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Atomic and Ionic Spectrum Lines below 2000 Angstroms: Hydrogen through Krypton

Part I (H–Cr)

Raymond L. Kelly

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David R. Lide, Jr., Editor

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The regular issues of the *Journal of Physical and Chemical Reference Data* are published quarterly and contain compilations and critical data reviews of moderate length. Longer monographs, volumes of collected tables, and other material unsuited to a periodical format are published separately as *Supplements to the Journal.* This tabulation, "Atomic and Ionic Spectrum Lines below 2000 Angstroms: Hydrogen through Krypton", by Raymond L. Kelly, is presented as Supplement No. 1 to Volume 16 of the *Journal of Physical and Chemical Reference Data.*

David R. Lide, Jr., Editor
Journal of Physical and Chemical Reference Data

Atomic and Ionic Spectrum Lines below 2000 Angstroms: Hydrogen through Krypton

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Spectrum lines from the elements hydrogen through krypton, in all stages of ionization, have been collected from the open literature and critically compared with the best values of atomic energy levels. The resulting list is ordered by element, spectrum number, and wavelength. The classification of each transition is given, along with the upper and lower energy level. A finding list is included.

Key words: atomic energy levels; atomic spectra; far ultraviolet spectra; spectrum lines.

Contents

List of Tables

Titanium (Continued)

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Chromium

1. Introduction

This report is a critical tabulation of spectral lines below 2000 Angstroms prepared primarily from information in the open literature. It incorporates an earlier report[1], published in 1982 as ORNL-5922, which included spectra for the first 18 elements (hydrogen through argon) as found in publications through 1978. Additional material presents spectra for the next 18 elements (potassium through krypton) as found in publications through July 1981. The current volume thus supplements, revises, and supersedes a 1973 report[2].

In most cases, only those lines which have been observed are listed in the tables. Notable exceptions are the lines of the hydrogen-like and helium-like atoms, for which few observations have been reported. Further, even in the case of some observed lines, the wavelengths given are those predicted from a comprehensive analysis of the spectrum rather than the measured values. A few lines have been predicted from unpublished extrapolations along isoelectronic sequences, and calculated wavelengths of some unobserved weak lines in multiplets have been included for completeness. Such predicted values of wavelength are marked by the symbol P in the appropriate column.

2. Arrangement of the Tables

The tabulation is divided into two main sections. Sec. I lists the lines by spectrum, and Sec. II is the finding list of all the lines listed in Sec. I, plus the K_α X-ray lines of the elements carbon through krypton.

For Sec. I pages 1–650, covering the elements H–Cr, appear in the first volume of this set; pages 651–1370, covering the elements Mn–Kr, appear in the second volume. Sec. II is contained in the third volume.

The entries in Sec. I are arranged by element (ordered by atomic number), with subdivision into the first spectrum, second spectrum, etc. Within each spectrum, the lines are arranged in order of increasing wavelength. This means that in a multiplet with several lines, those lines may not be listed in consecutively. For example, multiplets 8 and 17 in Mn II both include lines between 1000 and 1010 Angstroms, and these are interspersed. Transitions are shown in standard spectroscopic notation with the lower level given first.

2.1. Ground State and Ionization Potential

The ground configuration and ground-state term description are given for each state of ionization, if spectra below 2000 Angstroms have been observed. Note that data for the listed ionization states of the following elements are unavailable.

Arsenic	VIII–XIII, XIX, XX, XVII, XVIII
Bromine	X–XV, XVII, XVIII, XX–XXVIII, XXIX, XXX
Copper	VIII, XIX
Gallium	VI–XI, XXV, XXVI
Germanium	VIII–XII
Krypton	XV–XIX, XXII, XXIX–XXXI
Selenium	IX–XIV, XXVIII, XXIX
Titanium	I
Zinc	V–X, XXV

The ionization potentials are listed in electron volts (eV) and in reciprocal centimeters (cm^{-1}). They have been obtained from primary literature, from Moore's critical survey[3], or from the comprehensive compilation by Kelly and Harrison[4]. The values which are based on extrapolation rather than observation are enclosed in square brackets. The conversion factor is 8,065.479 cm^{-1}/eV.

2.2. Wavelength

The vacuum wavelengths are given as they are reported in the reference listed first for each line. Where more than one publication reports the wavelength of the line, the decision as to which to retain was based primarily on the present author's judgement of the best value. This judgement was based on consideration of the dates of publication, on probable accuracy from the type of instrumentation used and the wavelength standards employed, on the spectroscopic source used, and on the comparison of the observations with the wavelengths predicted from the best known values of energy levels as described below.

The accuracy of the wavelength tends to vary with the date of observation (because of improvements in wavelength standards) and also with the wavelength range covered, the type of source, etc. As a conservative estimate, all wavelengths reported here should be regarded as having uncertainties of ten to twenty in the last figure given unless the line is a wavelength standard, in which case the uncertainty is two or three in this figure.

Wavelength standards recommended in 1962 by Commission 14 of the International Astronomical Union (Ref. 308) are indicated with the symbol ST in the wavelength column. Those proposed but not yet firmly established are indicated by the symbol st.

The vacuum wavenumber has been omitted since it can be obtained by a simple inversion of the vacuum wavelength.

2.3. Intensity

Only a single intensity is given for each line, selected where possible from the source in which the particular spectrum was reported as most prominent. The listed intensities have been normalized to a maximum of 1000 for convenience in comparing the different references. The normalization procedure used was generally a linear or logarithmic transformation of the intensities reported by the original authors. (There continues to be a need for a single, consistently-used intensity scale. The normalization to 1000 in this report was adopted as a compromise between the long-standing scale extending from 00 to 10 and some later publications in which the maximum intensity is 100,000 or even more.)

As always the comparison of intensities presents a most vexing problem, particularly when one reference overlaps another. In most cases, the intensities are significant only over a limited range of wavelengths for a particular source operated in some particular way. For various reasons, intensities given by different observers are seldom compatible. No better statement on intensities can be made than that of Russell and Moore[5] in their analysis of the arc spectrum of iron.

"The recorded intensities of the lines in the great majority of spectra are in a state of primeval chaos. Different observers have used radically different scales. The older estimates were usually made on a scale from 1 for the weakest lines to 10 for the strongest. In some recent work a far more open scale has been adopted — from 1 to 1000 or even to 10000. Even the last probably falls short of representing the actual range.

In a few cases where an experienced observer, who has a fairly stable scale of estimation, has photographed the whole range of the spectrum, and made his estimates approximately homogeneous by comparison of overlapping plates, the recorded intensities give a good idea of the relative strengths of the lines on the photographs.

In the present case, however, one has to deal with a hodge-podge of estimates on all sorts of scales. The attempt to reduce these to an even roughly homogeneous system is hopeless.

The intensities found in the tables have been taken from what seemed to be as good a source as any (not always the same as for the wavelength).

All users of the tables should however, be explicitly warned that the tabulated intensities afford only a rough general indication, and should not be used for any quantitative purpose without special study."

2.4. Energy Levels

The energy levels (energies above the ground state) are shown in the column headed Levels. The units are 1000 cm^{-1}. In cases where the absolute positions of the levels are unknown, additive uncertainties are indicated by Z, X, E, etc. These uncertainties may be thousands of cm^{-1} in the worst cases. The levels, taken from the files of the Naval Postgraduate School Spectroscopic Data Center, were obtained from the primary literature and, in many cases, were derived or recalculated from the observed spectra.

2.5. Notes

A few descriptive symbols are used in the notes column. The symbols have the following meanings:

- A Observed in absorption
- F Forbidden by electric dipole selection rules
- N Not classified
- P Predicted value of wavelength

  There are three classes of predicted lines: (a) lines observed for which the calculations of energy levels are superior to the observations, as in the hydrogenic spectra and in other specific transitions; (b) those which have not been observed but for which Ritz calculations between known levels can be made, as in many of the forbidden lines; (c) those for which one or both of the energy levels have been found by Hartree-Fock type calculation, by interpolation, or by extrapolation. These three classes are not separately distinguished in the Notes column.
- Q Uncertain classification
- ST Standard Line (recommended)
- st Standard Line (proposed)
- Z Autoionizing; upper state above the first ionization limit
- ZZ Both states above the first ionization limit

2.6. Multiplet Number

The multiplet numbers assigned by C. E. Moore (Ref. 488 and later publications) are given in a separate column. Some lines missing from the multiplet tables are added, but lines with the same wavelength in a multiplet have not been listed twice.

2.7. Classification

The classifications of the transitions are given in the accepted form, with the lower state listed first. They are divided into columns showing configuration, term, and J-value.

Configuration: The configurations are given in enough detail to be self-explanatory. In general, those parts of the configuration which are given represent electrons outside the next lower closed shell.

Term: The symbol g is used to denote the ground term. Otherwise, the term designation is given in a notation which follows that of Cowan and Andrew[6], presented below in symbolic form for the two-electron case:

Type of Coupling	Description	Notation
LS	$[(\ell_1\ell_2)L,(s_1s_2)S]J$	$^{2S+1}L_J$
LK	$[\{(\ell_1\ell_2)L,s_1\}K,s_2]J$	$L[K]_J$
jK	$[\{(\ell_1s_1)j_1,\ell_2\}K,s_2]J$	$j_1[K]_J$
jj	$[(\ell_1s_1)j_1,(\ell_2s_2)j_2]J$	$(j_1,j_2)_J$

We have departed from older notation in not using primes, double primes, etc., to indicate those configurations which have, as parent terms, excited states of the next higher ion. Instead, the parent terms are given where they are known and where they are not immediately obvious. We have continued the older notation of a, b, c, . . (for even terms) and z, y, x, . . (for odd terms) to indicate the order of appearance of terms of the same multiplicity and same type.

J-Value: The J-values are given in a separate column to avoid the use of subscripts, and the J of the lower level appears first.

In general, the primary references for notation and classification of the observed spectra are the publications from the National Bureau of Standards (e.g., Ref. 488, 892, 1013, 1036, etc.) In all cases, as described above, the wavelength listed for the transition was compared with that predicted from the known "best" energy levels to verify the classification. Questionable or uncertain classifications are indicated with the letter "Q".

2.8. References

References are given with each spectral line to allow the reader to refer to the original publications. In every case, the first reference refers to the publication from which the wavelength listed in the table was taken.

3. Procedure for Assembling and Checking Data

The following general procedure was followed in preparing the table for each spectrum. First, the complete file of wavelengths was collected from the literature, punched onto cards, and ordered by wavelength. Second, the complete file of energy levels was collected for the spectrum. Third, the transitions were calculated from the energy levels and from a simple set of selection rules on J and change of parity. The computer program which made this calculation also compared each observed wavelength with all calculated wavelengths within some chosen tolerance, such as 0.1 Å. Fourth, the list of observed vs. calculated wavelengths was compared, on a line-by-line basis, with the publications used. Discrepancies outside acceptable limits usually required a reexamination of the energy level set. Most typographical errors were found in this step. Where discrepancies persisted, such as differences in wavelength or classification between two authors, the present author resolved the problem on the basis of best internal consistency and most comprehensive set of data. Fifth, when iteration of the previous step produced no further improvement, the computer was directed to produce a three-card set with the complete information about the transition. Sixth, the complete file of three-card sets for the spectrum was written onto magnetic tape with an up-date program. This tape was used for typesetting the tables.

4. Acknowledgements

Many spectroscopists have contributed preprints of their work for inclusion in these tables. It is a pleasure to thank V. A. Boiko, L. Cohen, A. M. Crooker, G. A. Doscheck, B. Edlen, B. C. Fawcett, U. Feldman, V. Kaufman, and E. Ya. Kononov for their numerous contributions. This extended data compilation could not have been completed had it not been for the careful programming of Dr. Don E. Harrison, Jr.

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The typesetting programs were developed by the Data Systems Development Group, Office of Standard Reference Data. It is a pleasure to acknowledge the splendid work of Nathan Seidenman, Margot Whitcomb, Phoebe Fagan, and other personnel there.

5. References for the Introduction

[1] R. L. Kelly, "Atomic and Ionic Spectrum Lines Below 2000 Angstroms: Hydrogen Through Argon," Report ORNL-5922, October 1982.

[2] R. L. Kelly with L. J. Palumbo, "Atomic and Ionic Emission Lines Below 2000 Angstroms: Hydrogen Through Krypton," NRL Report 7599, June 1973.

[3] C. E. Moore, Report NSRDS-NBS 34, Natl. Bur. Stand., Washington, D. C. 20234 (Sept. 1970).

[4] R. L. Kelly and D. E. Harrison, At. Data 3, 177 (1971), and R. L. Kelly and D. E. Harrison, At. Data and Nuc. Data Tables **19**, 301 (1977).

[5] H. N. Russell and C. E. Moore, Trans. Am. Phil. Soc. **34**, 113 (1944).

[6] R. D. Cowan and K. L. Andrew, J. Opt. Soc. Am. **55**, 502 (1965).

HYDROGEN I (H^{0+}), Z = 1
Ground State $1s(^2S_{1/2})$ (1 electron)
Ionization Potential 109 678.7737 cm^{-1}; 13.599 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
17	2	914.576	0.0 – 109.3402627	1s – 18p	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		309
16	2	914.919	0.0 – 109.2992665	1s – 17p	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		309,488
15	2	915.329	0.0 – 109.2503457	1s – 16p	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		309,488
14	3	915.824	0.0 – 109.1913178	1s – 15p	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		309,488
13	3	916.429	0.0 – 109.1191942	1s – 14p	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		309,488
12	4	917.181	0.0 – 109.0297939	1s – 13p	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		309,488
11	5	918.129	0.0 – 108.9171238	1s – 12p	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		309,488
10	7	919.351	0.0 – 108.7723455	1s – 11p	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		309,488
9	9	920.963	0.0 – 108.5819954	1s – 10p	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		309,488
8	10	923.150	0.0 – 108.3247262	1s – 9p	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		309,488
7	20	926.226	0.0 – 107.9650569	1s – 8p	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		309,488
6	30	930.748	0.0 – 107.4404490	1s – 7p	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		309,488
5	40	937.803	0.0 – 106.6321640	1s – 6p	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		309,488
4	70	949.743	0.0 – 105.2916540	1s – 5p	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		309,488
3	130	972.537	0.0 – 102.8238962	1s – 4p	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		309,488
2	300	1025.722	0.0 – 97.4923214	1s – 3p	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		309,488
1	670	1215.6683	0.0 – 82.2592865	1s – 2p	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309,488
1	330	1215.6737	0.0 – 82.2589206	1s – 2p	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{1}{2}$	P	309,488

DEUTERIUM I (D^{0+}), Z = 1
Ground State $1s(^2S_{1/2})$ (1 electron)
Ionization Potential 109 708.6165 cm^{-1}; 13.603 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		920.712	0.0 – 108.6115398	1s – 10p	$g^2S - {}^2P^o$	1 – 2		309
		922.899	0.0 – 108.3542005	1s – 9p	$g^2S - {}^2P^o$	1 – 2		309
7		925.974	0.0 – 107.9944334	1s – 8p	$g^2S - {}^2P^o$	1 – 2		309
6		930.495	0.0 – 107.4696828	1s – 7p	$g^2S - {}^2P^o$	1 – 2		309
5	40	937.548	0.0 – 106.6611779	1s – 6p	$g^2S - {}^2P^o$	1 – 2		309,487
4	70	949.485	0.0 – 105.3203031	1s – 5p	$g^2S - {}^2P^o$	1 – 2		309,487
3	140	972.272	0.0 – 102.8518738	1s – 4p	$g^2S - {}^2P^o$	1 – 2		309,487
2	320	1025.443	0.0 – 97.5188483	1s – 3p	$g^2S - {}^2P^o$	1 – 2		309,487
1	330	1215.3376	0.0 – 82.2816685	1s – 2p	$g^2S - {}^2P^o$	1 – 2	P	309,487
1	670	1215.3430	0.0 – 82.2813025	1s – 2p	$g^2S - {}^2P^o$	1 – 1	P	309,487

HELIUM I (He^{0+}), Z = 2
Ground State $1s^2(^1S_0)$ (2 electrons)
Ionization Potential 198 310.76 cm^{-1}; 24.588 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	286.4	169.086864 – 518.24	1s2p – 2p4p	$^3P^o$ – ^3D	2 – 3		398
	150	294.1	169.086864 – 509.094	1s2p – 2p3p	$^3P^o$ – ^3D	2 – 3		398
	100	295.2	171.135000 – 509.89	1s2p – 2p3p	$^1P^o$ – ^1P	1 – 1		398
	100	300.6	185.564654 – 518.24	1s3p – 2p4p	$^3P^o$ – ^3D	2 – 3		398
	150	302.4	186.101644 – 516.775	1s3d – 2p3d	^3D – $^3P^o$	3 – 2	P	398
	325	304.5	186.101644 – 514.4735	1s3d – 2p3d	^3D – $^3D^o$	3 – 3		398
	175	305.4	186.105065 – 513.55	1s3d – 2p3d	^1D – $^1D^o$	2 – 2	P	398
	270	305.8	191.217124 – 518.24	1s4p – 2p4p	$^3P^o$ – ^3D	2 – 3	P	398
	190	309.1	185.564654 – 509.094	1s3p – 2p3p	$^3P^o$ – ^3D	2 – 3		398
	30	311.2	191.217124 – 512.6	1s4p – 2p3p	$^3P^o$ – ^3P	2 – 2	P	398
	30	314.6	191.217124 – 509.094	1s4p – 2p3p	$^3P^o$ – ^3D	2 – 3		398
	370	320.29	169.086864 – 481.3015	$1s2p – 2p^2$	$^3P^o$ – ^3P	2 – 2	P	398
	130	338.1	185.564654 – 481.3015	$1s3p – 2p^2$	$^3P^o$ – ^3P	2 – 2		398
	30	344.7	191.217124 – 481.3015	$1s4p – 2p^2$	$^3P^o$ – ^3P	2 – 2		398
	4	505.5001	0. – 197.82391	$1s^2$ – 1s15p	g^1S – $^1P^o$	0 – 1		497
	6	505.6840	0. – 197.75194	$1s^2$ – 1s14p	g^1S – $^1P^o$	0 – 1		497
	8	505.9122	0. – 197.66275	$1s^2$ – 1s13p	g^1S – $^1P^o$	0 – 1		497
	10	506.2000	0. – 197.55036	$1s^2$ – 1s12p	g^1S – $^1P^o$	0 – 1		497
	15	506.5702	0. – 197.40599	$1s^2$ – 1s11p	g^1S – $^1P^o$	0 – 1		497
10	20	507.0576	0. – 197.21624	$1s^2$ – 1s10p	g^1S – $^1P^o$	0 – 1		497,488
9	30	507.7178	0. – 196.95979	$1s^2$ – 1s9p	g^1S – $^1P^o$	0 – 1		497,488
8	40	508.6431	0. – 196.60151	$1s^2$ – 1s8p	g^1S – $^1P^o$	0 – 1		497,488
7	50	509.9979	0. – 196.07924	$1s^2$ – 1s7p	g^1S – $^1P^o$	0 – 1		497,488
		510.2586	0. – 195.97904	$1s^2$ – 1s7s	g^1S – ^1S	0 – 0	F	497
6	70	512.0982	0. – 195.27504	$1s^2$ – 1s6p	g^1S – $^1P^o$	0 – 1		497,488
		512.5183	0. – 195.11500	$1s^2$ – 1s6s	g^1S – ^1S	0 – 0	F	497
5	100	515.6165	0. – 193.94257	$1s^2$ – 1s5p	g^1S – $^1P^o$	0 – 1		497,488
		516.3592	0. – 193.663627	$1s^2$ – 1s5s	g^1S – ^1S	0 – 0	F	497
4	160	522.2128	0. – 191.492817	$1s^2$ – 1s4p	g^1S – $^1P^o$	0 – 1		497,488
		523.7238	0. – 190.940331	$1s^2$ – 1s4s	g^1S – ^1S	0 – 0	F	497
3	400	537.0296	0. – 186.209471	$1s^2$ – 1s3p	g^1S – $^1P^o$	0 – 1		497,488
		537.3309	0. – 186.105065	$1s^2$ – 1s3d	g^1S – ^1D	0 – 2	F	497
		538.8956	0. – 185.564676	$1s^2$ – 1s3p	g^1S – $^3P^o$	0 – 1		497
		540.9354	0. – 184.864936	$1s^2$ – 1s3s	g^1S – ^1S	0 – 0	F	497
2	1000	584.3340	0. – 171.135000	$1s^2$ – 1s2p	g^1S – $^1P^o$	0 – 1		497,488
1	40	591.4117	0. – 169.086940	$1s^2$ – 1s2p	g^1S – $^3P^o$	0 – 1		497,488
		601.4041	0. – 166.277546	$1s^2$ – 1s2s	g^1S – ^1S	0 – 0	F	497
		625.563	0. – 159.856069	$1s^2$ – 1s2s	g^1S – ^3S	0 – 1	F,P	375,1037

HELIUM II (He^{1+}), Z = 2
Ground State $1s(^2S_{1/2})$ (1 electron)
Ionization Potential 438 908.8863 cm^{-1}; 54.418 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
11	5	229.431	0.0 – 435.8610442	1s – 12p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$		309,488
10	6	229.736	0.0 – 435.2816734	1s – 11p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$		309,488
9	9	230.139	0.0 – 434.5199557	1s – 10p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$		309,488
8	12	230.686	0.0 – 433.4904490	1s – 9p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$		309,488
7	17	231.454	0.0 – 432.0511701	1s – 8p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$		309,488
6	24	232.584	0.0 – 429.9518590	1s – 7p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$		309,488

HE II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
5	40	234.347	0.0 – 426.7173604	1s – 6p	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		309,488
4	70	237.331	0.0 – 421.3530610	1s – 5p	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		309,488
3	130	243.027	0.0 – 411.4778619	1s – 4p	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		309,488
2	320	256.317	0.0 – 390.1425671	1s – 3p	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		309,488
1	665	303.7804	0.0 – 329.1851566	1s – 2p	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309,488
1	335	303.7858	0.0 – 329.1792995	1s – 2p	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	309,488
		942.490	329.1797679 – 435.2816734	2s – 11p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		942.538	329.1851566 – 435.2816851	2p – 11d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
19	9	949.305	329.1797679 – 434.5199557	2s – 10p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309,488
19	17	949.354	329.1851566 – 434.5199712	2p – 10d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309,488
18	13	958.675	329.1797679 – 433.4904490	2s – 9p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309,488
18	22	958.724	329.1851566 – 433.4904703	2p – 9d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309,488
17	18	972.088	329.1797679 – 432.0511701	2s – 8p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309,488
17	32	972.138	329.1851566 – 432.0512004	2p – 8d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309,488
16	27	992.338	329.1797679 – 429.9518590	2s – 7p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309,488
16	48	992.391	329.1851566 – 429.9519043	2p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309,488
15	42	1025.246	329.1797679 – 426.7173604	2s – 6p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309,488
15	77	1025.302	329.1851566 – 426.7174323	2p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309,488
14	73	1084.913	329.1797679 – 421.3530610	2s – 5p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309,488
14	132	1084.975	329.1851566 – 421.3531853	2p – 5d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309,488
13	143	1215.095	329.1797679 – 411.4778619	2s – 4p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309,488
13	260	1215.171	329.1851566 – 411.4781047	2p – 4d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309,488
13	30	1215.175	329.1851566 – 411.4778607	2p – 4d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$	P	309,488
12	333	1640.345	329.1797679 – 390.1425671	2s – 3p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309,488
12	600	1640.474	329.1851566 – 390.1431426	2p – 3d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309,488
12	70	1640.490	329.1851566 – 390.1425642	2p – 3d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$	P	309,488

LITHIUM I (Li^{0+}), Z = 3
Ground State $1s^22s(^2S_{1/2})$ (3 electrons)
Ionization Potential 43 487.150 cm^{-1}; 5.392 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		199.23	42.298 – 544.23	$1s^210s - 1s2p(^1P^\circ)10s$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		887
		199.24	42.51 – 544.42	$1s^211s - 1s2p(^1P^\circ)11s$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		887
		199.25	42.0033 – 543.88	$1s^29s - 1s2p(^1P^\circ)9s$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		887
		199.26	41.5871 – 543.44	$1s^28s - 1s2p(^1P^\circ)8s$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		887
		199.29	40.9679 – 542.75	$1s^27s - 1s2p(^1P^\circ)7s$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		887
		199.31	39.98764 – 541.72	$1s^26s - 1s2p(^1P^\circ)6s$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		887
		199.40	38.29950 – 539.80	$1s^25s - 1s2p(^1P^\circ)5s$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		887
		199.61	35.01206 – 535.99	$1s^24s - 1s2p(^1P^\circ)4s$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		887
		200.32	27.20612 – 526.41	$1s^23s - 1s2p(^1P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		887
		207.5	14.90400 – 496.83	$1s^22p - 1s2p^2$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		126
		210.46	0.0 – 475.15	$1s^22s - 1s2p(^1P^\circ)2s$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		887
		1425.11	463.52 – 533.69	1s2s2p – 1s2p5p	$^4P^\circ - ^4P$	$\frac{5}{2} - \frac{5}{2}$		375
		1491.87	463.52 – 530.55	1s2s2p – 1s2p4p	$^4P^\circ - ^4P$	$\frac{5}{2} - \frac{5}{2}$		375
		1674.76	463.52 – 523.23	1s2s2p – 1s2p3p	$^4P^\circ - ^4P$	$\frac{5}{2} - \frac{5}{2}$		375
		1901.50	463.52 – 516.11	1s2s2p – 1s2s6s	$^4P^\circ - ^4S$	$\frac{5}{2} - \frac{3}{2}$		375
		1980.59	463.52 – 514.01	1s2s2p – 1s2s5s	$^4P^\circ - ^4S$	$\frac{5}{2} - \frac{3}{2}$		375

LITHIUM II (Li^{1+}), Z = 3
Ground State $1s^2(^1S_0)$ (2 electrons)
Ionization Potential 610 079. cm^{-1}; 75.641 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		75.64	0. – 1322.01	$1s^2 - 2s4p$	$g^1S - ^1P^\circ$	0 – 1		124
		76.98	0. – 1299.02	$1s^2 - 2s3p$	$g^1S - ^1P^\circ$	0 – 1		124
		82.49	0. – 1212.16	$1s^2 - 2s2p$	$g^1S - ^1P^\circ$	0 – 1		124
		125.5	494.26344 – 1291.2	1s2p – 2p3p	$^3P^\circ - ^3D$	2 – 3		126
		136.5	561.24377 – 1293.8	1s3d – 2p3d	$^3D - ^3D^\circ$	3 – 3		126
		140.5	494.26344 – 1206.0	$1s2p - 2p^2$	$^3P^\circ - ^3P$	2 – 2		126
		155.5						126
		166.39	0. – 600.998	$1s^2 - 1s7p$	$g^1S - ^1P^\circ$	0 – 1		124
		167.27	0. – 597.836	$1s^2 - 1s6p$	$g^1S - ^1P^\circ$	0 – 1		124
		168.74	0. – 592.63491	$1s^2 - 1s5p$	$g^1S - ^1P^\circ$	0 – 1		124
3	100	171.582	0. – 582.83011	$1s^2 - 1s4p$	$g^1S - ^1P^\circ$	0 – 1		168,488,596
2	100	178.015	0. – 561.75282	$1s^2 - 1s3p$	$g^1S - ^1P^\circ$	0 – 1		168,488,596
1	300	199.282	0. – 501.80859	$1s^2 - 1s2p$	$g^1S - ^1P^\circ$	0 – 1		168,488,596
		210.069	0. – 476.03498	$1s^2 - 1s2s$	$g^1S - ^3S$	0 – 1	F,P	375,307
	5	944.73	476.03498 – 581.88670	1s2s – 1s4p	$^3S - ^3P^\circ$	1 – 2		562
	5	1017.88	494.26344 – 592.50475	1s2p – 1s5d	$^3P^\circ - ^3D$	2 – 3		562
		1036.						126
	15	1131.884	494.26344 – 582.61407	1s2p – 1s4d	$^3P^\circ - ^3D$	2 – 3		562
		1139.	1206.0 – 1293.8	$2p^2 - 2p3d$	$^3P - ^3D^\circ$	2 – 3	P	126
	5	1166.63	494.26344 – 579.98133	1s2p – 1s4s	$^3P^\circ - ^3S$	2 – 1		562
	700	1198.082	476.03498 – 559.50142	1s2s – 1s3p	$^3S - ^3P^\circ$	1 – 2		562
	10	1237.287	501.80859 – 582.63095	1s2p – 1s4d	$^1P^\circ - ^1D$	1 – 2		562
	5	1253.324	501.80859 – 581.59677	1s2p – 1s4s	$^1P^\circ - ^1S$	1 – 0		562
	60	1420.891	491.3746 – 561.75282	1s2s – 1s3p	$^1S - ^1P^\circ$	0 – 1		562

Li II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	300	1492.931	494.26117 – 561.24315	1s2p – 1s3d	$^3P^o$ – ^3D	1 – 2		307,562
	500	1492.973	494.26344 – 561.24377	1s2p – 1s3d	$^3P^o$ – ^3D	2 – 3		307,562
	100	1493.036	494.26657 – 561.24430	1s2p – 1s3d	$^3P^o$ – ^3D	0 – 1		307,562
	150	1653.076	494.26117 – 554.75445	1s2p – 1s3s	$^3P^o$ – ^3S	1 – 1		307,562
	250	1653.132	494.26344 – 554.75445	1s2p – 1s3s	$^3P^o$ – ^3S	2 – 1		307,562
	50	1653.212	494.26657 – 554.75445	1s2p – 1s3s	$^3P^o$ – ^3S	0 – 1		307,562
	400	1681.667	501.80859 – 561.27362	1s2p – 1s3d	$^1P^o$ – ^1D	1 – 2		562
	100	1755.331	501.80859 – 558.77788	1s2p – 1s3s	$^1P^o$ – ^1S	1 – 0		307,788

LITHIUM III (Li^{2+}), Z = 3
Ground State 1s($^2S_{1/2}$) (1 electron)
Ionization Potential 987 661.027 cm^{-1}; 122.455 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		102.272	0.0 – 977.7852400	1s – 10p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		102.515	0.0 – 975.4686752	1s – 9p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		102.856	0.0 – 972.2300486	1s – 8p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		103.359	0.0 – 967.5062282	1s – 7p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		104.142	0.0 – 960.2280228	1s – 6p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		105.468	0.0 – 948.1573593	1s – 5p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
	10	107.999	0.0 – 925.9363066	1s – 4p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309,185
	30	113.905	0.0 – 877.9279192	1s – 3p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309,185
	65	134.996	0.0 – 740.7640088	1s – 2p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309,185
	35	135.001	0.0 – 740.7343504	1s – 2p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{1}{2}$	P	309,185
		421.854	740.7364435 – 977.7852400	2s – 10p	^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		421.903	740.7640088 – 977.7853186	2p – 10d	$^2P^o$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		426.017	740.7364435 – 975.4686752	2s – 9p	^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		426.067	740.7640088 – 975.4687831	2p – 9d	$^2P^o$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		431.977	740.7364435 – 972.2300486	2s – 8p	^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		432.029	740.7640088 – 972.2302023	2p – 8d	$^2P^o$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		440.976	740.7364435 – 967.5062282	2s – 7p	^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		441.029	740.7640088 – 967.5064576	2p – 7d	$^2P^o$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		455.598	740.7364435 – 960.2280228	2s – 6p	^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		455.655	740.7640088 – 960.2283870	2p – 6d	$^2P^o$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		482.112	740.7364435 – 948.1573593	2s – 5p	^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		482.174	740.7640088 – 948.1579887	2p – 5d	$^2P^o$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		539.957	740.7364435 – 925.9363066	2s – 4p	^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		540.034	740.7640088 – 925.9375360	2p – 4d	$^2P^o$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		728.908	740.7364435 – 877.9279192	2s – 3p	^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		729.039	740.7640088 – 877.9308334	2p – 3d	$^2P^o$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		1001.347	877.9197556 – 977.7852400	3s – 10p	^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		1001.428	877.9279192 – 977.7853186	3p – 10d	$^2P^o$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		1001.457	877.9308334 – 977.7853580	3d – 10f	^2D – $^2F^o$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		1025.127	877.9197556 – 975.4686752	3s – 9p	^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		1025.211	877.9279192 – 975.4687831	3p – 9d	$^2P^o$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		1025.241	877.9308334 – 975.4688371	3d – 9f	^2D – $^2F^o$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		1060.330	877.9197556 – 972.2300486	3s – 8p	^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		1060.420	877.9279192 – 972.2302023	3p – 8d	$^2P^o$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		1060.452	877.9308334 – 972.2302792	3d – 8f	^2D – $^2F^o$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		1116.240	877.9197556 – 967.5062282	3s – 7p	^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309

Li III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		1116.339	877.9279192 – 967.5064576	3p – 7d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		1116.374	877.9308334 – 967.5065724	3d – 7f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		1214.945	877.9197556 – 960.2280228	3s – 6p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		1215.060	877.9279192 – 960.2283870	3p – 6d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		1215.100	877.9308334 – 960.2285694	3d – 6f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		1423.739	877.9197556 – 948.1573593	3s – 5p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		1423.892	877.9279192 – 948.1579887	3p – 5d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		1423.944	877.9308334 – 948.1583038	3d – 5f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		1928.552	925.9328633 – 977.7852400	4s – 10p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		1928.677	925.9363066 – 977.7853186	4p – 10d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		1928.721	925.9375360 – 977.7853580	4d – 10f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309

BERYLLIUM I (Be^{0+}), Z = 4
Ground State $1s^22s^2(^1S_0)$ (4 electrons)
Ionization Potential 75 192.07 cm^{-1}; 9.323 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		89.16	0.0 – 1121.6	$1s^22s^2 - 1s2s(^1S)(3s4p(^1P^\circ))$	$g^1S - ^1P^\circ$	0 – 1	A	519
		90.21	0.0 – 1108.5	$1s^22s^2 - 1s2s(^1S)(3s3p(^1P^\circ))$	$g^1S - ^1P^\circ$	0 – 1	A	519
		90.67	0.0 – 1102.9	$1s^22s^2 - 1s2s(^3S)(3s4p(^3P^\circ))$	$g^1S - ^1P^\circ$	0 – 1	A	519
		92.19	0.0 – 1084.8	$1s^22s^2 - 1s2s(^3S)(3s3p(^3P^\circ))$	$g^1S - ^1P^\circ$	0 – 1	A	519
		96.29	0.0 – 1038.5	$1s^22s^2 - 1s(2s2p(^1P^\circ))4s$	$g^1S - ^1P^\circ$	0 – 1	A	519
		97.24	0.0 – 1028.4	$1s^22s^2 - 1s(2s2p(^1P^\circ))3d$	$g^1S - ^1P^\circ$	0 – 1	A	519
		97.44	0.0 – 1026.3	$1s^22s^2 - 1s(2s2p(^1P^\circ))3s$	$g^1S - ^1P^\circ$	0 – 1	A	519
		97.86	0.0 – 1021.9	$1s^22s^2 - 1s(2s2p(^3P^\circ))4s$	$g^1S - ^1P^\circ$	0 – 1	A	519
		97.97	0.0 – 1020.7	$1s^22s^2 - 1s(2s2p(^3P^\circ))4d$	$g^1S - ^1P^\circ$	0 – 1	A	519
		98.12	89.12108 – 1108.5	$1s^22p(^2P^\circ)3p - 1s2s(^1S)(3s3p(^1P^\circ))$	$^1P - ^1P^\circ$	1 – 1	A	519
		98.37	92.01597 – 1108.5	$1s^22p(^2P^\circ)3p - 1s2s(^1S)(3s3p(^1P^\circ))$	$^3P - ^1P^\circ$	1 – 1	A	519
		98.66	0.0 – 1013.6	$1s^22s^2 - 1s(2s2p(^3P^\circ))3d$	$g^1S - ^1P^\circ$	0 – 1	A	519
		98.94	73.9305 – 1084.8	$1s^22s10s - 1s2s(^3S)(3s3p(^3P^\circ))$	$^1S - ^1P^\circ$	0 – 1	A	519
		99.19	0.0 – 1008.2	$1s^22s^2 - 1s(2s2p(^3P^\circ))3s$	$g^1S - ^1P^\circ$	0 – 1	A	519
		100.86	21.98127 – 1013.5	$1s^22s2p - 1s(2s2p(^3P^\circ))3p$	$^3P^\circ - ^3D$	2 – 3	A	519
		101.20	0.0 – 988.2	$1s^22s^2 - 1s2s^24p$	$g^1S - ^1P^\circ$	0 – 1	A	519
		102.13	0.0 – 979.2	$1s^22s^2 - 1s2s^23p$	$g^1S - ^1P^\circ$	0 – 1	A	519
		104.67	21.98127 – 977.4	$1s^22s2p - 1s(2s(2p^2(^3P))(^2P))$	$^3P^\circ - ^3P$	2 – 2	A	519
		105.80	21.98127 – 967.2	$1s^22s2p - 1s(2s(2p^2(^1S))(^2S))$	$^3P^\circ - ^3S$	2 – 1	A	519
		107.26	21.98127 – 954.3	$1s^22s2p - 1s(2s(2p^2(^1D))(^2D))$	$^3P^\circ - ^3D$	2 – 3	A	519
		107.38	0.0 – 931.3	$1s^22s^2 - 1s2s^22p$	$g^1S - ^1P^\circ$	0 – 1	A	519
	125	1426.117	0.0 – 70.12049	$1s^22s^2 - 1s^22s5p$	$g^1S - ^1P^\circ$	0 – 1		333
	250	1491.765	0.0 – 67.03470	$1s^22s^2 - 1s^22s4p$	$g^1S - ^1P^\circ$	0 – 1		333
	1000	1661.478	0.0 – 60.18736	$1s^22s^2 - 1s^22s3p$	$g^1S - ^1P^\circ$	0 – 1		333,541
	100	1907.16	21.98127 – 74.4153	$1s^22s2p - 1s^22s12d$	$^3P^\circ - ^3D$	2 – 3		333,541
	100	1912.53	21.98127 – 74.2681	$1s^22s2p - 1s^22s11d$	$^3P^\circ - ^3D$	2 – 3		333,541
	200	1919.80	21.98127 – 74.0700	$1s^22s2p - 1s^22s10d$	$^3P^\circ - ^3D$	2 – 3		333,541
	300	1929.71	21.98127 – 73.8026	$1s^22s2p - 1s^22s9d$	$^3P^\circ - ^3D$	2 – 3		333,541
	500	1943.72	21.98127 – 73.4290	$1s^22s2p - 1s^22s8d$	$^3P^\circ - ^3D$	2 – 3		333,541
	100	1956.67	21.98127 – 73.0885	$1s^22s2p - 1s^22s8s$	$^3P^\circ - ^3S$	2 – 1		333,541
	900	1964.63	21.98127 – 72.8814	$1s^22s2p - 1s^22s7d$	$^3P^\circ - ^3D$	2 – 3		333,541
	300	1985.17	21.98127 – 72.3547	$1s^22s2p - 1s^22s7s$	$^3P^\circ - ^3S$	2 – 1		333,541
	100	1997.95	21.97828 – 72.02950	$1s^22s2p - 1s^22s6d$	$^3P^\circ - ^3D$	0 – 1		333,541
	300	1997.98	21.97892 – 72.02950	$1s^22s2p - 1s^22s6d$	$^3P^\circ - ^3D$	1 – 2		333,541
	600	1998.07	21.98127 – 72.02950	$1s^22s2p - 1s^22s6d$	$^3P^\circ - ^3D$	2 – 3		333,541

BERYLLIUM II (Be^{1+}), Z = 4
Ground State $1s^22s(^2S_{1/2})$ (3 electrons)
Ionization Potential 146 882.86 cm^{-1}; 18.211 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		82.58	0.0 – 1211.0	$1s^22s - 1s(3s3p(^1P^\circ))$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	519
		83.66	0.0 – 1195.3	$1s^22s - 1s(3s3p(^3P^\circ))$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	519
		89.80	0.0 – 1113.5	$1s^22s - 1s2p(^1P^\circ)6s$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	519
		90.04	0.0 – 1110.6	$1s^22s - 1s2p(^1P^\circ)5s$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	519
		91.06	0.0 – 1098.2	$1s^22s - 1s2p(^1P^\circ)4s$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	519
		91.36	0.0 – 1094.5	$1s^22s - 1s2p(^3P^\circ)5s$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	519

BE II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		91.74	0.0 – 1090.0	$1s^22s - 1s2p(^3P^\circ)4s$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	519
		92.61	0.0 – 1079.8	$1s^22s - 1s2s(^3S)5p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	519
		93.14	0.0 – 1073.7	$1s^22s - 1s2p(^1P^\circ)3s$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	519
		93.42	0.0 – 1070.4	$1s^22s - 1s2p(^3P^\circ)3s$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	519
		93.93	0.0 – 1064.6	$1s^22s - 1s2s(^3S)4p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	519
		94.78	0.0 – 1055.1	$1s^22s - 1s2s(^1S)3p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	519
		95.76	0.0 – 1044.3	$1s^22s - 1s2s(^3S)3p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	519
		101.7	127.33519 – 1110.6	$1s^25s - 1s2p(^1P^\circ)5s$	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		375
		102.49	0.0 – 975.7	$1s^22s - 1s(2s2p(^1P^\circ))$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	519
		104.40	0.0 – 957.8	$1s^22s - 1s(2s2p(^3P^\circ))$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	519
		714.	1060. – 1200.06	$1s2s2p - 1s2s4d$	${}^4P^\circ - {}^4D$	$\frac{5}{2} - \frac{7}{2}$	A	862
	100	725.71	0.0 – 137.796	$1s^22s - 1s^27p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		541
	300	743.58	0.0 – 134.4856	$1s^22s - 1s^26p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		541
	400	775.362	0.0 – 128.97200	$1s^22s - 1s^25p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		332,541
2	500	842.025	0.0 – 118.76132	$1s^22s - 1s^24p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		332,541
2	250	842.031	0.0 – 118.76053	$1s^22s - 1s^24p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		332,541
		865.3	1060. – 1175.57	$1s2s2p - 1s2s3d$	${}^4P^\circ - {}^4D$	$\frac{5}{2} - \frac{7}{2}$		862
	100	925.20	31.93534 – 140.0204	$1s^22p - 1s^28d$	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		541
	30	943.481	31.92876 – 137.91920	$1s^22p - 1s^27d$	${}^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		332,541
	70	943.540	31.93534 – 137.91920	$1s^22p - 1s^27d$	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		332,541
	100	949.75	31.93534 – 137.2260	$1s^22p - 1s^27s$	${}^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		541
	150	973.213	31.92876 – 134.68116	$1s^22p - 1s^26d$	${}^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		332,541
	350	973.276	31.93534 – 134.68116	$1s^22p - 1s^26d$	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		332,541
		981.4	1050. – 1151.9	$1s2p^2 - 1s2p3d$	${}^4P - {}^4D^\circ$	$\frac{5}{2} - \frac{7}{2}$		862
	50	983.984	31.92876 – 133.55642	$1s^22p - 1s^26s$	${}^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		332,541
	150	984.048	31.93534 – 133.55642	$1s^22p - 1s^26s$	${}^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		332,541
	200	1026.890	31.92876 – 129.31013	$1s^22p - 1s^25d$	${}^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		332,541
	400	1026.959	31.93534 – 129.31025	$1s^22p - 1s^25d$	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		332,541
1	550	1036.299	0.0 – 96.49728	$1s^22s - 1s^23p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		332,541
1	250	1036.319	0.0 – 96.49536	$1s^22s - 1s^23p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		332,541
	200	1048.147	31.92876 – 127.33519	$1s^22p - 1s^25s$	${}^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		332,541
	400	1048.220	31.93534 – 127.33519	$1s^22p - 1s^25s$	${}^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		332,541
	250	1142.956	31.92876 – 119.42120	$1s^22p - 1s^24d$	${}^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		332,541
	500	1143.039	31.93534 – 119.42144	$1s^22p - 1s^24d$	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		332,541
		1155.9	1050. – 1136.5	$1s2p^2 - 1s2p3s$	${}^4P - {}^4P^\circ$	$\frac{5}{2} - \frac{5}{2}$		862
5	330	1197.094	31.92876 – 115.46440	$1s^22p - 1s^24s$	${}^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		332,541
5	670	1197.188	31.93534 – 115.46440	$1s^22p - 1s^24s$	${}^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		332,488
4	555	1512.269	31.92876 – 98.05457	$1s^22p - 1s^23d$	${}^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		332,488
4	1000	1512.407	31.93534 – 98.05512	$1s^22p - 1s^23d$	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		332,488
4	110	1512.419	31.93534 – 98.05457	$1s^22p - 1s^23d$	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		332,488
3	500	1776.100	31.92876 – 88.23191	$1s^22p - 1s^23s$	${}^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		332,488
3	1000	1776.307	31.93534 – 88.23191	$1s^22p - 1s^23s$	${}^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		332,488
		1909.	1050. – 1102.38	$1s2p^2 - 1s2s3p$	${}^4P - {}^4P^\circ$	$\frac{5}{2} - \frac{5}{2}$		862

BERYLLIUM III (Be^{2+}), Z = 4
Ground State $1s^2(^1S_0)$ (2 electrons)
Ionization Potential 1 241 242. cm^{-1}; 153.896 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	0	76.096	1127.705 – 2441.8	1s3s – 23s	$^1S - ^1P^\circ$	0 – 1		304
	10	76.477	1121.184 – 2428.7	1s3s – 23s	$^3S - ^3P^\circ$	1 – 2		304
	40	78.530	956.502 – 2229.896	1s2s – 2s2p	$^3S - ^3P^\circ$	1 – 2		304
	90	78.662	983.370 – 2254.68	1s2p – $2p^2$	$^3P^\circ - ^3P$	2 – 2		304
	0	78.92	997.454 – 2264.536	1s2p – $2p^2$	$^1P^\circ - ^1D$	1 – 2		304
	50	81.890	0.0 – 1221.135	$1s^2$ – 1s7p	$g^1S - ^1P^\circ$	0 – 1		428,217
	100	82.378	0.0 – 1213.931	$1s^2$ – 1s6p	$g^1S - ^1P^\circ$	0 – 1		428,217
	200	83.200	0.0 – 1201.894	$1s^2$ – 1s5p	$g^1S - ^1P^\circ$	0 – 1		428,217
	300	84.754	0.0 – 1179.830	$1s^2$ – 1s4p	$g^1S - ^1P^\circ$	0 – 1		428,217
	500	88.309	0.0 – 1132.390	$1s^2$ – 1s3p	$g^1S - ^1P^\circ$	0 – 1		428,217
	1000	100.2552	0.0 – 997.454	$1s^2$ – 1s2p	$g^1S - ^1P^\circ$	0 – 1		715,217
		104.55	0.0 – 956.502	$1s^2$ – 1s2s	$g^1S - ^3S$	0 – 1	F,P	375,428
	25	509.99	983.370 – 1179.451	1s2p – 1s4d	$^3P^\circ - ^3D$	2 – 3		428
	10	549.31	997.454 – 1179.495	1s2p – 1s4d	$^1P^\circ - ^1D$	1 – 2		428
	90	582.078	956.502 – 1128.300	1s2s – 1s3p	$^3S - ^3P^\circ$	1 – 2		428
	40	661.322	981.178 – 1132.390	1s2s – 1s3p	$^1S - ^1P^\circ$	0 – 1		428
	150	675.593	983.370 – 1131.383	1s2p – 1s3d	$^3P^\circ - ^3D$	2 – 3		428
	40	725.586	983.370 – 1121.184	1s2p – 1s3s	$^3P^\circ - ^3S$	2 – 1		428
	30	746.228	997.454 – 1131.462	1s2p – 1s3d	$^1P^\circ - ^1D$	1 – 2		428,217
	10	767.75	997.454 – 1127.705	1s2p – 1s3s	$^1P^\circ - ^1S$	1 – 0		428
	10	1114.69	1131.383 – 1221.09	1s3d – 1s7f	$^3D - ^3F^\circ$	3 – 4		217
	20	1213.12	1131.383 – 1213.815	1s3d – 1s6f	$^3D - ^3F^\circ$	3 – 4		217
	10	1214.32	1131.462 – 1213.813	1s3d – 1s6f	$^1D - ^1F^\circ$	2 – 3		217
	20	1362.36	1128.300 – 1201.702	1s3p – 1s5d	$^3P^\circ - ^3D$	2 – 3	P	217
	10	1401.52	1128.300 – 1199.650	1s3p – 1s5s	$^3P^\circ - ^3S$	2 – 1		217
	100	1421.26	1131.383 – 1201.742	1s3d – 1s5f	$^3D - ^1F^\circ$	2 – 3		217
	50	1422.86	1131.462 – 1201.742	1s3d – 1s5f	$^1D - ^1F^\circ$	2 – 3		217
	10	1435.17	1131.383 – 1201.060	1s3d – 1s5p	$^3D - ^3P^\circ$	3 – 2		217
	20	1440.77	1132.390 – 1201.80	1s3p – 1s5d	$^1P^\circ - ^1D$	1 – 2		217
	50	1754.69	1121.184 – 1178.174	1s3s – 1s4p	$^3S - ^3P^\circ$	1 – 2		428,217
	30	1918.46	1127.705 – 1179.830	1s3s – 1s4p	$^1S - ^1P^\circ$	0 – 1	P	217
	500	1954.97	1128.300 – 1179.451	1s3p – 1s4d	$^3P^\circ - ^3D$	2 – 3		428,217

BERYLLIUM IV (Be^{3+}), Z = 4
Ground State $1s(^2S_{1/2})$ (1 electron)
Ionization Potential 1 756 018.824 cm^{-1}; 217.720 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		57.522	0.0 – 1738.4612874	1s – 10p	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		57.659	0.0 – 1734.3427829	1s – 9p	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		57.851	0.0 – 1728.5849799	1s – 8p	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		58.133	0.0 – 1720.1867016	1s – 7p	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		58.574	0.0 – 1707.2470596	1s – 6p	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		59.320	0.0 – 1685.7870356	1s – 5p	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
	10	60.743	0.0 – 1646.2808976	1s – 4p	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309,765
	30	64.064	0.0 – 1560.9283189	1s – 3p	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309,765
	65	75.926	0.0 – 1317.0730084	1s – 2p	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309,197
	35	75.931	0.0 – 1316.9792504	1s – 2p	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	P	309,197
		237.261	1316.9852510 – 1738.4612874	2s – 10p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		237.311	1317.0730084 – 1738.4615361	2p – 10d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309

BE IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		239.603	1316.9852510 - 1734.3427829	2s - 9p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		239.653	1317.0730084 - 1734.3431240	2p - 9d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		242.954	1316.9852510 - 1728.5849799	2s - 8p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		243.006	1317.0730084 - 1728.5854655	2p - 8d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		248.015	1316.9852510 - 1720.1867016	2s - 7p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		248.068	1317.0730084 - 1720.1874265	2p - 7d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		256.238	1316.9852510 - 1707.2470596	2s - 6p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		256.295	1317.0730084 - 1707.2482108	2p - 6d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		271.148	1316.9852510 - 1685.7870356	2s - 5p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		271.212	1317.0730084 - 1685.7890249	2p - 5d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		303.678	1316.9852510 - 1646.2808976	2s - 4p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		303.756	1317.0730084 - 1646.2847832	2p - 4d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		409.932	1316.9852510 - 1560.9283189	2s - 3p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		410.064	1317.0730084 - 1560.9375296	2p - 3d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		563.193	1560.9023284 - 1738.4612874	3s - 10p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		563.275	1560.9283189 - 1738.4615361	3p - 10d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		563.304	1560.9375296 - 1738.4616605	3d - 10f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		576.567	1560.9023284 - 1734.3427829	3s - 9p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		576.652	1560.9283189 - 1734.3431240	3p - 9d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		576.682	1560.9375296 - 1734.3432948	3d - 9f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		596.365	1560.9023284 - 1728.5849799	3s - 8p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		596.455	1560.9283189 - 1728.5854655	3p - 8d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		596.487	1560.9375296 - 1728.5857087	3d - 8f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		627.808	1560.9023284 - 1720.1867016	3s - 7p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		627.908	1560.9283189 - 1720.1874265	3p - 7d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		627.942	1560.9375296 - 1720.1877895	3d - 7f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		683.318	1560.9023284 - 1707.2470596	3s - 6p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		683.434	1560.9283189 - 1707.2482108	3p - 6d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		683.474	1560.9375296 - 1707.2487872	3d - 6f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		800.739	1560.9023284 - 1685.7870356	3s - 5p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		800.892	1560.9283189 - 1685.7890249	3p - 5d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		800.945	1560.9375296 - 1685.7900210	3d - 5f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		1084.700	1646.2699351 - 1738.4612874	4s - 10p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		1084.827	1646.2808976 - 1738.4615361	4p - 10d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		1084.871	1646.2847832 - 1738.4616605	4d - 10f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		1135.424	1646.2699351 - 1734.3427829	4s - 9p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		1135.561	1646.2808976 - 1734.3431240	4p - 9d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		1135.609	1646.2847832 - 1734.3432948	4d - 9f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		1171.254	1560.9023284 - 1646.2808976	3s - 4p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		1171.558	1560.9283189 - 1646.2847832	3p - 4d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		1171.657	1560.9375296 - 1646.2867286	3d - 4f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		1214.845	1646.2699351 - 1728.5849799	4s - 8p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		1215.000	1646.2808976 - 1728.5854655	4p - 8d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		1215.053	1646.2847832 - 1728.5857087	4d - 8f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		1352.873	1646.2699351 - 1720.1867016	4s - 7p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		1353.061	1646.2808976 - 1720.1874265	4p - 7d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		1353.125	1646.2847832 - 1720.1877895	4d - 7f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		1639.959	1646.2699351 - 1707.2470596	4s - 6p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		1640.224	1646.2808976 - 1707.2482108	4p - 6d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		1640.312	1646.2847832 - 1707.2487872	4d - 6f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		1898.258	1685.7814234 - 1738.4612874	5s - 10p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		1898.452	1685.7870356 - 1738.4615361	5p - 10d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		1898.519	1685.7890249 - 1738.4616605	5d - 10f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309

BORON I (B^{0+}), Z = 5
Ground State $1s^22s^22p(^2P^\circ_{1/2})$ (5 electrons)
Ionization Potential 66 928.10 cm^{-1}; 8.298 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		993.380	0.015254 – 100.6817	$2s^22p - 2s2p(^3P^\circ_1)6p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$	A	919
		1010.902	0.00 – 98.9215	$2s^22p - 2s2p(^3P^\circ_1)5p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$	A	919
		1011.058	0.015254 – 98.9215	$2s^22p - 2s2p(^3P^\circ_1)5p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$	A	919
		1047.647	0.00 – 95.4515	$2s^22p - 2s2p(^3P^\circ_1)4p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$	A	919
		1047.695	0.00 – 95.4474	$2s^22p - 2s2p(^3P^\circ_1)4p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$	A	919
		1047.825	0.015254 – 95.4515	$2s^22p - 2s2p(^3P^\circ_1)4p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$	A	919
		1047.867	0.015254 – 95.4474	$2s^22p - 2s2p(^3P^\circ_1)4p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$	A	919
		1129.701	0.00 – 88.5196	$2s^22p - 2s2p(^3P^\circ_2)3p$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$	A	919
		1129.881	0.015254 – 88.5196	$2s^22p - 2s2p(^3P^\circ_2)3p$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$	A	919
		1142.105	0.00 – 87.5576	$2s^22p - 2s2p(^3P^\circ_2)3p$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	P	375
		1142.269	0.015254 – 87.5603	$2s^22p - 2s2p(^3P^\circ_2)3p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	A	919
		1142.304	0.015254 – 87.5576	$2s^22p - 2s2p(^3P^\circ_2)3p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$	A	919
		1151.207	0.00 – 86.8649	$2s^22p - 2s2p(^3P^\circ_1)3p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$	A	919
		1151.281	0.00 – 86.8596	$2s^22p - 2s2p(^3P^\circ_1)3p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$	A	919
		1151.422	0.015254 – 86.8649	$2s^22p - 2s2p(^3P^\circ_1)3p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$	A	919
		1151.489	0.015254 – 86.8596	$2s^22p - 2s2p(^3P^\circ_1)3p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$	A	919
	10	1378.654	0.00 – 72.53452	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$	A	102,274
	20	1378.875	0.00 – 72.52287	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$	A	102,274
	40	1378.943	0.015254 – 72.53452	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$	A	102,274
	10	1379.166	0.015254 – 72.52287	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$	A	102,274
		1413.940	28.8813+X – 99.6057+X	$2s2p^2 - 2s2p(^3P^\circ_2)5d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$	A	919
	30	1465.548	28.8700+X – 97.1037+X	$2s2p^2 - 2p^3$	$^4P - ^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	919,274
	40	1465.663	28.8750+X – 97.1037+X	$2s2p^2 - 2p^3$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$	A	919,274
	20	1465.801	28.8813+X – 97.1037+X	$2s2p^2 - 2p^3$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$	A	919,274
		1469.015	28.8750+X – 96.9478+X	$2s2p^2 - 2s2p(^3P^\circ_1)4d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$	A	919
		1469.070	28.8813+X – 96.9516+X	$2s2p^2 - 2s2p(^3P^\circ_2)4d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$	A	919
		1469.297	28.8813+X – 96.9411+X	$2s2p^2 - 2s2p(^3P^\circ_1)4d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{3}{2}$	A	919
		1505.171	0.00 – 66.43762	$2s^22p - 2s^215d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	A	102
		1505.517	0.015254 – 66.43762	$2s^22p - 2s^215d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	A	102
		1506.820	0.00 – 66.36490	$2s^22p - 2s^214d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	A	102
		1507.168	0.015254 – 66.36490	$2s^22p - 2s^214d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	A	102
		1508.872	0.00 – 66.27465	$2s^22p - 2s^213d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	A	102
		1509.220	0.015254 – 66.27465	$2s^22p - 2s^213d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	A	102
		1511.465	0.00 – 66.16092	$2s^22p - 2s^212d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	A	102
		1511.816	0.015254 – 66.16092	$2s^22p - 2s^212d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	A	102
		1514.816	0.00 – 66.01458	$2s^22p - 2s^211d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	A	102
		1515.168	0.015254 – 66.01458	$2s^22p - 2s^211d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	A	102
		1519.246	0.00 – 65.82212	$2s^22p - 2s^210d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	A	102
		1519.598	0.015254 – 65.82212	$2s^22p - 2s^210d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	A	102
		1524.170	0.00 – 65.60935	$2s^22p - 2s^210s$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$	A	102
		1524.530	0.015254 – 65.60935	$2s^22p - 2s^210s$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$	A	102
		1525.281	0.00 – 65.56164	$2s^22p - 2s^29d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	A	102
		1525.637	0.015254 – 65.56164	$2s^22p - 2s^29d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	A	102
		1532.094	0.00 – 65.27016	$2s^22p - 2s^29s$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$	A	102
		1532.451	0.015254 – 65.27016	$2s^22p - 2s^29s$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$	A	102
		1533.806	0.00 – 65.19731	$2s^22p - 2s^28d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	A	102
		1534.166	0.015254 – 65.19729	$2s^22p - 2s^28d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	A	102
		1543.398	0.00 – 64.79207	$2s^22p - 2s^28s$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$	A	102
		1543.763	0.015254 – 64.79207	$2s^22p - 2s^28s$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$	A	102
	20	1546.423	0.00 – 64.66530	$2s^22p - 2s^27d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	A	102,274
	30	1546.789	0.015254 – 64.66534	$2s^22p - 2s^27d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	A	102,274
	5	1558.701	0.00 – 64.15600	$2s^22p - 2s^27s$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$	A	102,134
	10	1559.071	0.015254 – 64.15600	$2s^22p - 2s^27s$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$	A	102,274
	10	1566.286	0.00 – 63.84529	$2s^22p - 2s^26d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	A	102,274

B I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	1566.660	0.015254 – 63.84529	$2s^22p - 2s^26d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	A	102,274
	30	1573.301	0.00 – 63.56064	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$	A	102,274
	50	1573.679	0.015254 – 63.56064	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	A	102,274
		1574.868	28.8813+X – 92.3787+X	$2s2p^2 - 2s2p(^3P^\circ_2)4s$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$	A	919
		1587.340	28.8700+X – 91.8688+X	$2s2p^2 - 2s2p(^3P^\circ_2)3d$	$^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	919
		1587.385	28.8700+X – 91.8670+X	$2s2p^2 - 2s2p(^3P^\circ_2)3d$	$^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	919
		1587.451	28.8750+X – 91.8688+X	$2s2p^2 - 2s2p(^3P^\circ_2)3d$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$	A	919
		1587.500	28.8750+X – 91.8670+X	$2s2p^2 - 2s2p(^3P^\circ_2)3d$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$	A	919
		1587.596	28.8750+X – 91.8635+X	$2s2p^2 - 2s2p(^3P^\circ_2)3d$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$	A	919
		1587.653	28.8813+X – 91.8670+X	$2s2p^2 - 2s2p(^3P^\circ_2)3d$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$	A	919
		1587.747	28.8813+X – 91.8635+X	$2s2p^2 - 2s2p(^3P^\circ_2)3d$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$	A	919
		1600.373	0.00 – 62.48542	$2s^22p - 2s^25d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	A	102
	70	1600.455	0.00 – 62.48223	$2s^22p - 2s^26s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$	A	102,274
	120	1600.761	0.015254 – 62.48558	$2s^22p - 2s^25d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	A	102,274
	1	1600.846	0.015254 – 62.48223	$2s^22p - 2s^26s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	P	984
		1607.645	28.8700+X – 91.0729+X	$2s2p^2 - 2s2p(^3P^\circ_1)3d$	$^4P - {}^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	919
		1607.733	28.8750+X – 91.0745+X	$2s2p^2 - 2s2p(^3P^\circ_1)3d$	$^4P - {}^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$	A	919
		1607.820	28.8813+X – 91.0773+X	$2s2p^2 - 2s2p(^3P^\circ_2)3d$	$^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$	A	919
		1607.890	28.8813+X – 91.0745+X	$2s2p^2 - 2s2p(^3P^\circ_1)3d$	$^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$	A	919
		1607.932	28.8813+X – 91.0729+X	$2s2p^2 - 2s2p(^3P^\circ_1)3d$	$^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{3}{2}$	A	919
	50	1662.608	0.00 – 60.14645	$2s^22p - 2s^25s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$	A	102,274
	100	1663.031	0.015254 – 60.14645	$2s^22p - 2s^25s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	A	102,274
	5	1664.25						134
	5	1664.76						134
	150	1666.850	0.00 – 59.99341	$2s^22p - 2s^24d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	A	102,274
	200	1667.272	0.015254 – 59.99351	$2s^22p - 2s^24d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	A	102,274
	150	1817.843	0.00 – 55.010181	$2s^22p - 2s^24s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		984,274
	200	1818.348	0.015254 – 55.010181	$2s^22p - 2s^24s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		984,274
3	300	1825.891	0.00 – 54.767633	$2s^22p - 2s^23d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		984,274
3	300	1826.400	0.015254 – 54.767804	$2s^22p - 2s^23d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		984,274

BORON II (B^{1+}), Z = 5
Ground State $1s^22s^2(^1S_0)$ (4 electrons)
Ionization Potential 202 887.4 cm^{-1}; 25.155 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		632.8	37.3583 – 195.380	2s2p – 2p3p	$^3P^\circ - {}^3P$	2 – 2		532
		641.5	37.3583 – 193.236	2s2p – 2p3p	$^3P^\circ - {}^3S$	2 – 1		532
		652.0	37.3583 – 190.725	2s2p – 2p3p	$^3P^\circ - {}^3D$	2 – 3		532
	200	693.947	0. – 144.10317	$2s^2 - 2s3p$	$g^1S - {}^1P^\circ$	0 – 1		532
	100	731.357	37.3424 – 174.07313	2s2p – 2s4d	$^3P^\circ - {}^3D$	1 – 2		168
	100	731.442	37.3583 – 174.07313	2s2p – 2s4d	$^3P^\circ - {}^3D$	2 – 3		168,195
		770.8	73.39660 – 203.132	2s2p – 2p3p	$^1P^\circ - {}^1S$	1 – 0		532
		808.7	73.39660 – 197.052	2s2p – 2p3p	$^1P^\circ - {}^1D$	1 – 2		532
	10	864.08	73.39660 – 189.12816	2s2p – 2p3p	$^1P^\circ - {}^1P$	1 – 1		168
	300	882.543	37.3424 – 150.64945	2s2p – 2s3d	$^3P^\circ - {}^3D$	1 – 2		532
	300	882.681	37.3583 – 150.64945	2s2p – 2s3d	$^3P^\circ - {}^3D$	2 – 3		532
	10	978.938	73.39660 – 175.54723	2s2p – 2s4d	$^1P^\circ - {}^1D$	1 – 2		532

B II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	984.673	98.9343 – 200.4909	$2p^2$ – 2p3d	^3P – $^3D^\circ$	2 – 3		532
	1	1048.70	102.36300 – 197.72031	$2p^2$ – 2p3d	^1D – $^1D^\circ$	2 – 2		532
	300	1081.875	37.3424 – 129.77346	2s2p – 2s3s	$^3P^\circ$ – ^3S	1 – 1		532
	300	1082.073	37.3583 – 129.77346	2s2p – 2s3s	$^3P^\circ$ – ^3S	2 – 1		532
	1	1208.36	98.9218 – 181.6784	$2p^2$ – 2p3s	^3P – $^3P^\circ$	1 – 2		532
	40	1208.546	98.9343 – 181.6784	$2p^2$ – 2p3s	^3P – $^3P^\circ$	2 – 2		532
	10	1208.825	98.9218 – 181.6467	$2p^2$ – 2p3s	^3P – $^3P^\circ$	1 – 0		532
	300	1230.160	73.39660 – 154.68632	2s2p – 2s3d	$^1P^\circ$ – ^1D	1 – 2		532
		1324.	102.36300 – 177.883	$2p^2$ – 2p3s	^1D – $^1P^\circ$	2 – 1	Q	392
	600	1362.461	0. – 73.39660	$2s^2$ – 2s2p	g^1S – $^1P^\circ$	0 – 1		532
	1	1378.18	102.36300 – 174.92205	$2p^2$ – 2s4f	^1D – $^1F^\circ$	2 – 3		532
	10	1607.76	73.39660 – 135.5949	2s2p – 2s3s	$^1P^\circ$ – ^1S	1 – 0		532
	450	1623.582	37.3424 – 98.9343	2s2p – $2p^2$	$^3P^\circ$ – ^3P	1 – 2		532
	300	1623.771	37.3367 – 98.9218	2s2p – $2p^2$	$^3P^\circ$ – ^3P	0 – 1		532
	600	1624.018	37.3583 – 98.9343	2s2p – $2p^2$	$^3P^\circ$ – ^3P	2 – 2		532
	400	1624.16	37.3424 – 98.9126	2s2p – $2p^2$	$^3P^\circ$ – ^3P	1 – 0		168
	450	1624.340	37.3583 – 98.9218	2s2p – $2p^2$	$^3P^\circ$ – ^3P	2 – 1		532
	300	1842.811	73.39660 – 127.66159	2s2p – $2p^2$	$^1P^\circ$ – ^1S	1 – 0		532
	10	1926.65	129.77346 – 181.6771	2s3s – 2p3s	^3S – $^3P^\circ$	1 – 2		532
	1	1927.45	129.77346 – 181.6565	2s3s – 2p3s	^3S – $^3P^\circ$	1 – 1		532
	1	1927.78	129.77346 – 181.6467	2s3s – 2p3s	^3S – $^3P^\circ$	1 – 0		532
		1937.2	143.99389 – 195.6149	2s3p – 2p3p	$^3P^\circ$ – ^3P	2 – 2		532

BORON III (B^{2+}), Z = 5
Ground State $1s^22s(^2S_{1/2})$ (3 electrons)
Ionization Potential 305 931.1 cm^{-1}; 37.931 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		62.0	48.3926 – 1661.4+B	$1s^22p$ – $1s2p^2$	$^2P^\circ$ – ^2P	$\frac{3}{2}$ – $\frac{1}{2}$	Q	95
	100	376.372	0.0 – 265.7197	$1s^22s$ – $1s^25p$	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$		195
	300	411.810	0.0 – 242.8324	$1s^22s$ – $1s^24p$	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$		168,195
	100	434.627	48.3926 – 278.4737	$1s^22p$ – $1s^26d$	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$		195
	100	458.72	48.3926 – 266.3895	$1s^22p$ – $1s^25d$	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$		195
	200	510.777	48.3585 – 244.1386	$1s^22p$ – $1s^24d$	$^2P^\circ$ – ^2D	$\frac{1}{2}$ – $\frac{3}{2}$		168
	300	510.865	48.3926 – 244.1389	$1s^22p$ – $1s^24d$	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$		168,195
	460	518.244	0.0 – 192.9594	$1s^22s$ – $1s^23p$	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$		168
	230	518.271	0.0 – 192.9492	$1s^22s$ – $1s^23p$	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{1}{2}$		168,197
	10	528.25	48.3926 – 237.6955	$1s^22p$ – $1s^24s$	$^2P^\circ$ – ^2S	$\frac{3}{2}$ – $\frac{1}{2}$		195
	500	677.004	48.3585 – 196.0681	$1s^22p$ – $1s^23d$	$^2P^\circ$ – ^2D	$\frac{1}{2}$ – $\frac{3}{2}$		168
	600	677.147	48.3926 – 196.0712	$1s^22p$ – $1s^23d$	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$		168
	100	758.476	48.3585 – 180.2018	$1s^22p$ – $1s^23s$	$^2P^\circ$ – ^2S	$\frac{1}{2}$ – $\frac{1}{2}$		168
	200	758.673	48.3926 – 180.2018	$1s^22p$ – $1s^23s$	$^2P^\circ$ – ^2S	$\frac{3}{2}$ – $\frac{1}{2}$		168
		1701.						392

BORON IV (B^{3+}), Z = 5
Ground State $1s^2(^1S_0)$ (2 electrons)
Ionization Potential 2 092 001.4 cm^{-1}; 259.377 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		44.8	1636.995 – 3869.1	1s2p – 2p3p	$^3P^o - ^3D$	2 – 3		95
		48.939	0. – 2043.36	$1s^2$ – 1s6p	$g^1S - ^1P^o$	0 – 1		764
		49.4549	0. – 2022.044	$1s^2$ – 1s5p	$g^1S - ^1P^o$	0 – 1		715
	100	50.4347	0. – 1982.762	$1s^2$ – 1s4p	$g^1S - ^1P^o$	0 – 1		715,197
	330	52.6853	0. – 1898.063	$1s^2$ – 1s3p	$g^1S - ^1P^o$	0 – 1		715,197
	1000	60.3144	0. – 1657.980	$1s^2$ – 1s2p	$g^1S - ^1P^o$	0 – 1		715,197
		61.088	0. – 1636.943	$1s^2$ – 1s2p	$g^1S - ^3P^o$	0 – 1		764
		62.440	0. – 1601.545	$1s^2$ – 1s2s	$g^1S - ^3S$	0 – 1	F,P	375,221
	5	264.02	1601.532 – 1980.288	1s2s – 1s4p	$^3S - ^3P^o$	1 – 1		221
	5	289.64	1636.995 – 1982.14	1s2p – 1s4d	$^3P^o - ^3D$	2 – 3		221
	20	308.41	1657.980 – 1982.22	1s2p – 1s4d	$^1P^o - ^1D$	1 – 2		221
	160	344.01	1601.532 – 1892.215	1s2s – 1s3p	$^3S - ^3P^o$	1 – 1		221
	5	380.94	1635.555 – 1898.063	1s2s – 1s3p	$^1S - ^1P^o$	0 – 1		221
	450	385.00	1636.995 – 1896.73	1s2p – 1s3d	$^3P^o - ^3D$	2 – 3		221
	5	406.84	1636.943 – 1882.74	1s2p – 1s3s	$^3P^o - ^3S$	1 – 1		221
	285	418.66	1657.980 – 1896.836	1s2p – 1s3d	$^1P^o - ^1D$	1 – 2		221
	5	427.70	1657.980 – 1891.79	1s2p – 1s3s	$^1P^o - ^1S$	1 – 0		221
		682.60	1896.73 – 2043.21	1s3d – 1s6f	$^3D - ^3F^o$	3 – 4	P	087
		683.39	1896.836 – 2043.18	1s3d – 1s6f	$^1D - ^1F^o$	2 – 3	P	087
	20	799.66	1896.73 – 2021.73	1s3d – 1s5f	$^3D - ^3F^o$	3 – 4		221
		800.6	1896.836 – 2021.76	1s3d – 1s5f	$^1D - ^1F^o$	2 – 3	P	087
	20	1025.10	1882.74 – 1980.288	1s3s – 1s4p	$^3S - ^3P^o$	1 – 1		221
	70	1112.20	1892.227 – 1982.14	1s3p – 1s4d	$^3P^o - ^3D$	2 – 3		221
	450	1168.90	1896.73 – 1982.269	1s3d – 1s4f	$^3D - ^3F^o$	3 – 4		221
	70	1170.86	1896.836 – 1982.24	1s3d – 1s4f	$^1D - ^1F^o$	2 – 3		221
	5	1187.60	1892.215 – 1976.42	1s3p – 1s4s	$^3P^o - ^3S$	1 – 1		221
	5	1190.56						221
	5	1196.06	1896.73 – 1980.294	1s3d – 1s4p	$^3D - ^3P^o$	3 – 2		221

BORON V (B^{4+}), Z = 5
Ground State $1s(^2S_{1/2})$ (1 electron)
Ionization Potential 2 744 107.87 cm^{-1}; 340.229 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		36.810	0.0 – 2716.6733581	1s – 10p	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309
		36.897	0.0 – 2710.2379314	1s – 9p	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309
		37.020	0.0 – 2701.2409735	1s – 8p	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309
		37.201	0.0 – 2688.1180568	1s – 7p	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309
		37.483	0.0 – 2667.8988675	1s – 6p	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309
		37.960	0.0 – 2634.3658134	1s – 5p	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309
	10	38.871	0.0 – 2572.6340583	1s – 4p	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309,168
	30	40.996	0.0 – 2439.2634429	1s – 3p	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309,168
	65	48.586	0.0 – 2058.2270057	1s – 2p	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309,197
	35	48.591	0.0 – 2057.9980350	1s – 2p	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{1}{2}$	P	309,197
		151.823	2058.0115490 – 2716.6733581	2s – 10p	$^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309
		151.872	2058.2270057 – 2716.6739652	2p – 10d	$^2P^o - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309

B V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		153.321	2058.0115490 – 2710.2379314	2s – 9p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		153.372	2058.2270057 – 2710.2387641	2p – 9d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		155.466	2058.0115490 – 2701.2409735	2s – 8p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		155.517	2058.2270057 – 2701.2421592	2p – 8d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		158.703	2058.0115490 – 2688.1180568	2s – 7p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		158.757	2058.2270057 – 2688.1198267	2p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		163.965	2058.0115490 – 2667.8988675	2s – 6p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		164.022	2058.2270057 – 2667.9016782	2p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		173.504	2058.0115490 – 2634.3658134	2s – 5p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		173.568	2058.2270057 – 2634.3706706	2p – 5d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		194.317	2058.0115490 – 2572.6340583	2s – 4p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		194.395	2058.2270057 – 2572.6435454	2p – 4d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		262.294	2058.0115490 – 2439.2634429	2s – 3p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		262.427	2058.2270057 – 2439.2859317	2p – 3d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		360.394	2439.1996320 – 2716.6733581	3s – 10p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		360.477	2439.2634429 – 2716.6739652	3p – 10d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		360.505	2439.2859317 – 2716.6742691	3d – 10f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		368.952	2439.1996320 – 2710.2379314	3s – 9p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		369.037	2439.2634429 – 2710.2387641	3p – 9d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		369.067	2439.2859317 – 2710.2391811	3d – 9f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		381.619	2439.1996320 – 2701.2409735	3s – 8p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		381.710	2439.2634429 – 2701.2421592	3p – 8d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		381.742	2439.2859317 – 2701.2427529	3d – 8f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		401.738	2439.1996320 – 2688.1180568	3s – 7p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		401.838	2439.2634429 – 2688.1198267	3p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		401.873	2439.2859317 – 2688.1207130	3d – 7f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		437.256	2439.1996320 – 2667.8988675	3s – 6p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		437.372	2439.2634429 – 2667.9016782	3p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		437.413	2439.2859317 – 2667.9030855	3d – 6f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		512.384	2439.1996320 – 2634.3658134	3s – 5p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		512.539	2439.2634429 – 2634.3706706	3p – 5d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		512.591	2439.2859317 – 2634.3731024	3d – 5f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		694.125	2572.6071437 – 2716.6733581	4s – 10p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		694.252	2572.6340583 – 2716.6739652	4p – 10d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		694.296	2572.6435454 – 2716.6742691	4d – 10f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		726.582	2572.6071437 – 2710.2379314	4s – 9p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		726.719	2572.6340583 – 2710.2387641	4p – 9d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		726.767	2572.6435454 – 2710.2391811	4d – 9f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		749.432	2439.1996320 – 2572.6340583	3s – 4p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		749.737	2439.2634429 – 2572.6435454	3p – 4d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		749.837	2439.2859317 – 2572.6482951	3d – 4f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		777.401	2572.6071437 – 2701.2409735	4s – 8p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		777.556	2572.6340583 – 2701.2421592	4p – 8d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		777.610	2572.6435454 – 2701.2427529	4d – 8f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		865.719	2572.6071437 – 2688.1180568	4s – 7p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		865.907	2572.6340583 – 2688.1198267	4p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		865.972	2572.6435454 – 2688.1207130	4d – 7f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		1049.409	2572.6071437 – 2667.8988675	4s – 6p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		1049.675	2572.6340583 – 2667.9016782	4p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		1049.764	2572.6435454 – 2667.9030855	4d – 6f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		1214.752	2634.3520348 – 2716.6733581	5s – 10p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		1214.947	2634.3658134 – 2716.6739652	5p – 10d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		1215.014	2634.3706706 – 2716.6742691	5d – 10f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		1317.768	2634.3520348 – 2710.2379314	5s – 9p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309

B V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		1317.993	2634.3658134 – 2710.2387641	5p – 9d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		1318.070	2634.3706706 – 2710.2391811	5d – 9f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		1495.016	2634.3520348 – 2701.2409735	5s – 8p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		1495.298	2634.3658134 – 2701.2421592	5p – 8d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		1495.392	2634.3706706 – 2701.2427529	5d – 8f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		1619.205	2572.6071437 – 2634.3658134	4s – 5p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		1619.785	2572.6340583 – 2634.3706706	4p – 5d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		1619.970	2572.6435454 – 2634.3731024	4d – 5f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		1859.911	2634.3520348 – 2688.1180568	5s – 7p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		1860.327	2634.3658134 – 2688.1198267	5p – 7d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		1860.464	2634.3706706 – 2688.1207130	5d – 7f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309

CARBON I (C^{0+}), Z = 6
Ground State $1s^22s^22p^2(^3P_0)$ (6 electrons)
Ionization Potential 90 820.42 cm^{-1}; 11.260 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
31	20	945.191	0.0 – 105.7987	$2s^22p^2 - 2s2p^3$	$g\,^3P - {}^3S^\circ$	0 – 1		821,168
31	50	945.338	0.01640 – 105.7987	$2s^22p^2 - 2s2p^3$	$g\,^3P - {}^3S^\circ$	1 – 1		821,168
31	75	945.579	0.04340 – 105.7987	$2s^22p^2 - 2s2p^3$	$g\,^3P - {}^3S^\circ$	2 – 1		821,168
		1102.409	0.04340 – 90.7538	$2s^22p^2 - 2s^22p(^2P^\circ)29d$	$g\,^3P - {}^1F^\circ$	2 – 3	P	908
		1102.550	0.04340 – 90.7422	$2s^22p^2 - 2s^22p(^2P^\circ)28d$	$g\,^3P - {}^1F^\circ$	2 – 3	P	908
		1102.666	0.04340 – 90.7327	$2s^22p^2 - 2s^22p(^2P^\circ)27d$	$g\,^3P - {}^1F^\circ$	2 – 3	P	908
		1102.81	0.04340 – 90.721	$2s^22p^2 - 2s^22p(^2P^\circ)26d$	$g\,^3P - {}^1F^\circ$	2 – 3	P	908
		1102.97	0.04340 – 90.708	$2s^22p^2 - 2s^22p(^2P^\circ)25d$	$g\,^3P - {}^1F^\circ$	2 – 3	P	908
		1103.185	0.04340 – 90.690	$2s^22p^2 - 2s^22p(^2P^\circ)24d$	$g\,^3P - {}^1F^\circ$	2 – 3	P	908
		1103.36	0.04340 – 90.676	$2s^22p^2 - 2s^22p(^2P^\circ)23d$	$g\,^3P - {}^1F^\circ$	2 – 3	P	908
		1103.60	0.04340 – 90.656	$2s^22p^2 - 2s^22p(^2P^\circ)22d$	$g\,^3P - {}^1F^\circ$	2 – 3	P	908
		1103.629	0.0 – 90.6102	$2s^22p^2 - 2s^22p(^2P^\circ)20d$	$g\,^3P - {}^1P^\circ$	0 – 1	P	908
		1103.828	0.01640 – 90.6102	$2s^22p^2 - 2s^22p(^2P^\circ)20d$	$g\,^3P - {}^1P^\circ$	1 – 1	P	908
		1103.865	0.04340 – 90.6342	$2s^22p^2 - 2s^22p(^2P^\circ)21d$	$g\,^3P - {}^1F^\circ$	2 – 3	P	908
		1104.157	0.04340 – 90.6102	$2s^22p^2 - 2s^22p(^2P^\circ)20d$	$g\,^3P - {}^1P^\circ$	2 – 1	P	908
		1104.165	0.04340 – 90.6096	$2s^22p^2 - 2s^22p(^2P^\circ)20d$	$g\,^3P - {}^1F^\circ$	2 – 3	P	908
		1104.374	0.04340 – 90.5924	$2s^22p^2 - 2s^22p(^2P^\circ)22d$	$g\,^3P - {}^3F^\circ$	2 – 3	P	908
		1104.427	0.0 – 90.5447	$2s^22p^2 - 2s^22p(^2P^\circ)18d$	$g\,^3P - {}^1P^\circ$	0 – 1	P	908
		1104.543	0.04340 – 90.5786	$2s^22p^2 - 2s^22p(^2P^\circ)19d$	$g\,^3P - {}^1F^\circ$	2 – 3	P	908
		1104.627	0.01640 – 90.5447	$2s^22p^2 - 2s^22p(^2P^\circ)18d$	$g\,^3P - {}^1P^\circ$	1 – 1	P	908
		1104.644	0.04340 – 90.5703	$2s^22p^2 - 2s^22p(^2P^\circ)21d$	$g\,^3P - {}^3F^\circ$	2 – 3	P	908
		1104.942	0.0 – 90.5025	$2s^22p^2 - 2s^22p(^2P^\circ)17d$	$g\,^3P - {}^1P^\circ$	0 – 1	P	908
		1104.957	0.04340 – 90.5447	$2s^22p^2 - 2s^22p(^2P^\circ)18d$	$g\,^3P - {}^1P^\circ$	2 – 1	P	908
		1104.966	0.04340 – 90.5439	$2s^22p^2 - 2s^22p(^2P^\circ)20d$	$g\,^3P - {}^3F^\circ$	2 – 3	P	908
		1105.142	0.01640 – 90.5025	$2s^22p^2 - 2s^22p(^2P^\circ)17d$	$g\,^3P - {}^1P^\circ$	1 – 1	P	908
		1105.329	0.04340 – 90.5142	$2s^22p^2 - 2s^22p(^2P^\circ)19d$	$g\,^3P - {}^3F^\circ$	2 – 3	P	908
		1105.472	0.04340 – 90.5025	$2s^22p^2 - 2s^22p(^2P^\circ)17d$	$g\,^3P - {}^1P^\circ$	2 – 1	P	908
		1105.477	0.04340 – 90.5021	$2s^22p^2 - 2s^22p(^2P^\circ)17d$	$g\,^3P - {}^1F^\circ$	2 – 3	P	908
		1105.532	0.0 – 90.4542	$2s^22p^2 - 2s^22p(^2P^\circ)16d$	$g\,^3P - {}^1P^\circ$	0 – 1	P	908
		1105.732	0.01640 – 90.4542	$2s^22p^2 - 2s^22p(^2P^\circ)16d$	$g\,^3P - {}^1P^\circ$	1 – 1	P	908
		1105.757	0.04340 – 90.4792	$2s^22p^2 - 2s^22p(^2P^\circ)18d$	$g\,^3P - {}^3F^\circ$	2 – 3	P	908
		1106.063	0.04340 – 90.4542	$2s^22p^2 - 2s^22p(^2P^\circ)16d$	$g\,^3P - {}^1P^\circ$	2 – 1	P	908
		1106.076	0.04340 – 90.4531	$2s^22p^2 - 2s^22p(^2P^\circ)16d$	$g\,^3P - {}^1F^\circ$	2 – 3	P	908
		1106.250	0.0 – 90.3955	$2s^22p^2 - 2s^22p(^2P^\circ)15d$	$g\,^3P - {}^1P^\circ$	0 – 1	P	908
		1106.263	0.04340 – 90.4378	$2s^22p^2 - 2s^22p(^2P^\circ)17d$	$g\,^3P - {}^3F^\circ$	2 – 3	P	908
		1106.450	0.01640 – 90.3955	$2s^22p^2 - 2s^22p(^2P^\circ)15d$	$g\,^3P - {}^1P^\circ$	1 – 1	P	908
		1106.781	0.04340 – 90.3955	$2s^22p^2 - 2s^22p(^2P^\circ)15d$	$g\,^3P - {}^1P^\circ$	2 – 1	P	908
		1106.800	0.04340 – 90.3940	$2s^22p^2 - 2s^22p(^2P^\circ)16d$	$g\,^3P - {}^3F^\circ$	2 – 3	P	908
		1107.146	0.0 – 90.3223	$2s^22p^2 - 2s^22p(^2P^\circ)14d$	$g\,^3P - {}^1P^\circ$	0 – 1	P	908
		1107.347	0.01640 – 90.3223	$2s^22p^2 - 2s^22p(^2P^\circ)14d$	$g\,^3P - {}^1P^\circ$	1 – 1	P	908
		1107.591	0.04340 – 90.3294	$2s^22p^2 - 2s^22p(^2P^\circ)15d$	$g\,^3P - {}^3F^\circ$	2 – 3	P	908
		1107.679	0.04340 – 90.3223	$2s^22p^2 - 2s^22p(^2P^\circ)14d$	$g\,^3P - {}^1P^\circ$	2 – 1	P	908
		1107.703	0.04340 – 90.3203	$2s^22p^2 - 2s^22p(^2P^\circ)14d$	$g\,^3P - {}^1F^\circ$	2 – 3	P	908
		1107.908	0.0 – 90.2602	$2s^22p^2 - 2s^22p(^2P^\circ)14d$	$g\,^3P - {}^3D^\circ$	0 – 1	P	908
		1108.109	0.01640 – 90.2602	$2s^22p^2 - 2s^22p(^2P^\circ)14d$	$g\,^3P - {}^3D^\circ$	1 – 1	P	908
		1108.260	0.0 – 90.2315	$2s^22p^2 - 2s^22p(^2P^\circ)13d$	$g\,^3P - {}^1P^\circ$	0 – 1	P	908
		1108.283	0.0 – 90.2297	$2s^22p^2 - 2s^22p(^2P^\circ)14s$	$g\,^3P - {}^1P^\circ$	0 – 1	P	908
		1108.441	0.04340 – 90.2602	$2s^22p^2 - 2s^22p(^2P^\circ)14d$	$g\,^3P - {}^3D^\circ$	2 – 1	P	908
		1108.462	0.01640 – 90.2315	$2s^22p^2 - 2s^22p(^2P^\circ)13d$	$g\,^3P - {}^1P^\circ$	1 – 1	P	908
		1108.484	0.01640 – 90.2297	$2s^22p^2 - 2s^22p(^2P^\circ)14s$	$g\,^3P - {}^1P^\circ$	1 – 1	P	908
		1108.488	0.04340 – 90.2564	$2s^22p^2 - 2s^22p(^2P^\circ)14d$	$g\,^3P - {}^3F^\circ$	2 – 3	P	908
		1108.794	0.04340 – 90.2315	$2s^22p^2 - 2s^22p(^2P^\circ)13d$	$g\,^3P - {}^1P^\circ$	2 – 1	P	908
		1108.804	0.04340 – 90.2307	$2s^22p^2 - 2s^22p(^2P^\circ)13d$	$g\,^3P - {}^1F^\circ$	2 – 3	P	908
		1108.816	0.04340 – 90.2297	$2s^22p^2 - 2s^22p(^2P^\circ)14s$	$g\,^3P - {}^1P^\circ$	2 – 1	P	908

C I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		1109.031	0.0 - 90.1688	$2s^22p^2 - 2s^22p(^2P^\circ)13d$	$g^3P - {}^3D^\circ$	0 - 1	P	908
		1109.233	0.01640 - 90.1688	$2s^22p^2 - 2s^22p(^2P^\circ)13d$	$g^3P - {}^3D^\circ$	1 - 1	P	908
		1109.565	0.04340 - 90.1688	$2s^22p^2 - 2s^22p(^2P^\circ)13d$	$g^3P - {}^3D^\circ$	2 - 1	P	908
		1109.605	0.04340 - 90.1656	$2s^22p^2 - 2s^22p(^2P^\circ)13d$	$g^3P - {}^3F^\circ$	2 - 3	P	908
		1109.634	0.0 - 90.1198	$2s^22p^2 - 2s^22p(^2P^\circ)12d$	$g^3P - {}^1P^\circ$	0 - 1	P	908
		1109.676	0.0 - 90.1164	$2s^22p^2 - 2s^22p(^2P^\circ)13s$	$g^3P - {}^1P^\circ$	0 - 1	P	908
		1109.836	0.01640 - 90.1198	$2s^22p^2 - 2s^22p(^2P^\circ)12d$	$g^3P - {}^1P^\circ$	1 - 1	P	908
		1109.878	0.01640 - 90.1164	$2s^22p^2 - 2s^22p(^2P^\circ)13s$	$g^3P - {}^1P^\circ$	1 - 1	P	908
		1110.169	0.04340 - 90.1198	$2s^22p^2 - 2s^22p(^2P^\circ)12d$	$g^3P - {}^1P^\circ$	2 - 1	P	908
		1110.198	0.04340 - 90.1174	$2s^22p^2 - 2s^22p(^2P^\circ)12d$	$g^3P - {}^1F^\circ$	2 - 3	P	908
		1110.211	0.04340 - 90.1164	$2s^22p^2 - 2s^22p(^2P^\circ)13s$	$g^3P - {}^1P^\circ$	2 - 1	P	908
		1111.010	0.04340 - 90.0516	$2s^22p^2 - 2s^22p(^2P^\circ)12d$	$g^3P - {}^3F^\circ$	2 - 3	P	908
		1111.421	0.0 - 89.9749	$2s^22p^2 - 2s^22p(^2P^\circ)11d$	$g^3P - {}^1P^\circ$	0 - 1	P	908
		1111.624	0.01640 - 89.9749	$2s^22p^2 - 2s^22p(^2P^\circ)11d$	$g^3P - {}^1P^\circ$	1 - 1	P	908
		1111.957	0.04340 - 89.9749	$2s^22p^2 - 2s^22p(^2P^\circ)11d$	$g^3P - {}^1P^\circ$	2 - 1	P	908
		1112.003	0.04340 - 89.9713	$2s^22p^2 - 2s^22p(^2P^\circ)11d$	$g^3P - {}^1F^\circ$	2 - 3	P	908
	10	1112.058	0.04340 - 89.9668	$2s^22p^2 - 2s^22p(^2P^\circ)11d$	$g^3P - {}^3D^\circ$	2 - 3		821,168
30		1112.269	0.0 - 89.9063	$2s^22p^2 - 2s^22p(^2P^\circ)11d$	$g^3P - {}^3D^\circ$	0 - 1	P	908
30		1112.472	0.01640 - 89.9063	$2s^22p^2 - 2s^22p(^2P^\circ)11d$	$g^3P - {}^3D^\circ$	1 - 1	P	908
30		1112.806	0.04340 - 89.9063	$2s^22p^2 - 2s^22p(^2P^\circ)11d$	$g^3P - {}^3D^\circ$	2 - 1	P	908
		1112.825	0.04340 - 89.9048	$2s^22p^2 - 2s^22p(^2P^\circ)11d$	$g^3P - {}^3F^\circ$	2 - 3	P	908
		1113.793	0.0 - 89.7833	$2s^22p^2 - 2s^22p(^2P^\circ)10d$	$g^3P - {}^1P^\circ$	0 - 1	P	908
		1113.996	0.01640 - 89.7833	$2s^22p^2 - 2s^22p(^2P^\circ)10d$	$g^3P - {}^1P^\circ$	1 - 1	P	908
		1114.332	0.04340 - 89.7833	$2s^22p^2 - 2s^22p(^2P^\circ)10d$	$g^3P - {}^1P^\circ$	2 - 1	P	908
		1114.380	0.04340 - 89.7794	$2s^22p^2 - 2s^22p(^2P^\circ)10d$	$g^3P - {}^1F^\circ$	2 - 3	P	908
30	50	1114.457	0.04340 - 89.7732	$2s^22p^2 - 2s^22p(^2P^\circ)10d$	$g^3P - {}^3D^\circ$	2 - 3		821,168
30		1114.628	0.0 - 89.7160	$2s^22p^2 - 2s^22p(^2P^\circ)10d$	$g^3P - {}^3D^\circ$	0 - 1	P	908
30		1114.832	0.01640 - 89.7160	$2s^22p^2 - 2s^22p(^2P^\circ)10d$	$g^3P - {}^3D^\circ$	1 - 1	P	908
30		1115.168	0.04340 - 89.7160	$2s^22p^2 - 2s^22p(^2P^\circ)10d$	$g^3P - {}^3D^\circ$	2 - 1	P	908
		1115.225	0.04340 - 89.7114	$2s^22p^2 - 2s^22p(^2P^\circ)10d$	$g^3P - {}^3F^\circ$	2 - 3	P	908
		1117.000	0.0 - 89.52554	$2s^22p^2 - 2s^22p(^2P^\circ)9d$	$g^3P - {}^1P^\circ$	0 - 1	P	908
		1117.132	0.0 - 89.5149	$2s^22p^2 - 2s^22p(^2P^\circ)10s$	$g^3P - {}^1P^\circ$	0 - 1	P	908
		1117.205	0.01640 - 89.52554	$2s^22p^2 - 2s^22p(^2P^\circ)9d$	$g^3P - {}^1P^\circ$	1 - 1	P	908
		1117.337	0.01640 - 89.5149	$2s^22p^2 - 2s^22p(^2P^\circ)10s$	$g^3P - {}^1P^\circ$	1 - 1	P	908
		1117.542	0.04340 - 89.52554	$2s^22p^2 - 2s^22p(^2P^\circ)9d$	$g^3P - {}^1P^\circ$	2 - 1	P	908
	20	1117.581	0.04340 - 89.5224	$2s^22p^2 - 2s^22p(^2P^\circ)9d$	$g^3P - {}^3P^\circ$	2 - 2		821,816
		1117.674	0.04340 - 89.5149	$2s^22p^2 - 2s^22p(^2P^\circ)10s$	$g^3P - {}^1P^\circ$	2 - 1	P	908
29	50	1117.724	0.04340 - 89.5109	$2s^22p^2 - 2s^22p(^2P^\circ)9d$	$g^3P - {}^3D^\circ$	2 - 3		821,816
29		1117.866	0.0 - 89.4562	$2s^22p^2 - 2s^22p(^2P^\circ)9d$	$g^3P - {}^3D^\circ$	0 - 1	P	908
29		1118.070	0.01640 - 89.4562	$2s^22p^2 - 2s^22p(^2P^\circ)9d$	$g^3P - {}^3D^\circ$	1 - 1	P	908
	50	1118.180	0.01640 - 89.4474	$2s^22p^2 - 2s^22p(^2P^\circ)9d$	$g^3P - {}^3F^\circ$	1 - 2		821,168
29		1118.408	0.04340 - 89.4562	$2s^22p^2 - 2s^22p(^2P^\circ)9d$	$g^3P - {}^3D^\circ$	2 - 1	P	908
		1118.491	0.04340 - 89.4496	$2s^22p^2 - 2s^22p(^2P^\circ)9d$	$g^3P - {}^3F^\circ$	2 - 3	P	908
		1121.452	0.0 - 89.1700	$2s^22p^2 - 2s^22p(^2P^\circ)8d$	$g^3P - {}^3P^\circ$	0 - 1	P	908
		1121.658	0.01640 - 89.1700	$2s^22p^2 - 2s^22p(^2P^\circ)8d$	$g^3P - {}^3P^\circ$	1 - 1	P	908
		1121.998	0.04340 - 89.1700	$2s^22p^2 - 2s^22p(^2P^\circ)8d$	$g^3P - {}^3P^\circ$	2 - 1	P	908
28	20	1122.098	0.04340 - 89.1622	$2s^22p^2 - 2s^22p(^2P^\circ)8d$	$g^3P - {}^3P^\circ$	2 - 2		821,168
27	50	1122.260	0.04340 - 89.14935	$2s^22p^2 - 2s^22p(^2P^\circ)9s$	$g^3P - {}^1P^\circ$	2 - 1		821,816
27	100	1122.334	0.04340 - 89.1434	$2s^22p^2 - 2s^32p(^2P^\circ)8d$	$g^3P - {}^3D^\circ$	2 - 3	P	908,816
27	20	1122.438	0.0 - 89.0918	$2s^22p^2 - 2s^22p(^2P^\circ)8d$	$g^3P - {}^3D^\circ$	0 - 1	P	908,816
27		1122.644	0.01640 - 89.0918	$2s^22p^2 - 2s^22p(^2P^\circ)8d$	$g^3P - {}^3D^\circ$	1 - 1	P	908
26	50	1122.725	0.01640 - 89.08541	$2s^22p^2 - 2s^22p(^2P^\circ)9s$	$g^3P - {}^3P^\circ$	1 - 1		821,816
	20	1122.794	0.01640 - 89.0799	$2s^22p^2 - 2s^22p(^2P^\circ)8d$	$g^3P - {}^3F^\circ$	1 - 2		821,168
27		1122.985	0.04340 - 89.0918	$2s^22p^2 - 2s^22p(^2P^\circ)8d$	$g^3P - {}^3D^\circ$	2 - 1	P	908

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	1123.107	0.04340 – 89.0821	$2s^22p^2 - 2s^22p(^2P^\circ)8d$	$g^3P - {}^3F^\circ$	2 – 3		821,816
26		1128.079	0.0 – 88.6466	$2s^22p^2 - 2s^22p(^2P^\circ)7d$	$g^3P - {}^3P^\circ$	0 – 1	P	908
26	50	1128.252	0.01640 – 88.6491	$2s^22p^2 - 2s^22p(^2P^\circ)7d$	$g^3P - {}^3P^\circ$	1 – 0		821,816
26		1128.287	0.01640 – 88.6466	$2s^22p^2 - 2s^22p(^2P^\circ)7d$	$g^3P - {}^3P^\circ$	1 – 1	P	908
26		1128.631	0.04340 – 88.6466	$2s^22p^2 - 2s^22p(^2P^\circ)7d$	$g^3P - {}^3P^\circ$	2 – 1	P	908
25	20	1128.686	0.01640 – 88.61501	$2s^22p^2 - 2s^22p(^2P^\circ)8s$	$g^3P - {}^1P^\circ$	1 – 1		821,816
26	100	1128.752	0.04340 – 88.6368	$2s^22p^2 - 2s^22p(^2P^\circ)7d$	$g^3P - {}^3P^\circ$	2 – 2		821,816
25	20	1128.903	0.04340 – 88.62500	$2s^22p^2 - 2s^22p(^2P^\circ)7d$	$g^3P - {}^1F^\circ$	2 – 3		821,816
25	100	1129.030	0.04340 – 88.61501	$2s^22p^2 - 2s^22p(^2P^\circ)8s$	$g^3P - {}^1P^\circ$	2 – 1		821,816
25	200	1129.141	0.04340 – 88.6068	$2s^22p^2 - 2s^22p(^2P^\circ)7d$	$g^3P - {}^3D^\circ$	2 – 3	P	908,816
25		1129.161	0.04340 – 88.60475	$2s^22p^2 - 2s^22p(^2P^\circ)7d$	$g^3P - {}^3D^\circ$	2 – 2		821
25		1129.196	0.0 – 88.5586	$2s^22p^2 - 2s^22p(^2P^\circ)7d$	$g^3P - {}^3D^\circ$	0 – 1		821
25	20	1129.405	0.01640 – 88.5586	$2s^22p^2 - 2s^22p(^2P^\circ)7d$	$g^3P - {}^3D^\circ$	1 – 1		821,816
24	50	1129.624	0.01640 – 88.5414	$2s^22p^2 - 2s^22p(^2P^\circ)7d$	$g^3P - {}^3F^\circ$	1 – 2		821,816
25	20	1129.749	0.04340 – 88.5586	$2s^22p^2 - 2s^22p(^2P^\circ)7d$	$g^3P - {}^3D^\circ$	2 – 1		821,816
24	50	1129.924	0.04340 – 88.5449	$2s^22p^2 - 2s^22p(^2P^\circ)7d$	$g^3P - {}^3F^\circ$	2 – 3		821,816
23	20	1130.171	0.01640 – 88.49862	$2s^22p^2 - 2s^22p(^2P^\circ)7d$	$g^3P - {}^1D^\circ$	1 – 2		821,816
23	20	1138.383	0.0 – 87.84391	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$g^3P - {}^3P^\circ$	0 – 1		821,816
23	30	1138.557	0.01640 – 87.8469	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$g^3P - {}^3P^\circ$	1 – 0		821,816
23	20	1138.595	0.01640 – 87.84391	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$g^3P - {}^3P^\circ$	1 – 1		821,816
23	50	1138.946	0.04340 – 87.84391	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$g^3P - {}^3P^\circ$	2 – 1		821,816
23	100	1139.093	0.04340 – 87.83254	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$g^3P - {}^3P^\circ$	2 – 2		821,816
22	20	1139.300	0.01640 – 87.78963	$2s^22p^2 - 2s^22p(^2P^\circ)7s$	$g^3P - {}^1P^\circ$	1 – 1		821,816
22	50	1139.426	0.04340 – 87.80693	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$g^3P - {}^1F^\circ$	2 – 3		821,816
22	20	1139.514	0.01640 – 87.77309	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$g^3P - {}^3D^\circ$	1 – 2		821,816
22	20	1139.650	0.04340 – 87.78963	$2s^22p^2 - 2s^22p(^2P^\circ)7s$	$g^3P - {}^1P^\circ$	2 – 1		821,816
21	150	1139.766	0.01640 – 87.75373	$2s^22p^2 - 2s^22p(^2P^\circ)7s$	$g^3P - {}^3P^\circ$	1 – 2		821,816
22		1139.793	0.0 – 87.7353	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$g^3P - {}^3D^\circ$	0 – 1	P	908
22	150	1139.812	0.04340 – 87.77717	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$g^3P - {}^3D^\circ$	2 – 3		821,816
22	50	1139.865	0.04340 – 87.77309	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$g^3P - {}^3D^\circ$	2 – 2		821,816
22	50	1140.005	0.01640 – 87.7353	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$g^3P - {}^3D^\circ$	1 – 1		821,816
21	20	1140.223	0.01640 – 87.71856	$2s^22p^2 - 2s^22p(^2P^\circ)7s$	$g^3P - {}^3P^\circ$	1 – 1		821,816
21	100	1140.357	0.01640 – 87.70821	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$g^3P - {}^3F^\circ$	1 – 2		821,816
21	20	1140.574	0.04340 – 87.71856	$2s^22p^2 - 2s^22p(^2P^\circ)7s$	$g^3P - {}^3P^\circ$	2 – 1		821,816
21	150	1140.641	0.04340 – 87.71338	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$g^3P - {}^3F^\circ$	2 – 3		821,816
20	20	1141.327	0.01640 – 87.63375	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$g^3P - {}^1D^\circ$	1 – 2		821,816
20	20	1141.678	0.04340 – 87.63375	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$g^3P - {}^1D^\circ$	2 – 2		821,816
19	50	1155.809	0.0 – 86.51947	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^3P^\circ$	0 – 1		821,816
19	150	1156.028	0.01640 – 86.51947	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^3P^\circ$	1 – 1		821,816
19	20	1156.199	0.01640 – 86.50670	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^3P^\circ$	1 – 2		821,816
19	100	1156.389	0.04340 – 86.51947	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^3P^\circ$	2 – 1		821,816
19	200	1156.560	0.04340 – 86.50670	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^3P^\circ$	2 – 2		821,816
18	20	1156.765	0.04340 – 86.49141	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^1P^\circ$	2 – 1		821,816
17	20	1157.186	0.0 – 86.41655	$2s^22p^2 - 2s^22p(^2P^\circ)6s$	$g^3P - {}^1P^\circ$	0 – 1		821,816
18	50	1157.330	0.04340 – 86.44919	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^1F^\circ$	2 – 3		821,816
17	150	1157.405	0.01640 – 86.41655	$2s^22p^2 - 2s^22p(^2P^\circ)6s$	$g^3P - {}^1P^\circ$	1 – 1		821,816
16	350	1157.770	0.01640 – 86.38938	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^3D^\circ$	1 – 2		821,816
16	730	1157.910	0.0 – 86.36252	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^3D^\circ$	0 – 1		821,816
16	750	1158.019	0.04340 – 86.39780	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^3D^\circ$	2 – 3		821,816
16	400	1158.132	0.04340 – 86.38938	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^3D^\circ$	2 – 2		821,816
15	100	1158.324	0.0 – 86.33163	$2s^22p^2 - 2s^22p(^2P^\circ)6s$	$g^3P - {}^3P^\circ$	0 – 1		821,816
15	100	1158.397	0.04340 – 86.36960	$2s^22p^2 - 2s^22p(^2P^\circ)6s$	$g^3P - {}^3P^\circ$	2 – 2		821,816
16	20	1158.492	0.04340 – 86.36252	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^3D^\circ$	2 – 1		821,816
15	100	1158.674	0.01640 – 86.32194	$2s^22p^2 - 2s^22p(^2P^\circ)6s$	$g^3P - {}^3P^\circ$	1 – 0		821,816

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
15	100	1158.732	0.01640 – 86.31764	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^3F^\circ$	1 – 2		821,816
15	50	1158.907	0.04340 – 86.33163	$2s^22p^2 - 2s^22p(^2P^\circ)6s$	$g^3P - {}^3P^\circ$	2 – 1		821,816
15	200	1158.967	0.04340 – 86.32716	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^3F^\circ$	2 – 3		821,816
15	2	1159.126	0.04340 – 86.31764	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^3F^\circ$	2 – 2		908
14	200	1188.833	0.0 – 84.11609	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3P^\circ$	0 – 1		821,816
14	500	1188.992	0.01640 – 84.12122	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3P^\circ$	1 – 0		821,816
14	200	1189.065	0.01640 – 84.11609	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3P^\circ$	1 – 1		821,816
14	250	1189.249	0.01640 – 84.10310	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3P^\circ$	1 – 2		821,816
14	500	1189.447	0.04340 – 84.11609	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3P^\circ$	2 – 1		821,816
14	700	1189.631	0.04340 – 84.10310	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3P^\circ$	2 – 2		821,816
13	35	1190.021	0.0 – 84.03215	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^1P^\circ$	0 – 1		821,816
13	35	1190.253	0.01640 – 84.03215	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^1P^\circ$	1 – 1		821,816
13	120	1191.838	0.04340 – 83.94743	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^1F^\circ$	2 – 3		821,816
12	70	1192.218	0.0 – 83.87731	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$g^3P - {}^1P^\circ$	0 – 1		821,816
12	120	1192.451	0.01640 – 83.87731	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$g^3P - {}^1P^\circ$	1 – 1		821,816
	3	1192.83	0.04340 – 83.87731	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$g^3P - {}^1P^\circ$	2 – 1		908
11	700	1193.009	0.01640 – 83.83808	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3D^\circ$	1 – 2		821,816
11	300	1193.031	0.0 – 83.82013	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3D^\circ$	0 – 1		821,816
11	850	1193.240	0.04340 – 83.84883	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3D^\circ$	2 – 3		821,816
11	150	1193.264	0.01640 – 83.82013	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3D^\circ$	1 – 1		821,816
11	350	1193.393	0.04340 – 83.83808	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3D^\circ$	2 – 2		821,816
9	500	1193.679	0.01640 – 83.79104	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	1 – 2		821,816
9	120	1193.996	0.0 – 83.75241	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	0 – 1		821,816
9	350	1194.064	0.04340 – 83.79104	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	2 – 2		821,816
9	120	1194.229	0.01640 – 83.75241	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	1 – 1		821,816
10	120	1194.301	0.01640 – 83.74739	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3F^\circ$	1 – 2		821,816
9	200	1194.406	0.01640 – 83.74006	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	1 – 0		821,816
10	350	1194.488	0.04340 – 83.76126	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3F^\circ$	2 – 3		821,816
9	250	1194.615	0.04340 – 83.75241	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	2 – 1		821,816
9	1	1197.877	0.01640 – 83.49762	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^1D^\circ$	1 – 2		908
	1	1241.293	10.19263 – 90.7538	$2s^22p^2 - 2s^22p(^2P^\circ)29d$	$^1D - {}^1F^\circ$	2 – 3		908
	1	1241.472	10.19263 – 90.7422	$2s^22p^2 - 2s^22p(^2P^\circ)28d$	$^1D - {}^1F^\circ$	2 – 3		908
	1	1241.617	10.19263 – 90.7327	$2s^22p^2 - 2s^22p(^2P^\circ)27d$	$^1D - {}^1F^\circ$	2 – 3		908
	6	1242.278	10.19263 – 90.690	$2s^22p^2 - 2s^22p(^2P^\circ)24d$	$^1D - {}^1F^\circ$	2 – 3		908
	7	1243.14	10.19263 – 90.6342	$2s^22p^2 - 2s^22p(^2P^\circ)21d$	$^1D - {}^1F^\circ$	2 – 3		908
	8	1243.518	10.19263 – 90.6096	$2s^22p^2 - 2s^22p(^2P^\circ)20d$	$^1D - {}^1F^\circ$	2 – 3		908
	2	1243.784	10.19263 – 90.5924	$2s^22p^2 - 2s^22p(^2P^\circ)22d$	$^1D - {}^3F^\circ$	2 – 3		908
	7	1243.998	10.19263 – 90.5786	$2s^22p^2 - 2s^22p(^2P^\circ)19d$	$^1D - {}^1F^\circ$	2 – 3		908
	4	1244.127	10.19263 – 90.5703	$2s^22p^2 - 2s^22p(^2P^\circ)21d$	$^1D - {}^3F^\circ$	2 – 3		908
	10	1244.535	10.19263 – 90.5439	$2s^22p^2 - 2s^22p(^2P^\circ)18d$	$^1D - {}^1F^\circ$	2 – 3		908
	5	1244.996	10.19263 – 90.5142	$2s^22p^2 - 2s^22p(^2P^\circ)19d$	$^1D - {}^3F^\circ$	2 – 3		908
	9	1245.183	10.19263 – 90.5021	$2s^22p^2 - 2s^22p(^2P^\circ)17d$	$^1D - {}^1F^\circ$	2 – 3		908
	5	1245.538	10.19263 – 90.4792	$2s^22p^2 - 2s^22p(^2P^\circ)18d$	$^1D - {}^3F^\circ$	2 – 3		908
	10	1245.943	10.19263 – 90.4531	$2s^22p^2 - 2s^22p(^2P^\circ)16d$	$^1D - {}^1F^\circ$	2 – 3		908
	4	1246.180	10.19263 – 90.4378	$2s^22p^2 - 2s^22p(^2P^\circ)17d$	$^1D - {}^3F^\circ$	2 – 3		908
	30	1246.862	10.19263 – 90.3940	$2s^22p^2 - 2s^22p(^2P^\circ)15d$	$^1D - {}^1F^\circ$	2 – 3		908
	15	1247.867	10.19263 – 90.3294	$2s^22p^2 - 2s^22p(^2P^\circ)15d$	$^1D - {}^3F^\circ$	2 – 3		908
	30	1248.009	10.19263 – 90.3203	$2s^22p^2 - 2s^22p(^2P^\circ)14d$	$^1D - {}^1F^\circ$	2 – 3		908
	10	1249.004	10.19263 – 90.2564	$2s^22p^2 - 2s^22p(^2P^\circ)14d$	$^1D - {}^3F^\circ$	2 – 3		908
	20	1249.405	10.19263 – 90.2307	$2s^22p^2 - 2s^22p(^2P^\circ)13d$	$^1D - {}^1F^\circ$	2 – 3		908
	30	1250.423	10.19263 – 90.1656	$2s^22p^2 - 2s^22p(^2P^\circ)13d$	$^1D - {}^3F^\circ$	2 – 3		908
	40	1251.176	10.19263 – 90.1174	$2s^22p^2 - 2s^22p(^2P^\circ)12d$	$^1D - {}^1F^\circ$	2 – 3		908
	12	1252.208	10.19263 – 90.0516	$2s^22p^2 - 2s^22p(^2P^\circ)12d$	$^1D - {}^3F^\circ$	2 – 3		908
	50	1253.467	10.19263 – 89.9713	$2s^22p^2 - 2s^22p(^2P^\circ)11d$	$^1D - {}^1F^\circ$	2 – 3		821,168

C I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	15	1254.513	10.19263 – 89.9048	$2s^22p^2 - 2s^22p(^2P^o)11d$	$^1D - ^3F^o$	2 – 3		908
	200	1256.498	10.19263 – 89.7794	$2s^22p^2 - 2s^22p(^2P^o)10d$	$^1D - ^1F^o$	2 – 3		821,168
	20	1257.565	10.19263 – 89.7114	$2s^22p^2 - 2s^22p(^2P^o)10d$	$^1D - ^3F^o$	2 – 3		908
59	200	1260.613	10.19263 – 89.51913	$2s^22p^2 - 2s^22p(^2P^o)9d$	$^1D - ^1F^o$	2 – 3		821,168
9	250	1260.736	0.0 – 79.31878	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3P^o$	0 – 1		821,816
9	200	1260.927	0.01640 – 79.32316	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3P^o$	1 – 0		821,816
9	150	1260.996	0.01640 – 79.31878	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3P^o$	1 – 1		821,816
9	250	1261.122	0.01640 – 79.31085	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3P^o$	1 – 2		821,816
9	250	1261.426	0.04340 – 79.31878	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3P^o$	2 – 1		821,816
9	500	1261.552	0.04340 – 79.31085	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3P^o$	2 – 2		821,816
	30	1261.719	10.19263 – 89.4496	$2s^22p^2 - 2s^22p(^2P^o)9d$	$^1D - ^3F^o$	2 – 3		908
58	20	1266.270	10.19263 – 89.16474	$2s^22p^2 - 2s^22p(^2P^o)8d$	$^1D - ^1P^o$	2 – 1		821,816
58	100	1266.415	10.19263 – 89.15570	$2s^22p^2 - 2s^22p(^2P^o)8d$	$^1D - ^1F^o$	2 – 3		821,816
57	15	1266.517	10.19263 – 89.14935	$2s^22p^2 - 2s^22p(^2P^o)9s$	$^1D - ^1P^o$	2 – 1	P	908
57	10	1266.604	10.19263 – 89.1434	$2s^22p^2 - 2s^22p(^2P^o)8d$	$^1D - ^3D^o$	2 – 3	P	908
57	50	1267.596	10.19263 – 89.0821	$2s^22p^2 - 2s^22p(^2P^o)8d$	$^1D - ^3F^o$	2 – 3		821,816
56	2	1268.051	10.19263 – 89.05416	$2s^22p^2 - 2s^22p(^2P^o)8d$	$^1D - ^1D^o$	2 – 2		908
8	3	1270.144	0.0 – 78.73127	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^1P^o$	0 – 1		908
8	2	1270.408	0.01640 – 78.73127	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^1P^o$	1 – 1		908
8	50	1274.109	0.04340 – 78.52962	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^1F^o$	2 – 3		821,816
	3	1274.624	10.19263 – 88.6466	$2s^22p^2 - 2s^22p(^2P^o)7d$	$^1D - ^3P^o$	2 – 1		908
56	20	1274.756	10.19263 – 88.63902	$2s^22p^2 - 2s^22p(^2P^o)7d$	$^1D - ^1P^o$	2 – 1		821,816
55	150	1274.984	10.19263 – 88.62500	$2s^22p^2 - 2s^22p(^2P^o)7d$	$^1D - ^1F^o$	2 – 3		821,816
54	2	1275.146	10.19263 – 88.61501	$2s^22p^2 - 2s^22p(^2P^o)8s$	$^1D - ^1P^o$	2 – 1	P	908
54	12	1275.288	10.19263 – 88.6068	$2s^22p^2 - 2s^22p(^2P^o)7d$	$^1D - ^3D^o$	2 – 3		908
54	20	1276.220	10.19263 – 88.54906	$2s^22p^2 - 2s^22p(^2P^o)8s$	$^1D - ^3P^o$	2 – 1	P	908
	50	1276.287	10.19263 – 88.5449	$2s^22p^2 - 2s^22p(^2P^o)7d$	$^1D - ^3F^o$	2 – 3		821,816
7	100	1276.483	0.0 – 78.34028	$2s^22p^2 - 2s^22p(^2P^o)4s$	$g^3P - ^1P^o$	0 – 1		821,816
7	200	1276.750	0.01640 – 78.34028	$2s^22p^2 - 2s^22p(^2P^o)4s$	$g^3P - ^1P^o$	1 – 1		821,816
54	5	1277.041	10.19263 – 88.49862	$2s^22p^2 - 2s^22p(^2P^o)7d$	$^1D - ^1D^o$	2 – 2		908
7	300	1277.245	0.0 – 78.29349	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3D^o$	0 – 1		821,816
7	700	1277.282	0.01640 – 78.30763	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3D^o$	1 – 2		821,816
7	100	1277.513	0.01640 – 78.29349	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3D^o$	1 – 1		821,816
7	1000	1277.550	0.04340 – 78.31825	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3D^o$	2 – 3		821,816
7	250	1277.723	0.04340 – 78.30763	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3D^o$	2 – 2		821,816
7	70	1277.954	0.04340 – 78.29349	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3D^o$	2 – 1		821,816
6	100	1279.056	0.01640 – 78.19907	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3F^o$	1 – 2		821,816
6	150	1279.229	0.04340 – 78.21551	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3F^o$	2 – 3		821,816
6	70	1279.498	0.04340 – 78.19907	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3F^o$	2 – 2		821,816
5	250	1279.890	0.01640 – 78.14809	$2s^22p^2 - 2s^22p(^2P^o)4s$	$g^3P - ^3P^o$	1 – 2		821,816
5	200	1280.135	0.0 – 78.11674	$2s^22p^2 - 2s^22p(^2P^o)4s$	$g^3P - ^3P^o$	0 – 1		821,816
5	700	1280.333	0.04340 – 78.14809	$2s^22p^2 - 2s^22p(^2P^o)4s$	$g^3P - ^3P^o$	2 – 2		821,816
5	75	1280.404	0.01640 – 78.11674	$2s^22p^2 - 2s^22p(^2P^o)4s$	$g^3P - ^3P^o$	1 – 1		821,816
5	200	1280.597	0.01640 – 78.10498	$2s^22p^2 - 2s^22p(^2P^o)4s$	$g^3P - ^3P^o$	1 – 0		821,816
5	250	1280.847	0.04340 – 78.11674	$2s^22p^2 - 2s^22p(^2P^o)4s$	$g^3P - ^3P^o$	2 – 1		821,816
4	5	1287.609	0.01640 – 77.67982	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^1D^o$	1 – 2		908
54	1	1287.805	10.19263 – 87.84391	$2s^22p^2 - 2s^22p(^2P^o)6d$	$^1D - ^3P^o$	2 – 1		908
54	200	1288.037	10.19263 – 87.83017	$2s^22p^2 - 2s^22p(^2P^o)6d$	$^1D - ^1P^o$	2 – 1		821,816
53	500	1288.422	10.19263 – 87.80693	$2s^22p^2 - 2s^22p(^2P^o)6d$	$^1D - ^1F^o$	2 – 3		821,816
52	100	1288.710	10.19263 – 87.78963	$2s^22p^2 - 2s^22p(^2P^o)7s$	$^1D - ^1P^o$	2 – 1		821,816
51	100	1288.917	10.19263 – 87.77717	$2s^22p^2 - 2s^22p(^2P^o)6d$	$^1D - ^3D^o$	2 – 3		821,816
51	50	1289.891	10.19263 – 87.71856	$2s^22p^2 - 2s^22p(^2P^o)7s$	$^1D - ^3P^o$	2 – 1		821,816
51	300	1289.977	10.19263 – 87.71338	$2s^22p^2 - 2s^22p(^2P^o)6d$	$^1D - ^3F^o$	2 – 3		821,816
50	100	1291.304	10.19263 – 87.63375	$2s^22p^2 - 2s^22p(^2P^o)6d$	$^1D - ^1D^o$	2 – 2		821,816

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
49	10	1310.187	10.19263 – 86.51947	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$^1D - ^3P^\circ$	2 – 1		908
49	200	1310.637	10.19263 – 86.49141	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$^1D - ^1P^\circ$	2 – 1		821,816
48	1000	1311.363	10.19263 – 86.44919	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$^1D - ^1F^\circ$	2 – 3		821,816
47	200	1311.924	10.19263 – 86.41655	$2s^22p^2 - 2s^22p(^2P^\circ)6s$	$^1D - ^1P^\circ$	2 – 1		821,816
46	100	1312.247	10.19263 – 86.39780	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$^1D - ^3D^\circ$	2 – 3		821,816
46	3	1312.853	10.19263 – 86.36252	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$^1D - ^3D^\circ$	2 – 1		908
45	100	1313.387	10.19263 – 86.33163	$2s^22p^2 - 2s^22p(^2P^\circ)6s$	$^1D - ^3P^\circ$	2 – 1		821,816
45	300	1313.464	10.19263 – 86.32716	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$^1D - ^3F^\circ$	2 – 3		821,816
45	3	1313.629	10.19263 – 86.31764	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$^1D - ^3F^\circ$	2 – 2	P	908
44	200	1315.918	10.19263 – 86.18520	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$^1D - ^1D^\circ$	2 – 2		821,816
4	150	1328.8332	0.0 – 75.25397	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	0 – 1	ST	308,816,821
4	150	1329.0863	0.01640 – 75.25612	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	1 – 0	ST	308,816,821
4	200	1329.1001	0.01640 – 75.25527	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	1 – 2	ST	308,816,821
4	110	1329.1230	0.01640 – 75.25397	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	1 – 1	ST	308,816,821
4	600	1329.5775	0.04340 – 75.25527	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	2 – 2	ST	308,816,821
4	200	1329.6005	0.04340 – 75.25397	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	2 – 1	ST	308,816,821
43	1	1352.745	10.19263 – 84.11609	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$^1D - ^3P^\circ$	2 – 1		908
43	500	1354.288	10.19263 – 84.03215	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$^1D - ^1P^\circ$	2 – 1		821,816
42	750	1355.844	10.19263 – 83.94743	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$^1D - ^1F^\circ$	2 – 3		821,816
41	300	1357.134	10.19263 – 83.87731	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$^1D - ^1P^\circ$	2 – 1		821,816
40	100	1357.659	10.19263 – 83.84883	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$^1D - ^3D^\circ$	2 – 3		821,816
40	85	1358.188	10.19263 – 83.82013	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$^1D - ^3D^\circ$	2 – 1		908
40	200	1359.275	10.19263 – 83.76126	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$^1D - ^3F^\circ$	2 – 3		821,816
39	50	1359.438	10.19263 – 83.75241	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$^1D - ^3P^\circ$	2 – 1		821,816
40	5	1359.531	10.19263 – 83.74739	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$^1D - ^3F^\circ$	2 – 2	P	908
39	600	1364.164	10.19263 – 83.49762	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$^1D - ^1D^\circ$	2 – 2		821,816
65	100	1431.597	33.73520 – 103.5873	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^\circ - ^5P$	2 – 3		821,816
65	75	1432.105	33.73520 – 103.5625	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^\circ - ^5P$	2 – 2		821,668
65	50	1432.530	33.73520 – 103.5418	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^\circ - ^5P$	2 – 1		821,668
	1	1450.07	21.64801 – 90.6102	$2s^22p^2 - 2s^22p(^2P^\circ)20d$	$^1S - ^1P^\circ$	0 – 1		908
	3	1450.73	21.64801 – 90.5788	$2s^22p^2 - 2s^22p(^2P^\circ)19d$	$^1S - ^1P^\circ$	0 – 1		719
	2	1451.448	21.64801 – 90.5447	$2s^22p^2 - 2s^22p(^2P^\circ)18d$	$^1S - ^1P^\circ$	0 – 1		908
	10	1452.338	21.64801 – 90.5025	$2s^22p^2 - 2s^22p(^2P^\circ)17d$	$^1S - ^1P^\circ$	0 – 1		908
	4	1453.357	21.64801 – 90.4542	$2s^22p^2 - 2s^22p(^2P^\circ)16d$	$^1S - ^1P^\circ$	0 – 1		908
	2	1454.599	21.64801 – 90.3955	$2s^22p^2 - 2s^22p(^2P^\circ)15d$	$^1S - ^1P^\circ$	0 – 1		908
	15	1456.149	21.64801 – 90.3223	$2s^22p^2 - 2s^22p(^2P^\circ)14d$	$^1S - ^1P^\circ$	0 – 1		908
	10	1457.468	21.64801 – 90.2602	$2s^22p^2 - 2s^22p(^2P^\circ)14d$	$^1S - ^3D^\circ$	0 – 1		908
	7	1458.078	21.64801 – 90.2315	$2s^22p^2 - 2s^22p(^2P^\circ)13d$	$^1S - ^1P^\circ$	0 – 1		908
	8	1458.114	21.64801 – 90.2297	$2s^22p^2 - 2s^22p(^2P^\circ)14s$	$^1S - ^1P^\circ$	0 – 1		908
38	300	1459.0317	10.19263 – 78.73127	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - ^1P^\circ$	2 – 1		371,816,821
	5	1459.41	21.64801 – 90.1688	$2s^22p^2 - 2s^22p(^2P^\circ)13d$	$^1S - ^3D^\circ$	0 – 1		908
	10	1460.455	21.64801 – 90.1198	$2s^22p^2 - 2s^22p(^2P^\circ)12d$	$^1S - ^1P^\circ$	0 – 1		908
	4	1460.53	21.64801 – 90.1164	$2s^22p^2 - 2s^22p(^2P^\circ)13s$	$^1S - ^1P^\circ$	0 – 1		908
	7	1461.854	21.64801 – 90.0543	$2s^22p^2 - 2s^22p(^2P^\circ)12d$	$^1S - ^3D^\circ$	0 – 1		719
37	600	1463.3360	10.19263 – 78.52962	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - ^1F^\circ$	2 – 3		371,816,821
	40	1463.552	21.64801 – 89.9749	$2s^22p^2 - 2s^22p(^2P^\circ)11d$	$^1S - ^1P^\circ$	0 – 1		908
	20	1465.023	21.64801 – 89.9063	$2s^22p^2 - 2s^22p(^2P^\circ)11d$	$^1S - ^3D^\circ$	0 – 1		908
36	350	1467.402	10.19263 – 78.34028	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	$^1D - ^1P^\circ$	2 – 1		821,816
	8	1467.668	21.64801 – 89.7833	$2s^22p^2 - 2s^22p(^2P^\circ)10d$	$^1S - ^1P^\circ$	0 – 1		908
35	30	1467.877	10.19263 – 78.31825	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - ^3D^\circ$	2 – 3		821,816
35	100	1468.410	10.19263 – 78.29349	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - ^3D^\circ$	2 – 1		821,816
	10	1469.119	21.64801 – 89.7160	$2s^22p^2 - 2s^22p(^2P^\circ)10d$	$^1S - ^3D^\circ$	0 – 1		908
35	100	1470.094	10.19263 – 78.21551	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - ^3F^\circ$	2 – 3		821,816
35	8	1470.447	10.19263 – 78.19907	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - ^3F^\circ$	2 – 2		908

C I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
34	60	1472.231	10.19263 – 78.11674	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	${}^1D - {}^3P^\circ$	2 – 1		821,816
64	40	1473.242	21.64801 – 89.52554	$2s^22p^2 - 2s^22p(^2P^\circ)9d$	${}^1S - {}^1P^\circ$	0 – 1		908
	5	1473.473	21.64801 – 89.5149	$2s^22p^2 - 2s^22p(^2P^\circ)10s$	${}^1S - {}^1P^\circ$	0 – 1		908
	15	1474.748	21.64801 – 89.4562	$2s^22p^2 - 2s^22p(^2P^\circ)9d$	${}^1S - {}^3D^\circ$	0 – 1		908
	10	1480.998	21.64801 – 89.1700	$2s^22p^2 - 2s^22p(^2P^\circ)8d$	${}^1S - {}^3P^\circ$	0 – 1		908
64	65	1481.118	21.64801 – 89.16474	$2s^22p^2 - 2s^22p(^2P^\circ)8d$	${}^1S - {}^1P^\circ$	0 – 1		908
64	12	1481.451	21.64801 – 89.14935	$2s^22p^2 - 2s^22p(^2P^\circ)9s$	${}^1S - {}^1P^\circ$	0 – 1		908
34	450	1481.7635	10.19263 – 77.67982	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	${}^1D - {}^1D^\circ$	2 – 2		371,816,821
	20	1482.716	21.64801 – 89.0918	$2s^22p^2 - 2s^22p(^2P^\circ)8d$	${}^1S - {}^3D^\circ$	0 – 1		908
	30	1492.575	21.64801 – 88.6466	$2s^22p^2 - 2s^22p(^2P^\circ)7d$	${}^1S - {}^3P^\circ$	0 – 1		908
64	60	1492.738	21.64801 – 88.63902	$2s^22p^2 - 2s^22p(^2P^\circ)7d$	${}^1S - {}^1P^\circ$	0 – 1		821,816
64	10	1493.273	21.64801 – 88.61501	$2s^22p^2 - 2s^22p(^2P^\circ)8s$	${}^1S - {}^1P^\circ$	0 – 1		821,816
	25	1494.532	21.64801 – 88.5586	$2s^22p^2 - 2s^22p(^2P^\circ)7d$	${}^1S - {}^3D^\circ$	0 – 1		821,816
64	25	1510.668	21.64801 – 87.84391	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	${}^1S - {}^3P^\circ$	0 – 1		821,816
64	100	1510.981	21.64801 – 87.83017	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	${}^1S - {}^1P^\circ$	0 – 1		821,816
64	25	1511.907	21.64801 – 87.78963	$2s^22p^2 - 2s^22p(^2P^\circ)7s$	${}^1S - {}^1P^\circ$	0 – 1		821,816
	50	1513.150	21.64801 – 87.7353	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	${}^1S - {}^3D^\circ$	0 – 1		821,816
64	40	1541.510	21.64801 – 86.51947	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	${}^1S - {}^3P^\circ$	0 – 1		821,816
64	160	1542.1766	21.64801 – 86.49141	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	${}^1S - {}^1P^\circ$	0 – 1		371,816,821
63	60	1543.960	21.64801 – 86.41655	$2s^22p^2 - 2s^22p(^2P^\circ)6s$	${}^1S - {}^1P^\circ$	0 – 1		821,816
63	40	1545.249	21.64801 – 86.36252	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	${}^1S - {}^3D^\circ$	0 – 1		821,816
3	250	1560.3095	0.0 – 64.08985	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	0 – 1		371,796,821
3	500	1560.6832	0.01640 – 64.09095	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	1 – 2		371,796,821
3	200	1560.7079	0.01640 – 64.08985	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	1 – 1		371,796,821
3	400	1561.3407	0.04340 – 64.09095	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	2 – 2		371,908,821
3	400	1561.3668	0.04340 – 64.08985	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	2 – 1		821,908
3	1000	1561.4382	0.04340 – 64.08692	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	2 – 3		371,796,821
63	5	1600.821	21.64801 – 84.11609	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	${}^1S - {}^3P^\circ$	0 – 1		908
63	200	1602.9715	21.64801 – 84.03215	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	${}^1S - {}^1P^\circ$	0 – 1		371,816,821
62	50	1606.960	21.64801 – 83.87731	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	${}^1S - {}^1P^\circ$	0 – 1		821,816
62	70	1608.438	21.64801 – 83.82013	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	${}^1S - {}^3D^\circ$	0 – 1		821,816
2	80	1613.378	0.0 – 61.98182	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - {}^1P^\circ$	0 – 1		908
2	80	1613.804	0.01640 – 61.98182	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - {}^1P^\circ$	1 – 1		908
2	50	1614.522	0.04340 – 61.98182	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - {}^1P^\circ$	2 – 1		908
2	350	1656.2665	0.01640 – 60.39314	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	1 – 2		371,816,821
2	300	1656.9282	0.0 – 60.35263	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	0 – 1		371,816,821
2	1000	1657.0078	0.04340 – 60.39314	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	2 – 2		371,816,821
2	300	1657.3797	0.01640 – 60.35263	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	1 – 1		371,816,821
2	300	1657.9070	0.01640 – 60.33343	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	1 – 0		371,816,821
2	350	1658.1222	0.04340 – 60.35263	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	2 – 1		371,816,821
62	800	1751.8277	21.64801 – 78.73127	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	${}^1S - {}^1P^\circ$	0 – 1		371,816,821
61	120	1763.909	21.64801 – 78.34028	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	${}^1S - {}^1P^\circ$	0 – 1		821,816
61	50	1765.366	21.64801 – 78.29349	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	${}^1S - {}^3D^\circ$	0 – 1		821,816
33	1000	1930.9054	10.19263 – 61.98182	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	${}^1D - {}^1P^\circ$	2 – 1		371,816,821
32	50	1993.620	10.19263 – 60.35263	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	${}^1D - {}^3P^\circ$	2 – 1		821,816

CARBON II (C^{1+}), Z = 6
Ground State $1s^2 2s^2 2p(^2P^\circ_{1/2})$ (5 electrons)
Ionization Potential 196 664.7 cm^{-1}; 24.384 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	425.326						168
	100	437.102						168
6		438.824	0.0 – 227.88164	$2s^2(^1S)2p - 2s2p(^3P^\circ)5p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		287
6	100	438.897	0.06400 – 227.90814	$2s^2(^1S)2p - 2s2p(^3P^\circ)5p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		287,168
	100	461.120	0.06400 – 216.92720	$2s^2(^1S)2p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		287,168
6	10	466.352	0.0 – 214.43038	$2s^2(^1S)2p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		287,168
6	100	466.407	0.0 – 214.40476	$2s^2(^1S)2p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		287,168
6	200	466.491	0.06400 – 214.43038	$2s^2(^1S)2p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		287,168
6	10	466.547	0.06400 – 214.40476	$2s^2(^1S)2p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		287,168
	10	516.652	43.05400 – 236.60720	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		168,287
	100	517.07	43.05400 – 236.44620	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		168,287
6	300	530.274	0.0 – 188.58168	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		287,168
6	400	530.359	0.06400 – 188.61550	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		287,168
6		530.454	0.06400 – 188.58168	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		287
9	5	531.721	43.00370 – 231.07210	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		287,168
9	5	531.742	43.02570 – 231.08700	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		287,168
9	100	531.917	43.05400 – 231.05330	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		287,168
9	100	532.659	43.02570 – 230.76300	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		287,168
9	200	532.705	43.05400 – 230.77530	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		287,168
	100	533.935	0.06400 – 187.353	$2s^2(^1S)2p - 2s^2(^1S)7d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		168
6	200	543.257	0.0 – 184.07502	$2s^2(^1S)2p - 2s^2(^1S)6d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		287,168
6	300	543.444	0.06400 – 184.07571	$2s^2(^1S)2p - 2s^2(^1S)6d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		287,168
9		547.140	43.00370 – 225.77220	$2s2p^2 - 2s2p(^3P^\circ)5s$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		287
9	10	547.153	43.05400 – 225.81820	$2s2p^2 - 2s2p(^3P^\circ)5s$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		287,168
9	5	547.277	43.02570 – 225.74840	$2s2p^2 - 2s2p(^3P^\circ)5s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		287,168
9	5	547.291	43.05400 – 225.77220	$2s2p^2 - 2s2p(^3P^\circ)5s$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		287,168
6	300	549.3195	0.0 – 182.04384	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$	ST	308,168,287
6	400	549.3785	0.0 – 182.02429	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$	ST	308,168,287
6	500	549.5110	0.06400 – 182.04384	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$	ST	308,168,287
6	300	549.5700	0.06400 – 182.02429	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$	ST	308,168,287
6	10	551.874	0.06400 – 181.26467	$2s^2(^1S)2p - 2s^2(^1S)6s$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		287,168
6	400	560.2394	0.0 – 178.49554	$2s^2(^1S)2p - 2s^2(^1S)5d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	ST	308,168,287
6	500	560.4367	0.06400 – 178.49614	$2s^2(^1S)2p - 2s^2(^1S)5d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	ST	308,306,287
6	40	560.4386	0.06400 – 178.49554	$2s^2(^1S)2p - 2s^2(^1S)5d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$	ST	308,287
9	150	562.338	43.00370 – 220.83258	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		287,168
9	150	562.367	43.02570 – 220.84550	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		287,168
9	150	562.473	43.02570 – 220.81212	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		287,168
9	150	562.497	43.05400 – 220.83258	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		287,168
9	300	562.562	43.05400 – 220.81212	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		287,168
9	40	564.565	43.00370 – 220.13129	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		287,168
9	40	564.582	43.00370 – 220.12594	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{1}{2}$		287,168
9	100	564.608	43.02570 – 220.13984	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		287,168
9	50	564.635	43.02570 – 220.13129	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		287,168
9	200	564.663	43.05400 – 220.15092	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		287,168
9	40	564.698	43.05400 – 220.13984	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		287,168
6	100	576.8748	0.0 – 173.34827	$2s^2(^1S)2p - 2s^2(^1S)5s$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		306,168,287
6	200	577.0859	0.06400 – 173.34827	$2s^2(^1S)2p - 2s^2(^1S)5s$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		306,168,287
6	600	594.8000	0.0 – 168.12417	$2s^2(^1S)2p - 2s^2(^1S)4d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	ST	308,197,287
6	700	595.0219	0.06400 – 168.12488	$2s^2(^1S)2p - 2s^2(^1S)4d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	ST	308,197,287
6	70	595.0245	0.06400 – 168.12417	$2s^2(^1S)2p - 2s^2(^1S)4d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$	ST	308,197,287
9	100	600.251	43.02570 – 209.62275	$2s2p^2 - 2s2p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		287,168
9	100	600.337	43.00370 – 209.57689	$2s2p^2 - 2s2p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		287
9	300	600.353	43.05400 – 209.62275	$2s2p^2 - 2s2p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		287,168
9	100	600.503	43.02570 – 209.55279	$2s2p^2 - 2s2p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		287,168

C II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
9	100	600.518	43.05400 – 209.57689	2s2p^2 – 2s2p(^{3}P°)4s	^{4}P – ^{4}P°	$\frac{5}{2}$ – $\frac{3}{2}$		287,168
5	300	635.9945	0.0 – 157.23450	2s^2(^{1}S)2p – 2s^2(^{1}S)4s	g^{2}P° – ^{2}S	$\frac{1}{2}$ – $\frac{1}{2}$	ST	308,168,287
5	400	636.2511	0.06400 – 157.23450	2s^2(^{1}S)2p – 2s^2(^{1}S)4s	g^{2}P° – ^{2}S	$\frac{3}{2}$ – $\frac{1}{2}$	ST	308,168,287
9	250	641.593	43.00370 – 198.86568	2s2p^2 – 2s2p(^{3}P°)3d	^{4}P – ^{4}P°	$\frac{1}{2}$ – $\frac{3}{2}$		287,168
9	250	641.627	43.02570 – 198.87944	2s2p^2 – 2s2p(^{3}P°)3d	^{4}P – ^{4}P°	$\frac{3}{2}$ – $\frac{1}{2}$		287,168
9	300	641.771	43.02570 – 198.84443	2s2p^2 – 2s2p(^{3}P°)3d	^{4}P – ^{4}P°	$\frac{3}{2}$ – $\frac{5}{2}$		287,168
9	300	641.800	43.05400 – 198.86568	2s2p^2 – 2s2p(^{3}P°)3d	^{4}P – ^{4}P°	$\frac{5}{2}$ – $\frac{3}{2}$		287,168
9	650	641.888	43.05400 – 198.84443	2s2p^2 – 2s2p(^{3}P°)3d	^{4}P – ^{4}P°	$\frac{5}{2}$ – $\frac{5}{2}$		287,168
9	150	651.211	43.00370 – 196.56384	2s2p^2 – 2s2p(^{3}P°)3d	^{4}P – ^{4}D°	$\frac{1}{2}$ – $\frac{3}{2}$		287,168,488
9	150	651.234	43.00370 – 196.55830	2s2p^2 – 2s2p(^{3}P°)3d	^{4}P – ^{4}D°	$\frac{1}{2}$ – $\frac{1}{2}$		287,168
9	400	651.269	43.02570 – 196.57225	2s2p^2 – 2s2p(^{3}P°)3d	^{4}P – ^{4}D°	$\frac{3}{2}$ – $\frac{5}{2}$		287,168,488
9	300	651.304	43.02570 – 196.56384	2s2p^2 – 2s2p(^{3}P°)3d	^{4}P – ^{4}D°	$\frac{3}{2}$ – $\frac{3}{2}$		287
9	800	651.345	43.05400 – 196.58239	2s2p^2 – 2s2p(^{3}P°)3d	^{4}P – ^{4}D°	$\frac{5}{2}$ – $\frac{7}{2}$		287,168,488
9	150	651.389	43.05400 – 196.57225	2s2p^2 – 2s2p(^{3}P°)3d	^{4}P – ^{4}D°	$\frac{5}{2}$ – $\frac{5}{2}$		287
12	120	686.416	74.93060 – 220.61494	2s2p^2 – 2s2p(^{3}P°)4d	^{2}D – ^{2}D°	$\frac{5}{2}$ – $\frac{5}{2}$		287,168
12	80	686.488	74.93310 – 220.60196	2s2p^2 – 2s2p(^{3}P°)4d	^{2}D – ^{2}D°	$\frac{3}{2}$ – $\frac{3}{2}$		287,168
5	800	687.0526	0.0 – 145.54970	2s^2(^{1}S)2p – 2s^2(^{1}S)3d	g^{2}P° – ^{2}D	$\frac{1}{2}$ – $\frac{3}{2}$	ST	308,197,287
5	1000	687.3453	0.06400 – 145.55113	2s^2(^{1}S)2p – 2s^2(^{1}S)3d	g^{2}P° – ^{2}D	$\frac{3}{2}$ – $\frac{5}{2}$	ST	308,197,287
5	110	687.3521	0.06400 – 145.54970	2s^2(^{1}S)2p – 2s^2(^{1}S)3d	g^{2}P° – ^{2}D	$\frac{3}{2}$ – $\frac{3}{2}$	ST	308,197,287
13	10	794.964	96.49417 – 222.28610	2s2p^2 – 2s2p(^{3}P°)4d	^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{1}{2}$		168
13	100	795.134	96.49417 – 222.25920	2s2p^2 – 2s2p(^{3}P°)4d	^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$		168
12	500	799.660	74.93060 – 199.98367	2s2p^2 – 2s2p(^{3}P°)3d	^{2}D – ^{2}F°	$\frac{5}{2}$ – $\frac{7}{2}$		287,168
12	25	799.928	74.93060 – 199.94184	2s2p^2 – 2s2p(^{3}P°)3d	^{2}D – ^{2}F°	$\frac{5}{2}$ – $\frac{5}{2}$		287
12	350	799.944	74.93310 – 199.94184	2s2p^2 – 2s2p(^{3}P°)3d	^{2}D – ^{2}F°	$\frac{3}{2}$ – $\frac{5}{2}$		287,168
8	500	806.384	43.02570 – 167.03614	2s2p^2 – 2s2p(^{3}P°)3s	^{4}P – ^{4}P°	$\frac{3}{2}$ – $\frac{5}{2}$		287,168,488
8	200	806.533	43.00370 – 166.99116	2s2p^2 – 2s2p(^{3}P°)3s	^{4}P – ^{4}P°	$\frac{1}{2}$ – $\frac{3}{2}$		287,168,488
8	500	806.568	43.05400 – 167.03614	2s2p^2 – 2s2p(^{3}P°)3s	^{4}P – ^{4}P°	$\frac{5}{2}$ – $\frac{5}{2}$		287,168
8	250	806.676	43.02570 – 166.99116	2s2p^2 – 2s2p(^{3}P°)3s	^{4}P – ^{4}P°	$\frac{3}{2}$ – $\frac{3}{2}$		287,168,488
8	150	806.686	43.00370 – 166.96756	2s2p^2 – 2s2p(^{3}P°)3s	^{4}P – ^{4}P°	$\frac{1}{2}$ – $\frac{1}{2}$		287,168
8	300	806.830	43.02570 – 166.96756	2s2p^2 – 2s2p(^{3}P°)3s	^{4}P – ^{4}P°	$\frac{3}{2}$ – $\frac{1}{2}$		287,168,488
8	300	806.860	43.05400 – 166.99116	2s2p^2 – 2s2p(^{3}P°)3s	^{4}P – ^{4}P°	$\frac{5}{2}$ – $\frac{3}{2}$		287,168,488
12	400	809.677	74.93060 – 198.43674	2s2p^2 – 2s2p(^{3}P°)3d	^{2}D – ^{2}D°	$\frac{5}{2}$ – $\frac{5}{2}$		287,168
12	30	809.693	74.93310 – 198.43674	2s2p^2 – 2s2p(^{3}P°)3d	^{2}D – ^{2}D°	$\frac{3}{2}$ – $\frac{5}{2}$		287,168
12	30	809.747	74.93060 – 198.42586	2s2p^2 – 2s2p(^{3}P°)3d	^{2}D – ^{2}D°	$\frac{5}{2}$ – $\frac{3}{2}$		287,168
12	300	809.764	74.93310 – 198.42586	2s2p^2 – 2s2p(^{3}P°)3d	^{2}D – ^{2}D°	$\frac{3}{2}$ – $\frac{3}{2}$		287,168
4	500	858.0918	0.0 – 116.53808	2s^2(^{1}S)2p – 2s^2(^{1}S)3s	g^{2}P° – ^{2}S	$\frac{1}{2}$ – $\frac{1}{2}$	ST	308,197,287
4	900	858.5590	0.06400 – 116.53808	2s^2(^{1}S)2p – 2s^2(^{1}S)3s	g^{2}P° – ^{2}S	$\frac{3}{2}$ – $\frac{1}{2}$	ST	308,197,287
3	600	903.6235	0.0 – 110.66599	2s^2(^{1}S)2p – 2s2p^2	g^{2}P° – ^{2}P	$\frac{1}{2}$ – $\frac{3}{2}$	ST	308,197,287
3	800	903.9616	0.0 – 110.62460	2s^2(^{1}S)2p – 2s2p^2	g^{2}P° – ^{2}P	$\frac{1}{2}$ – $\frac{1}{2}$	ST	308,197,287
3	1000	904.1416	0.06400 – 110.66599	2s^2(^{1}S)2p – 2s2p^2	g^{2}P° – ^{2}P	$\frac{3}{2}$ – $\frac{3}{2}$	ST	308,197,287
3	600	904.4801	0.06400 – 110.62460	2s^2(^{1}S)2p – 2s2p^2	g^{2}P° – ^{2}P	$\frac{3}{2}$ – $\frac{1}{2}$	ST	308,197,287
13	100	945.977	96.49417 – 202.20495	2s2p^2 – 2s2p(^{3}P°)3d	^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{1}{2}$		287,168
13	200	946.198	96.49417 – 202.18028	2s2p^2 – 2s2p(^{3}P°)3d	^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$		287,168
7	400	1009.858	43.00370 – 142.02750	2s2p^2 – 2p^3	^{4}P – ^{4}S°	$\frac{1}{2}$ – $\frac{3}{2}$		287,488
7	600	1010.083	43.02570 – 142.02750	2s2p^2 – 2p^3	^{4}P – ^{4}S°	$\frac{3}{2}$ – $\frac{3}{2}$		287,488
7	1000	1010.371	43.05400 – 142.02750	2s2p^2 – 2p^3	^{4}P – ^{4}S°	$\frac{5}{2}$ – $\frac{3}{2}$		287,488
2	800	1036.3367	0.0 – 96.49417	2s^2(^{1}S)2p – 2s2p^2	g^{2}P° – ^{2}S	$\frac{1}{2}$ – $\frac{1}{2}$	ST	308,197,287
2	1000	1037.0182	0.06400 – 96.49417	2s^2(^{1}S)2p – 2s2p^2	g^{2}P° – ^{2}S	$\frac{3}{2}$ – $\frac{1}{2}$	ST	308,197,287
12	5	1063.285	74.93060 – 168.97877	2s2p^2 – 2s^2(^{1}S)4f	^{2}D – ^{2}F°	$\frac{5}{2}$ – $\frac{7}{2}$		287,168
12	5	1063.313	74.93310 – 168.97877	2s2p^2 – 2s^2(^{1}S)4f	^{2}D – ^{2}F°	$\frac{3}{2}$ – $\frac{5}{2}$		287,168
12	700	1065.8913	74.93060 – 168.74873	2s2p^2 – 2p^3	^{2}D – ^{2}P°	$\frac{5}{2}$ – $\frac{3}{2}$	ST	308,197,287
12	100	1065.9199	74.93310 – 168.74873	2s2p^2 – 2p^3	^{2}D – ^{2}P°	$\frac{3}{2}$ – $\frac{3}{2}$	ST	308,197,287
12	500	1066.1332	74.93310 – 168.72996	2s2p^2 – 2p^3	^{2}D – ^{2}P°	$\frac{3}{2}$ – $\frac{1}{2}$	ST	308,197,287
14	100	1091.937	110.62460 – 202.20495	2s2p^2 – 2s2p(^{3}P°)3d	^{2}P – ^{2}P°	$\frac{1}{2}$ – $\frac{1}{2}$		287,168

C II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
14	10	1092.232	110.62460 – 202.18028	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		287,168
14	10	1092.431	110.66599 – 202.20495	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		287,168
14	200	1092.726	110.66599 – 202.18028	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		287,168
14	200	1138.9358	110.62460 – 198.42586	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$	ST	308,168,287
14	300	1139.3317	110.66599 – 198.43674	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$	ST	308,168,287
14	10	1139.4730	110.66599 – 198.42586	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$	ST	308,168,287
11	300	1141.6246	74.93060 – 162.52500	$2s2p^2 - 2s^2(^1S)4p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$	ST	308,168,287
11	30	1141.6574	74.93310 – 162.52500	$2s2p^2 - 2s^2(^1S)4p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	ST	308,287
11	200	1141.7445	74.93310 – 162.51832	$2s2p^2 - 2s^2(^1S)4p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	ST	308,168,287
11	30	1323.8617	74.93060 – 150.46712	$2s2p^2 - 2p^3$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$	ST	308,287
11	300	1323.9059	74.93310 – 150.46712	$2s2p^2 - 2p^3$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$	ST	308,287
11	450	1323.9513	74.93060 – 150.46201	$2s2p^2 - 2p^3$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$	ST	308,287
11	30	1323.9955	74.93310 – 150.46201	$2s2p^2 - 2p^3$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$	ST	308,287
1	800	1334.5323	0.0 – 74.93310	$2s^2(^1S)2p - 2s2p^2$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	ST	308,488,287
1	100	1335.6627	0.06400 – 74.93310	$2s^2(^1S)2p - 2s2p^2$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$	ST	308,488,287
1	1000	1335.7077	0.06400 – 74.93060	$2s^2(^1S)2p - 2s2p^2$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	ST	308,488,287
14	10	1720.456	110.62460 – 168.74873	$2s2p^2 - 2p^3$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		287,168
14	100	1721.012	110.62460 – 168.72996	$2s2p^2 - 2p^3$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		287,168
14	200	1721.682	110.66599 – 168.74873	$2s2p^2 - 2p^3$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		287,168
14	10	1722.238	110.66599 – 168.72996	$2s2p^2 - 2p^3$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		287,168
10	450	1760.3954	74.93060 – 131.73595	$2s2p^2 - 2s^2(^1S)3p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$	ST	308,488,287
10	100	1760.4735	74.93310 – 131.73595	$2s2p^2 - 2s^2(^1S)3p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	ST	308,197,287
10	300	1760.8191	74.93310 – 131.72480	$2s2p^2 - 2s^2(^1S)3p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	ST	308,488,287
	5	1927.02	110.62460 – 162.51832	$2s2p^2 - 2s^2(^1S)4p$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	Q	816,375
	10	1928.30	110.66599 – 162.52500	$2s2p^2 - 2s^2(^1S)4p$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	Q	816,375
19	40	1987.33	131.72480 – 182.04384	$2s^2(^1S)3p - 2s2p(^3P^\circ)3p$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		287
19	120	1987.76	131.73595 – 182.04384	$2s^2(^1S)3p - 2s2p(^3P^\circ)3p$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		287
19	80	1988.09	131.72480 – 182.02429	$2s^2(^1S)3p - 2s2p(^3P^\circ)3p$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		287,168
19	40	1988.51	131.73595 – 182.02429	$2s^2(^1S)3p - 2s2p(^3P^\circ)3p$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		287

CARBON III (C^{2+}), Z = 6
Ground State $1s^22s^2(^1S_0)$ (4 electrons)
Ionization Potential 386 241.0 cm^{-1}; 47.888 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	265.029	52.44711 – 429.764	$2s2p - 2p7p$	$^3P^\circ - ^3P$	2 – 2		168,510
	10	265.287	52.44711 – 429.397	$2s2p - 2p7p$	$^3P^\circ - ^3D$	2 – 3		168,510
	10	270.324	0.0 – 369.926	$2s^2 - 2s8p$	$g^1S - ^1P^\circ$	0 – 1		168,510
	100	270.583	52.44711 – 422.019	$2s2p - 2p6p$	$^3P^\circ - ^3P$	2 – 2		168,510
	100	271.014	52.44711 – 421.432	$2s2p - 2p6p$	$^3P^\circ - ^3D$	2 – 3		168,510
	200	274.051	0.0 – 364.896	$2s^2 - 2s7p$	$g^1S - ^1P^\circ$	0 – 1		168,510
3	300	280.043	0.0 – 357.10968	$2s^2 - 2s6p$	$g^1S - ^1P^\circ$	0 – 1		510
	200	280.522	52.44711 – 408.925	$2s2p - 2p5p$	$^3P^\circ - ^3P$	2 – 2		168,510
	200	281.390	52.44711 – 407.826	$2s2p - 2p5p$	$^3P^\circ - ^3D$	2 – 3		168,510
	10	288.423	0.0 – 346.71273	$2s^2 - 2p3d$	$g^1S - ^1P^\circ$	0 – 1		170,510
	500	291.3261	0.0 – 343.25803	$2s^2 - 2s5p$	$g^1S - ^1P^\circ$	0 – 1		197,168,510
7	200	301.206	52.39075 – 384.4054	$2s2p - 2p4p$	$^3P^\circ - ^3P$	1 – 2		168,510
7	300	301.243	52.44711 – 384.4054	$2s2p - 2p4p$	$^3P^\circ - ^3P$	2 – 2		168,510
7	100	301.279	52.44711 – 384.365	$2s2p - 2p4p$	$^3P^\circ - ^3P$	2 – 1		168,510
7	400	303.432	52.44711 – 382.01	$2s2p - 2p4p$	$^3P^\circ - ^3D$	2 – 3		168,510
7	100	303.468	52.44711 – 381.971	$2s2p - 2p4p$	$^3P^\circ - ^3D$	2 – 2		168,510
3	700	310.1697	0.0 – 322.40420	$2s^2 - 2s4p$	$g^1S - ^1P^\circ$	0 – 1		197,168,510
	10	311.157	52.44711 – 373.828	$2s2p - 2s9d$	$^3P^\circ - ^3D$	2 – 3		168,510

C III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	314.41	52.44711 – 370.499	2s2p – 2s8d	$^3P^o - {}^3D$	2 – 3		168,510
	300	319.29	52.44711 – 365.638	2s2p – 2s7d	$^3P^o - {}^3D$	2 – 3		168,510
	10	321.372	52.44711 – 363.613	2s2p – 2s7s	$^3P^o - {}^3S$	2 – 1		168,510
	800	322.5741	0.0 – 310.00632	$2s^2$ – 2p3s	$g\,^1S - {}^1P^o$	0 – 1		197,168,510
	100	325.570	102.35204 – 409.506	2s2p – 2p5p	$^1P^o - {}^1D$	1 – 2		168,510
7	400	327.112	52.39075 – 358.09778	2s2p – 2s6d	$^3P^o - {}^3D$	1 – 2		168,510
7	400	327.176	52.44711 – 358.09778	2s2p – 2s6d	$^3P^o - {}^3D$	2 – 3		168,510
	100	327.784	102.35204 – 407.431	2s2p – 2p5p	$^1P^o - {}^1P$	1 – 1		168,510
7	100	330.617	52.39075 – 354.85803	2s2p – 2s6s	$^3P^o - {}^3S$	1 – 1		168,510
7	100	330.687	52.44711 – 354.85803	2s2p – 2s6s	$^3P^o - {}^3S$	2 – 1		168,510
7	500	341.143	52.36706 – 345.49657	2s2p – 2s5d	$^3P^o - {}^3D$	0 – 1		168,510
7	600	341.179	52.39075 – 345.49672	2s2p – 2s5d	$^3P^o - {}^3D$	1 – 2		168,510
7	700	341.242	52.44711 – 345.49715	2s2p – 2s5d	$^3P^o - {}^3D$	2 – 3		168,510
7	300	347.777	52.39075 – 339.93472	2s2p – 2s5s	$^3P^o - {}^3S$	1 – 1		168,510
7	300	347.854	52.44711 – 339.93472	2s2p – 2s5s	$^3P^o - {}^3S$	2 – 1		168,510
	10	350.132	137.50201 – 423.109	$2p^2$ – 2p6d	$^3P - {}^3P^o$	2 – 2		168,510
	200	350.35	137.50201 – 422.932	$2p^2$ – 2p6d	$^3P - {}^3D^o$	2 – 3		168,510
	300	353.000	102.35204 – 385.6381	2s2p – 2p4p	$^1P^o - {}^1D$	1 – 2		168,510
	400	358.740	102.35204 – 381.1054	2s2p – 2p4p	$^1P^o - {}^1P$	1 – 1		168,510
7	600	360.557	52.39075 – 329.74357	2s2p – 2p3p	$^3P^o - {}^3P$	1 – 2		168,510
7	700	360.623	52.44711 – 329.74357	2s2p – 2p3p	$^3P^o - {}^3P$	2 – 2		168,510
7	500	360.675	52.44711 – 329.70647	2s2p – 2p3p	$^3P^o - {}^3P$	2 – 1		168,510
7	400	363.7538	52.36706 – 327.27827	2s2p – 2p3p	$^3P^o - {}^3S$	0 – 1		034,168,510
7	500	363.7852	52.39075 – 327.27827	2s2p – 2p3p	$^3P^o - {}^3S$	1 – 1		034,168,510
7	600	363.8598	52.44711 – 327.27827	2s2p – 2p3p	$^3P^o - {}^3S$	2 – 1		034,168,510
	100	365.778	137.50201 – 410.892	$2p^2$ – 2p5d	$^3P - {}^3P^o$	2 – 2		168,510
	400	366.19	137.50201 – 410.585	$2p^2$ – 2p5d	$^3P - {}^3D^o$	2 – 3		168,510
7	500	369.415	52.44711 – 323.14033	2s2p – 2p3p	$^3P^o - {}^3D$	2 – 3		168,510
7	200	369.472	52.44711 – 323.10136	2s2p – 2p3p	$^3P^o - {}^3D$	2 – 2		168,510
7	1000	371.694	52.39075 – 321.42674	2s2p – 2s4d	$^3P^o - {}^3D$	1 – 2		168,510
7	1000	371.747	52.44711 – 321.45005	2s2p – 2s4d	$^3P^o - {}^3D$	2 – 3		168,510
7	800	371.784	52.44711 – 321.42674	2s2p – 2s4d	$^3P^o - {}^3D$	2 – 2		168,510
	100	379.065	145.87613 – 409.683	$2p^2$ – 2p5d	$^1D - {}^1D^o$	2 – 2		168,510
	10	379.254	102.35204 – 366.028	2s2p – 2s7d	$^1P^o - {}^1D$	1 – 2		168,510
2		385.043	0.0 – 259.71122	$2s^2$ – 2s3p	$g\,^1S - {}^3P^o$	0 – 1		510
2	850	386.2028	0.0 – 258.93129	$2s^2$ – 2s3p	$g\,^1S - {}^1P^o$	0 – 1		197,168,510
6	500	388.9687	52.36706 – 309.45717	2s2p – 2s4s	$^3P^o - {}^3S$	0 – 1		197,168,510
6	600	389.0045	52.39075 – 309.45717	2s2p – 2s4s	$^3P^o - {}^3S$	1 – 1		197,168,510
6	700	389.0898	52.44711 – 309.45717	2s2p – 2s4s	$^3P^o - {}^3S$	2 – 1		197,168,510
	300	390.055	102.35204 – 358.73293	2s2p – 2s6d	$^1P^o - {}^1D$	1 – 2		168,510
	200	398.42	137.50201 – 388.493	$2p^2$ – 2p4d	$^3P - {}^3P^o$	2 – 2		168,510
11	600	399.612	137.45440 – 387.697	$2p^2$ – 2p4d	$^3P - {}^3D^o$	1 – 2		168,510
11	600	399.688	137.50201 – 387.697	$2p^2$ – 2p4d	$^3P - {}^3D^o$	2 – 3		168,510
	600	409.325	102.35204 – 346.65834	2s2p – 2s5d	$^1P^o - {}^1D$	1 – 2		168,510
	10	411.697	145.87613 – 388.773	$2p^2$ – 2p4d	$^1D - {}^1F^o$	2 – 3		168,510
	300	411.9577	102.35204 – 345.09543	2s2p – 2p3p	$^1P^o - {}^1S$	1 – 0		034,168,510
	500	416.769	145.87613 – 385.8172	$2p^2$ – 2p4d	$^1D - {}^1D^o$	2 – 2		168,510
11	200	418.609	137.50201 – 376.388	$2p^2$ – 2p4s	$^3P - {}^3P^o$	2 – 2		510,168
11		423.438	102.35204 – 338.51433	2s2p – 2s5s	$^1P^o - {}^1S$	1 – 0		510
	800	433.3391	102.35204 – 333.11821	2s2p – 2p3p	$^1P^o - {}^1D$	1 – 2		197,168,510
	800	450.7338	102.35204 – 324.21249	2s2p – 2s4d	$^1P^o - {}^1D$	1 – 2		197,168,510
	0	455.5	137.50201 – 357.05123	$2p^2$ – 2s6p	$^3P - {}^3P^o$	2 – 2		565,510
6	900	459.462	52.36706 – 270.01083	2s2p – 2s3d	$^3P^o - {}^3D$	0 – 1		197,168,510
6	950	459.521	52.39075 – 270.01193	2s2p – 2s3d	$^3P^o - {}^3D$	1 – 2		197,168,510

C III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
6	1000	459.633	52.44711 – 270.01474	2s2p – 2s3d	$^3P^o$ – ^3D	2 – 3		197,168,510
	800	460.0487	102.35204 – 319.72035	2s2p – 2p3p	$^1P^o$ – ^1P	1 – 1		197,168,510
	10	468.94	145.87613 – 359.12195	$2p^2$ – 2s6f	^1D – $^1F^o$	2 – 3		168,510
11		473.410	145.87613 – 357.10968	$2p^2$ – 2s6p	^1D – $^1P^o$	2 – 1		510
	300	477.6246	102.35204 – 311.72151	2s2p – 2s4s	$^1P^o$ – ^1S	1 – 0		034,168,510
11	300	483.567	137.45440 – 344.23868	$2p^2$ – 2s5p	^3P – $^3P^o$	1 – 0		168,510
11	400	483.618	137.45440 – 344.23298	$2p^2$ – 2s5p	^3P – $^3P^o$	1 – 2		168,510
11	500	483.733	137.50201 – 344.23298	$2p^2$ – 2s5p	^3P – $^3P^o$	2 – 2		168,510
	700	492.6500	145.87613 – 348.85999	$2p^2$ – 2s5f	^1D – $^1F^o$	2 – 3		197,168,510
11	500	493.341	137.42570 – 340.12753	$2p^2$ – 2p3d	^3P – $^3P^o$	0 – 1		168,510
11	500	493.364	137.45440 – 340.14183	$2p^2$ – 2p3d	^3P – $^3P^o$	1 – 0		168,510
11	500	493.396	137.45440 – 340.12753	$2p^2$ – 2p3d	^3P – $^3P^o$	1 – 1		168,510
11	500	493.464	137.45440 – 340.10184	$2p^2$ – 2p3d	^3P – $^3P^o$	1 – 2		168,510
11	500	493.519	137.50201 – 340.12753	$2p^2$ – 2p3d	^3P – $^3P^o$	2 – 1		168,510
11	700	493.587	137.50201 – 340.10184	$2p^2$ – 2p3d	^3P – $^3P^o$	2 – 2		168,510
	100	497.910	145.87613 – 346.71273	$2p^2$ – 2p3d	^1D – $^1P^o$	2 – 1		168,510
11	700	499.425	137.42570 – 337.65598	$2p^2$ – 2p3d	^3P – $^3D^o$	0 – 1		168,510
11	800	499.462	137.45440 – 337.66889	$2p^2$ – 2p3d	^3P – $^3D^o$	1 – 2		168,510
11	900	499.530	137.50201 – 337.68804	$2p^2$ – 2p3d	^3P – $^3D^o$	2 – 3		168,510
11	700	499.583	137.50201 – 337.66889	$2p^2$ – 2p3d	^3P – $^3D^o$	2 – 2		168,510
	10	506.63	145.87613 – 343.25803	$2p^2$ – 2s5p	^1D – $^1P^o$	2 – 1		168,510
	1000	511.5225	145.87613 – 341.37094	$2p^2$ – 2p3d	^1D – $^1F^o$	2 – 3		197,168,510
	850	535.2885	145.87613 – 332.69128	$2p^2$ – 2p3d	^1D – $^1D^o$	2 – 2		197,168,510
5	900	538.0801	52.36706 – 238.21300	2s2p – 2s3s	$^3P^o$ – ^3S	0 – 1		197,168,510
5	950	538.1487	52.39075 – 238.21300	2s2p – 2s3s	$^3P^o$ – ^3S	1 – 1		197,168,510
5	1000	538.3120	52.44711 – 238.21300	2s2p – 2s3s	$^3P^o$ – ^3S	2 – 1		197,168,510
	200	554.63	137.50201 – 317.80130	$2p^2$ – 2s4p	^3P – $^3P^o$	2 – 2		168,510
	700	565.5280	145.87613 – 322.70202	$2p^2$ – 2s4f	^1D – $^1F^o$	2 – 3		197,168,510
	400	566.48	145.87613 – 322.40420	$2p^2$ – 2s4p	^1D – $^1P^o$	2 – 1		168,510
11	1000	574.2809	102.35204 – 276.48286	2s2p – 2s3d	$^1P^o$ – ^1D	1 – 2		197,168,510
11	600	585.261	137.45440 – 308.31729	$2p^2$ – 2p3s	^3P – $^3P^o$	1 – 2		168,510
11	800	585.417	137.50201 – 308.31729	$2p^2$ – 2p3s	^3P – $^3P^o$	2 – 2		168,510
11	500	585.496	137.45440 – 308.24891	$2p^2$ – 2p3s	^3P – $^3P^o$	1 – 1		168,510
11	600	585.608	137.45440 – 308.21658	$2p^2$ – 2p3s	^3P – $^3P^o$	1 – 0		168,510
11	600	585.666	137.50201 – 308.24891	$2p^2$ – 2p3s	^3P – $^3P^o$	2 – 1		168,510
11	400	609.04	182.51988 – 346.71273	$2p^2$ – 2p3d	^1S – $^1P^o$	0 – 1		168,510
	600	609.275	145.87613 – 310.00632	$2p^2$ – 2p3s	^1D – $^1P^o$	2 – 1		168,510
	200	622.13	182.51988 – 343.25803	$2p^2$ – 2s5p	^1S – $^1P^o$	0 – 1		168,510
10	700	690.526	102.35204 – 247.17026	2s2p – 2s3s	$^1P^o$ – ^1S	1 – 0		168,510
	100	714.879	182.51988 – 322.40420	$2p^2$ – 2s4p	^1S – $^1P^o$	0 – 1		168,510
	300	784.393	182.51988 – 310.00632	$2p^2$ – 2p3s	^1S – $^1P^o$	0 – 1		168,510
11		817.950	137.45440 – 259.71122	$2p^2$ – 2s3p	^3P – $^3P^o$	1 – 1		510
11		818.181	137.50201 – 259.72430	$2p^2$ – 2s3p	^3P – $^3P^o$	2 – 2		510
	800	884.516	145.87613 – 258.93129	$2p^2$ – 2s3p	^1D – $^1P^o$	2 – 1		168,510
11		943.218	238.21300 – 344.23298	2s3s – 2s5p	^3S – $^3P^o$	1 – 2		510
1	1000	977.020	0.0 – 102.35204	$2s^2$ – 2s2p	g^1S – $^1P^o$	0 – 1		197,168,510
	25	1016.5	259.72430 – 358.09778	2s3p – 2s6d	$^3P^o$ – ^3D	2 – 3		565,510
11		1040.715	247.17026 – 343.25803	2s3s – 2s5p	^1S – $^1P^o$	0 – 1		510
11	10	1165.698	259.71122 – 345.49672	2s3p – 2s5d	$^3P^o$ – ^3D	1 – 2		168,510
11	100	1165.870	259.72430 – 345.49715	2s3p – 2s5d	$^3P^o$ – ^3D	2 – 3		168,510
4	800	1174.933	52.39075 – 137.50201	2s2p – $2p^2$	$^3P^o$ – ^3P	1 – 2		197,510
4	700	1175.263	52.36706 – 137.45440	2s2p – $2p^2$	$^3P^o$ – ^3P	0 – 1		197,510
4	600	1175.590	52.39075 – 137.45440	2s2p – $2p^2$	$^3P^o$ – ^3P	1 – 1		197,510
4	1000	1175.711	52.44711 – 137.50201	2s2p – $2p^2$	$^3P^o$ – ^3P	2 – 2		197,168,510

C III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
4	700	1175.987	52.39075 - 137.42570	2s2p - 2p^2	$^3P^\circ - {}^3P$	1 - 0		197,510
4	800	1176.370	52.44711 - 137.45440	2s2p - 2p^2	$^3P^\circ - {}^3P$	2 - 1		197,510
9	600	1247.383	102.35204 - 182.51988	2s2p - 2p^2	$^1P^\circ - {}^1S$	1 - 0		197,168,510
	100	1256.47	238.21300 - 317.80130	2s3s - 2s4p	$^3S - {}^3P^\circ$	1 - 2		168,510
	200	1296.33	270.01474 - 347.15541	2s3d - 2s5f	$^3D - {}^3F^\circ$	3 - 4		168,510
	200	1308.70	182.51988 - 258.93129	2p^2 - 2s3p	$^1S - {}^1P^\circ$	0 - 1		168,510
11		1329.187	247.17026 - 322.40420	2s3s - 2s4p	$^1S - {}^1P^\circ$	0 - 1		510
12	10	1426.22	270.01193 - 340.12753	2s3d - 2p3d	$^3D - {}^3P^\circ$	2 - 1		168,510
11	400	1426.45	238.21300 - 308.31729	2s3s - 2p3s	$^3S - {}^3P^\circ$	1 - 2		168,510
12	100	1426.80	270.01474 - 340.10184	2s3d - 2p3d	$^3D - {}^3P^\circ$	3 - 2		168,510
11	300	1427.85	238.21300 - 308.24891	2s3s - 2p3s	$^3S - {}^3P^\circ$	1 - 1		168,510
11	200	1428.17	259.72430 - 329.74357	2s3p - 2p3p	$^3P^\circ - {}^3P$	2 - 2		168,510
11	200	1428.50	238.21300 - 308.21658	2s3s - 2p3s	$^3S - {}^3P^\circ$	1 - 0		168,510
11	10	1428.66	259.71122 - 329.70647	2s3p - 2p3p	$^3P^\circ - {}^3P$	1 - 1		168,510
11	100	1428.95	259.72430 - 329.70647	2s3p - 2p3p	$^3P^\circ - {}^3P$	2 - 1		168,510
11	10	1429.10	259.71122 - 329.68538	2s3p - 2p3p	$^3P^\circ - {}^3P$	1 - 0		168,510
12	300	1477.68	270.01474 - 337.68804	2s3d - 2p3d	$^3D - {}^3D^\circ$	3 - 3		168,510
12	200	1478.05	270.01193 - 337.66889	2s3d - 2p3d	$^3D - {}^3D^\circ$	2 - 2		168,510
12	100	1478.30	270.01083 - 337.65598	2s3d - 2p3d	$^3D - {}^3D^\circ$	1 - 1		168,510
	200	1531.83	258.93129 - 324.21249	2s3p - 2s4d	$^1P^\circ - {}^1D$	1 - 2		168,510
17		1541.115	276.48286 - 341.37094	2s3d - 2p3d	$^1D - {}^1F^\circ$	2 - 3		510
12	300	1576.48	270.01474 - 333.44724	2s3d - 2p3d	$^3D - {}^3F^\circ$	3 - 4		168,510
12	200	1577.30	270.01193 - 333.41155	2s3d - 2p3d	$^3D - {}^3F^\circ$	2 - 3		168,510
12	200	1577.89	270.01083 - 333.38701	2s3d - 2p3d	$^3D - {}^3F^\circ$	1 - 2		168,510
	200	1591.44	247.17026 - 310.00632	2s3s - 2p3s	$^1S - {}^1P^\circ$	0 - 1		168,510
11	300	1620.07	259.72430 - 321.45005	2s3p - 2s4d	$^3P^\circ - {}^3D$	2 - 3		168,510
11	200	1620.33	259.71122 - 321.42674	2s3p - 2s4d	$^3P^\circ - {}^3D$	1 - 2		168,510
11	10	1620.59	259.70555 - 321.41131	2s3p - 2s4d	$^3P^\circ - {}^3D$	0 - 1		168,510
11	100	1620.68	259.72430 - 321.42674	2s3p - 2s4d	$^3P^\circ - {}^3D$	2 - 2		168,510
	100	1645.03	258.93129 - 319.72035	2s3p - 2p3p	$^1P^\circ - {}^1P$	1 - 1		168,510
16	10	1779.09	276.48286 - 332.69128	2s3d - 2p3d	$^1D - {}^1D^\circ$	2 - 2		168,510
11	200	1894.29	258.93129 - 311.72151	2s3p - 2s4s	$^1P^\circ - {}^1S$	1 - 0		168,510
0		1908.734	0.0 - 52.39075	2s^2 - 2s2p	$g\,^1S - {}^3P^\circ$	0 - 1		510
12	300	1922.96	270.01474 - 322.01797	2s3d - 2s4f	$^3D - {}^3F^\circ$	3 - 4		168,510
12	200	1923.16	270.01193 - 322.00958	2s3d - 2s4f	$^3D - {}^3F^\circ$	2 - 3		168,510
12	200	1923.34	270.01083 - 322.00368	2s3d - 2s4f	$^3D - {}^3F^\circ$	1 - 2		168,510
41	100	1979.16	337.68804 - 388.2144	2p3d - 2p4f	$^3D^\circ - {}^3F$	3 - 4		034,510
41	50	1979.62	337.66889 - 388.184	2p3d - 2p4f	$^3D^\circ - {}^3F$	2 - 3		034,510

CARBON IV (C^{3+}), Z = 6
Ground State $1s^22s(^2S_{1/2})$ (3 electrons)
Ionization Potential 520 178.4 cm^{-1}; 64.494 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
5	2	196.27	0. - 509.502	1s^{2}2s - 1s^{2}13p	$g\,^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		536
5	2	196.96	0. - 507.717	1s^{2}2s - 1s^{2}12p	$g\,^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		536
5	5	197.82	0.0 - 505.51	1s^{2}2s - 1s^{2}11p	$g\,^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		168
5	10	199.04	0.0 - 502.412	1s^{2}2s - 1s^{2}10p	$g\,^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		168
5	25	200.68	0.0 - 498.3157	1s^{2}2s - 1s^{2}9p	$g\,^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		168
5	50	203.057	0.0 - 492.4793	1s^{2}2s - 1s^{2}8p	$g\,^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		168

C IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		206.6	2377.1+X – 2861.2+X	1s2s2p – 1s2s5d	$^4P^\circ - {}^4D$	5/2 – 7/2		94
5	150	206.641	0.0 – 483.9508	$1s^22s - 1s^27p$	$g^2S - {}^2P^\circ$	1/2 – 3/2		168
5	250	212.421	0.0 – 470.7789	$1s^22s - 1s^26p$	$g^2S - {}^2P^\circ$	1/2 – 3/2		168,488
		218.	2451.39+X – 2910.15+X	$1s2p^2 - 1s2p5d$	$^4P - {}^4D^\circ$	5/2 – 7/2		94
4	350	222.791	0.0 – 448.8629	$1s^22s - 1s^25p$	$g^2S - {}^2P^\circ$	1/2 – 3/2		168,488
11	2	223.9	64.5911 – 511.254	$1s^22p - 1s^214d$	$^2P^\circ - {}^2D$	3/2 – 5/2		536
		224.4	2377.1 – 2822.8	1s2s2p – 1s2s4d	$^4P^\circ - {}^4D$	5/2 – 7/2		94
11	2	224.6	64.5911 – 509.821	$1s^22p - 1s^213d$	$^2P^\circ - {}^2D$	3/2 – 5/2	P	536
11	4	225.49	64.5911 – 508.018	$1s^22p - 1s^212d$	$^2P^\circ - {}^2D$	3/2 – 5/2		536
11	6	226.72	64.5911 – 505.696	$1s^22p - 1s^211d$	$^2P^\circ - {}^2D$	3/2 – 5/2		536
11	25	228.27	64.5911 – 502.598	$1s^22p - 1s^210d$	$^2P^\circ - {}^2D$	3/2 – 5/2		168
11	25	230.43	64.5911 – 498.4906	$1s^22p - 1s^29d$	$^2P^\circ - {}^2D$	3/2 – 5/2		168
11	2	230.9	64.5911 – 497.7367	$1s^22p - 1s^29s$	$^2P^\circ - {}^2S$	3/2 – 1/2		536
11	100	233.53	64.4840 – 492.7285	$1s^22p - 1s^28d$	$^2P^\circ - {}^2D$	1/2 – 3/2		168
11	4	234.19	64.5911 – 491.6508	$1s^22p - 1s^28s$	$^2P^\circ - {}^2S$	3/2 – 1/2		536
11	100	238.200	64.4840 – 484.3206	$1s^22p - 1s^27d$	$^2P^\circ - {}^2D$	1/2 – 3/2		168
11	150	238.250	64.5911 – 484.3206	$1s^22p - 1s^27d$	$^2P^\circ - {}^2D$	3/2 – 5/2		168
11	25	239.196	64.5911 – 482.7060	$1s^22p - 1s^27s$	$^2P^\circ - {}^2S$	3/2 – 1/2		168
		240.5	2451.39+X – 2867.2+X	$1s2p^2 - 1s2p4d$	$^4P - {}^4D^\circ$	5/2 – 7/2		94
3	500	244.907	0.0 – 408.3242	$1s^22s - 1s^24p$	$g^2S - {}^2P^\circ$	1/2 – 3/2		168,488
11	200	245.775	64.4840 – 471.3703	$1s^22p - 1s^26d$	$^2P^\circ - {}^2D$	1/2 – 3/2		168,488
11	250	245.830	64.5911 – 471.3715	$1s^22p - 1s^26d$	$^2P^\circ - {}^2D$	3/2 – 5/2		168,488
10	25	247.357	64.5911 – 468.7840	$1s^22p - 1s^26s$	$^2P^\circ - {}^2S$	3/2 – 1/2		168
10	50	247.415	64.5911 – 468.7840	$1s^22p - 1s^26s$	$^2P^\circ - {}^2S$	3/2 – 1/2		168
		254.3	2377.1+X – 2770.4+X	1s2s2p – 1s2s4s	$^4P^\circ - {}^4S$	5/2 – 3/2		94
10	300	259.471	64.4840 – 449.8882	$1s^22p - 1s^25d$	$^2P^\circ - {}^2D$	1/2 – 3/2		168,488
10	350	259.542	64.5911 – 449.8899	$1s^22p - 1s^25d$	$^2P^\circ - {}^2D$	3/2 – 5/2		168,488
9	150	262.550	64.4840 – 445.3685	$1s^22p - 1s^25s$	$^2P^\circ - {}^2S$	1/2 – 1/2		168
9	200	262.624	64.5911 – 445.3685	$1s^22p - 1s^25s$	$^2P^\circ - {}^2S$	3/2 – 1/2		168
		284.	2377.1+X – 2729.25+X	1s2s2p – 1s2s3d	$^4P^\circ - {}^4D$	5/2 – 7/2		94
9	450	289.143	64.4840 – 410.3361	$1s^22p - 1s^24d$	$^2P^\circ - {}^2D$	1/2 – 3/2		168,488
9	500	289.230	64.5911 – 410.3401	$1s^22p - 1s^24d$	$^2P^\circ - {}^2D$	3/2 – 5/2		168,488
8	300	296.857	64.4840 – 401.3481	$1s^22p - 1s^24s$	$^2P^\circ - {}^2S$	1/2 – 1/2		168,488
8	350	296.951	64.5911 – 401.3481	$1s^22p - 1s^24s$	$^2P^\circ - {}^2S$	3/2 – 1/2		168,488
		303.4	2451.39+X – 2781.+X	$1s2p^2 - 1s2p3d$	$^4P - {}^4D^\circ$	5/2 – 7/2		94
F2	50	307.806	0. – 324.8798	$1s^22s - 1s^23d$	$g^2S - {}^2D$	1/2 – 3/2	F	168
2	750	312.422	0.0 – 320.0817	$1s^22s - 1s^23p$	$g^2S - {}^2P^\circ$	1/2 – 3/2		197,168,488
2	700	312.453	0.0 – 320.0501	$1s^22s - 1s^23p$	$g^2S - {}^2P^\circ$	1/2 – 1/2		197,168,488
		314.6	2377.1+X – 2695.+X	1s2s2p – 1s2s3s	$^4P^\circ - {}^4S$	5/2 – 3/2		94
7	800	384.032	64.4840 – 324.8798	$1s^22p - 1s^23d$	$^2P^\circ - {}^2D$	1/2 – 3/2		197,168,488
7	850	384.178	64.5911 – 324.8903	$1s^22p - 1s^23d$	$^2P^\circ - {}^2D$	3/2 – 5/2		197,168,488
6	650	419.525	64.4840 – 302.8490	$1s^22p - 1s^23s$	$^2P^\circ - {}^2S$	1/2 – 1/2		197,168,488
6	700	419.714	64.5911 – 302.8490	$1s^22p - 1s^23s$	$^2P^\circ - {}^2S$	3/2 – 1/2		197,168,488
	0	627.1	324.8903 – 484.3435	$1s^23d - 1s^27f$	$^2D - {}^2F^\circ$	5/2 – 7/2		565
	5	661.0	320.0817 – 471.3715	$1s^23p - 1s^26d$	$^2P^\circ - {}^2D$	3/2 – 5/2		565
	5	682.5	324.8903 – 471.4032	$1s^23d - 1s^26f$	$^2D - {}^2F^\circ$	5/2 – 7/2		565
11	25	770.379	320.0817 – 449.8899	$1s^23p - 1s^25d$	$^2P^\circ - {}^2D$	3/2 – 5/2		168
	100	799.7	324.8903 – 449.9398	$1s^23d - 1s^25f$	$^2D - {}^2F^\circ$	5/2 – 7/2		565
11	50	948.098	302.8490 – 408.3242	$1s^23s - 1s^24p$	$^2S - {}^2P^\circ$	1/2 – 3/2		168
11	25	948.214	302.8490 – 408.3111	$1s^23s - 1s^24p$	$^2S - {}^2P^\circ$	1/2 – 1/2		168
11	50	1107.600	320.0501 – 410.3361	$1s^23p - 1s^24d$	$^2P^\circ - {}^2D$	1/2 – 3/2		168
11	100	1107.933	320.0817 – 410.3401	$1s^23p - 1s^24d$	$^2P^\circ - {}^2D$	3/2 – 5/2		168
11	150	1168.873	324.8798 – 410.4342	$1s^23d - 1s^24f$	$^2D - {}^2F^\circ$	3/2 – 5/2		168
11	200	1168.990	324.8903 – 410.4342	$1s^23d - 1s^24f$	$^2D - {}^2F^\circ$	5/2 – 7/2		168

C IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
11	50	1198.58	324.8903 – 408.3242	$1s^23d - 1s^24p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		168
11	100	1230.046	320.0501 – 401.3481	$1s^23p - 1s^24s$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		168
11	150	1230.511	320.0817 – 401.3481	$1s^23p - 1s^24s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		168
		1346.	2377.1+X – 2451.39+X	$1s2s2p - 1s2p^2$	$^4P^\circ - ^4P$	$\frac{5}{2}-\frac{5}{2}$		94
1	1000	1548.202	0.0 – 64.5911	$1s^22s - 1s^22p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		510,488
1	950	1550.774	0.0 – 64.4840	$1s^22s - 1s^22p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		510,488

CARBON V (C^{4+}), Z = 6
Ground State $1s^2(^1S_0)$ (2 electrons)
Ionization Potential 3 162 395 cm^{-1}; 392.090 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
11		32.064	0.0 – 3119.619	$1s^2 - 1s8p$	$g^1S - ^1P^\circ$	0 – 1		510
10		32.188	0.0 – 3106.541	$1s^2 - 1s7p$	$g^1S - ^1P^\circ$	0 – 1		510
9	4	32.3998	0.0 – 3086.439	$1s^2 - 1s6p$	$g^1S - ^1P^\circ$	0 – 1		212
8	10	32.7542	0.0 – 3053.044	$1s^2 - 1s5p$	$g^1S - ^1P^\circ$	0 – 1		212
7		32.773	0.0 – 3051.332	$1s^2 - 1s5p$	$g^1S - ^3P^\circ$	0 – 1		510
6	30	33.4257	0.0 – 2991.71	$1s^2 - 1s4p$	$g^1S - ^1P^\circ$	0 – 1		212
5		33.463	0.0 – 2988.359	$1s^2 - 1s4p$	$g^1S - ^3P^\circ$	0 – 1	P	510
	3	33.925	2839.562 – 5786.7	$1s3s - 2p3s$	$^3S - ^3P^\circ$	1 – 1		235
	1	34.022	2851.18 – 5789.3	$1s3s - 2p3s$	$^1S - ^1P^\circ$	0 – 1		235
	1	34.283	2455.024 – 5371.4	$1s2s - 2s2p$	$^1S - ^1P^\circ$	0 – 1		235
	2	34.520	2411.262 – 5308.2	$1s2s - 2s2p$	$^3S - ^3P^\circ$	1 – 1		235
	1	34.598	2455.284 – 5345.5	$1s2p - 2p^2$	$^3P^\circ - ^3P$	2 – 2		235
	2	34.699	2483.371 – 5365.1	$1s2p - 2p^2$	$^1P^\circ - ^1D$	1 – 2		235
4	100	34.9728	0.0 – 2859.375	$1s^2 - 1s3p$	$g^1S - ^1P^\circ$	0 – 1		212
3		35.070	0.0 – 2851.418	$1s^2 - 1s3p$	$g^1S - ^3P^\circ$	0 – 1	P	510
2	500	40.2680	0.0 – 2483.371	$1s^2 - 1s2p$	$g^1S - ^1P^\circ$	0 – 1		212
1	30	40.7306	0.0 – 2455.148	$1s^2 - 1s2p$	$g^1S - ^3P^\circ$	0 – 1		212
		41.472	0.0 – 2411.262	$1s^2 - 1s2s$	$g^1S - ^3S$	0 – 1	F	277,510
		138.2	2411.262 – 3134.86	$1s2s - 1s10p$	$^3S - ^3P^\circ$	1 – 1	P	262
		139.5	2411.262 – 3128.12	$1s2s - 1s9p$	$^3S - ^3P^\circ$	1 – 1	P	262
		141.27	2411.262 – 3119.212	$1s2s - 1s8p$	$^3S - ^3P^\circ$	1 – 1	P	262
		143.94	2411.262 – 3105.933	$1s2s - 1s7p$	$^3S - ^3P^\circ$	1 – 1		262
		147.1	2455.284 – 3135.06	$1s2p - 1s10d$	$^3P^\circ - ^3D$	2 – 3	P	262
		148.35	2411.262 – 3085.435	$1s2s - 1s6p$	$^3S - ^3P^\circ$	1 – 1		262
		148.5	2455.284 – 3128.65	$1s2p - 1s9d$	$^3P^\circ - ^3D$	2 – 3	P	262
		150.55	2455.284 – 3119.507	$1s2p - 1s8d$	$^3P^\circ - ^3D$	2 – 3	P	262
		153.53	2455.148 – 3106.374	$1s2p - 1s7d$	$^3P^\circ - ^3D$	1 – 2		262
15	4	156.233	2411.262 – 3051.332	$1s2s - 1s5p$	$^3S - ^3P^\circ$	1 – 1		212
		157.2	2483.371 – 3119.53	$1s2p - 1s8d$	$^1P^\circ - ^1D$	1 – 2	P	262
20		158.374	2455.024 – 3086.439	$1s2s - 1s6p$	$^1S - ^1P^\circ$	0 – 1	P	510
		158.47	2455.284 – 3086.138	$1s2p - 1s6d$	$^3P^\circ - ^3D$	2 – 3		262
		160.53	2483.371 – 3106.407	$1s2p - 1s7d$	$^1P^\circ - ^1D$	1 – 2	P	262
		165.91	2483.371 – 3086.189	$1s2p - 1s6d$	$^1P^\circ - ^1D$	1 – 2	P	262
19		167.218	2455.024 – 3053.044	$1s2s - 1s5p$	$^1S - ^1P^\circ$	0 – 1	P	510
24	4	167.402	2455.284 – 3052.589	$1s2p - 1s5d$	$^3P^\circ - ^3D$	2 – 3		212
14	10	173.281	2411.262 – 2988.359	$1s2s - 1s4p$	$^3S - ^3P^\circ$	1 – 1		212

C V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		175.67	2483.371 – 3052.656	1s2p – 1s5d	$^1P^o - ^1D$	1 – 2		262
18		186.329	2455.024 – 2991.71	1s2s – 1s4p	$^1S - ^1P^o$	0 – 1	P	510
23	30	186.697	2455.148 – 2990.776	1s2p – 1s4d	$^3P^o - ^3D$	1 – 2		212
23	30	186.745	2455.284 – 2990.776	1s2p – 1s4d	$^3P^o - ^3D$	2 – 3		212
26	4	197.024	2483.371 – 2990.923	1s2p – 1s4d	$^1P^o - ^1D$	1 – 2		212
13	100	227.192	2411.262 – 2851.418	1s2s – 1s3p	$^3S - ^3P^o$	1 – 1		212
17		247.31	2455.024 – 2859.375	1s2s – 1s3p	$^1S - ^1P^o$	0 – 1		212
22	200	248.661	2455.148 – 2857.305	1s2p – 1s3d	$^3P^o - ^3D$	1 – 2		212
22	200	248.738	2455.284 – 2857.315	1s2p – 1s3d	$^3P^o - ^3D$	2 – 3		212
21	4	260.136	2455.148 – 2839.562	1s2p – 1s3s	$^3P^o - ^3S$	1 – 1		212
21	4	260.229	2455.284 – 2839.562	1s2p – 1s3s	$^3P^o - ^3S$	2 – 1		212
25	30	267.267	2483.371 – 2857.529	1s2p – 1s3d	$^1P^o - ^1D$	1 – 2		212
		436.94	2857.315 – 3086.1860	1s3d – 1s6f	$^3D - ^3F^o$	3 – 4	P	087
		437.37	2857.529 – 3086.1860	1s3d – 1s6f	$^1D - ^1F^o$	2 – 3	P	087
29		472.21	2839.562 – 3051.332	1s3s – 1s5p	$^3S - ^3P^o$	1 – 2	P	510
33		497.09	2851.418 – 3052.589	1s3p – 1s5d	$^3P^o - ^3D$	2 – 3	P	510
32		506.31	2851.418 – 3048.927	1s3p – 1s5s	$^3P^o - ^3S$	2 – 1	P	510
		511.94	2857.315 – 3052.6533	1s3d – 1s5f	$^3D - ^3F^o$	3 – 4	P	087
		512.54	2857.529 – 3052.6533	1s3d – 1s5f	$^1D - ^1F^o$	2 – 3	P	087
28		672.06	2839.562 – 2988.359	1s3s – 1s4p	$^3S - ^3P^o$	1 – 2	P	510
		711.59	2851.18 – 2991.71	1s3s – 1s4p	$^1S - ^1P^o$	0 – 1	P	375
31		717.58	2851.418 – 2990.776	1s3p – 1s4d	$^3P^o - ^3D$	2 – 3	P	510
	0	728.1	2990.776 – 3128.12	1s4d – 1s9p	$^3D - ^3P^o$	3 – 2		565
35		748.43	2857.315 – 2990.9234	1s3d – 1s4f	$^3D - ^3F^o$	3 – 4	P	510
36		749.66	2857.529 – 2990.9234	1s3d – 1s4f	$^1D - ^1F^o$	2 – 3	P	510
30		756.87	2851.418 – 2983.541	1s3p – 1s4s	$^3P^o - ^3S$	2 – 1	P	510
37		760.18	2859.375 – 2990.923	1s3p – 1s4d	$^1P^o - ^1D$	1 – 2	P	510
34		763.07	2857.315 – 2988.359	1s3d – 1s4p	$^3D - ^3P^o$	3 – 2	P	510
38		1619.80	2990.9234 – 3052.6594	1s4f – 1s5g	$^3F^o - ^3G$	4 – 5	P	510

CARBON VI (C^{5+}), Z = 6
Ground State 1s($^2S_{1/2}$) (1 electron)
Ionization Potential 3 952 061.52 cm^{-1}; 489.997 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		25.559	0.0 – 3912.5546783	1s – 10p	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309
		25.619	0.0 – 3903.2872869	1s – 9p	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309
		25.705	0.0 – 3890.3311015	1s – 8p	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309
		25.830	0.0 – 3871.4332107	1s – 7p	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309
		26.026	0.0 – 3842.3160935	1s – 6p	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309
4		26.357	0.0 – 3794.0258393	1s – 5p	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309
3	10	26.990	0.0 – 3705.1269361	1s – 4p	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309,765
2	30	28.466	0.0 – 3513.0623593	1s – 3p	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309,765
1	65	33.734	0.0 – 2964.3530120	1s – 2p	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309,197
1	35	33.740	0.0 – 2963.8780460	1s – 2p	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{1}{2}$	P	309,197
		105.413	2963.9041850 – 3912.5546783	2s – 10p	$^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309
		105.463	2964.3530120 – 3912.5559372	2p – 10d	$^2P^o - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		106.453	2963.9041850 – 3903.2872869	2s – 9p	$^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309
		106.504	2964.3530120 – 3903.2890139	2p – 9d	$^2P^o - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		107.942	2963.9041850 – 3890.3311015	2s – 8p	$^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309
		107.994	2964.3530120 – 3890.3335604	2p – 8d	$^2P^o - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		110.189	2963.9041850 – 3871.4332107	2s – 7p	$^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309
		110.243	2964.3530120 – 3871.4368812	2p – 7d	$^2P^o - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309

C VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		113.842	2963.9041850 – 3842.3160935	2s – 6p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		113.899	2964.3530120 – 3842.3219224	2p – 6d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		120.464	2963.9041850 – 3794.0258393	2s – 5p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		120.528	2964.3530120 – 3794.0359122	2p – 5d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		134.912	2963.9041850 – 3705.1269361	2s – 4p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		134.990	2964.3530120 – 3705.1466104	2p – 4d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		182.097	2963.9041850 – 3513.0623593	2s – 3p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		182.230	2964.3530120 – 3513.1089958	2p – 3d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		250.234	3512.9294300 – 3912.5546783	3s – 10p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		250.317	3513.0623593 – 3912.5559372	3p – 10d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		250.346	3513.1089958 – 3912.5565675	3d – 10f	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		256.175	3512.9294300 – 3903.2872869	3s – 9p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		256.261	3513.0623593 – 3903.2890139	3p – 9d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		256.291	3513.1089958 – 3903.2898785	3d – 9f	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		264.970	3512.9294300 – 3890.3311015	3s – 8p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		265.061	3513.0623593 – 3890.3335604	3p – 8d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		265.093	3513.1089958 – 3890.3347916	3d – 8f	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		278.937	3512.9294300 – 3871.4332107	3s – 7p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		279.038	3513.0623593 – 3871.4368812	3p – 7d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		279.073	3513.1089958 – 3871.4387190	3d – 7f	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		303.595	3512.9294300 – 3842.3160935	3s – 6p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		303.712	3513.0623593 – 3842.3219224	3p – 6d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		303.752	3513.1089958 – 3842.3248407	3d – 6f	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		355.750	3512.9294300 – 3794.0258393	3s – 5p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		355.906	3513.0623593 – 3794.0359122	3p – 5d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		355.958	3513.1089958 – 3794.0409551	3d – 5f	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		481.965	3705.0708687 – 3912.5546783	4s – 10p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		482.093	3705.1269361 – 3912.5559372	4p – 10d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		482.137	3705.1466104 – 3912.5565675	4d – 10f	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		504.499	3705.0708687 – 3903.2872869	4s – 9p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		504.638	3705.1269361 – 3903.2890139	4p – 9d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		504.685	3705.1466104 – 3903.2898785	4d – 9f	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		520.298	3512.9294300 – 3705.1269361	3s – 4p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		520.605	3513.0623593 – 3705.1466104	3p – 4d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		520.704	3513.1089958 – 3705.1564598	3d – 4f	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		539.781	3705.0708687 – 3890.3311015	4s – 8p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		539.938	3705.1269361 – 3890.3335604	4p – 8d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		539.991	3705.1466104 – 3890.3347916	4d – 8f	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		601.098	3705.0708687 – 3871.4332107	4s – 7p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		601.287	3705.1269361 – 3871.4368812	4p – 7d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		601.352	3705.1466104 – 3871.4387190	4d – 7f	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		728.623	3705.0708687 – 3842.3160935	4s – 6p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		728.890	3705.1269361 – 3842.3219224	4p – 6d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		728.978	3705.1466104 – 3842.3248407	4d – 6f	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		843.473	3793.9971367 – 3912.5546783	5s – 10p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		843.668	3794.0258393 – 3912.5559372	5p – 10d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		843.734	3794.0359122 – 3912.5565675	5d – 10f	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		914.996	3793.9971367 – 3903.2872869	5s – 9p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		915.222	3794.0258393 – 3903.2890139	5p – 9d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		915.298	3794.0359122 – 3903.2898785	5d – 9f	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		1038.056	3793.9971367 – 3890.3311015	5s – 8p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		1038.339	3794.0258393 – 3890.3335604	5p – 8d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		1038.434	3794.0359122 – 3890.3347916	5d – 8f	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		1124.164	3705.0708687 – 3794.0258393	4s – 5p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309

C VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		1124.747	3705.1269361 – 3794.0359122	4p – 5d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		1124.930	3705.1466104 – 3794.0409551	4d – 5f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		1291.389	3793.9971367 – 3871.4332107	5s – 7p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		1291.806	3794.0258393 – 3871.4368812	5p – 7d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		1291.943	3794.0359122 – 3871.4387190	5d – 7f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309

NITROGEN I (N^{0+}), Z = 7
Ground State $1s^22s^22p^3(^4S^\circ_{3/2})$ (7 electrons)
Ionization Potential 117 225.4 cm^{-1}; 14.534 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		611.998	0. – 163.399	$2s^22p^3 - 2s2p^3(^5S^\circ)14p$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$	A	460
		612.378	0. – 163.298	$2s^22p^3 - 2s2p^3(^5S^\circ)13p$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$	A	460
3	1	612.883	0. – 163.163	$2s^22p^3 - 2s2p^3(^5S^\circ)12p$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$	A	460
3	2	613.500	0. – 162.999	$2s^22p^3 - 2s2p^3(^5S^\circ)11p$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$	A	460
3	2	614.364	0. – 162.770	$2s^22p^3 - 2s2p^3(^5S^\circ)10p$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$	A	460
3		615.627	0. – 162.436	$2s^22p^3 - 2s2p^3(^5S^\circ)9p$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$	A	460
3	3	617.265	0. – 162.005	$2s^22p^3 - 2s2p^3(^5S^\circ)8p$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$	A	460
3	4	619.847	0. – 161.330	$2s^22p^3 - 2s2p^3(^5S^\circ)7p$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$	A	460
3	4	624.059	0. – 160.241	$2s^22p^3 - 2s2p^3(^5S^\circ)6p$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$	A	460
3	8	631.624	0. – 158.322	$2s^22p^3 - 2s2p^3(^5S^\circ)5p$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$	A	460
3	14	647.505	0. – 154.439	$2s^22p^3 - 2s2p^3(^5S^\circ)4p$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$	A	460
3	35	692.70	0. – 144.360	$2s^22p^3 - 2s2p^3(^5S^\circ)3p$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$	A	460
	2	857.77	0. – 116.581	$2s^22p^3 - 2s^22p^2(^3P)12d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		334
	2	858.80	0. – 116.441	$2s^22p^3 - 2s^22p^2(^3P)11d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		334
	3	859.35	0. – 116.367	$2s^22p^3 - 2s^22p^2(^3P)11d$	$g^4S^\circ - {}^4D$	$\frac{3}{2}-\frac{5}{2}$		334
	2	859.76	0. – 116.312	$2s^22p^3 - 2s^22p^2(^3P)12s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		334
3		860.004	0. – 116.278558	$2s^22p^3 - 2s^22p^2(^1S)3s$	$g^4S^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	P	521
	4	860.15	0. – 116.259	$2s^22p^3 - 2s^22p^2(^3P)10d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		334
	4	860.85	0. – 116.164	$2s^22p^3 - 2s^22p^2(^3P)10d$	$g^4S^\circ - {}^4D$	$\frac{3}{2}-\frac{5}{2}$		334
	1	861.15	0. – 116.124	$2s^22p^3 - 2s^22p^2(^3P)11s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		334
	5	862.14	0. – 115.99	$2s^22p^3 - 2s^22p^2(^3P)9d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		334
	5	862.91	0. – 115.887	$2s^22p^3 - 2s^22p^2(^3P)9d$	$g^4S^\circ - {}^4D$	$\frac{3}{2}-\frac{5}{2}$		334
	3	862.99	0. – 115.8765	$2s^22p^3 - 2s^22p^2(^3P)10s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$	P	334
	5	864.868	0. – 115.6269	$2s^22p^3 - 2s^22p^2(^3P)8d$	$g^4S^\circ - {}^4D$	$\frac{3}{2}-\frac{5}{2}$		224
	5	865.65	28.839306 – 144.360	$2s^22p^3 - 2s2p^3(^5S^\circ)3p$	${}^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$	P	334
	3	865.95	0. – 115.48	$2s^22p^3 - 2s^22p^2(^3P)9s$	$g^4S^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$	P	334
	8	868.860	0. – 115.0945	$2s^22p^3 - 2s^22p^2(^3P)7d$	$g^4S^\circ - {}^4D$	$\frac{3}{2}-\frac{3}{2}$		224
	4	869.413	0. – 115.0213	$2s^22p^3 - 2s^22p^2(^3P)8s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		224
3	4	869.424	0. – 115.0187	$2s^22p^3 - 2s^22p^2(^3P)7d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$	P	521
3		869.482	0. – 115.0110	$2s^22p^3 - 2s^22p^2(^3P)7d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$	P	521
	6	869.546	0. – 115.0030	$2s^22p^3 - 2s^22p^2(^3P)7d$	$g^4S^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$		224
	4	869.878	0. – 114.9590	$2s^22p^3 - 2s^22p^2(^3P)7d$	$g^4S^\circ - {}^4F$	$\frac{3}{2}-\frac{5}{2}$		224
3		869.925	0. – 114.9525	$2s^22p^3 - 2s^22p^2(^3P)7d$	$g^4S^\circ - {}^4F$	$\frac{3}{2}-\frac{3}{2}$	P	521
	5	870.029	0. – 114.9391	$2s^22p^3 - 2s^22p^2(^3P)8s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		224
3	3	870.367	0. – 114.8940	$2s^22p^3 - 2s^22p^2(^3P)8s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$	P	521
3	3	870.37	0. – 114.8940	$2s^22p^3 - 2s^22p^2(^3P)8s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$	P	334
	4	874.934	0. – 114.2935	$2s^22p^3 - 2s^22p^2(^3P)6d$	$g^4S^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		224
3		875.067	0. – 114.2770	$2s^22p^3 - 2s^22p^2(^3P)6d$	$g^4S^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$	P	521
	10	875.100	0. – 114.2726	$2s^22p^3 - 2s^22p^2(^3P)6d$	$g^4S^\circ - {}^4D$	$\frac{3}{2}-\frac{3}{2}$		224
3		875.277	0. – 114.2495	$2s^22p^3 - 2s^22p^2(^3P)6d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$	P	521
	2	875.598	0. – 114.2061	$2s^22p^3 - 2s^22p^2(^3P)7s$	$g^4S^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		224
	6	875.656	0. – 114.2000	$2s^22p^3 - 2s^22p^2(^3P)6d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		224
	6	875.721	0. – 114.1916	$2s^22p^3 - 2s^22p^2(^3P)6d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		224
	6	875.791	0. – 114.1827	$2s^22p^3 - 2s^22p^2(^3P)6d$	$g^4S^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$		224
	7	876.066	0. – 114.146525	$2s^22p^3 - 2s^22p^2(^3P)7s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		224
	6	876.172	0. – 114.1327	$2s^22p^3 - 2s^22p^2(^3P)6d$	$g^4S^\circ - {}^4F$	$\frac{3}{2}-\frac{5}{2}$		224
3		876.238	0. – 114.1242	$2s^22p^3 - 2s^22p^2(^3P)6d$	$g^4S^\circ - {}^4F$	$\frac{3}{2}-\frac{3}{2}$	P	521
3		876.331	0. – 114.1121	$2s^22p^3 - 2s^22p^2(^3P)7s$	$g^4S^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$	P	521
	6	876.645	0. – 114.071153	$2s^22p^3 - 2s^22p^2(^3P)7s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		224
	5	876.987	0. – 114.026654	$2s^22p^3 - 2s^22p^2(^3P)7s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		224
3	5	885.380	0. – 112.945809	$2s^22p^3 - 2s^22p^2(^3P)5d$	$g^4S^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	521
	5	885.387	0. – 112.945809	$2s^22p^3 - 2s^22p^2(^3P)5d$	$g^4S^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		214
3		885.527	0. – 112.927055	$2s^22p^3 - 2s^22p^2(^3P)5d$	$g^4S^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$	P	521
3	10	885.656	0. – 112.910630	$2s^22p^3 - 2s^22p^2(^3P)5d$	$g^4S^\circ - {}^4D$	$\frac{3}{2}-\frac{5}{2}$	P	521

N I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
3	5	885.668	0. – 112.909076	$2s^22p^3 - 2s^22p^2(^3P)5d$	$g^4S° - ^4D$	$\frac{3}{2}-\frac{3}{2}$	P	521
3		885.704	0.0 – 112.9045	$2s^22p^3 - 2s^22p^2(^3P)5d$	$g^4S° - ^4D$	$\frac{3}{2}-\frac{1}{2}$	P	521
	6	885.973	0. – 112.87027	$2s^22p^3 - 2s^22p^2(^3P)5d$	$g^4S° - ^4P$	$\frac{3}{2}-\frac{1}{2}$		214
	9	886.226	0. – 112.83802	$2s^22p^3 - 2s^22p^2(^3P)5d$	$g^4S° - ^4P$	$\frac{3}{2}-\frac{3}{2}$		214
	8	886.332	0. – 112.824459	$2s^22p^3 - 2s^22p^2(^3P)5d$	$g^4S° - ^4P$	$\frac{3}{2}-\frac{5}{2}$		214
	8	886.428	0. – 112.812518	$2s^22p^3 - 2s^22p^2(^3P)5d$	$g^4S° - ^2F$	$\frac{3}{2}-\frac{5}{2}$		214
3		886.465	0. – 112.807567	$2s^22p^3 - 2s^22p^2(^3P)5d$	$g^4S° - ^2P$	$\frac{3}{2}-\frac{1}{2}$	P	521
3		886.517	0. – 112.801031	$2s^22p^3 - 2s^22p^2(^3P)5d$	$g^4S° - ^2P$	$\frac{3}{2}-\frac{3}{2}$	P	521
	6	886.829	0. – 112.760325	$2s^22p^3 - 2s^22p^2(^3P)5d$	$g^4S° - ^4F$	$\frac{3}{2}-\frac{5}{2}$		214
3		886.840	0. – 112.759966	$2s^22p^3 - 2s^22p^2(^3P)5d$	$g^4S° - ^4F$	$\frac{3}{2}-\frac{3}{2}$	P	521
	4	887.016	0. – 112.736961	$2s^22p^3 - 2s^22p^2(^3P)6s$	$g^4S° - ^2P$	$\frac{3}{2}-\frac{3}{2}$		214
3	4	887.375	0. – 112.691961	$2s^22p^3 - 2s^22p^2(^3P)6s$	$g^4S° - ^2P$	$\frac{3}{2}-\frac{1}{2}$	P	521
	11	887.457	0. – 112.681389	$2s^22p^3 - 2s^22p^2(^3P)6s$	$g^4S° - ^4P$	$\frac{3}{2}-\frac{5}{2}$		214
	10	888.022	0. – 112.609612	$2s^22p^3 - 2s^22p^2(^3P)6s$	$g^4S° - ^4P$	$\frac{3}{2}-\frac{3}{2}$		214
	8	888.372	0. – 112.565470	$2s^22p^3 - 2s^22p^2(^3P)6s$	$g^4S° - ^4P$	$\frac{3}{2}-\frac{1}{2}$		214
	6	905.223	0. – 110.470244	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S° - ^2D$	$\frac{3}{2}-\frac{5}{2}$		214
3	2	905.411	0. – 110.447032	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S° - ^2D$	$\frac{3}{2}-\frac{3}{2}$	P	334
	11	905.787	0. – 110.401356	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S° - ^4D$	$\frac{3}{2}-\frac{5}{2}$		214
	12	905.839	0. – 110.395463	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S° - ^4D$	$\frac{3}{2}-\frac{3}{2}$		214
	11	905.916	0. – 110.385795	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S° - ^4D$	$\frac{3}{2}-\frac{1}{2}$		214
	11	906.206	0. – 110.350014	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S° - ^4P$	$\frac{3}{2}-\frac{1}{2}$		214
	13	906.433	0. – 110.322721	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S° - ^4P$	$\frac{3}{2}-\frac{3}{2}$		214
	12	906.617	0. – 110.299974	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S° - ^4P$	$\frac{3}{2}-\frac{5}{2}$		214
	12	906.730	0. – 110.286305	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S° - ^2F$	$\frac{3}{2}-\frac{5}{2}$		214
3	2	907.069	0. – 110.245183	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S° - ^2P$	$\frac{3}{2}-\frac{1}{2}$	P	521
3		907.275	0. – 110.220107	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S° - ^2P$	$\frac{3}{2}-\frac{3}{2}$	P	521
	7	907.337	0. – 110.212396	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S° - ^4F$	$\frac{3}{2}-\frac{5}{2}$		214
3		907.485	0. – 110.194654	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S° - ^4F$	$\frac{3}{2}-\frac{3}{2}$	P	521
3	3	908.2332	0. – 110.103834	$2s^22p^3 - 2s^22p^2(^3P)5s$	$g^4S° - ^2P$	$\frac{3}{2}-\frac{3}{2}$		376
3	1	908.7958	0. – 110.035720	$2s^22p^3 - 2s^22p^2(^3P)5s$	$g^4S° - ^2P$	$\frac{3}{2}-\frac{1}{2}$		376
3	9	909.6976	0. – 109.926661	$2s^22p^3 - 2s^22p^2(^3P)5s$	$g^4S° - ^4P$	$\frac{3}{2}-\frac{5}{2}$	ST	306,376
3	6	910.2785	0. – 109.856520	$2s^22p^3 - 2s^22p^2(^3P)5s$	$g^4S° - ^4P$	$\frac{3}{2}-\frac{3}{2}$	ST	306,376
3	5	910.6456	0. – 109.812233	$2s^22p^3 - 2s^22p^2(^3P)5s$	$g^4S° - ^4P$	$\frac{3}{2}-\frac{1}{2}$	ST	306,376
3	5	951.0791	0. – 105.143710	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S° - ^2D$	$\frac{3}{2}-\frac{5}{2}$		376
3	3	951.2947	0. – 105.119880	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S° - ^2D$	$\frac{3}{2}-\frac{3}{2}$		376
3	18	952.3037	0. – 105.00855	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S° - ^4D$	$\frac{3}{2}-\frac{5}{2}$	ST	306,376
3	14	952.4151	0. – 104.99627	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S° - ^4D$	$\frac{3}{2}-\frac{3}{2}$	ST	306,376
3	10	952.5231	0. – 104.98437	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S° - ^4D$	$\frac{3}{2}-\frac{1}{2}$	ST	306,376
3	25	953.4150	0. – 104.88610	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S° - ^4P$	$\frac{3}{2}-\frac{1}{2}$		376
3	27	953.6548	0. – 104.85973	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S° - ^4P$	$\frac{3}{2}-\frac{3}{2}$		376
3	30	953.9698	0. – 104.825110	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S° - ^4P$	$\frac{3}{2}-\frac{5}{2}$		376
	30	954.1040	0. – 104.810360	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S° - ^2F$	$\frac{3}{2}-\frac{5}{2}$		376
3	4	955.2647	0. – 104.683060	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S° - ^4F$	$\frac{3}{2}-\frac{5}{2}$	ST	306,334
3	4	955.4376	0. – 104.664130	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S° - ^4F$	$\frac{3}{2}-\frac{3}{2}$	ST	306,334
3	3	955.5292	0. – 104.654030	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S° - ^2P$	$\frac{3}{2}-\frac{1}{2}$		376
3	5	955.8814	0. – 104.615470	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S° - ^2P$	$\frac{3}{2}-\frac{3}{2}$		376
3	5	959.4936	0. – 104.221630	$2s^22p^3 - 2s^22p^2(^3P)4s$	$g^4S° - ^2P$	$\frac{3}{2}-\frac{3}{2}$		376
3		960.2017	0. – 104.144820	$2s^22p^3 - 2s^22p^2(^3P)4s$	$g^4S° - ^2P$	$\frac{3}{2}-\frac{1}{2}$		197,487
3	25	963.9904	0. – 103.73548	$2s^22p^3 - 2s^22p^2(^3P)4s$	$g^4S° - ^4P$	$\frac{3}{2}-\frac{5}{2}$	ST	308,376
3	23	964.6258	0. – 103.66716	$2s^22p^3 - 2s^22p^2(^3P)4s$	$g^4S° - ^4P$	$\frac{3}{2}-\frac{3}{2}$	ST	308,376
3	23	965.0415	0. – 103.62251	$2s^22p^3 - 2s^22p^2(^3P)4s$	$g^4S° - ^4P$	$\frac{3}{2}-\frac{1}{2}$	ST	308,376
	6	1000.183	19.224464 – 119.2100	$2s^22p^3 - 2s^22p^2(^1D)4s$	$^2D° - ^2D$	$\frac{5}{2}-\frac{3}{2}$		224
	2	1028.68	19.224464 – 116.436	$2s^22p^3 - 2s^22p^2(^3P)11d$	$^2D° - ^2D$	$\frac{5}{2}-\frac{5}{2}$	P	334
	1	1029.50	19.224464 – 116.359	$2s^22p^3 - 2s^22p^2(^3P)11d$	$^2D° - ^2F$	$\frac{5}{2}-\frac{7}{2}$	P	334

N I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
7		1030.446	19.233177 – 116.278558	$2s^22p^3 - 2s^22p^2(^1S)3s$	$^2D^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$	P	521
	2	1030.76	19.224464 – 116.24	$2s^22p^3 - 2s^22p^2(^3P)10d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$	P	334
	2	1031.62	19.224464 – 116.159	$2s^22p^3 - 2s^22p^2(^3P)10d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$	P	334
	1	1032.18	19.224464 – 116.107	$2s^22p^3 - 2s^22p^2(^3P)11s$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$	P	334
	3	1033.42	19.224464 – 115.991	$2s^22p^3 - 2s^22p^2(^3P)9d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$	P	191,334
	0	1033.70	19.233177 – 115.973	$2s^22p^3 - 2s^22p^2(^3P)9d$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$	P	334
	2	1034.37	19.224464 – 115.902	$2s^22p^3 - 2s^22p^2(^3P)9d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$	P	334
	0	1034.67	19.224464 – 115.8765	$2s^22p^3 - 2s^22p^2(^3P)10s$	$^2D^\circ - ^4P$	$\frac{5}{2}-\frac{3}{2}$	P	334
	1	1035.00	19.224464 – 115.842	$2s^22p^3 - 2s^22p^2(^3P)10s$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$	P	334
	5	1037.382	19.224464 – 115.6206	$2s^22p^3 - 2s^22p^2(^3P)8d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		224
	1	1037.64	19.224464 – 115.597	$2s^22p^3 - 2s^22p^2(^3P)8d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{3}{2}$	P	334
	3	1038.28	19.224464 – 115.5378	$2s^22p^3 - 2s^22p^2(^3P)8d$	$^2D^\circ - ^4F$	$\frac{5}{2}-\frac{7}{2}$	P	334
7		1038.366	19.233177 – 115.5384	$2s^22p^3 - 2s^22p^2(^3P)8d$	$^2D^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$	P	521
	1	1038.73	19.224464 – 115.4955	$2s^22p^3 - 2s^22p^2(^3P)8d$	$^2D^\circ - ^4F$	$\frac{5}{2}-\frac{5}{2}$	P	334
	1	1038.90	19.224464 – 115.48	$2s^22p^3 - 2s^22p^2(^3P)9s$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$	P	334
	8	1043.080	19.224464 – 115.0944	$2s^22p^3 - 2s^22p^2(^3P)7d$	$^2D^\circ - ^4D$	$\frac{5}{2}-\frac{7}{2}$		224
	8	1043.166	19.224464 – 115.0869	$2s^22p^3 - 2s^22p^2(^3P)7d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		224
	6	1043.739	19.224464 – 115.0334	$2s^22p^3 - 2s^22p^2(^3P)8s$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		224
	6	1043.845	19.233177 – 115.0334	$2s^22p^3 - 2s^22p^2(^3P)8s$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		224
	6	1043.991	19.224464 – 115.0110	$2s^22p^3 - 2s^22p^2(^3P)7d$	$^2D^\circ - ^4P$	$\frac{5}{2}-\frac{5}{2}$		224
7		1044.069	19.224464 – 115.0036	$2s^22p^3 - 2s^22p^2(^3P)7d$	$^2D^\circ - ^4F$	$\frac{5}{2}-\frac{7}{2}$	P	521
	8	1044.087	19.233177 – 115.0099	$2s^22p^3 - 2s^22p^2(^3P)7d$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		224
7		1044.171	19.233177 – 115.0030	$2s^22p^3 - 2s^22p^2(^3P)7d$	$^2D^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$	P	521
	7	1044.188	19.224464 – 114.9928	$2s^22p^3 - 2s^22p^2(^3P)7d$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		224
7		1044.606	19.233177 – 114.9631	$2s^22p^3 - 2s^22p^2(^3P)8s$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$	P	521
	8	1044.633	19.224464 – 114.9525	$2s^22p^3 - 2s^22p^2(^3P)7d$	$^2D^\circ - ^4F$	$\frac{5}{2}-\frac{3}{2}$		224
	7	1051.868	19.224464 – 114.2935	$2s^22p^3 - 2s^22p^2(^3P)6d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		224
	5	1051.956	19.233177 – 114.2935	$2s^22p^3 - 2s^22p^2(^3P)6d$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		224
	9	1052.082	19.224464 – 114.2741	$2s^22p^3 - 2s^22p^2(^3P)6d$	$^2D^\circ - ^4D$	$\frac{5}{2}-\frac{7}{2}$		224
	9	1052.215	19.224464 – 114.2621	$2s^22p^3 - 2s^22p^2(^3P)6d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		224
	8	1052.834	19.224464 – 114.2061	$2s^22p^3 - 2s^22p^2(^3P)7s$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		224
	6	1052.909	19.224464 – 114.2000	$2s^22p^3 - 2s^22p^2(^3P)6d$	$^2D^\circ - ^4P$	$\frac{5}{2}-\frac{3}{2}$		224
	11	1053.088	19.233177 – 114.1916	$2s^22p^3 - 2s^22p^2(^3P)6d$	$^2D^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		224
7	8	1053.184	19.233177 – 114.1835	$2s^22p^3 - 2s^22p^2(^3P)6d$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		224
	8	1053.184	19.224464 – 114.175736	$2s^22p^3 - 2s^22p^2(^3P)6d$	$^2D^\circ - ^4F$	$\frac{5}{2}-\frac{7}{2}$		224
7		1053.231	19.224464 – 114.1704	$2s^22p^3 - 2s^22p^2(^3P)6d$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$	P	521
7	5	1053.33	19.233177 – 114.1704	$2s^22p^3 - 2s^22p^2(^3P)6d$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$	P	334
7		1053.496	19.224464 – 114.146525	$2s^22p^3 - 2s^22p^2(^3P)7s$	$^2D^\circ - ^4P$	$\frac{5}{2}-\frac{5}{2}$	P	521
	7	1053.656	19.224464 – 114.1327	$2s^22p^3 - 2s^22p^2(^3P)6d$	$^2D^\circ - ^4F$	$\frac{5}{2}-\frac{5}{2}$		224
	7	1053.744	19.233177 – 114.1327	$2s^22p^3 - 2s^22p^2(^3P)6d$	$^2D^\circ - ^4F$	$\frac{3}{2}-\frac{5}{2}$		224
	12	1053.988	19.233177 – 114.1121	$2s^22p^3 - 2s^22p^2(^3P)7s$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		224
7	20	1054.333	19.224464 – 114.071153	$2s^22p^3 - 2s^22p^2(^3P)7s$	$^2D^\circ - ^4P$	$\frac{5}{2}-\frac{3}{2}$	P	521
7		1054.430	19.233177 – 114.071153	$2s^22p^3 - 2s^22p^2(^3P)7s$	$^2D^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$	P	521
	10	1066.992	19.224464 – 112.945809	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		214
7		1067.092	19.233177 – 112.945809	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	521
7		1067.206	19.224464 – 112.927055	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{3}{2}$	P	521
	8	1067.308	19.233177 – 112.927055	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		214
	10	1067.386	19.224464 – 112.911079	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2D^\circ - ^4D$	$\frac{5}{2}-\frac{7}{2}$		214
7	1	1067.399	19.224464 – 112.910630	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2D^\circ - ^4D$	$\frac{5}{2}-\frac{5}{2}$	P	521
7		1067.493	19.233177 – 112.910630	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2D^\circ - ^4D$	$\frac{3}{2}-\frac{5}{2}$	P	521
	15	1067.616	19.224464 – 112.891238	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		214
7		1067.953	19.233177 – 112.87027	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2D^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$	P	521
7		1068.221	19.224464 – 112.83802	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2D^\circ - ^4P$	$\frac{5}{2}-\frac{3}{2}$	P	521
7		1068.321	19.233177 – 112.83802	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2D^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$	P	521

N I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
7		1068.376	19.224464 – 112.824459	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2D^\circ - {}^4P$	5/2 – 5/2	P	521
	13	1068.477	19.233177 – 112.824459	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2D^\circ - {}^4P$	3/2 – 5/2		214
7	8	1068.512	19.224464 – 112.812518	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2D^\circ - {}^2F$	5/2 – 5/2	P	521
7	8	1068.612	19.233177 – 112.812518	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2D^\circ - {}^2F$	3/2 – 5/2	P	521,375
7	4	1068.644	19.224464 – 112.801031	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2D^\circ - {}^2P$	5/2 – 3/2	P	521,375
	2	1068.668	19.233177 – 112.807567	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2D^\circ - {}^2P$	3/2 – 1/2	P	521,375
7	10	1068.681	19.224464 – 112.797725	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2D^\circ - {}^4F$	5/2 – 7/2	P	521,375
	8	1069.110	19.224464 – 112.760325	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2D^\circ - {}^4F$	5/2 – 5/2		214
	9	1069.206	19.233177 – 112.760325	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2D^\circ - {}^4F$	3/2 – 5/2		214
	7	1069.374	19.224464 – 112.736961	$2s^22p^3 - 2s^22p^2(^3P)6s$	$^2D^\circ - {}^2P$	5/2 – 3/2		214
	6	1069.468	19.233177 – 112.736961	$2s^22p^3 - 2s^22p^2(^3P)6s$	$^2D^\circ - {}^2P$	3/2 – 3/2		214
	11	1069.990	19.233177 – 112.691961	$2s^22p^3 - 2s^22p^2(^3P)6s$	$^2D^\circ - {}^2P$	3/2 – 1/2		214
7		1070.012	19.224464 – 112.681389	$2s^22p^3 - 2s^22p^2(^3P)6s$	$^2D^\circ - {}^4P$	5/2 – 5/2	P	521
7		1070.111	19.233177 – 112.681389	$2s^22p^3 - 2s^22p^2(^3P)6s$	$^2D^\circ - {}^4P$	3/2 – 5/2	P	521
7	1	1070.821	19.224464 – 112.609612	$2s^22p^3 - 2s^22p^2(^3P)6s$	$^2D^\circ - {}^4P$	5/2 – 3/2		794,191
7		1070.834	19.224464 – 112.609612	$2s^22p^3 - 2s^22p^2(^3P)6s$	$^2D^\circ - {}^4P$	5/2 – 3/2	P	521
7		1070.935	19.233177 – 112.609612	$2s^22p^3 - 2s^22p^2(^3P)6s$	$^2D^\circ - {}^4P$	3/2 – 3/2	P	521
7		1071.441	19.233177 – 112.565470	$2s^22p^3 - 2s^22p^2(^3P)6s$	$^2D^\circ - {}^4P$	3/2 – 1/2	P	521
	13	1095.942	19.224464 – 110.470244	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^2D$	5/2 – 5/2		214
7		1096.046	19.233177 – 110.470244	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^2D$	3/2 – 5/2	P	521
7		1096.220	19.224464 – 110.447032	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^2D$	5/2 – 3/2	P	521
	11	1096.325	19.233177 – 110.447032	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^2D$	3/2 – 3/2		214
	13	1096.749	19.224464 – 110.403220	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^4D$	5/2 – 7/2		214
7		1096.769	19.224464 – 110.401356	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^4D$	5/2 – 5/2	P	521
7		1096.874	19.233177 – 110.401356	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^4D$	3/2 – 5/2	P	521
7		1096.945	19.233177 – 110.395463	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^4D$	3/2 – 3/2	P	521
	21	1097.237	19.224464 – 110.362462	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^2F$	5/2 – 7/2		214
7		1097.492	19.233177 – 110.350014	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^4P$	3/2 – 1/2	P	521
7		1097.716	19.224464 – 110.322721	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^4P$	5/2 – 3/2	P	521
7		1097.821	19.233177 – 110.322721	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^4P$	3/2 – 3/2	P	521
	8	1097.995	19.224464 – 110.299974	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^4P$	5/2 – 5/2		214
	17	1098.097	19.233177 – 110.299974	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^4P$	3/2 – 5/2		214
	17	1098.261	19.233177 – 110.286305	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^2F$	3/2 – 5/2		214
	12	1098.625	19.224464 – 110.247288	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^4F$	5/2 – 7/2		214
	6	1098.759	19.233177 – 110.245183	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^2P$	3/2 – 1/2		214
	9	1098.952	19.224464 – 110.220107	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^2P$	5/2 – 3/2		214
	8	1099.042	19.224464 – 110.212396	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^4F$	5/2 – 5/2		214
	13	1099.150	19.233177 – 110.212396	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^4F$	3/2 – 5/2		214
	8	1099.263	19.224464 – 110.194654	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^4F$	5/2 – 3/2		214
7	50	1100.3593	19.224464 – 110.103834	$2s^22p^3 - 2s^22p^2(^3P)5s$	$^2D^\circ - {}^2P$	5/2 – 3/2		376
7	15	1100.4649	19.233177 – 110.103834	$2s^22p^3 - 2s^22p^2(^3P)5s$	$^2D^\circ - {}^2P$	3/2 – 3/2		376
7	45	1101.2910	19.233177 – 110.035720	$2s^22p^3 - 2s^22p^2(^3P)5s$	$^2D^\circ - {}^2P$	3/2 – 1/2		376
7		1102.509	19.224464 – 109.926661	$2s^22p^3 - 2s^22p^2(^3P)5s$	$^2D^\circ - {}^4P$	5/2 – 5/2	P	521
7		1103.362	19.224464 – 109.856520	$2s^22p^3 - 2s^22p^2(^3P)5s$	$^2D^\circ - {}^4P$	5/2 – 3/2	P	521
7		1103.468	19.233177 – 109.856520	$2s^22p^3 - 2s^22p^2(^3P)5s$	$^2D^\circ - {}^4P$	3/2 – 3/2	P	521
7		1104.008	19.233177 – 109.812233	$2s^22p^3 - 2s^22p^2(^3P)5s$	$^2D^\circ - {}^4P$	3/2 – 1/2	P	521
	6	1106.547	28.838920 – 119.2100	$2s^22p^3 - 2s^22p^2(^1D)4s$	$^2P^\circ - {}^2D$	1/2 – 3/2		224
2	560	1134.1651	0. – 88.170570	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - {}^4P$	3/2 – 1/2		376
2	550	1134.4147	0. – 88.151170	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - {}^4P$	3/2 – 3/2		376
2	780	1134.9801	0. – 88.107260	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - {}^4P$	3/2 – 5/2		376
	1	1139.14	28.839306 – 116.625	$2s^22p^3 - 2s^22p^2(^3P)12d$	$^2P^\circ - {}^2D$	3/2 – 5/2	P	334
	2	1140.74	28.839306 – 116.502	$2s^22p^3 - 2s^22p^2(^3P)12d$	$^2P^\circ - {}^2P$	3/2 – 3/2	P	334
	1	1141.19	28.839306 – 116.467	$2s^22p^3 - 2s^22p^2(^3P)13s$	$^2P^\circ - {}^2P$	3/2 – 3/2	P	334
	2	1141.60	28.839306 – 116.436	$2s^22p^3 - 2s^22p^2(^3P)11d$	$^2P^\circ - {}^2D$	3/2 – 5/2	P	334

N I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	2	1142.70	28.839306 – 116.351	$2s^22p^3 - 2s^22p^2(^3P)11d$	$^2P^o - ^2P$	$\frac{3}{2}-\frac{3}{2}$	P	334
	1	1143.31	28.839306 – 116.305	$2s^22p^3 - 2s^22p^2(^3P)12s$	$^2P^o - ^2P$	$\frac{3}{2}-\frac{3}{2}$	P	334
41	15	1143.6458	28.838920 – 116.278558	$2s^22p^3 - 2s^22p^2(^1S)3s$	$^2P^o - ^2S$	$\frac{1}{2}-\frac{1}{2}$		376
41	30	1143.6508	28.839306 – 116.278558	$2s^22p^3 - 2s^22p^2(^1S)3s$	$^2P^o - ^2S$	$\frac{3}{2}-\frac{1}{2}$		376
	2	1144.16	28.839306 – 116.24	$2s^22p^3 - 2s^22p^2(^3P)10d$	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	334
	2	1145.27	28.839306 – 116.155	$2s^22p^3 - 2s^22p^2(^3P)10d$	$^2P^o - ^2P$	$\frac{3}{2}-\frac{3}{2}$	P	334
	1	1145.90	28.839306 – 116.107	$2s^22p^3 - 2s^22p^2(^3P)11s$	$^2P^o - ^2P$	$\frac{3}{2}-\frac{3}{2}$	P	334
	4	1147.42	28.839306 – 115.991	$2s^22p^3 - 2s^22p^2(^3P)9d$	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	334
	4	1148.77	28.839306 – 115.889	$2s^22p^3 - 2s^22p^2(^3P)9d$	$^2P^o - ^2P$	$\frac{3}{2}-\frac{3}{2}$	P	334
	2	1149.39	28.839306 – 115.842	$2s^22p^3 - 2s^22p^2(^3P)10s$	$^2P^o - ^2P$	$\frac{3}{2}-\frac{3}{2}$	P	334
	4	1152.15	28.839306 – 115.6335	$2s^22p^3 - 2s^22p^2(^3P)8d$	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	334
	1	1152.63	28.838920 – 115.597	$2s^22p^3 - 2s^22p^2(^3P)8d$	$^2P^o - ^2D$	$\frac{1}{2}-\frac{3}{2}$	P	334
	2	1153.453	28.839306 – 115.5354	$2s^22p^3 - 2s^22p^2(^3P)8d$	$^2P^o - ^2P$	$\frac{3}{2}-\frac{3}{2}$		224
	3	1154.19	28.839306 – 115.48	$2s^22p^3 - 2s^22p^2(^3P)9s$	$^2P^o - ^2P$	$\frac{3}{2}-\frac{3}{2}$	P	334
	4	1159.193	28.839306 – 115.1062	$2s^22p^3 - 2s^22p^2(^3P)7d$	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$		224
	1	1159.273	28.838920 – 115.1000	$2s^22p^3 - 2s^22p^2(^3P)7d$	$^2P^o - ^2D$	$\frac{1}{2}-\frac{3}{2}$		224
	3	1159.344	28.839306 – 115.0946	$2s^22p^3 - 2s^22p^2(^3P)7d$	$^2P^o - ^4D$	$\frac{3}{2}-\frac{5}{2}$		224
1	4	1159.8172	0. – 86.220510	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^o - ^2P$	$\frac{3}{2}-\frac{3}{2}$		197,224
	1	1160.171	28.839306 – 115.0334	$2s^22p^3 - 2s^22p^2(^3P)8s$	$^2P^o - ^2P$	$\frac{3}{2}-\frac{3}{2}$		224
	3	1160.39	28.839306 – 115.0187	$2s^22p^3 - 2s^22p^2(^3P)7d$	$^2P^o - ^4P$	$\frac{3}{2}-\frac{3}{2}$	P	334
	1	1160.476	28.838920 – 115.0099	$2s^22p^3 - 2s^22p^2(^3P)7d$	$^2P^o - ^2P$	$\frac{1}{2}-\frac{1}{2}$		224
	2	1160.713	28.839306 – 114.9928	$2s^22p^3 - 2s^22p^2(^3P)7d$	$^2P^o - ^2P$	$\frac{3}{2}-\frac{3}{2}$		224
1	2	1160.9370	0. – 86.137350	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^o - ^2P$	$\frac{3}{2}-\frac{1}{2}$		197,224
	2	1161.118	28.838920 – 114.9631	$2s^22p^3 - 2s^22p^2(^3P)8s$	$^2P^o - ^2P$	$\frac{1}{2}-\frac{1}{2}$		224
7	150	1163.8835	19.224464 – 105.143710	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^2D$	$\frac{5}{2}-\frac{5}{2}$		376
7	30	1164.0016	19.233177 – 105.143710	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$		376
7	60	1164.2064	19.224464 – 105.119880	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^2D$	$\frac{5}{2}-\frac{3}{2}$		376
7	95	1164.3246	19.233177 – 105.119880	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^2D$	$\frac{3}{2}-\frac{3}{2}$		376
6	40	1165.5943	19.224464 – 105.017600	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^4D$	$\frac{5}{2}-\frac{7}{2}$		376
6		1165.717	19.224464 – 105.00855	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^4D$	$\frac{5}{2}-\frac{5}{2}$	P	521
6	15	1165.8358	19.233177 – 105.00855	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^4D$	$\frac{3}{2}-\frac{5}{2}$		376
6		1166.003	19.233177 – 104.99627	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^4D$	$\frac{3}{2}-\frac{3}{2}$	P	521
6	350	1167.4484	19.224464 – 104.881350	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^2F$	$\frac{5}{2}-\frac{7}{2}$		376
6		1167.502	19.233177 – 104.88610	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^4P$	$\frac{3}{2}-\frac{1}{2}$	P	521
6		1167.743	19.224464 – 104.85973	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^4P$	$\frac{5}{2}-\frac{3}{2}$	P	521
6		1167.862	19.233177 – 104.85973	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^4P$	$\frac{3}{2}-\frac{3}{2}$	P	521
6	50	1168.2154	19.224464 – 104.825110	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^4P$	$\frac{5}{2}-\frac{5}{2}$		376
6	200	1168.3344	19.233177 – 104.825110	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^4P$	$\frac{3}{2}-\frac{5}{2}$		376
6	60	1168.4167	19.224464 – 104.810360	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^2F$	$\frac{5}{2}-\frac{5}{2}$		376
6	300	1168.5358	19.233177 – 104.810360	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^2F$	$\frac{3}{2}-\frac{5}{2}$		376
5	80	1169.6933	19.224464 – 104.716950	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^4F$	$\frac{5}{2}-\frac{7}{2}$		376
5	10	1170.1572	19.224464 – 104.683060	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^4F$	$\frac{5}{2}-\frac{5}{2}$		376
	6	1170.220	28.839306 – 114.2935	$2s^22p^3 - 2s^22p^2(^3P)6d$	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$		224
5	80	1170.2766	19.233177 – 104.683060	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^4F$	$\frac{3}{2}-\frac{5}{2}$		376
5	5	1170.4165	19.224464 – 104.664130	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^4F$	$\frac{5}{2}-\frac{3}{2}$		376
	7	1170.432	28.838920 – 114.2770	$2s^22p^3 - 2s^22p^2(^3P)6d$	$^2P^o - ^2D$	$\frac{1}{2}-\frac{3}{2}$		224
34		1170.485	28.839306 – 114.2740	$2s^22p^3 - 2s^22p^2(^3P)6d$	$^2P^o - ^4D$	$\frac{3}{2}-\frac{5}{2}$	P	521
	3	1170.499	28.838920 – 114.2726	$2s^22p^3 - 2s^22p^2(^3P)6d$	$^2P^o - ^4D$	$\frac{1}{2}-\frac{3}{2}$		224
5		1170.536	19.233177 – 104.664130	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^4F$	$\frac{3}{2}-\frac{3}{2}$	P	521
5	20	1170.6743	19.233177 – 104.654030	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^2P$	$\frac{3}{2}-\frac{1}{2}$		376
	2	1170.815	28.838920 – 114.2495	$2s^22p^3 - 2s^22p^2(^3P)6d$	$^2P^o - ^4P$	$\frac{1}{2}-\frac{1}{2}$		224
5	60	1171.0834	19.224464 – 104.615470	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^2P$	$\frac{5}{2}-\frac{3}{2}$		376
	6	1171.418	28.839306 – 114.2061	$2s^22p^3 - 2s^22p^2(^3P)7s$	$^2P^o - ^2P$	$\frac{3}{2}-\frac{3}{2}$		224
	3	1171.502	28.839306 – 114.2000	$2s^22p^3 - 2s^22p^2(^3P)6d$	$^2P^o - ^4P$	$\frac{3}{2}-\frac{3}{2}$		224

N I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	4	1171.722	28.838920 – 114.1835	$2s^22p^3 - 2s^22p^2(^3P)6d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		224
	5	1171.904	28.839306 – 114.1704	$2s^22p^3 - 2s^22p^2(^3P)6d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		224
	3	1172.42	28.839306 – 114.1327	$2s^22p^3 - 2s^22p^2(^3P)6d$	$^2P^\circ - ^4F$	$\frac{3}{2}-\frac{5}{2}$	P	334
5	350	1176.5097	19.224464 – 104.221630	$2s^22p^3 - 2s^22p^2(^3P)4s$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		376
5	180	1176.6304	19.233177 – 104.221630	$2s^22p^3 - 2s^22p^2(^3P)4s$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		376
5	320	1177.6948	19.233177 – 104.144820	$2s^22p^3 - 2s^22p^2(^3P)4s$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		376
5		1183.278	19.224464 – 103.73548	$2s^22p^3 - 2s^22p^2(^3P)4s$	$^2D^\circ - ^4P$	$\frac{5}{2}-\frac{5}{2}$	P	521
5		1183.400	19.233177 – 103.73548	$2s^22p^3 - 2s^22p^2(^3P)4s$	$^2D^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$	P	521
5		1184.235	19.224464 – 103.66716	$2s^22p^3 - 2s^22p^2(^3P)4s$	$^2D^\circ - ^4P$	$\frac{5}{2}-\frac{3}{2}$	P	521
5		1184.357	19.233177 – 103.66716	$2s^22p^3 - 2s^22p^2(^3P)4s$	$^2D^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$	P	521
5		1184.984	19.233177 – 103.62251	$2s^22p^3 - 2s^22p^2(^3P)4s$	$^2D^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$	P	521
	14	1188.971	28.839306 – 112.945809	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		214
	14	1189.249	28.839306 – 112.927055	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		214
	5	1190.031	28.838920 – 112.87027	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2P^\circ - ^4P$	$\frac{1}{2}-\frac{1}{2}$		214
	6	1190.494	28.839306 – 112.83802	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		214
	2	1190.688	28.839306 – 112.824459	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		214
	6	1190.855	28.839306 – 112.812518	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2P^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		214
	8	1190.923	28.838920 – 112.807567	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		214
	12	1191.019	28.839306 – 112.801031	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		214
24	2	1191.603	28.839306 – 112.759966	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2P^\circ - ^4F$	$\frac{3}{2}-\frac{3}{2}$		214
23	8	1191.925	28.839306 – 112.736961	$2s^22p^3 - 2s^22p^2(^3P)6s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		214
	4	1192.563	28.838920 – 112.691961	$2s^22p^3 - 2s^22p^2(^3P)6s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		214
22	4	1192.718	28.839306 – 112.681389	$2s^22p^3 - 2s^22p^2(^3P)6s$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$	P	521
22		1193.735	28.839306 – 112.609612	$2s^22p^3 - 2s^22p^2(^3P)6s$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$	P	521
1	1000	1199.5490	0. – 83.364620	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$	ST	308,376
1	950	1200.2238	0. – 83.317830	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$	ST	308,376
1	700	1200.7113	0. – 83.284070	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$	ST	308,376
	21	1225.027	28.839306 – 110.470244	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		214
	20	1225.374	28.838920 – 110.447032	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		214
20		1226.060	28.839306 – 110.401356	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2P^\circ - ^4D$	$\frac{3}{2}-\frac{5}{2}$	P	521
20		1226.143	28.838920 – 110.395463	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2P^\circ - ^4D$	$\frac{1}{2}-\frac{3}{2}$	P	521
19	8	1226.833	28.839306 – 110.350014	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$	P	521
	7	1227.241	28.839306 – 110.322721	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		214
19		1227.586	28.839306 – 110.299974	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$	P	521
	8	1227.793	28.839306 – 110.286305	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2P^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		214
17	265	1228.4067	28.838920 – 110.245183	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$	P	521
17	225	1228.4125	28.839306 – 110.245183	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$	P	521
17	225	1228.7852	28.838920 – 110.220107	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$	P	521
17	325	1228.7911	28.839306 – 110.220107	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$	P	521
16		1228.907	28.839306 – 110.212396	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2P^\circ - ^4F$	$\frac{3}{2}-\frac{5}{2}$	P	521
	14	1229.174	28.839306 – 110.194654	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2P^\circ - ^4F$	$\frac{3}{2}-\frac{3}{2}$		214
15	40	1230.5434	28.838920 – 110.103834	$2s^22p^3 - 2s^22p^2(^3P)5s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$	P	521
15	40	1230.5492	28.839306 – 110.103834	$2s^22p^3 - 2s^22p^2(^3P)5s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$	P	521
15	120	1231.5756	28.838920 – 110.035720	$2s^22p^3 - 2s^22p^2(^3P)5s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$	P	521
15	120	1231.5815	28.839306 – 110.035720	$2s^22p^3 - 2s^22p^2(^3P)5s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$	P	521
14	4	1233.238	28.839306 – 109.926661	$2s^22p^3 - 2s^22p^2(^3P)5s$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$	P	521
14		1234.300	28.838920 – 109.856520	$2s^22p^3 - 2s^22p^2(^3P)5s$	$^2P^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$	P	521
5	50	1243.1711	19.224464 – 99.663912	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{3}{2}$	P	521
5	700	1243.1786	19.224464 – 99.663427	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$	P	521
5	600	1243.3058	19.233177 – 99.663912	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$	P	521
5	50	1243.3133	19.233177 – 99.663427	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$	P	521
13	200	1310.5401	28.839306 – 105.143710	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		376
13	150	1310.9429	28.838920 – 105.119880	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		376
13	25	1310.9495	28.839306 – 105.119880	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		376

N I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
12		1312.866	28.839306 – 105.00855	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^4D$	$\frac{3}{2}-\frac{5}{2}$	P	521
12		1313.071	28.838920 – 104.99627	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^4D$	$\frac{1}{2}-\frac{3}{2}$	P	521
12		1315.429	28.838920 – 104.85973	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$	P	521
12		1316.035	28.839306 – 104.825110	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$	P	521
12	2	1316.2906	28.839306 – 104.810360	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		376
12		1318.500	28.839306 – 104.683060	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^4F$	$\frac{3}{2}-\frac{5}{2}$	P	521
	5	1318.8224	28.838920 – 104.664130	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^4F$	$\frac{1}{2}-\frac{3}{2}$		376
12	12	1318.8293	28.839306 – 104.664130	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^4F$	$\frac{3}{2}-\frac{3}{2}$	P	521
12	150	1318.9981	28.838920 – 104.654030	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		376
12	80	1319.0048	28.839306 – 104.654030	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		376
12	50	1319.6693	28.838920 – 104.615470	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		376
12	250	1319.6760	28.839306 – 104.615470	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		376
11	10	1326.5639	28.838920 – 104.221630	$2s^22p^3 - 2s^22p^2(^3P)4s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		376
11	50	1326.5707	28.839306 – 104.221630	$2s^22p^3 - 2s^22p^2(^3P)4s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		376
11	25	1327.9170	28.838920 – 104.144820	$2s^22p^3 - 2s^22p^2(^3P)4s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		376
11	15	1327.9238	28.839306 – 104.144820	$2s^22p^3 - 2s^22p^2(^3P)4s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		376
10		1335.182	28.839306 – 103.73548	$2s^22p^3 - 2s^22p^2(^3P)4s$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$	P	521
10		1336.394	28.838920 – 103.66716	$2s^22p^3 - 2s^22p^2(^3P)4s$	$^2P^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$	P	521
10	150	1411.9318	28.838920 – 99.663912	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		376
10	30	1411.9395	28.839306 – 99.663912	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		376
10	300	1411.9494	28.839306 – 99.663427	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		376
4		1450.592	19.233177 – 88.170570	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$	P	521
4		1450.816	19.224464 – 88.151170	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^4P$	$\frac{5}{2}-\frac{3}{2}$	P	521
4		1451.000	19.233177 – 88.151170	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$	P	521
4		1451.741	19.224464 – 88.107260	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^4P$	$\frac{5}{2}-\frac{5}{2}$	P	521
4		1451.925	19.233177 – 88.107260	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$	P	521
4	620	1492.6254	19.224464 – 86.220510	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		376
4	100	1492.8195	19.233177 – 86.220510	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		376
4	400	1494.6751	19.233177 – 86.137350	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		376
3		1559.086	19.224464 – 83.364620	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - ^4P$	$\frac{5}{2}-\frac{5}{2}$	P	521
3		1559.298	19.233177 – 83.364620	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$	P	521
3		1560.224	19.224464 – 83.317830	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - ^4P$	$\frac{5}{2}-\frac{3}{2}$	P	521
3		1560.436	19.233177 – 83.317830	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$	P	521
3		1561.258	19.233177 – 83.284070	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$	P	521
	20	1592.61	95.532150 – 158.322	$2s^22p^2(^3P)3p - 2s2p^3(^5S^\circ)5p$	$^4P^\circ - ^4P$	$\frac{5}{2}-\frac{5}{2}$	P	191
9		1685.992	28.838920 – 88.151170	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$	P	521
9		1687.252	28.839306 – 88.107260	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$	P	521
9	50	1742.7189	28.838920 – 86.220510	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		376
9	350	1742.7306	28.839306 – 86.220510	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		376
9	150	1745.2482	28.838920 – 86.137350	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		376
9	50	1745.2600	28.839306 – 86.137350	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		376
8		1834.011	28.839306 – 83.364620	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$	P	521
8		1835.573	28.838920 – 83.317830	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$	P	521
8	4	1836.712	28.838920 – 83.284070	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^4P$	$\frac{1}{2}-\frac{1}{2}$		796,191
8	50	1836.724	28.839306 – 83.284070	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$	P	521

NITROGEN II (N^{1+}), Z = 7
Ground State $1s^22s^22p^2(^3P_0)$ (6 electrons)
Ionization Potential 238 750.50 cm^{-1}; 29.602 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
6	20	453.257	0.0487 – 220.674	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^3D^\circ$	1 – 2		168,200
6	100	453.340	0.1308 – 220.716	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^3D^\circ$	2 – 3		168,200
6		453.624	0.0487 – 220.49536	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^1D^\circ$	1 – 2	P	521
6		453.793	0.1308 – 220.49536	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^1D^\circ$	2 – 2	P	521
6		465.486	0.0 – 214.82918	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$g^3P - {}^1P^\circ$	0 – 1	P	521
6		465.592	0.0487 – 214.82918	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$g^3P - {}^1P^\circ$	1 – 1	P	521
6		465.770	0.1308 – 214.82918	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$g^3P - {}^1P^\circ$	2 – 1	P	521
6		466.558	0.0487 – 214.38413	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	1 – 2	P	521
6		466.728	0.0 – 214.25769	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	0 – 1	P	521
6		466.737	0.1308 – 214.38413	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	2 – 2	P	521
6		466.834	0.0487 – 214.25769	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	1 – 1	P	521
6		466.934	0.0487 – 214.21196	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	1 – 0	P	521
6		467.013	0.1308 – 214.25769	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	2 – 1	P	521
6		473.180	0.0 – 211.33616	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^1P^\circ$	0 – 1	P	521
6		473.289	0.0487 – 211.33616	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^1P^\circ$	1 – 1	P	521
6		473.473	0.1308 – 211.33616	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^1P^\circ$	2 – 1	P	521
6	10	474.493	0.0 – 210.75143	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3P^\circ$	0 – 1		200,168
6	10	474.546	0.0487 – 210.77645	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3P^\circ$	1 – 0		200,168
6	10	474.602	0.0487 – 210.75143	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3P^\circ$	1 – 1		200,168
6	20	474.706	0.0487 – 210.70526	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3P^\circ$	1 – 2		200,168
6	20	474.787	0.1308 – 210.75143	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3P^\circ$	2 – 1		200,168
6	200	474.891	0.1308 – 210.70526	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3P^\circ$	2 – 2		200,168
6	100	475.647	0.0 – 210.23983	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3D^\circ$	0 – 1		200,168
6	200	475.698	0.0487 – 210.26604	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3D^\circ$	1 – 2		200,168
6		475.757	0.0487 – 210.23983	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3D^\circ$	1 – 1		200
6	250	475.803	0.1308 – 210.30168	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3D^\circ$	2 – 3		200,168
6	100	475.884	0.1308 – 210.26604	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3D^\circ$	2 – 2		200,168
6		476.469	0.0487 – 209.92576	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^1D^\circ$	1 – 2	P	521
6		476.656	0.1308 – 209.92576	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^1D^\circ$	2 – 2	P	521
11		485.602	15.3162 – 221.24617	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	${}^1D - {}^1P^\circ$	2 – 1	P	521
11	10	485.849	15.3162 – 221.14161	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	${}^1D - {}^1F^\circ$	2 – 3		200,168
6		505.411	0.0 – 197.85869	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	$g^3P - {}^1P^\circ$	0 – 1	P	521
6		505.536	0.0487 – 197.85869	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	$g^3P - {}^1P^\circ$	1 – 1	P	521
6		505.746	0.1308 – 197.85869	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	$g^3P - {}^1P^\circ$	2 – 1	P	521
13	100	505.986	46.7846 – 244.41852	$2s2p^3 - 2s2p^2(^4P)3d$	${}^5S^\circ - {}^5P$	2 – 1		200,168
13	200	506.054	46.7846 – 244.39188	$2s2p^3 - 2s2p^2(^4P)3d$	${}^5S^\circ - {}^5P$	2 – 2		200,168
13	300	506.153	46.7846 – 244.35331	$2s2p^3 - 2s2p^2(^4P)3d$	${}^5S^\circ - {}^5P$	2 – 3		200,168
6	10	508.484	0.0487 – 196.71154	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 2		200,168
6		508.668	0.0 – 196.59207	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	0 – 1		200
6	150	508.697	0.1308 – 196.71154	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	2 – 2		200,168
6		508.794	0.0487 – 196.59207	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 1	P	521
6	10	508.928	0.0487 – 196.54023	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 0		200,168
6	15	509.006	0.1308 – 196.59207	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	2 – 1		200,168
11		510.152	15.3162 – 211.33616	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	${}^1D - {}^1P^\circ$	2 – 1	P	521
11	250	510.758	15.3162 – 211.10363	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	${}^1D - {}^1F^\circ$	2 – 3		200,168
11		513.849	15.3162 – 209.92576	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	${}^1D - {}^1D^\circ$	2 – 2		200,168
6		525.983	0.0 – 190.12024	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^1P^\circ$	0 – 1	P	521
6		526.118	0.0487 – 190.12024	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^1P^\circ$	1 – 1	P	521
6		526.345	0.1308 – 190.12024	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^1P^\circ$	2 – 1	P	521
6	250	529.355	0.0 – 188.90917	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	0 – 1		197,168
6	250	529.413	0.0487 – 188.93724	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 0		197,168
6	250	529.491	0.0487 – 188.90917	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 1		197,168
6	250	529.637	0.0487 – 188.85737	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 2		197,168
6	250	529.722	0.1308 – 188.90917	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 1		197,168

N II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
6	400	529.867	0.1308 – 188.85737	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3P^\circ$	2 – 2		197,168
13		530.343	32.6888 – 221.24617	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$^1S - ^1P^\circ$	0 – 1	P	521
5	350	533.511	0.0 – 187.43756	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3D^\circ$	0 – 1		197,168
5	400	533.581	0.0487 – 187.46156	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		197,168
5	350	533.650	0.0487 – 187.43756	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3D^\circ$	1 – 1		197,168
5	500	533.729	0.1308 – 187.49190	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		197,168
5	350	533.815	0.1308 – 187.46156	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3D^\circ$	2 – 2		197,168
4		534.637	0.0487 – 187.09137	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^1D^\circ$	1 – 2	P	521
4		534.872	0.1308 – 187.09137	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^1D^\circ$	2 – 2	P	521
11	10	547.818	15.3162 – 197.85869	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	$^1D - ^1P^\circ$	2 – 1		200,168
13		549.027	32.6888 – 214.82918	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$^1S - ^1P^\circ$	0 – 1	P	521
11	10	559.762	32.6888 – 211.33616	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$^1S - ^1P^\circ$	0 – 1		200,168
11		572.069	15.3162 – 190.12024	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - ^1P^\circ$	2 – 1		200
11	500	574.650	15.3162 – 189.33516	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - ^1F^\circ$	2 – 3		197,168
10	400	582.156	15.3162 – 187.09137	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - ^1D^\circ$	2 – 2		197,168
4		599.644	0.0 – 166.76566	$2s^22p^2 - 2s2p^3$	$g^3P - ^1P^\circ$	0 – 1	P	521
4		599.819	0.0487 – 166.76566	$2s^22p^2 - 2s2p^3$	$g^3P - ^1P^\circ$	1 – 1	P	521
4		600.115	0.1308 – 166.76566	$2s^22p^2 - 2s2p^3$	$g^3P - ^1P^\circ$	2 – 1	P	521
13		605.437	32.6888 – 197.85869	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	$^1S - ^1P^\circ$	0 – 1	P	521
13		605.902	46.7846 – 211.82767	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^\circ - ^3P$	2 – 2	P	521
13		606.080	46.7846 – 211.77945	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^\circ - ^3P$	2 – 1	P	521
13	300	629.167	46.7846 – 205.72481	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^\circ - ^5P$	2 – 3		200,168
13	200	629.447	46.7846 – 205.65422	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^\circ - ^5P$	2 – 2		200,168
13		629.670	46.7846 – 205.59797	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^\circ - ^5P$	2 – 1		200
13	400	635.197	32.6888 – 190.12024	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1S - ^1P^\circ$	0 – 1		197,168
13		639.082	46.7846 – 203.25898	$2s2p^3 - 2s^22p(^2P^\circ)4p$	$^5S^\circ - ^3P$	2 – 2	P	521
13		639.368	46.7846 – 203.18903	$2s2p^3 - 2s^22p(^2P^\circ)4p$	$^5S^\circ - ^3P$	2 – 1	P	521
12		640.121	32.6888 – 188.90917	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1S - ^3P^\circ$	0 – 1	P	521
4	650	644.634	0.0 – 155.12673	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^\circ$	0 – 1		197,168
4	750	644.837	0.0487 – 155.12673	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^\circ$	1 – 1		197,168
4	850	645.178	0.1308 – 155.12673	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^\circ$	2 – 1		197,168
9	750	660.286	15.3162 – 166.76566	$2s^22p^2 - 2s2p^3$	$^1D - ^1P^\circ$	2 – 1		197,168
3	220	670.296	0.0 – 149.18780	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^1P^\circ$	0 – 1		200,168
3	120	670.515	0.0487 – 149.18780	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^1P^\circ$	1 – 1		200,168
3	100	670.884	0.1308 – 149.18780	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^1P^\circ$	2 – 1		200,168
3	500	671.016	0.0487 – 149.07652	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^3P^\circ$	1 – 2		197,168
3	500	671.386	0.1308 – 149.07652	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^3P^\circ$	2 – 2		197,168
3	650	671.411	0.0 – 148.94017	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^3P^\circ$	0 – 1		197,168
3	500	671.630	0.0487 – 148.94017	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^3P^\circ$	1 – 1		197,168
3	500	671.773	0.0487 – 148.90859	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^3P^\circ$	1 – 0		197,168
3	500	672.001	0.1308 – 148.94017	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^3P^\circ$	2 – 1		197,168
2		693.774	0.0487 – 144.18794	$2s^22p^2 - 2s2p^3$	$g^3P - ^1D^\circ$	1 – 2	P	521
2		694.169	0.1308 – 144.18794	$2s^22p^2 - 2s2p^3$	$g^3P - ^1D^\circ$	2 – 2	P	521
12	500	745.841	32.6888 – 166.76566	$2s^22p^2 - 2s2p^3$	$^1S - ^1P^\circ$	0 – 1		197,168
8	650	746.984	15.3162 – 149.18780	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$^1D - ^1P^\circ$	2 – 1		197,168
7		747.606	15.3162 – 149.07652	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$^1D - ^3P^\circ$	2 – 2	P	521
7		748.369	15.3162 – 148.94017	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$^1D - ^3P^\circ$	2 – 1		197,200
7	1000	775.965	15.3162 – 144.18794	$2s^22p^2 - 2s2p^3$	$^1D - ^1D^\circ$	2 – 2		197,168
		780.9	92.2372 – 220.29	$2s2p^3 - 2p^4$	$^3D^\circ - ^3P$	3 – 2	P	934
13		807.222	46.7846 – 170.66623	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^5S^\circ - ^3P$	2 – 2	P	521
13		807.603	46.7846 – 170.60789	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^5S^\circ - ^3P$	2 – 1	P	521
13	10	836.187	92.2372 – 211.82767	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^\circ - ^3P$	3 – 2		200,521
13	1	836.279	92.2503 – 211.82767	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^\circ - ^3P$	2 – 2		200,521
13	0	836.289	92.2518 – 211.82767	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^\circ - ^3P$	1 – 2		200,521

N II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
13	5	836.616	92.2503 – 211.77945	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^\circ - ^3P$	2 – 1		200,521
13	2	836.627	92.2518 – 211.77945	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^\circ - ^3P$	1 – 1		200,521
13	2	836.837	92.2518 – 211.74935	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^\circ - ^3P$	1 – 0		200,521
11	100	858.376	32.6888 – 149.18780	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$^1S - ^1P^\circ$	0 – 1		200,168
11		860.205	32.6888 – 148.94017	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$^1S - ^3P^\circ$	0 – 1		200
13		900.724	92.2372 – 203.25898	$2s2p^3 - 2s^22p(^2P^\circ)4p$	$^3D^\circ - ^3P$	3 – 2	P	521
13		901.398	92.2503 – 203.18903	$2s2p^3 - 2s^22p(^2P^\circ)4p$	$^3D^\circ - ^3P$	2 – 1	P	521
13		901.626	92.2518 – 203.16248	$2s2p^3 - 2s^22p(^2P^\circ)4p$	$^3D^\circ - ^3P$	1 – 0	P	521
13		903.962	92.2372 – 202.86136	$2s2p^3 - 2s^22p(^2P^\circ)4p$	$^3D^\circ - ^3D$	3 – 3	P	521
13		904.855	92.2503 – 202.76526	$2s2p^3 - 2s^22p(^2P^\circ)4p$	$^3D^\circ - ^3D$	2 – 2	P	521
13		905.286	92.2518 – 202.71412	$2s2p^3 - 2s^22p(^2P^\circ)4p$	$^3D^\circ - ^3D$	1 – 1	P	521
2	700	915.612	0.0 – 109.2166	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	0 – 1		197,168
2	700	915.962	0.0487 – 109.2235	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	1 – 0		197,168
2	800	916.012	0.0487 – 109.2176	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	1 – 2		197,168
2	600	916.020	0.0487 – 109.2166	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	1 – 1		197,168
2	1000	916.701	0.1308 – 109.2176	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	2 – 2		197,168
2	800	916.710	0.1308 – 109.2166	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	2 – 1		197,168
13		974.563	109.2176 – 211.82767	$2s2p^3 - 2s2p^2(^4P)3s$	$^3P^\circ - ^3P$	2 – 2	P	521
13		975.012	109.2166 – 211.77945	$2s2p^3 - 2s2p^2(^4P)3s$	$^3P^\circ - ^3P$	1 – 1	P	521
13		1063.350	109.2166 – 203.25898	$2s2p^3 - 2s^22p(^2P^\circ)4p$	$^3P^\circ - ^3P$	1 – 2	P	521
13		1063.362	109.2176 – 203.25898	$2s2p^3 - 2s^22p(^2P^\circ)4p$	$^3P^\circ - ^3P$	2 – 2	P	521
13		1064.142	109.2166 – 203.18903	$2s2p^3 - 2s^22p(^2P^\circ)4p$	$^3P^\circ - ^3P$	1 – 1	P	521
13		1064.153	109.2176 – 203.18903	$2s2p^3 - 2s^22p(^2P^\circ)4p$	$^3P^\circ - ^3P$	2 – 1	P	521
13		1064.220	109.2235 – 203.18903	$2s2p^3 - 2s^22p(^2P^\circ)4p$	$^3P^\circ - ^3P$	0 – 1	P	521
13		1064.443	109.2166 – 203.16248	$2s2p^3 - 2s^22p(^2P^\circ)4p$	$^3P^\circ - ^3P$	1 – 0	P	521
6		1064.947	15.3162 – 109.2176	$2s^22p^2 - 2s2p^3$	$^1D - ^3P^\circ$	2 – 2	P	521
6		1064.958	15.3162 – 109.2166	$2s^22p^2 - 2s2p^3$	$^1D - ^3P^\circ$	2 – 1	P	521
13		1067.877	109.2176 – 202.86136	$2s2p^3 - 2s^22p(^2P^\circ)4p$	$^3P^\circ - ^3D$	2 – 3	P	521
13		1068.962	109.2166 – 202.76526	$2s2p^3 - 2s^22p(^2P^\circ)4p$	$^3P^\circ - ^3D$	1 – 2	P	521
13		1069.626	109.2235 – 202.71412	$2s2p^3 - 2s^22p(^2P^\circ)4p$	$^3P^\circ - ^3D$	0 – 1	P	521
1	400	1083.990	0.0 – 92.2518	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^\circ$	0 – 1		197,168
1	150	1084.562	0.0487 – 92.2518	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^\circ$	1 – 1		197,168
1	750	1084.580	0.0487 – 92.2503	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^\circ$	1 – 2		197,168
1		1085.529	0.1308 – 92.2518	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^\circ$	2 – 1		197,200
1	400	1085.546	0.1308 – 92.2503	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^\circ$	2 – 2		197,168
1	1000	1085.701	0.1308 – 92.2372	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^\circ$	2 – 3		197,168
13	300	1275.038	92.2372 – 170.66623	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3P$	3 – 2		200,168
13		1275.251	92.2503 – 170.66623	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3P$	2 – 2		200
13		1275.275	92.2518 – 170.66623	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3P$	1 – 2		200
13	200	1276.201	92.2503 – 170.60789	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3P$	2 – 1		200,168
13		1276.225	92.2518 – 170.60789	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3P$	1 – 1		200
13	100	1276.800	92.2518 – 170.57261	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3P$	1 – 0		200,168
6		1299.788	15.3162 – 92.2518	$2s^22p^2 - 2s2p^3$	$^1D - ^3D^\circ$	2 – 1	P	521
6		1299.814	15.3162 – 92.2503	$2s^22p^2 - 2s2p^3$	$^1D - ^3D^\circ$	2 – 2	P	521
6		1300.035	15.3162 – 92.2372	$2s^22p^2 - 2s2p^3$	$^1D - ^3D^\circ$	2 – 3	P	521
13		1304.769	92.2503 – 168.89221	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3S$	2 – 1	P	521
13		1304.795	92.2518 – 168.89221	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3S$	1 – 1	P	521
13	200	1343.338	92.2372 – 166.67864	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3D$	3 – 3		200,168
13		1343.574	92.2503 – 166.67864	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3D$	2 – 3		200
13		1345.076	92.2372 – 166.58245	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3D$	3 – 2		200
13	100	1345.313	92.2503 – 166.58245	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3D$	2 – 2		200,168
13		1345.340	92.2518 – 166.58245	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3D$	1 – 2		200
13		1346.413	92.2503 – 166.52169	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3D$	2 – 1		200
13	10	1346.441	92.2518 – 166.52169	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3D$	1 – 1		200,168

N II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
13		1590.141	148.94017 – 211.82767	$2s^22p(^2P^\circ)3s - 2s2p^2(^4P)3s$	$^3P^\circ - {}^3P$	1 – 2	P	521
13		1590.562	148.90859 – 211.77945	$2s^22p(^2P^\circ)3s - 2s2p^2(^4P)3s$	$^3P^\circ - {}^3P$	0 – 1	P	521
13		1591.361	148.94017 – 211.77945	$2s^22p(^2P^\circ)3s - 2s2p^2(^4P)3s$	$^3P^\circ - {}^3P$	1 – 1	P	521
13		1592.124	148.94017 – 211.74935	$2s^22p(^2P^\circ)3s - 2s2p^2(^4P)3s$	$^3P^\circ - {}^3P$	1 – 0	P	521
13		1593.596	149.07652 – 211.82767	$2s^22p(^2P^\circ)3s - 2s2p^2(^4P)3s$	$^3P^\circ - {}^3P$	2 – 2	P	521
13		1594.822	149.07652 – 211.77945	$2s^22p(^2P^\circ)3s - 2s2p^2(^4P)3s$	$^3P^\circ - {}^3P$	2 – 1	P	521
13	33	1627.349	109.2166 – 170.66623	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3P$	1 – 2		200,521
13	100	1627.376	109.2176 – 170.66623	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3P$	2 – 2		200,168
13	20	1628.896	109.2166 – 170.60789	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3P$	1 – 1		200,521
13	33	1628.922	109.2176 – 170.60789	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3P$	2 – 1		200,521
13	100	1629.079	109.2235 – 170.60789	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3P$	0 – 1		200,168
13	10	1629.832	109.2166 – 170.57261	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3P$	1 – 0		200,168
13		1634.996	144.18794 – 205.35018	$2s2p^3 - 2s^22p(^2P^\circ)4p$	$^1D^\circ - {}^1D$	2 – 2	P	521
13	150	1675.726	109.2166 – 168.89221	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3S$	1 – 1		200
13	300	1675.755	109.2176 – 168.89221	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3S$	2 – 1		200,168
13	100	1675.920	109.2235 – 168.89221	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3S$	0 – 1		200,243
15		1709.663	164.61076 – 223.10182	$2s^22p(^2P^\circ)3p - 2s^22p(^2P^\circ)6s$	$^1P - {}^1P^\circ$	1 – 1	P	521
13		1724.653	144.18794 – 202.17063	$2s2p^3 - 2s^22p(^2P^\circ)4p$	$^1D^\circ - {}^1P$	2 – 1	P	521
13		1725.028	148.94017 – 206.91024	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^3P^\circ - {}^1S$	1 – 0		200
14		1732.428	149.18780 – 206.91024	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^1P^\circ - {}^1S$	1 – 0		200
13	400	1740.310	109.2176 – 166.67864	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3D$	2 – 3		200,168
13	200	1743.197	109.2166 – 166.58245	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3D$	1 – 2		200,168
13		1743.228	109.2176 – 166.58245	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3D$	2 – 2		200
13		1745.046	109.2166 – 166.52169	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3D$	1 – 1		200
13		1745.076	109.2176 – 166.52169	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3D$	2 – 1		200
13		1745.256	109.2235 – 166.52169	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3D$	0 – 1		200
14	100	1763.639	155.12673 – 211.82767	$2s2p^3 - 2s2p^2(^4P)3s$	$^3S^\circ - {}^3P$	1 – 2		200,243
14	50	1765.140	155.12673 – 211.77945	$2s2p^3 - 2s2p^2(^4P)3s$	$^3S^\circ - {}^3P$	1 – 1		200,243
15		1765.680	164.61076 – 221.24617	$2s^22p(^2P^\circ)3p - 2s^22p(^2P^\circ)5d$	$^1P - {}^1P^\circ$	1 – 1	P	521
14	100	1766.079	155.12673 – 211.74935	$2s2p^3 - 2s2p^2(^4P)3s$	$^3S^\circ - {}^3P$	1 – 0		200,243
13		1772.735	148.94017 – 205.35018	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^3P^\circ - {}^1D$	1 – 2		200
14		1780.551	149.18780 – 205.35018	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^1P^\circ - {}^1D$	1 – 2		200
15		1789.402	164.61076 – 220.49536	$2s^22p(^2P^\circ)3p - 2s^22p(^2P^\circ)5d$	$^1P - {}^1D^\circ$	1 – 2	P	521
13	1	1830.527	148.90859 – 203.53766	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^3P^\circ - {}^3S$	0 – 1		200,243
13	10	1831.586	148.94017 – 203.53766	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^3P^\circ - {}^3S$	1 – 1		200,243
13	100	1836.172	149.07652 – 203.53766	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^3P^\circ - {}^3S$	2 – 1		200,243
14		1839.931	149.18780 – 203.53766	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^1P^\circ - {}^3S$	1 – 1		200
13	100	1840.983	148.94017 – 203.25898	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^3P^\circ - {}^3P$	1 – 2		200,247
13	10	1842.284	148.90859 – 203.18903	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^3P^\circ - {}^3P$	0 – 1		200,247
13	10	1843.357	148.94017 – 203.18903	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^3P^\circ - {}^3P$	1 – 1		200,247
13	10	1844.259	148.94017 – 203.16248	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^3P^\circ - {}^3P$	1 – 0		200,247
13	100	1845.616	149.07652 – 203.25898	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^3P^\circ - {}^3P$	2 – 2		200,247
13	10	1848.002	149.07652 – 203.18903	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^3P^\circ - {}^3P$	2 – 1		200,247
14	100	1849.414	149.18780 – 203.25898	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^1P^\circ - {}^3P$	1 – 2		200,168
14		1851.810	149.18780 – 203.18903	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^1P^\circ - {}^3P$	1 – 1		200
14		1852.721	149.18780 – 203.16248	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^1P^\circ - {}^3P$	1 – 0		200
13	300	1857.870	148.94017 – 202.76526	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^3P^\circ - {}^3D$	1 – 2		200,243
13	200	1858.545	148.90859 – 202.71412	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^3P^\circ - {}^3D$	0 – 1		200,243
13	500	1859.260	149.07652 – 202.86136	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^3P^\circ - {}^3D$	2 – 3		200,243
13		1859.636	148.94017 – 202.71412	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^3P^\circ - {}^3D$	1 – 1		200
13	200	1862.588	149.07652 – 202.76526	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^3P^\circ - {}^3D$	2 – 2		200,243
13		1864.364	149.07652 – 202.71412	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^3P^\circ - {}^3D$	2 – 1		200
14		1866.457	149.18780 – 202.76526	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^1P^\circ - {}^3D$	1 – 2		200
14	10	1868.240	149.18780 – 202.71412	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^1P^\circ - {}^3D$	1 – 1		200,168

N II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
13	200	1878.624	148.94017 – 202.17063	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^3P^\circ - ^1P$	1 – 1		200,168
14	350	1887.404	149.18780 – 202.17063	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	$^1P^\circ - ^1P$	1 – 1		200,168
15	10	1991.301	164.61076 – 214.82918	$2s^22p(^2P^\circ)3p - 2s^22p(^2P^\circ)5s$	$^1P - ^1P^\circ$	1 – 1		200,168

NITROGEN III (N^{2+}), Z = 7
Ground State $1s^22s^22p(^2P^\circ_{1/2})$ (5 electrons)
Ionization Potential 382 703.8 cm^{-1}; 47.450 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
11	30	208.510	57.3279 – 536.9215	$2s2p^2 - 2p^2(^3P)7p$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		508
11	50	208.670	57.3279 – 536.5538	$2s2p^2 - 2p^2(^3P)7p$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		508
11	50	208.730	57.3279 – 536.416	$2s2p^2 - 2p^2(^3P)7p$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		508
11	20	212.019	57.1871 – 528.8328	$2s2p^2 - 2p^2(^3P)6p$	$^4P - ^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
11	50	212.049	57.2468 – 528.8328	$2s2p^2 - 2p^2(^3P)6p$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		508
11	80	212.087	57.3279 – 528.8328	$2s2p^2 - 2p^2(^3P)6p$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		508
11	50	212.359	57.3279 – 528.2289	$2s2p^2 - 2p^2(^3P)6p$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		508
11	100	212.465	57.3279 – 527.994	$2s2p^2 - 2p^2(^3P)6p$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		508
7	100	213.086	0. – 469.297	$2s^2(^1S)2p - 2s2p(^1P^\circ)5p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		508
7	200	213.164	0.1744 – 469.297	$2s^2(^1S)2p - 2s2p(^1P^\circ)5p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		508
7	50	213.364	0. – 468.683	$2s^2(^1S)2p - 2s2p(^1P^\circ)5p$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		508
7	100	213.447	0.1744 – 468.683	$2s^2(^1S)2p - 2s2p(^1P^\circ)5p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		508
11	50	218.349	57.1871 – 515.1701	$2s2p^2 - 2p^2(^3P)5p$	$^4P - ^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
11	70	218.378	57.2468 – 515.1701	$2s2p^2 - 2p^2(^3P)5p$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		508
11	100	218.416	57.3279 – 515.1701	$2s2p^2 - 2p^2(^3P)5p$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		508
11	100	218.949	57.3279 – 514.0556	$2s2p^2 - 2p^2(^3P)5p$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		508
11	250	219.168	57.3279 – 513.599	$2s2p^2 - 2p^2(^3P)5p$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		508
7	50	224.873	0.1744 – 444.870	$2s^2(^1S)2p - 2s2p(^3P^\circ)14p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		508
7	70	225.302	0.1744 – 444.023	$2s^2(^1S)2p - 2s2p(^3P^\circ)13p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		508
7	300	225.837	0.1744 – 442.972	$2s^2(^1S)2p - 2s2p(^3P^\circ)12p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		508
7	120	226.030	0. – 442.414	$2s^2(^1S)2p - 2s2p(^1P^\circ)4p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		508
7	300	226.122	0.1744 – 442.414	$2s^2(^1S)2p - 2s2p(^1P^\circ)4p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		508
7	50	226.520	0.1744 – 441.637	$2s^2(^1S)2p - 2s2p(^3P^\circ)11p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		508
7	350	226.832	0. – 440.8549	$2s^2(^1S)2p - 2s2p(^1P^\circ)4p$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		508
7	400	226.910	0.1744 – 440.8779	$2s^2(^1S)2p - 2s2p(^1P^\circ)4p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		508
7	150	227.479	0. – 439.6010	$2s^2(^1S)2p - 2s2p(^3P^\circ)10p$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		508
7	250	227.515	0.1744 – 439.7060	$2s^2(^1S)2p - 2s2p(^3P^\circ)10p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		508
7	150	228.762	0. – 437.1355	$2s^2(^1S)2p - 2s2p(^3P^\circ)9p$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		508
7	250	228.790	0.1744 – 437.2565	$2s^2(^1S)2p - 2s2p(^3P^\circ)9p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		508
7	25	228.844	0.1744 – 437.1355	$2s^2(^1S)2p - 2s2p(^3P^\circ)9p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		508
7	200	230.591	0. – 433.6683	$2s^2(^1S)2p - 2s2p(^3P^\circ)8p$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		508
7	300	230.626	0.1744 – 433.7770	$2s^2(^1S)2p - 2s2p(^3P^\circ)8p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		508
7	50	230.681	0.1744 – 433.6683	$2s^2(^1S)2p - 2s2p(^3P^\circ)8p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		508
7	100	230.765	0. – 433.3356	$2s^2(^1S)2p - 2s2p(^3P^\circ)8p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		508
7	150	230.789	0. – 433.2962	$2s^2(^1S)2p - 2s2p(^3P^\circ)8p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		508
7	250	230.861	0.1744 – 433.3356	$2s^2(^1S)2p - 2s2p(^3P^\circ)8p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		508
7	100	230.879	0.1744 – 433.2962	$2s^2(^1S)2p - 2s2p(^3P^\circ)8p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		508
11	100	231.465	57.1871 – 489.2190	$2s2p^2 - 2p^2(^3P)4p$	$^4P - ^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
11	150	231.497	57.2468 – 489.2190	$2s2p^2 - 2p^2(^3P)4p$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		508
11	200	231.540	57.3279 – 489.2190	$2s2p^2 - 2p^2(^3P)4p$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		508
11	300	232.854	57.3279 – 486.7818	$2s2p^2 - 2p^2(^3P)4p$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		508
7	250	233.332	0. – 428.5739	$2s^2(^1S)2p - 2s2p(^3P^\circ)7p$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		508

N III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
7	400	233.368	0.1744 – 428.6823	$2s^2(^1S)2p - 2s2p(^3P^\circ)7p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		508
11	350	233.393	57.3279 – 485.7901	$2s2p^2 - 2p^2(^3P)4p$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		508
7	50	233.424	57.1871 – 485.5974	$2s2p^2 - 2p^2(^3P)4p$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
11	150	233.459	57.3279 – 485.6689	$2s2p^2 - 2p^2(^3P)4p$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		508
11	50	233.498	57.3279 – 485.5974	$2s2p^2 - 2p^2(^3P)4p$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{3}{2}$		508
7	80	233.599	0. – 428.0808	$2s^2(^1S)2p - 2s2p(^3P^\circ)7p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		508
7	150	233.620	0. – 428.0455	$2s^2(^1S)2p - 2s2p(^3P^\circ)7p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		508
7	300	233.696	0.1744 – 428.0808	$2s^2(^1S)2p - 2s2p(^3P^\circ)7p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		508
7	80	233.716	0.1744 – 428.0455	$2s^2(^1S)2p - 2s2p(^3P^\circ)7p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		508
7	250	237.532	0. – 420.9959	$2s^2(^1S)2p - 2s2p(^3P^\circ)6p$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		508
7	450	237.565	0.1744 – 421.1119	$2s^2(^1S)2p - 2s2p(^3P^\circ)6p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		508
7	50	237.624	0.1744 – 420.9959	$2s^2(^1S)2p - 2s2p(^3P^\circ)6p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		508
7	80	237.994	0. – 420.1784	$2s^2(^1S)2p - 2s2p(^3P^\circ)6p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		521
7	200	238.034	0. – 420.1061	$2s^2(^1S)2p - 2s2p(^3P^\circ)6p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		508
7	350	238.093	0.1744 – 420.1784	$2s^2(^1S)2p - 2s2p(^3P^\circ)6p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		508
7	100	238.134	0.1744 – 420.1061	$2s^2(^1S)2p - 2s2p(^3P^\circ)6p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		508
7	200	245.021	0. – 408.128	$2s^2(^1S)2p - 2s2p(^3P^\circ)5p$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		508
7	400	245.115	0.1744 – 408.128	$2s^2(^1S)2p - 2s2p(^3P^\circ)5p$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		508
7	400	246.206	0. – 406.1639	$2s^2(^1S)2p - 2s2p(^3P^\circ)5p$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		508
7	650	246.249	0.1744 – 406.2675	$2s^2(^1S)2p - 2s2p(^3P^\circ)5p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		508
7	100	246.311	0.1744 – 406.1639	$2s^2(^1S)2p - 2s2p(^3P^\circ)5p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		508
7	100	248.320	0. – 402.7056	$2s^2(^1S)2p - 2s2p(^3P^\circ)5p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		508
7	150	248.371	0. – 402.6246	$2s^2(^1S)2p - 2s2p(^3P^\circ)5p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		508
7	350	248.428	0.1744 – 402.7056	$2s^2(^1S)2p - 2s2p(^3P^\circ)5p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		508
7	100	248.478	0.1744 – 402.6246	$2s^2(^1S)2p - 2s2p(^3P^\circ)5p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		508
11	300	257.502	57.3279 – 445.6747	$2s2p^2 - 2s2p(^3P^\circ)15d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		508
11	500	257.953	57.3279 – 444.9957	$2s2p^2 - 2s2p(^3P^\circ)14d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		508
11	650	258.499	57.3279 – 444.1769	$2s2p^2 - 2s2p(^3P^\circ)13d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		508
11	700	259.189	57.3279 – 443.1470	$2s2p^2 - 2s2p(^3P^\circ)12d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		508
11	800	260.090	57.3279 – 441.8105	$2s2p^2 - 2s2p(^3P^\circ)11d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		508
11	800	261.282	57.3279 – 440.0564	$2s2p^2 - 2s2p(^3P^\circ)10d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		508
7	450	262.184	0. – 381.4115	$2s^2(^1S)2p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		508
7	800	262.233	0.1744 – 381.5148	$2s^2(^1S)2p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		508
7	100	262.304	0.1744 – 381.4115	$2s^2(^1S)2p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		521
11	400	262.867	57.3279 – 437.7487	$2s2p^2 - 2s2p(^3P^\circ)9d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		508
11	500	262.914	57.3279 – 437.6807	$2s2p^2 - 2s2p(^3P^\circ)9d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		508
7	100	264.822	0. – 377.6113	$2s^2(^1S)2p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		508
7	200	264.846	0. – 377.5779	$2s^2(^1S)2p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		508
7	400	264.945	0.1744 – 377.6113	$2s^2(^1S)2p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		508
7	100	264.966	0.1744 – 377.5779	$2s^2(^1S)2p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		508
7	100	265.216	0. – 377.0509	$2s^2(^1S)2p - 2s^2(^1S)14s$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		521
11	500	265.232	57.3279 – 434.3566	$2s2p^2 - 2s2p(^3P^\circ)8d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		508
11	500	265.271	57.3279 – 434.3012	$2s2p^2 - 2s2p(^3P^\circ)8d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		508
7	200	265.339	0.1744 – 377.0509	$2s^2(^1S)2p - 2s^2(^1S)14s$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		508
7	100	265.852	0. – 376.1454	$2s^2(^1S)2p - 2s^2(^1S)13s$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		508
7	200	265.978	0.1744 – 376.1454	$2s^2(^1S)2p - 2s^2(^1S)13s$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		508
7	300	266.132	0. – 375.754	$2s^2(^1S)2p - 2s^2(^1S)12d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		521
7	500	266.255	0.1744 – 375.754	$2s^2(^1S)2p - 2s^2(^1S)12d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		508
7	200	266.613	0. – 375.0756	$2s^2(^1S)2p - 2s^2(^1S)12s$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		508
7	250	266.737	0.1744 – 375.0756	$2s^2(^1S)2p - 2s^2(^1S)12s$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		508
7	200	266.805	0. – 374.8048	$2s^2(^1S)2p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		508
7	200	266.847	0. – 374.7464	$2s^2(^1S)2p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		508
7	400	266.930	0.1744 – 374.8048	$2s^2(^1S)2p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		508
7	200	266.974	0.1744 – 374.7464	$2s^2(^1S)2p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		508

N III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
7	300	267.075	0. – 374.427	$2s^2(^1S)2p - 2s^2(^1S)11d$	$g^2P^\circ - {}^2D$	1/2 – 3/2		521
7	500	267.199	0.1744 – 374.427	$2s^2(^1S)2p - 2s^2(^1S)11d$	$g^2P^\circ - {}^2D$	3/2 – 5/2		508
7	250	267.661	0. – 373.6056	$2s^2(^1S)2p - 2s^2(^1S)11s$	$g^2P^\circ - {}^2S$	1/2 – 1/2		508
7	300	267.787	0.1744 – 373.6056	$2s^2(^1S)2p - 2s^2(^1S)11s$	$g^2P^\circ - {}^2S$	3/2 – 1/2		508
7	300	267.848	0. – 373.3461	$2s^2(^1S)2p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - {}^2D$	1/2 – 3/2		508
7	500	267.952	0.1744 – 373.3757	$2s^2(^1S)2p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - {}^2D$	3/2 – 5/2		508
7	50	267.966	0.1744 – 373.3461	$2s^2(^1S)2p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - {}^2D$	3/2 – 3/2		508
11	200	268.212	57.1871 – 430.0259	$2s2p^2 - 2p^2(^3P)3p$	$^4P - {}^4S^\circ$	1/2 – 3/2		508
11	300	268.255	57.2468 – 430.0259	$2s2p^2 - 2p^2(^3P)3p$	$^4P - {}^4S^\circ$	3/2 – 3/2		508
11	400	268.314	57.3279 – 430.0259	$2s2p^2 - 2p^2(^3P)3p$	$^4P - {}^4S^\circ$	5/2 – 3/2		508
7	350	268.347	0. – 372.651	$2s^2(^1S)2p - 2s^2(^1S)10d$	$g^2P^\circ - {}^2D$	1/2 – 3/2		508
7	600	268.473	0.1744 – 372.651	$2s^2(^1S)2p - 2s^2(^1S)10d$	$g^2P^\circ - {}^2D$	3/2 – 5/2		508
11	500	268.703	57.3279 – 429.4863	$2s2p^2 - 2s2p(^3P^\circ)7d$	$^4P - {}^4P^\circ$	5/2 – 5/2		508
11	400	268.756	57.3279 – 429.4129	$2s2p^2 - 2s2p(^3P^\circ)7d$	$^4P - {}^4D^\circ$	5/2 – 7/2		508
7	150	269.072	0. – 371.6469	$2s^2(^1S)2p - 2s^2(^1S)10s$	$g^2P^\circ - {}^2S$	1/2 – 1/2		508
7	300	269.199	0.1744 – 371.6469	$2s^2(^1S)2p - 2s^2(^1S)10s$	$g^2P^\circ - {}^2S$	3/2 – 1/2		508
7	400	270.004	0. – 370.365	$2s^2(^1S)2p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - {}^2S$	1/2 – 1/2		508
7	400	270.073	0. – 370.269	$2s^2(^1S)2p - 2s^2(^1S)9d$	$g^2P^\circ - {}^2D$	1/2 – 3/2		508
7		270.131	0.1744 – 370.365	$2s^2(^1S)2p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - {}^2S$	3/2 – 1/2		521
7	650	270.201	0.1744 – 370.269	$2s^2(^1S)2p - 2s^2(^1S)9d$	$g^2P^\circ - {}^2D$	3/2 – 5/2		508
11	50	270.554	57.2468 – 426.8596	$2s2p^2 - 2s2p(^3P^\circ)7s$	$^4P - {}^4P^\circ$	3/2 – 5/2		508
11	150	270.613	57.3279 – 426.8596	$2s2p^2 - 2s2p(^3P^\circ)7s$	$^4P - {}^4P^\circ$	5/2 – 5/2		508
11	50	270.685	57.3279 – 426.7613	$2s2p^2 - 2s2p(^3P^\circ)7s$	$^4P - {}^4P^\circ$	5/2 – 3/2		508
7	200	271.077	0. – 368.8938	$2s^2(^1S)2p - 2s^2(^1S)9s$	$g^2P^\circ - {}^2S$	1/2 – 1/2		508
7	350	271.209	0.1744 – 368.8938	$2s^2(^1S)2p - 2s^2(^1S)9s$	$g^2P^\circ - {}^2S$	3/2 – 1/2		508
7	400	272.523	0. – 366.940	$2s^2(^1S)2p - 2s^2(^1S)8d$	$g^2P^\circ - {}^2D$	1/2 – 3/2		508
7	650	272.654	0.1744 – 366.940	$2s^2(^1S)2p - 2s^2(^1S)8d$	$g^2P^\circ - {}^2D$	3/2 – 5/2		508
11	200	273.462	57.2468 – 422.9268	$2s2p^2 - 2p^2(^3P)3p$	$^4P - {}^4P^\circ$	3/2 – 5/2		508
11	100	273.503	57.2468 – 422.8760	$2s2p^2 - 2p^2(^3P)3p$	$^4P - {}^4P^\circ$	3/2 – 3/2		508
11	450	273.524	57.3279 – 422.9268	$2s2p^2 - 2p^2(^3P)3p$	$^4P - {}^4P^\circ$	5/2 – 5/2		508
11	200	273.562	57.3279 – 422.8760	$2s2p^2 - 2p^2(^3P)3p$	$^4P - {}^4P^\circ$	5/2 – 3/2		508
7	200	273.977	0. – 364.9942	$2s^2(^1S)2p - 2s^2(^1S)8s$	$g^2P^\circ - {}^2S$	1/2 – 1/2		508
7	400	274.108	0.1744 – 364.9942	$2s^2(^1S)2p - 2s^2(^1S)8s$	$g^2P^\circ - {}^2S$	3/2 – 1/2		508
11	50	274.213	57.1871 – 421.8672	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^4P - {}^4P^\circ$	1/2 – 1/2		521
11	160	274.258	57.2468 – 421.8672	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^4P - {}^4P^\circ$	3/2 – 1/2		508
11	100	274.276	57.2468 – 421.8432	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^4P - {}^4P^\circ$	3/2 – 3/2		508
11	200	274.316	57.2468 – 421.7942	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^4P - {}^4P^\circ$	3/2 – 5/2		508
11	200	274.337	57.3279 – 421.8432	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^4P - {}^4P^\circ$	5/2 – 3/2		521
11	400	274.374	57.3279 – 421.7942	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^4P - {}^4P^\circ$	5/2 – 5/2		508
11	400	275.829	57.3279 – 419.8717	$2s2p^2 - 2p^2(^3P)3p$	$^4P - {}^4D^\circ$	5/2 – 7/2		508
11	100	275.852	57.1871 – 419.7003	$2s2p^2 - 2p^2(^3P)3p$	$^4P - {}^4D^\circ$	1/2 – 1/2		508
11	150	275.871	57.2468 – 419.7376	$2s2p^2 - 2p^2(^3P)3p$	$^4P - {}^4D^\circ$	3/2 – 3/2		508
11	100	275.883	57.3279 – 419.8007	$2s2p^2 - 2p^2(^3P)3p$	$^4P - {}^4D^\circ$	5/2 – 5/2		508
11	50	275.931	57.3279 – 419.7376	$2s2p^2 - 2p^2(^3P)3p$	$^4P - {}^4D^\circ$	5/2 – 3/2		508
7	400	276.193	0. – 362.066	$2s^2(^1S)2p - 2s^2(^1S)7d$	$g^2P^\circ - {}^2D$	1/2 – 3/2		508
7	700	276.326	0.1744 – 362.066	$2s^2(^1S)2p - 2s^2(^1S)7d$	$g^2P^\circ - {}^2D$	3/2 – 5/2		508
11	150	277.813	57.2468 – 417.2048	$2s2p^2 - 2s2p(^3P^\circ)6s$	$^4P - {}^4P^\circ$	3/2 – 5/2		508
11	300	277.873	57.3279 – 417.2048	$2s2p^2 - 2s2p(^3P^\circ)6s$	$^4P - {}^4P^\circ$	5/2 – 5/2		508
11	50	277.901	57.2468 – 417.0909	$2s2p^2 - 2s2p(^3P^\circ)6s$	$^4P - {}^4P^\circ$	3/2 – 3/2		508
11	150	277.961	57.3279 – 417.0909	$2s2p^2 - 2s2p(^3P^\circ)6s$	$^4P - {}^4P^\circ$	5/2 – 3/2		508
7	200	278.436	0. – 359.1481	$2s^2(^1S)2p - 2s^2(^1S)7s$	$g^2P^\circ - {}^2S$	1/2 – 1/2		508
7	400	278.572	0.1744 – 359.1481	$2s^2(^1S)2p - 2s^2(^1S)7s$	$g^2P^\circ - {}^2S$	3/2 – 1/2		508
7	400	282.070	0. – 354.5305	$2s^2(^1S)2p - 2s^2(^1S)6d$	$g^2P^\circ - {}^2D$	1/2 – 3/2		508
7	700	282.209	0.1744 – 354.5305	$2s^2(^1S)2p - 2s^2(^1S)6d$	$g^2P^\circ - {}^2D$	3/2 – 5/2		508

N III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
11	30	283.850	57.1871 – 409.4862	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	508
11	180	283.882	57.1871 – 409.4458	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		521
11	180	283.898	57.2468 – 409.4862	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		508
11	50	283.937	57.2468 – 409.4458	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		508
11	200	283.977	57.2468 – 409.3913	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		508
11	200	283.996	57.3279 – 409.4458	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		508
11	400	284.040	57.3279 – 409.3913	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		508
11	100	284.277	57.1871 – 408.9567	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
11	250	284.308	57.2468 – 408.9782	$2s2p^2 - 2s2p(^2P^\circ)5d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		508
11	400	284.336	57.3279 – 409.0248	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		508
11	150	284.365	57.3279 – 408.9782	$2s2p^2 - 2s2p(^2P^\circ)5d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		508
7	225	285.855	0. – 349.8248	$2s^2(^1S)2p - 2s^2(^1S)6s$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		508
7	450	286.000	0.1744 – 349.8248	$2s^2(^1S)2p - 2s^2(^1S)6s$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		508
16	300	287.56	101.0239 – 448.775	$2s2p^2 - 2s2p(^1P^\circ)4d$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		508
11	200	290.865	57.2468 – 401.0535	$2s2p^2 - 2s2p(^3P^\circ)5s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		508
11	160	290.916	57.1871 – 400.9342	$2s2p^2 - 2s2p(^3P^\circ)5s$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
11	400	290.930	57.3279 – 401.0535	$2s2p^2 - 2s2p(^3P^\circ)5s$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		508
11	100	290.965	57.2468 – 400.9342	$2s2p^2 - 2s2p(^3P^\circ)5s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		508
11	160	291.023	57.2468 – 400.8625	$2s2p^2 - 2s2p(^3P^\circ)5s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		508
11	200	291.031	57.3279 – 400.9342	$2s2p^2 - 2s2p(^3P^\circ)5s$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		508
7	450	292.447	0. – 341.9477	$2s^2(^1S)2p - 2s^2(^1S)5d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		508
7	750	292.595	0.1744 – 341.9477	$2s^2(^1S)2p - 2s^2(^1S)5d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		508
7	300	299.661	0. – 333.7120	$2s^2(^1S)2p - 2s^2(^1S)5s$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		508
7	550	299.818	0.1744 – 333.7120	$2s^2(^1S)2p - 2s^2(^1S)5s$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		508
16	200	299.903	101.0306 – 434.4726	$2s2p^2 - 2s2p(^3P^\circ)8d$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		508
11	50	303.825	57.1871 – 386.3243	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$		508
11	180	303.856	57.1871 – 386.2918	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
11	180	303.880	57.2468 – 386.3243	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		508
11	100	303.910	57.2468 – 386.2918	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		508
11	200	303.960	57.2468 – 386.2377	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		508
11	200	303.985	57.3279 – 386.2918	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		508
11	450	304.035	57.3279 – 386.2377	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		508
16	300	304.103	101.0239 – 429.8598	$2s2p^2 - 2s2p(^3P^\circ)7d$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		508
16	200	304.203	101.0306 – 429.7594	$2s2p^2 - 2s2p(^3P^\circ)7d$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		508
11	100	304.786	57.1871 – 385.291	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
11	250	304.812	57.2468 – 385.318	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		508
11	110	304.837	57.2468 – 385.291	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		521
11	500	304.860	57.3279 – 385.347	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	508
11	100	304.887	57.3279 – 385.318	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$	P	508
11	100	304.921	57.3279 – 385.291	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{3}{2}$		508
7	250	305.761	0. – 327.0580	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		508
7	500	305.920	0.1744 – 327.0580	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		508
16	50	310.746	101.0306 – 422.8376	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		508
16	100	310.803	101.0239 – 422.7740	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		508
16	350	311.007	101.0239 – 422.5600	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		508
16	200	311.113	101.0306 – 422.4581	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		508
7	300	311.550	0. – 320.9782	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		508
7	500	311.636	0.1744 – 321.0668	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		508
7	50	311.721	0.1744 – 320.9782	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		508
7	450	314.715	0. – 317.7477	$2s^2(^1S)2p - 2s^2(^1S)4d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		508
7	800	314.850	0.1744 – 317.7795	$2s^2(^1S)2p - 2s^2(^1S)4d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		508
7	80	314.877	0.1744 – 317.7477	$2s^2(^1S)2p - 2s^2(^1S)4d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		508
11	220	321.079	57.2468 – 368.6963	$2s2p^2 - 2s2p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		508
11	200	321.135	57.1871 – 368.5783	$2s2p^2 - 2s2p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		508

N III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
11	500	321.162	57.3279 – 368.6963	$2s2p^2 - 2s2p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		508
11	100	321.198	57.2468 – 368.5783	$2s2p^2 - 2s2p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		508
11	200	321.261	57.2468 – 368.5144	$2s2p^2 - 2s2p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		521
11	220	321.278	57.3279 – 368.5783	$2s2p^2 - 2s2p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		508
16	600	323.263	101.0306 – 410.3771	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		508
6	100	323.436	0. – 309.1852	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		508
6	200	323.493	0. – 309.1312	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		508
6	500	323.620	0.1744 – 309.1852	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		508
6	100	323.675	0.1744 – 309.1312	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		508
18	20	325.788	131.0043 – 437.9516	$2s2p^2 - 2s2p(^3P^\circ)9d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		508
18	50	325.841	131.0043 – 437.9016	$2s2p^2 - 2s2p(^3P^\circ)9d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
18	50	329.242	131.0043 – 434.7315	$2s2p^2 - 2s2p(^3P^\circ)8d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		508
18	100	329.307	131.0043 – 434.6715	$2s2p^2 - 2s2p(^3P^\circ)8d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
20	300	330.26	145.9858 – 448.775	$2s2p^2 - 2s2p(^1P^\circ)4d$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		508
5	350	332.140	0. – 301.0826	$2s^2(^1S)2p - 2s^2(^1S)4s$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		508
5	650	332.333	0.1744 – 301.0826	$2s^2(^1S)2p - 2s^2(^1S)4s$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		508
18	200	334.407	131.0043 – 430.0403	$2s2p^2 - 2s2p(^3P^\circ)7d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		508
18	250	334.476	131.0043 – 429.9786	$2s2p^2 - 2s2p(^3P^\circ)7d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
16	500	338.349	101.0239 – 396.5848	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		508
20	250	338.808	145.8757 – 441.0266	$2s2p^2 - 2p^2(^3P)3p$	$^2P - ^2S^\circ$	$\frac{1}{2}-\frac{1}{2}$		508
20	300	338.937	145.9858 – 441.0266	$2s2p^2 - 2p^2(^3P)3p$	$^2P - ^2S^\circ$	$\frac{3}{2}-\frac{1}{2}$		508
16	500	340.20	101.0239 – 394.969	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		508
18	250	342.665	131.0043 – 422.8376	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		508
18	300	342.741	131.0043 – 422.7740	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
16	100	347.072	101.0306 – 389.1520	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		508
16	200	347.148	101.0239 – 389.0820	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		508
16	800	348.683	101.0239 – 387.8172	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		508
16	800	348.816	101.0306 – 387.7156	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		508
20		351.909	145.8757 – 430.0403	$2s2p^2 - 2s2p(^3P^\circ)7d$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		521
16	500	351.979	101.0239 – 385.126	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		508
20	20	352.114	145.9858 – 429.9786	$2s2p^2 - 2s2p(^3P^\circ)7d$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		508
18	250	357.238	131.0043 – 410.9270	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		508
18	450	357.324	131.0043 – 410.8591	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
11	50	358.278	57.1871 – 336.2966	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$		508
11	250	358.327	57.1871 – 336.2616	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
11	250	358.356	57.2468 – 336.2966	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		508
11	80	358.401	57.2468 – 336.2616	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		508
11	260	358.469	57.2468 – 336.2069	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		508
11	260	358.509	57.3279 – 336.2616	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		508
11	600	358.578	57.3279 – 336.2069	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		508
20	100	361.061	145.8757 – 422.8376	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		508
20	50	361.143	145.8757 – 422.7740	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
20	50	361.205	145.9858 – 422.8376	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		508
20	200	361.288	145.9858 – 422.7740	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		508
10	150	362.831	57.1871 – 332.8044	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
10	400	362.876	57.2468 – 332.8260	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		508
10	200	362.902	57.2468 – 332.8044	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		508
10	700	362.949	57.3279 – 332.8540	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		508
10	150	362.982	57.3279 – 332.8260	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		508
10	30	363.004	57.3279 – 332.8044	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{3}{2}$		508
20	300	370.640	145.8757 – 415.6797	$2s2p^2 - 2p^2(^3P)3p$	$^2P - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
20	350	370.794	145.9858 – 415.6780	$2s2p^2 - 2p^2(^3P)3p$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		508
5	500	374.204	0. – 267.2384	$2s^2(^1S)2p - 2s^2(^1S)3d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		508
5	900	374.441	0.1744 – 267.2440	$2s^2(^1S)2p - 2s^2(^1S)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		508

N III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
20	100	377.286	145.8757 – 410.9270	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		508
20	100	377.380	145.8757 – 410.8591	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
20	100	377.444	145.9858 – 410.9270	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		508
20	250	377.540	145.9858 – 410.8591	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		508
18	300	387.375	131.0043 – 389.1520	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		521
18	500	387.483	131.0043 – 389.0820	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
16	450	396.186	101.0306 – 353.4406	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		508
20	500	398.885	145.8757 – 396.5749	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
20	600	399.045	145.9858 – 396.5848	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		508
20	60	399.060	145.9858 – 396.5749	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		508
20	350	411.056	145.8757 – 389.1520	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		508
20	200	411.173	145.8757 – 389.0820	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
20	200	411.243	145.9858 – 389.1520	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		508
20	400	411.361	145.9858 – 389.0820	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		508
16	450	413.681	101.0306 – 342.7625	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		508
16	450	413.797	101.0239 – 342.6915	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		508
16	650	418.712	101.0239 – 339.8555	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		508
16	500	418.919	101.0306 – 339.7446	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		508
15	600	428.180	101.0239 – 334.5683	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		508
15	400	428.244	101.0306 – 334.5402	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		508
9	300	433.911	57.2468 – 287.7069	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		508
9	260	434.014	57.1871 – 287.5915	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
9	650	434.066	57.3279 – 287.7069	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		508
9	150	434.129	57.2468 – 287.5915	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		508
9	260	434.246	57.2468 – 287.5294	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		508
9	300	434.280	57.3279 – 287.5915	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		508
20	350	448.285	186.7971 – 409.8697	$2p^3 - 2p^2(^3P)3d$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		508
20	400	448.384	186.7971 – 409.8204	$2p^3 - 2p^2(^3P)3d$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		508
20	450	448.549	186.7971 – 409.7384	$2p^3 - 2p^2(^3P)3d$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		508
18	450	449.559	131.0043 – 353.4425	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
4	450	451.869	0. – 221.3022	$2s^2(^1S)2p - 2s^2(^1S)3s$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		508
4	900	452.226	0.1744 – 221.3022	$2s^2(^1S)2p - 2s^2(^1S)3s$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		508
14	600	456.077	101.0239 – 320.2883	$2s2p^2 - 2s^2(^1S)4f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		508
20	500	467.432	186.7971 – 400.7322	$2p^3 - 2p^2(^3P)3s$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		508
20	450	467.649	186.7971 – 400.6329	$2p^3 - 2p^2(^3P)3s$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		508
20	350	467.795	186.7971 – 400.5662	$2p^3 - 2p^2(^3P)3s$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		508
18	300	472.239	131.0043 – 342.7625	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		508
18	550	472.399	131.0043 – 342.6915	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		508
20	200	481.778	145.8757 – 353.4406	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		508
20	500	482.030	145.9858 – 353.4425	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		508
14	400	509.586	101.0239 – 297.2644	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		168
14	350	509.897	101.0306 – 297.1512	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		168
20	200	530.037	145.8757 – 334.5402	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		168
20	250	530.268	145.9858 – 334.5683	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		168
17	100	601.468	131.0043 – 297.2644	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		168
17	10	601.878	131.0043 – 297.1512	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		168
3	700	684.996	0. – 145.9858	$2s^2(^1S)2p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		197,168
3	750	685.513	0. – 145.8757	$2s^2(^1S)2p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		197,168
3	800	685.816	0.1744 – 145.9858	$2s^2(^1S)2p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		197,168
3	700	686.335	0.1744 – 145.8757	$2s^2(^1S)2p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		197,168
13	100	691.187	101.0239 – 245.7013	$2s2p^2 - 2s^2(^1S)3p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		168
13	50	691.388	101.0306 – 245.6654	$2s2p^2 - 2s^2(^1S)3p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		168
		758.09	245.7013 – 377.6113	$2s^2(^1S)3p - 2s2p(^1P^\circ)3p$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$	P	934
2	700	763.340	0. – 131.0043	$2s^2(^1S)2p - 2s2p^2$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		197,168

N III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
2	750	764.357	0.1744 – 131.0043	$2s^2(^1S)2p - 2s2p^2$	$g^2P^o - ^2S$	$\frac{3}{2}-\frac{1}{2}$		197,168
8	500	771.544	57.1871 – 186.7971	$2s2p^2 - 2p^3$	$^4P - ^4S^o$	$\frac{1}{2}-\frac{3}{2}$		197,168
8	550	771.901	57.2468 – 186.7971	$2s2p^2 - 2p^3$	$^4P - ^4S^o$	$\frac{3}{2}-\frac{3}{2}$		197,168
8	600	772.385	57.3279 – 186.7971	$2s2p^2 - 2p^3$	$^4P - ^4S^o$	$\frac{5}{2}-\frac{3}{2}$		197,168
13	450	772.891	101.0239 – 230.4086	$2s2p^2 - 2p^3$	$^2D - ^2P^o$	$\frac{5}{2}-\frac{3}{2}$		168
13	400	772.955	101.0306 – 230.4043	$2s2p^2 - 2p^3$	$^2D - ^2P^o$	$\frac{3}{2}-\frac{1}{2}$	P	168
		783.24	245.7013 – 373.3757	$2s^2(^1S)3p - 2s2p(^1P^o)3p$	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	934
17	25	871.870	131.0043 – 245.7013	$2s2p^2 - 2s^2(^1S)3p$	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$		521
17	10	872.143	131.0043 – 245.6654	$2s2p^2 - 2s^2(^1S)3p$	$^2S - ^2P^o$	$\frac{1}{2}-\frac{1}{2}$		521
		884.76	287.7069 – 400.7322	$2s2p(^3P^o)3s - 2p^2(^3P)3s$	$^4P^o - ^4P$	$\frac{5}{2}-\frac{5}{2}$	P	934
12	400	979.842	101.0306 – 203.0889	$2s2p^2 - 2p^3$	$^2D - ^2D^o$	$\frac{3}{2}-\frac{3}{2}$		168
12	450	979.919	101.0239 – 203.0746	$2s2p^2 - 2p^3$	$^2D - ^2D^o$	$\frac{5}{2}-\frac{5}{2}$		168
1	900	989.790	0. – 101.0306	$2s^2(^1S)2p - 2s2p^2$	$g^2P^o - ^2D$	$\frac{1}{2}-\frac{3}{2}$		521
1	700	991.514	0.1744 – 101.0306	$2s^2(^1S)2p - 2s2p^2$	$g^2P^o - ^2D$	$\frac{3}{2}-\frac{3}{2}$		521
1	1000	991.579	0.1744 – 101.0239	$2s^2(^1S)2p - 2s2p^2$	$g^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$		521
17	300	1006.015	131.0043 – 230.4086	$2s2p^2 - 2p^3$	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$		168
F7		1126.900	57.2468 – 145.9858	$2s2p^2 - 2s2p^2$	$^4P - ^2P$	$\frac{3}{2}-\frac{3}{2}$	F,P	521
F7		1127.931	57.3279 – 145.9858	$2s2p^2 - 2s2p^2$	$^4P - ^2P$	$\frac{5}{2}-\frac{3}{2}$	F,P	521
F7		1128.300	57.2468 – 145.8757	$2s2p^2 - 2s2p^2$	$^4P - ^2P$	$\frac{3}{2}-\frac{1}{2}$	F,P	521
20	350	1183.030	145.8757 – 230.4043	$2s2p^2 - 2p^3$	$^2P - ^2P^o$	$\frac{1}{2}-\frac{1}{2}$		168
20	400	1184.514	145.9858 – 230.4086	$2s2p^2 - 2p^3$	$^2P - ^2P^o$	$\frac{3}{2}-\frac{3}{2}$	P	521
		1324.188	321.0668 – 396.5848	$2s2p(^1P^o)3p - 2s2p(^1P^o)3d$	$^2D - ^2D^o$	$\frac{5}{2}-\frac{5}{2}$	P	375
	90	1324.361	321.0668 – 396.5749	$2s2p(^1P^o)3p - 2s2p(^1P^o)3d$	$^2D - ^2D^o$	$\frac{5}{2}-\frac{3}{2}$	P	521
	150	1324.40	267.2440 – 342.7501	$2s^2(^1S)3d - 2s^2(^1S)5f$	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	246
25	200	1345.78	309.7535 – 384.060	$2s2p(^3P^o)3p - 2s2p(^3P^o)4d$	$^4D - ^4F^o$	$\frac{5}{2}-\frac{7}{2}$	P	246
25	200	1346.18	309.8498 – 384.134	$2s2p(^3P^o)3p - 2s2p(^3P^o)4d$	$^4D - ^4F^o$	$\frac{7}{2}-\frac{9}{2}$	P	246
25	10	1347.52	309.8498 – 384.060	$2s2p(^3P^o)3p - 2s2p(^3P^o)4d$	$^4D - ^4F^o$	$\frac{7}{2}-\frac{7}{2}$	P	246
F7		1354.698	57.1871 – 131.0043	$2s2p^2 - 2s2p^2$	$^4P - ^2S$	$\frac{1}{2}-\frac{1}{2}$	F,P	521
F7		1355.794	57.2468 – 131.0043	$2s2p^2 - 2s2p^2$	$^4P - ^2S$	$\frac{3}{2}-\frac{1}{2}$	F,P	521
22	50	1387.303	245.6654 – 317.7477	$2s^2(^1S)3p - 2s^2(^1S)4d$	$^2P^o - ^2D$	$\frac{1}{2}-\frac{3}{2}$	P	521
22	100	1387.382	245.7013 – 317.7795	$2s^2(^1S)3p - 2s^2(^1S)4d$	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	521
22	40	1387.995	245.7013 – 317.7477	$2s^2(^1S)3p - 2s^2(^1S)4d$	$^2P^o - ^2D$	$\frac{3}{2}-\frac{3}{2}$		521
25	4	1470.68	317.2936 – 385.291	$2s2p(^3P^o)3p - 2s2p(^3P^o)4d$	$^4P - ^4D^o$	$\frac{1}{2}-\frac{3}{2}$	P	521
25	40	1470.98	317.3362 – 385.318	$2s2p(^3P^o)3p - 2s2p(^3P^o)4d$	$^4P - ^4D^o$	$\frac{3}{2}-\frac{5}{2}$	P	521
25	60	1471.63	317.3952 – 385.347	$2s2p(^3P^o)3p - 2s2p(^3P^o)4d$	$^4P - ^4D^o$	$\frac{5}{2}-\frac{7}{2}$	P	521
22	25	1574.32	245.6654 – 309.1852	$2s^2(^1S)3p - 2s2p(^3P^o)3p$	$^2P^o - ^2P$	$\frac{1}{2}-\frac{3}{2}$		521
22	60	1575.21	245.7013 – 309.1852	$2s^2(^1S)3p - 2s2p(^3P^o)3p$	$^2P^o - ^2P$	$\frac{3}{2}-\frac{3}{2}$		521
22	40	1575.65	245.6654 – 309.1312	$2s^2(^1S)3p - 2s2p(^3P^o)3p$	$^2P^o - ^2P$	$\frac{1}{2}-\frac{1}{2}$		521
22	25	1576.54	245.7013 – 309.1312	$2s^2(^1S)3p - 2s2p(^3P^o)3p$	$^2P^o - ^2P$	$\frac{3}{2}-\frac{1}{2}$		521
25	1	1694.786	309.6918 – 368.6963	$2s2p(^3P^o)3p - 2s2p(^3P^o)4s$	$^4D - ^4P^o$	$\frac{3}{2}-\frac{5}{2}$	P	521
25	10	1696.560	309.7535 – 368.6963	$2s2p(^3P^o)3p - 2s2p(^3P^o)4s$	$^4D - ^4P^o$	$\frac{5}{2}-\frac{5}{2}$	P	521
25	4	1697.156	309.6562 – 368.5783	$2s2p(^3P^o)3p - 2s2p(^3P^o)4s$	$^4D - ^4P^o$	$\frac{1}{2}-\frac{3}{2}$	P	521,375
25		1698.999	309.6562 – 368.5144	$2s2p(^3P^o)3p - 2s2p(^3P^o)4s$	$^4D - ^4P^o$	$\frac{1}{2}-\frac{1}{2}$	P	521
25	90	1699.336	309.8498 – 368.6963	$2s2p(^3P^o)3p - 2s2p(^3P^o)4s$	$^4D - ^4P^o$	$\frac{7}{2}-\frac{5}{2}$	P	521
25	60	1699.963	309.7535 – 368.5783	$2s2p(^3P^o)3p - 2s2p(^3P^o)4s$	$^4D - ^4P^o$	$\frac{5}{2}-\frac{3}{2}$	P	521
25	25	1700.027	309.6918 – 368.5144	$2s2p(^3P^o)3p - 2s2p(^3P^o)4s$	$^4D - ^4P^o$	$\frac{3}{2}-\frac{1}{2}$	P	521
26	4	1725.315	330.3185 – 388.2794	$2s2p(^3P^o)3d - 2s2p(^3P^o)4f$	$^4F^o - ^2G$	$\frac{7}{2}-\frac{9}{2}$		521
26	4	1726.776	330.2665 – 388.1782	$2s2p(^3P^o)3d - 2s2p(^3P^o)4f$	$^4F^o - ^2G$	$\frac{5}{2}-\frac{7}{2}$		521
26	60	1727.426	330.3899 – 388.2794	$2s2p(^3P^o)3d - 2s2p(^3P^o)4f$	$^4F^o - ^2G$	$\frac{9}{2}-\frac{9}{2}$		521
26	4	1728.318	330.3185 – 388.1782	$2s2p(^3P^o)3d - 2s2p(^3P^o)4f$	$^4F^o - ^2G$	$\frac{7}{2}-\frac{7}{2}$		521
26	250	1729.945	330.3185 – 388.1238	$2s2p(^3P^o)3d - 2s2p(^3P^o)4f$	$^4F^o - ^4G$	$\frac{7}{2}-\frac{9}{2}$		521
	400	1730.04	330.2665 – 388.0699	$2s2p(^3P^o)3d - 2s2p(^3P^o)4f$	$^4F^o - ^4G$	$\frac{5}{2}-\frac{7}{2}$		168
26	10	1730.863	330.2665 – 388.0411	$2s2p(^3P^o)3d - 2s2p(^3P^o)4f$	$^4F^o - ^4G$	$\frac{5}{2}-\frac{5}{2}$		521
26	10	1731.561	330.3185 – 388.0699	$2s2p(^3P^o)3d - 2s2p(^3P^o)4f$	$^4F^o - ^4G$	$\frac{7}{2}-\frac{7}{2}$		521

N III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
26	10	1732.089	330.3899 – 388.1238	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4F^\circ - {}^4G$	9/2 – 9/2		521
0		1746.822	0. – 57.2468	$2s^2(^1S)2p - 2s2p^2$	$g^2P^\circ - {}^4P$	1/2 – 3/2	P	209
19	450	1747.848	145.8757 – 203.0889	$2s2p^2 - 2p^3$	$^2P - {}^2D^\circ$	1/2 – 3/2	P	168
0	25	1748.646	0. – 57.1871	$2s^2(^1S)2p - 2s2p^2$	$g^2P^\circ - {}^4P$	1/2 – 1/2	P	209
0	25	1749.674	0.1744 – 57.3279	$2s^2(^1S)2p - 2s2p^2$	$g^2P^\circ - {}^4P$	3/2 – 5/2		209
19	300	1751.218	145.9858 – 203.0889	$2s2p^2 - 2p^3$	$^2P - {}^2D^\circ$	3/2 – 3/2	P	168
19	500	1751.657	145.9858 – 203.0746	$2s2p^2 - 2p^3$	$^2P - {}^2D^\circ$	3/2 – 5/2	P	168
0		1752.160	0.1744 – 57.2468	$2s^2(^1S)2p - 2s2p^2$	$g^2P^\circ - {}^4P$	3/2 – 3/2	P	209
0	4	1753.986	0.1744 – 57.1871	$2s^2(^1S)2p - 2s2p^2$	$g^2P^\circ - {}^4P$	3/2 – 1/2		209
26	25	1762.09	330.2321 – 386.9828	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4F^\circ - {}^4F$	3/2 – 5/2		521
26	4	1762.426	330.2321 – 386.9716	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4F^\circ - {}^4F$	3/2 – 3/2		521
26	4	1762.592	330.2665 – 387.0009	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4F^\circ - {}^4F$	5/2 – 7/2		521
26	10	1763.16	330.2665 – 386.9828	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4F^\circ - {}^4F$	5/2 – 5/2		521
26		1763.51	330.2665 – 386.9716	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4F^\circ - {}^4F$	5/2 – 3/2		521
26	60	1763.84	330.3185 – 387.0131	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4F^\circ - {}^4F$	7/2 – 9/2		521
26	4	1764.218	330.3185 – 387.0009	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4F^\circ - {}^4F$	7/2 – 7/2		521
26	4	1764.79	330.3185 – 386.9828	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4F^\circ - {}^4F$	7/2 – 5/2		521
26	25	1766.059	330.3899 – 387.0131	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4F^\circ - {}^4F$	9/2 – 9/2		521
26	1	1797.277	332.8044 – 388.4424	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4D^\circ - {}^2D$	3/2 – 3/2		521
26	4	1798.733	332.7913 – 388.3858	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4D^\circ - {}^4D$	1/2 – 1/2		521
26	4	1799.180	332.8044 – 388.3858	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4D^\circ - {}^4D$	3/2 – 1/2		521
26	4	1799.660	332.7913 – 388.3568	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4D^\circ - {}^4D$	1/2 – 3/2		521
26	25	1800.131	332.8044 – 388.3568	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4D^\circ - {}^4D$	3/2 – 3/2		521
26	10	1800.789	332.8260 – 388.3568	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4D^\circ - {}^4D$	5/2 – 3/2		521
26	4	1801.639	332.8044 – 388.3093	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4D^\circ - {}^4D$	3/2 – 5/2		521
26	40	1802.365	332.8260 – 388.3093	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4D^\circ - {}^4D$	5/2 – 5/2		521
26	4	1803.255	332.8540 – 388.3093	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4D^\circ - {}^4D$	7/2 – 5/2		521
26	4	1803.525	332.8260 – 388.2728	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4D^\circ - {}^4D$	5/2 – 7/2		521
26		1804.44	332.8540 – 388.2728	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4D^\circ - {}^4D$	7/2 – 7/2		521
22	150	1804.486	245.6654 – 301.0826	$2s^2(^1S)3p - 2s^2(^1S)4s$	$^2P^\circ - {}^2S$	1/2 – 1/2		521
22	200	1805.669	245.7013 – 301.0826	$2s^2(^1S)3p - 2s^2(^1S)4s$	$^2P^\circ - {}^2S$	3/2 – 1/2		521
25	25	1835.568	314.2173 – 368.6963	$2s2p(^3P^\circ)3p - 2s2p(^3P^\circ)4s$	$^4S - {}^4P^\circ$	3/2 – 5/2		521
25	25	1839.541	314.2173 – 368.5783	$2s2p(^3P^\circ)3p - 2s2p(^3P^\circ)4s$	$^4S - {}^4P^\circ$	3/2 – 3/2		521
25	10	1841.718	314.2173 – 368.5144	$2s2p(^3P^\circ)3p - 2s2p(^3P^\circ)4s$	$^4S - {}^4P^\circ$	3/2 – 1/2		521
26	80	1845.689	332.7913 – 386.9716	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4D^\circ - {}^4F$	1/2 – 3/2	P	521
26	120	1845.754	332.8044 – 386.9828	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4D^\circ - {}^4F$	3/2 – 5/2	P	521
26	120	1845.865	332.8260 – 387.0009	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4D^\circ - {}^4F$	5/2 – 7/2		521
26	25	1846.142	332.8044 – 386.9716	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4D^\circ - {}^4F$	3/2 – 3/2		521
26	150	1846.415	332.8540 – 387.0131	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4D^\circ - {}^4F$	7/2 – 9/2		521
26	60	1846.694	332.8260 – 386.9770	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4D^\circ - {}^2F$	5/2 – 7/2		521
27	4	1855.232	334.5402 – 388.4424	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^2D^\circ - {}^2D$	3/2 – 3/2		521
27	25	1858.48	334.5683 – 388.3756	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^2D^\circ - {}^2D$	5/2 – 5/2		521
27	4	1860.733	334.5683 – 388.3093	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^2D^\circ - {}^4D$	5/2 – 5/2		521
24	350	1885.058	267.2384 – 320.2872	$2s^2(^1S)3d - 2s^2(^1S)4f$	$^2D - {}^2F^\circ$	3/2 – 5/2		521
24	400	1885.215	267.2440 – 320.2883	$2s^2(^1S)3d - 2s^2(^1S)4f$	$^2D - {}^2F^\circ$	5/2 – 7/2		521
27	40	1906.847	334.5402 – 386.9828	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^2D^\circ - {}^4F$	3/2 – 5/2		521
27	90	1907.209	334.5683 – 387.0009	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^2D^\circ - {}^4F$	5/2 – 7/2		521
27	100	1907.916	334.5402 – 386.9534	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^2D^\circ - {}^2F$	3/2 – 5/2	P	521
27	150	1908.080	334.5683 – 386.9770	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^2D^\circ - {}^2F$	5/2 – 7/2	P	521
27	25	1908.936	334.5683 – 386.9534	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^2D^\circ - {}^2F$	5/2 – 5/2		521
29	4	1916.41	336.2616 – 388.4424	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4P^\circ - {}^2D$	3/2 – 3/2	P	521
29	4	1916.849	336.2069 – 388.3756	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4P^\circ - {}^2D$	5/2 – 5/2		521
29	1	1917.572	336.2069 – 388.3568	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4P^\circ - {}^4D$	5/2 – 3/2		521
29	10	1918.53	336.2616 – 388.3858	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4P^\circ - {}^4D$	3/2 – 1/2		521

N III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
29	40	1918.87	336.2616 – 388.3756	2s2p($^3P^o$)3d – 2s2p($^3P^o$)4f	$^4P^o$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$		521
29	90	1919.288	336.2069 – 388.3093	2s2p($^3P^o$)3d – 2s2p($^3P^o$)4f	$^4P^o$ – ^4D	$\frac{5}{2}$ – $\frac{5}{2}$		521
29	150	1919.547	336.2616 – 388.3568	2s2p($^3P^o$)3d – 2s2p($^3P^o$)4f	$^4P^o$ – ^4D	$\frac{3}{2}$ – $\frac{3}{2}$		521
29	150	1919.768	336.2966 – 388.3858	2s2p($^3P^o$)3d – 2s2p($^3P^o$)4f	$^4P^o$ – ^4D	$\frac{1}{2}$ – $\frac{1}{2}$		521
29	300	1920.654	336.2069 – 388.2728	2s2p($^3P^o$)3d – 2s2p($^3P^o$)4f	$^4P^o$ – ^4D	$\frac{5}{2}$ – $\frac{7}{2}$		521
29	150	1920.838	336.2966 – 388.3568	2s2p($^3P^o$)3d – 2s2p($^3P^o$)4f	$^4P^o$ – ^4D	$\frac{1}{2}$ – $\frac{3}{2}$		521
29	200	1921.299	336.2616 – 388.3093	2s2p($^3P^o$)3d – 2s2p($^3P^o$)4f	$^4P^o$ – ^4D	$\frac{3}{2}$ – $\frac{5}{2}$		521
25	40	1947.049	317.3362 – 368.6963	2s2p($^3P^o$)3p – 2s2p($^3P^o$)4s	^4P – $^4P^o$	$\frac{3}{2}$ – $\frac{5}{2}$		521
25	90	1949.285	317.3952 – 368.6963	2s2p($^3P^o$)3p – 2s2p($^3P^o$)4s	^4P – $^4P^o$	$\frac{5}{2}$ – $\frac{5}{2}$		521
25	40	1949.909	317.2936 – 368.5783	2s2p($^3P^o$)3p – 2s2p($^3P^o$)4s	^4P – $^4P^o$	$\frac{1}{2}$ – $\frac{3}{2}$		521
25	25	1951.521	317.3362 – 368.5783	2s2p($^3P^o$)3p – 2s2p($^3P^o$)4s	^4P – $^4P^o$	$\frac{3}{2}$ – $\frac{3}{2}$		521
25	10	1952.330	317.2936 – 368.5144	2s2p($^3P^o$)3p – 2s2p($^3P^o$)4s	^4P – $^4P^o$	$\frac{1}{2}$ – $\frac{1}{2}$		521
25	25	1953.784	317.3952 – 368.5783	2s2p($^3P^o$)3p – 2s2p($^3P^o$)4s	^4P – $^4P^o$	$\frac{5}{2}$ – $\frac{3}{2}$		521
25		1953.957	317.3362 – 368.5144	2s2p($^3P^o$)3p – 2s2p($^3P^o$)4s	^4P – $^4P^o$	$\frac{3}{2}$ – $\frac{1}{2}$		521

NITROGEN IV (N^{3+}), Z = 7
Ground State $1s^2 2s^2 (^1S_0)$ (4 electrons)
Ionization Potential 624 866 cm^{-1}; 77.474 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	159.366	67.4163 – 694.9027	2s2p – 2p($^2P^o$)13p	$^3P^o$ – ^3P	2 – 2		508
	1	159.833	67.4163 – 693.0693	2s2p – 2p($^2P^o$)12p	$^3P^o$ – ^3P	2 – 2		508
	1	160.451	67.4163 – 690.6595	2s2p – 2p($^2P^o$)11p	$^3P^o$ – ^3P	2 – 2		508
	2	161.256	67.4163 – 687.5483	2s2p – 2p($^2P^o$)10p	$^3P^o$ – ^3P	2 – 2		508
	2	161.286	67.4163 – 687.378	2s2p – 2p($^2P^o$)10p	$^3P^o$ – ^3D	2 – 2		508
	2	162.374	67.4163 – 683.2784	2s2p – 2p($^2P^o$)9p	$^3P^o$ – ^3P	2 – 2		508
	10	162.423	67.4163 – 683.0927	2s2p – 2p($^2P^o$)9p	$^3P^o$ – ^3D	2 – 3		508
	1	162.816	0.0 – 614.1903	$2s^2$ – 2s13p	g^1S – $^1P^o$	0 – 1		508
	1	163.311	0.0 – 612.3286	$2s^2$ – 2s12p	g^1S – $^1P^o$	0 – 1		508
	10	163.949	0.0 – 609.9458	$2s^2$ – 2s11p	g^1S – $^1P^o$	0 – 1		508
	2	163.972	67.4163 – 677.2765	2s2p – 2p($^2P^o$)8p	$^3P^o$ – ^3P	2 – 2		508
	50	164.048	67.4163 – 676.9940	2s2p – 2p($^2P^o$)8p	$^3P^o$ – ^3D	2 – 3		508
	30	164.794	0.0 – 606.8182	$2s^2$ – 2s10p	g^1S – $^1P^o$	0 – 1		508
	50	165.945	0.0 – 602.6093	$2s^2$ – 2s9p	g^1S – $^1P^o$	0 – 1		508
	10	166.337	67.2723 – 668.4609	2s2p – 2p($^2P^o$)7p	$^3P^o$ – ^3P	1 – 2		508
	20	166.377	67.4163 – 668.4609	2s2p – 2p($^2P^o$)7p	$^3P^o$ – ^3P	2 – 2		508
	20	166.496	67.4163 – 668.0313	2s2p – 2p($^2P^o$)7p	$^3P^o$ – ^3D	2 – 3		508
	75	166.540	67.4163 – 667.8726	2s2p – 2p($^2P^o$)7p	$^3P^o$ – ^3D	2 – 2		508
2		167.074	0.0 – 598.5382	$2s^2$ – 2p($^2P^o_{3/2}$)4d	g^1S – $^1P^o$	0 – 1	P	511
	150	167.709	0.0 – 596.2709	$2s^2$ – 2s8p	g^1S – $^1P^o$	0 – 1		508
	200	170.074	0.0 – 587.9794	$2s^2$ – 2s7p	g^1S – $^1P^o$	0 – 1		508
	50	170.208	67.2723 – 654.7913	2s2p – 2p($^2P^o$)6p	$^3P^o$ – ^3P	1 – 2		508
	100	170.249	67.4163 – 654.7913	2s2p – 2p($^2P^o$)6p	$^3P^o$ – ^3P	2 – 2		508
	50	170.463	67.4163 – 654.0539	2s2p – 2p($^2P^o$)6p	$^3P^o$ – ^3D	2 – 3		508
	100	170.505	67.4163 – 653.9094	2s2p – 2p($^2P^o$)6p	$^3P^o$ – ^3D	2 – 2		508
2		172.171	0.0 – 580.8175	$2s^2$ – 2p($^2P^o_{3/2}$)4s	g^1S – $^1P^o$	0 – 1	P	511
	200	174.602	0.0 – 572.7311	$2s^2$ – 2s6p	g^1S – $^1P^o$	0 – 1		508
	100	177.119	67.2723 – 631.8682	2s2p – 2p($^2P^o$)5p	$^3P^o$ – ^3P	1 – 2		508
	80	177.142	67.2723 – 631.78	2s2p – 2p($^2P^o$)5p	$^3P^o$ – ^3P	1 – 0		508
	200	177.163	67.4163 – 631.8682	2s2p – 2p($^2P^o$)5p	$^3P^o$ – ^3P	2 – 2		508

N IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	177.182	67.4163 – 631.8077	2s2p – 2p(^{2}P°)5p	^{3}P° – ^{3}P	2 – 1		508
	100	177.602	67.4163 – 630.4730	2s2p – 2p(^{2}P°)5p	^{3}P° – ^{3}D	2 – 3		508
	100	177.621	67.2723 – 630.2688	2s2p – 2p(^{2}P°)5p	^{3}P° – ^{3}D	1 – 1		508
	250	177.646	67.4163 – 630.3336	2s2p – 2p(^{2}P°)5p	^{3}P° – ^{3}D	2 – 2		508
	1	178.547	130.6939 – 690.7705	2s2p – 2p(^{2}P$^\circ_{3/2}$)11p	^{1}P° – ^{1}D	1 – 2		508
	2	179.554	130.6939 – 687.6294	2s2p – 2p(^{2}P$^\circ_{3/2}$)10p	^{1}P° – ^{1}D	1 – 2		508
	5	180.928	130.6939 – 683.3999	2s2p – 2p(^{2}P$^\circ_{3/2}$)9p	^{1}P° – ^{1}D	1 – 2		508
	400	181.746	0.0 – 550.2326	2s^2 – 2s5p	g^{1}S – ^{1}P°	0 – 1		508
6		181.895	67.2723 – 617.0387	2s2p – 2s15d	^{3}P° – ^{3}D	1 – 2	P	511
	10	181.943	67.4163 – 617.0387	2s2p – 2s15d	^{3}P° – ^{3}D	2 – 3		508
6		182.275	67.2723 – 615.8944	2s2p – 2s14d	^{3}P° – ^{3}D	1 – 2	P	511
	20	182.323	67.4163 – 615.8944	2s2p – 2s14d	^{3}P° – ^{3}D	2 – 3		508
6		182.779	67.2723 – 614.3806	2s2p – 2s13d	^{3}P° – ^{3}D	1 – 2	P	511
	30	182.827	67.4163 – 614.3806	2s2p – 2s13d	^{3}P° – ^{3}D	2 – 3		508
	10	182.894	130.6939 – 677.4587	2s2p – 2p(^{2}P$^\circ_{3/2}$)8p	^{1}P° – ^{1}D	1 – 2		508
	5	183.146	130.6939 – 676.7064	2s2p – 2p(^{2}P$^\circ_{1/2}$)8p	^{1}P° – ^{1}P	1 – 1		508
	35	183.402	67.2723 – 612.5251	2s2p – 2s12d	^{3}P° – ^{3}D	1 – 2		508
	50	183.450	67.4163 – 612.5251	2s2p – 2s12d	^{3}P° – ^{3}D	2 – 3		508
	50	184.200	67.2723 – 610.1660	2s2p – 2s11d	^{3}P° – ^{3}D	1 – 2		508
	75	184.247	67.4163 – 610.1660	2s2p – 2s11d	^{3}P° – ^{3}D	2 – 3		508
	1	184.437	67.2723 – 609.4658	2s2p – 2s11s	^{3}P° – ^{3}S	1 – 1		508
	2	184.485	67.4163 – 609.4658	2s2p – 2s11s	^{3}P° – ^{3}S	2 – 1		508
	50	185.237	67.2092 – 607.0642	2s2p – 2s10d	^{3}P° – ^{3}D	0 – 1		508
	150	185.257	67.2723 – 607.0642	2s2p – 2s10d	^{3}P° – ^{3}D	1 – 2		508
	200	185.306	67.4163 – 607.0642	2s2p – 2s10d	^{3}P° – ^{3}D	2 – 3		508
	3	185.568	67.2723 – 606.1426	2s2p – 2s10s	^{3}P° – ^{3}S	1 – 1		508
	5	185.623	67.4163 – 606.1426	2s2p – 2s10s	^{3}P° – ^{3}S	2 – 1		508
	75	185.853	130.6939 – 668.7535	2s2p – 2p(^{2}P$^\circ_{3/2}$)7p	^{1}P° – ^{1}D	1 – 2		508
	50	186.218	130.6939 – 667.6989	2s2p – 2p(^{2}P$^\circ_{1/2}$)7p	^{1}P° – ^{1}P	1 – 1		508
	150	186.690	67.2092 – 602.8657	2s2p – 2s9d	^{3}P° – ^{3}D	0 – 1		508
	250	186.709	67.2723 – 602.8657	2s2p – 2s9d	^{3}P° – ^{3}D	1 – 2		508
	300	186.759	67.4163 – 602.8657	2s2p – 2s9d	^{3}P° – ^{3}D	2 – 3		508
	10	187.123	67.2092 – 601.6215	2s2p – 2s9s	^{3}P° – ^{3}S	0 – 1		508
	10	187.142	67.2723 – 601.6215	2s2p – 2s9s	^{3}P° – ^{3}S	1 – 1		508
	20	187.194	67.4163 – 601.6215	2s2p – 2s9s	^{3}P° – ^{3}S	2 – 1		508
	100	188.583	67.2092 – 597.4816	2s2p – 2s8s	^{3}P° – ^{3}S	0 – 1		508
	200	188.606	67.2723 – 597.4816	2s2p – 2s8s	^{3}P° – ^{3}S	1 – 1		508
	250	188.656	67.4163 – 597.4816	2s2p – 2s8s	^{3}P° – ^{3}S	2 – 1		508
	100	188.743	67.2092 – 597.0268	2s2p – 2s8d	^{3}P° – ^{3}D	0 – 1		508
	200	188.762	67.2723 – 597.0268	2s2p – 2s8d	^{3}P° – ^{3}D	1 – 2		508
	300	188.818	67.4163 – 597.0268	2s2p – 2s8d	^{3}P° – ^{3}D	2 – 3		508
	1	189.365	67.2092 – 595.2963	2s2p – 2p(^{2}P$^\circ_{3/2}$)4p	^{3}P° – ^{3}S	0 – 1		508
	5	189.386	67.2723 – 595.2963	2s2p – 2p(^{2}P$^\circ_{3/2}$)4p	^{3}P° – ^{3}S	1 – 1		508
	10	189.437	67.4163 – 595.2963	2s2p – 2p(^{2}P$^\circ_{3/2}$)4p	^{3}P° – ^{3}S	2 – 1		508
	200	190.625	130.6939 – 655.2841	2s2p – 2p(^{2}P$^\circ_{3/2}$)6p	^{1}P° – ^{1}D	1 – 2		508
	100	191.228	130.6939 – 653.6299	2s2p – 2p(^{2}P$^\circ_{1/2}$)6p	^{1}P° – ^{1}P	1 – 1		508
	250	191.651	67.2092 – 588.9912	2s2p – 2p(^{2}P°)4p	^{3}P° – ^{3}P	0 – 1		508
	100	191.676	67.2723 – 588.9912	2s2p – 2p(^{2}P°)4p	^{3}P° – ^{3}P	1 – 1		508
	400	191.702	67.4163 – 589.0593	2s2p – 2p(^{2}P°)4p	^{3}P° – ^{3}P	2 – 2		508
	150	191.727	67.4163 – 588.9912	2s2p – 2p(^{2}P°)4p	^{3}P° – ^{3}P	2 – 1		508
	120	191.748	67.2723 – 588.7901	2s2p – 2p(^{2}P°)4p	^{3}P° – ^{3}P	1 – 0		508
	150	191.868	67.2092 – 588.3826	2s2p – 2s7d	^{3}P° – ^{3}D	0 – 1		508
	350	191.898	67.2723 – 588.3826	2s2p – 2s7d	^{3}P° – ^{3}D	1 – 2		508
	350	191.951	67.4163 – 588.3826	2s2p – 2s7d	^{3}P° – ^{3}D	2 – 3		508

N IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	192.533	175.7329 – 695.1244	$2p^2 - 2p(^2P^\circ)13d$	$^3P - ^3D^\circ$	2 – 3		508
2		192.823	0.0 – 518.6105	$2s^2 - 2p(^2P^\circ_{3/2})3d$	$g^1S - ^1P^\circ$	0 – 1	P	511
	400	192.859	67.4163 – 585.9298	$2s2p - 2p(^2P^\circ)4p$	$^3P^\circ - ^3D$	2 – 3		508
	100	192.888	67.2723 – 585.7095	$2s2p - 2p(^2P^\circ)4p$	$^3P^\circ - ^3D$	1 – 1		508
	100	192.908	67.4163 – 585.7981	$2s2p - 2p(^2P^\circ)4p$	$^3P^\circ - ^3D$	2 – 2		508
6	10	192.941	67.4163 – 585.7095	$2s2p - 2p(^2P^\circ)4p$	$^3P^\circ - ^3D$	2 – 1	P	511
	200	193.139	67.2092 – 584.9771	$2s2p - 2s7s$	$^3P^\circ - ^3S$	0 – 1		508
	300	193.160	67.2723 – 584.9771	$2s2p - 2s7s$	$^3P^\circ - ^3S$	1 – 1		508
	350	193.214	67.4163 – 584.9771	$2s2p - 2s7s$	$^3P^\circ - ^3S$	2 – 1		508
	75	194.083	175.7329 – 690.9764	$2p^2 - 2p(^2P^\circ)11d$	$^3P - ^3D^\circ$	2 – 3		508
	20	195.202	175.7329 – 688.0227	$2p^2 - 2p(^2P^\circ)10d$	$^3P - ^3P^\circ$	2 – 2		508
	100	195.258	175.7329 – 687.8758	$2p^2 - 2p(^2P^\circ)10d$	$^3P - ^3D^\circ$	2 – 3		508
	1	195.610	175.7329 – 686.9542	$2p^2 - 2p(^2P^\circ)10s$	$^3P - ^3P^\circ$	2 – 2		508
	100	196.802	175.7329 – 683.8578	$2p^2 - 2p(^2P^\circ)9d$	$^3P - ^3P^\circ$	2 – 2		508
	500	196.866	175.7329 – 683.6926	$2p^2 - 2p(^2P^\circ)9d$	$^3P - ^3D^\circ$	2 – 3		508
	200	196.921	67.2092 – 575.0305	$2s2p - 2s6d$	$^3P^\circ - ^3D$	0 – 1		508
	400	196.944	67.2723 – 575.0305	$2s2p - 2s6d$	$^3P^\circ - ^3D$	1 – 1		508
	400	197.000	67.4163 – 575.0305	$2s2p - 2s6d$	$^3P^\circ - ^3D$	2 – 1		508
	500	197.230	0.0 – 507.0279	$2s^2 - 2s4p$	$g^1S - ^1P^\circ$	0 – 1		508
	2	197.343	175.7329 – 682.4648	$2p^2 - 2p(^2P^\circ)9s$	$^3P - ^3P^\circ$	2 – 2		508
	150	198.740	67.2092 – 570.3813	$2s2p - 2s6s$	$^3P^\circ - ^3S$	0 – 1		508
	250	198.764	67.2723 – 570.3813	$2s2p - 2s6s$	$^3P^\circ - ^3S$	1 – 1		508
	300	198.821	67.4163 – 570.3813	$2s2p - 2s6s$	$^3P^\circ - ^3S$	2 – 1		508
	200	199.087	175.7329 – 678.0259	$2p^2 - 2p(^2P^\circ)8d$	$^3P - ^3P^\circ$	2 – 2		508
	450	199.159	175.7329 – 677.8443	$2p^2 - 2p(^2P^\circ)8d$	$^3P - ^3D^\circ$	2 – 3		508
	20	199.806	175.6081 – 676.0907	$2p^2 - 2p(^2P^\circ)8s$	$^3P - ^3P^\circ$	1 – 2		508
	50	199.857	175.7329 – 676.0907	$2p^2 - 2p(^2P^\circ)8s$	$^3P - ^3P^\circ$	2 – 2		508
18		200.316	188.8825 – 688.094	$2p^2 - 2p(^2P^\circ_{3/2})10d$	$^1D - ^1P^\circ$	2 – 1	P	511
	300	200.340	130.6939 – 629.8453	$2s2p - 2p(^2P^\circ_{1/2})5p$	$^1P^\circ - ^1P$	1 – 1		508
	100	201.988	188.8825 – 684.015	$2p^2 - 2p(^2P^\circ_{3/2})9d$	$^1D - ^1P^\circ$	2 – 1		508
	300	202.485	175.7329 – 669.5966	$2p^2 - 2p(^2P^\circ)7d$	$^3P - ^3P^\circ$	2 – 2		508
	500	202.595	175.7329 – 669.3285	$2p^2 - 2p(^2P^\circ)7d$	$^3P - ^3D^\circ$	2 – 3		508
	50	203.642	175.6081 – 666.6654	$2p^2 - 2p(^2P^\circ)7s$	$^3P - ^3P^\circ$	1 – 2		508
	50	203.694	175.7329 – 666.6654	$2p^2 - 2p(^2P^\circ)7s$	$^3P - ^3P^\circ$	2 – 2		508
15	10	203.728	175.6081 – 666.4582	$2p^2 - 2p(^2P^\circ)7s$	$^3P - ^3P^\circ$	1 – 1	P	511
	50	203.780	175.7329 – 666.4582	$2p^2 - 2p(^2P^\circ)7s$	$^3P - ^3P^\circ$	2 – 1		508
	150	204.302	188.8825 – 678.355	$2p^2 - 2p(^2P^\circ_{3/2})8d$	$^1D - ^1P^\circ$	2 – 1		511
	200	205.940	67.2092 – 552.7896	$2s2p - 2s5d$	$^3P^\circ - ^3D$	0 – 1		508
	300	205.968	67.2723 – 552.7896	$2s2p - 2s5d$	$^3P^\circ - ^3D$	1 – 2		508
	500	206.028	67.4163 – 552.7909	$2s2p - 2s5d$	$^3P^\circ - ^3D$	2 – 3		508
	10	206.707	130.6939 – 614.4705	$2s2p - 2s13d$	$^1P^\circ - ^1D$	1 – 2		508
	20	207.500	130.6939 – 612.6216	$2s2p - 2s12d$	$^1P^\circ - ^1D$	1 – 2		508
18	200	207.812	188.8825 – 670.086	$2p^2 - 2p(^2P^\circ_{3/2})7d$	$^1D - ^1P^\circ$	2 – 1	P	511
15	150	208.012	175.6081 – 656.3496	$2p^2 - 2p(^2P^\circ)6d$	$^3P - ^3P^\circ$	1 – 1	P	511
	400	208.066	175.7329 – 656.3496	$2p^2 - 2p(^2P^\circ)6d$	$^3P - ^3P^\circ$	2 – 2		508
	150	208.113	175.5354 – 656.0436	$2p^2 - 2p(^2P^\circ)6d$	$^3P - ^3D^\circ$	0 – 1		508
	250	208.131	175.6081 – 656.0747	$2p^2 - 2p(^2P^\circ)6d$	$^3P - ^3D^\circ$	1 – 2		508
	400	208.150	175.7329 – 656.1557	$2p^2 - 2p(^2P^\circ)6d$	$^3P - ^3D^\circ$	2 – 3		508
15	100	208.185	175.7329 – 656.0747	$2p^2 - 2p(^2P^\circ)6d$	$^3P - ^3D^\circ$	2 – 2	P	511
	100	208.510	130.6939 – 610.2872	$2s2p - 2s11d$	$^1P^\circ - ^1D$	1 – 2		508
	100	209.378	67.2092 – 544.8134	$2s2p - 2s5s$	$^3P^\circ - ^3S$	0 – 1		508
	300	209.407	67.2723 – 544.8134	$2s2p - 2s5s$	$^3P^\circ - ^3S$	1 – 1		508
	400	209.471	67.4163 – 544.8134	$2s2p - 2s5s$	$^3P^\circ - ^3S$	2 – 1		508
	150	209.842	130.6939 – 607.2429	$2s2p - 2s10d$	$^1P^\circ - ^1D$	1 – 2		508

N IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	209.976	175.6081 – 651.8599	$2p^2 - 2p(^2P^o)6s$	$^3P - ^3P^o$	1 – 2		508
15	80	210.024	175.5354 – 651.6718	$2p^2 - 2p(^2P^o)6s$	$^3P - ^3P^o$	0 – 1	P	511
	200	210.028	175.7329 – 651.8599	$2p^2 - 2p(^2P^o)6s$	$^3P - ^3P^o$	2 – 2		508
15	50	210.056	175.6081 – 651.6718	$2p^2 - 2p(^2P^o)6s$	$^3P - ^3P^o$	1 – 1	P	511
	100	210.092	175.6081 – 651.5901	$2p^2 - 2p(^2P^o)6s$	$^3P - ^3P^o$	1 – 0		508
	100	210.111	175.7329 – 651.6718	$2p^2 - 2p(^2P^o)6s$	$^3P - ^3P^o$	2 – 1		508
	400	211.405	0.0 – 473.0293	$2s^2 - 2p(^2P^o_{3/2})3s$	$g^1S - ^1P^o$	0 – 1		508
	250	211.679	130.6939 – 603.1073	$2s2p - 2s9d$	$^1P^o - ^1D$	1 – 2		508
18	300	213.443	188.8825 – 657.392	$2p^2 - 2p(^2P^o_{3/2})6d$	$^1D - ^1P^o$	2 – 1	P	511
	250	214.291	130.6939 – 597.3491	$2s2p - 2s8d$	$^1P^o - ^1D$	1 – 2		508
	50	214.414	188.8825 – 655.2700	$2p^2 - 2p(^2P^o_{3/2})6d$	$^1D - ^1F^o$	2 – 3		508
	10	214.843	130.6939 – 596.1501	$2s2p - 2s8s$	$^1P^o - ^1S$	1 – 0		508
	75	215.755	130.6939 – 594.1826	$2s2p - 2p(^2P^o_{3/2})4p$	$^1P^o - ^1S$	1 – 0		508
	500	217.218	130.6939 – 591.0609	$2s2p - 2p(^2P^o_{3/2})4p$	$^1P^o - ^1D$	1 – 2		508
15	200	217.836	175.6081 – 634.6695	$2p^2 - 2p(^2P^o)5d$	$^3P - ^3P^o$	1 – 2	P	511
	500	217.895	175.7329 – 634.6695	$2p^2 - 2p(^2P^o)5d$	$^3P - ^3P^o$	2 – 2		508
	150	218.044	175.5354 – 634.1584	$2p^2 - 2p(^2P^o)5d$	$^3P - ^3D^o$	0 – 1		508
	250	218.067	175.6081 – 634.1828	$2p^2 - 2p(^2P^o)5d$	$^3P - ^3D^o$	1 – 2		508
15	100	218.079	175.6081 – 634.1584	$2p^2 - 2p(^2P^o)5d$	$^3P - ^3D^o$	1 – 1	P	511
	400	218.088	175.7329 – 634.2634	$2p^2 - 2p(^2P^o)5d$	$^3P - ^3D^o$	2 – 3		508
	100	218.116	175.7329 – 634.1828	$2p^2 - 2p(^2P^o)5d$	$^3P - ^3D^o$	2 – 2		508
	400	218.250	130.6939 – 588.8840	$2s2p - 2s7d$	$^1P^o - ^1D$	1 – 2		508
	50	220.124	130.6939 – 584.9833	$2s2p - 2s7s$	$^1P^o - ^1S$	1 – 0		508
	400	220.280	130.6939 – 584.6616	$2s2p - 2p(^2P^o_{1/2})4p$	$^1P^o - ^1P$	1 – 1		508
	2	220.885	235.3693 – 688.094	$2p^2 - 2p(^2P^o_{3/2})10d$	$^1S - ^1P^o$	0 – 1		508
	300	221.729	175.6081 – 626.6119	$2p^2 - 2p(^2P^o)5s$	$^3P - ^3P^o$	1 – 2		508
15	250	221.774	175.5354 – 626.4453	$2p^2 - 2p(^2P^o)5s$	$^3P - ^3P^o$	0 – 1	P	511
	450	221.789	175.7329 – 626.6119	$2p^2 - 2p(^2P^o)5s$	$^3P - ^3P^o$	2 – 2		508
15	200	221.810	175.6081 – 626.4453	$2p^2 - 2p(^2P^o)5s$	$^3P - ^3P^o$	1 – 1	P	511
	250	221.854	175.6081 – 626.3550	$2p^2 - 2p(^2P^o)5s$	$^3P - ^3P^o$	1 – 0		508
	300	221.871	175.7329 – 626.4453	$2p^2 - 2p(^2P^o)5s$	$^3P - ^3P^o$	2 – 1		508
	30	222.893	235.3693 – 684.015	$2p^2 - 2p(^2P^o_{3/2})9d$	$^1S - ^1P^o$	0 – 1		508
6		223.066	67.2723 – 515.5698	$2s2p - 2p(^2P^o_{3/2})3p$	$^3P^o - ^1S$	1 – 0	P	511
18	500	223.421	188.8825 – 636.467	$2p^2 - 2p(^2P^o_{3/2})5d$	$^1D - ^1P^o$	2 – 1	P	511
	450	224.629	130.6939 – 575.8724	$2s2p - 2s6d$	$^1P^o - ^1D$	1 – 2		508
	300	225.110	67.2092 – 511.44	$2s2p - 2s4d$	$^3P^o - ^3D$	0 – 1		508
	500	225.142	67.2723 – 511.44	$2s2p - 2s4d$	$^3P^o - ^3D$	1 – 1		508
	800	225.212	67.4163 – 511.4480	$2s2p - 2s4d$	$^3P^o - ^3D$	2 – 3		508
	50	225.741	235.3693 – 678.355	$2p^2 - 2p(^2P^o_{3/2})8d$	$^1S - ^1P^o$	0 – 1		508
	100	227.026	130.6939 – 571.1721	$2s2p - 2s6s$	$^1P^o - ^1S$	1 – 0		508
18		227.446	188.8825 – 628.5469	$2p^2 - 2p(^2P^o_{3/2})5s$	$^1D - ^1P^o$	2 – 1	P	511
	100	230.035	235.3693 – 670.086	$2p^2 - 2p(^2P^o_{3/2})7d$	$^1S - ^1P^o$	0 – 1		508
	100	232.112	67.2092 – 498.0455	$2s2p - 2p(^2P^o_{3/2})3p$	$^3P^o - ^3S$	0 – 1		508
	150	232.145	67.2723 – 498.0455	$2s2p - 2p(^2P^o_{3/2})3p$	$^3P^o - ^3S$	1 – 1		508
	200	232.223	67.4163 – 498.0455	$2s2p - 2p(^2P^o_{3/2})3p$	$^3P^o - ^3S$	2 – 1		508
5		233.762	67.2723 – 495.0577	$2s2p - 2s4s$	$^3P^o - ^1S$	1 – 0	P	511
	600	234.124	67.2723 – 494.4020	$2s2p - 2p(^2P^o)3p$	$^3P^o - ^3P$	1 – 2		508
5	150	234.172	67.2723 – 494.3092	$2s2p - 2p(^2P^o)3p$	$^3P^o - ^3P$	1 – 1	P	511
	600	234.195	67.4163 – 494.4020	$2s2p - 2p(^2P^o)3p$	$^3P^o - ^3P$	2 – 2		508
5	180	234.203	67.2723 – 494.2531	$2s2p - 2p(^2P^o)3p$	$^3P^o - ^3P$	1 – 0	P	511
	600	234.249	67.4163 – 494.3092	$2s2p - 2p(^2P^o)3p$	$^3P^o - ^3P$	2 – 1		508
	550	236.068	130.6939 – 554.3007	$2s2p - 2s5d$	$^1P^o - ^1D$	1 – 2		508
	150	236.954	235.3693 – 657.392	$2p^2 - 2p(^2P^o_{3/2})6d$	$^1S - ^1P^o$	0 – 1		508
	200	237.873	67.2092 – 487.6074	$2s2p - 2s4s$	$^3P^o - ^3S$	0 – 1		508

N IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	400	237.908	67.2723 – 487.6074	2s2p – 2s4s	$^3P^\circ$ – ^3S	1 – 1		508
	500	237.991	67.4163 – 487.6074	2s2p – 2s4s	$^3P^\circ$ – ^3S	2 – 1		508
	450	238.657	175.5354 – 594.5477	$2p^2$ – $2p(^2P^\circ)4d$	^3P – $^3P^\circ$	0 – 1		508
15	450	238.683	175.6081 – 594.5738	$2p^2$ – $2p(^2P^\circ)4d$	^3P – $^3P^\circ$	1 – 0		508
	400	238.694	175.6081 – 594.5477	$2p^2$ – $2p(^2P^\circ)4d$	^3P – $^3P^\circ$	1 – 1		508
	500	238.731	175.6081 – 594.4899	$2p^2$ – $2p(^2P^\circ)4d$	^3P – $^3P^\circ$	1 – 2		508
	500	238.769	175.7329 – 594.5477	$2p^2$ – $2p(^2P^\circ)4d$	^3P – $^3P^\circ$	2 – 1		508
	600	238.802	175.7329 – 594.4899	$2p^2$ – $2p(^2P^\circ)4d$	^3P – $^3P^\circ$	2 – 2		508
	200	239.146	175.5354 – 593.6900	$2p^2$ – $2p(^2P^\circ)4d$	^3P – $^3D^\circ$	0 – 1		508
	300	239.174	175.6081 – 593.7137	$2p^2$ – $2p(^2P^\circ)4d$	^3P – $^3D^\circ$	1 – 2		508
	450	239.212	175.7329 – 593.7721	$2p^2$ – $2p(^2P^\circ)4d$	^3P – $^3D^\circ$	2 – 3		508
	180	239.243	175.7329 – 593.7137	$2p^2$ – $2p(^2P^\circ)4d$	^3P – $^3D^\circ$	2 – 2		508
	500	239.616	67.4163 – 484.7462	2s2p – $2p(^2P^\circ)3p$	$^3P^\circ$ – ^3D	2 – 3		508
	300	239.632	67.2723 – 484.5949	2s2p – $2p(^2P^\circ)3p$	$^3P^\circ$ – ^3D	1 – 2		508
	200	239.659	67.2092 – 484.4982	2s2p – $2p(^2P^\circ)3p$	$^3P^\circ$ – ^3D	0 – 1		508
	100	239.679	67.2723 – 484.4982	2s2p – $2p(^2P^\circ)3p$	$^3P^\circ$ – ^3D	1 – 1		508
	100	239.708	67.4163 – 484.5949	2s2p – $2p(^2P^\circ)3p$	$^3P^\circ$ – ^3D	2 – 2		508
	10	239.763	67.4163 – 484.4982	2s2p – $2p(^2P^\circ)3p$	$^3P^\circ$ – ^3D	2 – 1		508
	200	240.363	130.6939 – 546.7313	2s2p – 2s5s	$^1P^\circ$ – ^1S	1 – 0		508
	300	244.100	188.8825 – 598.5382	$2p^2$ – $2p(^2P^\circ_{3/2})4d$	^1D – $^1P^\circ$	2 – 1		508
	900	247.205	0.0 – 404.5224	$2s^2$ – 2s3p	g^1S – $^1P^\circ$	0 – 1		508
	500	248.383	175.6081 – 578.2106	$2p^2$ – $2p(^2P^\circ)4s$	^3P – $^3P^\circ$	1 – 2		508
	500	248.433	175.5354 – 578.0454	$2p^2$ – $2p(^2P^\circ)4s$	^3P – $^3P^\circ$	0 – 1		508
	500	248.461	175.7329 – 578.2106	$2p^2$ – $2p(^2P^\circ)4s$	^3P – $^3P^\circ$	2 – 2		508
	500	248.484	175.6081 – 578.0454	$2p^2$ – $2p(^2P^\circ)4s$	^3P – $^3P^\circ$	1 – 1		508
	450	248.540	175.6081 – 577.9578	$2p^2$ – $2p(^2P^\circ)4s$	^3P – $^3P^\circ$	1 – 0		508
	500	248.563	175.7329 – 578.0454	$2p^2$ – $2p(^2P^\circ)4s$	^3P – $^3P^\circ$	2 – 1		508
	450	248.654	188.8825 – 591.0478	$2p^2$ – $2p(^2P^\circ_{3/2})4d$	^1D – $^1F^\circ$	2 – 3		508
	300	249.316	235.3693 – 636.467	$2p^2$ – $2p(^2P^\circ_{3/2})5d$	^1S – $^1P^\circ$	0 – 1		508
	300	250.121	188.8825 – 588.6890	$2p^2$ – $2p(^2P^\circ_{1/2})4d$	^1D – $^1D^\circ$	2 – 2		508
18		250.566	188.8825 – 587.9794	$2p^2$ – 2s7p	^1D – $^1P^\circ$	2 – 1	P	511
	100	254.338	235.3693 – 628.5469	$2p^2$ – $2p(^2P^\circ_{3/2})5s$	^1S – $^1P^\circ$	0 – 1		508
	380	255.148	188.8825 – 580.8175	$2p^2$ – $2p(^2P^\circ_{3/2})4s$	^1D – $^1P^\circ$	2 – 1		508
	150	258.320	188.8825 – 575.9993	$2p^2$ – 2s6f	^1D – $^1F^\circ$	2 – 3		508
	450	259.824	130.6939 – 515.5698	2s2p – $2p(^2P^\circ_{3/2})3p$	$^1P^\circ$ – ^1S	1 – 0		508
	600	260.447	130.6939 – 514.6477	2s2p – 2s4d	$^1P^\circ$ – ^1D	1 – 2		508
18		260.519	188.8825 – 572.7311	$2p^2$ – 2s6p	^1D – $^1P^\circ$	2 – 1	P	511
	650	270.994	130.6939 – 499.7059	2s2p – $2p(^2P^\circ_{3/2})3p$	$^1P^\circ$ – ^1D	1 – 2		508
11		272.219	130.6939 – 498.0455	2s2p – $2p(^2P^\circ_{3/2})3p$	$^1P^\circ$ – ^3S	1 – 1	P	511
	300	273.140	188.8825 – 554.9957	$2p^2$ – 2s5f	^1D – $^1F^\circ$	2 – 3		508
	250	274.451	130.6939 – 495.0577	2s2p – 2s4s	$^1P^\circ$ – ^1S	1 – 0		508
11		274.946	130.6939 – 494.4020	2s2p – $2p(^2P^\circ)3p$	$^1P^\circ$ – ^3P	1 – 2	P	511
11		275.016	130.6939 – 494.3092	2s2p – $2p(^2P^\circ)3p$	$^1P^\circ$ – ^3P	1 – 1	P	511
	450	275.354	235.3693 – 598.5382	$2p^2$ – $2p(^2P^\circ_{3/2})4d$	^1S – $^1P^\circ$	0 – 1		508
	10	276.741	188.8825 – 550.2326	$2p^2$ – 2s5p	^1D – $^1P^\circ$	2 – 1		508
11		280.180	130.6939 – 487.6074	2s2p – 2s4s	$^1P^\circ$ – ^3S	1 – 1	P	511
	500	283.419	67.2092 – 420.0458	2s2p – 2s3d	$^3P^\circ$ – ^3D	0 – 1		508
	700	283.476	67.2723 – 420.0496	2s2p – 2s3d	$^3P^\circ$ – ^3D	1 – 2		508
	900	283.583	67.4163 – 420.0580	2s2p – 2s3d	$^3P^\circ$ – ^3D	2 – 3		508
18		283.599	235.3693 – 587.9794	$2p^2$ – 2s7p	^1S – $^1P^\circ$	0 – 1	P	511
	600	285.561	130.6939 – 480.8842	2s2p – $2p(^2P^\circ_{1/2})3p$	$^1P^\circ$ – ^1P	1 – 1		508
	300	289.479	235.3693 – 580.8175	$2p^2$ – $2p(^2P^\circ_{3/2})4s$	^1S – $^1P^\circ$	0 – 1		508
18		296.418	235.3693 – 572.7311	$2p^2$ – 2s6p	^1S – $^1P^\circ$	0 – 1	P	511
	500	297.595	175.5354 – 511.5604	$2p^2$ – $2p(^2P^\circ_{3/2})3d$	^3P – $^3P^\circ$	0 – 1		508

N IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	500	297.634	175.6081 – 511.5912	$2p^2 - 2p(^2P^o_{3/2})3d$	$^3P - ^3P^o$	1 – 0		508
	400	297.657	175.6081 – 511.5604	$2p^2 - 2p(^2P^o_{3/2})3d$	$^3P - ^3P^o$	1 – 1		508
	600	297.704	175.6081 – 511.5093	$2p^2 - 2p(^2P^o_{3/2})3d$	$^3P - ^3P^o$	1 – 2		508
	600	297.770	175.7329 – 511.5604	$2p^2 - 2p(^2P^o_{3/2})3d$	$^3P - ^3P^o$	2 – 1		508
	700	297.816	175.7329 – 511.5093	$2p^2 - 2p(^2P^o_{3/2})3d$	$^3P - ^3P^o$	2 – 2		508
	650	300.318	188.8825 – 521.8628	$2p^2 - 2s4f$	$^1D - ^1F^o$	2 – 3		508
	150	303.006	175.5354 – 505.5540	$2p^2 - 2p(^2P^o)3d$	$^3P - ^3D^o$	0 – 1		508
	300	303.048	175.6081 – 505.5882	$2p^2 - 2p(^2P^o)3d$	$^3P - ^3D^o$	1 – 2		508
	100	303.078	175.6081 – 505.5540	$2p^2 - 2p(^2P^o)3d$	$^3P - ^3D^o$	1 – 1		508
	500	303.124	175.7329 – 505.6306	$2p^2 - 2p(^2P^o)3d$	$^3P - ^3D^o$	2 – 3		508
	100	303.162	175.7329 – 505.5882	$2p^2 - 2p(^2P^o)3d$	$^3P - ^3D^o$	2 – 2		508
	10	303.191	175.7329 – 505.5540	$2p^2 - 2p(^2P^o)3d$	$^3P - ^3D^o$	2 – 1		508
	500	303.280	188.8825 – 518.6105	$2p^2 - 2p(^2P^o_{3/2})3d$	$^1D - ^1P^o$	2 – 1		508
13		304.733	175.5354 – 503.6919	$2p^2 - 2s4p$	$^3P - ^3P^o$	0 – 1	P	511
13		304.793	175.6081 – 503.6998	$2p^2 - 2s4p$	$^3P - ^3P^o$	1 – 0	P	511
13		304.800	175.6081 – 503.6919	$2p^2 - 2s4p$	$^3P - ^3P^o$	1 – 1	P	511
13		304.811	175.6081 – 503.6804	$2p^2 - 2s4p$	$^3P - ^3P^o$	1 – 2	P	511
13		304.916	175.7329 – 503.6919	$2p^2 - 2s4p$	$^3P - ^3P^o$	2 – 1	P	511
13		304.927	175.7329 – 503.6804	$2p^2 - 2s4p$	$^3P - ^3P^o$	2 – 2	P	511
4		310.962	67.2723 – 388.8546	$2s2p - 2s3s$	$^3P^o - ^1S$	1 – 0	P	511
	20	314.324	188.8825 – 507.0279	$2p^2 - 2s4p$	$^1D - ^1P^o$	2 – 1		508
	600	315.060	188.8825 – 506.2848	$2p^2 - 2p(^2P^o_{3/2})3d$	$^1D - ^1F^o$	2 – 3		508
	200	317.596	235.3693 – 550.2326	$2p^2 - 2s5p$	$^1S - ^1P^o$	0 – 1		508
	700	322.506	67.2092 – 377.2848	$2s2p - 2s3s$	$^3P^o - ^3S$	0 – 1		508
	700	322.572	67.2723 – 377.2848	$2s2p - 2s3s$	$^3P^o - ^3S$	1 – 1		508
	700	322.722	67.4163 – 377.2848	$2s2p - 2s3s$	$^3P^o - ^3S$	2 – 1		508
	600	323.178	188.8825 – 498.3103	$2p^2 - 2p(^2P^o_{1/2})3d$	$^1D - ^1D^o$	2 – 2		508
	850	335.052	130.6939 – 429.1596	$2s2p - 2s3d$	$^1P^o - ^1D$	1 – 2		508
	250	344.916	175.6081 – 465.5366	$2p^2 - 2p(^2P^o)3s$	$^3P - ^3P^o$	1 – 2		508
	200	345.025	175.5354 – 465.3710	$2p^2 - 2p(^2P^o)3s$	$^3P - ^3P^o$	0 – 1		508
	600	345.062	175.7329 – 465.5366	$2p^2 - 2p(^2P^o)3s$	$^3P - ^3P^o$	2 – 2		508
	150	345.111	175.6081 – 465.3710	$2p^2 - 2p(^2P^o)3s$	$^3P - ^3P^o$	1 – 1		508
	200	345.207	175.6081 – 465.2918	$2p^2 - 2p(^2P^o)3s$	$^3P - ^3P^o$	1 – 0		508
	250	345.261	175.7329 – 465.3710	$2p^2 - 2p(^2P^o)3s$	$^3P - ^3P^o$	2 – 1		508
	500	351.931	188.8825 – 473.0293	$2p^2 - 2p(^2P^o_{3/2})3s$	$^1D - ^1P^o$	2 – 1		508
	700	353.056	235.3693 – 518.6105	$2p^2 - 2p(^2P^o_{3/2})3d$	$^1S - ^1P^o$	0 – 1		508
	450	368.108	235.3693 – 507.0279	$2p^2 - 2s4p$	$^1S - ^1P^o$	0 – 1		508
	500	387.353	130.6939 – 388.8546	$2s2p - 2s3s$	$^1P^o - ^1S$	1 – 0		508
18		405.530	130.6939 – 377.2848	$2s2p - 2s3s$	$^1P^o - ^3S$	1 – 1	P	511
	500	420.769	235.3693 – 473.0293	$2p^2 - 2p(^2P^o_{3/2})3s$	$^1S - ^1P^o$	0 – 1		508
F1		424.864	0.0 – 235.3693	$2s^2 - 2p^2$	$g^1S - ^1S$	0 – 0	F,P	511
12		433.930	175.5354 – 405.9875	$2p^2 - 2s3p$	$^3P - ^3P^o$	0 – 1	P	511
12		434.000	175.6081 – 406.0228	$2p^2 - 2s3p$	$^3P - ^3P^o$	1 – 2	P	511
12		434.067	175.6081 – 405.9875	$2p^2 - 2s3p$	$^3P - ^3P^o$	1 – 1	P	511
12		434.097	175.6081 – 405.9716	$2p^2 - 2s3p$	$^3P - ^3P^o$	1 – 0	P	511
12		434.235	175.7329 – 406.0228	$2p^2 - 2s3p$	$^3P - ^3P^o$	2 – 2	P	511
12		434.302	175.7329 – 405.9875	$2p^2 - 2s3p$	$^3P - ^3P^o$	2 – 1	P	511
18		460.217	377.2848 – 594.5738	$2s3s - 2p(^2P^o)4d$	$^3S - ^3P^o$	1 – 0	P	511
18		460.272	377.2848 – 594.5477	$2s3s - 2p(^2P^o)4d$	$^3S - ^3P^o$	1 – 1	P	511
18		460.394	377.2848 – 594.4899	$2s3s - 2p(^2P^o)4d$	$^3S - ^3P^o$	1 – 2	P	511
	650	463.740	188.8825 – 404.5224	$2p^2 - 2s3p$	$^1D - ^1P^o$	2 – 1		508
18		476.909	388.8546 – 598.5382	$2s3s - 2p(^2P^o_{3/2})4d$	$^1S - ^1P^o$	0 – 1	P	511
18		497.696	377.2848 – 578.2106	$2s3s - 2p(^2P^o)4s$	$^3S - ^3P^o$	1 – 2	P	511
18		498.106	377.2848 – 578.0454	$2s3s - 2p(^2P^o)4s$	$^3S - ^3P^o$	1 – 1	P	511

N IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
18		498.323	377.2848 – 577.9578	2s3s – 2p(^{2}P°)4s	^{3}S – ^{3}P°	1 – 0	P	511
18		518.600	404.5224 – 597.3491	2s3p – 2s8d	^{1}P° – ^{1}D	1 – 2	P	511
18		520.934	388.8546 – 580.8175	2s3s – 2p(^{2}P$^o_{3/2}$)4s	^{1}S – ^{1}P°	0 – 1	P	511
18		521.845	404.5224 – 596.1501	2s3p – 2s8s	^{1}P° – ^{1}S	1 – 0	P	511
18		527.259	404.5224 – 594.1826	2s3p – 2p(^{2}P$^o_{3/2}$)4p	^{1}P° – ^{1}S	1 – 0	P	511
F1		529.430	0.0 – 188.8825	2s^2 – 2p^2	g^{1}S – ^{1}D	0 – 2	F,P	511
18		536.082	404.5224 – 591.0609	2s3p – 2p(^{2}P$^o_{3/2}$)4p	^{1}P° – ^{1}D	1 – 2	P	511
18		542.412	404.5224 – 588.8840	2s3p – 2s7d	^{1}P° – ^{1}D	1 – 2	P	511
18		554.137	404.5224 – 584.9833	2s3p – 2s7s	^{1}P° – ^{1}S	1 – 0	P	511
18		555.126	404.5224 – 584.6616	2s3p – 2p(^{2}P$^o_{1/2}$)4p	^{1}P° – ^{1}P	1 – 1	P	511
F1		569.450	0.0 – 175.6081	2s^2 – 2p^2	g^{1}S – ^{3}P	0 – 1	F,P	511
18		583.601	404.5224 – 575.8724	2s3p – 2s6d	^{1}P° – ^{1}D	1 – 2	P	511
18		586.104	235.3693 – 405.9875	2p^2 – 2s3p	^{1}S – ^{3}P°	0 – 1	P	511
18		591.180	235.3693 – 404.5224	2p^2 – 2s3p	^{1}S – ^{1}P°	0 – 1	P	511
3		594.895	67.2723 – 235.3693	2s2p – 2p^2	^{3}P° – ^{1}S	1 – 0	P	511
18		600.061	404.5224 – 571.1721	2s3p – 2s6s	^{1}P° – ^{1}S	1 – 0	P	511
18		619.663	388.8546 – 550.2326	2s3s – 2s5p	^{1}S – ^{1}P°	0 – 1	P	511
18		667.653	404.5224 – 554.3007	2s3p – 2s5d	^{1}P° – ^{1}D	1 – 2	P	511
18		703.191	404.5224 – 546.7313	2s3p – 2s5s	^{1}P° – ^{1}S	1 – 0	P	511
18		720.244	405.9716 – 544.8134	2s3p – 2s5s	^{3}P° – ^{3}S	0 – 1	P	511
18		720.327	405.9875 – 544.8134	2s3p – 2s5s	^{3}P° – ^{3}S	1 – 1	P	511
18		720.510	406.0228 – 544.8134	2s3p – 2s5s	^{3}P° – ^{3}S	2 – 1	P	511
18		744.566	377.2848 – 511.5912	2s3s – 2p(^{2}P$^o_{3/2}$)3d	^{3}S – ^{3}P°	1 – 0	P	511
18		744.737	377.2848 – 511.5604	2s3s – 2p(^{2}P$^o_{3/2}$)3d	^{3}S – ^{3}P°	1 – 1	P	511
18		745.020	377.2848 – 511.5093	2s3s – 2p(^{2}P$^o_{3/2}$)3d	^{3}S – ^{3}P°	1 – 2	P	511
1	750	765.148	0.0 – 130.6939	2s^2 – 2s2p	g^{1}S – ^{1}P°	0 – 1		824
18		770.678	388.8546 – 518.6105	2s3s – 2p(^{2}P$^o_{3/2}$)3d	^{1}S – ^{1}P°	0 – 1	P	511
18		791.045	377.2848 – 503.6998	2s3s – 2s4p	^{3}S – ^{3}P°	1 – 0	P	511
18		791.095	377.2848 – 503.6919	2s3s – 2s4p	^{3}S – ^{3}P°	1 – 1	P	511
18		791.167	377.2848 – 503.6804	2s3s – 2s4p	^{3}S – ^{3}P°	1 – 2	P	511
3		822.299	67.2723 – 188.8825	2s2p – 2p^2	^{3}P° – ^{1}D	1 – 2	P	511
	100	823.273	67.4163 – 188.8825	2s2p – 2p^2	^{3}P° – ^{1}D	2 – 2		824
		825.4	473.0293 – 594.1826	2p(^{2}P$^o_{3/2}$)3s – 2p(^{2}P$^o_{3/2}$)4p	^{1}P° – ^{1}S	1 – 0	P	934
		830.6	465.5366 – 585.9298	2p(^{2}P°)3s – 2p(^{2}P°)4p	^{3}P° – ^{3}D	2 – 3	P	934
18		846.215	388.8546 – 507.0279	2s3s – 2s4p	^{1}S – ^{1}P°	0 – 1	P	511
18		900.516	404.5224 – 515.5698	2s3p – 2p(^{2}P$^o_{3/2}$)3p	^{1}P° – ^{1}S	1 – 0	P	511
18		908.057	404.5224 – 514.6477	2s3p – 2s4d	^{1}P° – ^{1}D	1 – 2	P	511
3	720	921.992	67.2723 – 175.7329	2s2p – 2p^2	^{3}P° – ^{3}P	1 – 2		824
3	700	922.519	67.2092 – 175.6081	2s2p – 2p^2	^{3}P° – ^{3}P	0 – 1		824
3	680	923.057	67.2723 – 175.6081	2s2p – 2p^2	^{3}P° – ^{3}P	1 – 1		824
3	800	923.220	67.4163 – 175.7329	2s2p – 2p^2	^{3}P° – ^{3}P	2 – 2		824
3	700	923.675	67.2723 – 175.5354	2s2p – 2p^2	^{3}P° – ^{3}P	1 – 0		824
3	720	924.283	67.4163 – 175.6081	2s2p – 2p^2	^{3}P° – ^{3}P	2 – 1		824
18	100	948.155	405.9716 – 511.44	2s3p – 2s4d	^{3}P° – ^{3}D	0 – 1		824
18	200	948.244	405.9875 – 511.446	2s3p – 2s4d	^{3}P° – ^{3}D	1 – 2		824
18	250	948.540	406.0228 – 511.4480	2s3p – 2s4d	^{3}P° – ^{3}D	2 – 3		824
	1000	955.335	130.6939 – 235.3693	2s2p – 2p^2	^{1}P° – ^{1}S	1 – 0		824
18	400	1036.16	420.0496 – 516.5608	2s3d – 2s4f	^{3}D – ^{3}F°	2 – 3		824
18		1050.602	404.5224 – 499.7059	2s3p – 2p(^{2}P$^o_{3/2}$)3p	^{1}P° – ^{1}D	1 – 2	P	511
18	300	1078.708	429.1596 – 521.8628	2s3d – 2s4f	^{1}D – ^{1}F°	2 – 3		824
18		1086.084	405.9716 – 498.0455	2s3p – 2p(^{2}P$^o_{3/2}$)3p	^{3}P° – ^{3}S	0 – 1	P	511
18	50	1086.269	405.9875 – 498.0455	2s3p – 2p(^{2}P$^o_{3/2}$)3p	^{3}P° – ^{3}S	1 – 1		824
18	100	1086.691	406.0228 – 498.0455	2s3p – 2p(^{2}P$^o_{3/2}$)3p	^{3}P° – ^{3}S	2 – 1		824
18		1104.542	404.5224 – 495.0577	2s3p – 2s4s	^{1}P° – ^{1}S	1 – 0	P	511

N IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		1123.8	499.7059 – 588.6890	$2p(^2P^\circ_{3/2})3p - 2p(^2P^\circ_{1/2})4d$	$^1D - ^1D^\circ$	2 – 2	P	934
18		1131.488	406.0228 – 494.4020	$2s3p - 2p(^2P^\circ)3p$	$^3P^\circ - ^3P$	2 – 2	P	511
18		1132.225	405.9875 – 494.3092	$2s3p - 2p(^2P^\circ)3p$	$^3P^\circ - ^3P$	1 – 1	P	511
18	200	1133.117	377.2848 – 465.5366	$2s3s - 2p(^2P^\circ)3s$	$^3S - ^3P^\circ$	1 – 2		824
18	150	1135.244	377.2848 – 465.3710	$2s3s - 2p(^2P^\circ)3s$	$^3S - ^3P^\circ$	1 – 1		824
18	100	1136.241	377.2848 – 465.2918	$2s3s - 2p(^2P^\circ)3s$	$^3S - ^3P^\circ$	1 – 0		824
18	150	1168.599	420.0580 – 505.6306	$2s3d - 2p(^2P^\circ)3d$	$^3D - ^3D^\circ$	3 – 3		824
18	100	1169.063	420.0496 – 505.5882	$2s3d - 2p(^2P^\circ)3d$	$^3D - ^3D^\circ$	2 – 2		824
18	50	1169.478	420.0458 – 505.5540	$2s3d - 2p(^2P^\circ)3d$	$^3D - ^3D^\circ$	1 – 1		824
18	300	1188.006	388.8546 – 473.0293	$2s3s - 2p(^2P^\circ_{3/2})3s$	$^1S - ^1P^\circ$	0 – 1		824
18		1195.400	420.0458 – 503.6998	$2s3d - 2s4p$	$^3D - ^3P^\circ$	1 – 0	P	511
18		1195.567	420.0496 – 503.6919	$2s3d - 2s4p$	$^3D - ^3P^\circ$	2 – 1	P	511
18		1195.852	420.0580 – 503.6804	$2s3d - 2s4p$	$^3D - ^3P^\circ$	3 – 2	P	511
18	50	1224.960	405.9716 – 487.6074	$2s3p - 2s4s$	$^3P^\circ - ^3S$	0 – 1		824
18	150	1225.192	405.9875 – 487.6074	$2s3p - 2s4s$	$^3P^\circ - ^3S$	1 – 1		824
18	200	1225.719	406.0228 – 487.6074	$2s3p - 2s4s$	$^3P^\circ - ^3S$	2 – 1		824
18		1243.73	495.4062 – 575.8094	$2p(^2P^\circ)3d - 2s6g$	$^3F^\circ - ^3G$	2 – 3		824
18	50	1244.92	495.4826 – 575.8094	$2p(^2P^\circ)3d - 2s6g$	$^3F^\circ - ^3G$	3 – 4		824
18	100	1246.51	495.5857 – 575.8094	$2p(^2P^\circ)3d - 2s6g$	$^3F^\circ - ^3G$	4 – 5		824
18	250	1270.280	406.0228 – 484.7462	$2s3p - 2p(^2P^\circ)3p$	$^3P^\circ - ^3D$	2 – 3		824
18	200	1272.160	405.9875 – 484.5949	$2s3p - 2p(^2P^\circ)3p$	$^3P^\circ - ^3D$	1 – 2		824
18	100	1272.74	406.0228 – 484.5949	$2s3p - 2p(^2P^\circ)3p$	$^3P^\circ - ^3D$	2 – 2		824
18	150	1273.47	405.9716 – 484.4982	$2s3p - 2p(^2P^\circ)3p$	$^3P^\circ - ^3D$	0 – 1		824
18	100	1273.716	405.9875 – 484.4982	$2s3p - 2p(^2P^\circ)3p$	$^3P^\circ - ^3D$	1 – 1		824
18	150	1284.218	429.1596 – 507.0279	$2s3d - 2s4p$	$^1D - ^1P^\circ$	2 – 1		824
18	250	1296.600	429.1596 – 506.2848	$2s3d - 2p(^2P^\circ_{3/2})3d$	$^1D - ^1F^\circ$	2 – 3		824
18		1306.909	388.8546 – 465.3710	$2s3s - 2p(^2P^\circ)3s$	$^1S - ^1P^\circ$	0 – 1	P	511
18	200	1309.557	404.5224 – 480.8842	$2s3p - 2p(^2P^\circ_{1/2})3p$	$^1P^\circ - ^1P$	1 – 1		824
18	100	1323.98	420.0580 – 495.5857	$2s3d - 2p(^2P^\circ)3d$	$^3D - ^3F^\circ$	3 – 4		824
18	50	1325.685	420.0496 – 495.4826	$2s3d - 2p(^2P^\circ)3d$	$^3D - ^3F^\circ$	2 – 3		824
18	20	1326.964	420.0458 – 495.4062	$2s3d - 2p(^2P^\circ)3d$	$^3D - ^3F^\circ$	1 – 2		824
18	150	1438.37	506.2848 – 575.8079	$2p(^2P^\circ_{3/2})3d - 2s6g$	$^1F^\circ - ^1G$	3 – 4		824
18	250	1446.114	429.1596 – 498.3103	$2s3d - 2p(^2P^\circ_{1/2})3d$	$^1D - ^1D^\circ$	2 – 2		824
0	100	1486.496	0.0 – 67.2723	$2s^2 - 2s2p$	$g^1S - ^3P^\circ$	0 – 1		824
20	50	1687.60	516.5526 – 575.8094	$2s4f - 2s6g$	$^3F^\circ - ^3G$	2 – 3		824
20	100	1687.82	516.5608 – 575.8094	$2s4f - 2s6g$	$^3F^\circ - ^3G$	3 – 4		824
20	150	1688.11	516.5720 – 575.8094	$2s4f - 2s6g$	$^3F^\circ - ^3G$	4 – 5		824
18	150	1696.86	495.4062 – 554.3397	$2p(^2P^\circ)3d - 2s5g$	$^3F^\circ - ^3G$	2 – 3		824
18	200	1699.03	495.4826 – 554.3397	$2p(^2P^\circ)3d - 2s5g$	$^3F^\circ - ^3G$	3 – 4		824
18	250	1702.006	495.5857 – 554.3397	$2p(^2P^\circ)3d - 2s5g$	$^3F^\circ - ^3G$	4 – 5		824
7	1000	1718.551	130.6939 – 188.8825	$2s2p - 2p^2$	$^1P^\circ - ^1D$	1 – 2		824

NITROGEN V (N^{4+}), Z = 7
Ground State $1s^22s(^2S_{1/2})$ (3 electrons)
Ionization Potential 789 537.2 cm^{-1}; 97.891 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	128.229	0.0 – 779.855	2s – 17p	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		770
	1	128.430	0.0 – 778.634	2s – 16p	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		770
	10	128.662	0.0 – 777.23	2s – 15p	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		770
	10	128.954	0.0 – 775.465	2s – 14p	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		770
	20	129.337	0.0 – 773.174	2s – 13p	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		770
	30	129.811	0.0 – 770.347	2s – 12p	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		770

N V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	40	130.431	0.0 – 766.687	2s – 11p	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		770
	50	131.254	0.0 – 761.9183	2s – 10p	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		770
	60	132.383	0.0 – 755.4143	2s – 9p	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		770
	70	133.994	0.0 – 746.3099	2s – 8p	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		770
	80	136.429	0.0 – 733.0092	2s – 7p	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		770
3	160	140.356	0.0 – 712.4726	2s – 6p	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		313,770
3		140.358	0.0 – 712.4632	2s – 6p	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	511
	1	142.797	80.7219 – 781.067	2p – 18d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		770
	1	142.981	80.7219 – 780.117	2p – 17d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		770
	10	143.241	80.7219 – 778.847	2p – 16d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		770
	10	143.520	80.7219 – 777.49	2p – 15d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		770
	20	143.914	80.7219 – 775.581	2p – 14d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		770
	30	144.392	80.7219 – 773.282	2p – 13d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		770
	40	144.978	80.7219 – 770.483	2p – 12d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		770
	50	145.742	80.7219 – 766.866	2p – 11d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		770
18	30	146.716	80.4632 – 762.048	2p – 10d	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		770
18	60	146.767	80.7219 – 762.071	2p – 10d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		770
	30	146.921	80.7219 – 761.3827	2p – 10s	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		770
3	240	147.424	0.0 – 678.3165	2s – 5p	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		313,770
16	40	148.116	80.4632 – 755.608	2p – 9d	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		770
16	70	148.168	80.7219 – 755.633	2p – 9d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		770
15	10	148.328	80.4632 – 754.6770	2p – 9s	${}^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		770
15	40	148.387	80.7219 – 754.6770	2p – 9s	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		770
14	70	150.116	80.4632 – 746.6485	2p – 8d	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		770
14	140	150.171	80.7219 – 746.6497	2p – 8d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		770
13	20	150.429	80.4632 – 745.2556	2p – 8s	${}^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		770
13	50	150.488	80.7219 – 745.2556	2p – 8s	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		770
12	180	153.136	80.4632 – 733.5159	2p – 7d	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		770
12	280	153.192	80.7219 – 733.5159	2p – 7d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		770
11	30	153.624	80.4632 – 731.4254	2p – 7s	${}^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		770
11	60	153.683	80.7219 – 731.4254	2p – 7s	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		770
10	240	158.024	80.4632 – 713.2793	2p – 6d	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		313,770
10	360	158.088	80.7219 – 713.2815	2p – 6d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		313,770
9	40	158.862	80.4632 – 709.9392	2p – 6s	${}^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		313,770
9	70	158.928	80.7219 – 709.9392	2p – 6s	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		313,770
3	480	162.556	0.0 – 615.1738	2s – 4p	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		313,770
8	440	166.875	80.4632 – 679.7127	2p – 5d	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		313,770
8	520	166.946	80.7219 – 679.7176	2p – 5d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		313,770
7	50	168.514	80.4632 – 673.8862	2p – 5s	${}^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		313,770
7	120	168.587	80.7219 – 673.8862	2p – 5s	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		313,770
		177.1	3344.07+B – 3908.69+B	1s2s2p – 1s2s4s	${}^4P^\circ - {}^4S$	$\frac{5}{2}-\frac{3}{2}$	P	103
6	520	186.063	80.4632 – 617.9163	2p – 4d	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		313,770
6	620	186.149	80.7219 – 617.9255	2p – 4d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		313,770
5	200	190.155	80.4632 – 606.3488	2p – 4s	${}^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		313,770
5	320	190.249	80.7219 – 606.3488	2p – 4s	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		313,770
		193.4	3344.07+B – 3861.13+B	1s2s2p – 1s2s3d	${}^4P^\circ - {}^4D$	$\frac{5}{2}-\frac{7}{2}$		103
		202.5	3433.53+B – 3927.36+B	$1s2p^2$ – 1s2p3d	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		103
		204.3	3433.53+B – 3923.03+B	$1s2p^2$ – 1s2p3d	${}^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	103
2	800	209.274	0.0 – 477.8420	2s – 3p	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		313,770
2	800	209.308	0.0 – 477.7657	2s – 3p	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		313,770
		211.3	3344.07+B – 3817.35+B	1s2s2p – 1s2s3s	${}^4P^\circ - {}^4S$	$\frac{5}{2}-\frac{3}{2}$	P	103
		223.3	3433.53+B – 3881.36+B	$1s2p^2$ – 1s2p3s	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		103
5	85	247.561	80.4632 – 484.4043	2p – 3d	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		313
5	100	247.706	80.7219 – 484.4263	2p – 3d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		313

N V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
4	120	266.196	80.4632 – 456.1266	2p – 3s	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		313
4	150	266.379	80.7219 – 456.1266	2p – 3s	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		313
29		390.102	456.1266 – 712.4726	3s – 6p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	511
29		390.116	456.1266 – 712.4632	3s – 6p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	511
37		391.008	477.7657 – 733.5159	3p – 7d	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	P	511
37		391.123	477.8420 – 733.5159	3p – 7d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	511
36		394.228	477.7657 – 731.4254	3p – 7s	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$	P	511
36		394.348	477.8420 – 731.4254	3p – 7s	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	P	511
35	35	424.61	477.7657 – 713.2793	3p – 6d	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		313
35	40	424.75	477.8420 – 713.2815	3p – 6d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		313
34		430.714	477.7657 – 709.9392	3p – 6s	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$	P	511
34		430.857	477.8420 – 709.9392	3p – 6s	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	P	511
42	60	436.85	484.4263 – 713.3247	3d – 6f	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		313
28	50	450.072	456.1266 – 678.3165	3s – 5p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	511
28	30	450.105	456.1266 – 678.3004	3s – 5p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	511
33		495.180	477.7657 – 679.7127	3p – 5d	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	P	511
33		495.356	477.8420 – 679.7176	3p – 5d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	511
32		509.896	477.7657 – 673.8862	3p – 5s	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$	P	511
32		510.096	477.8420 – 673.8862	3p – 5s	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	P	511
41	30	511.804	484.4043 – 679.7904	3d – 5f	$^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$	P	313
41	40	511.865	484.4263 – 679.7904	3d – 5f	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	313
40		515.741	484.4043 – 678.3004	3d – 5p	$^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	P	511
40		515.757	484.4263 – 678.3165	3d – 5p	$^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$	P	511
27	70	628.744	456.1266 – 615.1738	3s – 4p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		313
27	50	628.874	456.1266 – 615.1410	3s – 4p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		313
31	85	713.518	477.7657 – 617.9163	3p – 4d	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		313
31	120	713.860	477.8420 – 617.9255	3p – 4d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		313
39	120	748.195	484.4043 – 618.0593	3d – 4f	$^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		313
39	150	748.291	484.4263 – 618.0641	3d – 4f	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		313
38		764.833	484.4263 – 615.1738	3d – 4p	$^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$	P	511
38		764.896	484.4043 – 615.1410	3d – 4p	$^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	P	511
30	35	777.712	477.7657 – 606.3488	3p – 4s	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		313
30	40	778.172	477.8420 – 606.3488	3p – 4s	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		313
44		942.278	606.3488 – 712.4726	4s – 6p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	511
44		942.380	606.3488 – 712.4632	4s – 6p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	511
48		1018.973	615.1410 – 713.2793	4p – 6d	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	P	511
48		1019.288	615.1738 – 713.2815	4p – 6d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	511
51	40	1048.20	617.9255 – 713.3247	4d – 6f	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		313
54	50	1049.65	618.0593 – 713.3289	4f – 6g	$^2F^\circ - {}^2G$	$\frac{5}{2}-\frac{7}{2}$		313
47		1054.871	615.1410 – 709.9392	4p – 6s	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$	P	511
47		1055.238	615.1738 – 709.9392	4p – 6s	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	P	511
1	1000	1238.821	0.0 – 80.7219	2s – 2p	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		313
1	800	1242.804	0.0 – 80.4632	2s – 2p	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		313
43	50	1389.514	606.3488 – 678.3165	4s – 5p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		313
43	40	1389.822	606.3488 – 678.3004	4s – 5p	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		313
63	40	1495.5	679.8023 – 746.6692	5g – 8f	$^2G - {}^2F^\circ$	$\frac{9}{2}-\frac{7}{2}$		313
46		1548.647	615.1410 – 679.7127	4p – 5d	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	P	511
46	85	1549.336	615.1738 – 679.7176	4p – 5d	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	313
50	100	1616.185	617.9163 – 679.7904	4d – 5f	$^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$	P	313
50	150	1616.426	617.9255 – 679.7904	4d – 5f	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	313
53	100	1619.617	618.0593 – 679.8023	4f – 5g	$^2F^\circ - {}^2G$	$\frac{5}{2}-\frac{7}{2}$	P	313
53	150	1619.743	618.0641 – 679.8023	4f – 5g	$^2F^\circ - {}^2G$	$\frac{7}{2}-\frac{9}{2}$	P	313
52	35	1621.966	618.0641 – 679.7176	4f – 5d	$^2F^\circ - {}^2D$	$\frac{7}{2}-\frac{5}{2}$	P	313
49	40	1655.876	617.9255 – 678.3165	4d – 5p	$^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$	P	313

N V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
49	25	1656.065	617.9163 – 678.3004	4d – 5p	${}^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	P	313
45	50	1702.267	615.1410 – 673.8862	4p – 5s	${}^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$	P	511
45	60	1703.218	615.1738 – 673.8862	4p – 5s	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		313
58	30	1811.08	678.3004 – 733.5159	5p – 7d	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		313
58	35	1811.62	678.3165 – 733.5159	5p – 7d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		313
60	45	1857.69	679.7127 – 733.5427	5d – 7f	${}^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		313
60	50	1857.88	679.7176 – 733.5427	5d – 7f	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		313
62	85	1860.5	679.8023 – 733.5499	5g – 7h	${}^2G - {}^2H^\circ$	$\frac{9}{2}-\frac{11}{2}$		313
57	30	1882.36	678.3004 – 731.4254	5p – 7s	${}^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		313
57	35	1882.92	678.3165 – 731.4254	5p – 7s	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		313

NITROGEN VI (N^{5+}), Z = 7
Ground State $1s^2({}^1S_0)$ (2 electrons)
Ionization Potential 4 452 745 cm^{-1}; 552.074 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	22.765	0.0 – 4392.71	$1s^2$ – 1s8p	$g{}^1S - {}^1P^\circ$	0 – 1		138
	4	22.870	0.0 – 4372.54	$1s^2$ – 1s7p	$g{}^1S - {}^1P^\circ$	0 – 1		138
	9	23.024	0.0 – 4343.29	$1s^2$ – 1s6p	$g{}^1S - {}^1P^\circ$	0 – 1		138
	10	23.277	0.0 – 4296.09	$1s^2$ – 1s5p	$g{}^1S - {}^1P^\circ$	0 – 1		138
		23.293	0.0 – 4293.08	$1s^2$ – 1s5p	$g{}^1S - {}^3P^\circ$	0 – 1	P	728
	10	23.771	0.0 – 4206.81	$1s^2$ – 1s4p	$g{}^1S - {}^1P^\circ$	0 – 1		197,764
		23.795	0.0 – 4202.62	$1s^2$ – 1s4p	$g{}^1S - {}^3P^\circ$	0 – 1	P	728
	30	24.898	0.0 – 4016.39	$1s^2$ – 1s3p	$g{}^1S - {}^1P^\circ$	0 – 1		197,764
		24.962	0.0 – 4006.16	$1s^2$ – 1s3p	$g{}^1S - {}^3P^\circ$	0 – 1	P	728
	100	28.787	0.0 – 3473.79	$1s^2$ – 1s2p	$g{}^1S - {}^1P^\circ$	0 – 1		197,764
	15	29.084	0.0 – 3438.32	$1s^2$ – 1s2p	$g{}^1S - {}^3P^\circ$	0 – 1		764,138
	19	29.534	0.0 – 3385.89	$1s^2$ – 1s2s	$g{}^1S - {}^3S$	0 – 1	F,P	856,511
		97.4	3385.89 – 4412.5	1s2s – 1s10p	${}^3S - {}^3P^\circ$	1 – 2		262
		98.3	3385.89 – 4403.1	1s2s – 1s9p	${}^3S - {}^3P^\circ$	1 – 2		262
		99.5	3385.89 – 4390.9	1s2s – 1s8p	${}^3S - {}^3P^\circ$	1 – 2		262
		101.46	3385.89 – 4371.46	1s2s – 1s7p	${}^3S - {}^3P^\circ$	1 – 2		262
		102.6	3438.61 – 4413.3	1s2p – 1s10d	${}^3P^\circ - {}^3D$	2 – 3		262
		103.6	3438.61 – 4403.8	1s2p – 1s9d	${}^3P^\circ - {}^3D$	2 – 3		262
	1	104.551	3385.89 – 4342.36	1s2s – 1s6p	${}^3S - {}^3P^\circ$	1 – 2		138
		105.0	3438.61 – 4391.	1s2p – 1s8d	${}^3P^\circ - {}^3D$	2 – 3		262
		107.15	3438.61 – 4371.84	1s2p – 1s7d	${}^3P^\circ - {}^3D$	2 – 3		262
	4	110.231	3385.89 – 4293.08	1s2s – 1s5p	${}^3S - {}^3P^\circ$	1 – 2		138
	2	110.541	3438.61 – 4343.25	1s2p – 1s6d	${}^3P^\circ - {}^3D$	2 – 3		138
	6	116.809	3438.61 – 4294.57	1s2p – 1s5d	${}^3P^\circ - {}^3D$	2 – 3		138
	1	121.820	3473.79 – 4294.67	1s2p – 1s5d	${}^1P^\circ - {}^1D$	1 – 2		138
	5	122.445	3385.89 – 4202.62	1s2s – 1s4p	${}^3S - {}^3P^\circ$	1 – 2		138
	25	130.340	3438.61 – 4205.82	1s2p – 1s4d	${}^3P^\circ - {}^3D$	2 – 3		138
	2	136.604	3473.79 – 4205.83	1s2p – 1s4d	${}^1P^\circ - {}^1D$	1 – 2		138
	14	161.223	3385.89 – 4006.16	1s2s – 1s3p	${}^3S - {}^3P^\circ$	1 – 2		138
		173.28	3439.274 – 4016.39	1s2s – 1s3p	${}^1S - {}^1P^\circ$	0 – 1	P	375
	20	173.871	3438.32 – 4013.46	1s2p – 1s3d	${}^3P^\circ - {}^3D$	1 – 2	P	138
	30	173.958	3438.61 – 4013.46	1s2p – 1s3d	${}^3P^\circ - {}^3D$	2 – 3	P	138
	9	185.192	3473.79 – 4013.77	1s2p – 1s3d	${}^1P^\circ - {}^1D$	1 – 2		138
		303.46	4013.77 – 4343.29	1s3d – 1s6p	${}^1D - {}^1P^\circ$	2 – 1		087
		303.75	4013.77 – 4342.99+B	1s3d – 1s6f	${}^1D - {}^1F^\circ$	2 – 3		087
		355.57	4013.46 – 4294.70+B	1s3d – 1s5f	${}^3D - {}^3F^\circ$	3 – 4		087

N VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		355.96	4013.77 – 4294.70+B	1s3d – 1s5f	$^1D - ^1F^\circ$	2 – 3		087
		474.48	3991.86 – 4202.62	1s3s – 1s4p	$^3S - ^3P^\circ$	1 – 2	P	375
		497.98	4006.00 – 4206.81	1s3s – 1s4p	$^1S - ^1P^\circ$	0 – 1	P	375
		519.88	4013.46 – 4205.81+B	1s3d – 1s4f	$^3D - ^3F^\circ$	3 – 4		087
		520.72	4013.77 – 4205.82+B	1s3d – 1s4f	$^1D - ^1F^\circ$	2 – 3		087
5	300	1896.82	3385.89 – 3438.61	1s2s – 1s2p	$^3S - ^3P^\circ$	1 – 2		072
5	200	1907.34	3385.89 – 3438.32	1s2s – 1s2p	$^3S - ^3P^\circ$	1 – 1		072
5	200	1907.87	3385.89 – 3438.304	1s2s – 1s2p	$^3S - ^3P^\circ$	1 – 0		072

NITROGEN VII (N^{6+}), Z = 7
Ground State $1s(^2S_{1/2})$ (1 electron)
Ionization Potential 5 380 089.3 cm^{-1}; 667.051 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		18.682	0.0 – 5352.6559544	1s – 14p	$g^2S - ^2P^\circ$	1/2 – 3/2	P	309
		18.698	0.0 – 5348.2730952	1s – 13p	$g^2S - ^2P^\circ$	1/2 – 3/2	P	309
		18.717	0.0 – 5342.7494236	1s – 12p	$g^2S - ^2P^\circ$	1/2 – 3/2	P	309
		18.742	0.0 – 5335.6474168	1s – 11p	$g^2S - ^2P^\circ$	1/2 – 3/2	P	309
		18.774	0.0 – 5326.3141670	1s – 10p	$g^2S - ^2P^\circ$	1/2 – 3/2	P	309
		18.819	0.0 – 5313.6995904	1s – 9p	$g^2S - ^2P^\circ$	1/2 – 3/2	P	309
		18.882	0.0 – 5296.0638422	1s – 8p	$g^2S - ^2P^\circ$	1/2 – 3/2	P	309
		18.974	0.0 – 5270.3402367	1s – 7p	$g^2S - ^2P^\circ$	1/2 – 3/2	P	309
		19.118	0.0 – 5230.7061499	1s – 6p	$g^2S - ^2P^\circ$	1/2 – 3/2	P	309
		19.361	0.0 – 5164.9733644	1s – 5p	$g^2S - ^2P^\circ$	1/2 – 3/2	P	309
	10	19.826	0.0 – 5043.9635490	1s – 4p	$g^2S - ^2P^\circ$	1/2 – 3/2	P	309
	30	20.910	0.0 – 4782.5243590	1s – 3p	$g^2S - ^2P^\circ$	1/2 – 3/2	P	309
1	70	24.779	0.0 – 4035.6415650	1s – 2p	$g^2S - ^2P^\circ$	1/2 – 3/2	P	309
1	30	24.785	0.0 – 4034.7612500	1s – 2p	$g^2S - ^2P^\circ$	1/2 – 1/2	P	309
50		77.429	4034.8068000 – 5326.3141670	2s – 10p	$^2S - ^2P^\circ$	1/2 – 3/2	P	309
35		77.479	4035.6415650 – 5326.3164995	2p – 10d	$^2P^\circ - ^2D$	3/2 – 5/2	P	309
49		78.193	4034.8068000 – 5313.6995904	2s – 9p	$^2S - ^2P^\circ$	1/2 – 3/2	P	309
33		78.244	4035.6415650 – 5313.7027901	2p – 9d	$^2P^\circ - ^2D$	3/2 – 5/2	P	309
48		79.286	4034.8068000 – 5296.0638422	2s – 8p	$^2S - ^2P^\circ$	1/2 – 3/2	P	309
31		79.338	4035.6415650 – 5296.0683982	2p – 8d	$^2P^\circ - ^2D$	3/2 – 5/2	P	309
47		80.937	4034.8068000 – 5270.3402367	2s – 7p	$^2S - ^2P^\circ$	1/2 – 3/2	P	309
29		80.991	4035.6415650 – 5270.3470376	2p – 7d	$^2P^\circ - ^2D$	3/2 – 5/2	P	309
46		83.619	4034.8068000 – 5230.7061499	2s – 6p	$^2S - ^2P^\circ$	1/2 – 3/2	P	309
27		83.677	4035.6415650 – 5230.7169500	2p – 6d	$^2P^\circ - ^2D$	3/2 – 5/2	P	309
45		88.482	4034.8068000 – 5164.9733644	2s – 5p	$^2S - ^2P^\circ$	1/2 – 3/2	P	309
25		88.546	4035.6415650 – 5164.9920279	2p – 5d	$^2P^\circ - ^2D$	3/2 – 5/2	P	309
44		99.093	4034.8068000 – 5043.9635490	2s – 4p	$^2S - ^2P^\circ$	1/2 – 3/2	P	309
23		99.171	4035.6415650 – 5044.0000020	2p – 4d	$^2P^\circ - ^2D$	3/2 – 5/2	P	309
43		133.740	4034.8068000 – 4782.5243590	2s – 3p	$^2S - ^2P^\circ$	1/2 – 3/2	P	309
21		133.874	4035.6415650 – 4782.6107684	2p – 3d	$^2P^\circ - ^2D$	3/2 – 5/2	P	309
		183.811	4782.2771220 – 5326.3141670	3s – 10p	$^2S - ^2P^\circ$	1/2 – 3/2	P	309
		183.894	4782.5243590 – 5326.3164995	3p – 10d	$^2P^\circ - ^2D$	3/2 – 5/2	P	309
68		183.923	4782.6107684 – 5326.3176674	3d – 10f	$^2D - ^2F^\circ$	5/2 – 7/2	P	309
		188.174	4782.2771220 – 5313.6995904	3s – 9p	$^2S - ^2P^\circ$	1/2 – 3/2	P	309
		188.261	4782.5243590 – 5313.7027901	3p – 9d	$^2P^\circ - ^2D$	3/2 – 5/2	P	309
67		188.291	4782.6107684 – 5313.7043921	3d – 9f	$^2D - ^2F^\circ$	5/2 – 7/2	P	309

N VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		194.633	4782.2771220 – 5296.0638422	3s – 8p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		194.725	4782.5243590 – 5296.0683982	3p – 8d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
66		194.757	4782.6107684 – 5296.0706792	3d – 8f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
61		204.891	4782.2771220 – 5270.3402367	3s – 7p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		204.993	4782.5243590 – 5270.3470376	3p – 7d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
65		205.027	4782.6107684 – 5270.3504426	3d – 7f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
60		223.000	4782.2771220 – 5230.7061499	3s – 6p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		223.119	4782.5243590 – 5230.7169500	3p – 6d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
64		223.158	4782.6107684 – 5230.7223569	3d – 6f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
59		261.303	4782.2771220 – 5164.9733644	3s – 5p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		261.460	4782.5243590 – 5164.9920279	3p – 5d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
63		261.512	4782.6107684 – 5165.0013711	3d – 5f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		354.039	5043.8592700 – 5326.3141670	4s – 10p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		354.167	5043.9635490 – 5326.3164995	4p – 10d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
80		354.210	5044.0000020 – 5326.3176674	4d – 10f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		370.590	5043.8592700 – 5313.6995904	4s – 9p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		370.729	5043.9635490 – 5313.7027901	4p – 9d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
79		370.776	5044.0000020 – 5313.7043921	4d – 9f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
58		382.136	4782.2771220 – 5043.9635490	3s – 4p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		382.446	4782.5243590 – 5044.0000020	3p – 4d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
62		382.544	4782.6107684 – 5044.0182508	3d – 4f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		396.504	5043.8592700 – 5296.0638422	4s – 8p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		396.660	5043.9635490 – 5296.0683982	4p – 8d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
78		396.714	5044.0000020 – 5296.0706792	4d – 8f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		441.538	5043.8592700 – 5270.3402367	4s – 7p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		441.729	5043.9635490 – 5270.3470376	4p – 7d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
77		441.792	5044.0000020 – 5270.3504426	4d – 7f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		535.197	5043.8592700 – 5230.7061499	4s – 6p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		535.467	5043.9635490 – 5230.7169500	4p – 6d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
76		535.553	5044.0000020 – 5230.7223569	4d – 6f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		619.601	5164.9199810 – 5326.3141670	5s – 10p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		619.798	5164.9733644 – 5326.3164995	5p – 10d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
90		619.863	5164.9920279 – 5326.3176674	5d – 10f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		672.133	5164.9199810 – 5313.6995904	5s – 9p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		672.364	5164.9733644 – 5313.7027901	5p – 9d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		672.439	5164.9920279 – 5313.7043921	5d – 9f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		762.521	5164.9199810 – 5296.0638422	5s – 8p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		762.806	5164.9733644 – 5296.0683982	5p – 8d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		762.901	5164.9920279 – 5296.0706792	5d – 8f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		825.668	5043.8592700 – 5164.9733644	4s – 5p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		826.252	5043.9635490 – 5164.9920279	4p – 5d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		826.437	5044.0000020 – 5165.0013711	4d – 5f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		948.584	5164.9199810 – 5270.3402367	5s – 7p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		949.004	5164.9733644 – 5270.3470376	5p – 7d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		949.141	5164.9920279 – 5270.3504426	5d – 7f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		1520.076	5164.9199810 – 5230.7061499	5s – 6p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		1521.061	5164.9733644 – 5230.7169500	5p – 6d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		1521.368	5164.9920279 – 5230.7223569	5d – 6f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309

OXYGEN , Z = 8
Unclassified Lines

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	140	130.25						391
	60	130.85						391
	1	145.203						226
	5	145.677						226

OXYGEN I (O^{0+}), Z = 8
Ground State $1s^22s^22p^4(^3P_2)$ (8 electrons)
Ionization Potential 109 837.02 cm^{-1}; 13.618 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
145	2	666.663	0.0 – 150.0008	$2s^22p^4 - 2s^22p^3(^2P^o)19d$	$g^3P - ^3D^o$	2 – 3	A	523
144	5	666.838	0.0 – 149.9615	$2s^22p^4 - 2s^22p^3(^2P^o)18d$	$g^3P - ^3D^o$	2 – 3	A	523
143	10	667.006	0.0 – 149.9237	$2s^22p^4 - 2s^22p^3(^2P^o)17d$	$g^3P - ^3D^o$	2 – 3	A	523
142	10	667.487	0.0 – 149.8156	$2s^22p^4 - 2s^22p^3(^2P^o)15d$	$g^3P - ^3D^o$	2 – 3	A	523
140	10	668.211	0.0 – 149.6522	$2s^22p^4 - 2s^22p^3(^2P^o)13d$	$g^3P - ^3D^o$	2 – 3	A	523
139	2	668.307	0.0 – 149.6318	$2s^22p^4 - 2s^22p^3(^2P^o)14s$	$g^3P - ^3P^o$	2 – 2	A	523
141	5	668.509	0.158265 – 149.7449	$2s^22p^4 - 2s^22p^3(^2P^o)14d$	$g^3P - ^3D^o$	1 – 2	A	523
138	20	668.720	0.0 – 149.5394	$2s^22p^4 - 2s^22p^3(^2P^o)12d$	$g^3P - ^3D^o$	2 – 3	A	523
137	2	668.832	0.0 – 149.5144	$2s^22p^4 - 2s^22p^3(^2P^o)13s$	$g^3P - ^3P^o$	2 – 2	A	523
140	2	668.928	0.158265 – 149.6522	$2s^22p^4 - 2s^22p^3(^2P^o)13d$	$g^3P - ^3D^o$	1 – 2	A	523
136	20	669.371	0.0 – 149.3906	$2s^22p^4 - 2s^22p^3(^2P^o)11d$	$g^3P - ^3D^o$	2 – 3	A	523
135	5	669.526	0.0 – 149.3594	$2s^22p^4 - 2s^22p^3(^2P^o)12s$	$g^3P - ^3P^o$	2 – 2	A	523
136	5	670.091	0.158265 – 149.3906	$2s^22p^4 - 2s^22p^3(^2P^o)11d$	$g^3P - ^3D^o$	1 – 2	A	523
134	20	670.237	0.0 – 149.2006	$2s^22p^4 - 2s^22p^3(^2P^o)10d$	$g^3P - ^3D^o$	2 – 3	A	523
136	5	670.425	0.226977 – 149.3906	$2s^22p^4 - 2s^22p^3(^2P^o)11d$	$g^3P - ^3D^o$	0 – 1	A	523
133	5	670.425	0.0 – 149.1591	$2s^22p^4 - 2s^22p^3(^2P^o)11s$	$g^3P - ^3P^o$	2 – 2	A	523
134	10	670.952	0.158265 – 149.2006	$2s^22p^4 - 2s^22p^3(^2P^o)10d$	$g^3P - ^3D^o$	1 – 2	A	523
132	30	671.406	0.0 – 148.9454	$2s^22p^4 - 2s^22p^3(^2P^o)9d$	$g^3P - ^3D^o$	2 – 3	A	523
131	5	671.669	0.0 – 148.8829	$2s^22p^4 - 2s^22p^3(^2P^o)10s$	$g^3P - ^3P^o$	2 – 2	A	523
132	10	672.090	0.158265 – 148.9454	$2s^22p^4 - 2s^22p^3(^2P^o)9d$	$g^3P - ^3D^o$	1 – 2	A	523
132	5	672.404	0.226977 – 148.9454	$2s^22p^4 - 2s^22p^3(^2P^o)9d$	$g^3P - ^3D^o$	0 – 1	A	523
130	30	673.052	0.0 – 148.5769	$2s^22p^4 - 2s^22p^3(^2P^o)8d$	$g^3P - ^3D^o$	2 – 3	A	523
129	5	673.421	0.0 – 148.4955	$2s^22p^4 - 2s^22p^3(^2P^o)9s$	$g^3P - ^3P^o$	2 – 2	A	523
128	30	675.463	0.0 – 148.0477	$2s^22p^4 - 2s^22p^3(^2P^o)7d$	$g^3P - ^3D^o$	2 – 3	A	523
127	5	676.033	0.0 – 147.9211	$2s^22p^4 - 2s^22p^3(^2P^o)8s$	$g^3P - ^3P^o$	2 – 2	A	523
128	10	676.183	0.158265 – 148.0477	$2s^22p^4 - 2s^22p^3(^2P^o)7d$	$g^3P - ^3D^o$	1 – 2	A	523
128	5	676.487	0.226977 – 148.0477	$2s^22p^4 - 2s^22p^3(^2P^o)7d$	$g^3P - ^3D^o$	0 – 1	A	523
127	2	676.763	0.158265 – 147.9211	$2s^22p^4 - 2s^22p^3(^2P^o)8s$	$g^3P - ^3P^o$	1 – 1	A	523
126	20	679.202	0.0 – 147.2301	$2s^22p^4 - 2s^22p^3(^2P^o)6d$	$g^3P - ^3D^o$	2 – 3	A	523
126	20	679.948	0.158265 – 147.2301	$2s^22p^4 - 2s^22p^3(^2P^o)6d$	$g^3P - ^3D^o$	1 – 2	A	523
125	5	680.146	0.0 – 147.0287	$2s^22p^4 - 2s^22p^3(^2P^o)7s$	$g^3P - ^3P^o$	2 – 2	A	523
126	5	680.256	0.226977 – 147.2301	$2s^22p^4 - 2s^22p^3(^2P^o)6d$	$g^3P - ^3D^o$	0 – 1	A	523
125	5	680.866	0.158265 – 147.0287	$2s^22p^4 - 2s^22p^3(^2P^o)7s$	$g^3P - ^3P^o$	1 – 1	A	523
124	55	685.544	0.0 – 145.8705	$2s^22p^4 - 2s^22p^3(^2P^o)5d$	$g^3P - ^3P^o$	2 – 2	A	523
124	30	686.284	0.158265 – 145.8705	$2s^22p^4 - 2s^22p^3(^2P^o)5d$	$g^3P - ^3P^o$	1 – 1	A	523
124	10	686.603	0.226977 – 145.8705	$2s^22p^4 - 2s^22p^3(^2P^o)5d$	$g^3P - ^3P^o$	0 – 1	A	523

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
123	20	687.202	0.0 – 145.5175	$2s^22p^4 - 2s^22p^3(^2P^\circ)6d$	$g^3P - {^3P^\circ}$	2 – 2	A	523
123	5	687.997	0.158265 – 145.5088	$2s^22p^4 - 2s^22p^3(^2P^\circ)6d$	$g^3P - {^3P^\circ}$	1 – 0	A	523
123	5	688.245	0.226977 – 145.5241	$2s^22p^4 - 2s^22p^3(^2P^\circ)6d$	$g^3P - {^3P^\circ}$	0 – 1	A	523
122	40	697.532	0.0 – 143.3634	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$g^3P - {^3D^\circ}$	2 – 3	A	523
122	20	698.297	0.158265 – 143.3634	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$g^3P - {^3D^\circ}$	1 – 2	A	523
122	10	698.631	0.226977 – 143.3634	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$g^3P - {^3D^\circ}$	0 – 1	A	523
121	5	701.014	0.0 – 142.6505	$2s^22p^4 - 2s^22p^3(^2P^\circ)5s$	$g^3P - {^3P^\circ}$	2 – 2	A	523
120	40	724.830	0.0 – 137.9625	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {^3D^\circ}$	2 – 3	A	523
119	30	724.932	0.0 – 137.9440	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {^3P^\circ}$	2 – 2	A	523
120	30	725.665	0.158265 – 137.9625	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {^3D^\circ}$	1 – 2	A	523
119	20	725.748	0.158265 – 137.9472	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {^3P^\circ}$	1 – 0	A	523
120	10	726.035	0.226977 – 137.9625	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {^3D^\circ}$	0 – 1	A	523
119	10	726.104	0.226977 – 137.9483	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {^3P^\circ}$	0 – 1	A	523
118	5	733.987	0.0 – 136.2422	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})16d$	$g^3P - {^3P^\circ}$	2 – 2	A	523
117	10	734.251	0.0 – 136.1944	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})16d$	$g^3P - {^3S^\circ}$	2 – 1	A	523
116	10	734.251	0.0 – 136.1944	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})16d$	$g^3P - {^3D^\circ}$	2 – 3	A	523
115	5	734.368	0.0 – 136.1715	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})15d$	$g^3P - {^3P^\circ}$	2 – 2	A	523
114	10	734.544	0.0 – 136.1389	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})15d$	$g^3P - {^3S^\circ}$	2 – 1	A	523
113	10	734.544	0.0 – 136.1389	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})15d$	$g^3P - {^3D^\circ}$	2 – 3	A	523
112	5	734.746	0.0 – 136.1001	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})14d$	$g^3P - {^3P^\circ}$	2 – 2	A	523
111	20	734.913	0.0 – 136.0713	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})14d$	$g^3P - {^3S^\circ}$	2 – 1	A	523
110	20	734.913	0.0 – 136.0713	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})14d$	$g^3P - {^3D^\circ}$	2 – 3	A	523
117	5	735.092	0.158265 – 136.1944	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})16d$	$g^3P - {^3S^\circ}$	1 – 1	A	523
116	5	735.092	0.158265 – 136.1944	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})16d$	$g^3P - {^3D^\circ}$	1 – 2	A	523
109	10	735.234	0.0 – 136.0110	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})13d$	$g^3P - {^3P^\circ}$	2 – 2	A	523
108	20	735.367	0.0 – 135.9864	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})13d$	$g^3P - {^3S^\circ}$	2 – 1	A	523
107	20	735.367	0.0 – 135.9864	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})13d$	$g^3P - {^3D^\circ}$	2 – 3	A	523
112	10	735.616	0.158265 – 136.1001	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})14d$	$g^3P - {^3P^\circ}$	1 – 2	A	523
111	5	735.760	0.158265 – 136.0713	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})14d$	$g^3P - {^3S^\circ}$	1 – 1	A	523
110	5	735.760	0.158265 – 136.0713	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})14d$	$g^3P - {^3D^\circ}$	1 – 2	A	523
106	5	735.840	0.0 – 135.8991	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})12d$	$g^3P - {^3P^\circ}$	2 – 2	A	523
105	20	735.960	0.0 – 135.8764	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})12d$	$g^3P - {^3S^\circ}$	2 – 1	A	523
104	20	735.960	0.0 – 135.8764	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})12d$	$g^3P - {^3D^\circ}$	2 – 3	A	523
109	10	736.092	0.158265 – 136.0110	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})13d$	$g^3P - {^3P^\circ}$	1 – 2	A	523
103	10	736.092	0.0 – 135.8526	$2s^22p^4 - 2s^22p^3(^2D^\circ)13d$	$g^3P - {^3D^\circ}$	2 – 3	A	523
108	10	736.225	0.158265 – 135.9864	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})13d$	$g^3P - {^3S^\circ}$	1 – 1	A	523
107	10	736.225	0.158265 – 135.9864	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})13d$	$g^3P - {^3D^\circ}$	1 – 2	A	523
109	5	736.460	0.226977 – 136.0117	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})13d$	$g^3P - {^3P^\circ}$	0 – 1	A	523
102	10	736.629	0.0 – 135.7529	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})11d$	$g^3P - {^3P^\circ}$	2 – 2	A	523
101	30	736.734	0.0 – 135.7324	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})11d$	$g^3P - {^3S^\circ}$	2 – 1	A	523
100	30	736.734	0.0 – 135.7324	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})11d$	$g^3P - {^3D^\circ}$	2 – 3	A	523
105	10	736.824	0.158265 – 135.8764	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})12d$	$g^3P - {^3S^\circ}$	1 – 1	A	523
104	10	736.824	0.158265 – 135.8764	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})12d$	$g^3P - {^3D^\circ}$	1 – 2	A	523
99	10	736.910	0.0 – 135.7018	$2s^22p^4 - 2s^22p^3(^2D^\circ)12s$	$g^3P - {^3D^\circ}$	2 – 3	A	523
98	5	737.019	0.0 – 135.6817	$2s^22p^4 - 2s^22p^3(^2P^\circ)4s$	$g^3P - {^3P^\circ}$	2 – 2	A	523
106	10	737.083	0.226977 – 135.8969	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})12d$	$g^3P - {^3P^\circ}$	0 – 1	A	523
102	20	737.495	0.158265 – 135.7529	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})11d$	$g^3P - {^3P^\circ}$	1 – 2	A	523
101	10	737.614	0.158265 – 135.7324	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})11d$	$g^3P - {^3S^\circ}$	1 – 1	A	523
100	10	737.614	0.158265 – 135.7324	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})11d$	$g^3P - {^3D^\circ}$	1 – 2	A	523
97	10	737.683	0.0 – 135.5603	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})10d$	$g^3P - {^3P^\circ}$	2 – 2	A	523
96	30	737.779	0.0 – 135.5417	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})10d$	$g^3P - {^3S^\circ}$	2 – 1	A	523
95	30	737.779	0.0 – 135.5417	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})10d$	$g^3P - {^3D^\circ}$	2 – 3	A	523
102	10	737.873	0.158265 – 135.6817	$2s^22p^4 - 2s^22p^3(^2P^\circ)4s$	$g^3P - {^3P^\circ}$	1 – 2	A	523
94	10	737.995	0.0 – 135.5023	$2s^22p^4 - 2s^22p^3(^2D^\circ)11s$	$g^3P - {^3D^\circ}$	2 – 3	A	523

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
97	20	738.537	0.158265 – 135.5603	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})10d$	$g^3P - {}^3P^\circ$	1 – 2	A	523
96	10	738.644	0.158265 – 135.5417	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})10d$	$g^3P - {}^3S^\circ$	1 – 1	A	523
95	10	738.644	0.158265 – 135.5417	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})10d$	$g^3P - {}^3D^\circ$	1 – 2	A	523
97	5	738.906	0.226977 – 135.5622	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})10d$	$g^3P - {}^3P^\circ$	0 – 1	A	523
93	20	739.085	0.0 – 135.3035	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})9d$	$g^3P - {}^3P^\circ$	2 – 2	A	523
92	30	739.188	0.0 – 135.2837	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})9d$	$g^3P - {}^3S^\circ$	2 – 1	A	523
91	30	739.188	0.0 – 135.2837	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})9d$	$g^3P - {}^3D^\circ$	2 – 3	A	523
90	10	739.499	0.0 – 135.2267	$2s^22p^4 - 2s^22p^3(^2D^\circ)10s$	$g^3P - {}^3D^\circ$	2 – 3	A	523
93	20	739.940	0.158265 – 135.3035	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})9d$	$g^3P - {}^3P^\circ$	1 – 2	A	523
92	10	740.053	0.158265 – 135.2837	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})9d$	$g^3P - {}^3S^\circ$	1 – 1	A	523
91	10	740.053	0.158265 – 135.2837	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})9d$	$g^3P - {}^3D^\circ$	1 – 2	A	523
93	1	740.313	0.226977 – 135.3050	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})9d$	$g^3P - {}^3P^\circ$	0 – 1	A	523
89	30	741.055	0.0 – 134.9438	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})8d$	$g^3P - {}^3P^\circ$	2 – 2	A	523
88	40	741.177	0.0 – 134.9192	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})8d$	$g^3P - {}^3S^\circ$	2 – 1	A	523
87	40	741.177	0.0 – 134.9192	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})8d$	$g^3P - {}^3D^\circ$	2 – 3	A	523
86	20	741.625	0.0 – 134.8390	$2s^22p^4 - 2s^22p^3(^2D^\circ)9s$	$g^3P - {}^3D^\circ$	2 – 3	A	523
89	20	741.914	0.158265 – 134.9438	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})8d$	$g^3P - {}^3P^\circ$	1 – 2	A	523
88	10	742.062	0.158265 – 134.9192	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})8d$	$g^3P - {}^3S^\circ$	1 – 1	A	523
87	10	742.062	0.158265 – 134.9192	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})8d$	$g^3P - {}^3D^\circ$	1 – 2	A	523
89	10	742.280	0.226977 – 134.9471	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})8d$	$g^3P - {}^3P^\circ$	0 – 1	A	523
86	5	742.471	0.158265 – 134.8437	$2s^22p^4 - 2s^22p^3(^2D^\circ)9s$	$g^3P - {}^3D^\circ$	1 – 2	A	523
85	30	743.929	0.0 – 134.4214	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})7d$	$g^3P - {}^3P^\circ$	2 – 2	A	523
84	40	744.051	0.0 – 134.4025	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})7d$	$g^3P - {}^3S^\circ$	2 – 1	A	523
83	30	744.128	0.0 – 134.3850	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})7d$	$g^3P - {}^3D^\circ$	2 – 3	A	523
82	55	744.794	0.0 – 134.2653	$2s^22p^4 - 2s^22p^3(^2D^\circ)8s$	$g^3P - {}^3D^\circ$	2 – 3	A	523
84	10	744.899	0.158265 – 134.4025	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})7d$	$g^3P - {}^3S^\circ$	1 – 1	A	523
83	10	745.011	0.158265 – 134.3850	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})7d$	$g^3P - {}^3D^\circ$	1 – 2	A	523
85	10	745.159	0.226977 – 134.4265	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})7d$	$g^3P - {}^3P^\circ$	0 – 1	A	523
84	5	745.287	.226977 – 134.4025	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})7d$	$g^3P - {}^3S^\circ$	0 – 1	A	523
82	5	745.628	0.158265 – 134.2734	$2s^22p^4 - 2s^22p^3(^2D^\circ)8s$	$g^3P - {}^3D^\circ$	1 – 2	A	523
82	5	745.945	0.226977 – 134.2851	$2s^22p^4 - 2s^22p^3(^2D^\circ)8s$	$g^3P - {}^3D^\circ$	0 – 1	A	523
81	40	748.380	0.0 – 133.6220	$2s^22p^4 - 2s^22p^3(^2D^\circ)6d$	$g^3P - {}^3P^\circ$	2 – 2	A	523
80	30	748.632	0.0 – 133.5779	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})6d$	$g^3P - {}^3S^\circ$	2 – 1	A	523
79	30	748.680	0.0 – 133.5668	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})6d$	$g^3P - {}^3D^\circ$	2 – 3	A	523
204	1	748.93	15.867862 – 149.392	$2s^22p^4 - 2s^22p^3(^2P^\circ)11d$	${}^1D - {}^1D^\circ$	2 – 2	A	523
81	40	749.253	0.158265 – 133.6220	$2s^22p^4 - 2s^22p^3(^2D^\circ)6d$	$g^3P - {}^3P^\circ$	1 – 2	A	523
80	10	749.517	0.158265 – 133.5779	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})6d$	$g^3P - {}^3S^\circ$	1 – 1	A	523
79	10	749.586	0.158265 – 133.5668	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})6d$	$g^3P - {}^3D^\circ$	1 – 2	A	523
81	10	749.628	0.226977 – 133.6265	$2s^22p^4 - 2s^22p^3(^2D^\circ)6d$	$g^3P - {}^3P^\circ$	0 – 1	A	523
78	10	749.742	0.0 – 133.3788	$2s^22p^4 - 2s^22p^3(^2D^\circ)7s$	$g^3P - {}^3D^\circ$	2 – 2	A	523
78	10	749.795	0.0 – 133.3698	$2s^22p^4 - 2s^22p^3(^2D^\circ)7s$	$g^3P - {}^3D^\circ$	2 – 3	A	523
80	5	749.894	0.226977 – 133.5779	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})6d$	$g^3P - {}^3S^\circ$	0 – 1	A	523
203	1	749.99	15.867862 – 149.203	$2s^22p^4 - 2s^22p^3(^2P^\circ)10d$	${}^1D - {}^1D^\circ$	2 – 2	A	523
202	2	750.19	15.867862 – 149.168	$2s^22p^4 - 2s^22p^3(^2P^\circ)11s$	${}^1D - {}^1P^\circ$	2 – 1	A	523
78	5	750.573	0.158265 – 133.3902	$2s^22p^4 - 2s^22p^3(^2D^\circ)7s$	$g^3P - {}^3D^\circ$	1 – 1	A	523
78	10	750.637	0.158265 – 133.3788	$2s^22p^4 - 2s^22p^3(^2D^\circ)7s$	$g^3P - {}^3D^\circ$	1 – 2	A	523
78	10	750.956	0.226977 – 133.3902	$2s^22p^4 - 2s^22p^3(^2D^\circ)7s$	$g^3P - {}^3D^\circ$	0 – 1	A	523
201	2	751.47	15.867862 – 148.941	$2s^22p^4 - 2s^22p^3(^2P^\circ)9d$	${}^1D - {}^1D^\circ$	2 – 2	A	523
200	1	751.75	15.867862 – 148.891	$2s^22p^4 - 2s^22p^3(^2P^\circ)10s$	${}^1D - {}^1P^\circ$	2 – 1	A	523
199	2	753.52	15.867862 – 148.578	$2s^22p^4 - 2s^22p^3(^2P^\circ)8d$	${}^1D - {}^1D^\circ$	2 – 2	A	523
198	1	753.94	15.867862 – 148.505	$2s^22p^4 - 2s^22p^3(^2P^\circ)9s$	${}^1D - {}^1P^\circ$	2 – 1	A	523
77	40	755.790	0.0 – 132.3111	$2s^22p^4 - 2s^22p^3(^2D^\circ)5d$	$g^3P - {}^3P^\circ$	2 – 2	A	523
76	40	756.243	0.0 – 132.2326	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})5d$	$g^3P - {}^3S^\circ$	2 – 1	A	523
75	30	756.354	0.0 – 132.2138	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})5d$	$g^3P - {}^3D^\circ$	2 – 2	A	523

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
75	40	756.410	0.0 – 132.2034	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})5d$	$g^3P - {}^3D^\circ$	2 – 3	A	523
197	1	756.56	15.867862 – 148.045	$2s^22p^4 - 2s^22p^3(^2P^\circ)7d$	${}^1D - {}^1D^\circ$	2 – 2	A	523
77	20	756.676	0.158265 – 132.3162	$2s^22p^4 - 2s^22p^3(^2D^\circ)5d$	$g^3P - {}^3P^\circ$	1 – 1	A	523
77	10	756.704	0.158265 – 132.31	$2s^22p^4 - 2s^22p^3(^2D^\circ)5d$	$g^3P - {}^3P^\circ$	1 – 0	A	523
77	10	757.059	0.226977 – 132.3162	$2s^22p^4 - 2s^22p^3(^2D^\circ)5d$	$g^3P - {}^3P^\circ$	0 – 1	A	523
76	10	757.149	0.158265 – 132.2326	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})5d$	$g^3P - {}^3S^\circ$	1 – 1	A	523
196	2	757.15	15.867862 – 147.942	$2s^22p^4 - 2s^22p^3(^2P^\circ)8s$	${}^1D - {}^1P^\circ$	2 – 1	A	523
75	20	757.254	0.158265 – 132.2138	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})5d$	$g^3P - {}^3D^\circ$	1 – 2	A	523
75	10	757.627	0.226977 – 132.2181	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})5d$	$g^3P - {}^3D^\circ$	0 – 1	A	523
74	20	758.347	0.0 – 131.8655	$2s^22p^4 - 2s^22p^3(^2D^\circ)6s$	$g^3P - {}^3D^\circ$	2 – 2	A	523
74	30	758.412	0.0 – 131.8545	$2s^22p^4 - 2s^22p^3(^2D^\circ)6s$	$g^3P - {}^3D^\circ$	2 – 3	A	523
74	10	759.200	0.158265 – 131.8761	$2s^22p^4 - 2s^22p^3(^2D^\circ)6s$	$g^3P - {}^3D^\circ$	1 – 1	A	523
74	20	759.262	0.158265 – 131.8655	$2s^22p^4 - 2s^22p^3(^2D^\circ)6s$	$g^3P - {}^3D^\circ$	1 – 2	A	523
74	10	759.593	0.226977 – 131.8761	$2s^22p^4 - 2s^22p^3(^2D^\circ)6s$	$g^3P - {}^3D^\circ$	0 – 1	A	523
194	2	762.26	15.867862 – 147.057	$2s^22p^4 - 2s^22p^3(^2P^\circ)7s$	${}^1D - {}^1P^\circ$	2 – 1	A	523
193	5	769.23	15.867862 – 145.868	$2s^22p^4 - 2s^22p^3(^2P^\circ)5d$	${}^1D - {}^1D^\circ$	2 – 2	A	523
73	20	769.3528	0.0 – 129.979384	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - {}^3P^\circ$	2 – 1	A	210
73	30	769.4083	0.0 – 129.970000	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - {}^3P^\circ$	2 – 2	A	210
73	10	770.2600	0.158265 – 129.984553	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - {}^3P^\circ$	1 – 0	A	210
73	2	770.2907	0.158265 – 129.979384	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - {}^3P^\circ$	1 – 1	A	210
73	10	770.3464	0.158265 – 129.970000	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - {}^3P^\circ$	1 – 2	A	210
73	10	770.6986	0.226977 – 129.979384	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - {}^3P^\circ$	0 – 1	A	210
192		770.70	15.867862 – 145.620	$2s^22p^4 - 2s^22p^3(^2P^\circ)6s$	${}^1D - {}^1P^\circ$	2 – 1	A	523
72	55	770.793	0.0 – 129.7366	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})4d$	$g^3P - {}^3S^\circ$	2 – 1	A	523
71	90	771.056	0.0 – 129.6923	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})4d$	$g^3P - {}^3D^\circ$	2 – 3	A	523
72	30	771.729	0.158265 – 129.7366	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})4d$	$g^3P - {}^3S^\circ$	1 – 1	A	523
71	40	771.967	0.158265 – 129.6975	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})4d$	$g^3P - {}^3D^\circ$	1 – 2	A	523
72	5	772.147	0.226977 – 129.7366	$2s^22p^4 - 2s^22p^3(^2D^\circ_{3/2})4d$	$g^3P - {}^3S^\circ$	0 – 1	A	523
71	20	772.344	0.226977 – 129.7030	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})4d$	$g^3P - {}^3D^\circ$	0 – 1	A	523
70	40	775.252	0.0 – 128.9902	$2s^22p^4 - 2s^22p^3(^2D^\circ)5s$	$g^3P - {}^3D^\circ$	2 – 2	A	523
70	55	775.321	0.0 – 128.9788	$2s^22p^4 - 2s^22p^3(^2D^\circ)5s$	$g^3P - {}^3D^\circ$	2 – 3	A	523
70	30	776.159	0.158265 – 128.9982	$2s^22p^4 - 2s^22p^3(^2D^\circ)5s$	$g^3P - {}^3D^\circ$	1 – 1	A	523
70	30	776.206	0.158265 – 128.9902	$2s^22p^4 - 2s^22p^3(^2D^\circ)5s$	$g^3P - {}^3D^\circ$	1 – 2	A	523
70	20	776.569	0.226977 – 128.9982	$2s^22p^4 - 2s^22p^3(^2D^\circ)5s$	$g^3P - {}^3D^\circ$	0 – 1	A	523
191	5	784.37	15.867862 – 143.359	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	${}^1D - {}^1D^\circ$	2 – 2	A	523
190	2	788.18	15.867862 – 142.743	$2s^22p^4 - 2s^22p^3(^2P^\circ)5s$	${}^1D - {}^1P^\circ$	2 – 1	A	523
69	30	791.5136	0.0 – 126.340225	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	2 – 1	A	523
69	55	791.9732	0.0 – 126.266896	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	2 – 2	A	523
69	20	792.2330	0.158265 – 126.383751	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	1 – 0	A	523
69	20	792.5063	0.158265 – 126.340225	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	1 – 1	A	523
69	40	792.9381	0.226977 – 126.340225	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	0 – 1	A	523
69	40	792.9671	0.158265 – 126.266896	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	1 – 2	A	523
68	90	804.267	0.0 – 124.3363	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3S^\circ$	2 – 1	A	523
67	40	804.775	0.0 – 124.2577	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 2	A	523
67	55	804.848	0.0 – 124.2471	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3	A	523
68	55	805.295	0.158265 – 124.3363	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3S^\circ$	1 – 1	A	523
68	10	805.745	0.226977 – 124.3363	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3S^\circ$	0 – 1	A	523
67	70	805.810	0.158265 – 124.2577	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2	A	523
67	20	806.231	0.226977 – 124.2640	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	0 – 1	A	523
66	10	810.6650	0.0 – 123.355512	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 1	A	210
66	20	811.0512	0.0 – 123.296777	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 2	A	210
66	10	811.4968	0.158265 – 123.387339	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 0	A	210
66	10	811.7064	0.158265 – 123.355512	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 1	A	210
66	5	812.0936	0.158265 – 123.296777	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 2	A	210

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
66	5	812.1594	0.226977 – 123.355512	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3P^\circ$	0 – 1	A	210
65	90	816.766	0.0 – 122.4332	$2s^22p^4 - 2s^22p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	2 – 2	A	523
65	90	816.862	0.0 – 122.4197	$2s^22p^4 - 2s^22p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	2 – 3	A	523
65	55	817.777	0.158265 – 122.4410	$2s^22p^4 - 2s^22p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	1 – 1	A	523
65	55	817.835	0.158265 – 122.4332	$2s^22p^4 - 2s^22p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	1 – 2	A	523
65	55	818.236	0.226977 – 122.4410	$2s^22p^4 - 2s^22p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	0 – 1	A	523
189	10	819.27	15.867862 – 137.928	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$^1D - ^1D^\circ$	2 – 2	A	523
188	2	829.98	15.867862 – 136.353	$2s^22p^4 - 2s^22p^3(^2P^\circ)4s$	$^1D - ^1P^\circ$	2 – 1	A	523
187	1	831.83	15.867862 – 136.085	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})14d$	$^1D - ^1P^\circ$	2 – 1	A	523
186	1	832.42	15.867862 – 136.000	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})13d$	$^1D - ^1P^\circ$	2 – 1	A	523
185	1	832.42	15.867862 – 136.000	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})14s$	$^1D - ^1D^\circ$	2 – 2	A	523
184	1	833.10	15.867862 – 135.902	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})12d$	$^1D - ^1D^\circ$	2 – 2	A	523
183	1	833.20	15.867862 – 135.887	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})12d$	$^1D - ^1P^\circ$	2 – 1	A	523
182	1	834.12	15.867862 – 135.755	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})11d$	$^1D - ^1D^\circ$	2 – 2	A	523
181	1	834.25	15.867862 – 135.736	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})11d$	$^1D - ^1P^\circ$	2 – 1	A	523
180	1	834.34	15.867862 – 135.723	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})12s$	$^1D - ^1D^\circ$	2 – 2	A	523
179	2	835.44	15.867862 – 135.565	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})10d$	$^1D - ^1D^\circ$	2 – 2	A	523
178	2	835.60	15.867862 – 135.542	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})10d$	$^1D - ^1P^\circ$	2 – 1	A	523
177	2	837.27	15.867862 – 135.304	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})9d$	$^1D - ^1D^\circ$	2 – 2	A	523
176	2	837.40	15.867862 – 135.285	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})9d$	$^1D - ^1P^\circ$	2 – 1	A	523
175	1	837.63	15.867862 – 135.252	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})10s$	$^1D - ^1D^\circ$	2 – 2	A	523
174	1	837.76	15.867862 – 135.234	$2s^22p^4 - 2s^22p^3(^2D^\circ)10s$	$^1D - ^3D^\circ$	2 – 2	A	523
173	2	839.83	15.867862 – 134.940	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})8d$	$^1D - ^1D^\circ$	2 – 2	A	523
172	2	839.96	15.867862 – 134.921	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})8d$	$^1D - ^1P^\circ$	2 – 1	A	523
171	1	840.33	15.867862 – 134.869	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})9s$	$^1D - ^1D^\circ$	2 – 2	A	523
170	1	840.49	15.867862 – 134.8437	$2s^22p^4 - 2s^22p^3(^2D^\circ)9s$	$^1D - ^3D^\circ$	2 – 2	A	523
169	2	843.59	15.867862 – 134.409	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})7d$	$^1D - ^1D^\circ$	2 – 2	A	523
168	2	843.75	15.867862 – 134.387	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})7d$	$^1D - ^1P^\circ$	2 – 1	A	523
167	1	844.33	15.867862 – 134.305	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})8s$	$^1D - ^1D^\circ$	2 – 2	A	523
166	1	844.53	15.867862 – 134.2734	$2s^22p^4 - 2s^22p^3(^2D^\circ)8s$	$^1D - ^3D^\circ$	2 – 2	A	523
165	1	849.45	15.867862 – 133.591	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})6d$	$^1D - ^1F^\circ$	2 – 3	A	523
164	2	849.48	15.867862 – 133.587	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})6d$	$^1D - ^1D^\circ$	2 – 2	A	523
163	5	849.61	15.867862 – 133.569	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})6d$	$^1D - ^1P^\circ$	2 – 1	A	523
162	5	850.68	15.867862 – 133.421	$2s^22p^4 - 2s^22p^3(^2D^\circ)7s$	$^1D - ^1D^\circ$	2 – 2	A	523
161	20	859.31	15.867862 – 132.240	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})5d$	$^1D - ^1F^\circ$	2 – 3	A	523
160	10	859.35	15.867862 – 132.235	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})5d$	$^1D - ^1D^\circ$	2 – 2	A	523
159	2	859.59	15.867862 – 132.203	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})5d$	$^1D - ^1P^\circ$	2 – 1	A	523
158	40	861.56	15.867862 – 131.936	$2s^22p^4 - 2s^22p^3(^2D^\circ)6s$	$^1D - ^1D^\circ$	2 – 2	A	523
64		862.678	0.0 – 115.918143	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^1P^\circ$	2 – 1	P	523
64		863.857	0.158265 – 115.918143	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^1P^\circ$	1 – 1	P	523
64		864.370	0.226977 – 115.918143	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^1P^\circ$	0 – 1	P	523
217	1	868.41	33.792583 – 148.946	$2s^22p^4 - 2s^22p^3(^2P^\circ)9d$	$^1S - ^1P^\circ$	0 – 1	A	523
216	1	871.16	33.792583 – 148.582	$2s^22p^4 - 2s^22p^3(^2P^\circ)8d$	$^1S - ^1P^\circ$	0 – 1	A	523
63	70	877.7983	0.0 – 113.921391	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^3P^\circ$	2 – 1		523
63	55	877.8787	0.0 – 113.910957	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^3P^\circ$	2 – 2		523
157	20	878.2007	15.867862 – 129.737052	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$^1D - ^1F^\circ$	2 – 3		523
156	10	878.25	15.867862 – 129.731	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})4d$	$^1D - ^1D^\circ$	2 – 2	A	523
155	1	878.62	15.867862 – 129.683	$2s^22p^4 - 2s^22p^3(^2D^\circ_{5/2})4d$	$^1D - ^1P^\circ$	2 – 1	A	523
63	20	878.9720	0.158265 – 113.927534	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^3P^\circ$	1 – 0		523
63	20	879.0194	0.158265 – 113.921391	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^3P^\circ$	1 – 1		523
63	20	879.1001	0.158265 – 113.910957	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^3P^\circ$	1 – 2		523
63	30	879.5507	0.226977 – 113.921391	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^3P^\circ$	0 – 1		523
214	1	881.47	33.792583 – 147.240	$2s^22p^4 - 2s^22p^3(^2P^\circ)6d$	$^1S - ^1P^\circ$	0 – 1	A	523
154	40	882.8895	15.867862 – 129.132323	$2s^22p^4 - 2s^22p^3(^2D^\circ)5s$	$^1D - ^1D^\circ$	2 – 2		523

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
213	2	892.11	33.792583 – 145.887	$2s^22p^4 - 2s^22p^3(^2P^\circ)5d$	$^1S - ^1P^\circ$	0 – 1	A	523
61	2	911.463	0.0 – 109.7137	$2s^22p^4 - 2s^22p^3(^4S^\circ)31s$	$g^3P - ^3S^\circ$	2 – 1	A	523
62	2	911.463	0.0 – 109.7137	$2s^22p^4 - 2s^22p^3(^4S^\circ)30d$	$g^3P - ^3D^\circ$	2 – 3	A	523
59	5	911.538	0.0 – 109.7054	$2s^22p^4 - 2s^22p^3(^4S^\circ)30s$	$g^3P - ^3S^\circ$	2 – 1	A	523
60	5	911.538	0.0 – 109.7054	$2s^22p^4 - 2s^22p^3(^4S^\circ)29d$	$g^3P - ^3D^\circ$	2 – 3	A	523
57	5	911.611	0.0 – 109.6959	$2s^22p^4 - 2s^22p^3(^4S^\circ)29s$	$g^3P - ^3S^\circ$	2 – 1	A	523
58	5	911.611	0.0 – 109.6959	$2s^22p^4 - 2s^22p^3(^4S^\circ)28d$	$g^3P - ^3D^\circ$	2 – 3	A	523
55	5	911.692	0.0 – 109.6862	$2s^22p^4 - 2s^22p^3(^4S^\circ)28s$	$g^3P - ^3S^\circ$	2 – 1	A	523
56	5	911.692	0.0 – 109.6862	$2s^22p^4 - 2s^22p^3(^4S^\circ)27d$	$g^3P - ^3D^\circ$	2 – 3	A	523
53	5	911.786	0.0 – 109.6735	$2s^22p^4 - 2s^22p^3(^4S^\circ)27s$	$g^3P - ^3S^\circ$	2 – 1	A	523
54	5	911.786	0.0 – 109.6735	$2s^22p^4 - 2s^22p^3(^4S^\circ)26d$	$g^3P - ^3D^\circ$	2 – 3	A	523
51	5	911.898	0.0 – 109.6614	$2s^22p^4 - 2s^22p^3(^4S^\circ)26s$	$g^3P - ^3S^\circ$	2 – 1	A	523
52	5	911.898	0.0 – 109.6614	$2s^22p^4 - 2s^22p^3(^4S^\circ)25d$	$g^3P - ^3D^\circ$	2 – 3	A	523
49	10	912.012	0.0 – 109.6477	$2s^22p^4 - 2s^22p^3(^4S^\circ)25s$	$g^3P - ^3S^\circ$	2 – 1	A	523
50	10	912.012	0.0 – 109.6477	$2s^22p^4 - 2s^22p^3(^4S^\circ)24d$	$g^3P - ^3D^\circ$	2 – 3	A	523
47	10	912.155	0.0 – 109.6300	$2s^22p^4 - 2s^22p^3(^4S^\circ)24s$	$g^3P - ^3S^\circ$	2 – 1	A	523
48	10	912.155	0.0 – 109.6300	$2s^22p^4 - 2s^22p^3(^4S^\circ)23d$	$g^3P - ^3D^\circ$	2 – 3	A	523
45	10	912.318	0.0 – 109.6105	$2s^22p^4 - 2s^22p^3(^4S^\circ)23s$	$g^3P - ^3S^\circ$	2 – 1	A	523
46	10	912.318	0.0 – 109.6105	$2s^22p^4 - 2s^22p^3(^4S^\circ)22d$	$g^3P - ^3D^\circ$	2 – 3	A	523
212	1	912.48	33.792583 – 143.384	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$^1S - ^1P^\circ$	0 – 1	A	523
43	10	912.500	0.0 – 109.5890	$2s^22p^4 - 2s^22p^3(^4S^\circ)22s$	$g^3P - ^3S^\circ$	2 – 1	A	523
44	10	912.500	0.0 – 109.5893	$2s^22p^4 - 2s^22p^3(^4S^\circ)21d$	$g^3P - ^3D^\circ$	2 – 3	A	523
42	20	912.723	0.0 – 109.5623	$2s^22p^4 - 2s^22p^3(^4S^\circ)21s$	$g^3P - ^3S^\circ$	2 – 1	A	523
41	20	912.723	0.0 – 109.5615	$2s^22p^4 - 2s^22p^3(^4S^\circ)20d$	$g^3P - ^3D^\circ$	2 – 3	A	523
60	10	912.843	0.158265 – 109.7054	$2s^22p^4 - 2s^22p^3(^4S^\circ)29d$	$g^3P - ^3D^\circ$	1 – 2	A	523
40	20	912.964	0.0 – 109.5333	$2s^22p^4 - 2s^22p^3(^4S^\circ)20s$	$g^3P - ^3S^\circ$	2 – 1	A	523
39	20	912.964	0.0 – 109.5332	$2s^22p^4 - 2s^22p^3(^4S^\circ)19d$	$g^3P - ^3D^\circ$	2 – 3	A	523
54	5	913.127	0.158265 – 109.6735	$2s^22p^4 - 2s^22p^3(^4S^\circ)26d$	$g^3P - ^3D^\circ$	1 – 2	A	523
38	20	913.250	0.0 – 109.4990	$2s^22p^4 - 2s^22p^3(^4S^\circ)19s$	$g^3P - ^3S^\circ$	2 – 1	A	523
37	20	913.250	0.0 – 109.4990	$2s^22p^4 - 2s^22p^3(^4S^\circ)18d$	$g^3P - ^3D^\circ$	2 – 3	A	523
48	10	913.483	0.158265 – 109.6300	$2s^22p^4 - 2s^22p^3(^4S^\circ)23d$	$g^3P - ^3D^\circ$	1 – 2	A	523
36	10	913.590	0.0 – 109.4576	$2s^22p^4 - 2s^22p^3(^4S^\circ)17d$	$g^3P - ^3D^\circ$	2 – 3	A	523
45		913.644	0.158265 – 109.6105	$2s^22p^4 - 2s^22p^3(^4S^\circ)23s$	$g^3P - ^3S^\circ$	1 – 1	A	523
46	10	913.644	0.158265 – 109.6105	$2s^22p^4 - 2s^22p^3(^4S^\circ)22d$	$g^3P - ^3D^\circ$	1 – 2	A	523
44	10	913.815	0.158265 – 109.5893	$2s^22p^4 - 2s^22p^3(^4S^\circ)21d$	$g^3P - ^3D^\circ$	1 – 2	A	523
34	20	913.997	0.0 – 109.4095	$2s^22p^4 - 2s^22p^3(^4S^\circ)16d$	$g^3P - ^3D^\circ$	2 – 3	A	523
41	10	914.057	0.158265 – 109.5615	$2s^22p^4 - 2s^22p^3(^4S^\circ)20d$	$g^3P - ^3D^\circ$	1 – 2	A	523
33	2	914.057	0.0 – 109.4024	$2s^22p^4 - 2s^22p^3(^4S^\circ)17s$	$g^3P - ^3S^\circ$	2 – 1	A	523
39	5	914.293	0.158265 – 109.5332	$2s^22p^4 - 2s^22p^3(^4S^\circ)19d$	$g^3P - ^3D^\circ$	1 – 2	A	523
32	10	914.513	0.0 – 109.3489	$2s^22p^4 - 2s^22p^3(^4S^\circ)15d$	$g^3P - ^3D^\circ$	2 – 3	A	523
37	10	914.588	0.158265 – 109.4980	$2s^22p^4 - 2s^22p^3(^4S^\circ)18d$	$g^3P - ^3D^\circ$	1 – 2	A	523
39	2	914.854	0.226977 – 109.5332	$2s^22p^4 - 2s^22p^3(^4S^\circ)19d$	$g^3P - ^3D^\circ$	0 – 1	A	523
36	5	914.918	0.158265 – 109.4576	$2s^22p^4 - 2s^22p^3(^4S^\circ)17d$	$g^3P - ^3D^\circ$	1 – 2	A	523
30	5	915.100	0.0 – 109.2782	$2s^22p^4 - 2s^22p^3(^4S^\circ)14d$	$g^3P - ^3D^\circ$	2 – 3	A	523
37	2	915.199	0.226977 – 109.4929	$2s^22p^4 - 2s^22p^3(^4S^\circ)18d$	$g^3P - ^3D^\circ$	0 – 1	A	523
29	2	915.199	0.0 – 109.2659	$2s^22p^4 - 2s^22p^3(^4S^\circ)15s$	$g^3P - ^3S^\circ$	2 – 1	A	523
34	5	915.321	0.158265 – 109.4095	$2s^22p^4 - 2s^22p^3(^4S^\circ)16d$	$g^3P - ^3D^\circ$	1 – 2	A	523
33		915.381	0.158265 – 109.4024	$2s^22p^4 - 2s^22p^3(^4S^\circ)17s$	$g^3P - ^3S^\circ$	1 – 1	P	523
36	2	915.499	0.226977 – 109.4576	$2s^22p^4 - 2s^22p^3(^4S^\circ)17d$	$g^3P - ^3D^\circ$	0 – 1	A	523
32	10	915.821	0.158265 – 109.3489	$2s^22p^4 - 2s^22p^3(^4S^\circ)15d$	$g^3P - ^3D^\circ$	1 – 2	A	523
28	10	915.877	0.0 – 109.1863	$2s^22p^4 - 2s^22p^3(^4S^\circ)13d$	$g^3P - ^3D^\circ$	2 – 3	A	523
27	5	915.991	0.0 – 109.1717	$2s^22p^4 - 2s^22p^3(^4S^\circ)14s$	$g^3P - ^3S^\circ$	2 – 1	A	523
30	10	916.420	0.158265 – 109.2782	$2s^22p^4 - 2s^22p^3(^4S^\circ)14d$	$g^3P - ^3D^\circ$	1 – 2	A	523
29		916.526	0.158265 – 109.2659	$2s^22p^4 - 2s^22p^3(^4S^\circ)15s$	$g^3P - ^3S^\circ$	1 – 1	P	523

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
26	10	916.816	0.0 – 109.0733	$2s^22p^4 - 2s^22p^3(^4S^\circ)12d$	$g^3P - ^3D^\circ$	2 – 3	A	523
30	5	916.960	0.226977 – 109.2830	$2s^22p^4 - 2s^22p^3(^4S^\circ)14d$	$g^3P - ^3D^\circ$	0 – 1	A	523
25	5	916.960	0.0 – 109.0560	$2s^22p^4 - 2s^22p^3(^4S^\circ)13s$	$g^3P - ^3S^\circ$	2 – 1	A	523
28	5	917.185	0.158265 – 109.1863	$2s^22p^4 - 2s^22p^3(^4S^\circ)13d$	$g^3P - ^3D^\circ$	1 – 2	A	523
27	5	917.315	0.158265 – 109.1717	$2s^22p^4 - 2s^22p^3(^4S^\circ)14s$	$g^3P - ^3S^\circ$	1 – 1	A	523
24	10	918.039	0.0 – 108.9272	$2s^22p^4 - 2s^22p^3(^4S^\circ)11d$	$g^3P - ^3D^\circ$	2 – 3	A	523
26	5	918.149	0.158265 – 109.0733	$2s^22p^4 - 2s^22p^3(^4S^\circ)12d$	$g^3P - ^3D^\circ$	1 – 2	A	523
23	5	918.221	0.0 – 108.9061	$2s^22p^4 - 2s^22p^3(^4S^\circ)12s$	$g^3P - ^3S^\circ$	2 – 1	A	523
25		918.293	0.158265 – 109.0560	$2s^22p^4 - 2s^22p^3(^4S^\circ)13s$	$g^3P - ^3S^\circ$	1 – 1	P	523
26	2	918.724	0.226977 – 109.0733	$2s^22p^4 - 2s^22p^3(^4S^\circ)12d$	$g^3P - ^3D^\circ$	0 – 1	A	523
24	5	919.376	0.158265 – 108.9272	$2s^22p^4 - 2s^22p^3(^4S^\circ)11d$	$g^3P - ^3D^\circ$	1 – 2	A	523
23	5	919.559	0.158265 – 108.9061	$2s^22p^4 - 2s^22p^3(^4S^\circ)12s$	$g^3P - ^3S^\circ$	1 – 1	A	523
22	10	919.658	0.0 – 108.7361	$2s^22p^4 - 2s^22p^3(^4S^\circ)10d$	$g^3P - ^3D^\circ$	2 – 3	A	523
21	5	919.908	0.0 – 108.7055	$2s^22p^4 - 2s^22p^3(^4S^\circ)11s$	$g^3P - ^3S^\circ$	2 – 1	A	523
24	2	919.971	0.226977 – 108.9272	$2s^22p^4 - 2s^22p^3(^4S^\circ)11d$	$g^3P - ^3D^\circ$	0 – 1	A	523
22	10	921.005	0.158265 – 108.7361	$2s^22p^4 - 2s^22p^3(^4S^\circ)10d$	$g^3P - ^3D^\circ$	1 – 2	A	523
21	2	921.247	0.158265 – 108.7055	$2s^22p^4 - 2s^22p^3(^4S^\circ)11s$	$g^3P - ^3S^\circ$	1 – 1	A	523
22	2	921.575	0.226977 – 108.7361	$2s^22p^4 - 2s^22p^3(^4S^\circ)10d$	$g^3P - ^3D^\circ$	0 – 1	A	523
20	10	921.860	0.0 – 108.4767	$2s^22p^4 - 2s^22p^3(^4S^\circ)9d$	$g^3P - ^3D^\circ$	2 – 3	A	523
153	70	922.0081	15.867862 – 124.326779	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1D - ^1F^\circ$	2 – 3		523
152	20	922.0727	15.867862 – 124.319175	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1D - ^1D^\circ$	2 – 2		523
19	5	922.200	0.0 – 108.4363	$2s^22p^4 - 2s^22p^3(^4S^\circ)10s$	$g^3P - ^3S^\circ$	2 – 1	A	523
151	5	922.46	15.867862 – 124.274	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1D - ^1P^\circ$	2 – 1	A	523
20	10	923.200	0.158265 – 108.4767	$2s^22p^4 - 2s^22p^3(^4S^\circ)9d$	$g^3P - ^3D^\circ$	1 – 2	A	523
19		923.549	0.158265 – 108.4363	$2s^22p^4 - 2s^22p^3(^4S^\circ)10s$	$g^3P - ^3S^\circ$	1 – 1	P	523
20		923.790	0.226977 – 108.4767	$2s^22p^4 - 2s^22p^3(^4S^\circ)9d$	$g^3P - ^3D^\circ$	0 – 1	P	523
19		924.135	0.226977 – 108.4363	$2s^22p^4 - 2s^22p^3(^4S^\circ)10s$	$g^3P - ^3S^\circ$	0 – 1	P	523
18	5	924.952	0.0 – 108.1140	$2s^22p^4 - 2s^22p^3(^4S^\circ)8d$	$g^3P - ^3D^\circ$	2 – 3	A	523
17	5	925.442	0.0 – 108.0560	$2s^22p^4 - 2s^22p^3(^4S^\circ)9s$	$g^3P - ^3S^\circ$	2 – 1	A	523
18	10	926.295	0.158265 – 108.1140	$2s^22p^4 - 2s^22p^3(^4S^\circ)8d$	$g^3P - ^3D^\circ$	1 – 2	A	523
17	5	926.809	0.158265 – 108.0560	$2s^22p^4 - 2s^22p^3(^4S^\circ)9s$	$g^3P - ^3S^\circ$	1 – 1	A	523
18	5	926.903	0.226977 – 108.1140	$2s^22p^4 - 2s^22p^3(^4S^\circ)8d$	$g^3P - ^3D^\circ$	0 – 1	A	523
17		927.394	0.226977 – 108.0560	$2s^22p^4 - 2s^22p^3(^4S^\circ)9s$	$g^3P - ^3S^\circ$	0 – 1	P	523
16	10	929.5168	0.0 – 107.582777	$2s^22p^4 - 2s^22p^3(^4S^\circ)7d$	$g^3P - ^3D^\circ$	2 – 3		523
15	5	930.2566	0.0 – 107.497224	$2s^22p^4 - 2s^22p^3(^4S^\circ)8s$	$g^3P - ^3S^\circ$	2 – 1		523
16	5	930.8862	0.158265 – 107.582777	$2s^22p^4 - 2s^22p^3(^4S^\circ)7d$	$g^3P - ^3D^\circ$	1 – 2		523
16	5	931.4820	0.226977 – 107.582777	$2s^22p^4 - 2s^22p^3(^4S^\circ)7d$	$g^3P - ^3D^\circ$	0 – 1		523
15	5	931.6282	0.158265 – 107.497224	$2s^22p^4 - 2s^22p^3(^4S^\circ)8s$	$g^3P - ^3S^\circ$	1 – 1		523
15		932.2249	0.226977 – 107.497224	$2s^22p^4 - 2s^22p^3(^4S^\circ)8s$	$g^3P - ^3S^\circ$	0 – 1		523
150	90	935.1930	15.867862 – 122.797661	$2s^22p^4 - 2s^22p^3(^2D^\circ)4s$	$^1D - ^1D^\circ$	2 – 2		523
14	10	936.6295	0.0 – 106.765803	$2s^22p^4 - 2s^22p^3(^4S^\circ)6d$	$g^3P - ^3D^\circ$	2 – 3		523
13		937.8405	0.0 – 106.627934	$2s^22p^4 - 2s^22p^3(^4S^\circ)7s$	$g^3P - ^3S^\circ$	2 – 1		523
14	5	938.0200	0.158265 – 106.765803	$2s^22p^4 - 2s^22p^3(^4S^\circ)6d$	$g^3P - ^3D^\circ$	1 – 2		523
14		938.6249	0.226977 – 106.765803	$2s^22p^4 - 2s^22p^3(^4S^\circ)6d$	$g^3P - ^3D^\circ$	0 – 1		523
13		939.2346	0.158265 – 106.627934	$2s^22p^4 - 2s^22p^3(^4S^\circ)7s$	$g^3P - ^3S^\circ$	1 – 1		523
13	5	939.8412	0.226977 – 106.627934	$2s^22p^4 - 2s^22p^3(^4S^\circ)7s$	$g^3P - ^3S^\circ$	0 – 1		523
12	10	948.6855	0.0 – 105.409008	$2s^22p^4 - 2s^22p^3(^4S^\circ)5d$	$g^3P - ^3D^\circ$	2 – 3		523,197
12	5	950.1121	0.158265 – 105.409008	$2s^22p^4 - 2s^22p^3(^4S^\circ)5d$	$g^3P - ^3D^\circ$	1 – 2		523
12	2	950.7327	0.226977 – 105.409008	$2s^22p^4 - 2s^22p^3(^4S^\circ)5d$	$g^3P - ^3D^\circ$	0 – 1		523,197
11	10	950.8846	0.0 – 105.165232	$2s^22p^4 - 2s^22p^3(^4S^\circ)6s$	$g^3P - ^3S^\circ$	2 – 1		523
11	2	952.3178	0.158265 – 105.165232	$2s^22p^4 - 2s^22p^3(^4S^\circ)6s$	$g^3P - ^3S^\circ$	1 – 1		523
11	2	952.9413	0.226977 – 105.165232	$2s^22p^4 - 2s^22p^3(^4S^\circ)6s$	$g^3P - ^3S^\circ$	0 – 1		523
211	1	959.80	33.792583 – 137.981	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$^1S - ^1P^\circ$	0 – 1	A	523
10	15	971.7381	0.0 – 102.908374	$2s^22p^4 - 2s^22p^3(^4S^\circ)4d$	$g^3P - ^3D^\circ$	2 – 3		523,197

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
9		972.143	0.0 – 102.865547	$2s^22p^4 - 2s^22p^3(^4S°)4d$	$g^3P - ^5D°$	2 – 3	P	523
10	9	973.2342	0.158265 – 102.908443	$2s^22p^4 - 2s^22p^3(^4S°)4d$	$g^3P - ^3D°$	1 – 2		523,197
9		973.640	0.158265 – 102.865606	$2s^22p^4 - 2s^22p^3(^4S°)4d$	$g^3P - ^5D°$	1 – 2	P	523
10	3	973.8852	0.226977 – 102.908489	$2s^22p^4 - 2s^22p^3(^4S°)4d$	$g^3P - ^3D°$	0 – 1		523,197
8		974.070	0.0 – 102.662026	$2s^22p^4 - 2s^22p^3(^2D°)3s$	$g^3P - ^1D°$	2 – 2	P	523
9		974.292	0.226977 – 102.865655	$2s^22p^4 - 2s^22p^3(^4S°)4d$	$g^3P - ^5D°$	0 – 1	P	523
210		975.04	33.792583 – 136.353	$2s^22p^4 - 2s^22p^3(^2P°)4s$	$^1S - ^1P°$	0 – 1	P	523
8		975.574	0.158265 – 102.662026	$2s^22p^4 - 2s^22p^3(^2D°)3s$	$g^3P - ^1D°$	1 – 2	P	523
7	10	976.4481	0.0 – 102.411995	$2s^22p^4 - 2s^22p^3(^4S°)5s$	$g^3P - ^3S°$	2 – 1		523,197
7	6	977.9594	0.158265 – 102.411995	$2s^22p^4 - 2s^22p^3(^4S°)5s$	$g^3P - ^3S°$	1 – 1		523,197
7	2	978.6170	0.226977 – 102.411995	$2s^22p^4 - 2s^22p^3(^4S°)5s$	$g^3P - ^3S°$	0 – 1		523,197
6		979.272	0.0 – 102.116698	$2s^22p^4 - 2s^22p^3(^4S°)5s$	$g^3P - ^5S°$	2 – 2	P	523
6		980.792	0.158265 – 102.116698	$2s^22p^4 - 2s^22p^3(^4S°)5s$	$g^3P - ^5S°$	1 – 2	P	523
5		988.5778	0.0 – 101.155422	$2s^22p^4 - 2s^22p^3(^2D°)3s$	$g^3P - ^3D°$	2 – 1		523
5	4	988.6549	0.0 – 101.147526	$2s^22p^4 - 2s^22p^3(^2D°)3s$	$g^3P - ^3D°$	2 – 2		523,197
5	20	988.7734	0.0 – 101.135407	$2s^22p^4 - 2s^22p^3(^2D°)3s$	$g^3P - ^3D°$	2 – 3		523,197
5	4	990.1269	0.158265 – 101.155422	$2s^22p^4 - 2s^22p^3(^2D°)3s$	$g^3P - ^3D°$	1 – 1		523,197
5	10	990.2043	0.158265 – 101.147526	$2s^22p^4 - 2s^22p^3(^2D°)3s$	$g^3P - ^3D°$	1 – 2		523,197
5	5	990.8010	0.226977 – 101.155422	$2s^22p^4 - 2s^22p^3(^2D°)3s$	$g^3P - ^3D°$	0 – 1		523,197
149	40	999.4974	15.867862 – 115.918143	$2s^22p^4 - 2s^22p^3(^2P°)3s$	$^1D - ^1P°$	2 – 1		523,488
4	25	1025.7618	0.0 – 97.488538	$2s^22p^4 - 2s^22p^3(^4S°)3d$	$g^3P - ^3D°$	2 – 3		523,197
3		1026.476	0.0 – 97.420716	$2s^22p^4 - 2s^22p^3(^4S°)3d$	$g^3P - ^5D°$	2 – 3	P	523
4	15	1027.4307	0.158265 – 97.488448	$2s^22p^4 - 2s^22p^3(^4S°)3d$	$g^3P - ^3D°$	1 – 2		523,197
3		1028.145	0.158265 – 97.420839	$2s^22p^4 - 2s^22p^3(^4S°)3d$	$g^3P - ^5D°$	1 – 2	P	523
4	5	1028.1571	0.226977 – 97.488378	$2s^22p^4 - 2s^22p^3(^4S°)3d$	$g^3P - ^3D°$	0 – 1		523,197
3		1028.870	0.226977 – 97.420942	$2s^22p^4 - 2s^22p^3(^4S°)3d$	$g^3P - ^5D°$	0 – 1	P	523
3	20	1039.2304	0.0 – 96.225049	$2s^22p^4 - 2s^22p^3(^4S°)4s$	$g^3P - ^3S°$	2 – 1		523,197
3	12	1040.9425	0.158265 – 96.225049	$2s^22p^4 - 2s^22p^3(^4S°)4s$	$g^3P - ^3S°$	1 – 1		523,197
3	4	1041.6876	0.226977 – 96.225049	$2s^22p^4 - 2s^22p^3(^4S°)4s$	$g^3P - ^3S°$	0 – 1		523,197
209		1042.86	33.792583 – 129.683	$2s^22p^4 - 2s^22p^3(^2D°_{5/2})4d$	$^1S - ^1P°$	0 – 1	P	523
2		1047.376	0.0 – 95.476728	$2s^22p^4 - 2s^22p^3(^4S°)4s$	$g^3P - ^5S°$	2 – 2	P	523
2		1049.115	0.158265 – 95.476728	$2s^22p^4 - 2s^22p^3(^4S°)4s$	$g^3P - ^5S°$	1 – 2	P	523
208		1105.20	33.792583 – 124.274	$2s^22p^4 - 2s^22p^3(^2D°)3d$	$^1S - ^1P°$	0 – 1	P	523
148	10	1152.1512	15.867862 – 102.662026	$2s^22p^4 - 2s^22p^3(^2D°)3s$	$^1D - ^1D°$	2 – 2		523,197
207	40	1217.6477	33.792583 – 115.918143	$2s^22p^4 - 2s^22p^3(^2P°)3s$	$^1S - ^1P°$	0 – 1		523
147		1225.180	15.867862 – 97.488538	$2s^22p^4 - 2s^22p^3(^4S°)3d$	$^1D - ^3D°$	2 – 3	P	523
147		1225.181	15.867862 – 97.488448	$2s^22p^4 - 2s^22p^3(^4S°)3d$	$^1D - ^3D°$	2 – 2	P	523
147		1225.182	15.867862 – 97.488378	$2s^22p^4 - 2s^22p^3(^4S°)3d$	$^1D - ^3D°$	2 – 1	P	523
2	1000	1302.1685	0.0 – 76.794978	$2s^22p^4 - 2s^22p^3(^4S°)3s$	$g^3P - ^3S°$	2 – 1		523,197
2	600	1304.8576	0.158265 – 76.794978	$2s^22p^4 - 2s^22p^3(^4S°)3s$	$g^3P - ^3S°$	1 – 1		523,197
2	200	1306.0286	0.226977 – 76.794978	$2s^22p^4 - 2s^22p^3(^4S°)3s$	$g^3P - ^3S°$	0 – 1		523,197
1	100	1355.5977	0.0 – 73.768200	$2s^22p^4 - 2s^22p^3(^4S°)3s$	$g^3P - ^5S°$	2 – 2		523,197
1	60	1358.5123	0.158265 – 73.768200	$2s^22p^4 - 2s^22p^3(^4S°)3s$	$g^3P - ^5S°$	1 – 2		523,197
206		1601.731	33.792583 – 96.225049	$2s^22p^4 - 2s^22p^3(^4S°)4s$	$^1S - ^3S°$	0 – 1	P	523
146		1641.305	15.867862 – 76.794978	$2s^22p^4 - 2s^22p^3(^4S°)3s$	$^1D - ^3S°$	2 – 1		523

OXYGEN II (O^{1+}), Z = 8
Ground State $1s^22s^22p^3(^4S^\circ_{3/2})$ (7 electrons)
Ionization Potential 283 240 cm^{-1}; 35.118 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	376.693	0.0 – 265.4682	$2s^22p^3 - 2s^22p^2(^3P)5d$	$g^4S^\circ - {}^4P$	3/2 – 3/2		168
	10	376.745	0.0 – 265.4315	$2s^22p^3 - 2s^22p^2(^3P)5d$	$g^4S^\circ - {}^4P$	3/2 – 5/2		168
	10	377.045	0.0 – 265.2203	$2s^22p^3 - 2s^22p^2(^3P)5d$	$g^4S^\circ - {}^4D$	3/2 – 5/2		168
	50	391.912	0.0 – 255.1626	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S^\circ - {}^4P$	3/2 – 1/2		168
	100	391.943	0.0 – 255.1409	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S^\circ - {}^4P$	3/2 – 3/2		168
	150	392.002	0.0 – 255.1046	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S^\circ - {}^4P$	3/2 – 5/2		168
	150	392.322	0.0 – 254.8952	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S^\circ - {}^4D$	3/2 – 5/2		168
	10	403.035	26.8084 – 274.92	$2s^22p^3 - 2s^22p^2(^1D)4d$	$^2D^\circ - {}^2D$	5/2 – 5/2		168
	10	403.087	26.8294 – 274.92	$2s^22p^3 - 2s^22p^2(^1D)4d$	$^2D^\circ - {}^2D$	3/2 – 3/2		168
	10	403.273	26.8084 – 274.7824	$2s^22p^3 - 2s^22p^2(^1D)4d$	$^2D^\circ - {}^2F$	5/2 – 7/2		168
	10	403.372	26.8294 – 274.7392	$2s^22p^3 - 2s^22p^2(^1D)4d$	$^2D^\circ - {}^2F$	3/2 – 5/2		168
	50	418.598	0.0 – 238.89296	$2s^22p^3 - 2s^22p^2(^3P)4s$	$g^4S^\circ - {}^4P$	3/2 – 5/2		168
	10	418.812	26.8084 – 265.578	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2D^\circ - {}^2F$	5/2 – 7/2		168
	10	424.577	40.4684 – 275.997	$2s^22p^3 - 2s^22p^2(^1D)4d$	$^2P^\circ - {}^2S$	1/2 – 1/2		168
	10	425.273	40.4669 – 275.611	$2s^22p^3 - 2s^22p^2(^1D)4d$	$^2P^\circ - {}^2P$	3/2 – 3/2		168
	50	426.526	40.4669 – 274.92	$2s^22p^3 - 2s^22p^2(^1D)4d$	$^2P^\circ - {}^2D$	3/2 – 5/2		168
	100	429.557	0.0 – 232.79627	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - {}^2F$	3/2 – 5/2		168
	250	429.647	0.0 – 232.74751	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - {}^4D$	3/2 – 5/2		168
	200	429.716	0.0 – 232.71170	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - {}^4D$	3/2 – 1/2		168
3	250	429.918	0.0 – 232.60257	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - {}^4P$	3/2 – 1/2		168
3	300	430.041	0.0 – 232.53606	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - {}^4P$	3/2 – 3/2		168
3	300	430.177	0.0 – 232.46283	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - {}^4P$	3/2 – 5/2		168
	50	436.510	26.8084 – 255.8972	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^2D$	5/2 – 5/2		168
	10	436.649	26.8294 – 255.8431	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^2D$	3/2 – 3/2		168
	150	437.332	26.8084 – 255.4652	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^2F$	5/2 – 7/2		168
	150	437.683	26.8294 – 255.3013	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^2F$	3/2 – 5/2		168
	150	440.552	26.8084 – 253.79187	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - {}^2P$	5/2 – 3/2		168
	100	440.598	26.8294 – 253.78951	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - {}^2P$	3/2 – 1/2		168
	200	442.001	26.8084 – 253.04835	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - {}^2D$	5/2 – 5/2		168
	200	442.048	26.8294 – 253.04623	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - {}^2D$	3/2 – 3/2		168
	10	443.681	40.4669 – 265.856	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2P^\circ - {}^2D$	3/2 – 5/2		168
	200	445.601	26.8084 – 251.2209	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - {}^2F$	5/2 – 7/2		168
	200	445.638	26.8294 – 251.2241	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - {}^2F$	3/2 – 5/2		168
	50	456.997	40.4669 – 259.2862	$2s^22p^3 - 2s^22p^2(^1D)4s$	$^2P^\circ - {}^2D$	3/2 – 5/2		168
	10	458.422	40.4669 – 258.6017	$2s^22p^3 - 2s^22p^2(^3P)5s$	$^2P^\circ - {}^2P$	3/2 – 3/2		168
	100	464.194	40.4669 – 255.8972	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2P^\circ - {}^2D$	3/2 – 5/2		168
	50	464.310	40.4684 – 255.8431	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2P^\circ - {}^2D$	1/2 – 3/2		168
	150	464.785	40.4669 – 255.6224	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - {}^2S$	3/2 – 1/2		168
	50	465.529	40.4684 – 255.2814	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2P^\circ - {}^2P$	1/2 – 1/2		168
	100	465.760	40.4669 – 255.1725	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2P^\circ - {}^2P$	3/2 – 3/2		168
	10	467.926	26.8084 – 240.51628	$2s^22p^3 - 2s^22p^2(^3P)4s$	$^2D^\circ - {}^2P$	5/2 – 3/2		168
	100	468.766	40.4669 – 253.79187	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - {}^2P$	3/2 – 3/2		168
	200	470.408	40.4669 – 253.04835	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - {}^2D$	3/2 – 5/2		168
10	200	481.587	26.8084 – 234.45445	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - {}^2D$	5/2 – 5/2		168
10	10	481.635	26.8294 – 234.45445	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - {}^2D$	3/2 – 5/2		168
10	50	481.704	26.8084 – 234.40248	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - {}^2D$	5/2 – 3/2		168
10	150	481.755	26.8294 – 234.40248	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - {}^2D$	3/2 – 3/2		168
9	200	483.752	26.8294 – 233.54409	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - {}^2P$	3/2 – 1/2		168
9	250	483.976	26.8084 – 233.43010	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - {}^2P$	5/2 – 3/2		168
9	100	484.025	26.8294 – 233.43010	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - {}^2P$	3/2 – 3/2		168
8	300	485.086	26.8084 – 232.95926	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - {}^2F$	5/2 – 7/2		168
8	10	485.465	26.8084 – 232.79627	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - {}^2F$	5/2 – 5/2		168
8	250	485.515	26.8294 – 232.79627	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - {}^2F$	3/2 – 5/2		168
	50	485.572	26.8084 – 232.75386	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - {}^4D$	5/2 – 7/2		168

O II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	485.631	26.8294 – 232.74751	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D° - ^4D$	$\frac{3}{2} - \frac{5}{2}$		168
	100	499.871	40.4669 – 240.51628	$2s^22p^3 - 2s^22p^2(^3P)4s$	$^2P° - ^2P$	$\frac{3}{2} - \frac{3}{2}$		168
	50	500.343	40.4684 – 240.32875	$2s^22p^3 - 2s^22p^2(^3P)4s$	$^2P° - ^2P$	$\frac{1}{2} - \frac{1}{2}$		168
17	250	515.498	40.4669 – 234.45445	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P° - ^2D$	$\frac{3}{2} - \frac{5}{2}$		168
17	200	515.640	40.4684 – 234.40248	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P° - ^2D$	$\frac{1}{2} - \frac{3}{2}$		168
16	200	517.937	40.4684 – 233.54409	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P° - ^2P$	$\frac{1}{2} - \frac{1}{2}$		168
16	250	518.242	40.4669 – 233.43010	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P° - ^2P$	$\frac{3}{2} - \frac{3}{2}$		168
		534.59						127
7	450	537.830	26.8294 – 212.7624	$2s^22p^3 - 2s2p^4$	$^2D° - ^2P$	$\frac{3}{2} - \frac{1}{2}$		168
7	500	538.256	26.8084 – 212.5932	$2s^22p^3 - 2s2p^4$	$^2D° - ^2P$	$\frac{5}{2} - \frac{3}{2}$		168
7	350	538.318	26.8294 – 212.5932	$2s^22p^3 - 2s2p^4$	$^2D° - ^2P$	$\frac{3}{2} - \frac{3}{2}$		168
2	400	539.086	0.0 – 185.49920	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S° - ^4P$	$\frac{3}{2} - \frac{5}{2}$		168
2	400	539.547	0.0 – 185.34068	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S° - ^4P$	$\frac{3}{2} - \frac{3}{2}$		168
2	350	539.853	0.0 – 185.23536	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S° - ^4P$	$\frac{3}{2} - \frac{1}{2}$		168
6	250	555.056	26.8084 – 206.9713	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2D° - ^2D$	$\frac{5}{2} - \frac{5}{2}$		168
6	250	555.121	26.8294 – 206.9723	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2D° - ^2D$	$\frac{3}{2} - \frac{3}{2}$		168
		575.28						127
15	300	580.400	40.4684 – 212.7624	$2s^22p^3 - 2s2p^4$	$^2P° - ^2P$	$\frac{1}{2} - \frac{1}{2}$		168
15	350	580.967	40.4669 – 212.5932	$2s^22p^3 - 2s2p^4$	$^2P° - ^2P$	$\frac{3}{2} - \frac{3}{2}$		168
14	300	600.585	40.4669 – 206.9713	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2P° - ^2D$	$\frac{3}{2} - \frac{5}{2}$		168
		613.11						127
5	350	616.291	26.8084 – 189.06837	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D° - ^2P$	$\frac{5}{2} - \frac{3}{2}$		168
5	200	616.363	26.8294 – 189.06837	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D° - ^2P$	$\frac{3}{2} - \frac{3}{2}$		168
	3	616.6						856
5	300	617.051	26.8294 – 188.88838	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D° - ^2P$	$\frac{3}{2} - \frac{1}{2}$		168
		641.20						127
13	600	644.148	40.4669 – 195.7104	$2s^22p^3 - 2s2p^4$	$^2P° - ^2S$	$\frac{3}{2} - \frac{1}{2}$		197,168
12	400	672.948	40.4669 – 189.06837	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P° - ^2P$	$\frac{3}{2} - \frac{3}{2}$		168
12	350	673.768	40.4684 – 188.88838	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P° - ^2P$	$\frac{1}{2} - \frac{1}{2}$		168
		684.84						127
4	850	718.484	26.8084 – 165.9877	$2s^22p^3 - 2s2p^4$	$^2D° - ^2D$	$\frac{5}{2} - \frac{5}{2}$		197,168
4	800	718.562	26.8294 – 165.9877	$2s^22p^3 - 2s2p^4$	$^2D° - ^2D$	$\frac{3}{2} - \frac{5}{2}$		197,168
	100	739.949	119.8377 – 254.9822	$2s2p^4 - 2s2p^3(^5S°)3s$	$^4P - ^4S°$	$\frac{5}{2} - \frac{3}{2}$		175
	10	740.838	120.0011 – 254.9822	$2s2p^4 - 2s2p^3(^5S°)3s$	$^4P - ^4S°$	$\frac{3}{2} - \frac{3}{2}$		175
	1	741.293	120.0835 – 254.9822	$2s2p^4 - 2s2p^3(^5S°)3s$	$^4P - ^4S°$	$\frac{1}{2} - \frac{3}{2}$		175
11	500	796.661	40.4669 – 165.9877	$2s^22p^3 - 2s2p^4$	$^2P° - ^2D$	$\frac{3}{2} - \frac{5}{2}$		197,168
1	700	832.762	0.0 – 120.0835	$2s^22p^3 - 2s2p^4$	$g^4S° - ^4P$	$\frac{3}{2} - \frac{1}{2}$		197,168
1	750	833.332	0.0 – 120.0011	$2s^22p^3 - 2s2p^4$	$g^4S° - ^4P$	$\frac{3}{2} - \frac{3}{2}$		197,168
1	750	834.462	0.0 – 119.8377	$2s^22p^3 - 2s2p^4$	$g^4S° - ^4P$	$\frac{3}{2} - \frac{5}{2}$		197,168
		859.32						127
		860.30						127
		868.21						127
		891.29						127
		971.26						127
		1009.04						127
		1010.63						127
		1078.29						127
		1079.23						127
	10	1957.49	206.87790 – 257.9638	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)5s$	$^4D° - ^4P$	$\frac{5}{2} - \frac{5}{2}$		036
	100	1960.34	206.78634 – 257.7979	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)5s$	$^4D° - ^4P$	$\frac{3}{2} - \frac{3}{2}$		036
	300	1962.27	207.00252 – 257.9638	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)5s$	$^4D° - ^4P$	$\frac{7}{2} - \frac{5}{2}$		036
	200	1963.86	206.87790 – 257.7979	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)5s$	$^4D° - ^4P$	$\frac{5}{2} - \frac{3}{2}$		036
	10	1964.35	206.78634 – 257.6937	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)5s$	$^4D° - ^4P$	$\frac{3}{2} - \frac{1}{2}$		036

OXYGEN III (O^{2+}), Z = 8
Ground State $1s^22s^22p^2(^3P_0)$ (6 electrons)
Ionization Potential 443 086 cm^{-1}; 54.936 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	226.038	0.3068 – 442.71	$2s^22p^2 - 2s2p^2(^4P)4p$	$g^3P - ^3D^\circ$	2 – 3		168,771
	10	228.893	0.1134 – 437.0150	$2s^22p^2 - 2s2p^2(^4P)4p$	$g^3P - ^3S^\circ$	1 – 1		168
	10	228.988	0.3068 – 437.0150	$2s^22p^2 - 2s2p^2(^4P)4p$	$g^3P - ^3S^\circ$	2 – 1		168
	50	236.710	20.2710 – 442.71	$2s^22p^2 - 2s2p^2(^4P)4p$	$^1D - ^3D^\circ$	2 – 3		168
	100	240.979	0.1134 – 415.087	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$g^3P - ^3D^\circ$	1 – 2		168
	100	241.037	0.3068 – 415.181	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$g^3P - ^3D^\circ$	2 – 3		168
	50	241.819	60.3252 – 473.857	$2s2p^3 - 2s2p^2(^4P)5d$	$^5S^\circ - ^5P$	2 – 2		168
	50	241.875	60.3252 – 473.763	$2s2p^3 - 2s2p^2(^4P)5d$	$^5S^\circ - ^5P$	2 – 3		168
	100	244.049	20.2710 – 430.025	$2s^22p^2 - 2s2p^2(^2D)3p$	$^1D - ^1P^\circ$	2 – 1		168
	150	246.265	20.2710 – 426.338	$2s^22p^2 - 2s2p^2(^2D)3p$	$^1D - ^1D^\circ$	2 – 2		168
	50	247.080	20.2710 – 424.998	$2s^22p^2 - 2s2p^2(^2D)3p$	$^1D - ^1F^\circ$	2 – 3		168
	50	248.320	20.2710 – 422.977	$2s^22p^2 - 2s^22p(^2P^\circ)7d$	$^1D - ^1F^\circ$	2 – 3		168
	50	248.538	0.0 – 402.353	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - ^3D^\circ$	0 – 1		168
	60	248.574	0.1134 – 402.408	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - ^3D^\circ$	1 – 2		168
	100	248.618	0.3068 – 402.53	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - ^3D^\circ$	2 – 3		168
	10	253.548	20.2710 – 414.675	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$^1D - ^1D^\circ$	2 – 2		168
	10	255.044	0.1134 – 392.221	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$g^3P - ^3P^\circ$	1 – 2		168
	50	255.158	0.3068 – 392.221	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$g^3P - ^3P^\circ$	2 – 2		168
	10	255.302	0.3068 – 392.	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$g^3P - ^3P^\circ$	2 – 1		168
	100	256.425	60.3252 – 450.304	$2s2p^3 - 2s2p^2(^4P)4d$	$^5S^\circ - ^5P$	2 – 1		168
	150	256.460	60.3252 – 450.25	$2s2p^3 - 2s2p^2(^4P)4d$	$^5S^\circ - ^5P$	2 – 2		168
	150	256.506	60.3252 – 450.18	$2s2p^3 - 2s2p^2(^4P)4d$	$^5S^\circ - ^5P$	2 – 3		168
	200	261.027	20.2710 – 403.374	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$^1D - ^1F^\circ$	2 – 3		168
	100	262.113	20.2710 – 401.787	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$^1D - ^1D^\circ$	2 – 2		168
	10	262.289	20.2710 – 401.53	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$^1D - ^3F^\circ$	2 – 2		168
	10	262.729	0.1134 – 380.706	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - ^3P^\circ$	1 – 2		168
	50	262.882	0.3068 – 380.706	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - ^3P^\circ$	2 – 2		168
	150	263.692	0.0 – 379.232	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	0 – 1		168
	200	263.728	0.1134 – 379.293	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	1 – 2		168
	150	263.768	0.1134 – 379.232	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	1 – 1		168
	250	263.818	0.3068 – 379.356	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	2 – 3		168
	150	263.861	0.3068 – 379.293	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	2 – 2		168
	10	263.903	0.3068 – 379.232	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	2 – 1		168
	200	264.257	0.0 – 378.4209	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3P^\circ$	0 – 1		168
	250	264.338	0.1134 – 378.4085	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3P^\circ$	1 – 2		168
	300	264.480	0.3068 – 378.4085	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3P^\circ$	2 – 2		168
	250	266.967	0.0 – 374.575	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3D^\circ$	0 – 1		168
	350	266.985	0.1134 – 374.6625	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3D^\circ$	1 – 2		168
	350	267.030	0.3068 – 374.7986	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3D^\circ$	2 – 3		168
	150	267.050	0.1134 – 374.575	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3D^\circ$	1 – 1		168
	200	267.121	0.3068 – 374.6625	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3D^\circ$	2 – 2		168
	50	268.451	20.2710 – 392.778	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	$^1D - ^1P^\circ$	2 – 1		168
	50	271.403	60.3252 – 428.782	$2s2p^3 - 2s2p^2(^4P)4s$	$^5S^\circ - ^5P$	2 – 3		168
	50	271.523	60.3252 – 428.619	$2s2p^3 - 2s2p^2(^4P)4s$	$^5S^\circ - ^5P$	2 – 2		168
	10	271.611	60.3252 – 428.5	$2s2p^3 - 2s2p^2(^4P)4s$	$^5S^\circ - ^5P$	2 – 1		168
	100	275.281	0.0 – 363.2668	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3S^\circ$	0 – 1		168
	150	275.366	0.1134 – 363.2668	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3S^\circ$	1 – 1		168
	200	275.513	0.3068 – 363.2668	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3S^\circ$	2 – 1		168
12	350	277.385	20.2710 – 380.782	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$^1D - ^1F^\circ$	2 – 3		168
	50	277.514	43.1835 – 403.526	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$^1S - ^1P^\circ$	0 – 1		168
	150	279.787	20.2710 – 377.687	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$^1D - ^1D^\circ$	2 – 2		168
	100	280.030	20.2710 – 377.375	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$^1D - ^3F^\circ$	2 – 2		168
	50	280.116	0.1134 – 357.1150	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	$g^3P - ^3P^\circ$	1 – 2		168
	50	280.234	0.0 – 356.8421	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	$g^3P - ^3P^\circ$	0 – 1		168

O III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	150	280.265	0.3068 – 357.1150	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	2 – 2		168
	50	280.328	0.1134 – 356.8421	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 1		168
	50	280.412	0.1134 – 356.7343	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 0		168
	50	280.483	0.3068 – 356.8421	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	2 – 1		168
	10	286.038	43.1835 – 392.778	$2s^22p^2 - 2s^22p(^2P^\circ)5s$	${}^1S - {}^1P^\circ$	0 – 1		168
	150	295.511	20.2710 – 358.6674	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	${}^1D - {}^1P^\circ$	2 – 1		168
	250	295.619	60.3252 – 398.5959	$2s2p^3 - 2s2p^2(^4P)3d$	${}^5S^\circ - {}^5P$	2 – 1		168
	300	295.657	60.3252 – 398.5574	$2s2p^3 - 2s2p^2(^4P)3d$	${}^5S^\circ - {}^5P$	2 – 2		168
	300	295.716	60.3252 – 398.4874	$2s2p^3 - 2s2p^2(^4P)3d$	${}^5S^\circ - {}^5P$	2 – 3		168
	150	295.944	43.1835 – 381.086	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	${}^1S - {}^1P^\circ$	0 – 1		168
	200	296.012	60.3252 – 398.1504	$2s2p^3 - 2s2p^2(^4P)3d$	${}^5S^\circ - {}^5D$	2 – 3		168
	50	296.22	120.0254 – 457.6	$2s2p^3 - 2s2p^2(^2D)3d$	${}^3D^\circ - {}^3P$	3 – 2		168
	100	299.275	120.0254 – 454.174	$2s2p^3 - 2s2p^2(^2D)3d$	${}^3D^\circ - {}^3D$	3 – 3		168
	150	300.455	120.0254 – 452.855	$2s2p^3 - 2s2p^2(^2D)3d$	${}^3D^\circ - {}^3F$	3 – 4		168
6	350	303.411	0.0 – 329.58198	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	0 – 1		168
6	350	303.460	0.1134 – 329.64343	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 0		168
6	350	303.515	0.1134 – 329.58198	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 1		168
6	350	303.621	0.1134 – 329.46798	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 2		168
6	350	303.693	0.3068 – 329.58198	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 1		168
6	450	303.799	0.3068 – 329.46798	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 2		168
5	400	305.596	0.0 – 327.22794	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	0 – 1		168
5	450	305.656	0.1134 – 327.27718	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		168
5	400	305.703	0.1134 – 327.22794	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 1		168
5	500	305.769	0.3068 – 327.35090	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		168
5	400	305.836	0.3068 – 327.27718	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 2		168
5	200	305.879	0.3068 – 327.22794	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 1		168
	50	308.051	0.1134 – 324.73422	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^1D^\circ$	1 – 2		168
	100	308.306	0.3068 – 324.65825	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3F^\circ$	2 – 3		168
	150	316.967	43.1835 – 358.6674	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	${}^1S - {}^1P^\circ$	0 – 1		168
	50	317.24	142.3817 – 457.6	$2s2p^3 - 2s2p^2(^2D)3d$	${}^3P^\circ - {}^3P$	2 – 2		168
	150	319.996	20.2710 – 332.7771	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	${}^1D - {}^1P^\circ$	2 – 1		168
	100	320.720	142.3817 – 454.174	$2s2p^3 - 2s2p^2(^2D)3d$	${}^3P^\circ - {}^3D$	2 – 3		168
11	600	320.979	20.2710 – 331.8202	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	${}^1D - {}^1F^\circ$	2 – 3		197,168,488
10	500	328.448	20.2710 – 324.73422	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	${}^1D - {}^1D^\circ$	2 – 2		168
	450	328.742	20.2710 – 324.46246	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	${}^1D - {}^3F^\circ$	2 – 2		168
15	500	345.309	43.1835 – 332.7771	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	${}^1S - {}^1P^\circ$	0 – 1		168
	150	349.825	120.0254 – 405.8830	$2s2p^3 - 2s2p^2(^4P)3d$	${}^3D^\circ - {}^3D$	3 – 3		168
	100	349.918	120.0526 – 405.8341	$2s2p^3 - 2s2p^2(^4P)3d$	${}^3D^\circ - {}^3D$	2 – 2		168
	50	349.961	120.0585 – 405.8051	$2s2p^3 - 2s2p^2(^4P)3d$	${}^3D^\circ - {}^3D$	1 – 1		168
	300	355.137	120.0254 – 401.6091	$2s2p^3 - 2s2p^2(^4P)3d$	${}^3D^\circ - {}^3F$	3 – 4		168
	150	355.293	120.0254 – 401.4754	$2s2p^3 - 2s2p^2(^4P)3d$	${}^3D^\circ - {}^3F$	3 – 3		168
	250	355.333	120.0526 – 401.4754	$2s2p^3 - 2s2p^2(^4P)3d$	${}^3D^\circ - {}^3F$	2 – 3		168
	250	355.469	120.0585 – 401.379	$2s2p^3 - 2s2p^2(^4P)3d$	${}^3D^\circ - {}^3F$	1 – 2		168
	10	356.558	120.0585 – 400.5184	$2s2p^3 - 2s2p^2(^4P)3d$	${}^3D^\circ - {}^3P$	1 – 0		168
	50	356.625	120.0585 – 400.4647	$2s2p^3 - 2s2p^2(^4P)3d$	${}^3D^\circ - {}^3P$	1 – 1		168
	100	356.725	120.0254 – 400.3548	$2s2p^3 - 2s2p^2(^4P)3d$	${}^3D^\circ - {}^3P$	3 – 2		168
	10	356.768	120.0585 – 400.3548	$2s2p^3 - 2s2p^2(^4P)3d$	${}^3D^\circ - {}^3P$	1 – 2		168
	400	359.016	60.3252 – 338.86460	$2s2p^3 - 2s2p^2(^4P)3s$	${}^5S^\circ - {}^5P$	2 – 3		168
	400	359.223	60.3252 – 338.70344	$2s2p^3 - 2s2p^2(^4P)3s$	${}^5S^\circ - {}^5P$	2 – 2		168
	350	359.384	60.3252 – 338.57897	$2s2p^3 - 2s2p^2(^4P)3s$	${}^5S^\circ - {}^5P$	2 – 1		168
	150	364.739	120.0254 – 394.195	$2s2p^3 - 2s2p^2(^2D)3s$	${}^3D^\circ - {}^3D$	3 – 3		168
	100	364.867	120.0526 – 394.126	$2s2p^3 - 2s2p^2(^2D)3s$	${}^3D^\circ - {}^3D$	2 – 2		168
	50	364.940	120.0585 – 394.09	$2s2p^3 - 2s2p^2(^2D)3s$	${}^3D^\circ - {}^3D$	1 – 1		168
4	400	373.805	0.1134 – 267.63259	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	1 – 2		168

O III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
4	400	374.005	0.0 – 267.37565	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	0 – 1		168
4	500	374.075	0.3068 – 267.63259	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	2 – 2		168
4	400	374.165	0.1134 – 267.37565	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	1 – 1		168
4	400	374.331	0.1134 – 267.25729	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	1 – 0		168
4	400	374.436	0.3068 – 267.37565	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	2 – 1		168
	200	379.505	142.3817 – 405.8830	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^\circ - {}^3D$	2 – 3		168
	150	379.575	142.3817 – 405.8341	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^\circ - {}^3D$	2 – 2		168
	100	379.631	142.3969 – 405.8051	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^\circ - {}^3D$	0 – 1		168
	50	382.214	120.0254 – 381.6450	$2s2p^3 - 2s^22p(^2P^\circ)4f$	$^3D^\circ - D[\frac{3}{2}]$	3 – 2		168
	50	382.903	120.0254 – 381.1769	$2s2p^3 - 2s^22p(^2P^\circ)4f$	$^3D^\circ - G[\frac{7}{2}]$	3 – 3		168
	100	387.398	142.3828 – 400.5184	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^\circ - {}^3P$	1 – 0		168
	150	387.482	142.3969 – 400.4647	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^\circ - {}^3P$	0 – 1		168
	200	387.639	142.3817 – 400.3548	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^\circ - {}^3P$	2 – 2		168
9	600	395.558	20.2710 – 273.08007	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$^1D - {}^1P^\circ$	2 – 1		197,168,488
	100	397.120	142.3817 – 394.195	$2s2p^3 - 2s2p^2(^2D)3s$	$^3P^\circ - {}^3D$	2 – 3		168
	50	397.231	142.3828 – 394.126	$2s2p^3 - 2s2p^2(^2D)3s$	$^3P^\circ - {}^3D$	1 – 2		168
	10	397.310	142.3969 – 394.09	$2s2p^3 - 2s2p^2(^2D)3s$	$^3P^\circ - {}^3D$	0 – 1		168
	200	434.256	120.0254 – 350.3023	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^\circ - {}^3P$	3 – 2		168
	150	434.646	120.0526 – 350.1229	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^\circ - {}^3P$	2 – 1		168
	100	434.840	120.0585 – 350.0261	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^\circ - {}^3P$	1 – 0		168
14	500	434.975	43.1835 – 273.08007	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$^1S - {}^1P^\circ$	0 – 1		168
	200	480.955	142.3817 – 350.3023	$2s2p^3 - 2s2p^2(^4P)3s$	$^3P^\circ - {}^3P$	2 – 2		168
	150	481.354	142.3817 – 350.1229	$2s2p^3 - 2s2p^2(^4P)3s$	$^3P^\circ - {}^3P$	2 – 1		168
	100	481.381	142.3828 – 350.1229	$2s2p^3 - 2s2p^2(^4P)3s$	$^3P^\circ - {}^3P$	1 – 1		168
	200	481.587	142.3828 – 350.0261	$2s2p^3 - 2s2p^2(^4P)3s$	$^3P^\circ - {}^3P$	1 – 0		168
	10	491.714	197.0867 – 400.4647	$2s2p^3 - 2s2p^2(^4P)3d$	$^3S^\circ - {}^3P$	1 – 1		168
	50	491.980	197.0867 – 400.3548	$2s2p^3 - 2s2p^2(^4P)3d$	$^3S^\circ - {}^3P$	1 – 2		168
3	800	507.391	0.0 – 197.0867	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3S^\circ$	0 – 1		197,168,488
3	850	507.683	0.1134 – 197.0867	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3S^\circ$	1 – 1		197,168,488
3	900	508.182	0.3068 – 197.0867	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3S^\circ$	2 – 1		197,168,488
		524.47						127
8	900	525.795	20.2710 – 210.4585	$2s^22p^2 - 2s2p^3$	$^1D - {}^1P^\circ$	2 – 1		197,168,488
		547.13						127
		551.23						127
	10	554.275	120.0254 – 300.44085	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - {}^3P$	3 – 2		175
		573.24						127
	1	574.065	120.0254 – 294.22165	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - {}^3D$	3 – 3		175
		574.82	120.0254 – 294.00160	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - {}^3D$	3 – 2	Q	127
		585.71						127
		596.56						127
13	750	597.818	43.1835 – 210.4585	$2s^22p^2 - 2s2p^3$	$^1S - {}^1P^\circ$	0 – 1		197,168,488
7	900	599.598	20.2710 – 187.0494	$2s^22p^2 - 2s2p^3$	$^1D - {}^1D^\circ$	2 – 2		197,168,488
16	300	609.705	120.0585 – 284.0733	$2s2p^3 - 2p^4$	$^3D^\circ - {}^3P$	1 – 0		168
16	350	610.043	120.0526 – 283.9766	$2s2p^3 - 2p^4$	$^3D^\circ - {}^3P$	2 – 1		168
16	400	610.746	120.0254 – 283.7589	$2s2p^3 - 2p^4$	$^3D^\circ - {}^3P$	3 – 2		168
16	300	610.850	120.0526 – 283.7589	$2s2p^3 - 2p^4$	$^3D^\circ - {}^3P$	2 – 2		168
		622.00						127
	50	658.578	142.3817 – 294.22165	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3D$	2 – 3		175
	10	659.538	142.3828 – 294.00160	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3D$	1 – 2		175
		685.74						127
		688.93						127
		690.13						127
		691.88						127
		694.73						127

O III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
2	800	702.332	0.0 – 142.3828	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^\circ$	0 – 1		197,168,488
2	800	702.822	0.1134 – 142.3969	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^\circ$	1 – 0		197,168,488
2	850	702.899	0.1134 – 142.3817	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^\circ$	1 – 2		197,168,488
2	900	703.850	0.3068 – 142.3817	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^\circ$	2 – 2		197,168,488
	100	705.762	142.3828 – 284.0733	$2s2p^3 - 2p^4$	${}^3P^\circ - {}^3P$	1 – 0		168
	150	706.224	142.3817 – 283.9766	$2s2p^3 - 2p^4$	${}^3P^\circ - {}^3P$	2 – 1		168
	100	706.298	142.3969 – 283.9766	$2s2p^3 - 2p^4$	${}^3P^\circ - {}^3P$	0 – 1		168
	200	707.315	142.3817 – 283.7589	$2s2p^3 - 2p^4$	${}^3P^\circ - {}^3P$	2 – 2		168
	200	752.762	210.4585 – 343.3026	$2s2p^3 - 2p^4$	${}^1P^\circ - {}^1S$	1 – 0		168
		763.81	267.63259 – 398.5574	$2s^22p(^2P^\circ)3s - 2s2p^2(^4P)3d$	${}^3P^\circ - {}^5P$	2 – 2	Q	127
		767.03	327.22794 – 457.6	$2s^22p(^2P^\circ)3d - 2s2p^2(^2D)3d$	${}^3D^\circ - {}^3P$	1 – 0	Q	127
		775.03						127
1	700	832.927	0.0 – 120.0585	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	0 – 1		197,168,488
1	800	833.742	0.1134 – 120.0526	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	1 – 2		197,168,488
1	700	835.096	0.3068 – 120.0526	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	2 – 2		197,168,488
1	800	835.292	0.3068 – 120.0254	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	2 – 3		197,168,488
		871.77						127
17	400	898.957	187.0494 – 298.2894	$2s2p^3 - 2p^4$	${}^1D^\circ - {}^1D$	2 – 2		168
		928.82	293.86526 – 401.53	$2s^22p(^2P^\circ)3p - 2s^22p(^2P^\circ)5d$	${}^3D - {}^3F^\circ$	1 – 2	Q	127
		962.47						127
		967.80						127
		970.25						127
		1003.35	338.86460 – 438.5306	$2s2p^2(^4P)3s - 2s2p^2(^4P)4p$	${}^5P - {}^5D^\circ$	3 – 4	P	127
		1007.90	267.37565 – 366.59401	$2s^22p(^2P^\circ)3s - 2s^22p(^2P^\circ)4p$	${}^3P^\circ - {}^3D$	1 – 2	Q	127
		1008.56	329.46798 – 428.619	$2s^22p(^2P^\circ)3d - 2s2p^2(^4P)4s$	${}^3P^\circ - {}^5P$	2 – 2	P	127
		1042.63						127
		1072.02						127
		1076.60						127
	100	1138.545	210.4585 – 298.2894	$2s2p^3 - 2p^4$	${}^1P^\circ - {}^1D$	1 – 2		168
	50	1149.603	197.0867 – 284.0733	$2s2p^3 - 2p^4$	${}^3S^\circ - {}^3P$	1 – 0		168
	100	1150.882	197.0867 – 283.9766	$2s2p^3 - 2p^4$	${}^3S^\circ - {}^3P$	1 – 1		168
	150	1153.773	197.0867 – 283.7589	$2s2p^3 - 2p^4$	${}^3S^\circ - {}^3P$	1 – 2		168
	600	1476.89	290.95662 – 358.6674	$2s^22p(^2P^\circ)3p - 2s^22p(^2P^\circ)4s$	${}^1P - {}^1P^\circ$	1 – 1		072
	400	1584.45	294.00160 – 357.1150	$2s^22p(^2P^\circ)3p - 2s^22p(^2P^\circ)4s$	${}^3D - {}^3P^\circ$	2 – 2		072
	400	1587.87	293.86526 – 356.8421	$2s^22p(^2P^\circ)3p - 2s^22p(^2P^\circ)4s$	${}^3D - {}^3P^\circ$	1 – 1		072
	800	1590.01	294.22165 – 357.1150	$2s^22p(^2P^\circ)3p - 2s^22p(^2P^\circ)4s$	${}^3D - {}^3P^\circ$	3 – 2		072
	400	1590.61	293.86526 – 356.7343	$2s^22p(^2P^\circ)3p - 2s^22p(^2P^\circ)4s$	${}^3D - {}^3P^\circ$	1 – 0		072
	600	1591.33	294.00160 – 356.8421	$2s^22p(^2P^\circ)3p - 2s^22p(^2P^\circ)4s$	${}^3D - {}^3P^\circ$	2 – 1		072
	20	1660.803	0.1134 – 60.3252	$2s^22p^2 - 2s2p^3$	$g^3P - {}^5S^\circ$	1 – 2		209
	250	1666.153	0.3068 – 60.3252	$2s^22p^2 - 2s2p^3$	$g^3P - {}^5S^\circ$	2 – 2		209
	400	1679.06	297.55750 – 357.1150	$2s^22p(^2P^\circ)3p - 2s^22p(^2P^\circ)4s$	${}^3S - {}^3P^\circ$	1 – 2		072
	700	1760.12	324.65825 – 381.4725	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	${}^3F^\circ - G[\frac{9}{2}]$	3 – 4		072
	500	1760.42	300.31031 – 357.1150	$2s^22p(^2P^\circ)3p - 2s^22p(^2P^\circ)4s$	${}^3P - {}^3P^\circ$	1 – 2		072
	700	1763.22	324.46246 – 381.1769	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	${}^3F^\circ - G[\frac{7}{2}]$	2 – 3		072
	700	1764.48	300.44085 – 357.1150	$2s^22p(^2P^\circ)3p - 2s^22p(^2P^\circ)4s$	${}^3P - {}^3P^\circ$	2 – 2		072
	400	1766.34	300.22821 – 356.8421	$2s^22p(^2P^\circ)3p - 2s^22p(^2P^\circ)4s$	${}^3P - {}^3P^\circ$	0 – 1		072
	1000	1767.78	324.83641 – 381.4045	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	${}^3F^\circ - G[\frac{9}{2}]$	4 – 5		072
	900	1768.24	324.65825 – 381.2113	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	${}^3F^\circ - G[\frac{7}{2}]$	3 – 4		072
	400	1769.32	324.65825 – 381.1769	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	${}^3F^\circ - G[\frac{7}{2}]$	3 – 3		072
	900	1771.67	324.73422 – 381.1769	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	${}^1D^\circ - G[\frac{7}{2}]$	2 – 3		072
	400	1772.31	300.31031 – 356.7343	$2s^22p(^2P^\circ)3p - 2s^22p(^2P^\circ)4s$	${}^3P - {}^3P^\circ$	1 – 0		072
	500	1773.00	300.44085 – 356.8421	$2s^22p(^2P^\circ)3p - 2s^22p(^2P^\circ)4s$	${}^3P - {}^3P^\circ$	2 – 1		072
	500	1773.85	324.83641 – 381.2113	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	${}^3F^\circ - G[\frac{7}{2}]$	4 – 4		072
	700	1779.08	324.46246 – 380.6713	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	${}^3F^\circ - F[\frac{7}{2}]$	2 – 3		072

O III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	600	1780.95	324.46246 – 380.6122	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3F^\circ - F[\frac{5}{2}]$	2 – 3	P	072
	600	1784.85	324.65825 – 380.6859	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3F^\circ - F[\frac{7}{2}]$	3 – 4		072
	700	1789.61	324.73422 – 380.6122	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^1D^\circ - F[\frac{5}{2}]$	2 – 3	P	072
	500	1848.26	327.35090 – 381.4568	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3D^\circ - D[\frac{5}{2}]$	3 – 3		072
	500	1856.62	327.35090 – 381.2113	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3D^\circ - G[\frac{7}{2}]$	3 – 4		072
	800	1872.86	327.27718 – 380.6713	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3D^\circ - F[\frac{7}{2}]$	2 – 3	P	072
	800	1872.87	327.22794 – 380.6219	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3D^\circ - F[\frac{5}{2}]$	1 – 2		072
	800	1874.94	327.35090 – 380.6859	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3D^\circ - F[\frac{7}{2}]$	3 – 4		072
	600	1920.04	306.5848 – 358.6674	$2s^22p(^2P^\circ)3p - 2s^22p(^2P^\circ)4s$	$^1D - {^1P^\circ}$	2 – 1		072
	500	1920.75	329.58198 – 381.6450	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3P^\circ - D[\frac{3}{2}]$	1 – 2		072
	500	1921.52	329.58198 – 381.6238	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3P^\circ - D[\frac{3}{2}]$	1 – 1		072
	700	1923.49	329.46798 – 381.4568	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3P^\circ - D[\frac{5}{2}]$	2 – 3		072
	500	1923.82	329.64343 – 381.6238	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3P^\circ - D[\frac{3}{2}]$	0 – 1		072
	500	1926.94	329.58198 – 381.4778	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3P^\circ - D[\frac{5}{2}]$	1 – 2		072

OXYGEN IV (O^{3+}), Z = 8
Ground State $1s^22s^22p(^2P^\circ_{1/2})$ (5 electrons)
Ionization Potential 624 383.8 cm^{-1}; 77.414 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	5	152.266	0.0 – 656.745	$2s^22p - 2s2p(^1P^\circ)4p$	$g^2P^\circ - {^2D}$	$\frac{1}{2} - \frac{3}{2}$		226
	20	152.346	0.3859 – 656.787	$2s^22p - 2s2p(^1P^\circ)4p$	$g^2P^\circ - {^2D}$	$\frac{3}{2} - \frac{5}{2}$		226
	1	153.086	0.0 – 653.411	$2s^22p - 2p^2(^1D)3d$	$g^2P^\circ - {^2D}$	$\frac{1}{2} - \frac{3}{2}$	Q	226
	20	153.151	0.3859 – 653.328	$2s^22p - 2p^2(^1D)3d$	$g^2P^\circ - {^2D}$	$\frac{3}{2} - \frac{5}{2}$		226
	1	154.590	0.0 – 646.859	$2s^22p - 2p^2(^3P)3d$	$g^2P^\circ - {^2D}$	$\frac{1}{2} - \frac{3}{2}$		226
	5	154.681	0.3859 – 646.859	$2s^22p - 2p^2(^3P)3d$	$g^2P^\circ - {^2D}$	$\frac{3}{2} - \frac{5}{2}$		226
	5	155.911	71.7555 – 713.033	$2s2p^2 - 2p^2(^3P)3p$	$^4P - {^4D^\circ}$	$\frac{5}{2} - \frac{7}{2}$		226
	5	158.567	0.0 – 630.648	$2s^22p - 2s2p(^3P^\circ)5p$	$g^2P^\circ - {^2D}$	$\frac{1}{2} - \frac{3}{2}$		226
	20	158.606	0.3859 – 630.879	$2s^22p - 2s2p(^3P^\circ)5p$	$g^2P^\circ - {^2D}$	$\frac{3}{2} - \frac{5}{2}$		226
	1	159.197	0.3859 – 628.539	$2s^22p - 2s2p(^3P^\circ)5p$	$g^2P^\circ - {^2P}$	$\frac{3}{2} - \frac{3}{2}$		226
	1	166.741	0.3859 – 600.106	$2s^22p - 2p^2(^1D)3s$	$g^2P^\circ - {^2D}$	$\frac{3}{2} - \frac{5}{2}$		226
	1	167.115	71.5701 – 669.968	$2s2p^2 - 2s2p(^3P^\circ)7d$	$^4P - {^4D^\circ}$	$\frac{3}{2} - \frac{5}{2}$		226
	5	167.145	71.7555 – 669.968	$2s2p^2 - 2s2p(^3P^\circ)7d$	$^4P - {^4D^\circ}$	$\frac{5}{2} - \frac{7}{2}$		226
	5	168.306	0.3859 – 594.538	$2s^22p - 2p^2(^3P)3s$	$g^2P^\circ - {^2P}$	$\frac{3}{2} - \frac{3}{2}$		226
	1	169.474	0.0 – 590.069	$2s^22p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - {^2S}$	$\frac{1}{2} - \frac{1}{2}$		226
	5	169.582	0.3859 – 590.069	$2s^22p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - {^2S}$	$\frac{3}{2} - \frac{1}{2}$		226
	1	170.847	71.4398 – 656.591	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^4P - {^4D^\circ}$	$\frac{1}{2} - \frac{3}{2}$		226
	5	170.935	71.5701 – 656.591	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^4P - {^4D^\circ}$	$\frac{3}{2} - \frac{5}{2}$		226
	20	170.988	71.7555 – 656.591	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^4P - {^4D^\circ}$	$\frac{5}{2} - \frac{7}{2}$		226
	40	171.074	0.0 – 584.541	$2s^22p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - {^2D}$	$\frac{1}{2} - \frac{3}{2}$		226
	70	171.123	0.3859 – 584.761	$2s^22p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - {^2D}$	$\frac{3}{2} - \frac{5}{2}$		226
	5	171.188	0.3859 – 584.541	$2s^22p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - {^2D}$	$\frac{3}{2} - \frac{3}{2}$		226
	5	173.799	0.0 – 575.375	$2s^22p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - {^2P}$	$\frac{1}{2} - \frac{3}{2}$		226
	20	173.852	0.0 – 575.202	$2s^22p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - {^2P}$	$\frac{1}{2} - \frac{1}{2}$		226
	40	173.916	0.3859 – 575.375	$2s^22p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - {^2P}$	$\frac{3}{2} - \frac{3}{2}$		226
	5	173.969	0.3859 – 575.202	$2s^22p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - {^2P}$	$\frac{3}{2} - \frac{1}{2}$		226
	20	174.105	0.0 – 574.3687	$2s^22p - 2s^26d$	$g^2P^\circ - {^2D}$	$\frac{1}{2} - \frac{3}{2}$		226
	40	174.221	0.3859 – 574.3687	$2s^22p - 2s^26d$	$g^2P^\circ - {^2D}$	$\frac{3}{2} - \frac{5}{2}$		226
	10	177.0	71.5701 – 636.492	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - {^2P^\circ}$	$\frac{3}{2} - \frac{3}{2}$	Q	391
	5	177.562	71.4398 – 634.622	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - {^4P^\circ}$	$\frac{1}{2} - \frac{3}{2}$		226

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	5	177.594	71.5701 – 634.653	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		226
	5	177.662	71.7555 – 634.622	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		226
	20	177.693	71.7555 – 634.523	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		226
	20	177.762	71.5701 – 634.123	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - {}^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		226
	40	177.801	71.7555 – 634.182	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		226
	20	180.354	0.0 – 554.461	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		226
	40	180.480	0.3859 – 554.461	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		226
	110	181.150	0.0 – 552.0296	$2s^22p - 2s^25d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		226
	160	181.277	0.3859 – 552.0323	$2s^22p - 2s^25d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		226
	20	181.866	0.0 – 549.855	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		226
	40	181.887	0.0 – 549.792	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		226
	70	181.994	0.3859 – 549.855	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		226
	20	182.015	0.3859 – 549.792	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		226
	70	182.706	0.0 – 547.326	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		226
	110	182.827	0.3859 – 547.355	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		226
	5	183.338	71.4398 – 616.881	$2s2p^2 - 2p^2(^3P)3p$	$^4P - {}^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		226
	20	183.382	71.5701 – 616.881	$2s2p^2 - 2p^2(^3P)3p$	$^4P - {}^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		226
	20	183.444	71.7555 – 616.881	$2s2p^2 - 2p^2(^3P)3p$	$^4P - {}^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		226
	5	185.402	0.0 – 539.368	$2s^22p - 2s^25s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		226
	20	185.535	0.3859 – 539.368	$2s^22p - 2s^25s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		226
	20	186.870	71.5701 – 606.694	$2s2p^2 - 2p^2(^3P)3p$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		226
	40	186.935	71.7555 – 606.694	$2s2p^2 - 2p^2(^3P)3p$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		226
	5	186.978	71.7555 – 606.578	$2s2p^2 - 2p^2(^3P)3p$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		226
	40	188.151	71.7555 – 603.227	$2s2p^2 - 2p^2(^3P)3p$	$^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		226
	1	188.185	71.5701 – 602.962	$2s2p^2 - 2p^2(^3P)3p$	$^4P - {}^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		226
	1	188.210	71.7555 – 603.077	$2s2p^2 - 2p^2(^3P)3p$	$^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		226
	5	188.405	126.9363 – 657.707	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		226
	1	188.494	126.9502 – 657.471	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		226
	20	191.583	71.4398 – 593.406	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		226
	40	191.607	71.5701 – 593.473	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		226
	20	191.631	71.5701 – 593.406	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		226
	20	191.680	71.5701 – 593.273	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		226
	40	191.699	71.7555 – 593.406	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		226
	70	191.748	71.7555 – 593.273	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		226
	70	192.138	71.4398 – 591.899	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - {}^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		226
	110	192.163	71.5701 – 591.962	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - {}^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		226
	160	192.200	71.7555 – 592.046	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		226
	40	192.231	71.7555 – 591.962	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		226
	285	195.863	0.0 – 510.5697	$2s^22p - 2s^24d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		226
	360	196.009	0.3859 – 510.5741	$2s^22p - 2s^24d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		226
	20	196.349	126.9363 – 636.233	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		226
	5	196.422	126.9502 – 636.058	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		226
	70	198.031	126.9363 – 631.913	$2s2p^2 - 2p^2(^1D)3p$	$^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		226
	20	200.830	126.9502 – 624.882	$2s2p^2 - 2p^2(^1D)3p$	$^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		226
	2	200.915	71.5701 – 569.283	$2s2p^2 - 2s2p(^3P^\circ)4s$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		168
	2	200.966	71.4398 – 569.036	$2s2p^2 - 2s2p(^3P^\circ)4s$	$^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		168
	5	200.995	71.7555 – 569.283	$2s2p^2 - 2s2p(^3P^\circ)4s$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		168
	1	201.022	71.5701 – 569.036	$2s2p^2 - 2s2p(^3P^\circ)4s$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		168
	2	201.073	71.5701 – 568.901	$2s2p^2 - 2s2p(^3P^\circ)4s$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		168
	2	201.098	71.7555 – 569.036	$2s2p^2 - 2s2p(^3P^\circ)4s$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		168
	15	202.885	0.0 – 492.8909	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		086
	25	203.044	0.3859 – 492.8909	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		086
	1	204.708	126.9363 – 615.431	$2s2p^2 - 2p^2(^3P)3p$	$^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		226
	1	204.990	180.7242 – 668.553	$2s2p^2 - 2s2p(^1P^\circ)4d$	$^2P - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		226

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	205.842	0.0 – 485.8217	$2s^22p - 2s^24s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		168
	2	206.002	0.3859 – 485.8217	$2s^22p - 2s^24s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		168
	40	207.183	0.0 – 482.6661	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		086
	60	207.239	0.3859 – 482.9216	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		086
	15	207.348	0.3859 – 482.6661	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		086
	1	211.808	164.3664 – 636.492	$2s2p^2 - 2s2p(^3P^\circ)5d$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		168
	5	212.578						168
	10	212.974	126.9363 – 596.475	$2s2p^2 - 2s2p(^3P^\circ)4d$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		168
	10	213.061	126.9502 – 596.295	$2s2p^2 - 2s2p(^3P^\circ)4d$	${}^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		168
	15	213.975	0.0 – 467.3449	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		086
	25	214.028	0.0 – 467.2293	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		086
	40	214.152	0.3859 – 467.3449	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		086
	15	214.205	0.3859 – 467.2293	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		086
	2	214.249	126.9363 – 593.708	$2s2p^2 - 2s2p(^3P^\circ)4d$	${}^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		168
	2	214.290	126.9502 – 593.627	$2s2p^2 - 2s2p(^3P^\circ)4d$	${}^2D - {}^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		168
	1	216.960	126.9363 – 587.85	$2s2p^2 - 2s^27f$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		168
	1	221.515	180.4808 – 631.913	$2s2p^2 - 2p^2(^1D)3p$	${}^2P - {}^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		226
	70	221.648	255.1559 – 706.333	$2p^3 - 2p^2(^1S)3d$	${}^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		226
	25	222.763	126.9363 – 575.853	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		168
	15	222.777	126.9502 – 575.819	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2D - {}^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		168
	1	223.728	126.9363 – 573.907	$2s2p^2 - 2s2p(^3P^\circ)4s$	${}^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		168
	1	223.841	126.9502 – 573.696	$2s2p^2 - 2s2p(^3P^\circ)4s$	${}^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		168
	25	225.299	126.9363 – 570.791	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		168
	1	229.896	180.4808 – 615.46	$2s2p^2 - 2p^2(^3P)3p$	${}^2P - {}^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		226
	1	230.040	180.7242 – 615.431	$2s2p^2 - 2p^2(^3P)3p$	${}^2P - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		226
	2	230.682	164.3664 – 597.869	$2s2p^2 - 2s2p(^3P^\circ)4d$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		168
	5	230.755	164.3664 – 597.72	$2s2p^2 - 2s2p(^3P^\circ)4d$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		168
	10	231.031	71.4398 – 504.2823	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$		086
	60	231.070	71.4398 – 504.2089	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		168
	40	231.101	71.5701 – 504.2823	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		086
	15	231.140	71.5701 – 504.2089	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		086
	40	231.200	71.5701 – 504.0957	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		086
	40	231.239	71.7555 – 504.2089	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		086
	60	231.299	71.7555 – 504.0957	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		086
	60	233.457	71.4398 – 499.7957	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		168,488
	60	233.496	71.5701 – 499.8426	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		086
	40	233.521	71.5701 – 499.7957	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		168
	90	233.561	71.7555 – 499.9070	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		168
	40	233.596	71.7555 – 499.8426	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		168
	10	234.988	126.9363 – 552.4951	$2s2p^2 - 2s^25f$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		168
	2	236.071	71.7555 – 495.3596	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4F^\circ$	$\frac{5}{2}-\frac{7}{2}$		168
	400	238.360	0.0 – 419.5339	$2s^22p - 2s^23d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		086
	500	238.571	0.3859 – 419.5506	$2s^22p - 2s^23d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		086
	10	239.592	164.3664 – 581.743	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		168
	1	239.935	180.4808 – 597.254	$2s2p^2 - 2p^2(^3P)3p$	${}^2P - {}^2S^\circ$	$\frac{1}{2}-\frac{1}{2}$		226
	5	240.079	180.7242 – 597.254	$2s2p^2 - 2p^2(^3P)3p$	${}^2P - {}^2S^\circ$	$\frac{3}{2}-\frac{1}{2}$		226
	5	242.045	180.4808 – 593.627	$2s2p^2 - 2s2p(^3P^\circ)4d$	${}^2P - {}^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		168
	10	242.140	180.7242 – 593.708	$2s2p^2 - 2s2p(^3P^\circ)4d$	${}^2P - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		168
	1	242.183	180.7242 – 593.627	$2s2p^2 - 2s2p(^3P^\circ)4d$	${}^2P - {}^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		168
	2	245.62	180.7242 – 587.85	$2s2p^2 - 2s^27f$	${}^2P - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$	P	168
	5	246.465	231.5375 – 637.275	$2p^3 - 2p^2(^3P)3d$	${}^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		168
	10	246.503	231.5375 – 637.213	$2p^3 - 2p^2(^3P)3d$	${}^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		168
	15	246.563	231.5375 – 637.114	$2p^3 - 2p^2(^3P)3d$	${}^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		168
	10	249.223	180.4808 – 581.721	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2P - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		168

O IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	15	249.365	180.7242 – 581.743	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2P - ^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		168
	5	251.114	255.1849 – 653.411	$2p^3 - 2p^2(^1D)3d$	$^2D^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		226
	5	251.148	255.1559 – 653.328	$2p^3 - 2p^2(^1D)3d$	$^2D^\circ - ^2D$	$\frac{5}{2} - \frac{5}{2}$		226
	160	252.550	255.1559 – 651.117	$2p^3 - 2p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{5}{2} - \frac{7}{2}$		226
	160	252.581	255.1849 – 651.098	$2p^3 - 2p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{3}{2} - \frac{5}{2}$		226
	40	252.948	180.4808 – 575.819	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{1}{2} - \frac{3}{2}$		168
	60	253.082	180.7242 – 575.853	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$		168
	25	255.252	126.9363 – 518.709	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^2D - ^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		168
	5	258.116	126.9502 – 514.3713	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		168
	10	258.207	126.9363 – 514.2204	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		168
	150	260.389	126.9363 – 510.9772	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		086
	120	260.555	126.9502 – 510.7449	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		086
	1	265.062	255.1559 – 632.426	$2p^3 - 2p^2(^3P)3d$	$^2D^\circ - ^2P$	$\frac{5}{2} - \frac{3}{2}$		226
	1	266.690	255.1559 – 630.095	$2p^3 - 2p^2(^3P)3d$	$^2D^\circ - ^2F$	$\frac{5}{2} - \frac{7}{2}$		168
	1	266.729	255.1849 – 630.095	$2p^3 - 2p^2(^3P)3d$	$^2D^\circ - ^2F$	$\frac{3}{2} - \frac{5}{2}$		168
	40	266.932	126.9363 – 501.5644	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2D^\circ$	$\frac{5}{2} - \frac{5}{2}$		168
	25	266.967	126.9363 – 501.5092	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2D^\circ$	$\frac{5}{2} - \frac{3}{2}$		168
	5	269.559	289.0235 – 659.998	$2p^3 - 2p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		226
	40	271.990	71.5701 – 439.2309	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{3}{2} - \frac{5}{2}$		086
	40	272.076	71.4398 – 438.9839	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{1}{2} - \frac{3}{2}$		086
	60	272.127	71.7555 – 439.2309	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{5}{2} - \frac{5}{2}$		086
	25	272.174	71.5701 – 438.9839	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{3}{2} - \frac{3}{2}$		168
	40	272.273	71.5701 – 438.8490	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{3}{2} - \frac{1}{2}$		086
	40	272.310	71.7555 – 438.9839	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{5}{2} - \frac{3}{2}$		086
	20	279.456	289.0235 – 646.859	$2p^3 - 2p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		226
	150	279.631	0.0 – 357.6143	$2s^22p - 2s^23s$	$g\,^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		086
	200	279.933	0.3859 – 357.6143	$2s^22p - 2s^23s$	$g\,^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		086
	2	282.213	164.3664 – 518.709	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		168
	40	285.710	164.3664 – 514.3713	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		086
	60	285.834	164.3664 – 514.2204	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		086
	10	289.292	231.5375 – 577.21	$2p^3 - 2p^2(^3P)3s$	$^4S^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		168
	5	289.469	231.5375 – 576.998	$2p^3 - 2p^2(^3P)3s$	$^4S^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		168
	2	289.590	231.5375 – 576.854	$2p^3 - 2p^2(^3P)3s$	$^4S^\circ - ^4P$	$\frac{3}{2} - \frac{1}{2}$		168
	20	289.898	255.1559 – 600.106	$2p^3 - 2p^2(^1D)3s$	$^2D^\circ - ^2D$	$\frac{5}{2} - \frac{5}{2}$		226
	5	289.933	255.1849 – 600.092	$2p^3 - 2p^2(^1D)3s$	$^2D^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		226
	5	291.054	289.0154 – 632.597	$2p^3 - 2p^2(^3P)3d$	$^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		226
	5	291.203	289.0235 – 632.426	$2p^3 - 2p^2(^3P)3d$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		226
	5	294.650	255.1559 – 594.538	$2p^3 - 2p^2(^3P)3s$	$^2D^\circ - ^2P$	$\frac{5}{2} - \frac{3}{2}$		226
	5	294.853	255.1849 – 594.340	$2p^3 - 2p^2(^3P)3s$	$^2D^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		226
	2	295.051	255.1559 – 594.074	$2p^3 - 2s2p(^3P^\circ)4f$	$^2D^\circ - ^2F$	$\frac{5}{2} - \frac{7}{2}$		168
	2	295.140	255.1849 – 594.019	$2p^3 - 2s2p(^3P^\circ)4f$	$^2D^\circ - ^2F$	$\frac{3}{2} - \frac{5}{2}$		168
	5	295.874	180.7242 – 518.709	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^2P - ^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		168
	10	299.499	180.4808 – 514.3713	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		086
	5	299.620	180.4808 – 514.2204	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		168
	5	299.710	180.7242 – 514.3713	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		168
	15	299.853	180.7242 – 514.2204	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		086
	90	306.623	126.9363 – 453.0715	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2D - ^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		086
	60	306.884	126.9502 – 452.8066	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2D - ^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		086
	25	311.499	180.4808 – 501.5092	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{1}{2} - \frac{3}{2}$		086
	40	311.682	180.7242 – 501.5644	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$		086
	10	311.726	180.7242 – 501.5092	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{3}{2} - \frac{3}{2}$		168
	5	321.457	289.0235 – 600.106	$2p^3 - 2p^2(^1D)3s$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		226
	5	327.320	289.0235 – 594.538	$2p^3 - 2p^2(^3P)3s$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		226
	1	327.519	289.0154 – 594.340	$2p^3 - 2p^2(^3P)3s$	$^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		226

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	2	339.330	255.1559 – 549.855	$2p^3 - 2s2p(^1P^\circ)3p$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		168
	1	339.436	255.1849 – 549.792	$2p^3 - 2s2p(^1P^\circ)3p$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		168
	15	346.374	164.3664 – 453.0715	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		086
	10	346.692	164.3664 – 452.8066	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		086
	5	367.192	180.7242 – 453.0715	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		168
	15	379.780	126.9363 – 390.2480	$2s2p^2 - 2s^23p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		086
	10	379.923	126.9502 – 390.1612	$2s2p^2 - 2s^23p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		086
	2	442.705	164.3664 – 390.2480	$2s2p^2 - 2s^23p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		168
	1	442.873	164.3664 – 390.1612	$2s2p^2 - 2s^23p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		168
	2	471.273	255.1559 – 467.3449	$2p^3 - 2s2p(^3P^\circ)3p$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		168
	1	471.603	255.1849 – 467.2293	$2p^3 - 2s2p(^3P^\circ)3p$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		168
		535.85	390.2480 – 576.854	$2s^23p - 2p^2(^3P)3s$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$	Q	127
	2	542.859	390.1612 – 574.3687	$2s^23p - 2s^26d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		086
		543.03	453.0715 – 637.213	$2s2p(^3P^\circ)3s - 2p^2(^3P)3d$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$	Q	127
	5	543.118	390.2480 – 574.3687	$2s^23p - 2s^26d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		086
	900	553.330	0.0 – 180.7242	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		086
	950	554.075	0.0 – 180.4808	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		086
	1000	554.514	0.3859 – 180.7242	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		086
	900	555.261	0.3859 – 180.4808	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		086
		601.57	468.4149 – 634.653	$2s2p(^3P^\circ)3p - 2s2p(^3P^\circ)5d$	$^4D - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$	Q	127
	800	608.398	0.0 – 164.3664	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		086
	850	609.829	0.3859 – 164.3664	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		086
	350	616.952	126.9363 – 289.0235	$2s2p^2 - 2p^3$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		086
	150	617.005	126.9502 – 289.0235	$2s2p^2 - 2p^3$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		086
	275	617.036	126.9502 – 289.0154	$2s2p^2 - 2p^3$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		086
	10	617.786	390.1612 – 552.0296	$2s^23p - 2s^25d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		086
	15	618.107	390.2480 – 552.0323	$2s^23p - 2s^25d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		086
		620.66	438.9839 – 600.106	$2s2p(^3P^\circ)3s - 2p^2(^1D)3s$	$^4P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	Q	127
	750	624.617	71.4398 – 231.5375	$2s2p^2 - 2p^3$	$^4P - ^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		086
	800	625.130	71.5701 – 231.5375	$2s2p^2 - 2p^3$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		086
	850	625.852	71.7555 – 231.5375	$2s2p^2 - 2p^3$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		086
		626.49	390.2480 – 549.855	$2s^23p - 2s2p(^1P^\circ)3p$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$	Q	127
		713.61	513.1983 – 653.328	$2s^24f - 2p^2(^1D)3d$	$^2F^\circ - ^2D$	$\frac{7}{2}-\frac{5}{2}$	Q	127
		742.64	468.4149 – 603.077	$2s2p(^3P^\circ)3p - 2p^2(^3P)3p$	$^4D - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$	Q	127
	5	752.150	419.5506 – 552.4951	$2s^23d - 2s^25f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		086
		769.78	467.3449 – 597.254	$2s2p(^3P^\circ)3p - 2p^2(^3P)3p$	$^2P - ^2S^\circ$	$\frac{3}{2}-\frac{1}{2}$	Q	127
	200	779.734	126.9363 – 255.1849	$2s2p^2 - 2p^3$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		086
8	400	779.821	126.9502 – 255.1849	$2s2p^2 - 2p^3$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		086
	500	779.912	126.9363 – 255.1559	$2s2p^2 - 2p^3$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		086
	200	779.997	126.9502 – 255.1559	$2s2p^2 - 2p^3$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		086
	850	787.711	0.0 – 126.9502	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		086
	750	790.109	0.3859 – 126.9502	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		086
	900	790.199	0.3859 – 126.9363	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		086
		797.62						127
	200	802.200	164.3664 – 289.0235	$2s2p^2 - 2p^3$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		086
	150	802.255	164.3664 – 289.0154	$2s2p^2 - 2p^3$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		086
	10	830.506	390.1612 – 510.5697	$2s^23p - 2s^24d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		086
	15	831.070	390.2480 – 510.5741	$2s^23p - 2s^24d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		086
	120	921.296	180.4808 – 289.0235	$2s2p^2 - 2p^3$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		086
	150	921.366	180.4808 – 289.0154	$2s2p^2 - 2p^3$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		086
	200	923.367	180.7242 – 289.0235	$2s2p^2 - 2p^3$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		086
	120	923.433	180.7242 – 289.0154	$2s2p^2 - 2p^3$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		086
	25	988.523	495.169 – 596.33	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4F^\circ - ^4G$	$\frac{3}{2}-\frac{5}{2}$		086
	40	988.571	495.2461 – 596.402	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4F^\circ - ^4G$	$\frac{5}{2}-\frac{7}{2}$		086

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	40	988.628	495.3596 – 596.51	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4F^\circ - {}^4G$	$\frac{7}{2} - \frac{9}{2}$		086
	40	988.713	495.5129 – 596.655	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4F^\circ - {}^4G$	$\frac{9}{2} - \frac{11}{2}$		086
		1016.39						127
	15	1045.384	390.1612 – 485.8217	$2s^23p - 2s^24s$	$^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		086
	25	1046.316	390.2480 – 485.8217	$2s^23p - 2s^24s$	$^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		086
	25	1061.780	499.7672 – 593.9487	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4D^\circ - {}^4F$	$\frac{1}{2} - \frac{3}{2}$		086
	25	1061.952	499.7957 – 593.9619	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4D^\circ - {}^4F$	$\frac{3}{2} - \frac{5}{2}$		086
	40	1062.133	499.8426 – 593.9928	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4D^\circ - {}^4F$	$\frac{5}{2} - \frac{7}{2}$		086
	40	1062.271	499.9070 – 594.0449	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4D^\circ - {}^4F$	$\frac{7}{2} - \frac{9}{2}$		086
	10	1062.434	499.8426 – 593.9619	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4D^\circ - {}^4F$	$\frac{5}{2} - \frac{5}{2}$		086
	10	1062.840	499.9070 – 593.9928	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4D^\circ - {}^4F$	$\frac{7}{2} - \frac{7}{2}$		086
	120	1067.810	419.5506 – 513.1983	$2s^23d - 2s^24f$	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		086
	60	1080.965	501.5644 – 594.074	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^2D^\circ - {}^2F$	$\frac{5}{2} - \frac{7}{2}$		086
	10	1081.645	501.5644 – 594.019	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^2D^\circ - {}^2F$	$\frac{5}{2} - \frac{5}{2}$		086
	10	1083.382	504.2089 – 596.5124	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4P^\circ - {}^4D$	$\frac{3}{2} - \frac{3}{2}$		086
	10	1083.613	504.2823 – 596.5662	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4P^\circ - {}^4D$	$\frac{1}{2} - \frac{1}{2}$		086
	40	1084.189	504.0957 – 596.331	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^4P^\circ - {}^4D$	$\frac{5}{2} - \frac{7}{2}$		086
	25	1164.320	510.7449 – 596.6319	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^2F^\circ - {}^2G$	$\frac{5}{2} - \frac{7}{2}$		086
	40	1164.545	510.9772 – 596.8476	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^2F^\circ - {}^2G$	$\frac{7}{2} - \frac{9}{2}$		086
	10	1167.532						086
	2	1169.160	510.9772 – 596.51	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^2F^\circ - {}^4G$	$\frac{7}{2} - \frac{9}{2}$		086
	5	1211.043						086
	60	1213.035	514.2204 – 596.6583	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		086
	40	1213.196	514.3713 – 596.7982	$2s2p(^3P^\circ)3d - 2s2p(^3P^\circ)4f$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		086
	200	1338.612	180.4808 – 255.1849	$2s2p^2 - 2p^3$	$^2P - {}^2D^\circ$	$\frac{1}{2} - \frac{3}{2}$		086
	120	1342.992	180.7242 – 255.1849	$2s2p^2 - 2p^3$	$^2P - {}^2D^\circ$	$\frac{3}{2} - \frac{3}{2}$		086
	275	1343.512	180.7242 – 255.1559	$2s2p^2 - 2p^3$	$^2P - {}^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$		086
	10	1397.20	0.0 – 71.5701	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^4P$	$\frac{1}{2} - \frac{3}{2}$		086
	25	1399.774	0.0 – 71.4398	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^4P$	$\frac{1}{2} - \frac{1}{2}$		086
	60	1401.156	0.3859 – 71.7555	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		086
	15	1404.812	0.3859 – 71.5701	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		086
	25	1407.386	0.3859 – 71.4398	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{1}{2}$		086
	5	1604.620	513.1872 – 575.5074	$2s^24f - 2s^26g$	$^2F^\circ - {}^2G$	$\frac{5}{2} - \frac{7}{2}$		086
	10	1604.901	513.1983 – 575.5074	$2s^24f - 2s^26g$	$^2F^\circ - {}^2G$	$\frac{7}{2} - \frac{9}{2}$		086
	15	1639.430	485.8217 – 546.8187	$2s^24s - 2s^25p$	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		086
	10	1639.842	485.8217 – 546.8034	$2s^24s - 2s^25p$	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		086

OXYGEN V (O^{4+}), Z = 8
Ground State $1s^22s^2(^1S_0)$ (4 electrons)
Ionization Potential 918 657 cm^{-1}; 113.900 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	5	114.225	82.3820 – 957.847	$2s2p - 2p(^2P^\circ_{3/2})7p$	$^3P^\circ - {}^3P$	2 – 2		226
	5	114.295	82.3820 – 957.311	$2s2p - 2p(^2P^\circ_{3/2})7p$	$^3P^\circ - {}^3D$	2 – 3		226
	5	114.358	0.0 – 874.447	$2s^2 - 2s8p$	$g^1S - {}^1P^\circ$	0 – 1		226
	20	116.161	0.0 – 860.874	$2s^2 - 2s7p$	$g^1S - {}^1P^\circ$	0 – 1		226
	20	117.063	82.3820 – 936.623	$2s2p - 2p(^2P^\circ_{3/2})6p$	$^3P^\circ - {}^3P$	2 – 2		226
	20	117.181	82.3820 – 935.763	$2s2p - 2p(^2P^\circ_{3/2})6p$	$^3P^\circ - {}^3D$	2 – 3		226

O V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	40	118.000	0.0 – 847.46	$2s^2 - 2p(^2P^\circ_{3/2})4d$	$g^1S - ^1P^\circ$	0 – 1		226
	70	119.102	0.0 – 839.616	$2s^2 - 2s6p$	$g^1S - ^1P^\circ$	0 – 1		226
	5	122.088	82.0753 – 901.162	$2s2p - 2p(^2P^\circ_{3/2})5p$	$^3P^\circ - ^3P$	1 – 2		226
	40	122.133	82.3820 – 901.162	$2s2p - 2p(^2P^\circ_{3/2})5p$	$^3P^\circ - ^3P$	2 – 2		226
	70	122.383	82.3820 – 899.489	$2s2p - 2p(^2P^\circ_{3/2})5p$	$^3P^\circ - ^3D$	2 – 3		226
	160	124.618	0.0 – 802.466	$2s^2 - 2s5p$	$g^1S - ^1P^\circ$	0 – 1		226
	5	126.082	82.0753 – 875.183	$2s2p - 2s8d$	$^3P^\circ - ^3D$	1 – 2		226
	20	126.135	82.3820 – 875.183	$2s2p - 2s8d$	$^3P^\circ - ^3D$	2 – 3		226
	20	128.246	82.0753 – 861.793	$2s2p - 2s7d$	$^3P^\circ - ^3D$	1 – 2		226
	40	128.302	82.3820 – 861.793	$2s2p - 2s7d$	$^3P^\circ - ^3D$	2 – 3		226
	5	128.445	158.7977 – 937.341	$2s2p - 2p(^2P^\circ_{3/2})6p$	$^1P^\circ - ^1D$	1 – 2		226
	1	128.817	158.7977 – 935.093	$2s2p - 2p(^2P^\circ_{1/2})6p$	$^1P^\circ - ^1P$	1 – 1		226
	20	131.738	81.9392 – 841.033	$2s2p - 2s6d$	$^3P^\circ - ^3D$	0 – 1		226
	40	131.758	82.0753 – 841.033	$2s2p - 2s6d$	$^3P^\circ - ^3D$	1 – 2		226
	70	131.812	82.3820 – 841.033	$2s2p - 2s6d$	$^3P^\circ - ^3D$	2 – 3		226
	40	132.797	81.9392 – 834.969	$2s2p - 2p(^2P^\circ_{3/2})4p$	$^3P^\circ - ^3P$	0 – 1		226
	70	132.845	82.3820 – 835.139	$2s2p - 2p(^2P^\circ_{3/2})4p$	$^3P^\circ - ^3P$	2 – 2		226
	20	132.875	82.3820 – 834.969	$2s2p - 2p(^2P^\circ_{3/2})4p$	$^3P^\circ - ^3P$	2 – 1		226
	5	133.316	81.9392 – 832.069	$2s2p - 2p(^2P^\circ_{3/2})4p$	$^3P^\circ - ^3S$	0 – 1		226
	20	133.335	82.0753 – 832.069	$2s2p - 2p(^2P^\circ_{3/2})4p$	$^3P^\circ - ^3S$	1 – 1		226
	40	133.389	82.3820 – 832.069	$2s2p - 2p(^2P^\circ_{3/2})4p$	$^3P^\circ - ^3S$	2 – 1		226
	110	133.522	82.3820 – 831.331	$2s2p - 2p(^2P^\circ_{3/2})4p$	$^3P^\circ - ^3D$	2 – 3		226
	5	133.549	82.0753 – 830.864	$2s2p - 2p(^2P^\circ_{1/2})4p$	$^3P^\circ - ^3D$	1 – 1		226
	5	133.574	82.3820 – 831.026	$2s2p - 2p(^2P^\circ_{1/2})4p$	$^3P^\circ - ^3D$	2 – 2		226
	5	134.205	213.8837 – 959.013	$2p^2 - 2p(^2P^\circ_{3/2})7d$	$^3P - ^3D^\circ$	2 – 3		226
	20	134.473	158.7977 – 902.442	$2s2p - 2p(^2P^\circ_{3/2})5p$	$^1P^\circ - ^1D$	1 – 2		226
	5	135.175	158.7977 – 898.58	$2s2p - 2p(^2P^\circ_{1/2})5p$	$^1P^\circ - ^1P$	1 – 1		226
	220	135.523	0.0 – 737.8808	$2s^2 - 2s4p$	$g^1S - ^1P^\circ$	0 – 1		226
	70	138.025	81.9392 – 806.4431	$2s2p - 2s5d$	$^3P^\circ - ^3D$	0 – 1		226
	110	138.051	82.0753 – 806.4451	$2s2p - 2s5d$	$^3P^\circ - ^3D$	1 – 2		226
	160	138.110	82.3820 – 806.4481	$2s2p - 2s5d$	$^3P^\circ - ^3D$	2 – 3		226
	220	139.028	0.0 – 719.2749	$2s^2 - 2p(^2P^\circ_{3/2})3d$	$g^1S - ^1P^\circ$	0 – 1		226
	1	140.030	81.9392 – 796.068	$2s2p - 2s5s$	$^3P^\circ - ^3S$	0 – 1		226
	5	140.052	82.0753 – 796.068	$2s2p - 2s5s$	$^3P^\circ - ^3S$	1 – 1		226
	20	140.115	82.3820 – 796.068	$2s2p - 2s5s$	$^3P^\circ - ^3S$	2 – 1		226
	5	142.122	158.7977 – 862.419	$2s2p - 2s7d$	$^1P^\circ - ^1D$	1 – 2		226
	5	144.734	213.8837 – 904.807	$2p^2 - 2p(^2P^\circ_{3/2})5d$	$^3P - ^3P^\circ$	2 – 2		226
	40	144.809	213.6149 – 904.315	$2p^2 - 2p(^2P^\circ)5d$	$^3P - ^3D^\circ$	1 – 2		226
	70	144.837	213.8837 – 904.315	$2p^2 - 2p(^2P^\circ_{3/2})5d$	$^3P - ^3D^\circ$	2 – 3		226
	40	146.347	158.7977 – 842.087	$2s2p - 2s6d$	$^1P^\circ - ^1D$	1 – 2		226
	1	146.920	158.7977 – 839.431	$2s2p - 2p(^2P^\circ_{3/2})4p$	$^1P^\circ - ^1S$	1 – 0		226
	110	147.263	158.7977 – 837.855	$2s2p - 2p(^2P^\circ_{3/2})4p$	$^1P^\circ - ^1D$	1 – 2		226
	5	148.218	231.7214 – 906.403	$2p^2 - 2p(^2P^\circ_{3/2})5d$	$^1D - ^1F^\circ$	2 – 3	Q	226
	5	149.038	231.7214 – 902.691	$2p^2 - 2p(^2P^\circ_{1/2})5d$	$^1D - ^1D^\circ$	2 – 2		226
	70	149.076	158.7977 – 829.597	$2s2p - 2p(^2P^\circ_{1/2})4p$	$^1P^\circ - ^1P$	1 – 1		226
	160	151.4470	81.9392 – 742.2361	$2s2p - 2s4d$	$^3P^\circ - ^3D$	0 – 1	P	226
	200	151.4772	82.0753 – 742.2408	$2s2p - 2s4d$	$^3P^\circ - ^3D$	1 – 2	P	226
	100	151.4782	82.0753 – 742.2361	$2s2p - 2s4d$	$^3P^\circ - ^3D$	1 – 1	P	226
	250	151.5465	82.3820 – 742.2453	$2s2p - 2s4d$	$^3P^\circ - ^3D$	2 – 3	P	226
	100	151.5476	82.3820 – 742.2408	$2s2p - 2s4d$	$^3P^\circ - ^3D$	2 – 2		226
	110	153.952	158.7977 – 808.3523	$2s2p - 2s5d$	$^1P^\circ - ^1D$	1 – 2		226
	20	156.119	81.9392 – 722.4767	$2s2p - 2s4s$	$^3P^\circ - ^3S$	0 – 1		226
	40	156.152	82.0753 – 722.4767	$2s2p - 2s4s$	$^3P^\circ - ^3S$	1 – 1		226
	70	156.227	82.3820 – 722.4767	$2s2p - 2s4s$	$^3P^\circ - ^3S$	2 – 1		226

O V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	158.792	213.4592 – 843.215	$2p^2 - 2p(^2P^\circ_{3/2})4d$	$^3P - ^3P^\circ$	0 – 1		226
	40	158.818	213.6149 – 843.267	$2p^2 - 2p(^2P^\circ_{3/2})4d$	$^3P - ^3P^\circ$	1 – 0		226
	5	158.858	213.6149 – 843.108	$2p^2 - 2p(^2P^\circ_{3/2})4d$	$^3P - ^3P^\circ$	1 – 2		226
	20	158.899	213.8837 – 843.215	$2p^2 - 2p(^2P^\circ_{3/2})4d$	$^3P - ^3P^\circ$	2 – 1		226
	70	158.926	213.8837 – 843.108	$2p^2 - 2p(^2P^\circ_{3/2})4d$	$^3P - ^3P^\circ$	2 – 2		226
	70	159.327	213.4592 – 841.112	$2p^2 - 2p(^2P^\circ)4d$	$^3P - ^3D^\circ$	0 – 1		226
	110	159.343	213.6149 – 841.1920	$2p^2 - 2p(^2P^\circ_{3/2})4d$	$^3P - ^3D^\circ$	1 – 2		226
	160	159.380	213.8837 – 841.315	$2p^2 - 2p(^2P^\circ_{3/2})4d$	$^3P - ^3D^\circ$	2 – 3		226
	40	159.411	213.8837 – 841.1920	$2p^2 - 2p(^2P^\circ_{3/2})4d$	$^3P - ^3D^\circ$	2 – 2		226
	1	160.023	213.6149 – 838.372	$2p^2 - 2s6p$	$^3P - ^3P^\circ$	1 – 2		226
	5	160.059	213.6149 – 838.372	$2p^2 - 2s6p$	$^3P - ^3P^\circ$	1 – 2		226
	5	160.132	213.8837 – 838.372	$2p^2 - 2s6p$	$^3P - ^3P^\circ$	2 – 2		226
	160	162.492	231.7214 – 847.136	$2p^2 - 2p(^2P^\circ_{3/2})4d$	$^1D - ^1F^\circ$	2 – 3		226
	125	163.85	213.8837 – 824.282	$2p^2 - 2p(^2P^\circ_{3/2})4s$	$^3P - ^1P^\circ$	2 – 1	Q	391
	70	164.174	231.7214 – 840.8215	$2p^2 - 2s6f$	$^1D - ^1F^\circ$	2 – 3		226
	160	164.573	82.0753 – 689.7052	$2s2p - 2p(^2P^\circ_{3/2})3p$	$^3P^\circ - ^3P$	1 – 2		226
	110	164.588	81.9392 – 689.5144	$2s2p - 2p(^2P^\circ_{3/2})3p$	$^3P^\circ - ^3P$	0 – 1		226
	70	164.625	82.0753 – 689.5144	$2s2p - 2p(^2P^\circ_{3/2})3p$	$^3P^\circ - ^3P$	1 – 1		226
	220	164.656	82.3820 – 689.7052	$2s2p - 2p(^2P^\circ_{3/2})3p$	$^3P^\circ - ^3P$	2 – 2		226
	160	164.708	82.3820 – 689.5144	$2s2p - 2p(^2P^\circ_{3/2})3p$	$^3P^\circ - ^3P$	2 – 1		226
	70	164.986	231.7214 – 837.833	$2p^2 - 2p(^2P^\circ_{1/2})4d$	$^1D - ^1D^\circ$	2 – 2		226
	1	165.218	231.7214 – 836.982	$2p^2 - 2p(^2P^\circ_{3/2})4d$	$^1D - ^3F^\circ$	2 – 2		226
	5	165.349	213.8837 – 818.665	$2p^2 - 2p(^2P^\circ_{3/2})4s$	$^3P - ^3P^\circ$	2 – 2		226
	70	166.112	81.9392 – 683.9396	$2s2p - 2p(^2P^\circ_{3/2})3p$	$^3P^\circ - ^3S$	0 – 1		226
	110	166.150	82.0753 – 683.9396	$2s2p - 2p(^2P^\circ_{3/2})3p$	$^3P^\circ - ^3S$	1 – 1		226
	160	166.234	82.3820 – 683.9396	$2s2p - 2p(^2P^\circ_{3/2})3p$	$^3P^\circ - ^3S$	2 – 1		226
6	285	167.988	82.3820 – 677.6617	$2s2p - 2p(^2P^\circ_{3/2})3p$	$^3P^\circ - ^3D$	2 – 3		226
6	110	168.007	81.9392 – 677.1474	$2s2p - 2p(^2P^\circ_{1/2})3p$	$^3P^\circ - ^3D$	0 – 1		226
6	70	168.046	82.0753 – 677.1474	$2s2p - 2p(^2P^\circ_{1/2})3p$	$^3P^\circ - ^3D$	1 – 1		226
	70	168.076	82.3820 – 677.3452	$2s2p - 2p(^2P^\circ_{1/2})3p$	$^3P^\circ - ^3D$	2 – 2		226
	5	168.132	82.3820 – 677.1474	$2s2p - 2p(^2P^\circ_{1/2})3p$	$^3P^\circ - ^3D$	2 – 1		226
	20	168.759	231.7214 – 824.282	$2p^2 - 2p(^2P^\circ_{3/2})4s$	$^1D - ^1P^\circ$	2 – 1		226
	220	170.218	158.7977 – 746.2749	$2s2p - 2s4d$	$^1P^\circ - ^1D$	1 – 2		226
2	750	172.169	0.0 – 580.8249	$2s^2 - 2s3p$	$g^1S - ^1P^\circ$	0 – 1		226
	40	174.560	158.7977 – 731.6705	$2s2p - 2s4s$	$^1P^\circ - ^1S$	1 – 0		226
	70	178.715	287.9103 – 847.46	$2p^2 - 2p(^2P^\circ_{3/2})4d$	$^1S - ^1P^\circ$	0 – 1		226
	10	181.26	287.9103 – 839.616	$2p^2 - 2s6p$	$^1S - ^1P^\circ$	0 – 1	P	391
	40	182.205	158.7977 – 707.6355	$2s2p - 2p(^2P^\circ_{3/2})3p$	$^1P^\circ - ^1S$	1 – 0		226
12	450	185.745	158.7977 – 697.1702	$2s2p - 2p(^2P^\circ_{3/2})3p$	$^1P^\circ - ^1D$	1 – 2		226
	1	186.442	287.9103 – 824.282	$2p^2 - 2p(^2P^\circ_{3/2})4s$	$^1S - ^1P^\circ$	0 – 1		226
	1	191.400	213.4592 – 735.9187	$2p^2 - 2s4p$	$^3P - ^3P^\circ$	0 – 1		226
	5	191.460	213.6149 – 735.9187	$2p^2 - 2s4p$	$^3P - ^3P^\circ$	1 – 1		226
	20	191.550	213.8837 – 735.9458	$2p^2 - 2s4p$	$^3P - ^3P^\circ$	2 – 2		226
5	650	192.751	81.9392 – 600.7456	$2s2p - 2s3d$	$^3P^\circ - ^3D$	0 – 1		226
5	750	192.799	82.0753 – 600.7556	$2s2p - 2s3d$	$^3P^\circ - ^3D$	1 – 2		226
5	900	192.906	82.3820 – 600.7759	$2s2p - 2s3d$	$^3P^\circ - ^3D$	2 – 3		226
	160	193.003	231.7214 – 749.8405	$2p^2 - 2s4f$	$^1D - ^1F^\circ$	2 – 3		226
11	360	194.593	158.7977 – 672.6938	$2s2p - 2p(^2P^\circ_{1/2})3p$	$^1P^\circ - ^1P$	1 – 1		226
14	300	202.161	213.4592 – 708.1218	$2p^2 - 2p(^2P^\circ_{3/2})3d$	$^3P - ^3P^\circ$	0 – 1		083,168
14	300	202.191	213.6149 – 708.202	$2p^2 - 2p(^2P^\circ_{3/2})3d$	$^3P - ^3P^\circ$	1 – 0		168
14	300	202.224	213.6149 – 708.1218	$2p^2 - 2p(^2P^\circ_{3/2})3d$	$^3P - ^3P^\circ$	1 – 1		083,168
14	300	202.283	213.6149 – 707.9779	$2p^2 - 2p(^2P^\circ_{3/2})3d$	$^3P - ^3P^\circ$	1 – 2		083,168
14	300	202.334	213.8837 – 708.1218	$2p^2 - 2p(^2P^\circ_{3/2})3d$	$^3P - ^3P^\circ$	2 – 1		083,168
14	380	202.393	213.8837 – 707.9779	$2p^2 - 2p(^2P^\circ_{3/2})3d$	$^3P - ^3P^\circ$	2 – 2		083,168

O V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
13	330	203.783	213.4592 – 704.179	$2p^2 - 2p(^2P^\circ_{1/2})3d$	$^3P - ^3D^\circ$	0 – 1		168
13	380	203.821	213.6149 – 704.239	$2p^2 - 2p(^2P^\circ_{3/2})3d$	$^3P - ^3D^\circ$	1 – 2		168
13	330	203.851	213.6149 – 704.179	$2p^2 - 2p(^2P^\circ_{1/2})3d$	$^3P - ^3D^\circ$	1 – 1		168
13	420	203.890	213.8837 – 704.345	$2p^2 - 2p(^2P^\circ_{3/2})3d$	$^3P - ^3D^\circ$	2 – 3		168
13	330	203.935	213.8837 – 704.239	$2p^2 - 2p(^2P^\circ_{3/2})3d$	$^3P - ^3D^\circ$	2 – 2		168
	150	205.105	231.7214 – 719.2749	$2p^2 - 2p(^2P^\circ_{3/2})3d$	$^1D - ^1P^\circ$	2 – 1		083
16	550	207.794	231.7214 – 712.9635	$2p^2 - 2p(^2P^\circ_{3/2})3d$	$^1D - ^1F^\circ$	2 – 3		083
4	380	215.040	81.9392 – 546.9694	2s2p – 2s3s	$^3P^\circ - ^3S$	0 – 1		083
4	420	215.103	82.0753 – 546.9694	2s2p – 2s3s	$^3P^\circ - ^3S$	1 – 1		083
4	500	215.245	82.3820 – 546.9694	2s2p – 2s3s	$^3P^\circ - ^3S$	2 – 1		083
15	500	216.018	231.7214 – 694.6438	$2p^2 - 2p(^2P^\circ_{1/2})3d$	$^1D - ^1D^\circ$	2 – 2		083
10	800	220.352	158.7977 – 612.6156	2s2p – 2s3d	$^1P^\circ - ^1D$	1 – 2		083
	200	222.235	287.9103 – 737.8808	$2p^2$ – 2s4p	$^1S - ^1P^\circ$	0 – 1		083
	300	227.372	213.6149 – 653.4200	$2p^2 - 2p(^2P^\circ_{3/2})3s$	$^3P - ^3P^\circ$	1 – 2		083
	300	227.469	213.4592 – 653.0768	$2p^2 - 2p(^2P^\circ_{1/2})3s$	$^3P - ^3P^\circ$	0 – 1		083
	380	227.511	213.8837 – 653.4200	$2p^2 - 2p(^2P^\circ_{3/2})3s$	$^3P - ^3P^\circ$	2 – 2		083
	300	227.549	213.6149 – 653.0768	$2p^2 - 2p(^2P^\circ_{1/2})3s$	$^3P - ^3P^\circ$	1 – 1		083
	300	227.634	213.6149 – 652.9147	$2p^2 - 2p(^2P^\circ_{1/2})3s$	$^3P - ^3P^\circ$	1 – 0		083
	300	227.689	213.8837 – 653.0768	$2p^2 - 2p(^2P^\circ_{1/2})3s$	$^3P - ^3P^\circ$	2 – 1		083
	380	231.070	231.7214 – 664.4859	$2p^2 - 2p(^2P^\circ_{3/2})3s$	$^1D - ^1P^\circ$	2 – 1		168
	380	231.823	287.9103 – 719.2749	$2p^2 - 2p(^2P^\circ_{3/2})3d$	$^1S - ^1P^\circ$	0 – 1		083
9	330	248.459	158.7977 – 561.2764	2s2p – 2s3s	$^1P^\circ - ^1S$	1 – 0		083
	250	265.550	287.9103 – 664.4859	$2p^2 - 2p(^2P^\circ_{3/2})3s$	$^1S - ^1P^\circ$	0 – 1		168
	10	270.982	213.8837 – 582.9170	$2p^2$ – 2s3p	$^3P - ^3P^\circ$	2 – 2		168
	100	286.448	231.7214 – 580.8249	$2p^2$ – 2s3p	$^1D - ^1P^\circ$	2 – 1		083
	10	341.391	287.9103 – 580.8249	$2p^2$ – 2s3p	$^1S - ^1P^\circ$	0 – 1		168
	3	343.168	546.9694 – 838.372	2s3s – 2s6p	$^3S - ^3P^\circ$	1 – 2		083
	1	382.757	580.8249 – 842.087	2s3p – 2s6d	$^1P^\circ - ^1D$	1 – 2		083
	15	390.755	546.9694 – 802.875	2s3s – 2s5p	$^3S - ^3P^\circ$	1 – 2		083
	25	413.296	600.7759 – 842.7390	2s3d – 2s6f	$^3D - ^3F^\circ$	3 – 4		083
	3	414.612	561.2764 – 802.466	2s3s – 2s5p	$^1S - ^1P^\circ$	0 – 1		083
	1	438.197	612.6156 – 840.8215	2s3d – 2s6f	$^1D - ^1F^\circ$	2 – 3		083
	15	439.517	580.8249 – 808.3523	2s3p – 2s5d	$^1P^\circ - ^1D$	1 – 2		083
	15	447.226	582.8398 – 806.4451	2s3p – 2s5d	$^3P^\circ - ^3D$	1 – 2		083
	25	447.356	582.9170 – 806.4481	2s3p – 2s5d	$^3P^\circ - ^3D$	2 – 3		083
	3	469.150	582.9170 – 796.068	2s3p – 2s5s	$^3P^\circ - ^3S$	2 – 1		083
	60	481.136	600.7759 – 808.6128	2s3d – 2s5f	$^3D - ^3F^\circ$	3 – 4		083
	15	509.415	612.6156 – 808.9168	2s3d – 2s5f	$^1D - ^1F^\circ$	2 – 3		083
	30	529.167	546.9694 – 735.9458	2s3s – 2s4p	$^3S - ^3P^\circ$	1 – 2	P	83
	20	529.242	546.9694 – 735.9187	2s3s – 2s4p	$^3S - ^3P^\circ$	1 – 1	P	83
	15	529.272	546.9694 – 735.9083	2s3s – 2s4p	$^3S - ^3P^\circ$	1 – 0	P	83
	7	561.959	653.0768 – 831.026	$2p(^2P^\circ_{1/2})3s - 2p(^2P^\circ_{1/2})4p$	$^3P^\circ - ^3D$	1 – 2		083
	15	562.080	653.4200 – 831.331	$2p(^2P^\circ_{3/2})3s - 2p(^2P^\circ_{3/2})4p$	$^3P^\circ - ^3D$	2 – 3		083
	7	566.232	561.2764 – 737.8808	2s3s – 2s4p	$^1S - ^1P^\circ$	0 – 1		083
	80	604.416	580.8249 – 746.2749	2s3p – 2s4d	$^1P^\circ - ^1D$	1 – 2		083
	7	627.225	582.8031 – 742.2361	2s3p – 2s4d	$^3P^\circ - ^3D$	0 – 1		083
	25	627.351	582.8398 – 742.2408	2s3p – 2s4d	$^3P^\circ - ^3D$	1 – 2		083
	40	627.636	582.9170 – 742.2453	2s3p – 2s4d	$^3P^\circ - ^3D$	2 – 3		083
1	1000	629.730	0.0 – 158.7977	$2s^2$ – 2s2p	$g^1S - ^1P^\circ$	0 – 1		083
		636.34						127
	7	654.207	692.6227 – 845.4783	$2p(^2P^\circ_{1/2})3d - 2p(^2P^\circ_{1/2})4f$	$^3F^\circ - ^3G$	2 – 3		083
	15	654.712	692.8061 – 845.5434	$2p(^2P^\circ_{1/2})3d - 2p(^2P^\circ_{1/2})4f$	$^3F^\circ - ^3G$	3 – 4		83
	40	655.039	693.0415 – 845.7034	$2p(^2P^\circ_{3/2})3d - 2p(^2P^\circ_{3/2})4f$	$^3F^\circ - ^3G$	4 – 5		83
	3	662.928	580.8249 – 731.6705	2s3p – 2s4s	$^1P^\circ - ^1S$	1 – 0		83

O V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	3	668.225	82.0753 – 231.7214	$2s2p - 2p^2$	$^3P^\circ - {}^1D$	1 – 2		83
	40	669.628	82.3820 – 231.7214	$2s2p - 2p^2$	$^3P^\circ - {}^1D$	2 – 2		83
	7	677.968	692.6227 – 840.1234	$2p(^2P^\circ_{1/2})3d - 2s6g$	$^3F^\circ - {}^3G$	2 – 3		83
	15	678.612	692.8061 – 840.1661	$2p(^2P^\circ_{1/2})3d - 2s6g$	$^3F^\circ - {}^3G$	3 – 4		83
	25	679.136	693.0415 – 840.2882	$2p(^2P^\circ_{3/2})3d - 2s6g$	$^3F^\circ - {}^3G$	4 – 5		83
	70	681.192	600.7456 – 747.5472	$2s3d - 2s4f$	$^3D - {}^3F^\circ$	1 – 2	P	83
	100	681.238	600.7556 – 747.5472	$2s3d - 2s4f$	$^3D - {}^3F^\circ$	2 – 3	P	83
	150	681.332	600.7759 – 747.5472	$2s3d - 2s4f$	$^3D - {}^3F^\circ$	3 – 4	P	83
	15	715.955	582.8031 – 722.4767	$2s3p - 2s4s$	$^3P^\circ - {}^3S$	0 – 1		83
	15	716.137	582.8398 – 722.4767	$2s3p - 2s4s$	$^3P^\circ - {}^3S$	1 – 1		83
	40	716.553	582.9170 – 722.4767	$2s3p - 2s4s$	$^3P^\circ - {}^3S$	2 – 1		83
	100	728.733	612.6156 – 749.8405	$2s3d - 2s4f$	$^1D - {}^1F^\circ$	2 – 3		83
	15	739.810	600.7759 – 735.9458	$2s3d - 2s4p$	$^3D - {}^3P^\circ$	3 – 2	P	83
	7	739.847	600.7556 – 735.9187	$2s3d - 2s4p$	$^3D - {}^3P^\circ$	2 – 1	P	83
		743.42						127
	3	752.019	712.9635 – 845.9426	$2p(^2P^\circ_{3/2})3d - 2p(^2P^\circ_{3/2})4f$	$^1F^\circ - {}^1G$	3 – 4		83
3	700	758.678	82.0753 – 213.8837	$2s2p - 2p^2$	$^3P^\circ - {}^3P$	1 – 2		83
3	640	759.441	81.9392 – 213.6149	$2s2p - 2p^2$	$^3P^\circ - {}^3P$	0 – 1		83
3	580	760.228	82.0753 – 213.6149	$2s2p - 2p^2$	$^3P^\circ - {}^3P$	1 – 1		83
3	775	760.445	82.3820 – 213.8837	$2s2p - 2p^2$	$^3P^\circ - {}^3P$	2 – 2		83
3	640	761.128	82.0753 – 213.4592	$2s2p - 2p^2$	$^3P^\circ - {}^3P$	1 – 0		83
3	700	762.003	82.3820 – 213.6149	$2s2p - 2p^2$	$^3P^\circ - {}^3P$	2 – 1		83
8	520	774.518	158.7977 – 287.9103	$2s2p - 2p^2$	$^1P^\circ - {}^1S$	1 – 0		83
	7	784.795	712.9635 – 840.3852	$2p(^2P^\circ_{3/2})3d - 2s6g$	$^1F^\circ - {}^1G$	3 – 4		83
	3	788.577	580.8249 – 707.6355	$2s3p - 2p(^2P^\circ_{3/2})3p$	$^1P^\circ - {}^1S$	1 – 0		83
	40	1055.451	582.9170 – 677.6617	$2s3p - 2p(^2P^\circ_{3/2})3p$	$^3P^\circ - {}^3D$	2 – 3		83
	15	1058.149	582.8398 – 677.3452	$2s3p - 2p(^2P^\circ_{1/2})3p$	$^3P^\circ - {}^3D$	1 – 2		83
	7	1058.998	582.9170 – 677.3452	$2s3p - 2p(^2P^\circ_{1/2})3p$	$^3P^\circ - {}^3D$	2 – 2		83
	7	1059.930	582.8031 – 677.1474	$2s3p - 2p(^2P^\circ_{1/2})3p$	$^3P^\circ - {}^3D$	0 – 1		83
	7	1060.380	582.8398 – 677.1474	$2s3p - 2p(^2P^\circ_{1/2})3p$	$^3P^\circ - {}^3D$	1 – 1		83
	3	1218.406	0.0 – 82.0753	$2s^2 - 2s2p$	$g^1S - {}^3P^\circ$	0 – 1		83
	3	1243.801	722.4767 – 802.875	$2s4s - 2s5p$	$^3S - {}^3P^\circ$	1 – 2		83
	15	1371.26	158.7977 – 231.7214	$2s2p - 2p^2$	$^1P^\circ - {}^1D$	1 – 2		856
7	640	1371.292	158.7977 – 231.7214	$2s2p - 2p^2$	$^1P^\circ - {}^1D$	1 – 2		83
	3	1417.740	735.9083 – 806.4431	$2s4p - 2s5d$	$^3P^\circ - {}^3D$	0 – 1	P	83
	7	1417.908	735.9187 – 806.4451	$2s4p - 2s5d$	$^3P^\circ - {}^3D$	1 – 2		83
	15	1418.393	735.9458 – 806.4481	$2s4p - 2s5d$	$^3P^\circ - {}^3D$	2 – 3		83
	7	1419.009	737.8808 – 808.3523	$2s4p - 2s5d$	$^1P^\circ - {}^1D$	1 – 2		83
	60	1506.623	742.2361 – 808.6097	$2s4d - 2s5f$	$^3D - {}^3F^\circ$	1 – 2	P	83
	80	1506.709	742.2408 – 808.6106	$2s4d - 2s5f$	$^3D - {}^3F^\circ$	2 – 3	P	83
	100	1506.762	742.2453 – 808.6128	$2s4d - 2s5f$	$^3D - {}^3F^\circ$	3 – 4	P	83
	80	1596.375	746.2749 – 808.9168	$2s4d - 2s5f$	$^1D - {}^1F^\circ$	2 – 3		83
	250	1643.617	747.5472 – 808.3886	$2s4f - 2s5g$	$^3F^\circ - {}^3G$	4 – 5	P	83
	200	1643.718	747.5472 – 808.3849	$2s4f - 2s5g$	$^3F^\circ - {}^3G$	3 – 4	P	83
	160	1707.996	749.8405 – 808.3886	$2s4f - 2s5g$	$^1F^\circ - {}^1G$	3 – 4		83
	7	1844.419	808.3886 – 862.6062	$2s5g - 2s7h$	$^3G - {}^3H^\circ$	5 – 6	P	83
	3	1845.590	808.6128 – 862.7960	$2s5f - 2s7g$	$^3F^\circ - {}^3G$	4 – 5	P	83
	2	1845.601	808.6106 – 862.7935	$2s5f - 2s7g$	$^3F^\circ - {}^3G$	3 – 4	P	83
	1	1845.696	808.6097 – 862.7898	$2s5f - 2s7g$	$^3F^\circ - {}^3G$	2 – 3	P	83

OXYGEN VI (O^{5+}), Z = 8
Ground State $1s^22s(^2S_{1/2})$ (3 electrons)
Ionization Potential 1 114 008 cm^{-1}; 138.121 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	21.649	640.0398 – 5259.19	$1s^23s - 1s2p3s$	$^2S - ^2P^o$	1/2 - 3/2		434
	4	21.676	640.0398 – 5253.44	$1s^23s - 1s2p3s$	$^2S - ^2P^o$	1/2 - 1/2		434
	3	21.781	96.9075 – 4688.07	$1s^22p - 1s2p^2$	$^2P^o - ^2S$	3/2 - 1/2		434
	4	21.845	0.0 – 4577.71	$1s^22s - 1s2p(^3P^o)2s$	$g^2S - ^2P^o$	1/2 - 3/2		434
	4	22.020	0.0 – 4541.33	$1s^22s - 1s2p(^1P^o)2s$	$g^2S - ^2P^o$	1/2 - 3/2		434
	3	22.044	96.9075 – 4633.29	$1s^22p - 1s2p^2$	$^2P^o - ^2P$	3/2 - 3/2		434
	4	22.120	96.9075 – 4617.71	$1s^22p - 1s2p^2$	$^2P^o - ^2D$	3/2 - 5/2		434
	100	93.03	0.0 – 1074.92	$1s^22s - 1s^210p$	$g^2S - ^2P^o$	1/2 - 3/2		555
	20	93.915	0.0 – 1064.79	$1s^22s - 1s^29p$	$g^2S - ^2P^o$	1/2 - 3/2		226
	40	95.082	0.0 – 1051.724	$1s^22s - 1s^28p$	$g^2S - ^2P^o$	1/2 - 3/2		226
	70	96.840	0.0 – 1032.63	$1s^22s - 1s^27p$	$g^2S - ^2P^o$	1/2 - 3/2		226
	110	99.688	0.0 – 1003.13	$1s^22s - 1s^26p$	$g^2S - ^2P^o$	1/2 - 3/2		226
	20	101.57	96.9075 – 1081.45	$1s^22p - 1s^211d$	$^2P^o - ^2D$	3/2 - 5/2		555
	40	102.37	96.9075 – 1073.76	$1s^22p - 1s^210d$	$^2P^o - ^2D$	3/2 - 5/2		897,555
	5	103.206	96.3750 – 1065.31	$1s^22p - 1s^29d$	$^2P^o - ^2D$	1/2 - 3/2		226
	20	103.260	96.9075 – 1065.34	$1s^22p - 1s^29d$	$^2P^o - ^2D$	3/2 - 5/2		226
	20	104.612	96.3750 – 1052.296	$1s^22p - 1s^28d$	$^2P^o - ^2D$	1/2 - 3/2		226
	40	104.669	96.9075 – 1052.296	$1s^22p - 1s^28d$	$^2P^o - ^2D$	3/2 - 5/2		226
	220	104.813	0.0 – 954.08	$1s^22s - 1s^25p$	$g^2S - ^2P^o$	1/2 - 3/2		226
	40	106.731	96.3750 – 1033.324	$1s^22p - 1s^27d$	$^2P^o - ^2D$	1/2 - 3/2		226
	70	106.789	96.9075 – 1033.324	$1s^22p - 1s^27d$	$^2P^o - ^2D$	3/2 - 5/2		226
	5	107.081	96.9075 – 1030.78	$1s^22p - 1s^27s$	$^2P^o - ^2S$	3/2 - 1/2		226
	40	109.27	4600.0+K – 5515.2+K	$1s2p^2 - 1s2s9p$	$^4P - ^4P^o$	5/2 - 5/2		391
	70	110.157	96.3750 – 1004.178	$1s^22p - 1s^26d$	$^2P^o - ^2D$	1/2 - 3/2		226
	110	110.220	96.9075 – 1004.178	$1s^22p - 1s^26d$	$^2P^o - ^2D$	3/2 - 5/2		226
	5	110.655	96.3750 – 1000.08	$1s^22p - 1s^26s$	$^2P^o - ^2S$	1/2 - 1/2		226
	20	110.721	96.9075 – 1000.08	$1s^22p - 1s^26s$	$^2P^o - ^2S$	3/2 - 1/2		226
		111.6						897
	50	114.25	4600.0+K – 5475.3+K	$1s2p^2 - 1s2p4d$	$^4P - ^4D^o$	5/2 - 7/2		391
	360	115.822	0.0 – 863.3977	$1s^22s - 1s^24p$	$g^2S - ^2P^o$	1/2 - 3/2		226
	285	115.830	0.0 – 863.3338	$1s^22s - 1s^24p$	$g^2S - ^2P^o$	1/2 - 1/2		226
	160	116.350	96.3750 – 955.856	$1s^22p - 1s^25d$	$^2P^o - ^2D$	1/2 - 3/2		226
	220	116.421	96.9075 – 955.856	$1s^22p - 1s^25d$	$^2P^o - ^2D$	3/2 - 5/2		226
	5	116.666	96.9075 – 954.08	$1s^22p - 1s^25p$	$^2P^o - ^2P^o$	3/2 - 3/2	F	226
	20	117.327	96.3750 – 948.69	$1s^22p - 1s^25s$	$^2P^o - ^2S$	1/2 - 1/2		226
	5	117.401	96.9075 – 948.69	$1s^22p - 1s^25s$	$^2P^o - ^2S$	3/2 - 1/2		226
5	450	129.785	96.3750 – 866.8801	$1s^22p - 1s^24d$	$^2P^o - ^2D$	1/2 - 3/2		226
5	550	129.871	96.9075 – 866.9015	$1s^22p - 1s^24d$	$^2P^o - ^2D$	3/2 - 5/2		226
	110	132.219	96.3750 – 852.696	$1s^22p - 1s^24s$	$^2P^o - ^2S$	1/2 - 1/2		226
	160	132.312	96.9075 – 852.696	$1s^22p - 1s^24s$	$^2P^o - ^2S$	3/2 - 1/2		226
	30	134.3	4670.0+R – 5414.6+R	$1s2s2p - 1s2s4d$	$^4P^o - ^4D$	5/2 - 7/2		391
	80	137.43	4670.0+R – 5397.6+R	$1s2s2p - 1s2s3d$	$^4P^o - ^4D$	5/2 - 7/2		391
	130	145.78	4600.0+K – 5286.0+K	$1s2p^2 - 1s2s5p$	$^4P - ^4P^o$	5/2 - 5/2		391
		145.95	4577.71 – 5262.5+K	$1s2p(^3P^o)2s - 1s2p3p$	$^2P^o - ^4P$	3/2 - 5/2	Q	897
2	750	150.089	0.0 – 666.2698	$1s^22s - 1s^23p$	$g^2S - ^2P^o$	1/2 - 3/2		226
2	650	150.124	0.0 – 666.1132	$1s^22s - 1s^23p$	$g^2S - ^2P^o$	1/2 - 1/2		226
4	750	172.935	96.3750 – 674.6257	$1s^22p - 1s^23d$	$^2P^o - ^2D$	1/2 - 3/2		226
4	900	173.082	96.9075 – 674.6768	$1s^22p - 1s^23d$	$^2P^o - ^2D$	3/2 - 5/2		226
3	360	183.937	96.3750 – 640.0398	$1s^22p - 1s^23s$	$^2P^o - ^2S$	1/2 - 1/2		226
3	450	184.117	96.9075 – 640.0398	$1s^22p - 1s^23s$	$^2P^o - ^2S$	3/2 - 1/2		226
		405.	4948.7+R – 5195.6+R	$1s2s3s - 1s2s4p$	$^4S - ^4P^o$	3/2 - 5/2		725
		440.	5187.3+R – 5414.6+R	$1s2p3s - 1s2s4d$	$^4P^o - ^4D$	5/2 - 7/2		725
		443.	5260.0+L – 5485.7+L	$1s2p3p - 1s2p4d$	$^4D - ^4P^o$	7/2 - 5/2		725
	10	447.712	640.0398 – 863.3977	$1s^23s - 1s^24p$	$^2S - ^2P^o$	1/2 - 3/2		168

O VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	447.840	640.0398 - 863.3338	$1s^23s - 1s^24p$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		168
		449.	5191.9+R - 5414.6+R	1s2s3p - 1s2s4d	$^4P^\circ - {}^4D$	$\frac{5}{2}-\frac{7}{2}$		725
		470.	5262.5+K - 5475.3+K	1s2p3p - 1s2p4d	$^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		725
		472.	5260.0+L - 5471.9+L	1s2p3p - 1s2p4d	$^4D - {}^4F^\circ$	$\frac{7}{2}-\frac{9}{2}$		725
		474.	5397.6+R - 5608.6+R	1s2s3d - 1s2s4f	$^4D - {}^4F^\circ$	$\frac{7}{2}-\frac{9}{2}$		725
		475.	5191.9+R - 5402.4+R	1s2s3p - 1s2s4s	$^4P^\circ - {}^4S$	$\frac{5}{2}-\frac{3}{2}$		725
		495.	5195.6+R - 5397.6+R	1s2s4p - 1s2s3d	$^4P^\circ - {}^4D$	$\frac{5}{2}-\frac{7}{2}$		725
	10	498.090	666.1132 - 866.8801	$1s^23p - 1s^24d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		168
	100	498.431	666.2698 - 866.9015	$1s^23p - 1s^24d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		168
		501.	5264.0+K - 5463.6+K	1s2p3p - 1s2p4s	$^4S - {}^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		725
		505.	5067.0+L - 5265.0+L	1s2p3d - 1s2p4p	$^4F^\circ - {}^4D$	$\frac{9}{2}-\frac{7}{2}$		725
	200	519.610	674.6257 - 867.0777	$1s^23d - 1s^24f$	$^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		168
	200	519.723	674.6768 - 867.0875	$1s^23d - 1s^24f$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		168
		525.	5079.5+L - 5270.0+L	1s2p3d - 1s2p4p	$^4D^\circ - {}^4P$	$\frac{7}{2}-\frac{5}{2}$		725
		539.	5079.5+L - 5265.0+L	1s2p3d - 1s2p4p	$^4D^\circ - {}^4D$	$\frac{7}{2}-\frac{7}{2}$		725
		551.	5088.5+L - 5270.0+L	1s2p3d - 1s2p4p	$^4P^\circ - {}^4P$	$\frac{5}{2}-\frac{5}{2}$		725
		562.	5088.5+L - 5265.0+L	1s2p3d - 1s2p4p	$^4P^\circ - {}^4D$	$\frac{5}{2}-\frac{7}{2}$		725
		981.	5265.0+L - 5366.9+L	1s2p4p - 1s2p5d	$^4D - {}^4D^\circ$	$\frac{7}{2}-\frac{7}{2}$		725
1	850	1031.924	0.0 - 96.9075	$1s^22s - 1s^22p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		617,168
1	750	1037.614	0.0 - 96.3750	$1s^22s - 1s^22p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		617,168
		1289.9	955.856 - 1033.382	$1s^25d - 1s^27f$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	117

OXYGEN VII (O^{6+}), Z = 8
Ground State $1s^2(^1S_0)$ (2 electrons)
Ionization Potential 5 963 114 cm^{-1}; 739.338 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
41		15.439	5355.67 - 11832.77	1s3p - 3p4p	$^3P^\circ - {}^3P$	2 - 2		628
18		15.750	4524.64 - 10873.85	1s2s - 2s4p	$^3S - {}^3P^\circ$	1 - 2		628
40		16.186	5355.67 - 11533.85	$1s3p - 3p^2$	$^3P^\circ - {}^3P$	2 - 2		628
17		16.478	4524.64 - 10593.34	1s2s - 2s3p	$^3S - {}^3P^\circ$	1 - 2		628
30		16.581	4586.23 - 10616.51	1s2p - 2p3p	$^3P^\circ - {}^3P$	2 - 2		628
31		16.650	4588.38 - 10594.38	1s2s - 2s3p	$^1S - {}^1P^\circ$	0 - 1		628
39		16.770	4629.201 - 10586.67	1s2p - 2p3p	$^1P^\circ - {}^1P$	1 - 1		628
	1	17.086	0.0 - 5852.74	$1s^2 - 1s7p$	$g^1S - {}^1P^\circ$	0 - 1		138
6	50	17.200	0.0 - 5813.95	$1s^2 - 1s6p$	$g^1S - {}^1P^\circ$	0 - 1		764
		17.207	0.0 - 5811.73	$1s^2 - 1s6p$	$g^1S - {}^3P^\circ$	0 - 1	P	375
5	100	17.396	0.0 - 5748.45	$1s^2 - 1s5p$	$g^1S - {}^1P^\circ$	0 - 1		764
		17.405	0.0 - 5745.44	$1s^2 - 1s5p$	$g^1S - {}^3P^\circ$	0 - 1	P	375
4	200	17.768	0.0 - 5628.10	$1s^2 - 1s4p$	$g^1S - {}^1P^\circ$	0 - 1		197,764
		17.785	0.0 - 5622.60	$1s^2 - 1s4p$	$g^1S - {}^3P^\circ$	0 - 1	P	375
3	500	18.627	0.0 - 5368.55	$1s^2 - 1s3p$	$g^1S - {}^1P^\circ$	0 - 1		197,764
		18.672	0.0 - 5355.67	$1s^2 - 1s3p$	$g^1S - {}^3P^\circ$	0 - 1	P	375
	0	18.993	5616.34 - 10881.44	1s4s - 2p4s	$^3S - {}^3P^\circ$	1 - 2		434
	0	18.993	5364.44 - 10629.54	1s3d - 2p3d	$^3D - {}^3D^\circ$	3 - 3		434
	2	19.012	5623.10 - 10882.94	1s4s - 2p4s	$^1S - {}^1P^\circ$	0 - 1		434
	2	19.012	5355.67 - 10616.51	1s3p - 2p3p	$^3P^\circ - {}^3P$	2 - 2		434
	4	19.045	5338.82 - 10589.54	1s3s - 2p3s	$^3S - {}^3P^\circ$	1 - 2		434
	4	19.045	5365.47 - 10616.19	1s3d - 2p3d	$^1D - {}^1D^\circ$	2 - 2		434
	1	19.096	5356.42 - 10593.12	1s3s - 2p3s	$^1S - {}^1P^\circ$	0 - 1		434
	2	19.164	5368.55 - 10586.67	1s3p - 2p3p	$^1P^\circ - {}^1P$	1 - 1		434

O VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	2	19.207	4588.38 – 9794.82	1s2s – 2s2p	$^1S - {}^1P^o$	0 – 1		434
	2	19.207	4629.201 – 9836.18	1s2p – $2p^2$	$^1P^o - {}^1S$	1 – 0		434
	4	19.301	4524.64 – 9705.72	1s2s – 2s2p	$^3S - {}^3P^o$	1 – 2		434
	4	19.330	4586.23 – 9759.77	1s2p – $2p^2$	$^3P^o - {}^3P$	2 – 2		434
37	5	19.385	4629.201 – 9788.36	1s2p – $2p^2$	$^1P^o - {}^1D$	1 – 2		434
2	1000	21.6020	0.0 – 4629.201	$1s^2$ – 1s2p	$g^1S - {}^1P^o$	0 – 1		715,764
1	300	21.804	0.0 – 4585.68	$1s^2$ – 1s2p	$g^1S - {}^3P^o$	0 – 1		764
	500	22.101	0.0 – 4524.64	$1s^2$ – 1s2s	$g^1S - {}^3S$	0 – 1	F,P	375,276,628
16		72.3	4524.64 – 5907.80	1s2s – 1s10p	$^3S - {}^3P^o$	1 – 2	P	262
15		73.0	4524.64 – 5894.50	1s2s – 1s9p	$^3S - {}^3P^o$	1 – 2	P	262
14		73.9	4524.64 – 5877.80	1s2s – 1s8p	$^3S - {}^3P^o$	1 – 2	P	262
	2	75.344	4524.64 – 5851.89	1s2s – 1s7p	$^3S - {}^3P^o$	1 – 2		138
28		75.5	4586.23 – 5910.50	1s2p – 1s10d	$^3P^o - {}^3D$	2 – 3	P	262
	1	76.513	4586.23 – 5892.95	1s2p – 1s9d	$^3P^o - {}^3D$	2 – 3		138
26	1	77.374	4586.23 – 5878.40	1s2p – 1s8d	$^3P^o - {}^3D$	2 – 3		138
12	3	77.695	4524.64 – 5811.73	1s2s – 1s6p	$^3S - {}^3P^o$	1 – 2		138
25	4	78.884	4586.23 – 5853.66	1s2p – 1s7d	$^3P^o - {}^3D$	2 – 3		138
24	10	81.494	4586.23 – 5813.07	1s2p – 1s6d	$^3P^o - {}^3D$	2 – 3		138
11	10	81.914	4524.64 – 5745.44	1s2s – 1s5p	$^3S - {}^3P^o$	1 – 2		138
36	1	84.425	4629.201 – 5813.68	1s2p – 1s6d	$^1P^o - {}^1D$	1 – 2		138
23	29	86.100	4586.23 – 5747.62	1s2p – 1s5d	$^3P^o - {}^3D$	2 – 3		138
35	10	89.363	4629.201 – 5748.23	1s2p – 1s5d	$^1P^o - {}^1D$	1 – 2		138
10	30	91.078	4524.64 – 5622.60	1s2s – 1s4p	$^3S - {}^3P^o$	1 – 2		138
22	68	96.126	4586.23 – 5626.50	1s2p – 1s4d	$^3P^o - {}^3D$	2 – 3		138
21	1	97.076	4586.23 – 5616.34	1s2p – 1s4s	$^3P^o - {}^3S$	2 – 1		138
34		100.254	4629.201 – 5626.67	1s2p – 1s4d	$^1P^o - {}^1D$	1 – 2		628
9	220	120.331	4524.64 – 5355.67	1s2s – 1s3p	$^3S - {}^3P^o$	1 – 2		164,555
		128.18	4588.38 – 5368.55	1s2s – 1s3p	$^1S - {}^1P^o$	0 – 1	P	375
20	150	128.412	4585.68 – 5364.43	1s2p – 1s3d	$^3P^o - {}^3D$	1 – 2		164,555
20	200	128.500	4586.23 – 5364.44	1s2p – 1s3d	$^3P^o - {}^3D$	2 – 3		164,555
19	5	132.777	4585.68 – 5338.82	1s2p – 1s3s	$^3P^o - {}^3S$	1 – 1	P	138
19	8	132.874	4586.23 – 5338.82	1s2p – 1s3s	$^3P^o - {}^3S$	2 – 1	P	138
	110	133.31						555
33	48	135.820	4629.201 – 5365.47	1s2p – 1s3d	$^1P^o - {}^1D$	1 – 2		138
32	80	137.51	4629.201 – 5356.42	1s2p – 1s3s	$^1P^o - {}^1S$	1 – 0		897,391
		222.98	5364.44 – 5812.91	1s3d – 1s6f	$^3D - {}^3F^o$	3 – 4	P	087
		223.18	5365.47 – 5813.54	1s3d – 1s6f	$^1D - {}^1F^o$	2 – 3	P	087
		261.26	5364.44 – 5747.20	1s3d – 1s5f	$^3D - {}^3F^o$	3 – 4	P	087
		261.54	5365.47 – 5747.82	1s3d – 1s5f	$^1D - {}^1F^o$	2 – 3	P	087
		352.39	5338.82 – 5622.60	1s3s – 1s4p	$^3S - {}^3P^o$	1 – 2	P	375
		368.08	5356.42 – 5628.10	1s3s – 1s4p	$^1S - {}^1P^o$	0 – 1	P	375
		382.02	5364.44 – 5626.21	1s3d – 1s4f	$^3D - {}^3F^o$	3 – 4	P	087
		382.60	5365.47 – 5626.84	1s3d – 1s4f	$^1D - {}^1F^o$	2 – 3		087
8	100	1623.63	4524.64 – 4586.23	1s2s – 1s2p	$^3S - {}^3P^o$	1 – 2		735
8	60	1638.30	4524.64 – 4585.68	1s2s – 1s2p	$^3S - {}^3P^o$	1 – 1		735
8	20	1639.87	4524.64 – 4585.62	1s2s – 1s2p	$^3S - {}^3P^o$	1 – 0		735

OXYGEN VIII (O^{7+}), Z = 8
Ground State 1s($^2S_{1/2}$) (1 electron)
Ionization Potential 7 028 393.6 cm^{-1}; 871.417 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		14.372	0.0 – 6958.153	1s – 10p	g^{2}S – ^{2}P°	1/2 – 3/2	P	309
		14.406	0.0 – 6941.676	1s – 9p	g^{2}S – ^{2}P°	1/2 – 3/2	P	309
		14.454	0.0 – 6918.641	1s – 8p	g^{2}S – ^{2}P°	1/2 – 3/2	P	309
		14.524	0.0 – 6885.040	1s – 7p	g^{2}S – ^{2}P°	1/2 – 3/2	P	309
		14.634	0.0 – 6833.27	1s – 6p	g^{2}S – ^{2}P°	1/2 – 3/2	P	309
		14.821	0.0 – 6747.408	1s – 5p	g^{2}S – ^{2}P°	1/2 – 3/2	P	309
	10	15.176	0.0 – 6589.342	1s – 4p	g^{2}S – ^{2}P°	1/2 – 3/2	P	309,375
	20	16.006	0.0 – 6247.844	1s – 3p	g^{2}S – ^{2}P°	1/2 – 3/2	P	309,375
	10	16.007	0.0 – 6247.399	1s – 3p	g^{2}S – ^{2}P°	1/2 – 1/2	P	309,375
	70	18.967	0.0 – 5272.284	1s – 2p	g^{2}S – ^{2}P°	1/2 – 3/2	P	309,375
	30	18.972	0.0 – 5270.782	1s – 2p	g^{2}S – ^{2}P°	1/2 – 1/2	P	309,375
		59.266	5270.855 – 6958.153	2s – 10p	^{2}S – ^{2}P°	1/2 – 3/2	P	309
		59.316	5272.284 – 6958.157	2p – 10d	^{2}P° – ^{2}D	3/2 – 5/2	P	309
		59.851	5270.855 – 6941.676	2s – 9p	^{2}S – ^{2}P°	1/2 – 3/2	P	309
		59.902	5272.284 – 6941.682	2p – 9d	^{2}P° – ^{2}D	3/2 – 5/2	P	309
		60.688	5270.855 – 6918.641	2s – 8p	^{2}S – ^{2}P°	1/2 – 3/2	P	309
		60.740	5272.284 – 6918.648	2p – 8d	^{2}P° – ^{2}D	3/2 – 5/2	P	309
		61.951	5270.855 – 6885.040	2s – 7p	^{2}S – ^{2}P°	1/2 – 3/2	P	309
		62.005	5272.284 – 6885.052	2p – 7d	^{2}P° – ^{2}D	3/2 – 5/2	P	309
		64.004	5270.855 – 6833.27	2s – 6p	^{2}S – ^{2}P°	1/2 – 3/2	P	309
		64.061	5272.284 – 6833.288	2p – 6d	^{2}P° – ^{2}D	3/2 – 5/2	P	309
		67.725	5270.855 – 6747.408	2s – 5p	^{2}S – ^{2}P°	1/2 – 3/2	P	309
		67.789	5272.284 – 6747.44	2p – 5d	^{2}P° – ^{2}D	3/2 – 5/2	P	309
		75.844	5270.855 – 6589.342	2s – 4p	^{2}S – ^{2}P°	1/2 – 3/2	P	309
		75.923	5272.284 – 6589.404	2p – 4d	^{2}P° – ^{2}D	3/2 – 5/2	P	309
		102.355	5270.855 – 6247.844	2s – 3p	^{2}S – ^{2}P°	1/2 – 3/2	P	309
		102.490	5272.284 – 6247.992	2p – 3d	^{2}P° – ^{2}D	3/2 – 5/2	P	309
		144.039	6247.421 – 6941.676	3s – 9p	^{2}S – ^{2}P°	1/2 – 3/2	P	309
		144.126	6247.844 – 6941.682	3p – 9d	^{2}P° – ^{2}D	3/2 – 5/2	P	309
		144.156	6247.992 – 6941.685	3d – 9f	^{2}D – ^{2}F°	5/2 – 7/2	P	309
		148.982	6247.421 – 6918.641	3s – 8p	^{2}S – ^{2}P°	1/2 – 3/2	P	309
		149.075	6247.844 – 6918.648	3p – 8d	^{2}P° – ^{2}D	3/2 – 5/2	P	309
		149.107	6247.992 – 6918.652	3d – 8f	^{2}D – ^{2}F°	5/2 – 7/2	P	309
		156.834	6247.421 – 6885.040	3s – 7p	^{2}S – ^{2}P°	1/2 – 3/2	P	309
		156.935	6247.844 – 6885.052	3p – 7d	^{2}P° – ^{2}D	3/2 – 5/2	P	309
		156.970	6247.992 – 6885.058	3d – 7f	^{2}D – ^{2}F°	5/2 – 7/2	P	309
		170.692	6247.421 – 6833.27	3s – 6p	^{2}S – ^{2}P°	1/2 – 3/2	P	309
		170.810	6247.844 – 6833.288	3p – 6d	^{2}P° – ^{2}D	3/2 – 5/2	P	309
		170.851	6247.992 – 6833.297	3d – 6f	^{2}D – ^{2}F°	5/2 – 7/2	P	309
		200.005	6247.421 – 6747.408	3s – 5p	^{2}S – ^{2}P°	1/2 – 3/2	P	309
		200.162	6247.844 – 6747.44	3p – 5d	^{2}P° – ^{2}D	3/2 – 5/2	P	309
		200.215	6247.992 – 6747.456	3d – 5f	^{2}D – ^{2}F°	5/2 – 7/2	P	309
		271.011	6589.164 – 6958.153	4s – 10p	^{2}S – ^{2}P°	1/2 – 3/2	P	309
		271.139	6589.342 – 6958.157	4p – 10d	^{2}P° – ^{2}D	3/2 – 5/2	P	309
		271.183	6589.404 – 6958.159	4d – 10f	^{2}D – ^{2}F°	5/2 – 7/2	P	309
		283.678	6589.164 – 6941.676	4s – 9p	^{2}S – ^{2}P°	1/2 – 3/2	P	309
		283.817	6589.342 – 6941.682	4p – 9d	^{2}P° – ^{2}D	3/2 – 5/2	P	309
		283.864	6589.404 – 6941.685	4d – 9f	^{2}D – ^{2}F°	5/2 – 7/2	P	309
		292.465	6247.421 – 6589.342	3s – 4p	^{2}S – ^{2}P°	1/2 – 3/2	P	309
		292.774	6247.844 – 6589.404	3p – 4d	^{2}P° – ^{2}D	3/2 – 5/2	P	309
		292.874	6247.992 – 6589.436	3d – 4f	^{2}D – ^{2}F°	5/2 – 7/2	P	309
		303.511	6589.164 – 6918.641	4s – 8p	^{2}S – ^{2}P°	1/2 – 3/2	P	309
		303.669	6589.342 – 6918.648	4p – 8d	^{2}P° – ^{2}D	3/2 – 5/2	P	309
		303.722	6589.404 – 6918.652	4d – 8f	^{2}D – ^{2}F°	5/2 – 7/2	P	309

O VIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		337.979	6589.164 – 6885.040	4s – 7p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		338.169	6589.342 – 6885.052	4p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		338.233	6589.404 – 6885.058	4d – 7f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		409.658	6589.164 – 6833.27	4s – 6p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		409.927	6589.342 – 6833.288	4p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		410.016	6589.404 – 6833.297	4d – 6f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		474.302	6747.317 – 6958.153	5s – 10p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		474.498	6747.408 – 6958.157	5p – 10d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		474.566	6747.44 – 6958.159	5d – 10f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		514.512	6747.317 – 6941.676	5s – 9p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		514.737	6747.408 – 6941.682	5p – 9d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		514.814	6747.44 – 6941.685	5d – 9f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		583.689	6747.317 – 6918.641	5s – 8p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		583.976	6747.408 – 6918.648	5p – 8d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		584.071	6747.44 – 6918.652	5d – 8f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		631.936	6589.164 – 6747.408	4s – 5p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		632.519	6589.342 – 6747.44	4p – 5d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		632.703	6589.404 – 6747.456	4d – 5f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		726.095	6747.317 – 6885.040	5s – 7p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		726.512	6747.408 – 6885.052	5p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		726.649	6747.44 – 6885.058	5d – 7f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		1163.426	6747.317 – 6833.27	5s – 6p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		1164.416	6747.408 – 6833.288	5p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		1164.727	6747.44 – 6833.297	5d – 6f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309

FLUORINE , Z = 9
Unclassified Lines

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	83.3						155
	45	87.85						155
	100	89.4						155
	65	119.2						155

FLUORINE I (F^{0+}), Z = 9
Ground State $1s^22s^22p^5(^2P^\circ_{3/2})$ (9 electrons)
Ionization Potential 140 524.5 cm^{-1}; 17.423 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		588.84	0.0 – 169.82450	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - ^2S$	3/2 – 1/2		375
		590.25	0.40410 – 169.82450	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - ^2S$	1/2 – 1/2		375
	2	680.698	0.0 – 146.9080	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - ^2S$	3/2 – 1/2		539,420
	2	682.577	0.40410 – 146.9080	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - ^2S$	1/2 – 1/2		539,420
	1	732.960	0.0 – 136.42680	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - ^4P$	3/2 – 3/2		420
	1	734.642	0.0 – 136.12430	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - ^4P$	3/2 – 1/2		420
	1	734.795	0.0 – 136.09224	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - ^2D$	3/2 – 5/2		420
	1	735.154	0.40410 – 136.42680	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - ^4P$	1/2 – 3/2		420
	1	735.469	0.0 – 135.96639	$2s^22p^5 - 2s^22p^4(^3P)6s$	$g^2P^\circ - ^2P$	3/2 – 3/2		420
	2	736.987	0.0 – 135.68527	$2s^22p^5 - 2s^22p^4(^3P)6s$	$g^2P^\circ - ^4P$	3/2 – 3/2		420
	2	745.767	0.0 – 134.09128	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2P$	3/2 – 3/2		420
	1	746.400	0.0 – 133.97138	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^4F$	3/2 – 3/2		420
	3	746.627	0.0 – 133.93181	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^4F$	3/2 – 5/2		420
	2	747.999	0.40410 – 134.09128	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2P$	1/2 – 3/2		420
	1	748.134	0.0 – 133.65912	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^4P$	3/2 – 1/2		420
	2	748.338	0.0 – 133.62385	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2D$	3/2 – 3/2		420
	4	748.580	0.0 – 133.58357	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2D$	3/2 – 5/2		420
	2	748.709	0.40410 – 133.97138	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^4F$	1/2 – 3/2		420
	3	748.946	0.40410 – 133.91949	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^4P$	1/2 – 3/2		420
	1	750.418	0.40410 – 133.65912	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^4P$	1/2 – 1/2		420
	3	750.610	0.0 – 133.22325	$2s^22p^5 - 2s^22p^4(^3P)5s$	$g^2P^\circ - ^2P$	3/2 – 1/2		420
	1	750.885	0.40410 – 133.57740	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^4D$	1/2 – 3/2		420
	4	751.861	0.0 – 132.99838	$2s^22p^5 - 2s^22p^4(^3P)5s$	$g^2P^\circ - ^2P$	3/2 – 3/2		420
	4	752.884	0.40410 – 133.22325	$2s^22p^5 - 2s^22p^4(^3P)5s$	$g^2P^\circ - ^2P$	1/2 – 1/2		420
	4	753.303	0.0 – 132.74497	$2s^22p^5 - 2s^22p^4(^3P)5s$	$g^2P^\circ - ^4P$	3/2 – 3/2		420
	2	754.148	0.0 – 132.59550	$2s^22p^5 - 2s^22p^4(^3P)5s$	$g^2P^\circ - ^4P$	3/2 – 5/2		420
	2	755.603	0.40410 – 132.74497	$2s^22p^5 - 2s^22p^4(^3P)5s$	$g^2P^\circ - ^4P$	1/2 – 3/2		420
	4	776.926	0.0 – 128.71230	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2P$	3/2 – 3/2		420
	5	777.010	0.0 – 128.69789	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2F$	3/2 – 5/2		420
	4	777.531	0.0 – 128.61192	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4F$	3/2 – 3/2		420
	6	778.059	0.0 – 128.52328	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4P$	3/2 – 3/2		420
	2	779.192	0.0 – 128.33872	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4P$	3/2 – 1/2		420
	6	779.365	0.40410 – 128.71230	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2P$	1/2 – 3/2		420
	5	779.910	0.0 – 128.21983	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2D$	3/2 – 3/2		420
	2	779.972	0.40410 – 128.61192	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4F$	1/2 – 3/2		420
	1	780.134	0.0 – 128.18499	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4D$	3/2 – 1/2		420

F I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	15	780.390	0.0 – 128.14048	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		420
	10	780.519	0.40410 – 128.52328	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{3}{2}$		420
	5	780.713	0.0 – 128.08783	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4D$	$\frac{3}{2}-\frac{5}{2}$		420
	3	781.654	0.40410 – 128.33872	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{1}{2}$		420
	10	782.378	0.40410 – 128.21983	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		420
	2	782.575	0.40410 – 128.18499	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4D$	$\frac{1}{2}-\frac{1}{2}$		420
	5	782.976	0.40410 – 128.12272	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4D$	$\frac{1}{2}-\frac{3}{2}$		420
	7	790.006	0.0 – 126.58118	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		420
	12	791.875	0.0 – 126.28258	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		420
	10	792.536	0.40410 – 126.58118	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		420
	1	793.237	0.0 – 126.06723	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		420
	10	794.417	0.0 – 125.87728	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		420
	2	795.774	0.40410 – 126.06723	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{1}{2}$		420
	3	796.982	0.40410 – 125.87728	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{3}{2}$		420
2	150	806.970	0.0 – 123.92105	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		539,420
2	125	809.607	0.40410 – 123.92201	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		539,420
1	500	951.871	0.0 – 105.05628	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		420
1	1000	954.825	0.0 – 104.73105	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		420
1	750	955.545	0.40410 – 105.05628	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		420
1	500	958.524	0.40410 – 104.73105	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		420
	20	972.401	0.0 – 102.84038	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		420
	350	973.895	0.0 – 102.68044	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		420
	100	976.217	0.40410 – 102.84038	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{1}{2}$		420
	40	976.505	0.0 – 102.40571	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		420
	100	977.745	0.40410 – 102.68044	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{3}{2}$		420
		1096.8	169.82450 – 261.+X	$2s2p^6 - 2s2p^53s$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	375

FLUORINE II (F^{1+}), Z = 9
Ground State $1s^22s^22p^4(^3P_2)$ (8 electrons)
Ionization Potential 282 058.6 cm^{-1}; 34.971 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	348.795	0.0 – 286.70128	$2s^22p^4 - 2s^22p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	2 – 2		538
	2	353.423	0.0 – 282.94697	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 2		538
	10	375.237	0.0 – 266.49874	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 1		538
	100	375.303	0.0 – 266.45388	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 2		538
	10	375.432	0.0 – 266.36060	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3S^\circ$	2 – 1		538
	40	375.702	0.3410 – 266.51643	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 0		538
	10	375.784	0.3410 – 266.45388	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 2		538
	40	375.927	0.4899 – 266.49874	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	0 – 1		538
	10	376.684	0.0 – 265.47231	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		538
	1	377.133	0.3410 – 265.49841	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		538
	1	379.719	20.8734 – 284.22519	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$^1D - {}^1P^\circ$	2 – 1		538
	100	380.896	20.8734 – 283.40965	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$^1D - {}^1F^\circ$	2 – 3		538
	1	381.824	20.8734 – 282.77499	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$^1D - {}^1D^\circ$	2 – 2		538
	40	393.680	0.0 – 254.01648	$2s^22p^4 - 2s^22p^3(^4S^\circ)4d$	$g^3P - {}^3D^\circ$	2 – 3		538
	10	394.207	0.3410 – 254.01540	$2s^22p^4 - 2s^22p^3(^4S^\circ)4d$	$g^3P - {}^3D^\circ$	1 – 2		538
	1	394.438	0.4899 – 254.01483	$2s^22p^4 - 2s^22p^3(^4S^\circ)4d$	$g^3P - {}^3D^\circ$	0 – 1		538
	10	400.582	20.8734 – 270.50829	$2s^22p^4 - 2s^22p^3(^2D^\circ)4s$	$^1D - {}^1D^\circ$	2 – 2		538
	100	405.638	20.8734 – 267.39994	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1D - {}^1P^\circ$	2 – 1		538

F II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	407.041	20.8734 – 266.54848	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1D - ^1F^\circ$	2 – 3		538
	100	407.503	20.8734 – 266.27011	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1D - ^1D^\circ$	2 – 2		538
	10	417.872	44.9181 – 284.22519	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$^1S - ^1P^\circ$	0 – 1		538
	40	422.013	0.0 – 236.96083	$2s^22p^4 - 2s^22p^3(^4S^\circ)4s$	$g^3P - ^3S^\circ$	2 – 1		538
	10	422.623	0.3410 – 236.96083	$2s^22p^4 - 2s^22p^3(^4S^\circ)4s$	$g^3P - ^3S^\circ$	1 – 1		538
	1	422.884	0.4899 – 236.96083	$2s^22p^4 - 2s^22p^3(^4S^\circ)4s$	$g^3P - ^3S^\circ$	0 – 1		538
	300	430.914	0.0 – 232.06632	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		538
	200	431.552	0.3410 – 232.06416	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		538
	100	431.832	0.4899 – 232.06334	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	0 – 1		538
	200	435.636	0.0 – 229.55011	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^3P^\circ$	2 – 2		538
	100	436.281	0.3410 – 229.55011	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^3P^\circ$	1 – 2		538
	40	436.565	0.4899 – 229.55179	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^3P^\circ$	0 – 1		538
	600	457.179	20.8734 – 239.60529	$2s^22p^4 - 2s2p^5$	$^1D - ^1P^\circ$	2 – 1		538
3	10	471.921	0.0 – 211.90026	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - ^3D^\circ$	2 – 1		538
3	200	471.952	0.0 – 211.88719	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - ^3D^\circ$	2 – 2		538
3	450	471.999	0.0 – 211.86613	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - ^3D^\circ$	2 – 3		538
	100	472.681	0.3410 – 211.90026	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - ^3D^\circ$	1 – 1		538
	300	472.711	0.3410 – 211.88719	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - ^3D^\circ$	1 – 2		538
	200	473.015	0.4899 – 211.90026	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - ^3D^\circ$	0 – 1		538
	850	484.601	20.8734 – 227.22842	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$^1D - ^1P^\circ$	2 – 1		538
	300	513.644	44.9181 – 239.60529	$2s^22p^4 - 2s2p^5$	$^1S - ^1P^\circ$	0 – 1		538
	600	514.944	20.8734 – 215.06959	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$^1D - ^1D^\circ$	2 – 2		538
2	600	546.852	0.0 – 182.86440	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^3S^\circ$	2 – 1		538
2	450	547.874	0.3410 – 182.86440	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^3S^\circ$	1 – 1		538
2	300	548.322	0.4899 – 182.86440	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^3S^\circ$	0 – 1		538
	200	548.516	44.9181 – 227.22842	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$^1S - ^1P^\circ$	0 – 1		538
1	850	605.670	0.0 – 165.10666	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	2 – 1		538
1	700	606.286	0.3410 – 165.27919	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	1 – 0		538
1	1000	606.804	0.0 – 164.79788	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	2 – 2		538
1	600	606.922	0.3410 – 165.10666	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	1 – 1		538
1	700	607.472	0.4899 – 165.10666	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	0 – 1		538
1	850	608.063	0.3410 – 164.79788	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	1 – 2		538
	10	694.801	20.8734 – 164.79788	$2s^22p^4 - 2s2p^5$	$^1D - ^3P^\circ$	2 – 2		538
	10	832.035	44.9181 – 165.10666	$2s^22p^4 - 2s2p^5$	$^1S - ^3P^\circ$	0 – 1		538
	10	1112.110	164.79788 – 254.71668	$2s2p^5 - 2s^22p^3(^2P^\circ)3p$	$^3P^\circ - ^3D$	2 – 2		538
	100	1112.302	164.79788 – 254.70162	$2s2p^5 - 2s^22p^3(^2P^\circ)3p$	$^3P^\circ - ^3D$	2 – 3		538
	40	1115.946	165.10666 – 254.71668	$2s2p^5 - 2s^22p^3(^2P^\circ)3p$	$^3P^\circ - ^3D$	1 – 2		538
	10	1118.017	165.27919 – 254.72328	$2s2p^5 - 2s^22p^3(^2P^\circ)3p$	$^3P^\circ - ^3D$	0 – 1		538
	200	1129.758	164.79788 – 253.31248	$2s2p^5 - 2s^22p^3(^2P^\circ)3p$	$^3P^\circ - ^3S$	2 – 1		538
	100	1133.714	165.10666 – 253.31248	$2s2p^5 - 2s^22p^3(^2P^\circ)3p$	$^3P^\circ - ^3S$	1 – 1		538
	10	1135.938	165.27919 – 253.31248	$2s2p^5 - 2s^22p^3(^2P^\circ)3p$	$^3P^\circ - ^3S$	0 – 1		538
	40	1209.345	176.49393 – 259.18441	$2s^22p^3(^4S^\circ)3s - 2s^22p^3(^4S^\circ)5p$	$^5S^\circ - ^5P$	2 – 3		538
	100	1221.235	164.79788 – 246.68210	$2s2p^5 - 2s^22p^3(^4S^\circ)4p$	$^3P^\circ - ^3P$	2 – 2		538
	40	1221.536	164.79788 – 246.66201	$2s2p^5 - 2s^22p^3(^4S^\circ)4p$	$^3P^\circ - ^3P$	2 – 1		538
	40	1225.854	165.10666 – 246.68210	$2s2p^5 - 2s^22p^3(^4S^\circ)4p$	$^3P^\circ - ^3P$	1 – 2		538
	10	1226.161	165.10666 – 246.66201	$2s2p^5 - 2s^22p^3(^4S^\circ)4p$	$^3P^\circ - ^3P$	1 – 1		538
	40	1226.267	165.10666 – 246.65474	$2s2p^5 - 2s^22p^3(^4S^\circ)4p$	$^3P^\circ - ^3P$	1 – 0		538
	40	1228.763	165.27919 – 246.66201	$2s2p^5 - 2s^22p^3(^4S^\circ)4p$	$^3P^\circ - ^3P$	0 – 1		538
	10	1321.515	207.70379 – 283.37451	$2s^22p^3(^4S^\circ)3p - 2s^22p^3(^2P^\circ)3d$	$^3P - ^3D^\circ$	2 – 3		538
	200	1327.058	164.79788 – 240.15271	$2s2p^5 - 2s^22p^3(^2D^\circ)3p$	$^3P^\circ - ^3P$	2 – 1		538
	300	1328.108	164.79788 – 240.09255	$2s2p^5 - 2s^22p^3(^2D^\circ)3p$	$^3P^\circ - ^3P$	2 – 2		538
	100	1332.042	165.10666 – 240.17922	$2s2p^5 - 2s^22p^3(^2D^\circ)3p$	$^3P^\circ - ^3P$	1 – 0		538
	100	1332.512	165.10666 – 240.15271	$2s2p^5 - 2s^22p^3(^2D^\circ)3p$	$^3P^\circ - ^3P$	1 – 1		538
	200	1333.588	165.10666 – 240.09255	$2s2p^5 - 2s^22p^3(^2D^\circ)3p$	$^3P^\circ - ^3P$	1 – 2		538

F II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	300	1343.603	182.86440 – 257.29084	$2s^22p^3(^4S^o)3s - 2s^22p^3(^2P^o)3p$	$^3S^o - ^3P$	1 – 2		538
	200	1344.037	182.86440 – 257.26730	$2s^22p^3(^4S^o)3s - 2s^22p^3(^2P^o)3p$	$^3S^o - ^3P$	1 – 1		538
	100	1344.295	182.86440 – 257.25284	$2s^22p^3(^4S^o)3s - 2s^22p^3(^2P^o)3p$	$^3S^o - ^3P$	1 – 0		538
	100	1375.319	164.79788 – 237.50823	$2s2p^5 - 2s^22p^3(^2D^o)3p$	$^3P^o - ^3F$	2 – 3		538
	300	1400.611	164.79788 – 236.19514	$2s2p^5 - 2s^22p^3(^2D^o)3p$	$^3P^o - ^3D$	2 – 3		538
	200	1407.135	165.10666 – 236.17261	$2s2p^5 - 2s^22p^3(^2D^o)3p$	$^3P^o - ^3D$	1 – 2		538
	100	1410.618	165.27919 – 236.16993	$2s2p^5 - 2s^22p^3(^2D^o)3p$	$^3P^o - ^3D$	0 – 1		538
	10	1419.485	182.86440 – 253.31248	$2s^22p^3(^4S^o)3s - 2s^22p^3(^2P^o)3p$	$^3S^o - ^3S$	1 – 1		538
	1	1424.737	176.49393 – 246.68210	$2s^22p^3(^4S^o)3s - 2s^22p^3(^4S^o)4p$	$^5S^o - ^3P$	2 – 2		538
	1	1462.842	227.22842 – 295.58861	$2s^22p^3(^2P^o)3s - 2s^22p^3(^2P^o)4p$	$^1P^o - ^1P$	1 – 1		538
	450	1493.091	176.49393 – 243.46927	$2s^22p^3(^4S^o)3s - 2s^22p^3(^4S^o)4p$	$^5S^o - ^5P$	2 – 3		538
	300	1493.235	176.49393 – 243.46278	$2s^22p^3(^4S^o)3s - 2s^22p^3(^4S^o)4p$	$^5S^o - ^5P$	2 – 2		538
	200	1493.311	176.49393 – 243.45890	$2s^22p^3(^4S^o)3s - 2s^22p^3(^4S^o)4p$	$^5S^o - ^5P$	2 – 1		538
	100	1514.789	211.86613 – 277.88165	$2s^22p^3(^2D^o)3s - 2s^22p^3(^2D^o)4p$	$^3D^o - ^3F$	3 – 4		538
	40	1515.034	211.88719 – 277.89261	$2s^22p^3(^2D^o)3s - 2s^22p^3(^2D^o)4p$	$^3D^o - ^3F$	2 – 3		538
	10	1521.590	229.55011 – 295.27085	$2s^22p^3(^2P^o)3s - 2s^22p^3(^2P^o)4p$	$^3P^o - ^3D$	2 – 3		538
	100	1523.197	211.86613 – 277.51780	$2s^22p^3(^2D^o)3s - 2s^22p^3(^2D^o)4p$	$^3D^o - ^3D$	3 – 3		538
	40	1523.583	211.88719 – 277.52178	$2s^22p^3(^2D^o)3s - 2s^22p^3(^2D^o)4p$	$^3D^o - ^3D$	2 – 2		538
	10	1523.925	211.90026 – 277.52038	$2s^22p^3(^2D^o)3s - 2s^22p^3(^2D^o)4p$	$^3D^o - ^3D$	1 – 1		538
	100	1566.961	182.86440 – 246.68210	$2s^22p^3(^4S^o)3s - 2s^22p^3(^4S^o)4p$	$^3S^o - ^3P$	1 – 2		538
	40	1567.435	182.86440 – 246.66201	$2s^22p^3(^4S^o)3s - 2s^22p^3(^4S^o)4p$	$^3S^o - ^3P$	1 – 1		538
	40	1585.056	215.06959 – 278.15921	$2s^22p^3(^2D^o)3s - 2s^22p^3(^2D^o)4p$	$^1D^o - ^1F$	2 – 3		538
	10	1609.798	215.06959 – 277.18886	$2s^22p^3(^2D^o)3s - 2s^22p^3(^2D^o)4p$	$^1D^o - ^1P$	2 – 1		538
	1	1650.200	182.86440 – 243.46278	$2s^22p^3(^4S^o)3s - 2s^22p^3(^4S^o)4p$	$^3S^o - ^5P$	1 – 2		538
	10	1700.185	207.69907 – 266.51643	$2s^22p^3(^4S^o)3p - 2s^22p^3(^2D^o)3d$	$^3P - ^3P^o$	1 – 0		538
	10	1700.691	207.69907 – 266.49874	$2s^22p^3(^4S^o)3p - 2s^22p^3(^2D^o)3d$	$^3P - ^3P^o$	1 – 1		538
	10	1700.767	207.70204 – 266.49874	$2s^22p^3(^4S^o)3p - 2s^22p^3(^2D^o)3d$	$^3P - ^3P^o$	0 – 1		538
	40	1700.831	207.70379 – 266.49874	$2s^22p^3(^4S^o)3p - 2s^22p^3(^2D^o)3d$	$^3P - ^3P^o$	2 – 1		538
	40	1701.993	207.69907 – 266.45388	$2s^22p^3(^4S^o)3p - 2s^22p^3(^2D^o)3d$	$^3P - ^3P^o$	1 – 2		538
	200	1702.130	207.70379 – 266.45388	$2s^22p^3(^4S^o)3p - 2s^22p^3(^2D^o)3d$	$^3P - ^3P^o$	2 – 2		538
	10	1704.696	207.69907 – 266.36060	$2s^22p^3(^4S^o)3p - 2s^22p^3(^2D^o)3d$	$^3P - ^3S^o$	1 – 1		538
	40	1704.834	207.70379 – 266.36060	$2s^22p^3(^4S^o)3p - 2s^22p^3(^2D^o)3d$	$^3P - ^3S^o$	2 – 1		538
	1	1729.669	207.70204 – 265.51657	$2s^22p^3(^4S^o)3p - 2s^22p^3(^2D^o)3d$	$^3P - ^3D^o$	0 – 1		538
	10	1730.119	207.69907 – 265.49841	$2s^22p^3(^4S^o)3p - 2s^22p^3(^2D^o)3d$	$^3P - ^3D^o$	1 – 2		538
	40	1731.047	207.70379 – 265.47231	$2s^22p^3(^4S^o)3p - 2s^22p^3(^2D^o)3d$	$^3P - ^3D^o$	2 – 3		538
	10	1734.494	207.70379 – 265.35756	$2s^22p^3(^4S^o)3p - 2s^22p^3(^4S^o)6s$	$^3P - ^3S^o$	2 – 1		538
	200	1744.745	182.86440 – 240.17922	$2s^22p^3(^4S^o)3s - 2s^22p^3(^2D^o)3p$	$^3S^o - ^3P$	1 – 0		538
	300	1745.550	182.86440 – 240.15271	$2s^22p^3(^4S^o)3s - 2s^22p^3(^2D^o)3p$	$^3S^o - ^3P$	1 – 1		538
	450	1747.389	182.86440 – 240.09255	$2s^22p^3(^4S^o)3s - 2s^22p^3(^2D^o)3p$	$^3S^o - ^3P$	1 – 2		538
	10	1885.047	202.44935 – 255.49860	$2s^22p^3(^4S^o)3p - 2s^22p^3(^4S^o)5s$	$^5P - ^5S^o$	1 – 2		538
	40	1885.442	202.46069 – 255.49860	$2s^22p^3(^4S^o)3p - 2s^22p^3(^4S^o)5s$	$^5P - ^5S^o$	2 – 2		538
	100	1886.147	202.48026 – 255.49860	$2s^22p^3(^4S^o)3p - 2s^22p^3(^4S^o)5s$	$^5P - ^5S^o$	3 – 2		538
	10	1929.791	238.32338 – 290.14246	$2s^22p^3(^2D^o)3p - 2s^22p^3(^2D^o)5s$	$^1F - ^1D^o$	3 – 2		538
	1	1959.758	202.44935 – 253.47596	$2s^22p^3(^4S^o)3p - 2s^22p^3(^4S^o)4d$	$^5P - ^5D^o$	1 – 2		538
	10	1960.255	202.46069 – 253.47528	$2s^22p^3(^4S^o)3p - 2s^22p^3(^4S^o)4d$	$^5P - ^5D^o$	2 – 3		538
	40	1960.984	202.48026 – 253.47466	$2s^22p^3(^4S^o)3p - 2s^22p^3(^4S^o)4d$	$^5P - ^5D^o$	3 – 4		538

FLUORINE III (F^{2+}), Z = 9
Ground State $1s^22s^22p^3(^4S^\circ_{3/2})$ (7 electrons)
Ionization Potential 505 777 cm^{-1}; 62.709 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	3	214.804	0.0 – 465.541	$2s^22p^3 - 2s^22p^2(^3P)5d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		537
	3	214.862	0.0 – 465.41414	$2s^22p^3 - 2s^22p^2(^3P)5d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		537
	1	219.277	34.0874 – 490.14	$2s^22p^3 - 2s^22p^2(^1D)5d$	${}^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		537
	0	219.588	34.0874 – 489.49453	$2s^22p^3 - 2s^22p^2(^1D)5d$	${}^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		537
	6	226.055	0.0 – 442.37028	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		537
	10	226.094	0.0 – 442.29431	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		537
	20	226.169	0.0 – 442.14719	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		537
	35	230.117	0.0 – 434.54872	$2s^22p^3 - 2s2p^3(^5S^\circ)3p$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		537
	1	230.553	34.0874 – 467.82716	$2s^22p^3 - 2s^22p^2(^1D)4d$	${}^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		537
	1	230.603	34.1232 – 467.76911	$2s^22p^3 - 2s^22p^2(^1D)4d$	${}^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		537
	6	231.011	34.0874 – 466.98286	$2s^22p^3 - 2s^22p^2(^1D)4d$	${}^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		537
	1	231.381	34.0874 – 466.27550	$2s^22p^3 - 2s^22p^2(^3P)5d$	${}^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		537
	3	240.231	51.5614 – 467.82716	$2s^22p^3 - 2s^22p^2(^1D)4d$	${}^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		537
	1	240.264	51.5606 – 467.76911	$2s^22p^3 - 2s^22p^2(^1D)4d$	${}^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		537
	3	240.546	0.0 – 415.72086	$2s^22p^3 - 2s^22p^2(^3P)4s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		537
	6	240.720	51.5614 – 466.98286	$2s^22p^3 - 2s^22p^2(^1D)4d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		537
	1	240.735	0.0 – 415.39451	$2s^22p^3 - 2s^22p^2(^3P)4s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		537
	1	240.857	0.0 – 415.18412	$2s^22p^3 - 2s^22p^2(^3P)4s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		537
	1	241.135	51.5614 – 466.27550	$2s^22p^3 - 2s^22p^2(^3P)5d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		537
	3	243.357	34.0874 – 445.00613	$2s^22p^3 - 2s^22p^2(^3P)4d$	${}^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		537
	1	243.407	34.1232 – 444.95711	$2s^22p^3 - 2s^22p^2(^3P)4d$	${}^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		537
	6	244.701	34.0874 – 442.74885	$2s^22p^3 - 2s^22p^2(^1S)3d$	${}^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		537
	20	244.769	34.0874 – 442.63627	$2s^22p^3 - 2s^22p^2(^3P)4d$	${}^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		537
	10	245.005	34.1232 – 442.27893	$2s^22p^3 - 2s^22p^2(^3P)4d$	${}^2D^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$		537
	3	245.866	34.0874 – 440.82855	$2s^22p^3 - 2s^22p^2(^1D)4s$	${}^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		537
	20	254.165	51.5614 – 445.00613	$2s^22p^3 - 2s^22p^2(^3P)4d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		537
	10	254.197	51.5606 – 444.95711	$2s^22p^3 - 2s^22p^2(^3P)4d$	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		537
	3	255.632	51.5614 – 442.74885	$2s^22p^3 - 2s^22p^2(^1S)3d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		537
	1	255.667	51.5606 – 442.69458	$2s^22p^3 - 2s^22p^2(^1S)3d$	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		537
	35	255.723	0.0 – 391.04754	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		537
	60	255.770	0.0 – 390.97635	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		537
	100	255.863	0.0 – 390.83460	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		537
	35	256.358	0.0 – 390.07780	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - {}^4D$	$\frac{3}{2}-\frac{5}{2}$		537
	3	256.526	51.5614 – 441.38588	$2s^22p^3 - 2s^22p^2(^3P)4d$	${}^2P^\circ - {}^4D$	$\frac{3}{2}-\frac{3}{2}$		537
	3	256.675	51.5614 – 441.15860	$2s^22p^3 - 2s^22p^2(^3P)4d$	${}^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		537
	1	256.723	0.0 – 389.52555	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		537
	6	256.894	51.5614 – 440.82855	$2s^22p^3 - 2s^22p^2(^1D)4s$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		537
	20	260.307	34.0874 – 418.24856	$2s^22p^3 - 2s^22p^2(^1D)3d$	${}^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		537
	10	260.372	34.1232 – 418.18848	$2s^22p^3 - 2s^22p^2(^1D)3d$	${}^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		537
	10	260.496	34.0874 – 417.97080	$2s^22p^3 - 2s^22p^2(^3P)4s$	${}^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		537
	3	260.782	34.1232 – 417.58535	$2s^22p^3 - 2s^22p^2(^3P)4s$	${}^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		537
	100	261.713	34.0874 – 416.18542	$2s^22p^3 - 2s^22p^2(^1D)3d$	${}^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		537
	60	261.749	34.1232 – 416.16830	$2s^22p^3 - 2s^22p^2(^1D)3d$	${}^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		537
	150	263.808	34.0874 – 413.14386	$2s^22p^3 - 2s^22p^2(^1D)3d$	${}^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		537
	20	270.677	51.5614 – 421.00536	$2s^22p^3 - 2s^22p^2(^1D)3d$	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		537
	20	272.712	51.5614 – 418.24856	$2s^22p^3 - 2s^22p^2(^1D)3d$	${}^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		537
	10	272.756	51.5606 – 418.18848	$2s^22p^3 - 2s^22p^2(^1D)3d$	${}^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		537
	10	272.919	51.5614 – 417.97080	$2s^22p^3 - 2s^22p^2(^3P)4s$	${}^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		537
	6	273.206	51.5606 – 417.58535	$2s^22p^3 - 2s^22p^2(^3P)4s$	${}^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		537
	60	274.260	51.5614 – 416.18542	$2s^22p^3 - 2s^22p^2(^1D)3d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		537
	35	276.780	34.0874 – 395.38566	$2s^22p^3 - 2s^22p^2(^3P)3d$	${}^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		537
	20	276.897	34.1232 – 395.26813	$2s^22p^3 - 2s^22p^2(^3P)3d$	${}^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		537
	100	279.689	34.0874 – 391.62691	$2s^22p^3 - 2s^22p^2(^3P)3d$	${}^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		537
	60	280.007	34.1232 – 391.25742	$2s^22p^3 - 2s^22p^2(^3P)3d$	${}^2D^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$		537

F III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	280.802	34.0874 – 390.21043	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^4D$	$\frac{5}{2}-\frac{7}{2}$		537
	3	280.905	34.0874 – 390.07780	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^4D$	$\frac{5}{2}-\frac{5}{2}$		537
	10	281.204	34.1232 – 389.73763	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		537
	20	281.343	34.0874 – 389.52555	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		537
	60	290.846	51.5614 – 395.38566	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		537
	35	290.945	51.5606 – 395.26813	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		537
	6	295.369	51.5606 – 390.12077	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^4D$	$\frac{1}{2}-\frac{1}{2}$		537
	3	295.404	51.5606 – 390.08030	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^4D$	$\frac{1}{2}-\frac{3}{2}$		537
	35	295.703	51.5614 – 389.73763	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		537
	60	295.889	51.5614 – 389.52555	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		537
	20	311.413	51.5614 – 372.67847	$2s^22p^3 - 2s^22p^2(^1S)3s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		537
	150	315.219	0.0 – 317.23997	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		537
	100	315.536	0.0 – 316.92099	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		537
	60	315.747	0.0 – 316.70981	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		537
	20	316.484	151.8997 – 467.87108	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	10	316.822	152.2374 – 467.87232	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	6	316.995	152.4109 – 467.87371	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		537
	3	317.791	151.8997 – 466.5722	$2s2p^4 - 2s2p^3(^3D^\circ)3s$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	1	318.126	152.2374 – 466.5779	$2s2p^4 - 2s2p^3(^3D^\circ)3s$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	20	322.647	34.0874 – 344.02417	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		537
	10	322.675	34.1232 – 344.02758	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		537
	10	341.921	51.5614 – 344.02417	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		537
	35	343.893	34.0874 – 324.87672	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		537
	3	343.934	34.1232 – 324.87672	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		537
	20	344.385	34.1232 – 324.49255	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		537
	60	365.876	51.5614 – 324.87672	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		537
	35	366.391	51.5614 – 324.49255	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		537
	10	378.580	210.2417 – 474.36894	$2s2p^4 - 2s2p^3(^3D^\circ)3s$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		537
	6	395.443	151.8997 – 404.78082	$2s2p^4 - 2s2p^3(^5S^\circ)3s$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		537
	3	395.972	152.2374 – 404.78082	$2s2p^4 - 2s2p^3(^5S^\circ)3s$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	1	396.244	152.4109 – 404.78082	$2s2p^4 - 2s2p^3(^5S^\circ)3s$	$^4P - ^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		537
	250	429.512	34.1232 – 266.94470	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		537
	300	430.152	34.0874 – 266.56185	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		537
	150	430.222	34.1232 – 266.56185	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		537
	200	464.288	51.5606 – 266.94470	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		537
	250	465.113	51.5614 – 266.56185	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		537
	10	486.430	151.8997 – 357.47935	$2s2p^4 - 2s^22p^2(^3P)3p$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		537
	6	487.223	152.2374 – 357.47935	$2s2p^4 - 2s^22p^2(^3P)3p$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	3	487.643	152.4109 – 357.47935	$2s2p^4 - 2s^22p^2(^3P)3p$	$^4P - ^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		537
	10	500.953	151.8997 – 351.51942	$2s2p^4 - 2s^22p^2(^3P)3p$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		537
	6	501.425	151.8997 – 351.33080	$2s2p^4 - 2s^22p^2(^3P)3p$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		537
	6	501.804	152.2374 – 351.51942	$2s2p^4 - 2s^22p^2(^3P)3p$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	3	502.280	152.2374 – 351.33080	$2s2p^4 - 2s^22p^2(^3P)3p$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	6	502.511	152.2374 – 351.23635	$2s2p^4 - 2s^22p^2(^3P)3p$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		537
	6	502.713	152.4109 – 351.33080	$2s2p^4 - 2s^22p^2(^3P)3p$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		537
	3	506.674	151.8997 – 349.26620	$2s2p^4 - 2s^22p^2(^3P)3p$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	400	508.386	51.5614 – 248.2614	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		537
	6	508.506	210.2417 – 406.90895	$2s2p^4 - 2s^22p^2(^1S)3p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		537
	10	522.285	210.2563 – 401.72433	$2s2p^4 - 2p^5$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		537
	60	523.662	210.2417 – 401.20578	$2s2p^4 - 2p^5$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		537
	150	567.636	34.0874 – 210.2563	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{3}{2}$		537
	400	567.686	34.0874 – 210.2417	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		537
	300	567.752	34.1232 – 210.2563	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		537
	150	567.801	34.1232 – 210.2417	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		537

F III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	573.886	210.2417 – 384.49306	$2s2p^4 - 2s^22p^2(^1D)3p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		537
	1	573.935	210.2563 – 384.49306	$2s2p^4 - 2s^22p^2(^1D)3p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	10	574.384	210.2563 – 384.35854	$2s2p^4 - 2s^22p^2(^1D)3p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		537
	3	588.060	210.2563 – 380.30713	$2s2p^4 - 2s^22p^2(^1D)3p$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	6	588.208	210.2417 – 380.25052	$2s2p^4 - 2s^22p^2(^1D)3p$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		537
	10	600.104	210.2417 – 376.87907	$2s2p^4 - 2s^22p^2(^1D)3p$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	6	600.390	210.2563 – 376.81402	$2s2p^4 - 2s^22p^2(^1D)3p$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	150	630.137	51.5606 – 210.2563	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		537
	200	630.198	51.5614 – 210.2417	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		537
	2	630.327	248.2614 – 406.90895	$2s2p^4 - 2s^22p^2(^1S)3p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		537
	1	630.346	248.2614 – 406.90438	$2s2p^4 - 2s^22p^2(^1S)3p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		537
	3	651.622	248.2614 – 401.72433	$2s2p^4 - 2p^5$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		537
	6	653.833	248.2614 – 401.20578	$2s2p^4 - 2p^5$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		537
	400	656.121	0.0 – 152.4109	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		537
	500	656.869	0.0 – 152.2374	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		537
	600	658.329	0.0 – 151.8997	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		537
	10	665.809	210.2417 – 360.43508	$2s2p^4 - 2s^22p^2(^3P)3p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		537
	6	666.258	210.2563 – 360.34828	$2s2p^4 - 2s^22p^2(^3P)3p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		537
	6	668.195	316.92099 – 466.5779	$2s^22p^2(^3P)3s - 2s2p^3(^3D^\circ)3s$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	10	669.648	317.23997 – 466.5722	$2s^22p^2(^3P)3s - 2s2p^3(^3D^\circ)3s$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	1	712.524	266.56185 – 406.90895	$2s2p^4 - 2s^22p^2(^1S)3p$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	6	734.047	248.2614 – 384.49306	$2s2p^4 - 2s^22p^2(^1D)3p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		537
	3	734.767	248.2614 – 384.35854	$2s2p^4 - 2s^22p^2(^1D)3p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		537
	20	739.851	266.56185 – 401.72433	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		537
	35	741.955	266.94470 – 401.72433	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		537
	60	742.699	266.56185 – 401.20578	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	20	744.818	266.94470 – 401.20578	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		537
	10	847.962	266.56185 – 384.49306	$2s2p^4 - 2s^22p^2(^1D)3p$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	3	848.915	266.56185 – 384.35854	$2s2p^4 - 2s^22p^2(^1D)3p$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		537
	3	850.707	266.94470 – 384.49306	$2s2p^4 - 2s^22p^2(^1D)3p$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		537
	6	851.700	266.94470 – 384.35854	$2s2p^4 - 2s^22p^2(^1D)3p$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		537
	6	879.59	266.56185 – 380.25052	$2s2p^4 - 2s^22p^2(^1D)3p$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	3	882.136	266.94470 – 380.30713	$2s2p^4 - 2s^22p^2(^1D)3p$	$^2P - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		537
	3	902.239	316.70981 – 427.54531	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)4p$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		537
	3	902.425	316.92099 – 427.73185	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)4p$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	3	903.96	316.92099 – 427.54531	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)4p$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	3	904.657	316.92099 – 427.45937	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)4p$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		537
	6	905.048	317.23997 – 427.73185	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)4p$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		537
	3	906.577	317.23997 – 427.54531	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)4p$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		537
	6	910.334	316.70981 – 426.55891	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)4p$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		537
	6	910.645	316.92099 – 426.73304	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)4p$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	20	911.164	317.23997 – 426.98957	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)4p$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	6	912.090	316.92099 – 426.55891	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)4p$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	3	913.303	317.23997 – 426.73304	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)4p$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		537
	3	914.836	357.47935 – 466.78957	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)5g$	$^4S^\circ - 2[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	6	924.716	344.43696 – 452.57790	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)5s$	$^2S^\circ - ^4P$	$\frac{1}{2}-\frac{1}{2}$		537
	1	938.538	360.43508 – 466.98286	$2s^22p^2(^3P)3p - 2s^22p^2(^1D)4d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		537
	6	962.580	349.26620 – 453.15239	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)5s$	$^4D^\circ - ^4P$	$\frac{7}{2}-\frac{5}{2}$		537
	3	963.322	349.00725 – 452.81660	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)5s$	$^4D^\circ - ^4P$	$\frac{5}{2}-\frac{3}{2}$		537
	1	983.927	351.51942 – 453.15239	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)5s$	$^4P^\circ - ^4P$	$\frac{5}{2}-\frac{5}{2}$		537
	3	991.102	324.49255 – 425.39001	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)4p$	$^2P - ^2S^\circ$	$\frac{1}{2}-\frac{1}{2}$		537
	6	993.281	51.5614 – 152.2374	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		537
	6	994.899	324.87672 – 425.39001	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)4p$	$^2P - ^2S^\circ$	$\frac{3}{2}-\frac{1}{2}$		537
	3	996.616	51.5614 – 151.8997	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		537

F III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	3	1023.270	356.37182 – 454.09766	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)5s$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		537
	1	1033.898	344.43696 – 441.15860	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4d$	$^2S^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		537
	3	1045.236	357.47935 – 453.15239	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)5s$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		537
	3	1048.898	357.47935 – 452.81660	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)5s$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		537
	60	1065.268	266.56185 – 360.43508	$2s2p^4 - 2s^22p^2(^3P)3p$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	6	1066.251	266.56185 – 360.34828	$2s2p^4 - 2s^22p^2(^3P)3p$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		537
	6	1069.636	266.94470 – 360.43508	$2s2p^4 - 2s^22p^2(^3P)3p$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		537
	20	1070.623	266.94470 – 360.34828	$2s2p^4 - 2s^22p^2(^3P)3p$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		537
	3	1085.297	349.26620 – 441.40646	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4d$	$^4D^\circ - ^4D$	$\frac{7}{2}-\frac{7}{2}$		537
	3	1094.277	348.81760 – 440.20248	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4d$	$^4D^\circ - ^4F$	$\frac{3}{2}-\frac{5}{2}$		537
	6	1094.660	349.00725 – 440.35926	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4d$	$^4D^\circ - ^4F$	$\frac{5}{2}-\frac{7}{2}$		537
	10	1095.095	349.26620 – 440.58212	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4d$	$^4D^\circ - ^4F$	$\frac{7}{2}-\frac{9}{2}$		537
	3	1109.262	351.23635 – 441.38588	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4d$	$^4P^\circ - ^4D$	$\frac{1}{2}-\frac{3}{2}$		537
	3	1111.782	351.33080 – 441.27672	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4d$	$^4P^\circ - ^4D$	$\frac{3}{2}-\frac{5}{2}$		537
	6	1112.507	351.51942 – 441.40646	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4d$	$^4P^\circ - ^4D$	$\frac{5}{2}-\frac{7}{2}$		537
	3	1113.244	351.33080 – 441.15860	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4d$	$^4P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		537
	20	1113.463	266.56185 – 356.37182	$2s2p^4 - 2s^22p^2(^3P)3p$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	10	1118.320	266.56185 – 355.98190	$2s2p^4 - 2s^22p^2(^3P)3p$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	3	1118.854	376.81402 – 466.19097	$2s^22p^2(^1D)3p - 2s^22p^2(^1D)4d$	$^2F^\circ - ^2G$	$\frac{5}{2}-\frac{7}{2}$		537
	6	1119.673	376.87907 – 466.19047	$2s^22p^2(^1D)3p - 2s^22p^2(^1D)4d$	$^2F^\circ - ^2G$	$\frac{7}{2}-\frac{9}{2}$		537
	20	1123.126	266.94470 – 355.98190	$2s2p^4 - 2s^22p^2(^3P)3p$	$^2P - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		537
	6	1138.182	316.92099 – 404.78082	$2s^22p^2(^3P)3s - 2s2p^3(^5S^\circ)3s$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	3	1141.857	380.25052 – 467.82716	$2s^22p^2(^1D)3p - 2s^22p^2(^1D)4d$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		537
	10	1142.332	317.23997 – 404.78082	$2s^22p^2(^3P)3s - 2s2p^3(^5S^\circ)3s$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		537
	1	1143.354	380.30713 – 467.76911	$2s^22p^2(^1D)3p - 2s^22p^2(^1D)4d$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		537
	6	1158.073	344.02417 – 430.37475	$2s^22p^2(^1D)3s - 2s^22p^2(^3P)4p$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		537
	10	1158.781	355.98190 – 442.27893	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4d$	$^2D^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		537
	20	1159.227	356.37182 – 442.63627	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		537
	10	1165.961	348.81760 – 434.58416	$2s^22p^2(^3P)3p - 2s2p^3(^5S^\circ)3p$	$^4D^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		537
	3	1177.988	357.47935 – 442.37028	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4d$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		537
	3	1178.642	389.52555 – 474.36894	$2s^22p^2(^3P)3d - 2s2p^3(^3D^\circ)3s$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	6	1179.035	357.47935 – 442.29431	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4d$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		537
	10	1181.061	357.47935 – 442.14719	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4d$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		537
	3	1181.909	360.34828 – 444.95711	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		537
	3	1182.427	360.43508 – 445.00613	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		537
	3	1184.039	356.37182 – 440.82855	$2s^22p^2(^3P)3p - 2s^22p^2(^1D)4s$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		537
	3	1201.358	351.33080 – 434.56980	$2s^22p^2(^3P)3p - 2s2p^3(^5S^\circ)3p$	$^4P^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		537
	6	1204.380	351.51942 – 434.54872	$2s^22p^2(^3P)3p - 2s2p^3(^5S^\circ)3p$	$^4P^\circ - ^4P$	$\frac{5}{2}-\frac{5}{2}$		537
	3	1210.349	384.35854 – 466.97815	$2s^22p^2(^1D)3p - 2s^22p^2(^1D)4d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		537
	6	1211.585	344.02417 – 426.55891	$2s^22p^2(^1D)3s - 2s^22p^2(^3P)4p$	$^2D - ^4D^\circ$	$\frac{5}{2}-\frac{3}{2}$		537
	6	1212.255	384.49306 – 466.98286	$2s^22p^2(^1D)3p - 2s^22p^2(^1D)4d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		537
	1	1212.321	384.49306 – 466.97815	$2s^22p^2(^1D)3p - 2s^22p^2(^1D)4d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		537
	20	1213.353	324.49255 – 406.90895	$2s^22p^2(^3P)3s - 2s^22p^2(^1S)3p$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		537
	3	1214.368	360.34828 – 442.69458	$2s^22p^2(^3P)3p - 2s^22p^2(^1S)3d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		537
	0	1214.864	360.43508 – 442.74885	$2s^22p^2(^3P)3p - 2s^22p^2(^1S)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		537
	150	1219.032	324.87672 – 406.90895	$2s^22p^2(^3P)3s - 2s^22p^2(^1S)3p$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	10	1235.316	360.43508 – 441.38588	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4d$	$^2P^\circ - ^4D$	$\frac{3}{2}-\frac{3}{2}$		537
	6	1237.308	360.34828 – 441.16740	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		537
	3	1242.585	360.34828 – 440.82513	$2s^22p^2(^3P)3p - 2s^22p^2(^1D)4s$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		537
	6	1243.888	360.43508 – 440.82855	$2s^22p^2(^3P)3p - 2s^22p^2(^1D)4s$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		537
	6	1261.859	387.52347 – 466.77172	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4F - 2[3]^\circ$	$\frac{7}{2}-\frac{7}{2}$		537
	6	1263.987	387.52347 – 466.63799	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4F - 2[5]^\circ$	$\frac{7}{2}-\frac{9}{2}$		537
	3	1264.870	387.72684 – 466.78708	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4F - 2[4]^\circ$	$\frac{9}{2}-\frac{9}{2}$		537
	150	1266.867	387.36792 – 466.30280	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4F - 1[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537

F III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	1267.711	387.72684 – 466.60857	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4F - 2[5]^\circ$	$\frac{9}{2}-\frac{11}{2}$		537
	3	1268.27	387.72684 – 466.5722	$2s^22p^2(^3P)3d - 2s2p^3(^3D^\circ)3s$	$^4F - ^4D^\circ$	$\frac{9}{2}-\frac{7}{2}$		537
	35	1268.573	387.36792 – 466.19670	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4F - 1[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	20	1269.368	387.52347 – 466.30280	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4F - 1[4]^\circ$	$\frac{7}{2}-\frac{7}{2}$		537
	60	1269.559	387.52347 – 466.29090	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4F - 1[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		537
	10	1271.075	387.36792 – 466.04122	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4F - 0[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	3	1272.463	355.98190 – 434.56980	$2s^22p^2(^3P)3p - 2s2p^3(^5S^\circ)3p$	$^2D^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		537
	6	1272.795	355.98190 – 434.54872	$2s^22p^2(^3P)3p - 2s2p^3(^5S^\circ)3p$	$^2D^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		537
	3	1276.352	389.52555 – 467.87371	$2s^22p^2(^3P)3d - 2s2p^3(^5S^\circ)3d$	$^2P - ^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	60	1278.810	356.37182 – 434.56980	$2s^22p^2(^3P)3p - 2s2p^3(^5S^\circ)3p$	$^2D^\circ - ^4P$	$\frac{5}{2}-\frac{3}{2}$		537
	10	1282.240	413.14386 – 491.13238	$2s^22p^2(^1D)3d - 2s^22p^2(^1D)5f$	$^2F - 2[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		537
	6	1283.098	413.19500 – 491.13137	$2s^22p^2(^1D)3d - 2s^22p^2(^1D)5f$	$^2F - 2[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	3	1284.105	266.56185 – 344.43696	$2s2p^4 - 2s^22p^2(^3P)3p$	$^2P - ^2S^\circ$	$\frac{3}{2}-\frac{1}{2}$		537
	1	1291.565	391.25742 – 468.68291	$2s^22p^2(^3P)3d - 2s^22p^2(^1D)4f$	$^2F - 2[3]^\circ$	$\frac{5}{2}-\frac{5}{2}$		537
	1	1294.279	389.52555 – 466.78860	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^2P - 2[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	1	1294.83	324.49255 – 401.72433	$2s^22p^2(^3P)3s - 2p^5$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		537
	20	1296.940	357.47935 – 434.58416	$2s^22p^2(^3P)3p - 2s2p^3(^5S^\circ)3p$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		537
	60	1297.188	357.47935 – 434.56980	$2s^22p^2(^3P)3p - 2s2p^3(^5S^\circ)3p$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		537
	100	1297.537	357.47935 – 434.54872	$2s^22p^2(^3P)3p - 2s2p^3(^5S^\circ)3p$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		537
	1	1297.757	391.62691 – 468.68291	$2s^22p^2(^3P)3d - 2s^22p^2(^1D)4f$	$^2F - 2[3]^\circ$	$\frac{7}{2}-\frac{5}{2}$		537
	6	1298.072	390.83460 – 467.87108	$2s^22p^2(^3P)3d - 2s2p^3(^5S^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	3	1299.055	391.62691 – 468.60594	$2s^22p^2(^3P)3d - 2s^22p^2(^1D)4f$	$^2F - 2[4]^\circ$	$\frac{7}{2}-\frac{7}{2}$		537
	3	1300.466	390.97635 – 467.87232	$2s^22p^2(^3P)3d - 2s2p^3(^5S^\circ)3d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	6	1302.599	389.52555 – 466.29515	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^2P - 1[2]^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	6	1303.624	390.08030 – 466.78860	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4D - 2[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	35	1303.871	390.07780 – 466.77172	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4D - 2[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	20	1304.368	389.52555 – 466.19103	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^2P - 1[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	1	1304.705	390.07780 – 466.72242	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4D - 2[2]^\circ$	$\frac{5}{2}-\frac{5}{2}$		537
	0	1305.008	390.08030 – 466.70825	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4D - 2[2]^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	3	1305.697	390.12077 – 466.70825	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4D - 2[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		537
	35	1305.870	390.21043 – 466.78708	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4D - 2[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		537
	60	1306.04	414.89489 – 491.46165	$2s^22p^2(^1D)3d - 2s^22p^2(^1D)5f$	$^2G - 2[5]^\circ$	$\frac{9}{2}-\frac{11}{2}$		537
	20	1306.122	414.89772 – 491.46025	$2s^22p^2(^1D)3d - 2s^22p^2(^1D)5f$	$^2G - 2[5]^\circ$	$\frac{7}{2}-\frac{9}{2}$		537
	6	1306.991	390.21043 – 466.72242	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4D - 2[2]^\circ$	$\frac{7}{2}-\frac{5}{2}$		537
	3	1310.117	324.87672 – 401.20578	$2s^22p^2(^3P)3s - 2p^5$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	1	1311.963	390.08030 – 466.30196	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4D - 1[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	1	1312.763	390.12077 – 466.29515	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4D - 1[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		537
	35	1316.401	390.07780 – 466.04122	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4D - 0[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	35	1316.531	390.08030 – 466.03817	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4D - 0[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	3	1317.744	390.83460 – 466.72242	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4P - 2[2]^\circ$	$\frac{5}{2}-\frac{5}{2}$		537
	6	1317.975	390.83460 – 466.70825	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4P - 2[2]^\circ$	$\frac{5}{2}-\frac{3}{2}$		537
	3	1320.203	390.97635 – 466.72242	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4P - 2[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	1	1320.451	390.97635 – 466.70825	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4P - 2[2]^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	3	1323.311	390.97635 – 466.54470	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4P - 2[1]^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	6	1325.214	390.83460 – 466.29515	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4P - 1[2]^\circ$	$\frac{5}{2}-\frac{3}{2}$		537
	20	1326.926	390.83460 – 466.19670	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4P - 1[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	1	1329.704	390.83460 – 466.03817	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^4P - 0[3]^\circ$	$\frac{5}{2}-\frac{5}{2}$		537
	6	1329.892	391.62691 – 466.82172	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^2F - 2[4]^\circ$	$\frac{7}{2}-\frac{7}{2}$		537
	6	1330.490	391.62691 – 466.78708	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^2F - 2[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		537
	60	1333.139	391.62691 – 466.63799	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^2F - 2[5]^\circ$	$\frac{7}{2}-\frac{9}{2}$		537
	3	1334.292	416.18542 – 491.13137	$2s^22p^2(^1D)3d - 2s^22p^2(^1D)5f$	$^2D - 2[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	6	1337.196	391.25742 – 466.04122	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^2F - 0[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	6	1339.337	391.62691 – 466.29090	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^2F - 1[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		537
	100	1359.921	344.43696 – 417.97080	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^2S^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		537

F III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	1364.291	395.38566 – 468.68343	$2s^22p^2(^3P)3d - 2s^22p^2(^1D)4f$	$^2D - 2[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	60	1367.083	344.43696 – 417.58535	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^2S^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		537
	10	1398.190	395.26813 – 466.78860	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^2D - 2[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	6	1399.491	395.26813 – 466.72242	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^2D - 2[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	60	1399.839	395.38566 – 466.82172	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^2D - 2[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	3	1401.794	395.38566 – 466.72242	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^2D - 2[2]^\circ$	$\frac{5}{2}-\frac{5}{2}$		537
	1	1403.153	395.26813 – 466.53745	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^2D - 2[1]^\circ$	$\frac{3}{2}-\frac{1}{2}$		537
	10	1409.982	395.26813 – 466.19103	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^2D - 1[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$	P	537
	15	1410.096	395.38566 – 466.30280	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5f$	$^2D - 1[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	537
	1	1419.740	387.52347 – 457.95907	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5p$	$^4F - ^4D^\circ$	$\frac{7}{2}-\frac{7}{2}$		537
	10	1423.831	387.72684 – 457.95907	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5p$	$^4F - ^4D^\circ$	$\frac{9}{2}-\frac{7}{2}$		537
	3	1424.64	387.52347 – 457.71510	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5p$	$^4F - ^4D^\circ$	$\frac{7}{2}-\frac{5}{2}$		537
	1	1424.74	387.36792 – 457.55517	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5p$	$^4F - ^4D^\circ$	$\frac{5}{2}-\frac{3}{2}$		537
		1436.687	384.49306 – 454.09766	$2s^22p^2(^1D)3p - 2s^22p^2(^3P)5s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		537
	3	1442.192	384.35854 – 453.69610	$2s^22p^2(^1D)3p - 2s^22p^2(^3P)5s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		537
	3	1457.145	414.89489 – 483.52114	$2s^22p^2(^1D)3d - 2s^22p^2(^1D)5p$	$^2G - ^2F^\circ$	$\frac{9}{2}-\frac{7}{2}$		537
	1	1457.441	414.89772 – 483.51017	$2s^22p^2(^1D)3d - 2s^22p^2(^1D)5p$	$^2G - ^2F^\circ$	$\frac{7}{2}-\frac{5}{2}$		537
	6	1458.802	391.25742 – 459.80455	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5p$	$^2F - ^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		537
	10	1459.503	390.07780 – 458.59486	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5p$	$^4D - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		537
	1	1460.750	384.35854 – 452.81660	$2s^22p^2(^1D)3p - 2s^22p^2(^3P)5s$	$^2P^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$		537
	6	1462.313	390.21043 – 458.59486	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5p$	$^4D - ^4P^\circ$	$\frac{7}{2}-\frac{5}{2}$		537
	3	1463.808	390.07780 – 458.39261	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5p$	$^4D - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		537
	3	1473.820	389.52555 – 457.37618	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5p$	$^2P - ^2S^\circ$	$\frac{3}{2}-\frac{1}{2}$		537
	3	1475.787	390.83460 – 458.59486	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5p$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		537
	1	1476.043	390.21043 – 457.95907	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5p$	$^4D - ^4D^\circ$	$\frac{7}{2}-\frac{7}{2}$		537
	3	1478.224	316.70981 – 384.35854	$2s^22p^2(^3P)3s - 2s^22p^2(^1D)3p$	$^4P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		537
	1	1478.879	390.97635 – 458.59486	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5p$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	3	1486.913	317.23997 – 384.49306	$2s^22p^2(^3P)3s - 2s^22p^2(^1D)3p$	$^4P - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		537
	100	1494.680	348.81760 – 415.72086	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^4D^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		537
	300	1498.933	349.00725 – 415.72086	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^4D^\circ - ^4P$	$\frac{5}{2}-\frac{5}{2}$		537
	150	1499.425	348.70280 – 415.39451	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^4D^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$		537
	400	1502.014	348.81760 – 415.39451	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^4D^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		537
	300	1504.177	348.70280 – 415.18412	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^4D^\circ - ^4P$	$\frac{1}{2}-\frac{1}{2}$		537
	600	1504.785	349.26620 – 415.72086	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^4D^\circ - ^4P$	$\frac{7}{2}-\frac{5}{2}$		537
	500	1506.300	349.00725 – 415.39451	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^4D^\circ - ^4P$	$\frac{5}{2}-\frac{3}{2}$		537
	300	1506.767	348.81760 – 415.18412	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^4D^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		537
	3	1518.137	376.87907 – 442.74885	$2s^22p^2(^1D)3p - 2s^22p^2(^1S)3d$	$^2F^\circ - ^2D$	$\frac{7}{2}-\frac{5}{2}$		537
	3	1520.716	376.87907 – 442.63627	$2s^22p^2(^1D)3p - 2s^22p^2(^3P)4d$	$^2F^\circ - ^2F$	$\frac{7}{2}-\frac{7}{2}$		537
	1	1527.524	376.81402 – 442.27893	$2s^22p^2(^1D)3p - 2s^22p^2(^3P)4d$	$^2F^\circ - ^2F$	$\frac{5}{2}-\frac{5}{2}$		537
	60	1534.754	425.26106 – 490.41804	$2s2p^3(^5S^\circ)3p - 2s2p^3(^5S^\circ)4s$	$^6P - ^6S^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	100	1535.269	425.28270 – 490.41804	$2s2p^3(^5S^\circ)3p - 2s2p^3(^5S^\circ)4s$	$^6P - ^6S^\circ$	$\frac{5}{2}-\frac{5}{2}$		537
	150	1536.113	425.31880 – 490.41804	$2s2p^3(^5S^\circ)3p - 2s2p^3(^5S^\circ)4s$	$^6P - ^6S^\circ$	$\frac{7}{2}-\frac{5}{2}$		537
	3	1544.276	395.38566 – 460.14163	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5p$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		537
	3	1549.492	395.26813 – 459.80455	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)5p$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	250	1553.023	351.33080 – 415.72086	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^4P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		537
	300	1557.592	351.51942 – 415.72086	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^4P^\circ - ^4P$	$\frac{5}{2}-\frac{5}{2}$		537
	200	1558.641	351.23635 – 415.39451	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^4P^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$		537
	60	1560.939	351.33080 – 415.39451	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^4P^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		537
	100	1562.234	376.81402 – 440.82513	$2s^22p^2(^1D)3p - 2s^22p^2(^1D)4s$	$^2F^\circ - ^2D$	$\frac{5}{2}-\frac{3}{2}$		537
	250	1563.726	376.87907 – 440.82855	$2s^22p^2(^1D)3p - 2s^22p^2(^1D)4s$	$^2F^\circ - ^2D$	$\frac{7}{2}-\frac{5}{2}$		537
	250	1565.539	351.51942 – 415.39451	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^4P^\circ - ^4P$	$\frac{5}{2}-\frac{3}{2}$		537
	200	1566.070	351.33080 – 415.18412	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^4P^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		537
	1	1577.652	316.92099 – 380.30713	$2s^22p^2(^3P)3s - 2s^22p^2(^1D)3p$	$^4P - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	3	1585.593	317.23997 – 380.30713	$2s^22p^2(^3P)3s - 2s^22p^2(^1D)3p$	$^4P - ^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		537

F III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	1590.180	344.02417 – 406.90895	$2s^22p^2(^1D)3s - 2s^22p^2(^1S)3p$	$^2D - ^2P^\circ$	5/2 - 3/2		537
	10	1599.926	406.90438 – 469.40729	$2s^22p^2(^1S)3p - 2s^22p^3(^1S)4s$	$^2P^\circ - ^2S$	1/2 - 1/2		537
	25	1600.041	406.90895 – 469.40729	$2s^22p^2(^1S)3p - 2s^22p^2(^1S)4s$	$^2P^\circ - ^2S$	3/2 - 1/2		537
	60	1613.186	355.98190 – 417.97080	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^2D^\circ - ^2P$	3/2 - 3/2		537
	150	1623.294	355.98190 – 417.58535	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^2D^\circ - ^2P$	3/2 - 1/2		537
	250	1623.402	356.37182 – 417.97080	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^2D^\circ - ^2P$	5/2 - 3/2		537
	6	1648.608	360.34828 – 421.00536	$2s^22p^2(^3P)3p - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2S$	1/2 - 1/2		537
	250	1650.764	380.25052 – 440.82855	$2s^22p^2(^1D)3p - 2s^22p^2(^1D)4s$	$^2D^\circ - ^2D$	3/2 - 5/2		537
	20	1650.974	360.43508 – 421.00536	$2s^22p^2(^3P)3p - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2S$	3/2 - 1/2		537
	3	1652.288	380.30713 – 440.82855	$2s^22p^2(^1D)3p - 2s^22p^2(^1D)4s$	$^2D^\circ - ^2D$	5/2 - 5/2		537
	60	1652.416	380.30713 – 440.82513	$2s^22p^2(^1D)3p - 2s^22p^2(^1D)4s$	$^2D^\circ - ^2D$	5/2 - 3/2		537
	1	1661.025	355.98190 – 416.18542	$2s^22p^2(^3P)3p - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2D$	3/2 - 5/2		537
		1661.505	355.98190 – 416.16830	$2s^22p^2(^3P)3p - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2D$	3/2 - 3/2		537
	150	1666.652	324.49255 – 384.49306	$2s^22p^2(^3P)3s - 2s^22p^2(^1D)3p$	$^2P - ^2P^\circ$	1/2 - 3/2		537
	500	1670.388	324.49255 – 384.35854	$2s^22p^2(^3P)3s - 2s^22p^2(^1D)3p$	$^2P - ^2P^\circ$	1/2 - 1/2		537
	35	1671.870	356.37182 – 416.18542	$2s^22p^2(^3P)3p - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2D$	5/2 - 5/2		537
	3	1672.341	356.37182 – 416.16830	$2s^22p^2(^3P)3p - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2D$	5/2 - 3/2		537
	600	1677.397	324.87672 – 384.49306	$2s^22p^2(^3P)3s - 2s^22p^2(^1D)3p$	$^2P - ^2P^\circ$	3/2 - 3/2		537
	150	1681.182	324.87672 – 384.35854	$2s^22p^2(^3P)3s - 2s^22p^2(^1D)3p$	$^2P - ^2P^\circ$	3/2 - 1/2		537
	10	1681.478	414.89772 – 474.36894	$2s^22p^2(^1D)3d - 2s2p^3(^3D^\circ)3s$	$^2G - ^2D^\circ$	7/2 - 5/2		537
	6	1683.991	372.67847 – 432.06064	$2s^22p^2(^1S)3s - 2s^22p^2(^3P)4p$	$^2S - ^2P^\circ$	1/2 - 3/2		537
	250	1716.990	357.47935 – 415.72086	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^4S^\circ - ^4P$	3/2 - 5/2		537
	200	1726.665	357.47935 – 415.39451	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^4S^\circ - ^4P$	3/2 - 3/2		537
	100	1732.945	357.47935 – 415.18412	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^4S^\circ - ^4P$	3/2 - 1/2		537
	6	1733.200	344.02758 – 401.72433	$2s^22p^2(^1D)3s - 2p^5$	$^2D - ^2P^\circ$	3/2 - 1/2		537
	35	1735.417	360.34828 – 417.97080	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^2P^\circ - ^2P$	1/2 - 3/2		537
	200	1738.041	360.43508 – 417.97080	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^2P^\circ - ^2P$	3/2 - 3/2		537
	1	1746.545	387.36792 – 444.62312	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4F - 2[4]^\circ$	5/2 - 7/2		537
	150	1747.114	360.34828 – 417.58535	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^2P^\circ - ^2P$	1/2 - 1/2		537
	10	1747.881	355.98190 – 413.19500	$2s^22p^2(^3P)3p - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2F$	3/2 - 5/2		537
	3	1748.023	387.36792 – 444.57535	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4F - 2[3]^\circ$	5/2 - 5/2		537
	3	1748.806	344.02417 – 401.20578	$2s^22p^2(^1D)3s - 2p^5$	$^2D - ^2P^\circ$	5/2 - 3/2		537
	35	1749.766	360.43508 – 417.58535	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)4s$	$^2P^\circ - ^2P$	3/2 - 1/2		537
	10	1750.640	387.36792 – 444.48940	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4F - 2[2]^\circ$	5/2 - 5/2		537
	6	1751.276	387.36792 – 444.47024	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4F - 2[2]^\circ$	5/2 - 3/2		537
	1	1752.694	387.52347 – 444.57851	$2s^22p^3(^3P)3d - 2s^22p^2(^3P)4f$	$^4F - 2[4]^\circ$	7/2 - 9/2		537
	60	1753.518	387.52347 – 444.55208	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4F - 2[3]^\circ$	7/2 - 7/2		537
	150	1758.956	387.72684 – 444.57851	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4F - 2[4]^\circ$	9/2 - 9/2		537
	3	1759.792	387.72684 – 444.55208	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4F - 2[3]^\circ$	9/2 - 7/2		537
	6	1761.444	356.37182 – 413.14386	$2s^22p^2(^3P)3p - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2F$	5/2 - 7/2		537
	150	1763.206	387.52347 – 444.23827	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4F - 2[5]^\circ$	7/2 - 9/2		537
	200	1768.038	387.36792 – 443.92741	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4F - 1[4]^\circ$	5/2 - 7/2		537
	6	1769.529	387.72684 – 444.23827	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4F - 2[5]^\circ$	9/2 - 9/2		537
	400	1770.092	387.25928 – 443.75306	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4F - 1[3]^\circ$	3/2 - 5/2		537
	700	1770.668	387.72684 – 444.20270	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4F - 2[5]^\circ$	9/2 - 11/2		537
	10	1770.963	384.35854 – 440.82513	$2s^22p^2(^1D)3p - 2s^22p^2(^1D)4s$	$^2P^\circ - ^2D$	1/2 - 3/2		537
	300	1772.925	387.52347 – 443.92741	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4F - 1[4]^\circ$	7/2 - 7/2		537
	600	1773.363	387.52347 – 443.91333	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4F - 1[4]^\circ$	7/2 - 9/2		537
	35	1773.496	387.36792 – 443.75306	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4F - 1[3]^\circ$	5/2 - 5/2		537
	150	1774.104	387.25928 – 443.62531	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4F - 0[3]^\circ$	3/2 - 5/2		537
	60	1775.079	384.49306 – 440.82855	$2s^22p^2(^1D)3p - 2s^22p^2(^1D)4s$	$^2P^\circ - ^2D$	3/2 - 5/2		537
	60	1777.358	387.36792 – 443.63096	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4F - 0[3]^\circ$	5/2 - 7/2		537
	35	1777.846	387.52347 – 443.77090	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4F - 1[3]^\circ$	7/2 - 7/2		537
	6	1779.778	387.72684 – 443.91333	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4F - 1[4]^\circ$	9/2 - 9/2		537

F III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	1786.436	413.14386 – 469.12035	$2s^22p^2(^1D)3d - 2s^22p^2(^1D)4f$	$^2F - 2[2]^\circ$	$\frac{7}{2}-\frac{5}{2}$		537
	1	1788.110	413.19500 – 469.11952	$2s^22p^2(^1D)3d - 2s^22p^2(^1D)4f$	$^2F - 2[2]^\circ$	$\frac{5}{2}-\frac{3}{2}$		537
	3	1791.445	360.34828 – 416.16830	$2s^22p^2(^3P)3p - 2s^22p^2(^1D)3d$	$^2P^\circ - {^2D}$	$\frac{1}{2}-\frac{3}{2}$		537
	800	1791.648	324.49255 – 380.30713	$2s^22p^2(^3P)3s - 2s^22p^2(^1D)3p$	$^2P - {^2D^\circ}$	$\frac{1}{2}-\frac{3}{2}$		537
	100	1800.505	413.14386 – 468.68343	$2s^22p^2(^1D)3d - 2s^22p^2(^1D)4f$	$^2F - 2[3]^\circ$	$\frac{7}{2}-\frac{7}{2}$		537
	60	1802.181	413.19500 – 468.68343	$2s^22p^2(^1D)3d - 2s^22p^2(^1D)4f$	$^2F - 2[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	300	1803.027	413.14386 – 468.60605	$2s^22p^2(^1D)3d - 2s^22p^2(^1D)4f$	$^2F - 2[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		537
	200	1804.073	324.87672 – 380.30713	$2s^22p^2(^3P)3s - 2s^22p^2(^1D)3p$	$^2P - {^2D^\circ}$	$\frac{3}{2}-\frac{3}{2}$		537
	250	1804.698	413.19500 – 468.60594	$2s^22p^2(^1D)3d - 2s^22p^2(^1D)4f$	$^2F - 2[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	900	1805.896	324.87672 – 380.25052	$2s^22p^2(^3P)3s - 2s^22p^2(^1D)3p$	$^2P - {^2D^\circ}$	$\frac{3}{2}-\frac{5}{2}$		537
	3	1830.567	442.69458 – 497.32246	$2s^22p^2(^1S)3d - 2s^22p^2(^1S)4f$	$^2D - 0[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	6	1832.361	442.74885 – 497.32325	$2s^22p^2(^1S)3d - 2s^22p^2(^1S)4f$	$^2D - 0[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	3	1833.322	390.07780 – 444.62312	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4D - 2[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	3	1833.791	389.52555 – 444.05744	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^2P - 2[1]^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	100	1834.997	390.08030 – 444.57535	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4D - 2[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	200	1835.712	390.07780 – 444.55208	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4D - 2[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	1	1837.815	390.21043 – 444.62312	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4D - 2[4]^\circ$	$\frac{7}{2}-\frac{7}{2}$		537
	100	1837.880	390.08030 – 444.48940	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4D - 2[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	20	1838.568	390.08030 – 444.47024	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4D - 2[2]^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	300	1839.301	390.21043 – 444.57851	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4D - 2[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		537
	400	1839.968	414.89489 – 469.24366	$2s^22p^2(^1D)3d - 2s^22p^2(^1D)4f$	$^2G - 2[5]^\circ$	$\frac{9}{2}-\frac{11}{2}$		537
	300	1840.140	414.89772 – 469.24141	$2s^22p^2(^1D)3d - 2s^22p^2(^1D)4f$	$^2G - 2[5]^\circ$	$\frac{7}{2}-\frac{9}{2}$		537
	10	1840.930	389.73763 – 444.05744	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^2P - 2[1]^\circ$	$\frac{1}{2}-\frac{3}{2}$		537
	1	1842.326	390.21043 – 444.48940	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4D - 2[2]^\circ$	$\frac{7}{2}-\frac{5}{2}$		537
	100	1844.077	389.52555 – 443.75306	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^2P - 1[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	150	1847.462	389.73763 – 443.86591	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^2P - 1[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		537
	200	1848.431	389.52555 – 443.62531	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^2P - 0[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	3	1850.889	390.21043 – 444.23827	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4D - 2[5]^\circ$	$\frac{7}{2}-\frac{9}{2}$		537
	3	1852.539	390.07780 – 444.05744	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4D - 2[1]^\circ$	$\frac{5}{2}-\frac{3}{2}$		537
	3	1852.683	390.08030 – 444.05642	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4D - 2[1]^\circ$	$\frac{3}{2}-\frac{1}{2}$		537
	35	1854.028	390.12077 – 444.05744	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4D - 2[1]^\circ$	$\frac{1}{2}-\frac{3}{2}$		537
	1	1857.034	390.07780 – 443.92741	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4D - 1[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	60	1859.143	390.07780 – 443.86591	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4D - 1[2]^\circ$	$\frac{5}{2}-\frac{3}{2}$		537
	60	1861.584	390.83460 – 444.55208	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4P - 2[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	35	1861.814	414.89489 – 468.60594	$2s^22p^2(^1D)3d - 2s^22p^2(^1D)4f$	$^2G - 2[4]^\circ$	$\frac{9}{2}-\frac{7}{2}$		537
	3	1861.912	414.89772 – 468.60594	$2s^22p^2(^1D)3d - 2s^22p^2(^1D)4f$	$^2G - 2[4]^\circ$	$\frac{7}{2}-\frac{7}{2}$		537
	35	1862.094	390.21043 – 443.91333	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4D - 1[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		537
	6	1863.758	390.83460 – 444.48940	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4P - 2[2]^\circ$	$\frac{5}{2}-\frac{5}{2}$		537
	1	1865.701	390.97635 – 444.57535	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4P - 2[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	6	1867.050	390.21043 – 443.77090	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4D - 1[3]^\circ$	$\frac{7}{2}-\frac{7}{2}$		537
	100	1867.310	390.07780 – 443.63096	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4D - 0[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	1	1867.598	390.08030 – 443.62531	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4D - 0[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	10	1868.690	390.97635 – 444.48940	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4P - 2[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	3	1869.380	390.97635 – 444.47024	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4P - 2[2]^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	10	1871.923	390.21043 – 443.63096	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4D - 0[3]^\circ$	$\frac{7}{2}-\frac{7}{2}$		537
	1	1876.348	391.25742 – 444.55208	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^2F - 2[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	1	1878.580	391.25742 – 444.48940	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^2F - 2[2]^\circ$	$\frac{5}{2}-\frac{5}{2}$		537
	1	1878.910	390.83460 – 444.05744	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4P - 2[1]^\circ$	$\frac{5}{2}-\frac{3}{2}$		537
	6	1883.925	390.97635 – 444.05744	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4P - 2[1]^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	3	1885.587	390.83460 – 443.86868	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4P - 1[2]^\circ$	$\frac{5}{2}-\frac{5}{2}$		537
	6	1886.464	391.04754 – 444.05642	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4P - 2[1]^\circ$	$\frac{1}{2}-\frac{1}{2}$		537
	3	1886.950	413.19500 – 466.19103	$2s^22p^2(^1D)3d - 2s^22p^2(^3P)5f$	$^2F - 1[3]^\circ$	$\frac{5}{2}-\frac{5}{2}$		537
	10	1888.530	416.16830 – 469.11952	$2s^22p^2(^1D)3d - 2s^22p^2(^1D)4f$	$^2D - 2[2]^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	20	1889.076	390.83460 – 443.77090	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4P - 1[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537

F III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	1889.711	390.83460 – 443.75306	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4P - 1[3]^\circ$	$\frac{5}{2}-\frac{5}{2}$		537
	3	1893.273	391.04754 – 443.86591	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4P - 1[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		537
	60	1894.082	390.83460 – 443.63096	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4P - 0[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	1	1894.779	390.97635 – 443.75306	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4P - 1[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	100	1898.631	391.25742 – 443.92741	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^2F - 1[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	1	1899.373	390.97635 – 443.62531	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^4P - 0[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	150	1900.760	391.25742 – 443.86868	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^2F - 1[2]^\circ$	$\frac{5}{2}-\frac{5}{2}$		537
	60	1904.247	416.16830 – 468.68291	$2s^22p^2(^1D)3d - 2s^22p^2(^1D)4f$	$^2D - 2[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		537
	35	1904.834	416.18542 – 468.68343	$2s^22p^2(^1D)3d - 2s^22p^2(^1D)4f$	$^2D - 2[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		537
	1	1909.375	401.72433 – 454.09766	$2p^5 - 2s^22p^2(^3P)5s$	$^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		537
	10	1912.543	391.62691 – 443.91333	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^2F - 1[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		537
	1	1917.766	391.62691 – 443.77090	$2s^22p^2(^3P)3d - 2s^22p^2(^3P)4f$	$^2F - 1[3]^\circ$	$\frac{7}{2}-\frac{7}{2}$		537
		1939.4	0.0 – 51.5614	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,537
		1939.5	0.0 – 51.5606	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	F,P	375,537
	10	1948.731	418.24856 – 469.56401	$2s^22p^2(^1D)3d - 2s^22p^2(^1D)4f$	$^2P - 2[1]^\circ$	$\frac{3}{2}-\frac{3}{2}$		537
	20	1963.439	418.18848 – 469.11952	$2s^22p^2(^1D)3d - 2s^22p^2(^1D)4f$	$^2P - 2[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		537
	35	1965.726	418.24856 – 469.12035	$2s^22p^2(^1D)3d - 2s^22p^2(^1D)4f$	$^2P - 2[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		537

FLUORINE IV (F^{3+}), Z = 9
Ground State $1s^22s^22p^2(^3P_0)$ (6 electrons)
Ionization Potential 702 830 cm^{-1}; 87.141 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	140.781	0.2260 – 710.55	$2s^22p^2 - 2s2p^2(^4P)5p$	$g^3P - {}^3D^\circ$	1 – 2		173
	1	140.816	0.6140 – 710.76	$2s^22p^2 - 2s2p^2(^4P)5p$	$g^3P - {}^3D^\circ$	2 – 3		173
	10	150.335	0.2260 – 665.409	$2s^22p^2 - 2s2p^2(^4P)4p$	$g^3P - {}^3P^\circ$	1 – 2		173
	10	150.422	0.6140 – 665.409	$2s^22p^2 - 2s2p^2(^4P)4p$	$g^3P - {}^3P^\circ$	2 – 2		173
	100	150.977	0.0 – 662.353	$2s^22p^2 - 2s2p^2(^4P)4p$	$g^3P - {}^3D^\circ$	0 – 1		173
	100	151.005	0.6140 – 662.843	$2s^22p^2 - 2s2p^2(^4P)4p$	$g^3P - {}^3D^\circ$	2 – 3		173
	1	151.079	0.6140 – 662.518	$2s^22p^2 - 2s2p^2(^4P)4p$	$g^3P - {}^3D^\circ$	2 – 2		173
	1	152.997	0.2260 – 653.772	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$g^3P - {}^3P^\circ$	1 – 2		173
	10	153.102	0.6140 – 653.772	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$g^3P - {}^3P^\circ$	2 – 2		173
	10	153.141	0.6140 – 653.606	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$g^3P - {}^3D^\circ$	2 – 3		173
	10	155.624	74.1947 – 716.768	$2s2p^3 - 2s2p^2(^4P)5d$	$^5S^\circ - {}^5P$	2 – 2		173
	10	155.673	74.1947 – 716.566	$2s2p^3 - 2s2p^2(^4P)5d$	$^5S^\circ - {}^5P$	2 – 3		173
	10	158.398	0.2260 – 631.546	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^3P^\circ$	1 – 0		173
	400	158.537	0.6140 – 631.426	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^3P^\circ$	2 – 2		176,173
	100	158.601	0.6140 – 631.126	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^3D^\circ$	2 – 3		173
	100	158.925	25.2382 – 654.469	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$^1D - {}^1F^\circ$	2 – 3		173
	200	164.612	25.2382 – 632.73	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$^1D - {}^1F^\circ$	2 – 3		173
	10	165.350	25.2382 – 630.019	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$^1D - {}^1D^\circ$	2 – 2		173
	1	165.479	25.2382 – 629.547	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$^1D - {}^3F^\circ$	2 – 2		173
	200	166.444	74.1947 – 674.997	$2s2p^3 - 2s2p^2(^4P)4d$	$^5S^\circ - {}^5P$	2 – 2		173
	200	166.499	74.1947 – 674.798	$2s2p^3 - 2s2p^2(^4P)4d$	$^5S^\circ - {}^5P$	2 – 3		173
	200	168.450	25.2382 – 618.889	$2s^22p^2 - 2s2p^2(^2D)3p$	$^1D - {}^1P^\circ$	2 – 1		173
	200	169.166	147.8430 – 738.996	$2s2p^3 - 2s2p^2(^2D)4d$	$^3D^\circ - {}^3F$	3 – 4		173
	100	169.481	0.2260 – 590.262	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3P^\circ$	1 – 0		173
	100	169.502	0.2260 – 590.201	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3P^\circ$	1 – 1		173
	100	169.610	0.6140 – 590.201	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3P^\circ$	2 – 1		173
	200	169.661	0.6140 – 590.024	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3P^\circ$	2 – 2		173
	200	169.748	0.0 – 589.109	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3D^\circ$	0 – 1		173
	300	169.790	0.2260 – 589.188	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3D^\circ$	1 – 2		173
	300	169.839	0.6140 – 589.406	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - {}^3D^\circ$	2 – 3		173

F IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	170.187	25.2382 – 612.83	$2s^22p^2 - 2s2p^2(^2D)3p$	$^1D - ^1D^o$	2 – 2		173
	300	171.066	25.2382 – 609.811	$2s^22p^2 - 2s2p^2(^2D)3p$	$^1D - ^1F^o$	2 – 3		173
	10	172.653	53.5412 – 632.74	$2s^22p^2 - 2s^22p(^2P^o)5d$	$^1S - ^1P^o$	0 – 1		173
	10	175.033	74.1947 – 645.515	$2s2p^3 - 2s2p^2(^4P)4s$	$^5S^o - ^5P$	2 – 3		173
	1	175.132	74.1947 – 645.192	$2s2p^3 - 2s2p^2(^4P)4s$	$^5S^o - ^5P$	2 – 2		173
	400	176.367	25.2382 – 592.24	$2s^22p^2 - 2s^22p(^2P^o)4d$	$^1D - ^1F^o$	2 – 3		173
	200	177.971	25.2382 – 587.13	$2s^22p^2 - 2s^22p(^2P^o)4d$	$^1D - ^1D^o$	2 – 2		173
	100	178.126	25.2382 – 586.641	$2s^22p^2 - 2s^22p(^2P^o)4d$	$^1D - ^3F^o$	2 – 2		173
	100	178.540	0.2260 – 560.294	$2s^22p^2 - 2s^22p(^2P^o)4s$	$g^3P - ^3P^o$	1 – 2		173
	300	178.670	0.6140 – 560.294	$2s^22p^2 - 2s^22p(^2P^o)4s$	$g^3P - ^3P^o$	2 – 2		173
	100	178.724	0.2260 – 559.747	$2s^22p^2 - 2s^22p(^2P^o)4s$	$g^3P - ^3P^o$	1 – 0		173
	100	178.805	0.6140 – 559.881	$2s^22p^2 - 2s^22p(^2P^o)4s$	$g^3P - ^3P^o$	2 – 1		173
	100	179.827	0.2260 – 556.316	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3P^o$	1 – 2		173
	1	179.907	0.2260 – 556.051	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3P^o$	1 – 1		173
	200	179.943	0.6140 – 556.316	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3P^o$	2 – 2		173
	10	180.029	0.6140 – 556.051	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3P^o$	2 – 1		173
	400	181.521	0.2260 – 551.098	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3D^o$	1 – 2		173
	400	181.571	0.6140 – 551.366	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3D^o$	2 – 3		173
	200	181.655	0.6140 – 551.098	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3D^o$	2 – 2		173
	300	185.484	53.5412 – 592.674	$2s^22p^2 - 2s^22p(^2P^o)4d$	$^1S - ^1P^o$	0 – 1		173
	100	186.558	25.2382 – 561.274	$2s^22p^2 - 2s^22p(^2P^o)4s$	$^1D - ^1P^o$	2 – 1		173
	200	187.105	0.2260 – 534.686	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3S^o$	1 – 1		173
	300	187.240	0.6140 – 534.686	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3S^o$	2 – 1		173
	100	187.916	147.8430 – 679.994	$2s2p^3 - 2s2p^2(^4P)4d$	$^3D^o - ^3D$	3 – 3		173
	10	188.004	147.8887 – 679.798	$2s2p^3 - 2s2p^2(^4P)4d$	$^3D^o - ^3D$	2 – 2		173
	200	188.656	147.8430 – 677.906	$2s2p^3 - 2s2p^2(^4P)4d$	$^3D^o - ^3F$	3 – 4		173
	100	188.758	147.8887 – 677.667	$2s2p^3 - 2s2p^2(^4P)4d$	$^3D^o - ^3F$	2 – 3		173
	10	188.834	147.9035 – 677.467	$2s2p^3 - 2s2p^2(^4P)4d$	$^3D^o - ^3F$	1 – 2		173
	400	196.351	74.1947 – 583.486	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^o - ^5P$	2 – 1		173
	500	196.390	74.1947 – 583.385	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^o - ^5P$	2 – 2		173
	600	196.448	74.1947 – 583.235	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^o - ^5P$	2 – 3		173
	100	196.968	53.5412 – 561.274	$2s^22p^2 - 2s^22p(^2P^o)4s$	$^1S - ^1P^o$	0 – 1		173
	200	197.108	74.1947 – 581.5603	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^o - ^5D$	2 – 3		173
	100	197.298	147.8887 – 654.739	$2s2p^3 - 2s2p^2(^2D)3d$	$^3D^o - ^3S$	2 – 1	Q	176,375
	300	199.004	147.8430 – 650.342	$2s2p^3 - 2s2p^2(^2D)3d$	$^3D^o - ^3D$	3 – 3		173
	300	199.086	147.8887 – 650.196	$2s2p^3 - 2s2p^2(^2D)3d$	$^3D^o - ^3D$	2 – 2		173
	100	199.607	147.8430 – 648.827	$2s2p^3 - 2s2p^2(^2D)3d$	$^3D^o - ^3P$	3 – 2		173
	500	199.761	0.0 – 500.6021	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3P^o$	0 – 1		173
	500	199.804	0.2260 – 500.7165	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3P^o$	1 – 0		173
	500	199.849	0.2260 – 500.6021	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3P^o$	1 – 1		173
	500	199.934	0.2260 – 500.3901	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3P^o$	1 – 2		173
	500	200.001	0.6140 – 500.6021	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3P^o$	2 – 1		173
	700	200.089	0.6140 – 500.3901	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3P^o$	2 – 2		173
	600	201.011	0.0 – 497.4814	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3D^o$	0 – 1		173
	700	201.063	0.2260 – 497.5756	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3D^o$	1 – 2		173
	600	201.101	0.2260 – 497.4814	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3D^o$	1 – 1		173
	800	201.160	0.6140 – 497.7291	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3D^o$	2 – 3		173
	600	201.222	0.6140 – 497.5756	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3D^o$	2 – 2		173
	400	201.465	147.8430 – 644.224	$2s2p^3 - 2s2p^2(^2D)3d$	$^3D^o - ^3F$	3 – 4		173
	10	202.989	0.2260 – 492.864	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^1D^o$	1 – 2		173
	100	203.152	0.6140 – 492.8588	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - ^3F^o$	2 – 3		173
	900	208.254	25.2382 – 505.4214	$2s^22p^2 - 2s^22p(^2P^o)3d$	$^1D - ^1F^o$	2 – 3		173
	200	208.549	175.2368 – 654.739	$2s2p^3 - 2s2p^2(^2D)3d$	$^3P^o - ^3S$	2 – 1		173
	100	210.480	175.2368 – 650.342	$2s2p^3 - 2s2p^2(^2D)3d$	$^3P^o - ^3D$	2 – 3		173

F IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	210.545	175.2419 – 650.196	$2s2p^3 - 2s2p^2(^2D)3d$	$^3P^\circ - ^3D$	1 – 2		173
	10	211.152	175.2368 – 648.827	$2s2p^3 - 2s2p^2(^2D)3d$	$^3P^\circ - ^3P$	2 – 2		173
	700	213.848	25.2382 – 492.864	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - ^1D^\circ$	2 – 2		173
	700	214.062	25.2382 – 492.3951	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - ^3F^\circ$	2 – 2		173
	700	220.765	53.5412 – 506.514	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1S - ^1P^\circ$	0 – 1		173
	300	223.394	147.8430 – 595.481	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3D$	3 – 3		173
	200	223.456	147.8887 – 595.403	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3D$	2 – 2		173
	100	223.497	147.9035 – 595.331	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3D$	1 – 1		173
	600	226.944	147.8430 – 588.478	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3F$	3 – 4		173
	300	227.079	147.8430 – 588.223	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3F$	3 – 3		173
	500	227.101	147.8887 – 588.223	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3F$	2 – 3		173
	400	227.211	147.9035 – 588.021	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3F$	1 – 2		173
	1	228.496	147.9035 – 585.531	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3P$	1 – 0		173
	10	228.552	147.8887 – 585.425	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3P$	2 – 1		173
	100	228.645	147.8430 – 585.201	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3P$	3 – 2		173
	200	233.159	228.9038 – 657.8	$2s2p^3 - 2s2p^2(^2D)3d$	$^1D^\circ - ^1D$	2 – 2		173
	600	233.222	74.1947 – 502.9704	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^\circ - ^5P$	2 – 3		173
	200	233.297	228.9038 – 657.546	$2s2p^3 - 2s2p^2(^2D)3d$	$^1D^\circ - ^1F$	2 – 3		173
	500	233.393	74.1947 – 502.6524	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^\circ - ^5P$	2 – 2		173
	400	233.526	74.1947 – 502.4110	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^\circ - ^5P$	2 – 1		173
	300	237.913	147.8430 – 568.175	$2s2p^3 - 2s2p^2(^2D)3s$	$^3D^\circ - ^3D$	3 – 3		173
	400	237.955	175.2368 – 595.481	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^\circ - ^3D$	2 – 3		173
	300	238.012	147.8887 – 568.019	$2s2p^3 - 2s2p^2(^2D)3s$	$^3D^\circ - ^3D$	2 – 2		173
	200	238.042	175.2639 – 595.331	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^\circ - ^3D$	0 – 1		173
	100	238.099	147.9035 – 567.9	$2s2p^3 - 2s2p^2(^2D)3s$	$^3D^\circ - ^3D$	1 – 1		173
	700	239.856	0.2260 – 417.1434	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g\,^3P - ^3P^\circ$	1 – 2		173
	700	240.017	0.0 – 416.6398	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g\,^3P - ^3P^\circ$	0 – 1		173
	900	240.079	0.6140 – 417.1434	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g\,^3P - ^3P^\circ$	2 – 2		173
	700	240.146	0.2260 – 416.6398	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g\,^3P - ^3P^\circ$	1 – 1		173
	700	240.275	0.2260 – 416.4173	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g\,^3P - ^3P^\circ$	1 – 0		173
	700	240.371	0.6140 – 416.6398	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g\,^3P - ^3P^\circ$	2 – 1		173
	200	243.736	175.2419 – 585.531	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^\circ - ^3P$	1 – 0		173
	300	243.796	175.2368 – 585.425	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^\circ - ^3P$	2 – 1		173
	400	243.922	175.2368 – 585.201	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^\circ - ^3P$	2 – 2		173
	100	249.228	257.3865 – 658.629	$2s2p^3 - 2s2p^2(^2D)3d$	$^1P^\circ - ^1P$	1 – 1		173
	10	249.744	257.3865 – 657.8	$2s2p^3 - 2s2p^2(^2D)3d$	$^1P^\circ - ^1D$	1 – 2		173
	1000	251.026	25.2382 – 423.6064	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$^1D - ^1P^\circ$	2 – 1		173
	200	254.491	175.2368 – 568.175	$2s2p^3 - 2s2p^2(^2D)3s$	$^3P^\circ - ^3D$	2 – 3		173
	100	254.595	175.2419 – 568.019	$2s2p^3 - 2s2p^2(^2D)3s$	$^3P^\circ - ^3D$	1 – 2		173
	10	254.681	175.2639 – 567.9	$2s2p^3 - 2s2p^2(^2D)3s$	$^3P^\circ - ^3D$	0 – 1		173
	400	268.785	147.8430 – 519.89	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^\circ - ^3P$	3 – 2		173
	100	268.817	147.8887 – 519.89	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^\circ - ^3P$	2 – 2		173
	300	269.076	147.8887 – 519.539	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^\circ - ^3P$	2 – 1		173
	200	269.225	147.9035 – 519.341	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^\circ - ^3P$	1 – 0		173
	600	270.225	53.5412 – 423.6064	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$^1S - ^1P^\circ$	0 – 1		173
	300	279.834	228.9038 – 586.263	$2s2p^3 - 2s2p^2(^2D)3s$	$^1D^\circ - ^1D$	2 – 2		173
	1	287.994	238.2967 – 585.531	$2s2p^3 - 2s2p^2(^4P)3d$	$^3S^\circ - ^3P$	1 – 0		173
	10	288.078	238.2967 – 585.425	$2s2p^3 - 2s2p^2(^4P)3d$	$^3S^\circ - ^3P$	1 – 1		173
	100	288.267	238.2967 – 585.201	$2s2p^3 - 2s2p^2(^4P)3d$	$^3S^\circ - ^3P$	1 – 2		173
	400	290.147	175.2368 – 519.89	$2s2p^3 - 2s2p^2(^4P)3s$	$^3P^\circ - ^3P$	2 – 2		173
	300	290.440	175.2368 – 519.539	$2s2p^3 - 2s2p^2(^4P)3s$	$^3P^\circ - ^3P$	2 – 1		173
	200	290.461	175.2639 – 519.539	$2s2p^3 - 2s2p^2(^4P)3s$	$^3P^\circ - ^3P$	0 – 1		173
	200	290.608	175.2419 – 519.341	$2s2p^3 - 2s2p^2(^4P)3s$	$^3P^\circ - ^3P$	1 – 0		173
	300	319.695	147.8430 – 460.6406	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3P$	3 – 2		173

F IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	319.740	147.8887 – 460.6406	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3P$	2 – 2		173
	200	320.004	147.8887 – 460.3858	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3P$	2 – 1		173
	100	320.192	147.9035 – 460.2152	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3P$	1 – 0		173
	10	328.213	147.8430 – 452.5171	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3D$	3 – 3		173
	200	355.045	175.2368 – 456.8843	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3P^\circ - ^3S$	2 – 1		173
	100	360.635	175.2368 – 452.5171	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3P^\circ - ^3D$	2 – 3		173
	10	361.208	175.2419 – 452.0811	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3P^\circ - ^3D$	1 – 2		173
	800	419.645	0.0 – 238.2967	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^\circ$	0 – 1		562
	900	420.045	0.2260 – 238.2967	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^\circ$	1 – 1		562
	1000	420.729	0.6140 – 238.2967	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^\circ$	2 – 1		562
	900	430.759	25.2382 – 257.3865	$2s^22p^2 - 2s2p^3$	$^1D - ^1P^\circ$	2 – 1		562
	700	490.568	53.5412 – 257.3865	$2s^22p^2 - 2s2p^3$	$^1S - ^1P^\circ$	0 – 1		562
	1000	491.001	25.2382 – 228.9038	$2s^22p^2 - 2s2p^3$	$^1D - ^1D^\circ$	2 – 2		562
	60	497.375	147.9035 – 348.9598	$2s2p^3 - 2p^4$	$^3D^\circ - ^3P$	1 – 0		562
	100	497.830	147.8887 – 348.7666	$2s2p^3 - 2p^4$	$^3D^\circ - ^3P$	2 – 1		562
	150	498.796	147.8430 – 348.3274	$2s2p^3 - 2p^4$	$^3D^\circ - ^3P$	3 – 2		562
	35	498.907	147.8887 – 348.3274	$2s2p^3 - 2p^4$	$^3D^\circ - ^3P$	2 – 2		562
	800	570.640	0.0 – 175.2419	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	0 – 1		562
	800	571.304	0.2260 – 175.2639	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	1 – 0		562
	900	571.391	0.2260 – 175.2368	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	1 – 2		562
	1000	572.663	0.6140 – 175.2368	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	2 – 2		562
	10	575.643	175.2419 – 348.9598	$2s2p^3 - 2p^4$	$^3P^\circ - ^3P$	1 – 0		562
	15	576.265	175.2368 – 348.7666	$2s2p^3 - 2p^4$	$^3P^\circ - ^3P$	2 – 1		562
	10	576.359	175.2639 – 348.7666	$2s2p^3 - 2p^4$	$^3P^\circ - ^3P$	0 – 1		562
	35	577.734	175.2368 – 348.3274	$2s2p^3 - 2p^4$	$^3P^\circ - ^3P$	2 – 2		562
		607.37	257.3865 – 422.03	$2s2p^3 - 2p^4$	$^1P^\circ - ^1S$	1 – 0		244
		639.13	560.304 – 716.768	$2s^22p(^2P^\circ)4s - 2s2p^2(^4P)5d$	$^3P^\circ - ^5P$	2 – 2	Q	244,375
	1	666.662	25.2382 – 175.2368	$2s^22p^2 - 2s2p^3$	$^1D - ^3P^\circ$	2 – 2		562
	800	676.119	0.0 – 147.9035	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^\circ$	0 – 1		562
	700	677.149	0.2260 – 147.9035	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^\circ$	1 – 1		562
	900	677.219	0.2260 – 147.8887	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^\circ$	1 – 2		562
	700	678.991	0.6140 – 147.8887	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^\circ$	2 – 2		562
	1000	679.214	0.6140 – 147.8430	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^\circ$	2 – 3		562
	500	722.028	228.9038 – 367.4026	$2s2p^3 - 2p^4$	$^1D^\circ - ^1D$	2 – 2		562
	10	815.629	25.2382 – 147.8430	$2s^22p^2 - 2s2p^3$	$^1D - ^3D^\circ$	2 – 3		562
	1	821.694	53.5412 – 175.2419	$2s^22p^2 - 2s2p^3$	$^1S - ^3P^\circ$	0 – 1		562
	35	903.64	238.2967 – 348.9598	$2s2p^3 - 2p^4$	$^3S^\circ - ^3P$	1 – 0		562
		905.14	519.539 – 630.019	$2s2p^2(^4P)3s - 2s^22p(^2P^\circ)5d$	$^3P - ^1D^\circ$	1 – 2	Q	244,375
	60	905.224	238.2967 – 348.7666	$2s2p^3 - 2p^4$	$^3S^\circ - ^3P$	1 – 1		562
	100	908.837	238.2967 – 348.3274	$2s2p^3 - 2p^4$	$^3S^\circ - ^3P$	1 – 2		562
	150	908.958	257.3865 – 367.4026	$2s2p^3 - 2p^4$	$^1P^\circ - ^1D$	1 – 2		562
	10	927.837	452.5171 – 560.294	$2s^22p(^2P^\circ)3p - 2s^22p(^2P^\circ)4s$	$^3D - ^3P^\circ$	3 – 2		562
	10	993.19	492.8588 – 593.544	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]^\circ$	3 – 4	P	562
	1	995.12	492.3951 – 592.883	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]^\circ$	2 – 3		562
		996.62	493.2062 – 593.544	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]^\circ$	4 – 4		562
	15	998.86	492.8588 – 592.973	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]^\circ$	3 – 4		562
	60	999.14	493.2062 – 593.292	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]^\circ$	4 – 5		562
	15	999.79	492.864 – 592.883	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^1D^\circ - \frac{3}{2}[\frac{7}{2}]^\circ$	2 – 3		562
	1	1000.89	460.3858 – 560.294	$2s^22p(^2P^\circ)3p - 2s^22p(^2P^\circ)4s$	$^3P - ^3P^\circ$	1 – 2		562
	5	1002.33	493.2062 – 592.973	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]^\circ$	4 – 4		562
	10	1003.45	460.6406 – 560.294	$2s^22p(^2P^\circ)3p - 2s^22p(^2P^\circ)4s$	$^3P - ^3P^\circ$	2 – 2		562
	5	1004.59	492.3951 – 591.938	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3F^\circ - \frac{1}{2}[\frac{5}{2}]^\circ$	2 – 3		562
	10	1007.64	492.8588 – 592.101	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3F^\circ - \frac{1}{2}[\frac{7}{2}]^\circ$	3 – 4		562
	5	1007.74						562

F IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	5	1007.88	492.864 – 592.085	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^1D^\circ - \frac{1}{2}[\frac{7}{2}]^\circ$	2 – 3		562
	10	1009.34	492.864 – 591.938	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^1D^\circ - \frac{1}{2}[\frac{5}{2}]^\circ$	2 – 3		562
	5	1012.90	493.2062 – 591.928	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3F^\circ - \frac{1}{2}[\frac{5}{2}]^\circ$	4 – 3		562
	5	1045.24	460.6406 – 556.316	$2s^22p(^2P^\circ)3p - 2s2p^2(^4P)3p$	$^3P - {}^3P^\circ$	2 – 2		562
	1	1049.96	497.7291 – 592.973	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]^\circ$	3 – 4		562
	10	1058.10	497.5756 – 592.085	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3D^\circ - \frac{1}{2}[\frac{7}{2}]^\circ$	2 – 3		562
	10	1058.50	497.4814 – 591.954	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]^\circ$	1 – 2		562
	35	1059.63	497.7291 – 592.101	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3D^\circ - \frac{1}{2}[\frac{7}{2}]^\circ$	3 – 4		562
	1	1059.73	497.5756 – 591.938	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]^\circ$	2 – 3		562
	5	1073.22	500.6021 – 593.78	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		562
	1	1074.10	500.6021 – 593.703	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		562
	5	1075.05	500.3901 – 593.41	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 3		562
	5	1076.86	500.6021 – 593.465	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]^\circ$	1 – 2		562
	10	1091.35	469.6442 – 561.274	$2s^22p(^2P^\circ)3p - 2s^22p(^2P^\circ)4s$	$^1D - {}^1P^\circ$	2 – 1		562
	5	1092.45	500.3901 – 591.928	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^3P^\circ - \frac{1}{2}[\frac{5}{2}]^\circ$	2 – 3		562
	35	1134.78	505.4214 – 593.544	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^1F^\circ - \frac{3}{2}[\frac{9}{2}]^\circ$	3 – 4		562
	5	1142.07	561.267 – 648.827	$2s^22p(^2P^\circ)4s - 2s2p^2(^2D)3d$	$^1P^\circ - {}^3P$	1 – 2		562
	5	1143.35	505.4214 – 592.883	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^1F^\circ - \frac{3}{2}[\frac{7}{2}]^\circ$	3 – 3		562
	10	1145.89	506.514 – 593.78	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^1P^\circ - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		562
	10	1150.07	506.514 – 593.465	$2s^22p(^2P^\circ)3d - 2s^22p(^2P^\circ)4f$	$^1P^\circ - \frac{3}{2}[\frac{5}{2}]^\circ$	1 – 2		562
	10	1351.924	0.2260 – 74.1947	$2s^22p^2 - 2s2p^3$	$g^3P - {}^5S^\circ$	1 – 2		562
	15	1359.053	0.6140 – 74.1947	$2s^22p^2 - 2s2p^3$	$g^3P - {}^5S^\circ$	2 – 2		562
	1	1453.14	348.3274 – 417.1434	$2p^4 - 2s^22p(^2P^\circ)3s$	$^3P - {}^3P^\circ$	2 – 2		562
		1875.6	0.2260 – 53.5412	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1S$	1 – 0	F,P	375,562
		1889.4	0.6140 – 53.5412	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1S$	2 – 0	F,P	375,562

FLUORINE V (F^{4+}), Z = 9
Ground State $1s^22s^22p(^2P^\circ_{1/2})$ (5 electrons)
Ionization Potential 921 430 cm^{-1}; 114.24 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	25	110.95	0.7445 – 902.012	$2s^22p - 2s2p(^3P^\circ)5p$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	Q	155
	140	117.1	86.4070 – 940.677	$2s2p^2 - 2s2p(^3P^\circ)6d$	$^4P - {}^4D^\circ$	$\frac{5}{2} - \frac{7}{2}$	Q	155
	25	118.6	0.0 – 843.497	$2s^22p - 2s^26d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$	Q	155
	10	119.986	0.0 – 833.501	$2s^22p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		172
	15	120.032	0.7445 – 833.92	$2s^22p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		172
	10	122.042	86.4070 – 905.7970	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - {}^4P^\circ$	$\frac{5}{2} - \frac{5}{2}$	Q	176,375
	10	123.665	0.0 – 808.663	$2s^22p - 2s^25d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		172
	100	123.774	0.7445 – 808.677	$2s^22p - 2s^25d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		172
	70	125.4	0.0 – 797.519	$2s^22p - 2p^2(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$	Q	155
	10	131.516	0.0 – 760.342	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		172
	10	131.638	0.7445 – 760.342	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		172
	10	132.207	86.0435 – 842.2080	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - {}^4P^\circ$	$\frac{3}{2} - \frac{5}{2}$		172
	100	132.310	86.4070 – 842.2080	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - {}^4P^\circ$	$\frac{5}{2} - \frac{5}{2}$		172
	10	132.389	86.4070 – 841.880	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - {}^4P^\circ$	$\frac{5}{2} - \frac{3}{2}$	Q	176,375
	200	132.453	85.7902 – 840.7930	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - {}^4D^\circ$	$\frac{1}{2} - \frac{3}{2}$		172
	300	132.484	86.0435 – 840.8515	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - {}^4D^\circ$	$\frac{3}{2} - \frac{5}{2}$		172
	300	132.511	86.4070 – 841.0610	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - {}^4D^\circ$	$\frac{5}{2} - \frac{7}{2}$		172
	100	132.699	0.0 – 753.529	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		172

F V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	132.819	0.7445 – 753.656	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		172
	10	133.082	0.0 – 751.406	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		172
	100	133.208	0.7445 – 751.452	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		172
	110	133.599	86.0435 – 834.5591	$2s2p^2 - 2p^2(^3P)3p$	${}^4P - {}^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		172
	100	133.662	86.4070 – 834.5591	$2s2p^2 - 2p^2(^3P)3p$	${}^4P - {}^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		172
	400	134.407	0.0 – 744.01	$2s^22p - 2s^24d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		172
	500	134.539	0.7445 – 744.036	$2s^22p - 2s^24d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		172
	1	135.621	85.7902 – 823.131	$2s2p^2 - 2p^2(^3P)3p$	${}^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		172
	10	135.692	86.4070 – 823.381	$2s2p^2 - 2p^2(^3P)3p$	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		172
	300	136.902	86.4070 – 816.8570	$2s2p^2 - 2p^2(^3P)3p$	${}^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		172
	10	136.955	86.4070 – 816.5650	$2s2p^2 - 2p^2(^3P)3p$	${}^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		172
	100	138.181	86.4070 – 810.0950	$2s2p^2 - 2s2p(^3P^\circ)4s$	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		176,375
	10	138.256	86.4070 – 809.7030	$2s2p^2 - 2s2p(^3P^\circ)4s$	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		176,375
	10	140.266	0.0 – 712.936	$2s^22p - 2s^24s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		172
	100	140.414	0.7445 – 712.936	$2s^22p - 2s^24s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		172
	100	142.422	152.8746 – 854.971	$2s2p^2 - 2p^2(^1D)3p$	${}^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$	Q	176,375
	100	143.897	152.8746 – 847.817	$2s2p^2 - 2s2p(^3P^\circ)4d$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		172
	15	143.965	152.8987 – 847.506	$2s2p^2 - 2s2p(^3P^\circ)4d$	${}^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		172
	100	144.637	152.8746 – 844.266	$2s2p^2 - 2p^2(^1D)3p$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		176,375
	90	144.673	152.8987 – 844.112	$2s2p^2 - 2p^2(^1D)3p$	${}^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		176,375
	100	145.177	152.8746 – 841.695	$2s2p^2 - 2s2p(^3P^\circ)4d$	${}^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		172
	200	145.392	0.0 – 687.806	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		172
	300	145.547	0.7445 – 687.806	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		172
	400	147.946	0.0 – 675.932	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		172
	500	148.002	0.7445 – 676.422	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		172
	100	148.108	0.7445 – 675.932	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		172
	50	152.035	0.0 – 657.7448	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^4D$	$\frac{1}{2}-\frac{1}{2}$		211
	50	152.174	0.7445 – 657.8900	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^4D$	$\frac{3}{2}-\frac{3}{2}$		211
	200	152.339	0.0 – 656.436	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		172
	300	152.391	0.0 – 656.208	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		172
	400	152.511	0.7445 – 656.436	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		172
	200	152.563	0.7445 – 656.208	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		172
	100	157.515	152.8746 – 787.764	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		172
	400	158.537	152.8746 – 783.65	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		172
	1	159.558	214.8804 – 841.598	$2s2p^2 - 2s2p(^3P^\circ)4d$	${}^2P - {}^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		172
	10	159.658	215.3481 – 841.695	$2s2p^2 - 2s2p(^3P^\circ)4d$	${}^2P - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		172
	200	162.013	85.7902 – 703.0200	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$		172
	300	162.053	85.7902 – 702.8660	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		172
	300	162.082	86.0435 – 703.0200	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		172
	200	162.121	86.0435 – 702.8660	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		172
	300	162.172	86.0435 – 702.6640	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		172
	300	162.215	86.4070 – 702.8660	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		172
	400	162.270	86.4070 – 702.6640	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		172
	300	163.456	85.7902 – 697.5752	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		172
	400	163.501	86.0435 – 697.6750	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		172
	500	163.558	86.4070 – 697.8110	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		172
	200	163.596	86.4070 – 697.6750	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		172
	900	165.983	0.0 – 602.476	$2s^22p - 2s^23d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		172
	1000	166.177	0.7445 – 602.516	$2s^22p - 2s^23d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		172
	100	167.858	197.5664 – 793.308	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		172
	10	171.214	276.4138 – 860.4778	$2p^3 - 2p^2(^3P)3d$	${}^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		172
	100	171.241	276.4138 – 860.3858	$2p^3 - 2p^2(^3P)3d$	${}^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		172
	200	171.302	276.4138 – 860.1778	$2p^3 - 2p^2(^3P)3d$	${}^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		172
	100	173.020	215.3481 – 793.308	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		172

F V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	173.656	307.2273 – 883.083	$2p^3 - 2p^2(^1D)3d$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		176,375
	10	173.714	307.2751 – 882.93	$2p^3 - 2p^2(^1D)3d$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		176,375
	300	174.490	307.2273 – 880.312	$2p^3 - 2p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		172
	300	174.513	307.2751 – 880.312	$2p^3 - 2p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		172
	300	174.568	214.8804 – 787.725	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		172
	400	174.698	215.3481 – 787.764	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		172
	10	176.472	307.2273 – 873.904	$2p^3 - 2p^2(^1D)3d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		172
	500	178.434	152.8746 – 713.306	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		172
	400	178.590	152.8987 – 712.84	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		172
	300	178.612	152.8746 – 712.755	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		172
	400	182.979	152.8746 – 699.389	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		172
	300	183.016	152.8987 – 699.293	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		172
	10	183.208	307.2273 – 853.035	$2p^3 - 2p^2(^3P)3d$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		172
	400	186.715	86.0435 – 621.6190	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		172
	400	186.788	85.7902 – 621.1510	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		172
	500	186.842	86.4070 – 621.6190	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		172
	300	186.879	86.0435 – 621.1510	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		172
	400	186.968	86.0435 – 620.8945	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		172
	400	187.008	86.4070 – 621.1510	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		172
	200	189.943	347.4425 – 873.904	$2p^3 - 2p^2(^1D)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		172
	600	190.571	0.0 – 524.751	$2s^22p - 2s^23s$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		172
	700	190.839	0.7445 – 524.751	$2s^22p - 2s^23s$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		172
	300	191.892	197.5664 – 718.691	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		172
	400	191.973	197.5664 – 718.472	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		172
	300	194.108	197.5664 – 712.755	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		172
	200	196.713	276.4138 – 784.7688	$2p^3 - 2p^2(^3P)3s$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		176,375
	100	196.870	276.4138 – 784.3628	$2p^3 - 2p^2(^3P)3s$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		176,375
	1	197.615	347.4206 – 853.442	$2p^3 - 2p^2(^3P)3d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		172
	10	197.780	347.4425 – 853.035	$2p^3 - 2p^2(^3P)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		172
	100	198.476	307.2273 – 811.075	$2p^3 - 2p^2(^1D)3s$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		172
	1	198.765	215.3481 – 718.472	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		172
	100	200.861	214.8804 – 712.755	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		172
	400	205.552	152.8746 – 639.365	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		172
	300	205.778	152.8987 – 638.856	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		172
	200	206.430	214.8804 – 699.293	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		172
	300	206.594	215.3481 – 699.389	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		172
	10	213.684	152.8987 – 620.8945	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2D - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$	Q	176,375
	10	215.676	347.4425 – 811.075	$2p^3 - 2p^2(^1D)3s$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		172
	1	223.999	307.2273 – 753.656	$2p^3 - 2s2p(^1P^\circ)3p$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		172
	10	225.114	307.2273 – 751.452	$2p^3 - 2s2p(^1P^\circ)3p$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$	Q	176,375
	200	226.341	197.5664 – 639.365	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		172
	90	226.608	197.5664 – 638.856	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		172
	100	235.840	215.3481 – 639.365	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		172
	300	242.324	152.8746 – 565.544	$2s2p^2 - 2s^23p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		172
	200	242.439	152.8987 – 565.367	$2s2p^2 - 2s^23p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		172
	400	464.367	0.0 – 215.3481	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		562
	500	465.374	0.0 – 214.8804	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		562
	600	465.976	0.7445 – 215.3481	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		562
	400	466.994	0.7445 – 214.8804	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		562
	300	506.159	0.0 – 197.5664	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		562
	400	508.075	0.7445 – 197.5664	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		562
	150	513.969	152.8746 – 347.4425	$2s2p^2 - 2p^3$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		562
	100	514.082	152.8987 – 347.4206	$2s2p^2 - 2p^3$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		562
	200	524.594	85.7902 – 276.4138	$2s2p^2 - 2p^3$	$^4P - ^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		562

F V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	300	525.292	86.0435 – 276.4138	2s2p^2 – 2p^3	^{4}P – ^{4}S°	3/2 – 3/2		562
	400	526.297	86.4070 – 276.4138	2s2p^2 – 2p^3	^{4}P – ^{4}S°	5/2 – 3/2		562
		539.91	602.516 – 787.725	2s^{2}3d – 2s2p(^{1}P°)3d	^{2}D – ^{2}D°	5/2 – 3/2	Q	244
		552.06	602.516 – 783.65	2s^{2}3d – 2s2p(^{1}P°)3d	^{2}D – ^{2}F°	5/2 – 7/2	Q	244
		560.24	565.544 – 744.036	2s^{2}3p – 2s^{2}4d	^{2}P° – ^{2}D	3/2 – 5/2	Q	244
		643.14	746.525 – 902.012	2s^{2}4f – 2s2p(^{3}P°)5p	^{2}F° – ^{2}D	7/2 – 5/2	P	244
	150	647.666	152.8746 – 307.2751	2s2p^2 – 2p^3	^{2}D – ^{2}D°	5/2 – 3/2		562
	400	647.768	152.8987 – 307.2751	2s2p^2 – 2p^3	^{2}D – ^{2}D°	3/2 – 3/2		562
	500	647.868	152.8746 – 307.2273	2s2p^2 – 2p^3	^{2}D – ^{2}D°	5/2 – 5/2		562
	150	647.967	152.8987 – 307.2273	2s2p^2 – 2p^3	^{2}D – ^{2}D°	3/2 – 5/2		562
	700	654.029	0.0 – 152.8987	2s^{2}2p – 2s2p^2	g^{2}P° – ^{2}D	1/2 – 3/2		562
	500	657.227	0.7445 – 152.8987	2s^{2}2p – 2s2p^2	g^{2}P° – ^{2}D	3/2 – 3/2		562
	800	657.333	0.7445 – 152.8746	2s^{2}2p – 2s2p^2	g^{2}P° – ^{2}D	3/2 – 5/2		562
	35	667.218	197.5664 – 347.4425	2s2p^2 – 2p^3	^{2}S – ^{2}P°	1/2 – 3/2		562
	15	667.315	197.5664 – 347.4206	2s2p^2 – 2p^3	^{2}S – ^{2}P°	1/2 – 1/2		562
		694.40	602.516 – 746.525	2s^{2}3d – 2s^{2}4f	^{2}D – ^{2}F°	5/2 – 7/2		244
		706.43	699.389 – 840.946	2s2p(^{3}P°)3d – 2s2p(^{3}P°)4f	^{2}D° – ^{2}F	5/2 – 7/2		244
		712.64	702.664 – 842.987	2s2p(^{3}P°)3d – 2s2p(^{3}P°)4f	^{4}P° – ^{4}D	5/2 – 7/2		244
		744.95	713.306 – 847.543	2s2p(^{3}P°)3d – 2s2p(^{3}P°)4f	^{2}F° – ^{2}G	7/2 – 9/2		244
	35	754.359	214.8804 – 347.4425	2s2p^2 – 2p^3	^{2}P – ^{2}P°	1/2 – 3/2		562
	60	754.490	214.8804 – 347.4206	2s2p^2 – 2p^3	^{2}P – ^{2}P°	1/2 – 1/2		562
	100	757.037	215.3481 – 347.4425	2s2p^2 – 2p^3	^{2}P – ^{2}P°	3/2 – 3/2		562
	35	757.158	215.3481 – 347.4206	2s2p^2 – 2p^3	^{2}P – ^{2}P°	3/2 – 1/2		562
	100	1082.313	214.8804 – 307.2751	2s2p^2 – 2p^3	^{2}P – ^{2}D°	1/2 – 3/2		562
	35	1087.820	215.3481 – 307.2751	2s2p^2 – 2p^3	^{2}P – ^{2}D°	3/2 – 3/2		562
	150	1088.387	215.3481 – 307.2273	2s2p^2 – 2p^3	^{2}P – ^{2}D°	3/2 – 5/2		562
	1	1167.372	0.7445 – 86.4070	2s^{2}2p – 2s2p^2	g^{2}P° – ^{4}P	3/2 – 5/2		562

FLUORINE VI (F^{5+}), Z = 9
Ground State $1s^22s^2(^1S_0)$ (4 electrons)
Ionization Potential 1 267 622 cm^{-1}; 157.166 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	60	91.0	0.0 – 1099.409	2s^2 – 2s5p	g^{1}S – ^{1}P°	0 – 1	Q	155
	45	91.9	97.441 – 1185.884	2s2p – 2s7d	^{3}P° – ^{3}D	2 – 3	Q	155
	120	94.45	97.441 – 1156.097	2s2p – 2s6d	^{3}P° – ^{3}D	2 – 3	Q	155
	80	97.95	96.867 – 1117.741	2s2p – 2p4p	^{3}P° – ^{3}D	1 – 2	Q	155
	10	99.044	96.867 – 1106.313	2s2p – 2s5d	^{3}P° – ^{3}D	1 – 2		171
	15	99.105	97.441 – 1106.417	2s2p – 2s5d	^{3}P° – ^{3}D	2 – 3		171
	10	99.203	0.0 – 1007.852	2s^2 – 2s4p	g^{1}S – ^{1}P°	0 – 1		171
	180	103.2	252.154 – 1220.94	2p^2 – 2p5d	^{3}P – ^{3}D°	2 – 3	Q	155
	90	105.4	274.599 – 1223.598	2p^2 – 2p5d	^{1}D – ^{1}F°	2 – 3	Q	155
	120	106.55	0.0 – 938.811	2s^2 – 2p3d	g^{1}S – ^{3}P°	0 – 1	Q	155
	45	107.65	186.841 – 1115.967	2s2p – 2p4p	^{1}P° – ^{1}P	1 – 1	Q	155
	100	108.5	186.841 – 1108.712	2s2p – 2s5d	^{1}P° – ^{1}D	1 – 2	Q	155
	100	108.975	96.605 – 1014.243	2s2p – 2s4d	^{3}P° – ^{3}D	0 – 1		171
	150	109.040	97.441 – 1014.439	2s2p – 2s4d	^{3}P° – ^{3}D	2 – 3		171
	90	112.0	97.441 – 989.928	2s2p – 2s4s	^{3}P° – ^{3}S	2 – 1	Q	155
	10	113.840	252.154 – 1130.339	2p^2 – 2p4d	^{3}P – ^{3}D°	2 – 3		171
	10	116.094	274.599 – 1135.953	2p^2 – 2p4d	^{1}D – ^{1}F°	2 – 3		171
	115	117.4	274.599 – 1126.168	2p^2 – 2p4d	^{1}D – ^{1}D°	2 – 2	Q	155

F VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	120.116	186.841 – 1019.363	2s2p – 2s4d	$^1P^\circ$ – ^1D	1 – 2		171
	100	122.122	96.867 – 915.77	2s2p – 2p($^2P^\circ$)3p	$^3P^\circ$ – ^3P	1 – 2		171
	10	122.169	96.867 – 915.42	2s2p – 2p($^2P^\circ$)3p	$^3P^\circ$ – ^3P	1 – 1		171
	200	122.200	97.441 – 915.77	2s2p – 2p($^2P^\circ$)3p	$^3P^\circ$ – ^3P	2 – 2		171
	15	122.251	97.441 – 915.42	2s2p – 2p($^2P^\circ$)3p	$^3P^\circ$ – ^3P	2 – 1		171
	10	123.051	96.605 – 909.284	2s2p – 2p($^2P^\circ$)3p	$^3P^\circ$ – ^3S	0 – 1		171
	10	123.090	96.867 – 909.284	2s2p – 2p($^2P^\circ$)3p	$^3P^\circ$ – ^3S	1 – 1		171
	100	123.175	97.441 – 909.284	2s2p – 2p($^2P^\circ$)3p	$^3P^\circ$ – ^3S	2 – 1		171
	300	124.387	97.441 – 901.397	2s2p – 2p($^2P^\circ$)3p	$^3P^\circ$ – ^3D	2 – 3		171
	10	124.440	96.867 – 900.442	2s2p – 2p($^2P^\circ$)3p	$^3P^\circ$ – ^3D	1 – 1		171
	10	124.474	97.441 – 900.785	2s2p – 2p($^2P^\circ$)3p	$^3P^\circ$ – ^3D	2 – 2		171
	500	126.923	0.0 – 787.833	$2s^2$ – 2s3p	g^1S – $^1P^\circ$	0 – 1		171
	150	129.5	340.424 – 1112.328	$2p^2$ – 2p4s	^1S – $^1P^\circ$	0 – 1	Q	155
	300	135.397	186.841 – 925.393	2s2p – 2p($^2P^\circ$)3p	$^1P^\circ$ – ^1D	1 – 2		171
	500	139.758	96.605 – 812.169	2s2p – 2s3d	$^3P^\circ$ – ^3D	0 – 1		171
	600	139.800	96.867 – 812.169	2s2p – 2s3d	$^3P^\circ$ – ^3D	1 – 2		171
	700	139.900	97.441 – 812.208	2s2p – 2s3d	$^3P^\circ$ – ^3D	2 – 3		171
	200	141.154	186.841 – 895.287	2s2p – 2p($^2P^\circ$)3p	$^1P^\circ$ – ^1P	1 – 1		171
	100	145.462	251.353 – 938.811	$2p^2$ – 2p3d	^3P – $^3P^\circ$	0 – 1		171
	100	145.489	251.644 – 938.958	$2p^2$ – 2p3d	^3P – $^3P^\circ$	1 – 0		171
	100	145.585	251.644 – 938.524	$2p^2$ – 2p3d	^3P – $^3P^\circ$	1 – 2		171
	100	145.630	252.154 – 938.811	$2p^2$ – 2p3d	^3P – $^3P^\circ$	2 – 1		171
	300	145.691	252.154 – 938.524	$2p^2$ – 2p3d	^3P – $^3P^\circ$	2 – 2		171
	200	146.576	251.353 – 933.586	$2p^2$ – 2p3d	^3P – $^3D^\circ$	0 – 1		171
	300	146.613	251.644 – 933.717	$2p^2$ – 2p3d	^3P – $^3D^\circ$	1 – 2		171
	400	146.676	252.154 – 933.92	$2p^2$ – 2p3d	^3P – $^3D^\circ$	2 – 3		171
	200	146.718	252.154 – 933.717	$2p^2$ – 2p3d	^3P – $^3D^\circ$	2 – 2		171
	400	148.653	274.599 – 947.305	$2p^2$ – 2p3d	^1D – $^1F^\circ$	2 – 3		171
	200	153.678	96.605 – 747.298	2s2p – 2s3s	$^3P^\circ$ – ^3S	0 – 1		171
	300	153.741	96.867 – 747.298	2s2p – 2s3s	$^3P^\circ$ – ^3S	1 – 1		171
	400	153.880	97.441 – 747.298	2s2p – 2s3s	$^3P^\circ$ – ^3S	2 – 1		171
	300	154.506	274.599 – 921.821	$2p^2$ – 2p3d	^1D – $^1D^\circ$	2 – 2		171
	600	156.247	186.841 – 826.853	2s2p – 2s3d	$^1P^\circ$ – ^1D	1 – 2		171
	120	161.174	251.644 – 872.078	$2p^2$ – 2p($^2P^\circ$)3s	^3P – $^3P^\circ$	1 – 2		171
	100	161.257	251.353 – 871.441	$2p^2$ – 2p($^2P^\circ$)3s	^3P – $^3P^\circ$	0 – 1		171
	300	161.308	252.154 – 872.078	$2p^2$ – 2p($^2P^\circ$)3s	^3P – $^3P^\circ$	2 – 2		171
	90	161.341	251.644 – 871.441	$2p^2$ – 2p($^2P^\circ$)3s	^3P – $^3P^\circ$	1 – 1		171
	100	161.414	251.644 – 871.16	$2p^2$ – 2p($^2P^\circ$)3s	^3P – $^3P^\circ$	1 – 0		171
	120	161.477	252.154 – 871.441	$2p^2$ – 2p($^2P^\circ$)3s	^3P – $^3P^\circ$	2 – 1		171
	200	163.138	340.424 – 953.402	$2p^2$ – 2p3d	^1S – $^1P^\circ$	0 – 1		171
	100	164.015	274.599 – 884.29	$2p^2$ – 2p($^2P^\circ$)3s	^1D – $^1P^\circ$	2 – 1		171
	100	173.145	186.841 – 764.392	2s2p – 2s3s	$^1P^\circ$ – ^1S	1 – 0		171
	100	194.840	274.599 – 787.833	$2p^2$ – 2s3p	^1D – $^1P^\circ$	2 – 1		171
		351.0	933.717 – 1218.588	2p3d – 2p5p	$^3D^\circ$ – ^1D	2 – 2	Q	533
		406.12						244
		444.47	787.833 – 1012.82	2s3p – 2s4d	$^1P^\circ$ – ^1D	1 – 2	Q	244
		446.49	790.474 – 1014.439	2s3p – 2s4d	$^3P^\circ$ – ^3D	2 – 3	P	244
		469.48						244
		477.55	787.833 – 997.235	2s3p – 2s4s	$^1P^\circ$ – ^1S	1 – 0		244
		479.85	812.208 – 1020.606	2s3d – 2s4f	^3D – $^3F^\circ$	3 – 4		244
		509.26	790.474 – 986.837	2s3p – 2s4s	$^3P^\circ$ – ^3S	2 – 1		244
		511.33	826.853 – 1022.42	2s3d – 2s4f	^1D – $^1F^\circ$	2 – 3		244
	60	535.207	0.0 – 186.841	$2s^2$ – 2s2p	g^1S – $^1P^\circ$	0 – 1		562
	10	643.969	96.867 – 252.154	2s2p – $2p^2$	$^3P^\circ$ – ^3P	1 – 2		562

F VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	644.999	96.605 – 251.644	$2s2p - 2p^2$	$^3P^\circ - {}^3P$	0 – 1		562
	5	646.092	96.867 – 251.644	$2s2p - 2p^2$	$^3P^\circ - {}^3P$	1 – 1		562
	35	646.360	97.441 – 252.154	$2s2p - 2p^2$	$^3P^\circ - {}^3P$	2 – 2		562
	10	647.307	96.867 – 251.353	$2s2p - 2p^2$	$^3P^\circ - {}^3P$	1 – 0		562
	10	648.496	97.441 – 251.644	$2s2p - 2p^2$	$^3P^\circ - {}^3P$	2 – 1		562
	5	651.082	186.841 – 340.424	$2s2p - 2p^2$	$^1P^\circ - {}^1S$	1 – 0		562
		1032.34	0.0 – 96.867	$2s^2 - 2s2p$	$g^1S - {}^3P^\circ$	0 – 1		211
	100	1139.496	186.841 – 274.599	$2s2p - 2p^2$	$^1P^\circ - {}^1D$	1 – 2		562

FLUORINE VII (F^{6+}), Z = 9
Ground State $1s^22s(^2S_{1/2})$ (3 electrons)
Ionization Potential 1 493 629 cm^{-1}; 185.188 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	16.831	1140.416 – 7081.8	$1s^24s - 1s2p(^1P^\circ)4s$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		875
	50	16.857	854.625 – 6786.9	$1s^23s - 1s2p(^1P^\circ)3s$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		875
	0	16.935	0.0 – 5894.1	$1s^22s - 1s(2s2p(^1P^\circ))$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	Q	875
	20	16.966	0.0 – 5894.1	$1s^22s - 1s(2s2p(^1P^\circ))$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		875
	0	17.047	113.2362 – 5979.3	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		875
	40	17.092	0.0 – 5850.7	$1s^22s - 1s(2s2p(^3P^\circ))$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		875
	40	17.116	113.2362 – 5955.7	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		875
	50	17.167	113.2362 – 5938.3	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		875
	1	69.448	0.0 – 1439.93	$1s^22s - 1s^210p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		138
	1	70.120	0.0 – 1426.13	$1s^22s - 1s^29p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		138
	10	70.979	0.0 – 1408.87	$1s^22s - 1s^28p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		138
	16	72.300	0.0 – 1382.858	$1s^22s - 1s^27p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		138
	38	74.481	0.0 – 1342.69	$1s^22s - 1s^26p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		138
	2	75.332	113.2362 – 1440.76	$1s^22p - 1s^210d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		138
	6	76.108	113.2362 – 1427.22	$1s^22p - 1s^29d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		138
	12	77.115	113.2362 – 1410.06	$1s^22p - 1s^28d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		138
	70	78.370	0.0 – 1276.14	$1s^22s - 1s^25p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		138
	29	78.699	113.2362 – 1383.841	$1s^22p - 1s^27d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		138
	55	81.222	113.2362 – 1344.141	$1s^22p - 1s^26d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		138
	1	81.581	113.2362 – 1339.216	$1s^22p - 1s^26s$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		138
	89	85.808	113.2362 – 1278.404	$1s^22p - 1s^25d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		138
	17	86.442	113.2362 – 1269.826	$1s^22p - 1s^25s$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		138
	97	86.746	0.0 – 1152.79	$1s^22s - 1s^24p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		138
	10	95.697	112.2604 – 1157.223	$1s^22p - 1s^24d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		171
	100	95.775	113.2362 – 1157.255	$1s^22p - 1s^24d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		171
	17	97.261	112.2604 – 1140.416	$1s^22p - 1s^24s$	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		138
	28	97.360	113.2362 – 1140.416	$1s^22p - 1s^24s$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		138
		106.7						897
		110.5						897
	100	111.6						155
	400	112.935	0.0 – 885.418	$1s^22s - 1s^23p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		171
	300	112.976	0.0 – 885.136	$1s^22s - 1s^23p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		171
		114.2						897
	400	127.653	112.2604 – 895.632	$1s^22p - 1s^23d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		171
	500	127.796	113.2362 – 895.722	$1s^22p - 1s^23d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		171
	100	134.703	112.2604 – 854.625	$1s^22p - 1s^23s$	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		171

F VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	134.882	113.2362 – 854.625	$1s^22p - 1s^23s$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		171
		335.38	854.625 – 1152.79	$1s^23s - 1s^24p$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	244
		367.53	885.136 – 1157.223	$1s^23p - 1s^24d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$	P	244
		367.87	885.418 – 1157.255	$1s^23p - 1s^24d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		244
		377.0						533
		381.80	895.722 – 1157.642	$1s^23d - 1s^24f$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	244
		385.6						533
		389.00	895.722 – 1152.79	$1s^23d - 1s^24p$	$^2D - ^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$	P	244
		392.16	885.418 – 1140.416	$1s^23p - 1s^24s$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$	P	244
		395.0						533
		396.7	1157.64 – 1409.7	$1s^24f - 1s^28g$	$^2F^\circ - ^2G$	$\frac{7}{2} - \frac{9}{2}$		533
		432.81	1152.79 – 1383.841	$1s^24p - 1s^27d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	533
		441.0	1157.255 – 1384.0	$1s^24d - 1s^27f$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		533
		444.0	1157.64 – 1382.87	$1s^24f - 1s^27g$	$^2F^\circ - ^2G$	$\frac{7}{2} - \frac{9}{2}$		533
		494.4	1140.416 – 1342.69	$1s^24s - 1s^26p$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		533
		522.6	1152.79 – 1344.141	$1s^24p - 1s^26d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	533
		534.4	1157.255 – 1344.38	$1s^24d - 1s^26f$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		533
		535.7	1157.64 – 1344.31	$1s^24f - 1s^26g$	$^2F^\circ - ^2G$	$\frac{7}{2} - \frac{9}{2}$		533
		736.8	1140.416 – 1276.14	$1s^24s - 1s^25p$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		533
		754.2						533
		772.7						533
		796.1	1152.79 – 1278.404	$1s^24p - 1s^25d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	533
		824.5	1157.255 – 1278.54	$1s^24d - 1s^25f$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		533
		825.8	1157.64 – 1278.73	$1s^24f - 1s^25g$	$^2F^\circ - ^2G$	$\frac{7}{2} - \frac{9}{2}$		533
		826.54						244
		828.1	1157.64 – 1278.404	$1s^24f - 1s^25d$	$^2F^\circ - ^2D$	$\frac{7}{2} - \frac{5}{2}$	P	533
	10	883.110	0.0 – 113.2362	$1s^22s - 1s^22p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		562
	5	890.786	0.0 – 112.2604	$1s^22s - 1s^22p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		562

FLUORINE VIII (F^{7+}), Z = 9
Ground State $1s^2(^1S_0)$ (2 electrons)
Ionization Potential 7 693 780 cm^{-1}; 953.915 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	13.143	0.0 – 7608.6	$1s^2 - 1s9p$	$g^1S - ^1P^\circ$	0 – 1		875
	20	13.185	0.0 – 7584.40	$1s^2 - 1s8p$	$g^1S - ^1P^\circ$	0 – 1		875
	40	13.244	0.0 – 7550.6	$1s^2 - 1s7p$	$g^1S - ^1P^\circ$	0 – 1		875
	50	13.334	0.0 – 7499.63	$1s^2 - 1s6p$	$g^1S - ^1P^\circ$	0 – 1		875
	60	13.488	0.0 – 7414.00	$1s^2 - 1s5p$	$g^1S - ^1P^\circ$	0 – 1		875
		13.495	0.0 – 7410.27	$1s^2 - 1s5p$	$g^1S - ^3P^\circ$	0 – 1	P	728
	80	13.781	0.0 – 7256.37	$1s^2 - 1s4p$	$g^1S - ^1P^\circ$	0 – 1		875
		13.792	0.0 – 7250.39	$1s^2 - 1s4p$	$g^1S - ^3P^\circ$	0 – 1	P	728
	100	14.458	0.0 – 6916.59	$1s^2 - 1s3p$	$g^1S - ^1P^\circ$	0 – 1		875
		14.487	0.0 – 6902.56	$1s^2 - 1s3p$	$g^1S - ^3P^\circ$	0 – 1	P	728
	30	15.008	7250.39 – 13913.38	$1s4p - 2p4p$	$^3P^\circ - ^3D$	2 – 3	A	875
	30	15.008	7244.27+R – 13907.38+R	$1s4s - 2p4s$	$^3S - ^3P^\circ$	1 – 2	A	875
	30	15.046	6885.09+R – 13530.42+R	$1s3s - 2p3s$	$^3S - ^3P^\circ$	1 – 2	A	875
	30	15.046	6902.56 – 13548.84	$1s3p - 2p3p$	$^3P^\circ - ^3D$	2 – 3	A	875
	0	15.076	6916.59 – 13548.84	$1s3p - 2p3p$	$^1P^\circ - ^3D$	1 – 2	Q	875
	20	15.155	5949.90 – 12548.38	$1s2p - 2p^2$	$^1P^\circ - ^1S$	1 – 0	A	875
	30	15.224	5830.04 – 12398.50	$1s2s - 2s3p$	$^3S - ^3P^\circ$	1 – 2	A	875
	30	15.246	5901.70+R – 12459.85+R	$1s2p - 2p^2$	$^3P^\circ - ^3P$	2 – 2	A	875

F VIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	40	15.286	5949.90 – 12491.83	$1s2p - 2p^2$	$^1P^\circ - ^1D$	1 – 2	A	875
	200	16.807	0.0 – 5949.90	$1s^2 - 1s2p$	$g^1S - ^1P^\circ$	0 – 1		875
	60	16.947	0.0 – 5900.75	$1s^2 - 1s2p$	$g^1S - ^3P^\circ$	0 – 1		875
		17.153	0.0 – 5830.04	$1s^2 - 1s2s$	$g^1S - ^3S$	0 – 1	F,P	375,918
		25.74	5903.10 – 9788.84+L	1s2s – 2s2p	$^1S - ^1P^\circ$	0 – 1	P	375
		25.79	5830.04 – 9707.49+L	1s2s – 2s2p	$^3S - ^3P^\circ$	1 – 2	P	375
	13	58.573	5901.70+R – 7608.97+R	1s2p – 1s9d	$^3P^\circ - ^3D$	2 – 3		138
	3	59.401	5901.70+R – 7585.17+R	1s2p – 1s8d	$^3P^\circ - ^3D$	2 – 3		138
	5	60.609	5901.70+R – 7551.62+R	1s2p – 1s7d	$^3P^\circ - ^3D$	2 – 3		138
	1	61.175	5949.90 – 7584.65	1s2p – 1s8d	$^1P^\circ - ^1D$	1 – 2		138
	12	62.491	5949.90 – 7550.13	1s2p – 1s7d	$^1P^\circ - ^1D$	1 – 2		138
	12	62.569	5901.70+R – 7499.94+R	1s2p – 1s6d	$^3P^\circ - ^3D$	2 – 3		138
	14	63.282	5830.04 – 7410.27	1s2s – 1s5p	$^3S - ^3P^\circ$	1 – 2		138
	8	64.581	5949.90 – 7498.34	1s2p – 1s6d	$^1P^\circ - ^1D$	1 – 2		138
	28	66.127	5901.70+R – 7413.94+R	1s2p – 1s5d	$^3P^\circ - ^3D$	2 – 3		138
	11	68.381	5949.90 – 7412.29	1s2p – 1s5d	$^1P^\circ - ^1D$	1 – 2		138
	29	70.405	5830.04 – 7250.39	1s2s – 1s4p	$^3S - ^3P^\circ$	1 – 2		138
	58	73.841	5901.70+R – 7255.96+R	1s2p – 1s4d	$^3P^\circ - ^3D$	2 – 3		138
		73.895	5903.10 – 7256.37	1s2s – 1s4p	$^1S - ^1P^\circ$	0 – 1	P	138
		74.484	5901.70+R – 7244.27+R	1s2p – 1s4s	$^3P^\circ - ^3S$	2 – 1		138
	25	76.667	5949.90 – 7254.24	1s2p – 1s4d	$^1P^\circ - ^1D$	1 – 2		138
	49	93.238	5830.04 – 6902.56	1s2s – 1s3p	$^3S - ^3P^\circ$	1 – 2		138
		98.669	5903.10 – 6916.59	1s2s – 1s3p	$^1S - ^1P^\circ$	0 – 1	P	138
	74	98.698	5901.70+R – 6914.89+R	1s2p – 1s3d	$^3P^\circ - ^3D$	2 – 3		138
	62	98.797	5900.75 – 6912.93	1s2p – 1s3d	$^3P^\circ - ^3D$	1 – 2		138
	4	101.689	5901.70+R – 6885.09+R	1s2p – 1s3s	$^3P^\circ - ^3S$	2 – 1		138
	28	103.810	5949.90 – 6912.93	1s2p – 1s3d	$^1P^\circ - ^3D$	1 – 2	Q	138
	6	104.891	5949.90 – 6903.27	1s2p – 1s3s	$^1P^\circ - ^1S$	1 – 0		138
		170.76	6914.89+R – 7500.52+R	1s3d – 1s6f	$^3D - ^3F^\circ$	3 – 4	P	375
		170.84	6915.90+K – 7501.23+K	1s3d – 1s6f	$^1D - ^1F^\circ$	2 – 3	P	375
		200.05	6914.89+R – 7414.76+R	1s3d – 1s5f	$^3D - ^3F^\circ$	3 – 4	P	087
		200.24	6915.90+K – 7415.30+K	1s3d – 1s5f	$^1D - ^1F^\circ$	2 – 3	P	087
		273.75	6885.09+R – 7250.39	1s3s – 1s4p	$^3S - ^3P^\circ$	1 – 2	P	375
		283.21	6903.27 – 7256.37	1s3s – 1s4p	$^1S - ^1P^\circ$	0 – 1	P	375
		292.52	6914.89+R – 7256.75+R	1s3d – 1s4f	$^3D - ^3F^\circ$	3 – 4	P	087
		292.95	6915.90+K – 7257.26+K	1s3d – 1s4f	$^1D - ^1F^\circ$	2 – 3	P	087
		340.0	7256.75+R – 7550.87+R	1s4f – 1s7g	$^3F^\circ - ^3G$	4 – 5		533
		408.9	7255.96+R – 7500.52+R	1s4d – 1s6f	$^3D - ^3F^\circ$	3 – 4		533
		409.7	7256.75+R – 7500.83+R	1s4f – 1s6g	$^3F^\circ - ^3G$	4 – 5		533
		584.0	7414.78+R – 7586.01+R	1s5g – 1s8h	$^3G - ^3H^\circ$	5 – 6		533
		632.0						533
		632.8	7256.75+R – 7414.78+R	1s4f – 1s5g	$^3F^\circ - ^3G$	4 – 5		533
		727.0	7414.78+R – 7552.33+R	1s5g – 1s7h	$^3G - ^3H^\circ$	5 – 6		533
		1395.48	5830.04 – 5901.70+R	1s2s – 1s2p	$^3S - ^3P^\circ$	1 – 2	P	375

FLUORINE IX (F^{8+}), Z = 9
Ground State $1s(^2S_{1/2})$ (1 electron)
Ionization Potential 8 897 240.3 cm^{-1}; 1103.126 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	0	11.353	0.0 – 8808.3393663	1s – 10p	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$		875
	10	11.380	0.0 – 8787.4842665	1s – 9p	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$		875
	20	11.418	0.0 – 8758.3276373	1s – 8p	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$		875
	30	11.473	0.0 – 8715.7991800	1s – 7p	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$		875
	40	11.560	0.0 – 8650.2719950	1s – 6p	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309,875
	60	11.707	0.0 – 8541.5944630	1s – 5p	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309,875
	55	11.988	0.0 – 8341.5242680	1s – 4p	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309,875
	25	11.989	0.0 – 8341.2232600	1s – 4p	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{1}{2}$	P	309,875
	70	12.643	0.0 – 7909.2786860	1s – 3p	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309,875
	30	12.644	0.0 – 7908.5651200	1s – 3p	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{1}{2}$	P	309,875
	130	14.982	0.0 – 6674.5272600	1s – 2p	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309,875
	70	14.988	0.0 – 6672.1191700	1s – 2p	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{1}{2}$	P	309,875
		46.814	6672.2312100 – 8808.3393663	2s – 10p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		46.864	6674.5272600 – 8808.3457418	2p – 10d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		47.276	6672.2312100 – 8787.4842665	2s – 9p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		47.327	6674.5272600 – 8787.4930123	2p – 9d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		47.936	6672.2312100 – 8758.3276373	2s – 8p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		47.989	6674.5272600 – 8758.3400903	2p – 8d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		48.934	6672.2312100 – 8715.7991800	2s – 7p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		48.989	6674.5272600 – 8715.8177700	2p – 7d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		50.555	6672.2312100 – 8650.2719950	2s – 6p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		50.613	6674.5272600 – 8650.3015160	2p – 6d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		53.494	6672.2312100 – 8541.5944630	2s – 5p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		53.558	6674.5272600 – 8541.6454780	2p – 5d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		59.906	6672.2312100 – 8341.5242680	2s – 4p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		59.984	6674.5272600 – 8341.6239100	2p – 4d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		80.838	6672.2312100 – 7909.2786860	2s – 3p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		80.972	6674.5272600 – 7909.5148691	2p – 3d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		111.143	7908.5986200 – 8808.3393663	3s – 10p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		111.226	7909.2786860 – 8808.3457418	3p – 10d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		111.255	7909.5148691 – 8808.3489337	3d – 10f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		113.780	7908.5986200 – 8787.4842665	3s – 9p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		113.867	7909.2786860 – 8787.4930123	3p – 9d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		113.898	7909.5148691 – 8787.4973907	3d – 9f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		117.685	7908.5986200 – 8758.3276373	3s – 8p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		117.777	7909.2786860 – 8758.3400903	3p – 8d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		117.809	7909.5148691 – 8758.3463245	3d – 8f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		123.885	7908.5986200 – 8715.7991800	3s – 7p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		123.987	7909.2786860 – 8715.8177700	3p – 7d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		124.021	7909.5148691 – 8715.8270755	3d – 7f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		134.830	7908.5986200 – 8650.2719950	3s – 6p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		134.949	7909.2786860 – 8650.3015160	3p – 6d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		134.989	7909.5148691 – 8650.3162940	3d – 6f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		157.979	7908.5986200 – 8541.5944630	3s – 5p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		158.136	7909.2786860 – 8541.6454780	3p – 5d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		158.189	7909.5148691 – 8541.6710130	3d – 5f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		214.086	8341.2374410 – 8808.3393663	4s – 10p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		214.215	8341.5242680 – 8808.3457418	4p – 10d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		214.259	8341.6239100 – 8808.3489337	4d – 10f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		224.091	8341.2374410 – 8787.4842665	4s – 9p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		224.231	8341.5242680 – 8787.4930123	4p – 9d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		224.279	8341.6239100 – 8787.4973907	4d – 9f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		230.987	7908.5986200 – 8341.5242680	3s – 4p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		231.297	7909.2786860 – 8341.6239100	3p – 4d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309

F IX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		231.396	7909.5148691 – 8341.6737830	3d – 4f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		239.756	8341.2374410 – 8758.3276373	4s – 8p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		239.914	8341.5242680 – 8758.3400903	4p – 8d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		239.968	8341.6239100 – 8758.3463245	4d – 8f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		266.979	8341.2374410 – 8715.7991800	4s – 7p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		267.170	8341.5242680 – 8715.8177700	4p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		267.234	8341.6239100 – 8715.8270755	4d – 7f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		323.588	8341.2374410 – 8650.2719950	4s – 6p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		323.858	8341.5242680 – 8650.3015160	4p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		323.947	8341.6239100 – 8650.3162940	4d – 6f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		374.684	8541.4476340 – 8808.3393663	5s – 10p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		374.881	8541.5944630 – 8808.3457418	5p – 10d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		374.948	8541.6454780 – 8808.3489337	5d – 10f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		406.443	8541.4476340 – 8787.4842665	5s – 9p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		406.672	8541.5944630 – 8787.4930123	5p – 9d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		406.749	8541.6454780 – 8787.4973907	5d – 9f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		461.084	8541.4476340 – 8758.3276373	5s – 8p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		461.370	8541.5944630 – 8758.3400903	5p – 8d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		461.466	8541.6454780 – 8758.3463245	5d – 8f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		499.109	8341.2374410 – 8541.5944630	4s – 5p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		499.697	8341.5242680 – 8541.6454780	4p – 5d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		499.882	8341.6239100 – 8541.6710130	4d – 5f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		573.554	8541.4476340 – 8715.7991800	5s – 7p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		573.976	8541.5944630 – 8715.8177700	5p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		574.114	8541.6454780 – 8715.8270755	5d – 7f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		918.912	8541.4476340 – 8650.2719950	5s – 6p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		919.904	8541.5944630 – 8650.3015160	5p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		920.210	8541.6454780 – 8650.3162940	5d – 6f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309

NEON , Z = 10
Unclassified Lines

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	35	100.94						846
	35	126.91						846
	30	134.31						846
	27	162.52						846

NEON I (Ne^{0+}), Z = 10
Ground State $1s^22s^22p^6(^1S_0)$ (10 electrons)
Ionization Potential 173 929.70 cm^{-1}; 21.565 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		257.19	0.0 – 388.82	$2s^22p^6 - 2s2p^68p$	$g\,^1S - {}^1P^\circ$	0 – 1	A	440
		257.68	0.0 – 388.08	$2s^22p^6 - 2s2p^67p$	$g\,^1S - {}^1P^\circ$	0 – 1	A	440
		258.48	0.0 – 386.88	$2s^22p^6 - 2s2p^66p$	$g\,^1S - {}^1P^\circ$	0 – 1	A	440
		259.96	0.0 – 384.68	$2s^22p^6 - 2s2p^65p$	$g\,^1S - {}^1P^\circ$	0 – 1	A	440
		263.11	0.0 – 380.07	$2s^22p^6 - 2s2p^64p$	$g\,^1S - {}^1P^\circ$	0 – 1	A	440
		272.21	0.0 – 367.36	$2s^22p^6 - 2s2p^63p$	$g\,^1S - {}^1P^\circ$	0 – 1	A	440
		576.0052	0.0 – 173.60953	$2p^6 - 2p^5(^2P^\circ_{1/2})10s$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382
		576.8650	0.0 – 173.35077	$2p^6 - 2p^5(^2P^\circ_{1/2})9s$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382
		577.1090	0.0 – 173.27749	$2p^6 - 2p^5(^2P^\circ_{3/2})13d$	$g\,^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	st	382
		577.1692	0.0 – 173.25943	$2p^6 - 2p^5(^2P^\circ_{1/2})10s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	st	382
		577.4886	0.0 – 173.16359	$2p^6 - 2p^5(^2P^\circ_{3/2})12d$	$g\,^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	st	382
		577.6047	0.0 – 173.12878	$2p^6 - 2p^5(^2P^\circ_{3/2})13s$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382
		577.9749	0.0 – 173.01789	$2p^6 - 2p^5(^2P^\circ_{3/2})11d$	$g\,^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	st	382
		578.0715	0.0 – 172.98898	$2p^6 - 2p^5(^2P^\circ_{1/2})8s$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382
		578.1270	0.0 – 172.97236	$2p^6 - 2p^5(^2P^\circ_{3/2})12s$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382
		578.5129	0.0 – 172.85699	$2p^6 - 2p^5(^2P^\circ_{1/2})9s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	st	382
		578.6056	0.0 – 172.82930	$2p^6 - 2p^5(^2P^\circ_{3/2})10d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382
		578.6185	0.0 – 172.82545	$2p^6 - 2p^5(^2P^\circ_{3/2})10d$	$g\,^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	st	382
		578.8224	0.0 – 172.76457	$2p^6 - 2p^5(^2P^\circ_{3/2})11s$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382
		579.4722	0.0 – 172.57083	$2p^6 - 2p^5(^2P^\circ_{3/2})9d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382
		579.4888	0.0 – 172.56590	$2p^6 - 2p^5(^2P^\circ_{3/2})9d$	$g\,^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	st	382
		579.7711	0.0 – 172.48186	$2p^6 - 2p^5(^2P^\circ_{3/2})10s$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382
		579.8411	0.0 – 172.46104	$2p^6 - 2p^5(^2P^\circ_{1/2})7s$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382
		580.5119	0.0 – 172.261740	$2p^6 - 2p^5(^2P^\circ_{1/2})8s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	st	382
		580.6893	0.0 – 172.20911	$2p^6 - 2p^5(^2P^\circ_{3/2})8d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382
		580.7137	0.0 – 172.20188	$2p^6 - 2p^5(^2P^\circ_{3/2})8d$	$g\,^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	st	382
		581.1219	0.0 – 172.080916	$2p^6 - 2p^5(^2P^\circ_{3/2})9s$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382
		582.4691	0.0 – 171.682924	$2p^6 - 2p^5(^2P^\circ_{3/2})7d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382
		582.5064	0.0 – 171.67192	$2p^6 - 2p^5(^2P^\circ_{3/2})7d$	$g\,^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	st	382
		582.5982	0.0 – 171.64488	$2p^6 - 2p^5(^2P^\circ_{1/2})6s$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382
		583.1261	0.0 – 171.489485	$2p^6 - 2p^5(^2P^\circ_{3/2})8s$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382
		583.6893	0.0 – 171.324017	$2p^6 - 2p^5(^2P^\circ_{1/2})7s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	st	382
		585.2472	0.0 – 170.867951	$2p^6 - 2p^5(^2P^\circ_{3/2})6d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382
		585.3042	0.0 – 170.85132	$2p^6 - 2p^5(^2P^\circ_{3/2})6d$	$g\,^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	st	382
		586.3140	0.0 – 170.557050	$2p^6 - 2p^5(^2P^\circ_{3/2})7s$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382
	35	587.2128	0.0 – 170.296004	$2p^6 - 2p^5(^2P^\circ_{1/2})5s$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382,057

NE I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	35	589.1792	0.0 – 169.727630	$2p^6 - 2p^5(^2P^\circ_{1/2})6s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	st	382,057
	35	589.9113	0.0 – 169.516990	$2p^6 - 2p^5(^2P^\circ_{3/2})5d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382,057
		590.0108	0.0 – 169.488415	$2p^6 - 2p^5(^2P^\circ_{3/2})5d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	st	382
	70	591.8303	0.0 – 168.967353	$2p^6 - 2p^5(^2P^\circ_{3/2})6s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382,057
	100	595.9200	0.0 – 167.807759	$2p^6 - 2p^5(^2P^\circ_{1/2})4s$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382,057
	75	598.7056	0.0 – 167.026988	$2p^6 - 2p^5(^2P^\circ_{3/2})4d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382,057
	35	598.8908	0.0 – 166.975341	$2p^6 - 2p^5(^2P^\circ_{3/2})4d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	st	382,057
	70	600.0365	0.0 – 166.656508	$2p^6 - 2p^5(^2P^\circ_{1/2})5s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	st	382,057
	170	602.7263	0.0 – 165.912782	$2p^6 - 2p^5(^2P^\circ_{3/2})5s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382,057
7	170	615.6283	0.0 – 162.435678	$2p^6 - 2p^5(^2P^\circ_{1/2})3s$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382,057
6	170	618.6716	0.0 – 161.636618	$2p^6 - 2p^5(^2P^\circ_{3/2})3d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382,057
5	120	619.1023	0.0 – 161.524174	$2p^6 - 2p^5(^2P^\circ_{3/2})3d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	st	382,057
4	200	626.8232	0.0 – 159.534620	$2p^6 - 2p^5(^2P^\circ_{1/2})4s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	st	382,057
3	200	629.7388	0.0 – 158.795992	$2p^6 - 2p^5(^2P^\circ_{3/2})4s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382,057
2	1000	735.8962	0.0 – 135.888717	$2p^6 - 2p^5(^2P^\circ_{1/2})3s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	st	382,057
1	400	743.7195	0.0 – 134.459287	$2p^6 - 2p^5(^2P^\circ_{3/2})3s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	382,057

NEON II (Ne^{1+}), Z = 10
Ground State $1s^22s^22p^5(^2P^\circ_{3/2})$ (9 electrons)
Ionization Potential 330 391.0 cm^{-1}; 40.964 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	324.570	0.0 – 308.10127	$2s^22p^5 - 2s^22p^4(^1D)4s$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		563
	10	325.393	0.78034 – 308.10161	$2s^22p^5 - 2s^22p^4(^1D)4s$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		563
	40	326.542	0.0 – 306.24342	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		563
	50	326.787	0.0 – 306.01107	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		563
	30	327.262	0.0 – 305.56694	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		563
	20	327.355	0.78034 – 306.26277	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		563
	20	327.626	0.78034 – 306.01107	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		563
	20	328.090	0.78034 – 305.58227	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		563
	5	330.146	0.0 – 302.89057	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2F$	$\frac{3}{2} - \frac{5}{2}$		563
	5	330.205	0.0 – 302.83928	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^4F$	$\frac{3}{2} - \frac{5}{2}$		563
	5	330.626	0.78034 – 303.23791	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		563
	20	330.790	0.0 – 302.30775	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		563
	1	331.069	0.78034 – 302.83180	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		563,057
	2	331.515	0.78034 – 302.42587	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		563,057
	30	352.2466	0.0 – 283.89441	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		563
	90	352.9561	0.0 – 283.32235	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		563
	50	353.2149	0.78034 – 283.89441	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		563
	30	353.9349	0.78034 – 283.32235	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		563
	60	354.9622	0.0 – 281.72028	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		563
	20	355.4541	0.0 – 281.33255	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		563
	40	355.6559	0.0 – 281.17138	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		563
	1	355.839	0.0 – 281.02594	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2F$	$\frac{3}{2} - \frac{5}{2}$		563,057
	40	355.9476	0.78034 – 281.72028	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		563
	40	356.1290	0.0 – 280.79726	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4F$	$\frac{3}{2} - \frac{5}{2}$		563
	30	356.4410	0.78034 – 281.33255	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		563
6	30	356.5405	0.0 – 280.47358	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		563
6	50	356.7995	0.0 – 280.26896	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		563
	20	356.8769	0.78034 – 280.98953	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4P$	$\frac{1}{2} - \frac{3}{2}$		563
6	40	357.5355	0.78034 – 280.47358	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		563
5	90	361.4326	0.0 – 276.67713	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		563

NE II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
5	60	362.4554	0.78034 – 276.67713	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		563
4	150	405.8538	0.0 – 246.39413	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		563
4	120	407.1376	0.78034 – 246.39749	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		563
3	200	445.0397	0.0 – 224.69927	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		563
3	300	446.2556	0.0 – 224.08702	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		563
3	250	446.5901	0.78034 – 224.69927	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		563
3	180	447.8150	0.78034 – 224.08702	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		563
2	150	454.6535	0.0 – 219.94746	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		563
2	200	455.2738	0.0 – 219.64844	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		563
2	10	456.2749	0.78034 – 219.94746	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{1}{2}$		563
2	120	456.3483	0.0 – 219.13078	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		563
2	90	456.8962	0.78034 – 219.64844	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{3}{2}$		563
1	1000	460.7284	0.0 – 217.04761	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		563
1	500	462.3908	0.78034 – 217.04761	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		563
		485.3	217.04761 – 423.1+X	$2s2p^6 - 2s2p^53s$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	375
	30	992.253	217.04761 – 317.82832	$2s2p^6 - 2s^22p^4(^1D)4p$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		563
	60	993.884	217.04761 – 317.66313	$2s2p^6 - 2s^22p^4(^1D)4p$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		563
	30	1066.764	224.08702 – 317.82832	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)4p$	${}^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		563
	70	1068.649	224.08702 – 317.66313	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)4p$	${}^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		563
	50	1073.781	224.69927 – 317.82832	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)4p$	${}^2P - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		563
	10	1074.313	224.69927 – 317.78179	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)4p$	${}^2P - {}^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		563
	20	1075.688	224.69927 – 317.66313	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)4p$	${}^2P - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		563
	40	1087.789	217.04761 – 308.97687	$2s2p^6 - 2s^22p^4(^3P)5p$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		563
	50	1090.628	217.04761 – 308.73803	$2s2p^6 - 2s^22p^4(^3P)5p$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		563
	90	1131.724	217.04761 – 305.40851	$2s2p^6 - 2s^22p^4(^1S)3p$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		563
	100	1131.848	217.04761 – 305.39851	$2s2p^6 - 2s^22p^4(^1S)3p$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		563
	70	1229.688	224.08702 – 305.40851	$2s^22p^4(^3P)3s - 2s^22p^4(^1S)3p$	${}^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		563
	90	1229.832	224.08702 – 305.39851	$2s^22p^4(^3P)3s - 2s^22p^4(^1S)3p$	${}^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		563
	80	1239.018	224.69927 – 305.40851	$2s^22p^4(^3P)3s - 2s^22p^4(^1S)3p$	${}^2P - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		563
	60	1239.167	224.69927 – 305.39851	$2s^22p^4(^3P)3s - 2s^22p^4(^1S)3p$	${}^2P - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		563
	70	1293.902	217.04761 – 294.33322	$2s2p^6 - 2s^22p^4(^3P)4p$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		563
	80	1298.046	217.04761 – 294.08649	$2s2p^6 - 2s^22p^4(^3P)4p$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		563
	40	1381.509	219.64844 – 292.03315	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)4p$	${}^4P - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		563
	10	1381.894	219.13078 – 291.49504	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)4p$	${}^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		563
	30	1385.937	219.64844 – 291.80188	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)4p$	${}^4P - {}^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		563
	80	1387.515	219.13078 – 291.20203	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)4p$	${}^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		563
	20	1387.665	246.19245 – 318.25613	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)7s$	${}^4P^\circ - {}^4P$	$\frac{5}{2}-\frac{5}{2}$		563
	50	1388.491	219.94746 – 291.96814	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)4p$	${}^4P - {}^4D^\circ$	$\frac{1}{2}-\frac{1}{2}$		563
	60	1391.704	219.94746 – 291.80188	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)4p$	${}^4P - {}^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		563
	70	1391.854	219.64844 – 291.49504	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)4p$	${}^4P - {}^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		563
	80	1399.532	219.13078 – 290.58317	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)4p$	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		563
	20	1399.956	246.39749 – 317.82832	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)4p$	${}^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		563
	40	1400.809	246.39413 – 317.78142	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)4p$	${}^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		563
	20	1400.868	246.39749 – 317.78179	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)4p$	${}^2D - {}^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		563
	50	1403.135	246.39413 – 317.66313	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)4p$	${}^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		563
	20	1403.202	246.39749 – 317.66313	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)4p$	${}^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		563
	80	1403.679	219.13078 – 290.37195	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)4p$	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		563
	80	1405.373	219.64844 – 290.80382	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)4p$	${}^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		563
	60	1409.747	219.64844 – 290.58317	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)4p$	${}^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		563
	10	1411.306	219.94746 – 290.80382	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)4p$	${}^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$		563
	70	1413.956	219.64844 – 290.37195	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)4p$	${}^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		563
	70	1415.716	219.94746 – 290.58317	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)4p$	${}^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		563
	90	1418.375	246.39413 – 316.89721	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)4p$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		563
	20	1418.687	246.39413 – 316.88221	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)4p$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		563

NE II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	80	1418.745	246.39749 – 316.88221	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)4p$	$^2D - ^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		563
	80	1423.564	224.08702 – 294.33322	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)4p$	$^2P - ^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		563
	90	1428.579	224.08702 – 294.08649	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)4p$	$^2P - ^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		563
	90	1436.086	224.69927 – 294.33322	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)4p$	$^2P - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		563
	40	1441.188	224.69927 – 294.08649	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)4p$	$^2P - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		563
	20	1446.183	249.10864 – 318.25613	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)7s$	$^4D^\circ - ^4P$	$\frac{7}{2} - \frac{5}{2}$		563
	40	1449.132	249.44599 – 318.45282	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)7s$	$^4D^\circ - ^4P$	$\frac{5}{2} - \frac{3}{2}$		563
	5	1454.390	249.69553 – 318.45282	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)7s$	$^4D^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		563
	30	1460.716	224.08702 – 292.54670	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)4p$	$^2P - ^2S^\circ$	$\frac{3}{2} - \frac{1}{2}$		563
	40	1462.744	224.08702 – 292.45178	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)4p$	$^2P - ^2D^\circ$	$\frac{3}{2} - \frac{3}{2}$		563
	20	1472.121	251.01118 – 318.94008	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)7s$	$^2D^\circ - ^2P$	$\frac{5}{2} - \frac{3}{2}$		563
	10	1473.894	224.69927 – 292.54670	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)4p$	$^2P - ^2S^\circ$	$\frac{1}{2} - \frac{1}{2}$		563
	80	1475.959	224.69927 – 292.45178	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)4p$	$^2P - ^2D^\circ$	$\frac{1}{2} - \frac{3}{2}$		563
	60	1483.502	224.08702 – 291.49504	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)4p$	$^2P - ^4D^\circ$	$\frac{3}{2} - \frac{5}{2}$		563
	40	1499.006	246.19245 – 312.90348	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)6s$	$^4P^\circ - ^4P$	$\frac{5}{2} - \frac{5}{2}$		563
	30	1557.487	249.44599 – 313.65217	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)6s$	$^4D^\circ - ^2P$	$\frac{5}{2} - \frac{3}{2}$		563
	70	1567.526	249.10864 – 312.90348	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)6s$	$^4D^\circ - ^4P$	$\frac{7}{2} - \frac{5}{2}$		563
	40	1569.015	249.44599 – 313.18023	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)6s$	$^4D^\circ - ^4P$	$\frac{5}{2} - \frac{3}{2}$		563
	30	1596.397	251.01118 – 313.65217	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)6s$	$^2D^\circ - ^2P$	$\frac{5}{2} - \frac{3}{2}$		563
	80	1597.971	246.39749 – 308.97687	$2s^22p^4(^1D)3s - 2s^22p^4(^3P)5p$	$^2D - ^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		563
	40	1600.080	251.52212 – 314.01894	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)6s$	$^2D^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		563
	80	1604.004	246.39413 – 308.73803	$2s^22p^4(^1D)3s - 2s^22p^4(^3P)5p$	$^2D - ^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		563
	70	1604.091	246.39749 – 308.73803	$2s^22p^4(^1D)3s - 2s^22p^4(^3P)5p$	$^2D - ^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		563
	30	1608.512	251.01118 – 313.18023	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)6s$	$^2D^\circ - ^4P$	$\frac{5}{2} - \frac{3}{2}$		563
	40	1668.057	252.95354 – 312.90348	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)6s$	$^4S^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		563
	20	1670.737	254.16501 – 314.01894	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)6s$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		563
	60	1674.290	254.29219 – 314.01894	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)6s$	$^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		563
	50	1681.035	254.16501 – 313.65217	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)6s$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		563
7	120	1681.683	217.04761 – 276.51182	$2s2p^6 - 2s^22p^4(^1D)3p$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		563
7	180	1688.356	217.04761 – 276.27685	$2s2p^6 - 2s^22p^4(^1D)3p$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		563
	40	1694.481	254.16501 – 313.18023	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)6s$	$^2P^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		563
	80	1694.600	246.39749 – 305.40851	$2s^22p^4(^1D)3s - 2s^22p^4(^1S)3p$	$^2D - ^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		563
	90	1694.786	246.39413 – 305.39851	$2s^22p^4(^1D)3s - 2s^22p^4(^1S)3p$	$^2D - ^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		563
	60	1694.878	246.39749 – 305.39851	$2s^22p^4(^1D)3s - 2s^22p^4(^1S)3p$	$^2D - ^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		563
	20	1723.389	246.41504 – 304.44024	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4P^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		563
	80	1730.645	246.19245 – 303.97429	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4P^\circ - ^2P$	$\frac{5}{2} - \frac{3}{2}$		563
	50	1737.341	246.41504 – 303.97429	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		563
	80	1738.736	246.41504 – 303.92810	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4P^\circ - ^4P$	$\frac{3}{2} - \frac{1}{2}$		563
	70	1742.869	246.59771 – 303.97429	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		563
	50	1744.277	246.59771 – 303.92810	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4P^\circ - ^4P$	$\frac{1}{2} - \frac{1}{2}$		563
	80	1744.416	246.19245 – 303.51821	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4P^\circ - ^4P$	$\frac{5}{2} - \frac{3}{2}$		563
	60	1751.216	246.41504 – 303.51821	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4P^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		563
	80	1751.698	246.19245 – 303.27991	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4P^\circ - ^4P$	$\frac{5}{2} - \frac{5}{2}$		563
	80	1756.835	246.59771 – 303.51821	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4P^\circ - ^4P$	$\frac{1}{2} - \frac{3}{2}$		563
	70	1758.105	246.19245 – 303.07184	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4P^\circ - ^4P$	$\frac{5}{2} - \frac{5}{2}$		563
	80	1758.555	246.41504 – 303.27991	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4P^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		563
	20	1758.590	219.64844 – 276.51182	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^4P - ^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		563
	20	1763.727	246.19245 – 302.89057	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4P^\circ - ^2F$	$\frac{5}{2} - \frac{5}{2}$		563
	30	1765.015	246.41504 – 303.07184	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4P^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		563
	70	1765.898	219.64844 – 276.27685	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^4P - ^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		563
	10	1767.900	219.94746 – 276.51182	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^4P - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		563
	10	1768.085	246.19245 – 302.75081	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4P^\circ - ^2F$	$\frac{5}{2} - \frac{7}{2}$		563
	30	1778.282	246.59771 – 302.83180	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		563
	30	1778.747	246.59771 – 302.81698	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4P^\circ - ^4P$	$\frac{1}{2} - \frac{3}{2}$		563

NE II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	30	1783.783	246.41504 – 302.47561	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4P^o - ^4P$	$\frac{3}{2}-\frac{1}{2}$		563
	20	1789.613	246.59771 – 302.47561	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4P^o - ^4P$	$\frac{1}{2}-\frac{1}{2}$		563
	70	1796.516	246.19245 – 301.85571	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4P^o - ^4D$	$\frac{5}{2}-\frac{5}{2}$		563
	30	1797.198	246.41504 – 302.05726	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4P^o - ^4D$	$\frac{3}{2}-\frac{1}{2}$		563
	80	1798.281	246.19245 – 301.80109	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4P^o - ^4D$	$\frac{5}{2}-\frac{7}{2}$		563
	70	1800.733	246.41504 – 301.94800	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4P^o - ^4D$	$\frac{3}{2}-\frac{3}{2}$		563
	30	1803.114	246.59771 – 302.05726	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4P^o - ^4D$	$\frac{1}{2}-\frac{1}{2}$		563
	70	1803.732	246.41504 – 301.85571	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4P^o - ^4D$	$\frac{3}{2}-\frac{5}{2}$		563
	5	1806.671	246.59771 – 301.94800	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4P^o - ^4D$	$\frac{1}{2}-\frac{3}{2}$		563
	80	1825.343	274.36457 – 329.14880	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)5s$	$^2F^o - ^2D$	$\frac{5}{2}-\frac{3}{2}$		563
	5	1826.667	249.69553 – 304.44024	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4D^o - ^2P$	$\frac{3}{2}-\frac{1}{2}$		563
	90	1826.829	274.40911 – 329.14867	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)5s$	$^2F^o - ^2D$	$\frac{7}{2}-\frac{5}{2}$		563
	10	1831.481	249.83963 – 304.44024	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4D^o - ^2P$	$\frac{1}{2}-\frac{1}{2}$		563
	80	1833.910	249.44599 – 303.97429	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4D^o - ^2P$	$\frac{5}{2}-\frac{3}{2}$		563
	70	1842.341	249.69553 – 303.97429	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4D^o - ^2P$	$\frac{3}{2}-\frac{3}{2}$		563
	80	1843.908	249.69553 – 303.92810	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4D^o - ^4P$	$\frac{3}{2}-\frac{1}{2}$		563
	80	1845.996	249.10864 – 303.27991	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4D^o - ^4P$	$\frac{7}{2}-\frac{5}{2}$		563
	5	1847.249	249.83963 – 303.97429	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4D^o - ^2P$	$\frac{1}{2}-\frac{3}{2}$		563
	70	1848.823	249.83963 – 303.92810	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4D^o - ^4P$	$\frac{1}{2}-\frac{1}{2}$		563
	90	1849.381	249.44599 – 303.51821	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4D^o - ^4P$	$\frac{5}{2}-\frac{3}{2}$		563
	90	1853.115	249.10864 – 303.07184	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4D^o - ^4P$	$\frac{7}{2}-\frac{5}{2}$		563
	20	1853.453	274.36457 – 328.31795	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)4d$	$^2F^o - ^2F$	$\frac{5}{2}-\frac{5}{2}$		563
	90	1854.035	254.16501 – 308.10127	$2s^22p^4(^3P)3p - 2s^22p^4(^1D)4s$	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$		563
	20	1854.976	274.40911 – 328.31812	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)4d$	$^2F^o - ^2F$	$\frac{7}{2}-\frac{7}{2}$		563
	30	1857.565	249.44599 – 303.27991	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4D^o - ^4P$	$\frac{5}{2}-\frac{5}{2}$		563
	70	1857.952	249.69553 – 303.51821	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4D^o - ^4P$	$\frac{3}{2}-\frac{3}{2}$		563
	80	1858.408	254.29219 – 308.10161	$2s^22p^4(^3P)3p - 2s^22p^4(^1D)4s$	$^2P^o - ^2D$	$\frac{1}{2}-\frac{3}{2}$		563
	20	1859.017	249.44599 – 303.23791	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4D^o - ^2P$	$\frac{5}{2}-\frac{3}{2}$		563
	80	1859.361	249.10864 – 302.89057	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4D^o - ^2F$	$\frac{7}{2}-\frac{5}{2}$		563
	50	1861.137	249.10864 – 302.83928	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4D^o - ^4F$	$\frac{7}{2}-\frac{5}{2}$		563
	70	1871.097	249.44599 – 302.89057	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4D^o - ^2F$	$\frac{5}{2}-\frac{5}{2}$		563
	50	1872.291	274.36457 – 327.77511	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)4d$	$^2F^o - ^2G$	$\frac{5}{2}-\frac{7}{2}$		563
	5	1872.721	249.83963 – 303.23791	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4D^o - ^2P$	$\frac{1}{2}-\frac{3}{2}$		563
	20	1873.492	249.69553 – 303.07184	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4D^o - ^4P$	$\frac{3}{2}-\frac{5}{2}$		563
	5	1873.677	249.44599 – 302.81698	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4D^o - ^4P$	$\frac{5}{2}-\frac{3}{2}$		563
	60	1873.873	274.40911 – 327.77448	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)4d$	$^2F^o - ^2G$	$\frac{7}{2}-\frac{9}{2}$		563
	70	1876.003	249.44599 – 302.75081	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4D^o - ^2F$	$\frac{5}{2}-\frac{7}{2}$		563
	30	1877.387	249.69553 – 302.96107	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4D^o - ^4F$	$\frac{3}{2}-\frac{3}{2}$		563
	40	1877.679	224.08702 – 277.34429	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^2P - ^2D^o$	$\frac{3}{2}-\frac{5}{2}$		563
	50	1879.884	249.69553 – 302.89057	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4D^o - ^2F$	$\frac{3}{2}-\frac{5}{2}$		563
	50	1880.210						558
	70	1881.690	249.69553 – 302.83928	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4D^o - ^4F$	$\frac{3}{2}-\frac{5}{2}$		563
	60	1882.478	249.83963 – 302.96107	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4D^o - ^4F$	$\frac{1}{2}-\frac{3}{2}$		563
	80	1883.796	249.10864 – 302.19292	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4D^o - ^4F$	$\frac{7}{2}-\frac{9}{2}$		563
	100	1888.107	251.01118 – 303.97429	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^2D^o - ^2P$	$\frac{5}{2}-\frac{3}{2}$		563
	100	1889.710	251.52212 – 304.44024	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^2D^o - ^2P$	$\frac{3}{2}-\frac{1}{2}$		563
	60	1891.366	276.27685 – 329.14867	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)5s$	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$		563
	5	1891.730	249.44599 – 302.30775	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4D^o - ^2D$	$\frac{5}{2}-\frac{5}{2}$		563
	70	1893.876	249.44599 – 302.24778	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4D^o - ^4F$	$\frac{5}{2}-\frac{7}{2}$		563
	10	1895.072	252.79848 – 305.56694	$2s^22p^4(^3P)3p - 2s^22p^4(^1D)3d$	$^2S^o - ^2P$	$\frac{1}{2}-\frac{3}{2}$		563
	5	1895.840	249.10864 – 301.85571	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4D^o - ^4D$	$\frac{7}{2}-\frac{5}{2}$		563
	40	1897.810	249.10864 – 301.80109	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4D^o - ^4D$	$\frac{7}{2}-\frac{7}{2}$		563
	40	1899.802	276.51182 – 329.14880	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)5s$	$^2P^o - ^2D$	$\frac{1}{2}-\frac{3}{2}$		563
	40	1900.189	224.69927 – 277.32560	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^2P - ^2D^o$	$\frac{1}{2}-\frac{3}{2}$		563

NE II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	5	1900.695	249.69553 – 302.30775	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4D^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		563
	70	1904.510	251.01118 – 303.51821	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^2D^\circ - ^4P$	$\frac{5}{2}-\frac{3}{2}$		563
	5	1904.691	249.44599 – 301.94800	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4D^\circ - ^4D$	$\frac{5}{2}-\frac{3}{2}$		563
	60	1906.502	251.52212 – 303.97429	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		563
9	200	1907.493	224.08702 – 276.51182	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		563
	30	1914.729	251.01118 – 303.23791	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		563
9	500	1916.083	224.08702 – 276.27685	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		563
	80	1920.181	254.16501 – 306.24342	$2s^22p^4(^3P)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		563
	5	1923.226	251.52212 – 303.51821	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^2D^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		563
	70	1924.166	254.29219 – 306.26277	$2s^22p^4(^3P)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		563
	5	1927.549	251.01118 – 302.89057	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{5}{2}$		563
	60	1928.786	254.16501 – 306.01107	$2s^22p^4(^3P)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		563
	60	1929.643	277.32560 – 329.14880	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)5s$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		563
9	300	1930.028	224.69927 – 276.51182	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		563
	60	1930.335	277.34429 – 329.14867	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)5s$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		563
	70	1932.754	251.01118 – 302.75081	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		563
	90	1933.529	254.29219 – 306.01107	$2s^22p^4(^3P)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		563
	10	1933.642	251.52212 – 303.23791	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		563
	30	1936.417	252.79848 – 304.44024	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^2S^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		563
9	200	1938.826	224.69927 – 276.27685	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		563
	70	1939.875	251.52212 – 303.07184	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^2D^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		563
	60	1944.883	254.16501 – 305.58227	$2s^22p^4(^3P)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		563
	100	1945.458	254.16501 – 305.56694	$2s^22p^4(^3P)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		563
	5	1949.450	251.01118 – 302.30775	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		563
	70	1949.696	254.29219 – 305.58227	$2s^22p^4(^3P)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		563
	40	1950.276	254.29219 – 305.56694	$2s^22p^4(^3P)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		563
	80	1951.727	251.01118 – 302.24778	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^2D^\circ - ^4F$	$\frac{5}{2}-\frac{7}{2}$		563
	70	1954.048	252.79848 – 303.97429	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^2S^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		563
	60	1959.994	252.95354 – 303.97429	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4S^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		563
	60	1961.772	252.95354 – 303.92810	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		563
	20	1971.621	252.79848 – 303.51821	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^2S^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$		563
	70	1977.657	252.95354 – 303.51821	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		563
	40	1982.576	252.79848 – 303.23791	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^2S^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		563
	80	1989.036	254.16501 – 304.44024	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		563
	90	1994.095	254.29219 – 304.44024	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)5s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		563
	50	1995.280	252.95354 – 303.07184	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		563
	20	1998.667	252.79848 – 302.83180	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^2S^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		563

NEON III (Ne^{2+}), Z = 10
Ground State $1s^22s^22p^4(^3P_2)$ (8 electrons)
Ionization Potential 511 800 cm^{-1}; 63.46 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
5	200	251.12	0.0 – 398.20784	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		338,488
5	200	251.54	0.6429 – 398.19393	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		338,488
5	200	251.72	0.9205 – 398.18980	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	0 – 1		338,488
4	300	267.07	0.0 – 374.43100	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^3P^\circ$	2 – 2		338,488
4	300	267.53	0.6429 – 374.43100	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^3P^\circ$	1 – 2		338,488
4	200	267.71	0.9205 – 374.45775	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^3P^\circ$	0 – 1		338,488

NE III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
8	10	282.49	25.8408 – 379.834	$2s^22p^4 - 2s^22p^3(^2P^o)3s$	$^1D - {}^1P^o$	2 – 1		057,488
3	300	283.15	0.0 – 353.17416	$2s^22p^4 - 2s^22p^3(^2D^o)3s$	$g^3P - {}^3D^o$	2 – 2		338,488
3	600	283.17	0.0 – 353.145	$2s^22p^4 - 2s^22p^3(^2D^o)3s$	$g^3P - {}^3D^o$	2 – 3		338,488
3	500	283.66	0.6429 – 353.17416	$2s^22p^4 - 2s^22p^3(^2D^o)3s$	$g^3P - {}^3D^o$	1 – 2		338,488
3	300	283.87	0.9205 – 353.19440	$2s^22p^4 - 2s^22p^3(^2D^o)3s$	$g^3P - {}^3D^o$	0 – 1		338,488
7	400	301.12	0.0 – 332.12	$2s^22p^4 - 2s^22p^3(^2D^o)3s$	$g^3P - {}^3D^o$	2 – 2		057,488
10	100	308.56	55.7506 – 379.834	$2s^22p^4 - 2s^22p^3(^2P^o)3s$	$^1S - {}^1P^o$	0 – 1		057,488
2	400	313.05	0.0 – 319.44200	$2s^22p^4 - 2s^22p^3(^4S^o)3s$	$g^3P - {}^3S^o$	2 – 1		057,488
2	300	313.68	0.6429 – 319.44200	$2s^22p^4 - 2s^22p^3(^4S^o)3s$	$g^3P - {}^3S^o$	1 – 1		057,488
2	100	313.92	0.9205 – 319.44200	$2s^22p^4 - 2s^22p^3(^4S^o)3s$	$g^3P - {}^3S^o$	0 – 1		057,488
		322.66	0.0 – 309.924	$2s^22p^4 - 2s^22p^3(^4S^o)3s$	$g^3P - {}^5S^o$	2 – 2	P	680
		323.33	.6429 – 309.924	$2s^22p^4 - 2s^22p^3(^4S^o)3s$	$g^3P - {}^5S^o$	1 – 2	P	680
6	700	379.31	25.8408 – 289.479	$2s^22p^4 - 2s2p^5$	$^1D - {}^1P^o$	2 – 1		057,488
9	300	427.84	55.7506 – 289.479	$2s^22p^4 - 2s2p^5$	$^1S - {}^1P^o$	0 – 1		057,488
1	800	488.10	0.0 – 204.876	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^o$	2 – 1		057,488
1	700	488.87	0.6429 – 205.199	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^o$	1 – 0		057,488
1	1000	489.50	0.0 – 204.29	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^o$	2 – 2		057,488
1	400	489.64	0.6429 – 204.876	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^o$	1 – 1		057,488
1	700	490.31	0.9205 – 204.876	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^o$	0 – 1		057,488
1	900	491.05	0.6429 – 204.29	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^o$	1 – 2		057,488
13	200	1255.03	319.44200 – 399.12212	$2s^22p^3(^4S^o)3s - 2s^22p^3(^2D^o)3p$	$^3S^o - {}^3P$	1 – 0		057,488
13	500	1255.68	319.44200 – 399.07957	$2s^22p^3(^4S^o)3s - 2s^22p^3(^2D^o)3p$	$^3S^o - {}^3P$	1 – 1		057,488
13	600	1257.19	319.44200 – 398.98364	$2s^22p^3(^4S^o)3s - 2s^22p^3(^2D^o)3p$	$^3S^o - {}^3P$	1 – 2		057,488
		1793.7	0.0 – 55.7506	$2s^22p^4 - 2s^22p^4$	$g^3P - {}^1S$	2 – 0	F,P	375,563
		1814.6	0.6429 – 55.7506	$2s^22p^4 - 2s^22p^4$	$g^3P - {}^1S$	1 – 0	F,P	375,563

NEON IV (Ne^{3+}), Z = 10
Ground State $1s^22s^22p^3(^4S^o_{3/2})$ (7 electrons)
Ionization Potential 783 300 cm^{-1}; 97.08 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	15	140.13	41.2346+E – 754.873+E	$2s^22p^3 - 2s^22p^2(^1D)6s$	$^2D^o - {}^2D$	$\frac{5}{2} - \frac{5}{2}$		544
	15	142.93	41.2346+E – 740.883+E	$2s^22p^3 - 2s^22p^2(^1D)5d$	$^2D^o - {}^2F$	$\frac{5}{2} - \frac{7}{2}$		544
	10	144.02	0.0 – 694.353	$2s^22p^3 - 2s^22p^2(^3P)5s$	$g^4S^o - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		544
	10	144.15	0.0 – 693.717	$2s^22p^3 - 2s^22p^2(^3P)5s$	$g^4S^o - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		544
	5	144.28	0.0 – 693.106	$2s^22p^3 - 2s^22p^2(^3P)5s$	$g^4S^o - {}^4P$	$\frac{3}{2} - \frac{1}{2}$		544
	10	146.26	41.2346+E – 724.967+E	$2s^22p^3 - 2s^22p^2(^1D)5s$	$^2D^o - {}^2D$	$\frac{5}{2} - \frac{5}{2}$		544
	5	148.66	0.0 – 672.676	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S^o - {}^4P$	$\frac{3}{2} - \frac{1}{2}$		544
	15	148.79	0.0 – 672.102	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S^o - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		544
	20	148.94	0.0 – 671.402	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S^o - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		544
	10	149.59	41.2346+E – 709.740+E	$2s^22p^3 - 2s^22p^2(^1S)4d$	$^2D^o - {}^2D$	$\frac{5}{2} - \frac{5}{2}$		544
	5	150.93	62.4413+E – 724.967+E	$2s^22p^3 - 2s^22p^2(^1D)5s$	$^2P^o - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		544
		151.46	41.2346+E – 701.488+E	$2s^22p^3 - 2s^22p^2(^1D)4d$	$^2D^o - {}^2P$	$\frac{5}{2} - \frac{3}{2}$		544
	75	151.82	41.2346+E – 699.904+E	$2s^22p^3 - 2s^22p^2(^1D)4d$	$^2D^o - {}^2D$	$\frac{5}{2} - \frac{5}{2}$		544
	75	152.23	41.2346+E – 698.131+E	$2s^22p^3 - 2s^22p^2(^1D)4d$	$^2D^o - {}^2F$	$\frac{5}{2} - \frac{7}{2}$		544
	25	154.49	62.4413+E – 709.740+E	$2s^22p^3 - 2s^22p^2(^1S)4d$	$^2P^o - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		544
	25	156.48	62.4413+E – 701.488+E	$2s^22p^3 - 2s^22p^2(^1D)4d$	$^2P^o - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		544
	15	156.87	62.4413+E – 699.904+E	$2s^22p^3 - 2s^22p^2(^1D)4d$	$^2P^o - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		544
	25	157.63	0.0 – 634.413	$2s^22p^3 - 2s^22p^2(^3P)4s$	$g^4S^o - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		544

NE IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	15	157.78	0.0 – 633.79	$2s^22p^3 - 2s^22p^2(^3P)4s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		544
	10	157.86	0.0 – 633.465	$2s^22p^3 - 2s^22p^2(^3P)4s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		544
	25	158.06	41.2346+E – 673.894+E	$2s^22p^3 - 2s^22p^2(^3P)4d$	${}^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		544
	10	158.11	41.2795+E – 673.770+E	$2s^22p^3 - 2s^22p^2(^3P)4d$	${}^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		544
	75	158.65	41.2346+E – 671.537+E	$2s^22p^3 - 2s^22p^2(^3P)4d$	${}^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		544
	75	158.82	41.2795+E – 670.916+E	$2s^22p^3 - 2s^22p^2(^3P)4d$	${}^2D^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$		544
	50	160.47	41.2346+E – 664.400+E	$2s^22p^3 - 2s^22p^2(^1D)4s$	${}^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		544
	60	163.56	62.4413+E – 673.894+E	$2s^22p^3 - 2s^22p^2(^3P)4d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		544
	10	163.60	62.4346+E – 673.770+E	$2s^22p^3 - 2s^22p^2(^3P)4d$	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		544
	25	167.92	41.2346+E – 636.753+E	$2s^22p^3 - 2s^22p^2(^3P)4s$	${}^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		544
	10	168.10	41.2795+E – 636.154+E	$2s^22p^3 - 2s^22p^2(^3P)4s$	${}^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		544
3	200	172.49	0.0 – 579.737	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		544
3	250	172.53	0.0 – 579.626	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		544
3	400	172.62	0.0 – 579.307	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		544
		174.12	62.4413+E – 636.753+E	$2s^22p^3 - 2s^22p^2(^3P)4s$	${}^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		544
	15	174.30	62.4346+E – 636.154+E	$2s^22p^3 - 2s^22p^2(^3P)4s$	${}^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		544
	50	174.88	41.2346+E – 613.058+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	${}^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		544
	40	174.92	41.2795+E – 612.955+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	${}^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		544
	250	176.01	41.2346+E – 609.394+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	${}^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		544
	400	177.16	41.2346+E – 605.693+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	${}^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		544
	75	180.40	62.4413+E – 616.759+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		544
	100	181.61	62.4413+E – 613.058+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	${}^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		544
	100	181.65	62.4346+E – 612.955+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	${}^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		544
		182.83	62.4413+E – 609.394+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		544
	75	183.17	41.2346+E – 587.191+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	${}^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		544
	60	183.25	41.2795+E – 586.992+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	${}^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		544
	100	185.48	41.2346+E – 580.380+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	${}^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		544
7	750	186.58	41.2346+E – 577.212+E	$2s^22p^3 - 2s^22p^2(^1S)3d$	${}^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		544
	25	186.79	41.2795+E – 576.642+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	${}^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		544
	75	186.92	41.2346+E – 576.246+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	${}^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		544
	125	190.57	62.4413+E – 587.191+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		544
	75	190.65	62.4346+E – 586.992+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		544
11	500	194.28	62.4413+E – 577.212+E	$2s^22p^3 - 2s^22p^2(^1S)3d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		544
	200	194.48	62.4346+E – 576.642+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	${}^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		544
	250	194.62	62.4413+E – 576.246+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	${}^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		544
		197.6						110
	75	204.27	62.4413+E – 551.9893+E	$2s^22p^3 - 2s^22p^2(^1S)3s$	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		544
	125	204.53	183.86 – 672.799	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		544
	75	204.79	184.477 – 672.799	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		544
	25	204.91	184.799 – 672.799	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		544
		206.7						110
2	500	208.49	0.0 – 479.662	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		544
2	500	208.73	0.0 – 479.083	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		544
2	400	208.90	0.0 – 478.701	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		544
6	750	212.56	41.2346+E – 511.6880+E	$2s^22p^3 - 2s^22p^2(^1D)3s$	${}^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		544
	25	215.40	183.86 – 648.06	$2s2p^4 - 2s^22p^2(^3P)4p$	${}^4P - {}^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		544
	15	215.71	184.477 – 648.06	$2s2p^4 - 2s^22p^2(^3P)4p$	${}^4P - {}^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		544
	75	215.84	184.799 – 648.06	$2s2p^4 - 2s^22p^2(^3P)4p$	${}^4P - {}^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		544
	75	217.34	183.86 – 643.975	$2s2p^4 - 2s^22p^2(^3P)4p$	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		544
	75	217.64	184.477 – 643.975	$2s2p^4 - 2s^22p^2(^3P)4p$	${}^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		544
	75	217.78	184.477 – 643.672	$2s2p^4 - 2s^22p^2(^3P)4p$	${}^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		544
	125	217.83	183.86 – 642.934	$2s2p^4 - 2s^22p^2(^3P)4p$	${}^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		544
	100	218.13	184.799 – 643.239	$2s2p^4 - 2s^22p^2(^3P)4p$	${}^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$		544
	50	218.18	183.86 – 642.184	$2s2p^4 - 2s^22p^2(^3P)4p$	${}^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		544

NE IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	75	218.34	184.477 – 642.472	$2s2p^4 - 2s^22p^2(^3P)4p$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		544
	100	218.48	184.477 – 642.184	$2s2p^4 - 2s^22p^2(^3P)4p$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		544
	125	218.64	184.799 – 642.184	$2s2p^4 - 2s^22p^2(^3P)4p$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		544
	250	218.77	184.799 – 641.908	$2s2p^4 - 2s^22p^2(^3P)4p$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{1}{2}$		544
	200	222.60	62.4413+E – 511.6880+E	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		544
	125	223.235	41.2346+E – 489.2010+E	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		773,544
	125	223.601	41.2795+E – 488.5040+E	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		773,544
	125	234.319	62.4413+E – 489.2010+E	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		773,544
	125	234.704	62.4346+E – 488.5040+E	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		773,544
		241.9						110
	50	247.42	183.86 – 588.021	$2s2p^4 - 2s2p^3(^5S^\circ)3s$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		544
	40	247.81	184.477 – 588.021	$2s2p^4 - 2s2p^3(^5S^\circ)3s$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		544
	40	248.00	184.799 – 588.021	$2s2p^4 - 2s2p^3(^5S^\circ)3s$	$^4P - ^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		544
	75	286.45	183.86 – 532.978	$2s2p^4 - 2s^22p^2(^3P)3p$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		544
	75	286.93	184.477 – 532.978	$2s2p^4 - 2s^22p^2(^3P)3p$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		544
	50	287.21	184.799 – 532.978	$2s2p^4 - 2s^22p^2(^3P)3p$	$^4P - ^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		544
	75	293.12	183.86 – 525.022	$2s2p^4 - 2s^22p^2(^3P)3p$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		544
	50	293.43	183.86 – 524.677	$2s2p^4 - 2s^22p^2(^3P)3p$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		544
	25	293.65	184.477 – 525.022	$2s2p^4 - 2s^22p^2(^3P)3p$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		544
	5	293.95	184.477 – 524.677	$2s2p^4 - 2s^22p^2(^3P)3p$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		544
	15	294.10	184.477 – 524.486	$2s2p^4 - 2s^22p^2(^3P)3p$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		544
	15	294.39	184.799 – 524.486	$2s2p^4 - 2s^22p^2(^3P)3p$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$		544
5	250	357.831	41.2795+E – 320.7405+E	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		197,544
5	1000	358.721	41.2346+E – 320.0296+E	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		197,544
10	700	387.141	62.4346+E – 320.7405+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		197,544
10	500	388.218	62.4413+E – 320.0296+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		197,544
9	750	421.609	62.4413+E – 299.6279+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		197,544
	125	431.47	254.1021+E – 485.8671+E	$2s2p^4 - 2p^5$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		544
	250	433.24	254.0805+E – 484.9041+E	$2s2p^4 - 2p^5$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		544
4	700	469.773	41.2346+E – 254.1021+E	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{3}{2}$		773
4	1000	469.820	41.2346+E – 254.0805+E	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		773
4	900	469.866	41.2795+E – 254.1021+E	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		773
4	700	469.921	41.2795+E – 254.0805+E	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		773
8	125	521.741	62.4346+E – 254.1021+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		773,544
8	125	521.820	62.4413+E – 254.0805+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		773,544
	5	536.97	299.6279+E – 485.8671+E	$2s2p^4 - 2p^5$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		544
	15	539.73	299.6279+E – 484.9041+E	$2s2p^4 - 2p^5$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		544
1	400	541.127	0.0 – 184.799	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		197,544
1	500	542.073	0.0 – 184.477	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		197,544
1	750	543.891	0.0 – 183.86	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		197,544
	10	603.00	320.0296+E – 485.8671+E	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		544
	10	605.60	320.7405+E – 485.8671+E	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		544
	25	606.53	320.0296+E – 484.9041+E	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		544
	5	609.17	320.7405+E – 484.9041+E	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		544
	15	758.32	484.9041+E – 616.759+E	$2p^5 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$	Q	544
	15	780.25	484.9041+E – 613.058+E	$2p^5 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		544
	5	786.14	485.8671+E – 613.058+E	$2p^5 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		544
		1601.	0.0 – 62.4413+E	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,225
		1602.	0.0 – 62.4346+E	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	F,P	375,225

NEON V (Ne^{4+}), Z = 10
Ground State $1s^22s^22p^2(^3P_0)$ (6 electrons)
Ionization Potential 1 018 000 cm^{-1}; 126.22 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		100.2						110
	18	107.96	0.414 – 926.27	$2s^22p^2 - 2s2p^2(^4P)4p$	$g^3P - {}^3D^\circ$	1 – 2		846
	13	108.89	88.362 – 1006.72	$2s2p^3 - 2s2p^2(^4P)5d$	${}^5S^\circ - {}^5P$	2 – 3		846
	18	109.57	30.294 – 942.95	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	${}^1D - {}^1F^\circ$	2 – 3		846
	23	110.36	1.112 – 907.24	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^3P^\circ$	2 – 2		846
	23	110.42	1.112 – 906.74	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - {}^3D^\circ$	2 – 3		846
	30	113.86	30.294 – 908.57	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	${}^1D - {}^1F^\circ$	2 – 3		846
	27	117.23	88.362 – 941.39	$2s2p^3 - 2s2p^2(^4P)4d$	${}^5S^\circ - {}^5P$	2 – 2		846
	27	117.27	88.362 – 941.10	$2s2p^3 - 2s2p^2(^4P)4d$	${}^5S^\circ - {}^5P$	2 – 3		846
	12	118.74	0.0 – 842.02	$2s^22p^2 - 2s^22p4d$	$g^3P - {}^3D^\circ$	0 – 1		846
	50	118.8	1.112 – 842.914	$2s^22p^2 - 2s^22p4d$	$g^3P - {}^3P^\circ$	2 – 2		544
	37	118.89	1.112 – 842.02	$2s^22p^2 - 2s^22p4d$	$g^3P - {}^3D^\circ$	2 – 2		846
	66	119.01	1.112 – 841.38	$2s^22p^2 - 2s^22p4d$	$g^3P - {}^3D^\circ$	2 – 3		846
	200	122.52	30.294 – 846.487	$2s^22p^2 - 2s^22p4d$	${}^1D - {}^1F^\circ$	2 – 3		544
	30	123.71	30.294 – 838.623	$2s^22p^2 - 2s^22p4d$	${}^1D - {}^1D^\circ$	2 – 2		544
	23	124.33	1.112 – 805.284	$2s^22p^2 - 2s^22p4s$	$g^3P - {}^1P^\circ$	2 – 1		846
	37	125.82	30.294 – 825.08	$2s^22p^2 - 2s2p^2(^2D)3p$	${}^1D - {}^1F^\circ$	2 – 3		846
	20	125.9	1.112 – 795.279	$2s^22p^2 - 2s^22p4s$	$g^3P - {}^3P^\circ$	2 – 2		544
	10	128.79	88.362 – 864.752+X	$2s2p^3 - 2s2p^2(^4P)4d$	${}^5S^\circ - {}^5P$	2 – 3		544
	50	129.03	30.294 – 805.284	$2s^22p^2 - 2s^22p4s$	${}^1D - {}^1P^\circ$	2 – 1		544
	18	130.61	0.414 – 766.00	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - {}^3P^\circ$	1 – 2		846
	16	130.68	0.414 – 765.64	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - {}^3P^\circ$	1 – 1		846
	30	130.74	1.112 – 766.00	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - {}^3P^\circ$	2 – 2		846
	16	130.77	1.112 – 765.64	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - {}^3P^\circ$	2 – 1		846
	45	131.99	0.414 – 758.05	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - {}^3D^\circ$	1 – 2		846
	50	132.04	1.112 – 758.46	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - {}^3D^\circ$	2 – 3		846
	18	132.11	1.112 – 758.05	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - {}^3D^\circ$	2 – 2		846
	27	134.48	0.0 – 743.5	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	$g^3P - {}^1P^\circ$	0 – 1	Q	846
	27	134.84	63.9 – 805.284	$2s^22p^2 - 2s^22p4s$	${}^1S - {}^1P^\circ$	0 – 1		846
	14	135.66	0.0 – 737.16	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - {}^3S^\circ$	0 – 1		846
	22	135.73	0.414 – 737.16	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - {}^3S^\circ$	1 – 1		846
	24	135.86	1.112 – 737.16	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - {}^3S^\circ$	2 – 1		846
	20	136.21	88.362 – 822.446+X	$2s2p^3 - 2s2p^2(^4P)4s$	${}^5S^\circ - {}^5P$	2 – 3		544
	50	140.72	88.362 – 798.963+X	$2s2p^3 - 2s2p^2(^4P)3d$	${}^5S^\circ - {}^5P$	2 – 1		544
	150	140.76	88.362 – 798.756+X	$2s2p^3 - 2s2p^2(^4P)3d$	${}^5S^\circ - {}^5P$	2 – 2		544
	150	140.79	88.362 – 798.585+X	$2s2p^3 - 2s2p^2(^4P)3d$	${}^5S^\circ - {}^5P$	2 – 3		544
	27	141.45	88.362 – 795.33	$2s2p^3 - 2s2p^2(^4P)3d$	${}^5S^\circ - {}^5D$	2 – 3		846
	37	142.44	0.414 – 702.459	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 0		846
	27	142.48	0.414 – 702.074	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 1		846
	18	142.58	0.414 – 701.765	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 2		846
	10	142.66	1.112 – 702.074	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 1		544
	50	142.72	1.112 – 701.765	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 2		846,544
	50	143.22	0.0 – 698.231	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	0 – 1		544
	100	143.27	0.414 – 698.382	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		544
	150	143.34	1.112 – 698.735	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		544
	36	143.41	1.112 – 698.382	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 2		846
	45	144.01	175.834 – 870.23	$2s2p^3 - 2s2p^2(^2D)3d$	${}^3D^\circ - {}^3F$	3 – 4		846
	18	146.86	30.294 – 711.18	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	${}^1D - {}^1P^\circ$	2 – 1		846
	150	147.13	30.294 – 709.956	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	${}^1D - {}^1F^\circ$	2 – 3		544
	18	148.15	208.157 – 883.15	$2s2p^3 - 2s2p^2(^2D)3d$	${}^3P^\circ - {}^3S$	2 – 1		846
	15	148.78	30.294 – 702.412	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	${}^1D - {}^1P^\circ$	2 – 1		544
	18	149.60	208.157 – 876.61	$2s2p^3 - 2s2p^2(^2D)3d$	${}^3P^\circ - {}^3D$	2 – 3		846
	66	151.23	30.294 – 691.54	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	${}^1D - {}^1D^\circ$	2 – 2		846
	120	151.42	30.294 – 690.691	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	${}^1D - {}^1D^\circ$	2 – 2		544

NE V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	45	154.50	63.9 – 711.18	$2s^22p^2 - 2s^22p(^2P^o)3d$	$^1S - ^1P^o$	0 – 1		846
	18	156.14	175.834 – 816.28	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^o - ^3D$	3 – 3		846
	18	156.20	175.905 – 816.13	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^o - ^3D$	2 – 2		846
	20	156.61	63.9 – 702.412	$2s^22p^2 - 2s^22p(^2P^o)3d$	$^1S - ^1P^o$	0 – 1		544
	30	158.59	175.834 – 806.39	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^o - ^3F$	3 – 4		846
	25	158.72	175.905 – 805.94	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^o - ^3F$	2 – 3		846
	23	158.82	175.927 – 805.57	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^o - ^3F$	1 – 2		846
	15	162.15	270.564 – 887.28	$2s2p^3 - 2s2p^2(^2D)3d$	$^1D^o - ^1F$	2 – 3		846
	100	164.02	88.362 – 698.044	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^o - ^5P$	2 – 3		544
	100	164.15	88.362 – 697.561	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^o - ^5P$	2 – 2		544
	80	164.29	88.362 – 697.042	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^o - ^5P$	2 – 1		544
	18	164.43	208.157 – 816.32	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^o - ^3D$	2 – 3		846
	18	164.48	208.157 – 816.13	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^o - ^3D$	1 – 2		846
	30	166.05	175.834 – 778.04	$2s2p^3 - 2s2p^2(^2D)3s$	$^3D^o - ^3D$	3 – 3		846
	150	167.47	0.414 – 597.523	$2s^22p^2 - 2s^22p(^2P^o)3s$	$g^3P - ^3P^o$	1 – 2		544
	30	167.61	0.0 – 596.626	$2s^22p^2 - 2s^22p(^2P^o)3s$	$g^3P - ^3P^o$	0 – 1		544
	250	167.67	1.112 – 597.523	$2s^22p^2 - 2s^22p(^2P^o)3s$	$g^3P - ^3P^o$	2 – 2		544
	23	167.72	0.414 – 596.626	$2s^22p^2 - 2s^22p(^2P^o)3s$	$g^3P - ^3P^o$	1 – 1		846
	25	167.83	0.414 – 596.254	$2s^22p^2 - 2s^22p(^2P^o)3s$	$g^3P - ^3P^o$	1 – 0		544
	25	167.92	1.112 – 596.626	$2s^22p^2 - 2s^22p(^2P^o)3s$	$g^3P - ^3P^o$	2 – 1		544
	14	168.60	208.193 – 801.31	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^o - ^3P$	0 – 1		846
	40	168.73	208.157 – 800.82	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^o - ^3P$	2 – 2		846
6	500	173.93	30.294 – 605.231	$2s^22p^2 - 2s^22p(^2P^o)3s$	$^1D - ^1P^o$	2 – 1		544
	18	175.48	208.157 – 778.04	$2s2p^3 - 2s2p^2(^2D)3s$	$^3P^o - ^3D$	2 – 3		846
		180.0						110
	18	183.72	175.834 – 720.14	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^o - ^3P$	3 – 2		846
	100	184.73	63.9 – 605.231	$2s^22p^2 - 2s^22p(^2P^o)3s$	$^1S - ^1P^o$	0 – 1		544
	30	188.42	270.564 – 801.31	$2s2p^3 - 2s2p^2(^4P)3d$	$^1D^o - ^3P$	2 – 1	Q	544
		192.0						110
	50	195.37	208.157 – 720.011	$2s2p^3 - 2s2p^2(^4P)3s$	$^3P^o - ^3P$	2 – 2		544
	30	195.55	208.157 – 719.527	$2s2p^3 - 2s2p^2(^4P)3s$	$^3P^o - ^3P$	2 – 1		544
	20	195.62	208.157 – 719.35	$2s2p^3 - 2s2p^2(^4P)3s$	$^3P^o - ^3P$	1 – 0		544
		210.23	175.927 – 651.6+Z	$2s2p^3 - 2s^22p(^2P^o)3p$	$^3D^o - ^3P$	1 – 2	P	110
		214.71	175.834 – 641.646	$2s2p^3 - 2s^22p(^2P^o)3p$	$^3D^o - ^3D$	3 – 3	P	110
		225.5	208.157 – 651.6+Z	$2s2p^3 - 2s^22p(^2P^o)3p$	$^3P^o - ^3P$	2 – 2		110
		228.2	208.157 – 646.37	$2s2p^3 - 2s^22p(^2P^o)3p$	$^3P^o - ^3S$	2 – 1		110
		230.69	208.157 – 641.646	$2s2p^3 - 2s^22p(^2P^o)3p$	$^3P^o - ^3D$	2 – 3	P	110
3	400	357.95	0.0 – 279.365	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^o$	0 – 1		544
3	500	358.48	0.414 – 279.365	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^o$	1 – 1		544
3	500	359.39	1.112 – 279.365	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^o$	2 – 1		544
5	1000	365.61	30.294 – 303.812	$2s^22p^2 - 2s2p^3$	$^1D - ^1P^o$	2 – 1		544
4	800	416.20	30.294 – 270.564	$2s^22p^2 - 2s2p^3$	$^1D - ^1D^o$	2 – 2		544
	250	416.82	63.9 – 303.812	$2s^22p^2 - 2s2p^3$	$^1S - ^1P^o$	0 – 1		544
	100	420.39	175.927 – 413.803	$2s2p^3 - 2p^4$	$^3D^o - ^3P$	1 – 0		544
	150	420.94	175.905 – 413.466	$2s2p^3 - 2p^4$	$^3D^o - ^3P$	2 – 1		544
	150	422.21	175.834 – 412.681	$2s2p^3 - 2p^4$	$^3D^o - ^3P$	3 – 2		544
	50	422.34	175.905 – 412.681	$2s2p^3 - 2p^4$	$^3D^o - ^3P$	2 – 2		544
2	250	480.41	0.0 – 208.157	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^o$	0 – 1		544
2	150	481.28	0.414 – 208.193	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^o$	1 – 0		544
2	250	481.36	0.414 – 208.157	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^o$	1 – 2		544
2	500	482.99	1.112 – 208.157	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^o$	2 – 2		544
	30	487.07	208.157 – 413.466	$2s2p^3 - 2p^4$	$^3P^o - ^3P$	2 – 1		544
		488.94	208.157 – 412.681	$2s2p^3 - 2p^4$	$^3P^o - ^3P$	2 – 2		544
1	400	568.42	0.0 – 175.927	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^o$	0 – 1		544

NE V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
1	250	569.76	0.414 – 175.927	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	1 – 1		544
1	500	569.83	0.414 – 175.905	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	1 – 2		544
1	250	572.11	1.112 – 175.905	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	2 – 2		544
1	800	572.34	1.112 – 175.834	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	2 – 3		544
		1137.0	0.414 – 88.362	$2s^22p^2 - 2s2p^3$	$g^3P - {}^5S^\circ$	1 – 2		211
		1146.1	1.112 – 88.362	$2s^22p^2 - 2s2p^3$	$g^3P - {}^5S^\circ$	2 – 2		211
		1574.8	0.4124 – 63.9136	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1S$	1 – 0	F,P	375,225
		1592.3	1.1101 – 63.9136	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1S$	2 – 0	F,P	375,225

NEON VI (Ne^{5+}), Z = 10
Ground State $1s^22s^22p(^2P^\circ_{1/2})$ (5 electrons)
Ionization Potential 1 273 800 cm^{-1}; 157.93 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	86.09	0.0 – 1161.58	$2s^22p - 2s^26d$	$g^2P^\circ - {}^2D$	1/2 – 3/2		846
	13	86.19	1.31 – 1161.58	$2s^22p - 2s^26d$	$g^2P^\circ - {}^2D$	3/2 – 5/2		846
	22	89.06	101.347 – 1224.18	$2s2p^2 - 2s2p(^3P^\circ)5d$	${}^4P - {}^4D^\circ$	5/2 – 7/2		846
	22	89.10	1.31 – 1123.64	$2s^22p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - {}^2D$	3/2 – 5/2		846
	18	89.95	0.0 – 1111.73	$2s^22p - 2s^25d$	$g^2P^\circ - {}^2D$	1/2 – 3/2		846
	24	90.06	1.31 – 1111.73	$2s^22p - 2s^25d$	$g^2P^\circ - {}^2D$	3/2 – 5/2		846
	13	95.37	178.992 – 1227.49	$2s2p^2 - 2s2p(^3P^\circ)5d$	${}^2D - {}^2F^\circ$	5/2 – 7/2		846
	12	95.44	179.021 – 1226.82	$2s2p^2 - 2s2p(^3P^\circ)5d$	${}^2D - {}^2F^\circ$	3/2 – 5/2		846
	20	96.89	100.704 – 1132.6	$2s2p^2 - 2s2p(^3P^\circ)4d$	${}^4P - {}^4P^\circ$	3/2 – 5/2		846
	27	96.97	101.347 – 1132.6	$2s2p^2 - 2s2p(^3P^\circ)4d$	${}^4P - {}^4P^\circ$	5/2 – 5/2		846
	23	97.05	100.261 – 1130.65	$2s2p^2 - 2s2p(^3P^\circ)4d$	${}^4P - {}^4D^\circ$	1/2 – 3/2		846
	25	97.09	100.704 – 1130.9	$2s2p^2 - 2s2p(^3P^\circ)4d$	${}^4P - {}^4D^\circ$	3/2 – 5/2		846
	25	97.11	101.347 – 1131.1	$2s2p^2 - 2s2p(^3P^\circ)4d$	${}^4P - {}^4D^\circ$	5/2 – 7/2		846
		98.13	0.0 – 1019.05	$2s^22p - 2s^24d$	$g^2P^\circ - {}^2D$	1/2 – 3/2		846
		98.26	1.31 – 1019.05	$2s^22p - 2s^24d$	$g^2P^\circ - {}^2D$	3/2 – 5/2		846
	25	101.22	0.0 – 987.95	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - {}^2P$	1/2 – 3/2		846
	45	101.34	1.31 – 987.95	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - {}^2P$	3/2 – 3/2		846
	27	101.42	0.0 – 986.00	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - {}^2D$	1/2 – 3/2		846
	50	101.54	1.31 – 986.14	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - {}^2D$	3/2 – 5/2		846
	13	101.75	100.261 – 1083.04	$2s2p^2 - 2p^2(^3P)3p$	${}^4P - {}^4S^\circ$	1/2 – 3/2		846
	18	101.80	100.704 – 1083.04	$2s2p^2 - 2p^2(^3P)3p$	${}^4P - {}^4S^\circ$	3/2 – 3/2		846
	23	101.87	101.347 – 1083.04	$2s2p^2 - 2p^2(^3P)3p$	${}^4P - {}^4S^\circ$	5/2 – 3/2		846
	27	102.59	249.292 – 1224.18	$2s2p^2 - 2s2p(^3P^\circ)5d$	${}^2P - {}^4D^\circ$	1/2 – 3/2	Q	846
	30	103.58	100.704 – 1066.14	$2s2p^2 - 2p^2(^3P)3p$	${}^4P - {}^4P^\circ$	3/2 – 5/2		846
	50	103.65	101.347 – 1066.14	$2s2p^2 - 2p^2(^3P)3p$	${}^4P - {}^4P^\circ$	5/2 – 5/2		846
	23	103.71	101.347 – 1065.57	$2s2p^2 - 2p^2(^3P)3p$	${}^4P - {}^4P^\circ$	5/2 – 3/2		846
	66	104.09	101.347 – 1062.05	$2s2p^2 - 2p^2(^3P)3p$	${}^4P - {}^4D^\circ$	5/2 – 7/2		846
	45	104.17	178.992 – 1138.96	$2s2p^2 - 2s2p(^3P^\circ)4d$	${}^2D - {}^2F^\circ$	5/2 – 7/2		846
	37	104.26	179.021 – 1138.16	$2s2p^2 - 2s2p(^3P^\circ)4d$	${}^2D - {}^2F^\circ$	3/2 – 5/2		846
	23	104.93	178.992 – 1132.01	$2s2p^2 - 2s2p(^3P^\circ)4d$	${}^2D - {}^2D^\circ$	5/2 – 5/2		846
	37	107.60	178.992 – 1108.36	$2s2p^2 - 2p^2(^1D)3p$	${}^2D - {}^2D^\circ$	5/2 – 5/2		846
	20	109.03	178.992 – 1096.17	$2s2p^2 - 2p^2(^1D)3p$	${}^2D - {}^2F^\circ$	5/2 – 7/2		846
	20	109.07	179.021 – 1095.83	$2s2p^2 - 2p^2(^1D)3p$	${}^2D - {}^2F^\circ$	3/2 – 5/2		846
	30	109.31	0.0 – 914.86	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2S$	1/2 – 1/2		846
	66	109.46	1.31 – 914.86	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2S$	3/2 – 1/2		846
	20	110.49	1.31 – 906.373	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2D$	3/2 – 5/2	P	544

NE VI — *Continued*

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	111.10	0.0 – 900.10	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		846
	500	111.16	1.31 – 900.90	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		846
	45	111.26	1.31 – 900.10	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		846
	10	113.95	1.31 – 878.852	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$	P	544
	60	114.07	0.0 – 876.66	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		846
	100	114.13	0.0 – 876.19	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		846
	200	114.24	1.31 – 876.66	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		846
	45	114.30	1.31 – 876.19	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		846
	100	116.58						846
	27	117.48	178.992 – 1030.23	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		846
	100	119.92	249.292 – 1083.04	$2s2p^2 - 2p^2(^3P)3p$	${}^2P - {}^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$	Q	846
	80	121.05	100.261 – 926.37	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		846
	100	121.10	100.704 – 926.47	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		846
	100	121.15	101.347 – 926.77	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		846
		121.19	101.347 – 926.47	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		846
	40	121.65						846
	200	122.49	0.0 – 816.405	$2s^22p - 2s^23d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		544
	100	122.69	1.31 – 816.405	$2s^22p - 2s^23d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		544
	23	124.77	230.853 – 1032.33	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		846
	66	125.12	230.853 – 1030.11	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2S - {}^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		846
	80	126.53	321.579 – 1111.73	$2p^3 - 2s^25d$	${}^4S^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$	Q	846
	35	126.73	230.853 – 1020.4	$2s2p^2 - 2s^24p$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	Q	846
	50	127.84	250.112 – 1032.33	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		846
	45	128.07	249.292 – 1030.11	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2P - {}^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		846
		128.18	359.46 – 1139.61	$2p^3 - 2p^2(^1D)3d$	${}^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		846
	50	129.36	178.992 – 952.20	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$	Q	846
	110	130.26	178.992 – 946.7	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		846
	100	130.40	179.021 – 945.9	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		846
	54	131.36	178.992 – 940.26	$2s2p^2 - 2s2p(^1P^\circ)3s$	${}^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		846
	55	133.51	178.992 – 928.02	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		846
	40	136.09	321.579 – 1056.23	$2p^3 - 2p^2(^1D)3s$	${}^4S^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$	Q	544
	150	136.21	100.704 – 834.81	$2s2p^2 - 2s2p(^3P^\circ)3s$	${}^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		846
	110	136.28	100.261 – 834.05	$2s2p^2 - 2s2p(^3P^\circ)3s$	${}^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		846
	350	136.34	101.347 – 834.81	$2s2p^2 - 2s2p(^3P^\circ)3s$	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		846
	150	136.45	100.704 – 833.57	$2s2p^2 - 2s2p(^3P^\circ)3s$	${}^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		846
	150	136.48	101.347 – 834.05	$2s2p^2 - 2s2p(^3P^\circ)3s$	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		846
	30	138.39	0.0 – 722.61	$2s^22p - 2s^23s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		544
	27	138.55	230.853 – 952.61	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		846
	30	138.63	1.31 – 722.61	$2s^22p - 2s^23s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		846,544
	27	139.31	406.056 – 1123.64	$2p^3 - 2s2p(^3P^\circ)4p$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	Q	846
	50	140.96	230.853 – 940.26	$2s2p^2 - 2s2p(^1P^\circ)3s$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		846
		142.44	250.112 – 952.20	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		846
		142.52	321.579 – 1023.23	$2p^3 - 2p^2(^3P)3s$	${}^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		846
	30	143.52	359.46 – 1056.23	$2p^3 - 2p^2(^1D)3s$	${}^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		846
	27	144.71	249.292 – 940.26	$2s2p^2 - 2s2p(^1P^\circ)3s$	${}^2P - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		846
	45	144.88	250.112 – 940.26	$2s2p^2 - 2s2p(^1P^\circ)3s$	${}^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		846
	18	147.33	249.292 – 928.02	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^2P - {}^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		846
	27	147.47	250.112 – 928.22	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^2P - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		846
	80	147.58	178.992 – 856.56	$2s2p^2 - 2s2p(^3P^\circ)3s$	${}^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		846
	50	147.78	179.021 – 855.74	$2s2p^2 - 2s2p(^3P^\circ)3s$	${}^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		846
	30	159.82	230.853 – 856.56	$2s2p^2 - 2s2p(^3P^\circ)3s$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		846
	18	160.03	230.853 – 855.74	$2s2p^2 - 2s2p(^3P^\circ)3s$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		846
	18	164.93	250.112 – 856.56	$2s2p^2 - 2s2p(^3P^\circ)3s$	${}^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		846
	40	168.73	178.992 – 771.655	$2s2p^2 - 2s^23p$	${}^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		846

NE VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	27	168.85	179.021 – 771.263	$2s2p^2 - 2s^23p$	$^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		846
	50	171.12	249.292 – 833.57	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2P - {}^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$	Q	544
	20	171.25	250.112 – 834.05	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2P - {}^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$	Q	544
	20	191.59	249.292 – 771.263	$2s2p^2 - 2s^23p$	$^2P - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	Q	375,544
	20	191.77	250.112 – 771.655	$2s2p^2 - 2s^23p$	$^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	Q	375,544
	50	399.82	0.0 – 250.112	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		544
	150	401.14	0.0 – 249.292	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		544
	250	401.93	1.31 – 250.112	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		544
	100	403.26	1.31 – 249.292	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		544
		429.95	906.373 – 1138.96	$2s2p(^3P^\circ)3p - 2s2p(^3P^\circ)4d$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	544
	400	433.176	0.0 – 230.853	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		071
	400	435.649	1.31 – 230.853	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		071
	100	440.404	178.992 – 406.056	$2s2p^2 - 2p^3$	$^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		071
	10	440.60	179.021 – 405.984	$2s2p^2 - 2p^3$	$^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		071
	200	451.843	100.261 – 321.579	$2s2p^2 - 2p^3$	$^4P - {}^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		071
	300	452.745	100.704 – 321.579	$2s2p^2 - 2p^3$	$^4P - {}^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		071
	300	454.072	101.347 – 321.579	$2s2p^2 - 2p^3$	$^4P - {}^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		071
		554.2	179.021 – 359.46	$2s2p^2 - 2p^3$	$^2D - {}^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		383
	50	558.59	0.0 – 179.021	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		544
	10	562.71	1.31 – 179.021	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		544
	150	562.80	1.31 – 178.992	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		544
		914.5	250.112 – 359.46	$2s2p^2 - 2p^3$	$^2P - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		383
		993.0	0.0 – 100.704	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{3}{2}$		211
		997.4	0.0 – 100.261	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{1}{2}$		211
		999.6	1.31 – 101.347	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		211
		1006.1	1.31 – 100.704	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		211
		1010.6	1.31 – 100.261	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		211

NEON VII (Ne^{6+}), Z = 10
Ground State $1s^22s^2(^1S_0)$ (4 electrons)
Ionization Potential 1 671 792 cm^{-1}; 207.28 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		65.85	0.0 – 1518.6	$2s^2 - 2s6p$	$g^1S - {}^1P^\circ$	0 – 1		777
	50	67.80	112.704+X – 1587.13+X	$2s2p - 2s8d$	$^3P^\circ - {}^3D$	2 – 3		777
	160	68.28	112.704+X – 1576.76+X	$2s2p - 2p5p$	$^3P^\circ - {}^3D$	2 – 3		777
	100	68.92	112.704+X – 1563.70+X	$2s2p - 2s7d$	$^3P^\circ - {}^3D$	2 – 3		777
	300	70.990	111.710 – 1520.36+X	$2s2p - 2s6d$	$^3P^\circ - {}^3D$	1 – 2		777
	300	71.038	112.704+X – 1520.40+X	$2s2p - 2s6d$	$^3P^\circ - {}^3D$	2 – 3		777
	80	74.23	214.952 – 1562.12	$2s2p - 2s7d$	$^1P^\circ - {}^1D$	1 – 2		777
		74.40	112.704+X – 1456.8+X	$2s2p - 2s5d$	$^3P^\circ - {}^3D$	2 – 3		777
	380	74.962	112.704+X – 1446.71+X	$2s2p - 2p4p$	$^3P^\circ - {}^3D$	2 – 3		777
	130	75.49	111.710 – 1436.36+X	$2s2p - 2s5s$	$^3P^\circ - {}^3S$	1 – 1		777
	120	75.55	112.704+X – 1436.36+X	$2s2p - 2s5s$	$^3P^\circ - {}^3S$	2 – 1		777
	500	75.765	0.0 – 1319.87	$2s^2 - 2s4p$	$g^1S - {}^1P^\circ$	0 – 1		777
	140	76.515	214.952 – 1521.88	$2s2p - 2s6d$	$^1P^\circ - {}^1D$	1 – 2		777
	220	77.25	289.839+X – 1584.38+X	$2p^2 - 2p5d$	$^3P - {}^3D^\circ$	1 – 2		777
	220	77.30	290.722+X – 1584.38+X	$2p^2 - 2p5d$	$^3P - {}^3D^\circ$	2 – 3		777
	520	80.533	214.952 – 1456.68	$2s2p - 2s5d$	$^1P^\circ - {}^1D$	1 – 2		777
	110	81.37	214.952 – 1443.9	$2s2p - 2p4p$	$^1P^\circ - {}^1P$	1 – 1		777
	13	82.01	0. – 1219.39	$2s^2 - 2p3d$	$g^1S - {}^1P^\circ$	0 – 1	P	846

NE VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	14	82.16	111.255+X – 1328.30+X	2s2p – 2s4d	$^3P^o - {}^3D$	0 – 1		846
	500	82.198	111.710 – 1328.30+X	2s2p – 2s4d	$^3P^o - {}^3D$	1 – 2		777
	700	82.268	112.704+X – 1328.30+X	2s2p – 2s4d	$^3P^o - {}^3D$	2 – 3		777
	200	84.212	111.710 – 1299.10+X	2s2p – 2s4s	$^3P^o - {}^3S$	1 – 1		777
	200	84.292	112.704+X – 1299.10+X	2s2p – 2s4s	$^3P^o - {}^3S$	2 – 1		777
	150	85.19	289.328+X – 1462.92+X	$2p^2$ – 2p4d	$^3P - {}^3P^o$	0 – 1		777
	190	85.29	290.722+X – 1462.92+X	$2p^2$ – 2p4d	$^3P - {}^3P^o$	2 – 2		777
	20	85.31	289.328+X – 1461.02+X	$2p^2$ – 2p4d	$^3P - {}^3D^o$	0 – 1		846
	20	85.41	289.839+X – 1460.64+X	$2p^2$ – 2p4d	$^3P - {}^3D^o$	1 – 2		846
	27	85.45	290.722+X – 1460.64+X	$2p^2$ – 2p4d	$^3P - {}^3D^o$	2 – 2		846
		86.54	319.72+V – 1475.21+V	$2p^2$ – 2p4d	$^1D - {}^1P^o$	2 – 1	P	777
	190	86.818	319.72+V – 1471.55+V	$2p^2$ – 2p4d	$^1D - {}^1F^o$	2 – 3		777
	130	89.02	319.72+V – 1443.06+V	$2p^2$ – 2p4s	$^1D - {}^1P^o$	2 – 1		777
	500	89.368	214.952 – 1333.92	2s2p – 2s4d	$^1P^o - {}^1D$	1 – 2		777
	260	91.564	214.952 – 1307.08	2s2p – 2s4s	$^1P^o - {}^1S$	1 – 0		777
	90	92.850	398.20+V – 1475.21+V	$2p^2$ – 2p4d	$^1S - {}^1P^o$	0 – 1		777
	400	94.29	111.710 – 1172.47+X	2s2p – 2p3p	$^3P^o - {}^3P$	1 – 2		777
	500	94.36	112.704+X – 1172.47+X	2s2p – 2p3p	$^3P^o - {}^3P$	2 – 2		777
	400	94.40	112.704+X – 1172.14+X	2s2p – 2p3p	$^3P^o - {}^3P$	2 – 1		777
	300	94.890	111.710 – 1165.50+X	2s2p – 2p3p	$^3P^o - {}^3S$	1 – 1		777
	300	94.986	112.704+X – 1165.50+X	2s2p – 2p3p	$^3P^o - {}^3S$	2 – 1		777
	700	95.75	112.704+X – 1157.08+X	2s2p – 2p3p	$^3P^o - {}^3D$	2 – 3		777
	250	95.84	111.710 – 1155.4+X	2s2p – 2p3p	$^3P^o - {}^3D$	1 – 2		777
	27	95.91	112.704+X – 1155.4+X	2s2p – 2p3p	$^3P^o - {}^3D$	2 – 2		846
	36	95.95	111.710 – 1154.35+X	2s2p – 2p3p	$^3P^o - {}^3D$	1 – 1		846
	730	97.502	0.0 – 1025.69	$2s^2$ – 2s3p	$g^1S - {}^1P^o$	0 – 1		777
		103.09	214.952 – 1184.98+V	2s2p – 2p3p	$^1P^o - {}^1D$	1 – 2		777
	300	106.040	111.255+X – 1054.29+X	2s2p – 2s3d	$^3P^o - {}^3D$	0 – 1		777
	800	106.086	111.710 – 1054.34+X	2s2p – 2s3d	$^3P^o - {}^3D$	1 – 2		777
	800	106.192	112.704+X – 1054.41+X	2s2p – 2s3d	$^3P^o - {}^3D$	2 – 3		777
	200	107.099	214.952 – 1148.67+V	2s2p – 2p3p	$^1P^o - {}^1P$	1 – 1		777
		109.75	289.328+X – 1200.46+X	$2p^2$ – 2p3d	$^3P - {}^3P^o$	0 – 1		846
	33	109.78	289.839+X – 1200.75+X	$2p^2$ – 2p3d	$^3P - {}^3P^o$	1 – 0		846
	33	109.81	289.839+X – 1200.46+X	$2p^2$ – 2p3d	$^3P - {}^3P^o$	1 – 1		846
	27	109.87	289.839+X – 1200.+X	$2p^2$ – 2p3d	$^3P - {}^3P^o$	1 – 2		846
	27	109.93	290.722+X – 1200.46+X	$2p^2$ – 2p3d	$^3P - {}^3P^o$	2 – 1		846
	250	109.98	290.722+X – 1200.+X	$2p^2$ – 2p3d	$^3P - {}^3P^o$	2 – 2		846
	200	110.53	289.328+X – 1194.06+X	$2p^2$ – 2p3d	$^3P - {}^3D^o$	0 – 1		846
	350	110.56	289.839+X – 1194.31+X	$2p^2$ – 2p3d	$^3P - {}^3D^o$	1 – 2		846
	1000	110.62	290.722+X – 1194.64+X	$2p^2$ – 2p3d	$^3P - {}^3D^o$	2 – 3		846
	27	110.67	290.722+X – 1194.31+X	$2p^2$ – 2p3d	$^3P - {}^3D^o$	2 – 2		846
	220	111.152	319.72+V – 1219.39+V	$2p^2$ – 2p3d	$^1D - {}^1P^o$	2 – 1		777
	430	111.807	319.72+V – 1214.12+V	$2p^2$ – 2p3d	$^1D - {}^1F^o$	2 – 3		777
	600	115.331	111.255+X – 978.32+X	2s2p – 2s3s	$^3P^o - {}^3S$	0 – 1		777
	600	115.392	111.710 – 978.32+X	2s2p – 2s3s	$^3P^o - {}^3S$	1 – 1		777
	700	115.522	112.704+X – 978.32+X	2s2p – 2s3s	$^3P^o - {}^3S$	2 – 1		777
	330	115.955	319.72+V – 1182.12+V	$2p^2$ – 2p3d	$^1D - {}^1D^o$	2 – 2		777
	66	116.27						846
	770	116.693	214.952 – 1071.9	2s2p – 2s3d	$^1P^o - {}^1D$	1 – 2		777
	500	120.192	289.839+X – 1121.78+X	$2p^2$ – 2p3s	$^3P - {}^3P^o$	1 – 2		777
	44	120.274	289.328+X – 1120.765+X	$2p^2$ – 2p3s	$^3P - {}^3P^o$	0 – 1	P	846
	700	120.337	290.722+X – 1121.78+X	$2p^2$ – 2p3s	$^3P - {}^3P^o$	2 – 2		777
	44	120.348	289.839+X – 1120.765+X	$2p^2$ – 2p3s	$^3P - {}^3P^o$	1 – 1	P	846
	44	120.419	289.839+X – 1120.27+X	$2p^2$ – 2p3s	$^3P - {}^3P^o$	1 – 0	P	846

NE VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	500	120.487	290.722+X – 1120.765+X	$2p^2$ – 2p3s	^3P – $^3P°$	2 – 1		777
	260	121.774	398.20+V – 1219.39+V	$2p^2$ – 2p3d	^1S – $^1P°$	0 – 1		777
	710	127.663	214.952 – 998.25	2s2p – 2s3s	$^1P°$ – ^1S	1 – 0		777
	150	133.64	398.20+V – 1146.48+V	$2p^2$ – 2p3s	^1S – $^1P°$	0 – 1		777
	44	134.12						846
	30	141.29						846
		234.6						109
		246.1	1054.34+X – 1460.64+X	2s3d – 2p4d	^3D – $^3D°$	2 – 2	Q	109
		250.2	1071.9 – 1471.55+V	2s3d – 2p4d	^1D – $^1F°$	2 – 3	Q	109
		258.0						109
		286.5						109
	700	465.221	0.0 – 214.952	$2s^2$ – 2s2p	g^1S – $^1P°$	0 – 1		197,071
	400	558.61	111.710 – 290.722+X	2s2p – $2p^2$	$^3P°$ – ^3P	1 – 2		197,071
	300	559.947	111.255+X – 289.839+X	2s2p – $2p^2$	$^3P°$ – ^3P	0 – 1		197,071
	200	561.378	111.710 – 289.839+X	2s2p – $2p^2$	$^3P°$ – ^3P	1 – 1		197,071
	400	561.728	112.704+X – 290.722+X	2s2p – $2p^2$	$^3P°$ – ^3P	2 – 2		197,071
	200	562.992	111.710 – 289.328+X	2s2p – $2p^2$	$^3P°$ – ^3P	1 – 0		197,071
	200	564.529	112.704+X – 289.839+X	2s2p – $2p^2$	$^3P°$ – ^3P	2 – 1		197,071
		895.18	0.0 – 111.710	$2s^2$ – 2s2p	g^1S – $^3P°$	0 – 1		211
	600	1981.974	978.32+X – 1028.775+X	2s3s – 2s3p	^3S – $^3P°$	1 – 2		071
	300	1992.060	978.32+X – 1028.519+X	2s3s – 2s3p	^3S – $^3P°$	1 – 1		071
	100	1997.345	978.32+X – 1028.386+X	2s3s – 2s3p	^3S – $^3P°$	1 – 0		071

NEON VIII (Ne^{7+}), Z = 10
Ground State $1s^22s(^2S_{1/2})$ (3 electrons)
Ionization Potential 1 928 462 cm^{-1}; 239.10 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	40	11.905	0.0 – 8399.8	$1s^22s$ – 1s2s3p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$		559
	70	13.654	0.0 – 7323.9	$1s^22s$ – 1s2s2p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$		559
	70	13.710	129.8012 – 7423.7	$1s^22p$ – $1s2p^2$	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$		559
	20	53.81	0.0 – 1858.4	$1s^22s$ – $1s^210p$	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$		777
	70	54.31	0.0 – 1841.3	$1s^22s$ – $1s^29p$	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$		777
	130	55.01	0.0 – 1817.85	$1s^22s$ – $1s^28p$	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$		777
	320	56.043	0.0 – 1784.34	$1s^22s$ – $1s^27p$	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$		777
	470	57.747	0.0 – 1731.69	$1s^22s$ – $1s^26p$	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$		777
	180	58.407	129.8012 – 1841.92	$1s^22p$ – $1s^29d$	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$		777
	290	59.19	129.8012 – 1819.30	$1s^22p$ – $1s^28d$	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$		777
	300	60.351	128.1519 – 1785.10	$1s^22p$ – $1s^27d$	$^2P°$ – ^2D	$\frac{1}{2}$ – $\frac{3}{2}$		777
	400	60.413	129.8012 – 1785.10	$1s^22p$ – $1s^27d$	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$		777
	10	60.49	129.8012 – 1783.00	$1s^22p$ – $1s^27s$	$^2P°$ – ^2S	$\frac{3}{2}$ – $\frac{1}{2}$		777
	630	60.796	0.0 – 1644.85	$1s^22s$ – $1s^25p$	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$		777
	350	62.297	128.1519 – 1733.37	$1s^22p$ – $1s^26d$	$^2P°$ – ^2D	$\frac{1}{2}$ – $\frac{3}{2}$		777
	500	62.361	129.8012 – 1733.37	$1s^22p$ – $1s^26d$	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$		777
	150	62.58	129.8012 – 1727.80	$1s^22p$ – $1s^26s$	$^2P°$ – ^2S	$\frac{3}{2}$ – $\frac{1}{2}$		777
	600	65.822	128.1519 – 1647.38	$1s^22p$ – $1s^25d$	$^2P°$ – ^2D	$\frac{1}{2}$ – $\frac{3}{2}$		777
	700	65.895	129.8012 – 1647.38	$1s^22p$ – $1s^25d$	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$		777
	300	66.259	128.1519 – 1637.41	$1s^22p$ – $1s^25s$	$^2P°$ – ^2S	$\frac{1}{2}$ – $\frac{1}{2}$		777
	350	66.330	129.8012 – 1637.41	$1s^22p$ – $1s^25s$	$^2P°$ – ^2S	$\frac{3}{2}$ – $\frac{1}{2}$		777
	770	67.382	0.0 – 1484.08	$1s^22s$ – $1s^24p$	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$		777
	700	73.470	128.1519 – 1489.15	$1s^22p$ – $1s^24d$	$^2P°$ – ^2D	$\frac{1}{2}$ – $\frac{3}{2}$		777
	750	73.563	129.8012 – 1489.18	$1s^22p$ – $1s^24d$	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$		777

NE VIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	650	74.541	128.1519 – 1469.64	$1s^22p - 1s^24s$	$^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		777
	650	74.637	129.8012 – 1469.64	$1s^22p - 1s^24s$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		777
	850	88.092	0.0 – 1135.34	$1s^22s - 1s^23p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		777
	300	88.13	0.0 – 1134.86	$1s^22s - 1s^23p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	P	777,846
	850	98.115	128.1519 – 1147.36	$1s^22p - 1s^23d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		777
	870	98.260	129.8012 – 1147.51	$1s^22p - 1s^23d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		777
	790	102.911	128.1519 – 1099.87	$1s^22p - 1s^23s$	$^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		777
	830	103.085	129.8012 – 1099.87	$1s^22p - 1s^23s$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		777
		183.5	1099.87 – 1644.85	$1s^23s - 1s^25p$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		109
		195.3	1135.34 – 1647.38	$1s^23p - 1s^25d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		109
		198.98	1134.86 – 1637.41	$1s^23p - 1s^25s$	$^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		847
		199.17	1135.34 – 1637.41	$1s^23p - 1s^25s$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		847
		199.97	1147.36 – 1647.44	$1s^23d - 1s^25f$	$^2D - ^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		847
		200.03	1147.51 – 1647.44	$1s^23d - 1s^25f$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		847
		201.0	1147.36 – 1644.85	$1s^23d - 1s^25p$	$^2D - ^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		109
		247.3						109
		260.34	1099.87 – 1483.98	$1s^23s - 1s^24p$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		847
		266.7						109
		270.8	1489.15 – 1858.4	$1s^24d - 1s^210p$	$^2D - ^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$	Q	109
		272.2						109
		277.1						109
		282.27	1134.86 – 1489.15	$1s^23p - 1s^24d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		847
		282.61	1135.34 – 1489.18	$1s^23p - 1s^24d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		847
		292.38	1147.36 – 1489.43	$1s^23d - 1s^24f$	$^2D - ^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		847
		292.47	1147.51 – 1489.38	$1s^23d - 1s^24f$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		847
		297.12	1147.51 – 1484.08	$1s^23d - 1s^24p$	$^2D - ^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$	P	109
		298.70	1134.86 – 1469.64	$1s^23p - 1s^24s$	$^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		847
		299.13	1135.34 – 1469.64	$1s^23p - 1s^24s$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		847
	1000	770.409	0.0 – 129.8012	$1s^22s - 1s^22p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		197,071
	500	780.324	0.0 – 128.1519	$1s^22s - 1s^22p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		197,071

NEON IX (Ne^{8+}), Z = 10
Ground State $1s^2(^1S_0)$ (2 electrons)
Ionization Potential 9 644 960 cm^{-1}; 1195.83 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	10.513	0.0 – 9512.	$1s^2 - 1s8p$	$g^1S - ^1P^\circ$	0 – 1		559
	70	10.565	0.0 – 9465.2	$1s^2 - 1s7p$	$g^1S - ^1P^\circ$	0 – 1		559
	120	10.646	0.0 – 9396.2	$1s^2 - 1s6p$	$g^1S - ^1P^\circ$	0 – 1		559
	230	10.765	0.0 – 9290.00	$1s^2 - 1s5p$	$g^1S - ^1P^\circ$	0 – 1		559
	350	11.001	0.0 – 9090.63	$1s^2 - 1s4p$	$g^1S - ^1P^\circ$	0 – 1		559
		11.008	0.0 – 9084.04	$1s^2 - 1s4p$	$g^1S - ^3P^\circ$	0 – 1	P	728
	570	11.544	0.0 – 8660.53	$1s^2 - 1s3p$	$g^1S - ^1P^\circ$	0 – 1		559
		11.568	0.0 – 8644.50	$1s^2 - 1s3p$	$g^1S - ^3P^\circ$	0 – 1	P	728
		12.172	7436.56 – 15652.18	$1s2p - 2p^2$	$^1P^\circ - ^1S$	1 – 0	P	626
		12.260	7382.68 – 15539.3	$1s2s - 2s2p$	$^1S - ^1P^\circ$	0 – 1	P	626
	50	12.303	7299.94 – 15428.0	$1s2s - 2s2p$	$^3S - ^3P^\circ$	1 – 2	A	559
		12.309	7299.94 – 15421.1	$1s2s - 2s2p$	$^3S - ^3P^\circ$	1 – 1	P	626

NE IX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		12.324	7380.05 – 15494.3	1s2p – 2p^2	^{3}P° – ^{3}P	2 – 2	P	626
	50	12.355	7436.56 – 15530.5	1s2p – 2p^2	^{1}P° – ^{1}D	1 – 2	A	559
	1000	13.447	0.0 – 7436.56	1s^2 – 1s2p	g^{1}S – ^{1}P°	0 – 1		559
	150	13.553	0.0 – 7378.50	1s^2 – 1s2p	g^{1}S – ^{3}P°	0 – 1	P	559
	500	13.700	0.0 – 7299.94	1s^2 – 1s2s	g^{1}S – ^{3}S	0 – 1	F,P	375,276,918
		46.3	7299.94 – 9460.	1s2s – 1s7p	^{3}S – ^{3}P°	1 – 2		262
		47.7	7299.94 – 9395.0	1s2s – 1s6p	^{3}S – ^{3}P°	1 – 2		262
		48.0	7380.05 – 9463.	1s2p – 1s7d	^{3}P° – ^{3}D	2 – 3		262
		49.5	7380.05 – 9400.	1s2p – 1s6d	^{3}P° – ^{3}D	2 – 3		262
		50.3	7299.94 – 9286.76	1s2s – 1s5p	^{3}S – ^{3}P°	1 – 2		262
		52.4	7382.68 – 9290.00	1s2s – 1s5p	^{1}S – ^{1}P°	0 – 1		262
		56.04	7299.94 – 9084.23	1s2s – 1s4p	^{3}S – ^{3}P°	1 – 2	P	375,918
	100	58.468	7380.05 – 9090.39	1s2p – 1s4d	^{3}P° – ^{3}D	2 – 3		559
		74.35	7299.94 – 8644.96	1s2s – 1s3p	^{3}S – ^{3}P°	1 – 2	P	375,918
		78.26	7382.68 – 8660.53	1s2s – 1s3p	^{1}S – ^{1}P°	0 – 1	P	375,918
	100	78.300	7380.05 – 8657.19	1s2p – 1s3d	^{3}P° – ^{3}D	2 – 3		559
		134.91	8657.19 – 9398.4	1s3d – 1s6f	^{3}D – ^{3}F°	3 – 4	P	087
		135.02	8662.4+K – 9403.+K	1s3d – 1s6f	^{1}D – ^{1}F°	2 – 3	P	087
		158.07	8657.19 – 9289.8	1s3d – 1s5f	^{3}D – ^{3}F°	3 – 4	P	087
		158.22	8662.4+K – 9294.4+K	1s3d – 1s5f	^{1}D – ^{1}F°	2 – 3	P	087
		216.81	8623.00 – 9084.23	1s3s – 1s4p	^{3}S – ^{3}P°	1 – 2	P	375,918
		224.34	8644.88 – 9090.63	1s3s – 1s4p	^{1}S – ^{1}P°	0 – 1	P	375,109,918
		231.16	8657.19 – 9089.8	1s3d – 1s4f	^{3}D – ^{3}F°	3 – 4	P	087
		231.47	8662.4+K – 9094.4+K	1s3d – 1s4f	^{1}D – ^{1}F°	2 – 3	P	087
		267.9						109
		276.2						109
		283.6						109
		288.8						109
		1248.28	7299.94 – 7380.05	1s2s – 1s2p	^{3}S – ^{3}P°	1 – 2	P	375,918
		1855.98	7382.68 – 7436.56	1s2s – 1s2p	^{1}S – ^{1}P°	0 – 1	P	375,918

NEON X (Ne^{9+}), Z = 10
Ground State 1s($^2S_{1/2}$) (1 electron)
Ionization Potential 10 986 873 cm^{-1}; 1362.21 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		9.194	0.0 – 10877.1138883	1s – 10p	g^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		9.215	0.0 – 10851.3651890	1s – 9p	g^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		9.246	0.0 – 10815.3668370	1s – 8p	g^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		9.291	0.0 – 10762.8585890	1s – 7p	g^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		9.362	0.0 – 10681.9541600	1s – 6p	g^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		9.481	0.0 – 10547.7723730	1s – 5p	g^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
	10	9.708	0.0 – 10300.7486800	1s – 4p	g^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$	P	309,375
	20	10.238	0.0 – 9767.0628900	1s – 3p	g^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$	P	309,375
	10	10.240	0.0 – 9765.9746100	1s – 3p	g^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{1}{2}$	P	309,375
	65	12.132	0.0 – 8242.6060500	1s – 2p	g^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$	P	309,375
	35	12.138	0.0 – 8238.9334400	1s – 2p	g^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{1}{2}$	P	309,375
		37.907	8239.0965000 – 10877.1138883	2s – 10p	^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$	P	309

NE X — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		37.958	8242.6060500 – 10877.1236072	2p – 10d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		38.281	8239.0965000 – 10851.3651890	2s – 9p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		38.332	8242.6060500 – 10851.3785208	2p – 9d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		38.816	8239.0965000 – 10815.3668370	2s – 8p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		38.868	8242.6060500 – 10815.3858200	2p – 8d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		39.623	8239.0965000 – 10762.8585890	2s – 7p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		39.678	8242.6060500 – 10762.8869270	2p – 7d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		40.936	8239.0965000 – 10681.9541600	2s – 6p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		40.994	8242.6060500 – 10681.9991630	2p – 6d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		43.315	8239.0965000 – 10547.7723730	2s – 5p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		43.379	8242.6060500 – 10547.8501420	2p – 5d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		48.505	8239.0965000 – 10300.7486800	2s – 4p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		48.584	8242.6060500 – 10300.9005760	2p – 4d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		65.446	8239.0965000 – 9767.0628900	2s – 3p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		65.582	8242.6060500 – 9767.4229278	2p – 3d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		90.002	9766.0233900 – 10877.1138883	3s – 10p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		90.085	9767.0628900 – 10877.1236072	3p – 10d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		90.114	9767.4229278 – 10877.1284725	3d – 10f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		92.137	9766.0233900 – 10851.3651890	3s – 9p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		92.224	9767.0628900 – 10851.3785208	3p – 9d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		92.254	9767.4229278 – 10851.3851948	3d – 9f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		95.298	9766.0233900 – 10815.3668370	3s – 8p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		95.390	9767.0628900 – 10815.3858200	3p – 8d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		95.422	9767.4229278 – 10815.3953230	3d – 8f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		100.318	9766.0233900 – 10762.8585890	3s – 7p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		100.419	9767.0628900 – 10762.8869270	3p – 7d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		100.454	9767.4229278 – 10762.9011120	3d – 7f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		109.178	9766.0233900 – 10681.9541600	3s – 6p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		109.297	9767.0628900 – 10681.9991630	3p – 6d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		109.338	9767.4229278 – 10682.0216880	3d – 6f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		127.918	9766.0233900 – 10547.7723730	3s – 5p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		128.076	9767.0628900 – 10547.8501420	3p – 5d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		128.129	9767.4229278 – 10547.8890660	3d – 5f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		173.369	10300.3102600 – 10877.1138883	4s – 10p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		173.498	10300.7486800 – 10877.1236072	4p – 10d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		173.542	10300.9005760 – 10877.1284725	4d – 10f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		181.470	10300.3102600 – 10851.3651890	4s – 9p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		181.610	10300.7486800 – 10851.3785208	4p – 9d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		181.658	10300.9005760 – 10851.3851948	4d – 9f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		187.012	9766.0233900 – 10300.7486800	3s – 4p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		187.323	9767.0628900 – 10300.9005760	3p – 4d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		187.423	9767.4229278 – 10300.9765970	3d – 4f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		194.153	10300.3102600 – 10815.3668370	4s – 8p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		194.312	10300.7486800 – 10815.3858200	4p – 8d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		194.365	10300.9005760 – 10815.3953230	4d – 8f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		216.194	10300.3102600 – 10762.8585890	4s – 7p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		216.386	10300.7486800 – 10762.8869270	4p – 7d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		216.450	10300.9005760 – 10762.9011120	4d – 7f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		262.024	10300.3102600 – 10681.9541600	4s – 6p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		262.294	10300.7486800 – 10681.9991630	4p – 6d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		262.384	10300.9005760 – 10682.0216880	4d – 6f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		303.429	10547.5479490 – 10877.1138883	5s – 10p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		303.627	10547.7723730 – 10877.1236072	5p – 10d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		303.694	10547.8501420 – 10877.1284725	5d – 10f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309

NE X — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		329.145	10547.5479490 – 10851.3651890	5s – 9p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		329.374	10547.7723730 – 10851.3785208	5p – 9d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		329.451	10547.8501420 – 10851.3851948	5d – 9f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		373.387	10547.5479490 – 10815.3668370	5s – 8p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		373.673	10547.7723730 – 10815.3858200	5p – 8d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		373.769	10547.8501420 – 10815.3953230	5d – 8f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		404.102	10300.3102600 – 10547.7723730	4s – 5p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		404.692	10300.7486800 – 10547.8501420	4p – 5d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		404.877	10300.9005760 – 10547.8890660	4d – 5f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		464.445	10547.5479490 – 10762.8585890	5s – 7p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		464.869	10547.7723730 – 10762.8869270	5p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		465.006	10547.8501420 – 10762.9011120	5d – 7f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		744.013	10547.5479490 – 10681.9541600	5s – 6p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		745.008	10547.7723730 – 10681.9991630	5p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		745.314	10547.8501420 – 10682.0216880	5d – 6f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309

SODIUM I (Na^{0+}), Z = 11
Ground State $1s^22s^22p^63s(^2S_{1/2})$ (11 electrons)
Ionization Potential 41 449.44 cm^{-1}; 5.139 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		298.33	0.0 – 335.20	$2p^63s - 2p^5(^2P^\circ_{1/2})3p5p$	$g^2S - {}^4P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
		298.83	0.0 – 334.64	$2p^63s - 2p^5(^2P^\circ_{3/2})3p6p$	$g^2S - {}^4P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
		300.90	0.0 – 332.34	$2p^63s - 2p^5(^2P^\circ_{1/2})3p5p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
		301.67	0.0 – 331.48	$2p^63s - 2p^5(^2P^\circ_{3/2})3p7p$	$g^2S - {}^4P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
		302.97	0.0 – 330.06	$2p^63s - 2p^5(^2P^\circ_{1/2})3p4p$	$g^2S - {}^4P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
		304.89	0.0 – 327.99	$2p^63s - 2p^5(^2P^\circ_{3/2})3p4p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
		319.71	0.0 – 312.79	$2p^63s - 2p^5(^2P^\circ_{3/2})3p^2$	$g^2S - {}^4P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
		320.32	0.0 – 312.19	$2p^63s - 2p^5(^2P^\circ_{3/2})3p^2$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
		321.57	0.0 – 310.98	$2p^63s - 2p^5(^2P^\circ_{3/2})3p^2$	$g^2S - {}^4S^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
		323.25	0.0 – 309.36	$2p^63s - 2p^53s(^1P^\circ)12d$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
		323.40	0.0 – 309.21	$2p^63s - 2p^53s(^1P^\circ)11d$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
	6	323.59	0.0 – 309.03	$2p^63s - 2p^53s(^1P^\circ)10d$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	513
	10	323.88	0.0 – 308.76	$2p^63s - 2p^53s(^1P^\circ)9d$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	513
	14	324.28	0.0 – 308.38	$2p^63s - 2p^53s(^1P^\circ)8d$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	513
		324.51	0.0 – 308.16	$2p^63s - 2p^53s(^1P^\circ)9s$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
	22	324.90	0.0 – 307.79	$2p^63s - 2p^53s(^1P^\circ)7d$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	513
	11	325.19	0.0 – 307.51	$2p^63s - 2p^53s(^1P^\circ)8s$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	513
	25	325.86	0.0 – 306.88	$2p^63s - 2p^53s(^1P^\circ)6d$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	513
	17	326.32	0.0 – 306.45	$2p^63s - 2p^53s(^1P^\circ)7s$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	513
		327.14	0.0 – 305.68	$2p^63s - 2p^53s(^3P^\circ_0)9s$	$g^2S - {}^4P^\circ$	$\frac{1}{2} - \frac{1}{2}$	A	135
		327.46	0.0 – 305.38	$2p^63s - 2p^53s(^1P^\circ)5d$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
		327.68	0.0 – 305.17	$2p^63s - 2p^53s(^3P^\circ_1)9s$	$g^2S - {}^4P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
		327.97	0.0 – 304.91	$2p^63s - 2p^53s(^1P^\circ)6s$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	A	135
		328.14	0.0 – 304.75	$2p^63s - 2p^53s(^1P^\circ)6s$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
		328.40	0.0 – 304.50	$2p^63s - 2p^53s(^3P^\circ_1)8s$	$g^2S - {}^4P^\circ$	$\frac{1}{2} - \frac{1}{2}$	A	135
		328.89	0.0 – 304.05	$2p^63s - 2p^53s(^3P^\circ_0)7s$	$g^2S - {}^4P^\circ$	$\frac{1}{2} - \frac{1}{2}$	A	135
		329.28	0.0 – 303.70	$2p^63s - 2p^53s(^3P^\circ_2)8s$	$g^2S - {}^4P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
		329.58	0.0 – 303.42	$2p^63s - 2p^53s(^3P^\circ_1)7s$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
		329.74	0.0 – 303.27	$2p^63s - 2p^53s(^3P^\circ_1)7s$	$g^2S - {}^4P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
		330.21	0.0 – 302.84	$2p^63s - 2p^53s(^3P^\circ_1)5d$	$g^2S - {}^4P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
		330.66	0.0 – 302.43	$2p^63s - 2p^53s(^1P^\circ)4d$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
		330.95	0. – 302.16	$2p^63s - 2p^53s(^3P^\circ_0)6s$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	A	135
		331.16	0.0 – 301.97	$2p^63s - 2p^53s(^3P^\circ_1)6s$	$g^2S - {}^4P^\circ$	$\frac{1}{2} - \frac{1}{2}$	A	135
		332.45	0.0 – 300.79	$2p^63s - 2p^53s(^3P^\circ_2)6s$	$g^2S - {}^4P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
		332.67	0.0 – 300.60	$2p^63s - 2p^53s(^1P^\circ)5s$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	A	135
		333.07	0.0 – 300.24	$2p^63s - 2p^53s(^1P^\circ)5s$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
	16	335.73	0.0 – 297.86	$2p^63s - 2p^53s(^3P^\circ_1)5s$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	A	513
	32	335.96	0.0 – 297.65	$2p^63s - 2p^53s(^3P^\circ_1)5s$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	513
		338.38	0.0 – 295.53	$2p^63s - 2p^53s(^1P^\circ)3d$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
		338.62	0.0 – 295.32	$2p^63s - 2p^53s(^1P^\circ)3d$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
	20	342.35	0.0 – 292.10	$2p^63s - 2p^53s(^1P^\circ)4s$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	A	513
	18	343.16	0.0 – 291.41	$2p^63s - 2p^53s(^1P^\circ)4s$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	513
	29	343.88	0.0 – 290.80	$2p^63s - 2p^53s(^3P^\circ_0)4s$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	A	513
		344.27	39.57451 – 330.06	$2p^69s - 2p^5(^2P^\circ_{1/2})3p4p$	$^2S - {}^4P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	135
	55	344.56	0.0 – 290.22	$2p^63s - 2p^53s(^3P^\circ_1)4s$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	513
		346.42	0.0 – 288.67	$2p^63s - 2p^53s(^3P^\circ_1)4s$	$g^2S - {}^4P^\circ$	$\frac{1}{2} - \frac{1}{2}$	A	135
	26	346.68	0.0 – 288.45	$2p^63s - 2p^53s(^3P^\circ_2)4s$	$g^2S - {}^4P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	513
	80	400.80	0.0 – 249.503	$2p^63s - 2p^53s^2$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	A	513
	100	402.97	0.0 – 248.159	$2p^63s - 2p^53s^2$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	A	513

SODIUM II (Na^{1+}), Z = 11
Ground State $1s^22s^22p^6(^1S_0)$ (10 electrons)
Ionization Potential 381 395 cm^{-1}; 47.287 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		156.88	0. – 637.43	$2s^22p^6 - 2s2p^6(^2S)8p$	$g\,^1S - {}^1P^\circ$	0 – 1	A	679
		157.55	0. – 634.72	$2s^22p^6 - 2s2p^6(^2S)7p$	$g\,^1S - {}^1P^\circ$	0 – 1	A	679
		158.67	0. – 630.24	$2s^22p^6 - 2s2p^6(^2S)6p$	$g\,^1S - {}^1P^\circ$	0 – 1	A	679
		160.66	0. – 622.43	$2s^22p^6 - 2s2p^6(^2S)5p$	$g\,^1S - {}^1P^\circ$	0 – 1	A	679
		164.92	0. – 606.36	$2s^22p^6 - 2s2p^6(^2S)4p$	$g\,^1S - {}^1P^\circ$	0 – 1	A	679
		177.24	0. – 564.21	$2s^22p^6 - 2s2p^6(^2S)3p$	$g\,^1S - {}^1P^\circ$	0 – 1	A	679
		263.06	0. – 380.14	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})13d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	679
		263.39	0. – 379.66	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})12d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	679
		263.81	0. – 379.06	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})11d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	679
		264.34	0. – 378.30	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})10d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	679
		264.76	0. – 377.70	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})11d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	679
		265.08	0. – 377.24	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})9d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	679
		265.30	0. – 376.93	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})10d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	679
		266.06	0. – 375.86	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})8d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	679
		267.06	0. – 374.45	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})8d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	679
		267.61	0. – 373.68	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})7d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	679
		268.88	0. – 371.91	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})7d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	679
	10	269.993	0. – 370.3786	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})7s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		152
	7	270.947	0. – 369.0705	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})7s$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		152
	5	271.373	0. – 368.4941	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})6d$	$g\,^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		152
	12	273.940	0. – 365.0435	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})6s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		152
	12	274.023	0. – 364.9311	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})5d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		152
	20	274.931	0. – 363.7258	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})6s$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		152
	20	275.003	0. – 363.6319	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})5d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		152
	5	275.218	0. – 363.3474	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})5d$	$g\,^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		152
	25	281.691	0. – 354.9978	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})5s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		152
	25	281.788	0. – 354.8765	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})4d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		152
	35	282.709	0. – 353.7193	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})5s$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		152
	35	282.803	0. – 353.6006	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		152
	15	283.258	0. – 353.0329	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4d$	$g\,^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		152
4	160	300.153	0. – 333.16294	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})3d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		152
	160	300.202	0. – 333.10774	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})4s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		152
	90	301.318	0. – 331.87393	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4s$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		152
3	100	301.436	0. – 331.74506	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		152
	60	302.446	0. – 330.63675	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3d$	$g\,^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		152
2	300	372.075	0. – 268.76296	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})3s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		752
	40	375.340	363.81538 – 630.24	$2s^22p^5(^2P^\circ_{3/2})5f - 2s2p^6(^1P)6p$	$\frac{3}{2}[\frac{5}{2}] - {}^1P^\circ$	2 – 1	Q	752
	45	375.730	340.2398 – 606.36	$2s^22p^5(^2P^\circ_{3/2})4p - 2s2p^6(^1P)4p$	$\frac{3}{2}[\frac{1}{2}] - {}^1P^\circ$	1 – 1	Q	752
1	350	376.379	0. – 265.68962	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3s$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		752
	80	1235.40						758
	30	1276.597	264.92432 – 343.2568	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{1/2})4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - \frac{1}{2}[\frac{3}{2}]$	2 – 2		152
	15	1281.308	264.92432 – 342.9710	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{1/2})4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - \frac{1}{2}[\frac{1}{2}]$	2 – 1		152
	12	1285.117	264.92432 – 342.7386	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{1/2})4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - \frac{1}{2}[\frac{3}{2}]$	2 – 1		152
	25	1285.686	265.68962 – 343.4692	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{1/2})4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - \frac{1}{2}[\frac{1}{2}]$	1 – 0		152
	60	1289.213	265.68962 – 343.2568	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{1/2})4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - \frac{1}{2}[\frac{3}{2}]$	1 – 2		152
	60	1293.974	265.68962 – 342.9710	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{1/2})4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - \frac{1}{2}[\frac{1}{2}]$	1 – 1		152
	12	1297.856	265.68962 – 342.7386	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{1/2})4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - \frac{1}{2}[\frac{3}{2}]$	1 – 1		152
	15	1298.142	264.92432 – 341.9574	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		152
	30	1299.018	264.92432 – 341.9070	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 1		152
	15	1301.782	293.22033 – 370.0356	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})6d$	$\frac{3}{2}[\frac{1}{2}]^\circ - \frac{1}{2}[\frac{3}{2}]$	1 – 1	Q	152
	15	1303.957	266.28162 – 342.9710	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{1/2})4p$	$\frac{1}{2}[\frac{1}{2}]^\circ - \frac{1}{2}[\frac{1}{2}]$	0 – 1		152
	15	1304.546	265.68962 – 342.3440	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - \frac{3}{2}[\frac{1}{2}]$	1 – 0		152
	20	1306.618	264.92432 – 341.4577	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		152
	10	1307.936	266.28162 – 342.7386	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{1/2})4p$	$\frac{1}{2}[\frac{1}{2}]^\circ - \frac{1}{2}[\frac{3}{2}]$	0 – 1		152

NA II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	1311.158	265.68962 – 341.9574	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		152
	30	1312.026	265.68962 – 341.9070	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	$\frac{3}{2}[\frac{1}{2}]^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		152
	20	1312.587	264.92432 – 341.1097	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		152
	30	1319.815	265.68962 – 341.4577	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		752
	12	1322.295	266.28162 – 341.9070	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	$\frac{1}{2}[\frac{1}{2}]^\circ - \frac{3}{2}[\frac{3}{2}]$	0 – 1		152
	50	1327.742	264.92432 – 340.2398	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - \frac{3}{2}[\frac{1}{2}]$	2 – 1		152
	12	1328.497	293.22033 – 368.4941	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})6d$	$\frac{3}{2}[\frac{1}{2}] - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 1		152
	35	1338.575	268.76296 – 343.4692	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{1/2})4p$	$\frac{1}{2}[\frac{1}{2}]^\circ - \frac{1}{2}[\frac{1}{2}]$	1 – 0		152
	35	1341.369	265.68962 – 340.2398	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - \frac{3}{2}[\frac{1}{2}]$	1 – 1		152
	20	1342.401	268.76296 – 343.2568	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{1/2})4p$	$\frac{1}{2}[\frac{1}{2}]^\circ - \frac{1}{2}[\frac{3}{2}]$	1 – 2		152
	45	1347.543	268.76296 – 342.9710	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{1/2})4p$	$\frac{1}{2}[\frac{1}{2}]^\circ - \frac{1}{2}[\frac{1}{2}]$	1 – 1		152
	12	1351.799	268.76296 – 342.7386	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{1/2})4p$	$\frac{1}{2}[\frac{1}{2}]^\circ - \frac{1}{2}[\frac{3}{2}]$	1 – 1		152
	35	1352.118	266.28162 – 340.2398	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	$\frac{1}{2}[\frac{1}{2}]^\circ - \frac{3}{2}[\frac{1}{2}]$	0 – 1		152
	20	1359.055	268.76296 – 342.3440	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	$\frac{1}{2}[\frac{1}{2}]^\circ - \frac{3}{2}[\frac{1}{2}]$	1 – 0		152
	15	1366.242	268.76296 – 341.9574	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	$\frac{1}{2}[\frac{1}{2}]^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		152
	90	1374.688	297.63561 – 370.3786	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})7s$	$\frac{3}{2}[\frac{5}{2}] - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		152
	15	1375.618	268.76296 – 341.4577	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	$\frac{1}{2}[\frac{1}{2}]^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		152
	30	1381.236	297.63561 – 370.0356	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})6d$	$\frac{3}{2}[\frac{5}{2}] - \frac{1}{2}[\frac{3}{2}]^\circ$	2 – 1		152
	10	1384.794	298.16544 – 370.3786	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})7s$	$\frac{3}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		152
	10	1392.316	293.22033 – 365.0435	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})6s$	$\frac{3}{2}[\frac{1}{2}] - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		152
	15	1392.940	293.22033 – 365.0099	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})6s$	$\frac{3}{2}[\frac{1}{2}] - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		152
	12	1398.143	293.22033 – 364.7441	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})5d$	$\frac{3}{2}[\frac{1}{2}] - \frac{1}{2}[\frac{3}{2}]^\circ$	1 – 2		152
	30	1399.070	268.76296 – 340.2398	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	$\frac{1}{2}[\frac{1}{2}]^\circ - \frac{3}{2}[\frac{1}{2}]$	1 – 1		152
	12	1399.860	297.63561 – 369.0705	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})7s$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		152
	90	1404.675	299.18996 – 370.3786	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})7s$	$\frac{3}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1	Q	152
	12	1410.374	298.16544 – 369.0705	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})7s$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		152
	7	1411.536	299.18996 – 370.0356	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})6d$	$\frac{3}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{3}{2}]^\circ$	2 – 1		152
	20	1418.579	299.88537 – 370.3786	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})7s$	$\frac{1}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		152
	15	1419.311	300.10392 – 370.56057	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})6g$	$\frac{1}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{7}{2}]^\circ$	2 – 3	Q	752
	12	1420.216	293.22033 – 363.6319	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})5d$	$\frac{3}{2}[\frac{1}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		152
	7	1421.889	298.16544 – 368.4941	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})6d$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 1		152
	12	1422.996	300.10392 – 370.3786	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})7s$	$\frac{1}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		152
	7	1425.499	299.88537 – 370.0356	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})6d$	$\frac{1}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{3}{2}]^\circ$	1 – 1		152
	7	1426.048						152
	10	1429.963	300.10392 – 370.0356	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})6d$	$\frac{1}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{3}{2}]^\circ$	2 – 1		152
	7	1431.015	299.18996 – 369.0705	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})7s$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		152
	15	1431.228	300.50711 – 370.3786	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})7s$	$\frac{1}{2}[\frac{1}{2}] - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		152
	10	1435.776	300.38782 – 370.0356	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})6d$	$\frac{3}{2}[\frac{1}{2}] - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		152
	30	1442.907	299.18996 – 368.4941	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})6d$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{1}{2}]^\circ$	2 – 1		152
	12	1455.969	300.38782 – 369.0705	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})7s$	$\frac{3}{2}[\frac{1}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		152
	10	1462.160	300.10392 – 368.4941	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})6d$	$\frac{1}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{1}{2}]^\circ$	2 – 1		152
	10	1470.916	300.50711 – 368.4941	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})6d$	$\frac{1}{2}[\frac{1}{2}] - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 1	Q	152
	15	1481.578	297.24882 – 364.7441	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})5d$	$\frac{3}{2}[\frac{5}{2}] - \frac{1}{2}[\frac{3}{2}]^\circ$	3 – 2		152
	15	1483.507	297.63561 – 365.0435	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})6s$	$\frac{3}{2}[\frac{5}{2}] - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		152
	15	1484.677						152
	25	1485.987	297.63561 – 364.9311	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})5d$	$\frac{3}{2}[\frac{5}{2}] - \frac{1}{2}[\frac{3}{2}]^\circ$	2 – 1		152
	20	1494.729						152
	45	1495.212	298.16544 – 365.0435	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})6s$	$\frac{3}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1	Q	152
	40	1496.011	298.16544 – 365.0099	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})6s$	$\frac{3}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		152
	45	1497.731	298.16544 – 364.9311	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})5d$	$\frac{3}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{3}{2}]^\circ$	1 – 1	Q	152
	25	1501.995	298.16544 – 364.7441	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})5d$	$\frac{3}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{3}{2}]^\circ$	1 – 2		152
	80	1506.407	297.24882 – 363.6319	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})5d$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	3 – 1	F	152
	60	1506.914	297.24882 – 363.6102	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})6s$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	3 – 2		152
	35	1510.701	297.24882 – 363.4417	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})5d$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	3 – 2		152

NA II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	70	1513.102	297.63561 – 363.7258	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})6s$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1	Q	152
	30	1515.229	297.63561 – 363.6319	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})5d$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		152
	30	1515.709	297.63561 – 363.6102	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})6s$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		152
	35	1518.505	299.18996 – 365.0435	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})6s$	$\frac{3}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		152
	60	1519.629	297.63561 – 363.4417	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})5d$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		152
	30	1525.311	298.16544 – 363.7258	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})6s$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		152
	15	1527.555						152
	20	1527.985	298.16544 – 363.6102	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})6s$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		152
	50	1528.742						152
	50	1530.307						152
	10	1534.163	298.16544 – 363.3474	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})5d$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 1		152
	25	1534.538	298.16544 – 363.3322	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})5d$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 0		152
	12	1534.737	299.88537 – 365.0435	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})6s$	$\frac{1}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		152
	12	1539.895	300.10392 – 365.0435	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})6s$	$\frac{1}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		152
	12	1546.722						152
	15	1547.066	300.10392 – 364.7441	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})5d$	$\frac{1}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{3}{2}]^\circ$	2 – 2		152
	20	1549.352	300.38782 – 364.9311	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})5d$	$\frac{3}{2}[\frac{1}{2}] - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		152
	20	1549.507	300.50711 – 365.0435	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})6s$	$\frac{1}{2}[\frac{1}{2}] - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		152
	20	1550.348	300.50711 – 365.0099	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})6s$	$\frac{1}{2}[\frac{1}{2}] - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		152
	20	1551.793	299.18996 – 363.6319	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})5d$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		152
	20	1551.934						152
	20	1552.203	300.50711 – 364.9311	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})5d$	$\frac{1}{2}[\frac{1}{2}] - \frac{1}{2}[\frac{3}{2}]^\circ$	1 – 1		152
	15	1556.370	299.18996 – 363.4417	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})5d$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		152
	12	1556.753	300.50711 – 364.7441	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})5d$	$\frac{1}{2}[\frac{1}{2}] - \frac{1}{2}[\frac{3}{2}]^\circ$	1 – 2		152
	7	1558.678	299.18996 – 363.3474	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})5d$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{1}{2}]^\circ$	2 – 1		152
	10	1568.673	299.88537 – 363.6319	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})5d$	$\frac{1}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1	Q	152
	20	1569.264	299.88537 – 363.6102	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})6s$	$\frac{1}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		152
	10	1573.430	299.88537 – 363.4417	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})5d$	$\frac{1}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		152
	12	1574.110	300.10392 – 363.6319	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})5d$	$\frac{1}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		152
	7	1574.664	300.10392 – 363.6102	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})6s$	$\frac{1}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		152
	15	1575.749	299.88537 – 363.3474	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})5d$	$\frac{1}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 1		152
	12	1576.118	299.88537 – 363.3322	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})5d$	$\frac{1}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 0		152
	12	1578.807	300.38782 – 363.7258	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})6s$	$\frac{3}{2}[\frac{1}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		152
	25	1581.108						152
	20	1581.835	300.50711 – 363.7258	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})6s$	$\frac{1}{2}[\frac{1}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		152
	20	1584.173	300.50711 – 363.6319	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})5d$	$\frac{1}{2}[\frac{1}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		152
	7	1588.983	300.50711 – 363.4417	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})5d$	$\frac{1}{2}[\frac{1}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		152
	15	1591.321	300.50711 – 363.3474	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})5d$	$\frac{1}{2}[\frac{1}{2}] - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 1		152
	7	1591.712	300.50711 – 363.3322	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})5d$	$\frac{1}{2}[\frac{1}{2}] - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 0		152
	12	1621.940	293.22033 – 354.8765	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})4d$	$\frac{3}{2}[\frac{1}{2}] - \frac{1}{2}[\frac{3}{2}]^\circ$	1 – 1	Q	152
	12	1622.347	293.22033 – 354.8598	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})5s$	$\frac{3}{2}[\frac{1}{2}] - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		152
	20	1626.372	293.22033 – 354.7070	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})4d$	$\frac{3}{2}[\frac{1}{2}] - \frac{1}{2}[\frac{3}{2}]^\circ$	1 – 2		152
	20	1652.921	293.22033 – 353.7193	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})5s$	$\frac{3}{2}[\frac{1}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		152
	60	1657.918	293.22033 – 353.5367	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})5s$	$\frac{3}{2}[\frac{1}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		752
	35	1668.569	293.22033 – 353.1518	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})4d$	$\frac{3}{2}[\frac{1}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		152
	35	1671.886	293.22033 – 353.0329	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})4d$	$\frac{3}{2}[\frac{1}{2}] - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 1		152
	15	1673.649	293.22033 – 352.9698	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})4d$	$\frac{3}{2}[\frac{1}{2}] - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 0		152
	15	1743.309	297.63561 – 354.9978	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})5s$	$\frac{3}{2}[\frac{5}{2}] - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		152
	0	1746.996	297.63561 – 354.8765	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})4d$	$\frac{3}{2}[\frac{5}{2}] - \frac{1}{2}[\frac{3}{2}]^\circ$	2 – 1		152
	12	1752.185	297.63561 – 354.7070	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})4d$	$\frac{3}{2}[\frac{5}{2}] - \frac{1}{2}[\frac{3}{2}]^\circ$	2 – 2		152
	10	1756.817						152
	30	1759.572	298.16544 – 354.9978	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})5s$	$\frac{3}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		152
	7	1763.325	298.16544 – 354.8765	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})4d$	$\frac{3}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{3}{2}]^\circ$	1 – 1		152
	30	1763.841	298.16544 – 354.8598	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})5s$	$\frac{3}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		152

NA II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	7	1768.603	298.16544 – 354.7070	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})4d$	$\frac{3}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{3}{2}]^{\circ}$	1 – 2		152
	90	1776.571	297.24882 – 353.5367	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})5s$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{3}{2}]^{\circ}$	3 – 2		152
	40	1778.243	297.24882 – 353.4838	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})4d$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{5}{2}]^{\circ}$	3 – 3		152
	0	1778.905	297.24882 – 353.4632	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})4d$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{5}{2}]^{\circ}$	3 – 2		152
	0	1779.906	308.86080 – 365.0435	$2s^22p^5(^2P^{\circ}_{1/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})6s$	$\frac{1}{2}[\frac{1}{2}] - \frac{1}{2}[\frac{1}{2}]^{\circ}$	0 – 1		152
	60	1783.043	297.63561 – 353.7193	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})5s$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{3}{2}]^{\circ}$	2 – 1		152
	15	1783.475	308.86080 – 364.9311	$2s^22p^5(^2P^{\circ}_{1/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})5d$	$\frac{1}{2}[\frac{1}{2}] - \frac{1}{2}[\frac{3}{2}]^{\circ}$	0 – 1		152
	12	1785.989	297.24882 – 353.2404	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})4d$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{7}{2}]^{\circ}$	3 – 3		152
	80	1787.189	297.24882 – 353.2026	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})4d$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{7}{2}]^{\circ}$	3 – 4		152
	45	1788.846	297.63561 – 353.5367	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})5s$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{3}{2}]^{\circ}$	2 – 2		152
	2	1790.562	297.63561 – 353.4838	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})4d$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{5}{2}]^{\circ}$	2 – 3		152
	35	1791.224	297.63561 – 353.4632	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})4d$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{5}{2}]^{\circ}$	2 – 2		152
	30	1791.862	299.18996 – 354.9978	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})5s$	$\frac{3}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{1}{2}]^{\circ}$	2 – 1		152
	1	1795.772	299.18996 – 354.8765	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})4d$	$\frac{3}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{3}{2}]^{\circ}$	2 – 1		152
	80	1798.410	297.63561 – 353.2404	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})4d$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{7}{2}]^{\circ}$	2 – 3		152
	25	1800.048	298.16544 – 353.7193	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})5s$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^{\circ}$	1 – 1		152
	45	1801.256	299.18996 – 354.7070	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})4d$	$\frac{3}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{3}{2}]^{\circ}$	2 – 2		152
	15	1803.833						152
	12	1805.998	298.16544 – 353.5367	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})5s$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^{\circ}$	1 – 2		152
	10	1806.061	299.18996 – 354.5592	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})4d$	$\frac{3}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{5}{2}]^{\circ}$	2 – 3		152
	90	1807.092	299.18996 – 354.5263	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})4d$	$\frac{3}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{5}{2}]^{\circ}$	2 – 2	Q	152
	60	1808.375	298.16544 – 353.4632	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})4d$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{5}{2}]^{\circ}$	1 – 2		152
	25	1814.474	299.88537 – 354.9978	$2s^22p^5(^2P^{\circ}_{1/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})5s$	$\frac{1}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{1}{2}]^{\circ}$	1 – 1		152
	5	1818.473	299.88537 – 354.8765	$2s^22p^5(^2P^{\circ}_{1/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})4d$	$\frac{1}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{3}{2}]^{\circ}$	1 – 1		152
	7	1818.628	298.16544 – 353.1518	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})4d$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^{\circ}$	1 – 2		152
	20	1819.024	299.88537 – 354.8598	$2s^22p^5(^2P^{\circ}_{1/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})5s$	$\frac{1}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{1}{2}]^{\circ}$	1 – 0		152
	50	1821.695	300.10392 – 354.9978	$2s^22p^5(^2P^{\circ}_{1/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})5s$	$\frac{1}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{1}{2}]^{\circ}$	2 – 1		152
	5	1822.568	298.16544 – 353.0329	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})4d$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{1}{2}]^{\circ}$	1 – 1		152
	0	1824.098	299.88537 – 354.7070	$2s^22p^5(^2P^{\circ}_{1/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})4d$	$\frac{1}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{3}{2}]^{\circ}$	1 – 2		152
	7	1825.730	300.10392 – 354.8765	$2s^22p^5(^2P^{\circ}_{1/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})4d$	$\frac{1}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{3}{2}]^{\circ}$	2 – 1		152
	20	1830.124	299.88537 – 354.5263	$2s^22p^5(^2P^{\circ}_{1/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})4d$	$\frac{1}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{5}{2}]^{\circ}$	1 – 2		152
	12	1831.172	300.38782 – 354.9978	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})5s$	$\frac{3}{2}[\frac{1}{2}] - \frac{1}{2}[\frac{1}{2}]^{\circ}$	0 – 1		152
	1	1831.402	300.10392 – 354.7070	$2s^22p^5(^2P^{\circ}_{1/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})4d$	$\frac{1}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{3}{2}]^{\circ}$	2 – 2		152
	45	1833.873	299.18996 – 353.7193	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})5s$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^{\circ}$	2 – 1		152
	80	1835.217	300.38782 – 354.8765	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})4d$	$\frac{3}{2}[\frac{1}{2}] - \frac{1}{2}[\frac{3}{2}]^{\circ}$	0 – 1		152
	2	1836.367	300.10392 – 354.5592	$2s^22p^5(^2P^{\circ}_{1/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})4d$	$\frac{1}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{5}{2}]^{\circ}$	2 – 3		152
	15	1837.522	300.10392 – 354.5263	$2s^22p^5(^2P^{\circ}_{1/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})4d$	$\frac{1}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{5}{2}]^{\circ}$	2 – 2		152
	45	1837.890	299.18996 – 353.6006	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})4d$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^{\circ}$	2 – 1		152
	20	1839.270	300.50711 – 354.8765	$2s^22p^5(^2P^{\circ}_{1/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})4d$	$\frac{1}{2}[\frac{1}{2}] - \frac{1}{2}[\frac{3}{2}]^{\circ}$	1 – 1		152
	25	1839.835	300.50711 – 354.8598	$2s^22p^5(^2P^{\circ}_{1/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})5s$	$\frac{1}{2}[\frac{1}{2}] - \frac{1}{2}[\frac{1}{2}]^{\circ}$	1 – 0		152
	20	1840.032	299.18996 – 353.5367	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})5s$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^{\circ}$	2 – 2		152
	60	1841.822	299.18996 – 353.4838	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})4d$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{5}{2}]^{\circ}$	2 – 3		152
	70	1845.016	300.50711 – 354.7070	$2s^22p^5(^2P^{\circ}_{1/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})4d$	$\frac{1}{2}[\frac{1}{2}] - \frac{1}{2}[\frac{3}{2}]^{\circ}$	1 – 2		152
	45	1850.150	299.18996 – 353.2404	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})4d$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{7}{2}]^{\circ}$	2 – 3		752
	70	1851.194	300.50711 – 354.5263	$2s^22p^5(^2P^{\circ}_{1/2})3p - 2s^22p^5(^2P^{\circ}_{1/2})4d$	$\frac{1}{2}[\frac{1}{2}] - \frac{1}{2}[\frac{5}{2}]^{\circ}$	1 – 2		152
	80	1853.166	299.18996 – 353.1518	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})4d$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^{\circ}$	2 – 2		152
	25	1857.265	299.18996 – 353.0329	$2s^22p^5(^2P^{\circ}_{3/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})4d$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{1}{2}]^{\circ}$	2 – 1		152
	40	1857.576	299.88537 – 353.7193	$2s^22p^5(^2P^{\circ}_{1/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})5s$	$\frac{1}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^{\circ}$	1 – 1		152
	15	1863.898	299.88537 – 353.5367	$2s^22p^5(^2P^{\circ}_{1/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})5s$	$\frac{1}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^{\circ}$	1 – 2		152
	35	1865.139	300.10392 – 353.7193	$2s^22p^5(^2P^{\circ}_{1/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})5s$	$\frac{1}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^{\circ}$	2 – 1		152
	45	1866.452	299.88537 – 353.4632	$2s^22p^5(^2P^{\circ}_{1/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})4d$	$\frac{1}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{5}{2}]^{\circ}$	1 – 2		152
	40	1871.517	300.10392 – 353.5367	$2s^22p^5(^2P^{\circ}_{1/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})5s$	$\frac{1}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^{\circ}$	2 – 2		152
	45	1873.369	300.10392 – 353.4838	$2s^22p^5(^2P^{\circ}_{1/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})4d$	$\frac{1}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{5}{2}]^{\circ}$	2 – 3		152
	15	1874.098	300.10392 – 353.4632	$2s^22p^5(^2P^{\circ}_{1/2})3p - 2s^22p^5(^2P^{\circ}_{3/2})4d$	$\frac{1}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{5}{2}]^{\circ}$	2 – 2		152

NA II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	60	1875.075	300.38782 – 353.7193	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})5s$	$\frac{3}{2}[\frac{1}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		152
	20	1877.365	299.88537 – 353.1518	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})4d$	$\frac{1}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		152
	30	1879.240	300.38782 – 353.6006	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})4d$	$\frac{3}{2}[\frac{1}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		152
	160	1881.912	300.10392 – 353.2404	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})4d$	$\frac{1}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{7}{2}]^\circ$	2 – 3		752
	20	1883.460	300.50711 – 353.6006	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})4d$	$\frac{1}{2}[\frac{1}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		152
	20	1883.804	299.88537 – 352.9698	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})4d$	$\frac{1}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 0		152
	50	1885.091	300.10392 – 353.1518	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})4d$	$\frac{1}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		152
	45	1885.742	300.50711 – 353.5367	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})5s$	$\frac{1}{2}[\frac{1}{2}] - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		152
	30	1889.317	300.10392 – 353.0329	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})4d$	$\frac{1}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{1}{2}]^\circ$	2 – 1		152
	30	1899.523	300.38782 – 353.0329	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})4d$	$\frac{3}{2}[\frac{1}{2}] - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		152
	15	1903.831	300.50711 – 353.0329	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})4d$	$\frac{1}{2}[\frac{1}{2}] - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 1		152
	15	1906.112	300.50711 – 352.9698	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})4d$	$\frac{1}{2}[\frac{1}{2}] - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 0		152

SODIUM III (Na^{2+}), Z = 11
Ground State $1s^22s^22p^5(^2P^\circ_{3/2})$ (9 electrons)
Ionization Potential 577 650 cm^{-1}; 71.620 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	30	181.023	0.0 – 552.416	$2s^22p^5 - 2s^22p^4(^1D)5s$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		427
	30	181.476	1.3664 – 552.416	$2s^22p^5 - 2s^22p^4(^1D)5s$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		427
	10	182.511	0.0 – 547.9107	$2s^22p^5 - 2s^22p^4(^1S)4s$	$g^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		427
	10	183.515	0.0 – 544.914	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - ^2F$	$\frac{3}{2} - \frac{5}{2}$		427
	30	183.556	0.0 – 544.793	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		427
	40	183.571	0.0 – 544.749	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		427
	30	183.729	0.0 – 544.28	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		427
	40	183.747	0.0 – 544.226	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		427
	50	183.946	0.0 – 543.638	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		427
	40	184.018	1.3664 – 544.793	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		427
	40	184.193	1.3664 – 544.28	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		427
	40	184.206	1.3664 – 544.226	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		427
	40	184.409	1.3664 – 543.638	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		427
	30	188.858	0.0 – 529.49770	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		427
	40	188.873	0.0 – 529.46164	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		427
	50	189.348	1.3664 – 529.49770	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		427
	50	191.000	0.0 – 523.56	$2s^22p^5 - 2s^22p^4(^3P)5s$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		427
	40	191.307	0.0 – 522.72	$2s^22p^5 - 2s^22p^4(^3P)5s$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		427
	30	191.511	1.3664 – 523.56	$2s^22p^5 - 2s^22p^4(^3P)5s$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		427
	20	191.808	1.3664 – 522.72	$2s^22p^5 - 2s^22p^4(^3P)5s$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		427
	50	193.804	0.0 – 515.984	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		427
	50	194.037	0.0 – 515.365	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		427
	40	194.121	0.0 – 515.142	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		427
	50	194.168	0.0 – 515.016	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		427
	50	194.292	0.0 – 514.688	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2F$	$\frac{3}{2} - \frac{5}{2}$		427
	40	194.322	1.3664 – 515.984	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		427
	50	194.461	0.0 – 514.24	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^4F$	$\frac{3}{2} - \frac{3}{2}$		427
	20	194.530	0.0 – 514.060	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		427
	50	194.550	0.0 – 514.007	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^4F$	$\frac{3}{2} - \frac{5}{2}$		427
	50	194.639	1.3664 – 515.142	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		427

NA III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	60	194.684	1.3664 – 515.016	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		427
	50	194.979	1.3664 – 514.24	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^o - {}^4F$	$\frac{1}{2}-\frac{3}{2}$		427
	30	195.044	1.3664 – 514.060	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^o - {}^4P$	$\frac{1}{2}-\frac{3}{2}$		427
	60	195.532	0.0 – 511.4338	$2s^22p^5 - 2s^22p^4(^1D)4s$	$g^2P^o - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		427
	50	196.054	1.3664 – 511.4338	$2s^22p^5 - 2s^22p^4(^1D)4s$	$g^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		427
	20	201.845	0.0 – 495.42975	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^o - {}^2F$	$\frac{3}{2}-\frac{5}{2}$		427
	60	202.149	0.0 – 494.68586	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^o - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		427
	60	202.186	0.0 – 494.60273	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		427
	80	202.494	0.0 – 493.84924	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^o - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		427
	50	202.709	1.3664 – 494.68586	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		427
	70	202.721	0.0 – 493.29398	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^o - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		427
	80	202.764	0.0 – 493.19206	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^o - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		427
	80	203.055	1.3664 – 493.84924	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^o - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		427
	80	203.284	1.3664 – 493.29398	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^o - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		427
	80	203.326	1.3664 – 493.19206	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^o - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		427
	60	206.874	0.0 – 483.38855	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^o - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		427
	100	207.297	0.0 – 482.40220	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^o - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		427
	60	207.460	1.3664 – 483.38855	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^o - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		427
	5	207.746	0.0 – 481.35865	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^o - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		427
	70	207.885	1.3664 – 482.40220	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^o - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		427
	50	207.996	0.0 – 480.77921	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^o - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		427
	5	208.338	1.3664 – 481.35865	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^o - {}^4P$	$\frac{1}{2}-\frac{1}{2}$		427
	5	208.343	0.0 – 479.97534	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^o - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		427
	20	208.591	1.3664 – 480.77921	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^o - {}^4P$	$\frac{1}{2}-\frac{3}{2}$		427
	70	214.233	0.0 – 466.78803	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^o - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		427
	80	214.588	0.0 – 466.01191	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^o - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		427
	60	214.860	1.3664 – 466.78803	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^o - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		427
	80	214.874	0.0 – 465.39859	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^o - {}^2F$	$\frac{3}{2}-\frac{5}{2}$		427
	80	215.047	0.0 – 465.01783	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^o - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		427
	80	215.082	0.0 – 464.94537	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^o - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		427
	30	215.218	1.3664 – 466.01191	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^o - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		427
	150	215.228	0.0 – 464.63129	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^o - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		427
	20	215.324	0.0 – 464.41194	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^o - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		427
	100	215.340	0.0 – 464.39017	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		427
	80	215.481	0.0 – 464.07716	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^o - {}^4F$	$\frac{3}{2}-\frac{3}{2}$		427
	70	215.659	0.0 – 463.69190	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^o - {}^4F$	$\frac{3}{2}-\frac{5}{2}$		427
	70	215.683	1.3664 – 465.01783	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		427
	120	215.860	1.3664 – 464.63129	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^o - {}^4P$	$\frac{1}{2}-\frac{3}{2}$		427
	10	215.964	1.3664 – 464.41194	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^o - {}^4P$	$\frac{1}{2}-\frac{1}{2}$		427
	120	216.118	1.3664 – 464.07716	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^o - {}^4F$	$\frac{1}{2}-\frac{3}{2}$		427
	5	217.043	0.0 – 460.74698	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^o - {}^4D$	$\frac{3}{2}-\frac{1}{2}$		427
	30	217.114	0.0 – 460.59362	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^o - {}^4D$	$\frac{3}{2}-\frac{3}{2}$		427
	20	217.198	0.0 – 460.40970	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^o - {}^4D$	$\frac{3}{2}-\frac{5}{2}$		427
	20	217.686	1.3664 – 460.74698	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^o - {}^4D$	$\frac{1}{2}-\frac{1}{2}$		427
	5	217.757	1.3664 – 460.59362	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^o - {}^4D$	$\frac{1}{2}-\frac{3}{2}$		427
	150	229.869	0.0 – 435.02800	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^o - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		427
	120	230.593	1.3664 – 435.02800	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^o - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		427
	500	250.516	0.0 – 399.17471	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		427
	300	251.372	1.3664 – 399.18231	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		427
	250	266.896	0.0 – 374.67991	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^o - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		427
	700	267.645	0.0 – 373.63232	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^o - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		427
	500	267.874	1.3664 – 374.67991	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^o - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		427
	500	268.626	1.3664 – 373.63232	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^o - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		427
	200	272.076	0.0 – 367.55017	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^o - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		427

NA III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	272.449	0.0 – 367.04066	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		427
	30	273.089	1.3664 – 367.55017	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^4P$	$\frac{1}{2}-\frac{1}{2}$		427
	20	273.103	0.0 – 366.15441	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		427
	30	273.467	1.3664 – 367.04066	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$		427
		284.94	264.4551 – 615.4+X	$2s2p^6 - 2s2p^53s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		375
	1000	378.136	0.0 – 264.4551	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		427
	700	380.100	1.3664 – 264.4551	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		427
	100	1100.49						758
	10	1122.30						758
	40	1153.04						758
	160	1180.40						758
	100	1221.12						758
	80	1223.44						758
	80	1224.73						758
	40	1265.66						758
	150	1325.70	418.41750 – 493.84924	$2s^22p^4(^3P)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		516
	350	1336.76	406.55063 – 481.35865	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4P^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		516
	350	1337.358	418.41750 – 493.19206	$2s^22p^4(^3P)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		516
	100	1337.995	418.55654 – 493.29398	$2s^22p^4(^3P)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		516
	400	1340.674	406.19015 – 480.77921	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4P^\circ - ^4P$	$\frac{5}{2}-\frac{3}{2}$		516
	450	1342.390	406.86511 – 481.35865	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4P^\circ - ^4P$	$\frac{1}{2}-\frac{1}{2}$		516
	500	1342.729	373.63232 – 448.10731	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		516
	650	1352.9	373.63232 – 447.54796	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		516
	550	1355.281	406.19015 – 479.97534	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4P^\circ - ^4P$	$\frac{5}{2}-\frac{5}{2}$		516
	600	1361.896	374.67991 – 448.10731	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		516
	550	1372.340	374.67991 – 447.54796	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		516
	450	1418.559	440.94020 – 511.4338	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)4s$	$^2F^\circ - ^2D$	$\frac{5}{2}-\frac{3}{2}$		516
	500	1420.885	441.05567 – 511.4343	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)4s$	$^2F^\circ - ^2D$	$\frac{7}{2}-\frac{5}{2}$		516
	10	1427.27						758
	240	1436.21						758
	350	1440.775	411.95178 – 481.35865	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4D^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		516
	500	1444.194	411.53638 – 480.77921	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4D^\circ - ^4P$	$\frac{5}{2}-\frac{3}{2}$		516
	350	1445.731	412.18946 – 481.35865	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4D^\circ - ^4P$	$\frac{1}{2}-\frac{1}{2}$		516
	100	1447.85	478.84299 – 547.9107	$2s^22p^4(^1S)3p - 2s^22p^4(^1S)4s$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		516
	150	1448.73	478.88407 – 547.9107	$2s^22p^4(^1S)3p - 2s^22p^4(^1S)4s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		516
	600	1449.311	410.97694 – 479.97534	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4D^\circ - ^4P$	$\frac{7}{2}-\frac{5}{2}$		516
	400	1452.911	445.87320 – 514.7	$2s^22p^4(^1D)3p - 2s^22p^4(^3P)4d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		516
	100	1457.939	412.18946 – 480.77921	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4D^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$		516
	350	1461.153	411.53638 – 479.97534	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4D^\circ - ^4P$	$\frac{5}{2}-\frac{5}{2}$		516
	450	1465.926	415.17228 – 483.38855	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		516
	550	1468.00	414.28185 – 482.40220	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		516
	250	1487.438	415.17228 – 482.40220	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		516
	250	1523.548	445.79752 – 511.4338	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)4s$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		516
	350	1525.301	445.87320 – 511.4343	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)4s$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		516
	300	1526.883	416.90931 – 482.40220	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^2S^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		516
	20	1529.67						758
	350	1539.145	418.41750 – 483.38855	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		516
	20	1541.19						758
	450	1542.46	418.55654 – 483.38855	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		516
	160	1548.68						758
	550	1562.870	418.41750 – 482.40220	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		516
	150	1563.61	417.40398 – 481.35865	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		516
	500	1565.294	447.54796 – 511.4343	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)4s$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		516
	450	1577.90	417.40398 – 480.77921	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		516

NA III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	400	1579.117	448.10731 – 511.4338	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)4s$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		516
	500	1598.177	417.40398 – 479.97534	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		516
	100	1602.91						758
	80	1610.97						758
	160	1613.77						758
	240	1624.07						758
	80	1633.64						758
	20	1650.91						758
	40	1658.71						758
	60	1669.52						758
	20	1678.74						758
	550	1688.942	406.19015 – 465.39859	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^2F$	$\frac{5}{2}-\frac{5}{2}$		516
	20	1691.70						758
	500	1699.293	406.55063 – 465.39859	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		516
	400	1701.970	406.19015 – 464.94537	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^4P$	$\frac{5}{2}-\frac{3}{2}$		516
	500	1711.124	406.19015 – 464.63129	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^4P$	$\frac{5}{2}-\frac{3}{2}$		516
	450	1712.482	406.55063 – 464.94537	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		516
	10	1718.48						758
	10	1719.60	406.86511 – 465.01783	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	Q	758
	550	1728.273	406.55063 – 464.41194	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		516
	50	1728.923	406.55063 – 464.39017	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		516
	0	1730.71	406.19015 – 463.97092	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		516
	500	1731.113	406.86511 – 464.63129	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$		516
	400	1737.711	406.86511 – 464.41194	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^4P$	$\frac{1}{2}-\frac{1}{2}$		516
	20	1741.33						758
	10	1746.39						758
	20	1752.06						758
	60	1752.65	406.19015 – 463.24576	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^4F$	$\frac{5}{2}-\frac{7}{2}$	Q	758
	10	1754.97						758
	200	1755.475	460.40970 – 517.37454	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_0)4f$	$^4D - 0[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		525
	60	1761.018	460.59362 – 517.37758	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_0)4f$	$^4D - 0[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		525
	60	1761.428	460.25721 – 517.0296	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4D - 1[3]^\circ$	$\frac{7}{2}-\frac{7}{2}$		525
	10	1762.13						758
	160	1766.700	460.25721 – 516.85991	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4D - 1[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		525
	10	1767.21						758
	40	1771.35	460.40970 – 516.86462	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4D - 1[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		525
	10	1775.32						758
	140	1778.402	460.59362 – 516.82362	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4D - 1[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		525
	240	1782.92						758
	180	1783.460	460.74698 – 516.81776	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4D - 1[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		525
	60	1801.267	460.25721 – 515.77367	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4D - 2[2]^\circ$	$\frac{7}{2}-\frac{5}{2}$		525
	20	1805.02	460.59362 – 515.9945	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4D - 2[1]^\circ$	$\frac{3}{2}-\frac{1}{2}$		525
	140	1805.764	460.25721 – 515.6354	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4D - 2[3]^\circ$	$\frac{7}{2}-\frac{7}{2}$		525
	140	1806.229	460.40970 – 515.77367	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4D - 2[2]^\circ$	$\frac{5}{2}-\frac{5}{2}$		525
	140	1806.684	460.25721 – 515.60727	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4D - 2[4]^\circ$	$\frac{7}{2}-\frac{7}{2}$		525
	300	1807.070	460.25721 – 515.5956	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4D - 2[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		525
	40	1810.071	460.74698 – 515.9945	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4D - 2[1]^\circ$	$\frac{1}{2}-\frac{1}{2}$		525
	200	1810.767	460.40970 – 515.63509	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4D - 2[3]^\circ$	$\frac{5}{2}-\frac{5}{2}$		525
	220	1811.671	460.40970 – 515.60727	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4D - 2[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		525
	160	1812.555	460.59362 – 515.76423	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4D - 2[2]^\circ$	$\frac{3}{2}-\frac{3}{2}$		525
	60	1814.35						758
	200	1816.812	460.59362 – 515.63509	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4D - 2[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		525
	160	1817.617	460.74698 – 515.76423	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4D - 2[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		525
	10	1824.52						758

NA III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	1825.44						758
	140	1832.39	492.31391 – 546.88736	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2G - 2[4]^\circ$	$\frac{9}{2}-\frac{7}{2}$		525
	500	1835.223	440.94020 – 495.42975	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2F^\circ - {}^2F$	$\frac{5}{2}-\frac{5}{2}$		516
	400	1838.122	406.19015 – 460.59362	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - {}^4D$	$\frac{5}{2}-\frac{3}{2}$		516
	500	1838.944	441.05567 – 495.43520	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2F^\circ - {}^2F$	$\frac{7}{2}-\frac{7}{2}$		516
	40	1843.43						758
	550	1844.362	406.19015 – 460.40970	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - {}^4D$	$\frac{5}{2}-\frac{5}{2}$		516
	450	1845.149	406.55063 – 460.74698	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - {}^4D$	$\frac{3}{2}-\frac{1}{2}$		516
	240	1847.527	492.31391 – 546.4403	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2G - 2[5]^\circ$	$\frac{9}{2}-\frac{11}{2}$		525
	200	1847.589	492.31641 – 546.4410	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2G - 2[5]^\circ$	$\frac{7}{2}-\frac{9}{2}$		525
	750	1849.564	406.19015 – 460.25721	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - {}^4D$	$\frac{5}{2}-\frac{7}{2}$		516
	400	1850.24						758
	600	1850.379	406.55063 – 460.59362	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - {}^4D$	$\frac{3}{2}-\frac{3}{2}$		516
	500	1855.92	406.86511 – 460.74698	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - {}^4D$	$\frac{1}{2}-\frac{1}{2}$		516
	500	1856.71	406.55063 – 460.40970	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - {}^4D$	$\frac{3}{2}-\frac{5}{2}$		516
	10	1859.20	463.24576 – 517.0330	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4F - 1[3]^\circ$	$\frac{7}{2}-\frac{5}{2}$	Q	758
	10	1859.61						758
	50	1860.61	440.94020 – 494.68586	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2F^\circ - {}^2D$	$\frac{5}{2}-\frac{3}{2}$		516
	500	1861.211	406.86511 – 460.59362	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - {}^4D$	$\frac{1}{2}-\frac{3}{2}$		516
	120	1862.40						758
	160	1865.177	463.24576 – 516.85991	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4F - 1[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		525
	50	1867.517	441.05567 – 494.60273	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2F^\circ - {}^2D$	$\frac{7}{2}-\frac{5}{2}$		516
	20	1869.43						758
	20	1872.45	463.97092 – 517.37758	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_0)4f$	$^2F - 0[3]^\circ$	$\frac{7}{2}-\frac{5}{2}$	Q	758
	10	1874.22						758
		1874.85	463.69190 – 517.0296	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4F - 1[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	525
	200	1875.522	493.19206 – 546.51055	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2P - 2[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		525
	160	1876.155	464.07716 – 517.37758	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_0)4f$	$^4F - 0[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		525
	80	1879.16	493.29398 – 546.5093	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2P - 2[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		525
	200	1880.663	463.69190 – 516.86462	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4F - 1[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		525
	60	1884.69	463.97092 – 517.0296	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2F - 1[3]^\circ$	$\frac{7}{2}-\frac{7}{2}$		525
	400	1886.96	493.19206 – 546.1871	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2P - 2[1]^\circ$	$\frac{3}{2}-\frac{3}{2}$		516
	80	1887.32	464.39017 – 517.37454	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_0)4f$	$^2D - 0[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		525
	200	1887.39	462.89104 – 515.87281	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4F - 2[5]^\circ$	$\frac{9}{2}-\frac{9}{2}$		525
	400	1887.472	462.89104 – 515.87196	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4F - 2[5]^\circ$	$\frac{9}{2}-\frac{11}{2}$		525
	160	1888.375	464.07716 – 517.0330	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4F - 1[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		525
	60	1890.59	463.97092 – 516.86462	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2F - 1[4]^\circ$	$\frac{7}{2}-\frac{7}{2}$		525
	300	1890.754	463.97092 – 516.85991	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2F - 1[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		525
	50	1892.01	411.53638 – 464.39017	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		516
	80	1892.05	463.97092 – 516.82362	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2F - 1[2]^\circ$	$\frac{7}{2}-\frac{5}{2}$	P	525
	120	1895.864	464.07716 – 516.82362	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4F - 1[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		525
	140	1897.350	462.89104 – 515.5956	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4F - 2[4]^\circ$	$\frac{9}{2}-\frac{9}{2}$		525
	180	1899.718	464.39017 – 517.0296	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2D - 1[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		525
	300	1900.164	463.24576 – 515.87281	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4F - 2[5]^\circ$	$\frac{7}{2}-\frac{9}{2}$		525
	60	1905.674	464.39017 – 516.86462	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2D - 1[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		525
	400	1907.01	411.95178 – 464.39017	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		516
	450	1907.12	411.53638 – 463.97092	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		516
	200	1907.18	464.39017 – 516.82362	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2D - 1[2]^\circ$	$\frac{5}{2}-\frac{5}{2}$	P	525
	60	1908.15	464.41194 – 516.81776	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4P - 1[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		525
	160	1909.806	463.24576 – 515.60727	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4F - 2[4]^\circ$	$\frac{7}{2}-\frac{7}{2}$		525
	120	1910.660	493.84924 – 546.1871	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2S - 2[1]^\circ$	$\frac{1}{2}-\frac{3}{2}$		525
	450	1913.190	410.97694 – 463.24576	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - {}^4F$	$\frac{7}{2}-\frac{7}{2}$		516
	0	1914.91	412.18946 – 464.41194	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - {}^4P$	$\frac{1}{2}-\frac{1}{2}$		516
	160	1915.436	494.60273 – 546.8101	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2D - 2[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		525

NA III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	60	1916.000	464.63129 – 516.82362	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4P - 1[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		525
	450	1917.344	411.53638 – 463.69190	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - {}^4F$	$\frac{5}{2}-\frac{5}{2}$		516
	500	1918.453	411.95178 – 464.07716	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - {}^4F$	$\frac{3}{2}-\frac{3}{2}$		516
	240	1918.46	494.68586 – 546.811	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2D - 2[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$	P	525
	80	1919.93	464.94537 – 517.0296	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4P - 1[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		525
	120	1920.12						758
	60	1922.58	465.01783 – 517.0330	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2D - 1[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		525
	220	1923.963	465.39859 – 517.37454	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_0)4f$	$^2F - 0[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		525
	160	1925.189	463.69190 – 515.63509	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4F - 2[3]^\circ$	$\frac{5}{2}-\frac{5}{2}$		525
	400	1926.21	463.69190 – 515.60727	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4F - 2[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	525
	700	1926.259	410.97694 – 462.89104	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - {}^4F$	$\frac{7}{2}-\frac{9}{2}$		516
	100	1926.711	463.97092 – 515.87281	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^2F - 2[5]^\circ$	$\frac{7}{2}-\frac{9}{2}$		525
	550	1927.237	412.18946 – 464.07716	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - {}^4F$	$\frac{1}{2}-\frac{3}{2}$		516
	60	1927.59	464.94537 – 516.82362	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4P - 1[2]^\circ$	$\frac{5}{2}-\frac{5}{2}$		525
	60	1929.624	494.68586 – 546.5093	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2D - 2[2]^\circ$	$\frac{3}{2}-\frac{3}{2}$		525
	120	1930.293	465.01783 – 516.82362	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2D - 1[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		525
	600	1932.737	411.95178 – 463.69190	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - {}^4F$	$\frac{3}{2}-\frac{5}{2}$		516
	650	1933.885	411.53638 – 463.24576	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - {}^4F$	$\frac{5}{2}-\frac{7}{2}$		516
	60	1934.335	464.07716 – 515.77367	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4F - 2[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		525
	10	1935.54	463.97092 – 515.6354	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^2F - 2[3]^\circ$	$\frac{7}{2}-\frac{7}{2}$	Q	758
	120	1936.815	465.39859 – 517.0296	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2F - 1[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		525
	60	1937.03	463.97092 – 515.5956	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^2F - 2[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		525
	80	1938.41	464.41194 – 516.0006	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4P - 2[1]^\circ$	$\frac{1}{2}-\frac{3}{2}$		525
	120	1938.637	464.41194 – 515.9945	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4P - 2[1]^\circ$	$\frac{1}{2}-\frac{1}{2}$		525
	60	1939.559	464.07716 – 515.63509	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4F - 2[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		525
	10	1941.61						758
	10	1941.77						758
	120	1942.19						758
	80	1943.047	465.39859 – 516.86462	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2F - 1[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		525
	180	1943.347	495.42975 – 546.88736	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2F - 2[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		525
	200	1943.516	495.43520 – 546.88834	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2F - 2[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		525
	60	1944.99						758
	600	1946.426	440.94020 – 492.31641	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2F^\circ - {}^2G$	$\frac{5}{2}-\frac{7}{2}$		516
	300	1946.48	495.43520 – 546.8101	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2F - 2[3]^\circ$	$\frac{7}{2}-\frac{7}{2}$	P	525
	10	1946.82						758
	20	1947.324	464.41194 – 515.76423	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4P - 2[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		525
	600	1950.906	441.05567 – 492.31391	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2F^\circ - {}^2G$	$\frac{7}{2}-\frac{9}{2}$		516
	700	1951.237	366.15441 – 417.40398	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - {}^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		516
	160	1955.326	464.63129 – 515.77367	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4P - 2[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		525
	300	1956.314	414.28185 – 465.39859	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{5}{2}$		516
	240	1960.64	464.63129 – 515.63509	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4P - 2[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$	P	525
	80	1968.23	466.01191 – 516.81776	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2P - 1[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		525
	40	1970.221	465.01783 – 515.77367	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^2D - 2[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		525
	50	1970.986	414.28185 – 465.01783	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{3}{2}$		516
	140	1972.780	464.94537 – 515.63509	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4P - 2[3]^\circ$	$\frac{5}{2}-\frac{5}{2}$		525
	10	1973.86	464.94537 – 515.60727	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4P - 2[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		525
	400	1974.150	478.84299 – 529.49770	$2s^22p^4(^1S)3p - 2s^22p^4(^1S)3d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		516
	10	1975.43						758
	60	1975.617	465.01783 – 515.63509	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^2D - 2[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		525
	160	1976.700	466.78803 – 517.37758	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_0)4f$	$^2P - 0[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		525
	500	1977.161	478.88407 – 529.46164	$2s^22p^4(^1S)3p - 2s^22p^4(^1S)3d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		516
	10	1980.95						758
	650	1985.567	367.04066 – 417.40398	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - {}^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		516
	160	1990.240	466.78803 – 517.0330	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2P - 1[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		525

NA III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	400	1990.989	415.17228 – 465.39859	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^\circ - {}^2F$	$\frac{3}{2} - \frac{5}{2}$		516
	100	1991.633	465.39859 – 515.60727	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^2F - 2[4]^\circ$	$\frac{5}{2} - \frac{7}{2}$		525
	500	1995.675	414.28185 – 464.39017	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^\circ - {}^2D$	$\frac{5}{2} - \frac{5}{2}$		516
	100	1998.584	466.78803 – 516.82362	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2P - 1[2]^\circ$	$\frac{3}{2} - \frac{5}{2}$		525

SODIUM IV (Na^{3+}), Z = 11
Ground State $1s^22s^22p^4(^3P_2)$ (8 electrons)
Ionization Potential 797 800 cm^{-1}; 98.92 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	129.464	0. – 772.415	$2s^22p^4 - 2s^22p^3(^2D^\circ)5d$	$g^3P - {}^3D^\circ$	2 – 3		693
	10	132.211	0. – 756.367	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$g^3P - {}^3D^\circ$	2 – 3		692,693
	10	132.465	1.5760 – 756.367	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$g^3P - {}^3D^\circ$	0 – 1		692,693
	10	132.740	0. – 753.352	$2s^22p^4 - 2s^22p^3(^2D^\circ)5s$	$g^3P - {}^3D^\circ$	2 – 3		692,693
	40	136.4295	0. – 732.979	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - {}^3S^\circ$	2 – 1		459
	70	136.5513	0. – 732.325	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - {}^3P^\circ$	2 – 2		459
	40	136.6359	1.1063 – 732.979	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - {}^3S^\circ$	1 – 1		459
	40	136.7540	1.1063 – 732.346	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - {}^3P^\circ$	1 – 1		459
	70	136.8547	0. – 730.702	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - {}^3D^\circ$	2 – 3		459
	70	137.0573	1.1063 – 730.728	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - {}^3D^\circ$	1 – 2		459
	40	137.1429	1.5760 – 730.742	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - {}^3D^\circ$	0 – 1		459
	110	137.7117	30.840 – 756.995	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$^1D - {}^1F^\circ$	2 – 3		459
	110	137.9415	30.840 – 755.785	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$^1D - {}^1D^\circ$	2 – 2		459
	200	139.867	1.5760 – 716.509	$2s^22p^4 - 2s^22p^3(^2P^\circ)4s$	$g^3P - {}^1P^\circ$	0 – 1		691,693
	70	139.9613	0. – 714.483	$2s^22p^4 - 2s^22p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	2 – 2		459
	40	140.1811	1.1063 – 714.468	$2s^22p^4 - 2s^22p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 0		459
	5	140.274	1.5760 – 714.468	$2s^22p^4 - 2s^22p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	0 – 1		459
	110	142.2315	30.840 – 733.919	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$^1D - {}^1F^\circ$	2 – 3		459
	160	142.3593	30.840 – 733.288	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$^1D - {}^1D^\circ$	2 – 2		459
	110	142.6851	30.840 – 731.684	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$^1D - {}^1P^\circ$	2 – 1		459
	70	144.9794	0. – 689.753	$2s^22p^4 - 2s^22p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	2 – 3		459
	5	145.2046	1.1063 – 689.789	$2s^22p^4 - 2s^22p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	1 – 2		459
	5	145.300	1.5760 – 689.808	$2s^22p^4 - 2s^22p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	0 – 1		459
	40	145.8426	30.840 – 716.509	$2s^22p^4 - 2s^22p^3(^2P^\circ)4s$	$^1D - {}^1P^\circ$	2 – 1		459
	285	146.0644	0. – 684.630	$2s^22p^4 - 2s^22p^3(^4S^\circ)4d$	$g^3P - {}^3D^\circ$	2 – 3		459
	220	146.3015	1.1063 – 684.626	$2s^22p^4 - 2s^22p^3(^4S^\circ)4d$	$g^3P - {}^3D^\circ$	1 – 2		459
	160	146.3991	1.5760 – 684.640	$2s^22p^4 - 2s^22p^3(^4S^\circ)4d$	$g^3P - {}^3D^\circ$	0 – 1		459
	360	150.2981	0. – 665.344	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		459
	5	150.459	0. – 664.637	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^1D^\circ$	2 – 2		459
	220	150.5427	1.1063 – 665.370	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		459
	220	150.642	1.5760 – 665.400	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	0 – 1		459
	285	150.6867	0. – 663.623	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 2		459
	110	150.7097	1.1063 – 664.637	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^1D^\circ$	1 – 2		459
	110	150.9424	1.1063 – 663.623	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 2		459
	160	150.9667	1.1063 – 663.509	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 1		459
	160	151.0503	1.1063 – 663.137	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 0		459
	220	151.2994	30.840 – 691.781	$2s^22p^4 - 2s^22p^3(^2D^\circ)4s$	$^1D - {}^1D^\circ$	2 – 2		459
	40	153.8432	66.496 – 716.509	$2s^22p^4 - 2s^22p^3(^2P^\circ)4s$	$^1S - {}^1P^\circ$	0 – 1		459
	220	155.0826	0. – 644.819	$2s^22p^4 - 2s^22p^3(^4S^\circ)4s$	$g^3P - {}^3S^\circ$	2 – 1		459
	220	155.2398	0. – 644.166	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3S^\circ$	2 – 1		459
	110	155.3486	1.1063 – 644.819	$2s^22p^4 - 2s^22p^3(^4S^\circ)4s$	$g^3P - {}^3S^\circ$	1 – 1		459
	5	155.368	0. – 643.6256	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^1D^\circ$	2 – 2		459

NA IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	220	155.4477	0. – 643.311	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 1		459
	40	155.4600	1.5760 – 644.819	$2s^22p^4 - 2s^22p^3(^4S^\circ)4s$	$g^3P - {}^3S^\circ$	0 – 1		459
	285	155.5104	0. – 643.052	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 2		459
	160	155.6197	1.5760 – 644.166	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3S^\circ$	0 – 1		459
	160	155.6872	1.1063 – 643.420	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 0		459
	110	155.7129	1.1063 – 643.311	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 1		459
	220	155.7762	1.1063 – 643.052	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 2		459
	110	155.8276	1.5760 – 643.311	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	0 – 1		459
	160	156.5084	0. – 638.943	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 2		459
	285	156.5374	0. – 638.825	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		459
	110	156.7635	1.1063 – 639.007	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 1		459
	160	156.7798	1.1063 – 638.943	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		459
	220	156.8800	1.5760 – 639.007	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	0 – 1		459
	285	157.0841	30.840 – 667.442	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	${}^1D - {}^1F^\circ$	2 – 3		459
	110	157.5948	30.840 – 665.370	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	${}^1D - {}^3D^\circ$	2 – 2		459
	285	157.7792	30.840 – 664.637	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	${}^1D - {}^1D^\circ$	2 – 2		459
	650	162.4479	30.840 – 646.4196	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	${}^1D - {}^1F^\circ$	2 – 3		459
	450	163.1895	30.840 – 643.6256	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	${}^1D - {}^1D^\circ$	2 – 2		459
	5	163.274	30.840 – 643.311	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	${}^1D - {}^3P^\circ$	2 – 1		459
	5	163.343	30.840 – 643.052	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	${}^1D - {}^3P^\circ$	2 – 2		459
	360	163.8396	30.840 – 641.193	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	${}^1D - {}^1P^\circ$	2 – 1		459
	360	164.8412	66.496 – 673.140	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	${}^1S - {}^1P^\circ$	0 – 1		459
	750	168.093	0. – 594.8992	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 2		459
	650	168.4110	1.1063 – 594.8881	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 1		459
	450	168.5456	1.5760 – 594.8881	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	0 – 1		459
	160	174.0047	66.496 – 641.193	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	${}^1S - {}^1P^\circ$	0 – 1		459
	160	175.4964	243.6819 – 813.494	$2s2p^5 - 2s2p^4(^4P)3d$	${}^3P^\circ - {}^3D$	2 – 3		459
	40	175.7965	244.6876 – 813.527	$2s2p^5 - 2s2p^4(^4P)3d$	${}^3P^\circ - {}^3D$	1 – 2		459
	5	175.930	245.2388 – 813.648	$2s2p^5 - 2s2p^4(^4P)3d$	${}^3P^\circ - {}^3D$	0 – 1		459
	285	181.7565	0. – 550.186	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	2 – 2		459
	160	181.7640	0. – 550.157	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	2 – 1		459
	160	182.1230	1.1063 – 550.186	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	1 – 2		459
	220	182.1322	1.1063 – 550.158	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	1 – 0		459
	160	182.2885	1.5760 – 550.157	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	0 – 1		459
	5	188.178	0. – 531.410	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^1D^\circ$	2 – 2		459
	285	190.1300	30.840 – 556.796	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	${}^1D - {}^1P^\circ$	2 – 1		459
	20	190.423	0. – 525.139	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	2 – 1		459
	360	190.4337	0. – 525.117	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	2 – 2		459
	450	190.4453	0. – 525.085	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	2 – 3		459
	360	190.8273	1.1063 – 525.139	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	1 – 1		459
	360	190.8359	1.1063 – 525.117	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	1 – 2		459
	285	190.9992	1.5760 – 525.139	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	0 – 1		459
	5	192.551	30.840 – 550.186	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	${}^1D - {}^3P^\circ$	2 – 2		459
	450	199.7722	30.840 – 531.410	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	${}^1D - {}^1D^\circ$	2 – 2		459
	285	203.9577	66.496 – 556.796	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	${}^1S - {}^1P^\circ$	0 – 1		459
	450	205.4869	0. – 486.6502	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - {}^3S^\circ$	2 – 1		459
	360	205.9546	1.1063 – 486.6502	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - {}^3S^\circ$	1 – 1		459
	285	206.1533	1.5760 – 486.6502	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - {}^3S^\circ$	0 – 1		459
	450	319.6436	30.840 – 343.688	$2s^22p^4 - 2s2p^5$	${}^1D - {}^1P^\circ$	2 – 1		459
	450	360.760	66.496 – 343.688	$2s^22p^4 - 2s2p^5$	${}^1S - {}^1P^\circ$	0 – 1		459
	650	408.6836	0. – 244.6876	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	2 – 1		459
	450	409.6142	1.1063 – 245.2388	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	1 – 0		459
	1000	410.3715	0. – 243.6819	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	2 – 2		459
	285	410.5411	1.1063 – 244.6876	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	1 – 1		459

NA IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	450	411.3343	1.5760 – 244.6876	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	0 – 1		459
	750	412.2418	1.1063 – 243.6819	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	1 – 2		459
	10	775.065	684.626 – 813.648	$2s^22p^3(^4S^\circ)4d - 2s2p^4(^4P)3d$	${}^3D^\circ - {}^3D$	2 – 1	Q	284,375
	20	1256.68	733.919 – 813.494	$2s^22p^3(^2D^\circ)4d - 2s2p^4(^4P)3d$	${}^1F^\circ - {}^3D$	3 – 3	Q	758
	220	1456.943	577.7827 – 646.4196	$2s^22p^3(^2D^\circ)3p - 2s^22p^3(^2D^\circ)3d$	${}^1F - {}^1F^\circ$	3 – 3		459
	360	1502.85						459
		1504.	0. – 66.496	$2s^22p^4 - 2s^22p^4$	$g^3P - {}^1S$	2 – 0	F,P	375,459
	285	1508.754	572.5460 – 638.825	$2s^22p^3(^2D^\circ)3p - 2s^22p^3(^2D^\circ)3d$	${}^3D - {}^3D^\circ$	3 – 3		459
		1529.	1.1063 – 66.496	$2s^22p^4 - 2s^22p^4$	$g^3P - {}^1S$	1 – 0	F,P	375,459
	650	1534.475	531.410 – 596.5789	$2s^22p^3(^2D^\circ)3s - 2s^22p^3(^2D^\circ)3p$	${}^1D^\circ - {}^1D$	2 – 2		459
		1542.46	600.5677 – 665.400	$2s^22p^3(^2P^\circ)3p - 2s^22p^3(^2P^\circ)3d$	${}^3D - {}^3D^\circ$	1 – 1		459
	360	1580.233	572.3938 – 635.6756	$2s^22p^3(^2D^\circ)3p - 2s^22p^3(^2D^\circ)3d$	${}^3D - {}^3F^\circ$	2 – 3		459
	450	1580.500	572.5460 – 635.8172	$2s^22p^3(^2D^\circ)3p - 2s^22p^3(^2D^\circ)3d$	${}^3D - {}^3F^\circ$	3 – 4		459
	70	1582.121	524.8533+X – 588.0596+X	$2s^22p^3(^4S^\circ)3p - 2s^22p^3(^4S^\circ)3d$	${}^5P - {}^5D^\circ$	1 – 0		459
	550	1582.182	524.8533+X – 588.0563+X	$2s^22p^3(^4S^\circ)3p - 2s^22p^3(^4S^\circ)3d$	${}^5P - {}^5D^\circ$	1 – 1		459
	450	1582.326	524.8533+X – 588.0512+X	$2s^22p^3(^4S^\circ)3p - 2s^22p^3(^4S^\circ)3d$	${}^5P - {}^5D^\circ$	1 – 2		459
	285	1582.613	572.3795 – 635.5660	$2s^22p^3(^2D^\circ)3p - 2s^22p^3(^2D^\circ)3d$	${}^3D - {}^3F^\circ$	1 – 2		459
	110	1583.84	524.9186+X – 588.0563+X	$2s^22p^3(^4S^\circ)3p - 2s^22p^3(^4S^\circ)3d$	${}^5P - {}^5D^\circ$	2 – 1	P	459
	550	1583.977	524.9186+X – 588.0512+X	$2s^22p^3(^4S^\circ)3p - 2s^22p^3(^4S^\circ)3d$	${}^5P - {}^5D^\circ$	2 – 2		459
	650	1584.141	524.9186+X – 588.0439+X	$2s^22p^3(^4S^\circ)3p - 2s^22p^3(^4S^\circ)3d$	${}^5P - {}^5D^\circ$	2 – 3		459
	40	1586.78	525.0306+X – 588.0512+X	$2s^22p^3(^4S^\circ)3p - 2s^22p^3(^4S^\circ)3d$	${}^5P - {}^5D^\circ$	3 – 2	P	459
	650	1586.990	525.0306+X – 588.0439+X	$2s^22p^3(^4S^\circ)3p - 2s^22p^3(^4S^\circ)3d$	${}^5P - {}^5D^\circ$	3 – 3		459
	450	1587.048	525.0306+X – 588.0407+X	$2s^22p^3(^4S^\circ)3p - 2s^22p^3(^4S^\circ)3d$	${}^5P - {}^5D^\circ$	3 – 4		459
	40	1588.87	575.8866 – 638.825	$2s^22p^3(^2D^\circ)3p - 2s^22p^3(^2D^\circ)3d$	${}^3F - {}^3D^\circ$	4 – 3		459
	40	1596.304	600.5677 – 663.2124	$2s^22p^3(^2P^\circ)3p - 2s^22p^3(^2P^\circ)3d$	${}^3D - {}^3F^\circ$	1 – 2		459
	160	1596.367	600.5341 – 663.1763	$2s^22p^3(^2P^\circ)3p - 2s^22p^3(^2P^\circ)3d$	${}^3D - {}^3F^\circ$	2 – 3		459
	360	1596.401	600.5096 – 663.1505	$2s^22p^3(^2P^\circ)3p - 2s^22p^3(^2P^\circ)3d$	${}^3D - {}^3F^\circ$	3 – 4		459
	450	1613.948	575.7681 – 637.7280	$2s^22p^3(^2D^\circ)3p - 2s^22p^3(^2D^\circ)3d$	${}^3F - {}^3G^\circ$	2 – 3		459
	550	1615.922	575.8210 – 637.7051	$2s^22p^3(^2D^\circ)3p - 2s^22p^3(^2D^\circ)3d$	${}^3F - {}^3G^\circ$	3 – 4		459
	650	1618.570	575.8866 – 637.6696	$2s^22p^3(^2D^\circ)3p - 2s^22p^3(^2D^\circ)3d$	${}^3F - {}^3G^\circ$	4 – 5		459
	550	1655.468	577.7827 – 638.1886	$2s^22p^3(^2D^\circ)3p - 2s^22p^3(^2D^\circ)3d$	${}^1F - {}^1G^\circ$	3 – 4		459
	285	1668.588	575.8866 – 635.8172	$2s^22p^3(^2D^\circ)3p - 2s^22p^3(^2D^\circ)3d$	${}^3F - {}^3F^\circ$	4 – 4		459
		1670.79						459
	110	1672.330	575.7681 – 635.5660	$2s^22p^3(^2D^\circ)3p - 2s^22p^3(^2D^\circ)3d$	${}^3F - {}^3F^\circ$	2 – 2		459
	1000	1701.97	536.1788 – 594.934	$2s^22p^3(^4S^\circ)3p - 2s^22p^3(^4S^\circ)3d$	${}^3P - {}^3D^\circ$	2 – 3		459
	450	1702.409	536.1591 – 594.8992	$2s^22p^3(^4S^\circ)3p - 2s^22p^3(^4S^\circ)3d$	${}^3P - {}^3D^\circ$	1 – 2		459
	160	1702.735	536.1591 – 594.8881	$2s^22p^3(^4S^\circ)3p - 2s^22p^3(^4S^\circ)3d$	${}^3P - {}^3D^\circ$	1 – 1		459
	220	1702.995	536.1788 – 594.8992	$2s^22p^3(^4S^\circ)3p - 2s^22p^3(^4S^\circ)3d$	${}^3P - {}^3D^\circ$	2 – 2		459
	360	1703.53	536.1849 – 594.8881	$2s^22p^3(^4S^\circ)3p - 2s^22p^3(^4S^\circ)3d$	${}^3P - {}^3D^\circ$	0 – 1		459
	285	1791.629	556.796 – 612.611	$2s^22p^3(^2P^\circ)3s - 2s^22p^3(^2P^\circ)3p$	${}^1P^\circ - {}^1D$	1 – 2		459
	110	1824.113	612.621 – 667.442	$2s^22p^3(^2P^\circ)3p - 2s^22p^3(^2P^\circ)3d$	${}^1D - {}^1F^\circ$	2 – 3		459
	650	1960.760	474.030+X – 525.0306+X	$2s^22p^3(^4S^\circ)3s - 2s^22p^3(^4S^\circ)3p$	${}^5S^\circ - {}^5P$	2 – 3		459
	550	1965.078	474.030+X – 524.9186+X	$2s^22p^3(^4S^\circ)3s - 2s^22p^3(^4S^\circ)3p$	${}^5S^\circ - {}^5P$	2 – 2		459
	450	1967.601	474.030+X – 524.8533+X	$2s^22p^3(^4S^\circ)3s - 2s^22p^3(^4S^\circ)3p$	${}^5S^\circ - {}^5P$	2 – 1		459
	360	1968.441	525.085 – 575.8866	$2s^22p^3(^2D^\circ)3s - 2s^22p^3(^2D^\circ)3p$	${}^3D^\circ - {}^3F$	3 – 4		459
	70	1970.986	525.085 – 575.8210	$2s^22p^3(^2D^\circ)3s - 2s^22p^3(^2D^\circ)3p$	${}^3D^\circ - {}^3F$	3 – 3		459
	360	1972.233	525.117 – 575.8210	$2s^22p^3(^2D^\circ)3s - 2s^22p^3(^2D^\circ)3p$	${}^3D^\circ - {}^3F$	2 – 3		459
	220	1975.148	525.139 – 575.7681	$2s^22p^3(^2D^\circ)3s - 2s^22p^3(^2D^\circ)3p$	${}^3D^\circ - {}^3F$	1 – 2		459
	110	1983.746	550.158 – 600.5677	$2s^22p^3(^2P^\circ)3s - 2s^22p^3(^2P^\circ)3p$	${}^3P^\circ - {}^3D$	0 – 1		459
	70	1985.03	550.157 – 600.5341	$2s^22p^3(^2P^\circ)3s - 2s^22p^3(^2P^\circ)3p$	${}^3P^\circ - {}^3D$	1 – 2		459
	220	1987.140	550.186 – 600.5096	$2s^22p^3(^2P^\circ)3s - 2s^22p^3(^2P^\circ)3p$	${}^3P^\circ - {}^3D$	2 – 3		459
	70	1998.584	556.796 – 606.831	$2s^22p^3(^2P^\circ)3s - 2s^22p^3(^2P^\circ)3p$	${}^1P^\circ - {}^1P$	1 – 1		459

SODIUM V (Na^{4+}), Z = 11
Ground State $1s^22s^22p^3(^4S^\circ_{3/2})$ (7 electrons)
Ionization Potential 1 116 200 cm^{-1}; 138.39 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	100.88	48.337+Y - 1039.612+Y	$2s^22p^3 - 2s^22p^2(^1D)5d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		692
	10	100.945	48.337+Y - 1038.975+Y	$2s^22p^3 - 2s^22p^2(^1D)5d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		692
	10	103.482	73.26+Y - 1039.612+Y	$2s^22p^3 - 2s^22p^2(^1D)5d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		692
	100	106.278	0.0 - 940.929	$2s^22p^3 - 2s^22p^2(^3P)4d$	g$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		692
	100	106.302	0.0 - 940.716	$2s^22p^3 - 2s^22p^2(^3P)4d$	g$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		692
	100	106.399	0.0 - 939.858	$2s^22p^3 - 2s^22p^2(^3P)4d$	g$^4S^\circ - ^4D$	$\frac{3}{2}-\frac{1}{2}$		692
	100	106.490	0.0 - 939.055	$2s^22p^3 - 2s^22p^2(^3P)4d$	g$^4S^\circ - ^4D$	$\frac{3}{2}-\frac{5}{2}$		692
	200	107.934	48.337+Y - 974.815+Y	$2s^22p^3 - 2s^22p^2(^1D)4d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		692
	200	108.017	48.337+Y - 974.117+Y	$2s^22p^3 - 2s^22p^2(^1D)4d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		692
	200	110.817	48.362+Y - 950.751+Y	$2s^22p^3 - 2s2p^3(^3D^\circ)3p$	$^2D^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		692
	200	110.878	48.337+Y - 950.229+Y	$2s^22p^3 - 2s2p^3(^3D^\circ)3p$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		692
	10	110.921	73.26+Y - 974.815+Y	$2s^22p^3 - 2s^22p^2(^1D)4d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		692
	100	111.512	48.337+Y - 945.101+Y	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		692
	10	111.552	48.362+Y - 944.789+Y	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		692
	10	111.879	48.337+Y - 942.159+Y	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		692
	300	112.009	48.362+Y - 941.147+Y	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		692
	10	112.077	0.0 - 892.244	$2s^22p^3 - 2s^22p^2(^3P)4s$	g$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		692
	10	112.186	48.362+Y - 939.858	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - ^4D$	$\frac{3}{2}-\frac{1}{2}$		692
	10	112.347	48.337+Y - 938.436+Y	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		692
	10	113.574	48.337+Y - 928.82+Y	$2s^22p^3 - 2s^22p^2(^1D)4s$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		692
	10	113.952	73.26+Y - 950.751+Y	$2s^22p^3 - 2s2p^3(^3D^\circ)3p$	$^2P^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$	Q	692,375
	100	114.700	73.26+Y - 945.101+Y	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		692
	100	114.738	73.221+Y - 944.789+Y	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		692
	10	117.703	48.337+Y - 897.914+Y	$2s^22p^3 - 2s^22p^2(^3P)4s$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		693
	10	117.876	48.362+Y - 896.711+Y	$2s^22p^3 - 2s^22p^2(^3P)4s$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		693
	400	117.990	0.0 - 847.539	$2s^22p^3 - 2s2p^3(^5S^\circ)3p$	g$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		692
	100	120.040	0.0 - 832.995+Y	$2s^22p^3 - 2s^22p^2(^1D)3d$	g$^4S^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	Q	692,375
	10	121.263	73.26+Y - 897.914+Y	$2s^22p^3 - 2s^22p^2(^3P)4s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		692
	400	125.178	0.0 - 798.862	$2s^22p^3 - 2s^22p^2(^3P)3d$	g$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		692
	400	125.216	0.0 - 798.62	$2s^22p^3 - 2s^22p^2(^3P)3d$	g$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		692
	500	125.286	0.0 - 798.174	$2s^22p^3 - 2s^22p^2(^3P)3d$	g$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		692
	300	125.428	0.0 - 797.27	$2s^22p^3 - 2s^22p^2(^3P)3d$	g$^4S^\circ - ^4D$	$\frac{3}{2}-\frac{1}{2}$		692
	300	125.461	0.0 - 797.06	$2s^22p^3 - 2s^22p^2(^3P)3d$	g$^4S^\circ - ^4D$	$\frac{3}{2}-\frac{5}{2}$		692
	200	125.899	73.26+Y - 867.547+Y	$2s^22p^3 - 2s^22p^2(^1S)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		692
	10	126.090	215.86 - 1008.941	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		692
	100	126.210	215.86 - 1008.214	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		692
	10	126.368	216.896 - 1008.214	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		692
	10	126.458	217.44 - 1008.214	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		692
	200	126.557	48.337+Y - 838.49+Y	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		692
	100	126.608	48.362+Y - 838.198+Y	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		692
	10	126.779	215.86 - 1004.626	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		692
	100	126.814	215.86 - 1004.404	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		692
	10	126.920	216.896 - 1004.794	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		692
	10	126.985	216.896 - 1004.404	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		692
	10	127.036	217.44 - 1004.626	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		692
	400	127.444	48.337+Y - 832.995+Y	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		692
	400	127.473	48.362+Y - 832.842+Y	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		692
	400	128.025	48.362+Y - 829.459+Y	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		692
	400	128.051	48.337+Y - 829.276+Y	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		692
	100	129.942	73.26+Y - 842.834+Y	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		692
	200	130.680	73.26+Y - 838.49+Y	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		692
	100	130.723	73.221+Y - 838.198+Y	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		692
	300	131.345	48.337+Y - 809.687+Y	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		692
	200	131.413	48.362+Y - 809.313+Y	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		692

NA V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	300	131.635	73.26+Y - 832.995+Y	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		692
	500	133.162	48.337+Y - 799.302+Y	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2F$	$\frac{5}{2} - \frac{7}{2}$		692
	400	133.388	48.362+Y - 798.055+Y	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2F$	$\frac{3}{2} - \frac{5}{2}$		692
	10	134.183	48.362+Y - 793.616+Y	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		692
	200	134.272	48.337+Y - 793.104+Y	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2P$	$\frac{5}{2} - \frac{3}{2}$		692
	300	135.791	73.26+Y - 809.687+Y	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		692
	300	135.854	73.221+Y - 809.313+Y	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		692
	200	138.812	73.221+Y - 793.616+Y	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		692
	300	138.917	73.26+Y - 793.104+Y	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		692
	10	140.171	297.917+Y - 1011.332+Y	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^2D - ^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		692
	10	140.258	297.883+Y - 1010.855+Y	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		692
	200	142.232	215.86 - 919.07	$2s2p^4 - 2s2p^3(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{5}{2} - \frac{5}{2}$		692
	10	142.415	216.896 - 919.07	$2s2p^4 - 2s2p^3(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{3}{2} - \frac{5}{2}$		692
	200	144.330	215.86 - 908.717	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2} - \frac{7}{2}$		692
	200	144.546	216.896 - 908.717	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	$^4P - ^4D^\circ$	$\frac{3}{2} - \frac{5}{2}$		692
	100	144.661	217.44 - 908.717	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	$^4P - ^4D^\circ$	$\frac{1}{2} - \frac{3}{2}$		692
	200	147.897	73.26+Y - 749.407+Y	$2s^22p^3 - 2s^22p^2(^1S)3s$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		692
	400	148.642	0.0 - 672.757	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		692
	300	148.856	0.0 - 671.79	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		692
	200	149.001	0.0 - 671.136	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{1}{2}$		692
	200	150.968	215.86 - 878.288	$2s2p^4 - 2s2p^3(^3D^\circ)3s$	$^4P - ^4D^\circ$	$\frac{5}{2} - \frac{7}{2}$		692
	400	151.127	48.337+Y - 710.044+Y	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2D^\circ - ^2D$	$\frac{5}{2} - \frac{5}{2}$		692
	100	151.188	216.896 - 878.288	$2s2p^4 - 2s2p^3(^3D^\circ)3s$	$^4P - ^4D^\circ$	$\frac{3}{2} - \frac{5}{2}$		692
	100	151.303	217.44 - 878.288	$2s2p^4 - 2s2p^3(^3D^\circ)3s$	$^4P - ^4D^\circ$	$\frac{1}{2} - \frac{3}{2}$		692
	200	157.036	73.26+Y - 710.044+Y	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		692
	300	157.209	48.337+Y - 684.44+Y	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - ^2P$	$\frac{5}{2} - \frac{3}{2}$		692
	200	157.511	48.362+Y - 683.237+Y	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		692
	300	163.616	73.26+Y - 684.44+Y	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		692
	5	163.662	297.883+Y - 908.717	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	$^2D - ^4D^\circ$	$\frac{5}{2} - \frac{7}{2}$	Q	284
	200	163.930	73.221+Y - 683.237+Y	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		692
	100	167.510	297.883+Y - 894.862+Y	$2s2p^4 - 2s2p^3(^3D^\circ)3s$	$^2D - ^2D^\circ$	$\frac{5}{2} - \frac{5}{2}$		692
	100	170.631	215.86 - 801.95	$2s2p^4 - 2s2p^3(^5S^\circ)3s$	$^4P - ^4S^\circ$	$\frac{5}{2} - \frac{3}{2}$		692
	100	170.923	216.896 - 801.95	$2s2p^4 - 2s2p^3(^5S^\circ)3s$	$^4P - ^4S^\circ$	$\frac{3}{2} - \frac{3}{2}$		692
	100	171.076	217.44 - 801.95	$2s2p^4 - 2s2p^3(^5S^\circ)3s$	$^4P - ^4S^\circ$	$\frac{1}{2} - \frac{3}{2}$		692
	30	183.806	350.754+Y - 894.862+Y	$2s2p^4 - 2s2p^3(^3D^\circ)3s$	$^2S - ^2D^\circ$	$\frac{1}{2} - \frac{3}{2}$	Q	284
	30	297.482	672.757 - 1008.941	$2s^22p^2(^3P)3s - 2s2p^3(^3D^\circ)3d$	$^4P - ^4S^\circ$	$\frac{5}{2} - \frac{3}{2}$	Q	284
	800	307.152	48.362+Y - 373.934+Y	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		197,692
	1000	308.264	48.337+Y - 372.734+Y	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{5}{2} - \frac{3}{2}$		197,692
	10	330.718	48.362+Y - 350.754+Y	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		692
	800	332.550	73.221+Y - 373.934+Y	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		692
	900	333.910	73.26+Y - 372.734+Y	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		692
	800	360.319	73.221+Y - 350.754+Y	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		692
	800	360.367	73.26+Y - 350.754+Y	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		692
	200	367.557	297.917+Y - 569.973+Y	$2s2p^4 - 2p^5$	$^2D - ^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		692
	300	369.743	297.883+Y - 568.355+Y	$2s2p^4 - 2p^5$	$^2D - ^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		692
	1000	400.722	48.337+Y - 297.883+Y	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{5}{2} - \frac{5}{2}$		197,692
	5	403.283						284
	500	445.046	73.221+Y - 297.917+Y	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		692
	600	445.190	73.26+Y - 297.883+Y	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		692
	600	459.897	0.0 - 217.44	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{1}{2}$		197,692
	850	461.051	0.0 - 216.896	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		197,692
	1000	463.263	0.0 - 215.86	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		197,692
	10	510.102	373.934+Y - 569.973+Y	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		692
	100	511.193	372.734+Y - 568.355+Y	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		692

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	514.350	373.934+Y – 568.355+Y	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		692
	10	636.579	847.539 – 1004.626	$2s2p^3(^5S^\circ)3p - 2s2p^3(^3D^\circ)3d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$	Q	284
	5	831.868	798.862 – 919.07	$2s^22p^2(^3P)3d - 2s2p^3(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$	Q	284
		1365.	0.0 – 73.26+Y	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,487
		1366.	0.0 – 73.221+Y	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	F,P	375,487
	20	1650.654	950.751+Y – 1011.332+Y	$2s2p^3(^3D^\circ)3p - 2s2p^3(^3D^\circ)3d$	$^2F - ^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$	Q	284
	25	1806.170	894.862+Y – 950.229+Y	$2s2p^3(^3D^\circ)3s - 2s2p^3(^3D^\circ)3p$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$	Q	284

SODIUM VI (Na^{5+}), Z = 11
Ground State $1s^22s^22p^2(^3P_0)$ (6 electrons)
Ionization Potential 1 388 500 cm^{-1}; 172.15 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	80.345	35.478+X – 1280.111+X	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$^1D - ^1F^\circ$	2 – 3		692
	10	80.645	103.508+X – 1343.51+X	$2s2p^3 - 2s2p^2(^4P)5d$	$^5S^\circ - ^5P$	2 – 3		692
	200	81.498	1.858 – 1228.882	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - ^3P^\circ$	2 – 2		692
	100	81.543	1.858 – 1228.205	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - ^3D^\circ$	2 – 3		692
	100	81.584	204.131 – 1429.862	$2s2p^3 - 2s2p^2(^2D)5d$	$^3D^\circ - ^3F$	3 – 4		692
	100	83.639	35.478+X – 1231.092+X	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$^1D - ^1F^\circ$	2 – 3		692
	100	87.141	103.508+X – 1251.073+X	$2s2p^3 - 2s2p^2(^4P)4d$	$^5S^\circ - ^5P$	2 – 2		692
	700	87.211	103.508+X – 1250.152+X	$2s2p^3 - 2s2p^2(^4P)4d$	$^5S^\circ - ^5P$	2 – 3		692
	100	88.038	0.698 – 1136.378	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - ^3P^\circ$	1 – 2		692
	200	88.143	1.858 – 1136.378	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - ^3P^\circ$	2 – 2		692
	100	88.223	0.0 – 1133.491	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	0 – 1		692
	200	88.246	0.698 – 1133.871	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	1 – 2		692
	300	88.270	1.858 – 1134.746	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	2 – 3		692
	100	88.340	1.858 – 1133.871	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	2 – 2		692
	10	88.387	204.131 – 1335.519	$2s2p^3 - 2s2p^2(^2D)4d$	$^3D^\circ - ^3P$	3 – 2		692
	100	88.460	204.131 – 1334.585	$2s2p^3 - 2s2p^2(^2D)4d$	$^3D^\circ - ^3F$	3 – 4		692
	100	88.583	1.858 – 1131.152+X	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - ^1D^\circ$	2 – 2	Q	692,375
	300	90.468	35.478+X – 1140.841+X	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$^1D - ^1F^\circ$	2 – 3		692
	10	90.746	103.508+X – 1205.485+X	$2s2p^3 - 2s2p^2(^4P)4s$	$^5S^\circ - ^5P$	2 – 3		692
	100	91.268	241.341 – 1337.017	$2s2p^3 - 2s2p^2(^2D)4d$	$^3P^\circ - ^3D$	2 – 2		692
	10	91.414	241.341 – 1335.519	$2s2p^3 - 2s2p^2(^2D)4d$	$^3P^\circ - ^3P$	2 – 2		692
	10	91.475	241.341 – 1334.585	$2s2p^3 - 2s2p^2(^2D)4d$	$^3P^\circ - ^3F$	2 – 3		692
	10	91.737	0.698 – 1090.756	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	$g^3P - ^3P^\circ$	1 – 2		692
	10	91.836	1.858 – 1090.756	$2s^22p^2 - 2s^22p(^2P^\circ)4s$	$g^3P - ^3P^\circ$	2 – 2		692
	10	92.608	350.299+X – 1429.862	$2s2p^3 - 2s2p^2(^2D)5d$	$^1P^\circ - ^3F$	1 – 2	Q	692,375
	100	94.208	204.131 – 1265.583	$2s2p^3 - 2p^3(^4S^\circ)3p$	$^3D^\circ - ^3P$	3 – 2		692
	10	94.827	204.131 – 1258.613	$2s2p^3 - 2s2p^2(^4P)4d$	$^3D^\circ - ^3D$	3 – 3		692
	100	95.182	204.131 – 1254.75	$2s2p^3 - 2s2p^2(^4P)4d$	$^3D^\circ - ^3F$	3 – 4		692
	100	95.263	204.222 – 1253.947	$2s2p^3 - 2s2p^2(^4P)4d$	$^3D^\circ - ^3F$	2 – 3		692
	10	95.319	204.26 – 1253.369	$2s2p^3 - 2s2p^2(^4P)4d$	$^3D^\circ - ^3F$	1 – 2		692
	300	95.933	35.478+X – 1077.872+X	$2s^22p^2 - 2s2p^2(^2D)3p$	$^1D - ^1D^\circ$	2 – 2		692
	10	96.124	0.0 – 1040.223	$2s^22p^2 - 2s2p^2(^2D)3p$	$g^3P - ^3D^\circ$	0 – 1		692
	100	96.196	0.698 – 1040.223	$2s^22p^2 - 2s2p^2(^2D)3p$	$g^3P - ^3D^\circ$	1 – 2		692
	100	96.307	1.858 – 1040.223	$2s^22p^2 - 2s2p^2(^2D)3p$	$g^3P - ^3D^\circ$	2 – 3		692
	300	96.475	35.478+X – 1072.016+X	$2s^22p^2 - 2s2p^2(^2D)3p$	$^1D - ^1F^\circ$	2 – 3		692
	10	97.636	241.341 – 1265.583	$2s2p^3 - 2p^3(^4S^\circ)3p$	$^3P^\circ - ^3P$	2 – 2		692

NA VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	98.309	241.341 - 1258.613	$2s2p^3 - 2s2p^2(^4P)4d$	$^3P^\circ - ^3D$	2 - 3		692
	10	99.004	204.131 - 1214.191	$2s2p^3 - 2s2p^2(^4P)4s$	$^3D^\circ - ^3P$	3 - 2		692
	10	99.500	0.698 - 1005.713	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3P^\circ$	1 - 2		692
	100	99.617	1.858 - 1005.713	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3P^\circ$	2 - 2		692
	100	99.680	1.858 - 1005.068	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3P^\circ$	2 - 1		692
	200	100.469	0.698 - 996.011	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3D^\circ$	1 - 2		692
	300	100.519	1.858 - 996.734	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3D^\circ$	2 - 3		692
	100	100.590	1.858 - 996.011	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3D^\circ$	2 - 2		692
	10	101.348	350.299+X - 1337.017	$2s2p^3 - 2s2p^2(^2D)4d$	$^1P^\circ - ^3D$	1 - 2	Q	692,375
	10	103.002	0.0 - 970.835	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3S^\circ$	0 - 1		692
	100	103.078	0.698 - 970.835	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3S^\circ$	1 - 1		692
	200	103.210	1.858 - 970.835	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3S^\circ$	2 - 1		692
	300	106.040	103.508+X - 1046.548+X	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^\circ - ^5P$	2 - 1		692
	300	106.077	103.508+X - 1046.22+X	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^\circ - ^5P$	2 - 2		692
	400	106.125	103.508+X - 1045.793+X	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^\circ - ^5P$	2 - 3		692
	10	106.580	103.508+X - 1041.771+X	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^\circ - ^5D$	2 - 3		692
	200	107.014	0.0 - 934.463	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3P^\circ$	0 - 1		692
	300	107.061	0.698 - 934.745	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3P^\circ$	1 - 0		692
	300	107.093	0.698 - 934.463	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3P^\circ$	1 - 1		692
	100	107.158	0.698 - 933.915	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3P^\circ$	1 - 2		692
	300	107.227	1.858 - 934.463	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3P^\circ$	2 - 1		692
	400	107.288	1.858 - 933.915	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3P^\circ$	2 - 2		692
	300	107.535	204.131 - 1134.094	$2s2p^3 - 2s2p^2(^2D)3d$	$^3D^\circ - ^3D$	3 - 3		692
	300	107.553	0.0 - 929.774	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3D^\circ$	0 - 1		692
	400	107.608	0.698 - 929.999	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3D^\circ$	1 - 2		692
	500	107.683	1.858 - 930.51	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3D^\circ$	2 - 3		692
	200	107.742	1.858 - 929.999	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3D^\circ$	2 - 2		692
	200	107.934	204.131 - 1130.631	$2s2p^3 - 2s2p^2(^2D)3d$	$^3D^\circ - ^3P$	3 - 2		692
	400	108.555	204.131 - 1125.323	$2s2p^3 - 2s2p^2(^2D)3d$	$^3D^\circ - ^3F$	3 - 4		692
	10	108.678	0.698 - 920.826+X	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^1D^\circ$	1 - 2		692
	10	109.763	35.478+X - 946.512+X	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - ^1P^\circ$	2 - 1		692
	500	109.896	35.478+X - 945.429+X	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - ^1F^\circ$	2 - 3		692
	200	110.085	350.299+X - 1258.613	$2s2p^3 - 2s2p^2(^4P)4d$	$^1P^\circ - ^3D$	1 - 2	Q	692,375
	200	110.750	241.341 - 1144.276	$2s2p^3 - 2s2p^2(^2D)3d$	$^3P^\circ - ^3S$	2 - 1		692
	100	111.725	35.478+X - 930.51	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - ^3D^\circ$	2 - 3		692
	100	111.793	35.478+X - 929.999	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - ^3D^\circ$	2 - 2		692
	300	112.009	241.341 - 1134.094	$2s2p^3 - 2s2p^2(^2D)3d$	$^3P^\circ - ^3D$	2 - 3		692
	300	112.448	241.341 - 1130.631	$2s2p^3 - 2s2p^2(^2D)3d$	$^3P^\circ - ^3P$	2 - 2		692
	400	112.950	35.478+X - 920.826+X	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - ^1D^\circ$	2 - 2		692
	400	113.125	241.341 - 1125.323	$2s2p^3 - 2s2p^2(^2D)3d$	$^3P^\circ - ^3F$	2 - 3		692
	400	114.666	74.394+X - 946.512+X	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1S - ^1P^\circ$	0 - 1		692
	200	115.729	204.131 - 1068.258	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3D$	3 - 3		692
	10	115.780	204.222 - 1067.971	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3D$	2 - 2		692
	400	117.491	204.131 - 1055.26	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3F$	3 - 4		692
	300	117.609	204.222 - 1054.497	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3F$	2 - 3		692
	300	117.699	204.26 - 1053.885	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3F$	1 - 2		692
	10	118.500	204.222 - 1048.104	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3P$	2 - 1		692
	10	118.585	204.131 - 1047.408	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3P$	3 - 2		692
	10	119.204	312.295+X - 1151.26+X	$2s2p^3 - 2s2p^2(^2D)3d$	$^1D^\circ - ^1P$	2 - 1		692
	5	119.415	204.222 - 1041.771+X	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^5D$	2 - 3	Q	284
	300	119.684	312.295+X - 1147.828+X	$2s2p^3 - 2s2p^2(^2D)3d$	$^1D^\circ - ^1F$	2 - 3		692
	10	120.355	320.589 - 1151.26+X	$2s2p^3 - 2s2p^2(^2D)3d$	$^3S^\circ - ^1P$	1 - 1	Q	692,375
	300	120.931	241.341 - 1068.258	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^\circ - ^3D$	2 - 3		692
	200	120.973	241.341 - 1067.971	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^\circ - ^3D$	1 - 2		692

NA VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	121.004	241.341 – 1067.76	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^\circ - ^3D$	0 – 1		692
	400	121.773	103.508+X – 924.708+X	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^\circ - ^5P$	2 – 3		692
	320	121.913	103.508+X – 923.765+X	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^\circ - ^5P$	2 – 2		692
	300	122.018	103.508+X – 923.059+X	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^\circ - ^5P$	2 – 1		692
	5	122.199	312.295+X – 1130.631	$2s2p^3 - 2s2p^2(^2D)3d$	$^1D^\circ - ^3P$	2 – 2	Q	284
	400	123.134	204.131 – 1016.274	$2s2p^3 - 2s2p^2(^2D)3s$	$^3D^\circ - ^3D$	3 – 3		692
	400	123.744	0.698 – 808.795	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^3P^\circ$	1 – 2		692
	300	123.868	0.0 – 807.324	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^3P^\circ$	0 – 1		692
	500	123.929	1.858 – 808.795	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^3P^\circ$	2 – 2		692
	200	123.970	0.698 – 807.324	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^3P^\circ$	1 – 1		692
	400	124.059	241.341 – 1047.408	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^\circ - ^3P$	2 – 2		692
	400	124.153	1.858 – 807.324	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^3P^\circ$	2 – 1		692
	10	124.850	350.299+X – 1151.26+X	$2s2p^3 - 2s2p^2(^2D)3d$	$^1P^\circ - ^1P$	1 – 1		692
	10	125.383	350.299+X – 1147.855+X	$2s2p^3 - 2s2p^2(^2D)3d$	$^1P^\circ - ^1D$	1 – 2		692
	400	127.837	35.478+X – 817.718+X	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$^1D - ^1P^\circ$	2 – 1		692
	200	129.040	241.341 – 1016.274	$2s2p^3 - 2s2p^2(^2D)3s$	$^3P^\circ - ^3D$	2 – 3		692
	200	133.825	204.131 – 951.389	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^\circ - ^3P$	3 – 2		692
	100	134.021	204.222 – 950.367	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^\circ - ^3P$	2 – 1		692
	10	134.135	204.26 – 949.778	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^\circ - ^3P$	1 – 0		692
	300	134.532	74.394+X – 817.718+X	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$^1S - ^1P^\circ$	0 – 1		692
	10	137.589	320.589 – 1047.408	$2s2p^3 - 2s2p^2(^4P)3d$	$^3S^\circ - ^3P$	1 – 2		692
	200	138.693	312.295+X – 1033.341+X	$2s2p^3 - 2s2p^2(^2D)3s$	$^1D^\circ - ^1D$	2 – 2		692
	25	138.970	204.222 – 923.765+X	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^\circ - ^5P$	2 – 2	Q	284,375
	200	140.833	241.341 – 951.389	$2s2p^3 - 2s2p^2(^4P)3s$	$^3P^\circ - ^3P$	2 – 2		692
	10	141.040	241.341 – 950.367	$2s2p^3 - 2s2p^2(^4P)3s$	$^3P^\circ - ^3P$	2 – 1		692
	10	146.398	350.299+X – 1033.341+X	$2s2p^3 - 2s2p^2(^2D)3s$	$^1P^\circ - ^1D$	1 – 2		692
	10	149.442	204.131 – 873.287	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3P$	3 – 2		692
	10	149.621	204.222 – 872.577	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3P$	2 – 1		692
	5	158.225	241.341 – 873.287	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3P^\circ - ^3P$	2 – 2		284
	5	158.517	320.589 – 951.389	$2s2p^3 - 2s2p^2(^4P)3s$	$^3S^\circ - ^3P$	1 – 2		284
	40	166.367	350.299+X – 951.389	$2s2p^3 - 2s2p^2(^4P)3s$	$^1P^\circ - ^3P$	1 – 2	Q	284
	30	177.637	477.277 – 1040.223	$2p^4 - 2s2p^2(^2D)3p$	$^3P - ^3D^\circ$	2 – 3		284
	20	178.061	478.597 – 1040.223	$2p^4 - 2s2p^2(^2D)3p$	$^3P - ^3D^\circ$	1 – 2		284
	15	178.244	479.156 – 1040.223	$2p^4 - 2s2p^2(^2D)3p$	$^3P - ^3D^\circ$	0 – 1		284
	10	189.473	477.277 – 1005.068	$2p^4 - 2s2p^2(^4P)3p$	$^3P - ^3P^\circ$	2 – 1		284
	10	191.205	350.299+X – 873.287	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^1P^\circ - ^3P$	1 – 2	Q	693,375
	10	206.871	946.512+X – 1429.862	$2s^22p(^2P^\circ)3d - 2s2p^2(^2D)5d$	$^1P^\circ - ^3F$	1 – 2		693,375
	30	293.887	996.734 – 1337.017	$2s2p^2(^4P)3p - 2s2p^2(^2D)4d$	$^3D^\circ - ^3D$	3 – 3		284
	25	308.500	934.463 – 1258.613	$2s^22p(^2P^\circ)3d - 2s2p^2(^4P)4d$	$^3P^\circ - ^3D$	1 – 2		284
	400	311.921	0.0 – 320.589	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^\circ$	0 – 1		692
	300	312.608	0.698 – 320.589	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^\circ$	1 – 1		692
	500	313.748	1.858 – 320.589	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^\circ$	2 – 1		692
	600	317.641	35.478+X – 350.299+X	$2s^22p^2 - 2s2p^3$	$^1D - ^1P^\circ$	2 – 1		197,692
	800	361.250	35.478+X – 312.295+X	$2s^22p^2 - 2s2p^3$	$^1D - ^1D^\circ$	2 – 2		197,692
	400	362.444	74.394+X – 350.299+X	$2s^22p^2 - 2s2p^3$	$^1S - ^1P^\circ$	0 – 1		692
	200	363.774	204.26 – 479.156	$2s2p^3 - 2p^4$	$^3D^\circ - ^3P$	1 – 0		692
	300	364.477	204.222 – 478.597	$2s2p^3 - 2p^4$	$^3D^\circ - ^3P$	2 – 1		692
	400	366.110	204.131 – 477.277	$2s2p^3 - 2p^4$	$^3D^\circ - ^3P$	3 – 2		692
	10	366.240	204.222 – 477.277	$2s2p^3 - 2p^4$	$^3D^\circ - ^3P$	2 – 2		692
	25	383.783	873.287 – 1133.871	$2s^22p(^2P^\circ)3p - 2s^22p(^2P^\circ)4d$	$^3P - ^3D^\circ$	2 – 2	Q	284
	200	414.370	0.0 – 241.341	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	0 – 1		692
	400	415.505	0.698 – 241.341	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	1 – 2		692
	600	417.595	1.858 – 241.341	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	2 – 2		692
	30	418.828						284

NA VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	421.465	241.341 - 478.597	$2s2p^3 - 2p^4$	$^3P^\circ - ^3P$	2 - 1		692
	200	423.821	241.341 - 477.277	$2s2p^3 - 2p^4$	$^3P^\circ - ^3P$	2 - 2		692
	10	436.946	350.299+X - 579.15+X	$2s2p^3 - 2p^4$	$^1P^\circ - ^1S$	1 - 0	Q	693,375
	300	440.266						692
	20	444.686						284
	5	465.460						284
	20	466.640	929.999 - 1144.276	$2s^22p(^2P^\circ)3d - 2s2p^2(^2D)3d$	$^3D^\circ - ^3S$	2 - 1	Q	284
	500	489.580	0.0 - 204.26	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^\circ$	0 - 1		197,692
	300	491.240	0.698 - 204.26	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^\circ$	1 - 1		197,692
	600	491.340	0.698 - 204.222	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^\circ$	1 - 2		197,692
	300	494.160	1.858 - 204.222	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^\circ$	2 - 2		197,692
	700	494.382	1.858 - 204.131	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^\circ$	2 - 3		197,692
	5	497.273	1133.491 - 1334.585	$2s^22p(^2P^\circ)4d - 2s2p^2(^2D)4d$	$^3D^\circ - ^3F$	1 - 2		284
	30	504.541	1136.378 - 1334.585	$2s^22p(^2P^\circ)4d - 2s2p^2(^2D)4d$	$^3P^\circ - ^3F$	2 - 3		284
		516.00	312.295+X - 506.09+X	$2s2p^3 - 2p^4$	$^1D^\circ - ^1D$	2 - 2	Q	244
	10	528.730						692
	10	632.90	320.589 - 478.597	$2s2p^3 - 2p^4$	$^3S^\circ - ^3P$	1 - 1		692
	10	638.21	320.589 - 477.277	$2s2p^3 - 2p^4$	$^3S^\circ - ^3P$	1 - 2		692
		641.87	350.299+X - 506.09+X	$2s2p^3 - 2p^4$	$^1P^\circ - ^1D$	1 - 2	Q	244
	15	674.510	996.011 - 1144.276	$2s2p^2(^4P)3p - 2s2p^2(^2D)3d$	$^3D^\circ - ^3S$	2 - 1	Q	284
	20	699.093	807.324 - 950.367	$2s^22p(^2P^\circ)3s - 2s2p^2(^4P)3s$	$^3P^\circ - ^3P$	1 - 1		284
	15	733.743						284
	10	798.320						284
	25	810.183	872.577 - 996.011	$2s^22p(^2P^\circ)3p - 2s2p^2(^4P)3p$	$^3P - ^3D^\circ$	1 - 2	Q	284
	15	814.515						284
	10	818.096	1136.378 - 1258.613	$2s^22p(^2P^\circ)4d - 2s2p^2(^4P)4d$	$^3P^\circ - ^3D$	2 - 3		284
	5	827.909						284
	5	851.740	929.999 - 1047.408	$2s^22p(^2P^\circ)3d - 2s2p^2(^4P)3d$	$^3D^\circ - ^3P$	2 - 2		284
	20	854.790	1136.378 - 1253.369	$2s^22p(^2P^\circ)4d - 2s2p^2(^4P)4d$	$^3P^\circ - ^3F$	2 - 2	Q	284
	10	864.625						284
	5	867.537						284
	5	888.784	920.826+X - 1033.341+X	$2s^22p(^2P^\circ)3d - 2s2p^2(^2D)3s$	$^1D^\circ - ^1D$	2 - 2		284
	5	945.223						284
	20	946.064	1228.882 - 1334.585	$2s^22p(^2P^\circ)5d - 2s2p^2(^2D)4d$	$^3P^\circ - ^3F$	2 - 3	Q	284
	20	967.480						284
	10	974.034						284
	5	985.190						284
	20	1088.636						284
	15	1116.780						284
		1357.	0.698 - 74.394+X	$2s^22p^2 - 2s^22p^2$	$g^3P - ^1S$	1 - 0	F,P	375,487
	10	1365.248						284
		1379.	1.858 - 74.394+X	$2s^22p^2 - 2s^22p^2$	$g^3P - ^1S$	2 - 0	F,P	375,487
	10	1429.430	1077.872+X - 1147.828+X	$2s2p^2(^2D)3p - 2s2p^2(^2D)3d$	$^1D^\circ - ^1F$	2 - 3	Q	284

SODIUM VII (Na^{6+}), Z = 11
Ground State $1s^22s^22p(^2P^o_{1/2})$ (5 electrons)
Ionization Potential 1 681 500 cm^{-1}; 208.48 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	62.725	2.139 – 1596.4	$2s^22p - 2s^28d$	$g^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	10	63.185	0.0 – 1583.742	$2s^22p - 2s2p(^3P^o)5p$	$g^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		692,691
	10	63.227	2.139 – 1583.742	$2s^22p - 2s2p(^3P^o)5p$	$g^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	10	63.361	0.0 – 1578.354	$2s^22p - 2s2p(^3P^o)5p$	$g^2P^o - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		691
	10	63.442	2.139 – 1578.354	$2s^22p - 2s2p(^3P^o)5p$	$g^2P^o - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		691
	10	63.778	2.139 – 1570.078	$2s^22p - 2s^27d$	$g^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	10	64.113	2.139 – 1561.885	$2s^22p - 2s2p(^1P^o)4p$	$g^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	10	64.904	116.113+Y – 1656.85+Y	$2s2p^2 - 2s2p(^3P^o)6d$	${}^4P - {}^4D^o$	$\frac{5}{2}-\frac{7}{2}$		691
	100	65.388	0.0 – 1529.463	$2s^22p - 2s^26d$	$g^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		691
	100	65.474	2.139 – 1529.463	$2s^22p - 2s^26d$	$g^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	100	67.826	115.046+Y – 1589.366+Y	$2s2p^2 - 2s2p(^3P^o)5d$	${}^4P - {}^4P^o$	$\frac{3}{2}-\frac{1}{2}$		691
	100	67.877	116.113+Y – 1589.366+Y	$2s2p^2 - 2s2p(^3P^o)5d$	${}^4P - {}^4P^o$	$\frac{5}{2}-\frac{5}{2}$		691
	200	67.912	116.113+Y – 1588.607+Y	$2s2p^2 - 2s2p(^3P^o)5d$	${}^4P - {}^4D^o$	$\frac{5}{2}-\frac{7}{2}$		691
	10	68.422	0.0 – 1461.518	$2s^22p - 2s^25d$	$g^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		691
	100	68.519	2.139 – 1461.588	$2s^22p - 2s^25d$	$g^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	10	68.866	0.0 – 1452.095	$2s^22p - 2s2p(^3P^o)4p$	$g^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		691
	100	68.908	2.139 – 1453.349	$2s^22p - 2s2p(^3P^o)4p$	$g^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	10	69.314	0.0 – 1442.711	$2s^22p - 2s2p(^3P^o)4p$	$g^2P^o - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		691
	10	69.395	2.139 – 1443.165	$2s^22p - 2s2p(^3P^o)4p$	$g^2P^o - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		691
	100	72.020	205.412 – 1593.915	$2s2p^2 - 2s2p(^3P^o)5d$	${}^2D - {}^2F^o$	$\frac{5}{2}-\frac{7}{2}$		691
	100	72.079	205.448 – 1592.815	$2s2p^2 - 2s2p(^3P^o)5d$	${}^2D - {}^2F^o$	$\frac{3}{2}-\frac{5}{2}$		691
	200	72.865	205.412 – 1577.813	$2s2p^2 - 2s2p(^1P^o)4d$	${}^2D - {}^2F^o$	$\frac{5}{2}-\frac{7}{2}$		691
	100	74.097	115.046+Y – 1464.185+Y	$2s2p^2 - 2s2p(^3P^o)4d$	${}^4P - {}^4P^o$	$\frac{3}{2}-\frac{5}{2}$		691
	200	74.180	116.113+Y – 1464.185+Y	$2s2p^2 - 2s2p(^3P^o)4d$	${}^4P - {}^4P^o$	$\frac{5}{2}-\frac{5}{2}$		691
	200	74.217	114.313+Y – 1461.713+Y	$2s2p^2 - 2s2p(^3P^o)4d$	${}^4P - {}^4D^o$	$\frac{1}{2}-\frac{3}{2}$		691
	300	74.255	115.046+Y – 1461.757+Y	$2s2p^2 - 2s2p(^3P^o)4d$	${}^4P - {}^4D^o$	$\frac{3}{2}-\frac{5}{2}$		691
	300	74.268	116.113+Y – 1462.588+Y	$2s2p^2 - 2s2p(^3P^o)4d$	${}^4P - {}^4D^o$	$\frac{5}{2}-\frac{7}{2}$		691
	300	74.861	0.0 – 1335.809	$2s^22p - 2s^24d$	$g^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		691
	300	74.980	2.139 – 1335.889	$2s^22p - 2s^24d$	$g^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	10	76.501	115.046+Y – 1422.176+Y	$2s2p^2 - 2s2p(^3P^o)4s$	${}^4P - {}^4P^o$	$\frac{3}{2}-\frac{5}{2}$		691
	10	76.565	116.113+Y – 1422.176+Y	$2s2p^2 - 2s2p(^3P^o)4s$	${}^4P - {}^4P^o$	$\frac{5}{2}-\frac{5}{2}$		691
	10	76.626	115.046+Y – 1420.086+Y	$2s2p^2 - 2s2p(^3P^o)4s$	${}^4P - {}^4P^o$	$\frac{3}{2}-\frac{1}{2}$		691
	10	76.827	366.625+Y – 1667.981+Y	$2p^3 - 2p^2(^3P)4d$	${}^4S^o - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		691
	10	76.862	366.625+Y – 1667.64+Y	$2p^3 - 2p^2(^3P)4d$	${}^4S^o - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		691
	100	77.353	2.139 – 1294.914	$2s^22p - 2s^2(^1S)4s$	$g^2P^o - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		691
	10	77.558	0.0 – 1289.347+Y	$2s^22p - 2p^2(^3P)3s$	$g^2P^o - {}^4P$	$\frac{1}{2}-\frac{3}{2}$	Q	692,375
	10	78.459	264.4 – 1538.951	$2s2p^2 - 2s2p(^1P^o)4s$	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		691
	10	78.771	205.448 – 1474.526	$2s2p^2 - 2s2p(^3P^o)4d$	${}^2D - {}^2P^o$	$\frac{3}{2}-\frac{1}{2}$		691
	300	78.907	205.412 – 1472.727	$2s2p^2 - 2s2p(^3P^o)4d$	${}^2D - {}^2F^o$	$\frac{5}{2}-\frac{7}{2}$		691
	200	78.982	205.448 – 1471.559	$2s2p^2 - 2s2p(^3P^o)4d$	${}^2D - {}^2F^o$	$\frac{3}{2}-\frac{5}{2}$		691
	200	79.477	0.0 – 1258.878	$2s^22p - 2s2p(^1P^o)3p$	$g^2P^o - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		691
	100	79.571	2.139 – 1258.878	$2s^22p - 2s2p(^1P^o)3p$	$g^2P^o - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		691
	100	79.620	205.448 – 1461.757+Y	$2s2p^2 - 2s2p(^3P^o)4d$	${}^2D - {}^4D^o$	$\frac{3}{2}-\frac{5}{2}$	Q	692,375
	10	79.761	285.189 – 1538.951	$2s2p^2 - 2s2p(^1P^o)4s$	${}^2P - {}^2P^o$	$\frac{3}{2}-\frac{3}{2}$		691
	10	79.786	0.0 – 1253.353	$2s^22p - 2s2p(^1P^o)3p$	$g^2P^o - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		691
	300	79.893	0.0 – 1251.674	$2s^22p - 2s2p(^1P^o)3p$	$g^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		691
	300	80.008	2.139 – 1252.014	$2s^22p - 2s2p(^1P^o)3p$	$g^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	10	80.133	115.046+Y – 1362.286+Y	$2s2p^2 - 2p^2(^3P)3p$	${}^4P - {}^4S^o$	$\frac{3}{2}-\frac{3}{2}$		691
	10	80.174	115.046+Y – 1362.286+Y	$2s2p^2 - 2p^2(^3P)3p$	${}^4P - {}^4S^o$	$\frac{3}{2}-\frac{3}{2}$		691
	100	80.245	116.113+Y – 1362.286+Y	$2s2p^2 - 2p^2(^3P)3p$	${}^4P - {}^4S^o$	$\frac{5}{2}-\frac{3}{2}$		691
	100	81.430	116.113+Y – 1344.162+Y	$2s2p^2 - 2p^2(^3P)3p$	${}^4P - {}^4P^o$	$\frac{5}{2}-\frac{5}{2}$		691
	200	81.498	205.412 – 1432.595	$2s2p^2 - 2s2p(^3P^o)4s$	${}^2D - {}^2P^o$	$\frac{5}{2}-\frac{3}{2}$		691
	400	81.855	116.113+Y – 1337.785+Y	$2s2p^2 - 2p^2(^3P)3p$	${}^4P - {}^4D^o$	$\frac{5}{2}-\frac{7}{2}$		691
	10	82.516	366.625+Y – 1578.354	$2p^3 - 2s2p(^3P^o)5p$	${}^4S^o - {}^2P$	$\frac{3}{2}-\frac{3}{2}$	Q	692,375

NA VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	82.636	264.4 – 1474.526	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		691
	10	82.685	264.4 – 1473.809	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	100	83.180	465.111 – 1667.64+Y	$2p^3 - 2p^2(^3P)4d$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$	Q	692,375
	400	84.221	205.412 – 1392.764	$2s2p^2 - 2p^2(^1D)3p$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		691
	10	84.832	285.189 – 1464.051	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		691
	300	85.260	205.412 – 1378.295	$2s2p^2 - 2p^2(^1D)3p$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		691
	300	85.297	205.448 – 1377.822	$2s2p^2 - 2p^2(^1D)3p$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		691
	400	85.458	2.139 – 1172.339	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		691
	400	86.596	0.0 – 1154.779	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		691
	500	86.652	2.139 – 1156.18	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	300	86.758	2.139 – 1154.779	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		691
	10	86.890	411.04 – 1561.885	$2p^3 - 2s2p(^1P^\circ)4p$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$	Q	692,375
	100	87.141	285.189 – 1432.595	$2s2p^2 - 2s2p(^3P^\circ)4s$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		691
	10	87.471	205.412 – 1348.721	$2s2p^2 - 2p^2(^3P)3p$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		691
	200	88.698	0.0 – 1127.431	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		691
	300	88.747	0.0 – 1126.81	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		691
	400	88.865	2.139 – 1127.431	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		691
	200	88.914	2.139 – 1126.81	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		691
	100	90.173	283.869 – 1392.764	$2s2p^2 - 2p^2(^1D)3p$	$^2P - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	400	90.252	285.189 – 1392.764	$2s2p^2 - 2p^2(^1D)3p$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		691
	10	90.830	205.412 – 1306.468	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		691
	200	91.064	205.412 – 1303.643	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		691
	500	92.003	205.412 – 1292.333	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		691
	200	92.774	114.313+Y – 1192.185+Y	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	100	92.809	115.046+Y – 1192.528+Y	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		691
	100	92.843	115.046+Y – 1192.185+Y	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		691
	100	92.883	115.046+Y – 1191.664+Y	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		691
	200	92.930	116.113+Y – 1192.185+Y	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		691
	400	92.976	116.113+Y – 1191.664+Y	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		691
	400	93.393	114.313+Y – 1185.057+Y	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	400	93.434	115.046+Y – 1185.316+Y	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		691
	500	93.486	116.113+Y – 1185.792+Y	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		691
	100	93.528	116.113+Y – 1185.316+Y	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		691
	10	94.020	285.189 – 1348.721	$2s2p^2 - 2p^2(^3P)3p$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		691
	600	94.288	0.0 – 1060.58	$2s^22p - 2s^23d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		691
	700	94.468	2.139 – 1060.699	$2s^22p - 2s^23d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	100	96.845	366.625+Y – 1399.185+Y	$2p^3 - 2p^2(^3P)3d$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		691
	200	96.872	366.625+Y – 1398.897+Y	$2p^3 - 2p^2(^3P)3d$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		691
	300	96.922	366.625+Y – 1398.364+Y	$2p^3 - 2p^2(^3P)3d$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		691
	100	97.790	283.869 – 1306.468	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		691
	200	97.907	285.189 – 1306.468	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		691
	100	98.016	412.311 – 1432.606	$2p^3 - 2p^2(^1D)3d$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		691
	300	98.080	283.869 – 1303.445	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	300	98.188	285.189 – 1303.643	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		691
	300	98.378	412.311 – 1428.798	$2p^3 - 2p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		691
	300	98.394	412.395 – 1428.717	$2p^3 - 2p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		691
	400	99.421	205.412 – 1211.236	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		691
	400	99.556	205.448 – 1209.908	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		691
	100	99.680	412.311 – 1415.636	$2p^3 - 2p^2(^1D)3d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		691
	100	100.337	465.111 – 1461.588	$2p^3 - 2s^25d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	Q	692,375
	200	100.718	205.412 – 1198.287	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		691
	10	101.201	465.111 – 1453.349	$2p^3 - 2s2p(^3P^\circ)4p$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	Q	692,375
	300	101.785	205.412 – 1187.885	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		691
	300	101.816	205.448 – 1187.612	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		691

NA VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	102.226	412.311 - 1390.448	$2p^3 - 2p^2(^3P)3d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		691
	100	102.390	412.311 - 1388.969	$2p^3 - 2p^2(^3P)3d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		691
	10	102.448	412.395 - 1388.5	$2p^3 - 2p^2(^3P)3d$	$^2D^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		691
	100	103.354	465.111 - 1432.606	$2p^3 - 2p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		691
	10	103.400	465.017 - 1432.135	$2p^3 - 2p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		691
	300	103.779	115.046+Y - 1078.646+Y	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		691
	200	103.842	114.313+Y - 1077.316+Y	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	400	103.891	116.113+Y - 1078.646+Y	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		691
	200	104.000	115.046+Y - 1076.584+Y	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		691
	220	104.036	116.113+Y - 1077.316+Y	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		691
	200	104.871	264.4 - 1217.955	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		691
	300	104.955	264.4 - 1217.189	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	300	105.111	0.0 - 951.347	$2s^22p - 2s^23s$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		691
	200	105.205	465.111 - 1415.636	$2p^3 - 2p^2(^1D)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	400	105.354	2.139 - 951.347	$2s^22p - 2s^23s$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		691
	300	107.061	264.4 - 1198.287	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		691
	300	107.093	264.4 - 1198.287	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	10	108.079	465.111 - 1390.448	$2p^3 - 2p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	10	108.159	285.189 - 1209.908	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$	Q	692,375
	200	108.193	366.625+Y - 1290.881+Y	$2p^3 - 2p^2(^3P)3s$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		691
	100	108.373	366.625+Y - 1289.347+Y	$2p^3 - 2p^2(^3P)3s$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		691
	200	108.733	412.311 - 1331.974	$2p^3 - 2p^2(^1D)3s$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		691
	100	108.829	412.395 - 1331.137	$2p^3 - 2p^2(^1D)3s$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		691
	100	109.362	283.869 - 1198.287	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		691
	200	109.519	285.189 - 1198.287	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		691
	200	110.647	283.869 - 1187.612	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	300	110.778	285.189 - 1187.885	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		691
	200	110.817	285.189 - 1187.612	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		691
	300	111.211	205.412 - 1104.62	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		691
	200	111.390	205.448 - 1103.222	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		691
	10	115.361	465.111 - 1331.974	$2p^3 - 2p^2(^1D)3s$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	10	115.475	465.017 - 1331.137	$2p^3 - 2p^2(^1D)3s$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		691
	10	118.840	412.311 - 1253.779	$2p^3 - 2s2p(^1P^\circ)3p$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		691
	10	118.902	412.395 - 1253.353	$2p^3 - 2s2p(^1P^\circ)3p$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		691
	100	119.014	264.4 - 1104.62	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	10	119.100	412.311 - 1252.014	$2p^3 - 2s2p(^1P^\circ)3p$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		691
	10	119.204	264.4 - 1103.222	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		691
	300	122.018	285.189 - 1104.62	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		691
	100	122.252	285.189 - 1103.222	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		691
	10	124.532	205.412 - 1008.418	$2s2p^2 - 2s^23p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		691
	10	126.779	465.111 - 1253.779	$2p^3 - 2s2p(^1P^\circ)3p$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		691
	100	126.814	465.017 - 1253.353	$2p^3 - 2s2p(^1P^\circ)3p$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		691
	200	139.867	412.311 - 1127.431	$2p^3 - 2s2p(^3P^\circ)3p$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		691
	20	302.563	1258.878 - 1589.366+Y	$2s2p(^1P^\circ)3p - 2s2p(^3P^\circ)5d$	$^2S - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$	Q	284,375
	20	304.030	1103.222 - 1432.135	$2s2p(^3P^\circ)3s - 2p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$	Q	284,375
	500	350.645	0.0 - 285.189	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		197,691
	600	352.275	0.0 - 283.869	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		197,691
	800	353.294	2.139 - 285.189	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		197,691
	400	354.950	2.139 - 283.869	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		197,691
		378.22	0.0 - 264.4	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		250
	300	381.300	2.139 - 264.4	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		691
	10	385.061	205.412 - 465.111	$2s2p^2 - 2p^3$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		691
	10	385.254	205.448 - 465.017	$2s2p^2 - 2p^3$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		691
	200	396.335	114.313+Y - 366.625+Y	$2s2p^2 - 2p^3$	$^4P - ^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		691

NA VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	300	397.490	115.046+Y – 366.625+Y	$2s2p^2 - 2p^3$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		691
	400	399.182	116.113+Y – 366.625+Y	$2s2p^2 - 2p^3$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		691
	100	425.493	1348.721 – 1583.742	$2p^2(^3P)3p - 2s2p(^3P^\circ)5p$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$	Q	693,375
	200	483.216	205.448 – 412.395	$2s2p^2 - 2p^3$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		691
	300	483.328	205.412 – 412.311	$2s2p^2 - 2p^3$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		691
	400	486.740	0.0 – 205.448	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		197,691
	400	491.950	2.139 – 205.412	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		197,691
	15	719.491	1253.779 – 1392.764	$2s2p(^1P^\circ)3p - 2p^2(^1D)3p$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$	Q	284,375
		777.83	285.189 – 413.75	$2s2p^2 - 2p^3$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		250
		786.35	283.869 – 411.04	$2s2p^2 - 2p^3$	$^2P - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		250

SODIUM VIII (Na^{7+}), Z = 11
Ground State $1s^22s^2(^1S_0)$ (4 electrons)
Ionization Potential 2 130 800 cm^{-1}; 264.19 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	51.316	128.247+X – 2076.957+X	$2s2p - 2p(^2P^\circ)6p$	$^3P^\circ - ^3D$	2 – 3		691
	10	51.789	0.0 – 1930.912	$2s^2 - 2s6p$	$g^1S - ^1P^\circ$	0 – 1		691
	10	53.750	128.247+X – 1988.712+X	$2s2p - 2p(^2P^\circ)5p$	$^3P^\circ - ^3P$	2 – 2		691
	100	54.380	0.0 – 1838.911	$2s^2 - 2s5p$	$g^1S - ^1P^\circ$	0 – 1		691
	10	55.345	126.643+X – 1933.461+X	$2s2p - 2s6d$	$^3P^\circ - ^3D$	1 – 2		691
	100	55.396	128.247+X – 1933.461+X	$2s2p - 2s6d$	$^3P^\circ - ^3D$	2 – 3		691
	10	57.096	329.759+X – 2081.195+X	$2p^2 - 2p(^2P^\circ)6d$	$^3P - ^3P^\circ$	2 – 2		691
	10	57.119	329.759+X – 2080.49+X	$2p^2 - 2p(^2P^\circ)6d$	$^3P - ^3D^\circ$	2 – 3		691
	10	57.230	243.223 – 1990.558	$2s2p - 2p(^2P^\circ)5p$	$^1P^\circ - ^1D$	1 – 2		691
	10	58.070	126.643+X – 1848.701+X	$2s2p - 2s5d$	$^3P^\circ - ^3D$	1 – 2		691
	100	59.009	128.247+X – 1822.904+X	$2s2p - 2p(^2P^\circ)4p$	$^3P^\circ - ^3P$	2 – 2		691
	10	59.101	243.223 – 1935.242	$2s2p - 2s6d$	$^1P^\circ - ^1D$	1 – 2		691
	300	59.204	128.247+X – 1817.322+X	$2s2p - 2p(^2P^\circ)4p$	$^3P^\circ - ^3D$	2 – 3		691
	10	59.249	128.247+X – 1816.039+X	$2s2p - 2p(^2P^\circ)4p$	$^3P^\circ - ^3D$	2 – 2		691
	200	59.759	0.0 – 1673.388	$2s^2 - 2s4p$	$g^1S - ^1P^\circ$	0 – 1		691
	10	59.992	327.527+X – 1994.4+X	$2p^2 - 2p(^2P^\circ)5d$	$^3P - ^3D^\circ$	0 – 1		691
	100	60.053	329.759+X – 1994.955+X	$2p^2 - 2p(^2P^\circ)5d$	$^3P - ^3P^\circ$	2 – 2		691
	100	60.073	329.759+X – 1994.4+X	$2p^2 - 2p(^2P^\circ)5d$	$^3P - ^3D^\circ$	2 – 1		691
	200	61.088	361.046 – 1998.029	$2p^2 - 2p(^2P^\circ)5d$	$^1D - ^1F^\circ$	2 – 3		691
	1	61.347	361.046 – 1991.118	$2p^2 - 2p(^2P^\circ)5d$	$^1D - ^1D^\circ$	2 – 2		691
	100	62.276	243.223 – 1848.978	$2s2p - 2s5d$	$^1P^\circ - ^1D$	1 – 2		691
	100	63.114	243.223 – 1827.658	$2s2p - 2p(^2P^\circ)4p$	$^1P^\circ - ^1D$	1 – 2		691
	10	63.695	243.223 – 1813.205	$2s2p - 2p(^2P^\circ)4p$	$^1P^\circ - ^1P$	1 – 1		691
	200	64.205	125.913+X – 1683.409+X	$2s2p - 2s4d$	$^3P^\circ - ^3D$	0 – 1		691
	400	64.237	126.643+X – 1683.409+X	$2s2p - 2s4d$	$^3P^\circ - ^3D$	1 – 2		691
	500	64.302	128.247+X – 1683.409+X	$2s2p - 2s4d$	$^3P^\circ - ^3D$	2 – 3		691
	10	65.672	126.643+X – 1649.542+X	$2s2p - 2s4s$	$^3P^\circ - ^3S$	1 – 1		691
	10	65.730	128.247+X – 1649.542+X	$2s2p - 2s4s$	$^3P^\circ - ^3S$	2 – 1		691
	200	66.059	0.0 – 1513.677	$2s^2 - 2p(^2P^\circ)3d$	$g^1S - ^1P^\circ$	0 – 1		691
	10	66.358	328.354+X – 1835.611	$2p^2 - 2p(^2P^\circ)4d$	$^3P - ^3P^\circ$	1 – 1		691
	200	66.433	329.759+X – 1835.035+X	$2p^2 - 2p(^2P^\circ)4d$	$^3P - ^3P^\circ$	2 – 2		691
	400	66.498	329.759+X – 1833.564+X	$2p^2 - 2p(^2P^\circ)4d$	$^3P - ^3D^\circ$	2 – 3		691
	100	67.027	0.0 – 1492.669+X	$2s^2 - 2p(^2P^\circ)3d$	$g^1S - ^3P^\circ$	0 – 1	Q	692,375
	200	67.478	361.046 – 1843.384	$2p^2 - 2p(^2P^\circ)4d$	$^1D - ^1P^\circ$	2 – 1		691
	400	67.672	361.046 – 1838.762	$2p^2 - 2p(^2P^\circ)4d$	$^1D - ^1F^\circ$	2 – 3		691
	100	68.193	361.046 – 1827.472	$2p^2 - 2p(^2P^\circ)4d$	$^1D - ^1D^\circ$	2 – 2		691

NA VIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	300	69.120	243.223 – 1689.982	2s2p – 2s4d	$^1P^o - {}^1D$	1 – 2		691
	10	70.741	243.223 – 1656.83	2s2p – 2s4s	$^1P^o - {}^1S$	1 – 0		691
	10	71.386	0.0 – 1400.523+X	$2s^2 - 2p(^2P^o)3s$	$g\,^1S - {}^3P^o$	0 – 1	Q	692,375
	300	74.956	125.913+X – 1460.104+X	$2s2p - 2p(^2P^o)3p$	$^3P^o - {}^3P$	0 – 1		691
	300	74.980	126.643+X – 1460.104+X	$2s2p - 2p(^2P^o)3p$	$^3P^o - {}^3P$	1 – 1		691
	400	75.043	128.247+X – 1460.988+X	$2s2p - 2p(^2P^o)3p$	$^3P^o - {}^3P$	2 – 2		691
	300	75.096	128.247+X – 1460.104+X	$2s2p - 2p(^2P^o)3p$	$^3P^o - {}^3P$	2 – 1		691
	100	75.385	125.913+X – 1452.428+X	$2s2p - 2p(^2P^o)3p$	$^3P^o - {}^3S$	0 – 1		691
	200	75.428	126.643+X – 1452.428+X	$2s2p - 2p(^2P^o)3p$	$^3P^o - {}^3S$	1 – 1		691
	300	75.518	128.247+X – 1452.428+X	$2s2p - 2p(^2P^o)3p$	$^3P^o - {}^3S$	2 – 1		691
	500	76.123	128.247+X – 1441.91+X	$2s2p - 2p(^2P^o)3p$	$^3P^o - {}^3D$	2 – 3		691
	100	76.173	126.643+X – 1439.444+X	$2s2p - 2p(^2P^o)3p$	$^3P^o - {}^3D$	1 – 1		691
	200	76.217	128.247+X – 1440.29+X	$2s2p - 2p(^2P^o)3p$	$^3P^o - {}^3D$	2 – 2		691
	600	77.267	0.0 – 1294.214	$2s^2 - 2s3p$	$g\,^1S - {}^1P^o$	0 – 1		691
	10	80.756	243.223 – 1481.521	$2s2p - 2p(^2P^o)3p$	$^1P^o - {}^1S$	1 – 0		691
	500	81.210	243.223 – 1474.598	$2s2p - 2p(^2P^o)3p$	$^1P^o - {}^1D$	1 – 2		691
	700	83.240	125.913+X – 1327.259+X	2s2p – 2s3d	$^3P^o - {}^3D$	0 – 1		691
	800	83.288	126.643+X – 1327.296+X	2s2p – 2s3d	$^3P^o - {}^3D$	1 – 2		691
	900	83.391	128.247+X – 1327.417+X	2s2p – 2s3d	$^3P^o - {}^3D$	2 – 3		691
	500	84.050	243.223 – 1432.991	$2s2p - 2p(^2P^o)3p$	$^1P^o - {}^1P$	1 – 1		691
	200	85.826	327.527+X – 1492.669+X	$2p^2 - 2p(^2P^o)3d$	$^3P - {}^3P^o$	0 – 1		691
	300	85.861	328.354+X – 1493.027+X	$2p^2 - 2p(^2P^o)3d$	$^3P - {}^3P^o$	1 – 0		691
	300	85.887	328.354+X – 1492.669+X	$2p^2 - 2p(^2P^o)3d$	$^3P - {}^3P^o$	1 – 1		691
	100	85.936	328.354+X – 1492.027+X	$2p^2 - 2p(^2P^o)3d$	$^3P - {}^3P^o$	1 – 2		691
	300	85.992	329.759+X – 1492.669+X	$2p^2 - 2p(^2P^o)3d$	$^3P - {}^3P^o$	2 – 1		691
	500	86.039	329.759+X – 1492.027+X	$2p^2 - 2p(^2P^o)3d$	$^3P - {}^3P^o$	2 – 2		691
	400	86.381	327.527+X – 1485.189+X	$2p^2 - 2p(^2P^o)3d$	$^3P - {}^3D^o$	0 – 1		691
	500	86.417	328.354+X – 1485.481+X	$2p^2 - 2p(^2P^o)3d$	$^3P - {}^3D^o$	1 – 2		691
	600	86.479	329.759+X – 1486.109+X	$2p^2 - 2p(^2P^o)3d$	$^3P - {}^3D^o$	2 – 3		691
	100	86.530	329.759+X – 1485.481+X	$2p^2 - 2p(^2P^o)3d$	$^3P - {}^3D^o$	2 – 2		691
	300	86.758	361.046 – 1513.677	$2p^2 - 2p(^2P^o)3d$	$^1D - {}^1P^o$	2 – 1		691
	700	87.211	361.046 – 1507.69	$2p^2 - 2p(^2P^o)3d$	$^1D - {}^1F^o$	2 – 3		691
	200	89.759	125.913+X – 1240.115+X	2s2p – 2s3s	$^3P^o - {}^3S$	0 – 1		691
	300	89.818	126.643+X – 1240.115+X	2s2p – 2s3s	$^3P^o - {}^3S$	1 – 1		691
	400	89.948	128.247+X – 1240.115+X	2s2p – 2s3s	$^3P^o - {}^3S$	2 – 1		691
	400	90.252	361.046 – 1469.055	$2p^2 - 2p(^2P^o)3d$	$^1D - {}^1D^o$	2 – 2		691
	500	90.536	243.223 – 1347.756	2s2p – 2s3d	$^1P^o - {}^1D$	1 – 2		691
	100	93.120	328.354+X – 1402.237+X	$2p^2 - 2p(^2P^o)3s$	$^3P - {}^3P^o$	1 – 2		691
	10	93.197	327.527+X – 1400.523+X	$2p^2 - 2p(^2P^o)3s$	$^3P - {}^3P^o$	0 – 1		691
	200	93.242	329.759+X – 1402.237+X	$2p^2 - 2p(^2P^o)3s$	$^3P - {}^3P^o$	2 – 2		691
	10	93.339	328.354+X – 1399.718+X	$2p^2 - 2p(^2P^o)3s$	$^3P - {}^3P^o$	1 – 0		691
	400	93.670	446.099 – 1513.677	$2p^2 - 2p(^2P^o)3d$	$^1S - {}^1P^o$	0 – 1		691
	200	93.898	361.046 – 1426.049	$2p^2 - 2p(^2P^o)3s$	$^1D - {}^1P^o$	2 – 1		691
	200	95.551	446.099 – 1492.669+X	$2p^2 - 2p(^2P^o)3d$	$^1S - {}^3P^o$	0 – 1		692,375
	300	98.080	243.223 – 1262.799	2s2p – 2s3s	$^1P^o - {}^1S$	1 – 0		691
	10	102.043	446.099 – 1426.049	$2p^2 - 2p(^2P^o)3s$	$^1S - {}^1P^o$	0 – 1		691
	10	106.703	361.046 – 1298.+Z	$2p^2 - 2s3p$	$^1D - {}^3P^o$	2 – 2	Q	692,375
	100	107.158	361.046 – 1294.214	$2p^2 - 2s3p$	$^1D - {}^1P^o$	2 – 1		691
	10	117.909	446.099 – 1294.214	$2p^2 - 2s3p$	$^1S - {}^1P^o$	0 – 1		691
	35	168.964	1485.189+X – 2076.957+X	$2p(^2P^o)3d - 2p(^2P^o)6p$	$^3D^o - {}^3D$	1 – 1	Q	284,375
	100	411.145	0.0 – 243.223	$2s^2 - 2s2p$	$g\,^1S - {}^1P^o$	0 – 1		691
	10	492.329	126.643+X – 329.759+X	$2s2p - 2p^2$	$^3P^o - {}^3P$	1 – 2		691
		492.79	243.223 – 446.149	$2s2p - 2p^2$	$^1P^o - {}^1S$	1 – 0		250
		495.76	126.643+X – 328.354+X	$2s2p - 2p^2$	$^3P^o - {}^3P$	1 – 1	P	250

NA VIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	496.249	128.247+X – 329.759+X	$2s2p - 2p^2$	$^3P^\circ - ^3P$	2 – 2		691
		499.78	128.247+X – 328.354+X	$2s2p - 2p^2$	$^3P^\circ - ^3P$	2 – 1		250
		789.6	0.0 – 126.643+X	$2s^2 - 2s2p$	$g^1S - ^3P^\circ$	0 – 1		211

SODIUM IX (Na^{8+}), Z = 11
Ground State $1s^22s(^2S_{1/2})$ (3 electrons)
Ionization Potential 2 418 700 cm^{-1}; 299.88 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		11.029	1416.13 – 10483.14	$1s^23p - 1s2p(^1P^\circ)3p$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		283
		11.067	144.038 – 9180.00	$1s^22p - 1s2p^2$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$	P	283
		11.070	146.688 – 9180.00	$1s^22p - 1s2p^2$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$	P	283
		11.090	0.0 – 9017.13	$1s^22s - 1s(2s2p(^1P^\circ))$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	283
		11.092	0.0 – 9015.51	$1s^22s - 1s(2s2p(^1P^\circ))$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	283
		11.154	0.0 – 8965.39	$1s^22s - 1s(2s2p(^3P^\circ))$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	283
		11.157	0.0 – 8962.98	$1s^22s - 1s(2s2p(^3P^\circ))$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	283
		11.170	146.688 – 9099.24	$1s^22p - 1s2p^2$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$	P	283
		11.197	144.038 – 9075.00	$1s^22p - 1s2p^2$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	P	283
		11.199	146.688 – 9076.06	$1s^22p - 1s2p^2$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	283
	10	44.723	0.0 – 2235.886	$1s^22s - 1s^27p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	100	46.090	0.0 – 2169.668	$1s^22s - 1s^26p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	10	47.776	144.038 – 2237.139	$1s^22p - 1s^27d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		691
	100	47.836	146.688 – 2237.165	$1s^22p - 1s^27d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	200	48.553	0.0 – 2059.605	$1s^22s - 1s^25p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	100	49.326	144.038 – 2171.366	$1s^22p - 1s^26d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		691
	200	49.386	146.688 – 2171.553	$1s^22p - 1s^26d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	100	52.116	144.038 – 2062.835	$1s^22p - 1s^25d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		691
	200	52.186	146.688 – 2062.911	$1s^22p - 1s^25d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	1	52.487	146.688 – 2051.922	$1s^22p - 1s^25s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		691
	300	53.860	0.0 – 1856.665	$1s^22s - 1s^24p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	500	58.201	144.038 – 1862.222	$1s^22p - 1s^24d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		691
	600	58.279	146.688 – 1862.572	$1s^22p - 1s^24d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	100	58.954	144.038 – 1840.336	$1s^22p - 1s^24s$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		691
	200	59.042	146.688 – 1840.336	$1s^22p - 1s^24s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		691
	700	70.615	0.0 – 1416.13	$1s^22s - 1s^23p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	600	70.653	0.0 – 1415.368	$1s^22s - 1s^23p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		691
	700	77.764	144.038 – 1429.98	$1s^22p - 1s^23d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		691
	800	77.911	146.688 – 1430.204	$1s^22p - 1s^23d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	500	81.175	144.038 – 1375.944	$1s^22p - 1s^23s$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		691
	500	81.350	146.688 – 1375.944	$1s^22p - 1s^23s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		691
	10	681.72	0.0 – 146.688	$1s^22s - 1s^22p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
		694.27	0.0 – 144.038	$1s^22s - 1s^22p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	250

SODIUM X (Na^{9+}), Z = 11
Ground State $1s^2(^1S_0)$ (2 electrons)
Ionization Potential 11 817 000 cm^{-1}; 1465.13 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		8.686	0. – 11513.	$1s^2 - 1s6p$	$g^1S - {}^1P^o$	0 – 1	P	728
		8.788	0. – 11378.65	$1s^2 - 1s5p$	$g^1S - {}^1P^o$	0 – 1	P	728
		8.983	0. – 11132.39	$1s^2 - 1s4p$	$g^1S - {}^1P^o$	0 – 1	P	728
		8.989	0. – 11124.94	$1s^2 - 1s4p$	$g^1S - {}^3P^o$	0 – 1	P	728
		9.433	0. – 10601.08	$1s^2 - 1s3p$	$g^1S - {}^1P^o$	0 – 1	P	624
		9.449	0. – 10582.95	$1s^2 - 1s3p$	$g^1S - {}^3P^o$	0 – 1	P	728
		10.06	10583.66 – 20520.4	1s3p – 2p3p	${}^3P^o - {}^3D$	2 – 3	P	283
		10.119	9027.98 – 18910.4	1s2s – 2s2p	${}^1S - {}^1P^o$	0 – 1	P	283
		10.157	8935.34 – 18780.8	1s2s – 2s2p	${}^3S - {}^3P^o$	1 – 2	P	283
		10.170	9025.26 – 18855.7	$1s2p - 2p^2$	${}^3P^o - {}^3P$	2 – 2	P	283
		10.193	9088.70 – 18899.3	$1s2p - 2p^2$	${}^1P^o - {}^1D$	1 – 2	P	283
		11.0027	0. – 9088.70	$1s^2 - 1s2p$	$g^1S - {}^1P^o$	0 – 1	P	283
		11.0830	0. – 9022.87	$1s^2 - 1s2p$	$g^1S - {}^3P^o$	0 – 1	P	283
		11.16						709
		11.192	0. – 8935.34	$1s^2 - 1s2s$	$g^1S - {}^3S$	0 – 1	F,P	375,918
		60.67	8935.34 – 10583.66	1s2s – 1s3p	${}^3S - {}^3P^o$	1 – 2	P	375
		63.57	9027.98 – 10601.08	1s2s – 1s3p	${}^1S - {}^1P^o$	0 – 1	P	375
		109.28	10597.45+R – 11512.5+R	1s3d – 1s6f	${}^3D - {}^3F^o$	3 – 4	P	087
		109.36	10598.60+K – 11513.0+K	1s3d – 1s6f	${}^1D - {}^1F^o$	2 – 3	P	087
		128.05	10597.45+R – 11378.4+R	1s3d – 1s5f	${}^3D - {}^3F^o$	3 – 4	P	087
		128.16	10598.60+K – 11378.9+K	1s3d – 1s5f	${}^1D - {}^1F^o$	2 – 3	P	087
		176.59	10558.95 – 11125.24	1s3s – 1s4p	${}^3S - {}^3P^o$	1 – 2	P	375
		182.16	10583.43 – 11132.39	1s3s – 1s4p	${}^1S - {}^1P^o$	0 – 1	P	375
		187.25	10597.45+R – 11131.5+R	1s3d – 1s4f	${}^3D - {}^3F^o$	3 – 4	P	087
		187.49	10598.60+K – 11132.0+K	1s3d – 1s4f	${}^1D - {}^1F^o$	2 – 3	P	087
		1112.10	8935.34 – 9025.26	1s2s – 1s2p	${}^3S - {}^3P^o$	1 – 2	P	375
		1646.90	9027.98 – 9088.70	1s2s – 1s2p	${}^1S - {}^1P^o$	0 – 1	P	375

SODIUM XI (Na^{10+}), Z = 11
Ground State $1s(^2S_{1/2})$ (1 electron)
Ionization Potential 13 297 672 cm^{-1}; 1648.71 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		7.596	0.0 – 13164.8566930	1s – 10p	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309
		7.614	0.0 – 13133.6984790	1s – 9p	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309
		7.639	0.0 – 13090.1370250	1s – 8p	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309
		7.677	0.0 – 13026.5965960	1s – 7p	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309
		7.735	0.0 – 12928.6931200	1s – 6p	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309
		7.833	0.0 – 12766.3167880	1s – 5p	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309
	10	8.021	0.0 – 12467.3861500	1s – 4p	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309,375
	20	8.459	0.0 – 11821.5591600	1s – 3p	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309,375
	10	8.460	0.0 – 11819.9646600	1s – 3p	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{1}{2}$	P	309,375
	65	10.023	0.0 – 9976.8659200	1s – 2p	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309,375
	35	10.029	0.0 – 9971.4851000	1s – 2p	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{1}{2}$	P	309,375
		31.317	9971.7140000 – 13164.8566930	2s – 10p	${}^2S - {}^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	309

NA XI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		31.368	9976.8659200 – 13164.8709246	2p – 10d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		31.626	9971.7140000 – 13133.6984790	2s – 9p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		31.677	9976.8659200 – 13133.7180030	2p – 9d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		32.068	9971.7140000 – 13090.1370250	2s – 8p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		32.120	9976.8659200 – 13090.1648230	2p – 8d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		32.734	9971.7140000 – 13026.5965960	2s – 7p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		32.789	9976.8659200 – 13026.6380930	2p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		33.818	9971.7140000 – 12928.6931200	2s – 6p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		33.877	9976.8659200 – 12928.7590200	2p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		35.783	9971.7140000 – 12766.3167880	2s – 5p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		35.848	9976.8659200 – 12766.4306720	2p – 5d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		40.069	9971.7140000 – 12467.3861500	2s – 4p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		40.149	9976.8659200 – 12467.6085860	2p – 4d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		54.059	9971.7140000 – 11821.5591600	2s – 3p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		54.194	9976.8659200 – 11822.0863770	2p – 3d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		74.359	11820.0331400 – 13164.8566930	3s – 10p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		74.443	11821.5591600 – 13164.8709246	3p – 10d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		74.472	11822.0863770 – 13164.8780487	3d – 10f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		76.123	11820.0331400 – 13133.6984790	3s – 9p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		76.210	11821.5591600 – 13133.7180030	3p – 9d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		76.240	11822.0863770 – 13133.7277750	3d – 9f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		78.734	11820.0331400 – 13090.1370250	3s – 8p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		78.827	11821.5591600 – 13090.1648230	3p – 8d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		78.859	11822.0863770 – 13090.1787380	3d – 8f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		82.880	11820.0331400 – 13026.5965960	3s – 7p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		82.982	11821.5591600 – 13026.6380930	3p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		83.017	11822.0863770 – 13026.6588640	3d – 7f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		90.199	11820.0331400 – 12928.6931200	3s – 6p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		90.318	11821.5591600 – 12928.7590200	3p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		90.358	11822.0863770 – 12928.7920030	3d – 6f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		105.676	11820.0331400 – 12766.3167880	3s – 5p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		105.835	11821.5591600 – 12766.4306720	3p – 5d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		105.887	11822.0863770 – 12766.4876670	3d – 5f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		143.243	12466.7425500 – 13164.8566930	4s – 10p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		143.372	12467.3861500 – 13164.8709246	4p – 10d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		143.417	12467.6085860 – 13164.8780487	4d – 10f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		149.935	12466.7425500 – 13133.6984790	4s – 9p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		150.075	12467.3861500 – 13133.7180030	4p – 9d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		150.123	12467.6085860 – 13133.7277750	4d – 9f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		154.475	11820.0331400 – 12467.3861500	3s – 4p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		154.787	11821.5591600 – 12467.6085860	3p – 4d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		154.886	11822.0863770 – 12467.7198970	3d – 4f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		160.412	12466.7425500 – 13090.1370250	4s – 8p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		160.571	12467.3861500 – 13090.1648230	4p – 8d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		160.624	12467.6085860 – 13090.1787380	4d – 8f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		178.618	12466.7425500 – 13026.5965960	4s – 7p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		178.810	12467.3861500 – 13026.6380930	4p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		178.875	12467.6085860 – 13026.6588640	4d – 7f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		216.473	12466.7425500 – 12928.6931200	4s – 6p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		216.744	12467.3861500 – 12928.7590200	4p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		216.833	12467.6085860 – 12928.7920030	4d – 6f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		250.709	12765.9873400 – 13164.8566930	5s – 10p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		250.907	12766.3167880 – 13164.8709246	5p – 10d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		250.974	12766.4306720 – 13164.8780487	5d – 10f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309

NA XI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		271.953	12765.9873400 – 13133.6984790	5s – 9p	$^{2}S - {}^{2}P^{\circ}$	$\frac{1}{2} - \frac{3}{2}$	P	309
		272.182	12766.3167880 – 13133.7180030	5p – 9d	$^{2}P^{\circ} - {}^{2}D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		272.259	12766.4306720 – 13133.7277750	5d – 9f	$^{2}D - {}^{2}F^{\circ}$	$\frac{5}{2} - \frac{7}{2}$	P	309
		308.500	12765.9873400 – 13090.1370250	5s – 8p	$^{2}S - {}^{2}P^{\circ}$	$\frac{1}{2} - \frac{3}{2}$	P	309
		308.787	12766.3167880 – 13090.1648230	5p – 8d	$^{2}P^{\circ} - {}^{2}D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		308.882	12766.4306720 – 13090.1787380	5d – 8f	$^{2}D - {}^{2}F^{\circ}$	$\frac{5}{2} - \frac{7}{2}$	P	309
		333.807	12466.7425500 – 12766.3167880	4s – 5p	$^{2}S - {}^{2}P^{\circ}$	$\frac{1}{2} - \frac{3}{2}$	P	309
		334.398	12467.3861500 – 12766.4306720	4p – 5d	$^{2}P^{\circ} - {}^{2}D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		334.584	12467.6085860 – 12766.4876670	4d – 5f	$^{2}D - {}^{2}F^{\circ}$	$\frac{5}{2} - \frac{7}{2}$	P	309
		383.716	12765.9873400 – 13026.5965960	5s – 7p	$^{2}S - {}^{2}P^{\circ}$	$\frac{1}{2} - \frac{3}{2}$	P	309
		384.141	12766.3167880 – 13026.6380930	5p – 7d	$^{2}P^{\circ} - {}^{2}D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		384.278	12766.4306720 – 13026.6588640	5d – 7f	$^{2}D - {}^{2}F^{\circ}$	$\frac{5}{2} - \frac{7}{2}$	P	309
		614.606	12765.9873400 – 12928.6931200	5s – 6p	$^{2}S - {}^{2}P^{\circ}$	$\frac{1}{2} - \frac{3}{2}$	P	309
		615.604	12766.3167880 – 12928.7590200	5p – 6d	$^{2}P^{\circ} - {}^{2}D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		615.910	12766.4306720 – 12928.7920030	5d – 6f	$^{2}D - {}^{2}F^{\circ}$	$\frac{5}{2} - \frac{7}{2}$	P	309

MAGNESIUM I (Mg^{0+}), Z = 12
Ground State $1s^22s^22p^63s^2(^1S_0)$ (12 electrons)
Ionization Potential 61 671.20 cm^{-1}; 7.646 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		200.29	0.0 – 499.29	$2p^63s^2$ – $2p^5(^2P^\circ)(3s3p(^3P^\circ))5p$	$g^1S - {}^1P^\circ$	0 – 1	A	894
		203.15	0.0 – 492.25	$2p^63s^2$ – $2p^5(^2P^\circ)(3s3p(^3P^\circ))4p$	$g^1S - {}^1P^\circ$	0 – 1	A	894
		204.22	0.0 – 489.67	$2p^63s^2 - 2p^53p^23d$	$g^1S - X^\circ$	0 – 1	A	894
		209.84	0.0 – 476.55	$2p^63s^2 - 2p^5(^2P^\circ)(3s3p^2(^2P))$	$g^1S - {}^1P^\circ$	0 – 1	A	894
		213.53	0.0 – 468.32	$2p^63s^2 - 2p^5(^2P^\circ)(3s3p^2(^2S))$	$g^1S - {}^1P^\circ$	0 – 1	A	894
		216.22	0.0 – 462.49	$2p^63s^2 - 2p^53s^2(^2P^\circ_{1/2})6d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	894
		216.68	0.0 – 461.51	$2p^63s^2 - 2p^53s^2(^2P^\circ_{3/2})7d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	894
		217.21	0.0 – 460.38	$2p^63s^2 - 2p^53s^2(^2P^\circ_{1/2})5d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	894
		217.37	0.0 – 460.05	$2p^63s^2 - 2p^53s^2(^2P^\circ_{1/2})6s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	894
		218.19	0.0 – 458.32	$2p^63s^2 - 2p^53s^2(^2P^\circ_{3/2})5d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	894
		218.42	0.0 – 457.83	$2p^63s^2 - 2p^53s^2(^2P^\circ_{3/2})6s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	894
		218.74	0.0 – 457.14	$2p^63s^2 - 2p^5(^2P^\circ)(3s3p^2(^2S))$	$g^1S - {}^3P^\circ$	0 – 1	A	894
		219.04	0.0 – 456.54	$2p^63s^2 - 2p^53s^2(^2P^\circ_{1/2})4d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	894
		219.28	0.0 – 456.04	$2p^63s^2 - 2p^53s^2(^2P^\circ_{1/2})5s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	894
		220.03	0.0 – 454.48	$2p^63s^2 - 2p^53s^2(^2P^\circ_{3/2})4d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	894
		220.33	0.0 – 453.86	$2p^63s^2 - 2p^53s^2(^2P^\circ_{3/2})5s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	894
		222.03	0.0 – 450.39	$2p^63s^2 - 2p^53s^2(^2P^\circ_{1/2})3d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	894
		222.67	0.0 – 449.10	$2p^63s^2$ – $2p^5(^2P^\circ)(3s3p^2(^2D))$	$g^1S - {}^1P^\circ$	0 – 1	A	894
		223.45	0.0 – 447.53	$2p^63s^2 - 2p^53s^2(^2P^\circ_{3/2})3d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	894
		223.74	0.0 – 446.94	$2p^63s^2$ – $2p^5(^2P^\circ)(3s3p^2(^2D))$	$g^1S - {}^3P^\circ$	0 – 1	A	894
		225.18	0.0 – 444.09	$2p^63s^2 - 2p^53s^2(^2P^\circ_{1/2})4s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	894
		225.54	0.0 – 443.38	$2p^63s^2 - 2p^5(^2P^\circ)(3s3p^2(^4P))$	$g^1S - {}^3P^\circ$	0 – 1	A	894
		226.26	0.0 – 441.97	$2p^63s^2 - 2p^53s^2(^2P^\circ_{3/2})4s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	894
		1625.22	0.0 – 61.53073	$3s^2 - 3s29p$	$g^1S - {}^1P^\circ$	0 – 1	A	145
		1625.50	0.0 – 61.52012	$3s^2 - 3s28p$	$g^1S - {}^1P^\circ$	0 – 1	A	145
		1625.81	0.0 – 61.50824	$3s^2 - 3s27p$	$g^1S - {}^1P^\circ$	0 – 1	A	145
		1626.151	0.0 – 61.49490	$3s^2 - 3s26p$	$g^1S - {}^1P^\circ$	0 – 1	A	96
		1626.36	0.0 – 61.4870	$3s^2 - 3s26p$	$g^1S - {}^3P^\circ$	0 – 1	A	145
		1626.549	0.0 – 61.47987	$3s^2 - 3s25p$	$g^1S - {}^1P^\circ$	0 – 1	A	96
		1626.79	0.0 – 61.4707	$3s^2 - 3s25p$	$g^1S - {}^3P^\circ$	0 – 1	A	145
		1627.000	0.0 – 61.46282	$3s^2 - 3s24p$	$g^1S - {}^1P^\circ$	0 – 1	A	96
		1627.27	0.0 – 61.4526	$3s^2 - 3s24p$	$g^1S - {}^3P^\circ$	0 – 1	A	145
		1627.514	0.0 – 61.44341	$3s^2 - 3s23p$	$g^1S - {}^1P^\circ$	0 – 1	A	96
		1627.82	0.0 – 61.4319	$3s^2 - 3s23p$	$g^1S - {}^3P^\circ$	0 – 1	A	145
		1628.104	0.0 – 61.42114	$3s^2 - 3s22p$	$g^1S - {}^1P^\circ$	0 – 1	A	96
		1628.46	0.0 – 61.4077	$3s^2 - 3s22p$	$g^1S - {}^3P^\circ$	0 – 1	A	145
		1628.786	0.0 – 61.39543	$3s^2 - 3s21p$	$g^1S - {}^1P^\circ$	0 – 1	A	96
		1629.21	0.0 – 61.3794	$3s^2 - 3s21p$	$g^1S - {}^3P^\circ$	0 – 1	A	145
		1629.579	0.0 – 61.36555	$3s^2 - 3s20p$	$g^1S - {}^1P^\circ$	0 – 1	A	96
		1629.6	0. – 61.363	$3s^2 - 3s20p$	$g^1S - {}^3P^\circ$	0 – 1	P	375
		1630.509	0.0 – 61.33055	$3s^2 - 3s19p$	$g^1S - {}^1P^\circ$	0 – 1	A	96
		1630.6	0.0 – 61.327	$3s^2 - 3s19p$	$g^1S - {}^3P^\circ$	0 – 1		375
		1631.609	0.0 – 61.28919	$3s^2 - 3s18p$	$g^1S - {}^1P^\circ$	0 – 1	A	96
		1631.7	0.0 – 61.285	$3s^2 - 3s18p$	$g^1S - {}^3P^\circ$	0 – 1		375
		1632.924	0.0 – 61.23983	$3s^2 - 3s17p$	$g^1S - {}^1P^\circ$	0 – 1	A	96
		1633.1	0. – 61.235	$3s^2 - 3s17p$	$g^1S - {}^3P^\circ$	0 – 1	P	375
		1634.515	0.0 – 61.18024	$3s^2 - 3s16p$	$g^1S - {}^1P^\circ$	0 – 1	A	96
		1634.7	0.0 – 61.175	$3s^2 - 3s16p$	$g^1S - {}^3P^\circ$	0 – 1		375
		1636.465	0.0 – 61.10734	$3s^2 - 3s15p$	$g^1S - {}^1P^\circ$	0 – 1	A	96
		1636.6	0.0 – 61.101	$3s^2 - 3s15p$	$g^1S - {}^3P^\circ$	0 – 1		375

MG I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		1638.890	0.0 – 61.01693	$3s^2 - 3s14p$	$g^1S - {}^1P^o$	0 – 1	A	96
		1639.1	0.0 – 61.008	$3s^2 - 3s14p$	$g^1S - {}^3P^o$	0 – 1		375
		1641.957	0.0 – 60.90293	$3s^2 - 3s13p$	$g^1S - {}^1P^o$	0 – 1	A	96
		1642.2	0.0 – 60.894	$3s^2 - 3s13p$	$g^1S - {}^3P^o$	0 – 1		375
	0	1645.921	0.0 – 60.75627	$3s^2 - 3s12p$	$g^1S - {}^1P^o$	0 – 1	A	96,831
		1646.3	0.0 – 60.742	$3s^2 - 3s12p$	$g^1S - {}^3P^o$	0 – 1		375
	10	1651.163	0.0 – 60.56339	$3s^2 - 3s11p$	$g^1S - {}^1P^o$	0 – 1	A	96,831
		1651.7	0.0 – 60.544	$3s^2 - 3s11p$	$g^1S - {}^3P^o$	0 – 1		375
	20	1658.312	0.0 – 60.30227	$3s^2 - 3s10p$	$g^1S - {}^1P^o$	0 – 1	A	96,831
		1659.0	0.0 – 60.276	$3s^2 - 3s10p$	$g^1S - {}^3P^o$	0 – 1		375
	50	1668.419	0.0 – 59.93697	$3s^2 - 3s9p$	$g^1S - {}^1P^o$	0 – 1	A	96,831
		1669.51	0.0 – 59.89786	$3s^2 - 3s9p$	$g^1S - {}^3P^o$	0 – 1		375
	100	1683.406	0.0 – 59.40336	$3s^2 - 3s8p$	$g^1S - {}^1P^o$	0 – 1	A	96,831
		1685.13	0.0 – 59.34251	$3s^2 - 3s8p$	$g^1S - {}^3P^o$	0 – 1		375
	150	1707.056	0.0 – 58.58039	$3s^2 - 3s7p$	$g^1S - {}^1P^o$	0 – 1	A	96,831
		1710.07	0.0 – 58.477020	$3s^2 - 3s7p$	$g^1S - {}^3P^o$	0 – 1		375
	200	1747.790	0.0 – 57.215126	$3s^2 - 3s6p$	$g^1S - {}^1P^o$	0 – 1	A	96,831
		1753.84	0.0 – 57.017724	$3s^2 - 3s6p$	$g^1S - {}^3P^o$	0 – 1		375
	300	1827.935	0.0 – 54.706536	$3s^2 - 3s5p$	$g^1S - {}^1P^o$	0 – 1	A	96,831
		1843.32	0.0 – 54.250086	$3s^2 - 3s5p$	$g^1S - {}^3P^o$	0 – 1		375

MAGNESIUM II (Mg^{1+}), Z = 12
Ground State $1s^22s^22p^63s(^2S_{1/2})$ (11 electrons)
Ionization Potential 121 267.61 cm^{-1}; 15.035 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		184.09	0.0 – 543.21	$2p^63s - 2p^53s(^1P^o_1)7d$	$g^2S - 15^o$	$\frac{1}{2} - \frac{3}{2}$	A	894
		184.31	0.0 – 542.56	$2p^63s - 2p^53s(^3P^o_1)9d$	$g^2S - 14^o$	$\frac{1}{2} - \frac{3}{2}$	A	894
		184.68	0.0 – 541.48	$2p^63s - 2p^53s(^3P^o_2)9d$	$g^2S - 13^o$	$\frac{1}{2} - \frac{3}{2}$	A	894
		184.81	0.0 – 541.10	$2p^63s - 2p^53s(^3P^o_1)8d$	$g^2S - 12^o$	$\frac{1}{2} - \frac{3}{2}$	A	894
		185.26	0.0 – 539.78	$2p^63s - 2p^53s(^1P^o_1)6d$	$g^2S - 11^o$	$\frac{1}{2} - \frac{3}{2}$	A	894
		185.59	0.0 – 538.82	$2p^63s - 2p^53s(^3P^o_1)7d$	$g^2S - 10^o$	$\frac{1}{2} - \frac{3}{2}$	A	894
		185.98	0.0 – 537.69	$2p^63s - 2p^53s(^3P^o_2)7d$	$g^2S - 9^o$	$\frac{1}{2} - \frac{3}{2}$	A	894
		186.47	0.0 – 536.28	$2p^63s - 2p^53s(^3P^o_0)6d$	$g^2S - 8^o$	$\frac{1}{2} - \frac{3}{2}$	A	894
		186.84	0.0 – 535.22	$2p^63s - 2p^53s(^3P^o_1)6d$	$g^2S - 7^o$	$\frac{1}{2} - \frac{3}{2}$	A	894
		187.19	0.0 – 534.22	$2p^63s - 2p^53s(^3P^o_2)6d$	$g^2S - 2[3]^o$	$\frac{1}{2} - \frac{3}{2}$	A	894
		187.38	0.0 – 533.67	$2p^63s - 2p^53s(^3P^o_2)6d$	$g^2S - 2[2]^o$	$\frac{1}{2} - \frac{3}{2}$	A	894
		188.54	0.0 – 530.39	$2p^63s - 2p^53s(^3P^o_0)5d$	$g^2S - 0[2]^o$	$\frac{1}{2} - \frac{3}{2}$	A	894
		188.91	0.0 – 529.35	$2p^63s - 2p^53s(^3P^o_1)5d$	$g^2S - 1[2]^o$	$\frac{1}{2} - \frac{3}{2}$	A	894
		189.01	0.0 – 529.07	$2p^63s - 2p^53s(^3P^o_1)5d$	$g^2S - 1[3]^o$	$\frac{1}{2} - \frac{3}{2}$	A	894
		189.23	0.0 – 528.46	$2p^63s - 2p^53s(^3P^o_2)5d$	$g^2S - 2[3]^o$	$\frac{1}{2} - \frac{3}{2}$	A	894
		189.37	0.0 – 528.07	$2p^63s - 2p^53s(^3P^o_2)5d$	$g^2S - 2[2]^o$	$\frac{1}{2} - \frac{3}{2}$	A	894
		191.30	0.0 – 522.74	$2p^63s - 2p^53s(^1P^o_1)4d$	$g^2S - 1[3]^o$	$\frac{1}{2} - \frac{3}{2}$	A	894
		191.56	0.0 – 522.03	$2p^63s - 2p^53s(^1P^o_1)4d$	$g^2S - 1[2]^o$	$\frac{1}{2} - \frac{3}{2}$	A	894
		191.65	0.0 – 521.78	$2p^63s - 2p^53s(^1P^o_1)5s$	$g^2S - 1[1]^o$	$\frac{1}{2} - \frac{3}{2}$	A	894
		192.40	0.0 – 519.75	$2p^63s - 2p^53s(^3P^o_2)4d$	$g^2S - 2[3]^o$	$\frac{1}{2} - \frac{3}{2}$	A	894
		192.55	0.0 – 519.35	$2p^63s - 2p^53s(^3P^o_0)4d$	$g^2S - 0[2]^o$	$\frac{1}{2} - \frac{3}{2}$	A	894
		192.84	0.0 – 518.56	$2p^63s - 2p^53s(^3P^o_1)5s$	$g^2S - 1[1]^o$	$\frac{1}{2} - \frac{3}{2}$	A	894
		193.09	0.0 – 517.89	$2p^63s - 2p^53s(^3P^o_1)4d$	$g^2S - 1[3]^o$	$\frac{1}{2} - \frac{3}{2}$	A	894
		193.31	0.0 – 517.3	$2p^63s - 2p^53s(^3P^o_1)4d$	$g^2S - 1[2]^o$	$\frac{1}{2} - \frac{3}{2}$	A	894

MG II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		193.40	0.0 – 517.06	$2p^63s - 2p^53s(^3P^o_2)5s$	$g^2S - 2[1]^o$	$\frac{1}{2}-\frac{3}{2}$	A	894
		193.64	0.0 – 516.42	$2p^63s - 2p^53s(^3P^o_2)4d$	$g^2S - 2[2]^o$	$\frac{1}{2}-\frac{3}{2}$	A	894
		197.76	0.0 – 505.78	$2p^63s - 2p^5(^2P^o)(3p^2(^3P))$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	A	894
		199.31	0.0 – 501.73	$2p^63s - 2p^5(^2P^o)(3p^2(^1S))$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	A	894
		202.00	0.0 – 495.05	$2p^63s - 2p^5(^2P^o)(3s4d(^1D))$	$g^2S - 6^o$	$\frac{1}{2}-\frac{3}{2}$	A	894
		202.27	0.0 – 494.39	$2p^63s - 2p^5(^2P^o)(3s4d(^1D))$	$g^2S - 5^o$	$\frac{1}{2}-\frac{3}{2}$	A	894
		202.51	0.0 – 493.80	$2p^63s - 2p^5(^2P^o)(3s4d(^1D))$	$g^2S - 4^o$	$\frac{1}{2}-\frac{3}{2}$	A	894
		202.94	0.0 – 492.76	$2p^63s - 2p^5(^2P^o)(3s4d(^3D))$	$g^2S - 3^o$	$\frac{1}{2}-\frac{3}{2}$	A	894
		203.42	0.0 – 491.59	$2p^63s - 2p^5(^2P^o)(3s4d(^3D))$	$g^2S - 2^o$	$\frac{1}{2}-\frac{3}{2}$	A	894
		203.53	0.0 – 491.33	$2p^63s - 2p^5(^2P^o)(3s4d(^3D))$	$g^2S - 1^o$	$\frac{1}{2}-\frac{3}{2}$	A	894
		209.09	0.0 – 478.26	$2p^63s - 2p^5(^2P^o)(3s4s(^1S))$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{1}{2}$	A	894
		209.43	0.0 – 477.49	$2p^63s - 2p^5(^2P^o)(3s4s(^1S))$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	A	894
		247.14	0.0 – 404.63	$2p^63s - 2p^53s^2$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{1}{2}$	A	894
		248.47	0.0 – 402.46	$2p^63s - 2p^53s^2$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	A	894
		884.6967	0.0 – 113.03309	$2p^63s - 2p^68p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		592
		884.7189	0.0 – 113.03025	$2p^63s - 2p^68p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{1}{2}$		592
		907.3752	0.0 – 110.20799	$2p^63s - 2p^67p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		592
		907.4115	0.0 – 110.20358	$2p^63s - 2p^67p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{1}{2}$		592
	80	946.7032	0.0 – 105.62972	$2p^63s - 2p^66p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		592,831
	90	946.7694	0.0 – 105.62234	$2p^63s - 2p^66p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{1}{2}$		592,831
	140	1025.9681	0.0 – 97.46892	$2p^63s - 2p^65p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		592,831
	120	1026.1133	0.0 – 97.45512	$2p^63s - 2p^65p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{1}{2}$		592,831
	250	1239.9252	0.0 – 80.65002	$2p^63s - 2p^64p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		592,831
	200	1240.3947	0.0 – 80.61950	$2p^63s - 2p^64p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{1}{2}$		592,831
	60	1248.511	35.66931 – 115.76499	$2p^63p - 2p^610s$	${}^2P^o - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		831
	80	1249.932	35.76088 – 115.76499	$2p^63p - 2p^610s$	${}^2P^o - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		831
	80	1271.2388	35.66931 – 114.33274	$2p^63p - 2p^68d$	${}^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		592,831
	90	1271.9402	35.66931 – 114.28936	$2p^63p - 2p^69s$	${}^2P^o - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		592,831
	80	1272.7212	35.76088 – 114.33268	$2p^63p - 2p^68d$	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		592,831
	110	1273.4232	35.76088 – 114.28936	$2p^63p - 2p^69s$	${}^2P^o - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		592,831
	110	1306.7139	35.66931 – 112.19716	$2p^63p - 2p^67d$	${}^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		592,831
	120	1307.8754	35.66931 – 112.12920	$2p^63p - 2p^68s$	${}^2P^o - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		592,831
	120	1308.2809	35.76088 – 112.19706	$2p^63p - 2p^67d$	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		592,831
	140	1309.4434	35.76088 – 112.12920	$2p^63p - 2p^68s$	${}^2P^o - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		592,831
	140	1365.5442	35.66931 – 108.90019	$2p^63p - 2p^66d$	${}^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		592,831
	150	1367.2568	35.76088 – 108.90003	$2p^63p - 2p^66d$	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		592,831
	150	1367.7082	35.66931 – 108.78433	$2p^63p - 2p^67s$	${}^2P^o - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		592,831
	180	1369.4231	35.76088 – 108.78433	$2p^63p - 2p^67s$	${}^2P^o - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		592,831
	200	1475.9998	35.66931 – 103.42000	$2p^63p - 2p^65d$	${}^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		592,831
	250	1478.0037	35.76088 – 103.41970	$2p^63p - 2p^65d$	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		592,831
	200	1480.8797	35.66931 – 103.19675	$2p^63p - 2p^66s$	${}^2P^o - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		592,831
	300	1482.8903	35.76088 – 103.19675	$2p^63p - 2p^66s$	${}^2P^o - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		592,831
	400	1734.8523	35.66931 – 93.31111	$2p^63p - 2p^64d$	${}^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		592,831
	500	1737.6283	35.76088 – 93.31059	$2p^63p - 2p^64d$	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		592,831
	400	1750.6637	35.66931 – 92.79051	$2p^63p - 2p^65s$	${}^2P^o - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		592,831
	500	1753.4744	35.76088 – 92.79051	$2p^63p - 2p^65s$	${}^2P^o - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		592,831

MAGNESIUM III (Mg^{2+}), Z = 12
Ground State $1s^22s^22p^6(^1S_0)$ (10 electrons)
Ionization Potential 646 402 cm^{-1}; 80.144 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		106.30	0.0 – 940.73	$2s^22p^6 - 2s2p^68p$	$g\,^1S - {}^1P^\circ$	0 – 1	A	440
		107.05	0.0 – 934.14	$2s^22p^6 - 2s2p^67p$	$g\,^1S - {}^1P^\circ$	0 – 1	A	440
		108.08	0.0 – 925.24	$2s^22p^6 - 2s2p^66p$	$g\,^1S - {}^1P^\circ$	0 – 1	A	440
		110.12	0.0 – 908.10	$2s^22p^6 - 2s2p^65p$	$g\,^1S - {}^1P^\circ$	0 – 1	A	440
		114.34	0.0 – 874.58	$2s^22p^6 - 2s2p^64p$	$g\,^1S - {}^1P^\circ$	0 – 1	A	440
		126.49	0.0 – 790.58	$2s^22p^6 - 2s2p^63p$	$g\,^1S - {}^1P^\circ$	0 – 1	A	440
	10	157.701	0.0 – 634.111	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})9d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		426
	10	157.981	0.0 – 632.988	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})8d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		426
	20	158.522	0.0 – 630.827	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})8d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		426
	20	159.198	0.0 – 628.149	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})7d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		426
	40	159.741	0.0 – 626.013	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})7d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		426
	50	161.108	0.0 – 620.702	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})6d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		426
	50	161.655	0.0 – 618.601	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})6d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		426
	20	163.562	0.0 – 611.389	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})6s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		426
	10	164.133	0.0 – 609.262	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})6s$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		426
	80	164.394	0.0 – 608.295	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})5d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		426
	80	164.949	0.0 – 606.248	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})5d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		426
	10	165.192	0.0 – 605.356	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})5d$	$g\,^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		426
	70	169.1406	0.0 – 591.2207	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})5s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		426
	60	169.7411	0.0 – 589.1268	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})5s$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		426
	150	170.8050	0.0 – 585.4662	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})4d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		426
	150	171.3946	0.0 – 583.4505	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		426
	40	171.8984	0.0 – 581.7347	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4d$	$g\,^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		426
	150	182.2415	0.0 – 548.7207	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})4s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		426
	120	182.9717	0.0 – 546.5316	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4s$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		426
4	200	186.5149	0.0 – 536.1520	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})3d$	$g\,^1S - {}^1P^\circ$	0 – 1		426
3	200	187.1977	0.0 – 534.1977	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3d$	$g\,^1S - {}^3D^\circ$	0 – 1		426
	100	188.5296	0.0 – 530.4206	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3d$	$g\,^1S - {}^3P^\circ$	0 – 1		426
2	1000	231.7333	0.0 – 431.5300	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})3s$	$g\,^1S - {}^1P^\circ$	0 – 1		426
1	800	234.2631	0.0 – 426.8681	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3s$	$g\,^1S - {}^3P^\circ$	0 – 1		426
	4	721.592	431.5300 – 570.1128	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{1/2})4p$	${}^1P^\circ - \frac{1}{2}[\frac{1}{2}]$	1 – 0		002
	7	725.347	426.8681 – 564.7316	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{1/2})4p$	${}^3P^\circ - \frac{1}{2}[\frac{1}{2}]$	1 – 1		002
	20	728.337	425.6403 – 562.9395	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	${}^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		002
	20	732.625	425.6403 – 562.1361	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	${}^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		002
	60	734.441	425.6403 – 561.7987	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	${}^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		002
	30	736.563	426.8681 – 562.6342	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	${}^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		002
	40	739.276	426.8681 – 562.1361	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	${}^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		002
	20	741.932	427.8521 – 562.6342	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	${}^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	0 – 1		002
	40	744.342	425.6403 – 559.9871	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	${}^3P^\circ - \frac{3}{2}[\frac{1}{2}]$	2 – 1		002
	12	750.745	431.5300 – 564.7316	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{1/2})4p$	${}^1P^\circ - \frac{1}{2}[\frac{1}{2}]$	1 – 1		002
	40	751.121	431.5300 – 564.6646	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{1/2})4p$	${}^1P^\circ - \frac{1}{2}[\frac{3}{2}]$	1 – 2		002
	40	751.207	426.8681 – 559.9871	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	${}^3P^\circ - \frac{3}{2}[\frac{1}{2}]$	1 – 1		002
	12	753.247	431.5300 – 564.2898	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{1/2})4p$	${}^1P^\circ - \frac{1}{2}[\frac{3}{2}]$	1 – 1		002
	7	756.808	427.8521 – 559.9871	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	${}^3P^\circ - \frac{3}{2}[\frac{1}{2}]$	0 – 1		002
	7	760.981	431.5300 – 562.9395	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	${}^1P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		002
	12	762.756	431.5300 – 562.6342	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	${}^1P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		002
	20	765.655	431.5300 – 562.1361	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	${}^1P^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		002
	4	821.369	467.3785 – 589.1268	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})5s$	${}^3S - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		002
	7	823.788	467.3785 – 588.7689	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})5s$	${}^3S - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		002
	4	865.935	475.5029 – 590.9842	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})5s$	${}^3D - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		002
	40	871.720	474.0532 – 588.7689	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})5s$	${}^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	3 – 2		002
	20	873.580	474.6550 – 589.1268	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})5s$	${}^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		002
	7	876.312	474.6550 – 588.7689	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})5s$	${}^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		002
	7	878.847	477.4357 – 591.2207	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})5s$	${}^1D - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		002

MG III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	7	880.107	475.5029 – 589.1268	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})5s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		002
	7	886.158	478.3745 – 591.2207	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})5s$	$^1P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		002
	20	889.888	478.8461 – 591.2207	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})5s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		002
	7	894.744	479.4560 – 591.2207	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})5s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		002
	12	895.324	477.4357 – 589.1268	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})5s$	$^1D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		002
	4	896.640	479.4560 – 590.9842	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})5s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		002
	12	898.207	477.4357 – 588.7689	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})5s$	$^1D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		002
	7	902.923	478.3745 – 589.1268	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})5s$	$^1P - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		002
	7	909.730	478.8461 – 588.7689	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})5s$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		002
	4	1229.389	467.3785 – 548.7207	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3S - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		002
	4	1239.827	467.3785 – 548.0344	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3S - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		002
	7	1263.375	467.3785 – 546.5316	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3S - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		002
	2	1271.784	530.4206 – 609.0505	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{1/2})5f$	$^3P^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		002
	100	1274.831	467.3785 – 545.8204	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3S - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		002
	2	1280.702	530.9629 – 609.0452	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{1/2})5f$	$^3P^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		002
		1306.59	530.1782 – 606.7131	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	0 – 1		002
	2	1308.654	530.4206 – 606.8347	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		002
	2	1310.271	532.7257 – 609.0454	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{1/2})5f$	$^3F^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		002
	7	1310.633	530.4206 – 606.7194	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		002
	2	1310.720	530.4206 – 606.7131	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		002
		1314.50	532.9712 – 609.0457	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{1/2})5f$	$^1F^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		002
	12	1318.078	530.9629 – 606.8307	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		002
	4	1320.022	530.9629 – 606.7194	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		002
	4	1327.512	531.5630 – 606.8918	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	4 – 4		002
	60	1329.583	531.5630 – 606.7745	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 5		002
	4	1332.310	531.8331 – 606.8911	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 3		002
	30	1334.359	531.8331 – 606.7754	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		002
	2	1335.951	534.1977 – 609.0505	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{1/2})5f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		002
		1346.46	534.7769 – 609.0454	$2s^22p^5(^2P^\circ_{1/2})3d - 2s^22p^5(^2P^\circ_{1/2})5f$	$^1D^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		002
	7	1348.342	532.7257 – 606.8911	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		002
	12	1349.132	534.9236 – 609.0454	$2s^22p^5(^2P^\circ_{1/2})3d - 2s^22p^5(^2P^\circ_{1/2})5f$	$^3D^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 3		002
	2	1349.365	532.7257 – 606.8347	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		002
	12	1350.156	474.6550 – 548.7207	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3D - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		002
		1352.80	532.9712 – 606.8918	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^1F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		002
	7	1353.804	535.1796 – 609.0454	$2s^22p^5(^2P^\circ_{1/2})3d - 2s^22p^5(^2P^\circ_{1/2})5f$	$^3D^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		002
	2	1353.915	532.9712 – 606.8307	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^1F^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		002
	4	1371.769	536.1520 – 609.0505	$2s^22p^5(^2P^\circ_{1/2})3d - 2s^22p^5(^2P^\circ_{1/2})5f$	$^1P^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		002
	7	1376.713	534.1977 – 606.8347	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		002
	40	1378.700	475.5029 – 548.0344	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3D - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		002
	2	1378.891	534.1977 – 606.7194	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		002
	2	1386.691	534.7769 – 606.8911	$2s^22p^5(^2P^\circ_{1/2})3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^1D^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		002
	4	1389.504	534.9236 – 606.8918	$2s^22p^5(^2P^\circ_{1/2})3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		002
	200	1391.271	474.6550 – 546.5316	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		002
	350	1393.391	474.0532 – 545.8204	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	3 – 2		002
	4	1395.642	535.1796 – 606.8307	$2s^22p^5(^2P^\circ_{1/2})3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		002
		1402.82	477.4357 – 548.7207	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^1D - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		002
	80	1405.170	474.6550 – 545.8204	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		002
	40	1407.880	475.5029 – 546.5316	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		002
	20	1421.538	478.3745 – 548.7207	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^1P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		002
	7	1422.118	475.5029 – 545.8204	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		002
	100	1431.136	478.8461 – 548.7207	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		002
	40	1435.550	478.3745 – 548.0344	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^1P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		002
	4	1439.770	479.2653 – 548.7207	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		002
	60	1443.738	479.4560 – 548.7207	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		002

MG III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	40	1446.254	426.8681 – 496.0121	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{1/2})3p$	$^3P^\circ - {}^1S$	1 – 0		002
	30	1447.260	477.4357 – 546.5316	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^1D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		002
	20	1458.172	479.4560 – 548.0344	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		002
	20	1462.305	477.4357 – 545.8204	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^1D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		002
	12	1467.188	478.3745 – 546.5316	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^1P - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		002
	4	1474.898	467.3785 – 535.1796	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})3d$	$^3S - {}^3D^\circ$	1 – 2		002
	2	1477.416	478.8461 – 546.5316	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		002
		1482.67	478.3745 – 545.8204	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^1P - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		002
	12	1486.624	479.2653 – 546.5316	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		002
	12	1493.097	478.8461 – 545.8204	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		002
	7	1506.826	479.4560 – 545.8204	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		002
		1550.82	431.5300 – 496.0121	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{1/2})3p$	$^1P^\circ - {}^1S$	1 – 0		002
	400	1572.712	467.3785 – 530.9629	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3S - {}^3P^\circ$	1 – 2		002
	200	1586.237	467.3785 – 530.4206	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3S - {}^3P^\circ$	1 – 1		002
	60	1592.360	467.3785 – 530.1782	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3S - {}^3P^\circ$	1 – 0		002
	4	1626.093	474.6550 – 536.1520	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})3d$	$^3D - {}^1P^\circ$	2 – 1		002
	4	1635.946	474.0532 – 535.1796	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})3d$	$^3D - {}^3D^\circ$	3 – 2		002
	20	1642.826	474.0532 – 534.9236	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})3d$	$^3D - {}^3D^\circ$	3 – 3		002
	4	1648.822	475.5029 – 536.1520	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})3d$	$^3D - {}^1P^\circ$	1 – 1		002
	12	1652.218	474.6550 – 535.1796	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})3d$	$^3D - {}^3D^\circ$	2 – 2		002
	12	1659.244	474.6550 – 534.9236	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})3d$	$^3D - {}^3D^\circ$	2 – 3		002
	4	1663.287	474.6550 – 534.7769	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})3d$	$^3D - {}^1D^\circ$	2 – 2		002
	2	1675.710	475.5029 – 535.1796	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})3d$	$^3D - {}^3D^\circ$	1 – 2		002
	4	1679.470	474.6550 – 534.1977	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3D - {}^3D^\circ$	2 – 1		002
	250	1687.091	475.5029 – 534.7769	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})3d$	$^3D - {}^1D^\circ$	1 – 2		002
	250	1697.282	474.0532 – 532.9712	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3D - {}^1F^\circ$	3 – 3		002
	7	1703.108	477.4357 – 536.1520	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})3d$	$^1D - {}^1P^\circ$	2 – 1		002
	20	1703.731	475.5029 – 534.1977	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3D - {}^3D^\circ$	1 – 1		002
	4	1704.368	474.0532 – 532.7257	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3D - {}^3F^\circ$	3 – 2		002
	12	1714.783	474.6550 – 532.9712	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3D - {}^1F^\circ$	2 – 3		002
	100	1722.041	474.6550 – 532.7257	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3D - {}^3F^\circ$	2 – 2		002
	40	1730.733	474.0532 – 531.8331	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3D - {}^3F^\circ$	3 – 3		002
	7	1730.778	478.3745 – 536.1520	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})3d$	$^1P - {}^1P^\circ$	1 – 1		002
	20	1731.786	477.4357 – 535.1796	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})3d$	$^1D - {}^3D^\circ$	2 – 2		002
	600	1738.835	474.0532 – 531.5630	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3D - {}^3F^\circ$	3 – 4		002
	7	1739.475	477.4357 – 534.9236	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})3d$	$^1D - {}^3D^\circ$	2 – 3		002
	4	1743.947	477.4357 – 534.7769	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})3d$	$^1D - {}^1D^\circ$	2 – 2		002
	2	1745.009	478.8461 – 536.1520	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})3d$	$^3P - {}^1P^\circ$	2 – 1		002
	200	1747.561	475.5029 – 532.7257	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3D - {}^3F^\circ$	1 – 2		002
	500	1748.932	474.6550 – 531.8331	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3D - {}^3F^\circ$	2 – 3		002
	4	1757.176	474.0532 – 530.9629	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3D - {}^3P^\circ$	3 – 2		002
	20	1757.888	479.2653 – 536.1520	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{1/2})3d$	$^3P - {}^1P^\circ$	0 – 1		002
		1761.74	477.4357 – 534.1977	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^1D - {}^3D^\circ$	2 – 1		002
	30	1763.805	479.4560 – 536.1520	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})3d$	$^3P - {}^1P^\circ$	1 – 1		002
	350	1772.982	478.3745 – 534.7769	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})3d$	$^1P - {}^1D^\circ$	1 – 2		002
	2	1773.959	530.4206 – 586.7916	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3P^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		002
	4	1775.942	474.6550 – 530.9629	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3D - {}^3P^\circ$	2 – 2		002
	550	1783.253	478.8461 – 534.9236	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})3d$	$^3P - {}^3D^\circ$	2 – 3		002
	12	1787.927	478.8461 – 534.7769	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})3d$	$^3P - {}^1D^\circ$	2 – 2		002
	20	1791.375	478.3745 – 534.1977	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^1P - {}^3D^\circ$	1 – 1		002
		1791.40	530.9629 – 586.7851	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3P^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		002
	4	1793.207	474.6550 – 530.4206	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3D - {}^3P^\circ$	2 – 1		002
	300	1794.582	479.4560 – 535.1796	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})3d$	$^3P - {}^3D^\circ$	1 – 2		002
	350	1800.662	477.4357 – 532.9712	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^1D - {}^1F^\circ$	2 – 3		002

MG III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	4	1803.087	475.5029 – 530.9629	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3D - {}^3P^\circ$	1 – 2		002
	2	1819.954	531.8331 – 586.7795	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		002
	20	1820.421	479.2653 – 534.1977	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3P - {}^3D^\circ$	0 – 1		002
	2	1820.896	475.5029 – 530.4206	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3D - {}^3P^\circ$	1 – 1		002
	2	1826.750	479.4560 – 534.1977	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3P - {}^3D^\circ$	1 – 1		002
	2	1828.974	475.5029 – 530.1782	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3D - {}^3P^\circ$	1 – 0		002
	12	1838.336	477.4357 – 531.8331	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^1D - {}^3F^\circ$	2 – 3		002
	7	1839.878	478.3745 – 532.7257	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^1P - {}^3F^\circ$	1 – 2		002
	7	1846.121	530.1782 – 584.3457	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	0 – 1		002
	7	1846.707	530.4206 – 584.5711	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		002
	2	1847.561	478.8461 – 532.9712	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3P - {}^1F^\circ$	2 – 3		002
	2	1849.591	532.7257 – 586.7916	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 2		002
	7	1850.060	532.7257 – 586.7779	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		002
	4	1854.139	530.4206 – 584.3541	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		002
		1855.99	478.8461 – 532.7257	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3P - {}^3F^\circ$	2 – 2		002
	250	1858.186	425.6403 – 479.4560	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{1/2})3p$	$^3P^\circ - {}^3P$	2 – 1		002
	7	1858.451	532.9712 – 586.7795	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^1F^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		002
	1	1865.388	530.9629 – 584.5711	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		002
	12	1865.636	530.9629 – 584.5639	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		002
	40	1868.225	477.4357 – 530.9629	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^1D - {}^3P^\circ$	2 – 2		002
	4	1872.956	530.9629 – 584.3541	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		002
	1	1873.268	530.9629 – 584.3457	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 1		002
	200	1879.492	425.6403 – 478.8461	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{1/2})3p$	$^3P^\circ - {}^3P$	2 – 2		002
	7	1882.308	531.5630 – 584.6892	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	4 – 4		002
	2	1886.764	531.5630 – 584.5639	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	4 – 3		002
	12	1887.308	477.4357 – 530.4206	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^1D - {}^3P^\circ$	2 – 1		002
	40	1890.380	531.5630 – 584.4624	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 5		002
	7	1891.970	531.8331 – 584.6879	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 3		002
	20	1896.304	425.6403 – 478.3745	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{1/2})3p$	$^3P^\circ - {}^1P$	2 – 1		002
	7	1897.226	496.0121 – 548.7207	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		002
	20	1900.043	531.8331 – 584.4635	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		002
	4	1901.360	534.1977 – 586.7916	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		002
	20	1901.572	426.8681 – 479.4560	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{1/2})3p$	$^3P^\circ - {}^3P$	1 – 1		002
	100	1908.500	426.8681 – 479.2653	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{3/2})3p$	$^3P^\circ - {}^3P$	1 – 0		002
	20	1918.777	478.8461 – 530.9629	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3P - {}^3P^\circ$	2 – 2		002
	2	1921.374	478.3745 – 530.4206	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^1P - {}^3P^\circ$	1 – 1		002
	2	1922.540	534.7769 – 586.7916	$2s^22p^5(^2P^\circ_{1/2})3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^1D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 2		002
	1	1922.788	534.7769 – 586.7851	$2s^22p^5(^2P^\circ_{1/2})3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^1D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		002
	20	1923.042	534.7769 – 586.7779	$2s^22p^5(^2P^\circ_{1/2})3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^1D^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		002
	200	1923.896	426.8681 – 478.8461	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{1/2})3p$	$^3P^\circ - {}^3P$	1 – 2		002
	30	1924.479	532.7257 – 584.6879	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		002
	2	1928.198	534.9236 – 586.7851	$2s^22p^5(^2P^\circ_{1/2})3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	3 – 3		002
	30	1928.424	534.9236 – 586.7795	$2s^22p^5(^2P^\circ_{1/2})3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		002
	4	1928.811	532.7257 – 584.5711	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		002
	1	1929.080	532.7257 – 584.5639	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		002
	7	1930.374	478.3745 – 530.1782	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^1P - {}^3P^\circ$	1 – 0		002
	250	1930.672	425.6403 – 477.4357	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{3/2})3p$	$^3P^\circ - {}^1D$	2 – 2		002
	40	1933.563	532.9712 – 584.6892	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		002
	1	1937.539	535.1796 – 586.7916	$2s^22p^5(^2P^\circ_{1/2})3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 2		002
		1937.78	535.1796 – 586.7851	$2s^22p^5(^2P^\circ_{1/2})3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		002
	150	1937.843	427.8521 – 479.4560	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{1/2})3p$	$^3P^\circ - {}^3P$	0 – 1		002
	7	1938.249	532.9712 – 584.5639	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		002
	7	1938.936	478.8461 – 530.4206	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3P - {}^3P^\circ$	2 – 1		002
	12	1941.500	479.4560 – 530.9629	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3P - {}^3P^\circ$	1 – 2		002

MG III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	4	1942.036	532.9712 – 584.4635	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		002
	7	1954.831	479.2653 – 530.4206	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3P - {}^3P^\circ$	0 – 1		002
	7	1962.145	479.4560 – 530.4206	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3P - {}^3P^\circ$	1 – 1		002
	4	1971.514	479.4560 – 530.1782	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})3d$	$^3P - {}^3P^\circ$	1 – 0		002
	12	1974.737	536.1520 – 586.7916	$2s^22p^5(^2P^\circ_{1/2})3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^1P^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		002
	60	1977.554	426.8681 – 477.4357	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{3/2})3p$	$^3P^\circ - {}^1D$	1 – 2		002
	80	1979.327	427.8521 – 478.3745	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{1/2})3p$	$^3P^\circ - {}^1P$	0 – 1		002
		1979.43	496.0121 – 546.5316	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		002
	12	1985.173	534.1977 – 584.5711	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		002
	7	1993.759	534.1977 – 584.3541	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		002
	4	1994.089	534.1977 – 584.3457	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		002

MAGNESIUM IV (Mg^{3+}), Z = 12
Ground State $1s^22s^22p^5(^2P^\circ_{3/2})$ (9 electrons)
Ionization Potential 881 190 cm^{-1}; 109.25 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	112.914						692
	80	118.164	0. – 846.281	$2s^22p^5 - 2s^22p^4(^1S)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		861
	100	118.424	0. – 844.424	$2s^22p^5 - 2s^22p^4(^1D)5d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		861
	80	118.476	2.2280 – 846.281	$2s^22p^5 - 2s^22p^4(^1S)4d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		861
	60	118.487	0. – 843.974	$2s^22p^5 - 2s^22p^4(^1D)5d$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		861
	80	118.737	2.2280 – 844.424	$2s^22p^5 - 2s^22p^4(^1D)5d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		861
	80	118.792	2.2280 – 844.036	$2s^22p^5 - 2s^22p^4(^1D)5d$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		861
	160	118.810	2.2280 – 843.974	$2s^22p^5 - 2s^22p^4(^1D)5d$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		861
	10	120.086						692
	100	121.542	0. – 822.761	$2s^22p^5 - 2s^22p^4(^1D)5s$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		861
	20	121.873	2.2280 – 822.754	$2s^22p^5 - 2s^22p^4(^1D)5s$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		861
	40	123.169	0. – 811.892	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		861
	160	123.266	0. – 811.254	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		861
	120	123.367	0. – 810.59	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		861
	80	123.377	0. – 810.492	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		861
	60	123.401	0. – 810.366	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - {}^4F$	$\frac{3}{2} - \frac{5}{2}$		861
	140	123.417	0. – 810.249	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - {}^4F$	$\frac{3}{2} - \frac{3}{2}$		861
	100	123.508	2.2280 – 811.892	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		861
	100	123.567	0. – 809.274	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		861
	140	123.590	0. – 809.127	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - {}^2F$	$\frac{3}{2} - \frac{5}{2}$		861
	10	123.613	0. – 808.965	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{1}{2}$		861
	40	123.708	2.2280 – 810.59	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		861
	80	123.722	2.2280 – 810.492	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		861
	40	123.761	2.2280 – 810.249	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - {}^4F$	$\frac{1}{2} - \frac{3}{2}$		861
	10	123.910	2.2280 – 809.274	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - {}^4P$	$\frac{1}{2} - \frac{3}{2}$		861
	20	123.958	2.2280 – 808.965	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - {}^4P$	$\frac{1}{2} - \frac{1}{2}$		861
	120	124.417	0. – 803.748	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		861
	60	124.527	0. – 803.048	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		861
	140	124.541	0. – 802.948	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		861
	100	124.640	0. – 802.311	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		861
	160	124.652	0. – 802.233	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		861
	100	124.763	2.2280 – 803.748	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		861
	120	124.872	2.2280 – 803.048	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		861
	120	124.987	2.2280 – 802.311	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		861
	100	124.999	2.2280 – 802.233	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		861
	100	125.462	0. – 797.056	$2s^22p^5 - 2s^22p^4(^1S)4s$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		861

MG IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	80	125.813	2.2280 – 797.056	$2s^22p^5 - 2s^22p^4(^1S)4s$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		861
	20	126.602	0. – 789.878	$2s^22p^5 - 2s^22p^4(^3P)5s$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		861
	80	126.799	0. – 788.644	$2s^22p^5 - 2s^22p^4(^3P)5s$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		861
	40	126.960	2.2280 – 789.878	$2s^22p^5 - 2s^22p^4(^3P)5s$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		861
	60	127.013	0. – 787.315	$2s^22p^5 - 2s^22p^4(^3P)5s$	$g^2P^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		861
	20	127.161	2.2280 – 788.644	$2s^22p^5 - 2s^22p^4(^3P)5s$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		861
	20	127.375	2.2280 – 787.315	$2s^22p^5 - 2s^22p^4(^3P)5s$	$g^2P^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$		861
	100	129.711	0. – 770.948	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		861
	320	129.857	0. – 770.078	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		861
	220	129.966	0. – 769.432	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		861
	180	129.975	0. – 769.379	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		861
	200	130.086	2.2280 – 770.948	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		861
	180	130.118	0. – 768.533	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		861
	140	130.246	0. – 767.781	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		861
	180	130.295	0. – 767.489	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^4F$	$\frac{3}{2}-\frac{5}{2}$		861
	180	130.344	2.2280 – 769.432	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		861
	180	130.354	2.2280 – 769.379	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		861
	60	130.537	2.2280 – 768.294	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^4F$	$\frac{1}{2}-\frac{3}{2}$		861
	80	130.624	2.2280 – 767.781	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$		861
	20	130.700	2.2280 – 767.339	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^4P$	$\frac{1}{2}-\frac{1}{2}$		861
	100	132.123	0. – 756.8661	$2s^22p^5 - 2s^22p^4(^1D)4s$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		861
	60	132.509	2.2280 – 756.8758	$2s^22p^5 - 2s^22p^4(^1D)4s$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		861
	400	132.814	0. – 752.9317	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		861
	180	133.197	2.2280 – 752.9974	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		861
	120	137.966	0. – 724.8163	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		861
	200	138.261	0. – 723.2673	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		861
	160	138.392	2.2280 – 724.8163	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		861
	160	138.689	2.2280 – 723.2673	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		861
	20	138.935	0. – 719.7848	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		861
	20	139.117	2.2280 – 721.0436	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$		861
	140	139.989	0. – 714.3364	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		861
	200	140.119	0. – 713.6825	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		861
	340	140.173	0. – 713.4110	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		861
	200	140.425	0. – 712.1245	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		861
	220	140.474	0. – 711.8805	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		861
	220	140.523	0. – 711.6327	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		861
	220	140.558	2.2280 – 713.6825	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		861
	220	140.867	2.2280 – 712.1245	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		861
	160	140.915	2.2280 – 711.8805	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		861
	220	140.964	2.2280 – 711.6327	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		861
	220	146.526	0. – 682.4728	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		861
	200	146.837	0. – 681.0233	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		861
	400	146.954	0. – 680.4932	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		861
	220	147.006	2.2280 – 682.4728	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		861
	220	147.052	0. – 680.0337	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		861
	220	147.254	0. – 679.1008	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		861
	200	147.321	2.2280 – 681.0233	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		861
	360	147.406	0. – 678.4283	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		861
	80	147.497	0. – 677.9800	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		861
	340	147.535	2.2280 – 680.0337	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		861
	160	147.629	0. – 677.3639	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4F$	$\frac{3}{2}-\frac{3}{2}$		861
	220	147.749	0. – 676.8264	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4F$	$\frac{3}{2}-\frac{5}{2}$		861
	180	147.884	2.2280 – 678.4283	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$		861
	20	147.981	2.2280 – 677.9800	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4P$	$\frac{1}{2}-\frac{1}{2}$		861

MG IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	148.117	2.2280 – 677.3639	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4F$	$\frac{1}{2}-\frac{3}{2}$		861
	20	148.904	0. – 671.5694	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4D$	$\frac{3}{2}-\frac{1}{2}$		861
	60	148.959	0. – 671.3241	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4D$	$\frac{3}{2}-\frac{3}{2}$		861
	40	149.025	0. – 671.0288	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4D$	$\frac{3}{2}-\frac{5}{2}$		861
	40	149.400	2.2280 – 671.5694	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4D$	$\frac{1}{2}-\frac{1}{2}$		861
	20	149.456	2.2280 – 671.3241	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4D$	$\frac{1}{2}-\frac{3}{2}$		861
	280	160.228	0. – 624.1096	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		861
	220	160.802	2.2280 – 624.1096	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		861
	500	171.655	0. – 582.5624	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		861
	400	172.311	2.2280 – 582.5784	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		861
	240	180.069	0. – 555.3419	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		861
	500	180.615	0. – 553.6661	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		861
	400	180.794	2.2280 – 555.3419	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		861
	280	181.344	2.2280 – 553.6661	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		861
	220	183.439	0. – 545.1376	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		861
	140	183.915	2.2280 – 545.9554	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{1}{2}$		861
	80	184.190	2.2280 – 545.1376	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{3}{2}$		861
	40	269.282	311.5315 – 682.8895	$2s2p^6 - 2s^22p^4(^1S)3p$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		861
	100	295.395	311.5315 – 650.0616	$2s2p^6 - 2s^22p^4(^1D)3p$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		861
	1000	320.9943	0. – 311.5315	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		861
	800	323.3076	2.2280 – 311.5315	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		861
	80	800.409	597.0657 – 722.0018	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4P^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		861
	40	803.072	596.5218 – 721.0436	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4P^\circ - {}^4P$	$\frac{5}{2}-\frac{3}{2}$		861
	40	809.975	597.5836 – 721.0436	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4P^\circ - {}^4P$	$\frac{1}{2}-\frac{3}{2}$		861
	80	811.276	596.5218 – 719.7848	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4P^\circ - {}^4P$	$\frac{5}{2}-\frac{5}{2}$		861
	60	814.873	597.0657 – 719.7848	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4P^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		861
	40	840.366	637.8797 – 756.8758	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)4s$	$^2F^\circ - {}^2D$	$\frac{5}{2}-\frac{3}{2}$		861
	60	842.087	638.1129 – 756.8661	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)4s$	$^2F^\circ - {}^2D$	$\frac{7}{2}-\frac{5}{2}$		861
	40	852.232	604.6629 – 722.0018	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4D^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		861
	80	854.407	604.0031 – 721.0436	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4D^\circ - {}^4P$	$\frac{5}{2}-\frac{3}{2}$		861
	40	854.936	605.0335 – 722.0018	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4D^\circ - {}^4P$	$\frac{1}{2}-\frac{1}{2}$		861
	80	857.289	603.1381 – 719.7848	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4D^\circ - {}^4P$	$\frac{7}{2}-\frac{5}{2}$		861
	20	861.991	605.0335 – 721.0436	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4D^\circ - {}^4P$	$\frac{1}{2}-\frac{3}{2}$		861
	40	863.698	604.0031 – 719.7848	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4D^\circ - {}^4P$	$\frac{5}{2}-\frac{5}{2}$		861
	60	865.722	609.3058 – 724.8163	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		861
	80	866.735	607.8917 – 723.2673	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		861
	20	868.635	604.6629 – 719.7848	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4D^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		861
	40	877.486	609.3058 – 723.2673	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		861
	40	890.354	612.5016 – 724.8163	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		861
	40	890.604	610.9832 – 723.2673	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		861
	40	891.006	644.6434 – 756.8758	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)4s$	$^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		861
	40	892.218	644.7864 – 756.8661	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)4s$	$^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		861
	40	893.869	612.9435 – 724.8163	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^2S^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		861
	60	902.812	612.5016 – 723.2673	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		861
	20	911.011	612.2324 – 722.0018	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		861
	80	919.025	612.2324 – 721.0436	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		861
	60	929.774	612.2324 – 719.7848	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		861
	40	936.288	650.0616 – 756.8661	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)4s$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		861
	20	945.342	651.0939 – 756.8758	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)4s$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		861
	80	1008.763	612.5016 – 711.6327	$2s^22p^4(^3P)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		861
	100	1026.406	553.6661 – 651.0939	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		861
	100	1037.395	553.6661 – 650.0616	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		861
	100	1044.366	555.3419 – 651.0939	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^2P - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		861
	80	1055.752	555.3419 – 650.0616	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^2P - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		861

MG IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	160	1210.967	596.5218 – 679.1008	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^o - ^4P$	$\frac{5}{2} - \frac{5}{2}$		861
	160	1218.992	597.0657 – 679.1008	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^o - ^4P$	$\frac{3}{2} - \frac{5}{2}$		861
	180	1220.900	596.5218 – 678.4283	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^o - ^4P$	$\frac{5}{2} - \frac{3}{2}$		861
	80	1229.066	597.0657 – 678.4283	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^o - ^4P$	$\frac{3}{2} - \frac{3}{2}$		861
	200	1235.873	597.0657 – 677.9800	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^o - ^4P$	$\frac{3}{2} - \frac{1}{2}$		861
	220	1236.936	597.5836 – 678.4283	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^o - ^4P$	$\frac{1}{2} - \frac{3}{2}$		861
	140	1243.840	597.5836 – 677.9800	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^o - ^4P$	$\frac{1}{2} - \frac{1}{2}$		861
	120	1307.9	637.8797 – 714.3364	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2F^o - ^2F$	$\frac{5}{2} - \frac{5}{2}$		861
	240	1311.650	638.1129 – 714.3528	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2F^o - ^2F$	$\frac{7}{2} - \frac{7}{2}$		861
	140	1311.930	638.1129 – 714.3364	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2F^o - ^2F$	$\frac{7}{2} - \frac{5}{2}$		861
	140	1331.592	604.0031 – 679.1008	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^o - ^4P$	$\frac{5}{2} - \frac{5}{2}$		861
	200	1336.850	596.5218 – 671.3241	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^o - ^4D$	$\frac{5}{2} - \frac{3}{2}$		861
	300	1342.163	596.5218 – 671.0288	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^o - ^4D$	$\frac{5}{2} - \frac{5}{2}$		861
	160	1345.643	603.1381 – 677.4519	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^o - ^2F$	$\frac{7}{2} - \frac{7}{2}$		861
	500	1346.543	596.5218 – 670.7861	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^o - ^4D$	$\frac{5}{2} - \frac{7}{2}$		861
	300	1346.633	597.0657 – 671.3241	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^o - ^4D$	$\frac{3}{2} - \frac{3}{2}$		861
	260	1351.620	597.5836 – 671.5694	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^o - ^4D$	$\frac{1}{2} - \frac{1}{2}$		861
	320	1352.020	597.0657 – 671.0288	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^o - ^4D$	$\frac{3}{2} - \frac{5}{2}$		861
	80	1355.651	604.6629 – 678.4283	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^o - ^4P$	$\frac{3}{2} - \frac{3}{2}$		861
	260	1356.108	597.5836 – 671.3241	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^o - ^4D$	$\frac{1}{2} - \frac{3}{2}$		861
	160	1361.493	604.0031 – 677.4519	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^o - ^2F$	$\frac{5}{2} - \frac{7}{2}$		861
	140	1362.504	605.0335 – 678.4283	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^o - ^4P$	$\frac{1}{2} - \frac{3}{2}$		861
	20	1366.733	609.3058 – 682.4728	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^o - ^2P$	$\frac{3}{2} - \frac{3}{2}$		861
	280	1371.033	603.1381 – 676.0753	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^o - ^4F$	$\frac{7}{2} - \frac{7}{2}$		861
	260	1373.187	604.0031 – 676.8264	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^o - ^4F$	$\frac{5}{2} - \frac{5}{2}$		861
	240	1375.497	604.6629 – 677.3639	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^o - ^4F$	$\frac{3}{2} - \frac{3}{2}$		861
	140	1377.373	607.8917 – 680.4932	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^o - ^2D$	$\frac{5}{2} - \frac{5}{2}$		861
	320	1382.544	605.0335 – 677.3639	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^o - ^4F$	$\frac{1}{2} - \frac{3}{2}$		861
	400	1384.425	603.1381 – 675.3702	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^o - ^4F$	$\frac{7}{2} - \frac{9}{2}$		861
	320	1385.740	604.6629 – 676.8264	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^o - ^4F$	$\frac{3}{2} - \frac{5}{2}$		861
	120	1386.155	607.8917 – 680.0337	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^o - ^2D$	$\frac{5}{2} - \frac{3}{2}$		861
	340	1387.494	604.0031 – 676.0753	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^o - ^4F$	$\frac{5}{2} - \frac{7}{2}$		861
	100	1394.356	609.3058 – 681.0233	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^o - ^2P$	$\frac{3}{2} - \frac{1}{2}$		861
	20	1398.795	610.9832 – 682.4728	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2P^o - ^2P$	$\frac{1}{2} - \frac{3}{2}$		861
	320	1404.663	637.8797 – 709.0712	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2F^o - ^2G$	$\frac{5}{2} - \frac{7}{2}$		861
	360	1409.336	638.1129 – 709.0681	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2F^o - ^2G$	$\frac{7}{2} - \frac{9}{2}$		861
	120	1413.868	609.3058 – 680.0337	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^o - ^2D$	$\frac{3}{2} - \frac{3}{2}$		861
	180	1418.378	607.8917 – 678.3951	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^o - ^2F$	$\frac{5}{2} - \frac{5}{2}$		861
	160	1425.597	682.8513 – 752.9974	$2s^22p^4(^1S)3p - 2s^22p^4(^1S)3d$	$^2P^o - ^2D$	$\frac{1}{2} - \frac{3}{2}$		861
	220	1427.710	682.8895 – 752.9317	$2s^22p^4(^1S)3p - 2s^22p^4(^1S)3d$	$^2P^o - ^2D$	$\frac{3}{2} - \frac{5}{2}$		861
	140	1429.166	612.5016 – 682.4728	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2P^o - ^2P$	$\frac{3}{2} - \frac{3}{2}$		861
	200	1432.767	609.3058 – 679.1008	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^o - ^4P$	$\frac{3}{2} - \frac{5}{2}$		861
	260	1434.866	644.6434 – 714.3364	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2D^o - ^2F$	$\frac{3}{2} - \frac{5}{2}$		861
	300	1437.51	644.7864 – 714.3528	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2D^o - ^2F$	$\frac{5}{2} - \frac{7}{2}$		861
	340	1437.61	607.8917 – 677.4519	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^o - ^2F$	$\frac{5}{2} - \frac{7}{2}$		861
		1437.8	644.7864 – 714.3364	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2D^o - ^2F$	$\frac{5}{2} - \frac{5}{2}$		861
	300	1438.244	612.9435 – 682.4728	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2S^o - ^2P$	$\frac{1}{2} - \frac{3}{2}$		861
	280	1447.395	609.3058 – 678.3951	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^o - ^2F$	$\frac{3}{2} - \frac{5}{2}$		861
	160	1448.217	610.9832 – 680.0337	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2P^o - ^2D$	$\frac{1}{2} - \frac{3}{2}$		861
	160	1448.456	644.6434 – 713.6825	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2D^o - ^2D$	$\frac{3}{2} - \frac{3}{2}$		861
	40	1451.457	644.7864 – 713.6825	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2D^o - ^2D$	$\frac{5}{2} - \frac{3}{2}$		861
	100	1454.171	644.6434 – 713.4110	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2D^o - ^2D$	$\frac{3}{2} - \frac{5}{2}$		861
	200	1457.212	644.7864 – 713.4110	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2D^o - ^2D$	$\frac{5}{2} - \frac{5}{2}$		861
	200	1459.39	612.5016 – 681.0233	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2P^o - ^2P$	$\frac{3}{2} - \frac{1}{2}$	P	861

MG IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	260	1459.521	582.5784 – 651.0939	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		861
	300	1459.605	543.7204 – 612.2324	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		861
	220	1466.635	607.8917 – 676.0753	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^\circ - ^4F$	$\frac{5}{2}-\frac{7}{2}$		861
	80	1468.868	612.9435 – 681.0233	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2S^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		861
	240	1470.777	612.5016 – 680.4932	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		861
	200	1472.963	603.1381 – 671.0288	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4D$	$\frac{7}{2}-\frac{5}{2}$		861
	300	1478.240	603.1381 – 670.7861	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4D$	$\frac{7}{2}-\frac{7}{2}$		861
	320	1481.490	582.5624 – 650.0616	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		861
	180	1481.840	582.5784 – 650.0616	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		861
	220	1485.421	604.0031 – 671.3241	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4D$	$\frac{5}{2}-\frac{3}{2}$		861
	20	1487.265	644.6434 – 711.8805	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		861
	320	1490.433	545.1376 – 612.2324	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		861
	240	1491.968	604.0031 – 671.0288	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4D$	$\frac{5}{2}-\frac{5}{2}$		861
	180	1494.624	604.6629 – 671.5694	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4D$	$\frac{3}{2}-\frac{1}{2}$		861
	280	1495.482	612.2324 – 679.1008	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		861
	120	1495.985	644.7864 – 711.6327	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		861
	180	1497.388	604.0031 – 670.7861	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4D$	$\frac{5}{2}-\frac{7}{2}$		861
	120	1500.118	604.6629 – 671.3241	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4D$	$\frac{3}{2}-\frac{3}{2}$		861
	180	1501.513	612.5016 – 679.1008	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		861
	200	1502.942	605.0335 – 671.5694	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4D$	$\frac{1}{2}-\frac{1}{2}$		861
	160	1508.516	605.0335 – 671.3241	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4D$	$\frac{1}{2}-\frac{3}{2}$		861
	280	1508.821	545.9554 – 612.2324	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		861
	280	1510.670	612.2324 – 678.4283	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		861
	100	1517.596	612.5016 – 678.3951	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2P^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		861
	280	1520.967	612.2324 – 677.9800	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		861
	140	1578.537	650.0616 – 713.4110	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		861
	80	1597.738	651.0939 – 713.6825	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		861
	320	1607.108	582.5624 – 644.7864	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		861
	200	1607.514	582.5784 – 644.7864	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		861
	140	1610.799	582.5624 – 644.6434	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		861
	300	1611.215	582.5784 – 644.6434	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		861
	100	1617.627	650.0616 – 711.8805	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		861
	120	1624.136	650.0616 – 711.6327	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		861
	80	1638.522	651.0939 – 712.1245	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		861
	180	1640.892	543.7204 – 604.6629	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{3}{2}$		861
	40	1651.837	651.0939 – 711.6327	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		861
	300	1658.851	543.7204 – 604.0031	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		861
	220	1669.574	545.1376 – 605.0335	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{1}{2}$		861
	360	1679.960	545.1376 – 604.6629	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		861
	500	1683.003	543.7204 – 603.1381	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		861
	340	1692.675	545.9554 – 605.0335	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{1}{2}$		861
	400	1698.784	545.1376 – 604.0031	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		861
	300	1699.654	553.6661 – 612.5016	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		861
	240	1701.262	624.1096 – 682.8895	$2s^22p^4(^1S)3s - 2s^22p^4(^1S)3p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		861
	200	1702.367	624.1096 – 682.8513	$2s^22p^4(^1S)3s - 2s^22p^4(^1S)3p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		861
	320	1703.357	545.9554 – 604.6629	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		861
	260	1736.067	555.3419 – 612.9435	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^2P - ^2S^\circ$	$\frac{1}{2}-\frac{1}{2}$		861
	280	1744.674	553.6661 – 610.9832	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		861
	240	1749.480	555.3419 – 612.5016	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		861
	220	1797.271	553.6661 – 609.3058	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		861
	340	1800.167	582.5624 – 638.1129	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		861
	120	1807.746	582.5624 – 637.8797	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		861
	320	1808.286	582.5784 – 637.8797	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		861
	320	1844.151	553.6661 – 607.8917	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		861

MG IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	340	1853.086	555.3419 – 609.3058	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^2P - {}^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		861
	440	1874.576	543.7204 – 597.0657	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		861
	500	1893.888	543.7204 – 596.5218	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		861
	360	1906.723	545.1376 – 597.5836	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		861
	240	1925.742	545.1376 – 597.0657	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		861
	200	1936.931	545.9554 – 597.5836	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$		861
	360	1946.117	545.1376 – 596.5218	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		861
	340	1956.548	545.9554 – 597.0657	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		861

MAGNESIUM V (Mg^{4+}), Z = 12
Ground State $1s^22s^22p^4(^3P_2)$ (8 electrons)
Ionization Potential 1 139 400 cm^{-1}; 141.27 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	92.409	0.0 – 1082.146	$2s^22p^4 - 2s^22p^3(^2D^\circ)5d$	$g\,^3P - {}^3P^\circ$	2 – 1		692
	10	92.428	0.0 – 1081.883	$2s^22p^4 - 2s^22p^3(^2D^\circ)5d$	$g\,^3P - {}^3P^\circ$	2 – 2		692
	10	92.534	1.7831 – 1082.146	$2s^22p^4 - 2s^22p^3(^2D^\circ)5d$	$g\,^3P - {}^3P^\circ$	1 – 1	Q	692,375
	10	92.588	1.7831 – 1081.883	$2s^22p^4 - 2s^22p^3(^2D^\circ)5d$	$g\,^3P - {}^3P^\circ$	1 – 2		692
	10	92.641	0.0 – 1079.431	$2s^22p^4 - 2s^22p^3(^2D^\circ)5d$	$g\,^3P - {}^3D^\circ$	2 – 3		692
	100	93.109	35.926 – 1109.9+W	$2s^22p^4 - 2s^22p^3(^2P^\circ)5d$	$^1D - {}^1D^\circ$	2 – 2		692
	10	94.793	0.0 – 1054.921	$2s^22p^4 - 2s^22p^3(^2D^\circ)5s$	$g\,^3P - {}^3D^\circ$	2 – 3		692
	100	95.556	35.926 – 1082.397+W	$2s^22p^4 - 2s^22p^3(^2D^\circ)5d$	$^1D - {}^1F^\circ$	2 – 3		692
	10	95.592	35.926 – 1082.003+W	$2s^22p^4 - 2s^22p^3(^2D^\circ)5d$	$^1D - {}^1D^\circ$	2 – 2		692
	200	95.803	0.0 – 1043.818	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$g\,^3P - {}^3D^\circ$	2 – 3		692
	100	95.909	0.0 – 1042.681	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$g\,^3P - {}^3P^\circ$	2 – 2		692
	100	95.965	1.7831 – 1043.818	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$g\,^3P - {}^3D^\circ$	1 – 2		692
	200	96.019	2.5218 – 1043.818	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$g\,^3P - {}^3D^\circ$	0 – 1		692
	100	96.085	1.7831 – 1042.481	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$g\,^3P - {}^3P^\circ$	1 – 1		692
	10	96.159	2.5218 – 1042.481	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$g\,^3P - {}^3P^\circ$	0 – 1		692
	100	97.391	0.0 – 1026.774	$2s^22p^4 - 2s^22p^3(^4S^\circ)5d$	$g\,^3P - {}^3D^\circ$	2 – 3		692
	200	97.439	0.0 – 1026.774	$2s^22p^4 - 2s^22p^3(^4S^\circ)5d$	$g\,^3P - {}^3D^\circ$	2 – 3		692
	100	97.563	1.7831 – 1026.774	$2s^22p^4 - 2s^22p^3(^4S^\circ)5d$	$g\,^3P - {}^3D^\circ$	1 – 2		692
	200	97.606	1.7831 – 1026.774	$2s^22p^4 - 2s^22p^3(^4S^\circ)5d$	$g\,^3P - {}^3D^\circ$	1 – 2		692
	100	97.686	2.5218 – 1026.283	$2s^22p^4 - 2s2p^4(^4P)3p$	$g\,^3P - {}^3D^\circ$	0 – 1		692
	100	98.235	0.0 – 1017.972	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g\,^3P - {}^3P^\circ$	2 – 1		692
	200	98.271	0.0 – 1017.59	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g\,^3P - {}^3P^\circ$	2 – 2		692
	100	98.406	1.7831 – 1017.972	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g\,^3P - {}^3P^\circ$	1 – 1		692
	100	98.444	1.7831 – 1017.59	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g\,^3P - {}^3P^\circ$	1 – 2		692
	200	98.636	0.0 – 1013.878	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g\,^3P - {}^3D^\circ$	2 – 3		692
	200	98.805	1.7831 – 1013.878	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g\,^3P - {}^3D^\circ$	1 – 2		692
	100	98.872	2.5218 – 1013.878	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g\,^3P - {}^3D^\circ$	0 – 1		692
	400	98.983	35.926 – 1046.167+W	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$^1D - {}^1F^\circ$	2 – 3		692
	200	99.025	35.926 – 1045.743+W	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$^1D - {}^1P^\circ$	2 – 1		692
	200	99.067	35.926 – 1045.308+W	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$^1D - {}^1D^\circ$	2 – 2		692
	10	99.149						692
	1	99.205	35.926 – 1043.818	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$^1D - {}^3D^\circ$	2 – 2	Q	692,375
	100	99.535	77.279 – 1082.146	$2s^22p^4 - 2s^22p^3(^2D^\circ)5d$	$^1S - {}^3P^\circ$	0 – 1	Q	692,375
	200	99.610	0.0 – 1003.91	$2s^22p^4 - 2s^22p^3(^4S^\circ)5s$	$g\,^3P - {}^3S^\circ$	2 – 1		692
	100	99.788	1.7831 – 1003.91	$2s^22p^4 - 2s^22p^3(^4S^\circ)5s$	$g\,^3P - {}^3S^\circ$	1 – 1		692
	10	100.949	0.0 – 990.599	$2s^22p^4 - 2s^22p^3(^2P^\circ)4s$	$g\,^3P - {}^3P^\circ$	2 – 2		692

MG V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	300	101.671	35.926 – 1019.455+W	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$^1D - ^1F^\circ$	2 – 3		692
	300	101.782	35.926 – 1018.372+W	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$^1D - ^1D^\circ$	2 – 2		692
	100	101.845	35.926 – 1017.59	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$^1D - ^3P^\circ$	2 – 2	Q	692,375
	200	102.079	35.926 – 1015.523+W	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$^1D - ^1P^\circ$	2 – 1		692
	10	103.333	283.2123 – 1250.956	$2s2p^5 - 2s2p^4(^4P)5s$	$^3P^\circ - ^3P$	2 – 2		692
	400	103.904	0.0 – 962.427	$2s^22p^4 - 2s^22p^3(^4S^\circ)4d$	$g\,^3P - ^3D^\circ$	2 – 3		692
	300	103.947	0.0 – 962.027	$2s^22p^4 - 2s^22p^3(^2D^\circ)4s$	$g\,^3P - ^3D^\circ$	2 – 3		692
	200	104.100	1.7831 – 962.395	$2s^22p^4 - 2s^22p^3(^4S^\circ)4d$	$g\,^3P - ^3D^\circ$	1 – 2		692
	200	104.140	1.7831 – 962.027	$2s^22p^4 - 2s^22p^3(^2D^\circ)4s$	$g\,^3P - ^3D^\circ$	1 – 2		692
	100	104.182	2.5218 – 962.378	$2s^22p^4 - 2s^22p^3(^4S^\circ)4d$	$g\,^3P - ^3D^\circ$	0 – 1		692
	100	104.214	2.5218 – 962.027	$2s^22p^4 - 2s^22p^3(^2D^\circ)4s$	$g\,^3P - ^3D^\circ$	0 – 1		692
	200	104.432	35.926 – 993.337+W	$2s^22p^4 - 2s^22p^3(^2P^\circ)4s$	$^1D - ^1P^\circ$	2 – 1		692
	200	107.661	35.926 – 964.731+W	$2s^22p^4 - 2s^22p^3(^2D^\circ)4s$	$^1D - ^1D^\circ$	2 – 2		692
	10	109.174	77.279 – 993.337+W	$2s^22p^4 - 2s^22p^3(^2P^\circ)4s$	$^1S - ^1P^\circ$	0 – 1		692
	200	109.812	0.0 – 910.639	$2s^22p^4 - 2s^22p^3(^4S^\circ)4s$	$g\,^3P - ^3S^\circ$	2 – 1		692
	100	110.029	1.7831 – 910.639	$2s^22p^4 - 2s^22p^3(^4S^\circ)4s$	$g\,^3P - ^3S^\circ$	1 – 1		692
	10	110.121	2.5218 – 910.639	$2s^22p^4 - 2s^22p^3(^4S^\circ)4s$	$g\,^3P - ^3S^\circ$	0 – 1		692
	200	110.809	0.0 – 902.441	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g\,^3P - ^3D^\circ$	2 – 2		692
	400	110.859	0.0 – 902.047	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g\,^3P - ^3D^\circ$	2 – 3		692
	200	110.939	0.0 – 901.414+W	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g\,^3P - ^1D^\circ$	2 – 2		692
	300	111.031	1.7831 – 902.441	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g\,^3P - ^3D^\circ$	1 – 2		692
	300	111.091	2.5218 – 902.682	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g\,^3P - ^3D^\circ$	0 – 1		692
	400	111.199	0.0 – 899.291	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g\,^3P - ^3P^\circ$	2 – 2		692
	200	111.247	0.0 – 898.904	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g\,^3P - ^3P^\circ$	2 – 1		692
	40	111.261	0.0 – 898.904	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g\,^3P - ^3P^\circ$	2 – 1		856,375
	200	111.419	1.7831 – 899.291	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g\,^3P - ^3P^\circ$	1 – 2		692
	200	111.467	1.7831 – 898.904	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g\,^3P - ^3P^\circ$	1 – 1		692
	200	111.496	1.7831 – 898.673	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g\,^3P - ^3P^\circ$	1 – 0		692
	200	113.217	283.2123 – 1166.471	$2s2p^5 - 2s2p^4(^2D)3d$	$^3P^\circ - ^3D$	2 – 3		692
	10	113.279	0.0 – 882.752+W	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g\,^3P - ^1F^\circ$	2 – 3	Q	692,375
	200	113.414	284.8283 – 1166.552	$2s2p^5 - 2s2p^4(^2D)3d$	$^3P^\circ - ^3D$	1 – 2		692
	100	113.518	285.7120 – 1166.626	$2s2p^5 - 2s2p^4(^2D)3d$	$^3P^\circ - ^3D$	0 – 1		692
	400	113.703	0.0 – 879.485	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g\,^3P - ^3S^\circ$	2 – 1		692
	100	113.823	283.2123 – 1161.768	$2s2p^5 - 2s2p^4(^4P)4s$	$^3P^\circ - ^3P$	2 – 2		692
	300	113.934	1.7831 – 879.485	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g\,^3P - ^3S^\circ$	1 – 1		692
	300	113.990	0.0 – 877.244	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g\,^3P - ^3P^\circ$	2 – 1		692
	200	114.029	2.5218 – 879.485	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g\,^3P - ^3S^\circ$	0 – 1		692
	400	114.059	0.0 – 876.762	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g\,^3P - ^3P^\circ$	2 – 2		692
	300	114.199	1.7831 – 877.444	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g\,^3P - ^3P^\circ$	1 – 0		692
	300	114.226	1.7831 – 877.244	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g\,^3P - ^3P^\circ$	1 – 1		692
	300	114.285	1.7831 – 876.762	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g\,^3P - ^3P^\circ$	1 – 2		692
	300	114.324	2.5218 – 877.244	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g\,^3P - ^3P^\circ$	0 – 1		692
	10	114.498	0.0 – 873.404+W	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g\,^3P - ^1P^\circ$	2 – 1	Q	692,375
	600	114.785	0.0 – 871.221	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g\,^3P - ^3D^\circ$	2 – 3		692
	600	115.013	1.7831 – 871.221	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g\,^3P - ^3D^\circ$	1 – 2		692
	400	115.093	2.5218 – 871.221	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g\,^3P - ^3D^\circ$	0 – 1		692
	400	115.399	35.926 – 902.449+W	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$^1D - ^1P^\circ$	2 – 1		692
	400	115.537	35.926 – 901.414+W	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$^1D - ^1D^\circ$	2 – 2		692
	500	118.083	35.926 – 882.752+W	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1D - ^1F^\circ$	2 – 3		692
	100	118.603						692
	500	118.810	35.926 – 877.57+W	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1D - ^1D^\circ$	2 – 2		692
	10	118.914	35.926 – 876.762	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1D - ^3P^\circ$	2 – 2	Q	692,375
	400	119.401	35.926 – 873.404+W	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1D - ^1P^\circ$	2 – 1		692
	400	119.447	35.926 – 873.404+W	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1D - ^1P^\circ$	2 – 1	Q	692

MG V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	119.978	77.279 – 910.639	$2s^22p^4 - 2s^22p^3(^4S^\circ)4s$	$^1S - {}^3S^\circ$	0 – 1	Q	692,375
	600	121.644	0.0 – 822.071	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		692
	500	121.922	1.7831 – 821.977	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		692
	400	122.034	2.5218 – 821.963	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	0 – 1		692
	400	125.600	77.279 – 873.404+W	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1S - {}^1P^\circ$	0 – 1		692
	400	126.280	283.2123 – 1075.102	$2s2p^5 - 2s2p^4(^4P)3d$	$^3P^\circ - {}^3D$	2 – 3		692
	200	126.544	284.8283 – 1075.102	$2s2p^5 - 2s2p^4(^4P)3d$	$^3P^\circ - {}^3D$	1 – 2		692
	10	126.677	285.7120 – 1075.102	$2s2p^5 - 2s2p^4(^4P)3d$	$^3P^\circ - {}^3D$	0 – 1		692
	600	132.171	0.0 – 756.589	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	2 – 2		692
	500	132.485	1.7831 – 756.589	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	1 – 2		692
	300	132.623	2.5218 – 756.536	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	0 – 1		692
	200	135.638	283.2123 – 1020.468	$2s2p^5 - 2s2p^4(^2D)3s$	$^3P^\circ - {}^3D$	2 – 3		692
	100	135.953	284.8283 – 1020.375	$2s2p^5 - 2s2p^4(^2D)3s$	$^3P^\circ - {}^3D$	1 – 2		692
	10	136.128	285.7120 – 1020.311	$2s2p^5 - 2s2p^4(^2D)3s$	$^3P^\circ - {}^3D$	0 – 1		692
	600	137.234	35.926 – 764.591+W	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$^1D - {}^1P^\circ$	2 – 1		692
	800	137.414	0.0 – 727.718	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	2 – 3		692
	700	137.748	1.7831 – 727.763	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	1 – 2		692
	600	137.880	2.5218 – 727.787	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	0 – 1		692
	600	142.933	35.926 – 735.518+W	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$^1D - {}^1D^\circ$	2 – 2		692
	500	145.485	77.279 – 764.591+W	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$^1S - {}^1P^\circ$	0 – 1		692
	600	146.083	0.0 – 684.544	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - {}^3S^\circ$	2 – 1		692
	500	146.464	1.7831 – 684.544	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - {}^3S^\circ$	1 – 1		692
	400	146.621	2.5218 – 684.544	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - {}^3S^\circ$	0 – 1		692
		149.49	0.0 – 668.94	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - {}^5S^\circ$	2 – 2	P	680
		149.89	1.7831 – 668.94	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - {}^5S^\circ$	1 – 2	P	680
	10	152.019	283.2123 – 941.048	$2s2p^5 - 2s2p^4(^4P)3s$	$^3P^\circ - {}^3P$	2 – 1		692
	300	152.149	283.2123 – 940.455	$2s2p^5 - 2s2p^4(^4P)3s$	$^3P^\circ - {}^3P$	2 – 2		692
	100	152.384	284.8283 – 941.048	$2s2p^5 - 2s2p^4(^4P)3s$	$^3P^\circ - {}^3P$	1 – 1		692
	100	152.527	284.8283 – 940.455	$2s2p^5 - 2s2p^4(^4P)3s$	$^3P^\circ - {}^3P$	1 – 2		692
	10	152.591	285.7120 – 941.048	$2s2p^5 - 2s2p^4(^4P)3s$	$^3P^\circ - {}^3P$	0 – 1		692
	100	251.584	0.0 – 397.482	$2s^22p^4 - 2s2p^5$	$g^3P - {}^1P^\circ$	2 – 1		861
	700	276.582	35.926 – 397.482	$2s^22p^4 - 2s2p^5$	$^1D - {}^1P^\circ$	2 – 1		861
	200	312.302	77.279 – 397.482	$2s^22p^4 - 2s2p^5$	$^1S - {}^1P^\circ$	0 – 1		861
	10	341.790	727.787 – 1020.375	$2s^22p^3(^2D^\circ)3s - 2s2p^4(^2D)3s$	$^3D^\circ - {}^3D$	1 – 2	Q	693,375
	400	351.088	0.0 – 284.8283	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	2 – 1		861
	360	352.200	1.7831 – 285.7120	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	1 – 0		861
	600	353.091	0.0 – 283.2123	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	2 – 2		861
	300	353.300	1.7831 – 284.8283	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	1 – 1		861
	360	354.224	2.5218 – 284.8283	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	0 – 1		861
	400	355.329	1.7831 – 283.2123	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	1 – 2		861
	100	376.665	397.482 – 662.969	$2s2p^5 - 2p^6$	$^1P^\circ - {}^1S$	1 – 0		693,868
		1293.9	0.0 – 77.2861	$2s^22p^4 - 2s^22p^4$	$g^3P - {}^1S$	2 – 0	F,P	375,940
	0	1324.45	1.7831 – 77.2861	$2s^22p^4 - 2s^22p^4$	$g^3P - {}^1S$	1 – 0	F	940

MAGNESIUM VI (Mg^{5+}), Z = 12
Ground State $1s^22s^22p^3(^4S^\circ_{3/2})$ (7 electrons)
Ionization Potential 1 504 300 cm^{-1}; 186.51 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	72.430	0.0 – 1380.643	$2s^22p^3 - 2s^22p^2(^3P)6s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		692
	300	74.319	0.0 – 1345.55	$2s^22p^3 - 2s^22p^2(^3P)5d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		692
	10	74.461	0.0 – 1342.985	$2s^22p^3 - 2s^22p^2(^3P)5d$	$g^4S^\circ - {}^4D$	$\frac{3}{2}-\frac{5}{2}$		692
	200	74.574	0.0 – 1340.95	$2s^22p^3 - 2s2p^3(^5S^\circ)4p$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		692
	100	75.248	55.352+Y – 1384.290+Y	$2s^22p^3 - 2s^22p^2(^1D)5d$	$^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		692
	100	75.334	55.352+Y – 1382.774+Y	$2s^22p^3 - 2s^22p^2(^1D)5d$	$^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		692
	200	75.834	0.0 – 1318.67	$2s^22p^3 - 2s^22p^2(^3P)5s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		692
	10	75.890	0.0 – 1317.697	$2s^22p^3 - 2s^22p^2(^3P)5s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		692
	1	76.908	84.029+Y – 1384.290+Y	$2s^22p^3 - 2s^22p^2(^1D)5d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		692
	10	77.301	0.0 – 1294.141+Y	$2s^22p^3 - 2s^22p^2(^1D)4d$	$g^4S^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$	Q	692,375
	200	77.405	55.352+Y – 1347.258+Y	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		692
	100	77.511	55.373+Y – 1345.512+Y	$2s^22p^3 - 2s^22p^2(^3P)5d$	$^2D^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$		692
	10	77.639	0.0 – 1288.306+Y	$2s^22p^3 - 2s^22p^2(^1D)4d$	$g^4S^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$		692,375
	10	78.239	55.352+Y – 1333.49+Y	$2s^22p^3 - 2s^22p^2(^1S)4d$	$^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		692
	10	79.059						692
	200	79.817	0.0 – 1252.866	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		692
	400	79.830	0.0 – 1252.662	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		692
	400	79.857	0.0 – 1252.238	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		692
	200	80.032	0.0 – 1249.5	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S^\circ - {}^4D$	$\frac{3}{2}-\frac{1}{2}$		692
	200	80.075	0.0 – 1248.829	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S^\circ - {}^4D$	$\frac{3}{2}-\frac{5}{2}$		692
	100	80.563	55.373+Y – 1296.523+Y	$2s^22p^3 - 2s^22p^2(^1D)4d$	$^2D^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	Q	692,375
	10	80.724	55.352+Y – 1294.141+Y	$2s^22p^3 - 2s^22p^2(^1D)4d$	$^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		692
	200	80.930	55.352+Y – 1290.989+Y	$2s^22p^3 - 2s^22p^2(^1D)4d$	$^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		692
	300	81.106	55.352+Y – 1288.306+Y	$2s^22p^3 - 2s^22p^2(^1D)4d$	$^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		692
	200	82.238	247.945 – 1463.928	$2s2p^4 - 2s2p^3(^5S^\circ)5d$	$^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		692
	100	82.475	84.029+Y – 1296.523+Y	$2s^22p^3 - 2s^22p^2(^1D)4d$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		692
	100	82.853	84.029+Y – 1290.989+Y	$2s^22p^3 - 2s^22p^2(^1D)4d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		692
	400	83.403	55.352+Y – 1254.350+Y	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		692
	300	83.519	55.373+Y – 1252.705+Y	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$		692
	200	83.560	0.0 – 1196.74	$2s^22p^3 - 2s^22p^2(^3P)4s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		692
	200	84.745	55.352+Y – 1235.689+Y	$2s^22p^3 - 2s^22p^2(^1D)4s$	$^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		692
	10	85.153	84.029+Y – 1258.391+Y	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		692
	200	85.577	55.373+Y – 1223.911+Y	$2s^22p^3 - 2s2p^3(^3D^\circ)3p$	$^2D^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$		692
	300	85.622	55.352+Y – 1223.276+Y	$2s^22p^3 - 2s2p^3(^3D^\circ)3p$	$^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		692
	200	86.807	83.918+Y – 1235.689+Y	$2s^22p^3 - 2s^22p^2(^1D)4s$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		692
	10	87.406	55.352+Y – 1199.467+Y	$2s^22p^3 - 2s^22p^2(^3P)4s$	$^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		692
	200	88.827	247.945 – 1373.76	$2s2p^4 - 2s2p^3(^5S^\circ)4d$	$^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		692
	200	88.952	249.578 – 1373.76	$2s2p^4 - 2s2p^3(^5S^\circ)4d$	$^4P - {}^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		692
	10	89.021	250.445 – 1373.76	$2s2p^4 - 2s2p^3(^5S^\circ)4d$	$^4P - {}^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		692
	10	89.649	84.029+Y – 1199.467+Y	$2s^22p^3 - 2s^22p^2(^3P)4s$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		692
	600	90.897	0.0 – 1100.146	$2s^22p^3 - 2s2p^3(^5S^\circ)3p$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		692
	100	92.964	247.945 – 1323.609	$2s2p^4 - 2s2p^3(^5S^\circ)4s$	$^4P - {}^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		692
	100	93.109	249.578 – 1323.609	$2s2p^4 - 2s2p^3(^5S^\circ)4s$	$^4P - {}^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		692
	300	93.493	55.352+Y – 1124.885+Y	$2s^22p^3 - 2s^22p^2(^1S)3d$	$^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		692
	400	95.385	0.0 – 1048.383	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		692
	400	95.421	0.0 – 1047.987	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		692
	500	95.483	0.0 – 1047.307	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		692
	300	95.637	0.0 – 1045.62	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - {}^4D$	$\frac{3}{2}-\frac{1}{2}$		692
	300	95.675	0.0 – 1045.205	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - {}^4D$	$\frac{3}{2}-\frac{5}{2}$		692
	200	95.803	55.373+Y – 1099.180+Y	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		692
	100	96.085	84.029+Y – 1124.885+Y	$2s^22p^3 - 2s^22p^2(^1S)3d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		692
	100	96.159	247.945 – 1287.889	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - {}^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		692
	100	96.240	247.945 – 1287.044	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		692
	200	96.256	55.352+Y – 1094.248+Y	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		692

MG VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	96.303	55.373+Y – 1093.760+Y	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		692
	100	96.388	249.578 – 1287.044	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		692
	10	96.467	250.445 – 1287.044	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		692
	200	96.670	247.945 – 1282.398	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		692
	200	96.704	247.945 – 1282.028	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		692
	100	96.797	249.578 – 1282.668	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		692
	100	96.857	249.578 – 1282.028	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		692
	10	96.903	250.445 – 1282.398	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		692
	400	96.939	55.352+Y – 1086.920+Y	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		692
	400	96.973	55.373+Y – 1086.563+Y	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		692
	500	97.251	55.373+Y – 1083.640+Y	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$		692
	500	97.278	55.352+Y – 1083.334+Y	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		692
	300	98.508	84.029+Y – 1099.180+Y	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		692
	400	98.983	84.029+Y – 1094.248+Y	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		692
	200	99.025	83.918+Y – 1093.760+Y	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		692
	400	99.279	55.352+Y – 1062.613+Y	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		692
	400	99.333	55.373+Y – 1062.050+Y	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		692
	300	99.713	84.029+Y – 1086.920+Y	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		692
	300	99.738	83.918+Y – 1086.563+Y	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		692
	500	100.702	55.352+Y – 1048.381+Y	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		692
	400	100.904	55.373+Y – 1046.414+Y	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$		692
	200	101.508	55.373+Y – 1040.674+Y	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		692
	300	101.556	55.352+Y – 1040.057+Y	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		692
	500	102.189	84.029+Y – 1062.613+Y	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		692
	500	102.239	83.918+Y – 1062.050+Y	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		692
	300	104.519	83.918+Y – 1040.674+Y	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		692
	500	104.597	84.029+Y – 1040.057+Y	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		692
	200	105.410	341.786+Y – 1290.463+Y	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		692
	300	105.502	341.753+Y – 1289.602+Y	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		692
	100	105.778	341.786+Y – 1287.044	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^2D - {}^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$	Q	692,375
	100	105.830	247.945 – 1192.634+Y	$2s2p^4 - 2s2p^3(^3P^\circ)3s$	$^4P - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$	Q	692,375
	400	107.820	247.945 – 1175.396	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		692
	300	108.015	249.578 – 1175.396	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		692
	200	108.114	250.445 – 1175.396	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		692
	100	108.148	247.945 – 1172.608	$2s2p^4 - 2s2p^3(^3P^\circ)3s$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		692
	100	108.338	249.578 – 1172.608	$2s2p^4 - 2s2p^3(^3P^\circ)3s$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		692
	10	108.441	250.445 – 1172.608	$2s2p^4 - 2s2p^3(^3P^\circ)3s$	$^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$		692
	300	111.160	83.918+Y – 983.420+Y	$2s^22p^3 - 2s^22p^2(^1S)3s$	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		692
	400	111.199	84.029+Y – 983.420+Y	$2s^22p^3 - 2s^22p^2(^1S)3s$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		692
	500	111.552	0.0 – 896.443	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		692
	400	111.746	0.0 – 894.887	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		692
	400	111.864	0.0 – 893.943	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		692
	500	113.189	55.352+Y – 938.830+Y	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		692
	10	114.412	247.945 – 1122.023	$2s2p^4 - 2s2p^3(^3D^\circ)3s$	$^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		692
	10	114.624	249.578 – 1122.023	$2s2p^4 - 2s2p^3(^3D^\circ)3s$	$^4P - {}^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		692
	10	114.725	250.445 – 1122.023	$2s2p^4 - 2s2p^3(^3D^\circ)3s$	$^4P - {}^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		692
	500	116.968	55.352+Y – 910.298+Y	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		692
	300	117.226	55.373+Y – 908.404+Y	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		692
	100	117.527	341.753+Y – 1192.634+Y	$2s2p^4 - 2s2p^3(^3P^\circ)3s$	$^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		692
	100	120.283						692
	10	120.415						692
	500	121.025	84.029+Y – 910.298+Y	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		692
	300	121.290	83.918+Y – 908.404+Y	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		692
	100	123.590	341.753+Y – 1150.840+Y	$2s2p^4 - 2s2p^3(^3D^\circ)3s$	$^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		692

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	300	125.206	247.945 - 1046.634	$2s2p^4 - 2s2p^3(^5S^\circ)3s$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		692
	300	125.459	249.578 - 1046.634	$2s2p^4 - 2s2p^3(^5S^\circ)3s$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		692
	400	125.600	250.445 - 1046.634	$2s2p^4 - 2s2p^3(^5S^\circ)3s$	$^4P - ^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		692
	100	126.450	401.821+Y - 1192.634+Y	$2s2p^4 - 2s2p^3(^3P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		692
	100	126.488	401.821+Y - 1192.328+Y	$2s2p^4 - 2s2p^3(^3P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		692
	200	130.294	425.183+Y - 1192.634+Y	$2s2p^4 - 2s2p^3(^3P^\circ)3s$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		692
	100	130.630	427.140+Y - 1192.634+Y	$2s2p^4 - 2s2p^3(^3P^\circ)3s$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		692
	10	130.701	427.140+Y - 1192.328+Y	$2s2p^4 - 2s2p^3(^3P^\circ)3s$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		692
	10	137.814	425.183+Y - 1150.840+Y	$2s2p^4 - 2s2p^3(^3D^\circ)3s$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		692
	650	268.986	55.373+Y - 427.140+Y	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		692
	750	270.394	55.352+Y - 425.183+Y	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		692
	10	288.652	55.373+Y - 401.821+Y	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		692
	300	291.348	83.918+Y - 427.140+Y	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		692
	200	291.458	84.029+Y - 427.140+Y	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		692
	200	293.026	83.918+Y - 425.183+Y	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		692
	400	293.124	84.029+Y - 425.183+Y	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		692
	300	314.554	83.918+Y - 401.821+Y	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		692
	400	314.676	84.029+Y - 401.821+Y	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		692
		319.80	341.786+Y - 654.507+Y	$2s2p^4 - 2p^5$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		238
		322.44	341.753+Y - 651.827+Y	$2s2p^4 - 2p^5$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		238
	700	349.155	55.352+Y - 341.753+Y	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		692
	200	387.787	83.918+Y - 341.786+Y	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		692
	300	388.020	84.029+Y - 341.753+Y	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		692
	600	399.289	0.0 - 250.445	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		692
	700	400.676	0.0 - 249.578	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		692
	800	403.315	0.0 - 247.945	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		692
		436.06	425.183+Y - 654.507+Y	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	P	250
		439.82	427.140+Y - 654.507+Y	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		250
		441.22	425.183+Y - 651.827+Y	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		250
		445.06	427.140+Y - 651.827+Y	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	250
	2	1190.07	0.0 - 84.0287	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	F	940
	1	1191.64	0.0 - 83.9180	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	F	940
		1805.97	0.0 - 55.3719	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$	F	940
		1807.	0.0 - 55.352+Y	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$	F,P	375,487
	100	1900.04						693

MAGNESIUM VII (Mg^{6+}), Z = 12
Ground State $1s^22s^22p^2(^3P_0)$ (6 electrons)
Ionization Potential 1 814 300 cm^{-1}; 224.95 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	58.316	2.939 - 1717.734	$2s^22p^2 - 2s2p^2(^4P)5p$	$g^3P - ^3D^\circ$	2 - 3		692
	1	59.640	118.65+K - 1795.377+K	$2s2p^3 - 2s2p^2(^4P)6d$	$^5S^\circ - ^5P$	2 - 3		692
	10	60.138	2.939 - 1665.781	$2s^22p^2 - 2s^22p(^2P^\circ)6d$	$g^3P - ^3P^\circ$	2 - 2		692
	10	62.166	118.65+K - 1727.246+K	$2s2p^3 - 2s2p^2(^4P)5d$	$^5S^\circ - ^5P$	2 - 3		692
	10	62.615	1.127 - 1597.937	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - ^3P^\circ$	1 - 2	Q	692,375
	100	62.696	2.939 - 1597.937	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - ^3P^\circ$	2 - 2		692
	100	63.396	2.939 - 1580.326	$2s^22p^2 - 2s2p^2(^4P)4p$	$g^3P - ^3D^\circ$	2 - 3		692
	200	64.122	40.984+Y - 1600.511+Y	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$^1D - ^1F^\circ$	2 - 3		692
	100	64.377	40.984+Y - 1594.334+Y	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$^1D - ^1D^\circ$	2 - 2		692
	10	66.788	232.865 - 1730.14	$2s2p^3 - 2s2p^2(^4P)5d$	$^3D^\circ - ^3F$	3 - 4		692
	10	67.453	118.65+K - 1601.164+K	$2s2p^3 - 2s2p^2(^4P)4d$	$^5S^\circ - ^5P$	2 - 1		692
	100	67.470	118.65+K - 1600.790+K	$2s2p^3 - 2s2p^2(^4P)4d$	$^5S^\circ - ^5P$	2 - 2		692

MG VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	67.497	118.65+K - 1600.197+K	$2s2p^3 - 2s2p^2(^4P)4d$	$^5S^\circ - ^5P$	2 - 3		692
	100	67.993	1.127 - 1472.144	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - ^3P^\circ$	1 - 2		692
	200	68.064	2.939 - 1472.144	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - ^3P^\circ$	2 - 2		692
	200	68.100	1.127 - 1469.556	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	1 - 2		692
	300	68.144	2.939 - 1470.42	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	2 - 3		692
	200	68.352	232.865 - 1695.88	$2s2p^3 - 2s2p^2(^2D)4d$	$^3D^\circ - ^3F$	3 - 4		692
	300	69.615	40.984+Y - 1477.456+Y	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$^1D - ^1F^\circ$	2 - 3		692
	10	69.900	118.65+K - 1549.265+K	$2s2p^3 - 2s2p^2(^4P)4s$	$^5S^\circ - ^5P$	2 - 3		692
	100	70.193	40.984+Y - 1465.627+Y	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$^1D - ^1D^\circ$	2 - 2		692
	100	71.786	85.172+Y - 1478.201+Y	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$^1S - ^1P^\circ$	0 - 1		692
	10	72.546	232.865 - 1611.3	$2s2p^3 - 2s2p^2(^4P)4d$	$^3D^\circ - ^3D$	3 - 3		692
	100	72.787	232.865 - 1606.747	$2s2p^3 - 2s2p^2(^4P)4d$	$^3D^\circ - ^3F$	3 - 4		692
	10	72.852	232.975 - 1605.621	$2s2p^3 - 2s2p^2(^4P)4d$	$^3D^\circ - ^3F$	2 - 3		692
	1	72.896	233.027 - 1604.844	$2s2p^3 - 2s2p^2(^4P)4d$	$^3D^\circ - ^3F$	1 - 2		692
	10	73.112	232.865 - 1600.197+K	$2s2p^3 - 2s2p^2(^4P)4d$	$^3D^\circ - ^5P$	3 - 3	Q	692,375
	400	75.975	40.984+Y - 1357.206+Y	$2s^22p^2 - 2s2p^2(^2D)3p$	$^1D - ^1D^\circ$	2 - 2		692
	300	76.392	40.984+Y - 1350.022+Y	$2s^22p^2 - 2s2p^2(^2D)3p$	$^1D - ^1F^\circ$	2 - 3		692
	100	77.033	1.127 - 1299.244	$2s^22p^2 - 2s2p^2(^2D)3p$	$g^3P - ^3D^\circ$	1 - 2		692
	200	77.144	2.939 - 1299.244	$2s^22p^2 - 2s2p^2(^2D)3p$	$g^3P - ^3D^\circ$	2 - 3		692
	10	78.376	1.127 - 1276.52	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3P^\circ$	1 - 0	Q	692,375
	10	78.405	1.127 - 1276.52	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3P^\circ$	1 - 2		692
	200	78.521	2.939 - 1276.52	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3P^\circ$	2 - 2		692
	500	79.131	1.127 - 1264.827	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3D^\circ$	1 - 2		692
	500	79.168	2.939 - 1266.076	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3D^\circ$	2 - 3		692
	100	79.248	2.939 - 1264.827	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3D^\circ$	2 - 2		692
	100	81.024	1.127 - 1235.329	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3S^\circ$	1 - 1		692
	300	81.133	2.939 - 1235.329	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3S^\circ$	2 - 1		692
	400	82.940	118.65+K - 1324.341+K	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^\circ - ^5P$	2 - 1		692
	400	82.969	118.65+K - 1323.919+K	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^\circ - ^5P$	2 - 2		692
	500	83.015	118.65+K - 1323.252+K	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^\circ - ^5P$	2 - 3		692
	400	83.403	118.65+K - 1317.648+K	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^\circ - ^5D$	2 - 3		692
	300	83.519	0.0 - 1197.469	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3P^\circ$	0 - 1		692
	200	83.560	1.127 - 1197.872	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3P^\circ$	1 - 0		692
	200	83.587	1.127 - 1197.469	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3P^\circ$	1 - 1		692
	10	83.635	1.127 - 1196.77	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3P^\circ$	1 - 2		692
	300	83.716	2.939 - 1197.469	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3P^\circ$	2 - 1		692
	500	83.766	2.939 - 1196.77	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3P^\circ$	2 - 2		692
	300	83.910	0.0 - 1191.753	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3D^\circ$	0 - 1		692
	400	83.959	1.127 - 1192.185	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3D^\circ$	1 - 2		692
	500	84.025	2.939 - 1193.061	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3D^\circ$	2 - 3		692
	300	84.087	2.939 - 1192.185	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3D^\circ$	2 - 2		692
	10	84.189	232.865 - 1420.669	$2s2p^3 - 2s2p^2(^2D)3d$	$^3D^\circ - ^3P$	3 - 2		692
	500	84.642	232.865 - 1414.307	$2s2p^3 - 2s2p^2(^2D)3d$	$^3D^\circ - ^3F$	3 - 4		692
	10	85.091	542.344 - 1717.734	$2p^4 - 2s2p^2(^4P)5p$	$^3P - ^3D^\circ$	2 - 3	Q	692,375
	10	85.336	40.984+Y - 1212.822+Y	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - ^1P^\circ$	2 - 1		692
	700	85.407	40.984+Y - 1211.848+Y	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - ^1F^\circ$	2 - 3		692
	200	86.032						692
	10	86.147	274.922 - 1435.724	$2s2p^3 - 2s2p^2(^2D)3d$	$^3P^\circ - ^3S$	2 - 1	Q	692,375
	100	86.762	40.984+Y - 1193.061	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - ^3D^\circ$	2 - 3	Q	692,375
	500	87.131	274.922 - 1422.614	$2s2p^3 - 2s2p^2(^2D)3d$	$^3P^\circ - ^3D$	2 - 3		692
	400	87.175	274.922 - 1422.04	$2s2p^3 - 2s2p^2(^2D)3d$	$^3P^\circ - ^3D$	1 - 2		692
	600	87.722	40.984+Y - 1180.949+Y	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - ^1D^\circ$	2 - 2		692
	400	87.767	274.922 - 1414.307	$2s2p^3 - 2s2p^2(^2D)3d$	$^3P^\circ - ^3F$	2 - 3		692
	500	87.889	40.984+Y - 1178.821+Y	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - ^1F^\circ$	2 - 2		692

MG VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	600	88.680	85.172+Y – 1212.822+Y	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1S - ^1P^\circ$	0 – 1		692
	200	89.407	232.865 – 1351.359	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3D$	3 – 3		692
	200	89.448	232.975 – 1350.948	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3D$	2 – 2		692
	10	89.476	233.027 – 1350.626	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3D$	1 – 1		692
	100	90.338	85.172+Y – 1191.753	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1S - ^3D^\circ$	0 – 1	Q	692,375
	400	90.706	232.865 – 1335.328	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3F$	3 – 4		692
	300	90.815	232.975 – 1334.115	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3F$	2 – 3		692
	600	90.897	233.027 – 1333.173	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3F$	1 – 2		692
	10	91.302	118.65+K – 1213.679	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^\circ - ^3P$	2 – 2	Q	692,375
	10	91.460	232.975 – 1326.033	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3P$	2 – 1		692
	100	91.573	232.865 – 1324.975	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3P$	3 – 2		692
	300	92.256	354.448+Y – 1438.388+Y	$2s2p^3 - 2s2p^2(^2D)3d$	$^1D^\circ - ^1F$	2 – 3		692
	10	92.503	354.448+Y – 1435.724	$2s2p^3 - 2s2p^2(^2D)3d$	$^1D^\circ - ^3S$	2 – 1	Q	692,375
	200	92.898	274.922 – 1351.359	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^\circ - ^3D$	2 – 3		692
	200	92.934	274.922 – 1350.948	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^\circ - ^3D$	1 – 2		692
	100	92.964	274.922 – 1350.626	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^\circ - ^3D$	0 – 1		692
	400	94.043	118.65+K – 1181.993+K	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^\circ - ^5P$	2 – 3		692
	300	94.174	118.65+K – 1180.514+K	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^\circ - ^5P$	2 – 2		692
	400	95.027	232.865 – 1285.196	$2s2p^3 - 2s2p^2(^2D)3s$	$^3D^\circ - ^3D$	3 – 3		692
	10	95.089	274.922 – 1326.568	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^\circ - ^3P$	1 – 0		692
	100	95.139	274.922 – 1326.033	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^\circ - ^3P$	0 – 1		692
	100	95.233	274.922 – 1324.975	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^\circ - ^3P$	2 – 2		692
	200	95.259	1.127 – 1050.906	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^3P^\circ$	1 – 2		692
	400	95.385	0.0 – 1048.385	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^3P^\circ$	0 – 1		692
	400	95.421	2.939 – 1050.906	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^3P^\circ$	2 – 2		692
	500	95.483	1.127 – 1048.385	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^3P^\circ$	1 – 1		692
	100	95.556	1.127 – 1047.624	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^3P^\circ$	1 – 0		692
	300	95.637	2.939 – 1048.385	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^3P^\circ$	2 – 1		692
	200	96.019	397.180+Y – 1438.641+Y	$2s2p^3 - 2s2p^2(^2D)3d$	$^1P^\circ - ^1D$	1 – 2		692
	300	98.032	40.984+Y – 1061.059+Y	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$^1D - ^1P^\circ$	2 – 1		692
	400	98.983	274.922 – 1285.196	$2s2p^3 - 2s2p^2(^2D)3s$	$^3P^\circ - ^3D$	2 – 3		692
	100	100.374	354.448+Y – 1350.948	$2s2p^3 - 2s2p^2(^4P)3d$	$^1D^\circ - ^3D$	2 – 2	Q	692,375
	100	100.421	354.448+Y – 1350.626	$2s2p^3 - 2s2p^2(^4P)3d$	$^1D^\circ - ^3D$	2 – 1	Q	692,375
	200	101.956	232.865 – 1213.679	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^\circ - ^3P$	3 – 2		692
	10	102.053	354.448+Y – 1334.115	$2s2p^3 - 2s2p^2(^4P)3d$	$^1D^\circ - ^3F$	2 – 3	Q	692,375
	100	102.138	232.975 – 1212.055	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^\circ - ^3P$	2 – 1		692
	300	102.471	85.172+Y – 1061.059+Y	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$^1S - ^1P^\circ$	0 – 1		692
	300	102.906	354.448+Y – 1326.033	$2s2p^3 - 2s2p^2(^4P)3d$	$^1D^\circ - ^3P$	2 – 1	Q	692,375
	10	103.743	362.128 – 1326.033	$2s2p^3 - 2s2p^2(^4P)3d$	$^3S^\circ - ^3P$	1 – 1		692
	10	103.859	362.128 – 1324.975	$2s2p^3 - 2s2p^2(^4P)3d$	$^3S^\circ - ^3P$	1 – 2		692
	100	105.159	354.448+Y – 1305.331+Y	$2s2p^3 - 2s2p^2(^2D)3s$	$^1D^\circ - ^1D$	2 – 2		692
	200	106.453	658.473+Y – 1597.937	$2p^4 - 2s^22p(^2P^\circ)5d$	$^1S - ^3P^\circ$	0 – 1	Q	692,375
	200	106.524	274.922 – 1213.679	$2s2p^3 - 2s2p^2(^4P)3s$	$^3P^\circ - ^3P$	2 – 2		692
	100	106.707	274.922 – 1212.055	$2s2p^3 - 2s2p^2(^4P)3s$	$^3P^\circ - ^3P$	2 – 1		692
	10	106.809	274.922 – 1211.173	$2s2p^3 - 2s2p^2(^4P)3s$	$^3P^\circ - ^3P$	1 – 0		692
	10	110.121	397.180+Y – 1305.331+Y	$2s2p^3 - 2s2p^2(^2D)3s$	$^1P^\circ - ^1D$	1 – 2		692
	10	111.984	232.865 – 1125.85	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3P$	3 – 2		692
	10	112.135	232.975 – 1124.937	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3P$	2 – 1		692
	1	112.269	233.027 – 1123.745	$2s2p^3 - 2s^22p(^2P^\circ)3p$	$^3D^\circ - ^3P$	1 – 0		692
	200	276.145	0.0 – 362.128	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^\circ$	0 – 1		692
	300	277.007	1.127 – 362.128	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^\circ$	1 – 1		692
	400	278.406	2.939 – 362.128	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^\circ$	2 – 1		692
	300	280.744	40.984+Y – 397.180+Y	$2s^22p^2 - 2s2p^3$	$^1D - ^1P^\circ$	2 – 1		692
	400	319.016	40.984+Y – 354.448+Y	$2s^22p^2 - 2s2p^3$	$^1D - ^1D^\circ$	2 – 2		692

MG VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		320.50	85.172+Y - 397.180+Y	$2s^22p^2 - 2s2p^3$	$^1S - {}^1P°$	0 - 1		244
		321.07	232.975 - 544.430	$2s2p^3 - 2p^4$	$^3D° - {}^3P$	2 - 1	P	250
		323.12	232.865 - 542.344	$2s2p^3 - 2p^4$	$^3D° - {}^3P$	3 - 2	P	250
	10	363.770	0.0 - 274.922	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P°$	0 - 1		692
	200	365.230	1.127 - 274.922	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P°$	1 - 2		692
	400	367.679	2.939 - 274.922	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P°$	2 - 2		692
		369.85	274.922 - 545.285	$2s2p^3 - 2p^4$	$^3P° - {}^3P$	1 - 0		250
		371.08	274.922 - 544.430	$2s2p^3 - 2p^4$	$^3P° - {}^3P$	2 - 1		250
		373.99	274.922 - 542.344	$2s2p^3 - 2p^4$	$^3P° - {}^3P$	2 - 2		250
		382.72	397.180+Y - 658.473+Y	$2s2p^3 - 2p^4$	$^1P° - {}^1S$	1 - 0		244
	100	429.134	0.0 - 233.027	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D°$	0 - 1		692
	200	431.318	1.127 - 232.975	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D°$	1 - 2		692
	10	434.710	2.939 - 232.975	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D°$	2 - 2		692
	200	434.923	2.939 - 232.865	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D°$	2 - 3		692
		450.69	354.448+Y - 576.326+Y	$2s2p^3 - 2p^4$	$^1D° - {}^1D$	2 - 2		244
		545.98	362.128 - 545.285	$2s2p^3 - 2p^4$	$^3S° - {}^3P$	1 - 0		250
		548.54	362.128 - 544.430	$2s2p^3 - 2p^4$	$^3S° - {}^3P$	1 - 1		250
		554.89	362.128 - 542.344	$2s2p^3 - 2p^4$	$^3S° - {}^3P$	1 - 2		250
		558.22	397.180+Y - 576.326+Y	$2s2p^3 - 2p^4$	$^1P° - {}^1D$	1 - 2		250
		850.9	1.127 - 118.65+K	$2s^22p^2 - 2s2p^3$	$g^3P - {}^5S°$	1 - 2	P	680
		864.2	2.939 - 118.65+K	$2s^22p^2 - 2s2p^3$	$g^3P - {}^5S°$	2 - 2	P	680
	1	1189.84	1.127 - 85.1719	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1S$	1 - 0	F	940
		1216.	2.939 - 85.1719	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1S$	2 - 0	F,P	375,940

MAGNESIUM VIII (Mg^{7+}), Z = 12
Ground State $1s^22s^22p(^2P°_{1/2})$ (5 electrons)
Ionization Potential 2 145 100 cm^{-1}; 265.96 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	50.219	3.304 - 1994.58	$2s^22p - 2s2p(^3P°)5p$	$g^2P° - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		833
	20	50.386	3.304 - 1987.98	$2s^22p - 2s2p(^3P°)5p$	$g^2P° - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		833
	10	51.040	131.763+X - 2091.+X	$2s2p^2 - 2s2p(^3P°)6d$	$^4P - {}^4P°$	$\frac{3}{2} - \frac{5}{2}$		833
	40	51.098	133.481+X - 2090.5+X	$2s2p^2 - 2s2p(^3P°)6d$	$^4P - {}^4D°$	$\frac{5}{2} - \frac{7}{2}$		833
	20	51.389	0.0 - 1946.06	$2s^22p - 2s^26d$	$g^2P° - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		833
	40	51.470	3.304 - 1946.06	$2s^22p - 2s^26d$	$g^2P° - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		833
	10	52.395	133.481+X - 2042.06+X	$2s2p^2 - 2p^2(^3P)4p$	$^4P - {}^4D°$	$\frac{5}{2} - \frac{7}{2}$		691
	40	52.628	232.306 - 2132.42	$2s2p^2 - 2s2p(^1P°)5d$	$^2D - {}^2D°$	$\frac{3}{2} - \frac{5}{2}$		833
	80	52.692	232.280 - 2130.1	$2s2p^2 - 2s2p(^1P°)5d$	$^2D - {}^2F°$	$\frac{5}{2} - \frac{7}{2}$		833
	20	53.438	131.763+X - 2003.09+X	$2s2p^2 - 2s2p(^3P°)5d$	$^4P - {}^4P°$	$\frac{3}{2} - \frac{5}{2}$		833
	10	53.484	131.763+X - 2002.221+X	$2s2p^2 - 2s2p(^3P°)5d$	$^4P - {}^4D°$	$\frac{3}{2} - \frac{5}{2}$		691
	100	53.512	133.481+X - 2002.221+X	$2s2p^2 - 2s2p(^3P°)5d$	$^4P - {}^4D°$	$\frac{5}{2} - \frac{7}{2}$		691
	10	53.744	232.280 - 2092.95	$2s2p^2 - 2s2p(^3P°)6d$	$^2D - {}^2F°$	$\frac{5}{2} - \frac{7}{2}$		833
	10	53.812	0.0 - 1858.322	$2s^22p - 2s^25d$	$g^2P° - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		691
	100	53.905	3.304 - 1858.419	$2s^22p - 2s^25d$	$g^2P° - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		691
	60	54.853	0.0 - 1823.05	$2s^22p - 2s2p(^3P°)4p$	$g^2P° - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		833
	100	54.886	3.304 - 1825.262	$2s^22p - 2s2p(^3P°)4p$	$g^2P° - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		691
	10	55.222	3.304 - 1814.176	$2s^22p - 2s2p(^3P°)4p$	$g^2P° - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		691
	10	56.358	232.280 - 2006.652	$2s2p^2 - 2s2p(^3P°)5d$	$^2D - {}^2F°$	$\frac{5}{2} - \frac{7}{2}$		691
	10	56.403	232.306 - 2005.261	$2s2p^2 - 2s2p(^3P°)5d$	$^2D - {}^2F°$	$\frac{3}{2} - \frac{5}{2}$		691
	10	57.590	232.280 - 1968.694	$2s2p^2 - 2s2p(^1P°)4d$	$^2D - {}^2D°$	$\frac{5}{2} - \frac{5}{2}$		691
	100	57.736	232.280 - 1964.303	$2s2p^2 - 2s2p(^1P°)4d$	$^2D - {}^2F°$	$\frac{5}{2} - \frac{7}{2}$		691
	10	58.537	131.763+X - 1840.084+X	$2s2p^2 - 2s2p(^3P°)4d$	$^4P - {}^4P°$	$\frac{3}{2} - \frac{3}{2}$		691
	200	58.614	131.763+X - 1838.017+X	$2s2p^2 - 2s2p(^3P°)4d$	$^4P - {}^4D°$	$\frac{3}{2} - \frac{5}{2}$		691

MG VIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	300	58.667	133.481+X – 1838.017+X	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		691
	200	59.038	0.0 – 1693.824	$2s^22p - 2s^24d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		691
	300	59.153	3.304 – 1693.835	$2s^22p - 2s^24d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	40	60.316	131.763+X – 1789.549+X	$2s2p^2 - 2s2p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		833
	10	60.384	133.481+X – 1789.549+X	$2s2p^2 - 2s2p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		691
	10	60.806	3.304 – 1647.879	$2s^22p - 2s^2(^1S)4s$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		691
	200	61.891	232.280 – 1848.025	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		691
	100	61.964	232.306 – 1846.146	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		691
	10	62.291	232.280 – 1837.649	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		691
	10	64.246	0.0 – 1556.517	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		691
	100	64.377	3.304 – 1556.517	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		691
	100	64.488	0.0 – 1550.564	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		691
	100	64.518	0.0 – 1549.955	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		691
	200	64.635	3.304 – 1550.564	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		691
	200	64.702	3.304 – 1548.851	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	10	64.811	131.763+X – 1674.774+X	$2s2p^2 - 2p^2(^3P)3p$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		691
	100	64.878	133.481+X – 1674.774+X	$2s2p^2 - 2p^2(^3P)3p$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		691
	100	65.735	131.763+X – 1653.061+X	$2s2p^2 - 2p^2(^3P)3p$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		691
	200	65.806	133.481+X – 1653.061+X	$2s2p^2 - 2p^2(^3P)3p$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		691
	300	66.069	133.481+X – 1647.05+X	$2s2p^2 - 2p^2(^3P)3p$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		691
	400	67.731	232.280 – 1708.86	$2s2p^2 - 2p^2(^1D)3p$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		691
	100	68.450	0.0 – 1460.911	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		691
	100	68.550	232.280 – 1691.07	$2s2p^2 - 2p^2(^1D)3p$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		691
	10	68.580	232.306 – 1691.07	$2s2p^2 - 2p^2(^1D)3p$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		691
	200	68.606	3.304 – 1460.911	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		691
	10	69.327	232.306 – 1674.774+X	$2s2p^2 - 2p^2(^3P)3p$	$^2D - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$	Q	692,375
	400	69.413	0.0 – 1440.561	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		691
	500	69.467	3.304 – 1442.836	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	100	69.577	3.304 – 1440.561	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		691
	10	70.878	298.289 – 1708.86	$2s2p^2 - 2p^2(^1D)3p$	$^2S - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$	Q	692,375
	100	70.953	0.0 – 1409.401	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		691
	200	71.007	0.0 – 1408.371	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		691
	300	71.118	3.304 – 1409.401	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		691
	100	71.168	3.304 – 1408.371	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		691
	100	71.454	414.38+X – 1814.176	$2p^3 - 2s2p(^3P^\circ)4p$	$^4S^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$	Q	692,375
	300	72.027	320.734 – 1708.86	$2s2p^2 - 2p^2(^1D)3p$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		691
	10	72.546	232.280 – 1610.669	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		691
	100	72.684	232.280 – 1608.224	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		691
	400	73.250	232.280 – 1597.469	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		691
	10	73.710	130.660+X – 1486.995	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^4P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	Q	692,375
	10	73.773	131.763+X – 1486.995	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^4P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	Q	692,375
	100	73.825	130.660+X – 1485.153+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	200	73.862	131.763+X – 1485.639+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		691
	100	73.890	131.763+X – 1485.153+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		691
	100	73.927	131.763+X – 1484.449+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		691
	200	73.981	133.481+X – 1485.153+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		691
	300	74.021	133.481+X – 1484.449+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		691
	200	74.274	130.660+X – 1476.964+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	300	74.319	131.763+X – 1477.341+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		691
	400	74.366	133.481+X – 1478.182+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		691
	100	74.411	133.481+X – 1477.341+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		691
	100	74.676	414.38+X – 1753.323	$2p^3 - 2p^2(^1D)3d$	$^4S^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$	Q	692,375
	600	74.858	0.0 – 1335.863	$2s^22p - 2s^23d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		691
	700	75.034	3.304 – 1336.033	$2s^22p - 2s^23d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		691

MG VIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	76.199	298.289 – 1610.669	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	100	76.714	414.38+X – 1717.923+X	$2p^3 - 2p^2(^3P)3d$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		691
	200	76.740	414.38+X – 1717.481+X	$2p^3 - 2p^2(^3P)3d$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		691
	300	76.788	414.38+X – 1716.667+X	$2p^3 - 2p^2(^3P)3d$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		691
	200	77.405	318.732 – 1610.669	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		691
	100	77.511	320.734 – 1610.669	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		691
	500	77.572	318.732 – 1607.872	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	500	77.671	320.734 – 1608.224	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		691
	600	77.737	465.760 – 1752.149	$2p^3 - 2p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		691
	600	78.446	232.280 – 1507.043	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		691
	600	78.574	232.306 – 1504.992	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		691
	200	79.695	232.280 – 1486.995	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		691
	200	79.880	131.763+X – 1383.731	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	Q	692,375
	400	80.229	232.280 – 1478.706	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		691
	400	80.255	232.306 – 1478.358	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		691
	10	80.806	465.760 – 1703.405	$2p^3 - 2p^2(^3P)3d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		691
	100	80.889	465.760 – 1702.022	$2p^3 - 2p^2(^3P)3d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		691
	100	81.304	524.666 – 1754.288	$2p^3 - 2p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$	Q	691
	10	81.368	524.666 – 1753.323	$2p^3 - 2p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$	Q	691
	300	81.732	131.763+X – 1355.296+X	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		691
	200	81.790	130.660+X – 1353.279+X	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	400	81.844	133.481+X – 1355.296+X	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		691
	200	81.943	131.763+X – 1352.123+X	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		691
	200	81.979	133.481+X – 1353.279+X	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		691
	200	82.238	298.289 – 1514.266	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		691
	300	82.317	298.289 – 1513.099	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	200	82.598	0.0 – 1210.689	$2s^22p - 2s^23s$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		691
	200	82.709	524.666 – 1733.744	$2p^3 - 2p^2(^1D)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	300	82.822	3.304 – 1210.689	$2s^22p - 2s^23s$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		691
	300	84.087	298.289 – 1486.995	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	10	84.827	524.666 – 1703.405	$2p^3 - 2p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		691
	100	84.919	414.38+X – 1591.973+X	$2p^3 - 2p^2(^3P)3s$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		691
	10	85.064	414.38+X – 1589.965+X	$2p^3 - 2p^2(^3P)3s$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		691
	10	85.153	414.38+X – 1588.737+X	$2p^3 - 2p^2(^3P)3s$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		691
	200	85.248	465.760 – 1638.808	$2p^3 - 2p^2(^1D)3s$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		691
	300	85.599	318.732 – 1486.995	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		691
	400	85.749	320.734 – 1486.995	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		691
	100	86.234	318.732 – 1478.358	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	100	86.359	320.734 – 1478.706	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		691
	200	86.417	320.734 – 1478.358	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$	Q	692,375
	200	86.440	320.734 – 1477.341+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$	Q	692,375
	200	86.847	232.280 – 1383.731	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		691
	100	87.017	232.306 – 1381.466	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		691
	200	88.016	414.38+X – 1550.564	$2p^3 - 2s2p(^1P^\circ)3p$	$^4S^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$	Q	692,375
	100	92.123	298.289 – 1383.731	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	10	92.324	298.289 – 1381.466	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		691
	100	93.720	524.666 – 1591.973+X	$2p^3 - 2p^2(^3P)3s$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$	Q	692,375
	10	93.911	318.732 – 1383.731	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		691
	10	93.972	524.666 – 1588.737+X	$2p^3 - 2p^2(^3P)3s$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$	Q	692,375
	400	94.043	320.734 – 1383.731	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		691
	200	94.276	320.734 – 1381.466	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		691
	200	97.465	524.666 – 1550.564	$2p^3 - 2s2p(^1P^\circ)3p$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		691
	10	97.525	524.666 – 1549.955	$2p^3 - 2s2p(^1P^\circ)3p$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		691
	200	97.606	524.666 – 1548.851	$2p^3 - 2s2p(^1P^\circ)3p$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		691

MG VIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	97.686	524.666 – 1548.027	$2p^3 - 2s2p(^1P^\circ)3p$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		691
	10	100.519	414.38+X – 1409.401	$2p^3 - 2s2p(^3P^\circ)3p$	$^4S^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$	Q	692,375
	200	100.597	414.38+X – 1408.371	$2p^3 - 2s2p(^3P^\circ)3p$	$^4S^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$	Q	692,375
	10	269.295	1717.481+X – 2088.79+X	$2p^2(^3P)3d - 2s2p(^3P^\circ)6d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$	Q	693,375
	10	295.393	1355.296+X – 1693.835	$2s2p(^3P^\circ)3s - 2s^24d$	$^4P^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$	Q	693,375
	10	311.806	0.0 – 320.734	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		691
	100	313.743	0.0 – 318.732	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		691
	200	315.022	3.304 – 320.734	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		691
	100	317.029	3.304 – 318.732	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		691
	10	335.230	0.0 – 298.289	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		691
	100	339.007	3.304 – 298.289	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		691
		341.75	232.280 – 524.890	$2s2p^2 - 2p^3$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		250
		342.07	232.306 – 524.666	$2s2p^2 - 2p^3$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		250
		352.46	130.660+X – 414.38+X	$2s2p^2 - 2p^3$	$^4P - ^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		250
		353.86	131.763+X – 414.38+X	$2s2p^2 - 2p^3$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		250
	10	356.000	133.481+X – 414.38+X	$2s2p^2 - 2p^3$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		691
		428.27	232.280 – 465.760	$2s2p^2 - 2p^3$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		250
	10	430.467	0.0 – 232.306	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		691
	100	436.726	3.304 – 232.280	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		691
		441.30	298.289 – 524.890	$2s2p^2 - 2p^3$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		250
		441.76	298.289 – 524.666	$2s2p^2 - 2p^3$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		250
	10	465.972	1610.669 – 1825.262	$2s2p(^1P^\circ)3d - 2s2p(^3P^\circ)4p$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	Q	693,375
		485.06	318.732 – 524.890	$2s2p^2 - 2p^3$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	250
		485.59	318.732 – 524.666	$2s2p^2 - 2p^3$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		250
		489.82	320.734 – 524.890	$2s2p^2 - 2p^3$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	P	250
		490.36	320.734 – 524.666	$2s2p^2 - 2p^3$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	P	250
	10	491.045	1514.266 – 1717.923+X	$2s2p(^3P^\circ)3d - 2p^2(^3P)3d$	$^2P^\circ - ^4P$	$\frac{1}{2}-\frac{1}{2}$	Q	693,375
		679.77	318.732 – 465.841	$2s2p^2 - 2p^3$	$^2P - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		250
		689.55	320.734 – 465.760	$2s2p^2 - 2p^3$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		250

MAGNESIUM IX (Mg^{8+}), Z = 12
Ground State $1s^22s^2(^1S_0)$ (4 electrons)
Ionization Potential 2 647 440 cm^{-1}; 328.24 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	40.638	0.0 – 2460.75	$1s^22s^2 - 1s^22s7p$	$g^1S - ^1P^\circ$	0 – 1		832
	40	41.803	0.0 – 2392.17	$1s^22s^2 - 1s^22s6p$	$g^1S - ^1P^\circ$	0 – 1		832
	10	43.087	141.700+X – 2462.7+X	$1s^22s2p - 1s^22s7d$	$^3P^\circ - ^3D$	1 – 2		832
	20	43.138	144.162+X – 2462.7+X	$1s^22s2p - 1s^22s7d$	$^3P^\circ - ^3D$	2 – 3		832
	50	43.481	144.162+X – 2444.28+X	$1s^22s2p - 1s^22p5p$	$^3P^\circ - ^3P$	2 – 2		832
	60	43.843	0.0 – 2280.87	$1s^22s^2 - 1s^22s5p$	$g^1S - ^1P^\circ$	0 – 1		832
	40	44.373	141.700+X – 2395.6+X	$1s^22s2p - 1s^22s6d$	$^3P^\circ - ^3D$	1 – 2		832
	60	44.420	144.162+X – 2395.6+X	$1s^22s2p - 1s^22s6d$	$^3P^\circ - ^3D$	2 – 3		832
	20	44.983	405.100 – 2627.8+Y	$1s^22p^2 - 1s^22p7d$	$^1D - ^1F^\circ$	2 – 3		832
	40	45.635	271.687 – 2462.99	$1s^22s2p - 1s^22s7d$	$^1P^\circ - ^1D$	1 – 2		832
	20	45.980	271.687 – 2446.55	$1s^22s2p - 1s^22p5p$	$^1P^\circ - ^1D$	1 – 2		832
	40	46.340	405.100 – 2562.7+Y	$1s^22p^2 - 1s^22p6d$	$^1D - ^1F^\circ$	2 – 3		832
	160	46.657	141.700+X – 2284.985+X	$1s^22s2p - 1s^22s5d$	$^3P^\circ - ^3D$	1 – 2		832
	10	46.711	144.162+X – 2284.985+X	$1s^22s2p - 1s^22s5d$	$^3P^\circ - ^3D$	2 – 3		691
	60	47.041	271.687 – 2397.49	$1s^22s2p - 1s^22s6d$	$^1P^\circ - ^1D$	1 – 2		832
	10	47.818	144.162+X – 2235.683	$1s^22s2p - 1s^22p(^2P^\circ)4p$	$^3P^\circ - ^3P$	2 – 2		691
	100	47.947	144.162+X – 2229.798+X	$1s^22s2p - 1s^22p(^2P^\circ)4p$	$^3P^\circ - ^3D$	2 – 3		691
	10	48.024	369.397+X – 2451.684+X	$1s^22p^2 - 1s^22p(^2P^\circ)5d$	$^3P - ^3D^\circ$	2 – 3		691

MG IX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	48.340	0.0 – 2068.68	$1s^22s^2 - 1s^22s4p$	$g^1S - {}^1P^\circ$	0 – 1		691
	10	48.794	405.100 – 2454.530	$1s^22p^2 - 1s^22p(^2P^\circ)5d$	$^1D - {}^1F^\circ$	2 – 3		691
	1	49.586	271.687 – 2288.385	$1s^22s2p - 1s^22s5d$	$^1P^\circ - {}^1D$	1 – 2		691
	10	50.777	271.687 – 2241.083	$1s^22s2p - 1s^22p(^2P^\circ)4p$	$^1P^\circ - {}^1D$	1 – 2		691
	10	51.560	140.575+X – 2080.016+X	$1s^22s2p - 1s^22s4d$	$^3P^\circ - {}^3D$	0 – 1		691
	300	51.591	141.700+X – 2080.07+X	$1s^22s2p - 1s^22s4d$	$^3P^\circ - {}^3D$	1 – 2		691
	400	51.654	144.162+X – 2080.12+X	$1s^22s2p - 1s^22s4d$	$^3P^\circ - {}^3D$	2 – 3		691
	10	53.112	367.230+X – 2249.515+X	$1s^22p^2 - 1s^22p(^2P^\circ)4d$	$^3P - {}^3P^\circ$	1 – 2		691
	200	53.188	369.397+X – 2249.515+X	$1s^22p^2 - 1s^22p(^2P^\circ)4d$	$^3P - {}^3P^\circ$	2 – 2		691
	200	53.222	369.397+X – 2248.314+X	$1s^22p^2 - 1s^22p(^2P^\circ)4d$	$^3P - {}^3D^\circ$	2 – 3		691
	200	54.011	405.100 – 2256.570	$1s^22p^2 - 1s^22p(^2P^\circ)4d$	$^1D - {}^1F^\circ$	2 – 3		691
	10	54.463	405.100 – 2240.853	$1s^22p^2 - 1s^22p(^2P^\circ)4d$	$^1D - {}^1D^\circ$	2 – 2		691
	200	55.060	271.687 – 2087.888	$1s^22s2p - 1s^22s4d$	$^1P^\circ - {}^1D$	1 – 2		691
	10	56.861	499.638 – 2258.119	$1s^22p^2 - 1s^22p(^2P^\circ)4d$	$^1S - {}^1P^\circ$	0 – 1		691
	200	61.038	141.700+X – 1780.057+X	$1s^22s2p - 1s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3P$	1 – 2		691
	100	61.088	141.700+X – 1778.745+X	$1s^22s2p - 1s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3P$	1 – 1		691
	300	61.127	144.162+X – 1780.057+X	$1s^22s2p - 1s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3P$	2 – 2		691
	200	61.175	144.162+X – 1778.745+X	$1s^22s2p - 1s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3P$	2 – 1		691
	10	61.359	140.575+X – 1770.43+X	$1s^22s2p - 1s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3S$	0 – 1		691
	100	61.393	141.700+X – 1770.43+X	$1s^22s2p - 1s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3S$	1 – 1		691
	200	61.489	144.162+X – 1770.43+X	$1s^22s2p - 1s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3S$	2 – 1		691
	400	61.924	144.162+X – 1759.045+X	$1s^22s2p - 1s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3D$	2 – 3		691
	100	61.964	141.700+X – 1755.785+X	$1s^22s2p - 1s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3D$	1 – 1		691
	10	62.020	144.162+X – 1756.545+X	$1s^22s2p - 1s^22p(^2P^\circ)3p$	$^3P^\circ - {}^3D$	2 – 2		691
	500	62.751	0.0 – 1593.908	$1s^22s^2 - 1s^22s3p$	$g^1S - {}^1P^\circ$	0 – 1		691
	400	65.609	271.687 – 1795.868	$1s^22s2p - 1s^22p(^2P^\circ)3p$	$^1P^\circ - {}^1D$	1 – 2		691
	500	67.090	140.575+X – 1631.063+X	$1s^22s2p - 1s^22s3d$	$^3P^\circ - {}^3D$	0 – 1		691
	600	67.135	141.700+X – 1631.226+X	$1s^22s2p - 1s^22s3d$	$^3P^\circ - {}^3D$	1 – 2		691
	700	67.239	144.162+X – 1631.394+X	$1s^22s2p - 1s^22s3d$	$^3P^\circ - {}^3D$	2 – 3		691
	400	67.731	271.687 – 1748.116	$1s^22s2p - 1s^22p(^2P^\circ)3p$	$^1P^\circ - {}^1P$	1 – 1		691
	10	68.949	365.930+X – 1816.276+X	$1s^22p^2 - 1s^22p(^2P^\circ)3d$	$^3P - {}^3P^\circ$	0 – 1		691
	100	68.986	367.230+X – 1816.804+X	$1s^22p^2 - 1s^22p(^2P^\circ)3d$	$^3P - {}^3P^\circ$	1 – 0		691
	100	69.009	367.230+X – 1816.276+X	$1s^22p^2 - 1s^22p(^2P^\circ)3d$	$^3P - {}^3P^\circ$	1 – 1		691
	10	69.058	367.230+X – 1815.294+X	$1s^22p^2 - 1s^22p(^2P^\circ)3d$	$^3P - {}^3P^\circ$	1 – 2		691
	100	69.116	369.397+X – 1816.276+X	$1s^22p^2 - 1s^22p(^2P^\circ)3d$	$^3P - {}^3P^\circ$	2 – 1		691
	300	69.161	369.397+X – 1815.294+X	$1s^22p^2 - 1s^22p(^2P^\circ)3d$	$^3P - {}^3P^\circ$	2 – 2		691
	200	69.374	365.930+X – 1807.436+X	$1s^22p^2 - 1s^22p(^2P^\circ)3d$	$^3P - {}^3D^\circ$	0 – 1		691
	400	69.413	367.230+X – 1807.929+X	$1s^22p^2 - 1s^22p(^2P^\circ)3d$	$^3P - {}^3D^\circ$	1 – 2		691
	500	69.467	369.397+X – 1808.924+X	$1s^22p^2 - 1s^22p(^2P^\circ)3d$	$^3P - {}^3D^\circ$	2 – 3		691
	100	69.513	369.397+X – 1807.929+X	$1s^22p^2 - 1s^22p(^2P^\circ)3d$	$^3P - {}^3D^\circ$	2 – 2		691
	300	69.615	405.100 – 1841.570	$1s^22p^2 - 1s^22p(^2P^\circ)3d$	$^1D - {}^1P^\circ$	2 – 1		691
	600	69.950	405.100 – 1834.690	$1s^22p^2 - 1s^22p(^2P^\circ)3d$	$^1D - {}^1F^\circ$	2 – 3		691
	100	71.841	140.575+X – 1532.491+X	$1s^22s2p - 1s^22s3s$	$^3P^\circ - {}^3S$	0 – 1		691
	200	71.901	141.700+X – 1532.491+X	$1s^22s2p - 1s^22s3s$	$^3P^\circ - {}^3S$	1 – 1		691
	300	72.027	144.162+X – 1532.491+X	$1s^22s2p - 1s^22s3s$	$^3P^\circ - {}^3S$	2 – 1		691
	300	72.226	405.100 – 1789.287	$1s^22p^2 - 1s^22p(^2P^\circ)3d$	$^1D - {}^1D^\circ$	2 – 2		691
	400	72.312	271.687 – 1654.583	$1s^22s2p - 1s^22s3d$	$^1P^\circ - {}^1D$	1 – 2		691
	200	74.274	367.230+X – 1713.847+X	$1s^22p^2 - 1s^22p(^2P^\circ)3s$	$^3P - {}^3P^\circ$	1 – 2		691
	300	74.319	365.930+X – 1711.314+X	$1s^22p^2 - 1s^22p(^2P^\circ)3s$	$^3P - {}^3P^\circ$	0 – 1		691
	400	74.366	369.397+X – 1713.847+X	$1s^22p^2 - 1s^22p(^2P^\circ)3s$	$^3P - {}^3P^\circ$	2 – 2		691
	100	74.411	367.230+X – 1711.314+X	$1s^22p^2 - 1s^22p(^2P^\circ)3s$	$^3P - {}^3P^\circ$	1 – 1		691
	10	74.461	367.230+X – 1710.22+X	$1s^22p^2 - 1s^22p(^2P^\circ)3s$	$^3P - {}^3P^\circ$	1 – 0		691
	100	74.520	499.638 – 1841.570	$1s^22p^2 - 1s^22p(^2P^\circ)3d$	$^1S - {}^1P^\circ$	0 – 1		691
	100	74.520	369.397+X – 1711.314+X	$1s^22p^2 - 1s^22p(^2P^\circ)3s$	$^3P - {}^3P^\circ$	2 – 1		691

MG IX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	74.738	405.100 – 1743.000	$1s^22p^2 - 1s^22p(^2P^o)3s$	$^1D - ^1P^o$	2 – 1		691
	100	76.459	499.638 – 1807.436+X	$1s^22p^2 - 1s^22p(^2P^o)3d$	$^1S - ^3D^o$	0 – 1	Q	692,375
	600	77.737	271.687 – 1558.076	$1s^22s2p - 1s^22s3s$	$^1P^o - ^1S$	1 – 0		691
	100	80.428	499.638 – 1743.000	$1s^22p^2 - 1s^22p(^2P^o)3s$	$^1S - ^1P^o$	0 – 1		691
	10	91.385	499.638 – 1593.908	$1s^22p^2 - 1s^22s3p$	$^1S - ^1P^o$	0 – 1		691
	10	117.880	1598.4+Z – 2446.55	$1s^22s3p - 1s^22p5p$	$^3P^o - ^1D$	2 – 2	Q	692,375
	100	368.071	0.0 – 271.687	$1s^22s^2 - 1s^22s2p$	$g^1S - ^1P^o$	0 – 1		691
		438.69	271.687 – 499.638	$1s^22s2p - 1s^22p^2$	$^1P^o - ^1S$	1 – 0		250
	10	439.180	141.700+X – 369.397+X	$1s^22s2p - 1s^22p^2$	$^3P^o - ^3P$	1 – 2		691
		441.20	140.575+X – 367.230+X	$1s^22s2p - 1s^22p^2$	$^3P^o - ^3P$	0 – 1		250
		443.40	141.700+X – 367.230+X	$1s^22s2p - 1s^22p^2$	$^3P^o - ^3P$	1 – 1		250
	10	443.981	144.162+X – 369.397+X	$1s^22s2p - 1s^22p^2$	$^3P^o - ^3P$	2 – 2		691
		445.97	141.700+X – 365.930+X	$1s^22s2p - 1s^22p^2$	$^3P^o - ^3P$	1 – 0		250
		448.29	144.162+X – 367.230+X	$1s^22s2p - 1s^22p^2$	$^3P^o - ^3P$	2 – 1		250
	1	705.72	0. – 141.700+X	$1s^22s^2 - 1s^22s2p$	$g^1S - ^3P^o$	0 – 1	P	211,856
		749.55	271.687 – 405.100	$1s^22s2p - 1s^22p^2$	$^1P^o - ^1D$	1 – 2		250

MAGNESIUM X (Mg^{9+}), Z = 12
Ground State $1s^22s(^2S_{1/2})$ (3 electrons)
Ionization Potential 2 964 400 cm^{-1}; 367.54 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		7.998	0.0 – 12503.	$1s^22s - 1s2s(^1S)3p$	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$		283
	2	8.0358	163.991 – 12607.8	$1s^22p - 1s2p(^1P^o)3p$	$^2P^o - ^2D$	$\frac{3}{2} - \frac{5}{2}$		624,809
		8.0514	163.991 – 12584.2	$1s^22p - 1s2p(^3P^o)3p$	$^2P^o - ^2S$	$\frac{3}{2} - \frac{1}{2}$		624
	4	8.0688	163.991 – 12557.4	$1s^22p - 1s2p(^3P^o)3p$	$^2P^o - ^2D$	$\frac{3}{2} - \frac{5}{2}$		624,809
	3	8.092	163.991 – 12522.	$1s^22p - 1s2p(^3P^o)3p$	$^2P^o - ^2P$	$\frac{3}{2} - \frac{3}{2}$		283,809
	5	9.1771	1727.832 – 12624.5	$1s^23p - 1s2p(^1P^o)3p$	$^2P^o - ^2P$	$\frac{3}{2} - \frac{3}{2}$		624,636
	4	9.187	2270.148 – 13155.1	$1s^24p - 1s2p4p$	$^2P^o - ^2D$	$\frac{3}{2} - \frac{5}{2}$		636
		9.1912	1727.832 – 12607.8	$1s^23p - 1s2p(^1P^o)3p$	$^2P^o - ^2D$	$\frac{3}{2} - \frac{5}{2}$		624
	3	9.195	2520.9 – 13396.4	$1s^25p - 1s2p5p$	$^2P^o - ^2D$	$\frac{3}{2} - \frac{5}{2}$		636
	4	9.218	160.013 – 11008.6	$1s^22p - 1s2p^2$	$^2P^o - ^2S$	$\frac{1}{2} - \frac{1}{2}$	P	629,636
		9.221	163.991 – 11008.6	$1s^22p - 1s2p^2$	$^2P^o - ^2S$	$\frac{3}{2} - \frac{1}{2}$	P	629
		9.234	0.0 – 10828.	$1s^22s - 1s(2s2p(^1P^o))$	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{1}{2}$	P	629
	4	9.235	1682.648 – 12503.	$1s^23s - 1s2s(^1S)3p$	$^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	629,636
	2	9.266	2656.5 – 13448.6	$1s^26p - 1s2p6p$	$^2P^o - ^2D$	$\frac{3}{2} - \frac{5}{2}$		636
	16	9.2832	0.0 – 10772.	$1s^22s - 1s(2s2p(^3P^o))$	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$		624,636
		9.285	0.0 – 10770.	$1s^22s - 1s(2s2p(^3P^o))$	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{1}{2}$	P	629
	13	9.294	160.013 – 10919.9	$1s^22p - 1s2p^2$	$^2P^o - ^2P$	$\frac{1}{2} - \frac{3}{2}$	P	629,636
		9.297	163.991 – 10919.9	$1s^22p - 1s2p^2$	$^2P^o - ^2P$	$\frac{3}{2} - \frac{3}{2}$	P	629
		9.300	163.991 – 10916.4	$1s^22p - 1s2p^2$	$^2P^o - ^2P$	$\frac{3}{2} - \frac{1}{2}$	P	629
	32	9.316	160.013 – 10895.1	$1s^22p - 1s2p^2$	$^2P^o - ^2D$	$\frac{1}{2} - \frac{3}{2}$	P	629,636
		9.318	163.991 – 10894.8	$1s^22p - 1s2p^2$	$^2P^o - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	629
		9.319	163.991 – 10894.8	$1s^22p - 1s2p^2$	$^2P^o - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	629
		9.382	160.013 – 10819.6	$1s^22p - 1s2p^2$	$^2P^o - ^4P$	$\frac{1}{2} - \frac{3}{2}$	P	629
		9.383	163.991 – 10821.6	$1s^22p - 1s2p^2$	$^2P^o - ^4P$	$\frac{3}{2} - \frac{5}{2}$	P	629
		9.384	163.991 – 10819.6	$1s^22p - 1s2p^2$	$^2P^o - ^4P$	$\frac{3}{2} - \frac{3}{2}$	P	629
		9.386	163.991 – 10817.9	$1s^22p - 1s2p^2$	$^2P^o - ^4P$	$\frac{3}{2} - \frac{1}{2}$	P	629
		9.391	0.0 – 10648.	$1s^22s - 1s(2s2p(^3P^o))$	$g^2S - ^4P^o$	$\frac{1}{2} - \frac{1}{2}$	P	629
	3	35.366	0.0 – 2827.6	$1s^22s - 1s^29p$	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$		234
	6	35.827	0.0 – 2791.2	$1s^22s - 1s^28p$	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$		234
	35	36.518	0.0 – 2738.4	$1s^22s - 1s^27p$	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$		234

MG X — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	60	37.644	0.0 – 2656.5	$1s^22s - 1s^26p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		234
	60	38.769	160.013 – 2739.3	$1s^22p - 1s^27d$	${}^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		234
	120	38.823	163.991 – 2739.8	$1s^22p - 1s^27d$	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		234
	250	39.669	0.0 – 2520.9	$1s^22s - 1s^25p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		234
	120	40.022	160.013 – 2658.5	$1s^22p - 1s^26d$	${}^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		234
	200	40.080	163.991 – 2659.	$1s^22p - 1s^26d$	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		234
	250	42.294	160.013 – 2524.3	$1s^22p - 1s^25d$	${}^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		234
	400	42.363	163.991 – 2524.6	$1s^22p - 1s^25d$	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		234
	6	42.523	160.013 – 2511.6	$1s^22p - 1s^25s$	${}^2P^o - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		234
	10	42.596	163.991 – 2511.6	$1s^22p - 1s^25s$	${}^2P^o - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		234
	400	44.050	0.0 – 2270.148	$1s^22s - 1s^24p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		234
	250	47.231	160.013 – 2277.182	$1s^22p - 1s^24d$	${}^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		234
	400	47.310	163.991 – 2277.694	$1s^22p - 1s^24d$	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		234
	700	57.876	0.0 – 1727.832	$1s^22s - 1s^23p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		234
	700	57.920	0.0 – 1726.519	$1s^22s - 1s^23p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{1}{2}$		234
	400	63.152	160.013 – 1743.41	$1s^22p - 1s^23d$	${}^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		234
	700	63.295	163.991 – 1743.88	$1s^22p - 1s^23d$	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		234
	35	65.672	160.013 – 1682.648	$1s^22p - 1s^23s$	${}^2P^o - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		234
	60	65.847	163.991 – 1682.648	$1s^22p - 1s^23s$	${}^2P^o - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		234
	100	94.721	1682.648 – 2738.4	$1s^23s - 1s^27p$	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	Q	692,375
	200	100.545	1743.88 – 2738.4	$1s^23d - 1s^27p$	${}^2D - {}^2P^o$	$\frac{5}{2}-\frac{3}{2}$	Q	692,375
		170.21	1682.648 – 2270.148	$1s^23s - 1s^24p$	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		375
		181.60	1726.519 – 2277.182	$1s^23p - 1s^24d$	${}^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	P	244
		181.86	1727.832 – 2277.694	$1s^23p - 1s^24d$	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		244
		187.17	1743.88 – 2278.15	$1s^23d - 1s^24f$	${}^2D - {}^2F^o$	$\frac{5}{2}-\frac{7}{2}$		244
	23	609.79	0.0 – 163.991	$1s^22s - 1s^22p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		730,856
	12	624.95	0.0 – 160.013	$1s^22s - 1s^22p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{1}{2}$		730,856

MAGNESIUM XI (Mg^{10+}), Z = 12
Ground State $1s^2({}^1S_0)$ (2 electrons)
Ionization Potential 14 210 200 cm^{-1}; 1761.85 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	2	7.128	0.0 – 14029.	$1s^2 - 1s9p$	$g^1S - {}^1P^o$	0 – 1		809
	3	7.156	0.0 – 13974.	$1s^2 - 1s8p$	$g^1S - {}^1P^o$	0 – 1		809
	4	7.177	0.0 – 13933.	$1s^2 - 1s7p$	$g^1S - {}^1P^o$	0 – 1		809
	4	7.225	0.0 – 13841.	$1s^2 - 1s6p$	$g^1S - {}^1P^o$	0 – 1		624,809
	6	7.3101	0.0 – 13679.63	$1s^2 - 1s5p$	$g^1S - {}^1P^o$	0 – 1		236,809
	10	7.4730	0.0 – 13381.53	$1s^2 - 1s4p$	$g^1S - {}^1P^o$	0 – 1		236,809
	44	7.8503	0.0 – 12738.29	$1s^2 - 1s3p$	$g^1S - {}^1P^o$	0 – 1		236,809
	2	7.8629	0.0 – 12717.99	$1s^2 - 1s3p$	$g^1S - {}^3P^o$	0 – 1		644,809
		8.445	12719.05 – 24560.	1s3p – 2p3p	${}^3P^o - {}^3D$	2 – 3		283
		8.458	10906.89 – 22730.	$1s2p - 2p^2$	${}^1P^o - {}^1S$	1 – 0		839
		8.4943	10839.04 – 22611.6	1s2s – 2s2p	${}^1S - {}^1P^o$	0 – 1	P	626
	1	8.5228	10736.42 – 22469.4	1s2s – 2s2p	${}^3S - {}^3P^o$	1 – 1		624,809
		8.5313	10836.65 – 22558.2	$1s2p - 2p^2$	${}^3P^o - {}^3P$	2 – 2	P	626
	2	8.5487	10906.89 – 22604.6	$1s2p - 2p^2$	${}^1P^o - {}^1D$	1 – 2	P	624,809
	1	8.573	10906.89 – 22558.2	$1s2p - 2p^2$	${}^1P^o - {}^3P$	1 – 2	Q	624,809
		8.5983	10839.04 – 22469.4	1s2s – 2s2p	${}^1S - {}^3P^o$	0 – 1		624
	100	9.1685	0.0 – 10906.89	$1s^2 - 1s2p$	$g^1S - {}^1P^o$	0 – 1		236,636
	31	9.2310	0.0 – 10833.09	$1s^2 - 1s2p$	$g^1S - {}^3P^o$	0 – 1		446,636

MG XI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	32	9.314	0.0 – 10736.42	$1s^2$ – 1s2s	g^1S – ^3S	0 – 1	F,P	375,636,918
		50.44	10736.42 – 12719.05	1s2s – 1s3p	^3S – $^3P^\circ$	1 – 2	P	375
		52.65	10839.04 – 12738.29	1s2s – 1s3p	^1S – $^1P^\circ$	0 – 1	P	375
		90.32	12761.0+R – 13868.2+R	1s3d – 1s6f	^3D – $^3F^\circ$	3 – 4	P	087
		90.38	12765.0+K – 13871.4+K	1s3d – 1s6f	^1D – $^1F^\circ$	2 – 3	P	087
		105.83	12761.0+R – 13705.9+R	1s3d – 1s5f	^3D – $^3F^\circ$	3 – 4	P	087
		105.92	12765.0+K – 13709.1+K	1s3d – 1s5f	^1D – $^1F^\circ$	2 – 3	P	087
		146.58	12691.44 – 13373.64	1s3s – 1s4p	^3S – $^3P^\circ$	1 – 2	P	375
		150.83	12718.55 – 13381.53	1s3s – 1s4p	^1S – $^1P^\circ$	0 – 1	P	375
		154.77	12761.0+R – 13407.1+R	1s3d – 1s4f	^3D – $^3F^\circ$	3 – 4	P	087
		154.95	12765.0+K – 13410.4+K	1s3d – 1s4f	^1D – $^1F^\circ$	2 – 3	P	087
		997.71	10736.42 – 10836.65	1s2s – 1s2p	^3S – $^3P^\circ$	1 – 2	P	375
		1473.84	10839.04 – 10906.89	1s2s – 1s2p	^1S – $^1P^\circ$	0 – 1	P	375

MAGNESIUM XII (Mg^{11+}), Z = 12
Ground State $1s(^2S_{1/2})$ (1 electron)
Ionization Potential 1 582 938 cm^{-1}; 1962.68 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		6.381	0.0 – 15671.8684290	1s – 10p	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		6.396	0.0 – 15634.7847080	1s – 9p	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		6.417	0.0 – 15582.9386320	1s – 8p	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		6.448	0.0 – 15507.3133860	1s – 7p	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
	3	6.497	0.0 – 15390.7886130	1s – 6p	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309,809
	8	6.580	0.0 – 15197.5265800	1s – 5p	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309,809
	10	6.738	0.0 – 14841.7337800	1s – 4p	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309,809
	20	7.106	0.0 – 14073.0609400	1s – 3p	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309,809
	10	7.107	0.0 – 14070.8008900	1s – 3p	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{1}{2}$	P	309,809
	60	8.419	0.0 – 11877.5990000	1s – 2p	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309,809
	120	8.425	0.0 – 11869.9724000	1s – 2p	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{1}{2}$	P	309,809
		26.305	11870.2839000 – 15671.8684290	2s – 10p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		26.355	11877.5990000 – 15671.8885890	2p – 10d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		26.564	11870.2839000 – 15634.7847080	2s – 9p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		26.616	11877.5990000 – 15634.8123640	2p – 9d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		26.935	11870.2839000 – 15582.9386320	2s – 8p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		26.988	11877.5990000 – 15582.9780110	2p – 8d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		27.495	11870.2839000 – 15507.3133860	2s – 7p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		27.550	11877.5990000 – 15507.3721710	2p – 7d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		28.405	11870.2839000 – 15390.7886130	2s – 6p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		28.463	11877.5990000 – 15390.8819670	2p – 6d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		30.055	11870.2839000 – 15197.5265800	2s – 5p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		30.120	11877.5990000 – 15197.6879120	2p – 5d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		33.654	11870.2839000 – 14841.7337800	2s – 4p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		33.733	11877.5990000 – 14842.0488800	2p – 4d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		45.397	11870.2839000 – 14073.0609400	2s – 3p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		45.533	11877.5990000 – 14073.8077730	2p – 3d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		62.462	14070.8941000 – 15671.8684290	3s – 10p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		62.546	14073.0609400 – 15671.8885890	3p – 10d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		62.575	14073.8077730 – 15671.8986800	3d – 10f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309

MG XII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		63.943	14070.8941000 – 15634.7847080	3s – 9p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		64.031	14073.0609400 – 15634.8123640	3p – 9d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		64.061	14073.8077730 – 15634.8262060	3d – 9f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		66.136	14070.8941000 – 15582.9386320	3s – 8p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		66.229	14073.0609400 – 15582.9780110	3p – 8d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		66.261	14073.8077730 – 15582.9977200	3d – 8f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		69.618	14070.8941000 – 15507.3133860	3s – 7p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		69.720	14073.0609400 – 15507.3721710	3p – 7d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		69.755	14073.8077730 – 15507.4015920	3d – 7f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		75.764	14070.8941000 – 15390.7886130	3s – 6p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		75.883	14073.0609400 – 15390.8819670	3p – 6d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		75.923	14073.8077730 – 15390.9286870	3d – 6f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		88.760	14070.8941000 – 15197.5265800	3s – 5p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		88.918	14073.0609400 – 15197.6879120	3p – 5d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		88.971	14073.8077730 – 15197.7686430	3d – 5f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		120.330	14840.8199600 – 15671.8684290	4s – 10p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		120.460	14841.7337800 – 15671.8885890	4p – 10d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		120.504	14842.0488800 – 15671.8986800	4d – 10f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		125.950	14840.8199600 – 15634.7847080	4s – 9p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		126.091	14841.7337800 – 15634.8123640	4p – 9d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		126.139	14842.0488800 – 15634.8262060	4d – 9f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		129.729	14070.8941000 – 14841.7337800	3s – 4p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		130.041	14073.0609400 – 14842.0488800	3p – 4d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		130.141	14073.8077730 – 14842.2065480	3d – 4f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		134.749	14840.8199600 – 15582.9386320	4s – 8p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		134.908	14841.7337800 – 15582.9780110	4p – 8d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		134.962	14842.0488800 – 15582.9977200	4d – 8f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		150.039	14840.8199600 – 15507.3133860	4s – 7p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		150.232	14841.7337800 – 15507.3721710	4p – 7d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		150.296	14842.0488800 – 15507.4015920	4d – 7f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		181.828	14840.8199600 – 15390.7886130	4s – 6p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		182.100	14841.7337800 – 15390.8819670	4p – 6d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		182.189	14842.0488800 – 15390.9286870	4d – 6f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		210.611	15197.0588300 – 15671.8684290	5s – 10p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		210.810	15197.5265800 – 15671.8885890	5p – 10d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		210.877	15197.6879120 – 15671.8986800	5d – 10f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309

ALUMINUM , Z = 13
Unclassified Lines

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	53.598						233
	10	55.143						233
	10	56.545						233
	50	57.244						233
	50	57.271						233
	50	61.373						233
	100	61.472						233
	10	61.900						233
	10	64.418						233
	10	66.996						233
	10	67.873						233
	50	68.439						233
	50	68.458						233
	50	69.379						233
	10	71.077						233
	50	71.139						233
	70	71.590						233
	10	71.867						233
	10	71.987						233
	70	78.573						233
	50	79.783						233
	10	80.014						233
	10	80.403						233
	70	82.128						233
	50	82.582						233
	50	86.282						233
	10	86.540						233
	500	91.023						233
	10	95.405						233
	200	95.720						233
	10	95.859						233
	10	96.939						233
	10	104.227						233
	10	106.471						233
	10	1291.81						693
	10	1320.71						693
	10	1429.57						693

ALUMINUM I (Al^{0+}), Z = 13
Ground State $1s^2 2s^2 2p^6 3s^2 3p (^2P^\circ_{1/2})$ (13 electrons)
Ionization Potential 48 278.37 cm^{-1}; 5.986 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	1762.892	0.0 – 56.72498	$3s^2 3p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		197,198
	200	1765.632	0.0 – 56.63693	$3s^2 3p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		197,198
	200	1766.381	0.112061 – 56.72498	$3s^2 3p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		197,198
	200	1769.133	0.112061 – 56.63693	$3s^2 3p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		197,198
		1932.255	0.0 – 51.7530	$3s^2 3p - 3s3p^2$	$g^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$	P	198
		1936.448	0.112061 – 51.7530	$3s^2 3p - 3s3p^2$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$	P	198

ALUMINUM II (Al^{1+}), Z = 13
Ground State $1s^22s^22p^63s^2(^1S_0)$ (12 electrons)
Ionization Potential 151 862.7 cm^{-1}; 18.829 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	2	683.529	0.00 – 146.29992	$3s^2$ – 3s10p	g^1S – $^1P^o$	0 – 1		961
	5	689.936	0.00 – 144.94110	$3s^2$ – 3s9p	g^1S – $^1P^o$	0 – 1		961
	10	699.489	0.00 – 142.96120	$3s^2$ – 3s8p	g^1S – $^1P^o$	0 – 1		961
	20	714.695	0.00 – 139.91898	$3s^2$ – 3s7p	g^1S – $^1P^o$	0 – 1		961
	25	741.182	0.00 – 134.91940	$3s^2$ – 3s6p	g^1S – $^1P^o$	0 – 1		961
	20	794.475	0.00 – 125.86904	$3s^2$ – 3s5p	g^1S – $^1P^o$	0 – 1		961
	20	905.152	37.57779 – 148.05615	3s3p – 3s12s	$^3P^o$ – ^3S	2 – 1		961
	10	910.916	37.45391 – 147.23345	3s3p – 3s11s	$^3P^o$ – ^3S	1 – 1		961
	10	911.497	37.57779 – 147.28710	3s3p – 3s10d	$^3P^o$ – ^3D	2 – 3		961
	40	911.946	37.57779 – 147.23345	3s3p – 3s11s	$^3P^o$ – ^3S	2 – 1		961
	30	919.672	37.45391 – 146.18852	3s3p – 3s9d	$^3P^o$ – ^3D	1 – 2		961
	50	920.317	37.45391 – 146.11214	3s3p – 3s10s	$^3P^o$ – ^3S	1 – 1		961
	50	920.716	37.57779 – 146.18888	3s3p – 3s9d	$^3P^o$ – ^3D	2 – 3		961
	75	921.367	37.57779 – 146.11214	3s3p – 3s10s	$^3P^o$ – ^3S	2 – 1		961
	20	932.408	37.39303 – 144.64202	3s3p – 3s8d	$^3P^o$ – ^3D	0 – 1		961
	40	932.938	37.45391 – 144.64218	3s3p – 3s8d	$^3P^o$ – ^3D	1 – 2		961
	50	933.408	37.39303 – 144.52735	3s3p – 3s9s	$^3P^o$ – ^3S	0 – 1		961
	75	933.938	37.45391 – 144.52735	3s3p – 3s9s	$^3P^o$ – ^3S	1 – 1		961
	100	934.015	37.57779 – 144.64245	3s3p – 3s8d	$^3P^o$ – ^3D	2 – 3		961
	100	935.020	37.57779 – 144.52735	3s3p – 3s9s	$^3P^o$ – ^3S	2 – 1		961
	100	935.275	0.00 – 106.92056	$3s^2$ – 3s4p	g^1S – $^1P^o$	0 – 1		961
	75	952.630	37.39303 – 142.36554	3s3p – 3s7d	$^3P^o$ – ^3D	0 – 1		961
	100	953.182	37.45391 – 142.36569	3s3p – 3s7d	$^3P^o$ – ^3D	1 – 2		961
	125	954.305	37.57779 – 142.36598	3s3p – 3s7d	$^3P^o$ – ^3D	2 – 3		961
	100	954.847	37.45391 – 142.18294	3s3p – 3s8s	$^3P^o$ – ^3S	1 – 1		961
	125	955.977	37.57779 – 142.18294	3s3p – 3s8s	$^3P^o$ – ^3S	2 – 1		961
	100	985.989	37.39303 – 138.81483	3s3p – 3s6d	$^3P^o$ – ^3D	0 – 1		961
	125	986.571	37.45391 – 138.81491	3s3p – 3s6d	$^3P^o$ – ^3D	1 – 2		961
	150	987.777	37.57779 – 138.81512	3s3p – 3s6d	$^3P^o$ – ^3D	2 – 3		961
	75	989.052	37.39303 – 138.49989	3s3p – 3s7s	$^3P^o$ – ^3S	0 – 1		961
	100	989.648	37.45391 – 138.49989	3s3p – 3s7s	$^3P^o$ – ^3S	1 – 1		961
	125	990.862	37.57779 – 138.49989	3s3p – 3s7s	$^3P^o$ – ^3S	2 – 1		961
	150	1047.889	37.39303 – 132.82295	3s3p – 3s5d	$^3P^o$ – ^3D	0 – 1		961
	170	1048.559	37.45391 – 132.82280	3s3p – 3s5d	$^3P^o$ – ^3D	1 – 2		961
	190	1049.923	37.57779 – 132.82289	3s3p – 3s5d	$^3P^o$ – ^3D	2 – 3		961
	100	1054.603	37.39303 – 132.21551	3s3p – 3s6s	$^3P^o$ – ^3S	0 – 1		961
	125	1055.280	37.45391 – 132.21551	3s3p – 3s6s	$^3P^o$ – ^3S	1 – 1		961
	150	1056.661	37.57779 – 132.21551	3s3p – 3s6s	$^3P^o$ – ^3S	2 – 1		961
	35	1132.726	59.85202 – 148.13513	3s3p – 3s11d	$^1P^o$ – ^1D	1 – 2		961
	100	1142.953	59.85202 – 147.34489	3s3p – 3s10d	$^1P^o$ – ^1D	1 – 2		961
	125	1157.088	59.85202 – 146.27600	3s3p – 3s9d	$^1P^o$ – ^1D	1 – 2		961
	100	1158.210	59.85202 – 146.19214	3s3p – 3s10s	$^1P^o$ – ^1S	1 – 0		961
	125	1177.437	59.85202 – 144.78223	3s3p – 3s8d	$^1P^o$ – ^1D	1 – 2		961
	125	1179.354	59.85202 – 144.64414	3s3p – 3s9s	$^1P^o$ – ^1S	1 – 0		961
	125	1189.185	37.39303 – 121.48422	3s3p – 3s4d	$^3P^o$ – ^3D	0 – 1		961
	150	1190.052	37.45391 – 121.48392	3s3p – 3s4d	$^3P^o$ – ^3D	1 – 2		961
	190	1191.811	37.57779 – 121.48350	3s3p – 3s4d	$^3P^o$ – ^3D	2 – 3		961
	150	1208.352	59.85202 – 142.60927	3s3p – 3s7d	$^1P^o$ – ^1D	1 – 2		961
	100	1209.191	37.39303 – 120.09295	3s3p – 3s5s	$^3P^o$ – ^3S	0 – 1		961
	125	1210.082	37.45391 – 120.09295	3s3p – 3s5s	$^3P^o$ – ^3S	1 – 1		961
	150	1211.898	37.57779 – 120.09295	3s3p – 3s5s	$^3P^o$ – ^3S	2 – 1		961
	125	1211.953	59.85202 – 142.36306	3s3p – 3s8s	$^1P^o$ – ^1S	1 – 0		961
	125	1258.858	59.85202 – 139.28915	3s3p – 3s6d	$^1P^o$ – ^1D	1 – 2		961
	150	1266.648	59.85202 – 138.80060	3s3p – 3s7s	$^1P^o$ – ^1S	1 – 0		961

AL II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	150	1350.178	59.85202 – 133.91640	3s3p – 3s5d	$^1P^o - ^1D$	1 – 2		961
	150	1371.240	59.85202 – 132.77868	3s3p – 3s6s	$^1P^o - ^1S$	1 – 0		961
10	340	1539.830	59.85202 – 124.79413	3s3p – 3s4d	$^1P^o - ^1D$	1 – 2		961
	1	1555.943	85.48135 – 149.75124	$3p^2$ – 3s16p	$^1D - ^1P^o$	2 – 1		961
	1	1560.35	85.48135 – 149.57100	$3p^2$ – 3s14f	$^1D - ^1F^o$	2 – 3		653
	1	1563.580	85.48135 – 149.43717	$3p^2$ – 3s15p	$^1D - ^1P^o$	2 – 1		961
	100	1569.385	85.48135 – 149.20162	$3p^2$ – 3s13f	$^1D - ^1F^o$	2 – 3		379
	3	1573.003	85.48135 – 149.05398	$3p^2$ – 3s14p	$^1D - ^1P^o$	2 – 1		961
	1	1580.919	85.48135 – 148.73566	$3p^2$ – 3s12f	$^1D - ^1F^o$	2 – 3		961
	4	1584.708	85.48135 – 148.58444	$3p^2$ – 3s13p	$^1D - ^1P^o$	2 – 1		961
	112	1596.059	85.48135 – 148.13588	$3p^2$ – 3s11f	$^1D - ^1F^o$	2 – 3		961
	20	1599.410	85.48135 – 148.00449	$3p^2$ – 3s12p	$^1D - ^1P^o$	2 – 1		961
	10	1616.415	85.48135 – 147.34667	$3p^2$ – 3s10f	$^1D - ^1F^o$	2 – 3		961
	50	1618.399	85.48135 – 147.27082	$3p^2$ – 3s11p	$^1D - ^1P^o$	2 – 1		961
9	125	1625.627	59.85202 – 121.36676	3s3p – 3s5s	$^1P^o - ^1S$	1 – 0		961
	100	1644.235	85.48135 – 146.29992	$3p^2$ – 3s10p	$^1D - ^1P^o$	2 – 1		961
	100	1644.809	85.48135 – 146.27870	$3p^2$ – 3s9f	$^1D - ^1F^o$	2 – 3		961
2	400	1670.787	0.00 – 59.85202	$3s^2$ – 3s3p	$g^1S - ^1P^o$	0 – 1		961
	80	1681.809	85.48135 – 144.94110	$3p^2$ – 3s9p	$^1D - ^1P^o$	2 – 1		961
	100	1686.250	85.48135 – 144.78445	$3p^2$ – 3s8f	$^1D - ^1F^o$	2 – 3		961
6	340	1719.440	37.39303 – 95.55144	3s3p – 3s3d	$^3P^o - ^3D$	0 – 1		961
6	255	1721.244	37.45391 – 95.55144	3s3p – 3s3d	$^3P^o - ^3D$	1 – 1		961
6	365	1721.271	37.45391 – 95.55051	3s3p – 3s3d	$^3P^o - ^3D$	1 – 2		961
6	255	1724.952	37.57779 – 95.55051	3s3p – 3s3d	$^3P^o - ^3D$	2 – 2		961
6	365	1724.984	37.57779 – 95.54942	3s3p – 3s3d	$^3P^o - ^3D$	2 – 3		961
	50	1739.738	85.48135 – 142.96120	$3p^2$ – 3s8p	$^1D - ^1P^o$	2 – 1		961
	60	1750.612	85.48135 – 142.60405	$3p^2$ – 3s7f	$^1D - ^1F^o$	2 – 3		961
5	210	1760.104	37.45391 – 94.26868	3s3p – $3p^2$	$^3P^o - ^3P$	1 – 2		961
5	190	1761.975	37.39303 – 94.14746	3s3p – $3p^2$	$^3P^o - ^3P$	0 – 1		961
5	255	1763.869	37.45391 – 94.14746	3s3p – $3p^2$	$^3P^o - ^3P$	1 – 1		961
5	315	1763.952	37.57779 – 94.26868	3s3p – $3p^2$	$^3P^o - ^3P$	2 – 2		961
5	190	1765.815	37.45391 – 94.08496	3s3p – $3p^2$	$^3P^o - ^3P$	1 – 0		961
5	225	1767.731	37.57779 – 94.14746	3s3p – $3p^2$	$^3P^o - ^3P$	2 – 1		961
	10	1772.802	94.08496 – 150.49280	$3p^2$ – 3p3d	$^3P - ^3D^o$	0 – 1		961
	25	1774.002	94.14746 – 150.51717	$3p^2$ – 3p3d	$^3P - ^3D^o$	1 – 2		961
	10	1774.770	94.14746 – 150.49280	$3p^2$ – 3p3d	$^3P - ^3D^o$	1 – 1		961
	1	1776.19	91.27450 – 147.57442	3s4s – 3s11p	$^3S - ^3P^o$	1 – 2		961
	100	1776.975	94.26868 – 150.54417	$3p^2$ – 3p3d	$^3P - ^3D^o$	2 – 3		961
	3	1777.825	94.26868 – 150.51717	$3p^2$ – 3p3d	$^3P - ^3D^o$	2 – 2		961
	70	1807.417	91.27450 – 146.60210	3s4s – 3s10p	$^3S - ^3P^o$	1 – 2		961
	20	1807.585	91.27450 – 146.59695	3s4s – 3s10p	$^3S - ^3P^o$	1 – 1		961
	1	1807.651	91.27450 – 146.59485	3s4s – 3s10p	$^3S - ^3P^o$	1 – 0		961
	50	1818.352	95.54942 – 150.54417	3s3d – 3p3d	$^3D - ^3D^o$	3 – 3		961
	3	1818.392	95.55051 – 150.54417	3s3d – 3p3d	$^3D - ^3D^o$	2 – 3		961
	1	1819.285	95.55051 – 150.51717	3s3d – 3p3d	$^3D - ^3D^o$	2 – 2		961
	2	1820.124	95.55144 – 150.49280	3s3d – 3p3d	$^3D - ^3D^o$	1 – 1		961
	290	1828.588	91.27450 – 145.96154	3s4s – 3p4s	$^3S - ^3P^o$	1 – 2		961
	225	1832.837	91.27450 – 145.83470	3s4s – 3p4s	$^3S - ^3P^o$	1 – 1		961
	170	1834.808	91.27450 – 145.77615	3s4s – 3p4s	$^3S - ^3P^o$	1 – 0		961
	60	1836.964	85.48135 – 139.91898	$3p^2$ – 3s7p	$^1D - ^1P^o$	2 – 1		961
	0	1839.39	95.55051 – 149.9163	3s3d – 3s15f	$^3D - ^3F^o$	2 – 3		961
	1	1848.888	95.35060 – 149.43717	3s4s – 3s15p	$^1S - ^1P^o$	0 – 1		961
	2	1849.15	95.54942 – 149.6290	3s3d – 3s14f	$^3D - ^3F^o$	3 – 4		961
	90	1855.805	91.27450 – 145.15949	3s4s – 3s9p	$^3S - ^3P^o$	1 – 2		961

AL II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
4	190	1855.929	37.39303 – 91.27450	3s3p – 3s4s	$^3P^o$ – ^3S	0 – 1		961
	90	1856.096	91.27450 – 145.15106	3s4s – 3s9p	^3S – $^3P^o$	1 – 1		961
	30	1856.274	91.27450 – 145.14584	3s4s – 3s9p	^3S – $^3P^o$	1 – 0		961
4	315	1858.026	37.45391 – 91.27450	3s3p – 3s4s	$^3P^o$ – ^3S	1 – 1		961
	110	1859.980	85.48135 – 139.24539	$3p^2$ – 3s6f	^1D – $^1F^o$	2 – 3		961
	5	1862.081	95.35060 – 149.05398	3s4s – 3s14p	^1S – $^1P^o$	0 – 1		961
4	400	1862.311	37.57779 – 91.27450	3s3p – 3s4s	$^3P^o$ – ^3S	2 – 1		961
	5	1877.04	95.54942 – 148.8257	3s3d – 3s12f	^3D – $^3F^o$	3 – 4		961
	8	1878.504	95.35060 – 148.58444	3s4s – 3s13p	^1S – $^1P^o$	0 – 1		961
	10	1897.401	95.54942 – 148.25308	3s3d – 3s11f	^3D – $^3F^o$	3 – 4		961
	3	1897.460	95.55051 – 148.25252	3s3d – 3s11f	^3D – $^3F^o$	2 – 3		961
	1	1897.500	95.55144 – 148.25237	3s3d – 3s11f	^3D – $^3F^o$	1 – 2		961
	25	1899.194	95.35060 – 148.00449	3s4s – 3s12p	^1S – $^1P^o$	0 – 1		961
	8	1904.326	94.08496 – 146.59695	$3p^2$ – 3s10p	^3P – $^3P^o$	0 – 1		961
	25	1906.408	94.14746 – 146.60210	$3p^2$ – 3s10p	^3P – $^3P^o$	1 – 2		961
	4	1906.596	94.14746 – 146.59695	$3p^2$ – 3s10p	^3P – $^3P^o$	1 – 1		961
	8	1906.674	94.14746 – 146.59485	$3p^2$ – 3s10p	^3P – $^3P^o$	1 – 0		961
	80	1910.825	94.26868 – 146.60210	$3p^2$ – 3s10p	^3P – $^3P^o$	2 – 2		961
	15	1911.013	94.26868 – 146.59695	$3p^2$ – 3s10p	^3P – $^3P^o$	2 – 1		961
	1	1922.16	95.54942 – 147.57442	3s3d – 3s11p	^3D – $^3P^o$	3 – 2		961
	50	1924.754	95.54942 – 147.50412	3s3d – 3s10f	^3D – $^3F^o$	3 – 4		961
	30	1924.825	95.55051 – 147.50327	3s3d – 3s10f	^3D – $^3F^o$	2 – 3		961
	10	1924.879	95.55144 – 147.50276	3s3d – 3s10f	^3D – $^3F^o$	1 – 2		961
	60	1926.029	95.35060 – 147.27082	3s4s – 3s11p	^1S – $^1P^o$	0 – 1		961
	20	1926.948	91.27450 – 143.17004	3s4s – 3s8p	^3S – $^3P^o$	1 – 2		961
	10	1927.070	91.27450 – 143.16676	3s4s – 3s8p	^3S – $^3P^o$	1 – 1		961
	0	1927.13	91.27450 – 143.1654	3s4s – 3s8p	^3S – $^3P^o$	1 – 0		961
	150	1929.978	94.14746 – 145.96154	$3p^2$ – 3p4s	^3P – $^3P^o$	1 – 2		961
	125	1931.048	59.85202 – 111.63733	3s3p – $3p^2$	$^1P^o$ – ^1S	1 – 0		961
	150	1932.377	94.08496 – 145.83470	$3p^2$ – 3p4s	^3P – $^3P^o$	0 – 1		961
	225	1934.503	94.26868 – 145.96154	$3p^2$ – 3p4s	^3P – $^3P^o$	2 – 2		961
	125	1934.713	94.14746 – 145.83470	$3p^2$ – 3p4s	^3P – $^3P^o$	1 – 1		961
	125	1936.907	94.14746 – 145.77615	$3p^2$ – 3p4s	^3P – $^3P^o$	1 – 0		961
	150	1939.261	94.26868 – 145.83470	$3p^2$ – 3p4s	^3P – $^3P^o$	2 – 1		961
	8	1958.247	94.08496 – 145.15106	$3p^2$ – 3s9p	^3P – $^3P^o$	0 – 1		961
	1	1958.77	95.54942 – 146.60210	3s3d – 3s10p	^3D – $^3P^o$	3 – 2		816,375
	0	1959.00	95.55051 – 146.59695	3s3d – 3s10p	^3D – $^3P^o$	2 – 1		816,375
	3	1960.322	94.14746 – 145.15949	$3p^2$ – 3s9p	^3P – $^3P^o$	1 – 2		961
	3	1960.646	94.14746 – 145.15106	$3p^2$ – 3s9p	^3P – $^3P^o$	1 – 1		961
	10	1960.846	94.14746 – 145.14584	$3p^2$ – 3s9p	^3P – $^3P^o$	1 – 0		961
	70	1962.590	95.54942 – 146.50247	3s3d – 3s9f	^3D – $^3F^o$	3 – 4		961
	8	1962.645	95.54942 – 146.50099	3s3d – 3s9f	^3D – $^3F^o$	3 – 3		961
	60	1962.691	95.55051 – 146.50099	3s3d – 3s9f	^3D – $^3F^o$	2 – 3		961
	70	1962.735	95.35060 – 146.29992	3s4s – 3s10p	^1S – $^1P^o$	0 – 1		961
	50	1962.763	95.55051 – 146.4990	3s3d – 3s9f	^3D – $^3F^o$	2 – 2		961
	40	1964.990	94.26868 – 145.15949	$3p^2$ – 3s9p	^3P – $^3P^o$	2 – 2		961
	10	1965.316	94.26868 – 145.15106	$3p^2$ – 3s9p	^3P – $^3P^o$	2 – 1		961
	10	1983.650	95.54942 – 145.96154	3s3d – 3p4s	^3D – $^3P^o$	3 – 2		961
	3	1988.699	95.55051 – 145.83470	3s3d – 3p4s	^3D – $^3P^o$	2 – 1		961
	315	1990.531	59.85202 – 110.08983	3s3p – 3s3d	$^1P^o$ – ^1D	1 – 2		961
	1	1991.05	95.55144 – 145.77615	3s3d – 3p4s	^3D – $^3P^o$	1 – 0		816,375

ALUMINUM III (Al^{2+}), Z = 13
Ground State $1s^22s^22p^63s(^2S_{1/2})$ (11 electrons)
Ionization Potential 229 445.71 cm^{-1}; 28.448 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	70	486.8839	0.0 – 205.38777	$2p^63s - 2p^67p$	$g\,^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		826
	30	486.9124	0.0 – 205.37574	$2p^63s - 2p^67p$	$g\,^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		826
	250	511.1384	0.0 – 195.64174	$2p^63s - 2p^66p$	$g\,^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		826
	150	511.1907	0.0 – 195.62172	$2p^63s - 2p^66p$	$g\,^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		826
3	500	560.3173	0.0 – 178.47032	$2p^63s - 2p^65p$	$g\,^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		826
3	200	560.4331	0.0 – 178.43343	$2p^63s - 2p^65p$	$g\,^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		826
		644.3339	53.68293 – 208.88183	$2p^63p - 2p^67d$	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		826
		645.3063	53.91660 – 208.88183	$2p^63p - 2p^67d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		826
	100	670.0676	53.68293 – 202.92160	$2p^63p - 2p^67s$	${}^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		826
	200	671.1184	53.91660 – 202.92160	$2p^63p - 2p^67s$	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		826
		677.0819	53.68293 – 201.37556	$2p^63p - 2p^66d$	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		826
		678.1548	53.91660 – 201.37556	$2p^63p - 2p^66d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		826
		678.1564	53.91660 – 201.37520	$2p^63p - 2p^66d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		826
2	500	695.8289	0.0 – 143.71350	$2p^63s - 2p^64p$	$g\,^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		826
2	400	696.2170	0.0 – 143.63338	$2p^63s - 2p^64p$	$g\,^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		826
	200	725.6826	53.68293 – 191.48423	$2p^63p - 2p^66s$	${}^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		826
	300	726.9152	53.91660 – 191.48423	$2p^63p - 2p^66s$	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		826
		739.6707	53.68293 – 188.87822	$2p^63p - 2p^65d$	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		826
		740.9514	53.91660 – 188.87822	$2p^63p - 2p^65d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		826
		740.9550	53.91660 – 188.87757	$2p^63p - 2p^65d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		826
	400	855.0340	53.68293 – 170.63735	$2p^63p - 2p^65s$	${}^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		826
	500	856.7457	53.91660 – 170.63735	$2p^63p - 2p^65s$	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		826
	400	892.0242	53.68293 – 165.78751	$2p^63p - 2p^64d$	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		826
	50	893.8874	53.91660 – 165.78751	$2p^63p - 2p^64d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		826
	450	893.8969	53.91660 – 165.78632	$2p^63p - 2p^64d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		826
		1071.730	115.95621 – 209.26325	$2p^63d - 2p^67f$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		826
		1071.757	115.95850 – 209.26325	$2p^63d - 2p^67f$	${}^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		826
		1118.173	115.95621 – 205.38777	$2p^63d - 2p^67p$	${}^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		826
		1118.202	115.95850 – 205.38777	$2p^63d - 2p^67p$	${}^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		826
		1118.353	115.95850 – 205.37574	$2p^63d - 2p^67p$	${}^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		826
	10	1162.588	115.95621 – 201.97116	$2p^63d - 2p^66f$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		826
	5	1162.621	115.95850 – 201.97116	$2p^63d - 2p^66f$	${}^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		826
		1254.933	115.95621 – 195.64174	$2p^63d - 2p^66p$	${}^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		826
		1254.969	115.95850 – 195.64174	$2p^63d - 2p^66p$	${}^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		826
		1255.284	115.95850 – 195.62172	$2p^63d - 2p^66p$	${}^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		826
		1262.248	126.16405 – 205.38777	$2p^64s - 2p^67p$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		826
		1262.440	126.16405 – 205.37574	$2p^64s - 2p^67p$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		826
	100	1352.810	115.95621 – 189.87642	$2p^63d - 2p^65f$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		826
	5	1352.816	115.95621 – 189.87610	$2p^63d - 2p^65f$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		826
	70	1352.858	115.95850 – 189.87610	$2p^63d - 2p^65f$	${}^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		826
	600	1379.670	53.68293 – 126.16405	$2p^63p - 2p^64s$	${}^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		826
	800	1384.132	53.91660 – 126.16405	$2p^63p - 2p^64s$	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		826
		1439.311	126.16405 – 195.64174	$2p^64s - 2p^66p$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		826
		1439.726	126.16405 – 195.62172	$2p^64s - 2p^66p$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		826
		1532.600	143.63338 – 208.88183	$2p^64p - 2p^67d$	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		826
		1534.489	143.71350 – 208.88183	$2p^64p - 2p^67d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		826
		1599.639	115.95621 – 178.47032	$2p^63d - 2p^65p$	${}^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		826
		1599.697	115.95850 – 178.47032	$2p^63d - 2p^65p$	${}^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		826
		1600.642	115.95850 – 178.43343	$2p^63d - 2p^65p$	${}^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		826
	700	1605.766	53.68293 – 115.95850	$2p^63p - 2p^63d$	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		826
	100	1611.814	53.91660 – 115.95850	$2p^63p - 2p^63d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		826
	800	1611.874	53.91660 – 115.95621	$2p^63p - 2p^63d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		826
		1686.676	143.63338 – 202.92160	$2p^64p - 2p^67s$	${}^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		826
		1688.958	143.71350 – 202.92160	$2p^64p - 2p^67s$	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		826

AL III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		1731.836	143.63338 – 201.37556	$2p^64p - 2p^66d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		826
		1734.243	143.71350 – 201.37556	$2p^64p - 2p^66d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		826
		1734.253	143.71350 – 201.37520	$2p^64p - 2p^66d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		826
1	1000	1854.716	0.0 – 53.91660	$2p^63s - 2p^63p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		826
1	600	1862.790	0.0 – 53.68293	$2p^63s - 2p^63p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		826
		1911.817	126.16405 – 178.47032	$2p^64s - 2p^65p$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		826
		1913.166	126.16405 – 178.43343	$2p^64s - 2p^65p$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		826
	300	1935.840	115.95621 – 167.61337	$2p^63d - 2p^64f$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		826
	15	1935.863	115.95621 – 167.61275	$2p^63d - 2p^64f$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		826
	200	1935.949	115.95850 – 167.61275	$2p^63d - 2p^64f$	$^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		826

ALUMINUM IV (Al^{3+}), Z = 13
Ground State $1s^22s^22p^6(^1S_0)$ (10 electrons)
Ionization Potential 967 804 cm^{-1}; 119.99 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		77.18	0.0 – 1295.7	$2s^22p^6 - 2s2p^68p$	$g^1S - {}^1P^\circ$	0 – 1	A	440
		77.79	0.0 – 1285.5	$2s^22p^6 - 2s2p^67p$	$g^1S - {}^1P^\circ$	0 – 1	A	440
		78.79	0.0 – 1269.2	$2s^22p^6 - 2s2p^66p$	$g^1S - {}^1P^\circ$	0 – 1	A	440
		80.56	0.0 – 1241.0	$2s^22p^6 - 2s2p^65p$	$g^1S - {}^1P^\circ$	0 – 1	A	440
		80.58	0.0 – 1241.0	$2s^22p^6 - 2s2p^65p$	$g^1S - {}^1P^\circ$	0 – 1	A	440
		84.38	0.0 – 1185.1	$2s^22p^6 - 2s2p^64p$	$g^1S - {}^1P^\circ$	0 – 1	A	440
		84.48	0.0 – 1183.7	$2s^22p^6 - 2s2p^64p$	$g^1S - {}^3P^\circ$	0 – 1	A	440
		95.56	0.0 – 1046.5	$2s^22p^6 - 2s2p^63p$	$g^1S - {}^1P^\circ$	0 – 1	A	440
		95.68	0.0 – 1045.2	$2s^22p^6 - 2s2p^63p$	$g^1S - {}^3P^\circ$	0 – 1	A	440
	50	108.535	0.0 – 921.362	$2s^22p^6 - 2s^22p^5(^2P^\circ)6d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		693
	50	108.907	0.0 – 918.215	$2s^22p^6 - 2s^22p^5(^2P^\circ)6d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		693
	100	111.196	0.0 – 899.281	$2s^22p^6 - 2s^22p^5(^2P^\circ)5d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		233,693
	150	111.589	0.0 – 896.138	$2s^22p^6 - 2s^22p^5(^2P^\circ)5d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		233,693
	50	111.781	0.0 – 894.614	$2s^22p^6 - 2s^22p^5(^2P^\circ)5d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		233,693
	10	114.313	0.0 – 874.7568	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})5s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		233,693
	50	114.737	0.0 – 871.5122	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})5s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		233,693
	250	116.464	0.0 – 858.6420	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})4d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		233,693
	150	116.921	0.0 – 855.2727	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		233,693
	10	117.370	0.0 – 852.0075	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	P	925,233
	400	124.030	0.0 – 806.2349	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})4s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		385
	300	124.550	0.0 – 802.9075	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		385
	700	129.730	0.0 – 770.8369	$2s^22p^6 - 2s^22p^53d$	$g^1S - {}^1P^\circ$	0 – 1		385
		130.39	0.0 – 766.8808	$2s^22p^6 - 2s^22p^53d$	$g^1S - {}^3D^\circ$	0 – 1		385
	150	131.647	0.0 – 759.5968	$2s^22p^6 - 2s^22p^53d$	$g^1S - {}^3P^\circ$	0 – 1		385
	800	160.074	0.0 – 624.7175	$2s^22p^6 - 2s^22p^53s$	$g^1S - {}^1P^\circ$	0 – 1		385
	700	161.688	0.0 – 618.4739	$2s^22p^6 - 2s^22p^53s$	$g^1S - {}^3P^\circ$	0 – 1		385
	5	476.13	618.4739 – 828.4988	$2s^22p^53s - 2s^22p^5(^2P^\circ_{1/2})4p$	$^3P^\circ - \frac{1}{2}[\frac{1}{2}]$	1 – 1		888
	20	476.27	618.4739 – 828.4392	$2s^22p^53s - 2s^22p^5(^2P^\circ_{1/2})4p$	$^3P^\circ - \frac{1}{2}[\frac{3}{2}]$	1 – 2		888
	5	477.60	618.4739 – 827.8449	$2s^22p^53s - 2s^22p^5(^2P^\circ_{1/2})4p$	$^3P^\circ - \frac{1}{2}[\frac{3}{2}]$	1 – 1		888
	10	477.73	618.4739 – 827.7995	$2s^22p^53s - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3P^\circ - \frac{3}{2}[\frac{1}{2}]$	1 – 0		888
	30	478.26	616.6442 – 825.7396	$2s^22p^53s - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		888
	5	479.30	616.6442 – 825.2779	$2s^22p^53s - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 1		888
	20	479.76	620.0601 – 828.4988	$2s^22p^53s - 2s^22p^5(^2P^\circ_{1/2})4p$	$^3P^\circ - \frac{1}{2}[\frac{1}{2}]$	0 – 1		888
	30	481.01	616.6442 – 824.5447	$2s^22p^53s - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		888
	10	481.29	620.0601 – 827.8449	$2s^22p^53s - 2s^22p^5(^2P^\circ_{1/2})4p$	$^3P^\circ - \frac{1}{2}[\frac{3}{2}]$	0 – 1		888
	100	482.08	616.6442 – 824.0800	$2s^22p^53s - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		888

AL IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	482.48	618.4739 – 825.7396	$2s^22p^53s - 2s^22p^5(^2P^o_{3/2})4p$	$^3P^o - \frac{3}{2}[\frac{3}{2}]$	1 – 2		888
	20	483.55	618.4739 – 825.2779	$2s^22p^53s - 2s^22p^5(^2P^o_{3/2})4p$	$^3P^o - \frac{3}{2}[\frac{3}{2}]$	1 – 1		888
	40	485.28	618.4739 – 824.5447	$2s^22p^53s - 2s^22p^5(^2P^o_{3/2})4p$	$^3P^o - \frac{3}{2}[\frac{5}{2}]$	1 – 2		888
	100	488.36	616.6442 – 821.4089	$2s^22p^53s - 2s^22p^5(^2P^o_{3/2})4p$	$^3P^o - \frac{3}{2}[\frac{1}{2}]$	2 – 1		888
	20	490.73	624.7175 – 828.4988	$2s^22p^53s - 2s^22p^5(^2P^o_{1/2})4p$	$^1P^o - \frac{1}{2}[\frac{1}{2}]$	1 – 1		888
	40	490.88	624.7175 – 828.4392	$2s^22p^53s - 2s^22p^5(^2P^o_{1/2})4p$	$^1P^o - \frac{1}{2}[\frac{3}{2}]$	1 – 2		888
	20	492.31	671.6325 – 874.7568	$2s^22p^53p - 2s^22p^5(^2P^o_{1/2})5s$	$^3S - \frac{1}{2}[\frac{1}{2}]^o$	1 – 1		888
	25	492.78	618.4739 – 821.4089	$2s^22p^53s - 2s^22p^5(^2P^o_{3/2})4p$	$^3P^o - \frac{3}{2}[\frac{1}{2}]$	1 – 1		888
	10	496.66	620.0601 – 821.4089	$2s^22p^53s - 2s^22p^5(^2P^o_{3/2})4p$	$^3P^o - \frac{3}{2}[\frac{1}{2}]$	0 – 1		888
	15	497.47	624.7175 – 825.7396	$2s^22p^53s - 2s^22p^5(^2P^o_{3/2})4p$	$^1P^o - \frac{3}{2}[\frac{3}{2}]$	1 – 2		888
	5	498.61	624.7175 – 825.2779	$2s^22p^53s - 2s^22p^5(^2P^o_{3/2})4p$	$^1P^o - \frac{3}{2}[\frac{3}{2}]$	1 – 1		888
	30	500.29	671.6325 – 871.5122	$2s^22p^53p - 2s^22p^5(^2P^o_{3/2})5s$	$^3S - \frac{3}{2}[\frac{3}{2}]^o$	1 – 1		888
	10	500.42	624.7175 – 824.5447	$2s^22p^53s - 2s^22p^5(^2P^o_{3/2})4p$	$^1P^o - \frac{3}{2}[\frac{5}{2}]$	1 – 2		888
	5	501.62	671.6325 – 870.9919	$2s^22p^53p - 2s^22p^5(^2P^o_{3/2})5s$	$^3S - \frac{3}{2}[\frac{3}{2}]^o$	1 – 2		888
	20	525.95	680.8598 – 870.9919	$2s^22p^53p - 2s^22p^5(^2P^o_{3/2})5s$	$^3D - \frac{3}{2}[\frac{3}{2}]^o$	3 – 2		888
	5	526.81	681.6833 – 871.5122	$2s^22p^53p - 2s^22p^5(^2P^o_{3/2})5s$	$^3D - \frac{3}{2}[\frac{3}{2}]^o$	2 – 1		888
	5	528.26	681.6833 – 870.9919	$2s^22p^53p - 2s^22p^5(^2P^o_{3/2})5s$	$^3D - \frac{3}{2}[\frac{3}{2}]^o$	2 – 2		888
	2	530.42	682.9818 – 871.5122	$2s^22p^53p - 2s^22p^5(^2P^o_{3/2})5s$	$^3D - \frac{3}{2}[\frac{3}{2}]^o$	1 – 1		888
	1	532.49	686.9591 – 874.7568	$2s^22p^53p - 2s^22p^5(^2P^o_{1/2})5s$	$^1P - \frac{1}{2}[\frac{1}{2}]^o$	1 – 1		888
	15	534.98	687.8305 – 874.7568	$2s^22p^53p - 2s^22p^5(^2P^o_{1/2})5s$	$^3P - \frac{1}{2}[\frac{1}{2}]^o$	2 – 1		888
	3	536.36	688.3096 – 874.7568	$2s^22p^53p - 2s^22p^5(^2P^o_{1/2})5s$	$^3P - \frac{1}{2}[\frac{1}{2}]^o$	0 – 1		888
	5	537.34	688.6494 – 874.7568	$2s^22p^53p - 2s^22p^5(^2P^o_{1/2})5s$	$^3P - \frac{1}{2}[\frac{1}{2}]^o$	1 – 1		888
	5	541.86	686.9591 – 871.5122	$2s^22p^53p - 2s^22p^5(^2P^o_{3/2})5s$	$^1P - \frac{3}{2}[\frac{3}{2}]^o$	1 – 1		888
	10	545.97	687.8305 – 870.9919	$2s^22p^53p - 2s^22p^5(^2P^o_{3/2})5s$	$^3P - \frac{3}{2}[\frac{3}{2}]^o$	2 – 2		888
	2	548.43	688.6494 – 870.9919	$2s^22p^53p - 2s^22p^5(^2P^o_{3/2})5s$	$^3P - \frac{3}{2}[\frac{3}{2}]^o$	1 – 2		888
	15	552.67	671.6325 – 852.5705	$2s^22p^53p - 2s^22p^5(^2P^o_{3/2})4d$	$^3S - \frac{3}{2}[\frac{3}{2}]^o$	1 – 2		888
	20	571.61	681.6833 – 856.6258	$2s^22p^53p - 2s^22p^5(^2P^o_{1/2})4d$	$^3D - \frac{1}{2}[\frac{5}{2}]^o$	2 – 2		888
	20	575.89	682.9818 – 856.6258	$2s^22p^53p - 2s^22p^5(^2P^o_{1/2})4d$	$^3D - \frac{1}{2}[\frac{5}{2}]^o$	1 – 2		888
	10	577.66	680.8598 – 853.9715	$2s^22p^53p - 2s^22p^5(^2P^o_{3/2})4d$	$^3D - \frac{3}{2}[\frac{5}{2}]^o$	3 – 3		888
	5	578.32	685.7282 – 858.6420	$2s^22p^53p - 2s^22p^5(^2P^o_{1/2})4d$	$^1D - \frac{1}{2}[\frac{3}{2}]^o$	2 – 1		888
	40	580.41	681.6833 – 853.9715	$2s^22p^53p - 2s^22p^5(^2P^o_{3/2})4d$	$^3D - \frac{3}{2}[\frac{5}{2}]^o$	2 – 3		888
	10	581.18	681.6833 – 853.7494	$2s^22p^53p - 2s^22p^5(^2P^o_{3/2})4d$	$^3D - \frac{3}{2}[\frac{5}{2}]^o$	2 – 2		888
	100	581.91	680.8598 – 852.7068	$2s^22p^53p - 2s^22p^5(^2P^o_{3/2})4d$	$^3D - \frac{3}{2}[\frac{7}{2}]^o$	3 – 4		888
	70	583.59	681.6833 – 853.0391	$2s^22p^53p - 2s^22p^5(^2P^o_{3/2})4d$	$^3D - \frac{3}{2}[\frac{7}{2}]^o$	2 – 3		888
	5	585.13	685.7282 – 856.6258	$2s^22p^53p - 2s^22p^5(^2P^o_{1/2})4d$	$^1D - \frac{1}{2}[\frac{5}{2}]^o$	2 – 2		888
	3	585.44	687.8305 – 858.6420	$2s^22p^53p - 2s^22p^5(^2P^o_{1/2})4d$	$^3P - \frac{1}{2}[\frac{3}{2}]^o$	2 – 1		888
	5	587.11	681.6833 – 852.0075	$2s^22p^53p - 2s^22p^5(^2P^o_{3/2})4d$	$^3D - \frac{3}{2}[\frac{1}{2}]^o$	2 – 1		888
	20	589.39	686.9591 – 856.6258	$2s^22p^53p - 2s^22p^5(^2P^o_{1/2})4d$	$^1P - \frac{1}{2}[\frac{5}{2}]^o$	1 – 2		888
	60	591.62	687.8305 – 856.8599	$2s^22p^53p - 2s^22p^5(^2P^o_{1/2})4d$	$^3P - \frac{1}{2}[\frac{5}{2}]^o$	2 – 3		888
	2	592.42	687.8305 – 856.6258	$2s^22p^53p - 2s^22p^5(^2P^o_{1/2})4d$	$^3P - \frac{1}{2}[\frac{5}{2}]^o$	2 – 2		888
	40	594.38	685.7282 – 853.9715	$2s^22p^53p - 2s^22p^5(^2P^o_{3/2})4d$	$^1D - \frac{3}{2}[\frac{5}{2}]^o$	2 – 3		888
	30	594.55	688.6494 – 856.8431	$2s^22p^53p - 2s^22p^5(^2P^o_{1/2})4d$	$^3P - \frac{1}{2}[\frac{3}{2}]^o$	1 – 2		888
	10	598.95	688.3096 – 855.2727	$2s^22p^53p - 2s^22p^5(^2P^o_{3/2})4d$	$^3P - \frac{3}{2}[\frac{3}{2}]^o$	0 – 1		888
	2	603.83	686.9591 – 852.5705	$2s^22p^53p - 2s^22p^5(^2P^o_{3/2})4d$	$^1P - \frac{3}{2}[\frac{3}{2}]^o$	1 – 2		888
	10	607.04	687.8305 – 852.5705	$2s^22p^53p - 2s^22p^5(^2P^o_{3/2})4d$	$^3P - \frac{3}{2}[\frac{3}{2}]^o$	2 – 2		888
	1	635.31	714.0969 – 871.5122	$2s^22p^53p - 2s^22p^5(^2P^o_{3/2})5s$	$^1S - \frac{3}{2}[\frac{3}{2}]^o$	0 – 1		888
	30	691.82	714.0969 – 858.6420	$2s^22p^53p - 2s^22p^5(^2P^o_{1/2})4d$	$^1S - \frac{1}{2}[\frac{3}{2}]^o$	0 – 1		888
	10	708.34	714.0969 – 855.2727	$2s^22p^53p - 2s^22p^5(^2P^o_{3/2})4d$	$^1S - \frac{3}{2}[\frac{3}{2}]^o$	0 – 1		888
	10	712.43	760.4723 – 900.8369	$2s^22p^53d - 2s^22p^5(^2P^o_{1/2})5f$	$^3P^o - \frac{1}{2}[\frac{5}{2}]$	2 – 3		888
	7	724.62	759.1934 – 897.1971	$2s^22p^53d - 2s^22p^5(^2P^o_{3/2})5f$	$^3P^o - \frac{3}{2}[\frac{3}{2}]$	0 – 1		888
	30	726.63	759.5968 – 897.2176	$2s^22p^53d - 2s^22p^5(^2P^o_{3/2})5f$	$^3P^o - \frac{3}{2}[\frac{3}{2}]$	1 – 2		888
	60	728.71	763.6136 – 900.8436	$2s^22p^53d - 2s^22p^5(^2P^o_{1/2})5f$	$^3F^o - \frac{1}{2}[\frac{7}{2}]$	2 – 3		888
	60	730.22	760.4723 – 897.4168	$2s^22p^53d - 2s^22p^5(^2P^o_{3/2})5f$	$^3P^o - \frac{3}{2}[\frac{5}{2}]$	2 – 3		888
	3	732.35	764.2971 – 900.8436	$2s^22p^53d - 2s^22p^5(^2P^o_{1/2})5f$	$^1F^o - \frac{1}{2}[\frac{7}{2}]$	3 – 3		888

AL IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	5	736.11	761.6884 – 897.5375	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	4 – 3		888
	200	737.27	761.6884 – 897.3247	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 5		888
	5	739.31	762.2725 – 897.5375	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 3		888
	5	739.93	762.2725 – 897.4168	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		888
	100	740.44	762.2725 – 897.3284	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		888
	20	742.947	671.6325 – 806.2349	$2s^22p^53p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3S - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		385
	5	746.43	766.8808 – 900.8541	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})5f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		888
	20	746.71	763.6136 – 897.5375	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		888
	40	747.35	763.6136 – 897.4168	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		888
	2	748.63	763.6136 – 897.1971	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 1		888
	60	749.07	767.3455 – 900.8477	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})5f$	$^3D^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		888
	40	750.52	764.2971 – 897.5375	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^1F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 3		888
	40	751.41	767.7506 – 900.8369	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})5f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		888
	2	751.68	764.2971 – 897.3284	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^1F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		888
		761.761	671.6325 – 802.9075	$2s^22p^53p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3S - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		385
	6	765.97	766.8808 – 897.4357	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		888
	3	766.31	767.0357 – 897.5375	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^1D^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		888
	100	767.747	671.6325 – 801.8823	$2s^22p^53p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3S - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		385
	10	769.13	770.8369 – 900.8541	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})5f$	$^1P^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		888
	10	802.875	681.6833 – 806.2349	$2s^22p^53p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3D - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		385
	1	811.341	682.9818 – 806.2349	$2s^22p^53p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3D - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		385
	50	817.473	682.9818 – 805.3097	$2s^22p^53p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3D - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		385
	150	824.911	681.6833 – 802.9075	$2s^22p^53p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		385
	200	826.287	680.8598 – 801.8823	$2s^22p^53p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	3 – 2		385
	50	829.828	685.7282 – 806.2349	$2s^22p^53p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^1D - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		385
	10	831.939	681.6833 – 801.8823	$2s^22p^53p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		385
	30	838.398	686.9591 – 806.2349	$2s^22p^53p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^1P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		385
	1	841.050	682.9818 – 801.8823	$2s^22p^53p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		385
	200	844.564	687.8305 – 806.2349	$2s^22p^53p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		385
	50	844.949	686.9591 – 805.3097	$2s^22p^53p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^1P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		385
	10	847.995	688.3096 – 806.2349	$2s^22p^53p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		385
	80	850.447	688.6494 – 806.2349	$2s^22p^53p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		385
	100	853.393	685.7282 – 802.9075	$2s^22p^53p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^1D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		385
	50	857.198	688.6494 – 805.3097	$2s^22p^53p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		385
	150	860.937	685.7282 – 801.8823	$2s^22p^53p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^1D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		385
	10	862.455	686.9591 – 802.9075	$2s^22p^53p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^1P - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		385
	1	868.994	687.8305 – 802.9075	$2s^22p^53p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		385
	5	870.154	686.9591 – 801.8823	$2s^22p^53p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^1P - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		385
	20	872.626	688.3096 – 802.9075	$2s^22p^53p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		385
	80	876.803	687.8305 – 801.8823	$2s^22p^53p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		385
	50	883.138	688.6494 – 801.8823	$2s^22p^53p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		385
	30	1017.940	759.5968 – 857.8351	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		888
	100	1018.168	759.1934 – 857.4096	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	0 – 1		888
	200	1022.082	759.5968 – 857.4367	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		888
	100	1022.362	759.5968 – 857.4096	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		888
	5	1023.93	763.6136 – 861.2748	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 2		888
	150	1024.248	763.6136 – 861.2469	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		888
	5	1027.08	760.4723 – 857.8351	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		888
	500	1027.343	760.4723 – 857.8105	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		888
	100	1031.39	764.2971 – 861.2524	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^1F^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		888
	30	1040.340	761.6884 – 857.8105	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	4 – 3		888
	800	1042.169	761.6884 – 857.6427	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 5		888
	200	1044.064	762.2725 – 858.0514	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 3		888
	200	1045.766	618.4739 – 714.0969	$2s^22p^53s - 2s^22p^53p$	$^3P^\circ - {}^1S$	1 – 0		385

AL IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	700	1048.515	762.2725 – 857.6459	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		888
	500	1058.901	763.6136 – 858.0514	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		888
	150	1059.396	766.8808 – 861.2748	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		888
	40	1061.135	767.0357 – 861.2748	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^1D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 2		888
	500	1061.429	767.0357 – 861.2469	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^1D^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		888
	600	1064.891	767.3455 – 861.2524	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		888
	500	1066.567	764.2971 – 858.0556	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		888
	600	1069.437	767.7506 – 861.2577	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		888
	100	1071.241	764.2971 – 857.6459	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		888
	5	1085.331	714.0969 – 806.2349	$2s^22p^53p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		385
	200	1098.718	767.0357 – 858.0514	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1D^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		888
	300	1099.461	766.8808 – 857.8351	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		888
	20	1101.34	767.0357 – 857.8351	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		888
	200	1102.417	767.3455 – 858.0556	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		888
	70	1104.285	766.8808 – 857.4367	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		888
	20	1104.617	766.8808 – 857.4096	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		888
	50	1105.402	767.3455 – 857.8105	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		888
	400	1105.738	770.8369 – 861.2748	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^1P^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		888
	600	1118.824	624.7175 – 714.0969	$2s^22p^53s - 2s^22p^53p$	$^1P^\circ - {}^1S$	1 – 0		385
	500	1125.613	671.6325 – 760.4723	$2s^22p^53p - 2s^22p^53d$	$^3S - {}^3P^\circ$	1 – 2		385
	5	1126.001	714.0969 – 802.9075	$2s^22p^53p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		385
	400	1136.821	671.6325 – 759.5968	$2s^22p^53p - 2s^22p^53d$	$^3S - {}^3P^\circ$	1 – 1		385
	200	1142.058	671.6325 – 759.1934	$2s^22p^53p - 2s^22p^53d$	$^3S - {}^3P^\circ$	1 – 0		385
	200	1149.450	770.8369 – 857.8351	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1P^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		888
		1150.870	680.8598 – 767.7506	$2s^22p^53p - 2s^22p^53d$	$^3D - {}^3D^\circ$	3 – 2		385
	250	1154.730	770.8369 – 857.4367	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		888
	150	1156.263	680.8598 – 767.3455	$2s^22p^53p - 2s^22p^53d$	$^3D - {}^3D^\circ$	3 – 3		385
	1	1160.42	680.8598 – 767.0357	$2s^22p^53p - 2s^22p^53d$	$^3D - {}^1D^\circ$	3 – 2	P	385
	300	1161.885	681.6833 – 767.7506	$2s^22p^53p - 2s^22p^53d$	$^3D - {}^3D^\circ$	2 – 2		385
	150	1167.36	681.6833 – 767.3455	$2s^22p^53p - 2s^22p^53d$	$^3D - {}^3D^\circ$	2 – 3		385
	5	1171.59	681.6833 – 767.0357	$2s^22p^53p - 2s^22p^53d$	$^3D - {}^1D^\circ$	2 – 2		385
	10	1173.719	681.6833 – 766.8808	$2s^22p^53p - 2s^22p^53d$	$^3D - {}^3D^\circ$	2 – 1		385
		1174.967	685.7282 – 770.8369	$2s^22p^53p - 2s^22p^53d$	$^1D - {}^1P^\circ$	2 – 1		385
	20	1179.666	682.9818 – 767.7506	$2s^22p^53p - 2s^22p^53d$	$^3D - {}^3D^\circ$	1 – 2		385
	50	1189.711	682.9818 – 767.0357	$2s^22p^53p - 2s^22p^53d$	$^3D - {}^1D^\circ$	1 – 2		385
	200	1191.907	682.9818 – 766.8808	$2s^22p^53p - 2s^22p^53d$	$^3D - {}^3D^\circ$	1 – 1		385
	150	1192.212	686.9591 – 770.8369	$2s^22p^53p - 2s^22p^53d$	$^1P - {}^1P^\circ$	1 – 1		385
	400	1198.500	680.8598 – 764.2971	$2s^22p^53p - 2s^22p^53d$	$^3D - {}^1F^\circ$	3 – 3		385
	1	1204.722	687.8305 – 770.8369	$2s^22p^53p - 2s^22p^53d$	$^3P - {}^1P^\circ$	2 – 1		385
	10	1208.401	680.8598 – 763.6136	$2s^22p^53p - 2s^22p^53d$	$^3D - {}^3F^\circ$	3 – 2		385
	40	1211.724	688.3096 – 770.8369	$2s^22p^53p - 2s^22p^53d$	$^3P - {}^1P^\circ$	0 – 1		385
	300	1216.723	688.6494 – 770.8369	$2s^22p^53p - 2s^22p^53d$	$^3P - {}^1P^\circ$	1 – 1		385
	300	1219.171	685.7282 – 767.7506	$2s^22p^53p - 2s^22p^53d$	$^1D - {}^3D^\circ$	2 – 2		385
	400	1220.546	681.6833 – 763.6136	$2s^22p^53p - 2s^22p^53d$	$^3D - {}^3F^\circ$	2 – 2		385
	10	1225.236	685.7282 – 767.3455	$2s^22p^53p - 2s^22p^53d$	$^1D - {}^3D^\circ$	2 – 3		385
	300	1228.310	680.8598 – 762.2725	$2s^22p^53p - 2s^22p^53d$	$^3D - {}^3F^\circ$	3 – 3		385
	40	1229.908	685.7282 – 767.0357	$2s^22p^53p - 2s^22p^53d$	$^1D - {}^1D^\circ$	2 – 2		385
	900	1237.187	680.8598 – 761.6884	$2s^22p^53p - 2s^22p^53d$	$^3D - {}^3F^\circ$	3 – 4		385
	10	1237.744	686.9591 – 767.7506	$2s^22p^53p - 2s^22p^53d$	$^1P - {}^3D^\circ$	1 – 2		385
	600	1240.206	682.9818 – 763.6136	$2s^22p^53p - 2s^22p^53d$	$^3D - {}^3F^\circ$	1 – 2		385
	700	1240.861	681.6833 – 762.2725	$2s^22p^53p - 2s^22p^53d$	$^3D - {}^3F^\circ$	2 – 3		385
	700	1248.790	686.9591 – 767.0357	$2s^22p^53p - 2s^22p^53d$	$^1P - {}^1D^\circ$	1 – 2		385
	150	1251.235	686.9591 – 766.8808	$2s^22p^53p - 2s^22p^53d$	$^1P - {}^3D^\circ$	1 – 1		385
	40	1256.083	680.8598 – 760.4723	$2s^22p^53p - 2s^22p^53d$	$^3D - {}^3P^\circ$	3 – 2		385

AL IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	900	1257.624	687.8305 – 767.3455	$2s^22p^53p - 2s^22p^53d$	$^3P - {^3D^\circ}$	2 – 3		385
	300	1262.544	687.8305 – 767.0357	$2s^22p^53p - 2s^22p^53d$	$^3P - {^1D^\circ}$	2 – 2		385
	800	1264.181	688.6494 – 767.7506	$2s^22p^53p - 2s^22p^53d$	$^3P - {^3D^\circ}$	1 – 2		385
	1	1265.03	687.8305 – 766.8808	$2s^22p^53p - 2s^22p^53d$	$^3P - {^3D^\circ}$	2 – 1		385
	20	1269.209	681.6833 – 760.4723	$2s^22p^53p - 2s^22p^53d$	$^3D - {^3P^\circ}$	2 – 2		385
	1000	1272.763	685.7282 – 764.2971	$2s^22p^53p - 2s^22p^53d$	$^1D - {^1F^\circ}$	2 – 3		385
	5	1275.731	688.6494 – 767.0357	$2s^22p^53p - 2s^22p^53d$	$^3P - {^1D^\circ}$	1 – 2		385
	50	1278.265	688.6494 – 766.8808	$2s^22p^53p - 2s^22p^53d$	$^3P - {^3D^\circ}$	1 – 1		385
	40	1283.484	681.6833 – 759.5968	$2s^22p^53p - 2s^22p^53d$	$^3D - {^3P^\circ}$	2 – 1		385
	20	1290.486	682.9818 – 760.4723	$2s^22p^53p - 2s^22p^53d$	$^3D - {^3P^\circ}$	1 – 2		385
	100	1302.13						693
	30	1304.547	686.9591 – 763.6136	$2s^22p^53p - 2s^22p^53d$	$^1P - {^3F^\circ}$	1 – 2		385
	1	1305.21	682.9818 – 759.5968	$2s^22p^53p - 2s^22p^53d$	$^3D - {^3P^\circ}$	1 – 1		385
	200	1306.432	685.7282 – 762.2725	$2s^22p^53p - 2s^22p^53d$	$^1D - {^3F^\circ}$	2 – 3		385
	60	1307.762	687.8305 – 764.2971	$2s^22p^53p - 2s^22p^53d$	$^3P - {^1F^\circ}$	2 – 3		385
	20	1312.135	682.9818 – 759.1934	$2s^22p^53p - 2s^22p^53d$	$^3D - {^3P^\circ}$	1 – 0		385
	1	1319.57	687.8305 – 763.6136	$2s^22p^53p - 2s^22p^53d$	$^3P - {^3F^\circ}$	2 – 2		385
	400	1337.898	685.7282 – 760.4723	$2s^22p^53p - 2s^22p^53d$	$^1D - {^3P^\circ}$	2 – 2		385
	150	1353.745	685.7282 – 759.5968	$2s^22p^53p - 2s^22p^53d$	$^1D - {^3P^\circ}$	2 – 1		385
	10	1359.49						693
	100	1360.298	686.9591 – 760.4723	$2s^22p^53p - 2s^22p^53d$	$^1P - {^3P^\circ}$	1 – 2		385
	500	1376.618	687.8305 – 760.4723	$2s^22p^53p - 2s^22p^53d$	$^3P - {^3P^\circ}$	2 – 2		385
	500	1388.789	616.6442 – 688.6494	$2s^22p^53s - 2s^22p^53p$	$^3P^\circ - {^3P}$	2 – 1		385
	40	1392.33	688.6494 – 760.4723	$2s^22p^53p - 2s^22p^53d$	$^3P - {^3P^\circ}$	1 – 2		385
	60	1393.42	687.8305 – 759.5968	$2s^22p^53p - 2s^22p^53d$	$^3P - {^3P^\circ}$	2 – 1		385
		1402.776	688.3096 – 759.5968	$2s^22p^53p - 2s^22p^53d$	$^3P - {^3P^\circ}$	0 – 1		385
	300	1404.751	616.6442 – 687.8305	$2s^22p^53s - 2s^22p^53p$	$^3P^\circ - {^3P}$	2 – 2		385
	100	1409.490	688.6494 – 759.5968	$2s^22p^53p - 2s^22p^53d$	$^3P - {^3P^\circ}$	1 – 1		385
	10	1412.24						693
	100	1417.558	688.6494 – 759.1934	$2s^22p^53p - 2s^22p^53d$	$^3P - {^3P^\circ}$	1 – 0		385
	200	1422.176	616.6442 – 686.9591	$2s^22p^53s - 2s^22p^53p$	$^3P^\circ - {^1P}$	2 – 1		385
	250	1424.995	618.4739 – 688.6494	$2s^22p^53s - 2s^22p^53p$	$^3P^\circ - {^3P}$	1 – 1		385
	600	1431.935	618.4739 – 688.3096	$2s^22p^53s - 2s^22p^53p$	$^3P^\circ - {^3P}$	1 – 0		385
	10	1432.97	766.8808 – 836.6665	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})4p$	$^3D^\circ - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		888
	700	1441.825	618.4739 – 687.8305	$2s^22p^53s - 2s^22p^53p$	$^3P^\circ - {^3P}$	1 – 2		385
	800	1447.512	616.6442 – 685.7282	$2s^22p^53s - 2s^22p^53p$	$^3P^\circ - {^1D}$	2 – 2		385
	10	1449.70						693
	600	1457.956	620.0601 – 688.6494	$2s^22p^53s - 2s^22p^53p$	$^3P^\circ - {^3P}$	0 – 1		385
	250	1460.168	618.4739 – 686.9591	$2s^22p^53s - 2s^22p^53p$	$^3P^\circ - {^1P}$	1 – 1		385
	15	1466.24	759.5968 – 827.7995	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3P^\circ - \frac{3}{2}[\frac{1}{2}]$	1 – 0		888
	30	1470.024	760.4723 – 828.4988	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})4p$	$^3P^\circ - \frac{1}{2}[\frac{1}{2}]$	2 – 1		888
	40	1471.303	760.4723 – 828.4392	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})4p$	$^3P^\circ - \frac{1}{2}[\frac{3}{2}]$	2 – 2		888
	10	1481.26						693
	700	1486.887	618.4739 – 685.7282	$2s^22p^53s - 2s^22p^53p$	$^3P^\circ - {^1D}$	1 – 2		385
	800	1494.791	620.0601 – 686.9591	$2s^22p^53s - 2s^22p^53p$	$^3P^\circ - {^1P}$	0 – 1		385
	300	1507.442	616.6442 – 682.9818	$2s^22p^53s - 2s^22p^53p$	$^3P^\circ - {^3D}$	2 – 1		385
	100	1511.88	759.5968 – 825.7396	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		888
	10	1513.20	759.1934 – 825.2779	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	0 – 1		888
	400	1519.07	770.8369 – 836.6665	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})4p$	$^1P^\circ - \frac{1}{2}[\frac{1}{2}]$	1 – 0		888
	300	1532.16	760.4723 – 825.7396	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		888
	800	1537.540	616.6442 – 681.6833	$2s^22p^53s - 2s^22p^53p$	$^3P^\circ - {^3D}$	2 – 2		385
	500	1550.192	618.4739 – 682.9818	$2s^22p^53s - 2s^22p^53p$	$^3P^\circ - {^3D}$	1 – 1		385
	50	1553.00						693
	1	1556.88	763.6136 – 827.8449	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})4p$	$^3F^\circ - \frac{1}{2}[\frac{3}{2}]$	2 – 1		888

AL IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1000	1557.254	616.6442 – 680.8598	$2s^22p^53s - 2s^22p^53p$	$^3P^\circ - {}^3D$	2 – 3		385
	500	1559.03	764.2971 – 828.4392	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})4p$	$^1F^\circ - \frac{1}{2}[\frac{3}{2}]$	3 – 2		888
	700	1564.164	624.7175 – 688.6494	$2s^22p^53s - 2s^22p^53p$	$^1P^\circ - {}^3P$	1 – 1		385
	100	1572.54	624.7175 – 688.3096	$2s^22p^53s - 2s^22p^53p$	$^1P^\circ - {}^3P$	1 – 0		385
	900	1582.040	618.4739 – 681.6833	$2s^22p^53s - 2s^22p^53p$	$^3P^\circ - {}^3D$	1 – 2		385
	800	1584.460	624.7175 – 687.8305	$2s^22p^53s - 2s^22p^53p$	$^1P^\circ - {}^3P$	1 – 2		385
	400	1589.275	620.0601 – 682.9818	$2s^22p^53s - 2s^22p^53p$	$^3P^\circ - {}^3D$	0 – 1		385
	300	1602.77	761.6884 – 824.0800	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	4 – 3		888
	400	1606.646	624.7175 – 686.9591	$2s^22p^53s - 2s^22p^53p$	$^1P^\circ - {}^1P$	1 – 1		385
	1	1607.31	759.1934 – 821.4089	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3P^\circ - \frac{3}{2}[\frac{1}{2}]$	0 – 1		888
	400	1617.81	759.5968 – 821.4089	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3P^\circ - \frac{3}{2}[\frac{1}{2}]$	1 – 1		888
	200	1617.93	762.2725 – 824.0800	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		888
	350	1621.68	763.6136 – 825.2779	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3F^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 1		888
	600	1627.536	764.2971 – 825.7396	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^1F^\circ - \frac{3}{2}[\frac{3}{2}]$	3 – 2		888
	50	1628.58	767.0357 – 828.4392	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})4p$	$^1D^\circ - \frac{1}{2}[\frac{3}{2}]$	2 – 2		888
	500	1636.822	767.3455 – 828.4392	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})4p$	$^3D^\circ - \frac{1}{2}[\frac{3}{2}]$	3 – 2		888
	800	1639.055	624.7175 – 685.7282	$2s^22p^53s - 2s^22p^53p$	$^1P^\circ - {}^1D$	1 – 2		385
	300	1641.05	760.4723 – 821.4089	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3P^\circ - \frac{3}{2}[\frac{1}{2}]$	2 – 1		888
	200	1641.20	763.6136 – 824.5447	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		888
	50	1641.55	766.8808 – 827.7995	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3D^\circ - \frac{3}{2}[\frac{1}{2}]$	1 – 0		888
	200	1644.47	767.0357 – 827.8449	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})4p$	$^1D^\circ - \frac{1}{2}[\frac{3}{2}]$	2 – 1		888
	200	1646.15	767.7506 – 828.4988	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})4p$	$^3D^\circ - \frac{1}{2}[\frac{1}{2}]$	2 – 1		888
	1	1647.79	767.7506 – 828.4392	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})4p$	$^3D^\circ - \frac{1}{2}[\frac{3}{2}]$	2 – 2		888
	20	1672.722	764.2971 – 824.0800	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^1F^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		888
	200	1712.43	766.8808 – 825.2779	$2s^22p^53d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		888
	5	1716.28	624.7175 – 682.9818	$2s^22p^53s - 2s^22p^53p$	$^1P^\circ - {}^3D$	1 – 1		385
	40	1734.24	770.8369 – 828.4988	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})4p$	$^1P^\circ - \frac{1}{2}[\frac{1}{2}]$	1 – 1		888
	20	1754.120	770.8369 – 827.8449	$2s^22p^53d - 2s^22p^5(^2P^\circ_{1/2})4p$	$^1P^\circ - \frac{1}{2}[\frac{3}{2}]$	1 – 1		888
	100	1755.431	624.7175 – 681.6833	$2s^22p^53s - 2s^22p^53p$	$^1P^\circ - {}^3D$	1 – 2		385
	200	1762.424	714.0969 – 770.8369	$2s^22p^53p - 2s^22p^53d$	$^1S - {}^1P^\circ$	0 – 1		385
	1000	1818.563	616.6442 – 671.6325	$2s^22p^53s - 2s^22p^53p$	$^3P^\circ - {}^3S$	2 – 1		385
	700	1881.159	618.4739 – 671.6325	$2s^22p^53s - 2s^22p^53p$	$^3P^\circ - {}^3S$	1 – 1		385
	50	1894.48	714.0969 – 766.8808	$2s^22p^53p - 2s^22p^53d$	$^1S - {}^3D^\circ$	0 – 1		385
	300	1939.022	620.0601 – 671.6325	$2s^22p^53s - 2s^22p^53p$	$^3P^\circ - {}^3S$	0 – 1		385

ALUMINUM V (Al^{4+}), Z = 13
Ground State $1s^22s^22p^5(^2P^\circ_{3/2})$ (9 electrons)
Ionization Potential 1 240 684 cm^{-1}; 153.826 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	85.662	0.0 – 1167.38	$2s^22p^5 - 2s^22p^4(^1D)5d$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		233
	350	85.804	0.0 – 1165.45	$2s^22p^5 - 2s^22p^4(^3P)6d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		233
	10	85.922	0.0 – 1163.85	$2s^22p^5 - 2s^22p^4(^3P)6d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		233
	100	87.020	0.0 – 1149.16	$2s^22p^5 - 2s^22p^4(^1S)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		233
	50	87.279	3.44 – 1149.26	$2s^22p^5 - 2s^22p^4(^1S)4d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		233
	100	88.425	0.0 – 1130.9	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		233
	400	88.539	0.0 – 1129.35	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		233
	100	88.636	3.44 – 1131.65	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		233
	200	88.688	0.0 – 1127.55	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - {}^4D$	$\frac{3}{2} - \frac{5}{2}$		233
	50	88.817	3.44 – 1129.35	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		233
	1	88.945	3.44 – 1127.73	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - {}^4D$	$\frac{1}{2} - \frac{3}{2}$		233
	250	90.630	0.0 – 1103.38	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		233

Al V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	90.646	0.0 – 1103.19	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		233
	200	90.701	0.0 – 1102.54	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		233
	200	90.914	3.44 – 1103.38	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		233
	50	90.982	3.44 – 1102.54	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		233
	10	91.078	3.44 – 1101.4	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		233
	50	91.750	0.0 – 1089.957	$2s^22p^5 - 2s^22p^4(^1S)4s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		233
	10	92.039	3.44 – 1089.957	$2s^22p^5 - 2s^22p^4(^1S)4s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		233
	20	93.654	0.0 – 1067.77	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		233
	350	93.755	0.0 – 1066.61	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		233
	200	93.855	0.0 – 1065.46	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		233
	70	93.880	0.0 – 1065.17	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		233
	300	93.955	3.44 – 1067.77	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		233
	100	93.981	0.0 – 1064.05	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		233
	70	94.089	0.0 – 1062.82	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - {}^4D$	$\frac{3}{2}-\frac{3}{2}$		233
	120	94.117	0.0 – 1062.51	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - {}^4D$	$\frac{3}{2}-\frac{5}{2}$		233
	100	94.160	3.44 – 1065.46	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		233
	100	94.187	3.44 – 1065.17	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		233
	10	94.321	3.44 – 1063.65	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{3}{2}$		233
	10	94.394	3.44 – 1062.82	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - {}^4D$	$\frac{1}{2}-\frac{3}{2}$		233
	30	95.835	0.0 – 1043.49	$2s^22p^5 - 2s^22p^4(^1D)4s$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		873
	20	96.150	3.44 – 1043.495	$2s^22p^5 - 2s^22p^4(^1D)4s$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		873
	20	99.200	0.0 – 1008.073	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		873
	10	99.277	0.0 – 1007.29	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		873
	100	99.290	0.0 – 1007.146	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		873
	40	99.425	0.0 – 1005.79	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		873
	30	99.541	3.44 – 1008.073	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		873
	80	99.614	3.44 – 1007.29	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		873
	10	99.774	3.44 – 1005.79	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		873
	300	103.805	0.0 – 963.319	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		873
	400	103.882	0.0 – 962.631	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		873
	150	103.992	0.0 – 961.638	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		873
	250	104.072	0.0 – 960.868	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		873
	200	104.122	0.0 – 960.415	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		873
	250	104.181	3.44 – 963.319	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		873
	200	104.362	3.44 – 961.638	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		873
	100	104.447	3.44 – 960.868	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		873
	150	104.496	3.44 – 960.415	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		873
	200	107.711	0.0 – 928.408	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		873
	600	107.948	0.0 – 926.388	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		873
	150	108.005	0.0 – 925.894	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		873
	300	108.059	0.0 – 925.432	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		873
	300	108.113	3.44 – 928.408	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		873
	100	108.316	0.0 – 923.2272	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		873
	150	108.388	0.0 – 922.61	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$		873
	150	108.406	3.44 – 925.894	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		873
	50	108.445	0.0 – 922.1328	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		873
	200	108.462	3.44 – 925.432	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		873
	20	108.530	0.0 – 921.4154	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		873
	50	108.617	0.0 – 920.675	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4F$	$\frac{3}{2}-\frac{3}{2}$		873
	200	108.708	0.0 – 919.901	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4F$	$\frac{3}{2}-\frac{5}{2}$		873
	30	108.849	3.44 – 922.1328	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{3}{2}$		873
	10	108.941	3.44 – 921.4154	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{1}{2}$		873
	100	109.024	3.44 – 920.675	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4F$	$\frac{1}{2}-\frac{3}{2}$		873
	2	109.630	0.0 – 912.1627	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4D$	$\frac{3}{2}-\frac{1}{2}$		873

AL V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	5	109.675	0.0 – 911.7800	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4D$	$\frac{3}{2}-\frac{3}{2}$		873
	1	109.730	0.0 – 911.3292	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4D$	$\frac{3}{2}-\frac{5}{2}$		873
	5	110.045	3.44 – 912.1627	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4D$	$\frac{1}{2}-\frac{1}{2}$		873
	250	118.497	0.0 – 843.914	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		873
	200	118.983	3.44 – 843.914	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		873
	900	125.529	0.0 – 796.6224	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		873
	800	126.068	3.44 – 796.6529	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		873
	800	130.411	0.0 – 766.7922	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		873
	1000	130.847	0.0 – 764.2504	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		873
	900	131.002	3.44 – 766.7922	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		873
	900	131.438	3.44 – 764.2504	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		873
	1	132.407	0.0 – 755.2374	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		873
	500	132.626	0.0 – 753.9895	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		873
	200	133.010	0.0 – 751.8401	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		873
	50	133.233	3.44 – 753.9895	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{3}{2}$		873
	50	136.249	358.816 – 1092.76	$2s2p^6 - 2s2p^5(^3P^\circ)3s$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		233
	100	136.668	358.816 – 1090.51	$2s2p^6 - 2s2p^5(^3P^\circ)3s$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		233
	5	179.003	358.816 – 917.463	$2s2p^6 - 2s^22p^4(^1S)3p$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		873
	2	189.977	358.816 – 885.194	$2s2p^6 - 2s^22p^4(^1D)3p$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		873
	10	190.569	358.816 – 883.559	$2s2p^6 - 2s^22p^4(^1D)3p$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		873
	1000	278.694	0.0 – 358.816	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		873
	900	281.394	3.44 – 358.816	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		873
	15	456.08	910.9746 – 1130.235	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)5f$	$^4D - 2[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		113
	8	456.73	911.3292 – 1130.277	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)5f$	$^4D - 2[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		113
	10	457.00	911.7800 – 1130.598	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)5f$	$^4D - 2[2]^\circ$	$\frac{3}{2}-\frac{3}{2}$		113
	10	463.51	955.755 – 1171.498	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)5f$	$^2G - 2[5]^\circ$	$\frac{9}{2}-\frac{11}{2}$		113
	8	466.24	918.757 – 1133.238	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)5f$	$^4F - 1[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		113
	20	469.24	917.612 – 1130.723	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)5f$	$^4F - 2[5]^\circ$	$\frac{9}{2}-\frac{11}{2}$		113
	5	471.34	921.075 – 1133.238	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)5f$	$^2F - 1[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		113
	5	471.74	918.757 – 1130.738	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)5f$	$^4F - 2[5]^\circ$	$\frac{7}{2}-\frac{9}{2}$		113
	8	474.75	922.61 – 1133.247	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)5f$	$^2F - 1[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		113
	8	475.63	923.2272 – 1133.474	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)5f$	$^4P - 1[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		113
	10	479.02	963.354 – 1172.116	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)5f$	$^2F - 2[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		113
	5	536.73	818.1363 – 1004.449	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4P^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		873
	3	538.90	817.3649 – 1002.927	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4P^\circ - {}^4P$	$\frac{5}{2}-\frac{3}{2}$		873
	3	541.161	818.1363 – 1002.927	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		873
	20	543.572	818.9616 – 1002.927	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4P^\circ - {}^4P$	$\frac{1}{2}-\frac{3}{2}$		873
	50	544.29	817.3649 – 1001.087	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4P^\circ - {}^4P$	$\frac{5}{2}-\frac{5}{2}$		873
	40	546.60	818.1363 – 1001.087	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4P^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		873
	30	561.40	865.3689 – 1043.495	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)4s$	$^2F^\circ - {}^2D$	$\frac{5}{2}-\frac{3}{2}$		873
		562.730	865.7849 – 1043.49	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)4s$	$^2F^\circ - {}^2D$	$\frac{7}{2}-\frac{5}{2}$		873
	20	566.847	828.0351 – 1004.449	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4D^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		873
	60	568.492	827.0250 – 1002.927	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4D^\circ - {}^4P$	$\frac{5}{2}-\frac{3}{2}$		873
	20	568.629	828.5861 – 1004.449	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4D^\circ - {}^4P$	$\frac{1}{2}-\frac{1}{2}$		873
	100	570.364	825.757 – 1001.087	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4D^\circ - {}^4P$	$\frac{7}{2}-\frac{5}{2}$		873
	15	571.76	828.0351 – 1002.927	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4D^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		873
	5	574.499	827.0250 – 1001.087	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4D^\circ - {}^4P$	$\frac{5}{2}-\frac{5}{2}$		873
	8	574.77	834.0847 – 1008.073	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		873
	50	575.473	832.0176 – 1005.79	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		873
	2	579.53	917.403 – 1089.957	$2s^22p^4(^1S)3p - 2s^22p^4(^1S)4s$	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		873
	5	579.73	917.463 – 1089.957	$2s^22p^4(^1S)3p - 2s^22p^4(^1S)4s$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		873
	10	582.395	834.0847 – 1005.79	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		873
	10	584.334	836.9374 – 1008.073	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		873
	20	585.61	835.0333 – 1005.79	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		873

AL V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	4	588.371	838.1178 – 1008.073	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^2S^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		873
	8	590.078	874.0260 – 1043.495	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)4s$	$^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		873
	10	590.98	874.2801 – 1043.49	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)4s$	$^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		873
	4	592.24	836.9374 – 1005.79	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		873
	8	605.03	837.6462 – 1002.927	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4s$	$^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		873
	15	620.460	911.3292 – 1072.500	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_0)4f$	$^4D - 0[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		113
	10	622.02	910.9746 – 1071.742	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4D - 1[3]^\circ$	$\frac{7}{2}-\frac{7}{2}$		113
	10	623.39	911.3292 – 1071.742	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4D - 1[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		113
	20	623.749	910.9746 – 1071.297	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4D - 1[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		113
	25	627.400	911.7800 – 1071.169	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4D - 1[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		113
	25	629.062	912.1627 – 1071.130	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4D - 1[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		113
	8	635.64	911.3292 – 1068.654	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4D - 2[2]^\circ$	$\frac{5}{2}-\frac{5}{2}$		113
	10	636.008	910.9746 – 1068.207	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4D - 2[3]^\circ$	$\frac{7}{2}-\frac{7}{2}$		113
	30	636.552	910.9746 – 1068.072	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4D - 2[4]^\circ$	$\frac{7}{2}-\frac{7}{2}$		113
	90	636.708	910.9746 – 1068.032	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4D - 2[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		113
	30	637.675	911.3292 – 1068.149	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4D - 2[3]^\circ$	$\frac{5}{2}-\frac{5}{2}$		113
	80	637.984	911.3292 – 1068.072	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4D - 2[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		113
	30	638.147	911.7800 – 1068.484	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4D - 2[2]^\circ$	$\frac{3}{2}-\frac{3}{2}$		113
	50	639.518	911.7800 – 1068.149	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4D - 2[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		113
	30	639.712	912.1627 – 1068.484	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4D - 2[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		113
	25	646.009	955.755 – 1110.551	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2G - 2[4]^\circ$	$\frac{9}{2}-\frac{9}{2}$		113
	100	651.204	955.755 – 1109.315	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2G - 2[5]^\circ$	$\frac{9}{2}-\frac{11}{2}$		113
	5	653.66	918.757 – 1071.742	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4F - 1[3]^\circ$	$\frac{7}{2}-\frac{7}{2}$		113
	10	655.300	919.901 – 1072.500	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_0)4f$	$^4F - 0[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		113
	65	655.564	918.757 – 1071.297	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4F - 1[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		113
	1	658.42	919.901 – 1071.778	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4F - 1[3]^\circ$	$\frac{5}{2}-\frac{5}{2}$		113
	60	658.56	919.901 – 1071.742	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4F - 1[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		113
	70	660.36	919.901 – 1071.331	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4F - 1[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		113
	100	660.964	917.612 – 1068.906	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4F - 2[5]^\circ$	$\frac{9}{2}-\frac{11}{2}$		113
	50	661.803	920.675 – 1071.778	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4F - 1[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		113
	5	663.72	921.075 – 1071.742	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2F - 1[3]^\circ$	$\frac{7}{2}-\frac{7}{2}$		113
	50	664.804	917.612 – 1068.032	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4F - 2[4]^\circ$	$\frac{9}{2}-\frac{9}{2}$		113
	90	665.675	921.075 – 1071.297	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2F - 1[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		113
	90	665.938	918.757 – 1068.921	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4F - 2[5]^\circ$	$\frac{7}{2}-\frac{9}{2}$		113
	70	667.156	922.61 – 1072.500	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_0)4f$	$^2F - 0[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		113
	50	667.944	921.4154 – 1071.130	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4P - 1[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		113
	1	668.26	922.1328 – 1071.778	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4P - 1[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		113
	25	669.720	918.757 – 1068.072	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4F - 2[4]^\circ$	$\frac{7}{2}-\frac{7}{2}$		113
	10	669.92	923.2272 – 1072.500	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_0)4f$	$^4P - 0[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		113
	20	670.546	922.61 – 1071.742	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2F - 1[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		113
	50	670.977	922.1328 – 1071.169	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4P - 1[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		113
	40	673.104	960.868 – 1109.433	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2P - 2[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		113
	70	673.325	923.2272 – 1071.742	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4P - 1[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		113
	20	674.269	919.901 – 1068.207	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4F - 2[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		113
	15	674.53	919.901 – 1068.149	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4F - 2[3]^\circ$	$\frac{5}{2}-\frac{5}{2}$		113
	10	674.88	919.901 – 1068.072	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4F - 2[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		113
	15	675.20	923.2272 – 1071.331	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4P - 1[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		113
	30	675.336	960.415 – 1108.492	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2S - 2[1]^\circ$	$\frac{1}{2}-\frac{3}{2}$		113
	20	675.938	923.2272 – 1071.169	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^4P - 1[2]^\circ$	$\frac{5}{2}-\frac{5}{2}$		113
	65	676.380	921.075 – 1068.921	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^2F - 2[5]^\circ$	$\frac{7}{2}-\frac{9}{2}$		113
	45	676.595	921.4154 – 1069.212	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4P - 2[1]^\circ$	$\frac{1}{2}-\frac{3}{2}$		113
	40	676.838	921.4154 – 1069.161	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4P - 2[1]^\circ$	$\frac{1}{2}-\frac{1}{2}$		113
	55	677.248	962.631 – 1110.288	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2D - 2[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		113
	20	677.377	960.868 – 1108.492	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2P - 2[1]^\circ$	$\frac{3}{2}-\frac{3}{2}$		113

AL V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	679.373	963.354 – 1110.551	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2F - 2[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		113
	10	679.659	921.075 – 1068.207	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^2F - 2[3]^\circ$	$\frac{7}{2}-\frac{7}{2}$		113
	30	679.909	922.1328 – 1069.212	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4P - 2[1]^\circ$	$\frac{3}{2}-\frac{3}{2}$		113
	1	680.15	922.1328 – 1069.161	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4P - 2[1]^\circ$	$\frac{3}{2}-\frac{1}{2}$		113
	40	680.41	963.319 – 1110.288	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2D - 2[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		113
	10	680.44	921.075 – 1068.032	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^2F - 2[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		113
	50	680.586	963.354 – 1110.288	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2F - 2[3]^\circ$	$\frac{7}{2}-\frac{7}{2}$		113
	5	680.955	961.638 – 1108.492	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2P - 2[1]^\circ$	$\frac{1}{2}-\frac{3}{2}$		113
	40	681.22	962.631 – 1109.433	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2D - 2[2]^\circ$	$\frac{5}{2}-\frac{5}{2}$		113
	15	682.496	922.1328 – 1068.654	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4P - 2[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		113
	25	683.31	925.432 – 1071.778	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2D - 1[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		113
	60	684.402	926.388 – 1072.500	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_0)4f$	$^2D - 0[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		113
	1	684.58	963.359 – 1109.433	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2F - 2[2]^\circ$	$\frac{5}{2}-\frac{5}{2}$		113
	5	684.74	922.61 – 1068.654	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^2F - 2[2]^\circ$	$\frac{5}{2}-\frac{5}{2}$		113
	5	685.58	962.631 – 1108.492	$2s^22p^4(^1D)3d - 2s^22p^4(^1D_2)4f$	$^2D - 2[1]^\circ$	$\frac{5}{2}-\frac{3}{2}$		113
	10	686.169	925.432 – 1071.169	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2D - 1[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		113
	60	686.827	922.61 – 1068.207	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^2F - 2[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		113
	1	687.81	926.388 – 1071.778	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2D - 1[3]^\circ$	$\frac{5}{2}-\frac{5}{2}$		113
	25	688.531	925.894 – 1071.130	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2P - 1[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		113
	1	689.76	923.2272 – 1068.207	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^4P - 2[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		113
	60	689.927	926.388 – 1071.331	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2D - 1[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		113
	60	693.896	928.408 – 1072.522	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_0)4f$	$^2P - 0[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		113
	60	697.491	928.408 – 1071.778	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2P - 1[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		113
	40	697.751	925.894 – 1069.212	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^2P - 2[1]^\circ$	$\frac{1}{2}-\frac{3}{2}$		113
	50	698.218	925.432 – 1068.654	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^2D - 2[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		113
	30	700.473	928.408 – 1071.169	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_1)4f$	$^2P - 1[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		113
	40	700.680	925.432 – 1068.149	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^2D - 2[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		113
	5	701.315	925.894 – 1068.484	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^2P - 2[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		113
	70	705.127	926.388 – 1068.207	$2s^22p^4(^3P)3d - 2s^22p^4(^3P_2)4f$	$^2D - 2[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		113
	30	826.826	764.2504 – 885.194	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^2P - {^2P^\circ}$	$\frac{3}{2}-\frac{1}{2}$		873
	80	838.156	764.2504 – 883.559	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^2P - {^2P^\circ}$	$\frac{3}{2}-\frac{3}{2}$		873
		844.582	766.7922 – 885.194	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^2P - {^2P^\circ}$	$\frac{1}{2}-\frac{1}{2}$		873
	50	856.394	766.7922 – 883.559	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^2P - {^2P^\circ}$	$\frac{1}{2}-\frac{3}{2}$		873
	60	944.62	817.3649 – 923.2272	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - {^4P}$	$\frac{5}{2}-\frac{5}{2}$		873
	40	951.55	818.1363 – 923.2272	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - {^4P}$	$\frac{3}{2}-\frac{5}{2}$		873
	40	954.49	817.3649 – 922.1328	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - {^4P}$	$\frac{5}{2}-\frac{3}{2}$		873
	2	961.54	818.1363 – 922.1328	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - {^4P}$	$\frac{3}{2}-\frac{3}{2}$		873
	40	968.25	818.1363 – 921.4154	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - {^4P}$	$\frac{3}{2}-\frac{1}{2}$		873
	30	969.26	818.9616 – 922.1328	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - {^4P}$	$\frac{1}{2}-\frac{3}{2}$		873
	2	976.05	818.9616 – 921.4154	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - {^4P}$	$\frac{1}{2}-\frac{1}{2}$		873
	20	1020.52	865.3689 – 963.359	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2F^\circ - {^2F}$	$\frac{5}{2}-\frac{5}{2}$		873
	50	1024.91	865.7849 – 963.354	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2F^\circ - {^2F}$	$\frac{7}{2}-\frac{7}{2}$		873
	5	1028.17	865.3689 – 962.631	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2F^\circ - {^2D}$	$\frac{5}{2}-\frac{5}{2}$		873
	1	1057.36	828.0351 – 922.61	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - {^2F}$	$\frac{3}{2}-\frac{5}{2}$		873
	2	1059.14	817.3649 – 911.7800	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - {^4D}$	$\frac{5}{2}-\frac{3}{2}$		873
	5	1059.65	832.0176 – 926.388	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^\circ - {^2D}$	$\frac{5}{2}-\frac{5}{2}$		873
	3	1063.27	827.0250 – 921.075	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - {^2F}$	$\frac{5}{2}-\frac{7}{2}$		873
	10	1063.53	818.1363 – 912.1627	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - {^4D}$	$\frac{3}{2}-\frac{1}{2}$		873
	70	1064.24	817.3649 – 911.3292	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - {^4D}$	$\frac{5}{2}-\frac{5}{2}$		873
	80	1067.87	818.1363 – 911.7800	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - {^4D}$	$\frac{3}{2}-\frac{3}{2}$		873
	250	1068.26	817.3649 – 910.9746	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - {^4D}$	$\frac{5}{2}-\frac{7}{2}$		873
	200	1073.02	818.1363 – 911.3292	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - {^4D}$	$\frac{3}{2}-\frac{5}{2}$		873
	10	1075.28	825.757 – 918.757	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - {^4F}$	$\frac{7}{2}-\frac{7}{2}$		873
	30	1076.73	827.0250 – 919.901	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - {^4F}$	$\frac{5}{2}-\frac{5}{2}$		873

AL V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	40	1077.35	818.9616 – 911.7800	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^4D$	$\frac{1}{2}-\frac{3}{2}$		873
	30	1079.41	828.0351 – 920.675	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4F$	$\frac{3}{2}-\frac{3}{2}$		873
	70	1085.92	828.5861 – 920.675	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4F$	$\frac{1}{2}-\frac{3}{2}$		873
	100	1088.52	828.0351 – 919.901	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4F$	$\frac{3}{2}-\frac{5}{2}$		873
	500	1088.67	825.757 – 917.612	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4F$	$\frac{7}{2}-\frac{9}{2}$		873
	300	1090.14	827.0250 – 918.757	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4F$	$\frac{5}{2}-\frac{7}{2}$		873
	8	1093.22	836.9374 – 928.408	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		873
	10	1094.75	834.0847 – 925.432	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		873
	10	1100.60	835.0333 – 925.894	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		873
		1103.85	832.0176 – 922.61	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{5}{2}$		873
	20	1106.20	835.0333 – 925.432	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		873
	70	1106.41	865.3689 – 955.751	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2F^\circ - ^2G$	$\frac{5}{2}-\frac{7}{2}$		873
	20	1107.55	838.1178 – 928.408	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2S^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		873
	100	1111.48	865.7849 – 955.755	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2F^\circ - ^2G$	$\frac{7}{2}-\frac{9}{2}$		873
	20	1112.51	917.403 – 1007.29	$2s^22p^4(^1S)3p - 2s^22p^4(^1S)3d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		873
	10	1115.04	917.463 – 1007.146	$2s^22p^4(^1S)3p - 2s^22p^4(^1S)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		873
	50	1117.93	836.9374 – 926.388	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		873
	30	1119.39	874.0260 – 963.359	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2D^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		873
	10	1119.94	874.0260 – 963.319	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		873
	20	1121.79	834.0847 – 923.2272	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		873
	50	1122.66	874.2801 – 963.354	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		873
	200	1122.88	832.0176 – 921.075	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		873
	2	1128.62	874.0260 – 962.631	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		873
	80	1129.43	796.6529 – 885.194	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		873
	60	1129.62	834.0847 – 922.61	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		873
	2	1130.00	836.9374 – 925.432	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		873
	10	1131.84	874.2801 – 962.631	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		873
	1	1139.25	838.1178 – 925.894	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2S^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		873
	1	1141.39	874.0260 – 961.638	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		873
	300	1150.30	796.6224 – 883.559	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		873
	10	1150.67	796.6529 – 883.559	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		873
	30	1152.89	832.0176 – 918.757	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^\circ - ^4F$	$\frac{5}{2}-\frac{7}{2}$		873
	10	1154.90	874.2801 – 960.868	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		873
	350	1165.42	751.8401 – 837.6462	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		873
	250	1168.48	837.6462 – 923.2272	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		873
	200	1173.47	825.757 – 910.9746	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4D$	$\frac{7}{2}-\frac{7}{2}$		873
	20	1179.86	827.0250 – 911.7800	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4D$	$\frac{5}{2}-\frac{3}{2}$		873
	120	1183.62	837.6462 – 922.1328	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		873
	100	1186.18	827.0250 – 911.3292	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4D$	$\frac{5}{2}-\frac{5}{2}$		873
	15	1188.67	828.0351 – 912.1627	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4D$	$\frac{3}{2}-\frac{1}{2}$		873
	8	1191.20	827.0250 – 910.9746	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4D$	$\frac{5}{2}-\frac{7}{2}$		873
	50	1193.76	837.6462 – 921.4154	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		873
	10	1194.10	828.0351 – 911.7800	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4D$	$\frac{3}{2}-\frac{3}{2}$		873
	200	1195.37	753.9895 – 837.6462	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		873
	20	1200.56	828.0351 – 911.3292	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4D$	$\frac{3}{2}-\frac{5}{2}$		873
	10	1202.00	828.5861 – 911.7800	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4D$	$\frac{1}{2}-\frac{3}{2}$		873
	50	1213.48	755.2374 – 837.6462	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		873
	3	1253.11	883.559 – 963.359	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		873
	2	1253.76	883.559 – 963.319	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		873
	10	1264.67	883.559 – 962.631	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	873
	8	1280.01	885.194 – 963.319	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		873
	500	1287.70	796.6224 – 874.2801	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		873
	100	1288.23	796.6529 – 874.2801	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		873
	30	1291.91	796.6224 – 874.0260	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		873

AL V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	1292.44	796.6529 – 874.0260	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2D^\circ$	$\frac{3}{2} - \frac{3}{2}$		873
	30	1293.51	883.559 – 960.868	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		873
	10	1301.13	883.559 – 960.415	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		873
	5	1308.16	885.194 – 961.638	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		873
	10	1312.43	751.8401 – 828.0351	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4D^\circ$	$\frac{5}{2} - \frac{3}{2}$		873
	400	1330.06	751.8401 – 827.0250	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4D^\circ$	$\frac{5}{2} - \frac{5}{2}$		873
	10	1340.52	753.9895 – 828.5861	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4D^\circ$	$\frac{3}{2} - \frac{1}{2}$		873
	400	1350.518	753.9895 – 828.0351	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4D^\circ$	$\frac{3}{2} - \frac{3}{2}$		873
		1352.871	751.8401 – 825.757	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4D^\circ$	$\frac{5}{2} - \frac{7}{2}$		873
		1353.745	764.2504 – 838.1178	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^2P - ^2S^\circ$	$\frac{3}{2} - \frac{1}{2}$		873
	150	1359.64	843.914 – 917.463	$2s^22p^4(^1S)3s - 2s^22p^4(^1S)3p$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		873
	400	1363.351	755.2374 – 828.5861	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4D^\circ$	$\frac{1}{2} - \frac{1}{2}$		873
	600	1369.20	753.9895 – 827.0250	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4D^\circ$	$\frac{3}{2} - \frac{5}{2}$		873
	300	1373.70	755.2374 – 828.0351	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4D^\circ$	$\frac{1}{2} - \frac{3}{2}$		873
	100	1375.79	764.2504 – 836.9374	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^2P - ^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		873
	100	1402.021	766.7922 – 838.1178	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^2P - ^2S^\circ$	$\frac{1}{2} - \frac{1}{2}$		873
	100	1412.772	764.2504 – 835.0333	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^2P - ^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		873
	80	1425.64	766.7922 – 836.9374	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^2P - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		873
		1431.961	764.2504 – 834.0847	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^2P - ^2D^\circ$	$\frac{3}{2} - \frac{3}{2}$		873
	400	1445.87	796.6224 – 865.7849	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		873
	30	1454.65	796.6224 – 865.3689	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{5}{2}$		873
	300	1455.265	796.6529 – 865.3689	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		873
	10	1465.392	766.7922 – 835.0333	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^2P - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		873
	600	1475.64	764.2504 – 832.0176	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^2P - ^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$		873
	300	1486.05	766.7922 – 834.0847	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^2P - ^2D^\circ$	$\frac{1}{2} - \frac{3}{2}$		873
	700	1508.37	751.8401 – 818.1363	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4P^\circ$	$\frac{5}{2} - \frac{3}{2}$		873
	1000	1526.14	751.8401 – 817.3649	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4P^\circ$	$\frac{5}{2} - \frac{5}{2}$		873
	500	1539.124	753.9895 – 818.9616	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4P^\circ$	$\frac{3}{2} - \frac{1}{2}$		873
	150	1558.92	753.9895 – 818.1363	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4P^\circ$	$\frac{3}{2} - \frac{3}{2}$		873
	50	1569.25	755.2374 – 818.9616	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4P^\circ$	$\frac{1}{2} - \frac{1}{2}$		873
	300	1577.90	753.9895 – 817.3649	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4P^\circ$	$\frac{3}{2} - \frac{5}{2}$		873
	10	1579.38	1108.492 – 1171.808	$2s^22p^4(^1D_2)4f - 2s^22p^4(^1D_2)5g$	$\frac{3}{2}[\frac{1}{2}]^\circ - \frac{3}{2}[\frac{3}{2}]$	$\frac{3}{2} - \frac{5}{2}$		113
	350	1589.87	755.2374 – 818.1363	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4P^\circ$	$\frac{1}{2} - \frac{3}{2}$		873
	20	1593.54	1068.072 – 1130.824	$2s^22p^4(^3P_2)4f - 2s^22p^4(^3P_2)5g$	$\frac{3}{2}[\frac{7}{2}]^\circ - \frac{3}{2}[\frac{9}{2}]$	$\frac{7}{2} - \frac{9}{2}$		113
	20	1595.46	1068.149 – 1130.827	$2s^22p^4(^3P_2)4f - 2s^22p^4(^3P_2)5g$	$\frac{3}{2}[\frac{5}{2}]^\circ - \frac{3}{2}[\frac{7}{2}]$	$\frac{5}{2} - \frac{7}{2}$		113
	60	1596.95	1109.315 – 1171.934	$2s^22p^4(^1D_2)4f - 2s^22p^4(^1D_2)5g$	$\frac{3}{2}[\frac{9}{2}]^\circ - \frac{3}{2}[\frac{11}{2}]$	$\frac{11}{2} - \frac{13}{2}$		113
	20	1602.03	1068.484 – 1130.905	$2s^22p^4(^3P_2)4f - 2s^22p^4(^3P_2)5g$	$\frac{3}{2}[\frac{3}{2}]^\circ - \frac{3}{2}[\frac{5}{2}]$	$\frac{3}{2} - \frac{5}{2}$		113
	10	1621.36	1110.551 – 1172.228	$2s^22p^4(^1D_2)4f - 2s^22p^4(^1D_2)5g$	$\frac{3}{2}[\frac{7}{2}]^\circ - \frac{3}{2}[\frac{9}{2}]$	$\frac{9}{2} - \frac{11}{2}$		113

ALUMINUM VI (Al^{5+}), Z = 13
Ground State $1s^22s^22p^4(^3P_2)$ (8 electrons)
Ionization Potential 1 536 300 cm^{-1}; 190.48 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	68.167	0.000 – 1466.99	$2s^22p^4 - 2s^22p^3(^2P^\circ)5d$	$g^3P - ^3D^\circ$	2 – 3		233
	10	68.223	0.000 – 1465.78	$2s^22p^4 - 2s^22p^3(^2P^\circ)5d$	$g^3P - ^3P^\circ$	2 – 2		233
	1	68.289	2.732 – 1467.1	$2s^22p^4 - 2s^22p^3(^2P^\circ)5d$	$g^3P - ^3D^\circ$	1 – 2		233
	300	72.674	0.000 – 1376.4+X	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$g^3P - ^1F^\circ$	2 – 3	Q	233,375
	1	72.714	0.000 – 1375.25	$2s^22p^4 - 2s^22p^3(^4S^\circ)5d$	$g^3P - ^3D^\circ$	2 – 3		233
	250	72.810	0.000 – 1373.44	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$g^3P - ^3D^\circ$	2 – 3		233

AL VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	72.865	2.732 – 1375.14	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$g^3P - ^3D^\circ$	1 – 2		233
	100	72.926	0.000 – 1371.22	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$g^3P - ^3P^\circ$	2 – 2		233
	100	73.076	2.732 – 1371.22	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$g^3P - ^3P^\circ$	1 – 2		233
	1	73.334	41.167 – 1404.76+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)5s$	$^1D - ^1D^\circ$	2 – 2		233
	10	74.259	0.000 – 1346.32+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - ^1F^\circ$	2 – 3	Q	233,375
	50	74.346	0.000 – 1345.03	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - ^3S^\circ$	2 – 1		233
	300	74.444	0.000 – 1343.32	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - ^3P^\circ$	2 – 2		233
	50	74.504	2.732 – 1345.03	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - ^3S^\circ$	1 – 1		233
	150	74.592	2.732 – 1343.32	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - ^3P^\circ$	1 – 2		233
	250	74.656	0.000 – 1339.48	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - ^3D^\circ$	2 – 3		233
	50	74.813	2.732 – 1339.48	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - ^3D^\circ$	1 – 2		233
	100	74.892	41.167 – 1376.4+X	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$^1D - ^1F^\circ$	2 – 3		233
	100	75.164	41.167 – 1371.22	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$^1D - ^3P^\circ$	2 – 2	Q	233,375
	610	76.402	2.732 – 1311.61+X	$2s^22p^4 - 2s^22p^3(^2P^\circ)4s$	$g^3P - ^1P^\circ$	1 – 1	Q	859,375
	200	76.618	41.167 – 1346.32+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$^1D - ^1F^\circ$	2 – 3		233
	200	76.697	41.167 – 1344.97+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$^1D - ^1D^\circ$	2 – 2		233
	200	76.794	41.167 – 1343.32	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$^1D - ^3P^\circ$	2 – 2	Q	233,375
	50	76.953	41.167 – 1340.63+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$^1D - ^1P^\circ$	2 – 1		233
	50	77.052	41.167 – 1339.48	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$^1D - ^3D^\circ$	2 – 2	Q	233,375
	500	77.945	0.000 – 1282.96	$2s^22p^4 - 2s^22p^3(^4S^\circ)4d$	$g^3P - ^3D^\circ$	2 – 3		233
	100	78.112	2.732 – 1282.96	$2s^22p^4 - 2s^22p^3(^4S^\circ)4d$	$g^3P - ^3D^\circ$	1 – 2		233
	100	78.149	0.000 – 1279.22+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)4s$	$g^3P - ^1D^\circ$	2 – 2	Q	233,375
	50	78.178	3.829 – 1282.96	$2s^22p^4 - 2s^22p^3(^4S^\circ)4d$	$g^3P - ^3D^\circ$	0 – 1		233
	70	78.459	0.000 – 1274.55	$2s^22p^4 - 2s^22p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	2 – 3		233
	10	78.628	2.732 – 1274.55	$2s^22p^4 - 2s^22p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	1 – 2		233
	10	78.712	41.167 – 1311.61+X	$2s^22p^4 - 2s^22p^3(^2P^\circ)4s$	$^1D - ^1P^\circ$	2 – 1		233
	10	79.557	88.213 – 1345.03	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$^1S - ^3S^\circ$	0 – 1	Q	233,375
	70	80.770	41.167 – 1279.22+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)4s$	$^1D - ^1D^\circ$	2 – 2		233
	50	81.738	88.213 – 1311.61+X	$2s^22p^4 - 2s^22p^3(^2P^\circ)4s$	$^1S - ^1P^\circ$	0 – 1		233
	70	82.082	0.000 – 1218.29	$2s^22p^4 - 2s^22p^3(^4S^\circ)4s$	$g^3P - ^3S^\circ$	2 – 1		233
	50	82.267	2.732 – 1218.29	$2s^22p^4 - 2s^22p^3(^4S^\circ)4s$	$g^3P - ^3S^\circ$	1 – 1		233
	10	82.338	3.829 – 1218.29	$2s^22p^4 - 2s^22p^3(^4S^\circ)4s$	$g^3P - ^3S^\circ$	0 – 1		233
	100	84.650						233
	20	84.801						233
	70	84.828						233
	10	84.928	41.167 – 1218.29	$2s^22p^4 - 2s^22p^3(^4S^\circ)4s$	$^1D - ^3S^\circ$	2 – 1	Q	233,375
	10	85.189	0.000 – 1173.99+X	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^1F^\circ$	2 – 3	Q	693,375
	100	85.423	0.000 – 1170.65	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	2 – 2		233
	1000	85.515	0.000 – 1169.39	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		233
	200	85.569	0.000 – 1168.69	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3F^\circ$	2 – 2		233
	300	85.622	2.732 – 1170.65	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		233
	300	85.724	0.000 – 1166.53	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3F^\circ$	2 – 3		233
	400	85.764	2.732 – 1168.69	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3F^\circ$	1 – 2		233
	350	85.817	0.000 – 1165.26	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	2 – 2		233
	100	85.865	0.000 – 1164.62	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	2 – 1		233
	10	85.970						233
	150	86.020	2.732 – 1165.26	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	1 – 2		233
	150	86.070	2.732 – 1164.62	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	1 – 1		233
	150	86.097	2.732 – 1164.22	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	1 – 0		233
	200	86.147	3.829 – 1164.62	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	0 – 1		233
	10	86.975	0.000 – 1149.79+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^1F^\circ$	2 – 3	Q	233,375
	400	87.334	0.000 – 1145.02	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3S^\circ$	2 – 1		233
	350	87.544	2.732 – 1145.02	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3S^\circ$	1 – 1		233
	500	87.592	0.000 – 1141.67	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3P^\circ$	2 – 1		233

AL VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	87.629	3.829 – 1145.02	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3S^\circ$	0 – 1		233
	650	87.655	0.000 – 1140.84	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3P^\circ$	2 – 2		233
	250	87.783	2.732 – 1141.91	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3P^\circ$	1 – 0		233
	250	87.802	2.732 – 1141.67	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3P^\circ$	1 – 1		233
	350	87.866	2.732 – 1140.84	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3P^\circ$	1 – 2		233
	250	87.887	3.829 – 1141.67	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3P^\circ$	0 – 1		233
	1000	88.170	0.000 – 1134.17	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		233
	10	88.241	2.732 – 1136.04+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^1P^\circ$	1 – 1	Q	233,375
	750	88.273	41.167 – 1173.99+X	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$^1D - ^1F^\circ$	2 – 3		233
	100	88.325	0.000 – 1132.18	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3F^\circ$	2 – 3		233
	750	88.376	2.732 – 1134.17	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		233
	250	88.469	3.829 – 1134.17	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3D^\circ$	0 – 1		233
	100	88.688	41.167 – 1168.69+X	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$^1D - ^1D^\circ$	2 – 2		233
	1000	90.200	41.167 – 1149.79+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1D - ^1F^\circ$	2 – 3		233
	600	90.858	41.167 – 1141.76+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1D - ^1D^\circ$	2 – 2		233
	500	91.332	41.167 – 1136.04+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1D - ^1P^\circ$	2 – 1		233
	750	92.626	0.000 – 1079.61	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		233
	200	92.636	0.000 – 1079.49	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	2 – 2		233
	500	92.875	2.732 – 1079.49	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		233
	250	92.970	3.829 – 1079.46	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	0 – 1		233
	100	95.436	88.213 – 1136.04+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1S - ^1P^\circ$	0 – 1		233
	100	95.624	88.213 – 1134.17	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1S - ^3D^\circ$	0 – 1	Q	233,375
	10	96.071						233
	10	96.442	323.002 – 1359.89	$2s2p^5 - 2s2p^4(^2S)3s$	$^3P^\circ - ^3S$	2 – 1		233
	50	96.673	325.469 – 1359.89	$2s2p^5 - 2s2p^4(^2S)3s$	$^3P^\circ - ^3S$	1 – 1		233
	10	98.684						233
	600	100.616	0.000 – 993.88	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^3P^\circ$	2 – 2		233
	100	100.639	0.000 – 993.66	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^3P^\circ$	2 – 1		233
	200	100.894	2.732 – 993.88	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^3P^\circ$	1 – 2		233
	200	100.919	2.732 – 993.66	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^3P^\circ$	1 – 1		233
	150	101.027	3.829 – 993.66	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^3P^\circ$	0 – 1		233
	10	103.062	323.002 – 1293.29	$2s2p^5 - 2s2p^4(^2D)3s$	$^3P^\circ - ^3D$	2 – 3		233
	300	103.940	41.167 – 1003.24+X	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$^1D - ^1P^\circ$	2 – 1		233
	1000	104.047	0.000 – 961.1	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - ^3D^\circ$	2 – 3		233
	800	104.344	2.732 – 961.1	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - ^3D^\circ$	1 – 2		233
	400	104.466	3.829 – 961.1	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - ^3D^\circ$	0 – 1		233
	10	104.960	41.167 – 993.88	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$^1D - ^3P^\circ$	2 – 2	Q	233,375
	700	107.620	41.167 – 970.33+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$^1D - ^1D^\circ$	2 – 2		233
	350	109.284	88.213 – 1003.24+X	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$^1S - ^1P^\circ$	0 – 1		233
	1000	109.514	0.000 – 913.13	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^3S^\circ$	2 – 1		233
	600	109.843	2.732 – 913.13	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^3S^\circ$	1 – 1		233
	200	109.974	3.829 – 913.13	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^3S^\circ$	0 – 1		233
	50	113.314	323.002 – 1205.5	$2s2p^5 - 2s2p^4(^4P)3s$	$^3P^\circ - ^3P$	2 – 1		233
	150	113.437	323.002 – 1204.55	$2s2p^5 - 2s2p^4(^4P)3s$	$^3P^\circ - ^3P$	2 – 2		233
	50	113.623	325.469 – 1205.5	$2s2p^5 - 2s2p^4(^4P)3s$	$^3P^\circ - ^3P$	1 – 1		233
	50	113.756	325.469 – 1204.55	$2s2p^5 - 2s2p^4(^4P)3s$	$^3P^\circ - ^3P$	1 – 2		233
	50	221.535	0.000 – 451.396	$2s^22p^4 - 2s2p^5$	$g^3P - ^1P^\circ$	2 – 1		113
	600	243.766	41.167 – 451.396	$2s^22p^4 - 2s2p^5$	$^1D - ^1P^\circ$	2 – 1		113
	300	275.343	88.213 – 451.396	$2s^22p^4 - 2s2p^5$	$^1S - ^1P^\circ$	0 – 1		113
	350	307.249	0.000 – 325.469	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	2 – 1		113
	300	308.563	2.732 – 326.815	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	1 – 0		113
	400	309.597	0.000 – 323.002	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	2 – 2		113
	300	309.851	2.732 – 325.469	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	1 – 1		113
	300	310.907	3.829 – 325.469	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	0 – 1		113

AL VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	300	312.237	2.732 – 323.002	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	1 – 2		113
		328.67	451.396 – 755.636	$2s2p^5 - 2p^6$	${}^1P^\circ - {}^1S$	1 – 0		868
	5	421.46	88.213 – 325.469	$2s^22p^4 - 2s2p^5$	${}^1S - {}^3P^\circ$	0 – 1		113
		1134.	0.000 – 88.213	$2s^22p^4 - 2s^22p^4$	$g^3P - {}^1S$	2 – 0	F,P	375,113
		1170.	2.732 – 88.213	$2s^22p^4 - 2s^22p^4$	$g^3P - {}^1S$	1 – 0	F	108,113
	40	1592.62	1141.76+X – 1204.55	$2s^22p^3(^2D^\circ)3d - 2s2p^4(^4P)3s$	${}^1D^\circ - {}^3P$	2 – 2	Q	113

ALUMINUM VII (Al^{6+}), Z = 13
Ground State $1s^22s^22p^3(^4S^\circ_{3/2})$ (7 electrons)
Ionization Potential 1 947 300 cm^{-1}; 241.44 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	58.379	62.140+X – 1774.94+X	$2s^22p^3 - 2s^22p^2(^1D)5d$	${}^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		864,233
	1	58.750	0.0 – 1702.07	$2s^22p^3 - 2s^22p^2(^3P)5s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		864,233
	10	59.481	94.651+X – 1774.94+X	$2s^22p^3 - 2s^22p^2(^1D)5d$	${}^2P^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$	Q	233,375
	10	59.827	62.140+X – 1733.79+X	$2s^22p^3 - 2s^22p^2(^3P)5d$	${}^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		864,233
	10	59.911	62.089+X – 1731.22+X	$2s^22p^3 - 2s^22p^2(^3P)5d$	${}^2D^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$		233
	12	62.292	0.0 – 1605.24	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		864
		62.330	0. – 1604.35	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$	P	375
	27	62.354	0.0 – 1603.75	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		864
	1	62.430	0.0 – 1601.74	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S^\circ - {}^4D$	$\frac{3}{2}-\frac{1}{2}$		864
	8	62.465	0.0 – 1600.67	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S^\circ - {}^4D$	$\frac{3}{2}-\frac{5}{2}$		864
	65	63.005	62.140+X – 1649.26+X	$2s^22p^3 - 2s^22p^2(^1D)4d$	${}^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		864
	500	63.025	62.140+X – 1648.81+X	$2s^22p^3 - 2s^22p^2(^1D)4d$	${}^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		233
	65	63.056	62.089+X – 1648.2+X	$2s^22p^3 - 2s^22p^2(^1D)4d$	${}^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		864
	1	64.061	94.651+X – 1655.54+X	$2s^22p^3 - 2s^22p^2(^1D)4d$	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		864
	8	64.328	94.651+X – 1649.26+X	$2s^22p^3 - 2s^22p^2(^1D)4d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		864
	25	64.349	94.651+X – 1648.81+X	$2s^22p^3 - 2s^22p^2(^1D)4d$	${}^2P^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$		864
	1	64.481	62.140+X – 1612.94+X	$2s^22p^3 - 2s^22p^2(^3P)4d$	${}^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		864
	1	64.516	62.089+X – 1612.2+X	$2s^22p^3 - 2s^22p^2(^3P)4d$	${}^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		864
	12	64.698	62.140+X – 1607.64+X	$2s^22p^3 - 2s^22p^2(^3P)4d$	${}^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		864
	8	64.801	0.0 – 1542.85	$2s^22p^3 - 2s^22p^2(^3P)4s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		864
	9	64.816	62.089+X – 1604.93+X	$2s^22p^3 - 2s^22p^2(^3P)4d$	${}^2D^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$		864
	27	64.892	0.0 – 1540.74	$2s^22p^3 - 2s^22p^2(^3P)4s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		864
	12	65.020	62.140+X – 1600.27+X	$2s^22p^3 - 2s^22p^2(^3P)4d$	${}^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		864
	8	65.770	62.140+X – 1582.6+X	$2s^22p^3 - 2s^22p^2(^1D)4s$	${}^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		864
	18	65.862	94.651+X – 1612.94+X	$2s^22p^3 - 2s^22p^2(^3P)4d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		864
	50	65.882	94.396+X – 1612.2+X	$2s^22p^3 - 2s^22p^2(^3P)4d$	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		233
	27	66.409	94.651+X – 1600.27+X	$2s^22p^3 - 2s^22p^2(^3P)4d$	${}^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		864
	47	67.523	62.089+X – 1543.06+X	$2s^22p^3 - 2s^22p^2(^3P)4s$	${}^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		864
		67.560	62.140+X – 1542.31+X	$2s^22p^3 - 2s^22p^2(^3P)4s$	${}^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		864
	60	68.534	280.2 – 1739.39	$2s2p^4 - 2s2p^3(^5S^\circ)4d$	${}^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		864
	64	68.626	282.66 – 1739.6	$2s2p^4 - 2s2p^3(^5S^\circ)4d$	${}^4P - {}^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		864
	30	68.675	283.96 – 1739.9	$2s2p^4 - 2s2p^3(^5S^\circ)4d$	${}^4P - {}^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		864
	16	69.029	94.396+X – 1543.06+X	$2s^22p^3 - 2s^22p^2(^3P)4s$	${}^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		859
	16	69.085	94.651+X – 1542.31+X	$2s^22p^3 - 2s^22p^2(^3P)4s$	${}^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		864
	200	69.165	94.651+X – 1540.74	$2s^22p^3 - 2s^22p^2(^3P)4s$	${}^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$	Q	233,375
	195	72.282	0.0 – 1383.7	$2s^22p^3 - 2s2p^3(^5S^\circ)3p$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		864

AL VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	74	74.099	62.140+X – 1411.76+X	$2s^22p^3 - 2s^22p^2(^1S)3d$	$^2D^\circ - ^2D$	5/2 – 5/2		864
	50	74.321	0.0 – 1345.91+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - ^2D$	3/2 – 5/2	Q	233,375
	215	75.281	0.0 – 1328.55	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - ^4P$	3/2 – 1/2		864
	250	75.313	0.0 – 1327.99	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - ^4P$	3/2 – 3/2		864
	227	75.367	0.0 – 1326.96	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - ^4P$	3/2 – 5/2		864
	227	75.544	0.0 – 1323.94	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - ^4D$	3/2 – 3/2		864
	100	75.809	280.2 – 1599.3	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - ^4S^\circ$	5/2 – 3/2		233
	195	75.846	62.140+X – 1380.51+X	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2P$	5/2 – 3/2		864
	195	75.876	280.2 – 1598.27	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - ^4D^\circ$	5/2 – 7/2		864
	262	75.903	94.396+X – 1411.76+X	$2s^22p^3 - 2s^22p^2(^1S)3d$	$^2P^\circ - ^2D$	1/2 – 3/2		864
	185	75.926	94.651+X – 1411.76+X	$2s^22p^3 - 2s^22p^2(^1S)3d$	$^2P^\circ - ^2D$	3/2 – 5/2		864
		75.946	282.66 – 1599.3	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - ^4S^\circ$	3/2 – 3/2		864
	205	76.009	282.66 – 1598.27	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - ^4D^\circ$	3/2 – 5/2		864
	157	76.022	283.96 – 1599.3	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - ^4S^\circ$	1/2 – 3/2		864
	125	76.090	283.96 – 1598.27	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - ^4D^\circ$	1/2 – 3/2		864
	205	76.226	280.2 – 1592.17	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - ^4P^\circ$	5/2 – 3/2		864
	195	76.262	280.2 – 1591.56	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - ^4P^\circ$	5/2 – 5/2		864
	157	76.344	282.66 – 1592.55	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - ^4P^\circ$	3/2 – 1/2		864
	140	76.366	282.66 – 1592.17	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - ^4P^\circ$	3/2 – 3/2		864
	300	76.386	62.140+X – 1371.34+X	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2D$	5/2 – 5/2		864
	215	76.400	282.66 – 1591.56	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - ^4P^\circ$	3/2 – 5/2		864
	288	76.430	62.089+X – 1370.65+X	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2D$	3/2 – 3/2		864
	215	76.440	283.96 – 1592.17	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^4P - ^4P^\circ$	1/2 – 3/2		864
	215	76.557	62.140+X – 1368.1+X	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2F$	5/2 – 7/2		864
	225	76.582	62.140+X – 1368.1+X	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2F$	5/2 – 7/2		864
	215	77.443	94.651+X – 1385.75+X	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2S$	3/2 – 1/2		864
	91	77.778	94.651+X – 1380.51+X	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2P$	3/2 – 3/2		864
	104	77.809	94.396+X – 1379.67+X	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2P$	1/2 – 1/2		864
	250	77.906	62.140+X – 1345.91+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2D$	5/2 – 5/2		864
	166	77.958	62.089+X – 1345.09+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2D$	3/2 – 3/2		864
	345	78.329	94.651+X – 1371.34+X	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2D$	3/2 – 5/2		864
	288	78.343	94.396+X – 1370.65+X	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2D$	1/2 – 3/2		864
	262	78.365	94.651+X – 1370.65+X	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2D$	3/2 – 3/2		864
	300	78.938	62.089+X – 1328.55	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^4P$	3/2 – 1/2	Q	233,375
	314	79.022	62.140+X – 1327.77+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2F$	5/2 – 7/2		864
	300	79.204	62.089+X – 1324.75+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2F$	3/2 – 5/2		864
	64	79.637	62.089+X – 1317.8+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2P$	3/2 – 1/2		864
	215	79.692	62.140+X – 1317.02+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2P$	5/2 – 3/2		864
	390	79.928	94.651+X – 1345.91+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2D$	3/2 – 5/2		864
	390	79.960	94.396+X – 1345.09+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2D$	1/2 – 3/2		864
	300	79.972	94.651+X – 1345.09+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2D$	3/2 – 3/2		864
	50	81.176	94.651+X – 1326.96	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^4P$	3/2 – 5/2	Q	233
	50	81.234	94.396+X – 1324.71	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^4D$	1/2 – 1/2	Q	233
	10	81.339	94.651+X – 1323.94	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^4D$	3/2 – 5/2	Q	233
	262	81.741	94.396+X – 1317.8+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2P$	1/2 – 1/2		864
	205	81.774	94.396+X – 1317.02+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2P$	1/2 – 3/2		864
	365	81.794	94.651+X – 1317.02+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2P$	3/2 – 3/2		864
	380	81.809	94.651+X – 1317.02+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2P$	3/2 – 3/2		864
	50	82.423	385.638+X – 1598.27	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^2D - ^4D^\circ$	5/2 – 7/2	Q	233,375
	50	82.908	385.638+X – 1591.56	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^2D - ^4P^\circ$	5/2 – 5/2	Q	233,375
	512	83.833	280.2 – 1473.06	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	$^4P - ^4D^\circ$	5/2 – 7/2		864
	475	84.005	282.66 – 1473.06	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	$^4P - ^4D^\circ$	3/2 – 5/2		864
	422	84.095	283.96 – 1473.06	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	$^4P - ^4D^\circ$	1/2 – 3/2		864
	100	86.393	280.2 – 1437.43+X	$2s2p^4 - 2s2p^3(^3D^\circ)3s$	$^4P - ^2D^\circ$	5/2 – 5/2	Q	233,375

AL VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	118	86.666	94.396+X - 1248.22+X	$2s^22p^3 - 2s^22p^2(^1S)3s$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		864
	166	86.685	94.651+X - 1248.22+X	$2s^22p^3 - 2s^22p^2(^1S)3s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		864
	475	86.884	0.0 - 1150.92	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		864
	456	87.058	0.0 - 1148.63	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		864
	422	87.165	0.0 - 1147.1	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		864
	515	88.027	62.089+X - 1198.06+X	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		864
	515	90.547	62.140+X - 1166.51+X	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		864
	185	90.596	94.396+X - 1198.06+X	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		864
	185	90.627	94.651+X - 1198.06+X	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		864
	195	90.766	62.089+X - 1163.74+X	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		864
	420	93.275	94.396+X - 1166.51+X	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		864
	550	93.298	94.651+X - 1166.51+X	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		864
	420	93.517	94.396+X - 1163.74+X	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		864
	343	93.535	94.651+X - 1163.74+X	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		864
	150	94.970	94.396+X - 1147.1	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^4P$	$\frac{1}{2}-\frac{1}{2}$	Q	233,375
	105	95.076	385.638+X - 1437.43+X	$2s2p^4 - 2s2p^3(^3D^\circ)3s$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		864
	440	95.975	280.2 - 1322.18	$2s2p^4 - 2s2p^3(^5S^\circ)3s$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		864
	375	96.207	735.525+X - 1774.94+X	$2p^5 - 2s^22p^2(^1D)5d$	$^2P^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		864
	227	96.327	283.96 - 1322.18	$2s2p^4 - 2s2p^3(^5S^\circ)3s$	$^4P - ^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		864
		208.1	0.0 - 480.445+X	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		375
		209.4	0.0 - 477.474+X	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		375
	100	239.030	62.089+X - 480.445+X	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		693
	125	240.368	1323.94 - 1739.97	$2s^22p^2(^3P)3d - 2s2p^3(^5S^\circ)4d$	$^4D - ^4D^\circ$	$\frac{3}{2}-\frac{1}{2}$		864
	200	240.770	62.140+X - 477.474+X	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		693
	262	259.036	94.396+X - 480.445+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		864
	345	259.207	94.651+X - 480.445+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		864
	330	261.044	94.396+X - 477.474+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		864
	495	261.219	94.651+X - 477.474+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		864
	510	278.982	94.396+X - 452.842+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		864
	440	279.187	94.651+X - 452.842+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		864
	100	280.745	1383.7 - 1739.9	$2s2p^3(^5S^\circ)3p - 2s2p^3(^5S^\circ)4d$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		864
	150	280.994	1383.7 - 1739.6	$2s2p^3(^5S^\circ)3p - 2s2p^3(^5S^\circ)4d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		864
	12	281.153	1383.7 - 1739.39	$2s2p^3(^5S^\circ)3p - 2s2p^3(^5S^\circ)4d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		864
	315	282.660	385.689+X - 739.472+X	$2s2p^4 - 2p^5$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		864
	360	285.822	385.638+X - 735.525+X	$2s2p^4 - 2p^5$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		864
	420	309.023	62.089+X - 385.689+X	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		864
	475	309.072	62.089+X - 385.638+X	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		864
	375	309.121	62.140+X - 385.638+X	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		864
	125	343.290	94.396+X - 385.689+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		864
	160	343.641	94.651+X - 385.638+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		864
	75	352.145	0.0 - 283.96	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		864
	140	353.769	0.0 - 282.66	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		864
	20	356.880	0.0 - 280.2	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		864
	35	370.753	1328.55 - 1598.27	$2s^22p^2(^3P)3d - 2s2p^3(^3D^\circ)3d$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		864
	55	381.674	477.474+X - 739.472+X	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		864
	95	386.066	480.445+X - 739.472+X	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		864
	125	387.521	477.474+X - 735.525+X	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		864
	45	392.048	480.445+X - 735.525+X	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		864
		1054.	0.0 - 94.880+X	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,225
		1057.	0.0 - 94.627+X	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	F,P	375,225
		1605.	0.0 - 62.319+X	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,843,225
		1606.	0.0 - 62.270+X	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$	F,P	375,225

ALUMINUM VIII (Al^{7+}), Z = 13
Ground State $1s^22s^22p^2(^3P_0)$ (6 electrons)
Ionization Potential 2 295 400 cm^{-1}; 284.60 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	6	49.436	133.51+Y - 2156.33+Y	$2s2p^3 - 2s2p^2(^4P)5d$	$^5S^\circ - ^5P$	2 - 3		859
	5	49.758	4.44 - 2014.17	$2s^22p^2 - 2s^22p(^2P^\circ)5d$	$g^3P - ^3P^\circ$	2 - 2		859
	10	53.785	133.51+Y - 1992.76+Y	$2s2p^3 - 2s2p^2(^4P)4d$	$^5S^\circ - ^5P$	2 - 1		233
	10	53.800	133.51+Y - 1992.25+Y	$2s2p^3 - 2s2p^2(^4P)4d$	$^5S^\circ - ^5P$	2 - 2		233
	10	53.823	133.51+Y - 1991.45+Y	$2s2p^3 - 2s2p^2(^4P)4d$	$^5S^\circ - ^5P$	2 - 3		233
	200	54.217	1.74 - 1846.18	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	1 - 2		233
	200	54.258	4.44 - 1847.49	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	2 - 3		233
	50	55.317	46.7384+X - 1854.50+X	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$^1D - ^1F^\circ$	2 - 3		859
	65	55.720	46.7384+X - 1841.43+X	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$^1D - ^1D^\circ$	2 - 2		859
	80	57.326	262.19 - 2006.60	$2s2p^3 - 2s2p^2(^4P)4d$	$^3D^\circ - ^3D$	3 - 3		859
	10	57.553	262.19 - 1999.71	$2s2p^3 - 2s2p^2(^4P)4d$	$^3D^\circ - ^3F$	3 - 4		233
	87	57.597	262.39 - 1998.59	$2s2p^3 - 2s2p^2(^4P)4d$	$^3D^\circ - ^3F$	1 - 2		859
	10	57.624	262.32 - 1997.71	$2s2p^3 - 2s2p^2(^4P)4d$	$^3D^\circ - ^3F$	2 - 3		233
	150	61.694	46.7384+X - 1667.54+X	$2s^22p^2 - 2s2p^2(^2D)3p$	$^1D - ^1D^\circ$	2 - 2		233
	50	61.933	133.51+Y - 1747.94	$2s2p^3 - 2s2p^2(^2D)3d$	$^5S^\circ - ^3P$	2 - 1	Q	233,375
	100	62.016	46.7384+X - 1659.23+X	$2s^22p^2 - 2s2p^2(^2D)3p$	$^1D - ^1F^\circ$	2 - 3		233
	10	63.203	262.19 - 1844.39	$2s2p^3 - 2s2p^2(^2P)3d$	$^3D^\circ - ^3P$	3 - 2		233
	45	63.433	1.74 - 1577.76	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3P^\circ$	1 - 2		859
	45	63.559	4.44 - 1577.76	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3P^\circ$	2 - 2		859
	100	63.714	262.19 - 1831.7	$2s2p^3 - 2s2p^2(^2P)3d$	$^3D^\circ - ^3F$	3 - 4		233
	10	63.933	0.0 - 1564.14	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3D^\circ$	0 - 1		233
	150	63.965	1.74 - 1564.84	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3D^\circ$	1 - 2		233
	200	64.004	4.44 - 1566.84	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3D^\circ$	2 - 3		233
	10	64.086	4.44 - 1564.84	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3D^\circ$	2 - 2		233
	10	65.128	309.13 - 1844.39	$2s2p^3 - 2s2p^2(^2P)3d$	$^3P^\circ - ^3P$	2 - 2		233
	10	65.298	309.13 - 1840.57	$2s2p^3 - 2s2p^2(^2P)3d$	$^3P^\circ - ^3D$	2 - 3		233
	50	65.381	1.74 - 1531.27	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3S^\circ$	1 - 1		233
	50	65.494	4.44 - 1531.27	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3S^\circ$	2 - 1		233
	60	66.321	309.13 - 1816.95	$2s2p^3 - 2s2p^2(^2S)3d$	$^3P^\circ - ^3D$	2 - 3		233
	10	66.363	309.13 - 1815.99	$2s2p^3 - 2s2p^2(^2S)3d$	$^3P^\circ - ^3D$	1 - 2		233
	150	66.704	133.51+Y - 1632.67+Y	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^\circ - ^5P$	2 - 1		233
	200	66.731	133.51+Y - 1632.06+Y	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^\circ - ^5P$	2 - 2		233
	350	66.771	133.51+Y - 1631.17+Y	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^\circ - ^5P$	2 - 3		233
	10	67.044	0.0 - 1491.57	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3P^\circ$	0 - 1		233
	100	67.096	1.74 - 1492.14	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3P^\circ$	1 - 0		233
	100	67.121	1.74 - 1491.57	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3P^\circ$	1 - 1		233
	10	67.166	1.74 - 1490.59	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3P^\circ$	1 - 2		233
	150	67.244	4.44 - 1491.57	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3P^\circ$	2 - 1		233
	500	67.288	4.44 - 1490.59	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3P^\circ$	2 - 2		233
	250	67.360	0.0 - 1484.56	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3D^\circ$	0 - 1		233
	500	67.408	262.19 - 1745.69	$2s2p^3 - 2s2p^2(^2D)3d$	$^3D^\circ - ^3P$	3 - 2		233
	50	67.437	1.74 - 1484.56	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3D^\circ$	1 - 1		233
	600	67.464	4.44 - 1486.71	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3D^\circ$	2 - 3		233
	10	67.529	4.44 - 1485.24	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g^3P - ^3D^\circ$	2 - 2		233
	150	67.565	262.19 - 1742.25	$2s2p^3 - 2s2p^2(^2D)3d$	$^3D^\circ - ^3D$	3 - 3		233
	500	67.946	262.19 - 1733.95	$2s2p^3 - 2s2p^2(^2D)3d$	$^3D^\circ - ^3F$	3 - 4		233
	10	68.000	262.39 - 1733.95	$2s2p^3 - 2s2p^2(^2D)3d$	$^3D^\circ - ^3F$	1 - 2	Q	233,375
	750	68.375	46.7384+X - 1509.26+X	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - ^1F^\circ$	2 - 3		233
	50	68.825	309.13 - 1762.09	$2s2p^3 - 2s2p^2(^2D)3d$	$^3P^\circ - ^3S$	2 - 1		233
	50	69.420	309.13 - 1749.64	$2s2p^3 - 2s2p^2(^2D)3d$	$^3P^\circ - ^3P$	1 - 0		233
	100	69.502	309.13 - 1747.94	$2s2p^3 - 2s2p^2(^2D)3d$	$^3P^\circ - ^3P$	2 - 1		233
	200	69.611	309.13 - 1745.69	$2s2p^3 - 2s2p^2(^2D)3d$	$^3P^\circ - ^3P$	2 - 2		233
	200	69.631	404.22 - 1840.57	$2s2p^3 - 2s2p^2(^2P)3d$	$^3S^\circ - ^3D$	1 - 2	Q	233,375
	150	69.773	309.13 - 1742.25	$2s2p^3 - 2s2p^2(^2D)3d$	$^3P^\circ - ^3D$	2 - 3		233

AL VIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	70.040	404.22 – 1831.7	$2s2p^3 - 2s2p^2(^2P)3d$	$^3S^o - ^3F$	1 – 2	Q	233,375
	300	70.161	46.7384+X – 1472.03+X	$2s^22p^2 - 2s^22p(^2P^o)3d$	$^1D - ^1D^o$	2 – 2		233
	200	70.323	46.7384+X – 1468.75+X	$2s^22p^2 - 2s^22p(^2P^o)3d$	$^1D - ^3F^o$	2 – 3		233
	1	70.402	262.19 – 1682.59	$2s2p^3 - 2s2p^2(^2P)3s$	$^3D^o - ^3P$	3 – 2		233
	250	70.727	96.22+X – 1510.11+X	$2s^22p^2 - 2s^22p(^2P^o)3d$	$^1S - ^1P^o$	0 – 1		233
	50	70.802	404.22 – 1815.99	$2s2p^3 - 2s2p^2(^2S)3d$	$^3S^o - ^3D$	1 – 2	Q	233,375
	135	71.238	262.19 – 1665.93	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^o - ^3D$	3 – 3		859
	125	71.274	262.32 – 1665.38	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^o - ^3D$	2 – 2		859
	50	71.277	262.39 – 1665.38	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^o - ^3D$	1 – 2	Q	233,375
	70	71.625	96.22+X – 1491.57	$2s^22p^2 - 2s^22p(^2P^o)3d$	$^1S - ^3P^o$	0 – 1	Q	233,375
	200	72.223	262.19 – 1646.79	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^o - ^3F$	3 – 4		233
	200	72.324	262.32 – 1644.99	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^o - ^3F$	2 – 3		233
	150	72.401	262.39 – 1643.59	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^o - ^3F$	1 – 2		233
	100	73.278	397.04+X – 1762.09	$2s2p^3 - 2s2p^2(^2D)3d$	$^1D^o - ^3S$	2 – 1	Q	233,375
	304	73.406	397.04+X – 1759.33+X	$2s2p^3 - 2s2p^2(^2D)3d$	$^1D^o - ^1F$	2 – 3		859
	150	73.703	309.13 – 1665.93	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^o - ^3D$	2 – 3		233
	100	73.733	309.13 – 1665.38	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^o - ^3D$	1 – 2		233
	10	73.760	309.13 – 1664.88	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^o - ^3D$	0 – 1		233
	200	73.879	309.13 – 1662.74	$2s2p^3 - 2s2p^2(^2S)3s$	$^3P^o - ^3S$	2 – 1		233
	120	74.016	397.04+X – 1747.94	$2s2p^3 - 2s2p^2(^2D)3d$	$^1D^o - ^3P$	2 – 1	Q	233,375
	200	74.841	133.51+Y – 1469.68+Y	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^o - ^5P$	2 – 3		233
	150	74.965	133.51+Y – 1467.47+Y	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^o - ^5P$	2 – 2		233
	50	75.058	133.51+Y – 1465.81+Y	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^o - ^5P$	2 – 1		233
	100	75.226	404.22 – 1733.95	$2s2p^3 - 2s2p^2(^2D)3d$	$^3S^o - ^3F$	1 – 2	Q	233,375
	70	75.397	309.13 – 1635.44	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^o - ^3P$	1 – 1		233
	200	75.488	309.13 – 1633.84	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^o - ^3P$	2 – 2		233
	150	75.577	262.19 – 1585.4	$2s2p^3 - 2s2p^2(^2D)3s$	$^3D^o - ^3D$	3 – 3		233
	100	75.623	1.74 – 1324.08	$2s^22p^2 - 2s^22p(^2P^o)3s$	$g^3P - ^3P^o$	1 – 2		233
	50	75.734	0.0 – 1320.45	$2s^22p^2 - 2s^22p(^2P^o)3s$	$g^3P - ^3P^o$	0 – 1		233
	250	75.778	4.44 – 1324.08	$2s^22p^2 - 2s^22p(^2P^o)3s$	$g^3P - ^3P^o$	2 – 2		233
	100	75.894	1.74 – 1319.28	$2s^22p^2 - 2s^22p(^2P^o)3s$	$g^3P - ^3P^o$	1 – 0		233
	50	75.985	4.44 – 1320.45	$2s^22p^2 - 2s^22p(^2P^o)3s$	$g^3P - ^3P^o$	2 – 1		233
	200	76.853	444.60+X – 1745.69	$2s2p^3 - 2s2p^2(^2D)3d$	$^1P^o - ^3P$	1 – 2	Q	233,375
	300	77.605	46.7384+X – 1335.32+X	$2s^22p^2 - 2s^22p(^2P^o)3s$	$^1D - ^1P^o$	2 – 1		233
	1	78.225	404.22 – 1682.59	$2s2p^3 - 2s2p^2(^2P)3s$	$^3S^o - ^3P$	1 – 2		233
	70	78.256	46.7384+X – 1324.08	$2s^22p^2 - 2s^22p(^2P^o)3s$	$^1D - ^3P^o$	2 – 2	Q	233,375
	1000	78.351	309.13 – 1585.4	$2s2p^3 - 2s2p^2(^2D)3s$	$^3P^o - ^3D$	2 – 3		233
	10	78.421	133.51+Y – 1409.+Z	$2s2p^3 - 2s^22p(^2P^o)3p$	$^5S^o - ^3P$	2 – 2	Q	233,375
	150	78.508	46.7384+X – 1320.45	$2s^22p^2 - 2s^22p(^2P^o)3s$	$^1D - ^3P^o$	2 – 1	Q	233,375
	100	78.836	397.04+X – 1665.38	$2s2p^3 - 2s2p^2(^4P)3d$	$^1D^o - ^3D$	2 – 2	Q	233,375
	120	79.455	404.22 – 1662.74	$2s2p^3 - 2s2p^2(^2S)3s$	$^3S^o - ^3S$	1 – 1		233
	10	80.320	262.19 – 1507.22	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^o - ^3P$	3 – 2		233
	10	80.483	262.32 – 1504.81	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^o - ^3P$	2 – 1		233
	100	80.704	96.22+X – 1335.32+X	$2s^22p^2 - 2s^22p(^2P^o)3s$	$^1S - ^1P^o$	0 – 1		233
	100	81.667	96.22+X – 1320.45	$2s^22p^2 - 2s^22p(^2P^o)3s$	$^1S - ^3P^o$	0 – 1	Q	233,375
	150	82.543	397.04+X – 1608.49+X	$2s2p^3 - 2s2p^2(^2D)3s$	$^1D^o - ^1D$	2 – 2		233
	10	83.102	262.39 – 1465.81+Y	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^o - ^5P$	1 – 1	Q	233,375
	10	83.335	647.32+X – 1847.49	$2p^4 - 2s^22p(^2P^o)4d$	$^1D - ^3D^o$	2 – 3	Q	233,375
	50	83.465	309.13 – 1507.22	$2s2p^3 - 2s2p^2(^4P)3s$	$^3P^o - ^3P$	2 – 2		233
	10	83.635	309.13 – 1504.81	$2s2p^3 - 2s2p^2(^4P)3s$	$^3P^o - ^3P$	1 – 1		233
	133	83.723	309.13 – 1503.54	$2s2p^3 - 2s2p^2(^4P)3s$	$^3P^o - ^3P$	1 – 0		859
	100	86.360	309.13 – 1467.47+Y	$2s2p^3 - 2s2p^2(^4P)3s$	$^3P^o - ^5P$	1 – 2	Q	233,375
	100	86.427	309.13 – 1465.81+Y	$2s2p^3 - 2s2p^2(^4P)3s$	$^3P^o - ^5P$	0 – 1	Q	233,375
	50	91.487	309.13 – 1402.18	$2s2p^3 - 2s^22p(^2P^o)3p$	$^3P^o - ^3S$	2 – 1		233

AL VIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	113.140	647.32+X – 1531.27	$2p^4 - 2s2p^2(^4P)3p$	$^1D - ^3S^o$	2 – 1	Q	233,375
	10	247.401	0.0 – 404.22	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^o$	0 – 1		859
	55	248.456	1.74 – 404.22	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^o$	1 – 1		859
	100	250.139	4.44 – 404.22	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^o$	2 – 1		693,381
	10	251.347	46.7384+X – 444.60+X	$2s^22p^2 - 2s2p^3$	$^1D - ^1P^o$	2 – 1		693
	50	285.467	46.7384+X – 397.04+X	$2s^22p^2 - 2s2p^3$	$^1D - ^1D^o$	2 – 2		693
	105	285.959						859
		286.61	262.32 – 611.215	$2s2p^3 - 2p^4$	$^3D^o - ^3P$	2 – 1		380
	165	287.083	96.22+X – 444.60+X	$2s^22p^2 - 2s2p^3$	$^1S - ^1P^o$	0 – 1	Q	859
	60	287.610						859
		289.07	262.19 – 608.155	$2s2p^3 - 2p^4$	$^3D^o - ^3P$	3 – 2		380
		289.12	262.32 – 608.155	$2s2p^3 - 2p^4$	$^3D^o - ^3P$	2 – 2		250
	58	289.645						859
		323.52	0.0 – 309.13	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^o$	0 – 1		380
	80	323.863						859
		325.31	1.74 – 309.13	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^o$	1 – 2		380
	155	325.596	1324.08 – 1631.17+Y	$2s^22p(^2P^o)3s - 2s2p^2(^4P)3d$	$^3P^o - ^5P$	2 – 3	Q	859
	10	328.200	4.44 – 309.13	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^o$	2 – 2		693
	40	329.551	309.13 – 612.575	$2s2p^3 - 2p^4$	$^3P^o - ^3P$	1 – 0		859
	65	330.982						859
		331.01	309.13 – 611.215	$2s2p^3 - 2p^4$	$^3P^o - ^3P$	1 – 1		380
		334.40	309.13 – 608.155	$2s2p^3 - 2p^4$	$^3P^o - ^3P$	2 – 2		380
	215	334.951	1335.32+X – 1633.84	$2s^22p(^2P^o)3s - 2s2p^2(^4P)3d$	$^1P^o - ^3P$	1 – 2		859
		340.23	444.60+X – 738.52+X	$2s2p^3 - 2p^4$	$^1P^o - ^1S$	1 – 0		244
		381.15	0.0 – 262.39	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^o$	0 – 1		250
		383.70	1.74 – 262.39	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^o$	1 – 1		380
	50	383.785	1.74 – 262.32	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^o$	1 – 2		693
	100	387.970	4.44 – 262.19	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^o$	2 – 3		693
		399.57	397.04+X – 647.32+X	$2s2p^3 - 2p^4$	$^1D^o - ^1D$	2 – 2		244
		479.95	404.22 – 612.575	$2s2p^3 - 2p^4$	$^3S^o - ^3P$	1 – 0	P	380
		483.10	404.22 – 611.215	$2s2p^3 - 2p^4$	$^3S^o - ^3P$	1 – 1	P	380
		490.35	404.22 – 608.155	$2s2p^3 - 2p^4$	$^3S^o - ^3P$	1 – 2	P	380
		493.29	444.60+X – 647.32+X	$2s2p^3 - 2p^4$	$^1P^o - ^1D$	1 – 2	P	250
		774.8	4.44 – 133.51+Y	$2s^22p^2 - 2s2p^3$	$g^3P - ^5S^o$	2 – 2		375
		1058.	1.74 – 96.22+X	$2s^22p^2 - 2s^22p^2$	$g^3P - ^1S$	1 – 0	F,P	375,487
		1090.	4.44 – 96.22+X	$2s^22p^2 - 2s^22p^2$	$g^3P - ^1S$	2 – 0	F,P	375,487

ALUMINUM IX (Al^{8+}), Z = 13
Ground State $1s^22s^22p(^2P^o_{1/2})$ (5 electrons)
Ionization Potential 2 662 500 cm^{-1}; 330.11 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	40.904	4.89 – 2449.64	$2s^2(^1S)2p - 2s2p(^3P^o)5p$	$g^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$		833
	20	41.037	4.89 – 2441.72	$2s^2(^1S)2p - 2s2p(^3P^o)5p$	$g^2P^o - ^2P$	$\frac{3}{2}-\frac{3}{2}$		833
	20	41.543	4.89 – 2412.03	$2s^2(^1S)2p - 2s^26d$	$g^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$		833
	10	42.708	259.74 – 2601.2	$2s2p^2 - 2s2p(^1P^o)5d$	$^2D - ^2D^o$	$\frac{5}{2}-\frac{5}{2}$		833
	10	42.744	259.74 – 2599.23	$2s2p^2 - 2s2p(^1P^o)5d$	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$		833
	20	42.928	150.505+X – 2479.97+X	$2s2p^2 - 2p^2(^3P)4p$	$^4P - ^4D^o$	$\frac{5}{2}-\frac{7}{2}$		833

AL IX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	40	43.195	148.015+X – 2463.2+X	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		833
	40	43.237	150.505+X – 2463.2+X	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		833
	80	43.261	150.505+X – 2462.04+X	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		833
	10	43.549	4.89 – 2301.15	$2s^2(^1S)2p - 2s^2(^1S)5d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		233
	60	44.704	0.0 – 2236.94	$2s^2(^1S)2p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		833
	80	44.743	4.89 – 2239.88	$2s^2(^1S)2p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		833
	10	45.077	4.89 – 2223.32	$2s^2(^1S)2p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		833
	40	45.344	259.74 – 2465.05	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		833
	40	46.896	259.74 – 2392.1	$2s2p^2 - 2s2p(^1P^\circ)4d$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		833
	80	47.417	148.015+X – 2256.95+X	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		833
	200	47.489	150.505+X – 2256.24+X	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		833
	100	47.534	150.505+X – 2254.25+X	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		233
	10	47.755	0.0 – 2094.02	$2s^2(^1S)2p - 2s^2(^1S)4d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		233
	50	47.856	4.89 – 2094.49	$2s^2(^1S)2p - 2s^2(^1S)4d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		233
	20	48.765	150.505+X – 2201.14+X	$2s2p^2 - 2s2p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		833
	2	48.899						859
	40	49.094	356.96 – 2393.86	$2s2p^2 - 2s2p(^1P^\circ)4d$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		833
	100	49.854	259.74 – 2265.58	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		233
	100	49.916	259.775 – 2263.09	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		833
	10	52.966	0.0 – 1888.1	$2s^2(^1S)2p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		833
	10	53.098	4.89 – 1888.1	$2s^2(^1S)2p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		833
	60	53.237	0.0 – 1878.4	$2s^2(^1S)2p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		833
	60	53.267	0.0 – 1877.34	$2s^2(^1S)2p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		833
	10	53.376	0.0 – 1873.5	$2s^2(^1S)2p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		233
	10	53.412	4.89 – 1877.34	$2s^2(^1S)2p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$	Q	233,375
	10	53.424	4.89 – 1876.71	$2s^2(^1S)2p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		233
	1	53.488	148.015+X – 2017.67+X	$2s2p^2 - 2p^2(^3P)3p$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		233
	10	53.554	150.505+X – 2017.67+X	$2s2p^2 - 2p^2(^3P)3p$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		233
	10	54.312	150.505+X – 1991.7+X	$2s2p^2 - 2p^2(^3P)3p$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		233
	200	54.457	150.505+X – 1986.8+X	$2s2p^2 - 2p^2(^3P)3p$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		233
	1	55.622	146.36+X – 1943.38	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^4P - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$	Q	233,375
	10	55.667	259.74 – 2056.12	$2s2p^2 - 2p^2(^1D)3p$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		233
	50	56.150	0.0 – 1780.95	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		233
	30	56.274	461.985+X – 2239.88	$2p^3 - 2s2p(^3P^\circ)4p$	$^4S^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	Q	233,375
	70	56.304	4.89 – 1780.95	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		233
	70	56.346	259.74 – 2034.49	$2s2p^2 - 2p^2(^1D)3p$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		859
	65	56.373	259.775 – 2033.68	$2s2p^2 - 2p^2(^1D)3p$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		859
	100	56.899	0.0 – 1757.5	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		233
	250	56.945	4.89 – 1760.97	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		233
	10	58.060	0.0 – 1722.4	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		233
	50	58.112	0.0 – 1720.9	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		233
	100	58.222	4.89 – 1722.4	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		233
	1	58.276	4.89 – 1720.9	$2s^2(^1S)2p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		233
	10	59.381	259.74 – 1943.63	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		233
	300	59.761	259.74 – 1933.05	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		233
	60	59.960						833
	10	60.162	146.36+X – 1808.54+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		233
	50	60.197	148.015+X – 1809.22+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		233
	10	60.222	148.015+X – 1808.54+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		233
	10	60.262	148.015+X – 1807.55+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		233
	50	60.312	150.505+X – 1808.54+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		233
	100	60.347	150.505+X – 1807.55+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		233
	150	60.504	146.36+X – 1799.09+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		233
	200	60.549	148.015+X – 1799.49+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		233

AL IX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	300	60.588	150.505+X – 1800.98+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		233
	10	60.645	150.505+X – 1799.49+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		233
	300	60.896	0.0 – 1642.14	$2s^2(^1S)2p - 2s^2(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		233
	600	61.069	4.89 – 1642.38	$2s^2(^1S)2p - 2s^2(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		233
	10	61.262	461.985+X – 2094.02	$2p^3 - 2s^2(^1S)4d$	$^4S^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$	Q	233,375
	10	61.647	332.725 – 1954.71	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		233
	50	62.070	332.725 – 1943.38	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2S - {}^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$	Q	233,375
	250	62.327	461.985+X – 2066.35+X	$2p^3 - 2p^2(^3P)3d$	$^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		233
	150	62.369	461.985+X – 2065.27+X	$2p^3 - 2p^2(^3P)3d$	$^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		233
	100	62.474	354.08 – 1954.71	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2P - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		233
	100	62.587	356.96 – 1954.71	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		233
	150	62.916	354.08 – 1943.38	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2P - {}^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		233
	65	62.948	519.56 – 2108.17	$2p^3 - 2p^2(^1D)3d$	$^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		859
	500	63.025	356.96 – 1943.63	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2P - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		233
	500	63.509	259.74 – 1834.3	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		233
	300	63.632	259.775 – 1831.26	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		233
	50	64.625	259.74 – 1807.02	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		233
	150	64.885	259.74 – 1800.91	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		233
	100	64.904	259.775 – 1800.46	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - {}^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		233
	50	66.038	148.015+X – 1662.34+X	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		233
	50	66.092	146.36+X – 1659.35+X	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		233
	120	66.142	150.505+X – 1662.34+X	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		233
	150	66.239	148.015+X – 1657.69+X	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		833
	50	66.275	150.505+X – 1659.35+X	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		233
	60	66.321	332.725 – 1840.47	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		233
	10	66.624	0.0 – 1501.02	$2s^2(^1S)2p - 2s^2(^1S)3s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		233
	345	66.724	585.23 – 2083.94	$2p^3 - 2p^2(^3P)3d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		859
	100	66.836	4.89 – 1501.02	$2s^2(^1S)2p - 2s^2(^1S)3s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		233
	10	67.828	332.725 – 1807.02	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		233
	100	68.531	461.985+X – 1921.1+X	$2p^3 - 2p^2(^3P)3s$	$^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		233
	50	68.637	461.985+X – 1918.85+X	$2p^3 - 2p^2(^3P)3s$	$^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		233
	25	68.722	354.08 – 1809.22+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - {}^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$	Q	859
	10	68.783	354.08 – 1808.54+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - {}^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$	Q	233,375
	50	68.825	354.08 – 1807.02	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^2P - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		233
	10	68.904	356.96 – 1808.54+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - {}^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$	Q	233,375
	50	68.958	356.96 – 1807.02	$2s2p^2 - 2s2p(^1P^\circ)3s$	$^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		233
	215	69.135	354.08 – 1800.46	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - {}^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		859
	50	69.258	356.96 – 1800.91	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2P - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		233
	100	69.716	259.74 – 1694.11	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		233
	50	69.850	259.775 – 1690.88	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		233
	100	70.090	148.015+X – 1575.+W	$2s2p^2 - 2s^23p$	$^4P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	Q	233,375
	10	71.774	585.56 – 1979.+Y	$2p^3 - 2p^2(^1D)3s$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	Q	233,375
	1	73.451	332.725 – 1694.11	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		233
	1	73.625	332.725 – 1690.88	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		233
	50	74.785	356.96 – 1694.11	$2s2p^2 - 2s2p(^3P^\circ)3s$	$^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		233
	100	76.984	461.985+X – 1760.97	$2p^3 - 2s2p(^3P^\circ)3p$	$^4S^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	Q	233,375
	10	77.315	585.56 – 1878.4	$2p^3 - 2s2p(^1P^\circ)3p$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$	Q	233,375
	150	77.381	585.23 – 1877.34	$2p^3 - 2s2p(^1P^\circ)3p$	$^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		233
	150	77.448	585.56 – 1876.71	$2p^3 - 2s2p(^1P^\circ)3p$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		233
	70	82.105	356.96 – 1575.+W	$2s2p^2 - 2s^23p$	$^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	Q	233,375
	1	85.046	585.56 – 1760.97	$2p^3 - 2s2p(^3P^\circ)3p$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	Q	233,375
	100	87.932	585.23 – 1722.4	$2p^3 - 2s2p(^3P^\circ)3p$	$^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$	Q	233,375
	100	88.108	585.56 – 1720.9	$2p^3 - 2s2p(^3P^\circ)3p$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$	Q	233,375
	175	280.114	0.0 – 356.96	$2s^2(^1S)2p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		859

AL IX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	240	282.407	0.0 – 354.08	$2s^2(^1S)2p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		859
	345	284.015	4.89 – 356.96	$2s^2(^1S)2p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		859
	215	286.364	4.89 – 354.08	$2s^2(^1S)2p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		859
	125	300.560	0.0 – 332.725	$2s^2(^1S)2p - 2s2p^2$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		859
	165	305.055	4.89 – 332.725	$2s^2(^1S)2p - 2s2p^2$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		859
		306.91	259.74 – 585.56	$2s2p^2 - 2p^3$	${}^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		381
		307.26	259.775 – 585.23	$2s2p^2 - 2p^3$	${}^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	P	250
	90	316.793	146.36+X – 461.985+X	$2s2p^2 - 2p^3$	${}^4P - {}^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		859
	120	318.537	148.015+X – 461.985+X	$2s2p^2 - 2p^3$	${}^4P - {}^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		859
	160	321.027	150.505+X – 461.985+X	$2s2p^2 - 2p^3$	${}^4P - {}^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		859
		384.95	0.0 – 259.775	$2s^2(^1S)2p - 2s2p^2$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		381
	80	392.425	4.89 – 259.74	$2s^2(^1S)2p - 2s2p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		859
		395.51	332.725 – 585.56	$2s2p^2 - 2p^3$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	250
		396.05	332.725 – 585.23	$2s2p^2 - 2p^3$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		250
		432.03	354.08 – 585.56	$2s2p^2 - 2p^3$	${}^2P - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		381
		432.66	354.08 – 585.23	$2s2p^2 - 2p^3$	${}^2P - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		381
		437.46	356.96 – 585.56	$2s2p^2 - 2p^3$	${}^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		381
		438.09	356.96 – 585.23	$2s2p^2 - 2p^3$	${}^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		381
		603.65	354.08 – 519.74	$2s2p^2 - 2p^3$	${}^2P - {}^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	375
		615.01	356.96 – 519.56	$2s2p^2 - 2p^3$	${}^2P - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$	P	375

ALUMINUM X (Al^{9+}), Z = 13
Ground State $1s^22s^2(^1S_0)$ (4 electrons)
Ionization Potential 3 221 080 cm^{-1}; 399.37 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	25	34.445	0.0 – 2903.18	$2s^2 - 2s6p$	$g^1S - {}^1P^\circ$	0 – 1		832
	10	35.301	156.53+X – 2989.85+X	$2s2p - 2s7d$	${}^3P^\circ - {}^3D$	1 – 2		832
	10	35.340	160.155+X – 2989.85+X	$2s2p - 2s7d$	${}^3P^\circ - {}^3D$	2 – 3		832
	50	35.888	160.155+X – 2946.65+X	$2s2p - 2p5p$	${}^3P^\circ - {}^3P$	2 – 2		832
	25	36.188	0.0 – 2763.35	$2s^2 - 2s5p$	$g^1S - {}^1P^\circ$	0 – 1		832
	25	36.350	156.53+X – 2907.4+X	$2s2p - 2s6d$	${}^3P^\circ - {}^3D$	1 – 2		832
	50	36.403	160.155+X – 2907.4+X	$2s2p - 2s6d$	${}^3P^\circ - {}^3D$	2 – 3		832
	100	38.255	156.53+X – 2770.52+X	$2s2p - 2s5d$	${}^3P^\circ - {}^3D$	1 – 2		832
	125	38.310	160.155+X – 2770.52+X	$2s2p - 2s5d$	${}^3P^\circ - {}^3D$	2 – 3		832
	75	39.291	409.455+X – 2954.57+X	$2p^2 - 2p5d$	${}^3P - {}^3P^\circ$	2 – 2		832
	100	39.535	160.155+X – 2689.6+X	$2s2p - 2p4p$	${}^3P^\circ - {}^3P$	2 – 2		832
	125	39.628	160.155+X – 2683.67+X	$2s2p - 2p4p$	${}^3P^\circ - {}^3D$	2 – 3		832
	50	39.853	449.74+Y – 2958.09+Y	$2p^2 - 2p5d$	${}^1D - {}^1F^\circ$	2 – 3		832
	100	39.925	0.0 – 2504.7	$2s^2 - 2s4p$	$g^1S - {}^1P^\circ$	0 – 1		832
	25	40.421	300.5 – 2774.36	$2s2p - 2s5d$	${}^1P^\circ - {}^1D$	1 – 2		832
	100	41.730	300.5 – 2696.76	$2s2p - 2p4p$	${}^1P^\circ - {}^1D$	1 – 2		832
	75	42.310	154.85+X – 2518.34+X	$2s2p - 2s4d$	${}^3P^\circ - {}^3D$	0 – 1		832
	200	42.340	156.53+X – 2518.34+X	$2s2p - 2s4d$	${}^3P^\circ - {}^3D$	1 – 2		832
	350	42.403	160.155+X – 2518.34+X	$2s2p - 2s4d$	${}^3P^\circ - {}^3D$	2 – 3		832
	75	43.460	406.265+X – 2705.72+X	$2p^2 - 2p4d$	${}^3P - {}^3P^\circ$	1 – 2		832
	350	43.549	409.455+X – 2705.72+X	$2p^2 - 2p4d$	${}^3P - {}^3P^\circ$	2 – 2		832
	100	43.577	409.455+X – 2704.25+X	$2p^2 - 2p4d$	${}^3P - {}^3D^\circ$	2 – 3		832
	10	44.136	449.74+Y – 2714.56	$2p^2 - 2p(^2P^\circ)4d$	${}^1D - {}^1F^\circ$	2 – 3		233
	75	44.493	449.74+Y – 2696.39+Y	$2p^2 - 2p4d$	${}^1D - {}^1D^\circ$	2 – 2		832

AL X — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	44.902	300.5 – 2527.47	2s2p – 2s4d	$^1P^o$ – ^1D	1 – 2		233
	75	46.223	553.27 – 2716.7+Z	$2p^2$ – 2p4d	^1S – $^1P^o$	0 – 1		832
	50	50.670	156.53+X – 2130.18+X	2s2p – $2p(^2P^o)3p$	$^3P^o$ – ^3P	1 – 2		233
	75	50.717	156.53+X – 2128.3+X	2s2p – $2p(^2P^o)3p$	$^3P^o$ – ^3P	1 – 1		832
	350	50.762	160.155+X – 2130.18+X	2s2p – $2p(^2P^o)3p$	$^3P^o$ – ^3P	2 – 2		832
	50	50.802	160.155+X – 2128.3+X	2s2p – $2p(^2P^o)3p$	$^3P^o$ – ^3P	2 – 1		233
	50	50.903	154.85+X – 2119.44+X	2s2p – $2p(^2P^o)3p$	$^3P^o$ – ^3S	0 – 1		832
	10	50.946	156.53+X – 2119.44+X	2s2p – $2p(^2P^o)3p$	$^3P^o$ – ^3S	1 – 1		233
	10	51.039	160.155+X – 2119.44+X	2s2p – $2p(^2P^o)3p$	$^3P^o$ – ^3S	2 – 1		233
	350	51.362	156.53+X – 2103.56+X	2s2p – $2p(^2P^o)3p$	$^3P^o$ – ^3D	1 – 2		233
	1	51.400	156.53+X – 2101.95+X	2s2p – $2p(^2P^o)3p$	$^3P^o$ – ^3D	1 – 1		233
	1	51.454	160.155+X – 2103.56+X	2s2p – $2p(^2P^o)3p$	$^3P^o$ – ^3D	2 – 2		233
	300	51.979	0.0 – 1923.85	$2s^2$ – 2s3p	g^1S – $^1P^o$	0 – 1		233
	220	54.115	300.5 – 2148.32	2s2p – $2p(^2P^o)3p$	$^1P^o$ – ^1D	1 – 2		233
	150	55.227	154.85+X – 1965.56+X	2s2p – 2s3d	$^3P^o$ – ^3D	0 – 1		233
	500	55.272	156.53+X – 1965.77+X	2s2p – 2s3d	$^3P^o$ – ^3D	1 – 2		233
	750	55.376	160.155+X – 1966.05+X	2s2p – 2s3d	$^3P^o$ – ^3D	2 – 3		233
	50	55.731	300.5 – 2094.73	2s2p – $2p(^2P^o)3p$	$^1P^o$ – ^1P	1 – 1		233
	75	56.590	404.335+X – 2171.35+X	$2p^2$ – $2p(^2P^o)3d$	^3P – $^3P^o$	0 – 1		832
	10	56.650	406.265+X – 2171.35+X	$2p^2$ – $2p(^2P^o)3d$	^3P – $^3P^o$	1 – 1		233
	75	56.696	406.265+X – 2169.96+X	$2p^2$ – $2p(^2P^o)3d$	^3P – $^3P^o$	1 – 2		832
	10	56.762	409.455+X – 2171.35+X	$2p^2$ – $2p(^2P^o)3d$	^3P – $^3P^o$	2 – 1		233
	200	56.802	409.455+X – 2169.96+X	$2p^2$ – $2p(^2P^o)3d$	^3P – $^3P^o$	2 – 2		233
	250	56.945	404.335+X – 2160.38+X	$2p^2$ – 2p3d	^3P – $^3D^o$	0 – 1		832
	150	56.964	406.265+X – 2161.63+X	$2p^2$ – $2p(^2P^o)3d$	^3P – $^3D^o$	1 – 2		233
	250	57.024	409.455+X – 2163.11+X	$2p^2$ – $2p(^2P^o)3d$	^3P – $^3D^o$	2 – 3		233
	10	57.072	409.455+X – 2161.63+X	$2p^2$ – $2p(^2P^o)3d$	^3P – $^3D^o$	2 – 2		233
	75	57.116	409.455+X – 2160.38+X	$2p^2$ – 2p3d	^3P – $^3D^o$	2 – 1		832
	350	57.368	449.74+Y – 2192.06	$2p^2$ – $2p(^2P^o)3d$	^1D – $^1F^o$	2 – 3		233
	10	57.663	406.265+X – 2140.69	$2p^2$ – $2p(^2P^o)3d$	^3P – $^1D^o$	1 – 2	Q	233,375
	1	58.808	154.85+X – 1855.51+X	2s2p – 2s3s	$^3P^o$ – ^3S	0 – 1		233
	100	58.858	156.53+X – 1855.51+X	2s2p – 2s3s	$^3P^o$ – ^3S	1 – 1		233
	150	58.987	160.155+X – 1855.51+X	2s2p – 2s3s	$^3P^o$ – ^3S	2 – 1		233
	300	59.107	300.5 – 1992.25	2s2p – 2s3d	$^1P^o$ – ^1D	1 – 2		832
	10	59.298	404.335+X – 2090.98+Y	$2p^2$ – 2p3s	^3P – $^1P^o$	0 – 1	Q	233,375
	125	59.884						859
	50	60.052	300.5 – 1965.77+X	2s2p – 2s3d	$^1P^o$ – ^3D	1 – 2	Q	233,375
	205	60.632	404.335+X – 2053.62+X	$2p^2$ – $2p(^2P^o)3s$	^3P – $^3P^o$	0 – 1		859
	10	60.700	409.455+X – 2056.91+X	$2p^2$ – $2p(^2P^o)3s$	^3P – $^3P^o$	2 – 2		233
	250	60.787	406.265+X – 2051.36+X	$2p^2$ – $2p(^2P^o)3s$	^3P – $^3P^o$	1 – 0		859
	50	60.809	409.455+X – 2053.62+X	$2p^2$ – $2p(^2P^o)3s$	^3P – $^3P^o$	2 – 1	Q	233,375
	185	60.925	449.74+Y – 2090.98+Y	$2p^2$ – 2p3s	^1D – $^1P^o$	2 – 1		859
	200	63.134	300.5 – 1884.33	2s2p – 2s3s	$^1P^o$ – ^1S	1 – 0		233
	10	64.269	300.5 – 1855.51+X	2s2p – 2s3s	$^1P^o$ – ^3S	1 – 1	Q	233,375
	175	65.032	553.27 – 2090.98+Y	$2p^2$ – 2p3s	^1S – $^1P^o$	0 – 1	P	859
	50	65.632	406.265+X – 1930.+Z	$2p^2$ – 2s3p	^3P – $^3P^o$	1 – 2	Q	233,375
	50	65.821	409.455+X – 1929.+Z	$2p^2$ – 2s3p	^3P – $^3P^o$	2 – 1	Q	233,375
	10	135.231	1966.05+X – 2705.72+X	2s3d – 2p4d	^3D – $^3P^o$	3 – 2	Q	693,375
	50	135.620	2169.96+X – 2907.4+X	$2p(^2P^o)3d$ – 2s6d	$^3P^o$ – ^3D	2 – 3	Q	693,375
		177.80	1966.05+X – 2528.48+X	2s3d – 2s4f	^3D – $^3F^o$	3 – 4		244
	20	332.783	0.0 – 300.5	$2s^2$ – 2s2p	g^1S – $^1P^o$	0 – 1		856
	10	332.891						693
		395.36	156.53+X – 409.455+X	2s2p – $2p^2$	$^3P^o$ – ^3P	1 – 2		381
		395.62	300.5 – 553.27	2s2p – $2p^2$	$^1P^o$ – ^1S	1 – 0	P	250

AL X — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		397.76	154.85+X – 406.265+X	$2s2p - 2p^2$	$^3P^o - {}^3P$	0 – 1		381
		400.43	156.53+X – 406.265+X	$2s2p - 2p^2$	$^3P^o - {}^3P$	1 – 1		381
		401.12	160.155+X – 409.455+X	$2s2p - 2p^2$	$^3P^o - {}^3P$	2 – 2		381
	10	401.183						693
		403.55	156.53+X – 404.335+X	$2s2p - 2p^2$	$^3P^o - {}^3P$	1 – 0		381
		406.31	160.155+X – 406.265+X	$2s2p - 2p^2$	$^3P^o - {}^3P$	2 – 1		381
		637.99	0. – 156.53+X	$2s^2 - 2s2p$	$g^1S - {}^3P^o$	0 – 1	P	386
		670.06	300.5 – 449.74+Y	$2s2p - 2p^2$	$^1P^o - {}^1D$	1 – 2		250

ALUMINUM XI (Al^{10+}), Z = 13
Ground State $1s^22s(^2S_{1/2})$ (3 electrons)
Ionization Potential 3 565 600 cm^{-1}; 442.08 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		6.748	0.0 – 14819.	$1s^22s - 1s(2s3p(^1P^o))$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		283
		6.780	181.81 – 14930.8	$1s^22p - 1s2p(^1P^o)3p$	$^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		283
		6.792	181.81 – 14904.8	$1s^22p - 1s2p(^3P^o)3p$	$^2P^o - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		283
		6.805	181.81 – 14876.8	$1s^22p - 1s2p(^3P^o)3p$	$^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		283
		6.824	181.81 – 14835.8	$1s^22p - 1s2p(^3P^o)3p$	$^2P^o - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		283
	5	6.83	0.0 – 14640.	$1s^22s - 1s(2s3p(^3P^o))$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		636
	10	7.765	2070.52 – 14948.5	$1s^23p - 1s2p4p$	$^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		636
	10	7.773	2070.52 – 14933.2	$1s^23p - 1s2p(^3P^o)3p$	$^2P^o - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		283,636
	2	7.796	176.01 – 13003.	$1s^22p - 1s2p^2$	$^2P^o - {}^2S$	$\frac{1}{2}-\frac{1}{2}$	P	283,636
	6	7.800	181.81 – 13003.	$1s^22p - 1s2p^2$	$^2P^o - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	P	283,636
		7.810	0.0 – 12804.	$1s^22s - 1s(2s2p(^1P^o))$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	283
		7.811	0.0 – 12802.	$1s^22s - 1s(2s2p(^1P^o))$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{1}{2}$	P	283
	11	7.815	2020.46 – 14819.	$1s^23s - 1s(2s3p(^1P^o))$	$^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		636
	5	7.827	2070.52 – 14835.8	$1s^23p - 1s2p(^3P^o)3p$	$^2P^o - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		636
	14	7.846	0.0 – 12745.	$1s^22s - 1s(2s2p(^3P^o))$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	283,636
		7.849	0.0 – 12740.	$1s^22s - 1s(2s2p(^3P^o))$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{1}{2}$	P	283
	11	7.856	181.81 – 12910.8	$1s^22p - 1s2p^2$	$^2P^o - {}^2P$	$\frac{3}{2}-\frac{3}{2}$	P	283,636
	66	7.875	176.01 – 12874.	$1s^22p - 1s2p^2$	$^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	P	283,636
		7.878	181.81 – 12875.8	$1s^22p - 1s2p^2$	$^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	283
	6	29.416	0.0 – 3399.5	$1s^22s - 1s^29p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		234
	10	29.793	0.0 – 3356.5	$1s^22s - 1s^28p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		234
	20	30.376	0.0 – 3292.1	$1s^22s - 1s^27p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		234
	35	31.313	0.0 – 3193.6	$1s^22s - 1s^26p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		234
	3	31.426	176.01 – 3358.	$1s^22p - 1s^28d$	$^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		234
	6	31.483	181.81 – 3358.1	$1s^22p - 1s^28d$	$^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		234
	6	32.068	176.01 – 3294.3	$1s^22p - 1s^27d$	$^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		234
	10	32.128	181.81 – 3294.3	$1s^22p - 1s^27d$	$^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		234
	200	33.007	0.0 – 3029.7	$1s^22s - 1s^25p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		234
	10	33.109	176.01 – 3196.2	$1s^22p - 1s^26d$	$^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		234
	35	33.172	181.81 – 3196.4	$1s^22p - 1s^26d$	$^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		234
	200	34.994	176.01 – 3033.5	$1s^22p - 1s^25d$	$^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		234
	250	35.065	181.81 – 3033.6	$1s^22p - 1s^25d$	$^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		234
	6	35.163	176.01 – 3019.7	$1s^22p - 1s^25s$	$^2P^o - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		234
	6	35.239	181.81 – 3019.7	$1s^22p - 1s^25s$	$^2P^o - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		234
	400	36.675	0.0 – 2726.7	$1s^22s - 1s^24p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		234
	250	39.091	176.01 – 2734.	$1s^22p - 1s^24d$	$^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		234

AL XI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	400	39.180	181.81 – 2734.14	$1s^22p - 1s^24d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		234
	60	39.530	176.01 – 2705.6	$1s^22p - 1s^24s$	$^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		234
	90	39.623	181.81 – 2705.6	$1s^22p - 1s^24s$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		234
	700	48.297	0.0 – 2070.52	$1s^22s - 1s^23p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		234
	700	48.338	0.0 – 2068.77	$1s^22s - 1s^23p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		234
	400	52.299	176.01 – 2087.98	$1s^22p - 1s^23d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		234
	700	52.446	181.81 – 2088.54	$1s^22p - 1s^23d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		234
	60	54.388	181.81 – 2020.46	$1s^22p - 1s^23s$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		234
	100	81.560	2068.77 – 3294.3	$1s^23p - 1s^27d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$	Q	233,375
		150.31	2734.14 – 3399.5	$1s^24d - 1s^29p$	$^2D - ^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		244
		150.69	2070.52 – 2734.14	$1s^23p - 1s^24d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	244
		154.66	2088.54 – 2735.1	$1s^23d - 1s^24f$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		244
	2	550.03	0.0 – 181.81	$1s^22s - 1s^22p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		730,856
	1	568.15	0.0 – 176.01	$1s^22s - 1s^22p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		730,856

ALUMINUM XII (Al^{11+}), Z = 13
Ground State $1s^2(^1S_0)$ (2 electrons)
Ionization Potential 16 824 900 cm^{-1}; 2086.04 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		5.992	0.0 – 16689.	$1s^2 - 1s10p$	$g^1S - ^1P^\circ$	0 – 1		624
		6.0095	0.0 – 16640.3	$1s^2 - 1s9p$	$g^1S - ^1P^\circ$	0 – 1		624
		6.0294	0.0 – 16585.4	$1s^2 - 1s8p$	$g^1S - ^1P^\circ$	0 – 1		624
		6.059	0.0 – 16504.	$1s^2 - 1s7p$	$g^1S - ^1P^\circ$	0 – 1		624
		6.1005	0.0 – 16392.1	$1s^2 - 1s6p$	$g^1S - ^1P^\circ$	0 – 1		624
		6.1745	0.0 – 16193.35	$1s^2 - 1s5p$	$g^1S - ^1P^\circ$	0 – 1		624
		6.3137	0.0 – 15838.45	$1s^2 - 1s4p$	$g^1S - ^1P^\circ$	0 – 1		236
	10	6.6350	0.0 – 15072.51	$1s^2 - 1s3p$	$g^1S - ^1P^\circ$	0 – 1		644,636
		6.6444	0.0 – 15050.01	$1s^2 - 1s3p$	$g^1S - ^3P^\circ$	0 – 1		644
		7.1913	12891.48 – 26797.2	$1s2p - 2p^2$	$^1P^\circ - ^1S$	1 – 0		624
		7.2282	12816.13 – 26651.	$1s2s - 2s2p$	$^1S - ^1P^\circ$	0 – 1		624
		7.2518	12703.46 – 26497.5	$1s2s - 2s2p$	$^3S - ^3P^\circ$	1 – 2		624
		7.260	12814.58 – 26588.6	$1s2p - 2p^2$	$^3P^\circ - ^3P$	2 – 2		283
		7.2745	12891.48 – 26638.1	$1s2p - 2p^2$	$^1P^\circ - ^1D$	1 – 2		624
	21	7.7571	0.0 – 12891.48	$1s^2 - 1s2p$	$g^1S - ^1P^\circ$	0 – 1	P	918,809
	8	7.8067	0.0 – 12809.48	$1s^2 - 1s2p$	$g^1S - ^3P^\circ$	0 – 1	P	918,809
		7.872	0.0 – 12703.46	$1s^2 - 1s2s$	$g^1S - ^3S$	0 – 1	F,P	375,918
		42.59	12703.46 – 15051.53	$1s2s - 1s3p$	$^3S - ^3P^\circ$	1 – 2	P	375
		44.32	12816.13 – 15072.51	$1s2s - 1s3p$	$^1S - ^1P^\circ$	0 – 1	P	375
		75.90	15075.00+R – 16392.52+R	$1s3d - 1s6f$	$^3D - ^3F^\circ$	3 – 4	P	087
		75.95	15095.00+K – 16411.66+K	$1s3d - 1s6f$	$^1D - ^1F^\circ$	2 – 3	P	087
		88.93	15075.00+R – 16199.48+R	$1s3d - 1s5f$	$^3D - ^3F^\circ$	3 – 4	P	087
		89.00	15095.00+K – 16218.60+K	$1s3d - 1s5f$	$^1D - ^1F^\circ$	2 – 3	P	087
		123.610	15020.85 – 15829.84	$1s3s - 1s4p$	$^3S - ^3P^\circ$	1 – 2	P	375
		126.93	15050.61 – 15838.45	$1s3s - 1s4p$	$^1S - ^1P^\circ$	0 – 1	P	375
		130.06	15075.00+R – 15843.88+R	$1s3d - 1s4f$	$^3D - ^3F^\circ$	3 – 4	P	087
		130.21	15095.00+K – 15862.99+K	$1s3d - 1s4f$	$^1D - ^1F^\circ$	2 – 3	P	087
		899.93	12703.46 – 12814.58	$1s2s - 1s2p$	$^3S - ^3P^\circ$	1 – 2	P	375
		1327.14	12816.13 – 12891.48	$1s2s - 1s2p$	$^1S - ^1P^\circ$	0 – 1	P	375

ALUMINUM XIII (Al^{12+}), Z = 13
Ground State $1s(^2S_{1/2})$ (1 electron)
Ionization Potential 18 584 123 cm^{-1}; 2304.16 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		5.435	0.0 – 18398.5998320	1s – 10p	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		5.448	0.0 – 18355.0742360	1s – 9p	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		5.466	0.0 – 18294.2214720	1s – 8p	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		5.493	0.0 – 18205.4579300	1s – 7p	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		5.534	0.0 – 18068.6882300	1s – 6p	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		5.605	0.0 – 17841.8469200	1s – 5p	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
	10	5.739	0.0 – 17424.2320600	1s – 4p	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309,375
	30	6.053	0.0 – 16521.9988400	1s – 3p	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309,375
	65	7.171	0.0 – 13945.2176000	1s – 2p	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309,375
	35	7.176	0.0 – 13934.7044000	1s – 2p	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	309,375
		22.404	13935.1179000 – 18398.5998320	2s – 10p	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		22.455	13945.2176000 – 18398.6276060	2p – 10d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		22.625	13935.1179000 – 18355.0742360	2s – 9p	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		22.676	13945.2176000 – 18355.1123370	2p – 9d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		22.940	13935.1179000 – 18294.2214720	2s – 8p	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		22.994	13945.2176000 – 18294.2757230	2p – 8d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		23.417	13935.1179000 – 18205.4579300	2s – 7p	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		23.472	13945.2176000 – 18205.5389160	2p – 7d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		24.192	13935.1179000 – 18068.6882300	2s – 6p	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		24.251	13945.2176000 – 18068.8168410	2p – 6d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		25.597	13935.1179000 – 17841.8469200	2s – 5p	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		25.662	13945.2176000 – 17842.0691800	2p – 5d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		28.661	13935.1179000 – 17424.2320600	2s – 4p	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		28.740	13945.2176000 – 17424.6661700	2p – 4d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		38.657	13935.1179000 – 16521.9988400	2s – 3p	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		38.793	13945.2176000 – 16523.0277170	2p – 3d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		53.203	16519.0071000 – 18398.5998320	3s – 10p	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		53.287	16521.9988400 – 18398.6276060	3p – 10d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		53.316	16523.0277170 – 18398.6415070	3d – 10f	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		54.464	16519.0071000 – 18355.0742360	3s – 9p	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		54.552	16521.9988400 – 18355.1123370	3p – 9d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		54.582	16523.0277170 – 18355.1314050	3d – 9f	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		56.331	16519.0071000 – 18294.2214720	3s – 8p	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		56.425	16521.9988400 – 18294.2757230	3p – 8d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		56.456	16523.0277170 – 18294.3028740	3d – 8f	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		59.296	16519.0071000 – 18205.4579300	3s – 7p	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		59.399	16521.9988400 – 18205.5389160	3p – 7d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		59.434	16523.0277170 – 18205.5794450	3d – 7f	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		64.529	16519.0071000 – 18068.6882300	3s – 6p	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		64.649	16521.9988400 – 18068.8168410	3p – 6d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		64.689	16523.0277170 – 18068.8811990	3d – 6f	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		75.595	16519.0071000 – 17841.8469200	3s – 5p	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		75.754	16521.9988400 – 17842.0691800	3p – 5d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		75.806	16523.0277170 – 17842.1803900	3d – 5f	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		102.498	17422.9703600 – 18398.5998320	4s – 10p	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		102.628	17424.2320600 – 18398.6276060	4p – 10d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		102.672	17424.6661700 – 18398.6415070	4d – 10f	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		107.284	17422.9703600 – 18355.0742360	4s – 9p	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		107.425	17424.2320600 – 18355.1123370	4p – 9d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		107.473	17424.6661700 – 18355.1314050	4d – 9f	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		110.470	16519.0071000 – 17424.2320600	3s – 4p	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		110.783	16521.9988400 – 17424.6661700	3p – 4d	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		110.882	16523.0277170 – 17424.8833600	3d – 4f	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		114.778	17422.9703600 – 18294.2214720	4s – 8p	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309

AL XIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		114.937	17424.2320600 – 18294.2757230	4p – 8d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		114.990	17424.6661700 – 18294.3028740	4d – 8f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		127.798	17422.9703600 – 18205.4579300	4s – 7p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		127.991	17424.2320600 – 18205.5389160	4p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		128.055	17424.6661700 – 18205.5794450	4d – 7f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		154.866	17422.9703600 – 18068.6882300	4s – 6p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		155.139	17424.2320600 – 18068.8168410	4p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		155.228	17424.6661700 – 18068.8811990	4d – 6f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		179.405	17841.2011200 – 18398.5998320	5s – 10p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		179.604	17841.8469200 – 18398.6276060	5p – 10d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		179.671	17842.0691800 – 18398.6415070	5d – 10f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		194.601	17841.2011200 – 18355.0742360	5s – 9p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		194.831	17841.8469200 – 18355.1123370	5p – 9d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		194.908	17842.0691800 – 18355.1314050	5d – 9f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		220.741	17841.2011200 – 18294.2214720	5s – 8p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		221.029	17841.8469200 – 18294.2757230	5p – 8d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		221.125	17842.0691800 – 18294.3028740	5d – 8f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		238.734	17422.9703600 – 17841.8469200	4s – 5p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		239.328	17424.2320600 – 17842.0691800	4p – 5d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		239.513	17424.6661700 – 17842.1803900	4d – 5f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		274.532	17841.2011200 – 18205.4579300	5s – 7p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		274.958	17841.8469200 – 18205.5389160	5p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		275.095	17842.0691800 – 18205.5794450	5d – 7f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		439.585	17841.2011200 – 18068.6882300	5s – 6p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		440.587	17841.8469200 – 18068.8168410	5p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		440.894	17842.0691800 – 18068.8811990	5d – 6f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309

SILICON , Z = 14
Unclassified Lines

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	53.025						231
	20	53.063						231
	50	56.145						231
	20	60.421						231
	50	62.386						231
	50	63.183						231
	50	65.711						231
	100	68.786						231
	20	68.833						231
	100	70.771						231
	50	82.622						231
	20	85.614						231
		87.57						534
		90.09						534
	50	92.957						231
	50	107.2						931
		109.54						534
	50	111.6						931
	50	112.4						931
	20	115.6						931
	20	118.2						931
	20	119.4						931
	20	120.3						931
	20	120.7						931
	20	121.1						931
	50	122.5						931
	50	123.1						931
	50	123.5						931
	20	125.4						931
	50	139.4						931
	50	140.7						931
	50	150.6						931
	50	151.1						931
	50	151.7						931
	50	152.4						931
	50	153.1						931
		155.26						534
		156.6						534
		157.7						534
	50	158.1						931
	20	162.4						931
	50	165.7						931
	50	166.2						931
	50	167.2						931
	20	168.5						931
	50	169.7						931
	50	170.5						931
	50	174.7						931
	100	175.0						931
	50	175.8						931
	50	176.9						931
	50	178.5						931
	50	180.2						931
	50	180.9						931

SI UNCLASSIFIED LINES — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	181.7						931
	50	182.0						931
	20	182.5						931
	50	183.3						931
	50	184.5						931
	50	186.6						931
	50	188.3						931
		193.67						534
	20	203.9						931
	50	204.3						931
	50	205.4						931
	20	208.2						931
	50	210.2						931
	20	212.5						931
	20	213.0						931
	20	214.2						931
	50	218.3						931
	20	230.0						931
		231.74						534
	50	244.3						931
	50	251.7						931
	20	252.4						931
		262.98						534
		264.74						534
		268.00						534
	50	280.1						931
	20	283.1						931
		284.2						534
	20	286.0						931
	50	286.9						931
	50	294.7						931
	50	295.6						931
	50	297.9						931
		300.02						534
	50	302.0						931
	50	305.5						931
	50	314.7						931
		321.81						534
		322.90						534
	50	332.1						931
	20	332.8						931
	20	334.4						931
	50	337.1						931
	50	342.2						931
		359.95						534
	50	361.9						931
	50	373.4						931
		384.32						534
		385.4						534
		387.39						534
		393.15						534
		397.47						534
		398.65						534
		400.82						534

Si UNCLASSIFIED LINES — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		404.30						534
		406.54						534
		409.1						534
		481.15						534
		517.5						534

SILICON I (Si^{0+}), Z = 14
Ground State $1s^22s^22p^63s^23p^2(^3P_0)$ (14 electrons)
Ionization Potential 65 747.55 cm^{-1}; 8.152 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
41	10	1255.276	0.0 – 79.6640	$3s^23p^2 - 3s3p^3$	$g^3P - ^3S^o$	0 – 1		608
41	40	1256.490	0.077115 – 79.6640	$3s^23p^2 - 3s3p^3$	$g^3P - ^3S^o$	1 – 1		608
41	50	1258.795	0.223157 – 79.6640	$3s^23p^2 - 3s3p^3$	$g^3P - ^3S^o$	2 – 1		608
	1	1363.045	6.298850 – 79.6640	$3s^23p^2 - 3s3p^3$	$^1D - ^3S^o$	2 – 1	P	441
	1	1517.035					A	106
	1	1517.130	0.077115 – 65.99107	$3s^23p^2 - 3s^23p(^2P^o_{3/2})50d$	$g^3P - ^3P^o$	1 – 1	A	106
	1	1517.169	0.077115 – 65.98936	$3s^23p^2 - 3s^23p(^2P^o_{3/2})49d$	$g^3P - ^3P^o$	1 – 1	A	106
	1	1517.207	0.077115 – 65.98741	$3s^23p^2 - 3s^23p(^2P^o_{3/2})48d$	$g^3P - ^3P^o$	1 – 1	A	106
	1	1517.214	0.077115 – 65.98741	$3s^23p^2 - 3s^23p(^2P^o_{3/2})48d$	$g^3P - ^3P^o$	1 – 1	A	106
	1	1517.264	0.077115 – 65.98523	$3s^23p^2 - 3s^23p(^2P^o_{3/2})47d$	$g^3P - ^3P^o$	1 – 1	A	106
	1	1517.306	0.077115 – 65.98338	$3s^23p^2 - 3s^23p(^2P^o_{3/2})46d$	$g^3P - ^3P^o$	1 – 1	A	106
	1	1517.369	0.077115 – 65.98066	$3s^23p^2 - 3s^23p(^2P^o_{3/2})45d$	$g^3P - ^3P^o$	1 – 1	A	106
	1	1517.426	0.077115 – 65.97819	$3s^23p^2 - 3s^23p(^2P^o_{3/2})44d$	$g^3P - ^3P^o$	1 – 1	A	106
	1	1517.490	0.077115 – 65.97541	$3s^23p^2 - 3s^23p(^2P^o_{3/2})43d$	$g^3P - ^3P^o$	1 – 1	A	106
	1	1517.554	0.077115 – 65.97264	$3s^23p^2 - 3s^23p(^2P^o_{3/2})42d$	$g^3P - ^3P^o$	1 – 1	A	106
	1	1517.624	0.077115 – 65.96958	$3s^23p^2 - 3s^23p(^2P^o_{3/2})41d$	$g^3P - ^3P^o$	1 – 1	A	106
	1	1517.703	0.077115 – 65.96617	$3s^23p^2 - 3s^23p(^2P^o_{3/2})40d$	$g^3P - ^3P^o$	1 – 1	A	106
	1	1517.782	0.077115 – 65.96272	$3s^23p^2 - 3s^23p(^2P^o_{3/2})39d$	$g^3P - ^3P^o$	1 – 1	A	106
	5	1517.867	0.077115 – 65.95906	$3s^23p^2 - 3s^23p(^2P^o_{3/2})38d$	$g^3P - ^3P^o$	1 – 1	A	106
	5	1517.963	0.077115 – 65.95487	$3s^23p^2 - 3s^23p(^2P^o_{3/2})37d$	$g^3P - ^3P^o$	1 – 1	A	106
	5	1518.069	0.077115 – 65.95026	$3s^23p^2 - 3s^23p(^2P^o_{3/2})36d$	$g^3P - ^3P^o$	1 – 1	A	106
	5	1518.107					A	106
	5	1518.187	0.077115 – 65.94516	$3s^23p^2 - 3s^23p(^2P^o_{3/2})35d$	$g^3P - ^3P^o$	1 – 1	A	106
	5	1518.307	0.077115 – 65.93996	$3s^23p^2 - 3s^23p(^2P^o_{3/2})34d$	$g^3P - ^3P^o$	1 – 1	A	106
	5	1518.434	0.077115 – 65.93445	$3s^23p^2 - 3s^23p(^2P^o_{3/2})33d$	$g^3P - ^3P^o$	1 – 1	A	106
	5	1518.594	0.077115 – 65.92750	$3s^23p^2 - 3s^23p(^2P^o_{3/2})32d$	$g^3P - ^3P^o$	1 – 1	A	106
	5	1518.720	0.0 – 65.84450	$3s^23p^2 - 3s^23p(^2P^o_{3/2})24d$	$g^3P - ^3P^o$	0 – 1	A	106
	5	1518.763	0.077115 – 65.92018	$3s^23p^2 - 3s^23p(^2P^o_{3/2})31d$	$g^3P - ^3P^o$	1 – 1	A	106
	5	1518.926	0.077115 – 65.91313	$3s^23p^2 - 3s^23p(^2P^o_{3/2})30d$	$g^3P - ^3P^o$	1 – 1	A	106
	5	1519.125	0.077115 – 65.90447	$3s^23p^2 - 3s^23p(^2P^o_{3/2})29d$	$g^3P - ^3P^o$	1 – 1	A	106
	5	1519.364	0.077115 – 65.89414	$3s^23p^2 - 3s^23p(^2P^o_{3/2})28d$	$g^3P - ^3P^o$	1 – 1	A	106
	10	1519.584	0.077115 – 65.88468	$3s^23p^2 - 3s^23p(^2P^o_{3/2})27d$	$g^3P - ^3P^o$	1 – 1	A	106
	10	1519.857	0.077115 – 65.87283	$3s^23p^2 - 3s^23p(^2P^o_{3/2})26d$	$g^3P - ^3P^o$	1 – 1	A	106
	5	1520.157	0.077115 – 65.85972	$3s^23p^2 - 3s^23p(^2P^o_{3/2})25d$	$g^3P - ^3P^o$	1 – 1	A	106
	5	1520.189					A	106
	5	1520.202					A	106
	5	1520.291	0.223157 – 66.00005	$3s^23p^2 - 3s^23p(^2P^o_{3/2})56d$	$g^3P - ^3D^o$	2 – 3	A	106
	5	1520.324	0.223157 – 65.99859	$3s^23p^2 - 3s^23p(^2P^o_{3/2})55d$	$g^3P - ^3D^o$	2 – 3	A	106
	5	1520.353	0.223157 – 65.99734	$3s^23p^2 - 3s^23p(^2P^o_{3/2})54d$	$g^3P - ^3D^o$	2 – 3	A	106
	5	1520.389	0.223157 – 65.99581	$3s^23p^2 - 3s^23p(^2P^o_{3/2})53d$	$g^3P - ^3D^o$	2 – 3	A	106
	5	1520.423	0.223157 – 65.99430	$3s^23p^2 - 3s^23p(^2P^o_{3/2})52d$	$g^3P - ^3D^o$	2 – 3	A	106
	5	1520.463	0.223157 – 65.99259	$3s^23p^2 - 3s^23p(^2P^o_{3/2})51d$	$g^3P - ^3D^o$	2 – 3	A	106

Si I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	1520.503	0.223157 – 65.99087	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})50d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	5	1520.540	0.223157 – 65.98929	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})49d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	5	1520.586	0.223157 – 65.98729	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})48d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	5	1520.637	0.223157 – 65.98509	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})47d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	5	1520.685	0.223157 – 65.98298	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})46d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	5	1520.732	0.223157 – 65.98095	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})45d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	5	1520.796	0.223157 – 65.97819	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})44d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	5	1520.859	0.223157 – 65.97536	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})43d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	5	1520.892	0.077115 – 65.82798	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})23d$	$g^3P - {}^3P^\circ$	1 – 1	A	106
	5	1520.926	0.223157 – 65.97257	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})42d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	10	1520.996	0.223157 – 65.96954	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})41d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	10	1521.073	0.223157 – 65.96622	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})40d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	10	1521.156	0.223157 – 65.96263	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})39d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	10	1521.246	0.223157 – 65.95880	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})38d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	15	1521.338	0.223157 – 65.95476	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})37d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	5	1521.415	0.0 – 65.72830	$3s^23p^2 - 3s^23p(^2P^\circ)19d$	$g^3P - {}^3D^\circ$	0 – 1	A	106
	5	1521.445	0.223157 – 65.95017	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})36d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	10	1521.559	0.223157 – 65.94519	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})35d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	10	1521.686	0.223157 – 65.93975	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})34d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	10	1521.820	0.223157 – 65.93395	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})33d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	10	1521.840	0.077115 – 65.78690	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})21d$	$g^3P - {}^3P^\circ$	1 – 1	A	106
	5	1521.907					A	106
	5	1521.970	0.223157 – 65.92737	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})32d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	1	1522.036	0.0 – 65.70156	$3s^23p^2 - 3s^23p(^2P^\circ)20s$	$g^3P - {}^1P^\circ$	0 – 1	A	106
	1	1522.052					A	106
	1	1522.111	0.0 – 65.69747	$3s^23p^2 - 3s^23p(^2P^\circ)18d$	$g^3P - {}^3P^\circ$	0 – 1	A	106
	10	1522.131	0.223157 – 65.92045	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})31d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	1	1522.169					A	106
	5	1522.231	0.0 – 65.69300	$3s^23p^2 - 3s^23p(^2P^\circ)18d$	$g^3P - {}^3D^\circ$	0 – 1	A	106
	5	1522.280					A	106
	10	1522.315	0.223157 – 65.91260	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})30d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	1	1522.345					A	106
	10	1522.433	0.077115 – 65.76136	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})20d$	$g^3P - {}^3P^\circ$	1 – 1	A	106
	1	1522.482					A	106
	15	1522.510	0.223157 – 65.90412	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})29d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	1	1522.557					A	106
	1	1522.642					A	106
	15	1522.734	0.223157 – 65.89452	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})28d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	1	1522.829					A	106
	5	1522.960	0.223157 – 65.88468	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})27d$	$g^3P - {}^3P^\circ$	2 – 1	A	106
	15	1522.983	0.223157 – 65.88380	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})27d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	5	1523.043					A	106
	5	1523.109	0.077115 – 65.73227	$3s^23p^2 - 3s^23p(^2P^\circ)19d$	$g^3P - {}^3P^\circ$	1 – 1	A	106
	1	1523.122					A	106
	1	1523.174					A	106
	5	1523.200	0.0 – 65.65130	$3s^23p^2 - 3s^23p(^2P^\circ)17d$	$g^3P - {}^3D^\circ$	0 – 1	A	106
	1	1523.235	0.223157 – 65.87283	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})26d$	$g^3P - {}^3P^\circ$	2 – 1	A	106
	10	1523.259	0.223157 – 65.87188	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})26d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	1	1523.308					A	106
	5	1523.458					A	106
	5	1523.543	0.223157 – 65.85972	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})25d$	$g^3P - {}^3P^\circ$	2 – 1	A	106
	10	1523.568	0.223157 – 65.85850	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})25d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	5	1523.620					A	106
	1	1523.701					A	106

Si I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	1523.732					A	106
	1	1523.776					A	106
	5	1523.806	0.077115 – 65.70156	$3s^23p^2 - 3s^23p(^2P^\circ)20s$	$g^3P - {}^1P^\circ$	1 – 1	A	106
	5	1523.856					A	106
	1	1523.895	0.223157 – 65.84450	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})24d$	$g^3P - {}^3P^\circ$	2 – 1	A	106
	15	1523.915	0.077115 – 65.69758	$3s^23p^2 - 3s^23p(^2P^\circ)18d$	$g^3P - {}^3P^\circ$	1 – 0	A	106
	1	1523.966	0.077115 – 65.69520	$3s^23p^2 - 3s^23p(^2P^\circ)18d$	$g^3P - {}^3P^\circ$	1 – 2	A	106
	1	1523.986					A	106
	5	1524.011	0.077115 – 65.69300	$3s^23p^2 - 3s^23p(^2P^\circ)18d$	$g^3P - {}^3D^\circ$	1 – 1	A	106
	5	1524.067	0.0 – 65.61395	$3s^23p^2 - 3s^23p(^2P^\circ)18s$	$g^3P - {}^1P^\circ$	0 – 1	A	106
	5	1524.130					A	106
	10	1524.192	0.0 – 65.60844	$3s^23p^2 - 3s^23p(^2P^\circ)16d$	$g^3P - {}^3P^\circ$	0 – 1	A	106
	1	1524.242					A	106
	5	1524.269					A	106
	5	1524.279	0.223157 – 65.82798	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})23d$	$g^3P - {}^3P^\circ$	2 – 1	A	106
	5	1524.292	0.223157 – 65.82736	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})23d$	$g^3P - {}^3P^\circ$	2 – 2	A	106
	10	1524.316	0.223157 – 65.82636	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})23d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	10	1524.345	0.0 – 65.60192	$3s^23p^2 - 3s^23p(^2P^\circ)16d$	$g^3P - {}^3D^\circ$	0 – 1	A	106
	5	1524.417					A	106
	1	1524.478	0.077115 – 65.67298	$3s^23p^2 - 3s^23p(^2P^\circ)18d$	$g^3P - {}^3F^\circ$	1 – 2	A	106
	5	1524.535					A	106
	5	1524.621					A	106
	1	1524.690					A	106
	5	1524.723	0.223157 – 65.80880	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})22d$	$g^3P - {}^3P^\circ$	2 – 1	A	106
	10	1524.742	0.223157 – 65.80798	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})22d$	$g^3P - {}^3P^\circ$	2 – 2	A	106
	5	1524.767	0.223157 – 65.80694	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})22d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	5	1524.830					A	106
	5	1524.852	0.077115 – 65.65724	$3s^23p^2 - 3s^23p(^2P^\circ)17d$	$g^3P - {}^3P^\circ$	1 – 0	A	106
	5	1524.873	0.077115 – 65.65634	$3s^23p^2 - 3s^23p(^2P^\circ)17d$	$g^3P - {}^3P^\circ$	1 – 1	A	106
	5	1524.970					A	106
	1	1524.989	0.077115 – 65.65130	$3s^23p^2 - 3s^23p(^2P^\circ)17d$	$g^3P - {}^3D^\circ$	1 – 1	A	106
	5	1525.056					A	106
	5	1525.091					A	106
	1	1525.191					A	106
	10	1525.236	0.223157 – 65.78690	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})21d$	$g^3P - {}^3P^\circ$	2 – 1	A	106
	5	1525.254	0.223157 – 65.78600	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})21d$	$g^3P - {}^3P^\circ$	2 – 2	A	106
	10	1525.285	0.223157 – 65.78465	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})21d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	5	1525.381	0.0 – 65.55735	$3s^23p^2 - 3s^23p(^2P^\circ)17s$	$g^3P - {}^1P^\circ$	0 – 1	A	106
	5	1525.421					A	106
	1	1525.579	0.0 – 65.54905	$3s^23p^2 - 3s^23p(^2P^\circ)15d$	$g^3P - {}^3P^\circ$	0 – 1	A	106
	5	1525.619					A	106
	1	1525.707					A	106
	5	1525.758	0.0 – 65.54120	$3s^23p^2 - 3s^23p(^2P^\circ)15d$	$g^3P - {}^3D^\circ$	0 – 1	A	106
	5	1525.792					A	106
	5	1525.832	0.223157 – 65.76136	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})20d$	$g^3P - {}^3P^\circ$	2 – 1	A	106
	5	1525.851	0.223157 – 65.76050	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})20d$	$g^3P - {}^3P^\circ$	2 – 2	A	106
	15	1525.886	0.223157 – 65.75886	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})20d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	15	1525.983	0.077115 – 65.60863	$3s^23p^2 - 3s^23p(^2P^\circ)16d$	$g^3P - {}^3P^\circ$	1 – 0	A	106
	10	1526.035					A	106
	5	1526.054	0.077115 – 65.60554	$3s^23p^2 - 3s^23p(^2P^\circ)16d$	$g^3P - {}^3P^\circ$	1 – 2	A	106
	10	1526.141	0.077115 – 65.60192	$3s^23p^2 - 3s^23p(^2P^\circ)16d$	$g^3P - {}^3D^\circ$	1 – 1	A	106
	15	1526.253					A	106
	1	1526.456					A	106
	10	1526.506	0.223157 – 65.73227	$3s^23p^2 - 3s^23p(^2P^\circ)19d$	$g^3P - {}^3P^\circ$	2 – 1	A	106

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	1526.549	0.223157 – 65.73040	$3s^23p^2 - 3s^23p(^2P^\circ)19d$	$g^3P - {}^3P^\circ$	2 – 2	A	106
	15	1526.585	0.223157 – 65.72886	$3s^23p^2 - 3s^23p(^2P^\circ)19d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	1	1526.609	0.223157 – 65.72830	$3s^23p^2 - 3s^23p(^2P^\circ)19d$	$g^3P - {}^3D^\circ$	2 – 1	A	106
	10	1526.766					A	106
	10	1526.894					A	106
	5	1527.027	0.0 – 65.48667	$3s^23p^2 - 3s^23p(^2P^\circ)16s$	$g^3P - {}^1P^\circ$	0 – 1	A	106
	10	1527.185	0.077115 – 65.55707	$3s^23p^2 - 3s^23p(^2P^\circ)24d$	$g^3P - {}^3D^\circ$	1 – 2	A	106
	10	1527.223	0.0 – 65.47835	$3s^23p^2 - 3s^23p(^2P^\circ)14d$	$g^3P - {}^3P^\circ$	0 – 1	A	106
	5	1527.252	0.077115 – 65.55450	$3s^23p^2 - 3s^23p(^2P^\circ)17s$	$g^3P - {}^3P^\circ$	1 – 2	A	106
	10	1527.301	0.223157 – 65.69747	$3s^23p^2 - 3s^23p(^2P^\circ)18d$	$g^3P - {}^3P^\circ$	2 – 1	A	106
	10	1527.316	0.223157 – 65.69747	$3s^23p^2 - 3s^23p(^2P^\circ)18d$	$g^3P - {}^3P^\circ$	2 – 1	A	106
	10	1527.343	0.077115 – 65.55033	$3s^23p^2 - 3s^23p(^2P^\circ)15d$	$g^3P - {}^3P^\circ$	1 – 0	A	106
	10	1527.367	0.223157 – 65.69520	$3s^23p^2 - 3s^23p(^2P^\circ)18d$	$g^3P - {}^3P^\circ$	2 – 2	A	106
	20	1527.399	0.223157 – 65.69390	$3s^23p^2 - 3s^23p(^2P^\circ)18d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	5	1527.460	0.077115 – 65.54530	$3s^23p^2 - 3s^23p(^2P^\circ)15d$	$g^3P - {}^3P^\circ$	1 – 2	A	106
	5	1527.522					A	106
	5	1527.555	0.077115 – 65.54120	$3s^23p^2 - 3s^23p(^2P^\circ)15d$	$g^3P - {}^3D^\circ$	1 – 1	A	106
	15	1527.588	0.077115 – 65.53981	$3s^23p^2 - 3s^23p(^2P^\circ)23d$	$g^3P - {}^3D^\circ$	1 – 2	A	106
	1	1527.771					A	106
	1	1527.941	0.0 – 65.4476	$3s^23p^2 - 3s^23p(^2P^\circ)21s$	$g^3P - {}^3P^\circ$	0 – 1	A	106
	15	1527.989	0.077115 – 65.52263	$3s^23p^2 - 3s^23p(^2P^\circ)22d$	$g^3P - {}^3D^\circ$	1 – 2	A	106
	1	1528.035					A	106
	10	1528.072	0.0 – 65.44193	$3s^23p^2 - 3s^23p(^2P^\circ)19d$	$g^3P - {}^1P^\circ$	0 – 1	A	106
	5	1528.144	0.223157 – 65.66200	$3s^23p^2 - 3s^23p(^2P^\circ)19s$	$g^3P - {}^1P^\circ$	2 – 1	A	106
	5	1528.185	0.223157 – 65.66026	$3s^23p^2 - 3s^23p(^2P^\circ)19s$	$g^3P - {}^3P^\circ$	2 – 2	A	106
	10	1528.238					A	106
	5	1528.250					A	106
	10	1528.277	0.223157 – 65.65634	$3s^23p^2 - 3s^23p(^2P^\circ)17d$	$g^3P - {}^3P^\circ$	2 – 1	A	106
	10	1528.328	0.223157 – 65.65415	$3s^23p^2 - 3s^23p(^2P^\circ)17d$	$g^3P - {}^3P^\circ$	2 – 2	A	106
	15	1528.372	0.223157 – 65.65239	$3s^23p^2 - 3s^23p(^2P^\circ)17d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	5	1528.426					A	106
	10	1528.485	0.223157 – 65.64743	$3s^23p^2 - 3s^23p(^2P^\circ)17d$	$g^3P - {}^3F^\circ$	2 – 3	A	106
	5	1528.564					A	106
	15	1528.596	0.077115 – 65.49659	$3s^23p^2 - 3s^23p(^2P^\circ)21d$	$g^3P - {}^3D^\circ$	1 – 2	A	106
	1	1528.726	0.0 – 65.4140	$3s^23p^2 - 3s^23p(^2P^\circ)20s$	$g^3P - {}^3P^\circ$	0 – 1	A	106
	15	1528.871	0.0 – 65.40772	$3s^23p^2 - 3s^23p(^2P^\circ)18d$	$g^3P - {}^1P^\circ$	0 – 1	A	106
	5	1528.890	0.077115 – 65.48396	$3s^23p^2 - 3s^23p(^2P^\circ)16s$	$g^3P - {}^3P^\circ$	1 – 2	A	106
	15	1529.004	0.077115 – 65.47914	$3s^23p^2 - 3s^23p(^2P^\circ)14d$	$g^3P - {}^3P^\circ$	1 – 0	A	106
	15	1529.022	0.077115 – 65.47835	$3s^23p^2 - 3s^23p(^2P^\circ)14d$	$g^3P - {}^3P^\circ$	1 – 1	A	106
	15	1529.061	0.0 – 65.39960	$3s^23p^2 - 3s^23p(^2P^\circ)15s$	$g^3P - {}^1P^\circ$	0 – 1	A	106
	15	1529.202	0.077115 – 65.47071	$3s^23p^2 - 3s^23p(^2P^\circ)20d$	$g^3P - {}^3D^\circ$	1 – 2	A	106
	5	1529.229					A	106
	5	1529.268	0.077115 – 65.46800	$3s^23p^2 - 3s^23p(^2P^\circ)14d$	$g^3P - {}^3D^\circ$	1 – 1	A	106
	10	1529.307	0.223157 – 65.61224	$3s^23p^2 - 3s^23p(^2P^\circ)18s$	$g^3P - {}^3P^\circ$	2 – 2	A	106
	15	1529.396	0.223157 – 65.60844	$3s^23p^2 - 3s^23p(^2P^\circ)16d$	$g^3P - {}^3P^\circ$	2 – 1	A	106
	10	1529.440					A	106
	15	1529.464	0.223157 – 65.60554	$3s^23p^2 - 3s^23p(^2P^\circ)16d$	$g^3P - {}^3P^\circ$	2 – 2	A	106
	20	1529.532	0.223157 – 65.60264	$3s^23p^2 - 3s^23p(^2P^\circ)16d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	10	1529.561	0.0 – 65.37802	$3s^23p^2 - 3s^23p(^2P^\circ)13d$	$g^3P - {}^3D^\circ$	0 – 1	A	106
	15	1529.647					A	106
	10	1529.686	0.0 – 65.37280	$3s^23p^2 - 3s^23p(^2P^\circ)19s$	$g^3P - {}^3P^\circ$	0 – 1	A	106
	1	1529.746	0.077115 – 65.44745	$3s^23p^2 - 3s^23p(^2P^\circ)21s$	$g^3P - {}^3P^\circ$	1 – 0	A	106
	15	1529.778	0.077115 – 65.44605	$3s^23p^2 - 3s^23p(^2P^\circ)19d$	$g^3P - {}^3D^\circ$	1 – 2	A	106
	5	1529.826	0.223157 – 65.59007	$3s^23p^2 - 3s^23p(^2P^\circ)16d$	$g^3P - {}^3F^\circ$	2 – 3	A	106

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	15	1529.870	0.0 – 65.36505	$3s^23p^2 - 3s^23p(^2P^o)17d$	$g^3P - {}^1P^o$	0 – 1	A	106
	1	1529.914					A	106
	1	1530.311	0.077115 – 65.42314	$3s^23p^2 - 3s^23p(^2P^o)14d$	$g^3P - {}^3F^o$	1 – 2	A	106
	10	1530.325	0.223157 – 65.56883	$3s^23p^2 - 3s^23p(^2P^o)25d$	$g^3P - {}^1F^o$	2 – 3	A	106
	1	1530.412					A	106
	1	1530.544	0.077115 – 65.41338	$3s^23p^2 - 3s^23p(^2P^o)20s$	$g^3P - {}^3P^o$	1 – 0	A	106
	10	1530.602	0.223157 – 65.55707	$3s^23p^2 - 3s^23p(^2P^o)24d$	$g^3P - {}^3D^o$	2 – 2	A	106
	5	1530.638	0.223157 – 65.55477	$3s^23p^2 - 3s^23p(^2P^o)24d$	$g^3P - {}^1F^o$	2 – 3	A	106
	10	1530.657	0.223157 – 65.55450	$3s^23p^2 - 3s^23p(^2P^o)17s$	$g^3P - {}^3P^o$	2 – 2	A	106
	4	1530.676	0.077115 – 65.40772	$3s^23p^2 - 3s^23p(^2P^o)18d$	$g^3P - {}^1P^o$	1 – 1	P	441
	15	1530.690	0.077115 – 65.40715	$3s^23p^2 - 3s^23p(^2P^o)18d$	$g^3P - {}^3D^o$	1 – 2	A	106
	15	1530.738					A	106
	15	1530.787	0.223157 – 65.54905	$3s^23p^2 - 3s^23p(^2P^o)15d$	$g^3P - {}^3P^o$	2 – 1	A	106
	15	1530.867	0.077115 – 65.39960	$3s^23p^2 - 3s^23p(^2P^o)15s$	$g^3P - {}^1P^o$	1 – 1	P	441
	20	1530.875	0.223157 – 65.54530	$3s^23p^2 - 3s^23p(^2P^o)15d$	$g^3P - {}^3P^o$	2 – 2	A	106
	20	1530.929	0.223157 – 65.54302	$3s^23p^2 - 3s^23p(^2P^o)15d$	$g^3P - {}^3D^o$	2 – 3	A	106
	20	1531.002	0.223157 – 65.53981	$3s^23p^2 - 3s^23p(^2P^o)23d$	$g^3P - {}^3D^o$	2 – 2	A	106
	15	1531.070	0.077115 – 65.39089	$3s^23p^2 - 3s^23p(^2P^o)13d$	$g^3P - {}^3P^o$	1 – 0	A	106
	15	1531.116	0.077115 – 65.38896	$3s^23p^2 - 3s^23p(^2P^o)13d$	$g^3P - {}^3P^o$	1 – 1	A	106
	1	1531.185					A	106
	10	1531.276	0.223157 – 65.52819	$3s^23p^2 - 3s^23p(^2P^o)15d$	$g^3P - {}^3F^o$	2 – 3	A	106
	10	1531.373	0.077115 – 65.37802	$3s^23p^2 - 3s^23p(^2P^o)13d$	$g^3P - {}^3D^o$	1 – 1	A	106
	1	1531.410	0.223157 – 65.52263	$3s^23p^2 - 3s^23p(^2P^o)22d$	$g^3P - {}^3D^o$	2 – 2	A	106
	5	1531.491	0.077115 – 65.37298	$3s^23p^2 - 3s^23p(^2P^o)19s$	$g^3P - {}^3P^o$	1 – 0	A	106
	25	1531.602	0.077115 – 65.36823	$3s^23p^2 - 3s^23p(^2P^o)17d$	$g^3P - {}^3D^o$	1 – 2	A	106
	5	1531.676	0.077115 – 65.36505	$3s^23p^2 - 3s^23p(^2P^o)17d$	$g^3P - {}^1P^o$	1 – 1	A	106
	10	1531.904	0.0 – 65.27823	$3s^23p^2 - 3s^23p(^2P^o)12d$	$g^3P - {}^3P^o$	0 – 1	A	106
	5	1532.018	0.223157 – 65.49659	$3s^23p^2 - 3s^23p(^2P^o)21d$	$g^3P - {}^3D^o$	2 – 2	A	106
	10	1532.077	0.223157 – 65.49405	$3s^23p^2 - 3s^23p(^2P^o)21d$	$g^3P - {}^1F^o$	2 – 3	A	106
	5	1532.210					A	106
	1	1532.252	0.223157 – 65.48667	$3s^23p^2 - 3s^23p(^2P^o)16s$	$g^3P - {}^1P^o$	2 – 1	A	106
	10	1532.295	0.0 – 65.26150	$3s^23p^2 - 3s^23p(^2P^o)12d$	$g^3P - {}^3D^o$	0 – 1	A	106
	5	1532.316	0.223157 – 65.48396	$3s^23p^2 - 3s^23p(^2P^o)16s$	$g^3P - {}^3P^o$	2 – 2	A	106
	15	1532.446	0.223157 – 65.47835	$3s^23p^2 - 3s^23p(^2P^o)14d$	$g^3P - {}^3P^o$	2 – 1	A	106
	20	1532.490	0.077115 – 65.33038	$3s^23p^2 - 3s^23p(^2P^o)13d$	$g^3P - {}^3F^o$	1 – 2	A	106
	10	1532.603	0.223157 – 65.47153	$3s^23p^2 - 3s^23p(^2P^o)14d$	$g^3P - {}^3D^o$	2 – 3	A	106
	15	1532.624	0.223157 – 65.47072	$3s^23p^2 - 3s^23p(^2P^o)14d$	$g^3P - {}^3P^o$	2 – 2	A	106
	30	1532.646	0.223157 – 65.46978	$3s^23p^2 - 3s^23p(^2P^o)20d$	$g^3P - {}^1F^o$	2 – 3	A	106
	5	1532.815	0.077115 – 65.31657	$3s^23p^2 - 3s^23p(^2P^o)16d$	$g^3P - {}^1P^o$	1 – 1	A	106
	5	1532.871					A	106
	15	1532.929	0.077115 – 65.31178	$3s^23p^2 - 3s^23p(^2P^o)16d$	$g^3P - {}^3D^o$	1 – 2	A	106
	1	1532.976					A	106
	10	1533.036	0.223157 – 65.45323	$3s^23p^2 - 3s^23p(^2P^o)14d$	$g^3P - {}^3F^o$	2 – 3	A	106
	1	1533.166	0.223157 – 65.4476	$3s^23p^2 - 3s^23p(^2P^o)21s$	$g^3P - {}^3P^o$	2 – 1	A	106
	5	1533.205	0.223157 – 65.44605	$3s^23p^2 - 3s^23p(^2P^o)19d$	$g^3P - {}^3D^o$	2 – 2	A	106
	80	1533.410	0.077115 – 65.29126	$3s^23p^2 - 3s^23p(^2P^o)14s$	$g^3P - {}^1P^o$	1 – 1	P	441
	10	1533.508	0.077115 – 65.28704	$3s^23p^2 - 3s^23p(^2P^o)14s$	$g^3P - {}^3P^o$	1 – 2	A	106
	15	1533.672	0.077115 – 65.28010	$3s^23p^2 - 3s^23p(^2P^o)12d$	$g^3P - {}^3P^o$	1 – 0	A	106
	15	1533.717	0.077115 – 65.27823	$3s^23p^2 - 3s^23p(^2P^o)12d$	$g^3P - {}^3P^o$	1 – 1	A	106
	5	1533.791	0.0 – 65.19798	$3s^23p^2 - 3s^23p(^2P^o)16s$	$g^3P - {}^3P^o$	0 – 1	A	106
	10	1533.937	0.077115 – 65.26880	$3s^23p^2 - 3s^23p(^2P^o)17s$	$g^3P - {}^3P^o$	1 – 1	A	106
	5	1533.972	0.077115 – 65.26735	$3s^23p^2 - 3s^23p(^2P^o)17s$	$g^3P - {}^3P^o$	1 – 0	A	106
	20	1534.112	0.077115 – 65.26150	$3s^23p^2 - 3s^23p(^2P^o)12d$	$g^3P - {}^3D^o$	1 – 1	A	106
	20	1534.184	0.077115 – 65.25833	$3s^23p^2 - 3s^23p(^2P^o)15d$	$g^3P - {}^3D^o$	1 – 2	A	106

Si I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	1534.236	0.223157 – 65.40224	$3s^23p^2 - 3s^23p(^2P^o)18d$	$g^3P - {}^1F^o$	2 – 3	A	106
	10	1534.255	0.077115 – 65.25531	$3s^23p^2 - 3s^23p(^2P^o)15d$	$g^3P - {}^1P^o$	1 – 1	A	106
	5	1534.299	0.223157 – 65.39960	$3s^23p^2 - 3s^23p(^2P^o)15s$	$g^3P - {}^1P^o$	2 – 1	A	106
	10	1534.364	0.223157 – 65.39673	$3s^23p^2 - 3s^23p(^2P^o)15s$	$g^3P - {}^3P^o$	2 – 2	A	106
	15	1534.431	0.223157 – 65.39391	$3s^23p^2 - 3s^23p(^2P^o)18d$	$g^3P - {}^1D^o$	2 – 2	A	106
	15	1534.547	0.223157 – 65.38896	$3s^23p^2 - 3s^23p(^2P^o)13d$	$g^3P - {}^3P^o$	2 – 1	A	106
	1	1534.618					A	106
	25	1534.707	0.223157 – 65.38218	$3s^23p^2 - 3s^23p(^2P^o)13d$	$g^3P - {}^3P^o$	2 – 2	A	106
	25	1534.778	0.223157 – 65.37919	$3s^23p^2 - 3s^23p(^2P^o)13d$	$g^3P - {}^3D^o$	2 – 3	A	106
	1	1534.818	0.077115 – 65.23121	$3s^23p^2 - 3s^23p(^2P^o)15d$	$g^3P - {}^1D^o$	1 – 2	A	106
	10	1534.883	0.0 – 65.15167	$3s^23p^2 - 3s^23p(^2P^o)13s$	$g^3P - {}^1P^o$	0 – 1	A	106
	1	1534.928	0.223157 – 65.37280	$3s^23p^2 - 3s^23p(^2P^o)19s$	$g^3P - {}^3P^o$	2 – 1	A	106
	20	1534.932	0.223157 – 65.37280	$3s^23p^2 - 3s^23p(^2P^o)19s$	$g^3P - {}^3P^o$	2 – 1	P	441
	20	1534.996	0.223157 – 65.36994	$3s^23p^2 - 3s^23p(^2P^o)17d$	$g^3P - {}^1F^o$	2 – 3	A	106
	10	1535.266	0.0 – 65.13528	$3s^23p^2 - 3s^23p(^2P^o)11d$	$g^3P - {}^3P^o$	0 – 1	A	106
	15	1535.472	0.223157 – 65.34972	$3s^23p^2 - 3s^23p(^2P^o)13d$	$g^3P - {}^3F^o$	2 – 3	A	106
	5	1535.537					A	106
	1	1535.604	0.077115 – 65.19798	$3s^23p^2 - 3s^23p(^2P^o)16s$	$g^3P - {}^3P^o$	1 – 1	A	106
	5	1535.634	0.077115 – 65.19682	$3s^23p^2 - 3s^23p(^2P^o)16s$	$g^3P - {}^3P^o$	1 – 0	A	106
	15	1535.705	0.0 – 65.11672	$3s^23p^2 - 3s^23p(^2P^o)11d$	$g^3P - {}^3D^o$	0 – 1	A	106
	15	1535.896	0.0 – 65.10874	$3s^23p^2 - 3s^23p(^2P^o)15s$	$g^3P - {}^3P^o$	0 – 1	A	106
	10	1535.931	0.077115 – 65.18424	$3s^23p^2 - 3s^23p(^2P^o)14d$	$g^3P - {}^1P^o$	1 – 1	A	106
	5	1536.035	0.223157 – 65.32582	$3s^23p^2 - 3s^23p(^2P^o)18s$	$g^3P - {}^3P^o$	2 – 1	A	106
	20	1536.085	0.077115 – 65.17770	$3s^23p^2 - 3s^23p(^2P^o)14d$	$g^3P - {}^3D^o$	1 – 2	A	106
	1	1536.257	0.223157 – 65.31657	$3s^23p^2 - 3s^23p(^2P^o)16d$	$g^3P - {}^1P^o$	2 – 1	A	106
	15	1536.285	0.0 – 65.09205	$3s^23p^2 - 3s^23p(^2P^o)13d$	$g^3P - {}^1P^o$	0 – 1	A	106
	10	1536.366	0.223157 – 65.31178	$3s^23p^2 - 3s^23p(^2P^o)16d$	$g^3P - {}^3D^o$	2 – 2	A	106
	15	1536.473	0.223157 – 65.30730	$3s^23p^2 - 3s^23p(^2P^o)16d$	$g^3P - {}^1F^o$	2 – 3	A	106
	1	1536.624					A	106
	1	1536.672	0.077115 – 65.15274	$3s^23p^2 - 3s^23p(^2P^o)14d$	$g^3P - {}^1D^o$	1 – 2	A	106
	1	1536.699	0.077115 – 65.15167	$3s^23p^2 - 3s^23p(^2P^o)13s$	$g^3P - {}^1P^o$	1 – 1	A	106
	10	1536.763	0.223157 – 65.29503	$3s^23p^2 - 3s^23p(^2P^o)16d$	$g^3P - {}^1D^o$	2 – 2	A	106
	10	1536.830	0.077115 – 65.14614	$3s^23p^2 - 3s^23p(^2P^o)13s$	$g^3P - {}^3P^o$	1 – 2	A	106
	5	1536.852	0.223157 – 65.29126	$3s^23p^2 - 3s^23p(^2P^o)14s$	$g^3P - {}^1P^o$	2 – 1	A	106
	10	1536.953	0.223157 – 65.28704	$3s^23p^2 - 3s^23p(^2P^o)14s$	$g^3P - {}^3P^o$	2 – 2	A	106
	15	1537.016	0.077115 – 65.13822	$3s^23p^2 - 3s^23p(^2P^o)11d$	$g^3P - {}^3P^o$	1 – 0	A	106
	15	1537.086	0.077115 – 65.13528	$3s^23p^2 - 3s^23p(^2P^o)11d$	$g^3P - {}^3P^o$	1 – 1	A	106
	15	1537.159	0.223157 – 65.27823	$3s^23p^2 - 3s^23p(^2P^o)12d$	$g^3P - {}^3P^o$	2 – 1	A	106
	25	1537.297	0.223157 – 65.27241	$3s^23p^2 - 3s^23p(^2P^o)12d$	$g^3P - {}^3P^o$	2 – 2	A	106
	10	1537.322	0.077115 – 65.12526	$3s^23p^2 - 3s^23p(^2P^o)11d$	$g^3P - {}^3P^o$	1 – 2	A	106
	10	1537.382	0.223157 – 65.26880	$3s^23p^2 - 3s^23p(^2P^o)17s$	$g^3P - {}^3P^o$	2 – 1	A	106
	20	1537.474	0.223157 – 65.26491	$3s^23p^2 - 3s^23p(^2P^o)12d$	$g^3P - {}^3D^o$	2 – 3	A	106
	15	1537.524	0.077115 – 65.11672	$3s^23p^2 - 3s^23p(^2P^o)11d$	$g^3P - {}^3D^o$	1 – 1	A	106
	25	1537.618	0.223157 – 65.25883	$3s^23p^2 - 3s^23p(^2P^o)15d$	$g^3P - {}^1F^o$	2 – 3	A	106
	5	1537.696	0.077115 – 65.10947	$3s^23p^2 - 3s^23p(^2P^o)15s$	$g^3P - {}^3P^o$	1 – 0	A	106
	5	1537.714	0.077115 – 65.10874	$3s^23p^2 - 3s^23p(^2P^o)15s$	$g^3P - {}^3P^o$	1 – 1	A	106
	25	1537.935	0.077115 – 65.09938	$3s^23p^2 - 3s^23p(^2P^o)13d$	$g^3P - {}^3D^o$	1 – 2	A	106
	15	1538.109	0.077115 – 65.09205	$3s^23p^2 - 3s^23p(^2P^o)13d$	$g^3P - {}^1P^o$	1 – 1	A	106
	5	1538.271	0.223157 – 65.23121	$3s^23p^2 - 3s^23p(^2P^o)15d$	$g^3P - {}^1D^o$	2 – 2	A	106
	10	1538.380	0.223157 – 65.22660	$3s^23p^2 - 3s^23p(^2P^o)12d$	$g^3P - {}^3F^o$	2 – 3	A	106
	10	1538.410	0.0 – 65.00216	$3s^23p^2 - 3s^23p(^2P^o)14s$	$g^3P - {}^3P^o$	0 – 1	A	106
	20	1538.876	0.0 – 64.98242	$3s^23p^2 - 3s^23p(^2P^o)12d$	$g^3P - {}^1P^o$	0 – 1	A	106
	10	1538.922	0.223157 – 65.20373	$3s^23p^2 - 3s^23p(^2P^o)12d$	$g^3P - {}^3F^o$	2 – 2	A	106
	5	1539.057	0.223157 – 65.19798	$3s^23p^2 - 3s^23p(^2P^o)16s$	$g^3P - {}^3P^o$	2 – 1	A	106

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	1539.236	0.0 - 64.96734	$3s^23p^2 - 3s^23p(^2P^\circ)12s$	$g^3P - {}^1P^\circ$	0 - 1	A	106
	5	1539.384	0.223157 - 65.18424	$3s^23p^2 - 3s^23p(^2P^\circ)14d$	$g^3P - {}^1P^\circ$	2 - 1	A	106
	15	1539.537	0.223157 - 65.17770	$3s^23p^2 - 3s^23p(^2P^\circ)14d$	$g^3P - {}^3D^\circ$	2 - 2	A	106
	9	1539.689	0.077115 - 65.02530	$3s^23p^2 - 3s^23p(^2P^\circ)11d$	$g^3P - {}^3F^\circ$	1 - 2	P	441
	25	1539.705	0.223157 - 65.17067	$3s^23p^2 - 3s^23p(^2P^\circ)14d$	$g^3P - {}^1F^\circ$	2 - 3	A	106
41	5	1539.738	0.0 - 64.94612	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$g^3P - {}^3P^\circ$	0 - 1	A	106
	15	1540.131	0.223157 - 65.15274	$3s^23p^2 - 3s^23p(^2P^\circ)14d$	$g^3P - {}^1D^\circ$	2 - 2	A	106
	10	1540.152	0.223157 - 65.15167	$3s^23p^2 - 3s^23p(^2P^\circ)13s$	$g^3P - {}^1P^\circ$	2 - 1	A	106
	5	1540.239	0.077115 - 65.00216	$3s^23p^2 - 3s^23p(^2P^\circ)14s$	$g^3P - {}^3P^\circ$	1 - 1	A	106
	15	1540.286	0.223157 - 65.14614	$3s^23p^2 - 3s^23p(^2P^\circ)13s$	$g^3P - {}^3P^\circ$	2 - 2	A	106
41	15	1540.354	0.0 - 64.92015	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$g^3P - {}^3D^\circ$	0 - 1	A	106
	20	1540.544	0.223157 - 65.13528	$3s^23p^2 - 3s^23p(^2P^\circ)11d$	$g^3P - {}^3P^\circ$	2 - 1	A	106
	30	1540.707	0.077115 - 64.98237	$3s^23p^2 - 3s^23p(^2P^\circ)12d$	$g^3P - {}^3D^\circ$	1 - 2	A	106
	30	1540.783	0.223157 - 65.12526	$3s^23p^2 - 3s^23p(^2P^\circ)11d$	$g^3P - {}^3P^\circ$	2 - 2	A	106
	40	1540.963	0.223157 - 65.11765	$3s^23p^2 - 3s^23p(^2P^\circ)11d$	$g^3P - {}^3D^\circ$	2 - 3	A	106
	10	1540.978	0.223157 - 65.11672	$3s^23p^2 - 3s^23p(^2P^\circ)11d$	$g^3P - {}^3D^\circ$	2 - 1	A	106
	5	1541.064	0.077115 - 64.96734	$3s^23p^2 - 3s^23p(^2P^\circ)12s$	$g^3P - {}^1P^\circ$	1 - 1	A	106
	5	1541.178	0.223157 - 65.10874	$3s^23p^2 - 3s^23p(^2P^\circ)15s$	$g^3P - {}^3P^\circ$	2 - 1	A	106
	10	1541.198	0.077115 - 64.96167	$3s^23p^2 - 3s^23p(^2P^\circ)12s$	$g^3P - {}^3P^\circ$	1 - 2	A	106
	25	1541.322	0.223157 - 65.10252	$3s^23p^2 - 3s^23p(^2P^\circ)13d$	$g^3P - {}^1F^\circ$	2 - 3	A	106
	20	1541.397	0.223157 - 65.09938	$3s^23p^2 - 3s^23p(^2P^\circ)13d$	$g^3P - {}^3D^\circ$	2 - 2	P	441
41	20	1541.415	0.077115 - 64.95258	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$g^3P - {}^3P^\circ$	1 - 0	A	106
41	20	1541.569	0.077115 - 64.94612	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$g^3P - {}^3P^\circ$	1 - 1	A	106
	15	1541.620	0.077115 - 64.94394	$3s^23p^2 - 3s^23p(^2P^\circ)12d$	$g^3P - {}^1D^\circ$	1 - 2	A	106
	10	1541.758	0.0 - 64.86102	$3s^23p^2 - 3s^23p(^2P^\circ)13s$	$g^3P - {}^3P^\circ$	0 - 1	A	106
41	15	1542.185	0.077115 - 64.92015	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$g^3P - {}^3D^\circ$	1 - 1	A	106
41	15	1542.270	0.077115 - 64.91664	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$g^3P - {}^3P^\circ$	1 - 2	A	106
	25	1542.432	0.223157 - 65.05582	$3s^23p^2 - 3s^23p(^2P^\circ)13d$	$g^3P - {}^1D^\circ$	2 - 2	A	106
	5	1543.158	0.223157 - 65.02530	$3s^23p^2 - 3s^23p(^2P^\circ)11d$	$g^3P - {}^3F^\circ$	2 - 2	A	106
	1	1543.593	0.077115 - 64.86102	$3s^23p^2 - 3s^23p(^2P^\circ)13s$	$g^3P - {}^3P^\circ$	1 - 1	A	106
	5	1543.631	0.077115 - 64.85923	$3s^23p^2 - 3s^23p(^2P^\circ)13s$	$g^3P - {}^3P^\circ$	1 - 0	A	106
	15	1543.710	0.223157 - 65.00216	$3s^23p^2 - 3s^23p(^2P^\circ)14s$	$g^3P - {}^3P^\circ$	2 - 1	P	441
	35	1543.724	0.077115 - 64.85548	$3s^23p^2 - 3s^23p(^2P^\circ)11d$	$g^3P - {}^3D^\circ$	1 - 2	A	106
	15	1544.184	0.223157 - 64.98237	$3s^23p^2 - 3s^23p(^2P^\circ)12d$	$g^3P - {}^3D^\circ$	2 - 2	A	106
	10	1544.266	0.077115 - 64.83270	$3s^23p^2 - 3s^23p(^2P^\circ)11d$	$g^3P - {}^1P^\circ$	1 - 1	A	106
	10	1544.540	0.223157 - 64.96734	$3s^23p^2 - 3s^23p(^2P^\circ)12s$	$g^3P - {}^1P^\circ$	2 - 1	A	106
	15	1544.591	0.223157 - 64.96503	$3s^23p^2 - 3s^23p(^2P^\circ)12d$	$g^3P - {}^1F^\circ$	2 - 3	A	106
	10	1544.676	0.223157 - 64.96167	$3s^23p^2 - 3s^23p(^2P^\circ)12s$	$g^3P - {}^3P^\circ$	2 - 2	A	106
	10	1545.025	0.0 - 64.72388	$3s^23p^2 - 3s^23p(^2P^\circ)11s$	$g^3P - {}^1P^\circ$	0 - 1	A	106
	10	1545.045	0.223157 - 64.94612	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$g^3P - {}^3P^\circ$	2 - 1	A	106
	10	1545.099	0.223157 - 64.94394	$3s^23p^2 - 3s^23p(^2P^\circ)12d$	$g^3P - {}^1D^\circ$	2 - 2	A	106
	15	1545.163	0.077115 - 64.79556	$3s^23p^2 - 3s^23p(^2P^\circ)11d$	$g^3P - {}^1D^\circ$	1 - 2	A	106
41	25	1545.575	0.223157 - 64.92397	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$g^3P - {}^3D^\circ$	2 - 3	A	106
41	20	1545.612	0.0 - 64.69946	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$g^3P - {}^3P^\circ$	0 - 1	A	106
41	1	1545.664	0.223157 - 64.92015	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$g^3P - {}^3D^\circ$	2 - 1	A	106
	15	1545.749	0.223157 - 64.91664	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$g^3P - {}^3P^\circ$	2 - 2	A	106
	5	1546.007					A	106
	5	1546.098	0.0 - 64.67893	$3s^23p^2 - 3s^23p(^2P^\circ)12s$	$g^3P - {}^3P^\circ$	0 - 1	A	106
	1	1546.559						608
41	30	1546.590	0.223157 - 64.88145	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$g^3P - {}^3F^\circ$	2 - 3	A	106
41	25	1546.674	0.0 - 64.65497	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$g^3P - {}^3D^\circ$	0 - 1	A	106
	5	1546.869	0.077115 - 64.72388	$3s^23p^2 - 3s^23p(^2P^\circ)11s$	$g^3P - {}^1P^\circ$	1 - 1	A	106
	10	1547.079	0.223157 - 64.86102	$3s^23p^2 - 3s^23p(^2P^\circ)13s$	$g^3P - {}^3P^\circ$	2 - 1	A	106
	20	1547.129	0.077115 - 64.71305	$3s^23p^2 - 3s^23p(^2P^\circ)11s$	$g^3P - {}^3P^\circ$	1 - 2	A	106

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	1547.214	0.223157 – 64.85548	$3s^23p^2 - 3s^23p(^2P^\circ)11d$	$g^3P - {}^3D^\circ$	2 – 2	A	106
41	25	1547.362	0.077115 – 64.70323	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$g^3P - {}^3P^\circ$	1 – 0	A	106
	1	1547.373	0.077115 – 64.70323	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$g^3P - {}^3P^\circ$	1 – 0		608
41	20	1547.452	0.077115 – 64.69946	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$g^3P - {}^3P^\circ$	1 – 1	A	106
41	5	1547.731	0.077115 – 64.68777	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$g^3P - {}^3P^\circ$	1 – 2	A	106
	15	1547.943	0.077115 – 64.67893	$3s^23p^2 - 3s^23p(^2P^\circ)12s$	$g^3P - {}^3P^\circ$	1 – 1	A	106
	10	1548.048	0.077115 – 64.67461	$3s^23p^2 - 3s^23p(^2P^\circ)12s$	$g^3P - {}^3P^\circ$	1 – 0	A	106
41	20	1548.518	0.077115 – 64.65497	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$g^3P - {}^3D^\circ$	1 – 1	A	106
	15	1548.649	0.223157 – 64.79556	$3s^23p^2 - 3s^23p(^2P^\circ)11d$	$g^3P - {}^1D^\circ$	2 – 2	A	106
41	25	1548.716	0.077115 – 64.64673	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$g^3P - {}^3D^\circ$	1 – 2	A	106
	15	1548.978	0.077115 – 64.63582	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$g^3P - {}^1P^\circ$	1 – 1	A	106
	10	1549.536	0.223157 – 64.75861	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$g^3P - {}^3F^\circ$	2 – 2	A	106
	5	1550.369	0.223157 – 64.72388	$3s^23p^2 - 3s^23p(^2P^\circ)11s$	$g^3P - {}^1P^\circ$	2 – 1	A	106
	15	1550.630	0.223157 – 64.71305	$3s^23p^2 - 3s^23p(^2P^\circ)11s$	$g^3P - {}^3P^\circ$	2 – 2	A	106
41	20	1550.958	0.223157 – 64.69946	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$g^3P - {}^3P^\circ$	2 – 1	A	106
41	25	1551.240	0.223157 – 64.68777	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$g^3P - {}^3P^\circ$	2 – 2	A	106
	10	1551.454	0.223157 – 64.67893	$3s^23p^2 - 3s^23p(^2P^\circ)12s$	$g^3P - {}^3P^\circ$	2 – 1	A	106
41	20	1551.856	0.223157 – 64.66209	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$g^3P - {}^3D^\circ$	2 – 3	A	106
	1	1551.9323						370
41	10	1552.022	0.0 – 64.43203	$3s^23p^2 - 3s^23p(^2P^\circ)11s$	$g^3P - {}^3P^\circ$	0 – 1	A	106
	15	1552.180					A	106
41	45	1552.209	0.223157 – 64.64746	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$g^3P - {}^1F^\circ$	2 – 3	A	106
	1	1552.490	0.223157 – 64.63582	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$g^3P - {}^1P^\circ$	2 – 1	P	441
	5	1552.515	0.077115 – 64.48872	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$g^3P - {}^3F^\circ$	1 – 2	A	106
	25	1552.948	0.0 – 64.39366	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$g^3P - {}^1P^\circ$	0 – 1	A	106
41	30	1553.370	0.0 – 64.37618	$3s^23p^2 - 3s^23p(^2P^\circ)10s$	$g^3P - {}^1P^\circ$	0 – 1	A	106
	5	1553.883	0.077115 – 64.43203	$3s^23p^2 - 3s^23p(^2P^\circ)11s$	$g^3P - {}^3P^\circ$	1 – 1	A	106
	10	1554.029	0.077115 – 64.42597	$3s^23p^2 - 3s^23p(^2P^\circ)11s$	$g^3P - {}^3P^\circ$	1 – 0	A	106
41	5	1554.297	0.0 – 64.33781	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$g^3P - {}^3P^\circ$	0 – 1	A	106
	1	1554.476	0.223157 – 64.55346	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$g^3P - {}^1D^\circ$	2 – 2	A	106
41	30	1554.700	0.077115 – 64.39819	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$g^3P - {}^3D^\circ$	1 – 2	A	106
	1	1554.808	0.077115 – 64.39366	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$g^3P - {}^1P^\circ$	1 – 1	A	106
41	10	1555.233	0.077115 – 64.37618	$3s^23p^2 - 3s^23p(^2P^\circ)10s$	$g^3P - {}^1P^\circ$	1 – 1	A	106
41	15	1555.463	0.077115 – 64.36668	$3s^23p^2 - 3s^23p(^2P^\circ)10s$	$g^3P - {}^3P^\circ$	1 – 2	A	106
41	20	1555.514	0.0 – 64.28743	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$g^3P - {}^3D^\circ$	0 – 1	A	106
41	25	1555.660	0.077115 – 64.35852	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$g^3P - {}^3P^\circ$	1 – 0	A	106
	0	1555.946	15.394370 – 79.6640	$3s^23p^2 - 3s3p^3$	${}^1S - {}^3S^\circ$	0 – 1	P	441
	5	1556.043	0.223157 – 64.48872	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$g^3P - {}^3F^\circ$	2 – 2	A	106
41	20	1556.160	0.077115 – 64.33781	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$g^3P - {}^3P^\circ$	1 – 1	A	106
41	30	1556.527	0.077115 – 64.32274	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$g^3P - {}^3P^\circ$	1 – 2	A	106
	20	1556.547	0.077115 – 64.32190	$3s^23p^2 - 3s3p^3$	$g^3P - {}^1D^\circ$	1 – 2	A	106
41	20	1557.382	0.077115 – 64.28743	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$g^3P - {}^3D^\circ$	1 – 1	A	106
	10	1557.416	0.223157 – 64.43203	$3s^23p^2 - 3s^23p(^2P^\circ)11s$	$g^3P - {}^3P^\circ$	2 – 1	A	106
41	25	1558.238	0.223157 – 64.39819	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$g^3P - {}^3D^\circ$	2 – 2	A	106
	10	1558.349	0.223157 – 64.39366	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$g^3P - {}^1P^\circ$	2 – 1	A	106
	15	1558.453	0.077115 – 64.24330	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$g^3P - {}^1D^\circ$	1 – 2	A	106
41	20	1558.773	0.223157 – 64.37618	$3s^23p^2 - 3s^23p(^2P^\circ)10s$	$g^3P - {}^1P^\circ$	2 – 1	A	106
41	20	1559.004	0.223157 – 64.36668	$3s^23p^2 - 3s^23p(^2P^\circ)10s$	$g^3P - {}^3P^\circ$	2 – 2	A	106
	30	1559.362	0.223157 – 64.35193	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$g^3P - {}^1F^\circ$	2 – 3	A	106
41	25	1559.705	0.223157 – 64.33781	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$g^3P - {}^3P^\circ$	2 – 1	A	106
41	30	1560.072	0.223157 – 64.32274	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$g^3P - {}^3P^\circ$	2 – 2	A	106
	20	1560.093	0.223157 – 64.32190	$3s^23p^2 - 3s3p^3$	$g^3P - {}^1D^\circ$	2 – 2	A	106
41	15	1560.406	0.0 – 64.08587	$3s^23p^2 - 3s^23p(^2P^\circ)10s$	$g^3P - {}^3P^\circ$	0 – 1	A	106
41	8	1560.7425	0.223157 – 64.29532	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$g^3P - {}^3D^\circ$	2 – 3		610

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
41	5	1560.934	0.223157 – 64.28743	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$g^3P - {}^3D^\circ$	2 – 1	A	106
41	30	1561.822	0.077115 – 64.10488	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$g^3P - {}^3D^\circ$	1 – 2	A	106
41	4	1562.0065	0.223157 – 64.24330	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$g^3P - {}^1D^\circ$	2 – 2		610
	1	1562.0531						370
41	5	1562.286	0.077115 – 64.08587	$3s^23p^2 - 3s^23p(^2P^\circ)10s$	$g^3P - {}^3P^\circ$	1 – 1	A	106
41	10	1562.436	0.077115 – 64.07974	$3s^23p^2 - 3s^23p(^2P^\circ)10s$	$g^3P - {}^3P^\circ$	1 – 0	A	106
41	25	1563.364	0.223157 – 64.18784	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$g^3P - {}^1F^\circ$	2 – 3	A	106
41	15	1563.886	0.077115 – 64.02042	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$g^3P - {}^1P^\circ$	1 – 1	A	106
41	8	1564.6138	0.077115 – 63.99073	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$g^3P - {}^3F^\circ$	1 – 2		610
41	20	1565.322	0.0 – 63.88465	$3s^23p^2 - 3s^23p(^2P^\circ)9s$	$g^3P - {}^1P^\circ$	0 – 1	A	106
	15	1565.395	0.223157 – 64.10488	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$g^3P - {}^3D^\circ$	2 – 2	A	106
41	10	1565.861	0.223157 – 64.08587	$3s^23p^2 - 3s^23p(^2P^\circ)10s$	$g^3P - {}^3P^\circ$	2 – 1	A	106
	10	1566.303	0.0 – 63.84465	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$g^3P - {}^3P^\circ$	0 – 1	A	106
41	5	1567.212	0.077115 – 63.88465	$3s^23p^2 - 3s^23p(^2P^\circ)9s$	$g^3P - {}^1P^\circ$	1 – 1	A	106
41	5	1567.465	0.223157 – 64.02042	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$g^3P - {}^1P^\circ$	2 – 1	A	106
37	8	1567.7263	0.077115 – 63.86384	$3s^23p^2 - 3s^23p(^2P^\circ)9s$	$g^3P - {}^3P^\circ$	1 – 2		610
	15	1567.808	0.077115 – 63.86044	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$g^3P - {}^1D^\circ$	1 – 2	A	106
40	10	1568.1963	0.077115 – 63.84465	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$g^3P - {}^3P^\circ$	1 – 1		610
40	3	1568.6182	0.0 – 63.75044	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$g^3P - {}^3D^\circ$	0 – 1		610
41	8	1569.3185	0.223157 – 63.94510	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$g^3P - {}^3F^\circ$	2 – 3		610
40	25	1570.026	0.077115 – 63.77028	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$g^3P - {}^3P^\circ$	1 – 2	A	106
40	3	1570.5175	0.077115 – 63.75044	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$g^3P - {}^3D^\circ$	1 – 1		610
41	20	1570.808	0.223157 – 63.88465	$3s^23p^2 - 3s^23p(^2P^\circ)9s$	$g^3P - {}^1P^\circ$	2 – 1	A	106
37	25	1571.321	0.223157 – 63.86384	$3s^23p^2 - 3s^23p(^2P^\circ)9s$	$g^3P - {}^3P^\circ$	2 – 2	A	106
40	10	1571.4058	0.077115 – 63.71440	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$g^3P - {}^3D^\circ$	1 – 2		610
	35	1571.796	0.223157 – 63.84465	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$g^3P - {}^3P^\circ$	2 – 1	A	106
37	30	1572.718	0.0 – 63.58423	$3s^23p^2 - 3s^23p(^2P^\circ)9s$	$g^3P - {}^3P^\circ$	0 – 1	A	106
	1	1572.9245						370
	5	1572.947					A	106
	1	1573.3483						370
40	10	1573.6350	0.223157 – 63.77028	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$g^3P - {}^3P^\circ$	2 – 2		610
40	25	1573.8840	0.223157 – 63.76026	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$g^3P - {}^3D^\circ$	2 – 3		610
40	10	1574.126	0.223157 – 63.75044	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$g^3P - {}^3D^\circ$	2 – 1	A	106
37	5	1574.625	0.077115 – 63.58423	$3s^23p^2 - 3s^23p(^2P^\circ)9s$	$g^3P - {}^3P^\circ$	1 – 1	A	106
	1	1574.7456						370
37	10	1574.810	0.077115 – 63.57685	$3s^23p^2 - 3s^23p(^2P^\circ)9s$	$g^3P - {}^3P^\circ$	1 – 0	A	106
40	30	1574.8435	0.223157 – 63.72153	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$g^3P - {}^3P^\circ$	2 – 2		610
40	45	1574.847	0.077115 – 63.57535	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$g^3P - {}^3D^\circ$	1 – 2	A	106
37	10	1575.1268	0.0 – 63.48695	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$g^3P - {}^1P^\circ$	0 – 1		610
39	40	1576.825	0.223157 – 63.64176	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$g^3P - {}^1F^\circ$	2 – 3	A	106
37	30	1577.042	0.077115 – 63.48695	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$g^3P - {}^1P^\circ$	1 – 1	A	106
37	25	1578.258	0.223157 – 63.58423	$3s^23p^2 - 3s^23p(^2P^\circ)9s$	$g^3P - {}^3P^\circ$	2 – 1	A	106
40	25	1578.478	0.223157 – 63.57535	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$g^3P - {}^3D^\circ$	2 – 2	A	106
38	12	1580.3001	0.077115 – 63.35616	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$g^3P - {}^3F^\circ$	1 – 2		610
37	5	1580.684	0.223157 – 63.48695	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$g^3P - {}^1P^\circ$	2 – 1	A	106
38	25	1583.958	0.223157 – 63.35616	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$g^3P - {}^3F^\circ$	2 – 2	A	106
37	8	1584.0207	0.0 – 63.13046	$3s^23p^2 - 3s^23p(^2P^\circ)8s$	$g^3P - {}^1P^\circ$	0 – 1		610
	6	1584.089	0.077115 – 63.20488	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$g^3P - {}^1D^\circ$	1 – 2	P	441
38	12	1584.3455	0.223157 – 63.34064	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$g^3P - {}^3F^\circ$	2 – 3		610
35	30	1584.855	0.0 – 63.09730	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$g^3P - {}^3P^\circ$	0 – 1	A	106
37	3	1585.9580	0.077115 – 63.13046	$3s^23p^2 - 3s^23p(^2P^\circ)8s$	$g^3P - {}^1P^\circ$	1 – 1		610
35	15	1586.1372	0.077115 – 63.12331	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$g^3P - {}^3P^\circ$	1 – 0		610
35	20	1586.7913	0.077115 – 63.09730	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$g^3P - {}^3P^\circ$	1 – 1		610
35	3	1586.8920	0.077115 – 63.09338	$3s^23p^2 - 3s^23p(^2P^\circ)8s$	$g^3P - {}^3P^\circ$	1 – 2		610

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
37	15	1587.7620	0.223157 – 63.20488	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$g^3P - {}^1D^\circ$	2 – 2		610
35	25	1588.731	0.077115 – 63.02042	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$g^3P - {}^3P^\circ$	1 – 2	A	106
35	15	1589.1733	0.0 – 62.92580	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$g^3P - {}^3D^\circ$	0 – 1		610
37	7	1589.6399	0.223157 – 63.13046	$3s^23p^2 - 3s^23p(^2P^\circ)8s$	$g^3P - {}^1P^\circ$	2 – 1		610
35	20	1590.4768	0.223157 – 63.09730	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$g^3P - {}^3P^\circ$	2 – 1		610
35	15	1590.5763	0.223157 – 63.09338	$3s^23p^2 - 3s^23p(^2P^\circ)8s$	$g^3P - {}^3P^\circ$	2 – 2		610
35	20	1591.1232	0.077115 – 62.92580	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$g^3P - {}^3D^\circ$	1 – 1		610
35		1591.24	0.077115 – 62.92108	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$g^3P - {}^3P^\circ$	1 – 2		507
35	20	1592.0200	0.0 – 62.81326	$3s^23p^2 - 3s^23p(^2P^\circ_{1/2})8s$	$g^3P - (\frac{1}{2},\frac{1}{2})^\circ$	0 – 1		610
35	60	1592.4234	0.223157 – 63.02042	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$g^3P - {}^3P^\circ$	2 – 2		610
	1	1593.177					A	106
		1593.978	0.077115 – 62.81326	$3s^23p^2 - 3s^23p(^2P^\circ_{1/2})8s$	$g^3P - (\frac{1}{2},\frac{1}{2})^\circ$	1 – 1	P	441
35	15	1594.147	0.077115 – 62.80665	$3s^23p^2 - 3s^23p(^2P^\circ_{1/2})8s$	$g^3P - (\frac{1}{2},\frac{1}{2})^\circ$	1 – 0	A	106
35	70	1594.5655	0.223157 – 62.93614	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$g^3P - {}^3D^\circ$	2 – 3		610
35	10	1594.832	0.223157 – 62.92580	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$g^3P - {}^3D^\circ$	2 – 1	A	106
35	70	1594.9493	0.223157 – 62.92108	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$g^3P - {}^3P^\circ$	2 – 2		610
33	30	1595.7552	0.0 – 62.66625	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$g^3P - {}^1P^\circ$	0 – 1		610
35	10	1597.700	0.223157 – 62.81326	$3s^23p^2 - 3s^23p(^2P^\circ_{1/2})8s$	$g^3P - (\frac{1}{2},\frac{1}{2})^\circ$	2 – 1	A	106
33	50	1597.720	0.077115 – 62.66625	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$g^3P - {}^1P^\circ$	1 – 1	A	106
	20	1597.7357	0.077115 – 62.66625	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$g^3P - {}^1P^\circ$	1 – 1		370
35	60	1597.9620	0.223157 – 62.80286	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$g^3P - {}^1F^\circ$	2 – 3		610
35	1	1598.674	0.223157 – 62.77499	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$g^3P - {}^3D^\circ$	2 – 2	A	106
33	5	1601.459	0.223157 – 62.66625	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$g^3P - {}^1P^\circ$	2 – 1	A	106
33	20	1605.8370	0.077115 – 62.34993	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$g^3P - {}^3F^\circ$	1 – 2		610
33	25	1608.9157	0.223157 – 62.376820	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$g^3P - {}^3F^\circ$	2 – 3		610
32	5	1610.829	0.077115 – 62.156816	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$g^3P - {}^1D^\circ$	1 – 2	A	106
30	30	1614.5665	0.0 – 61.93613	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$g^3P - {}^3P^\circ$	0 – 1		610
32	25	1614.6309	0.223157 – 62.156816	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$g^3P - {}^1D^\circ$	2 – 2		610
30	50	1615.9488	0.077115 – 61.96026	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$g^3P - {}^3P^\circ$	1 – 0		610
31	5	1615.990	0.0 – 61.88160	$3s^23p^2 - 3s^23p(^2P^\circ)7s$	$g^3P - (\frac{3}{2},\frac{1}{2})^\circ$	0 – 1	A	106
30	70	1616.5794	0.077115 – 61.93613	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$g^3P - {}^3P^\circ$	1 – 1		610
31	8	1618.0054	0.077115 – 61.88160	$3s^23p^2 - 3s^23p(^2P^\circ)7s$	$g^3P - (\frac{3}{2},\frac{1}{2})^\circ$	1 – 1		610
30	8	1619.0458	0.077115 – 61.84194	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$g^3P - {}^3P^\circ$	1 – 2		610
29	15	1619.5266	0.077115 – 61.823550	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})7s$	$g^3P - (\frac{3}{2},\frac{1}{2})^\circ$	1 – 2		610
30	60	1620.4049	0.223157 – 61.93613	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$g^3P - {}^3P^\circ$	2 – 1		610
31	1	1621.838	0.223157 – 61.88160	$3s^23p^2 - 3s^23p(^2P^\circ)7s$	$g^3P - (\frac{3}{2},\frac{1}{2})^\circ$	2 – 1	A	106
30	90	1622.8806	0.223157 – 61.84194	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$g^3P - {}^3P^\circ$	2 – 2		610
29	8	1623.3663	0.223157 – 61.823550	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})7s$	$g^3P - (\frac{3}{2},\frac{1}{2})^\circ$	2 – 2		610
29	10	1623.4971	0.0 – 61.59543	$3s^23p^2 - 3s^23p(^2P^\circ_{1/2})7s$	$g^3P - (\frac{1}{2},\frac{1}{2})^\circ$	0 – 1		610
29	35	1625.5320	0.077115 – 61.59543	$3s^23p^2 - 3s^23p(^2P^\circ_{1/2})7s$	$g^3P - (\frac{1}{2},\frac{1}{2})^\circ$	1 – 1		610
27	70	1625.7051	0.0 – 61.51177	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$g^3P - {}^3D^\circ$	0 – 1		610
29	20	1627.0498	0.077115 – 61.53805	$3s^23p^2 - 3s^23p(^2P^\circ_{1/2})7s$	$g^3P - (\frac{1}{2},\frac{1}{2})^\circ$	1 – 0		610
27	30	1627.7459	0.077115 – 61.51177	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$g^3P - {}^3D^\circ$	1 – 1		610
29	15	1629.404	0.223157 – 61.59543	$3s^23p^2 - 3s^23p(^2P^\circ_{1/2})7s$	$g^3P - (\frac{1}{2},\frac{1}{2})^\circ$	2 – 1	A	106
27	50	1629.439	0.077115 – 61.44786	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$g^3P - {}^3D^\circ$	1 – 2	A	106
27	100	1629.9477	0.223157 – 61.574814	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$g^3P - {}^3D^\circ$	2 – 3		610
26	35	1631.170	0.0 – 61.30567	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$g^3P - {}^1P^\circ$	0 – 1	A	106
27	10	1631.623	0.223157 – 61.51177	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$g^3P - {}^3D^\circ$	2 – 1	A	106
26	30	1633.224	0.077115 – 61.30567	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$g^3P - {}^1P^\circ$	1 – 1	A	106
27	40	1633.3277	0.223157 – 61.44786	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$g^3P - {}^3D^\circ$	2 – 2		610
28	90	1633.9851	0.223157 – 61.42323	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$g^3P - {}^1F^\circ$	2 – 3		610
104	4	1637.0106	33.326053 – 94.41301	$3s3p^3 - 3s3p^2(^4P)3d$	${}^5S^\circ - {}^5P$	2 – 1		370
26	5	1637.128	0.223157 – 61.30567	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$g^3P - {}^1P^\circ$	2 – 1	A	106
104	2	1638.2823	33.326053 – 94.36559	$3s3p^3 - 3s3p^2(^4P)3d$	${}^5S^\circ - {}^5P$	2 – 2		370

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
104	1	1640.267	33.326053 – 94.29173	$3s3p^3 - 3s3p^2(^4P)3d$	$^5S^\circ - ^5P$	2 – 3		370
25	25	1651.0279	0.077115 – 60.645441	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$g^3P - ^3F^\circ$	1 – 2		610
25	40	1653.3760	0.223157 – 60.705464	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$g^3P - ^3F^\circ$	2 – 3		610
25	15	1655.017	0.223157 – 60.645441	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$g^3P - ^3F^\circ$	2 – 2	A	106
24	15	1660.4748	0.077115 – 60.300860	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$g^3P - ^1D^\circ$	1 – 2		610
24	35	1664.5111	0.223157 – 60.300860	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$g^3P - ^1D^\circ$	2 – 2		610
23	60	1666.3762	0.0 – 60.010458	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^3P^\circ$	0 – 1		610
23	70	1667.6288	0.077115 – 60.04250	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^3P^\circ$	1 – 0		610
23	70	1668.5204	0.077115 – 60.010458	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^3P^\circ$	1 – 1		610
23	40	1671.1168	0.077115 – 59.917336	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^3P^\circ$	1 – 2		610
23	80	1672.5961	0.223157 – 60.010458	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^3P^\circ$	2 – 1		610
23	200	1675.2053	0.223157 – 59.917336	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^3P^\circ$	2 – 2		610
	1	1675.859	6.298850 – 65.96954	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})41d$	$^1D - ^3D^\circ$	2 – 3	A	106
	1	1675.943	6.298850 – 65.96622	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})40d$	$^1D - ^3D^\circ$	2 – 3	A	106
	1	1676.025					A	106
	1	1676.060	6.298850 – 65.96263	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})39d$	$^1D - ^3D^\circ$	2 – 3	A	106
	1	1676.160	6.298850 – 65.95880	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})38d$	$^1D - ^3D^\circ$	2 – 3	A	106
	1	1676.280	6.298850 – 65.95476	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})37d$	$^1D - ^3D^\circ$	2 – 3	A	106
	1	1676.408	6.298850 – 65.95017	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})36d$	$^1D - ^3D^\circ$	2 – 3	A	106
	1	1676.550	6.298850 – 65.94519	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})35d$	$^1D - ^3D^\circ$	2 – 3	A	106
21	15	1676.8207	0.0 – 59.636667	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})6s$	$g^3P - (\frac{3}{2},\frac{1}{2})^\circ$	0 – 1		610
	1	1677.054	6.298850 – 65.92737	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})32d$	$^1D - ^3D^\circ$	2 – 3	A	106
	1	1677.247	6.298850 – 65.92045	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})31d$	$^1D - ^3D^\circ$	2 – 3	A	106
	1	1677.465	6.298850 – 65.91260	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})30d$	$^1D - ^3D^\circ$	2 – 3	A	106
	1	1677.663					A	106
	1	1677.705	6.298850 – 65.90412	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})29d$	$^1D - ^3D^\circ$	2 – 3	A	106
	5	1678.276	6.298850 – 65.88380	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})27d$	$^1D - ^3D^\circ$	2 – 3	A	106
	5	1678.613	6.298850 – 65.87188	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})26d$	$^1D - ^3D^\circ$	2 – 3	A	106
22	5	1678.991	6.298850 – 65.85850	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})25d$	$^1D - ^3D^\circ$	2 – 3	A	106
	5	1679.413	6.298850 – 65.84345	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})24d$	$^1D - ^3D^\circ$	2 – 3	A	106
	1	1680.322	6.298850 – 65.81124	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})24s$	$^1D - ^1P^\circ$	2 – 1	A	106
	5	1680.444	6.298850 – 65.80694	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})22d$	$^1D - ^3D^\circ$	2 – 3	A	106
	1	1680.935	6.298850 – 65.78956	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})23s$	$^1D - ^1P^\circ$	2 – 1	A	106
	5	1681.074	6.298850 – 65.78465	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})21d$	$^1D - ^3D^\circ$	2 – 3	A	106
	1	1681.639	6.298850 – 65.76403	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})22s$	$^1D - ^1P^\circ$	2 – 1	A	106
	5	1681.802	6.298850 – 65.75886	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})20d$	$^1D - ^3D^\circ$	2 – 3	A	106
	1	1682.448	6.298850 – 65.73606	$3s^23p^2 - 3s^23p(^2P^\circ)21s$	$^1D - ^1P^\circ$	2 – 1	A	106
21	70	1682.6734	0.077115 – 59.506359	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})6s$	$g^3P - (\frac{3}{2},\frac{1}{2})^\circ$	1 – 2		610
22	3	1683.1189	0.223157 – 59.636667	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})6s$	$g^3P - (\frac{3}{2},\frac{1}{2})^\circ$	2 – 1		610
	1	1683.423	6.298850 – 65.70156	$3s^23p^2 - 3s^23p(^2P^\circ)20s$	$^1D - ^1P^\circ$	2 – 1	A	106
	1	1683.590	6.298850 – 65.69520	$3s^23p^2 - 3s^23p(^2P^\circ)18d$	$^1D - ^3P^\circ$	2 – 2	A	106
	10	1683.643	6.298850 – 65.69390	$3s^23p^2 - 3s^23p(^2P^\circ)18d$	$^1D - ^3D^\circ$	2 – 3	A	106
	1	1683.722					A	106
	1	1683.787					A	106
	1	1683.851					A	106
	1	1684.235	6.298850 – 65.67298	$3s^23p^2 - 3s^23p(^2P^\circ)18d$	$^1D - ^3F^\circ$	2 – 2	A	106
	1	1684.408					A	106
	5	1684.546	6.298850 – 65.66200	$3s^23p^2 - 3s^23p(^2P^\circ)19s$	$^1D - ^1P^\circ$	2 – 1	A	106
	5	1684.674					A	106
	10	1684.815	6.298850 – 65.65239	$3s^23p^2 - 3s^23p(^2P^\circ)17d$	$^1D - ^3D^\circ$	2 – 3	A	106
	5	1684.959	6.298850 – 65.64743	$3s^23p^2 - 3s^23p(^2P^\circ)17d$	$^1D - ^3F^\circ$	2 – 3	A	106
	5	1685.092					A	106
	1	1685.307					A	106
	1	1685.505	6.298850 – 65.62827	$3s^23p^2 - 3s^23p(^2P^\circ)17d$	$^1D - ^3F^\circ$	2 – 2	A	106

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	1685.628					A	106
	1	1685.864					A	106
	1	1685.910	6.298850 – 65.61395	$3s^23p^2 - 3s^23p(^2P^\circ)18s$	$^1D - ^1P^\circ$	2 – 1	A	106
	0	1686.233	6.298850 – 65.60264	$3s^23p^2 - 3s^23p(^2P^\circ)16d$	$^1D - ^3D^\circ$	2 – 3	P	441
	5	1686.372					A	106
	5	1686.591	6.298850 – 65.59007	$3s^23p^2 - 3s^23p(^2P^\circ)16d$	$^1D - ^3F^\circ$	2 – 3	A	106
21	100	1686.8185	0.223157 – 59.506359	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})6s$	$g^3P - (\frac{3}{2},\frac{1}{2})^\circ$	2 – 2		610
	1	1686.993	6.298850 – 65.57591	$3s^23p^2 - 3s^23p(^2P^\circ)16d$	$^1D - ^3F^\circ$	2 – 2	A	106
21	20	1687.0923	0.0 – 59.273575	$3s^23p^2 - 3s^23p(^2P^\circ_{1/2})6s$	$g^3P - (\frac{1}{2},\frac{1}{2})^\circ$	0 – 1		610
	5	1687.192	6.298850 – 65.56883	$3s^23p^2 - 3s^23p(^2P^\circ)25d$	$^1D - ^1F^\circ$	2 – 3	A	106
	1	1687.299					A	106
	1	1687.457					A	106
	1	1687.521	6.298850 – 65.55735	$3s^23p^2 - 3s^23p(^2P^\circ)17s$	$^1D - ^1P^\circ$	2 – 1	A	106
	5	1687.595	6.298850 – 65.55477	$3s^23p^2 - 3s^23p(^2P^\circ)24d$	$^1D - ^1F^\circ$	2 – 3	A	106
	10	1687.929	6.298850 – 65.54302	$3s^23p^2 - 3s^23p(^2P^\circ)15d$	$^1D - ^3D^\circ$	2 – 3	A	106
	5	1688.016	6.298850 – 65.53999	$3s^23p^2 - 3s^23p(^2P^\circ)23d$	$^1D - ^1F^\circ$	2 – 3	A	106
	5	1688.352	6.298850 – 65.52819	$3s^23p^2 - 3s^23p(^2P^\circ)15d$	$^1D - ^3F^\circ$	2 – 3	A	106
	5	1688.962	6.298850 – 65.50681	$3s^23p^2 - 3s^23p(^2P^\circ)15d$	$^1D - ^3F^\circ$	2 – 2	A	106
21	60	1689.2902	0.077115 – 59.273575	$3s^23p^2 - 3s^23p(^2P^\circ_{1/2})6s$	$g^3P - (\frac{1}{2},\frac{1}{2})^\circ$	1 – 1		610
	5	1689.326	6.298850 – 65.49405	$3s^23p^2 - 3s^23p(^2P^\circ)21d$	$^1D - ^1F^\circ$	2 – 3	A	106
	1	1689.487					A	106
	5	1689.536	6.298850 – 65.48667	$3s^23p^2 - 3s^23p(^2P^\circ)16s$	$^1D - ^1P^\circ$	2 – 1	A	106
	15	1689.969	6.298850 – 65.47153	$3s^23p^2 - 3s^23p(^2P^\circ)14d$	$^1D - ^3D^\circ$	2 – 3	A	106
	10	1690.020	6.298850 – 65.46978	$3s^23p^2 - 3s^23p(^2P^\circ)20d$	$^1D - ^1F^\circ$	2 – 3	A	106
	1	1690.069	6.298850 – 65.46800	$3s^23p^2 - 3s^23p(^2P^\circ)14d$	$^1D - ^3D^\circ$	2 – 1	A	106
	5	1690.491	6.298850 – 65.45323	$3s^23p^2 - 3s^23p(^2P^\circ)14d$	$^1D - ^3F^\circ$	2 – 3	A	106
21	60	1690.7889	0.077115 – 59.22111	$3s^23p^2 - 3s^23p(^2P^\circ_{1/2})6s$	$g^3P - (\frac{1}{2},\frac{1}{2})^\circ$	1 – 0		610
	1	1691.065	6.298850 – 65.43314	$3s^23p^2 - 3s^23p(^2P^\circ)19d$	$^1D - ^1F^\circ$	2 – 3	A	106
	5	1691.352	6.298850 – 65.42314	$3s^23p^2 - 3s^23p(^2P^\circ)14d$	$^1D - ^3F^\circ$	2 – 2	A	106
	1	1691.612	6.298850 – 65.4140	$3s^23p^2 - 3s^23p(^2P^\circ)20s$	$^1D - ^3P^\circ$	2 – 1	A	106
	1	1691.802	6.298850 – 65.40715	$3s^23p^2 - 3s^23p(^2P^\circ)18d$	$^1D - ^3D^\circ$	2 – 2	A	106
	10	1691.949	6.298850 – 65.40224	$3s^23p^2 - 3s^23p(^2P^\circ)18d$	$^1D - ^1F^\circ$	2 – 3	A	106
	5	1692.024	6.298850 – 65.39960	$3s^23p^2 - 3s^23p(^2P^\circ)15s$	$^1D - ^1P^\circ$	2 – 1	A	106
	1	1692.189	6.298850 – 65.39391	$3s^23p^2 - 3s^23p(^2P^\circ)18d$	$^1D - ^1D^\circ$	2 – 2	A	106
	20	1692.609	6.298850 – 65.37919	$3s^23p^2 - 3s^23p(^2P^\circ)13d$	$^1D - ^3D^\circ$	2 – 3	A	106
	5	1692.640	6.298850 – 65.37802	$3s^23p^2 - 3s^23p(^2P^\circ)13d$	$^1D - ^3D^\circ$	2 – 1	A	106
	20	1692.875	6.298850 – 65.36994	$3s^23p^2 - 3s^23p(^2P^\circ)17d$	$^1D - ^1F^\circ$	2 – 3	A	106
18	125	1693.2934	0.0 – 59.056508	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	0 – 1		610
21	60	1693.4681	0.223157 – 59.273575	$3s^23p^2 - 3s^23p(^2P^\circ_{1/2})6s$	$g^3P - (\frac{1}{2},\frac{1}{2})^\circ$	2 – 1		610
	5	1694.010	6.298850 – 65.33038	$3s^23p^2 - 3s^23p(^2P^\circ)13d$	$^1D - ^3F^\circ$	2 – 2	A	106
	1	1694.137	6.298850 – 65.32582	$3s^23p^2 - 3s^23p(^2P^\circ)18s$	$^1D - ^3P^\circ$	2 – 1	A	106
	5	1694.542	6.298850 – 65.31178	$3s^23p^2 - 3s^23p(^2P^\circ)16d$	$^1D - ^3D^\circ$	2 – 2	A	106
	10	1694.671	6.298850 – 65.30730	$3s^23p^2 - 3s^23p(^2P^\circ)16d$	$^1D - ^1F^\circ$	2 – 3	A	106
	1	1695.025	6.298850 – 65.29503	$3s^23p^2 - 3s^23p(^2P^\circ)16d$	$^1D - ^1D^\circ$	2 – 2	A	106
	1	1695.070					A	106
	5	1695.133	6.298850 – 65.29126	$3s^23p^2 - 3s^23p(^2P^\circ)14s$	$^1D - ^1P^\circ$	2 – 1	A	106
18	90	1695.5074	0.077115 – 59.056508	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	1 – 1		610
	1	1695.66	6.298850 – 65.27241	$3s^23p^2 - 3s^23p(^2P^\circ)12d$	$^1D - ^3P^\circ$	2 – 2	A	106
	1	1695.771	6.298850 – 65.26880	$3s^23p^2 - 3s^23p(^2P^\circ)17s$	$^1D - ^3P^\circ$	2 – 1	A	106
	20	1695.891	6.298850 – 65.26491	$3s^23p^2 - 3s^23p(^2P^\circ)12d$	$^1D - ^3D^\circ$	2 – 3	A	106
	1	1695.982	6.298850 – 65.26150	$3s^23p^2 - 3s^23p(^2P^\circ)12d$	$^1D - ^3D^\circ$	2 – 1	A	106
	15	1696.065	6.298850 – 65.25883	$3s^23p^2 - 3s^23p(^2P^\circ)15d$	$^1D - ^1F^\circ$	2 – 3	A	106
18	200	1696.2065	0.077115 – 59.03219	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	1 – 2		610
	1	1696.994	6.298850 – 65.22660	$3s^23p^2 - 3s^23p(^2P^\circ)12d$	$^1D - ^3F^\circ$	2 – 3	A	106

Si I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	5	1697.652	6.298850 – 65.20373	$3s^23p^2 - 3s^23p(^2P^\circ)12d$	$^1D - ^3F^\circ$	2 – 2	A	106
	1	1697.818	6.298850 – 65.19798	$3s^23p^2 - 3s^23p(^2P^\circ)16s$	$^1D - ^3P^\circ$	2 – 1	A	106
18	250	1697.9409	0.223157 – 59.11803	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	2 – 3		610
	1	1698.209	6.298850 – 65.18424	$3s^23p^2 - 3s^23p(^2P^\circ)14d$	$^1D - ^1P^\circ$	2 – 1	A	106
	5	1698.403	6.298850 – 65.17770	$3s^23p^2 - 3s^23p(^2P^\circ)14d$	$^1D - ^3D^\circ$	2 – 2	A	106
	15	1698.606	6.298850 – 65.17067	$3s^23p^2 - 3s^23p(^2P^\circ)14d$	$^1D - ^1F^\circ$	2 – 3	A	106
	1	1699.122	6.298850 – 65.15274	$3s^23p^2 - 3s^23p(^2P^\circ)14d$	$^1D - ^1D^\circ$	2 – 2	A	106
	5	1699.155	6.298850 – 65.15167	$3s^23p^2 - 3s^23p(^2P^\circ)13s$	$^1D - ^1P^\circ$	2 – 1	A	106
18	10	1699.7162	0.223157 – 59.056508	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	2 – 1		610
	1	1699.931	6.298850 – 65.12526	$3s^23p^2 - 3s^23p(^2P^\circ)11d$	$^1D - ^3P^\circ$	2 – 2	A	106
	25	1700.137	6.298850 – 65.11765	$3s^23p^2 - 3s^23p(^2P^\circ)11d$	$^1D - ^3D^\circ$	2 – 3	A	106
	1	1700.15	6.298850 – 65.11765	$3s^23p^2 - 3s^23p(^2P^\circ)11d$	$^1D - ^3D^\circ$	2 – 3	A	106
18	90	1700.4193	0.223157 – 59.03219	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	2 – 2		610
	20	1700.573	6.298850 – 65.10252	$3s^23p^2 - 3s^23p(^2P^\circ)13d$	$^1D - ^1F^\circ$	2 – 3	A	106
16	80	1700.6360	0.0 – 58.801529	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^1P^\circ$	0 – 1		610
	1	1700.863	6.298850 – 65.09205	$3s^23p^2 - 3s^23p(^2P^\circ)13d$	$^1D - ^1P^\circ$	2 – 1	A	106
	1	1702.6978						370
	10	1702.811	6.298850 – 65.02530	$3s^23p^2 - 3s^23p(^2P^\circ)11d$	$^1D - ^3F^\circ$	2 – 2	A	106
16	70	1702.8694	0.077115 – 58.801529	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^1P^\circ$	1 – 1		610
	5	1703.480	6.298850 – 65.00216	$3s^23p^2 - 3s^23p(^2P^\circ)14s$	$^1D - ^3P^\circ$	2 – 1	A	106
	5	1704.055	6.298850 – 64.98242	$3s^23p^2 - 3s^23p(^2P^\circ)12d$	$^1D - ^1P^\circ$	2 – 1	A	106
	1	1704.195					A	106
17	100	1704.4416	0.223157 – 58.89340	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^1F^\circ$	2 – 3		610
	5	1704.492	6.298850 – 64.96734	$3s^23p^2 - 3s^23p(^2P^\circ)12s$	$^1D - ^1P^\circ$	2 – 1	A	106
	30	1704.560	6.298850 – 64.96503	$3s^23p^2 - 3s^23p(^2P^\circ)12d$	$^1D - ^1F^\circ$	2 – 3	A	106
	35	1705.755	6.298850 – 64.92397	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$^1D - ^3D^\circ$	2 – 3	A	106
	5	1705.866	6.298850 – 64.92015	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$^1D - ^3D^\circ$	2 – 1	A	106
	1	1705.967	6.298850 – 64.91664	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$^1D - ^3P^\circ$	2 – 2	A	106
	30	1706.994	6.298850 – 64.88145	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$^1D - ^3F^\circ$	2 – 3	A	106
16	8	1707.1148	0.223157 – 58.801529	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^1P^\circ$	2 – 1		610
	5	1707.589	6.298850 – 64.86102	$3s^23p^2 - 3s^23p(^2P^\circ)13s$	$^1D - ^3P^\circ$	2 – 1	A	106
	5	1707.750	6.298850 – 64.85548	$3s^23p^2 - 3s^23p(^2P^\circ)11d$	$^1D - ^3D^\circ$	2 – 2	A	106
	5	1708.417	6.298850 – 64.83270	$3s^23p^2 - 3s^23p(^2P^\circ)11d$	$^1D - ^1P^\circ$	2 – 1	A	106
	25	1709.502	6.298850 – 64.79543	$3s^23p^2 - 3s^23p(^2P^\circ)11d$	$^1D - ^1F^\circ$	2 – 3	A	106
	15	1710.579	6.298850 – 64.75861	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$^1D - ^3F^\circ$	2 – 2	A	106
	1	1710.744						370
	20	1711.595	6.298850 – 64.72388	$3s^23p^2 - 3s^23p(^2P^\circ)11s$	$^1D - ^1P^\circ$	2 – 1	A	106
81	45	1713.408	6.298850 – 64.66209	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$^1D - ^3D^\circ$	2 – 3	A	106
81	1	1713.616	6.298850 – 64.65497	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$^1D - ^3D^\circ$	2 – 1	A	106
	10	1713.810					A	106
	35	1713.837	6.298850 – 64.64746	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$^1D - ^1F^\circ$	2 – 3	A	106
81	10	1713.858	6.298850 – 64.64673	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$^1D - ^3D^\circ$	2 – 2	P	441
	5	1714.182	6.298850 – 64.63582	$3s^23p^2 - 3s^23p(^2P^\circ)10d$	$^1D - ^1P^\circ$	2 – 1	A	106
	20	1718.514	6.298850 – 64.48872	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$^1D - ^3F^\circ$	2 – 2	A	106
	15	1720.189	6.298850 – 64.43203	$3s^23p^2 - 3s^23p(^2P^\circ)11s$	$^1D - ^3P^\circ$	2 – 1	A	106
81	1	1721.199	6.298850 – 64.39819	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$^1D - ^3D^\circ$	2 – 2	A	106
	10	1721.326	6.298850 – 64.39366	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$^1D - ^1P^\circ$	2 – 1	A	106
81	10	1721.841	6.298850 – 64.37618	$3s^23p^2 - 3s^23p(^2P^\circ)10s$	$^1D - ^1P^\circ$	2 – 1	A	106
	45	1722.562	6.298850 – 64.35193	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$^1D - ^1F^\circ$	2 – 3	A	106
81	40	1724.243	6.298850 – 64.29532	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$^1D - ^3D^\circ$	2 – 3	A	106
81	10	1724.477	6.298850 – 64.28743	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$^1D - ^3D^\circ$	2 – 1	A	106
	5	1725.791	6.298850 – 64.24330	$3s^23p^2 - 3s^23p(^2P^\circ)9d$	$^1D - ^1D^\circ$	2 – 2	A	106
81	30	1727.444	6.298850 – 64.18784	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$^1D - ^1F^\circ$	2 – 3	A	106
81	20	1729.923	6.298850 – 64.10488	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$^1D - ^3D^\circ$	2 – 2	A	106

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	1730.492	6.298850 – 64.08587	$3s^23p^2 - 3s^23p(^2P^\circ)10s$	$^1D - ^3P^\circ$	2 – 1	A	106
	10	1732.453	6.298850 – 64.02042	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$^1D - ^1P^\circ$	2 – 1	A	106
81	15	1733.344	6.298850 – 63.99073	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$^1D - ^3F^\circ$	2 – 2	A	106
81	50	1734.718	6.298850 – 63.94510	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$^1D - ^3F^\circ$	2 – 3	A	106
81	25	1736.539	6.298850 – 63.88465	$3s^23p^2 - 3s^23p(^2P^\circ)9s$	$^1D - ^1P^\circ$	2 – 1	A	106
	5	1737.269	6.298850 – 63.86044	$3s^23p^2 - 3s^23p(^2P^\circ)8d$	$^1D - ^1D^\circ$	2 – 2	A	106
	5	1739.993	6.298850 – 63.77028	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$^1D - ^3P^\circ$	2 – 2	A	106
80	20	1740.2988	6.298850 – 63.76026	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$^1D - ^3D^\circ$	2 – 3		610
80	20	1740.597	6.298850 – 63.75044	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$^1D - ^3D^\circ$	2 – 1	A	106
79	20	1743.8941	6.298850 – 63.64176	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$^1D - ^1F^\circ$	2 – 3		610
15	25	1745.3475	0.077115 – 57.372297	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^3F^\circ$	1 – 2		610
77	5	1745.646	6.298850 – 63.58423	$3s^23p^2 - 3s^23p(^2P^\circ)9s$	$^1D - ^3P^\circ$	2 – 1	A	106
80	5	1745.916	6.298850 – 63.57535	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$^1D - ^3D^\circ$	2 – 2	A	106
15	40	1747.4141	0.223157 – 57.450580	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^3F^\circ$	2 – 3		610
	5	1748.616	6.298850 – 63.48695	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$^1D - ^1P^\circ$	2 – 1	A	106
15	3	1749.8076	0.223157 – 57.372297	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^3F^\circ$	2 – 2		610
77	10	1752.624	6.298850 – 63.35616	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$^1D - ^3F^\circ$	2 – 2	A	106
77	20	1753.101	6.298850 – 63.34064	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$^1D - ^3F^\circ$	2 – 3	A	106
77	3	1757.2827	6.298850 – 63.20488	$3s^23p^2 - 3s^23p(^2P^\circ)7d$	$^1D - ^1D^\circ$	2 – 2		610
77	10	1759.5831	6.298850 – 63.13046	$3s^23p^2 - 3s^23p(^2P^\circ)8s$	$^1D - ^1P^\circ$	2 – 1		610
	1	1760.600	6.298850 – 63.09730	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$^1D - ^3P^\circ$	2 – 1	A	106
	1	1762.999	6.298850 – 63.02042	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$^1D - ^3P^\circ$	2 – 2	A	106
14	80	1763.6607	0.0 – 56.70025	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P^\circ$	0 – 1		610
14	90	1765.0296	0.077115 – 56.73338	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P^\circ$	1 – 0		610
76	50	1765.6215	6.298850 – 62.93614	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$^1D - ^3D^\circ$	2 – 3		610
76	10	1765.945	6.298850 – 62.92580	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$^1D - ^3D^\circ$	2 – 1	A	106
14	100	1766.0627	0.077115 – 56.70025	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P^\circ$	1 – 1		610
14	50	1766.3541	0.077115 – 56.690903	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P^\circ$	1 – 2		610
75	5	1769.461	6.298850 – 62.81326	$3s^23p^2 - 3s^23p(^2P^\circ_{1/2})8s$	$^1D - (\frac{1}{2},\frac{1}{2})^\circ$	2 – 1	A	106
75	70	1769.7859	6.298850 – 62.80286	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$^1D - ^1F^\circ$	2 – 3		610
14	125	1770.6295	0.223157 – 56.70025	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P^\circ$	2 – 1		610
76	10	1770.659	6.298850 – 62.77499	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$^1D - ^3D^\circ$	2 – 2	P	441
14	300	1770.9223	0.223157 – 56.690903	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P^\circ$	2 – 2		610
13	12	1772.2254	0.077115 – 56.503346	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^1D^\circ$	1 – 2		610
73	5	1774.076	6.298850 – 62.66625	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$^1D - ^1P^\circ$	2 – 1	A	106
13	150	1776.8241	0.223157 – 56.503346	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^1D^\circ$	2 – 2		610
73	25	1783.2315	6.298850 – 62.376820	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$^1D - ^3F^\circ$	2 – 3		610
73	8	1784.0884	6.298850 – 62.34993	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$^1D - ^3F^\circ$	2 – 2		610
72	25	1790.2548	6.298850 – 62.156816	$3s^23p^2 - 3s^23p(^2P^\circ)6d$	$^1D - ^1D^\circ$	2 – 2		610
70	6	1797.3560	6.298850 – 61.93613	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$^1D - ^3P^\circ$	2 – 1		610
71	30	1799.1193	6.298850 – 61.88160	$3s^23p^2 - 3s^23p(^2P^\circ)7s$	$^1D - (\frac{3}{2},\frac{1}{2})^\circ$	2 – 1		610
70	1	1800.406	6.298850 – 61.84194	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$^1D - ^3P^\circ$	2 – 2	A	106
69	6	1801.003	6.298850 – 61.823550	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})7s$	$^1D - (\frac{3}{2},\frac{1}{2})^\circ$	2 – 2	P	441
69	20	1808.4301	6.298850 – 61.59543	$3s^23p^2 - 3s^23p(^2P^\circ_{1/2})7s$	$^1D - (\frac{1}{2},\frac{1}{2})^\circ$	2 – 1		610
67	100	1809.1047	6.298850 – 61.574814	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$^1D - ^3D^\circ$	2 – 3		610
68	1	1813.27	6.298850 – 61.44786	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$^1D - ^3D^\circ$	2 – 2		507
68	250	1814.0794	6.298850 – 61.42323	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$^1D - ^1F^\circ$	2 – 3		610
66	10	1817.9562	6.298850 – 61.30567	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$^1D - ^1P^\circ$	2 – 1		610
12	30	1822.4553	0.0 – 54.871031	$3s^23p^2 - 3s^23p(^2P^\circ)5s$	$g^3P - ^1P^\circ$	0 – 1		610
12	10	1825.021	0.077115 – 54.871031	$3s^23p^2 - 3s^23p(^2P^\circ)5s$	$g^3P - ^1P^\circ$	1 – 1	A	106
12	10	1829.8975	0.223157 – 54.871031	$3s^23p^2 - 3s^23p(^2P^\circ)5s$	$g^3P - ^1P^\circ$	2 – 1		610
11	200	1836.5102	0.077115 – 54.528220	$3s^23p^2 - 3s^23p(^2P^\circ)5s$	$g^3P - ^3P^\circ$	1 – 2		610
65	40	1838.0120	6.298850 – 60.705464	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$^1D - ^3F^\circ$	2 – 3		610
65	8	1840.0418	6.298850 – 60.645441	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$^1D - ^3F^\circ$	2 – 2		610

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
11	125	1841.1520	0.0 – 54.313818	$3s^23p^2 - 3s^23p(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	0 – 1		610
11	400	1841.4490	0.223157 – 54.528220	$3s^23p^2 - 3s^23p(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	2 – 2		610
11	200	1843.7700	0.077115 – 54.313818	$3s^23p^2 - 3s^23p(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	1 – 1		610
10	200	1845.5203	0.0 – 54.185264	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	0 – 1		610
11	200	1846.1118	0.077115 – 54.245020	$3s^23p^2 - 3s^23p(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	1 – 0		610
10	300	1847.4737	0.077115 – 54.205090	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		610
10	200	1848.1504	0.077115 – 54.185264	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 1		610
11	250	1848.7480	0.223157 – 54.313818	$3s^23p^2 - 3s^23p(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	2 – 1		610
10	400	1850.6719	0.223157 – 54.257582	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		610
64	70	1851.7829	6.298850 – 60.300860	$3s^23p^2 - 3s^23p(^2P^\circ)5d$	$^1D - {}^1D^\circ$	2 – 2		610
10	250	1852.4717	0.223157 – 54.205090	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 2		610
10	35	1853.1521	0.223157 – 54.185264	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 1		610
	1	1861.693					A	106
63	1	1861.799	6.298850 – 60.010458	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$^1D - {}^3P^\circ$	2 – 1	A	106
63	1	1865.028	6.298850 – 59.917336	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$^1D - {}^3P^\circ$	2 – 2	A	106
9	25	1873.1036	0.0 – 53.387334	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^1P^\circ$	0 – 1		610
62	175	1874.8423	6.298850 – 59.636667	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})6s$	$^1D - (\frac{3}{2},\frac{1}{2})^\circ$	2 – 1		610
9	30	1875.8129	0.077115 – 53.387334	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^1P^\circ$	1 – 1		610
61	7	1879.432	6.298850 – 59.506359	$3s^23p^2 - 3s^23p(^2P^\circ_{3/2})6s$	$^1D - (\frac{3}{2},\frac{1}{2})^\circ$	2 – 2	P	441
9	5	1880.9657	0.223157 – 53.387334	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^1P^\circ$	2 – 1		610
8	30	1881.8538	0.223157 – 53.36224	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^1F^\circ$	2 – 3		610
61	45	1887.6928	6.298850 – 59.273575	$3s^23p^2 - 3s^23p(^2P^\circ_{1/2})6s$	$^1D - (\frac{1}{2},\frac{1}{2})^\circ$	2 – 1		610
58	175	1893.252	6.298850 – 59.11803	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$^1D - {}^3D^\circ$	2 – 3		370
58	1	1895.461	6.298850 – 59.056508	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$^1D - {}^3D^\circ$	2 – 1		370
58	1	1896.339	6.298850 – 59.03219	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$^1D - {}^3D^\circ$	2 – 2		370
57	400	1901.3377	6.298850 – 58.89340	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$^1D - {}^1F^\circ$	2 – 3		610
56	40	1904.6647	6.298850 – 58.801529	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$^1D - {}^1P^\circ$	2 – 1		610
55	50	1954.9681	6.298850 – 57.450580	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$^1D - {}^3F^\circ$	2 – 3		610
55	1	1957.965	6.298850 – 57.372297	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$^1D - {}^3F^\circ$	2 – 2		370
7	400	1977.5978	0.0 – 50.566397	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	0 – 1		610
7	400	1979.2056	0.077115 – 50.60244	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 0		610
7	300	1980.6185	0.077115 – 50.566397	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 1		610
7	300	1983.2330	0.077115 – 50.499838	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 2		610
53	3	1984.0719	6.298850 – 56.70025	$3s^23p^2 - 3s3p^3$	$^1D - {}^3P^\circ$	2 – 1		610
53	20	1984.4400	6.298850 – 56.690903	$3s^23p^2 - 3s3p^3$	$^1D - {}^3P^\circ$	2 – 2		610
7	500	1986.3640	0.223157 – 50.566397	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 1		610
7	1000	1988.9937	0.223157 – 50.499838	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 2		610
53	50	1991.8537	6.298850 – 56.503346	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$^1D - {}^1D^\circ$	2 – 2		610

SILICON II (Si^{1+}), Z = 14
Ground State $1s^22s^22p^63s^23p(^2P^\circ_{1/2})$ (13 electrons)
Ionization Potential 131 838.4 cm^{-1}; 16.346 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	348	693.41						127
6	0	711.34	0.0 – 140.58	$3s^23p - 3s3p(^3P^\circ)4p$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		504,678
6	1	711.83	0.28732 – 140.773	$3s^23p - 3s3p(^3P^\circ)4p$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		504,678
6	2	755.362	0.28732 – 132.6765	$3s^23p - 3s3p(^3P^\circ)4p$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		504,678
6	3	803.234	0.0 – 124.4960	$3s^23p - 3s^28d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		504,678
6	10	805.101	0.28732 – 124.4960	$3s^23p - 3s^28d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		504,678

Si II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
6	2	818.590	0.0 – 122.16374	$3s^23p - 3s^27d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		504,678
8	0	819.49	42.93268 – 164.9660	$3s3p^2 - 3s3p(^3P^\circ)5d$	${}^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		504,678
6	20	820.516	0.28732 – 122.16380	$3s^23p - 3s^27d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		504,678
8	3	820.63	43.10797 – 164.9660	$3s3p^2 - 3s3p(^3P^\circ)5d$	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		504,678
6	3	820.9210	0.0 – 121.81464	$3s^23p - 3s^28s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		371,678,504
8	2	821.450	43.10797 – 164.8440	$3s3p^2 - 3s3p(^3P^\circ)5d$	${}^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		504,678
6	5	822.8613	0.28732 – 121.81464	$3s^23p - 3s^28s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		371,678,504
8	1	826.42	43.10797 – 164.1110	$3s3p^2 - 3s3p(^3P^\circ)6s$	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		504,678
6	20	843.7192	0.0 – 118.52312	$3s^23p - 3s^26d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		371,678,504
6	40	845.7684	0.28732 – 118.52319	$3s^23p - 3s^26d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		371,678,504
6	5	848.0700	0.0 – 117.91506	$3s^23p - 3s^27s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		371,678,504
6	10	850.1409	0.28732 – 117.91506	$3s^23p - 3s^27s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		371,678,504
6	100	889.7228	0.0 – 112.39482	$3s^23p - 3s^25d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		371,678,504
6	200	892.0007	0.28732 – 112.39498	$3s^23p - 3s^25d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		371,678,504
6	10	899.4063	0.0 – 111.18472	$3s^23p - 3s^26s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		371,678,504
6	20	901.7359	0.28732 – 111.18472	$3s^23p - 3s^26s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		371,678,504
8	0	905.71	42.82435 – 153.2334	$3s3p^2 - 3s3p(^3P^\circ)4d$	${}^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$		504,678
8	0	906.126	42.82435 – 153.1844	$3s3p^2 - 3s3p(^3P^\circ)4d$	${}^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		504,678
8	1	906.586	42.93268 – 153.2334	$3s3p^2 - 3s3p(^3P^\circ)4d$	${}^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		504,678
8	0	907.033	42.93268 – 153.1844	$3s3p^2 - 3s3p(^3P^\circ)4d$	${}^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		504,678
8	0	907.762	42.93268 – 153.0937	$3s3p^2 - 3s3p(^3P^\circ)4d$	${}^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		504,678
8	1	908.461	43.10797 – 153.1844	$3s3p^2 - 3s3p(^3P^\circ)4d$	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		504,678
8	3	909.209	43.10797 – 153.0937	$3s3p^2 - 3s3p(^3P^\circ)4d$	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		504,678
8	5	912.375	42.82435 – 152.4317	$3s3p^2 - 3s3p(^3P^\circ)4d$	${}^4P - {}^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		504,678
8	5	912.459	42.82435 – 152.4182	$3s3p^2 - 3s3p(^3P^\circ)4d$	${}^4P - {}^4D^\circ$	$\frac{1}{2}-\frac{1}{2}$		504,678
8	10	913.012	42.93268 – 152.4609	$3s3p^2 - 3s3p(^3P^\circ)4d$	${}^4P - {}^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		504,678
8	3	913.264	42.93268 – 152.4317	$3s3p^2 - 3s3p(^3P^\circ)4d$	${}^4P - {}^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		504,678
8	20	913.853	43.10797 – 152.5356	$3s3p^2 - 3s3p(^3P^\circ)4d$	${}^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		504,678
8	2	914.476	43.10797 – 152.4609	$3s3p^2 - 3s3p(^3P^\circ)4d$	${}^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		504,678
8	5	928.297	42.93268 – 150.6576	$3s3p^2 - 3s3p(^3P^\circ)5s$	${}^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		504,678
8	1	929.206	42.82435 – 150.4426	$3s3p^2 - 3s3p(^3P^\circ)5s$	${}^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		504,678
8	20	929.810	43.10797 – 150.6576	$3s3p^2 - 3s3p(^3P^\circ)5s$	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		504,678
8	0	930.242	42.82435 – 150.3219	$3s3p^2 - 3s3p(^3P^\circ)5s$	${}^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$		504,678
8	5	931.200	42.93268 – 150.3219	$3s3p^2 - 3s3p(^3P^\circ)5s$	${}^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		504,678
8	5	931.667	43.10797 – 150.4426	$3s3p^2 - 3s3p(^3P^\circ)5s$	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		504,678
	159	942.20						127
6	100	989.8730	0.0 – 101.02331	$3s^23p - 3s^24d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		371,678,504
6	200	992.6826	0.28732 – 101.02461	$3s^23p - 3s^24d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		371,678,504
5	25	1020.6988	0.0 – 97.97235	$3s^23p - 3s^25s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		371,678,504
5	50	1023.7002	0.28732 – 97.97235	$3s^23p - 3s^25s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		371,678,504
13	0	1034.967	55.32544 – 151.9497	$3s3p^2 - 3s3p(^3P^\circ)5s$	${}^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		504,678
13	2	1056.899	55.30961 – 149.9283	$3s3p^2 - 3s3p(^3P^\circ)4d$	${}^2D - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		504,678
13	30	1057.050	55.32544 – 149.9283	$3s3p^2 - 3s3p(^3P^\circ)4d$	${}^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		504,678
13	15	1057.503	55.30961 – 149.8715	$3s3p^2 - 3s3p(^3P^\circ)4d$	${}^2D - {}^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		504,678
13	2	1057.690	55.32544 – 149.8715	$3s3p^2 - 3s3p(^3P^\circ)4d$	${}^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		504,678
	2	1082.400						504,678
	3	1084.144						504,678
13	20	1127.442	55.30961 – 144.0043	$3s3p^2 - 3p^3$	${}^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		504,678
13	40	1127.907	55.32544 – 143.9829	$3s3p^2 - 3p^3$	${}^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		504,678
5	100	1190.4157	0.0 – 84.00452	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		371,678,504
5	200	1193.2894	0.0 – 83.80221	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		371,678,504
5	250	1194.5001	0.28732 – 84.00452	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		371,678,504
5	100	1197.3936	0.28732 – 83.80221	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		371,678,504
	10	1216.117						504,678

Si II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
8	0	1222.288	42.82435 – 124.6390	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$		504,678
8	5	1222.635	42.82435 – 124.6157	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		504,678
8	20	1223.907	42.93268 – 124.6390	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		504,678
8	20	1224.252	42.93268 – 124.6157	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		504,678
8	10	1224.972	42.93268 – 124.5675	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		504,678
8	50	1226.814	42.82435 – 124.3374	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{1}{2}$		504,678
8	20	1226.887	43.10797 – 124.6157	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		504,678
8	40	1226.986	42.82435 – 124.3254	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		504,678
8	100	1227.604	43.10797 – 124.5675	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		504,678
8	10	1228.437	42.93268 – 124.3374	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{1}{2}$		504,678
8	25	1228.617	42.93268 – 124.3254	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		504,678
8	150	1228.746	42.93268 – 124.3170	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		504,678
8	200	1229.388	43.10797 – 124.4496	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		504,678
8	5	1231.406	43.10797 – 124.3170	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		504,678
	5	1233.354						504,678
	10	1235.920						504,678
	3	1237.36						504,678
8	100	1246.738	42.82435 – 123.0336	$3s3p^2 - 3p^3$	$^4P - ^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		504,678
8	150	1248.426	42.93268 – 123.0336	$3s3p^2 - 3p^3$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		504,678
13	100	1250.089	55.30961 – 135.3042	$3s3p^2 - 3p^3$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		504,678
13	150	1250.433	55.32544 – 135.2981	$3s3p^2 - 3p^3$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		504,678
8	200	1251.164	43.10797 – 123.0336	$3s3p^2 - 3p^3$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		504,678
4	500	1260.4212	0.0 – 79.33876	$3s^23p - 3s^23d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		371,678,504
4	1000	1264.7374	0.28732 – 79.35528	$3s^23p - 3s^23d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		371,678,504
4	100	1265.0010	0.28732 – 79.33876	$3s^23p - 3s^23d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		371,678,504
	3	1274.300						504,678
	5	1275.662						504,678
3	100	1304.3720	0.0 – 76.66561	$3s^23p - 3s3p^2$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		371,504,678
13	50	1305.590	55.32544 – 131.9191	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		504,678
3	200	1309.2769	0.28732 – 76.66561	$3s^23p - 3s3p^2$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		371,504,678
13	20	1309.458	55.30961 – 131.6774	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		504,678
13	2	1309.77	55.32544 – 131.6774	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		504,678
	2	1311.265						504,678
7	100	1346.873	42.93268 – 117.17812	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		504,678
7	100	1348.543	42.82435 – 116.97844	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		504,678
7	150	1350.057	43.10797 – 117.17812	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		504,678
7	20	1350.520	42.93268 – 116.97844	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		504,678
7	20	1350.658	42.82435 – 116.86244	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$		504,678
7	100	1352.635	42.93268 – 116.86244	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		504,678
7	100	1353.718	43.10797 – 116.97844	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		504,678
13	5	1403.783	55.30961 – 126.5457	$3s3p^2 - 3s^210p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		504,678
13	1	1404.170	55.30961 – 126.5261	$3s3p^2 - 3s^210p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		504,678
13	6	1404.478	55.32544 – 126.5261	$3s3p^2 - 3s^210p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		504,678
13	10	1409.073	55.30961 – 126.2793	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		504,678
13	2	1409.90	55.30961 – 126.2367	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		504,678
13	20	1410.219	55.32544 – 126.2367	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		504,678
18	10	1416.972	79.35528 – 149.9283	$3s^23d - 3s3p(^3P^\circ)4d$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		504,678
18	5	1417.781	79.33876 – 149.8715	$3s^23d - 3s3p(^3P^\circ)4d$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		504,678
18	0	1418.110	79.35528 – 149.8715	$3s^23d - 3s3p(^3P^\circ)4d$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		504,678
13	1	1434.400	55.30961 – 125.0252	$3s3p^2 - 3s^29p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		504,678
13	2	1434.542	55.32544 – 125.0340	$3s3p^2 - 3s^29p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		504,678
13	2	1438.576	55.30961 – 124.82240	$3s3p^2 - 3s^28f$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		504,678
13	4	1438.931	55.32544 – 124.82234	$3s3p^2 - 3s^28f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		504,678
30	2	1471.775	84.00452 – 151.9497	$3s3p^2 - 3s3p(^3P^\circ)5s$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		504,678

Si II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
12	1	1474.304	55.30961 – 123.13893	$3s3p^2 - 3s^28p$	$^2D - {^2P^\circ}$	3/2 – 3/2		504,678
12	15	1474.649	55.32544 – 123.13893	$3s3p^2 - 3s^28p$	$^2D - {^2P^\circ}$	5/2 – 3/2		504,678
12	5	1475.188	55.30961 – 123.09789	$3s3p^2 - 3s^28p$	$^2D - {^2P^\circ}$	3/2 – 1/2		504,678
12	1	1476.928	55.32544 – 123.0336	$3s3p^2 - 3p^3$	$^2D - {^4S^\circ}$	5/2 – 3/2		504,678
12	15	1484.873	55.30961 – 122.65563	$3s3p^2 - 3s^27f$	$^2D - {^2F^\circ}$	3/2 – 5/2		504,678
15	90	1485.024	76.66561 – 144.0043	$3s3p^2 - 3p^3$	$^2S - {^2P^\circ}$	1/2 – 1/2		504,678
12	30	1485.224	55.32544 – 122.65551	$3s3p^2 - 3s^27f$	$^2D - {^2F^\circ}$	5/2 – 7/2		504,678
15	100	1485.513	76.66561 – 143.9829	$3s3p^2 - 3p^3$	$^2S - {^2P^\circ}$	1/2 – 3/2		504,678
11	3	1508.741	55.30961 – 121.59045	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^2D - {^2P^\circ}$	3/2 – 3/2		504,678
11	100	1509.101	55.32544 – 121.59045	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^2D - {^2P^\circ}$	5/2 – 3/2		504,678
11	50	1512.072	55.30961 – 121.44438	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^2D - {^2P^\circ}$	3/2 – 1/2		504,678
29	30	1513.570	83.80221 – 149.8715	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^2P - {^2D^\circ}$	1/2 – 3/2		504,678
29	60	1516.910	84.00452 – 149.9283	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^2P - {^2D^\circ}$	3/2 – 5/2		504,678
29	5	1518.221	84.00452 – 149.8715	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^2P - {^2D^\circ}$	3/2 – 3/2		504,678
2	500	1526.7076	0.0 – 65.50073	$3s^23p - 3s^24s$	$g^2P^\circ - {^2S}$	1/2 – 1/2		371,504,678
2	1000	1533.4320	0.28732 – 65.50073	$3s^23p - 3s^24s$	$g^2P^\circ - {^2S}$	3/2 – 1/2		371,504,678
11	10	1562.451	55.30961 – 119.31160	$3s3p^2 - 3s^26f$	$^2D - {^2F^\circ}$	3/2 – 5/2		504,678
11	15	1562.845	55.32544 – 119.31145	$3s3p^2 - 3s^26f$	$^2D - {^2F^\circ}$	5/2 – 7/2		504,678
10	10	1563.765	55.32544 – 119.27407	$3s3p^2 - 3s^27p$	$^2D - {^2P^\circ}$	5/2 – 3/2		504,678
10	5	1564.066	55.30961 – 119.24548	$3s3p^2 - 3s^27p$	$^2D - {^2P^\circ}$	3/2 – 1/2		504,678
28	3	1661.059	83.80221 – 144.0043	$3s3p^2 - 3p^3$	$^2P - {^2P^\circ}$	1/2 – 1/2		504,678
28	1	1661.633	83.80221 – 143.9829	$3s3p^2 - 3p^3$	$^2P - {^2P^\circ}$	1/2 – 3/2		504,678
28	0	1667.267	84.00452 – 143.9829	$3s3p^2 - 3p^3$	$^2P - {^2P^\circ}$	3/2 – 3/2		504,678
10	2	1704.967	55.32544 – 113.97698	$3s3p^2 - 3s^26p$	$^2D - {^2P^\circ}$	5/2 – 3/2		504,678
10	10	1710.826	55.30961 – 113.76058	$3s3p^2 - 3s^25f$	$^2D - {^2F^\circ}$	3/2 – 5/2		504,678
10	20	1711.296	55.32544 – 113.76041	$3s3p^2 - 3s^25f$	$^2D - {^2F^\circ}$	5/2 – 7/2		504,678
18	4	1786.817	79.33876 – 135.3042	$3s^23d - 3p^3$	$^2D - {^2D^\circ}$	3/2 – 3/2		504,678
18	8	1787.538	79.35528 – 135.2981	$3s^23d - 3p^3$	$^2D - {^2D^\circ}$	5/2 – 5/2		504,678
1	150	1808.0117	0.0 – 55.30961	$3s^23p - 3s3p^2$	$g^2P^\circ - {^2D}$	1/2 – 3/2		370,504,678
1	200	1816.9278	0.28732 – 55.32544	$3s^23p - 3s3p^2$	$g^2P^\circ - {^2D}$	3/2 – 5/2		370,504,678
1	10	1817.4511	0.28732 – 55.30961	$3s^23p - 3s3p^2$	$g^2P^\circ - {^2D}$	3/2 – 3/2		370,504,678
9	1	1868.765	55.30961 – 108.8209	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - {^2D^\circ}$	3/2 – 5/2		504,678
9	20	1869.317	55.32544 – 108.8209	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - {^2D^\circ}$	5/2 – 5/2		504,678
9	15	1870.227	55.30961 – 108.7790	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - {^2D^\circ}$	3/2 – 3/2		504,678
9	3	1870.782	55.32544 – 108.7790	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - {^2D^\circ}$	5/2 – 3/2		504,678
18	100	1902.459	79.35528 – 131.9191	$3s^23d - 3s3p(^3P^\circ)3d$	$^2D - {^2F^\circ}$	5/2 – 7/2		504,678
31	5	1904.326	101.02461 – 153.5375	$3s^24d - 3s3p(^3P^\circ)4d$	$^2D - {^2P^\circ}$	5/2 – 3/2		504,678
	3	1905.878	97.97235 – 150.4426	$3s^25s - 3s3p(^3P^\circ)5s$	$^2S - {^4P^\circ}$	1/2 – 3/2		504,678
18	50	1910.621	79.33876 – 131.6774	$3s^23d - 3s3p(^3P^\circ)3d$	$^2D - {^2F^\circ}$	3/2 – 5/2		504,678
18	0	1911.265	79.35528 – 131.6774	$3s^23d - 3s3p(^3P^\circ)3d$	$^2D - {^2F^\circ}$	5/2 – 5/2		504,678
27	50	1941.667	83.80221 – 135.3042	$3s3p^2 - 3p^3$	$^2P - {^2D^\circ}$	1/2 – 3/2		504,678
23	15	1944.586	81.25158 – 132.6765	$3s^24p - 3s3p(^3P^\circ)4p$	$^2P^\circ - {^2P}$	3/2 – 3/2		504,678
23	3	1945.504	81.19160 – 132.5924	$3s^24p - 3s3p(^3P^\circ)4p$	$^2P^\circ - {^2P}$	1/2 – 1/2		504,678
23	1	1947.769	81.25158 – 132.5924	$3s^24p - 3s3p(^3P^\circ)4p$	$^2P^\circ - {^2P}$	3/2 – 1/2		504,678
27	10	1949.331	84.00452 – 135.3042	$3s3p^2 - 3p^3$	$^2P - {^2D^\circ}$	3/2 – 3/2		504,678
27	100	1949.564	84.00452 – 135.2981	$3s3p^2 - 3p^3$	$^2P - {^2D^\circ}$	3/2 – 5/2		504,678

SILICON III (Si^{2+}), Z = 14
Ground State $1s^22s^22p^63s^2(^1S_0)$ (12 electrons)
Ionization Potential 270 139.3 cm^{-1}; 33.493 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
3		423.817	0.0 – 235.95109	$3s^2$ – $3p(^2P°)4s$	g^1S – $^1P°$	0 – 1		504
3		426.644	0.0 – 234.38764	$3s^2$ – 3s6p	g^1S – $^1P°$	0 – 1		504
3		437.255	0.0 – 228.69975	$3s^2$ – $3p(^2P°)3d$	g^1S – $^1P°$	0 – 1		504
3	80	466.129	0.0 – 214.53217	$3s^2$ – 3s5p	g^1S – $^1P°$	0 – 1		197,504
6		510.079	52.72469 – 248.77286	3s3p – $3p(^2P°)4p$	$^3P°$ – ^3S	0 – 1		504
6		510.414	52.85328 – 248.77286	3s3p – $3p(^2P°)4p$	$^3P°$ – ^3S	1 – 1		504
6		511.096	53.11501 – 248.77286	3s3p – $3p(^2P°)4p$	$^3P°$ – ^3S	2 – 1		504
6		511.994	52.85328 – 248.16804	3s3p – $3p(^2P°)4p$	$^3P°$ – ^3P	1 – 2		504
6		512.219	52.72469 – 247.95369	3s3p – $3p(^2P°)4p$	$^3P°$ – ^3P	0 – 1		504
6		512.557	52.85328 – 247.95369	3s3p – $3p(^2P°)4p$	$^3P°$ – ^3P	1 – 1		504
6		512.681	53.11501 – 248.16804	3s3p – $3p(^2P°)4p$	$^3P°$ – ^3P	2 – 2		504
6		512.772	52.85328 – 247.87166	3s3p – $3p(^2P°)4p$	$^3P°$ – ^3P	1 – 0		504
6		513.245	53.11501 – 247.95369	3s3p – $3p(^2P°)4p$	$^3P°$ – ^3P	2 – 1		504
6	10	520.79	52.85328 – 244.86605	3s3p – $3p(^2P°)4p$	$^3P°$ – ^3D	1 – 2		504
6	20	520.92	53.11501 – 245.08658	3s3p – $3p(^2P°)4p$	$^3P°$ – ^3D	2 – 3		504
6		521.149	52.85328 – 244.73693	3s3p – $3p(^2P°)4p$	$^3P°$ – ^3D	1 – 1		504
6		521.510	53.11501 – 244.86605	3s3p – $3p(^2P°)4p$	$^3P°$ – ^3D	2 – 2		504
6		521.861	53.11501 – 244.73693	3s3p – $3p(^2P°)4p$	$^3P°$ – ^3D	2 – 1		504
6		533.226	52.72469 – 240.26228	3s3p – 3s6d	$^3P°$ – ^3D	0 – 1		504
6		533.530	52.85328 – 240.28428	3s3p – 3s6d	$^3P°$ – ^3D	1 – 2		504
6		533.592	52.85328 – 240.26228	3s3p – 3s6d	$^3P°$ – ^3D	1 – 1		504
6		534.189	53.11501 – 240.31463	3s3p – 3s6d	$^3P°$ – ^3D	2 – 3		504
6		534.276	53.11501 – 240.28428	3s3p – 3s6d	$^3P°$ – ^3D	2 – 2		504
6		534.339	53.11501 – 240.26228	3s3p – 3s6d	$^3P°$ – ^3D	2 – 1		504
	315	538.28						127
6	20	565.289	52.72469 – 229.62319	3s3p – 3s6s	$^3P°$ – ^3S	0 – 1		504
6	40	565.698	52.85328 – 229.62319	3s3p – 3s6s	$^3P°$ – ^3S	1 – 1		504
6		566.546	53.11501 – 229.62319	3s3p – 3s6s	$^3P°$ – ^3S	2 – 1		504
3	160	566.613	0.0 – 176.48719	$3s^2$ – 3s4p	g^1S – $^1P°$	0 – 1		197,504
19		567.878	82.88441 – 258.97866	3s3p – $3p(^2P°)4p$	$^1P°$ – ^1S	1 – 0		504
6		573.538	52.72469 – 227.08119	3s3p – 3s5d	$^3P°$ – ^3D	0 – 1		504
6		573.951	52.85328 – 227.08421	3s3p – 3s5d	$^3P°$ – ^3D	1 – 2		504
6		573.961	52.85328 – 227.08119	3s3p – 3s5d	$^3P°$ – ^3D	1 – 1		504
6		574.799	53.11501 – 227.08872	3s3p – 3s5d	$^3P°$ – ^3D	2 – 3		504
6		574.814	53.11501 – 227.08421	3s3p – 3s5d	$^3P°$ – ^3D	2 – 2		504
6		574.824	53.11501 – 227.08119	3s3p – 3s5d	$^3P°$ – ^3D	2 – 1		504
18		605.873	82.88441 – 247.93539	3s3p – $3p(^2P°)4p$	$^1P°$ – ^1D	1 – 2		504
	293	613.21						127
17		624.997	82.88441 – 242.88530	3s3p – $3p(^2P°)4p$	$^1P°$ – ^1P	1 – 1		504
	188	629.97						127
16		634.255	82.88441 – 240.54977	3s3p – 3s6d	$^1P°$ – ^1D	1 – 2		504
	133	638.40						127
6	80	651.668	52.72469 – 206.17608	3s3p – 3s5s	$^3P°$ – ^3S	0 – 1		197,504
6	120	652.223	52.85328 – 206.17608	3s3p – 3s5s	$^3P°$ – ^3S	1 – 1		197,504
6	160	653.332	53.11501 – 206.17608	3s3p – 3s5s	$^3P°$ – ^3S	2 – 1		197,504
	111	654.78						127
	175	659.93						127
	338	660.09						127
	346	664.24						127
	152	669.95						127
6	40	671.718	52.72469 – 201.59773	3s3p – 3s4d	$^3P°$ – ^3D	0 – 1		504
6	80	672.293	52.85328 – 201.59828	3s3p – 3s4d	$^3P°$ – ^3D	1 – 2		504
6	100	673.477	53.11501 – 201.59948	3s3p – 3s4d	$^3P°$ – ^3D	2 – 3		504
15	40	678.055	82.88441 – 230.36446	3s3p – 3s6s	$^1P°$ – ^1S	1 – 0		504

Si III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
14	40	690.689	82.88441 – 227.66509	3s3p – 3s5d	$^1P^o$ – ^1D	1 – 2		504
	110	707.54						127
13	100	800.066	82.88441 – 207.87409	3s3p – 3s5s	$^1P^o$ – ^1S	1 – 0		504
	141	804.95						127
	141	805.20						127
29		822.004	122.21452 – 243.86850	$3p^2$ – 3s6f	^1D – $^1F^o$	2 – 3		504
12	180	823.408	82.88441 – 204.33079	3s3p – 3s4d	$^1P^o$ – ^1D	1 – 2		197,504
	111	840.74						127
	222	844.39						127
	159	853.11						127
	164	876.16						127
	109	877.92						127
28	10	879.233	122.21452 – 235.95109	$3p^2$ – $3p(^2P^o)4s$	^1D – $^1P^o$	2 – 1		504
27	100	883.398	122.21452 – 235.41393	$3p^2$ – $3p(^2P^o)3d$	^1D – $^1F^o$	2 – 3		504
26		891.479	122.21452 – 234.38764	$3p^2$ – 3s6p	^1D – $^1P^o$	2 – 1		504
	206	916.42						127
44	25	936.056	142.94374 – 249.77498	3s3d – 3s7f	^3D – $^3F^o$	3 – 4		504
44	2	936.058	142.94374 – 249.77470	3s3d – 3s7f	^3D – $^3F^o$	3 – 3		504
44	1	936.060	142.94374 – 249.77448	3s3d – 3s7f	^3D – $^3F^o$	3 – 2		504
44	18	936.077	142.94584 – 249.77470	3s3d – 3s7f	^3D – $^3F^o$	2 – 3		504
44	2	936.079	142.94584 – 249.77448	3s3d – 3s7f	^3D – $^3F^o$	2 – 2		504
44	12	936.100	142.94825 – 249.77448	3s3d – 3s7f	^3D – $^3F^o$	1 – 2		504
25	140	939.093	122.21452 – 228.69975	$3p^2$ – $3p(^2P^o)3d$	^1D – $^1P^o$	2 – 1		197,504
24	180	967.946	122.21452 – 225.52633	$3p^2$ – 3s5f	^1D – $^1F^o$	2 – 3		197,504
	182	972.21						127
6	200	993.519	52.72469 – 153.37705	3s3p – 3s4s	$^3P^o$ – ^3S	0 – 1		197,504
6	260	994.787	52.85328 – 153.37705	3s3p – 3s4s	$^3P^o$ – ^3S	1 – 1		197,504
6	320	997.389	53.11501 – 153.37705	3s3p – 3s4s	$^3P^o$ – ^3S	2 – 1		197,504
43	60	1005.349	142.94374 – 242.41170	3s3d – 3s6f	^3D – $^3F^o$	3 – 4		504
43	5	1005.353	142.94374 – 242.41127	3s3d – 3s6f	^3D – $^3F^o$	3 – 3		504
43	1	1005.357	142.94374 – 242.41088	3s3d – 3s6f	^3D – $^3F^o$	3 – 2		504
43	40	1005.374	142.94584 – 242.41127	3s3d – 3s6f	^3D – $^3F^o$	2 – 3		504
43	5	1005.378	142.94584 – 242.41088	3s3d – 3s6f	^3D – $^3F^o$	2 – 2		504
43	30	1005.403	142.94825 – 242.41088	3s3d – 3s6f	^3D – $^3F^o$	1 – 2		504
33	140	1031.169	129.84197 – 226.82028	$3p^2$ – $3p(^2P^o)4s$	^3P – $^3P^o$	1 – 2		504
33	60	1032.851	129.70845 – 226.52742	$3p^2$ – $3p(^2P^o)4s$	^3P – $^3P^o$	0 – 1		504
33	160	1033.920	130.10052 – 226.82028	$3p^2$ – $3p(^2P^o)4s$	^3P – $^3P^o$	2 – 2		504
33	80	1034.287	129.84197 – 226.52742	$3p^2$ – $3p(^2P^o)4s$	^3P – $^3P^o$	1 – 1		504
33	60	1035.657	129.84197 – 226.40000	$3p^2$ – $3p(^2P^o)4s$	^3P – $^3P^o$	1 – 0		504
33	140	1037.053	130.10052 – 226.52742	$3p^2$ – $3p(^2P^o)4s$	^3P – $^3P^o$	2 – 1		504
23	120	1083.210	122.21452 – 214.53217	$3p^2$ – 3s5p	^1D – $^1P^o$	2 – 1		504
42		1092.915	142.94374 – 234.44218	3s3d – 3s6p	^3D – $^3P^o$	3 – 2		504
42		1092.940	142.94584 – 234.44218	3s3d – 3s6p	^3D – $^3P^o$	2 – 2		504
42		1092.969	142.94825 – 234.44218	3s3d – 3s6p	^3D – $^3P^o$	1 – 2		504
42		1093.105	142.94584 – 234.42840	3s3d – 3s6p	^3D – $^3P^o$	2 – 1		504
42		1093.133	142.94825 – 234.42840	3s3d – 3s6p	^3D – $^3P^o$	1 – 1		504
42		1093.293	142.94825 – 234.41507	3s3d – 3s6p	^3D – $^3P^o$	1 – 0		504
5	280	1108.368	52.72469 – 142.94825	3s3p – 3s3d	$^3P^o$ – ^3D	0 – 1		197,504
5	320	1109.965	52.85328 – 142.94584	3s3p – 3s3d	$^3P^o$ – ^3D	1 – 2		197,504
5	360	1113.228	53.11501 – 142.94374	3s3p – 3s3d	$^3P^o$ – ^3D	2 – 3		197,504
	226	1133.18						127
	163	1133.35						127
32	120	1140.545	129.70845 – 217.38577	$3p^2$ – $3p(^2P^o)3d$	^3P – $^3D^o$	0 – 1		504
32	140	1141.580	129.84197 – 217.43992	$3p^2$ – $3p(^2P^o)3d$	^3P – $^3D^o$	1 – 2		504

Si III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
32	120	1142.282	129.84197 – 217.38577	$3p^2$ – $3p(^2P^\circ)3d$	^3P – $^3D^\circ$	1 – 1		504
32	160	1144.306	130.10052 – 217.48949	$3p^2$ – $3p(^2P^\circ)3d$	^3P – $^3D^\circ$	2 – 3		504
32	120	1144.959	130.10052 – 217.43992	$3p^2$ – $3p(^2P^\circ)3d$	^3P – $^3D^\circ$	2 – 2		504
41	150	1145.122	142.94374 – 230.27066	3s3d – 3s5f	^3D – $^3F^\circ$	3 – 4		504
41	13	1145.149	142.94374 – 230.26862	3s3d – 3s5f	^3D – $^3F^\circ$	3 – 3		504
41	1	1145.16	142.94374 – 230.2677	3s3d – 3s5f	^3D – $^3F^\circ$	3 – 2		504
41	80	1145.177	142.94584 – 230.26862	3s3d – 3s5f	^3D – $^3F^\circ$	2 – 3		504
41	10	1145.19	142.94584 – 230.2677	3s3d – 3s5f	^3D – $^3F^\circ$	2 – 2		504
41	50	1145.22	142.94825 – 230.2677	3s3d – 3s5f	^3D – $^3F^\circ$	1 – 2		504
32		1145.669	130.10052 – 217.38577	$3p^2$ – $3p(^2P^\circ)3d$	^3P – $^3D^\circ$	2 – 1		504
31	120	1154.998	129.70845 – 216.28869	$3p^2$ – $3p(^2P^\circ)3d$	^3P – $^3P^\circ$	0 – 1		504
31	120	1155.957	129.84197 – 216.35026	$3p^2$ – $3p(^2P^\circ)3d$	^3P – $^3P^\circ$	1 – 0		504
31	80	1156.782	129.84197 – 216.28869	$3p^2$ – $3p(^2P^\circ)3d$	^3P – $^3P^\circ$	1 – 1		504
31	140	1158.102	129.84197 – 216.19024	$3p^2$ – $3p(^2P^\circ)3d$	^3P – $^3P^\circ$	1 – 2		504
31	120	1160.255	130.10052 – 216.28869	$3p^2$ – $3p(^2P^\circ)3d$	^3P – $^3P^\circ$	2 – 1		504
31	160	1161.579	130.10052 – 216.19024	$3p^2$ – $3p(^2P^\circ)3d$	^3P – $^3P^\circ$	2 – 2		504
30	80	1172.529	129.70845 – 214.99465	$3p^2$ – 3s5p	^3P – $^3P^\circ$	0 – 1		504
30	100	1174.369	129.84197 – 214.99465	$3p^2$ – 3s5p	^3P – $^3P^\circ$	1 – 1		504
30	120	1174.432	129.84197 – 214.98927	$3p^2$ – 3s5p	^3P – $^3P^\circ$	1 – 2		504
30	160	1178.004	130.10052 – 214.98927	$3p^2$ – 3s5p	^3P – $^3P^\circ$	2 – 2		504
64	60	1182.018	165.76500 – 250.36622	3s3d – 3s7f	^1D – $^1F^\circ$	2 – 3		504
40		1192.228	142.94374 – 226.82028	3s3d – $3p(^2P^\circ)4s$	^3D – $^3P^\circ$	3 – 2		504
40		1192.258	142.94584 – 226.82028	3s3d – $3p(^2P^\circ)4s$	^3D – $^3P^\circ$	2 – 2		504
40		1192.293	142.94825 – 226.82028	3s3d – $3p(^2P^\circ)4s$	^3D – $^3P^\circ$	1 – 2		504
40		1196.436	142.94584 – 226.52742	3s3d – $3p(^2P^\circ)4s$	^3D – $^3P^\circ$	2 – 1		504
40		1196.470	142.94825 – 226.52742	3s3d – $3p(^2P^\circ)4s$	^3D – $^3P^\circ$	1 – 1		504
40		1198.297	142.94825 – 226.40000	3s3d – $3p(^2P^\circ)4s$	^3D – $^3P^\circ$	1 – 0		504
2	600	1206.510	0.0 – 82.88441	$3s^2$ – 3s3p	g^1S – $^1P^\circ$	0 – 1		504
11	600	1206.533	82.88441 – 165.76500	3s3p – 3s3d	$^1P^\circ$ – ^1D	1 – 2		504
22	180	1207.517	122.21452 – 205.02909	$3p^2$ – $3p(^2P^\circ)3d$	^1D – $^1D^\circ$	2 – 2		504
21	200	1210.456	122.21452 – 204.82806	$3p^2$ – 3s4f	^1D – $^1F^\circ$	2 – 3		504
50	40	1212.011	153.44423 – 235.95109	$3p^2$ – $3p(^2P^\circ)4s$	^1S – $^1P^\circ$	0 – 1		504
74		1212.247	176.48719 – 258.97866	3s4p – $3p(^2P^\circ)4p$	$^1P^\circ$ – ^1S	1 – 0		504
49	140	1235.431	153.44423 – 234.38764	$3p^2$ – 3s6p	^1S – $^1P^\circ$	0 – 1		504
63	120	1280.354	165.76500 – 243.86850	3s3d – 3s6f	^1D – $^1F^\circ$	2 – 3		504
4	340	1294.543	52.85328 – 130.10052	3s3p – $3p^2$	$^3P^\circ$ – ^3P	1 – 2		197,504
4	280	1296.726	52.72469 – 129.84197	3s3p – $3p^2$	$^3P^\circ$ – ^3P	0 – 1		197,504
4	300	1298.891	52.85328 – 129.84197	3s3p – $3p^2$	$^3P^\circ$ – ^3P	1 – 1		197,504
4	360	1298.960	53.11501 – 130.10052	3s3p – $3p^2$	$^3P^\circ$ – ^3P	2 – 2		504
54		1300.703	159.06961 – 235.95109	3s4s – $3p(^2P^\circ)4s$	^1S – $^1P^\circ$	0 – 1		504
4	280	1301.146	52.85328 – 129.70845	3s3p – $3p^2$	$^3P^\circ$ – ^3P	1 – 0		197,504
4	320	1303.320	53.11501 – 129.84197	3s3p – $3p^2$	$^3P^\circ$ – ^3P	2 – 1		197,504
10	260	1312.590	82.88441 – 159.06961	3s3p – 3s4s	$^1P^\circ$ – ^1S	1 – 0		197,504
53		1327.703	159.06961 – 234.38764	3s4s – 3s6p	^1S – $^1P^\circ$	0 – 1		504
48		1328.806	153.44423 – 228.69975	$3p^2$ – $3p(^2P^\circ)3d$	^1S – $^1P^\circ$	0 – 1		504
39	160	1341.465	142.94374 – 217.48949	3s3d – $3p(^2P^\circ)3d$	^3D – $^3D^\circ$	3 – 3		504
39		1341.496	142.94584 – 217.48949	3s3d – $3p(^2P^\circ)3d$	^3D – $^3D^\circ$	2 – 3		504
39		1342.351	142.94374 – 217.43992	3s3d – $3p(^2P^\circ)3d$	^3D – $^3D^\circ$	3 – 2		504
39	140	1342.392	142.94584 – 217.43992	3s3d – $3p(^2P^\circ)3d$	^3D – $^3D^\circ$	2 – 2		504
39		1342.432	142.94825 – 217.43992	3s3d – $3p(^2P^\circ)3d$	^3D – $^3D^\circ$	1 – 2		504
39	120	1343.388	142.94825 – 217.38577	3s3d – $3p(^2P^\circ)3d$	^3D – $^3D^\circ$	1 – 1		504
68		1359.751	175.23001 – 248.77286	3s4p – $3p(^2P^\circ)4p$	$^3P^\circ$ – ^3S	0 – 1		504
68	20	1360.360	175.26310 – 248.77286	3s4p – $3p(^2P^\circ)4p$	$^3P^\circ$ – ^3S	1 – 1		504
46	160	1361.597	153.37705 – 226.82028	3s4s – $3p(^2P^\circ)4s$	^3S – $^3P^\circ$	1 – 2		197,504

Si III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
68		1361.719	175.33626 – 248.77286	3s4p – 3p($^2P^\circ$)4p	$^3P^\circ - {}^3S$	2 – 1		504
38	100	1362.366	142.94825 – 216.35026	3s3d – 3p($^2P^\circ$)3d	$^3D - {}^3P^\circ$	1 – 0		504
38	140	1363.459	142.94584 – 216.28869	3s3d – 3p($^2P^\circ$)3d	$^3D - {}^3P^\circ$	2 – 1		504
38		1363.504	142.94825 – 216.28869	3s3d – 3p($^2P^\circ$)3d	$^3D - {}^3P^\circ$	1 – 1		504
38	160	1365.253	142.94374 – 216.19024	3s3d – 3p($^2P^\circ$)3d	$^3D - {}^3P^\circ$	3 – 2		504
38		1365.292	142.94584 – 216.19024	3s3d – 3p($^2P^\circ$)3d	$^3D - {}^3P^\circ$	2 – 2		504
38		1365.337	142.94825 – 216.19024	3s3d – 3p($^2P^\circ$)3d	$^3D - {}^3P^\circ$	1 – 2		504
46	140	1367.049	153.37705 – 226.52742	3s4s – 3p($^2P^\circ$)4s	$^3S - {}^3P^\circ$	1 – 1		197,504
46	100	1369.437	153.37705 – 226.40000	3s4s – 3p($^2P^\circ$)4s	$^3S - {}^3P^\circ$	1 – 0		504
67	60	1371.652	175.26310 – 248.16804	3s4p – 3p($^2P^\circ$)4p	$^3P^\circ - {}^3P$	1 – 2		504
67	100	1373.030	175.33626 – 248.16804	3s4p – 3p($^2P^\circ$)4p	$^3P^\circ - {}^3P$	2 – 2		504
67	40	1375.083	175.23001 – 247.95369	3s4p – 3p($^2P^\circ$)4p	$^3P^\circ - {}^3P$	0 – 1		504
67	40	1375.688	175.26310 – 247.95369	3s4p – 3p($^2P^\circ$)4p	$^3P^\circ - {}^3P$	1 – 1		504
67	60	1377.082	175.33626 – 247.95369	3s4p – 3p($^2P^\circ$)4p	$^3P^\circ - {}^3P$	2 – 1		504
67	40	1377.238	175.26310 – 247.87166	3s4p – 3p($^2P^\circ$)4p	$^3P^\circ - {}^3P$	1 – 0		504
37	25	1387.948	142.94584 – 214.99465	3s3d – 3s5p	$^3D - {}^3P^\circ$	2 – 1		504
37	10	1387.979	142.94825 – 214.99546	3s3d – 3s5p	$^3D - {}^3P^\circ$	1 – 0		504
37	8	1387.994	142.94825 – 214.99465	3s3d – 3s5p	$^3D - {}^3P^\circ$	1 – 1		504
37	50	1388.011	142.94374 – 214.98927	3s3d – 3s5p	$^3D - {}^3P^\circ$	3 – 2		504
37	8	1388.052	142.94584 – 214.98927	3s3d – 3s5p	$^3D - {}^3P^\circ$	2 – 2		504
37	1	1388.098	142.94825 – 214.98927	3s3d – 3s5p	$^3D - {}^3P^\circ$	1 – 2		504
73		1399.615	176.48719 – 247.93539	3s4p – 3p($^2P^\circ$)4p	$^1P^\circ - {}^1D$	1 – 2		504
62	40	1424.775	165.76500 – 235.95109	3s3d – 3p($^2P^\circ$)4s	$^1D - {}^1P^\circ$	2 – 1		504
66	120	1433.690	175.33626 – 245.08658	3s4p – 3p($^2P^\circ$)4p	$^3P^\circ - {}^3D$	2 – 3		504
61	160	1435.776	165.76500 – 235.41393	3s3d – 3p($^2P^\circ$)3d	$^1D - {}^1F^\circ$	2 – 3		197,504
52	140	1436.166	159.06961 – 228.69975	3s4s – 3p($^2P^\circ$)3d	$^1S - {}^1P^\circ$	0 – 1		197,504
66	80	1436.724	175.26310 – 244.86605	3s4p – 3p($^2P^\circ$)4p	$^3P^\circ - {}^3D$	1 – 2		504
66	40	1438.228	175.33626 – 244.86605	3s4p – 3p($^2P^\circ$)4p	$^3P^\circ - {}^3D$	2 – 2		504
66	40	1438.702	175.23001 – 244.73693	3s4p – 3p($^2P^\circ$)4p	$^3P^\circ - {}^3D$	0 – 1		504
66	40	1439.391	175.26310 – 244.73693	3s4p – 3p($^2P^\circ$)4p	$^3P^\circ - {}^3D$	1 – 1		504
66		1440.908	175.33626 – 244.73693	3s4p – 3p($^2P^\circ$)4p	$^3P^\circ - {}^3D$	2 – 1		504
3	100	1441.732	52.85328 – 122.21452	3s3p – 3p^2	$^3P^\circ - {}^1D$	1 – 2		504
3	120	1447.196	53.11501 – 122.21452	3s3p – 3p^2	$^3P^\circ - {}^1D$	2 – 2		504
60	100	1457.253	165.76500 – 234.38764	3s3d – 3s6p	$^1D - {}^1P^\circ$	2 – 1		504
36	240	1500.241	142.94374 – 209.59970	3s3d – 3s4f	$^3D - {}^3F^\circ$	3 – 4		197,504
36		1501.150	142.94374 – 209.55933	3s3d – 3s4f	$^3D - {}^3F^\circ$	3 – 3		197,504
36	200	1501.191	142.94584 – 209.55933	3s3d – 3s4f	$^3D - {}^3F^\circ$	2 – 3		197,504
36		1501.780	142.94374 – 209.53140	3s3d – 3s4f	$^3D - {}^3F^\circ$	3 – 2		504
36		1501.827	142.94584 – 209.53140	3s3d – 3s4f	$^3D - {}^3F^\circ$	2 – 2		197,504
36	180	1501.870	142.94825 – 209.53140	3s3d – 3s4f	$^3D - {}^3F^\circ$	1 – 2		504
72	120	1506.060	176.48719 – 242.88530	3s4p – 3p($^2P^\circ$)4p	$^1P^\circ - {}^1P$	1 – 1		504
94	40	1513.533	235.41393 – 301.48451	3p($^2P^\circ$)3d – 3p($^2P^\circ$)5f	$^1F^\circ - \frac{1}{2}[\frac{7}{2}]^\circ$	3 – 3	Q	504
71		1560.974	176.48719 – 240.54977	3s4p – 3s6d	$^1P^\circ - {}^1D$	1 – 2		504
59	40	1588.950	165.76500 – 228.69975	3s3d – 3p($^2P^\circ$)3d	$^1D - {}^1P^\circ$	2 – 1		504
45		1622.892	153.37705 – 214.99546	3s4s – 3s5p	$^3S - {}^3P^\circ$	1 – 0		504
45		1622.913	153.37705 – 214.99465	3s4s – 3s5p	$^3S - {}^3P^\circ$	1 – 1		504
45		1623.055	153.37705 – 214.98927	3s4s – 3s5p	$^3S - {}^3P^\circ$	1 – 2		504
47	20	1636.990	153.44423 – 214.53217	3p^2 – 3s5p	$^1S - {}^1P^\circ$	0 – 1		504
58	140	1673.315	165.76500 – 225.52633	3s3d – 3s5f	$^1D - {}^1F^\circ$	2 – 3		504
35		1778.715	142.94374 – 199.16410	3s3d – 3p($^2P^\circ$)3d	$^3D - {}^3F^\circ$	3 – 4		504
35		1783.079	142.94374 – 199.02649	3s3d – 3p($^2P^\circ$)3d	$^3D - {}^3F^\circ$	3 – 3		504
35		1783.146	142.94584 – 199.02649	3s3d – 3p($^2P^\circ$)3d	$^3D - {}^3F^\circ$	2 – 3		504
35		1786.371	142.94374 – 198.92315	3s3d – 3p($^2P^\circ$)3d	$^3D - {}^3F^\circ$	3 – 2		504
35		1786.438	142.94584 – 198.92315	3s3d – 3p($^2P^\circ$)3d	$^3D - {}^3F^\circ$	2 – 2		504

Si III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
35		1786.515	142.94825 – 198.92315	$3s3d - 3p(^{2}P^{\circ})3d$	$^{3}D - {}^{3}F^{\circ}$	1 – 2		504
51	60	1803.023	159.06961 – 214.53217	$3s4s - 3s5p$	$^{1}S - {}^{1}P^{\circ}$	0 – 1		504
65		1838.466	175.23001 – 229.62319	$3s4p - 3s6s$	$^{3}P^{\circ} - {}^{3}S$	0 – 1		504
65		1839.585	175.26310 – 229.62319	$3s4p - 3s6s$	$^{3}P^{\circ} - {}^{3}S$	1 – 1		504
65		1842.064	175.33626 – 229.62319	$3s4p - 3s6s$	$^{3}P^{\circ} - {}^{3}S$	2 – 1		504
20	180	1842.547	122.21452 – 176.48719	$3p^{2} - 3s4p$	$^{1}D - {}^{1}P^{\circ}$	2 – 1		504
70	20	1856.062	176.48719 – 230.36446	$3s4p - 3s6s$	$^{1}P^{\circ} - {}^{1}S$	1 – 0		504
1	60	1892.030	0.0 – 52.85328	$3s^{2} - 3s3p$	$g^{1}S - {}^{3}P^{\circ}$	0 – 1		504
69		1953.968	176.48719 – 227.66509	$3s4p - 3s5d$	$^{1}P^{\circ} - {}^{1}D$	1 – 2		504
83		1979.233	204.33079 – 254.85542	$3s4d - 3s8f$	$^{1}D - {}^{1}F^{\circ}$	2 – 3		504

SILICON IV (Si^{3+}), Z = 14
Ground State $1s^{2}2s^{2}2p^{6}3s(^{2}S_{1/2})$ (11 electrons)
Ionization Potential 364 093.1 cm^{-1}; 45.142 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
2		327.137	0.0 – 305.68227	$2p^{6}3s - 2p^{6}6p$	$g^{2}S - {}^{2}P^{\circ}$	$\frac{1}{2}-\frac{3}{2}$		504
2		327.181	0.0 – 305.64110	$2p^{6}3s - 2p^{6}6p$	$g^{2}S - {}^{2}P^{\circ}$	$\frac{1}{2}-\frac{1}{2}$		504
2		361.560	0.0 – 276.57903	$2p^{6}3s - 2p^{6}5p$	$g^{2}S - {}^{2}P^{\circ}$	$\frac{1}{2}-\frac{3}{2}$		197,504
2		361.659	0.0 – 276.50367	$2p^{6}3s - 2p^{6}5p$	$g^{2}S - {}^{2}P^{\circ}$	$\frac{1}{2}-\frac{1}{2}$		197,504
9		412.155	71.28754 – 313.91492	$2p^{6}3p - 2p^{6}6d$	$^{2}P^{\circ} - {}^{2}D$	$\frac{1}{2}-\frac{3}{2}$		504
9		412.939	71.74864 – 313.91492	$2p^{6}3p - 2p^{6}6d$	$^{2}P^{\circ} - {}^{2}D$	$\frac{3}{2}-\frac{5}{2}$		504
8		437.849	71.28754 – 299.67695	$2p^{6}3p - 2p^{6}6s$	$^{2}P^{\circ} - {}^{2}S$	$\frac{1}{2}-\frac{1}{2}$		504
8		438.734	71.74864 – 299.67695	$2p^{6}3p - 2p^{6}6s$	$^{2}P^{\circ} - {}^{2}S$	$\frac{3}{2}-\frac{1}{2}$		504
7		454.112	71.28754 – 291.49750	$2p^{6}3p - 2p^{6}5d$	$^{2}P^{\circ} - {}^{2}D$	$\frac{1}{2}-\frac{3}{2}$		197,504
7		455.065	71.74864 – 291.49760	$2p^{6}3p - 2p^{6}5d$	$^{2}P^{\circ} - {}^{2}D$	$\frac{3}{2}-\frac{5}{2}$		197,504
2	250	457.818	0.0 – 218.42867	$2p^{6}3s - 2p^{6}4p$	$g^{2}S - {}^{2}P^{\circ}$	$\frac{1}{2}-\frac{3}{2}$		197,504
2	200	458.155	0.0 – 218.26686	$2p^{6}3s - 2p^{6}4p$	$g^{2}S - {}^{2}P^{\circ}$	$\frac{1}{2}-\frac{1}{2}$		197,504
	148	507.45						127
	43	510.70						127
6	150	515.118	71.28754 – 265.41795	$2p^{6}3p - 2p^{6}5s$	$^{2}P^{\circ} - {}^{2}S$	$\frac{1}{2}-\frac{1}{2}$		197,504
6	200	516.348	71.74864 – 265.41795	$2p^{6}3p - 2p^{6}5s$	$^{2}P^{\circ} - {}^{2}S$	$\frac{3}{2}-\frac{1}{2}$		197,504
	120	536.07						127
	157	547.40						127
5	2	559.533	71.28754 – 250.00814	$2p^{6}3p - 2p^{6}4d$	$^{2}P^{\circ} - {}^{2}D$	$\frac{1}{2}-\frac{3}{2}$		197,677,504
5	5	560.980	71.74864 – 250.00802	$2p^{6}3p - 2p^{6}4d$	$^{2}P^{\circ} - {}^{2}D$	$\frac{3}{2}-\frac{5}{2}$		197,677,504
	104	587.53						127
	123	595.84	160.37441 – 328.20004	$2p^{6}3d - 2p^{6}7f$	$^{2}D - {}^{2}F^{\circ}$	$\frac{5}{2}-\frac{7}{2}$		127
	111	625.34						127
	120	625.77						127
	152	626.58						127
15	150	645.759	160.37441 – 315.23027	$2p^{6}3d - 2p^{6}6f$	$^{2}D - {}^{2}F^{\circ}$	$\frac{5}{2}-\frac{7}{2}$		504,767
	246	674.02						127
14	1	688.194	160.37441 – 305.68227	$2p^{6}3d - 2p^{6}6p$	$^{2}D - {}^{2}P^{\circ}$	$\frac{5}{2}-\frac{3}{2}$		504,677
14		688.200	160.37560 – 305.68227	$2p^{6}3d - 2p^{6}6p$	$^{2}D - {}^{2}P^{\circ}$	$\frac{3}{2}-\frac{3}{2}$		504
14		688.395	160.37560 – 305.64110	$2p^{6}3d - 2p^{6}6p$	$^{2}D - {}^{2}P^{\circ}$	$\frac{3}{2}-\frac{1}{2}$		504
13	300	749.941	160.37441 – 293.71899	$2p^{6}3d - 2p^{6}5f$	$^{2}D - {}^{2}F^{\circ}$	$\frac{5}{2}-\frac{7}{2}$		197,504
	101	779.04	193.97889 – 322.33783	$2p^{6}4s - 2p^{6}7p$	$^{2}S - {}^{2}P^{\circ}$	$\frac{1}{2}-\frac{3}{2}$		127
4	500	815.049	71.28754 – 193.97889	$2p^{6}3p - 2p^{6}4s$	$^{2}P^{\circ} - {}^{2}S$	$\frac{1}{2}-\frac{1}{2}$		197,504
4	550	818.129	71.74864 – 193.97889	$2p^{6}3p - 2p^{6}4s$	$^{2}P^{\circ} - {}^{2}S$	$\frac{3}{2}-\frac{1}{2}$		197,504
12	20	860.551	160.37441 – 276.57903	$2p^{6}3d - 2p^{6}5p$	$^{2}D - {}^{2}P^{\circ}$	$\frac{5}{2}-\frac{3}{2}$		504,677
12		860.560	160.37560 – 276.57903	$2p^{6}3d - 2p^{6}5p$	$^{2}D - {}^{2}P^{\circ}$	$\frac{3}{2}-\frac{3}{2}$		504

Si IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
12	5	861.118	160.37560 – 276.50367	$2p^63d - 2p^65p$	$^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		504,677
17		895.228	193.97889 – 305.68227	$2p^64s - 2p^66p$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		504
17		895.558	193.97889 – 305.64110	$2p^64s - 2p^66p$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		504
	582	899.86						127
	219	915.67						127
	153	929.39						127
	217	936.15						127
21		1045.500	218.26686 – 313.91492	$2p^64p - 2p^66d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		504
21		1047.271	218.42867 – 313.91492	$2p^64p - 2p^66d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		504
11	550	1066.629	160.37441 – 254.12903	$2p^63d - 2p^64f$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		197,504
3	550	1122.486	71.28754 – 160.37560	$2p^63p - 2p^63d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		197,504
3		1128.325	71.74864 – 160.37560	$2p^63p - 2p^63d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		197,504
3	650	1128.340	71.74864 – 160.37441	$2p^63p - 2p^63d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		197,504
	128	1146.78						127
16		1210.652	193.97889 – 276.57903	$2p^64s - 2p^65p$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		504
16		1211.757	193.97889 – 276.50367	$2p^64s - 2p^65p$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		504
20		1228.349	218.26686 – 299.67695	$2p^64p - 2p^66s$	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		504
20		1230.795	218.42867 – 299.67695	$2p^64p - 2p^66s$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		504
19		1365.549	218.26686 – 291.49750	$2p^64p - 2p^65d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		504
19		1368.571	218.42867 – 291.49760	$2p^64p - 2p^65d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		504
19		1368.573	218.42867 – 291.49750	$2p^64p - 2p^65d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		504
1	1000	1393.755	0.0 – 71.74864	$2p^63s - 2p^63p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		197,504,767
1	800	1402.770	0.0 – 71.28754	$2p^63s - 2p^63p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		197,504,767
24		1533.220	250.00802 – 315.23027	$2p^64d - 2p^66f$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		504
28	70	1634.607	254.12903 – 315.30528	$2p^64f - 2p^66g$	$^2F^\circ - {}^2G$	$\frac{7}{2}-\frac{9}{2}$		504
27		1672.612	254.12903 – 313.91492	$2p^64f - 2p^66d$	$^2F^\circ - {}^2D$	$\frac{7}{2}-\frac{5}{2}$		504
10	400	1722.534	160.37441 – 218.42867	$2p^63d - 2p^64p$	$^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		504
10	300	1727.377	160.37560 – 218.26686	$2p^63d - 2p^64p$	$^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		504
23		1796.162	250.00802 – 305.68227	$2p^64d - 2p^66p$	$^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		504
23		1796.166	250.00814 – 305.68227	$2p^64d - 2p^66p$	$^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		504
23		1797.496	250.00814 – 305.64110	$2p^64d - 2p^66p$	$^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		504

SILICON V (Si^{4+}), Z = 14
Ground State $1s^22s^22p^6(^1S_0)$ (10 electrons)
Ionization Potential 1 345 070 cm^{-1}; 166.77 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	78.611	0. – 1272.09	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})6d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		231
	50	78.903	0. – 1267.38	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})6d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		231
	100	80.807	0. – 1237.52	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})5d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		231
	100	81.113	0. – 1232.85	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})5d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		231
	500	85.175	0. – 1173.988	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})4d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		231
	300	85.579	0. – 1168.621	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		231
	200	90.447	0. – 1105.585	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})4s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		116
	200	90.850	0. – 1100.739	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		116
	750	96.442	0. – 1036.915	$2s^22p^6 - 2s^22p^5(^2P^\circ)3d$	$g^1S - {}^1P^\circ$	0 – 1		116
	500	97.143	0. – 1029.407	$2s^22p^6 - 2s^22p^5(^2P^\circ)3d$	$g^1S - {}^3D^\circ$	0 – 1		116
	100	98.211	0. – 1018.2355	$2s^22p^6 - 2s^22p^5(^2P^\circ)3d$	$g^1S - {}^3P^\circ$	0 – 1		116
	1000	117.853	0. – 848.5112	$2s^22p^6 - 2s^22p^5(^2P^\circ)3s$	$g^1S - {}^1P^\circ$	0 – 1		116

Si V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1000	118.961	0. – 840.5900	$2s^22p^6 - 2s^22p^5(^2P^\circ)3s$	$g^1S - ^3P^\circ$	0 – 1		116
	50	255.3	848.5112 – 1240.177	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ_{1/2})5f$	$^1P^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2	Q	931,375
		400.15	920.8639 – 1170.743	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{1/2})4d$	$^3D - \frac{1}{2}[\frac{3}{2}]^\circ$	1 – 2	Q	534,375
		405.54	927.3982 – 1173.988	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{1/2})4d$	$^3P - \frac{1}{2}[\frac{3}{2}]^\circ$	2 – 1	Q	534,375
		415.15	924.2917 – 1165.183	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{3/2})4d$	$^1D - \frac{3}{2}[\frac{7}{2}]^\circ$	2 – 3	Q	534,375
	1	460.68	1017.6290 – 1234.699	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	0 – 1		941
	3	461.97	1018.2355 – 1234.699	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		941
	10	464.05	1019.5374 – 1235.029	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		941
	1	467.64	1021.384 – 1235.230	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	4 – 3		941
	25	468.345	1021.384 – 1234.901	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 5		941
	10	469.71	1022.351 – 1235.238	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		941
		470.42	1022.351 – 1234.910	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		941
	5	473.95	1024.240 – 1235.230	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		941
	10	474.45	1029.340 – 1240.110	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})5f$	$^1D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		941
	15	475.63	1029.875 – 1240.122	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})5f$	$^3D^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		941
	15	476.88	1030.414 – 1240.110	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})5f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		941
	1	477.59	1025.526 – 1234.910	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^1F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		941
	10	486.22	1029.407 – 1235.077	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		941
	1	488.73	1030.414 – 1235.029	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		941
	1	501.68	906.2523 – 1105.585	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3S - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		116
	1	505.58	1036.915 – 1234.708	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^1P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		941
	10	514.177	906.2523 – 1100.739	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3S - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		116
	60	517.82	906.2523 – 1099.374	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3S - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		116
	5	535.86	918.9594 – 1105.585	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3D - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		116
	5	541.36	920.8639 – 1105.585	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3D - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		116
	30	544.719	920.8639 – 1104.445	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3D - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		116
	90	550.123	918.9594 – 1100.739	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		116
	120	551.131	917.9285 – 1099.374	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	3 – 2		116
	20	551.597	924.2917 – 1105.585	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^1D - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		116
	40	555.944	920.8639 – 1100.739	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		116
	55	556.670	925.9473 – 1105.585	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^1P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		116
	100	560.227	925.9473 – 1104.445	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^1P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		116
	10	561.204	927.3982 – 1105.585	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		116
	50	562.498	927.8057 – 1105.585	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		116
	60	564.403	928.4054 – 1105.585	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		116
	50	566.72	924.2917 – 1100.739	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^1D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		116
	90	568.054	928.4054 – 1104.445	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		116
	20	571.158	924.2917 – 1099.374	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^1D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		116
	5	572.110	925.9473 – 1100.739	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^1P - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		116
	5	576.614	925.9473 – 1099.374	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^1P - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		116
	1	576.89	927.3982 – 1100.739	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		116
	20	578.255	927.8057 – 1100.739	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		116
	50	581.473	927.3982 – 1099.374	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		116
	20	584.903	928.4054 – 1099.374	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		116
	50	630.129	1019.5374 – 1178.233	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3P^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		941
	90	645.39	1018.2355 – 1173.182	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		941
	80	648.052	1018.2355 – 1172.545	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		941
	50	648.312	1018.2355 – 1172.483	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		941
	5	649.23	1024.240 – 1178.272	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 2		941
	60	649.404	1024.240 – 1178.227	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		941
	10	650.866	1019.5374 – 1173.182	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		941
	100	651.104	1019.5374 – 1173.122	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		941
	60	653.550	1019.5374 – 1172.545	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		941
	40	654.819	1025.526 – 1178.241	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^1F^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		941

SI V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	657.267	1021.384 – 1173.530	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	4 – 4		941
	400	660.057	1021.384 – 1172.886	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 5		941
	50	661.509	1022.351 – 1173.520	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 3		941
	250	664.259	1022.351 – 1172.895	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		941
	100	669.888	1024.240 – 1173.520	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		941
	100	671.651	1029.340 – 1178.227	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^1D^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		941
		671.72	1029.407 – 1178.272	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		941
	250	674.007	1029.875 – 1178.241	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		941
	200	675.657	1025.526 – 1173.530	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		941
	10	676.332	1030.414 – 1178.272	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 2		941
	150	676.511	1030.414 – 1178.233	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		941
	40	677.531	1025.526 – 1173.122	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		941
	40	678.566	1025.526 – 1172.895	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		941
	1	680.181	1025.526 – 1172.545	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{3}{2}]$	3 – 2		941
	50	693.581	1029.340 – 1173.520	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1D^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		941
	10	695.208	1029.340 – 1173.182	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		941
	60	695.532	1029.407 – 1173.182	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		941
	50	696.113	1029.875 – 1173.530	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		941
	20	698.096	1029.875 – 1173.122	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		941
	20	698.617	1029.407 – 1172.545	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		941
	5	698.93	1029.407 – 1172.483	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		941
	1	700.46	1030.414 – 1173.182	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		941
	40	700.733	1030.414 – 1173.122	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		941
	30	701.095	962.950 – 1105.585	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		116
	30	703.586	1030.414 – 1172.545	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		941
	60	707.420	1036.915 – 1178.272	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^1P^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		941
	20	725.737	962.950 – 1100.739	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		116
	50	733.855	1036.915 – 1173.182	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1P^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		941
	50	737.301	1036.915 – 1172.545	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		941
	50	817.257	840.5900 – 962.950	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - {}^1S$	1 – 0		116
	5	872.25	1019.5374 – 1134.184	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4p$	$^3P^\circ - \frac{1}{2}[\frac{3}{2}]$	2 – 2		941
	250	873.832	848.5112 – 962.950	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^1P^\circ - {}^1S$	1 – 0		116
	200	882.735	906.2523 – 1019.5374	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3S - {}^3P^\circ$	1 – 2		116
	3	888.999	917.9285 – 1030.414	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - {}^3D^\circ$	3 – 2		116
	150	892.993	906.2523 – 1018.2355	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3S - {}^3P^\circ$	1 – 1		116
	60	893.277	917.9285 – 1029.875	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - {}^3D^\circ$	3 – 3		116
	40	897.227	918.9594 – 1030.414	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - {}^3D^\circ$	2 – 2		116
	80	897.856	906.2523 – 1017.6290	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3S - {}^3P^\circ$	1 – 0		116
	70	901.168	925.9473 – 1036.915	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^1P - {}^1P^\circ$	1 – 1		116
		904.48	1019.5374 – 1130.097	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		941
	5	905.414	918.9594 – 1029.407	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - {}^3D^\circ$	2 – 1		116
	5	905.963	918.9594 – 1029.340	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - {}^1D^\circ$	2 – 2		116
	30	912.827	920.8639 – 1030.414	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - {}^3D^\circ$	1 – 2		116
	30	916.500	927.8057 – 1036.915	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3P - {}^1P^\circ$	0 – 1		116
	5	920.305	1025.526 – 1134.184	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4p$	$^1F^\circ - \frac{1}{2}[\frac{3}{2}]$	3 – 2		941
		921.31	920.8639 – 1029.407	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - {}^3D^\circ$	1 – 1		116
	70	921.583	928.4054 – 1036.915	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3P - {}^1P^\circ$	1 – 1		116
	10	921.862	920.8639 – 1029.340	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - {}^1D^\circ$	1 – 2		116
	30	925.565	1036.915 – 1144.957	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4p$	$^1P^\circ - \frac{1}{2}[\frac{1}{2}]$	1 – 0		941
	100	929.389	917.9285 – 1025.526	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - {}^1F^\circ$	3 – 3		116
	5	937.973	1017.6290 – 1124.243	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3P^\circ - \frac{3}{2}[\frac{1}{2}]$	0 – 1		941
	70	938.753	1021.384 – 1127.908	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	4 – 3		941
	5	940.61	917.9285 – 1024.240	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - {}^3F^\circ$	3 – 2		116
	80	942.294	924.2917 – 1030.414	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^1D - {}^3D^\circ$	2 – 2		941

Si V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	943.335	1018.2355 – 1124.243	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3P^\circ - \frac{3}{2}[\frac{1}{2}]$	1 – 1		941
	10	947.108	924.2917 – 1029.875	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^1D - {}^3D^\circ$	2 – 3		941
	2	947.359	1022.351 – 1127.908	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		941
	100	949.842	918.9594 – 1024.240	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - {}^3F^\circ$	2 – 2		116
	20	950.224	1024.240 – 1129.479	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3F^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 1		941
	5	951.94	924.2917 – 1029.340	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^1D - {}^1D^\circ$	2 – 2		116
	3	953.84	1029.340 – 1134.184	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4p$	$^1D^\circ - \frac{1}{2}[\frac{3}{2}]$	2 – 2		941
	20	955.059	1019.5374 – 1124.243	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3P^\circ - \frac{3}{2}[\frac{1}{2}]$	2 – 1		941
	50	956.292	1025.526 – 1130.097	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^1F^\circ - \frac{3}{2}[\frac{3}{2}]$	3 – 2		941
	3	957.265	925.9473 – 1030.414	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^1P - {}^3D^\circ$	1 – 2		941
	80	957.649	917.9285 – 1022.351	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - {}^3F^\circ$	3 – 3		116
	60	958.709	1029.875 – 1134.184	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4p$	$^3D^\circ - \frac{1}{2}[\frac{3}{2}]$	3 – 2		941
	5	959.33	1024.240 – 1128.480	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		941
	30	961.633	1029.340 – 1133.330	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4p$	$^1D^\circ - \frac{1}{2}[\frac{3}{2}]$	2 – 1		941
	40	963.666	1030.414 – 1134.184	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4p$	$^3D^\circ - \frac{1}{2}[\frac{3}{2}]$	2 – 2		941
	10	964.861	1029.407 – 1133.049	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3D^\circ - \frac{3}{2}[\frac{1}{2}]$	1 – 0		941
	300	966.607	917.9285 – 1021.384	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - {}^3F^\circ$	3 – 4		116
	250	967.193	918.9594 – 1022.351	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - {}^3F^\circ$	2 – 3		116
	100	967.338	920.8639 – 1024.240	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - {}^3F^\circ$	1 – 2		116
		970.720	927.3982 – 1030.414	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3P - {}^3D^\circ$	2 – 2		116
		975.8	927.3982 – 1029.875	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3P - {}^3D^\circ$	2 – 3		938
	250	975.825	927.3982 – 1029.875	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3P - {}^3D^\circ$	2 – 3		116
	5	976.73	1025.526 – 1127.908	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^1F^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		941
	200	980.310	928.4054 – 1030.414	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3P - {}^3D^\circ$	1 – 2		116
	70	980.955	927.3982 – 1029.340	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3P - {}^1D^\circ$	2 – 2		116
	80	984.236	927.8057 – 1029.407	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3P - {}^3D^\circ$	0 – 1		116
	250	987.809	924.2917 – 1025.526	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^1D - {}^1F^\circ$	2 – 3		116
		990.083	928.4054 – 1029.407	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3P - {}^3D^\circ$	1 – 1		116
	30	999.28	1029.407 – 1129.479	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		941
	20	1007.295	918.9594 – 1018.2355	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - {}^3P^\circ$	2 – 1		116
	30	1019.084	927.3982 – 1025.526	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3P - {}^1F^\circ$	2 – 3		116
	20	1019.792	924.2917 – 1022.351	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^1D - {}^3F^\circ$	2 – 3		116
	5	1020.09	1029.875 – 1127.908	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4p$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		941
	2	1028.06	1036.915 – 1134.185	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4p$	$^1P^\circ - \frac{1}{2}[\frac{1}{2}]$	1 – 1		941
	10	1049.915	924.2917 – 1019.5374	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^1D - {}^3P^\circ$	2 – 2		116
	70	1064.450	924.2917 – 1018.2355	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^1D - {}^3P^\circ$	2 – 1		116
	40	1068.48	925.9473 – 1019.5374	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^1P - {}^3P^\circ$	1 – 2		116
	10	1083.54	925.9473 – 1018.2355	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^1P - {}^3P^\circ$	1 – 1		116
	90	1085.318	927.3982 – 1019.5374	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3P - {}^3P^\circ$	2 – 2		116
	20	1097.308	928.4054 – 1019.5374	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3P - {}^3P^\circ$	1 – 2		116
	30	1100.865	927.3982 – 1018.2355	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3P - {}^3P^\circ$	2 – 1		116
	60	1105.831	927.8057 – 1018.2355	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3P - {}^3P^\circ$	0 – 1		116
	150	1106.338	838.0174 – 928.4054	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - {}^3P$	2 – 1		116
		1113.213	928.4054 – 1018.2355	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3P - {}^3P^\circ$	1 – 1		116
	200	1118.807	838.0174 – 927.3982	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - {}^3P$	2 – 2		116
	70	1120.780	928.4054 – 1017.6290	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3P - {}^3P^\circ$	1 – 0		116
	80	1137.267	838.0174 – 925.9473	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - {}^1P$	2 – 1		116
	80	1138.752	840.5900 – 928.4054	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - {}^3P$	1 – 1		116
	200	1146.583	840.5900 – 927.8057	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - {}^3P$	1 – 0		116
	250	1151.963	840.5900 – 927.3982	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - {}^3P$	1 – 2		116
	400	1159.095	838.0174 – 924.2917	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - {}^1D$	2 – 2		116
	100	1171.559	840.5900 – 925.9473	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - {}^1P$	1 – 1		116
	300	1171.857	843.0706 – 928.4054	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - {}^3P$	0 – 1		116
	200	1194.74	840.5900 – 924.2917	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - {}^1D$	1 – 2		116

Si V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		1206.612	843.0706 – 925.9473	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - {}^1P$	0 – 1	P	116
		1207.052	838.0174 – 920.8639	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - {}^3D$	2 – 1	P	116
		1235.453	838.0174 – 918.9594	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - {}^3D$	2 – 2	P	116
	500	1245.737	840.5900 – 920.8639	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - {}^3D$	1 – 1		116
	600	1251.390	838.0174 – 917.9285	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - {}^3D$	2 – 3		116
	450	1251.639	848.5112 – 928.4054	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^1P^\circ - {}^3P$	1 – 1		116
	550	1267.638	848.5112 – 927.3982	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^1P^\circ - {}^3P$	1 – 2		116
	600	1276.007	840.5900 – 918.9594	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - {}^3D$	1 – 2		116
	400	1285.457	843.0706 – 920.8639	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - {}^3D$	0 – 1		116
	450	1291.390	848.5112 – 925.9473	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^1P^\circ - {}^1P$	1 – 1		116
	500	1319.601	848.5112 – 924.2917	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^1P^\circ - {}^1D$	1 – 2		116
	100	1351.990	962.950 – 1036.915	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^1S - {}^1P^\circ$	0 – 1		116
	70	1419.484	848.5112 – 918.9594	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^1P^\circ - {}^3D$	1 – 2		116
	60	1423.36	1164.645 – 1234.901	$2s^22p^5(^2P^\circ_{3/2})4d - 2s^22p^5(^2P^\circ_{3/2})5f$	$\frac{3}{2}[\frac{7}{2}]^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 5		941
	60	1434.17	1165.183 – 1234.910	$2s^22p^5(^2P^\circ_{3/2})4d - 2s^22p^5(^2P^\circ_{3/2})5f$	$\frac{3}{2}[\frac{7}{2}]^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		941
	40	1434.86	1170.425 – 1240.118	$2s^22p^5(^2P^\circ_{1/2})4d - 2s^22p^5(^2P^\circ_{1/2})5f$	$\frac{1}{2}[\frac{5}{2}]^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		941
	40	1447.95	1166.166 – 1235.230	$2s^22p^5(^2P^\circ_{3/2})4d - 2s^22p^5(^2P^\circ_{3/2})5f$	$\frac{3}{2}[\frac{5}{2}]^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		941
	50	1455.83	1166.549 – 1235.238	$2s^22p^5(^2P^\circ_{3/2})4d - 2s^22p^5(^2P^\circ_{3/2})5f$	$\frac{3}{2}[\frac{5}{2}]^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		941
	700	1465.531	838.0174 – 906.2523	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - {}^3S$	2 – 1		116
	30	1504.76	1168.621 – 1235.077	$2s^22p^5(^2P^\circ_{3/2})4d - 2s^22p^5(^2P^\circ_{3/2})5f$	$\frac{3}{2}[\frac{3}{2}]^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		941
	400	1522.944	840.5900 – 906.2523	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - {}^3S$	1 – 1		116
	200	1582.737	843.0706 – 906.2523	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - {}^3S$	0 – 1		116
	30	1595.44	1172.483 – 1235.163	$2s^22p^5(^2P^\circ_{3/2})4f - 2s^22p^5(^2P^\circ_{3/2})5g$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{5}{2}]^\circ$	1 – 2		941
	50	1596.98	1172.545 – 1235.163	$2s^22p^5(^2P^\circ_{3/2})4f - 2s^22p^5(^2P^\circ_{3/2})5g$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 3		941
	80	1604.25	1172.886 – 1235.221	$2s^22p^5(^2P^\circ_{3/2})4f - 2s^22p^5(^2P^\circ_{3/2})5g$	$\frac{3}{2}[\frac{9}{2}] - \frac{3}{2}[\frac{11}{2}]^\circ$	5 – 6		941
	60	1604.47	1172.895 – 1235.221	$2s^22p^5(^2P^\circ_{3/2})4f - 2s^22p^5(^2P^\circ_{3/2})5g$	$\frac{3}{2}[\frac{9}{2}] - \frac{3}{2}[\frac{11}{2}]^\circ$	4 – 5		941
	40	1607.73	1173.122 – 1235.321	$2s^22p^5(^2P^\circ_{3/2})4f - 2s^22p^5(^2P^\circ_{3/2})5g$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{7}{2}]^\circ$	3 – 4		941
	80	1609.11	1178.227 – 1240.373	$2s^22p^5(^2P^\circ_{1/2})4f - 2s^22p^5(^2P^\circ_{1/2})5g$	$\frac{1}{2}[\frac{7}{2}] - \frac{1}{2}[\frac{9}{2}]^\circ$	3 – 4		941
	80	1609.28	1173.182 – 1235.321	$2s^22p^5(^2P^\circ_{3/2})4f - 2s^22p^5(^2P^\circ_{3/2})5g$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{7}{2}]^\circ$	2 – 3		941
	50	1609.43	1178.241 – 1240.373	$2s^22p^5(^2P^\circ_{1/2})4f - 2s^22p^5(^2P^\circ_{1/2})5g$	$\frac{1}{2}[\frac{7}{2}] - \frac{1}{2}[\frac{9}{2}]^\circ$	4 – 5		941
	40	1610.29	1178.272 – 1240.373	$2s^22p^5(^2P^\circ_{1/2})4f - 2s^22p^5(^2P^\circ_{1/2})5g$	$\frac{1}{2}[\frac{5}{2}] - \frac{1}{2}[\frac{7}{2}]^\circ$	2 – 3		941
	40	1616.81	1173.530 – 1235.380	$2s^22p^5(^2P^\circ_{3/2})4f - 2s^22p^5(^2P^\circ_{3/2})5g$	$\frac{3}{2}[\frac{7}{2}] - \frac{3}{2}[\frac{9}{2}]^\circ$	4 – 4		941
	20	1731.868	848.5112 – 906.2523	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^1P^\circ - {}^3S$	1 – 1		116

SILICON VI (Si^{5+}), Z = 14
Ground State $1s^22s^22p^5(^2P^\circ_{3/2})$ (9 electrons)
Ionization Potential 1 653 900 cm^{-1}; 205.06 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	65.004	0. – 1538.37	$2s^22p^5 - 2s^22p^4(^1D)5d$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		231
	10	65.211	5.090 – 1538.37	$2s^22p^5 - 2s^22p^4(^1D)5d$	$g^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		231
	20	66.772	0. – 1497.63	$2s^22p^5 - 2s^22p^4(^3P)5d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		231
	10	66.796	0. – 1497.1	$2s^22p^5 - 2s^22p^4(^1S)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		231
	50	69.204	0. – 1445.	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		231
	250	69.236	0. – 1444.34	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		231
	50	69.421	5.090 – 1445.59	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		231
	100	69.448	5.090 – 1445.03	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		231
	250	71.181	0. – 1404.87	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		231
	100	71.273	0. – 1403.05	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		231
	10	71.304	0. – 1402.51	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		231
	50	71.340	0. – 1401.74	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		231

Si VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	150	71.366	5.090 – 1406.33	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		231
	200	71.384	0. – 1400.88	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		231
	50	71.474	0. – 1399.11	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - {}^4F$	$\frac{3}{2} - \frac{5}{2}$		231
	50	71.534	5.090 – 1403.05	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		231
	50	71.561	5.090 – 1402.51	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		231
	10	71.644	5.090 – 1400.88	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - {}^4P$	$\frac{1}{2} - \frac{3}{2}$		231
	10	71.718	5.090 – 1399.45	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - {}^4F$	$\frac{1}{2} - \frac{3}{2}$		231
	50	72.896	0. – 1371.82	$2s^22p^5 - 2s^22p^4(^1D)4s$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		231
	200	75.193	0. – 1329.9	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		231
	150	75.398						231
	50	75.486	5.090 – 1329.9	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		231
	50	75.587	0. – 1322.98	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		231
	500	77.429	0. – 1291.510	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		231
	300	77.718	5.090 – 1291.800	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		231
	250	80.395	0. – 1243.860	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		231
	500	80.449	0. – 1243.020	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		231
	250	80.491	0. – 1242.390	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		231
	500	80.501	0. – 1242.186	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2F$	$\frac{3}{2} - \frac{5}{2}$		231
	600	80.577	0. – 1241.060	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		231
	500	80.698	0. – 1239.200	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		231
	500	80.725	5.090 – 1243.860	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		231
	400	80.821	5.090 – 1242.390	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		231
	400	80.908	5.090 – 1241.060	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		231
	350	81.030	5.090 – 1239.200	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		231
	200	83.006	0. – 1204.740	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		231
	750	83.128	0. – 1202.960	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		231
	250	83.258	0. – 1201.100	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		231
	50	83.283	0. – 1200.720	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		231
	400	83.358	5.090 – 1204.740	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		231
	400	83.526	0. – 1197.727	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		231
	400	83.611	5.090 – 1201.100	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		231
	150	83.639	5.090 – 1200.720	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		231
	50	83.684	0. – 1194.899	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{1}{2}$		231
	50	83.729	0. – 1194.327	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4F$	$\frac{3}{2} - \frac{3}{2}$		231
	300	83.802	0. – 1193.223	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4F$	$\frac{3}{2} - \frac{5}{2}$		231
	10	83.965	5.090 – 1195.984	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4P$	$\frac{1}{2} - \frac{3}{2}$		231
	600	84.082	5.090 – 1194.327	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4F$	$\frac{1}{2} - \frac{3}{2}$		231
	200	91.370	0. – 1094.449	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		733
	200	91.798	5.090 – 1094.449	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		733
	500	96.022	0. – 1041.416	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		733
	500	96.488	5.090 – 1041.472	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		733
	500	99.0963	0. – 1009.118	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		733
	750	99.4595	0. – 1005.430	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		733
	500	99.5991	5.090 – 1009.118	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		733
	500	99.9658	5.090 – 1005.430	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		733
	500	100.6403	0. – 993.640	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		733
	40	100.953	0. – 990.516	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		733
	10	100.970	5.090 – 995.470	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{1}{2} - \frac{1}{2}$		733
	10	101.159	5.090 – 993.640	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{1}{2} - \frac{3}{2}$		733
	50	102.846	406.497 – 1378.83	$2s2p^6 - 2s2p^5(^3P^\circ)3s$	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		231
	100	103.163	406.497 – 1375.84	$2s2p^6 - 2s2p^5(^3P^\circ)3s$	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		231
	50	147.8	406.497 – 1083.003	$2s2p^6 - 2s^22p^4(^3P)3p$	${}^2S - {}^4D^\circ$	$\frac{1}{2} - \frac{1}{2}$	Q	931,375
	50	213.4	1069.854 – 1538.37	$2s^22p^4(^3P)3p - 2s^22p^4(^1D)5d$	${}^4P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$	Q	931,375
	50	224.1	1092.171 – 1538.37	$2s^22p^4(^3P)3p - 2s^22p^4(^1D)5d$	${}^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$	Q	931,375

Si VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	800	246.004	0. – 406.497	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - ^2S$	3/2 – 1/2		733
	700	249.124	5.090 – 406.497	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - ^2S$	1/2 – 1/2		733
		281.23	1182.783 – 1538.37	$2s^22p^4(^1S)3p - 2s^22p^4(^1D)5d$	$^2P^\circ - ^2S$	3/2 – 1/2	Q	534,375
	50	281.3	1089.547 – 1445.03	$2s^22p^4(^3P)3p - 2s^22p^4(^1D)4d$	$^2D^\circ - ^2P$	3/2 – 3/2	Q	931,375
		285.92	1147.901 – 1497.63	$2s^22p^4(^1D)3p - 2s^22p^4(^3P)5d$	$^2P^\circ - ^2D$	3/2 – 5/2	Q	534,375
		301.25	1071.129 – 1403.05	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)4d$	$^4P^\circ - ^2D$	1/2 – 3/2	Q	534,375
	50	331.2	1069.854 – 1371.82	$2s^22p^4(^3P)3p - 2s^22p^4(^1D)4s$	$^4P^\circ - ^2D$	3/2 – 5/2	Q	534,931,375
	50	360.3	1124.219 – 1401.74	$2s^22p^4(^1D)3p - 2s^22p^4(^3P)4d$	$^2F^\circ - ^4P$	7/2 – 5/2	Q	931,375
	60	442.94						733
	20	443.81						733
	100	452.17						733
	30	457.42						733
	200	461.30						733
	20	462.29	1182.783 – 1399.11	$2s^22p^4(^1S)3p - 2s^22p^4(^3P)4d$	$^2P^\circ - ^4F$	3/2 – 5/2	Q	733
	100	468.78						733
	40	483.68						733
	80	489.81						733
		504.95	1093.752 – 1291.800	$2s^22p^4(^3P)3p - 2s^22p^4(^1S)3d$	$^4S^\circ - ^2D$	3/2 – 3/2	Q	534,375
	90	690.35	1005.430 – 1150.282	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^2P - ^2P^\circ$	3/2 – 1/2		733
	90	701.89	1005.430 – 1147.901	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^2P - ^2P^\circ$	3/2 – 3/2		733
	60	708.394	1009.118 – 1150.282	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^2P - ^2P^\circ$	1/2 – 1/2		733
	40	720.547	1009.118 – 1147.901	$2s^22p^4(^3P)3s - 2s^22p^4(^1D)3p$	$^2P - ^2P^\circ$	1/2 – 3/2		733
	20	775.71	1068.813 – 1197.727	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^4P$	5/2 – 5/2		733
	20	779.19	1068.813 – 1197.151	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^2F$	5/2 – 5/2		733
	10	782.03	1069.854 – 1197.727	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^4P$	3/2 – 5/2		733
	5	785.57	1069.854 – 1197.151	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^2F$	3/2 – 5/2		733
	10	786.343	1068.813 – 1195.984	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^4P$	5/2 – 3/2		733
	5	792.86	1069.854 – 1195.984	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^4P$	3/2 – 3/2		733
	30	799.723	1069.854 – 1194.899	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^4P$	3/2 – 1/2		733
	30	800.926	1071.129 – 1195.984	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^4P$	1/2 – 3/2		733
	5	807.94	1071.129 – 1194.899	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^4P$	1/2 – 1/2		733
	20	844.39	1124.219 – 1242.649	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2F^\circ - ^2F$	7/2 – 7/2		733
	5	874.99	1078.935 – 1193.223	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4F$	7/2 – 5/2		733
	10	884.64	1069.854 – 1182.894	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^4D$	3/2 – 1/2		733
	60	886.243	1068.813 – 1181.649	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^4D$	5/2 – 5/2		733
	10	888.050	1078.935 – 1191.541	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4F$	7/2 – 7/2		733
	20	888.72	1080.700 – 1193.223	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4F$	5/2 – 5/2		733
	50	889.227	1069.854 – 1182.311	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^4D$	3/2 – 3/2		733
	100	890.041	1068.813 – 1181.167	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^4D$	5/2 – 7/2		733
		891.97	1082.215 – 1194.327	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4F$	3/2 – 3/2		733
	70	894.490	1069.854 – 1181.649	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^4D$	3/2 – 5/2		733
	40	894.737	1071.129 – 1182.894	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^4D$	1/2 – 1/2		733
	40	898.281	1083.003 – 1194.327	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4F$	1/2 – 3/2		733
	40	899.427	1071.129 – 1182.311	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4P^\circ - ^4D$	1/2 – 3/2		733
	60	900.834	1082.215 – 1193.223	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4F$	3/2 – 5/2		733
	200	901.637	1078.935 – 1189.844	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4F$	7/2 – 9/2		733
	100	902.209	1080.700 – 1191.541	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4F$	5/2 – 7/2		733
	5	906.18	1086.796 – 1197.151	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^\circ - ^2F$	5/2 – 5/2		733
	30	919.034	1041.472 – 1150.282	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2P^\circ$	3/2 – 1/2		733
	90	922.063	1124.219 – 1232.671	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2F^\circ - ^2G$	7/2 – 9/2		733
	100	924.290	1086.796 – 1194.987	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^\circ - ^2F$	5/2 – 7/2		733
	50	924.62	1134.496 – 1242.649	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2D^\circ - ^2F$	5/2 – 7/2		733
	5	925.03	1134.081 – 1242.186	$2s^22p^4(^1D)3p - 2s^22p^4(^1D)3d$	$^2D^\circ - ^2F$	3/2 – 5/2		733
		939.10	1041.416 – 1147.901	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2P^\circ$	5/2 – 3/2		733

Si VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	5	954.70	1086.796 – 1191.541	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^2D^\circ - ^4F$	$\frac{5}{2}-\frac{7}{2}$		733
	40	961.766	1093.752 – 1197.727	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		733
	60	968.655	990.516 – 1093.752	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		733
	5	973.57	1078.935 – 1181.649	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4D$	$\frac{7}{2}-\frac{5}{2}$		733
	70	978.167	1078.935 – 1181.167	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4D$	$\frac{7}{2}-\frac{7}{2}$		733
	30	988.664	1093.752 – 1194.899	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		733
	50	990.59	1080.700 – 1181.649	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4D$	$\frac{5}{2}-\frac{5}{2}$		733
	60	998.884	993.640 – 1093.752	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		733
	5	1001.09	1083.003 – 1182.894	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4D$	$\frac{1}{2}-\frac{1}{2}$		733
	5	1006.96	1083.003 – 1182.311	$2s^22p^4(^3P)3p - 2s^22p^4(^3P)3d$	$^4D^\circ - ^4D$	$\frac{1}{2}-\frac{3}{2}$		733
	40	1017.48	995.470 – 1093.752	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		733
	50	1074.36	1041.416 – 1134.496	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		733
	5	1074.98	1041.472 – 1134.496	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		733
	30	1079.809	1041.472 – 1134.081	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		733
	40	1108.85	990.516 – 1080.700	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		733
	30	1128.99	993.640 – 1082.215	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		733
	100	1130.983	990.516 – 1078.935	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		733
	50	1142.43	995.470 – 1083.003	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{1}{2}$		733
	90	1148.630	993.640 – 1080.700	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		733
	70	1152.862	1005.430 – 1092.171	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		733
	50	1188.829	1005.430 – 1089.547	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		733
	80	1204.05	1009.118 – 1092.171	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		733
	200	1207.68	1041.416 – 1124.219	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		733
	10	1217.65	1041.416 – 1123.540	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		733
	100	1218.50	1041.472 – 1123.540	$2s^22p^4(^1D)3s - 2s^22p^4(^1D)3p$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		733
	300	1229.01	1005.430 – 1086.796	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		733
	50	1243.31	1009.118 – 1089.547	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^2P - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		733
	500	1277.20	990.516 – 1068.813	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		733
	100	1290.49	993.640 – 1071.129	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		733
	50	1312.11	993.640 – 1069.854	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		733
	90	1330.27	993.640 – 1068.813	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		733
	80	1344.40	995.470 – 1069.854	$2s^22p^4(^3P)3s - 2s^22p^4(^3P)3p$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		733

SILICON VII (Si^{6+}), Z = 14
Ground State $1s^22s^22p^4(^3P_2)$ (8 electrons)
Ionization Potential 1 988 400 cm^{-1}; 246.53 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	54.462	0.0 – 1836.14	$2s^22p^4 - 2s^22p^3(^2D^\circ)5d$	$g^3P - ^3P^\circ$	2 – 2		231
	50	54.522	0.0 – 1834.12	$2s^22p^4 - 2s^22p^3(^2D^\circ)5d$	$g^3P - ^3D^\circ$	2 – 3		233,231
	50	56.528	0.0 – 1769.04	$2s^22p^4 - 2s^22p^3(^4S^\circ)5d$	$g^3P - ^3D^\circ$	2 – 3		231
	50	56.645	4.03 – 1769.04	$2s^22p^4 - 2s^22p^3(^4S^\circ)5d$	$g^3P - ^3D^\circ$	1 – 2	Q	231,375
	50	57.325	0.0 – 1744.44	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$g^3P - ^3D^\circ$	2 – 3		231
	50	57.434	0.0 – 1741.13	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$g^3P - ^3P^\circ$	2 – 2		231
	50	57.589	4.03 – 1741.13	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$g^3P - ^3P^\circ$	1 – 2		231,487
	50	58.388	0.0 – 1712.68	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - ^3S^\circ$	2 – 1		231
	100	58.445	0.0 – 1711.01	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - ^3P^\circ$	2 – 2		231
	10	58.526	4.03 – 1712.68	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - ^3S^\circ$	1 – 1		231
	100	58.580	0.0 – 1707.07	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - ^3D^\circ$	2 – 3		231
	50	58.719	4.03 – 1707.07	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - ^3D^\circ$	1 – 2		231

Si VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	58.782	46.55+X – 1747.75+X	$2s^22p^4 - 2s^22p^3(^2P^\circ)4d$	$^1D - ^1F^\circ$	2 – 3		231
	50	59.884	0.0 – 1669.9	$2s^22p^4 - 2s^22p^3(^2P^\circ)4s$	$g^3P - ^3P^\circ$	2 – 2		231
	100	59.966	46.55+X – 1714.16+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$^1D - ^1F^\circ$	2 – 3		231,375
	100	60.221	46.55+X – 1707.1+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$^1D - ^1P^\circ$	2 – 1		231
	100	60.837	0.0 – 1643.74	$2s^22p^4 - 2s^22p^3(^4S^\circ)4d$	$g^3P - ^3D^\circ$	2 – 3		231
	100	60.989	4.03 – 1643.74	$2s^22p^4 - 2s^22p^3(^4S^\circ)4d$	$g^3P - ^3D^\circ$	1 – 2		231
	50	61.306	0.0 – 1631.16	$2s^22p^4 - 2s^22p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	2 – 3		231
	50	62.154	99.33+X – 1707.1+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$^1S - ^1P^\circ$	0 – 1	Q	231,375
	50	62.940	46.55+X – 1635.37+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)4s$	$^1D - ^1D^\circ$	2 – 2		231
	50	65.595	363.17 – 1887.68	$2s2p^5 - 2s2p^4(^4P)4s$	$^3P^\circ - ^3P$	2 – 2		231,233
	10	68.026	0.0 – 1470.05	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	2 – 2		231
	250	68.148	0.0 – 1467.39	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		231
	50	68.190	0.0 – 1466.49	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3F^\circ$	2 – 2		231,375
	50	68.212	4.03 – 1470.05	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		231
	50	68.270	5.57 – 1470.04+X	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^1P^\circ$	0 – 1	Q	231,375
	50	68.340	0.0 – 1463.27	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3F^\circ$	2 – 3	Q	231,375
	100	68.408	0.0 – 1461.86	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	2 – 2		231
	10	68.456	0.0 – 1460.86	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	2 – 1		231
	50	68.593	4.03 – 1461.86	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	1 – 2		231
	50	68.642	4.03 – 1460.86	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	1 – 1		231
	50	68.669	4.03 – 1460.29	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	1 – 0		231
	100	68.715	5.57 – 1460.86	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	0 – 1		231
	150	69.385	0.0 – 1441.23	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3S^\circ$	2 – 1		231
	100	69.580	4.03 – 1441.23	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3S^\circ$	1 – 1		231
	100	69.602	0.0 – 1436.75	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3P^\circ$	2 – 1		231
	200	69.663	0.0 – 1435.46	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3P^\circ$	2 – 2		231
	200	69.790	4.03 – 1437.09	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3P^\circ$	1 – 0		231
	100	69.861	4.03 – 1435.46	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3P^\circ$	1 – 2		231
	100	69.872	5.57 – 1436.75	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3P^\circ$	0 – 1		231
	250	70.027	0.0 – 1428.02	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		231
	250	70.072	46.55+X – 1473.65+X	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$^1D - ^1F^\circ$	2 – 3		231
	20	70.123	0.0 – 1426.05	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3F^\circ$	2 – 3		231
	200	70.222	4.03 – 1428.09	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		231
	200	70.250	46.55+X – 1470.04+X	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$^1D - ^1P^\circ$	2 – 1		231
	50	70.323	4.03 – 1426.05	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3F^\circ$	1 – 2		231
	50	70.427	46.55+X – 1466.46+X	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$^1D - ^1D^\circ$	2 – 2		231
	100	70.594	46.55+X – 1463.27	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$^1D - ^3F^\circ$	2 – 3	Q	231,375
	50	70.730	46.55+X – 1460.86	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$^1D - ^3P^\circ$	2 – 1		231
	200	71.384	46.55+X – 1447.42+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1D - ^1F^\circ$	2 – 3		231
	200	71.900	46.55+X – 1436.75	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1D - ^3P^\circ$	2 – 1	Q	231,375
	200	71.955	46.55+X – 1436.31+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1D - ^1D^\circ$	2 – 2		231,233
	300	72.324	46.55+X – 1429.23+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1D - ^1P^\circ$	2 – 1		231
	500	73.123	0.0 – 1367.56	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		231
	250	73.350	4.03 – 1367.36	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	1 – 1		231
	200	73.433	5.57 – 1367.36	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	0 – 1		231
	200	75.193	99.33+X – 1429.23+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1S - ^1P^\circ$	0 – 1		231,233
	250	79.236	0.0 – 1262.04	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^3P^\circ$	2 – 2		231
	50	79.262	0.0 – 1261.61	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^3P^\circ$	2 – 1		231
	100	79.491	4.03 – 1262.04	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^3P^\circ$	1 – 2		231
	100	79.523	4.03 – 1261.61	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^3P^\circ$	1 – 1		231
	100	79.615	5.57 – 1261.61	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^3P^\circ$	0 – 1		231
	50	81.449	363.17 – 1590.93	$2s2p^5 - 2s2p^4(^2D)3s$	$^3P^\circ - ^3D$	2 – 3		233
	250	81.558	46.55+X – 1272.72+X	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$^1D - ^1P^\circ$	2 – 1		231
	600	81.620	0.0 – 1225.15	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - ^3D^\circ$	2 – 3		231

Si VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	500	81.895	4.03 – 1225.15	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - ^3D^\circ$	1 – 2		231
	150	81.998	5.57 – 1225.15	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - ^3D^\circ$	0 – 1		231
	600	84.082	46.55+X – 1235.87+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$^1D - ^1D^\circ$	2 – 2		231
	100	85.219	99.33+X – 1272.72+X	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$^1S - ^1P^\circ$	0 – 1		231
	500	85.289	0.0 – 1172.47	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^3S^\circ$	2 – 1		231
	500	85.584	4.03 – 1172.47	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^3S^\circ$	1 – 1		231
	100	85.698	5.57 – 1172.47	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^3S^\circ$	0 – 1		231
		86.88	0. – 1151.	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^5S^\circ$	2 – 2	P	680
		87.19	4.03 – 1151.	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^5S^\circ$	1 – 2	P	680
	150	88.008	363.17 – 1499.43	$2s2p^5 - 2s2p^4(^4P)3s$	$^3P^\circ - ^3P$	2 – 2		231,233
	50	163.4	849.013+X – 1460.86	$2p^6 - 2s^22p^3(^2P^\circ)3d$	$^1S - ^3P^\circ$	0 – 1	Q	931,375
		170.13	849.013+X – 1436.75	$2p^6 - 2s^22p^3(^2D^\circ)3d$	$^1S - ^3P^\circ$	0 – 1	Q	534,375
	50	172.39	849.013+X – 1429.23+X	$2p^6 - 2s^22p^3(^2D^\circ)3d$	$^1S - ^1P^\circ$	0 – 1	Q	534,931,375
	50	217.6	1428.02 – 1887.68	$2s^22p^3(^2D^\circ)3d - 2s2p^4(^4P)4s$	$^3D^\circ - ^3P$	3 – 2	Q	931,375
	350	217.826	46.55+X – 505.63+X	$2s^22p^4 - 2s2p^5$	$^1D - ^1P^\circ$	2 – 1		197,231
		246.12	99.33+X – 505.63+X	$2s^22p^4 - 2s2p^5$	$^1S - ^1P^\circ$	0 – 1	P	248
	200	272.641	0.0 – 366.78	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	2 – 1		197,231
	200	274.175	4.03 – 368.76	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	1 – 0		197,231
	250	275.352	0.0 – 363.17	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	2 – 2		197,231
	200	275.665	4.03 – 366.78	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	1 – 1		197,231
	200	276.839	5.57 – 366.78	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	0 – 1		197,231
	200	278.445	4.03 – 363.17	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	1 – 2		197,231
		291.22	505.63+X – 849.013+X	$2s2p^5 - 2p^6$	$^1P^\circ - ^1S$	1 – 0		868
		1007.	0.0 – 99.3443+X	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1S$	2 – 0	F,P	375,225
		1049.	4.0298 – 99.3443+X	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1S$	1 – 0	F,P	375,225
		1894.8	46.5691 – 99.3443+X	$2s^22p^4 - 2s^22p^4$	$^1D - ^1S$	2 – 0	F,P	375,225

SILICON VIII (Si^{7+}), Z = 14
Ground State $1s^22s^22p^3(^4S^\circ_{3/2})$ (7 electrons)
Ionization Potential 2 445 300 cm^{-1}; 303.18 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	49.987	0.0 – 2000.52	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		231
	50	50.019	0.0 – 1999.24	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		231
	50	50.524	69.414+X – 2048.68+X	$2s^22p^3 - 2s^22p^2(^1D)4d$	$^2D^\circ - ^2D$	$\frac{5}{2} - \frac{5}{2}$		231
	20	51.718	69.414+X – 2002.98+X	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - ^2F$	$\frac{5}{2} - \frac{7}{2}$		231
	20	51.819	69.167+X – 1998.93+X	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2D^\circ - ^2F$	$\frac{3}{2} - \frac{5}{2}$		231
	20	52.554	105.883+X – 2008.71+X	$2s^22p^3 - 2s^22p^2(^3P)4d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		231
	10	53.770	69.414+X – 1929.19+X	$2s^22p^3 - 2s^22p^2(^3P)4s$	$^2D^\circ - ^2P$	$\frac{5}{2} - \frac{3}{2}$		231
	150	58.885	0.0 – 1698.23	$2s^22p^3 - 2s2p^3(^5S^\circ)3p$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		231
	100	60.673	105.883+X – 1754.08+X	$2s^22p^3 - 2s^22p^2(^1S)3d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		231,680
	100	60.989	0.0 – 1639.64	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{1}{2}$		231
	100	61.019	0.0 – 1638.83	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		231
	200	61.070	0.0 – 1637.47	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		231
	50	61.175	0.0 – 1634.66	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - ^4D$	$\frac{3}{2} - \frac{1}{2}$		231
	100	61.223	0.0 – 1633.37	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - ^4D$	$\frac{3}{2} - \frac{5}{2}$		231
	50	61.395	69.414+X – 1698.14+X	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2P$	$\frac{5}{2} - \frac{3}{2}$		231
	100	61.446	69.167+X – 1696.56+X	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		231
	100	61.798	69.414+X – 1687.56+X	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2D$	$\frac{5}{2} - \frac{5}{2}$		231
	100	61.852	69.167+X – 1685.93+X	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		231,233

Si VIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	150	61.895	69.167+X – 1684.78+X	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		231
	150	61.914	69.414+X – 1684.56+X	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		231
	50	62.586	105.883+X – 1703.70+X	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		231
	100	62.808	105.883+X – 1698.14+X	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		231
	150	62.849	69.414+X – 1660.46+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		231
	50	62.884	69.167+X – 1659.29+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		231
	150	63.229	105.883+X – 1687.56+X	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		231
	50	63.266	105.347+X – 1685.93+X	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		231
	150	63.732	69.414+X – 1638.49+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		231
	50	63.879	0.0 – 1565.27+X	$2s^22p^3 - 2s^22p^2(^1S)3s$	$g^4S^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$	Q	231,375
	150	63.903	69.167+X – 1634.01+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		231
	100	64.281	69.414+X – 1624.90+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		231
	150	64.327	105.883+X – 1660.46+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		231
	50	64.355	105.347+X – 1659.29+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		231
	50	65.833	105.883+X – 1624.90+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		231
	150	67.157	312.67 – 1801.71	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		231
	100	67.318	316.26 – 1801.71	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		231
	150	67.408	318.16 – 1801.71	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		231
	50	68.497	105.347+X – 1565.27+X	$2s^22p^3 - 2s^22p^2(^1S)3s$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		231,680
	50	68.522	105.883+X – 1565.27+X	$2s^22p^3 - 2s^22p^2(^1S)3s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		231,680
	100	68.853	0.0 – 1453.90+X	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$	Q	231,375
	150	69.632	0.0 – 1436.12	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		231
	200	69.790	0.0 – 1432.87	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		231
	50	69.905	0.0 – 1430.51	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		231
	100	70.458	69.414+X – 1488.71+X	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		231
	100	70.473	69.167+X – 1488.12+X	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		231
	200	72.228	69.414+X – 1453.90+X	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		231
	300	72.324	105.883+X – 1488.71+X	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		231
	200	72.420	69.167+X – 1449.95+X	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		231
	100	74.186	105.883+X – 1453.90+X	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		231
	20	74.371	105.347+X – 1449.95+X	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		231
	50	75.986	312.67 – 1628.66	$2s2p^4 - 2s2p^3(^5S^\circ)3s$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		231
	20	76.198	316.26 – 1628.66	$2s2p^4 - 2s2p^3(^5S^\circ)3s$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		231
	100	214.756	69.167+X – 534.79+X	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		231
	20	216.800	69.167+X – 530.42+X	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		231
	100	216.918	69.414+X – 530.42+X	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		231
	10	232.864	105.347+X – 534.79+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		231
	10	233.159	105.883+X – 534.79+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		231
	10	235.221	105.347+X – 530.42+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		231
	20	235.563	105.883+X – 530.42+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		231
		250.60	105.347+X – 504.36+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$	P	248
		250.97	105.883+X – 504.36+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$	P	248
		252.79	430.36+X – 825.91+X	$2s2p^4 - 2p^5$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		248
		256.53	430.36+X – 820.19+X	$2s2p^4 - 2p^5$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		248
	200	276.839	69.167+X – 430.36+X	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		231
	200	277.054	69.414+X – 430.30+X	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		231
	20	307.65	105.347+X – 430.36+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		693
	50	308.26	105.883+X – 430.30+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		774
	50	314.31	0.0 – 318.16	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		774
	100	316.202	0.0 – 316.26	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		231
	100	319.829	0.0 – 312.67	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		231
	50	334.94						534,931
		338.43	530.42+X – 825.91+X	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		250
		343.49	534.79+X – 825.91+X	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		250

Si VIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		345.10	530.42+X – 820.19+X	$2s2p^4 - 2p^5$	$^2P - ^2P°$	$\frac{3}{2}-\frac{3}{2}$		250
		350.38	534.79+X – 820.19+X	$2s2p^4 - 2p^5$	$^2P - ^2P°$	$\frac{1}{2}-\frac{3}{2}$		250
		407.7						534
		944.	0.0 – 105.883+X	$2s^22p^3 - 2s^22p^3$	$g^4S° - ^2P°$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,225
		949.	0.0 – 105.347+X	$2s^22p^3 - 2s^22p^3$	$g^4S° - ^2P°$	$\frac{3}{2}-\frac{1}{2}$	F,P	375,225
	0	1440.49	0.0 – 69.4208	$2s^22p^3 - 2s^22p^3$	$g^4S° - ^2D°$	$\frac{3}{2}-\frac{5}{2}$	F	940
	9	1445.76	0.0 – 69.1678	$2s^22p^3 - 2s^22p^3$	$g^4S° - ^2D°$	$\frac{3}{2}-\frac{3}{2}$	F	940

SILICON IX (Si^{8+}), Z = 14
Ground State $1s^22s^22p^2(^3P_0)$ (6 electrons)
Ionization Potential 2 831 900 cm^{-1}; 351.11 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		6.884						839
	10	44.215	2.553 – 2264.27	$2s^22p^2 - 2s^22p(^2P°)4d$	$g^3P - ^3D°$	1 – 2		231
	10	44.249	6.418 – 2266.4	$2s^22p^2 - 2s^22p(^2P°)4d$	$g^3P - ^3D°$	2 – 3		231
	50	51.113	52.939+X – 2009.41+X	$2s^22p^2 - 2s2p^2(^2D)3p$	$^1D - ^1D°$	2 – 2		231
	100	51.362	52.939+X – 1999.93+X	$2s^22p^2 - 2s2p^2(^2D)3p$	$^1D - ^1F°$	2 – 3		231
	10	52.671	292.21 – 2190.79	$2s2p^3 - 2s2p^2(^2P)3d$	$^3D° - ^3F$	3 – 4		233
	20	52.810	2.553 – 1896.17	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3D°$	1 – 2		231
	50	52.838	6.418 – 1899.04	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3D°$	2 – 3		231
	10	53.992	6.418 – 1858.59	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3S°$	2 – 1		231
	50	54.403	0.0 – 1838.54+X	$2s^22p^2 - 2s^22p(^2P°)3d$	$g^3P - ^1P°$	0 – 1	Q	231,375
	100	54.841	150.01+Y – 1973.46+Y	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S° - ^5P$	2 – 1		231
	100	54.870	150.01+Y – 1972.5+Y	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S° - ^5P$	2 – 2		231
	100	54.907	150.01+Y – 1971.27+Y	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S° - ^5P$	2 – 3		231
	50	55.094	2.553 – 1817.67	$2s^22p^2 - 2s^22p(^2P°)3d$	$g^3P - ^3P°$	1 – 0		231
	50	55.116	2.553 – 1816.94	$2s^22p^2 - 2s^22p(^2P°)3d$	$g^3P - ^3P°$	1 – 1		231
	50	55.234	6.418 – 1816.94	$2s^22p^2 - 2s^22p(^2P°)3d$	$g^3P - ^3P°$	2 – 1		231
	150	55.272	6.418 – 1815.69	$2s^22p^2 - 2s^22p(^2P°)3d$	$g^3P - ^3P°$	2 – 2		231
	50	55.305	0.0 – 1808.16	$2s^22p^2 - 2s^22p(^2P°)3d$	$g^3P - ^3D°$	0 – 1		231
	100	55.356	2.553 – 1809.08	$2s^22p^2 - 2s^22p(^2P°)3d$	$g^3P - ^3D°$	1 – 2		231
	100	55.401	6.418 – 1811.48	$2s^22p^2 - 2s^22p(^2P°)3d$	$g^3P - ^3D°$	2 – 3		231
	50	55.511	292.21 – 2093.65	$2s2p^3 - 2s2p^2(^2D)3d$	$^3D° - ^3D$	3 – 3		231,233
	150	55.781	292.21 – 2084.94	$2s2p^3 - 2s2p^2(^2D)3d$	$^3D° - ^3F$	3 – 4		231,233
	150	56.027	52.939+X – 1837.81+X	$2s^22p^2 - 2s^22p(^2P°)3d$	$^1D - ^1F°$	2 – 3		231
	50	57.157	344.08 – 2093.65	$2s2p^3 - 2s2p^2(^2D)3d$	$^3P° - ^3D$	2 – 3		231,233
	50	57.434	52.939+X – 1794.09+X	$2s^22p^2 - 2s^22p(^2P°)3d$	$^1D - ^1D°$	2 – 2		231
	50	57.589	52.939+X – 1789.4+X	$2s^22p^2 - 2s^22p(^2P°)3d$	$^1D - ^3F°$	2 – 3		233
	100	57.778	107.827+X – 1838.54+X	$2s^22p^2 - 2s^22p(^2P°)3d$	$^1S - ^1P°$	0 – 1		231
	50	58.150	292.21 – 2011.69	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D° - ^3D$	3 – 3	Q	231,375
	50	58.906	292.21 – 1989.83	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D° - ^3F$	3 – 4		231
	100	59.004	292.36 – 1987.16	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D° - ^3F$	2 – 3		231
	50	59.077	292.44 – 1985.15	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D° - ^3F$	1 – 2		231
	100	59.966	344.08 – 2011.69	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P° - ^3D$	2 – 3		231,233
	20	60.459	440.41+X – 2093.65	$2s2p^3 - 2s2p^2(^2D)3d$	$^1D° - ^3D$	2 – 3	Q	231,375
	100	60.989	150.01+Y – 1789.65+Y	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S° - ^5P$	2 – 3		231
	50	61.109	150.01+Y – 1786.43+Y	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S° - ^5P$	2 – 2		231
	50	61.190	150.01+Y – 1784.26+Y	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S° - ^5P$	2 – 1		231

Si IX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	61.355	344.08 – 1973.94	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^\circ - ^3P$	2 – 2		231
	50	61.502	2.553 – 1628.55	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^3P^\circ$	1 – 2		231
	100	61.546	292.21 – 1917.08	$2s2p^3 - 2s2p^2(^2D)3s$	$^3D^\circ - ^3D$	3 – 3		231,233
	50	61.600	0.0 – 1623.38	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^3P^\circ$	0 – 1		231
	100	61.649	6.418 – 1628.55	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^3P^\circ$	2 – 2		231
	100	61.852	6.418 – 1623.38	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$g^3P - ^3P^\circ$	2 – 1		233
	20	62.454	492.82+X – 2093.65	$2s2p^3 - 2s2p^2(^2D)3d$	$^1P^\circ - ^3D$	1 – 2	Q	231,375
	50	62.974	52.939+X – 1640.92+X	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$^1D - ^1P^\circ$	2 – 1		231
	20	63.478	52.939+X – 1628.55	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$^1D - ^3P^\circ$	2 – 2	Q	231,375
	100	63.586	344.08 – 1917.08	$2s2p^3 - 2s2p^2(^2D)3s$	$^3P^\circ - ^3D$	2 – 3	Q	231,375
	10	65.236	107.827+X – 1640.92+X	$2s^22p^2 - 2s^22p(^2P^\circ)3s$	$^1S - ^1P^\circ$	0 – 1		231
	100	66.912	292.36 – 1786.43+Y	$2s2p^3 - 2s2p^2(^4P)3s$	$^3D^\circ - ^5P$	2 – 2	Q	231,375
	50	67.574	492.82+X – 1973.94	$2s2p^3 - 2s2p^2(^4P)3d$	$^1P^\circ - ^3P$	1 – 2	Q	231,375
	50	209.8	1789.65+Y – 2266.4	$2s2p^2(^4P)3s - 2s^22p(^2P^\circ)4d$	$^5P - ^3D^\circ$	3 – 3	Q	931,375
	80	223.72	0.0 – 446.98	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^\circ$	0 – 1		774
	800	225.033	2.553 – 446.98	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^\circ$	1 – 1		774
	800	227.007	6.418 – 446.98	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^\circ$	2 – 1		774
		227.30	52.939+X – 492.82+X	$2s^22p^2 - 2s2p^3$	$^1D - ^1P^\circ$	2 – 1		248
	50	257.255	292.44 – 681.14	$2s2p^3 - 2p^4$	$^3D^\circ - ^3P$	1 – 0		93
	20	258.073	52.939+X – 440.41+X	$2s^22p^2 - 2s2p^3$	$^1D - ^1D^\circ$	2 – 2		856
		258.36	292.36 – 679.42	$2s2p^3 - 2p^4$	$^3D^\circ - ^3P$	2 – 1		248
		259.75	107.827+X – 492.82+X	$2s^22p^2 - 2s2p^3$	$^1S - ^1P^\circ$	0 – 1		248
		261.41	292.21 – 674.75	$2s2p^3 - 2p^4$	$^3D^\circ - ^3P$	3 – 2		248
	20	290.63	0.0 – 344.08	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	0 – 1		774
	80	292.83	2.553 – 344.08	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	1 – 2		774
	150	296.19	6.418 – 344.08	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	2 – 2		774
		298.20	344.08 – 679.42	$2s2p^3 - 2p^4$	$^3P^\circ - ^3P$	1 – 1	P	250
		302.42	344.08 – 674.75	$2s2p^3 - 2p^4$	$^3P^\circ - ^3P$	2 – 2	P	250
		305.85	492.82+X – 819.78+X	$2s2p^3 - 2p^4$	$^1P^\circ - ^1S$	1 – 0		244
		341.95	0.0 – 292.44	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^\circ$	0 – 1	P	250
	20	345.06	2.553 – 292.36	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^\circ$	1 – 2		774
	50	349.90	6.418 – 292.21	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^\circ$	2 – 3		774
		358.29	440.41+X – 719.51+X	$2s2p^3 - 2p^4$	$^1D^\circ - ^1D$	2 – 2		248
	50	360.9	1987.16 – 2264.27	$2s2p^2(^4P)3d - 2s^22p(^2P^\circ)4d$	$^3F - ^3D^\circ$	3 – 2	Q	931,375
		427.06	446.98 – 681.14	$2s2p^3 - 2p^4$	$^3S^\circ - ^3P$	1 – 0	P	250
		430.22	446.98 – 679.42	$2s2p^3 - 2p^4$	$^3S^\circ - ^3P$	1 – 1	P	250
		439.04	446.98 – 674.75	$2s2p^3 - 2p^4$	$^3S^\circ - ^3P$	1 – 2	P	250
		441.13	492.82+X – 719.51+X	$2s2p^3 - 2p^4$	$^1P^\circ - ^1D$	1 – 2	P	250
		678.2	2.553 – 150.01+Y	$2s^22p^2 - 2s2p^3$	$g^3P - ^5S^\circ$	1 – 2	P	680
		696.4	6.418 – 150.01+Y	$2s^22p^2 - 2s2p^3$	$g^3P - ^5S^\circ$	2 – 2	P	680
	4	950.	2.553 – 107.827+X	$2s^22p^2 - 2s^22p^2$	$g^3P - ^1S$	1 – 0	F,P	375,843,225
		986.	6.418 – 107.827+X	$2s^22p^2 - 2s^22p^2$	$g^3P - ^1S$	2 – 0	F,P	375,225
		1822.	52.9295 – 107.827+X	$2s^22p^2 - 2s^22p^2$	$^1D - ^1S$	2 – 0	F,P	375,225
		1889.	0.0 – 52.9295	$2s^22p^2 - 2s^22p^2$	$g^3P - ^1D$	0 – 2	F,P	375,225
	7	1985.	2.553 – 52.9295	$2s^22p^2 - 2s^22p^2$	$g^3P - ^1D$	1 – 2	F,P	375,442,225

SILICON X (Si^{9+}), Z = 14
Ground State $1s^22s^22p(^2P^\circ_{1/2})$ (5 electrons)
Ionization Potential 3 237 300 cm^{-1}; 401.38 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	13	6.846	6.983 – 14607.	$1s^22s^22p - 1s2s^22p^2$	$g^2P^\circ - ^2P$	3/2 – 3/2		839,736
	5	34.040	6.983 – 2944.7	$2s^22p - 2s2p(^3P^\circ)5p$	$g^2P^\circ - ^2P$	3/2 – 3/2		833
	5	34.238	6.983 – 2927.7	$2s^22p - 2s^26d$	$g^2P^\circ - ^2D$	3/2 – 5/2		833
	10	35.310	287.826 – 3116.4	$2s2p^2 - 2s2p(^1P^\circ)5d$	$^2D - ^2D^\circ$	5/2 – 5/2		833
	10	35.353	287.826 – 3116.4	$2s2p^2 - 2s2p(^1P^\circ)5d$	$^2D - ^2F^\circ$	5/2 – 7/2		833
	5	35.656	164.5+X – 2969.1+X	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - ^4P^\circ$	3/2 – 5/2		833
	20	35.709	168.09+X – 2968.1+X	$2s2p^2 - 2s2p(^3P^\circ)5d$	$^4P - ^4D^\circ$	5/2 – 7/2		833
	40	35.838	168.09+X – 2958.4+X	$2s2p^2 - 2p^2(^3P)4p$	$^4P - ^4D^\circ$	5/2 – 7/2		833
	20	35.932	6.983 – 2790.	$2s^22p - 2s^25d$	$g^2P^\circ - ^2D$	3/2 – 5/2		833
	20	37.159	0. – 2691.1	$2s^22p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - ^2D$	1/2 – 3/2		833
	20	37.206	6.983 – 2695.3	$2s^22p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - ^2D$	3/2 – 5/2		833
	10	37.248	6.983 – 2691.1	$2s^22p - 2s2p(^3P^\circ)4p$	$g^2P^\circ - ^2D$	3/2 – 3/2		833
	60	38.830	287.826 – 2863.2	$2s2p^2 - 2s2p(^1P^\circ)4d$	$^2D - ^2D^\circ$	5/2 – 5/2		833
	40	39.175	164.5+X – 2717.1+X	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4P^\circ$	3/2 – 3/2		833
	50	39.203	164.5+X – 2715.1+X	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4P^\circ$	3/2 – 5/2		833
	50	39.264	164.5+X – 2711.4+X	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4D^\circ$	3/2 – 5/2		833
	80	39.305	168.09+X – 2712.4+X	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4D^\circ$	5/2 – 7/2		833
	50	39.443	0. – 2535.3	$2s^22p - 2s^24d$	$g^2P^\circ - ^2D$	1/2 – 3/2		833
	70	39.552	6.983 – 2535.3	$2s^22p - 2s^24d$	$g^2P^\circ - ^2D$	3/2 – 5/2		833
	10	40.407	6.983 – 2481.8	$2s^22p - 2s^24s$	$g^2P^\circ - ^2S$	3/2 – 1/2		833
	5	40.503	394.055 – 2863.2	$2s2p^2 - 2s2p(^1P^\circ)4d$	$^2P - ^2D^\circ$	3/2 – 5/2		833
	30	41.023	287.826 – 2725.5	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2D - ^2F^\circ$	5/2 – 7/2		833
	30	41.086	287.828 – 2721.8	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2D - ^2F^\circ$	3/2 – 5/2		833
	30	44.521	0. – 2246.3	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - ^2S$	1/2 – 1/2		833
	30	44.655	6.983 – 2246.3	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - ^2S$	3/2 – 1/2		833
	20	44.719	0. – 2236.2	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - ^2P$	1/2 – 1/2		833
	30	44.830	6.983 – 2237.6	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - ^2P$	3/2 – 3/2		833
	30	44.855	6.983 – 2236.4	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - ^2D$	3/2 – 5/2		833
	60	44.979	168.09+X – 2391.4+X	$2s2p^2 - 2p^2(^3P)3p$	$^4P - ^4S^\circ$	5/2 – 3/2		833
	5	45.606	168.09+X – 2360.9+X	$2s2p^2 - 2p^2(^3P)3p$	$^4P - ^4P^\circ$	5/2 – 5/2		833
	60	45.684	168.09+X – 2357.1+X	$2s2p^2 - 2p^2(^3P)3p$	$^4P - ^4D^\circ$	5/2 – 7/2		833
	30	46.563	287.826 – 2435.4	$2s2p^2 - 2p^2(^1D)3p$	$^2D - ^2D^\circ$	5/2 – 5/2		833
	20	46.895	0. – 2132.5	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2S$	1/2 – 1/2		833
	50	47.043	6.983 – 2132.5	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2S$	3/2 – 1/2		833
	50	47.489	0. – 2105.8	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2D$	1/2 – 3/2		833
	50	47.545	6.983 – 2110.26	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2D$	3/2 – 5/2		231,233
	20	48.381	0. – 2066.6	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	1/2 – 3/2		833
	40	48.440	0. – 2064.6	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	1/2 – 1/2		833
	10	48.553	6.983 – 2066.6	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	3/2 – 3/2		231,233
	20	48.596	6.983 – 2064.6	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	3/2 – 1/2		833
	10	49.182	287.826 – 2321.1	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2D - ^2P^\circ$	5/2 – 3/2		833
	50	49.441	287.826 – 2311.36	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2D - ^2D^\circ$	5/2 – 5/2		833
	100	49.701	287.826 – 2299.86	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2D - ^2F^\circ$	5/2 – 7/2		231,233
	60	49.984	162.06+X – 2163.5+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	1/2 – 3/2		833
	90	50.018	164.5+X – 2163.5+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	3/2 – 3/2		833
	70	50.124	168.09+X – 2163.5+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	5/2 – 3/2		833
	50	50.154	168.09+X – 2161.95+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	5/2 – 5/2		231
	70	50.254	162.06+X – 2151.95+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4D^\circ$	1/2 – 3/2		833
	50	50.305	164.5+X – 2152.37+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4D^\circ$	3/2 – 5/2		231
	50	50.333	168.09+X – 2154.86+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4D^\circ$	5/2 – 7/2		231
	10	50.390	168.09+X – 2152.37+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4D^\circ$	5/2 – 5/2		833
	50	50.524	0. – 1979.26	$2s^22p - 2s^23d$	$g^2P^\circ - ^2D$	1/2 – 3/2		231,233
	100	50.691	6.983 – 1979.73	$2s^22p - 2s^23d$	$g^2P^\circ - ^2D$	3/2 – 5/2		231,233
	10	51.635	510.31+X – 2446.86+X	$2p^3 - 2p^2(^3P)3d$	$^4S^\circ - ^4P$	3/2 – 3/2		233

Si X — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	51.676	510.31+X – 2445.32+X	$2p^3 - 2p^2(^3P)3d$	$^4S^o - ^4P$	$\frac{3}{2}-\frac{5}{2}$		231,233
	50	52.070	390.059 – 2310.23	$2s2p^2 - 2s2p(^1P^o)3d$	$^2P - ^2D^o$	$\frac{1}{2}-\frac{3}{2}$		231,233
	100	52.155	394.055 – 2311.36	$2s2p^2 - 2s2p(^1P^o)3d$	$^2P - ^2D^o$	$\frac{3}{2}-\frac{5}{2}$		231,233
	100	52.485	287.826 – 2193.14	$2s2p^2 - 2s2p(^3P^o)3d$	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$		231,233
	50	52.611	287.828 – 2188.57	$2s2p^2 - 2s2p(^3P^o)3d$	$^2D - ^2F^o$	$\frac{3}{2}-\frac{5}{2}$		231,233
	10	53.463	287.828 – 2158.29	$2s2p^2 - 2s2p(^1P^o)3s$	$^2D - ^2P^o$	$\frac{3}{2}-\frac{1}{2}$		233
	50	53.573	287.826 – 2154.44	$2s2p^2 - 2s2p(^3P^o)3d$	$^2D - ^2D^o$	$\frac{5}{2}-\frac{5}{2}$		231,233
	50	53.595	287.828 – 2153.68	$2s2p^2 - 2s2p(^3P^o)3d$	$^2D - ^2D^o$	$\frac{3}{2}-\frac{3}{2}$		231,233
	50	54.462	164.5+X – 2000.57+X	$2s2p^2 - 2s2p(^3P^o)3s$	$^4P - ^4P^o$	$\frac{3}{2}-\frac{5}{2}$		231
	50	54.522	162.06+X – 1996.18+X	$2s2p^2 - 2s2p(^3P^o)3s$	$^4P - ^4P^o$	$\frac{1}{2}-\frac{3}{2}$		231,233
	50	54.571	168.09+X – 2000.57+X	$2s2p^2 - 2s2p(^3P^o)3s$	$^4P - ^4P^o$	$\frac{5}{2}-\frac{5}{2}$		231
	50	54.599	367.654 – 2199.19	$2s2p^2 - 2s2p(^3P^o)3d$	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$		231,233
	10	54.664	164.5+X – 1993.86+X	$2s2p^2 - 2s2p(^3P^o)3s$	$^4P - ^4P^o$	$\frac{3}{2}-\frac{1}{2}$		231
	10	54.702	168.09+X – 1996.18+X	$2s2p^2 - 2s2p(^3P^o)3s$	$^4P - ^4P^o$	$\frac{5}{2}-\frac{3}{2}$		231
	100	55.096	6.983 – 1822.	$2s^22p - 2s^23s$	$g^2P^o - ^2S$	$\frac{3}{2}-\frac{1}{2}$		833
	50	56.680	394.055 – 2158.29	$2s2p^2 - 2s2p(^1P^o)3s$	$^2P - ^2P^o$	$\frac{3}{2}-\frac{1}{2}$		231,233
	50	56.804	394.055 – 2154.44	$2s2p^2 - 2s2p(^3P^o)3d$	$^2P - ^2D^o$	$\frac{3}{2}-\frac{5}{2}$		231,233
	20	57.209	287.826 – 2035.81	$2s2p^2 - 2s2p(^3P^o)3s$	$^2D - ^2P^o$	$\frac{5}{2}-\frac{3}{2}$		231,233
	80	57.365	287.828 – 2031.05	$2s2p^2 - 2s2p(^3P^o)3s$	$^2D - ^2P^o$	$\frac{3}{2}-\frac{1}{2}$		833
	20	60.151	574.36 – 2236.4	$2p^3 - 2s2p(^1P^o)3p$	$^2D^o - ^2D$	$\frac{5}{2}-\frac{5}{2}$	Q	231,375
	100	62.251	394.055 – 2000.57+X	$2s2p^2 - 2s2p(^3P^o)3s$	$^2P - ^4P^o$	$\frac{3}{2}-\frac{5}{2}$	Q	231,375
	50	64.772	394.055 – 1938.4	$2s2p^2 - 2s^23p$	$^2P - ^2P^o$	$\frac{3}{2}-\frac{1}{2}$	Q	231,375
	100	66.726	510.31+X – 2009.5	$2p^3 - 2s^23d$	$^4S^o - ^2D$	$\frac{3}{2}-\frac{3}{2}$	Q	231,375
	20	66.977	574.36 – 2066.6	$2p^3 - 2s2p(^3P^o)3p$	$^2D^o - ^2P$	$\frac{5}{2}-\frac{3}{2}$	Q	231,375
		101.64	2132.5 – 3116.4	$2s2p(^3P^o)3p - 2s2p(^1P^o)5d$	$^2S - ^2D^o$	$\frac{1}{2}-\frac{3}{2}$	Q	534,375
	50	113.1	1979.26 – 2863.2	$2s^23d - 2s2p(^1P^o)4d$	$^2D - ^2F^o$	$\frac{3}{2}-\frac{5}{2}$	Q	931,375
	20	114.9	2246.3 – 3116.4	$2s2p(^1P^o)3p - 2s2p(^1P^o)5d$	$^2S - ^2D^o$	$\frac{1}{2}-\frac{3}{2}$	Q	931,375
	20	126.0	1996.18+X – 2790.	$2s2p(^3P^o)3s - 2s^25d$	$^4P^o - ^2D$	$\frac{3}{2}-\frac{3}{2}$	Q	931,375
	50	129.4	2154.86+X – 2927.7	$2s2p(^3P^o)3d - 2s^26d$	$^4D^o - ^2D$	$\frac{7}{2}-\frac{5}{2}$	Q	931,375
		132.03	2105.8 – 2863.2	$2s2p(^3P^o)3p - 2s2p(^1P^o)4d$	$^2D - ^2F^o$	$\frac{3}{2}-\frac{5}{2}$		534
		136.86	2132.5 – 2863.2	$2s2p(^3P^o)3p - 2s2p(^1P^o)4d$	$^2S - ^2D^o$	$\frac{1}{2}-\frac{3}{2}$		534
		143.03	1996.18+X – 2695.3	$2s2p(^3P^o)3s - 2s2p(^3P^o)4p$	$^4P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	Q	534,375
	50	149.4	2446.86+X – 3116.4	$2p^2(^3P)3d - 2s2p(^1P^o)5d$	$^4P - ^2D^o$	$\frac{3}{2}-\frac{3}{2}$	Q	931,375
	50	159.3	2299.86 – 2927.7	$2s2p(^1P^o)3d - 2s^26d$	$^2F^o - ^2D$	$\frac{7}{2}-\frac{5}{2}$	Q	931,375
	50	159.6	2163.5+X – 2790.	$2s2p(^3P^o)3d - 2s^25d$	$^4P^o - ^2D$	$\frac{3}{2}-\frac{3}{2}$	Q	931,375
	20	162.0	2310.23 – 2927.7	$2s2p(^1P^o)3d - 2s^26d$	$^2D^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	Q	931,375
		163.40						534
		163.67						534
		164.42						534
		164.69						534
	50	164.9	2321.1 – 2927.7	$2s2p(^1P^o)3d - 2s^26d$	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	Q	931,375
	50	168.0	1940. – 2535.3	$2s^23p - 2s^24d$	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	Q	931,375
	50	176.4	2360.9+X – 2927.7	$2p^2(^3P)3p - 2s^26d$	$^4P^o - ^2D$	$\frac{5}{2}-\frac{5}{2}$	Q	931,375
	50	185.6	2152.37+X – 2691.1	$2s2p(^3P^o)3d - 2s2p(^3P^o)4p$	$^4D^o - ^2D$	$\frac{5}{2}-\frac{3}{2}$	Q	931,375
	20	203.0	2435.+Z – 2927.7	$2p^2(^1D)3p - 2s^26d$	$^2D^o - ^2D$	$\frac{3}{2}-\frac{3}{2}$	Q	931,375
	50	207.1	164.5+X – 647.400	$2s2p^2 - 2p^3$	$^4P - ^2P^o$	$\frac{3}{2}-\frac{3}{2}$	Q	931,375
	50	211.1	2237.6 – 2711.4+X	$2s2p(^1P^o)3p - 2s2p(^3P^o)4d$	$^2P - ^4D^o$	$\frac{3}{2}-\frac{3}{2}$	Q	931,375
	50	220.8	1993.86+X – 2446.86+X	$2s2p(^3P^o)3s - 2p^2(^3P)3d$	$^4P^o - ^4P$	$\frac{1}{2}-\frac{3}{2}$	Q	931,375
	20	233.6	2105.8 – 2533.8	$2s2p(^3P^o)3p - 2s^24p$	$^2D - ^2P^o$	$\frac{3}{2}-\frac{1}{2}$	Q	931,375
	70	253.772	0. – 394.055	$2s^22p - 2s2p^2$	$g^2P^o - ^2P$	$\frac{1}{2}-\frac{3}{2}$		833
	300	256.37	0. – 390.059	$2s^22p - 2s2p^2$	$g^2P^o - ^2P$	$\frac{1}{2}-\frac{1}{2}$		463
	10	256.569						833
	120	258.347	6.983 – 394.055	$2s^22p - 2s2p^2$	$g^2P^o - ^2P$	$\frac{3}{2}-\frac{3}{2}$		833
	50	261.045	6.983 – 390.059	$2s^22p - 2s2p^2$	$g^2P^o - ^2P$	$\frac{3}{2}-\frac{1}{2}$		856

Si X — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	40	271.995	0. - 367.654	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		833
	50	277.261	6.983 - 367.654	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		833
		278.107	287.826 - 647.400	$2s2p^2 - 2p^3$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		534,250
	100	278.61	287.828 - 646.750	$2s2p^2 - 2p^3$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		250,931
	50	287.16	162.06+X - 510.31+X	$2s2p^2 - 2p^3$	$^4P - ^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		250,931
	100	289.186	164.5+X - 510.31+X	$2s2p^2 - 2p^3$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		833
	60	292.220	168.09+X - 510.31+X	$2s2p^2 - 2p^3$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		833
	40	347.417	0. - 287.828	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		856
	200	347.644	287.826 - 575.477	$2s2p^2 - 2p^3$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		534,931
	15	347.646	287.828 - 575.477	$2s2p^2 - 2p^3$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		534,931
	15	347.693	287.826 - 575.436	$2s2p^2 - 2p^3$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		534,931
	100	347.695	287.828 - 575.436	$2s2p^2 - 2p^3$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		534,931
	40	356.051	6.983 - 287.826	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		856
	50	357.47	367.654 - 647.400	$2s2p^2 - 2p^3$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		534,931
		358.30	367.654 - 646.750	$2s2p^2 - 2p^3$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		534,250
		388.59	390.059 - 647.400	$2s2p^2 - 2p^3$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		534,250
		389.57	390.059 - 646.750	$2s2p^2 - 2p^3$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		534,250
		394.71	394.055 - 647.400	$2s2p^2 - 2p^3$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		534,250
		395.73	394.055 - 646.750	$2s2p^2 - 2p^3$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		534,250
		481.273	367.654 - 575.436	$2s2p^2 - 2p^3$	$^2S - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		534
		539.44	390.059 - 575.436	$2s2p^2 - 2p^3$	$^2P - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		534,250
		551.20	394.055 - 575.477	$2s2p^2 - 2p^3$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		534,250
		551.32	394.055 - 575.436	$2s2p^2 - 2p^3$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		534,250

SILICON XI (Si^{10+}), Z = 14
Ground State $1s^22s^2(^1S_0)$ (4 electrons)
Ionization Potential 3 839 800 cm^{-1}; 476.08 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	5	30.126	176.81+X - 3496.16+X	2s2p - 2p5p	$^3P^\circ - ^3P$	2 - 2		832
	5	30.322	176.81+X - 3474.74+X	2s2p - 2s6d	$^3P^\circ - ^3D$	2 - 3		832
	10	30.368	0.0 - 3292.94	$2s^2 - 2s5p$	$g^1S - ^1P^\circ$	0 - 1		832
	10	31.924	171.56+X - 3303.89+X	2s2p - 2s5d	$^3P^\circ - ^3D$	1 - 2		832
	20	31.980	176.81+X - 3303.89+X	2s2p - 2s5d	$^3P^\circ - ^3D$	2 - 3		832
	10	32.735	450.47+X - 3505.3+H	$2p^2 - 2p5d$	$^3P - ^3P^\circ$	2 - 2		832
	10	33.153	493.4+Z - 3509.72+Y	$2p^2 - 2p5d$	$^1D - ^1F^\circ$	2 - 3		832
	20	33.222	176.81+X - 3186.86+X	2s2p - 2p4p	$^3P^\circ - ^3P$	2 - 2		832
	20	33.298	176.81+X - 3179.99+X	2s2p - 2p4p	$^3P^\circ - ^3D$	2 - 3		832
	20	33.515	0.0 - 2983.74	$2s^2 - 2s4p$	$g^1S - ^1P^\circ$	0 - 1		832
	10	33.573	329.69 - 3307.98	2s2p - 2s5d	$^1P^\circ - ^1D$	1 - 2		832
	20	34.910	329.69 - 3193.91	2s2p - 2p4p	$^1P^\circ - ^1D$	1 - 2		832
	10	35.353	169.14+X - 2997.84+X	2s2p - 2s4d	$^3P^\circ - ^3D$	0 - 1		832
	60	35.383	171.56+X - 2997.84+X	2s2p - 2s4d	$^3P^\circ - ^3D$	1 - 2		832
	100	35.446	176.81+X - 2997.84+X	2s2p - 2s4d	$^3P^\circ - ^3D$	2 - 3		832
	10	36.238	445.91+X - 3204.46+V	$2p^2 - 2p4d$	$^3P - ^3P^\circ$	1 - 2		832
	80	36.311	450.47+X - 3204.46+V	$2p^2 - 2p4d$	$^3P - ^3P^\circ$	2 - 2		832
	80	36.335	450.47+X - 3202.64+V	$2p^2 - 2p4d$	$^3P - ^3D^\circ$	2 - 3		832
	70	36.772	493.4+Z - 3212.86+Y	$2p^2 - 2p4d$	$^1D - ^1F^\circ$	2 - 3		832
	10	37.060	493.4+Z - 3191.73+Y	$2p^2 - 2p4d$	$^1D - ^1D^\circ$	2 - 2		832
	50	37.340	329.69 - 3007.49	2s2p - 2s4d	$^1P^\circ - ^1D$	1 - 2		832
	20	38.336	608.80+W - 3217.31+W	$2p^2 - 2p4d$	$^1S - ^1P^\circ$	0 - 1		832
	40	42.730	171.56+X - 2511.84+X	2s2p - 2p3p	$^3P^\circ - ^3P$	1 - 2		832
	10	42.773	171.56+X - 2509.52+X	2s2p - 2p3p	$^3P^\circ - ^3P$	1 - 1		832

Si XI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	70	42.826	176.81+X - 2511.84+X	2s2p - 2p3p	$^3P^\circ - {}^3P$	2 - 2		832
	30	42.866	176.81+X - 2509.52+X	2s2p - 2p3p	$^3P^\circ - {}^3P$	2 - 1		832
	10	42.910	169.14+X - 2499.82+X	2s2p - 2p3p	$^3P^\circ - {}^3S$	0 - 1		832
	20	42.950	171.56+X - 2499.82+X	2s2p - 2p3p	$^3P^\circ - {}^3S$	1 - 1		832
	20	43.046	176.81+X - 2499.82+X	2s2p - 2p3p	$^3P^\circ - {}^3S$	2 - 1		832
	10	43.290	171.56+X - 2481.75+X	2s2p - 2p3p	$^3P^\circ - {}^3D$	1 - 2		231
	10	43.329	171.56+X - 2479.48+X	2s2p - 2p3p	$^3P^\circ - {}^3D$	1 - 1		832
	10	43.385	176.81+X - 2481.75+X	2s2p - 2p3p	$^3P^\circ - {}^3D$	2 - 2		832
	10	43.763	0.0 - 2285.04	$2s^2$ - 2s3p	$g\,^1S - {}^1P^\circ$	0 - 1		231
	10	45.398	329.69 - 2532.14	2s2p - 2p3p	$^1P^\circ - {}^1D$	1 - 2		231
	10	46.264	169.14+X - 2330.65+X	2s2p - 2s3d	$^3P^\circ - {}^3D$	0 - 1		231
	50	46.300	171.56+X - 2331.16+X	2s2p - 2s3d	$^3P^\circ - {}^3D$	1 - 2		231
	100	46.401	176.81+X - 2331.94+X	2s2p - 2s3d	$^3P^\circ - {}^3D$	2 - 3		231
	40	46.662	329.69 - 2472.47	2s2p - 2p3p	$^1P^\circ - {}^1P$	1 - 1		832
	20	47.293	443.02+X - 2557.50+X	$2p^2$ - 2p3d	$^3P - {}^3P^\circ$	0 - 1		832
	50	47.350	445.91+X - 2557.83+X	$2p^2$ - 2p3d	$^3P - {}^3P^\circ$	1 - 2		832
	10	47.385	445.91+X - 2556.28+X	$2p^2$ - 2p3d	$^3P - {}^3P^\circ$	1 - 0		832
	10	47.453	450.47+X - 2557.83+X	$2p^2$ - 2p3d	$^3P - {}^3P^\circ$	2 - 2		832
	50	47.489	450.47+X - 2557.50+X	$2p^2$ - 2p3d	$^3P - {}^3P^\circ$	2 - 1		231
	50	47.607	445.91+X - 2546.82+V	$2p^2$ - 2p3d	$^3P - {}^3D^\circ$	1 - 2		231
	50	47.653	450.47+X - 2548.97+X	$2p^2$ - 2p3d	$^3P - {}^3D^\circ$	2 - 3		231
	5	47.702	450.47+X - 2546.82+V	$2p^2$ - 2p3d	$^3P - {}^3D^\circ$	2 - 2		832
	20	47.735	493.4+Z - 2588.3+Y	$2p^2$ - 2p3d	$^1D - {}^1P^\circ$	2 - 1		832
	50	47.899	493.4+Z - 2581.13	$2p^2$ - 2p3d	$^1D - {}^1F^\circ$	2 - 3		231
	20	48.991	169.14+X - 2210.22+X	2s2p - 2s3s	$^3P^\circ - {}^3S$	0 - 1		832
	30	49.052	171.56+X - 2210.22+X	2s2p - 2s3s	$^3P^\circ - {}^3S$	1 - 1		832
	30	49.181	176.81+X - 2210.22+X	2s2p - 2s3s	$^3P^\circ - {}^3S$	2 - 1		832
	50	49.222	329.69 - 2361.31	2s2p - 2s3d	$^1P^\circ - {}^1D$	1 - 2		231
	10	49.265	493.4+Z - 2523.24	$2p^2$ - 2p3d	$^1D - {}^1D^\circ$	2 - 2		231
	100	50.524	450.47+X - 2429.73+V	$2p^2$ - 2p3s	$^3P - {}^3P^\circ$	2 - 2		832
	40	50.617	493.4+Z - 2469.02+Y	$2p^2$ - 2p3s	$^1D - {}^1P^\circ$	2 - 1		832
	100	52.296	329.69 - 2241.59	2s2p - 2s3s	$^1P^\circ - {}^1S$	1 - 0		832
	50	107.8	2546.82+V - 3474.74+X	2p3d - 2s6d	$^3D^\circ - {}^3D$	2 - 3	Q	931,375
	20	111.9	2581.13 - 3474.74+X	2p3d - 2s6d	$^1F^\circ - {}^3D$	3 - 3	Q	931,375
	20	119.8	2469.02+Y - 3303.89+X	2p3s - 2s5d	$^1P^\circ - {}^3D$	1 - 2	Q	931,375
	50	121.9	2472.47 - 3292.94	2p3p - 2s5p	$^1P - {}^1P^\circ$	1 - 1	Q	931,375
	20	127.6	2509.52+X - 3292.94	2p3p - 2s5p	$^3P - {}^1P^\circ$	1 - 1	Q	931,375
	20	128.0	2511.84+X - 3292.94	2p3p - 2s5p	$^3P - {}^1P^\circ$	2 - 1	Q	931,375
		129.28	2210.22+X - 2983.74	2s3s - 2s4p	$^3S - {}^1P^\circ$	1 - 1		534
		132.08	2429.73+V - 3186.86+X	2p3s - 2p4p	$^3P^\circ - {}^3P$	2 - 2		534
		133.29	2429.73+V - 3179.99+X	2p3s - 2p4p	$^3P^\circ - {}^3D$	2 - 3		534
		134.47	2472.47 - 3216.14+W	2p3p - 2p4d	$^1P - {}^1P^\circ$	1 - 1		534
		134.74	2241.59 - 2983.74	2s3s - 2s4p	$^1S - {}^1P^\circ$	0 - 1		534
	50	138.72	2481.75+X - 3202.64+V	2p3p - 2p4d	$^3D - {}^3D^\circ$	2 - 3		534,931
		139.03	2472.47 - 3191.73+Y	2p3p - 2p4d	$^1P - {}^1D^\circ$	1 - 2		534
	50	141.5	2509.52+X - 3216.14+W	2p3p - 2p4d	$^3P - {}^1P^\circ$	1 - 1	Q	931,375
		143.90	2509.52+X - 3204.46+V	2p3p - 2p4d	$^3P - {}^3P^\circ$	1 - 2		534
	50	144.76	2511.84+X - 3202.64+V	2p3p - 2p4d	$^3P - {}^3D^\circ$	2 - 3		534,931
	100	146.2	2532.14 - 3216.14+W	2p3p - 2p4d	$^1D - {}^1P^\circ$	2 - 1	Q	931,375
	50	147.1	2511.84+X - 3191.73+Y	2p3p - 2p4d	$^3P - {}^1D^\circ$	2 - 2	Q	931,375
	100	147.60	2331.94+X - 3009.45+X	2s3d - 2s4f	$^3D - {}^3F^\circ$	3 - 4		244,931
	50	148.6	2523.24 - 3195.9	2p3d - 2p4p	$^1D^\circ - {}^1P$	2 - 1	Q	931,375
	20	158.47	2548.97+X - 3179.99+X	2p3d - 2p4p	$^3D^\circ - {}^3D$	3 - 3	P	534,931
	50	160.6	2557.50+X - 3179.99+X	2p3d - 2p4p	$^3P^\circ - {}^3D$	1 - 2	Q	931,375

Si XI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	161.3	2361.31 – 2981.2	2s3d – 2s4p	^{1}D – ^{3}P°	2 – 1	Q	931,375
		165.12	2588.3+Y – 3193.91	2p3d – 2p4p	^{1}P° – ^{1}D	1 – 2		534
	50	169.0	2588.3+Y – 3179.99+X	2p3d – 2p4p	^{1}P° – ^{3}D	1 – 2	Q	931,375
	50	173.10	2429.73+V – 3007.49	2p3s – 2s4d	^{3}P° – ^{1}D	2 – 2	Q	534,931,375
		194.28	2469.02+Y – 2983.74	2p3s – 2s4p	^{1}P° – ^{1}P°	1 – 1	F,Q	534
		197.1	2997.84+X – 3505.3+H	2s4d – 2p5d	^{3}D – ^{3}P°	3 – 2	Q	534,375
	20	206.5	2523.24 – 3007.49	2p3d – 2s4d	^{1}D° – ^{1}D	2 – 2	Q	931,375
	50	207.7	2499.82+X – 2981.2	2p3p – 2s4p	^{3}S – ^{3}P°	1 – 1	Q	931,375
	50	211.9	2511.84+X – 2983.74	2p3p – 2s4p	^{3}P – ^{1}P°	2 – 1	Q	931,375
	50	216.4	2545.37+X – 3007.49	2p3d – 2s4d	^{3}D° – ^{1}D	1 – 2	Q	931,375
	50	289.0	2210.22+X – 2556.28+X	2s3s – 2p3d	^{3}S – ^{3}P°	1 – 0	Q	931,375
	60	303.318	0.0 – 329.69	2s^2 – 2s2p	g^{1}S – ^{1}P°	0 – 1		856
		358.29	329.69 – 608.80+W	2s2p – 2p^2	^{1}P° – ^{1}S	1 – 0		250
	100	358.54	171.56+X – 450.47+X	2s2p – 2p^2	^{3}P° – ^{3}P	1 – 2	P	250,931
	50	361.31	169.14+X – 445.91+X	2s2p – 2p^2	^{3}P° – ^{3}P	0 – 1	P	250,931
	50	364.50	171.56+X – 445.91+X	2s2p – 2p^2	^{3}P° – ^{3}P	1 – 1		250,931
	100	365.42	176.81+X – 450.47+X	2s2p – 2p^2	^{3}P° – ^{3}P	2 – 2		250,931
	50	368.38	171.56+X – 443.02+X	2s2p – 2p^2	^{3}P° – ^{3}P	1 – 0	P	250,931
	100	371.61	176.81+X – 445.91+X	2s2p – 2p^2	^{3}P° – ^{3}P	2 – 1	P	250,931
		508.32	2285.04 – 2481.75+X	2s3p – 2p3p	^{1}P° – ^{3}D	1 – 2	Q	534,375
	1	580.85	0.0 – 172.16	2s^2 – 2s2p	g^{1}S – ^{3}P°	0 – 1		856
		610.87	329.69 – 493.4+Z	2s2p – 2p^2	^{1}P° – ^{1}D	1 – 2	P	250

SILICON XII (Si^{11+}), Z = 14
Ground State 1s^{2}2s(^{2}S$_{1/2}$) (3 electrons)
Ionization Potential 4 222 400 cm^{-1}; 523.52 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		5.680	2464.53 – 20070.5	1s^{2}3d – 1s3p3d	^{2}D – ^{2}P°	$\frac{5}{2}$ – $\frac{3}{2}$		731
		5.768	0.0 – 17337.0	1s^{2}2s – 1s(2s3p(^{1}P°))	g^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$		283
		5.7931	200.24 – 17455.57	1s^{2}2p – 1s2p(^{3}P°)3p	^{2}P° – ^{2}P	$\frac{3}{2}$ – $\frac{3}{2}$		643
		5.8031	192.06 – 17417.92	1s^{2}2p – 1s2p(^{3}P°)3p	^{2}P° – ^{2}S	$\frac{1}{2}$ – $\frac{1}{2}$		643
	6	5.808	200.24 – 17417.92	1s^{2}2p – 1s2p(^{3}P°)3p	^{2}P° – ^{2}S	$\frac{3}{2}$ – $\frac{1}{2}$		283,809
		5.8125	192.06 – 17394.24	1s^{2}2p – 1s2p(^{3}P°)3p	^{2}P° – ^{2}D	$\frac{1}{2}$ – $\frac{3}{2}$		643
		5.816	200.24 – 17394.24	1s^{2}2p – 1s2p(^{3}P°)3p	^{2}P° – ^{2}D	$\frac{3}{2}$ – $\frac{5}{2}$		839
		6.6617	2444.39 – 17455.57	1s^{2}3p – 1s2p(^{3}P°)3p	^{2}P° – ^{2}P	$\frac{3}{2}$ – $\frac{3}{2}$		643
		6.678	192.06 – 15168.10	1s^{2}2p – 1s2p^2	^{2}P° – ^{2}S	$\frac{1}{2}$ – $\frac{1}{2}$	P	629
		6.681	200.24 – 15168.10	1s^{2}2p – 1s2p^2	^{2}P° – ^{2}S	$\frac{3}{2}$ – $\frac{1}{2}$	P	629
	66	6.688	0.0 – 14950.0	1s^{2}2s – 1s(2s2p(^{1}P°))	g^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$	P	629,809
		6.689	0.0 – 14948.0	1s^{2}2s – 1s(2s2p(^{1}P°))	g^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{1}{2}$	P	629
	20	6.718	0.0 – 14885.0	1s^{2}2s – 1s(2s2p(^{3}P°))	g^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$	P	629,809
	12	6.720	0.0 – 14881.0	1s^{2}2s – 1s(2s2p(^{3}P°))	g^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{1}{2}$	P	629,809
		6.724	192.06 – 15065.76	1s^{2}2p – 1s2p^2	^{2}P° – ^{2}P	$\frac{1}{2}$ – $\frac{3}{2}$	P	629
		6.727	200.24 – 15065.76	1s^{2}2p – 1s2p^2	^{2}P° – ^{2}P	$\frac{3}{2}$ – $\frac{3}{2}$	P	629
		6.731	200.24 – 15057.37	1s^{2}2p – 1s2p^2	^{2}P° – ^{2}P	$\frac{3}{2}$ – $\frac{1}{2}$	P	629
		6.738	192.06 – 15033.10	1s^{2}2p – 1s2p^2	^{2}P° – ^{2}D	$\frac{1}{2}$ – $\frac{3}{2}$	P	629
		6.742	200.24 – 15032.68	1s^{2}2p – 1s2p^2	^{2}P° – ^{2}D	$\frac{3}{2}$ – $\frac{5}{2}$	P	629
		6.779	0.0 – 14742.74	1s^{2}2s – 1s(2s2p(^{3}P°))	g^{2}S – ^{4}P°	$\frac{1}{2}$ – $\frac{3}{2}$	P	629
		6.781	192.06 – 14938.99	1s^{2}2p – 1s2p^2	^{2}P° – ^{4}P	$\frac{1}{2}$ – $\frac{3}{2}$	P	629
		6.782	192.06 – 14938.68	1s^{2}2p – 1s2p^2	^{2}P° – ^{4}P	$\frac{1}{2}$ – $\frac{1}{2}$	P	629
		6.784	200.24 – 14938.99	1s^{2}2p – 1s2p^2	^{2}P° – ^{4}P	$\frac{3}{2}$ – $\frac{3}{2}$	P	629
		6.785	200.24 – 14938.68	1s^{2}2p – 1s2p^2	^{2}P° – ^{4}P	$\frac{3}{2}$ – $\frac{1}{2}$	P	629

Si XII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	7	6.787	0.0 – 14742.74	$1s^22s - 1s(2s2p(^3P^\circ))$	$g^2S - ^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	629,809
	1	25.655	0.0 – 3897.9	$1s^22s - 1s^27p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		234
		26.03	200.24 – 4042.	$1s^22p - 1s^29d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		776
	3	26.460	0.0 – 3779.3	$1s^22s - 1s^26p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		234
		26.98	192.06 – 3899.2	$1s^22p - 1s^27d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		234
	1	27.035	200.24 – 3899.2	$1s^22p - 1s^27d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		234
	3	27.850	192.06 – 3782.6	$1s^22p - 1s^26d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		234
	10	27.909	200.24 – 3783.4	$1s^22p - 1s^26d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		234
	10	29.439	192.06 – 3588.8	$1s^22p - 1s^25d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		234
	20	29.509	200.24 – 3589.1	$1s^22p - 1s^25d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		234
	1	29.574	192.06 – 3573.5	$1s^22p - 1s^25s$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		234
	3	29.645	200.24 – 3573.5	$1s^22p - 1s^25s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		234
	60	31.015	0.0 – 3224.2	$1s^22s - 1s^24p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		234
	35	32.888	192.06 – 3232.5	$1s^22p - 1s^24d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		234
	90	32.972	200.24 – 3233.2	$1s^22p - 1s^24d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		234
	200	40.911	0.0 – 2444.39	$1s^22s - 1s^23p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		234
	200	40.951	0.0 – 2442.	$1s^22s - 1s^23p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		234
	200	44.021	192.06 – 2463.54	$1s^22p - 1s^23d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		234
	250	44.165	200.24 – 2464.53	$1s^22p - 1s^23d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		234
	10	45.519	192.06 – 2388.85	$1s^22p - 1s^23s$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		234
	20	45.692	200.24 – 2388.85	$1s^22p - 1s^23s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		234
		87.36	2444.39 – 3589.1	$1s^23p - 1s^25d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	534
		88.60	2444.39 – 3573.5	$1s^23p - 1s^25s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		534
		88.84	2464.53 – 3590.	$1s^23d - 1s^25f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		776
		119.71	2388.85 – 3224.2	$1s^23s - 1s^24p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	534
		126.50	2442. – 3232.5	$1s^23p - 1s^24d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	P	244
	50	126.77	2444.39 – 3233.2	$1s^23p - 1s^24d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	244,931
	50	129.89	2463.54 – 3233.5	$1s^23d - 1s^24f$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		534,931
	20	130.02	2464.53 – 3233.5	$1s^23d - 1s^24f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		534,931
		131.46	2463.54 – 3224.2	$1s^23d - 1s^24p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		534
	50	131.64	2464.53 – 3224.2	$1s^23d - 1s^24p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		534,931
		148.15	3224.2 – 3899.2	$1s^24p - 1s^27d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		534
	50	178.8	3224.2 – 3783.4	$1s^24p - 1s^26d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	Q	931,375
	20	335.7	17120. – 17417.92	$1s(2s3p(^3P^\circ)) - 1s2p(^3P^\circ)3p$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$	Q	931,375
	33	499.40	0.0 – 200.24	$1s^22s - 1s^22p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		730,856
	17	520.67	0.0 – 192.06	$1s^22s - 1s^22p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		730,856

SILICON XIII (Si^{12+}), Z = 14
Ground State $1s^2(^1S_0)$ (2 electrons)
Ionization Potential 19 661 500 cm^{-1}; 2437.74 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		5.223	0.0 – 19146.	$1s^2 - 1s6p$	$g^1S - ^1P^\circ$	0 – 1	P	728
	5	5.2850	0.0 – 18920.17	$1s^2 - 1s5p$	$g^1S - ^1P^\circ$	0 – 1		643,809
	13	5.4045	0.0 – 18503.48	$1s^2 - 1s4p$	$g^1S - ^1P^\circ$	0 – 1		643,809
	25	5.6805	0.0 – 17604.17	$1s^2 - 1s3p$	$g^1S - ^1P^\circ$	0 – 1	P	918,809
		5.688	0.0 – 17579.31	$1s^2 - 1s3p$	$g^1S - ^3P^\circ$	0 – 1	P	728
	1	6.1973	15042.79 – 31178.9	$1s2p - 2p^2$	$^1P^\circ - ^1S$	1 – 0	P	626,809

Si XIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	6.224	14959.50 – 31026.5	1s2s – 2s2p	$^1S-{}^1P^\circ$	0 – 1		839,809
		6.244	14836.70 – 30851.7	1s2s – 2s2p	$^3S-{}^3P^\circ$	1 – 2		626
		6.2517	14959.40 – 30955.0	$1s2p-2p^2$	$^3P^\circ-{}^3P$	2 – 2	P	626
	1	6.2664	15042.79 – 31000.9	$1s2p-2p^2$	$^1P^\circ-{}^1D$	1 – 2		643,809
	227	6.6477	0.0 – 15042.79	$1s^2-1s2p$	$g\,^1S-{}^1P^\circ$	0 – 1	P	918,809
	3	6.6879	0.0 – 14952.29	$1s^2-1s2p$	$g\,^1S-{}^3P^\circ$	0 – 1	P	918,856
		6.740	0.0 – 14836.70	$1s^2-1s2s$	$g\,^1S-{}^3S$	0 – 1	F,P	375,918
		36.43	14836.70 – 17581.44	1s2s – 1s3p	$^3S-{}^3P^\circ$	1 – 2	P	375
		37.81	14959.50 – 17604.17	1s2s – 1s3p	$^1S-{}^1P^\circ$	0 – 1	P	375
		64.67	17600.20+R – 19146.51+R	1s3d – 1s6f	$^3D-{}^3F^\circ$	3 – 4	P	087
		64.71	17625.00+K – 19170.24+K	1s3d – 1s6f	$^1D-{}^1F^\circ$	2 – 3	P	087
		75.78	17600.20+R – 18919.81+R	1s3d – 1s5f	$^3D-{}^3F^\circ$	3 – 4	P	087
		75.84	17625.00+K – 18943.56+K	1s3d – 1s5f	$^1D-{}^1F^\circ$	2 – 3	P	087
		105.630	17547.48 – 18494.18	1s3s – 1s4p	$^3S-{}^3P^\circ$	1 – 2	P	375
		108.28	17579.91 – 18503.48	1s3s – 1s4p	$^1S-{}^1P^\circ$	0 – 1	P	375
		110.82	17600.20+R – 18502.56+R	1s3d – 1s4f	$^3D-{}^3F^\circ$	3 – 4	P	087
	100	110.957	17625.00+K – 18526.31+K	1s3d – 1s4f	$^1D-{}^1F^\circ$	2 – 3	Q	231,375
		815.00	14836.70 – 14959.40	1s2s – 1s2p	$^3S-{}^3P^\circ$	1 – 2	P	375
		1200.62	14959.50 – 15042.79	1s2s – 1s2p	$^1S-{}^1P^\circ$	0 – 1	P	375

SILICON XIV (Si^{13+}), Z = 14
Ground State $1s(^2S_{1/2})$ (1 electron)
Ionization Potential 21 560 601 cm^{-1}; 2673.20 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		4.685	0.0 – 21345.4247360	1s – 10p	$g\,^2S-{}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		4.696	0.0 – 21294.9407760	1s – 9p	$g\,^2S-{}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		4.712	0.0 – 21224.3590580	1s – 8p	$g\,^2S-{}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		4.735	0.0 – 21121.4034000	1s – 7p	$g\,^2S-{}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		4.770	0.0 – 20962.7645200	1s – 6p	$g\,^2S-{}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		4.831	0.0 – 20699.6492000	1s – 5p	$g\,^2S-{}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
	3	4.947	0.0 – 20215.2500400	1s – 4p	$g\,^2S-{}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309,809
	20	5.217	0.0 – 19168.7370000	1s – 3p	$g\,^2S-{}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309,375
	10	5.218	0.0 – 19164.5426000	1s – 3p	$g\,^2S-{}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	309,375
	65	6.180	0.0 – 16180.0829000	1s – 2p	$g\,^2S-{}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309,375
	35	6.186	0.0 – 16165.9295000	1s – 2p	$g\,^2S-{}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	309,375
		19.309	16166.4670000 – 21345.4247360	2s – 10p	$^2S-{}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		19.360	16180.0829000 – 21345.4621020	2p – 10d	$^2P^\circ-{}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		19.499	16166.4670000 – 21294.9407760	2s – 9p	$^2S-{}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		19.551	16180.0829000 – 21294.9920360	2p – 9d	$^2P^\circ-{}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		19.771	16166.4670000 – 21224.3590580	2s – 8p	$^2S-{}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		19.824	16180.0829000 – 21224.4320460	2p – 8d	$^2P^\circ-{}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		20.182	16166.4670000 – 21121.4034000	2s – 7p	$^2S-{}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		20.237	16180.0829000 – 21121.5123550	2p – 7d	$^2P^\circ-{}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		20.849	16166.4670000 – 20962.7645200	2s – 6p	$^2S-{}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		20.908	16180.0829000 – 20962.9375590	2p – 6d	$^2P^\circ-{}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		22.060	16166.4670000 – 20699.6492000	2s – 5p	$^2S-{}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		22.125	16180.0829000 – 20699.9482300	2p – 5d	$^2P^\circ-{}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		24.699	16166.4670000 – 20215.2500400	2s – 4p	$^2S-{}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309

SI XIV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		24.778	16180.0829000 – 20215.8340900	2p – 4d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		33.308	16166.4670000 – 19168.7370000	2s – 3p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		33.444	16180.0829000 – 19170.1212420	2p – 3d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		45.856	19164.7035000 – 21345.4247360	3s – 10p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		45.941	19168.7370000 – 21345.4621020	3p – 10d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		45.969	19170.1212420 – 21345.4808020	3d – 10f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		46.943	19164.7035000 – 21294.9407760	3s – 9p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		47.031	19168.7370000 – 21294.9920360	3p – 9d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		47.061	19170.1212420 – 21295.0176870	3d – 9f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		48.552	19164.7035000 – 21224.3590580	3s – 8p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		48.645	19168.7370000 – 21224.4320460	3p – 8d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		48.677	19170.1212420 – 21224.4685700	3d – 8f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		51.106	19164.7035000 – 21121.4034000	3s – 7p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		51.209	19168.7370000 – 21121.5123550	3p – 7d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		51.244	19170.1212420 – 21121.5668760	3d – 7f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		55.615	19164.7035000 – 20962.7645200	3s – 6p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		55.735	19168.7370000 – 20962.9375590	3p – 6d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		55.776	19170.1212420 – 20963.0241360	3d – 6f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		65.149	19164.7035000 – 20699.6492000	3s – 5p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		65.308	19168.7370000 – 20699.9482300	3p – 5d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		65.360	19170.1212420 – 20700.0978270	3d – 5f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		88.349	20213.5490000 – 21345.4247360	4s – 10p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		88.479	20215.2500400 – 21345.4621020	4p – 10d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		88.523	20215.8340900 – 21345.4808020	4d – 10f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		92.473	20213.5490000 – 21294.9407760	4s – 9p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		92.615	20215.2500400 – 21294.9920360	4p – 9d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		92.663	20215.8340900 – 21295.0176870	4d – 9f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		95.188	19164.7035000 – 20215.2500400	3s – 4p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		95.502	19168.7370000 – 20215.8340900	3p – 4d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		95.602	19170.1212420 – 20216.1262480	3d – 4f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		98.931	20213.5490000 – 21224.3590580	4s – 8p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		99.090	20215.2500400 – 21224.4320460	4p – 8d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		99.144	20215.8340900 – 21224.4685700	4d – 8f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		110.150	20213.5490000 – 21121.4034000	4s – 7p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		110.343	20215.2500400 – 21121.5123550	4p – 7d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		110.408	20215.8340900 – 21121.5668760	4d – 7f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		133.473	20213.5490000 – 20962.7645200	4s – 6p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		133.746	20215.2500400 – 20962.9375590	4p – 6d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		133.835	20215.8340900 – 20963.0241360	4d – 6f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		154.644	20698.7785600 – 21345.4247360	5s – 10p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		154.844	20699.6492000 – 21345.4621020	5p – 10d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		154.911	20699.9482300 – 21345.4808020	5d – 10f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		167.740	20698.7785600 – 21294.9407760	5s – 9p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		167.970	20699.6492000 – 21294.9920360	5p – 9d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		168.048	20699.9482300 – 21295.0176870	5d – 9f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		190.266	20698.7785600 – 21224.3590580	5s – 8p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		190.555	20699.6492000 – 21224.4320460	5p – 8d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		190.650	20699.9482300 – 21224.4685700	5d – 8f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		205.719	20213.5490000 – 20699.6492000	4s – 5p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		206.314	20215.2500400 – 20699.9482300	4p – 5d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		206.499	20215.8340900 – 20700.0978270	4d – 5f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		236.616	20698.7785600 – 21121.4034000	5s – 7p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		237.044	20699.6492000 – 21121.5123550	5p – 7d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		237.181	20699.9482300 – 21121.5668760	5d – 7f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309

Si XIV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		378.808	20698.7785600 – 20962.7645200	5s – 6p	^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		379.812	20699.6492000 – 20962.9375590	5p – 6d	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		380.118	20699.9482300 – 20963.0241360	5d – 6f	^2D – $^2F°$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309

PHOSPHORUS I (P^{0+}), Z = 15
Ground State $1s^22s^22p^63s^23p^3(^4S^\circ_{3/2})$ (15 electrons)
Ionization Potential 84 580 cm^{-1}; 10.49 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	3	1202.393	0.0 – 83.16715	$3s^23p^3 - 3s^23p^2(^3P)8d$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		1086
	1	1205.528	0.0 – 82.94943	$3s^23p^3 - 3s^23p^2(^3P)8d$	$g^4S^\circ - {}^2F$	$\frac{3}{2} - \frac{5}{2}$		1086
	3	1205.647	0.0 – 82.94304	$3s^23p^3 - 3s^23p^2(^3P)8d$	$g^4S^\circ - {}^4D$	$\frac{3}{2} - \frac{5}{2}$		1086
	1	1206.831	0.0 – 82.8618	$3s^23p^3 - 3s^23p^2(^3P)8d$	$g^4S^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	1	1207.113	0.0 – 82.84316	$3s^23p^3 - 3s^23p^2(^3P)9s$	$g^4S^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	0	1207.436	0.0 – 82.82060	$3s^23p^3 - 3s^23p^2(^3P)9s$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		1086
	1	1208.430	0.0 – 82.75331	$3s^23p^3 - 3s^23p^2(^3P)7d$	$g^4S^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		1086
	1	1208.617	0.0 – 82.73886	$3s^23p^3 - 3s^23p^2(^3P)7d$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{1}{2}$		1086
	3	1209.706	0.0 – 82.66531	$3s^23p^3 - 3s^23p^2(^3P)7d$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		1086
	3	1210.788	0.0 – 82.59022	$3s^23p^3 - 3s^23p^2(^3P)7d$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		1086
	0	1211.804	0.0 – 82.52195	$3s^23p^3 - 3s^23p^2(^3P)9s$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		1086
	3	1213.965	0.0 – 82.37480	$3s^23p^3 - 3s^23p^2(^3P)7d$	$g^4S^\circ - {}^2F$	$\frac{3}{2} - \frac{5}{2}$		1086
	7	1214.389	0.0 – 82.34623	$3s^23p^3 - 3s^23p^2(^3P)7d$	$g^4S^\circ - {}^4D$	$\frac{3}{2} - \frac{5}{2}$		1086
	1	1216.055	0.0 – 82.23305	$3s^23p^3 - 3s^23p^2(^1D)3d$	$g^4S^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		1086
	1	1216.602	0.0 – 82.19577	$3s^23p^3 - 3s^23p^2(^1D)3d$	$g^4S^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		1086
	3	1217.852	0.0 – 82.11237	$3s^23p^3 - 3s^23p^2(^3P)7d$	$g^4S^\circ - {}^4F$	$\frac{3}{2} - \frac{5}{2}$		1086
	0	1218.400	0.0 – 82.07589	$3s^23p^3 - 3s^23p^2(^3P)7d$	$g^4S^\circ - {}^4F$	$\frac{3}{2} - \frac{3}{2}$		1086
	3	1218.547	0.0 – 82.06443	$3s^23p^3 - 3s^23p^2(^3P)8s$	$g^4S^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	3	1219.286	0.0 – 82.01499	$3s^23p^3 - 3s^23p^2(^3P)8s$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		1086
	7	1221.051	0.0 – 81.89633	$3s^23p^3 - 3s^23p^2(^3P)6d$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{1}{2}$		1086
	7	1221.150	0.0 – 81.89008	$3s^23p^3 - 3s^23p^2(^3P)6d$	$g^4S^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		1086
	7	1221.881	0.0 – 81.84073	$3s^23p^3 - 3s^23p^2(^3P)6d$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		1086
	0	1222.963						1086
	7	1223.017	0.0 – 81.76468	$3s^23p^3 - 3s^23p^2(^3P)6d$	$g^4S^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		1086
	15	1223.693	0.0 – 81.71997	$3s^23p^3 - 3s^23p^2(^3P)6d$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		1086
	1	1225.825	0.0 – 81.57864	$3s^23p^3 - 3s^23p^2(^3P)8s$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{1}{2}$		1086
	1	1226.716	0.0 – 81.51673	$3s^23p^3 - 3s^23p^2(^3P)6d$	$g^4S^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		1086
	7	1228.253	0.0 – 81.41575	$3s^23p^3 - 3s^23p^2(^3P)6d$	$g^4S^\circ - {}^4D$	$\frac{3}{2} - \frac{3}{2}$		1086
	15	1228.465	0.0 – 81.40256	$3s^23p^3 - 3s^23p^2(^3P)6d$	$g^4S^\circ - {}^4D$	$\frac{3}{2} - \frac{5}{2}$		1086
	7	1229.965	0.0 – 81.30281	$3s^23p^3 - 3s^23p^2(^1D)5s$	$g^4S^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		1086
	7	1230.062	0.0 – 81.29670	$3s^23p^3 - 3s^23p^2(^1D)5s$	$g^4S^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		1086
	3	1230.251	0.0 – 81.28384	$3s^23p^3 - 3s^23p^2(^3P)6d$	$g^4S^\circ - {}^4D$	$\frac{3}{2} - \frac{1}{2}$		1086
	3	1230.350	0.0 – 81.27727	$3s^23p^3 - 3s^23p^2(^3P)6d$	$g^4S^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	7	1232.687	0.0 – 81.12364	$3s^23p^3 - 3s^23p^2(^3P)6d$	$g^4S^\circ - {}^4F$	$\frac{3}{2} - \frac{5}{2}$		1086
	1	1233.495	0.0 – 81.06994	$3s^23p^3 - 3s^23p^2(^3P)6d$	$g^4S^\circ - {}^4F$	$\frac{3}{2} - \frac{3}{2}$		1086
	7	1237.470	0.0 – 80.81013	$3s^23p^3 - 3s^23p^2(^3P)7s$	$g^4S^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	7	1239.476	0.0 – 80.67930	$3s^23p^3 - 3s^23p^2(^3P)7s$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		1086
	0	1239.568	0.0 – 80.67281	$3s^23p^3 - 3s^23p^2(^1D)3d$	$g^4S^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		1086
	1	1239.826	0.0 – 80.65521	$3s^23p^3 - 3s^23p^2(^1S)4s$	$g^4S^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		1086
	15	1241.475	0.0 – 80.54877	$3s^23p^3 - 3s^23p^2(^1D)3d$	$g^4S^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	15	1241.972	0.0 – 80.51706	$3s^23p^3 - 3s^23p^2(^3P)5d$	$g^4S^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		1086
	15	1242.111	0.0 – 80.50815	$3s^23p^3 - 3s^23p^2(^3P)5d$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{1}{2}$		1086
	25	1243.374	0.0 – 80.42627	$3s^23p^3 - 3s^23p^2(^3P)5d$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		1086
	7	1244.089	0.0 – 80.38049	$3s^23p^3 - 3s^23p^2(^3P)7s$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		1086
	7	1244.199	0.0 – 80.37265	$3s^23p^3 - 3s^23p^2(^3P)7s$	$g^4S^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		1086
	25	1245.193	0.0 – 80.30841	$3s^23p^3 - 3s^23p^2(^3P)5d$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		1086
	7	1245.334	0.0 – 80.29941	$3s^23p^3 - 3s^23p^2(^3P)5d$	$g^4S^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		1086
	7	1246.566	0.0 – 80.22046	$3s^23p^3 - 3s^23p^2(^3P)7s$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{1}{2}$		1086
	7	1247.142	0.0 – 80.18329	$3s^23p^3 - 3s^23p^2(^3P)5d$	$g^4S^\circ - {}^2F$	$\frac{3}{2} - \frac{5}{2}$		1086
	2	1247.31						496
	1	1248.20						496
	1	1248.61						496
	25	1253.737	0.0 – 79.76177	$3s^23p^3 - 3s^23p^2(^3P)5d$	$g^4S^\circ - {}^4D$	$\frac{3}{2} - \frac{5}{2}$		1086
	15	1254.412	0.0 – 79.71849	$3s^23p^3 - 3s^23p^2(^3P)5d$	$g^4S^\circ - {}^4D$	$\frac{3}{2} - \frac{3}{2}$		1086

P I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	3	1254.758	0.0 – 79.69659	$3s^23p^3 - 3s^23p^2(^3P)5d$	$g^4S^\circ - {}^4D$	$\frac{3}{2} - \frac{1}{2}$		1086
	15	1259.413	0.0 – 79.40210	$3s^23p^3 - 3s^23p^2(^3P)5d$	$g^4S^\circ - {}^4F$	$\frac{3}{2} - \frac{5}{2}$		1086
	1	1260.422	0.0 – 79.33938	$3s^23p^3 - 3s^23p^2(^3P)5d$	$g^4S^\circ - {}^4F$	$\frac{3}{2} - \frac{3}{2}$		1086
	3	1262.311	0.0 – 79.21956	$3s^23p^3 - 3s^23p^2(^3P)5d$	$g^4S^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		1086
	15	1263.869	0.0 – 79.12219	$3s^23p^3 - 3s^23p^2(^3P)5d$	$g^4S^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	15	1276.186	0.0 – 78.35880	$3s^23p^3 - 3s^23p^2(^3P)6s$	$g^4S^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	7	1276.498	0.0 – 78.33984	$3s^23p^3 - 3s^23p^2(^1D)3d$	$g^4S^\circ - {}^2F$	$\frac{3}{2} - \frac{5}{2}$		1086
	15	1278.593	0.0 – 78.21134	$3s^23p^3 - 3s^23p^2(^3P)6s$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		1086
	3	1281.246	0.0 – 78.04907	$3s^23p^3 - 3s^23p^2(^3P)6s$	$g^4S^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		1086
	40	1282.624	0.0 – 77.9655	$3s^23p^3 - 3s^23p^2(^3P)4d$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{1}{2}$		1086
	40	1282.921	0.0 – 77.94670	$3s^23p^3 - 3s^23p^2(^3P)4d$	$g^4S^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		1086
	40	1282.980	0.0 – 77.94255	$3s^23p^3 - 3s^23p^2(^3P)6s$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		1086
	40	1283.884	0.0 – 77.88881	$3s^23p^3 - 3s^23p^2(^3P)4d$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		1086
	40	1284.805	0.0 – 77.83375	$3s^23p^3 - 3s^23p^2(^3P)4d$	$g^4S^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		1086
	25	1285.862	0.0 – 77.76950	$3s^23p^3 - 3s^23p^2(^3P)6s$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{1}{2}$		1086
	60	1286.449	0.0 – 77.73368	$3s^23p^3 - 3s^23p^2(^3P)4d$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		1086
	0	1300.225						1086
	15	1305.004	0.0 – 76.62790	$3s^23p^3 - 3s^23p^2(^3P)4d$	$g^4S^\circ - {}^4D$	$\frac{3}{2} - \frac{5}{2}$		1086
	25	1305.717	0.0 – 76.58571	$3s^23p^3 - 3s^23p^2(^3P)4d$	$g^4S^\circ - {}^4D$	$\frac{3}{2} - \frac{3}{2}$		1086
	40	1306.036	0.0 – 76.56649	$3s^23p^3 - 3s^23p^2(^3P)4d$	$g^4S^\circ - {}^4D$	$\frac{3}{2} - \frac{1}{2}$		1086
	7	1314.988	0.0 – 76.04599	$3s^23p^3 - 3s^23p^2(^3P)4d$	$g^4S^\circ - {}^4F$	$\frac{3}{2} - \frac{5}{2}$		1086
	1	1316.654	0.0 – 75.94947	$3s^23p^3 - 3s^23p^2(^3P)4d$	$g^4S^\circ - {}^4F$	$\frac{3}{2} - \frac{3}{2}$		1086
	3	1318.678	0.0 – 75.83318	$3s^23p^3 - 3s^23p^2(^3P)4d$	$g^4S^\circ - {}^2F$	$\frac{3}{2} - \frac{5}{2}$		1086
	7	1319.020	0.0 – 75.81372	$3s^23p^3 - 3s^23p^2(^3P)4d$	$g^4S^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		1086
	25	1321.427	0.0 – 75.67609	$3s^23p^3 - 3s^23p^2(^3P)4d$	$g^4S^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	25	1365.195	0.0 – 73.249806	$3s^23p^3 - 3s^23p^2(^3P)5s$	$g^4S^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	7	1370.921	0.0 – 72.943803	$3s^23p^3 - 3s^23p^2(^3P)5s$	$g^4S^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		1086
	60	1372.033	0.0 – 72.884865	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		1086
	60	1373.500	0.0 – 72.807203	$3s^23p^3 - 3s^23p^2(^3P)5s$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		1086
	40	1374.732	0.0 – 72.741808	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		1086
	60	1377.080	0.0 – 72.617789	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{1}{2}$		1086
	60	1377.937	0.0 – 72.572400	$3s^23p^3 - 3s^23p^2(^3P)5s$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		1086
	80	1379.429	0.0 – 72.493806	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		1086
	80	1381.469	0.0 – 72.386347	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		1086
	60	1381.637	0.0 – 72.378000	$3s^23p^3 - 3s^23p^2(^3P)5s$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{1}{2}$		1086
	0	1384.699	11.37663 – 83.59491	$3s^23p^3 - 3s^23p^2(^3P)9d$	${}^2D^\circ - {}^2F$	$\frac{5}{2} - \frac{7}{2}$		1086
	0	1391.027	11.37663 – 83.26541	$3s^23p^3 - 3s^23p^2(^3P)9d$	${}^2D^\circ - {}^4F$	$\frac{5}{2} - \frac{7}{2}$		1086
	1	1392.348	11.37663 – 83.19776	$3s^23p^3 - 3s^23p^2(^3P)8d$	${}^2D^\circ - {}^2F$	$\frac{5}{2} - \frac{7}{2}$		1086
	0	1393.462						1086
	1	1396.863	11.36102 – 82.94943	$3s^23p^3 - 3s^23p^2(^3P)8d$	${}^2D^\circ - {}^2F$	$\frac{3}{2} - \frac{5}{2}$		1086
	1	1397.008	11.36102 – 82.94304	$3s^23p^3 - 3s^23p^2(^3P)8d$	${}^2D^\circ - {}^4D$	$\frac{3}{2} - \frac{5}{2}$		1086
	0	1397.301	11.37663 – 82.94304	$3s^23p^3 - 3s^23p^2(^3P)8d$	${}^2D^\circ - {}^4D$	$\frac{5}{2} - \frac{5}{2}$		1086
	0	1398.563	11.36102 – 82.8618	$3s^23p^3 - 3s^23p^2(^3P)8d$	${}^2D^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	1	1398.881	11.37663 – 82.8618	$3s^23p^3 - 3s^23p^2(^3P)8d$	${}^2D^\circ - {}^2P$	$\frac{5}{2} - \frac{3}{2}$		1086
	1	1398.950	11.36102 – 82.84316	$3s^23p^3 - 3s^23p^2(^3P)9s$	${}^2D^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	1	1399.189	11.37663 – 82.84691	$3s^23p^3 - 3s^23p^2(^3P)8d$	${}^2D^\circ - {}^4F$	$\frac{5}{2} - \frac{7}{2}$		1086
	1	1400.740	11.36102 – 82.75331	$3s^23p^3 - 3s^23p^2(^3P)7d$	${}^2D^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		1086
	3	1401.043	11.37663 – 82.75331	$3s^23p^3 - 3s^23p^2(^3P)7d$	${}^2D^\circ - {}^2D$	$\frac{5}{2} - \frac{5}{2}$		1086
	7	1403.245	11.37663 – 82.64041	$3s^23p^3 - 3s^23p^2(^3P)7d$	${}^2D^\circ - {}^2F$	$\frac{5}{2} - \frac{7}{2}$		1086
	0	1403.931	11.36102 – 82.59022	$3s^23p^3 - 3s^23p^2(^3P)7d$	${}^2D^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		1086
	0	1404.215	11.37663 – 82.59022	$3s^23p^3 - 3s^23p^2(^3P)7d$	${}^2D^\circ - {}^4P$	$\frac{5}{2} - \frac{5}{2}$		1086
	0	1405.116	0.0 – 71.168229	$3s^23p^3 - 3s3p^4$	$g^4S^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		1086
	0	1405.569	11.37663 – 82.52195	$3s^23p^3 - 3s^23p^2(^3P)9s$	${}^2D^\circ - {}^4P$	$\frac{5}{2} - \frac{3}{2}$		1086
	7	1408.187	11.36102 – 82.37480	$3s^23p^3 - 3s^23p^2(^3P)7d$	${}^2D^\circ - {}^2F$	$\frac{3}{2} - \frac{5}{2}$		1086

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	0	1408.461	11.37663 – 82.37480	$3s^23p^3 - 3s^23p^2(^3P)7d$	$^2D° - ^2F$	$\frac{5}{2} - \frac{5}{2}$		1086
	3	1408.744	11.36102 – 82.34623	$3s^23p^3 - 3s^23p^2(^3P)7d$	$^2D° - ^4D$	$\frac{3}{2} - \frac{5}{2}$		1086
	7	1409.060	11.37663 – 82.34623	$3s^23p^3 - 3s^23p^2(^3P)7d$	$^2D° - ^4D$	$\frac{5}{2} - \frac{5}{2}$		1086
	7	1410.630	11.36102 – 82.25136	$3s^23p^3 - 3s^23p^2(^3P)7d$	$^2D° - ^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	7	1410.940	11.37663 – 82.25136	$3s^23p^3 - 3s^23p^2(^3P)7d$	$^2D° - ^2P$	$\frac{5}{2} - \frac{3}{2}$		1086
	15	1411.309	11.37663 – 82.23305	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D° - ^2D$	$\frac{5}{2} - \frac{5}{2}$		1086
	7	1411.487	11.37663 – 82.22415	$3s^23p^3 - 3s^23p^2(^3P)7d$	$^2D° - ^4F$	$\frac{5}{2} - \frac{7}{2}$		1086
	7	1411.740	11.36102 – 82.19577	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D° - ^2D$	$\frac{3}{2} - \frac{3}{2}$		1086
	7	1413.406	11.36102 – 82.11237	$3s^23p^3 - 3s^23p^2(^3P)7d$	$^2D° - ^4F$	$\frac{3}{2} - \frac{5}{2}$		1086
	0	1414.134	11.36102 – 82.07589	$3s^23p^3 - 3s^23p^2(^3P)7d$	$^2D° - ^4F$	$\frac{3}{2} - \frac{3}{2}$		1086
	1	1414.445	11.37663 – 82.07589	$3s^23p^3 - 3s^23p^2(^3P)7d$	$^2D° - ^4F$	$\frac{5}{2} - \frac{3}{2}$		1086
	3	1414.677	11.37663 – 82.06443	$3s^23p^3 - 3s^23p^2(^3P)8s$	$^2D° - ^2P$	$\frac{5}{2} - \frac{3}{2}$		1086
	0	1417.726	11.36102 – 81.89633	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2D° - ^4P$	$\frac{3}{2} - \frac{1}{2}$		1086
	7	1417.862	11.36102 – 81.89008	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2D° - ^2D$	$\frac{3}{2} - \frac{5}{2}$		1086
	7	1418.173	11.37663 – 81.89008	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2D° - ^2D$	$\frac{5}{2} - \frac{5}{2}$		1086
	0	1419.172	11.37663 – 81.84073	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2D° - ^4P$	$\frac{5}{2} - \frac{3}{2}$		1086
	15	1420.090	11.37663 – 81.79511	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2D° - ^2F$	$\frac{5}{2} - \frac{7}{2}$		1086
	3	1420.246	11.36102 – 81.7713	$3s^23p^3 - 3s^23p^2(^3P)8s$	$^2D° - ^2P$	$\frac{3}{2} - \frac{1}{2}$		1086
	7	1420.379	11.36102 – 81.76468	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2D° - ^2D$	$\frac{3}{2} - \frac{3}{2}$		1086
	3	1420.618	0.0 – 70.391801	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S° - ^2F$	$\frac{3}{2} - \frac{5}{2}$		1086
	1	1421.280	11.36102 – 81.71997	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2D° - ^4P$	$\frac{3}{2} - \frac{5}{2}$		1086
	3	1421.594	11.37663 – 81.71997	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2D° - ^4P$	$\frac{5}{2} - \frac{5}{2}$		1086
	3	1424.145	11.36102 – 81.57864	$3s^23p^3 - 3s^23p^2(^3P)8s$	$^2D° - ^4P$	$\frac{3}{2} - \frac{1}{2}$		1086
	15	1425.294	11.36102 – 81.52220	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2D° - ^2F$	$\frac{3}{2} - \frac{5}{2}$		1086
	3	1425.381	11.36102 – 81.51673	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2D° - ^2P$	$\frac{3}{2} - \frac{1}{2}$		1086
	7	1427.458	11.36102 – 81.41575	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2D° - ^4D$	$\frac{3}{2} - \frac{3}{2}$		1086
	15	1427.755	11.37663 – 81.41575	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2D° - ^4D$	$\frac{5}{2} - \frac{3}{2}$		1086
	7	1428.045	11.37663 – 81.40256	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2D° - ^4D$	$\frac{5}{2} - \frac{5}{2}$		1086
	15	1429.770	11.36102 – 81.30281	$3s^23p^3 - 3s^23p^2(^1D)5s$	$^2D° - ^2D$	$\frac{3}{2} - \frac{3}{2}$		1086
	3	1429.891	11.36102 – 81.29670	$3s^23p^3 - 3s^23p^2(^1D)5s$	$^2D° - ^2D$	$\frac{3}{2} - \frac{5}{2}$		1086
	25	1430.135	11.36102 – 81.28384	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2D° - ^4D$	$\frac{3}{2} - \frac{1}{2}$		1086
	15	1430.277	11.36102 – 81.27727	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2D° - ^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	7	1430.602	11.37663 – 81.27727	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2D° - ^2P$	$\frac{5}{2} - \frac{3}{2}$		1086
	60	1430.732	0.0 – 69.894307	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S° - ^4D$	$\frac{3}{2} - \frac{3}{2}$		1086
	25	1431.055	0.0 – 69.878033	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S° - ^4D$	$\frac{3}{2} - \frac{1}{2}$		1086
	15	1431.489	11.37663 – 81.23376	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2D° - ^4F$	$\frac{5}{2} - \frac{7}{2}$		1086
	15	1433.434	11.36102 – 81.12364	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2D° - ^4F$	$\frac{3}{2} - \frac{5}{2}$		1086
	0	1433.757	11.37663 – 81.12364	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2D° - ^4F$	$\frac{5}{2} - \frac{5}{2}$		1086
	0	1434.536	11.36102 – 81.06994	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2D° - ^4F$	$\frac{3}{2} - \frac{3}{2}$		1086
	0	1434.856	11.37663 – 81.06994	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2D° - ^4F$	$\frac{5}{2} - \frac{3}{2}$		1086
	7	1439.908	11.36102 – 80.81013	$3s^23p^3 - 3s^23p^2(^3P)7s$	$^2D° - ^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	25	1440.231	11.37663 – 80.81013	$3s^23p^3 - 3s^23p^2(^3P)7s$	$^2D° - ^2P$	$\frac{5}{2} - \frac{3}{2}$		1086
	25	1442.764	11.36102 – 80.67281	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D° - ^2P$	$\frac{3}{2} - \frac{1}{2}$		1086
	15	1443.124	11.36102 – 80.65521	$3s^23p^3 - 3s^23p^2(^1S)4s$	$^2D° - ^2S$	$\frac{3}{2} - \frac{1}{2}$		1086
	7	1445.344	11.36102 – 80.54877	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D° - ^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	15	1445.676	11.37663 – 80.54877	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D° - ^2P$	$\frac{5}{2} - \frac{3}{2}$		1086
	25	1446.010	11.36102 – 80.51706	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D° - ^2D$	$\frac{3}{2} - \frac{5}{2}$		1086
	0	1446.191	11.36102 – 80.50815	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D° - ^4P$	$\frac{3}{2} - \frac{1}{2}$		1086
	15	1446.331	11.37663 – 80.51706	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D° - ^2D$	$\frac{5}{2} - \frac{5}{2}$		1086
	60	1447.504	11.37663 – 80.46117	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D° - ^2F$	$\frac{5}{2} - \frac{7}{2}$		1086
	1	1447.913	11.36102 – 80.42627	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D° - ^4P$	$\frac{3}{2} - \frac{3}{2}$		1086
	15	1448.239	11.37663 – 80.42627	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D° - ^4P$	$\frac{5}{2} - \frac{3}{2}$		1086
	0	1448.905						1086
	1	1449.034	11.36102 – 80.37265	$3s^23p^3 - 3s^23p^2(^3P)7s$	$^2D° - ^2P$	$\frac{3}{2} - \frac{1}{2}$		1086

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	25	1450.382	11.36102 – 80.30841	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		1086
	3	1450.577	11.36102 – 80.29941	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		1086
	7	1450.704	11.37663 – 80.30841	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D^\circ - ^4P$	$\frac{5}{2} - \frac{5}{2}$		1086
	15	1450.904	11.37663 – 80.29941	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D^\circ - ^2D$	$\frac{5}{2} - \frac{3}{2}$		1086
	45	1453.018	11.36102 – 80.18329	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D^\circ - ^2F$	$\frac{3}{2} - \frac{5}{2}$	P	1086,496
	25	1453.350	11.37663 – 80.18329	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D^\circ - ^2F$	$\frac{5}{2} - \frac{5}{2}$		1086
	7	1460.126	11.37663 – 79.86371	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D^\circ - ^4D$	$\frac{5}{2} - \frac{7}{2}$		1086
	3	1461.974	11.36102 – 79.76177	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D^\circ - ^4D$	$\frac{3}{2} - \frac{5}{2}$		1086
	0	1462.321	11.37663 – 79.76177	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D^\circ - ^4D$	$\frac{5}{2} - \frac{5}{2}$		1086
	0	1462.884	11.36102 – 79.71849	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D^\circ - ^4D$	$\frac{3}{2} - \frac{3}{2}$		1086
	1	1463.240	11.37663 – 79.71849	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D^\circ - ^4D$	$\frac{5}{2} - \frac{3}{2}$		1086
	3	1463.358	11.36102 – 79.69659	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D^\circ - ^4D$	$\frac{3}{2} - \frac{1}{2}$		1086
	3	1464.939	0.0 – 68.262151	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4F$	$\frac{3}{2} - \frac{5}{2}$		1086
	0	1466.650	0.0 – 68.183186	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4F$	$\frac{3}{2} - \frac{3}{2}$		1086
	25	1467.587	11.37663 – 79.51535	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D^\circ - ^4F$	$\frac{5}{2} - \frac{7}{2}$		1086
	3	1467.849	0.0 – 68.126607	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		1086
	25	1469.706	11.36102 – 79.40210	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D^\circ - ^4F$	$\frac{3}{2} - \frac{5}{2}$		1086
	3	1470.037	11.37663 – 79.40210	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D^\circ - ^4F$	$\frac{5}{2} - \frac{5}{2}$		1086
	1	1471.389	11.37663 – 79.33938	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D^\circ - ^4F$	$\frac{5}{2} - \frac{3}{2}$		1086
	15	1472.559	0.0 – 67.909136	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	25	1473.658	11.36102 – 79.21956	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		1086
	7	1475.774	11.36102 – 79.12219	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	25	1476.115	11.37663 – 79.12219	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2D^\circ - ^2P$	$\frac{5}{2} - \frac{3}{2}$		1086
	80	1488.029	11.37663 – 78.57996	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2G$	$\frac{5}{2} - \frac{7}{2}$		1086
	100	1491.359	11.37663 – 78.42931	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{5}{2} - \frac{7}{2}$		1086
	25	1492.588	11.36102 – 78.35880	$3s^23p^3 - 3s^23p^2(^3P)6s$	$^2D^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	60	1492.940	11.37663 – 78.35880	$3s^23p^3 - 3s^23p^2(^3P)6s$	$^2D^\circ - ^2P$	$\frac{5}{2} - \frac{3}{2}$		1086
	40	1493.008	11.36102 – 78.33984	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{3}{2} - \frac{5}{2}$		1086
	40	1493.363	11.37663 – 78.33984	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{5}{2} - \frac{5}{2}$		1086
	3	1495.875	11.36102 – 78.21134	$3s^23p^3 - 3s^23p^2(^3P)6s$	$^2D^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		1086
	0	1496.233	11.37663 – 78.21134	$3s^23p^3 - 3s^23p^2(^3P)6s$	$^2D^\circ - ^4P$	$\frac{5}{2} - \frac{5}{2}$		1086
	40	1499.525	11.36102 – 78.04907	$3s^23p^3 - 3s^23p^2(^3P)6s$	$^2D^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		1086
	3	1501.400	11.36102 – 77.9655	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^4P$	$\frac{3}{2} - \frac{1}{2}$		1086
	60	1501.825	11.36102 – 77.94670	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		1086
	15	1501.902	11.36102 – 77.94255	$3s^23p^3 - 3s^23p^2(^3P)6s$	$^2D^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		1086
	60	1502.195	11.37663 – 77.94670	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^2D$	$\frac{5}{2} - \frac{5}{2}$		1086
	15	1502.241	11.37663 – 77.94255	$3s^23p^3 - 3s^23p^2(^3P)6s$	$^2D^\circ - ^4P$	$\frac{5}{2} - \frac{3}{2}$		1086
	15	1503.123	11.36102 – 77.88881	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		1086
	15	1503.475	11.37663 – 77.88881	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^4P$	$\frac{5}{2} - \frac{3}{2}$		1086
	60	1504.381	11.36102 – 77.83375	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		1086
	15	1504.711	11.37663 – 77.83375	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^2D$	$\frac{5}{2} - \frac{3}{2}$		1086
	7	1505.825	11.36102 – 77.76950	$3s^23p^3 - 3s^23p^2(^3P)6s$	$^2D^\circ - ^4P$	$\frac{3}{2} - \frac{1}{2}$		1086
	40	1506.650	11.36102 – 77.73368	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		1086
	25	1506.984	11.37663 – 77.73368	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^4P$	$\frac{5}{2} - \frac{5}{2}$		1086
	9	1508.74						496
	6	1515.10						496
	15	1525.518	11.36102 – 76.91225	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		1086
	25	1530.617	11.37663 – 76.70942	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^4D$	$\frac{5}{2} - \frac{7}{2}$		1086
	3	1532.185	11.36102 – 76.62790	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^4D$	$\frac{3}{2} - \frac{5}{2}$		1086
	3	1533.166	11.36102 – 76.58571	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^4D$	$\frac{3}{2} - \frac{3}{2}$		1086
	0	1533.487						1086
	40	1534.757	0.0 – 65.157126	$3s^23p^3 - 3s^23p^2(^1D)4s$	$g^4S^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		1086
	30	1541.69						496
	40	1543.287	11.37663 – 76.17335	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^4F$	$\frac{5}{2} - \frac{7}{2}$		1086

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	40	1545.946	11.36102 – 76.04599	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^4F$	$\frac{3}{2}-\frac{5}{2}$		1086
	25	1546.319	11.37663 – 76.04599	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^4F$	$\frac{5}{2}-\frac{5}{2}$		1086
	3	1548.245	11.36102 – 75.94947	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^4F$	$\frac{3}{2}-\frac{3}{2}$		1086
	80	1548.458	11.37663 – 75.95687	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		1086
	60	1551.056	11.36102 – 75.83318	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		1086
	40	1551.427	11.37663 – 75.83318	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{5}{2}$		1086
	15	1551.538	11.36102 – 75.81372	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		1086
	15	1554.842	11.36102 – 75.67609	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		1086
	15	1555.209	11.37663 – 75.67609	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		1086
	2	1556.18						496
	1	1557.550						1086
	0	1559.130	18.72271 – 82.8618	$3s^23p^3 - 3s^23p^2(^3P)8d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		1086
	0	1559.541	18.72271 – 82.84316	$3s^23p^3 - 3s^23p^2(^3P)9s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		1086
	0	1560.171	18.74801 – 82.84316	$3s^23p^3 - 3s^23p^2(^3P)9s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		1086
	0	1562.073	18.72271 – 82.73886	$3s^23p^3 - 3s^23p^2(^3P)7d$	$^2P^\circ - ^4P$	$\frac{1}{2}-\frac{1}{2}$		1086
	1	1562.383	18.74801 – 82.75331	$3s^23p^3 - 3s^23p^2(^3P)7d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		1086
	0	1562.786						1086
	1	1563.293	18.72271 – 82.68980	$3s^23p^3 - 3s^23p^2(^3P)8d$	$^2P^\circ - ^4F$	$\frac{1}{2}-\frac{3}{2}$		1086
	0	1564.471						1086
	0	1566.371	18.74801 – 82.59022	$3s^23p^3 - 3s^23p^2(^3P)7d$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		1086
	0	1567.414	18.72271 – 82.52195	$3s^23p^3 - 3s^23p^2(^3P)9s$	$^2P^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$		1086
	0	1571.673	18.74801 – 82.37480	$3s^23p^3 - 3s^23p^2(^3P)7d$	$^2P^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		1086
	3	1574.090	18.72271 – 82.25136	$3s^23p^3 - 3s^23p^2(^3P)7d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		1086
	3	1574.710	18.74801 – 82.25136	$3s^23p^3 - 3s^23p^2(^3P)7d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		1086
	15	1575.166	18.74801 – 82.23305	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		1086
	15	1575.466	18.72271 – 82.19577	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		1086
	0	1576.091	18.74801 – 82.19577	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		1086
	0	1578.181	18.74801 – 82.11237	$3s^23p^3 - 3s^23p^2(^3P)7d$	$^2P^\circ - ^4F$	$\frac{3}{2}-\frac{5}{2}$		1086
	7	1578.460	18.72271 – 82.07589	$3s^23p^3 - 3s^23p^2(^3P)7d$	$^2P^\circ - ^4F$	$\frac{1}{2}-\frac{3}{2}$		1086
	3	1578.732	18.72271 – 82.06443	$3s^23p^3 - 3s^23p^2(^3P)8s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		1086
	0	1579.087	18.74801 – 82.07589	$3s^23p^3 - 3s^23p^2(^3P)7d$	$^2P^\circ - ^4F$	$\frac{3}{2}-\frac{3}{2}$		1086
	7	1579.371	18.74801 – 82.06443	$3s^23p^3 - 3s^23p^2(^3P)8s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		1086
	0	1583.537						1086
	25	1583.727	18.74801 – 81.89008	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		1086
	0	1584.329	18.72271 – 81.84073	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2P^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$		1086
	1	1584.964	18.74801 – 81.84073	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		1086
	3	1586.078	18.72271 – 81.7713	$3s^23p^3 - 3s^23p^2(^3P)8s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		1086
	15	1586.240	18.72271 – 81.76468	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		1086
	1	1586.717	18.74801 – 81.7713	$3s^23p^3 - 3s^23p^2(^3P)8s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		1086
	15	1586.878	18.74801 – 81.76468	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		1086
	1	1587.384	18.72271 – 81.71954	$3s^23p^3 - 3s^23p^2(^3P)8s$	$^2P^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$		1086
	7	1588.007	18.74801 – 81.71997	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		1086
	3	1590.934	18.72271 – 81.57864	$3s^23p^3 - 3s^23p^2(^3P)8s$	$^2P^\circ - ^4P$	$\frac{1}{2}-\frac{1}{2}$		1086
	1	1591.567	18.74801 – 81.57864	$3s^23p^3 - 3s^23p^2(^3P)8s$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		1086
	3	1592.508	18.72271 – 81.51673	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		1086
	7	1593.002	18.74801 – 81.52220	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2P^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		1086
	1	1593.147	18.74801 – 81.51673	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		1086
	15	1595.070	18.72271 – 81.41575	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2P^\circ - ^4D$	$\frac{1}{2}-\frac{3}{2}$		1086
	3	1595.717	18.74801 – 81.41575	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2P^\circ - ^4D$	$\frac{3}{2}-\frac{3}{2}$		1086
	15	1596.051	18.74801 – 81.40256	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2P^\circ - ^4D$	$\frac{3}{2}-\frac{5}{2}$		1086
	15	1597.951	18.72271 – 81.30281	$3s^23p^3 - 3s^23p^2(^1D)5s$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		1086
	3	1598.428	18.72271 – 81.28384	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2P^\circ - ^4D$	$\frac{1}{2}-\frac{1}{2}$		1086
	3	1598.609	18.72271 – 81.27727	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		1086
	15	1598.750	18.74801 – 81.29670	$3s^23p^3 - 3s^23p^2(^1D)5s$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		1086

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	1599.086	18.74801 – 81.28384	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2P^\circ - ^4D$	$\frac{3}{2} - \frac{1}{2}$		1086
	15	1599.246	18.74801 – 81.27727	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	7	1603.920	18.72271 – 81.06994	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2P^\circ - ^4F$	$\frac{1}{2} - \frac{3}{2}$		1086
	0	1604.576	18.74801 – 81.06994	$3s^23p^3 - 3s^23p^2(^3P)6d$	$^2P^\circ - ^4F$	$\frac{3}{2} - \frac{3}{2}$		1086
	7	1610.624	18.72271 – 80.81013	$3s^23p^3 - 3s^23p^2(^3P)7s$	$^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		1086
	25	1611.281	18.74801 – 80.81013	$3s^23p^3 - 3s^23p^2(^3P)7s$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	25	1614.199	18.72271 – 80.67281	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		1086
	25	1614.658	18.72271 – 80.65521	$3s^23p^3 - 3s^23p^2(^1S)4s$	$^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		1086
	7	1614.853	18.74801 – 80.67281	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		1086
	7	1615.318	18.74801 – 80.65521	$3s^23p^3 - 3s^23p^2(^1S)4s$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		1086
	60	1615.803	11.36102 – 73.249806	$3s^23p^3 - 3s^23p^2(^3P)5s$	$^2D^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	80	1616.202	11.37663 – 73.249806	$3s^23p^3 - 3s^23p^2(^3P)5s$	$^2D^\circ - ^2P$	$\frac{5}{2} - \frac{3}{2}$		1086
	7	1617.434	18.72271 – 80.54877	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		1086
	40	1618.098	18.74801 – 80.54877	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	0	1618.497	18.72271 – 80.50815	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2P^\circ - ^4P$	$\frac{1}{2} - \frac{1}{2}$		1086
	40	1618.927	18.74801 – 80.51706	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		1086
	1	1619.162	18.74801 – 80.50815	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2P^\circ - ^4P$	$\frac{3}{2} - \frac{1}{2}$		1086
	3	1620.652	18.72271 – 80.42627	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2P^\circ - ^4P$	$\frac{1}{2} - \frac{3}{2}$		1086
	25	1621.320	18.74801 – 80.42627	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2P^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		1086
	7	1621.848	18.72271 – 80.38049	$3s^23p^3 - 3s^23p^2(^3P)7s$	$^2P^\circ - ^4P$	$\frac{1}{2} - \frac{3}{2}$		1086
	15	1622.058	18.72271 – 80.37265	$3s^23p^3 - 3s^23p^2(^3P)7s$	$^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		1086
	7	1622.514	18.74801 – 80.38049	$3s^23p^3 - 3s^23p^2(^3P)7s$	$^2P^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		1086
	7	1622.719	18.74801 – 80.37265	$3s^23p^3 - 3s^23p^2(^3P)7s$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		1086
	60	1623.819	11.36102 – 72.943803	$3s^23p^3 - 3s^23p^2(^3P)5s$	$^2D^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		1086
	15	1623.987	18.72271 – 80.29941	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		1086
	7	1624.420	18.74801 – 80.30841	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2P^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		1086
	15	1624.654	18.74801 – 80.29941	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		1086
	80	1625.378	11.36102 – 72.884865	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		1086
	130	1625.786	11.37663 – 72.884865	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2D$	$\frac{5}{2} - \frac{5}{2}$		1086
	3	1626.065	18.72271 – 80.22046	$3s^23p^3 - 3s^23p^2(^3P)7s$	$^2P^\circ - ^4P$	$\frac{1}{2} - \frac{1}{2}$		1086
	0	1626.744	18.74801 – 80.22046	$3s^23p^3 - 3s^23p^2(^3P)7s$	$^2P^\circ - ^4P$	$\frac{3}{2} - \frac{1}{2}$		1086
	15	1627.435	11.36102 – 72.807203	$3s^23p^3 - 3s^23p^2(^3P)5s$	$^2D^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		1086
	15	1627.738	18.74801 – 80.18329	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2P^\circ - ^2F$	$\frac{3}{2} - \frac{5}{2}$		1086
	25	1627.847	11.37663 – 72.807203	$3s^23p^3 - 3s^23p^2(^3P)5s$	$^2D^\circ - ^4P$	$\frac{5}{2} - \frac{5}{2}$		1086
	100	1629.165	11.36102 – 72.741808	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		1086
	60	1629.589	11.37663 – 72.741808	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2D$	$\frac{5}{2} - \frac{3}{2}$		1086
	7	1632.466	11.36102 – 72.617789	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^4P$	$\frac{3}{2} - \frac{1}{2}$		1086
	15	1633.677	11.36102 – 72.572400	$3s^23p^3 - 3s^23p^2(^3P)5s$	$^2D^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		1086
	60	1634.093	11.37663 – 72.572400	$3s^23p^3 - 3s^23p^2(^3P)5s$	$^2D^\circ - ^4P$	$\frac{5}{2} - \frac{3}{2}$		1086
	40	1635.777	11.36102 – 72.493806	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		1086
	40	1636.199	11.37663 – 72.493806	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^4P$	$\frac{5}{2} - \frac{3}{2}$		1086
	15	1638.657	11.36102 – 72.386347	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		1086
	25	1638.884	11.36102 – 72.378000	$3s^23p^3 - 3s^23p^2(^3P)5s$	$^2D^\circ - ^4P$	$\frac{3}{2} - \frac{1}{2}$		1086
	7	1638.975	18.74801 – 79.76177	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2P^\circ - ^4D$	$\frac{3}{2} - \frac{5}{2}$		1086
	40	1639.075	11.37663 – 72.386347	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^4P$	$\frac{5}{2} - \frac{5}{2}$		1086
	7	1640.044	18.72271 – 79.69659	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2P^\circ - ^4D$	$\frac{1}{2} - \frac{1}{2}$		1086
	7	1640.135	18.74801 – 79.71849	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2P^\circ - ^4D$	$\frac{3}{2} - \frac{3}{2}$		1086
	7	1640.723	18.74801 – 79.69659	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2P^\circ - ^4D$	$\frac{3}{2} - \frac{1}{2}$		1086
	3	1648.689	18.74801 – 79.40210	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2P^\circ - ^4F$	$\frac{3}{2} - \frac{5}{2}$		1086
	7	1649.704	18.72271 – 79.33938	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2P^\circ - ^4F$	$\frac{1}{2} - \frac{3}{2}$		1086
	3	1650.393	18.74801 – 79.33938	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2P^\circ - ^4F$	$\frac{3}{2} - \frac{3}{2}$		1086
	25	1652.980	18.72271 – 79.21956	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		1086
	25	1653.663	18.74801 – 79.21956	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		1086
	3	1655.642	18.72271 – 79.12219	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		1086

P I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	15	1656.333	18.74801 – 79.12219	$3s^23p^3 - 3s^23p^2(^3P)5d$	$^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	200	1671.070	11.36102 – 71.202979	$3s^23p^3 - 3s3p^4$	$^2D^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		1086
	160	1671.510	11.37663 – 71.202979	$3s^23p^3 - 3s3p^4$	$^2D^\circ - {}^2D$	$\frac{5}{2} - \frac{3}{2}$		1086
2	230	1671.680	0.0 – 59.820371	$3s^23p^3 - 3s3p^4$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{1}{2}$		1086
	200	1672.035	11.36102 – 71.168229	$3s^23p^3 - 3s3p^4$	$^2D^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		1086
	200	1672.474	11.37663 – 71.168229	$3s^23p^3 - 3s3p^4$	$^2D^\circ - {}^2D$	$\frac{5}{2} - \frac{5}{2}$		1086
	3	1673.94						496
2	410	1674.591	0.0 – 59.715921	$3s^23p^3 - 3s3p^4$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		1086
	7	1676.843	18.72271 – 78.35880	$3s^23p^3 - 3s^23p^2(^3P)6s$	$^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		1086
	15	1677.553	18.74801 – 78.35880	$3s^23p^3 - 3s^23p^2(^3P)6s$	$^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
6	40	1678.087	18.74801 – 78.33984	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - {}^2F$	$\frac{3}{2} - \frac{5}{2}$		1086
2	410	1679.695	0.0 – 59.534549	$3s^23p^3 - 3s3p^4$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		1086
	1	1681.703	18.74801 – 78.21134	$3s^23p^3 - 3s^23p^2(^3P)6s$	$^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		1086
	15	1685.592	18.72271 – 78.04907	$3s^23p^3 - 3s^23p^2(^3P)6s$	$^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		1086
6	200	1685.976	11.37663 – 70.689504	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^2F$	$\frac{5}{2} - \frac{7}{2}$		1086
	100	1686.301	18.74801 – 78.04907	$3s^23p^3 - 3s^23p^2(^3P)6s$	$^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		1086
	3	1687.965	18.72271 – 77.9655	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2P^\circ - {}^4P$	$\frac{1}{2} - \frac{1}{2}$		1086
	15	1688.626	18.72271 – 77.94255	$3s^23p^3 - 3s^23p^2(^3P)6s$	$^2P^\circ - {}^4P$	$\frac{1}{2} - \frac{3}{2}$		1086
	60	1689.218	18.74801 – 77.94670	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		1086
	15	1689.334	18.74801 – 77.94255	$3s^23p^3 - 3s^23p^2(^3P)6s$	$^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		1086
	25	1690.158	18.72271 – 77.88881	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2P^\circ - {}^4P$	$\frac{1}{2} - \frac{3}{2}$		1086
	15	1690.888	18.74801 – 77.88881	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		1086
	60	1691.734	18.72271 – 77.83375	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		1086
	25	1692.452	18.74801 – 77.83375	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		1086
	3	1693.579	18.72271 – 77.76950	$3s^23p^3 - 3s^23p^2(^3P)6s$	$^2P^\circ - {}^4P$	$\frac{1}{2} - \frac{1}{2}$		1086
6	160	1694.028	11.36102 – 70.391801	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^2F$	$\frac{3}{2} - \frac{5}{2}$		1086
	0	1694.296	18.74801 – 77.76950	$3s^23p^3 - 3s^23p^2(^3P)6s$	$^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{1}{2}$		1086
6	160	1694.486	11.37663 – 70.391801	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^2F$	$\frac{5}{2} - \frac{5}{2}$		1086
	60	1695.338	18.74801 – 77.73368	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		1086
	160	1706.376	11.37663 – 69.980077	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^4D$	$\frac{5}{2} - \frac{7}{2}$		1086
	160	1707.553	11.36102 – 69.924453	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^4D$	$\frac{3}{2} - \frac{5}{2}$		1086
	7	1707.998	11.37663 – 69.924453	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^4D$	$\frac{5}{2} - \frac{5}{2}$		1086
	25	1708.434	11.36102 – 69.894307	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^4D$	$\frac{3}{2} - \frac{3}{2}$		1086
	7	1708.878	11.37663 – 69.894307	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^4D$	$\frac{5}{2} - \frac{3}{2}$		1086
	130	1718.523	18.72271 – 76.91225	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		1086
	100	1718.972	0.0 – 58.174366	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g\,^4S^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	80	1719.271	18.74801 – 76.91225	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		1086
	7	1727.725	18.74801 – 76.62790	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2P^\circ - {}^4D$	$\frac{3}{2} - \frac{5}{2}$		1086
	40	1727.808	0.0 – 57.876574	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g\,^4S^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		1086
	7	1728.218	18.72271 – 76.58571	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2P^\circ - {}^4D$	$\frac{1}{2} - \frac{3}{2}$		1086
	0	1728.803	18.72271 – 76.56649	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2P^\circ - {}^4D$	$\frac{1}{2} - \frac{1}{2}$		1086
	3	1728.983	18.74801 – 76.58571	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2P^\circ - {}^4D$	$\frac{3}{2} - \frac{3}{2}$		1086
	25	1745.265	18.74801 – 76.04599	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2P^\circ - {}^4F$	$\frac{3}{2} - \frac{5}{2}$		1086
	7	1747.439	18.72271 – 75.94947	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2P^\circ - {}^4F$	$\frac{1}{2} - \frac{3}{2}$		1086
	1	1748.202	18.74801 – 75.94947	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2P^\circ - {}^4F$	$\frac{3}{2} - \frac{3}{2}$		1086
	7	1751.591	18.72271 – 75.81372	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		1086
	25	1751.799	18.74801 – 75.83318	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2P^\circ - {}^2F$	$\frac{3}{2} - \frac{5}{2}$		1086
	0	1752.349	18.74801 – 75.81372	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		1086
	100	1754.369	11.37663 – 68.377472	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^4F$	$\frac{5}{2} - \frac{7}{2}$		1086
	15	1755.829	18.72271 – 75.67609	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		1086
	15	1756.610	18.74801 – 75.67609	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		1086
	60	1757.445	11.36102 – 68.262151	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^4F$	$\frac{3}{2} - \frac{5}{2}$		1086
	60	1757.913	11.37663 – 68.262151	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^4F$	$\frac{5}{2} - \frac{5}{2}$		1086
	40	1759.880	11.36102 – 68.183186	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^4F$	$\frac{3}{2} - \frac{3}{2}$		1086

P I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	15	1760.361	11.37663 – 68.183186	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^4F$	$\frac{5}{2}-\frac{3}{2}$		1086
	60	1761.639	11.36102 – 68.126607	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		1086
	100	1768.414	11.36102 – 67.909136	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		1086
	100	1768.902	11.37663 – 67.909136	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		1086
1	410	1774.951	0.0 – 56.339656	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		1086
1	360	1782.838	0.0 – 56.090626	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		1086
1	315	1787.656	0.0 – 55.939421	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		1086
	100	1833.950	18.72271 – 73.249806	$3s^23p^3 - 3s^23p^2(^3P)5s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		1086
	200	1834.801	18.74801 – 73.249806	$3s^23p^3 - 3s^23p^2(^3P)5s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		1086
	100	1844.296	18.72271 – 72.943803	$3s^23p^3 - 3s^23p^2(^3P)5s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		1086
	80	1845.158	18.74801 – 72.943803	$3s^23p^3 - 3s^23p^2(^3P)5s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		1086
	200	1847.165	18.74801 – 72.884865	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		1086
	3	1849.05						496
	9	1849.52						496
	160	1849.820	18.74801 – 72.807203	$3s^23p^3 - 3s^23p^2(^3P)5s$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		1086
	200	1851.194	18.72271 – 72.741808	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		1086
	160	1852.069	18.74801 – 72.741808	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		1086
	7	1855.466	18.72271 – 72.617789	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^4P$	$\frac{1}{2}-\frac{1}{2}$		1086
	3	1856.334	18.74801 – 72.617789	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		1086
	60	1857.014	18.72271 – 72.572400	$3s^23p^3 - 3s^23p^2(^3P)5s$	$^2P^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$		1086
	7	1857.907	18.74801 – 72.572400	$3s^23p^3 - 3s^23p^2(^3P)5s$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		1086
5	360	1858.886	11.36102 – 65.157126	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		1086
5	315	1859.393	11.37663 – 65.157126	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		1086
	25	1859.736	18.72271 – 72.493806	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$		1086
	60	1860.612	18.74801 – 72.493806	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		1086
	25	1863.741	18.72271 – 72.378000	$3s^23p^3 - 3s^23p^2(^3P)5s$	$^2P^\circ - ^4P$	$\frac{1}{2}-\frac{1}{2}$		1086
	200	1864.348	18.74801 – 72.386347	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		1086
	7	1864.628	18.74801 – 72.378000	$3s^23p^3 - 3s^23p^2(^3P)5s$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		1086
	230	1905.481	18.72271 – 71.202979	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		1086
	200	1906.403	18.74801 – 71.202979	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		1086
	270	1907.665	18.74801 – 71.168229	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		1086
	15	1936.347	18.74801 – 70.391801	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		1086
	15	1954.026	18.74801 – 69.924453	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^4D$	$\frac{3}{2}-\frac{5}{2}$		1086
	15	1954.208	18.72271 – 69.894307	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^4D$	$\frac{1}{2}-\frac{3}{2}$		1086
	40	1954.829	18.72271 – 69.878033	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^4D$	$\frac{1}{2}-\frac{1}{2}$		1086
	25	1955.170	18.74801 – 69.894307	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^4D$	$\frac{3}{2}-\frac{3}{2}$		1086
	25	1955.800	18.74801 – 69.878033	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^4D$	$\frac{3}{2}-\frac{1}{2}$		1086

PHOSPHORUS II (P^{1+}), Z = 15
Ground State $1s^22s^22p^63s^23p^2(^3P_0)$ (14 electrons)
Ionization Potential 159 100 cm^{-1}; 19.73 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	5	782.59	0.1648 – 127.9506	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	1 – 2		496
	1	782.72	0.1648 – 127.9349	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^3P^\circ$	1 – 1		496
	1	782.90	0.1648 – 127.9004	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^3P^\circ$	1 – 0		496
	5	783.71	0.0 – 127.6000	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	0 – 1		496
	1	784.46	0.4690 – 127.9506	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	2 – 2		496
	5	784.81	0.4690 – 127.8893	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - ^3D^\circ$	2 – 3		496

P II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	5	786.18	0.1648 – 127.3680	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - {}^3P^\circ$	1 – 2		496
	5	786.52						496
	1	801.35	0.1648 – 124.9476	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - {}^3F^\circ$	1 – 2		496
	1	802.20	0.4690 – 125.1297	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - {}^3F^\circ$	2 – 3		496
	50	808.25	0.1648 – 123.8916	$3s^23p^2 - 3s^23p(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	1 – 2		496
	30	810.00	0.0 – 123.4563	$3s^23p^2 - 3s^23p(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	0 – 1		496
	100	810.24	0.4690 – 123.8916	$3s^23p^2 - 3s^23p(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	2 – 2		496
	20	811.10	0.1648 – 123.4563	$3s^23p^2 - 3s^23p(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	1 – 1		496
	30	811.85	0.1648 – 123.3450	$3s^23p^2 - 3s^23p(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	1 – 0		496
	40	813.10	0.4690 – 123.4563	$3s^23p^2 - 3s^23p(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	2 – 1		496
	5	813.768	8.8826 – 131.7637	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$^1D - {}^1P^\circ$	2 – 1		496,594
	30	824.66	8.8826 – 130.1433	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$^1D - {}^1F^\circ$	2 – 3		496
	1	840.04						496
	20	841.21	8.8826 – 127.7563	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$^1D - {}^1D^\circ$	2 – 2		496
	20	844.01	8.8826 – 127.3680	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$^1D - {}^3P^\circ$	2 – 2		496
	10	861.61	8.8826 – 124.9476	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$^1D - {}^3F^\circ$	2 – 2		496
	100	865.44	8.8826 – 124.4331	$3s^23p^2 - 3s^23p(^2P^\circ)5s$	$^1D - {}^1P^\circ$	2 – 1		496
	5	872.84	8.8826 – 123.4563	$3s^23p^2 - 3s^23p(^2P^\circ)5s$	$^1D - {}^3P^\circ$	2 – 1		496
	5	906.89						496
	10	906.987	0.0 – 110.252	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3S^\circ$	0 – 1		496,594
	40	907.56	21.5762 – 131.7637	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$^1S - {}^1P^\circ$	0 – 1		496
	1	908.38	0.1648 – 110.252	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3S^\circ$	1 – 1		496
	5	910.88	0.4690 – 110.252	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3S^\circ$	2 – 1		496
	10	913.59	8.8826 – 118.3426	$3s^23p^2 - 3s3p^3$	$^1D - {}^1P^\circ$	2 – 1		496
	10	927.771	45.6968 – 153.4820	$3s3p^3 - 3s3p^2(^4P)3d$	$^5S^\circ - {}^5P$	2 – 1		496,594
	10	928.550	45.6968 – 153.3915	$3s3p^3 - 3s3p^2(^4P)3d$	$^5S^\circ - {}^5P$	2 – 2		496,594
	10	929.642	45.6968 – 153.2650	$3s3p^3 - 3s3p^2(^4P)3d$	$^5S^\circ - {}^5P$	2 – 3		496,594
	1	961.04	0.0 – 104.0547	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	0 – 1		496
	5	962.13	0.1648 – 104.1026	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 2		496
	5	962.57	0.1648 – 104.0547	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 1		496
	1	963.59	0.1648 – 103.9413	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 0		496
	5	963.81	0.0 – 103.7569	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	0 – 1		496
	10	964.09	8.8826 – 112.60770	$3s^23p^2 - 3s3p^3$	$^1D - {}^1D^\circ$	2 – 2		496
	10	964.95	0.4690 – 104.1026	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 2		496
	20	965.43	0.4690 – 104.0511	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		496
	10	966.52	0.1648 – 103.6306	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		496
	1	968.17	0.4690 – 103.7569	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 1		496
	5	969.38	0.4690 – 103.6306	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 2		496
	5	972.24	21.5762 – 124.4331	$3s^23p^2 - 3s^23p(^2P^\circ)5s$	$^1S - {}^1P^\circ$	0 – 1		496
	30	972.807	0.0 – 102.7992	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^1P^\circ$	0 – 1		496,594
	5	974.36	0.1648 – 102.7992	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^1P^\circ$	1 – 1		496
	1	977.258	0.4690 – 102.7992	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^1P^\circ$	2 – 1		496,594
	100	1015.47	8.8826 – 107.3611	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$^1D - {}^1F^\circ$	2 – 3		496
	100	1033.41	21.5762 – 118.3426	$3s^23p^2 - 3s3p^3$	$^1S - {}^1P^\circ$	0 – 1		496
	150	1064.80	8.8826 – 102.7992	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$^1D - {}^1P^\circ$	2 – 1		496
	10	1124.945	0.0 – 88.8940	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	$g^3P - {}^1P^\circ$	0 – 1		496,594
	10	1130.925	0.4690 – 88.8940	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	$g^3P - {}^1P^\circ$	2 – 1		496,594
	5	1141.00	0.1648 – 87.8050	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3F^\circ$	1 – 2		496
	20	1142.88	0.4690 – 87.9677	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3F^\circ$	2 – 3		496
	1	1143.71						496
	1	1145.01	0.4690 – 87.8050	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3F^\circ$	2 – 2		496
3	70	1149.96	0.1648 – 87.1254	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 2		496
3	50	1152.81	0.0 – 86.7447	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	0 – 1		496
3	120	1153.99	0.4690 – 87.1254	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	2 – 2		496

P II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
3	40	1155.00	0.1648 – 86.7447	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 - 1		496
3	50	1156.96	0.1648 – 86.5983	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 - 0		496
3	80	1159.08	0.4690 – 86.7447	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	2 - 1		496
	50	1231.18	21.5762 – 102.7992	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	${}^1S - {}^1P^\circ$	0 - 1		496
	200	1249.82	8.8826 – 88.8940	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	${}^1D - {}^1P^\circ$	2 - 1		496
	30	1264.47	8.8826 – 87.9677	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	${}^1D - {}^3F^\circ$	2 - 3		496
	5	1267.06	8.8826 – 87.8050	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	${}^1D - {}^3F^\circ$	2 - 2		496
	5	1278.094	8.8826 – 87.1254	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	${}^1D - {}^3P^\circ$	2 - 2		496
	5	1284.31	8.8826 – 86.7447	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	${}^1D - {}^3P^\circ$	2 - 1		496
	30	1289.57	0.1648 – 77.71100	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^1D^\circ$	1 - 2		496
	150	1294.64	0.4690 – 77.71100	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^1D^\circ$	2 - 2		496
2	200	1301.87	0.0 – 76.81322	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P^\circ$	0 - 1		496
2	200	1304.47	0.1648 – 76.82400	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P^\circ$	1 - 0		496
2	150	1304.68	0.1648 – 76.81322	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P^\circ$	1 - 1		496
2	350	1305.48	0.1648 – 76.76496	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P^\circ$	1 - 2		496
2	250	1309.87	0.4690 – 76.81322	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P^\circ$	2 - 1		496
2	600	1310.70	0.4690 – 76.76496	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P^\circ$	2 - 2		496
	300	1452.89	8.8826 – 77.71100	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	${}^1D - {}^1D^\circ$	2 - 2		496
	10	1473.129	8.8826 – 76.76496	$3s^23p^2 - 3s3p^3$	${}^1D - {}^3P^\circ$	2 - 2		496
	250	1485.49	21.5762 – 88.8940	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	${}^1S - {}^1P^\circ$	0 - 1		496
	10	1489.834	65.25225 – 132.3726	$3s3p^3 - 3s^23p(^2P^\circ)4f$	${}^3D^\circ - D[\frac{3}{2}]$	1 - 1		496
	10	1494.990	65.27318 – 132.1643	$3s3p^3 - 3s^23p(^2P^\circ)4f$	${}^3D^\circ - D[\frac{5}{2}]$	2 - 2		496
	5	1496.44	65.30805 – 132.1332	$3s3p^3 - 3s^23p(^2P^\circ)4f$	${}^3D^\circ - D[\frac{5}{2}]$	3 - 3		496
	30	1506.44	65.30805 – 131.6895	$3s3p^3 - 3s^23p(^2P^\circ)4f$	${}^3D^\circ - G[\frac{7}{2}]$	3 - 4		496
	10	1506.975	65.27318 – 131.6320	$3s3p^3 - 3s^23p(^2P^\circ)4f$	${}^3D^\circ - G[\frac{7}{2}]$	2 - 3		496
	5	1512.87	65.25225 – 131.3533	$3s3p^3 - 3s^23p(^2P^\circ)5p$	${}^3D^\circ - {}^1D$	1 - 2		496
	300	1521.62	65.30805 – 131.0257	$3s3p^3 - 3s^23p(^2P^\circ)4f$	${}^3D^\circ - F[\frac{7}{2}]$	3 - 4		496
	4	1522.11	65.25225 – 130.9502	$3s3p^3 - 3s^23p(^2P^\circ)4f$	${}^3D^\circ - F[\frac{5}{2}]$	1 - 2		496
	10	1522.392	65.30805 – 130.9938	$3s3p^3 - 3s^23p(^2P^\circ)4f$	${}^3D^\circ - F[\frac{7}{2}]$	3 - 3		496
	5	1522.59	65.27318 – 130.9502	$3s3p^3 - 3s^23p(^2P^\circ)4f$	${}^3D^\circ - F[\frac{5}{2}]$	2 - 2		496
	10	1523.44	65.27318 – 130.9137	$3s3p^3 - 3s^23p(^2P^\circ)4f$	${}^3D^\circ - F[\frac{5}{2}]$	2 - 3		496
	1	1525.58	65.25225 – 130.8017	$3s3p^3 - 3s^23p(^2P^\circ)5p$	${}^3D^\circ - {}^3S$	1 - 1		496
1	700	1532.51	0.0 – 65.25225	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D^\circ$	0 - 1		496
1	1000	1535.90	0.1648 – 65.27318	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D^\circ$	1 - 2		496
1	700	1536.39	0.1648 – 65.25225	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D^\circ$	1 - 1		496
1	1000	1542.29	0.4690 – 65.30805	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D^\circ$	2 - 3		496
1	400	1543.09	65.25225 – 130.058	$3s3p^3 - 3s^23p(^2P^\circ)5p$	${}^3D^\circ - {}^3P$	1 - 0		496
1	150	1543.61	0.4690 – 65.25225	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D^\circ$	2 - 1		496
	5	1552.51	65.25225 – 129.6661	$3s3p^3 - 3s^23p(^2P^\circ)5p$	${}^3D^\circ - {}^3D$	1 - 2		496
	1	1552.94	65.27318 – 129.6661	$3s3p^3 - 3s^23p(^2P^\circ)5p$	${}^3D^\circ - {}^3D$	2 - 2		496
	1	1553.392						496
	10	1553.82	65.30805 – 129.6661	$3s3p^3 - 3s^23p(^2P^\circ)5p$	${}^3D^\circ - {}^3D$	3 - 2		496
	1	1734.88	45.6968 – 103.34001	$3s3p^3 - 3s^23p(^2P^\circ)4p$	${}^5S^\circ - {}^3D$	2 - 2		496
	30	1772.30	8.8826 – 65.30805	$3s^23p^2 - 3s3p^3$	${}^1D - {}^3D^\circ$	2 - 3		496
	10	1797.54	76.76496 – 132.3977	$3s3p^3 - 3s^23p(^2P^\circ)4f$	${}^3P^\circ - D[\frac{3}{2}]$	2 - 2		496
	5	1798.37	76.76496 – 132.3726	$3s3p^3 - 3s^23p(^2P^\circ)4f$	${}^3P^\circ - D[\frac{3}{2}]$	2 - 1		496
	50	1799.10	76.81322 – 132.3977	$3s3p^3 - 3s^23p(^2P^\circ)4f$	${}^3P^\circ - D[\frac{3}{2}]$	1 - 2		496
	20	1799.91	76.81322 – 132.3726	$3s3p^3 - 3s^23p(^2P^\circ)4f$	${}^3P^\circ - D[\frac{3}{2}]$	1 - 1		496
	20	1800.27	76.82400 – 132.3726	$3s3p^3 - 3s^23p(^2P^\circ)4f$	${}^3P^\circ - D[\frac{3}{2}]$	0 - 1		496
	30	1805.11	76.76496 – 132.1643	$3s3p^3 - 3s^23p(^2P^\circ)4f$	${}^3P^\circ - D[\frac{5}{2}]$	2 - 2		496
	150	1806.12	76.76496 – 132.1332	$3s3p^3 - 3s^23p(^2P^\circ)4f$	${}^3P^\circ - D[\frac{5}{2}]$	2 - 3		496
	50	1806.67	76.81322 – 132.1643	$3s3p^3 - 3s^23p(^2P^\circ)4f$	${}^3P^\circ - D[\frac{5}{2}]$	1 - 2		496
	30	1828.63	77.71100 – 132.3977	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)4f$	${}^1D^\circ - D[\frac{3}{2}]$	2 - 2		496
	10	1836.47	77.71100 – 132.1643	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)4f$	${}^1D^\circ - D[\frac{5}{2}]$	2 - 2		496

P II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	1837.51	77.71100 – 132.1332	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)4f$	$^1D^\circ - D[\frac{5}{2}]$	2 – 3		496
	5	1844.06	76.76496 – 130.9938	$3s3p^3 - 3s^23p(^2P^\circ)4f$	$^3P^\circ - F[\frac{7}{2}]$	2 – 3		496
	20	1846.78	76.76496 – 130.9137	$3s3p^3 - 3s^23p(^2P^\circ)4f$	$^3P^\circ - F[\frac{5}{2}]$	2 – 3		496
	20	1850.61	76.76496 – 130.8017	$3s3p^3 - 3s^23p(^2P^\circ)5p$	$^3P^\circ - {}^3S$	2 – 1		496
	20	1852.27	76.81322 – 130.8017	$3s3p^3 - 3s^23p(^2P^\circ)5p$	$^3P^\circ - {}^3S$	1 – 1		496
	10	1852.65	76.82400 – 130.8017	$3s3p^3 - 3s^23p(^2P^\circ)5p$	$^3P^\circ - {}^3S$	0 – 1		496
	150	1854.59	77.71100 – 131.6320	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)4f$	$^1D^\circ - G[\frac{7}{2}]$	2 – 3		496
	150	1864.22	77.71100 – 131.3533	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)5p$	$^1D^\circ - {}^1D$	2 – 2		496
	1	1872.36	76.76496 – 130.1743	$3s3p^3 - 3s^23p(^2P^\circ)5p$	$^3P^\circ - {}^3P$	2 – 1		496
	100	1876.79	77.71100 – 130.9938	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)4f$	$^1D^\circ - F[\frac{7}{2}]$	2 – 3		496
	250	1879.62	77.71100 – 130.9137	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)4f$	$^1D^\circ - F[\frac{5}{2}]$	2 – 3		496
	5	1928.30	77.71100 – 129.5704	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)5p$	$^1D^\circ - {}^3D$	2 – 1		496
	50	1945.54	77.71100 – 129.1106	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)5p$	$^1D^\circ - {}^1P$	2 – 1		496

PHOSPHORUS III (P^{2+}), Z = 15
Ground State $1s^22s^22p^63s^23p(^2P^\circ_{1/2})$ (13 electrons)
Ionization Potential 243 607 cm^{-1}; 30.204 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	4	395.723	0. – 252.70059	$3s^23p - 3s3p(^3P^\circ)5p$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		936
	25	396.059	0. – 252.48701	$3s^23p - 3s3p(^3P^\circ)5p$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		936
	40	396.605	.55914 – 252.70059	$3s^23p - 3s3p(^3P^\circ)5p$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		936
	4	396.940	.55914 – 252.48701	$3s^23p - 3s3p(^3P^\circ)5p$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		936
	4	439.509	0. – 227.5273	$3s^23p - 3s^29s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		936
	10	440.590	.55914 – 227.5273	$3s^23p - 3s^29s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		936
	10	449.462	0. – 222.4880	$3s^23p - 3s^28s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		936
	25	450.596	.55914 – 222.4880	$3s^23p - 3s^28s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		936
	40	456.844	0. – 218.89210	$3s^23p - 3s3p(^3P^\circ)4p$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		936
	60	458.016	.55914 – 218.89210	$3s^23p - 3s3p(^3P^\circ)4p$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		936
	25	466.038	0. – 214.5773	$3s^23p - 3s^27s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		936
	60	467.255	.55914 – 214.5773	$3s^23p - 3s^27s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		936
	60	468.039	.55914 – 214.21741	$3s^23p - 3s3p(^3P^\circ)4p$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		936
	25	468.516	.55914 – 213.99652	$3s^23p - 3s3p(^3P^\circ)4p$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		936
	60	470.232	0. – 212.66219	$3s^23p - 3s^26d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		936
	90	471.146	.55914 – 212.80245	$3s^23p - 3s^26d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		936
	25	471.467	.55914 – 212.66219	$3s^23p - 3s^26d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		936
	1	474.433	.55914 – 211.33988	$3s^23p - 3s3p(^3P^\circ)4p$	$g^2P^\circ - {}^4S$	$\frac{3}{2}-\frac{3}{2}$		936
	1	477.596	.55914 – 209.93920	$3s^23p - 3s3p(^3P^\circ)4p$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		936
	25	482.971	0. – 207.05378	$3s^23p - 3s3p(^3P^\circ)4p$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		936
	60	483.210	0. – 206.95034	$3s^23p - 3s3p(^3P^\circ)4p$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		936
	25	484.139	0. – 206.55377	$3s^23p - 3s3p(^3P^\circ)4p$	$g^2P^\circ - {}^4D$	$\frac{1}{2}-\frac{1}{2}$		936
	90	484.278	.55914 – 207.05378	$3s^23p - 3s3p(^3P^\circ)4p$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		936
	40	484.518	.55914 – 206.95034	$3s^23p - 3s3p(^3P^\circ)4p$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		936
	40	485.009	.55914 – 206.74262	$3s^23p - 3s3p(^3P^\circ)4p$	$g^2P^\circ - {}^4D$	$\frac{3}{2}-\frac{3}{2}$		936
	60	485.453	.55914 – 206.55377	$3s^23p - 3s3p(^3P^\circ)4p$	$g^2P^\circ - {}^4D$	$\frac{3}{2}-\frac{1}{2}$		936
	90	496.795	0. – 201.29173	$3s^23p - 3s^26s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		936
	120	498.180	.55914 – 201.29173	$3s^23p - 3s^26s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		936
	40	502.123	0. – 199.15489	$3s^23p - 3s^25d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		936
	60	503.538	.55914 – 199.15483	$3s^23p - 3s^25d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		936

P III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	40	534.416	57.12598 – 244.24744	$3s3p^2 - 3s3p(^3P^\circ)5s$	$^4P - ^4P^\circ$	3/2 – 5/2		936
	10	534.960	56.92167 – 243.85168	$3s3p^2 - 3s3p(^3P^\circ)5s$	$^4P - ^4P^\circ$	1/2 – 3/2		936
	90	535.349	57.45400 – 244.24744	$3s3p^2 - 3s3p(^3P^\circ)5s$	$^4P - ^4P^\circ$	5/2 – 5/2		936
	40	535.560	57.12598 – 243.85168	$3s3p^2 - 3s3p(^3P^\circ)5s$	$^4P - ^4P^\circ$	3/2 – 3/2		936
	25	536.169	57.12598 – 243.63422	$3s3p^2 - 3s3p(^3P^\circ)5s$	$^4P - ^4P^\circ$	3/2 – 1/2		936
	40	536.491	57.45400 – 243.85168	$3s3p^2 - 3s3p(^3P^\circ)5s$	$^4P - ^4P^\circ$	5/2 – 3/2		936
	4	542.980	56.92167 – 241.08925	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^4P - ^4P^\circ$	1/2 – 1/2		936
	1	543.300	56.92167 – 240.98075	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^4P - ^4P^\circ$	1/2 – 3/2		936
	10	543.584	57.12598 – 241.08925	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^4P - ^4P^\circ$	3/2 – 1/2		936
	4	543.909	57.12598 – 240.98075	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^4P - ^4P^\circ$	3/2 – 3/2		936
	4	544.492	57.12598 – 240.78337	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^4P - ^4P^\circ$	3/2 – 5/2		936
	4	544.887	57.45400 – 240.98075	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^4P - ^4P^\circ$	5/2 – 3/2		936
	10	545.464	57.45400 – 240.78337	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^4P - ^4P^\circ$	5/2 – 5/2		936
	25	549.995	56.92167 – 238.74218	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^4P - ^4D^\circ$	1/2 – 3/2		936
	25	550.157	56.92167 – 238.68857	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^4P - ^4D^\circ$	1/2 – 1/2		936
	40	550.343	57.12598 – 238.83148	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^4P - ^4D^\circ$	3/2 – 5/2		936
	10	550.614	57.12598 – 238.74218	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^4P - ^4D^\circ$	3/2 – 3/2		936
	4	550.770	57.12598 – 238.68857	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^4P - ^4D^\circ$	3/2 – 1/2		936
	40	550.944	57.45400 – 238.96087	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^4P - ^4D^\circ$	5/2 – 7/2		936
	10	551.337	57.45400 – 238.83148	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^4P - ^4D^\circ$	5/2 – 5/2		936
	1	551.607	57.45400 – 238.74218	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^4P - ^4D^\circ$	5/2 – 3/2		936
	1	551.741	56.92167 – 238.16736	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^4P - ^4F^\circ$	1/2 – 3/2		936
	1	552.045	57.12598 – 238.26153	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^4P - ^4F^\circ$	3/2 – 5/2		936
	10	552.573	57.45400 – 238.42649	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^4P - ^4F^\circ$	5/2 – 7/2		936
	1	553.089	57.45400 – 238.26153	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^4P - ^4F^\circ$	5/2 – 5/2		936
	120	568.038	0. – 176.04287	$3s^23p - 3s^25s$	$g^2P^\circ - ^2S$	1/2 – 1/2		936
	200	569.853	.55914 – 176.04287	$3s^23p - 3s^25s$	$g^2P^\circ - ^2S$	3/2 – 1/2		936
	1	574.869	74.94586 – 248.89998	$3s3p^2 - 3s3p(^3P^\circ)5s$	$^2D - ^2P^\circ$	5/2 – 3/2		936
	1	575.217	74.91685 – 248.76531	$3s3p^2 - 3s3p(^3P^\circ)5s$	$^2D - ^2P^\circ$	3/2 – 1/2		936
	120	579.944	0. – 172.43049	$3s^23p - 3s^24d$	$g^2P^\circ - ^2D$	1/2 – 3/2		936
	200	581.831	.55914 – 172.42981	$3s^23p - 3s^24d$	$g^2P^\circ - ^2D$	3/2 – 5/2		936
	25	600.757	74.94586 – 241.40367	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^2D - ^2D^\circ$	5/2 – 5/2		936
	10	601.094	74.91685 – 241.28223	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^2D - ^2D^\circ$	3/2 – 3/2		936
	1	601.212	74.94586 – 241.28223	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^2D - ^2D^\circ$	5/2 – 3/2		936
	1	672.496	100.20044 – 248.89998	$3s3p^2 - 3s3p(^3P^\circ)5s$	$^2S - ^2P^\circ$	1/2 – 3/2		936
	1	673.104	100.20044 – 248.76531	$3s3p^2 - 3s3p(^3P^\circ)5s$	$^2S - ^2P^\circ$	1/2 – 1/2		936
	1	676.132	74.91685 – 222.81615	$3s3p^2 - 3s3p(^1P^\circ)4s$	$^2D - ^2P^\circ$	3/2 – 3/2		936
	40	676.264	74.94586 – 222.81615	$3s3p^2 - 3s3p(^1P^\circ)4s$	$^2D - ^2P^\circ$	5/2 – 3/2		936
	10	688.420	74.91685 – 220.17676	$3s3p^2 - 3s3p(^1P^\circ)3d$	$^2D - ^2P^\circ$	3/2 – 3/2		936
	40	688.549	74.94586 – 220.17676	$3s3p^2 - 3s3p(^1P^\circ)3d$	$^2D - ^2P^\circ$	5/2 – 3/2		936
	4	689.986	74.91685 – 219.84731	$3s3p^2 - 3s3p(^1P^\circ)3d$	$^2D - ^2D^\circ$	3/2 – 5/2		936
	40	690.125	74.94586 – 219.84731	$3s3p^2 - 3s3p(^1P^\circ)3d$	$^2D - ^2D^\circ$	5/2 – 5/2		936
	25	690.650	74.91685 – 219.70871	$3s3p^2 - 3s3p(^1P^\circ)3d$	$^2D - ^2D^\circ$	3/2 – 3/2		936
	10	690.787	74.94586 – 219.70871	$3s3p^2 - 3s3p(^1P^\circ)3d$	$^2D - ^2D^\circ$	5/2 – 3/2		936
	4	708.812	100.20044 – 241.28223	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^2S - ^2D^\circ$	1/2 – 3/2		936
	4	715.677	109.03725 – 248.76531	$3s3p^2 - 3s3p(^3P^\circ)5s$	$^2P - ^2P^\circ$	1/2 – 1/2		936
	60	716.739	74.91685 – 214.4335	$3s3p^2 - 3s^26f$	$^2D - ^2F^\circ$	3/2 – 5/2		936
	25	716.912	109.41298 – 248.89998	$3s3p^2 - 3s3p(^3P^\circ)5s$	$^2P - ^2P^\circ$	3/2 – 3/2		936
	60	739.673	74.91685 – 210.11179	$3s3p^2 - 3s3p(^1P^\circ)3d$	$^2D - ^2F^\circ$	3/2 – 5/2		936
	25	739.833	74.94586 – 210.11179	$3s3p^2 - 3s3p(^1P^\circ)3d$	$^2D - ^2F^\circ$	5/2 – 5/2		936
	90	740.178	74.94586 – 210.04882	$3s3p^2 - 3s3p(^1P^\circ)3d$	$^2D - ^2F^\circ$	5/2 – 7/2		936
	60	756.171	109.03725 – 241.28223	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^2P - ^2D^\circ$	1/2 – 3/2		936
	90	757.629	109.41298 – 241.40367	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^2P - ^2D^\circ$	3/2 – 5/2		936
	4	757.878	109.03725 – 240.98075	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^2P - ^4P^\circ$	1/2 – 3/2		936

P III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	758.333	109.41298 – 241.28223	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^2P - ^2D^\circ$	3/2 – 3/2		936
	4	759.200	74.91685 – 206.63165	$3s3p^2 - 3p^3$	$^2D - ^2P^\circ$	3/2 – 1/2		936
	1	759.318	74.91685 – 206.61372	$3s3p^2 - 3p^3$	$^2D - ^2P^\circ$	3/2 – 3/2		936
	4	759.473	74.94586 – 206.61372	$3s3p^2 - 3p^3$	$^2D - ^2P^\circ$	5/2 – 3/2		936
	10	761.200	109.41298 – 240.78337	$3s3p^2 - 3s3p(^3P^\circ)4d$	$^2P - ^4P^\circ$	3/2 – 5/2		936
	25	762.757	74.91685 – 206.02084	$3s3p^2 - 3s^26p$	$^2D - ^2P^\circ$	3/2 – 1/2		936
	1	762.852	74.91685 – 206.00336	$3s3p^2 - 3s^26p$	$^2D - ^2P^\circ$	3/2 – 3/2		936
	40	763.031	74.94586 – 206.00336	$3s3p^2 - 3s^26p$	$^2D - ^2P^\circ$	5/2 – 3/2		936
	90	781.742	57.12598 – 185.04562	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - ^4P^\circ$	3/2 – 5/2		936
	4	782.358	56.92167 – 184.74077	$3s3p^2 - 3s^25p$	$^4P - ^2P^\circ$	1/2 – 1/2		936
	25	782.886	57.12598 – 184.85812	$3s3p^2 - 3s^25p$	$^4P - ^2P^\circ$	3/2 – 3/2		936
	60	782.972	56.92167 – 184.63975	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - ^4P^\circ$	1/2 – 3/2		936
	10	783.575	57.45400 – 185.07434	$3s3p^2 - 3p^3$	$^4P - ^2D^\circ$	5/2 – 5/2		936
	150	783.746	57.45400 – 185.04562	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - ^4P^\circ$	5/2 – 5/2		936
	10	784.119	56.92167 – 184.45379	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - ^4P^\circ$	1/2 – 1/2		936
	25	784.227	57.12598 – 184.63975	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - ^4P^\circ$	3/2 – 3/2		936
	4	784.913	57.45400 – 184.85812	$3s3p^2 - 3s^25p$	$^4P - ^2P^\circ$	5/2 – 3/2		936
	60	785.373	57.12598 – 184.45379	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - ^4P^\circ$	3/2 – 1/2		936
	60	786.252	57.45400 – 184.63975	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - ^4P^\circ$	5/2 – 3/2		936
	90	795.835	74.91685 – 200.57127	$3s3p^2 - 3s^25f$	$^2D - ^2F^\circ$	3/2 – 5/2		936
	10	796.020	74.94586 – 200.57127	$3s3p^2 - 3s^25f$	$^2D - ^2F^\circ$	5/2 – 5/2		936
	120	796.223	74.94586 – 200.53896	$3s3p^2 - 3s^25f$	$^2D - ^2F^\circ$	5/2 – 7/2		936
	25	803.093	116.88587 – 241.40367	$3s^23d - 3s3p(^3P^\circ)4d$	$^2D - ^2D^\circ$	5/2 – 5/2		936
	10	803.813	116.87456 – 241.28223	$3s^23d - 3s3p(^3P^\circ)4d$	$^2D - ^2D^\circ$	3/2 – 3/2		936
	1	805.056	116.87456 – 241.08925	$3s^23d - 3s3p(^3P^\circ)4d$	$^2D - ^4P^\circ$	3/2 – 1/2		936
	1	805.765	116.87456 – 240.98075	$3s^23d - 3s3p(^3P^\circ)4d$	$^2D - ^4P^\circ$	3/2 – 3/2		936
	1	807.107	116.88587 – 240.78337	$3s^23d - 3s3p(^3P^\circ)4d$	$^2D - ^4P^\circ$	5/2 – 5/2		936
	25	815.559	100.20044 – 222.81615	$3s3p^2 - 3s3p(^1P^\circ)4s$	$^2S - ^2P^\circ$	1/2 – 3/2		936
	10	815.736	100.20044 – 222.78762	$3s3p^2 - 3s3p(^1P^\circ)4s$	$^2S - ^2P^\circ$	1/2 – 1/2		936
	1	820.552	116.87456 – 238.74218	$3s^23d - 3s3p(^3P^\circ)4d$	$^2D - ^4D^\circ$	3/2 – 3/2		936
	4	833.492	100.20044 – 220.17676	$3s3p^2 - 3s3p(^1P^\circ)3d$	$^2S - ^2P^\circ$	1/2 – 3/2		936
	1	833.668	100.20044 – 220.15251	$3s3p^2 - 3s3p(^1P^\circ)3d$	$^2S - ^2P^\circ$	1/2 – 1/2		936
5	200	844.646	56.92167 – 175.31407	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	1/2 – 3/2		936
5	150	845.038	56.92167 – 175.25973	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	1/2 – 1/2		936
5	250	845.664	57.12598 – 175.37640	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	3/2 – 5/2		936
5	200	846.108	57.12598 – 175.31407	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	3/2 – 3/2		936
5	120	846.496	57.12598 – 175.25973	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	3/2 – 1/2		936
5	300	847.669	57.45400 – 175.42536	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	5/2 – 7/2		936
5	200	848.016	57.45400 – 175.37640	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	5/2 – 5/2		936
5	120	848.465	57.45400 – 175.31407	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	5/2 – 3/2		936
	150	848.639	0. – 117.83595	$3s^23p - 3s^24s$	$g^2P^\circ - ^2S$	1/2 – 1/2		936
	250	852.686	.55914 – 117.83595	$3s^23p - 3s^24s$	$g^2P^\circ - ^2S$	3/2 – 1/2		936
	60	853.355	56.92167 – 174.10620	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	1/2 – 1/2		936
	90	854.232	56.92167 – 173.98569	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	1/2 – 3/2		936
	90	854.845	57.12598 – 174.10620	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	3/2 – 1/2		936
4	350	855.624	0. – 116.87456	$3s^23p - 3s^23d$	$g^2P^\circ - ^2D$	1/2 – 3/2		936
	10	855.722	57.12598 – 173.98569	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	3/2 – 3/2		936
	1	856.717	74.91685 – 191.64109	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^2D - ^2P^\circ$	3/2 – 3/2		936
	40	856.934	74.94586 – 191.64109	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^2D - ^2P^\circ$	5/2 – 3/2		936
	120	856.985	57.12598 – 173.81317	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	3/2 – 5/2		936
	90	858.135	57.45400 – 173.98569	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	5/2 – 3/2		936
	25	859.362	74.91685 – 191.28197	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^2D - ^2P^\circ$	3/2 – 1/2		936
	200	859.406	57.45400 – 173.81317	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	5/2 – 5/2		936
4	500	859.652	.55914 – 116.88587	$3s^23p - 3s^23d$	$g^2P^\circ - ^2D$	3/2 – 5/2		936

P III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
4	250	859.729	.55914 – 116.87456	$3s^23p - 3s^23d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		936
	150	879.264	74.94586 – 188.67737	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		936
	25	881.813	109.41298 – 222.81615	$3s3p^2 - 3s3p(^1P^\circ)4s$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		936
	1	882.028	109.41298 – 222.78762	$3s3p^2 - 3s3p(^1P^\circ)4s$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		936
	90	882.626	74.91685 – 188.21525	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		936
	40	882.848	74.94586 – 188.21525	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		936
	1	883.467	56.92167 – 170.11047	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		936
	1	885.073	57.12598 – 170.11047	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		936
	1	899.767	109.03725 – 220.17676	$3s3p^2 - 3s3p(^1P^\circ)3d$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		936
	60	899.963	109.03725 – 220.15251	$3s3p^2 - 3s3p(^1P^\circ)3d$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		936
	120	902.822	109.41298 – 220.17676	$3s3p^2 - 3s3p(^1P^\circ)3d$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		936
	40	903.022	109.41298 – 220.15251	$3s3p^2 - 3s3p(^1P^\circ)3d$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		936
	90	903.575	109.03725 – 219.70871	$3s3p^2 - 3s3p(^1P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		936
	120	905.517	109.41298 – 219.84731	$3s3p^2 - 3s3p(^1P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		936
	25	906.660	109.41298 – 219.70871	$3s3p^2 - 3s3p(^1P^\circ)3d$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		936
	90	907.590	74.91685 – 185.09848	$3s3p^2 - 3p^3$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		936
	120	907.809	74.91685 – 185.07434	$3s3p^2 - 3p^3$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		936
	120	908.032	74.94586 – 185.07434	$3s3p^2 - 3p^3$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		936
	10	908.266	74.94586 – 185.04562	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^2D - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		936
	4	909.581	74.91685 – 184.85812	$3s3p^2 - 3s^25p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		936
	90	909.818	74.94586 – 184.85812	$3s3p^2 - 3s^25p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		936
	60	910.548	74.91685 – 184.74077	$3s3p^2 - 3s^25p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		936
	1	911.379	74.91685 – 184.63975	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^2D - ^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		936
	40	911.629	74.94586 – 184.63975	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^2D - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		936
	10	912.936	74.91685 – 184.45379	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^2D - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		936
3	300	913.971	0. – 109.41298	$3s^23p - 3s3p^2$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		936
3	300	917.120	0. – 109.03725	$3s^23p - 3s3p^2$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		936
3	350	918.665	.55914 – 109.41298	$3s^23p - 3s3p^2$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		936
3	250	921.849	.55914 – 109.03725	$3s^23p - 3s3p^2$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		936
	40	939.576	100.20044 – 206.63165	$3s3p^2 - 3p^3$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		936
	60	939.730	100.20044 – 206.61372	$3s3p^2 - 3p^3$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		936
	10	944.016	116.88587 – 222.81615	$3s^23d - 3s3p(^1P^\circ)4s$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		936
	1	944.178	116.87456 – 222.78762	$3s^23d - 3s3p(^1P^\circ)4s$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		936
	40	945.000	100.20044 – 206.02084	$3s3p^2 - 3s^26p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		936
	60	945.151	100.20044 – 206.00336	$3s3p^2 - 3s^26p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		936
	25	952.559	117.83595 – 222.81615	$3s^24s - 3s3p(^1P^\circ)4s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		936
	10	952.822	117.83595 – 222.78762	$3s^24s - 3s3p(^1P^\circ)4s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		936
	60	963.962	74.91685 – 178.65523	$3s3p^2 - 3s^24f$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		936
	90	964.224	74.94586 – 178.65578	$3s3p^2 - 3s^24f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		936
	25	968.034	116.87456 – 220.17676	$3s^23d - 3s3p(^1P^\circ)3d$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		936
	90	968.175	116.88587 – 220.17676	$3s^23d - 3s3p(^1P^\circ)3d$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		936
	40	968.262	116.87456 – 220.15251	$3s^23d - 3s3p(^1P^\circ)3d$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		936
	10	971.137	116.87456 – 219.84731	$3s^23d - 3s3p(^1P^\circ)3d$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		936
	60	971.236	116.88587 – 219.84731	$3s^23d - 3s3p(^1P^\circ)3d$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		936
	40	972.439	116.87456 – 219.70871	$3s^23d - 3s3p(^1P^\circ)3d$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		936
	25	972.545	116.88587 – 219.70871	$3s^23d - 3s3p(^1P^\circ)3d$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		936
	60	972.821	56.92167 – 159.71535	$3s3p^2 - 3p^3$	$^4P - ^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		936
	90	974.761	57.12598 – 159.71535	$3s3p^2 - 3p^3$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		936
	4	977.121	117.83595 – 220.17676	$3s^24s - 3s3p(^1P^\circ)3d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		936
	1	977.355	117.83595 – 220.15251	$3s^24s - 3s3p(^1P^\circ)3d$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		936
	120	977.886	57.45400 – 159.71535	$3s3p^2 - 3p^3$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		936
	1	978.442	56.92167 – 159.12477	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4F^\circ$	$\frac{1}{2}-\frac{3}{2}$		936
	4	979.312	57.12598 – 159.23872	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4F^\circ$	$\frac{3}{2}-\frac{5}{2}$		936
	4	980.892	57.45400 – 159.40112	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4F^\circ$	$\frac{5}{2}-\frac{7}{2}$		936

P III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	982.452	57.45400 – 159.23872	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4F^\circ$	$\frac{5}{2}-\frac{5}{2}$		936
	1	995.232	74.94586 – 175.42536	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		936
	40	995.705	74.94586 – 175.37640	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - ^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		936
	1	996.332	74.94586 – 175.31407	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - ^4D^\circ$	$\frac{5}{2}-\frac{3}{2}$		936
2	200	997.999	0. – 100.20044	$3s^23p - 3s3p^2$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		936
2	250	1003.598	.55914 – 100.20044	$3s^23p - 3s3p^2$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		936
	25	1024.656	109.03725 – 206.63165	$3s3p^2 - 3p^3$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		936
	4	1024.844	109.03725 – 206.61372	$3s3p^2 - 3p^3$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		936
	4	1025.140	116.88587 – 214.4335	$3s^23d - 3s^26f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		936
	4	1028.603	109.41298 – 206.63165	$3s3p^2 - 3p^3$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		936
	40	1028.797	109.41298 – 206.61372	$3s3p^2 - 3p^3$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		936
	10	1031.107	109.03725 – 206.02084	$3s3p^2 - 3s^26p$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		936
	1	1031.295	109.03725 – 206.00336	$3s3p^2 - 3s^26p$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		936
	4	1035.102	109.41298 – 206.02084	$3s3p^2 - 3s^26p$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		936
	25	1035.294	109.41298 – 206.00336	$3s3p^2 - 3s^26p$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		936
	4	1044.963	159.40112 – 255.09921	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4F^\circ - ^4F$	$\frac{7}{2}-\frac{9}{2}$		936
	1	1045.089	159.12477 – 254.81062	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4F^\circ - ^4F$	$\frac{3}{2}-\frac{5}{2}$		936
	25	1046.052	159.12477 – 254.72226	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4F^\circ - ^4F$	$\frac{3}{2}-\frac{3}{2}$		936
	40	1046.333	159.23872 – 254.81062	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4F^\circ - ^4F$	$\frac{5}{2}-\frac{5}{2}$		936
	60	1046.739	159.40112 – 254.93583	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4F^\circ - ^4F$	$\frac{7}{2}-\frac{7}{2}$		936
	90	1047.283	159.61367 – 255.09921	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4F^\circ - ^4F$	$\frac{9}{2}-\frac{9}{2}$		936
	4	1048.120	159.40112 – 254.81062	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4F^\circ - ^4F$	$\frac{7}{2}-\frac{5}{2}$		936
	1	1049.083	159.61367 – 254.93583	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4F^\circ - ^4F$	$\frac{9}{2}-\frac{7}{2}$		936
	90	1049.825	74.91685 – 170.17065	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		936
	60	1050.491	74.91685 – 170.11047	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		936
	120	1050.810	74.94586 – 170.11047	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		936
	40	1072.533	116.87456 – 210.11179	$3s^23d - 3s3p(^1P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		936
	10	1072.661	116.88587 – 210.11179	$3s^23d - 3s3p(^1P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		936
	60	1073.383	116.88587 – 210.04882	$3s^23d - 3s3p(^1P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		936
	40	1093.606	100.20044 – 191.64109	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		936
	25	1097.916	100.20044 – 191.28197	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		936
	4	1122.118	116.88587 – 206.00336	$3s^23d - 3s^26p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		936
	10	1133.975	117.83595 – 206.02084	$3s^24s - 3s^26p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		936
	25	1134.201	117.83595 – 206.00336	$3s^24s - 3s^26p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		936
	25	1181.224	100.20044 – 184.85812	$3s3p^2 - 3s^25p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		936
	10	1182.868	100.20044 – 184.74077	$3s3p^2 - 3s^25p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		936
	1	1184.043	56.92167 – 141.37691	$3s3p^2 - 3s^24p$	$^4P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		936
	1	1185.015	57.12598 – 141.51363	$3s3p^2 - 3s^24p$	$^4P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		936
	10	1186.304	74.94586 – 159.23872	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - ^4F^\circ$	$\frac{5}{2}-\frac{5}{2}$		936
	25	1187.542	74.91685 – 159.12477	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - ^4F^\circ$	$\frac{3}{2}-\frac{3}{2}$		936
	1	1187.934	74.94586 – 159.12477	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - ^4F^\circ$	$\frac{5}{2}-\frac{3}{2}$		936
	40	1194.792	116.87456 – 200.57127	$3s^23d - 3s^25f$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		936
	25	1194.945	116.88587 – 200.57127	$3s^23d - 3s^25f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		936
	60	1195.410	116.88587 – 200.53896	$3s^23d - 3s^25f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		936
	40	1210.601	109.03725 – 191.64109	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		936
	60	1215.886	109.03725 – 191.28197	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		936
	120	1216.127	109.41298 – 191.64109	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		936
	40	1221.471	109.41298 – 191.28197	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		936
	1	1237.252	173.98569 – 254.81062	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4P^\circ - ^4F$	$\frac{3}{2}-\frac{5}{2}$		936
	60	1255.116	175.42536 – 255.09921	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4D^\circ - ^4F$	$\frac{7}{2}-\frac{9}{2}$		936
	40	1256.926	175.37640 – 254.93583	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4D^\circ - ^4F$	$\frac{5}{2}-\frac{7}{2}$		936
	4	1257.702	175.42536 – 254.93583	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4D^\circ - ^4F$	$\frac{7}{2}-\frac{7}{2}$		936
	40	1257.917	175.31407 – 254.81062	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4D^\circ - ^4F$	$\frac{3}{2}-\frac{5}{2}$		936
	25	1258.457	175.25973 – 254.72226	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4D^\circ - ^4F$	$\frac{1}{2}-\frac{3}{2}$		936

P III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	1258.904	175.37640 – 254.81062	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4D^\circ - ^4F$	$\frac{5}{2} - \frac{5}{2}$		936
	4	1259.311	175.31407 – 254.72226	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4D^\circ - ^4F$	$\frac{3}{2} - \frac{3}{2}$		936
	1	1259.685	175.42536 – 254.81062	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4D^\circ - ^4F$	$\frac{7}{2} - \frac{5}{2}$		936
	1	1260.322	175.37640 – 254.72226	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4D^\circ - ^4F$	$\frac{5}{2} - \frac{3}{2}$		936
	1	1290.074	141.37691 – 218.89210	$3s^24p - 3s3p(^3P^\circ)4p$	$^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		936
	4	1292.348	141.51363 – 218.89210	$3s^24p - 3s3p(^3P^\circ)4p$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		936
	60	1314.728	109.03725 – 185.09848	$3s3p^2 - 3p^3$	$^2P - ^2D^\circ$	$\frac{1}{2} - \frac{3}{2}$		936
	25	1318.901	109.03725 – 184.85812	$3s3p^2 - 3s^25p$	$^2P - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		936
	25	1320.941	109.03725 – 184.74077	$3s3p^2 - 3s^25p$	$^2P - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		936
	25	1321.259	109.41298 – 185.09848	$3s3p^2 - 3p^3$	$^2P - ^2D^\circ$	$\frac{3}{2} - \frac{3}{2}$		936
	90	1321.681	109.41298 – 185.07434	$3s3p^2 - 3p^3$	$^2P - ^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$		936
	1	1322.188	109.41298 – 185.04562	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^2P - ^4P^\circ$	$\frac{3}{2} - \frac{5}{2}$		936
	1	1322.707	109.03725 – 184.63975	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^2P - ^4P^\circ$	$\frac{1}{2} - \frac{3}{2}$		936
	40	1325.465	109.41298 – 184.85812	$3s3p^2 - 3s^25p$	$^2P - ^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		936
	25	1327.531	109.41298 – 184.74077	$3s3p^2 - 3s^25p$	$^2P - ^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		936
	10	1329.318	109.41298 – 184.63975	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^2P - ^4P^\circ$	$\frac{3}{2} - \frac{3}{2}$		936
	4	1332.600	109.41298 – 184.45379	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^2P - ^4P^\circ$	$\frac{3}{2} - \frac{1}{2}$		936
1	500	1334.808	0. – 74.91685	$3s^23p - 3s3p^2$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		936
	40	1337.500	116.87456 – 191.64109	$3s^23d - 3s3p(^3P^\circ)4s$	$^2D - ^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		936
	120	1337.702	116.88587 – 191.64109	$3s^23d - 3s3p(^3P^\circ)4s$	$^2D - ^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		936
	70	1343.81	173.81317 – 248.2284	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4P^\circ - ^4D$	$\frac{5}{2} - \frac{3}{2}$	P	597
	90	1343.957	116.87456 – 191.28197	$3s^23d - 3s3p(^3P^\circ)4s$	$^2D - ^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		936
1	650	1344.327	.55914 – 74.94586	$3s^23p - 3s3p^2$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		936
1	300	1344.845	.55914 – 74.91685	$3s^23p - 3s3p^2$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		936
	200	1346.93	173.98569 – 248.2284	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4P^\circ - ^4D$	$\frac{3}{2} - \frac{3}{2}$	P	597
	10	1347.46	173.98569 – 248.1994	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4P^\circ - ^4D$	$\frac{3}{2} - \frac{5}{2}$	P	597
	10	1348.45	174.10620 – 248.2655	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4P^\circ - ^4D$	$\frac{1}{2} - \frac{1}{2}$		597
	200	1349.12	174.10620 – 248.2284	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4P^\circ - ^4D$	$\frac{1}{2} - \frac{3}{2}$	P	597
	25	1354.923	117.83595 – 191.64109	$3s^24s - 3s3p(^3P^\circ)4s$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		936
	10	1361.548	117.83595 – 191.28197	$3s^24s - 3s3p(^3P^\circ)4s$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		936
	4	1366.114	141.37691 – 214.5773	$3s^24p - 3s^27s$	$^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		936
	10	1368.668	141.51363 – 214.5773	$3s^24p - 3s^27s$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		936
	10	1370.45	175.25973 – 248.2284	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4D^\circ - ^4D$	$\frac{1}{2} - \frac{3}{2}$	P	597
	100	1372.02	175.31407 – 248.1994	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4D^\circ - ^4D$	$\frac{3}{2} - \frac{5}{2}$	P	597
	300	1372.65	175.37640 – 248.2284	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4D^\circ - ^4D$	$\frac{5}{2} - \frac{3}{2}$	P	597
	100	1374.70	175.42536 – 248.1684	$3s3p(^3P^\circ)3d - 3s3p(^3P^\circ)4f$	$^4D^\circ - ^4D$	$\frac{7}{2} - \frac{7}{2}$	P	597
	1	1375.091	176.04287 – 248.76531	$3s^25s - 3s3p(^3P^\circ)5s$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		936
	4	1375.453	141.51363 – 214.21741	$3s^24p - 3s3p(^3P^\circ)4p$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		936
7	40	1379.911	74.91685 – 147.38526	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - ^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$		936
7	250	1380.463	74.94586 – 147.38526	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - ^2D^\circ$	$\frac{5}{2} - \frac{5}{2}$		936
7	150	1381.089	74.91685 – 147.32319	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - ^2D^\circ$	$\frac{3}{2} - \frac{3}{2}$		936
7	90	1381.644	74.94586 – 147.32319	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2D - ^2D^\circ$	$\frac{5}{2} - \frac{3}{2}$		936
	40	1392.924	116.88587 – 188.67737	$3s^23d - 3s3p(^3P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		936
	25	1401.725	116.87456 – 188.21525	$3s^23d - 3s3p(^3P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		936
	1	1401.946	116.88587 – 188.21525	$3s^23d - 3s3p(^3P^\circ)3d$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{5}{2}$		936
	25	1429.184	100.20044 – 170.17065	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		936
	40	1430.410	100.20044 – 170.11047	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		936
	1	1460.906	159.61367 – 228.06429	$3s3p(^3P^\circ)3d - 3s^28g$	$^4F^\circ - ^2G$	$\frac{9}{2} - \frac{9}{2}$		936
	4	1465.766	116.87456 – 185.09848	$3s^23d - 3p^3$	$^2D - ^2D^\circ$	$\frac{3}{2} - \frac{3}{2}$		936
	1	1466.286	116.87456 – 185.07434	$3s^23d - 3p^3$	$^2D - ^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$		936
	10	1466.536	116.88587 – 185.07434	$3s^23d - 3p^3$	$^2D - ^2D^\circ$	$\frac{5}{2} - \frac{5}{2}$		936
	10	1471.198	116.88587 – 184.85812	$3s^23d - 3s^25p$	$^2D - ^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		936
	4	1473.492	116.87456 – 184.74077	$3s^23d - 3s^25p$	$^2D - ^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		936
	1	1475.939	116.88587 – 184.63975	$3s^23d - 3s3p(^3P^\circ)4s$	$^2D - ^4P^\circ$	$\frac{5}{2} - \frac{3}{2}$		936

P III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	40	1492.048	117.83595 – 184.85812	$3s^24s - 3s^25p$	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$		936
	25	1494.667	117.83595 – 184.74077	$3s^24s - 3s^25p$	$^2S - ^2P^o$	$\frac{1}{2}-\frac{1}{2}$		936
	25	1496.295	147.38526 – 214.21741	$3s3p(^3P^o)3d - 3s3p(^3P^o)4p$	$^2D^o - ^2D$	$\frac{5}{2}-\frac{5}{2}$		936
	10	1496.932	117.83595 – 184.63975	$3s^24s - 3s3p(^3P^o)4s$	$^2S - ^4P^o$	$\frac{1}{2}-\frac{3}{2}$		936
	10	1499.855	147.32319 – 213.99652	$3s3p(^3P^o)3d - 3s3p(^3P^o)4p$	$^2D^o - ^2D$	$\frac{3}{2}-\frac{3}{2}$		936
	1	1501.093	117.83595 – 184.45379	$3s^24s - 3s3p(^3P^o)4s$	$^2S - ^4P^o$	$\frac{1}{2}-\frac{1}{2}$		936
6	90	1501.575	74.91685 – 141.51363	$3s3p^2 - 3s^24p$	$^2D - ^2P^o$	$\frac{3}{2}-\frac{3}{2}$		936
6	350	1502.228	74.94586 – 141.51363	$3s3p^2 - 3s^24p$	$^2D - ^2P^o$	$\frac{5}{2}-\frac{3}{2}$		936
6	250	1504.663	74.91685 – 141.37691	$3s3p^2 - 3s^24p$	$^2D - ^2P^o$	$\frac{3}{2}-\frac{1}{2}$		936
	25	1522.607	141.37691 – 207.05378	$3s^24p - 3s3p(^3P^o)4p$	$^2P^o - ^2P$	$\frac{1}{2}-\frac{3}{2}$		936
	10	1525.010	141.37691 – 206.95034	$3s^24p - 3s3p(^3P^o)4p$	$^2P^o - ^2P$	$\frac{1}{2}-\frac{1}{2}$		936
	25	1525.795	141.51363 – 207.05378	$3s^24p - 3s3p(^3P^o)4p$	$^2P^o - ^2P$	$\frac{3}{2}-\frac{3}{2}$		936
	1	1528.194	141.51363 – 206.95034	$3s^24p - 3s3p(^3P^o)4p$	$^2P^o - ^2P$	$\frac{3}{2}-\frac{1}{2}$		936
	25	1528.654	147.38526 – 212.80245	$3s3p(^3P^o)3d - 3s^26d$	$^2D^o - ^2D$	$\frac{5}{2}-\frac{5}{2}$		936
	10	1530.492	147.32319 – 212.66219	$3s3p(^3P^o)3d - 3s^26d$	$^2D^o - ^2D$	$\frac{3}{2}-\frac{3}{2}$		936
	10	1533.063	141.51363 – 206.74262	$3s^24p - 3s3p(^3P^o)4p$	$^2P^o - ^4D$	$\frac{3}{2}-\frac{3}{2}$		936
	1	1534.291	141.37691 – 206.55377	$3s^24p - 3s3p(^3P^o)4p$	$^2P^o - ^4D$	$\frac{1}{2}-\frac{1}{2}$		936
	4	1537.527	141.51363 – 206.55377	$3s^24p - 3s3p(^3P^o)4p$	$^2P^o - ^4D$	$\frac{3}{2}-\frac{1}{2}$		936
	1	1570.215	159.61367 – 223.29875	$3s3p(^3P^o)3d - 3s^27g$	$^4F^o - ^2G$	$\frac{9}{2}-\frac{9}{2}$		936
	150	1618.632	116.87456 – 178.65523	$3s^23d - 3s^24f$	$^2D - ^2F^o$	$\frac{3}{2}-\frac{5}{2}$		936
	200	1618.907	116.88587 – 178.65578	$3s^23d - 3s^24f$	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$		936
	60	1635.766	109.03725 – 170.17065	$3s3p^2 - 3s3p(^3P^o)3d$	$^2P - ^2P^o$	$\frac{1}{2}-\frac{1}{2}$		936
	40	1637.379	109.03725 – 170.11047	$3s3p^2 - 3s3p(^3P^o)3d$	$^2P - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$		936
	25	1645.886	109.41298 – 170.17065	$3s3p^2 - 3s3p(^3P^o)3d$	$^2P - ^2P^o$	$\frac{3}{2}-\frac{1}{2}$		936
	90	1647.513	109.41298 – 170.11047	$3s3p^2 - 3s3p(^3P^o)3d$	$^2P - ^2P^o$	$\frac{3}{2}-\frac{3}{2}$		936
	4	1669.044	141.37691 – 201.29173	$3s^24p - 3s^26s$	$^2P^o - ^2S$	$\frac{1}{2}-\frac{1}{2}$		936
	25	1672.850	141.51363 – 201.29173	$3s^24p - 3s^26s$	$^2P^o - ^2S$	$\frac{3}{2}-\frac{1}{2}$		936
	25	1674.184	147.32319 – 207.05378	$3s3p(^3P^o)3d - 3s3p(^3P^o)4p$	$^2D^o - ^2P$	$\frac{3}{2}-\frac{3}{2}$		936
	90	1675.924	147.38526 – 207.05378	$3s3p(^3P^o)3d - 3s3p(^3P^o)4p$	$^2D^o - ^2P$	$\frac{5}{2}-\frac{3}{2}$		936
	60	1677.083	147.32319 – 206.95034	$3s3p(^3P^o)3d - 3s3p(^3P^o)4p$	$^2D^o - ^2P$	$\frac{3}{2}-\frac{1}{2}$		936
	10	1678.12						597
	10	1682.944	147.32319 – 206.74262	$3s3p(^3P^o)3d - 3s3p(^3P^o)4p$	$^2D^o - ^4D$	$\frac{3}{2}-\frac{3}{2}$		936
	60	1684.705	147.38526 – 206.74262	$3s3p(^3P^o)3d - 3s3p(^3P^o)4p$	$^2D^o - ^4D$	$\frac{5}{2}-\frac{3}{2}$		936
	60	1688.311	147.32319 – 206.55377	$3s3p(^3P^o)3d - 3s3p(^3P^o)4p$	$^2D^o - ^4D$	$\frac{3}{2}-\frac{1}{2}$		936
	100	1693.03						597
	100	1696.92						597
	10	1730.758	141.37691 – 199.15489	$3s^24p - 3s^25d$	$^2P^o - ^2D$	$\frac{1}{2}-\frac{3}{2}$		936
	40	1734.867	141.51363 – 199.15483	$3s^24p - 3s^25d$	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$		936
	40	1756.798	0. – 56.92167	$3s^23p - 3s3p^2$	$g\,^2P^o - ^4P$	$\frac{1}{2}-\frac{1}{2}$		936
	60	1757.626	.55914 – 57.45400	$3s^23p - 3s3p^2$	$g\,^2P^o - ^4P$	$\frac{3}{2}-\frac{5}{2}$		936
	25	1767.818	.55914 – 57.12598	$3s^23p - 3s3p^2$	$g\,^2P^o - ^4P$	$\frac{3}{2}-\frac{3}{2}$		936
	25	1774.226	.55914 – 56.92167	$3s^23p - 3s3p^2$	$g\,^2P^o - ^4P$	$\frac{3}{2}-\frac{1}{2}$		936
	1	1876.302	116.87456 – 170.17065	$3s^23d - 3s3p(^3P^o)3d$	$^2D - ^2P^o$	$\frac{3}{2}-\frac{1}{2}$		936
	4	1878.828	116.88587 – 170.11047	$3s^23d - 3s3p(^3P^o)3d$	$^2D - ^2P^o$	$\frac{5}{2}-\frac{3}{2}$		936
	4	1910.780	117.83595 – 170.17065	$3s^24s - 3s3p(^3P^o)3d$	$^2S - ^2P^o$	$\frac{1}{2}-\frac{1}{2}$		936
	10	1912.974	117.83595 – 170.11047	$3s^24s - 3s3p(^3P^o)3d$	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$		936

PHOSPHORUS IV (P^{3+}), Z = 15
Ground State $1s^22s^22p^63s^2(^1S_0)$ (12 electrons)
Ionization Potential 414 922.8 cm^{-1}; 51.444 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	4	256.453	0. – 389.9350	$3s^2$ – 3s9p	g^1S – $^1P°$	0 – 1		937
	10	261.477	0. – 382.4508	$3s^2$ – 3s8p	g^1S – $^1P°$	0 – 1		937
	40	269.117	0. – 371.58576	$3s^2$ – 3s7p	g^1S – $^1P°$	0 – 1		937
	90	282.301	0. – 354.23479	$3s^2$ – 3s6p	g^1S – $^1P°$	0 – 1		937
	1	299.258	68.14648 – 402.3098	3s3p – 3s12d	$^3P°$ – ^3D	1 – 2		937
	1	299.672	68.61517 – 402.3098	3s3p – 3s12d	$^3P°$ – ^3D	2 – 3		937
	1	301.249	67.91803 – 399.8713	3s3p – 3s11d	$^3P°$ – ^3D	0 – 1		937
	4	301.460	68.14648 – 399.8713	3s3p – 3s11d	$^3P°$ – ^3D	1 – 2		937
	4	301.880	68.61517 – 399.8713	3s3p – 3s11d	$^3P°$ – ^3D	2 – 3		937
	4	304.364	68.14648 – 396.6996	3s3p – 3s10d	$^3P°$ – ^3D	1 – 2		937
	4	304.805	68.61517 – 396.6996	3s3p – 3s10d	$^3P°$ – ^3D	2 – 3		937
	90	304.996	0. – 327.87354	$3s^2$ – 3p4s	g^1S – $^1P°$	0 – 1		937
	1	307.203	68.14648 – 393.6628	3s3p – 3s10s	$^3P°$ – ^3S	1 – 1		937
	4	307.648	68.61517 – 393.6628	3s3p – 3s10s	$^3P°$ – ^3S	2 – 1		937
	4	308.402	67.91803 – 392.1745	3s3p – 3s9d	$^3P°$ – ^3D	0 – 1		937
	10	308.615	68.14648 – 392.1745	3s3p – 3s9d	$^3P°$ – ^3D	1 – 2		937
	25	309.060	68.61517 – 392.1745	3s3p – 3s9d	$^3P°$ – ^3D	2 – 3		937
	4	312.566	68.14648 – 388.0786	3s3p – 3s9s	$^3P°$ – ^3S	1 – 1		937
	10	313.024	68.61517 – 388.0786	3s3p – 3s9s	$^3P°$ – ^3S	2 – 1		937
	10	314.300	67.91803 – 386.0835	3s3p – 3s8d	$^3P°$ – ^3D	0 – 1		937
	60	314.512	0. – 317.95741	$3s^2$ – 3p4s	g^1S – $^3P°$	0 – 1		937
	25	314.991	68.61517 – 386.0835	3s3p – 3s8d	$^3P°$ – ^3D	2 – 3		937
	150	315.570	0. – 316.88809	$3s^2$ – 3s5p	g^1S – $^1P°$	0 – 1		937
	4	320.462	67.91803 – 379.96882	3s3p – 3s8s	$^3P°$ – ^3S	0 – 1		937
	10	320.701	68.14648 – 379.96882	3s3p – 3s8s	$^3P°$ – ^3S	1 – 1		937
	10	321.172	68.61517 – 379.96882	3s3p – 3s8s	$^3P°$ – ^3S	2 – 1		937
	1	322.544	105.19042 – 415.22356	3s3p – 3p5p	$^1P°$ – ^1P	1 – 1		937
	10	323.502	67.91803 – 377.0351	3s3p – 3s7d	$^3P°$ – ^3D	0 – 1		937
	25	323.734	68.14648 – 377.03703	3s3p – 3s7d	$^3P°$ – ^3D	1 – 2		937
	40	324.221	68.61517 – 377.04914	3s3p – 3s7d	$^3P°$ – ^3D	2 – 3		937
	10	325.651	0. – 307.08334	$3s^2$ – 3p3d	g^1S – $^1P°$	0 – 1		937
	25	333.758	67.91803 – 367.53564	3s3p – 3s7s	$^3P°$ – ^3S	0 – 1		937
	40	334.013	68.14648 – 367.53564	3s3p – 3s7s	$^3P°$ – ^3S	1 – 1		937
	60	334.538	68.61517 – 367.53564	3s3p – 3s7s	$^3P°$ – ^3S	2 – 1		937
	25	338.841	67.91803 – 363.04147	3s3p – 3s6d	$^3P°$ – ^3D	0 – 1		937
	60	339.101	68.14648 – 363.04330	3s3p – 3s6d	$^3P°$ – ^3D	1 – 2		937
	90	339.633	68.61517 – 363.05067	3s3p – 3s6d	$^3P°$ – ^3D	2 – 3		937
	4	346.490	105.19042 – 393.7990	3s3p – 3s10s	$^1P°$ – ^1S	1 – 0		937
	1	351.808	68.14648 – 352.38940	3s3p – 3p4p	$^3P°$ – ^1D	1 – 2		937
	10	353.236	105.19042 – 388.2873	3s3p – 3s9s	$^1P°$ – ^1S	1 – 0		937
	10	356.364	105.19042 – 385.8024	3s3p – 3s8d	$^1P°$ – ^1D	1 – 2		937
	60	357.708	68.14648 – 347.70436	3s3p – 3p4p	$^3P°$ – ^3P	1 – 2		937
	60	357.837	67.91803 – 347.37399	3s3p – 3p4p	$^3P°$ – ^3P	0 – 1		937
	60	358.132	68.14648 – 347.37399	3s3p – 3p4p	$^3P°$ – ^3P	1 – 1		937
	150	358.328	68.61517 – 347.70436	3s3p – 3p4p	$^3P°$ – ^3P	2 – 2		937
	90	358.736	68.61517 – 347.37399	3s3p – 3p4p	$^3P°$ – ^3P	2 – 1		937
	60	358.999	67.91803 – 346.47211	3s3p – 3s6s	$^3P°$ – ^3S	0 – 1		937
	120	359.293	68.14648 – 346.47211	3s3p – 3s6s	$^3P°$ – ^3S	1 – 1		937
	150	359.899	68.61517 – 346.47211	3s3p – 3s6s	$^3P°$ – ^3S	2 – 1		937
	120	361.514	68.14648 – 344.75807	3s3p – 3p4p	$^3P°$ – ^3D	1 – 2		937
	150	361.629	68.61517 – 345.14016	3s3p – 3p4p	$^3P°$ – ^3D	2 – 3		937
	40	361.802	68.14648 – 344.54000	3s3p – 3p4p	$^3P°$ – ^3D	1 – 1		937
	60	362.133	68.61517 – 344.75807	3s3p – 3p4p	$^3P°$ – ^3D	2 – 2		937
	4	362.412	68.61517 – 344.54000	3s3p – 3p4p	$^3P°$ – ^3D	2 – 1		937

P IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	363.467	105.19042 - 380.3156	3s3p - 3s8s	$^1P^o - ^1S$	1 - 0		937
	4	363.933	105.19042 - 379.96882	3s3p - 3s8s	$^1P^o - ^3S$	1 - 1		937
	25	367.660	105.19042 - 377.17998	3s3p - 3s7d	$^1P^o - ^1D$	1 - 2		937
	120	371.299	67.91803 - 337.24564	3s3p - 3s5d	$^3P^o - ^3D$	0 - 1		937
	150	371.504	68.14648 - 337.32491	3s3p - 3s5d	$^3P^o - ^3D$	1 - 2		937
	60	371.611	68.14648 - 337.24564	3s3p - 3s5d	$^3P^o - ^3D$	1 - 1		937
	200	372.001	68.61517 - 337.43226	3s3p - 3s5d	$^3P^o - ^3D$	2 - 3		937
	60	372.150	68.61517 - 337.32491	3s3p - 3s5d	$^3P^o - ^3D$	2 - 2		937
	10	372.256	68.61517 - 337.24564	3s3p - 3s5d	$^3P^o - ^3D$	2 - 1		937
	60	380.152	105.19042 - 368.24073	3s3p - 3s7s	$^1P^o - ^1S$	1 - 0		937
	90	386.752	105.19042 - 363.75186	3s3p - 3s6d	$^1P^o - ^1D$	1 - 2		937
	500	388.318	0. - 257.52266	$3s^2$ - 3s4p	$g^1S - ^1P^o$	0 - 1		937
	90	389.698	0. - 256.61197	$3s^2$ - 3s4p	$g^1S - ^3P^o$	0 - 1		937
	60	392.901	105.19042 - 359.70814	3s3p - 3p4p	$^1P^o - ^1S$	1 - 0		937
	150	404.535	105.19042 - 352.38940	3s3p - 3p4p	$^1P^o - ^1D$	1 - 2		937
	40	409.827	105.19042 - 349.19623	3s3p - 3p4p	$^1P^o - ^3S$	1 - 1		937
	90	412.521	105.19042 - 347.60239	3s3p - 3s6s	$^1P^o - ^1S$	1 - 0		937
	120	414.604	67.91803 - 309.11144	3s3p - 3s5s	$^3P^o - ^3S$	0 - 1		937
	200	414.999	68.14648 - 309.11144	3s3p - 3s5s	$^3P^o - ^3S$	1 - 1		937
	250	415.805	68.61517 - 309.11144	3s3p - 3s5s	$^3P^o - ^3S$	2 - 1		937
	4	417.828	158.14182 - 397.4736	$3p^2$ - 3s10f	$^1D - ^1F^o$	2 - 3		937
	200	424.235	105.19042 - 340.90855	3s3p - 3p4p	$^1P^o - ^1P$	1 - 1		937
	10	424.983	158.14182 - 393.4443	$3p^2$ - 3s9f	$^1D - ^1F^o$	2 - 3		937
	10	429.475	105.19042 - 338.03509	3s3p - 3s5d	$^1P^o - ^1D$	1 - 2		937
	4	433.838	158.14182 - 388.64207	$3p^2$ - 3p4d	$^1D - ^1P^o$	2 - 1		937
	10	434.817	158.14182 - 388.12417	$3p^2$ - 3s8f	$^1D - ^1F^o$	2 - 3		937
	1	438.906	158.14182 - 385.98004	$3p^2$ - 3p4d	$^1D - ^1F^o$	2 - 3		937
	200	443.803	67.91803 - 293.24294	3s3p - 3s4d	$^3P^o - ^3D$	0 - 1		937
	1	444.245	68.14648 - 293.24769	3s3p - 3s4d	$^3P^o - ^3D$	1 - 2		937
	300	445.158	68.61517 - 293.25527	3s3p - 3s4d	$^3P^o - ^3D$	2 - 3		937
	4	445.810	158.14182 - 382.4508	$3p^2$ - 3s8p	$^1D - ^1P^o$	2 - 1		937
	1	446.121	165.65404 - 389.8106	$3p^2$ - 3s9p	$^3P - ^3P^o$	2 - 2		937
	1	448.466	165.65404 - 388.64207	$3p^2$ - 3p4d	$^3P - ^1P^o$	2 - 1		937
	10	450.448	158.14182 - 380.14504	$3p^2$ - 3p4d	$^1D - ^1D^o$	2 - 2		937
	40	453.707	158.14182 - 378.54810	$3p^2$ - 3s7f	$^1D - ^1F^o$	2 - 3		937
	4	455.466	165.65404 - 385.20591	$3p^2$ - 3p4d	$^3P - ^3P^o$	2 - 2		937
	1	461.834	165.18539 - 381.7151	$3p^2$ - 3s8p	$^3P - ^3P^o$	1 - 2		937
	1	462.050	165.18539 - 381.61480	$3p^2$ - 3p4d	$^3P - ^3D^o$	1 - 1		937
	10	462.185	165.65404 - 382.01268	$3p^2$ - 3p4d	$^3P - ^3D^o$	2 - 3		937
	4	462.625	165.65404 - 381.80962	$3p^2$ - 3p4d	$^3P - ^3D^o$	2 - 2		937
	4	462.827	165.65404 - 381.7151	$3p^2$ - 3s8p	$^3P - ^3P^o$	2 - 2		937
	10	463.060	165.65404 - 381.61480	$3p^2$ - 3p4d	$^3P - ^3D^o$	2 - 1		937
	40	463.843	165.65404 - 381.24718	$3p^2$ - 3p4d	$^3P - ^3F^o$	2 - 2		937
	25	468.502	158.14182 - 371.58576	$3p^2$ - 3s7p	$^1D - ^1P^o$	2 - 1		937
	4	468.953	189.39813 - 402.6391	3s3d - 3s12f	$^3D - ^3F^o$	3 - 4		937
	80	472.96						597
	10	474.159	189.39813 - 400.2982	3s3d - 3s11f	$^3D - ^3F^o$	3 - 4		937
	60	480.756	158.14182 - 366.14637	$3p^2$ - 3s6f	$^1D - ^1F^o$	2 - 3		937
	40	481.177	189.39813 - 397.2219	3s3d - 3s10f	$^3D - ^3F^o$	3 - 4		937
	1	484.757	165.18539 - 371.47160	$3p^2$ - 3s7p	$^3P - ^3P^o$	1 - 1		937
	120	485.453	105.19042 - 311.18304	3s3p - 3s5s	$^1P^o - ^1S$	1 - 0		937
	1	485.854	165.65404 - 371.48250	$3p^2$ - 3s7p	$^3P - ^3P^o$	2 - 2		937
	90	491.008	189.39813 - 393.0608	3s3d - 3s9f	$^3D - ^3F^o$	3 - 4		937
	4	498.968	189.39813 - 389.8106	3s3d - 3s9p	$^3D - ^3P^o$	3 - 2		937

P IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	60	505.387	189.39813 – 387.2681	3s3d – 3s8f	^{3}D – ^{3}F°	3 – 4		937
	25	509.964	158.14182 – 354.23479	3p^2 – 3s6p	^{1}D – ^{1}P°	2 – 1		937
	40	519.171	189.39813 – 382.01268	3s3d – 3p4d	^{3}D – ^{3}D°	3 – 3		937
	40	519.718	189.39813 – 381.80962	3s3d – 3p4d	^{3}D – ^{3}D°	2 – 2		937
	1	519.930	189.39813 – 381.72938	3s3d – 3p4d	^{3}D – ^{3}F°	3 – 4		937
	4	519.973	189.39813 – 381.7151	3s3d – 3s8p	^{3}D – ^{3}P°	3 – 2		937
	40	520.246	189.39813 – 381.61480	3s3d – 3p4d	^{3}D – ^{3}D°	1 – 1		937
	1	520.751	189.39813 – 381.42802	3s3d – 3p4d	^{3}D – ^{3}F°	2 – 3		937
	4	521.246	189.39813 – 381.24718	3s3d – 3p4d	^{3}D – ^{3}F°	1 – 2		937
	10	522.02						597
	90	525.932	105.19042 – 295.32863	3s3p – 3s4d	^{1}P° – ^{1}D	1 – 2		937
	60	528.672	189.39813 – 378.54810	3s3d – 3s7f	^{3}D – ^{1}F°	3 – 3		937
	150	528.834	189.39813 – 378.49337	3s3d – 3s7f	^{3}D – ^{3}F°	3 – 4		937
	4	530.534	165.18539 – 353.67327	3p^2 – 3s6p	^{3}P – ^{3}P°	1 – 1		937
	4	531.758	165.65404 – 353.70750	3p^2 – 3s6p	^{3}P – ^{3}P°	2 – 2		937
	1	532.312	194.59175 – 382.4508	3p^2 – 3s8p	^{1}S – ^{1}P°	0 – 1		937
	90	533.297	158.14182 – 345.65520	3p^2 – 3s5f	^{1}D – ^{1}F°	2 – 3		937
	25	549.221	189.39813 – 371.48250	3s3d – 3s7p	^{3}D – ^{3}P°	3 – 2		937
	4	552.045	219.15388 – 400.2982	3s3d – 3s11f	^{1}D – ^{1}F°	2 – 3		937
	10	560.799	219.15388 – 397.4736	3s3d – 3s10f	^{1}D – ^{1}F°	2 – 3		937
	250	568.038	189.39813 – 365.44695	3s3d – 3s6f	^{3}D – ^{3}F°	3 – 4		937
	10	573.760	219.15388 – 393.4443	3s3d – 3s9f	^{1}D – ^{1}F°	2 – 3		937
	200	589.161	158.14182 – 327.87354	3p^2 – 3p4s	^{1}D – ^{1}P°	2 – 1		937
	10	591.816	219.15388 – 388.12417	3s3d – 3s8f	^{1}D – ^{1}F°	2 – 3		937
	1	602.945	68.14648 – 233.99796	3s3p – 3s4s	^{3}P° – ^{1}S	1 – 0		937
	40	608.613	189.39813 – 353.70750	3s3d – 3s6p	^{3}D – ^{3}P°	3 – 2		937
	40	608.741	189.39813 – 353.67327	3s3d – 3s6p	^{3}D – ^{3}P°	2 – 1		937
	1	624.129	158.14182 – 318.36254	3p^2 – 3p4s	^{1}D – ^{3}P°	2 – 2		937
	40	625.724	158.14182 – 317.95741	3p^2 – 3p4s	^{1}D – ^{3}P°	2 – 1		937
	120	627.374	219.15388 – 378.54810	3s3d – 3s7f	^{1}D – ^{1}F°	2 – 3		937
	350	629.008	67.91803 – 226.89814	3s3p – 3s4s	^{3}P° – ^{3}S	0 – 1		937
	400	629.914	68.14648 – 226.89814	3s3p – 3s4s	^{3}P° – ^{3}S	1 – 1		937
	500	631.779	68.61517 – 226.89814	3s3p – 3s4s	^{3}P° – ^{3}S	2 – 1		937
	60	634.928	164.94144 – 322.43899	3p^2 – 3s5p	^{3}P – ^{3}P°	0 – 1		937
	90	635.501	165.18539 – 322.54198	3p^2 – 3s5p	^{3}P – ^{3}P°	1 – 2		937
	90	635.915	165.18539 – 322.43899	3p^2 – 3s5p	^{3}P – ^{3}P°	1 – 1		937
	60	636.124	165.18539 – 322.38752	3p^2 – 3s5p	^{3}P – ^{3}P°	1 – 0		937
	120	637.398	165.65404 – 322.54198	3p^2 – 3s5p	^{3}P – ^{3}P°	2 – 2		937
	90	637.817	165.65404 – 322.43899	3p^2 – 3s5p	^{3}P – ^{3}P°	2 – 1		937
	200	639.869	158.14182 – 314.42369	3p^2 – 3p3d	^{1}D – ^{1}F°	2 – 3		937
	350	648.482	189.39813 – 343.60488	3s3d – 3s5f	^{3}D – ^{3}F°	3 – 4		937
	20	649.69						597
	120	652.836	165.18539 – 318.36254	3p^2 – 3p4s	^{3}P – ^{3}P°	1 – 2		937
	90	653.528	164.94144 – 317.95741	3p^2 – 3p4s	^{3}P – ^{3}P°	0 – 1		937
	90	654.569	165.18539 – 317.95741	3p^2 – 3p4s	^{3}P – ^{3}P°	1 – 1		937
	150	654.839	165.65404 – 318.36254	3p^2 – 3p4s	^{3}P – ^{3}P°	2 – 2		937
	120	655.778	165.18539 – 317.67535	3p^2 – 3p4s	^{3}P – ^{3}P°	1 – 0		937
	4	656.029	219.15388 – 371.58576	3s3d – 3s7p	^{1}D – ^{1}P°	2 – 1		937
	120	656.583	165.65404 – 317.95741	3p^2 – 3p4s	^{3}P – ^{3}P°	2 – 1		937
	25	658.125	164.94144 – 316.88809	3p^2 – 3s5p	^{3}P – ^{1}P°	0 – 1		937
	40	659.185	165.18539 – 316.88809	3p^2 – 3s5p	^{3}P – ^{1}P°	1 – 1		937
	40	661.228	165.65404 – 316.88809	3p^2 – 3s5p	^{3}P – ^{1}P°	2 – 1		937
	60	662.219	68.14648 – 219.15388	3s3p – 3s3d	^{3}P° – ^{1}D	1 – 2		937
	25	664.277	68.61517 – 219.15388	3s3p – 3s3d	^{3}P° – ^{1}D	2 – 2		937

P IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	90	671.400	158.14182 – 307.08334	$3p^2 - 3p3d$	$^1D - ^1P^\circ$	2 – 1		937
	1	674.724	267.01523 – 415.22356	$3p3d - 3p5p$	$^1D^\circ - ^1P$	2 – 1		937
	120	680.306	219.15388 – 366.14637	$3s3d - 3s6f$	$^1D - ^1F^\circ$	2 – 3		937
	10	683.571	219.15388 – 365.44609	$3s3d - 3s6f$	$^1D - ^3F^\circ$	2 – 3		937
	25	726.811	233.99796 – 371.58576	$3s4s - 3s7p$	$^1S - ^1P^\circ$	0 – 1		937
	120	750.284	194.59175 – 327.87354	$3p^2 - 3p4s$	$^1S - ^1P^\circ$	0 – 1		937
	1	750.775	262.00527 – 395.19984	$3p3d - 3p(^2P^\circ_{1/2})4f$	$^3F^\circ - F[\frac{5}{2}]$	2 – 3		937
	90	751.069	189.39813 – 322.54198	$3s3d - 3s5p$	$^3D - ^3P^\circ$	3 – 2		937
	90	751.651	189.39813 – 322.43899	$3s3d - 3s5p$	$^3D - ^3P^\circ$	2 – 1		937
	60	751.944	189.39813 – 322.38752	$3s3d - 3s5p$	$^3D - ^3P^\circ$	1 – 0		937
	1	753.646	262.56720 – 395.25391	$3p3d - 3p(^2P^\circ_{1/2})4f$	$^3F^\circ - F[\frac{7}{2}]$	4 – 4		937
	300	756.510	158.14182 – 290.32771	$3p^2 - 3s4f$	$^1D - ^1F^\circ$	2 – 3		937
	10	765.958	257.52266 – 388.0786	$3s4p - 3s9s$	$^1P^\circ - ^3S$	1 – 1		937
	10	772.382	256.61197 – 386.0835	$3s4p - 3s8d$	$^3P^\circ - ^3D$	1 – 2		937
	300	776.353	105.19042 – 233.99796	$3s3p - 3s4s$	$^1P^\circ - ^1S$	1 – 0		937
	1	785.590	262.00527 – 389.29650	$3p3d - 3d^2$	$^3F^\circ - ^1D$	2 – 2		937
	10	788.580	226.89814 – 353.70750	$3s4s - 3s6p$	$^3S - ^3P^\circ$	1 – 2		937
	4	788.797	226.89814 – 353.67327	$3s4s - 3s6p$	$^3S - ^3P^\circ$	1 – 1		937
	150	790.508	219.15388 – 345.65520	$3s3d - 3s5f$	$^1D - ^1F^\circ$	2 – 3		937
	25	790.844	68.14648 – 194.59175	$3s3p - 3p^2$	$^3P^\circ - ^1S$	1 – 0		937
	60	798.803	158.14182 – 283.32908	$3p^2 - 3p3d$	$^1D - ^3D^\circ$	2 – 3		937
	25	799.326	158.14182 – 283.24687	$3p^2 - 3p3d$	$^1D - ^3D^\circ$	2 – 2		937
	25	810.595	194.59175 – 317.95741	$3p^2 - 3p4s$	$^1S - ^3P^\circ$	0 – 1		937
	1	814.386	257.52266 – 380.3156	$3s4p - 3s8s$	$^1P^\circ - ^1S$	1 – 0		937
	60	817.684	194.59175 – 316.88809	$3p^2 - 3s5p$	$^1S - ^1P^\circ$	0 – 1		937
	60	817.786	267.01523 – 389.29650	$3p3d - 3d^2$	$^1D^\circ - ^1D$	2 – 2		937
3	650	823.179	67.91803 – 189.39813	$3s3p - 3s3d$	$^3P^\circ - ^3D$	0 – 1		937
3	700	824.730	68.14648 – 189.39813	$3s3p - 3s3d$	$^3P^\circ - ^3D$	1 – 2		937
3	800	827.932	68.61517 – 189.39813	$3s3p - 3s3d$	$^3P^\circ - ^3D$	2 – 3		937
	10	842.689	262.00527 – 380.67319	$3p3d - 3d^2$	$^3F^\circ - ^3F$	2 – 3		937
	90	842.867	262.00527 – 380.64721	$3p3d - 3d^2$	$^3F^\circ - ^3F$	2 – 2		937
	10	844.148	262.24846 – 380.71265	$3p3d - 3d^2$	$^3F^\circ - ^3F$	3 – 4		937
	120	844.420	262.24846 – 380.67319	$3p3d - 3d^2$	$^3F^\circ - ^3F$	3 – 3		937
		844.646	262.24846 – 380.64721	$3p3d - 3d^2$	$^3F^\circ - ^3F$	3 – 2		937
	150	845.969	164.94144 – 283.15004	$3p^2 - 3p3d$	$^3P - ^3D^\circ$	0 – 1		937
	200	846.415	262.56720 – 380.71265	$3p3d - 3d^2$	$^3F^\circ - ^3F$	4 – 4		937
	25	846.701	262.56720 – 380.67319	$3p3d - 3d^2$	$^3F^\circ - ^3F$	4 – 3		937
	250	847.019	165.18539 – 283.24687	$3p^2 - 3p3d$	$^3P - ^3D^\circ$	1 – 2		937
		847.669	165.18539 – 283.15004	$3p^2 - 3p3d$	$^3P - ^3D^\circ$	1 – 1		937
	350	849.799	165.65404 – 283.32908	$3p^2 - 3p3d$	$^3P - ^3D^\circ$	2 – 3		937
	200	850.392	165.65404 – 283.24687	$3p^2 - 3p3d$	$^3P - ^3D^\circ$	2 – 2		937
	90	851.091	165.65404 – 283.15004	$3p^2 - 3p3d$	$^3P - ^3D^\circ$	2 – 1		937
	120	860.479	165.18539 – 281.39992	$3p^2 - 3p3d$	$^3P - ^3P^\circ$	1 – 0		937
	90	861.531	165.18539 – 281.25785	$3p^2 - 3p3d$	$^3P - ^3P^\circ$	1 – 1		937
	150	863.300	165.18539 – 281.02000	$3p^2 - 3p3d$	$^3P - ^3P^\circ$	1 – 2		937
	90	865.026	165.65404 – 281.25785	$3p^2 - 3p3d$	$^3P - ^3P^\circ$	2 – 1		937
	150	866.807	165.65404 – 281.02000	$3p^2 - 3p3d$	$^3P - ^3P^\circ$	2 – 2		937
	60	868.336	281.02000 – 396.18292	$3p3d - 3d^2$	$^3P^\circ - ^3P$	2 – 2		937
	25	870.148	281.25785 – 396.18067	$3p3d - 3d^2$	$^3P^\circ - ^3P$	1 – 1		937
	200	875.087	189.39813 – 303.67249	$3s3d - 3s4f$	$^3D - ^3F^\circ$	3 – 4		937
	120	875.143	189.39813 – 303.66580	$3s3d - 3s4f$	$^3D - ^3F^\circ$	2 – 3		937
	90	875.175	189.39813 – 303.66064	$3s3d - 3s4f$	$^3D - ^3F^\circ$	1 – 2		937
	700	877.476	105.19042 – 219.15388	$3s3p - 3s3d$	$^1P^\circ - ^1D$	1 – 2		937
	1	880.022	267.01523 – 380.64721	$3p3d - 3d^2$	$^1D^\circ - ^3F$	2 – 2		937

P IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	25	884.724	283.15004 – 396.1796	$3p3d - 3d^2$	$^3D^\circ - ^3P$	1 – 0		937
	40	885.468	283.24687 – 396.18067	$3p3d - 3d^2$	$^3D^\circ - ^3P$	2 – 1		937
	60	886.101	283.32908 – 396.18292	$3p3d - 3d^2$	$^3D^\circ - ^3P$	3 – 2		937
	120	888.957	194.59175 – 307.08334	$3p^2 - 3p3d$	$^1S - ^1P^\circ$	0 – 1		937
	40	892.460	283.15004 – 395.19984	$3p3d - 3p(^2P^\circ_{1/2})4f$	$^3D^\circ - F[\frac{5}{2}]$	1 – 2		937
	90	892.804	283.24687 – 395.25391	$3p3d - 3p(^2P^\circ_{1/2})4f$	$^3D^\circ - F[\frac{7}{2}]$	2 – 3		937
	40	893.235	283.24687 – 395.19984	$3p3d - 3p(^2P^\circ_{1/2})4f$	$^3D^\circ - F[\frac{5}{2}]$	2 – 3		937
	120	893.451	283.32908 – 395.25391	$3p3d - 3p(^2P^\circ_{1/2})4f$	$^3D^\circ - F[\frac{7}{2}]$	3 – 4		937
	1	901.521	256.61197 – 367.53564	3s4p – 3s7s	$^3P^\circ - ^3S$	1 – 1		937
		902.722	256.76046 – 367.53564	3s4p – 3s7s	$^3P^\circ - ^3S$	2 – 1		937
	1	903.191	257.52266 – 368.24073	3s4p – 3s7s	$^1P^\circ - ^1S$	1 – 0		937
	200	918.497	158.14182 – 267.01523	$3p^2 - 3p3d$	$^1D - ^1D^\circ$	2 – 2		937
	90	919.799	219.15388 – 327.87354	3s3d – 3p4s	$^1D - ^1P^\circ$	2 – 1		937
	1	924.719	307.08334 – 415.22356	3p3d – 3p5p	$^1P^\circ - ^1P$	1 – 1		937
	1	941.363	257.52266 – 363.75186	3s4p – 3s6d	$^1P^\circ - ^1D$	1 – 2		937
1	1000	950.655	0. – 105.19042	$3s^2 - 3s3p$	$g\,^1S - ^1P^\circ$	0 – 1		937
	10	967.741	262.24846 – 365.58298	3p3d – 3s6g	$^3F^\circ - ^3G$	3 – 4		937
	4	970.694	262.56720 – 365.58613	3p3d – 3s6g	$^3F^\circ - ^3G$	4 – 5		937
	25	978.614	257.52266 – 359.70814	3s4p – 3p4p	$^1P^\circ - ^1S$	1 – 0		937
	1	986.569	165.65404 – 267.01523	$3p^2 - 3p3d$	$^3P - ^1D^\circ$	2 – 2		937
	1	1001.811	293.24294 – 393.0608	3s4d – 3s9f	$^3D - ^3F^\circ$	1 – 2		937
	1	1001.875	293.24769 – 393.0608	3s4d – 3s9f	$^3D - ^3F^\circ$	2 – 3		937
	1	1001.950	293.25527 – 393.0608	3s4d – 3s9f	$^3D - ^3F^\circ$	3 – 4		937
	120	1006.229	158.14182 – 257.52266	$3p^2 - 3s4p$	$^1D - ^1P^\circ$	2 – 1		937
	25	1010.417	290.32771 – 389.29650	$3s4f - 3d^2$	$^1F^\circ - ^1D$	3 – 2		937
	1	1012.108	219.15388 – 317.95741	3s3d – 3p4s	$^1D - ^3P^\circ$	2 – 1		937
	4	1016.931	316.88809 – 415.22356	3s5p – 3p5p	$^1P^\circ - ^1P$	1 – 1		937
	40	1023.182	219.15388 – 316.88809	3s3d – 3s5p	$^1D - ^1P^\circ$	2 – 1		937
2	570	1025.563	68.14648 – 165.65404	$3s3p - 3p^2$	$^3P^\circ - ^3P$	1 – 2		937
	4	1025.678	283.15004 – 380.64721	$3p3d - 3d^2$	$^3D^\circ - ^3F$	1 – 2		937
	10	1026.418	283.24687 – 380.67319	$3p3d - 3d^2$	$^3D^\circ - ^3F$	2 – 3		937
	10	1026.874	283.32908 – 380.71265	$3p3d - 3d^2$	$^3D^\circ - ^3F$	3 – 4		937
2	500	1028.096	67.91803 – 165.18539	$3s3p - 3p^2$	$^3P^\circ - ^3P$	0 – 1		937
2	570	1030.517	68.61517 – 165.65404	$3s3p - 3p^2$	$^3P^\circ - ^3P$	2 – 2		937
2	500	1033.111	68.14648 – 164.94144	$3s3p - 3p^2$	$^3P^\circ - ^3P$	1 – 0		937
2	500	1035.517	68.61517 – 165.18539	$3s3p - 3p^2$	$^3P^\circ - ^3P$	2 – 1		937
	4	1045.550	226.89814 – 322.54198	3s4s – 3s5p	$^3S - ^3P^\circ$	1 – 2		937
	1	1048.277	293.24769 – 388.64207	3s4d – 3p4d	$^3D - ^1P^\circ$	2 – 1		937
	200	1049.647	219.15388 – 314.42369	3s3d – 3p3d	$^1D - ^1F^\circ$	2 – 3		937
	60	1054.114	257.52266 – 352.38940	3s4p – 3p4p	$^1P^\circ - ^1D$	1 – 2		937
	1	1063.677	293.25527 – 387.2681	3s4d – 3s8f	$^3D - ^3F^\circ$	3 – 4		937
	120	1064.612	189.39813 – 283.32908	3s3d – 3p3d	$^3D - ^3D^\circ$	3 – 3		937
	25	1065.237	233.99796 – 327.87354	3s4s – 3p4s	$^1S - ^1P^\circ$	0 – 1		937
	90	1065.544	189.39813 – 283.24687	3s3d – 3p3d	$^3D - ^3D^\circ$	2 – 2		937
	40	1066.652	189.39813 – 283.15004	3s3d – 3p3d	$^3D - ^3D^\circ$	1 – 1		937
	1	1071.656	295.32863 – 388.64207	3s4d – 3p4d	$^1D - ^1P^\circ$	2 – 1		937
	4	1077.640	295.32863 – 388.12417	3s4d – 3s8f	$^1D - ^1F^\circ$	2 – 3		937
	1	1079.416	256.55336 – 349.19623	3s4p – 3p4p	$^3P^\circ - ^3S$	0 – 1		937
	10	1080.096	256.61197 – 349.19623	3s4p – 3p4p	$^3P^\circ - ^3S$	1 – 1		937
	4	1081.835	256.76046 – 349.19623	3s4p – 3p4p	$^3P^\circ - ^3S$	2 – 1		937
	1	1083.375	293.24294 – 385.54660	3s4d – 3p4d	$^3D - ^3P^\circ$	1 – 0		937
	4	1084.874	293.24769 – 385.42496	3s4d – 3p4d	$^3D - ^3P^\circ$	2 – 1		937
	120	1086.944	189.39813 – 281.39992	3s3d – 3p3d	$^3D - ^3P^\circ$	1 – 0		937
	10	1087.537	293.25527 – 385.20591	3s4d – 3p4d	$^3D - ^3P^\circ$	3 – 2		937

P IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	150	1088.614	189.39813 – 281.25785	3s3d – 3p3d	^{3}D – ^{3}P°	2 – 1		937
	200	1091.442	189.39813 – 281.02000	3s3d – 3p3d	^{3}D – ^{3}P°	3 – 2		937
	25	1091.874	303.66580 – 395.25391	3s4f – 3p(^{2}P$^\circ_{1/2}$)4f	^{3}F° – F[$\frac{7}{2}$]	3 – 4		937
	10	1092.428	303.66064 – 395.19984	3s4f – 3p(^{2}P$^\circ_{1/2}$)4f	^{3}F° – F[$\frac{5}{2}$]	2 – 3		937
	120	1093.324	226.89814 – 318.36254	3s4s – 3p4s	^{3}S – ^{3}P°	1 – 2		937
	40	1097.790	256.61197 – 347.70436	3s4p – 3p4p	^{3}P° – ^{3}P	1 – 2		937
	120	1098.186	226.89814 – 317.95741	3s4s – 3p4s	^{3}S – ^{3}P°	1 – 1		937
	90	1099.581	256.76046 – 347.70436	3s4p – 3p4p	^{3}P° – ^{3}P	2 – 2		937
	40	1101.070	256.55336 – 347.37399	3s4p – 3p4p	^{3}P° – ^{3}P	0 – 1		937
	60	1101.599	226.89814 – 317.67535	3s4s – 3p4s	^{3}S – ^{3}P°	1 – 0		937
	40	1101.784	256.61197 – 347.37399	3s4p – 3p4p	^{3}P° – ^{3}P	1 – 1		937
	10	1103.129	295.32863 – 385.98004	3s4d – 3p4d	^{1}D – ^{1}F°	2 – 3		937
	60	1103.590	256.76046 – 347.37399	3s4p – 3p4p	^{3}P° – ^{3}P	2 – 1		937
	40	1104.108	256.61197 – 347.18292	3s4p – 3p4p	^{3}P° – ^{3}P	1 – 0		937
	10	1110.126	257.52266 – 347.60239	3s4p – 3s6s	^{1}P° – ^{1}S	1 – 0		937
	120	1111.167	68.14648 – 158.14182	3s3p – 3p^2	^{3}P° – ^{1}D	1 – 2		937
	4	1112.121	256.55336 – 346.47211	3s4p – 3s6s	^{3}P° – ^{3}S	0 – 1		937
	10	1112.842	256.61197 – 346.47211	3s4p – 3s6s	^{3}P° – ^{3}S	1 – 1		937
	40	1114.685	256.76046 – 346.47211	3s4p – 3s6s	^{3}P° – ^{3}S	2 – 1		937
	120	1116.985	68.61517 – 158.14182	3s3p – 3p^2	^{3}P° – ^{1}D	2 – 2		937
	570	1118.551	105.19042 – 194.59175	3s3p – 3p^2	^{1}P° – ^{1}S	1 – 0		937
	40	1122.376	307.08334 – 396.18067	3p3d – 3d^2	^{1}P° – ^{3}P	1 – 1		937
	40	1126.658	293.25527 – 382.01268	3s4d – 3p4d	^{3}D – ^{3}D°	3 – 3		937
	25	1129.154	293.24769 – 381.80962	3s4d – 3p4d	^{3}D – ^{3}D°	2 – 2		937
	120	1131.488	256.76046 – 345.14016	3s4p – 3p4p	^{3}P° – ^{3}D	2 – 3		937
	90	1134.481	256.61197 – 344.75807	3s4p – 3p4p	^{3}P° – ^{3}D	1 – 2		937
	40	1136.396	256.76046 – 344.75807	3s4p – 3p4p	^{3}P° – ^{3}D	2 – 2		937
	60	1136.528	256.55336 – 344.54000	3s4p – 3p4p	^{3}P° – ^{3}D	0 – 1		937
	120	1137.281	219.15388 – 307.08334	3s3d – 3p3d	^{1}D – ^{1}P°	2 – 1		937
	10	1139.222	256.76046 – 344.54000	3s4p – 3p4p	^{3}P° – ^{3}D	2 – 1		937
	1	1146.331	257.52266 – 344.75807	3s4p – 3p4p	^{1}P° – ^{3}D	1 – 2		937
	4	1149.190	257.52266 – 344.54000	3s4p – 3p4p	^{1}P° – ^{3}D	1 – 1		937
	40	1161.87						597
	60	1171.316	267.01523 – 352.38940	3p3d – 3p4p	^{1}D° – ^{1}D	2 – 2		937
	4	1172.996	293.24294 – 378.49337	3s4d – 3s7f	^{3}D – ^{3}F°	1 – 2		937
	4	1173.094	293.24769 – 378.49337	3s4d – 3s7f	^{3}D – ^{3}F°	2 – 3		937
	4	1173.189	293.25527 – 378.49337	3s4d – 3s7f	^{3}D – ^{3}F°	3 – 4		937
	90	1179.022	295.32863 – 380.14504	3s4d – 3p4d	^{1}D – ^{1}D°	2 – 2		937
	10	1186.295	256.61197 – 340.90855	3s4p – 3p4p	^{3}P° – ^{1}P	1 – 1		937
	25	1187.542	105.19042 – 189.39813	3s3p – 3s3d	^{1}P° – ^{3}D	1 – 2		937
	40	1191.055	233.99796 – 317.95741	3s4s – 3p4s	^{1}S – ^{3}P°	0 – 1		937
	40	1197.82						597
	150	1199.243	257.52266 – 340.90855	3s4p – 3p4p	^{1}P° – ^{1}P	1 – 1		937
	10	1201.642	295.32863 – 378.54810	3s4d – 3s7f	^{1}D – ^{1}F°	2 – 3		937
	40	1203.41						597
	40	1204.30						597
	200	1206.422	233.99796 – 316.88809	3s4s – 3s5p	^{1}S – ^{1}P°	0 – 1		937
	40	1208.419	262.00527 – 344.75807	3p3d – 3p4p	^{3}F° – ^{3}D	2 – 2		937
	120	1211.052	262.56720 – 345.14016	3p3d – 3p4p	^{3}F° – ^{3}D	4 – 3		937
	60	1211.612	262.00527 – 344.54000	3p3d – 3p4p	^{3}F° – ^{3}D	2 – 1		937
	90	1211.984	262.24846 – 344.75807	3p3d – 3p4p	^{3}F° – ^{3}D	3 – 2		937
	40	1219.495	262.00527 – 344.00644	3p3d – 3s5g	^{3}F° – ^{3}G	2 – 3		937
	40	1223.098	262.24846 – 344.00766	3p3d – 3s5g	^{3}F° – ^{3}G	3 – 4		937
	60	1227.839	262.56720 – 344.01121	3p3d – 3s5g	^{3}F° – ^{3}G	4 – 5		937

P IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	1237.165	314.42369 – 395.25391	3p3d – 3p($^2P^\circ_{1/2}$)4f	$^1F^\circ - F[\frac{7}{2}]$	3 – 4		937
	90	1238.958	256.61197 – 337.32491	3s4p – 3s5d	$^3P^\circ - {}^3D$	1 – 2		937
	60	1239.276	256.55336 – 337.24564	3s4p – 3s5d	$^3P^\circ - {}^3D$	0 – 1		937
	120	1239.587	256.76046 – 337.43226	3s4p – 3s5d	$^3P^\circ - {}^3D$	2 – 3		937
	40	1240.181	256.61197 – 337.24564	3s4p – 3s5d	$^3P^\circ - {}^3D$	1 – 1		937
	40	1241.246	256.76046 – 337.32491	3s4p – 3s5d	$^3P^\circ - {}^3D$	2 – 2		937
	60	1242.050	257.52266 – 338.03509	3s4p – 3s5d	$^1P^\circ - {}^1D$	1 – 2		937
	1	1242.456	256.76046 – 337.24564	3s4p – 3s5d	$^3P^\circ - {}^3D$	2 – 1		937
	1	1253.099	257.52266 – 337.32491	3s4p – 3s5d	$^1P^\circ - {}^3D$	1 – 2		937
	10	1278.33	293.25527 – 371.48250	3s4d – 3s7p	$^3D - {}^3P^\circ$	3 – 2		937
	10	1278.38	293.24769 – 371.47160	3s4d – 3s7p	$^3D - {}^3P^\circ$	2 – 1		937
	40	1298.022	303.67249 – 380.71265	3s4f – 3d^2	$^3F^\circ - {}^3F$	4 – 4		937
	40	1298.573	303.66580 – 380.67319	3s4f – 3d^2	$^3F^\circ - {}^3F$	3 – 3		937
	25	1298.931	303.66064 – 380.64721	3s4f – 3d^2	$^3F^\circ - {}^3F$	2 – 2		937
	1	1311.349	295.32863 – 371.58576	3s4d – 3s7p	$^1D - {}^1P^\circ$	2 – 1		937
	25	1327.670	262.00527 – 337.32491	3p3d – 3s5d	$^3F^\circ - {}^3D$	2 – 2		937
	10	1328.826	290.32771 – 365.58298	3s4f – 3s6g	$^1F^\circ - {}^3G$	3 – 4		937
	120	1329.070	262.00527 – 337.24564	3p3d – 3s5d	$^3F^\circ - {}^3D$	2 – 1		937
	25	1330.075	262.24846 – 337.43226	3p3d – 3s5d	$^3F^\circ - {}^3D$	3 – 3		937
	90	1331.981	262.24846 – 337.32491	3p3d – 3s5d	$^3F^\circ - {}^3D$	3 – 2		937
	200	1335.705	303.66580 – 378.53199	3s4f – 3s7g	$^3F^\circ - {}^3G$	3 – 4		937
	1	1346.945	311.18304 – 385.42496	3s5s – 3p4d	$^1S - {}^3P^\circ$	0 – 1		937
	4	1348.479	322.54198 – 396.6996	3s5p – 3s10d	$^3P^\circ - {}^3D$	2 – 3		937
	120	1353.303	267.01523 – 340.90855	3p3d – 3p4p	$^1D^\circ - {}^1P$	2 – 1		937
	1	1361.956	290.32771 – 363.75186	3s4f – 3s6d	$^1F^\circ - {}^1D$	3 – 2		937
	500	1366.695	189.39813 – 262.56720	3s3d – 3p3d	$^3D - {}^3F^\circ$	3 – 4		937
	40	1368.265	233.99796 – 307.08334	3s4s – 3p3d	$^1S - {}^1P^\circ$	0 – 1		937
	400	1372.674	189.39813 – 262.24846	3s3d – 3p3d	$^3D - {}^3F^\circ$	2 – 3		937
	350	1377.282	189.39813 – 262.00527	3s3d – 3p3d	$^3D - {}^3F^\circ$	1 – 2		937
	200	1385.048	293.24769 – 365.44609	3s4d – 3s6f	$^3D - {}^3F^\circ$	2 – 3		937
	40	1385.192	293.25527 – 365.44695	3s4d – 3s6f	$^3D - {}^3F^\circ$	3 – 4		937
	150	1405.013	219.15388 – 290.32771	3s3d – 3s4f	$^1D - {}^1F^\circ$	2 – 3		937
	10	1408.055	267.01523 – 338.03509	3p3d – 3s5d	$^1D^\circ - {}^1D$	2 – 2		937
	25	1412.076	295.32863 – 366.14637	3s4d – 3s6f	$^1D - {}^1F^\circ$	2 – 3		937
	1	1426.180	295.32863 – 365.44609	3s4d – 3s6f	$^1D - {}^3F^\circ$	2 – 3		937
	1	1436.114	322.54198 – 392.1745	3s5p – 3s9d	$^3P^\circ - {}^3D$	2 – 3		937
	90	1466.787	281.02000 – 349.19623	3p3d – 3p4p	$^3P^\circ - {}^3S$	2 – 1		937
	150	1467.427	0. – 68.14648	3s^2 – 3s3p	$g\,^1S - {}^3P^\circ$	0 – 1		937
	90	1467.898	189.39813 – 257.52266	3s3d – 3s4p	$^3D - {}^1P^\circ$	2 – 1		937
	60	1471.926	281.25785 – 349.19623	3p3d – 3p4p	$^3P^\circ - {}^3S$	1 – 1		937
	40	1475.013	281.39992 – 349.19623	3p3d – 3p4p	$^3P^\circ - {}^3S$	0 – 1		937
	500	1484.507	189.39813 – 256.76046	3s3d – 3s4p	$^3D - {}^3P^\circ$	3 – 2		937
	400	1487.788	189.39813 – 256.61197	3s3d – 3s4p	$^3D - {}^3P^\circ$	2 – 1		937
	300	1489.098	189.39813 – 256.55336	3s3d – 3s4p	$^3D - {}^3P^\circ$	1 – 0		937
	90	1499.602	281.02000 – 347.70436	3p3d – 3p4p	$^3P^\circ - {}^3P$	2 – 2		937
	10	1504.970	281.25785 – 347.70436	3p3d – 3p4p	$^3P^\circ - {}^3P$	1 – 2		937
	60	1507.067	281.02000 – 347.37399	3p3d – 3p4p	$^3P^\circ - {}^3P$	2 – 1		937
	25	1515.751	281.39992 – 347.37399	3p3d – 3p4p	$^3P^\circ - {}^3P$	0 – 1		937
	4	1516.316	283.24687 – 349.19623	3p3d – 3p4p	$^3D^\circ - {}^3S$	2 – 1		937
	40	1516.879	281.25785 – 347.18292	3p3d – 3p4p	$^3P^\circ - {}^3P$	1 – 0		937
	40	1527.836	281.02000 – 346.47211	3p3d – 3s6s	$^3P^\circ - {}^3S$	2 – 1		937
	10	1533.401	281.25785 – 346.47211	3p3d – 3s6s	$^3P^\circ - {}^3S$	1 – 1		937
	10	1551.420	283.24687 – 347.70436	3p3d – 3p4p	$^3D^\circ - {}^3P$	2 – 2		937
	90	1553.401	283.32908 – 347.70436	3p3d – 3p4p	$^3D^\circ - {}^3P$	3 – 2		937

P IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	60	1557.054	283.15004 - 347.37399	3p3d - 3p4p	$^3D° - ^3P$	1 - 1		937
	90	1559.407	283.24687 - 347.37399	3p3d - 3p4p	$^3D° - ^3P$	2 - 1		937
	60	1561.700	283.15004 - 347.18292	3p3d - 3p4p	$^3D° - ^3P$	1 - 0		937
	90	1589.042	194.59175 - 257.52266	$3p^2$ - 3s4p	$^1S - ^1P°$	0 - 1		937
	4	1593.466	314.42369 - 377.17998	3p3d - 3s7d	$^1F° - ^1D$	3 - 2		937
	40	1611.300	290.32771 - 352.38940	3s4f - 3p4p	$^1F° - ^1D$	3 - 2		937
	150	1615.078	303.66580 - 365.58298	3s4f - 3s6g	$^3F° - ^3G$	3 - 4		937
	150	1615.162	303.67249 - 365.58613	3s4f - 3s6g	$^3F° - ^3G$	4 - 5		937
	1	1615.382	303.67249 - 365.57807	3s4f - 3s6g	$^3F° - ^3G$	4 - 3		937
	4	1615.681	283.24687 - 345.14016	3p3d - 3p4p	$^3D° - ^3D$	2 - 3		937
	4	1617.833	283.32908 - 345.14016	3p3d - 3p4p	$^3D° - ^3D$	3 - 3		937
	1	1623.155	283.15004 - 344.75807	3p3d - 3p4p	$^3D° - ^3D$	1 - 2		937
	60	1625.719	283.24687 - 344.75807	3p3d - 3p4p	$^3D° - ^3D$	2 - 2		937
	1	1628.065	327.87354 - 389.29650	3p4s - $3d^2$	$^1P° - ^1D$	1 - 2		937
	25	1628.932	283.15004 - 344.54000	3p3d - 3p4p	$^3D° - ^3D$	1 - 1		937
	4	1631.499	283.24687 - 344.54000	3p3d - 3p4p	$^3D° - ^3D$	2 - 1		937
	4	1635.128	307.08334 - 368.24073	3p3d - 3s7s	$^1P° - ^1S$	1 - 0		937
	120	1640.58						597
	40	1653.891	105.19042 - 165.65404	3s3p - $3p^2$	$^1P° - ^3P$	1 - 2		937
	25	1654.199	293.25527 - 353.70750	3s4d - 3s6p	$^3D - ^3P°$	3 - 2		937
	25	1654.918	293.24769 - 353.67327	3s4d - 3s6p	$^3D - ^3P°$	2 - 1		937
	4	1655.191	293.24294 - 353.65902	3s4d - 3s6p	$^3D - ^3P°$	1 - 0		937
	10	1673.612	105.19042 - 164.94144	3s3p - $3p^2$	$^1P° - ^3P$	1 - 0		937
	40	1691.81						597
	40	1697.612	295.32863 - 354.23479	3s4d - 3s6p	$^1D - ^1P°$	2 - 1		937
	4	1741.345	322.54198 - 379.96882	3s5p - 3s8s	$^3P° - ^3S$	2 - 1		937
	1	1772.661	281.02000 - 337.43226	3p3d - 3s5d	$^3P° - ^3D$	2 - 3		937
	1	1797.638	337.43226 - 393.0608	3s5d - 3s9f	$^3D - ^3F°$	3 - 4		937
	1	1831.568	322.43899 - 377.03703	3s5p - 3s7d	$^3P° - ^3D$	1 - 2		937
	1	1832.466	256.61197 - 311.18304	3s4p - 3s5s	$^3P° - ^1S$	1 - 0		937
	4	1834.621	322.54198 - 377.04914	3s5p - 3s7d	$^3P° - ^3D$	2 - 3		937
	10	1848.318	283.32908 - 337.43226	3p3d - 3s5d	$^3D° - ^3D$	3 - 3		937
	1	1848.579	283.15004 - 337.24564	3p3d - 3s5d	$^3D° - ^3D$	1 - 1		937
	4	1849.176	283.24687 - 337.32491	3p3d - 3s5d	$^3D° - ^3D$	2 - 2		937
	250	1862.762	290.32771 - 344.01161	3s4f - 3s5g	$^1F° - ^1G$	3 - 4		937
	120	1862.893	290.32771 - 344.00766	3s4f - 3s5g	$^1F° - ^3G$	3 - 4		937
	200	1863.580	257.52266 - 311.18304	3s4p - 3s5s	$^1P° - ^1S$	1 - 0		937
5	650	1888.523	105.19042 - 158.14182	3s3p - $3p^2$	$^1P° - ^1D$	1 - 2		937
	40	1900.244	307.08334 - 359.70814	3p3d - 3p4p	$^1P° - ^1S$	1 - 0		937
	90	1902.649	256.55336 - 309.11144	3s4p - 3s5s	$^3P° - ^3S$	0 - 1		937
	150	1904.777	256.61197 - 309.11144	3s4p - 3s5s	$^3P° - ^3S$	1 - 1		937
	200	1910.183	256.76046 - 309.11144	3s4p - 3s5s	$^3P° - ^3S$	2 - 1		937
	4	1938.403	257.52266 - 309.11144	3s4p - 3s5s	$^1P° - ^3S$	1 - 1		937
	120	1985.682	293.24294 - 343.60359	3s4d - 3s5f	$^3D - ^3F°$	1 - 2		937
	150	1985.851	293.24769 - 343.60390	3s4d - 3s5f	$^3D - ^3F°$	2 - 3		937
	200	1986.114	293.25527 - 343.60488	3s4d - 3s5f	$^3D - ^3F°$	3 - 4		937
	150	1987.022	295.32863 - 345.65520	3s4d - 3s5f	$^1D - ^1F°$	2 - 3		937
	1	1996.443	338.03509 - 388.12417	3s5d - 3s8f	$^1D - ^1F°$	2 - 3		937

PHOSPHORUS V (P^{4+}), Z = 15
Ground State $1s^22s^22p^63s(^2S_{1/2})$ (11 electrons)
Ionization Potential 524 462.9 cm^{-1}; 65.026 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	12	209.964	0.00000 – 476.2639	$2p^63s - 2p^68p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		524
	12	217.214	0.00000 – 460.3863	$2p^63s - 2p^67p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		524
	30	229.819	0.00000 – 435.12244	$2p^63s - 2p^66p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		524
	4	252.959	89.44725 – 484.7682	$2p^63p - 2p^69s$	${}^2P^o - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		524
	80	255.587	0.00000 – 391.25191	$2p^63s - 2p^65p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		524
	50	255.674	0.00000 – 391.11807	$2p^63s - 2p^65p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{1}{2}$		524
		255.681	89.44725 – 480.5601	$2p^63p - 2p^68d$	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	524
	12	260.619	89.44725 – 473.1613	$2p^63p - 2p^68s$	${}^2P^o - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		524
	30	264.358	88.65187 – 466.9361	$2p^63p - 2p^67d$	${}^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		524
	50	264.911	89.44725 – 466.9361	$2p^63p - 2p^67d$	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		524
	12	272.513	88.65187 – 455.60253	$2p^63p - 2p^67s$	${}^2P^o - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		524
	30	273.112	89.44725 – 455.60253	$2p^63p - 2p^67s$	${}^2P^o - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		524
	50	279.965	88.65187 – 445.8388	$2p^63p - 2p^66d$	${}^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		524
	80	280.593	89.44725 – 445.8388	$2p^63p - 2p^66d$	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		524
	50	295.392	88.65187 – 427.18541	$2p^63p - 2p^66s$	${}^2P^o - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		524
	80	296.085	89.44725 – 427.18541	$2p^63p - 2p^66s$	${}^2P^o - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		524
	110	310.578	88.65187 – 410.63553	$2p^63p - 2p^65d$	${}^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		524
	150	311.342	89.44725 – 410.63867	$2p^63p - 2p^65d$	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		524
	300	328.470	0.00000 – 304.44528	$2p^63s - 2p^64p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		524
	250	328.775	0.00000 – 304.16087	$2p^63s - 2p^64p$	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{1}{2}$		524
	4	332.02	204.20604 – 505.3869	$2p^63d - 2p^612f$	${}^2D - {}^2F^o$	$\frac{5}{2}-\frac{7}{2}$		524
	12	336.072	204.20604 – 501.7585	$2p^63d - 2p^611f$	${}^2D - {}^2F^o$	$\frac{5}{2}-\frac{7}{2}$		524
	30	341.549	204.20604 – 496.9870	$2p^63d - 2p^610f$	${}^2D - {}^2F^o$	$\frac{5}{2}-\frac{7}{2}$		524
	150	347.234	88.65187 – 376.64525	$2p^63p - 2p^65s$	${}^2P^o - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		524
	200	348.196	89.44725 – 376.64525	$2p^63p - 2p^65s$	${}^2P^o - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		524
	50	349.242	204.20604 – 490.5376	$2p^63d - 2p^69f$	${}^2D - {}^2F^o$	$\frac{5}{2}-\frac{7}{2}$		524
	4	353.763	204.20604 – 486.8922	$2p^63d - 2p^69p$	${}^2D - {}^2P^o$	$\frac{5}{2}-\frac{3}{2}$		524
	80	360.600	204.20604 – 481.5194	$2p^63d - 2p^68f$	${}^2D - {}^2F^o$	$\frac{5}{2}-\frac{7}{2}$		524
	12	367.588	204.20604 – 476.2639	$2p^63d - 2p^68p$	${}^2D - {}^2P^o$	$\frac{5}{2}-\frac{3}{2}$		524
	110	378.561	204.20604 – 468.36351	$2p^63d - 2p^67f$	${}^2D - {}^2F^o$	$\frac{5}{2}-\frac{7}{2}$		524
	250	389.496	88.65187 – 345.39562	$2p^63p - 2p^64d$	${}^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		524
	50	390.371	204.20604 – 460.3863	$2p^63d - 2p^67p$	${}^2D - {}^2P^o$	$\frac{5}{2}-\frac{3}{2}$		524
	300	390.699	89.44725 – 345.40075	$2p^63p - 2p^64d$	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		524
	150	410.029	204.20604 – 448.09023	$2p^63d - 2p^66f$	${}^2D - {}^2F^o$	$\frac{5}{2}-\frac{7}{2}$		524
	80	433.056	204.20604 – 435.12244	$2p^63d - 2p^66p$	${}^2D - {}^2P^o$	$\frac{5}{2}-\frac{3}{2}$		524
	50	433.173	204.19899 – 435.04896	$2p^63d - 2p^66p$	${}^2D - {}^2P^o$	$\frac{3}{2}-\frac{1}{2}$		524
	1	467.448	272.95927 – 486.8922	$2p^64s - 2p^69p$	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		524
	375	475.598	204.20604 – 414.46773	$2p^63d - 2p^65f$	${}^2D - {}^2F^o$	$\frac{5}{2}-\frac{7}{2}$		524
	30	489.695	0.00000 – 204.19899	$2p^63s - 2p^63d$	$g^2S - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	F	524
	12	491.872	272.95927 – 476.2639	$2p^64s - 2p^68p$	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		524
	4	491.944	272.95927 – 476.2344	$2p^64s - 2p^68p$	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{1}{2}$		524
	12	533.541	272.95927 – 460.3863	$2p^64s - 2p^67p$	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		524
	4	533.672	272.95927 – 460.3416	$2p^64s - 2p^67p$	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{1}{2}$		524
	110	534.627	204.20604 – 391.25191	$2p^63d - 2p^65p$	${}^2D - {}^2P^o$	$\frac{5}{2}-\frac{3}{2}$		524
	80	534.986	204.19899 – 391.11807	$2p^63d - 2p^65p$	${}^2D - {}^2P^o$	$\frac{3}{2}-\frac{1}{2}$		524
	520	542.572	88.65187 – 272.95927	$2p^63p - 2p^64s$	${}^2P^o - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		524
	600	544.923	89.44725 – 272.95927	$2p^63p - 2p^64s$	${}^2P^o - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		524
	1	566.904	304.16087 – 480.5601	$2p^64p - 2p^68d$	${}^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		524
	1	567.810	304.44528 – 480.5601	$2p^64p - 2p^68d$	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		524
	1	591.714	304.16087 – 473.1613	$2p^64p - 2p^68s$	${}^2P^o - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		524
	4	592.712	304.44528 – 473.1613	$2p^64p - 2p^68s$	${}^2P^o - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		524
	1	614.352	304.16087 – 466.9361	$2p^64p - 2p^67d$	${}^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		524
	4	615.421	304.44528 – 466.9361	$2p^64p - 2p^67d$	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		524
	12	616.668	272.95927 – 435.12244	$2p^64s - 2p^66p$	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$		524

P V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	12	616.952	272.95927 – 435.04896	$2p^64s - 2p^66p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		524
	1	660.316	304.16087 – 455.60253	$2p^64p - 2p^67s$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		524
	4	661.566	304.44528 – 455.60253	$2p^64p - 2p^67s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		524
	450	673.899	204.20604 – 352.59424	$2p^63d - 2p^64f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		524
	12	705.833	304.16087 – 445.8388	$2p^64p - 2p^66d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		524
	30	707.241	304.44528 – 445.8388	$2p^64p - 2p^66d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		524
	1	724.688	352.59424 – 490.5847	$2p^64f - 2p^69g$	$^2F^\circ - ^2G$	$\frac{7}{2}-\frac{9}{2}$		524
	1	734.65	345.40075 – 481.5194	$2p^64d - 2p^68f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		524
	1	764.157	345.40075 – 476.2639	$2p^64d - 2p^68p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		524
	1	775.254	352.59424 – 481.5842	$2p^64f - 2p^68g$	$^2F^\circ - ^2G$	$\frac{7}{2}-\frac{9}{2}$		524
	4	812.843	304.16087 – 427.18541	$2p^64p - 2p^66s$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		524
	1	813.241	345.40075 – 468.36351	$2p^64d - 2p^67f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		524
	12	814.732	304.44528 – 427.18541	$2p^64p - 2p^66s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		524
	12	845.370	272.95927 – 391.25191	$2p^64s - 2p^65p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		524
	4	846.299	272.95927 – 391.11807	$2p^64s - 2p^65p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		524
	4	863.095	352.59424 – 468.45620	$2p^64f - 2p^67g$	$^2F^\circ - ^2G$	$\frac{7}{2}-\frac{9}{2}$		524
	450	865.446	88.65187 – 204.19899	$2p^63p - 2p^63d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		524
	12	869.683	345.40075 – 460.3863	$2p^64d - 2p^67p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		524
	4	869.974	345.39562 – 460.3416	$2p^64d - 2p^67p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		524
	600	871.394	89.44725 – 204.20604	$2p^63p - 2p^63d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		524
		871.446	89.44725 – 204.19899	$2p^63p - 2p^63d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		524
	1	874.568	352.59424 – 466.9361	$2p^64f - 2p^67d$	$^2F^\circ - ^2D$	$\frac{7}{2}-\frac{5}{2}$		524
	1	939.20	304.16087 – 410.63553	$2p^64p - 2p^65d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		524
	4	941.692	304.44528 – 410.63867	$2p^64p - 2p^65d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		524
	50	973.793	345.40075 – 448.09023	$2p^64d - 2p^66f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		524
	250	997.617	204.20604 – 304.44528	$2p^63d - 2p^64p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		524
	150	1000.381	204.19899 – 304.16087	$2p^63d - 2p^64p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		524
	30	1045.631	352.59424 – 448.23028	$2p^64f - 2p^66g$	$^2F^\circ - ^2G$	$\frac{7}{2}-\frac{9}{2}$		524
	50	1114.550	345.40075 – 435.12244	$2p^64d - 2p^66p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		524
	12	1115.413	345.39562 – 435.04896	$2p^64d - 2p^66p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		524
	900	1117.978	0.00000 – 89.44725	$2p^63s - 2p^63p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		524
	700	1128.007	0.00000 – 88.65187	$2p^63s - 2p^63p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		524
	150	1379.615	304.16087 – 376.64525	$2p^64p - 2p^65s$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		524
	250	1385.048	304.44528 – 376.64525	$2p^64p - 2p^65s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		524
	4	1410.795	410.63553 – 481.5194	$2p^65d - 2p^68f$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		524
	375	1447.827	345.40075 – 414.46773	$2p^64d - 2p^65f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		524
	1	1550.768	391.11807 – 455.60253	$2p^65p - 2p^67s$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		524
	4	1554.001	391.25191 – 455.60253	$2p^65p - 2p^67s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		524
	450	1610.499	352.59424 – 414.68679	$2p^64f - 2p^65g$	$^2F^\circ - ^2G$	$\frac{7}{2}-\frac{9}{2}$		524
	4	1710.065	376.64525 – 435.12244	$2p^65s - 2p^66p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		524
	1	1712.212	376.64525 – 435.04896	$2p^65s - 2p^66p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		524
	50	1722.856	352.59424 – 410.63867	$2p^64f - 2p^65d$	$^2F^\circ - ^2D$	$\frac{7}{2}-\frac{5}{2}$		524
	12	1732.315	410.63867 – 468.36351	$2p^65d - 2p^67f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		524
	1	1831.935	391.25191 – 445.8388	$2p^65p - 2p^66d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		524
	4	1852.241	414.46773 – 468.45620	$2p^65f - 2p^67g$	$^2F^\circ - ^2G$	$\frac{7}{2}-\frac{9}{2}$		524
	30	1859.330	414.68679 – 468.46952	$2p^65g - 2p^67h$	$^2G - ^2H^\circ$	$\frac{9}{2}-\frac{11}{2}$		524

PHOSPHORUS VI (P^{5+}), Z = 15
Ground State $1s^22s^22p^6(^1S_0)$ (10 electrons)
Ionization Potential 1 777 902 cm^{-1}; 220.434 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	61.622	0.0 – 1622.8	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})5d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		249
	50	61.869	0.0 – 1616.32	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})5d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		249
	50	61.970	0.0 – 1613.68	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})5d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		249
	150	65.308	0.0 – 1531.21	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})4d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		249
	350	65.640	0.0 – 1523.46	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		249
	350	65.940	0.0 – 1516.53	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		249
	50	69.121	0.0 – 1446.74	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})4s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		249
	400	74.951	0.0 – 1334.1164	$2s^22p^6 - 2s^22p^5(^2P^\circ)3d$	$g^1S - {}^1P^\circ$	0 – 1		249
	200	75.648	0.0 – 1321.9669	$2s^22p^6 - 2s^22p^5(^2P^\circ)3d$	$g^1S - {}^3D^\circ$	0 – 1		249
	50	76.534	0.0 – 1306.6058	$2s^22p^6 - 2s^22p^5(^2P^\circ)3d$	$g^1S - {}^3P^\circ$	0 – 1		249
	500	90.647	0.0 – 1103.0661	$2s^22p^6 - 2s^22p^5(^2P^\circ)3s$	$g^1S - {}^1P^\circ$	0 – 1		249
	500	91.471	0.0 – 1093.2400	$2s^22p^6 - 2s^22p^5(^2P^\circ)3s$	$g^1S - {}^3P^\circ$	0 – 1		249
	3	436.53	1308.4433 – 1537.523	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3P^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		734
	1	441.08	1310.8406 – 1537.557	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{7}{2}]$	4 – 3		734
	50	447.351	1305.7463 – 1529.284	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	0 – 1		734
	80	448.850	1306.6058 – 1529.400	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		734
	60	448.928	1314.810 – 1537.557	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		734
	20	449.08	1306.6058 – 1529.284	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		734
	2	450.67	1308.4433 – 1530.339	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		734
	100	450.900	1308.4433 – 1530.221	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		734
	30	452.59	1308.4433 – 1529.400	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		734
	10	452.835	1316.7544 – 1537.581	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^1F^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		734
	20	454.537	1310.8406 – 1530.843	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	4 – 4		734
	300	456.430	1310.8406 – 1529.932	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 5		734
	60	457.498	1312.2478 – 1530.827	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 3		734
	100	459.347	1312.2478 – 1529.949	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		734
	100	462.926	1314.810 – 1530.827	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		734
	60	463.605	1321.8514 – 1537.557	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^1D^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		734
	30	463.735	1321.9669 – 1537.607	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		734
	10	463.981	1314.810 – 1530.339	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		734
	200	465.376	1322.7005 – 1537.581	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		734
	120	466.864	1323.3284 – 1537.523	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		734
	150	467.098	1316.7544 – 1530.843	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		734
	70	468.464	1316.7544 – 1530.221	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		734
	60	469.052	1316.7544 – 1529.949	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		734
	150	478.518	1321.8514 – 1530.827	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1D^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		734
	5	479.648	1321.8514 – 1530.339	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		734
	100	479.910	1321.9669 – 1530.339	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		734
	50	480.439	1322.7005 – 1530.843	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		734
	5	481.878	1322.7005 – 1530.221	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		734
	4	482.083	1321.9669 – 1529.400	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		734
	2	482.355	1321.9669 – 1529.284	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		734
	40	483.340	1323.3284 – 1530.221	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		734
	4	485.269	1323.3284 – 1529.400	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		734
	100	509.619	1334.1164 – 1530.339	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1P^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		734
	100	512.066	1334.1164 – 1529.400	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		734
	200	669.792	1093.2400 – 1242.5385	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - {}^1S$	1 – 0		734
	400	716.98	1103.0661 – 1242.5385	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^1P^\circ - {}^1S$	1 – 0		734
	100	721.76	1195.5664 – 1334.1164	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^1P - {}^1P^\circ$	1 – 1		734
	60	728.34	1185.4020 – 1322.7005	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - {}^3D^\circ$	3 – 3		734
	500	729.568	1171.3762 – 1308.4433	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3S - {}^3P^\circ$	1 – 2		734
	80	731.35	1186.5954 – 1323.3284	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - {}^3D^\circ$	2 – 2		734
	5	738.71	1186.5954 – 1321.9669	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - {}^3D^\circ$	2 – 1		734
	400	739.48	1171.3762 – 1306.6058	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3S - {}^3P^\circ$	1 – 1		734

P VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	150	744.21	1171.3762 – 1305.7463	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3S - ^3P^\circ$	1 – 0		734
	10	745.91	1189.2642 – 1323.3284	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - ^3D^\circ$	1 – 2		734
	30	753.564	1189.2642 – 1321.9669	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - ^3D^\circ$	1 – 1		734
	70	768.787	1193.2534 – 1323.3284	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^1D - ^3D^\circ$	2 – 2		734
	100	788.359	1185.4020 – 1312.2478	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - ^3F^\circ$	3 – 3		734
	250	791.860	1195.5664 – 1321.8514	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^1P - ^1D^\circ$	1 – 2		734
		795.846	1186.5954 – 1312.2478	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - ^3F^\circ$	2 – 3		734
	40	796.52	1189.2642 – 1314.810	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - ^3F^\circ$	1 – 2		734
	40	796.66	1197.8034 – 1323.3284	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3P - ^3D^\circ$	2 – 2		734
	500	797.203	1185.4020 – 1310.8406	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3D - ^3F^\circ$	3 – 4		734
	150	803.989	1198.9486 – 1323.3284	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3P - ^3D^\circ$	1 – 2		734
	20	806.14	1197.8034 – 1321.8514	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^3P - ^1D^\circ$	2 – 2		734
	400	809.710	1193.2534 – 1316.7544	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^1D - ^1F^\circ$	2 – 3		734
	150	868.135	1193.2534 – 1308.4433	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^1D - ^3P^\circ$	2 – 2		734
	100	916.139	1089.7946 – 1198.9486	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - ^3P$	2 – 1		734
	150	925.852	1089.7946 – 1197.8034	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - ^3P$	2 – 2		734
	30	946.00	1093.2400 – 1198.9486	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - ^3P$	1 – 1		734
	150	955.170	1093.2400 – 1197.9334	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - ^3P$	1 – 0		734
	80	956.359	1093.2400 – 1197.8034	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - ^3P$	1 – 2		734
	200	980.99	1097.0121 – 1198.9486	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - ^3P$	0 – 1		734
	500	999.870	1093.2400 – 1193.2534	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - ^1D$	1 – 2		734
	200	1005.35	1089.7946 – 1189.2642	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - ^3D$	2 – 1		734
	100	1014.675	1097.0121 – 1195.5664	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - ^1P$	0 – 1		734
		1033.049	1089.7946 – 1186.5954	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - ^3D$	2 – 2		734
	250	1041.404	1093.2400 – 1189.2642	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - ^3D$	1 – 1		734
	400	1042.942	1103.0661 – 1198.9486	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^1P^\circ - ^3P$	1 – 1		734
	250	1045.944	1089.7946 – 1185.4020	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - ^3D$	2 – 3		734
	350	1055.542	1103.0661 – 1197.8034	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^1P^\circ - ^3P$	1 – 2		734
	600	1071.215	1093.2400 – 1186.5954	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - ^3D$	1 – 2		734
	150	1081.078	1103.0661 – 1195.5664	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^1P^\circ - ^1P$	1 – 1		734
	80	1083.986	1097.0121 – 1189.2642	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - ^3D$	0 – 1		734
	30	1091.97	1242.5385 – 1334.1164	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)3d$	$^1S - ^1P^\circ$	0 – 1		734
	100	1108.82	1103.0661 – 1193.2534	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^1P^\circ - ^1D$	1 – 2		734
	900	1225.770	1089.7946 – 1171.3762	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - ^3S$	2 – 1		734
	500	1279.814	1093.2400 – 1171.3762	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - ^3S$	1 – 1		734
		1344.735	1097.0121 – 1171.3762	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)3p$	$^3P^\circ - ^3S$	0 – 1		734

PHOSPHORUS VII (P^{6+}), Z = 15
Ground State $1s^22s^22p^5(^2P^\circ_{3/2})$ (9 electrons)
Ionization Potential 2 123 100 cm^{-1}; 263.23 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	54.708	0.0 – 1827.89	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		249
	100	54.887	7.268 – 1829.19	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		249
	50	56.174	0.0 – 1780.19	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		249
	10	56.282	7.268 – 1784.03	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		249
	120	56.322	0.0 – 1775.51	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		249
	35	58.972	0.0 – 1695.72	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		249

P VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	15	59.028	7.268 – 1701.38	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		249
	150	62.245	0.0 – 1606.55	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		249
	50	62.515	7.268 – 1606.88	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		249
	150	64.286	0.0 – 1555.56	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		249
	250	64.361	0.0 – 1553.74	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		249
	150	64.579	0.0 – 1548.48	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		249
	100	64.587	7.268 – 1555.56	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		249
	200	64.635	7.268 – 1554.42	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		249
	150	66.432	0.0 – 1505.3	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		249
	50	66.488	7.268 – 1511.31	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		249
	100	66.576	0.0 – 1502.04	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		249
	150	66.691	7.268 – 1506.73	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		249
	50	67.989	454.732 – 1925.56	$2s2p^6 - 2s2p^5(^3P^\circ)3d$	${}^2S - 4^\circ$	$\frac{1}{2}-\frac{3}{2}$		249
	50	68.147	454.732 – 1922.15	$2s2p^6 - 2s2p^5(^3P^\circ)3d$	${}^2S - 3^\circ$	$\frac{1}{2}-\frac{3}{2}$		249
	100	72.684	0.0 – 1375.81	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		249
	100	73.070	7.268 – 1375.81	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		249
	450	75.924	0.0 – 1317.11	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		249
	200	76.344	7.268 – 1317.13	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		249
	250	77.969	0.0 – 1282.55	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		249
	400	78.285	0.0 – 1277.38	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		249
	150	78.414	7.268 – 1282.55	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		249
	250	78.734	7.268 – 1277.38	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		249
	50	80.507	454.732 – 1696.86	$2s2p^6 - 2s2p^5(^3P^\circ)3s$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		249
	100	80.813	454.732 – 1692.16	$2s2p^6 - 2s2p^5(^3P^\circ)3s$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		249
	450	219.91	0.0 – 454.732	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		249
	350	223.48	7.268 – 454.732	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		249

PHOSPHORUS VIII (P^{7+}), Z = 15
Ground State $1s^22s^22p^4(^3P_2)$ (8 electrons)
Ionization Potential 2 495 600 cm^{-1}; 309.42 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	120	55.672	0.0 – 1796.24	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		249
	70	55.710	5.757 – 1800.77	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		249
	300	55.876	0.0 – 1789.69	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 2		249
	100	55.926	0.0 – 1788.09	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 1		249
	450	57.042	0.0 – 1753.09	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		249
	350	57.230	5.757 – 1753.09	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		249
	350	58.018	52.254+X – 1775.85+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	${}^1D - {}^1F^\circ$	2 – 3		249
	150	58.506	52.254+X – 1761.48+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	${}^1D - {}^1D^\circ$	2 – 2		249
	50	58.776	52.254+X – 1753.63+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	${}^1D - {}^1P^\circ$	2 – 1		249
	350	59.302	0.0 – 1686.28	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		249
	250	59.516	5.757 – 1685.98	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		249
	80	64.051	0.0 – 1561.26	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	2 – 2		249
	20	64.100	0.0 – 1560.07	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	2 – 1		249
	100	64.337	5.757 – 1560.07	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	1 – 1		249
	300	64.361	5.757 – 1559.5	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	1 – 0		249
	350	65.788	0.0 – 1520.03	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	2 – 3		249
	350	66.051	5.757 – 1519.74	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	1 – 2		249
	300	67.587	52.254+X – 1531.82+X	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	${}^1D - {}^1D^\circ$	2 – 2		249

P VIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	68.384	0.0 – 1462.34	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g\,^3P - {}^3S^\circ$	2 – 1		249
	100	68.385	110.788+X – 1573.07+X	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$^1S - {}^1P^\circ$	0 – 1		249
	100	68.654	5.757 – 1462.34	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g\,^3P - {}^3S^\circ$	1 – 1		249
	850	196.75	52.254+X – 560.48+X	$2s^22p^4 - 2s2p^5$	$^1D - {}^1P^\circ$	2 – 1		751
	200	222.36	110.788+X – 560.48+X	$2s^22p^4 - 2s2p^5$	$^1S - {}^1P^\circ$	0 – 1		751
	500	244.56	0.0 – 408.913	$2s^22p^4 - 2s2p^5$	$g\,^3P - {}^3P^\circ$	2 – 1		751
	350	246.32	5.757 – 411.736	$2s^22p^4 - 2s2p^5$	$g\,^3P - {}^3P^\circ$	1 – 0		751
	1000	247.65	0.0 – 403.806	$2s^22p^4 - 2s2p^5$	$g\,^3P - {}^3P^\circ$	2 – 2		751
	400	248.06	5.757 – 408.913	$2s^22p^4 - 2s2p^5$	$g\,^3P - {}^3P^\circ$	1 – 1		751
	400	249.33	7.826 – 408.913	$2s^22p^4 - 2s2p^5$	$g\,^3P - {}^3P^\circ$	0 – 1		751
	400	251.23	5.757 – 403.806	$2s^22p^4 - 2s2p^5$	$g\,^3P - {}^3P^\circ$	1 – 2		751
	80	261.05	560.48+X – 943.58+X	$2s2p^5 - 2p^6$	$^1P^\circ - {}^1S$	1 – 0		751
		903.	0.0 – 110.788+X	$2s^22p^4 - 2s^22p^4$	$g\,^3P - {}^1S$	2 – 0	F,P	375,225
		952.	5.757 – 110.788+X	$2s^22p^4 - 2s^22p^4$	$g\,^3P - {}^1S$	1 – 0	F,P	375,225
		1708.	52.254+X – 110.788+X	$2s^22p^4 - 2s^22p^4$	$^1D - {}^1S$	2 – 0	F,P	375
		1914.	0.0 – 52.254+X	$2s^22p^4 - 2s^22p^4$	$g\,^3P - {}^1D$	2 – 2	F,P	375,225

PHOSPHORUS IX (P^{8+}), Z = 15
Ground State $1s^22s^22p^3(^4S^\circ_{3/2})$ (7 electrons)
Ionization Potential 2 998 300 cm^{-1}; 371.74 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	150	41.556	76.462+X – 2482.83+X	$2s^22p^3 - 2s^22p^2(^1D)4d$	$^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		249
	350	48.925	0.0 – 2043.95	$2s^22p^3 - 2s2p^3(^5S^\circ)3p$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		249
	200	50.511	0.0 – 1979.75	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		249
	300	50.560	0.0 – 1977.83	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		249
	100	50.626	0.0 – 1975.97	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g\,^4S^\circ - {}^4D$	$\frac{3}{2}-\frac{5}{2}$		249
	450	51.156	76.462+X – 2031.24+X	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		249
	300	51.861	76.462+X – 2004.67+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		249
	100	51.889	75.877+X – 2003.07+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		249
	300	52.160	117.136+X – 2034.32+X	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		249
	150	52.552	76.462+X – 1979.32+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		249
	150	52.709	75.877+X – 1973.09+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$		249
	250	52.980	117.136+X – 2004.67+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		249
	150	54.124	117.136+X – 1965.34+X	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		249
	100	55.066	345.435 – 2161.39	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		249
	100	55.220	350.420 – 2161.39	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		249
	50	55.299	353.030 – 2161.39	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		249
	450	57.083	0.0 – 1751.85	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		249
	350	57.266	0.0 – 1746.25	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		249
	150	57.339	0.0 – 1744.	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		249
	100	57.683	76.462+X – 1810.05+X	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		249
	50	57.711	583.390+X – 2315.24+X	$2s2p^4 - 2s2p^3(^3D^\circ)3d$	$^2P - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		249
	50	61.065	913.355+X – 2549.79+X	$2p^5 - 2s^22p^2(^1S)4d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		249
	50	61.270						249
	50	61.320	475.270+X – 2105.82+X	$2s2p^4 - 2s2p^3(^3D^\circ)3s$	$^2D - {}^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		249
	600	194.63	75.877+X – 589.670+X	$2s^22p^3 - 2s2p^4$	$^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		751
	200	197.04	75.877+X – 583.390+X	$2s^22p^3 - 2s2p^4$	$^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		751
	900	197.27	76.462+X – 583.390+X	$2s^22p^3 - 2s2p^4$	$^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		751
	60	208.08	75.877+X – 556.460+X	$2s^22p^3 - 2s2p^4$	$^2D^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		751
	150	211.16	116.109+X – 589.670+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		751
	300	211.62	117.136+X – 589.670+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		751

P IX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	214.00	116.109+X – 583.390+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		751
	350	214.47	117.136+X – 583.390+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		751
	200	227.08	116.109+X – 556.460+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		751
	300	227.62	117.136+X – 556.460+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		751
	100	228.24	475.270+X – 913.355+X	$2s2p^4 - 2p^5$	$^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		751
	200	232.57	475.315+X – 905.245+X	$2s2p^4 - 2p^5$	$^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		751
	550	250.38	75.877+X – 475.270+X	$2s^22p^3 - 2s2p^4$	$^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		751
	750	250.73	76.462+X – 475.315+X	$2s^22p^3 - 2s2p^4$	$^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		751
	40	278.42	116.109+X – 475.270+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		751
	150	279.18	117.136+X – 475.315+X	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		751
	200	283.26	0.0 – 353.030	$2s^22p^3 - 2s2p^4$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		751
	450	285.37	0.0 – 350.420	$2s^22p^3 - 2s2p^4$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		751
	10	286.70	556.460+X – 905.245+X	$2s2p^4 - 2p^5$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		751
	500	289.49	0.0 – 345.435	$2s^22p^3 - 2s2p^4$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		751
	60	310.70	583.390+X – 905.245+X	$2s2p^4 - 2p^5$	$^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		751
		854.	0.0 – 117.136+X	$2s^22p^3 - 2s^22p^3$	$g\,^4S^\circ - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,225
		861.	0.0 – 116.109+X	$2s^22p^3 - 2s^22p^3$	$g\,^4S^\circ - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	F,P	375,225
		1308.	0.0 – 76.462+X	$2s^22p^3 - 2s^22p^3$	$g\,^4S^\circ - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$	F,P	375,225
		1318.	0.0 – 75.877+X	$2s^22p^3 - 2s^22p^3$	$g\,^4S^\circ - {}^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,225

PHOSPHORUS X (P^{9+}), Z = 15
Ground State $1s^22s^22p^2(^3P_0)$ (6 electrons)
Ionization Potential 3 423 900 cm^{-1}; 424.51 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	36.75	9.055 – 2729.58	$2s^22p^2 - 2s^22p(^2P^\circ)4d$	$g\,^3P - {}^3D^\circ$	2 – 3		249
	10	44.336	9.055 – 2262.66	$2s^22p^2 - 2s2p^2(^4P)3p$	$g\,^3P - {}^3D^\circ$	2 – 3		852
	10	44.367	9.055 – 2262.66	$2s^22p^2 - 2s2p^2(^4P)3p$	$g\,^3P - {}^3D^\circ$	2 – 3		852
	75	45.905	166.58+Y – 2344.97+Y	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^\circ - {}^5P$	2 – 1		249
	125	45.931	166.58+Y – 2343.76+Y	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^\circ - {}^5P$	2 – 2		249
	200	45.963	166.58+Y – 2342.24+Y	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^\circ - {}^5P$	2 – 3		249
		45.992	0. – 2173.04	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g\,^3P - {}^3P^\circ$	0 – 1		949
		46.060	3.685 – 2173.99	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g\,^3P - {}^3P^\circ$	1 – 0		949
		46.079	3.685 – 2173.04	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g\,^3P - {}^3P^\circ$	1 – 1		949
		46.199	9.055 – 2173.04	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g\,^3P - {}^3P^\circ$	2 – 1		949
		46.233	9.055 – 2171.63	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g\,^3P - {}^3P^\circ$	2 – 2		949
		46.255	0. – 2162.41	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g\,^3P - {}^3D^\circ$	0 – 1		949
	450	46.294	3.685 – 2163.5	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g\,^3P - {}^3D^\circ$	1 – 2		249
	450	46.334	9.055 – 2166.8	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g\,^3P - {}^3D^\circ$	2 – 3		249
		46.399	9.055 – 2163.5	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g\,^3P - {}^3D^\circ$	2 – 2		949
	300	46.636	323.195 – 2467.29	$2s2p^3 - 2s2p^2(^2D)3d$	$^3D^\circ - {}^3F$	2 – 3		249
	350	46.769	59.330+X – 2197.5+X	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - {}^1P^\circ$	2 – 1		249
		46.777	59.330+X – 2197.1+X	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - {}^1F^\circ$	2 – 3		949
		46.887	9.055 – 2141.8	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$g\,^3P - {}^3F^\circ$	2 – 2		949
		47.341	59.330+X – 2171.63	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - {}^3P^\circ$	2 – 2		949
	100	47.702	380.155 – 2476.1	$2s2p^3 - 2s2p^2(^2D)3d$	$^3P^\circ - {}^3D$	2 – 3		249
	50	47.896	59.330+X – 2147.19+X	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - {}^1D^\circ$	2 – 2		249
		48.045	59.330+X – 2141.8	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1D - {}^3F^\circ$	2 – 2		949
	50	48.113	119.600+X – 2197.5+X	$2s^22p^2 - 2s^22p(^2P^\circ)3d$	$^1S - {}^1P^\circ$	0 – 1		852

P X — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	48.986	323.245 – 2364.64	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^o - ^3F$	3 – 4		852
	10	49.076	323.195 – 2360.86	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^o - ^3F$	2 – 3		852
	10	49.145	323.410 – 2358.20	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^o - ^3F$	1 – 2		852
	50	49.765	380.155 – 2389.60	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^o - ^3D$	2 – 3		249
	25	49.803	379.930 – 2387.84	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^o - ^3D$	1 – 2		249
	15	49.865	379.930 – 2385.34	$2s2p^3 - 2s2p^2(^4P)3d$	$^3P^o - ^3D$	0 – 1		249
	50	50.671	166.58+Y – 2139.32+Y	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^o - ^5P$	2 – 3		852
	10	50.774	166.58+Y – 2135.05+Y	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^o - ^5P$	2 – 2		852
	10	50.870	166.58+Y – 2132.45+Y	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^o - ^5P$	2 – 1		852
	450	51.155	9.055 – 1963.43	$2s^22p^2 - 2s^22p(^2P^o)3s$	$g\,^3P - ^3P^o$	2 – 2		249
	250	52.158	59.330+X – 1976.578+X	$2s^22p^2 - 2s^22p(^2P^o)3s$	$^1D - ^1P^o$	2 – 1		249
	200	52.594	380.155 – 2281.	$2s2p^3 - 2s2p^2(^2D)3s$	$^3P^o - ^3D$	2 – 3		249
	150	56.597	541.630+X – 2307.97+X	$2s2p^3 - 2s2p^2(^1D)3s$	$^1P^o - ^1D$	1 – 2		249
	150	203.83	0. – 490.585	$2s^22p^2 - 2s2p^3$	$g\,^3P - ^3S^o$	0 – 1		751
	450	205.38	3.685 – 490.585	$2s^22p^2 - 2s2p^3$	$g\,^3P - ^3S^o$	1 – 1		751
	300	207.34	59.330+X – 541.630+X	$2s^22p^2 - 2s2p^3$	$^1D - ^1P^o$	2 – 1		751
	700	207.67	9.055 – 490.585	$2s^22p^2 - 2s2p^3$	$g\,^3P - ^3S^o$	2 – 1		751
	60	233.51	323.410 – 751.640	$2s2p^3 - 2p^4$	$^3D^o - ^3P$	1 – 0		751
	150	234.84	323.195 – 749.010	$2s2p^3 - 2p^4$	$^3D^o - ^3P$	2 – 1		751
	80	234.95	323.410 – 749.010	$2s2p^3 - 2p^4$	$^3D^o - ^3P$	1 – 1		751
	800	235.26	59.330+X – 484.390+X	$2s^22p^2 - 2s2p^3$	$^1D - ^1D^o$	2 – 2		751
	100	236.95	119.600+X – 541.630+X	$2s^22p^2 - 2s2p^3$	$^1S - ^1P^o$	0 – 1		751
	300	238.45	323.245 – 742.605	$2s2p^3 - 2p^4$	$^3D^o - ^3P$	3 – 2		751
	80	263.22	0. – 379.930	$2s^22p^2 - 2s2p^3$	$g\,^3P - ^3P^o$	0 – 1		751
	70	265.62	3.685 – 380.155	$2s^22p^2 - 2s2p^3$	$g\,^3P - ^3P^o$	1 – 2		751
	150	265.79	3.685 – 379.930	$2s^22p^2 - 2s2p^3$	$g\,^3P - ^3P^o$	1 – 0		751
	300	269.47	9.055 – 380.155	$2s^22p^2 - 2s2p^3$	$g\,^3P - ^3P^o$	2 – 2		751
	100	269.64	9.055 – 379.930	$2s^22p^2 - 2s2p^3$	$g\,^3P - ^3P^o$	2 – 1		751
	30	271.11	380.155 – 749.010	$2s2p^3 - 2p^4$	$^3P^o - ^3P$	2 – 1		751
	20	275.74	379.930 – 742.605	$2s2p^3 - 2p^4$	$^3P^o - ^3P$	1 – 2		751
	40	275.91	380.155 – 742.605	$2s2p^3 - 2p^4$	$^3P^o - ^3P$	2 – 2		751
		309.20	0. – 323.410	$2s^22p^2 - 2s2p^3$	$g\,^3P - ^3D^o$	0 – 1		238
	40	312.77	3.685 – 323.410	$2s^22p^2 - 2s2p^3$	$g\,^3P - ^3D^o$	1 – 1		751
	150	312.98	3.685 – 323.195	$2s^22p^2 - 2s2p^3$	$g\,^3P - ^3D^o$	1 – 2		751
	250	318.28	9.055 – 323.245	$2s^22p^2 - 2s2p^3$	$g\,^3P - ^3D^o$	2 – 3		751
	10	396.77	490.585 – 742.605	$2s2p^3 - 2p^4$	$^3S^o - ^3P$	1 – 2		751
		863.	3.685 – 119.600+X	$2s^22p^2 - 2s^22p^2$	$g\,^3P - ^1S$	1 – 0	F,P	375,751
		905.	9.055 – 119.600+X	$2s^22p^2 - 2s^22p^2$	$g\,^3P - ^1S$	2 – 0	F,P	375,751
		1659.	59.330+X – 119.600+X	$2s^22p^2 - 2s^22p^2$	$^1D - ^1S$	2 – 0	F,P	375,751
		1685.	0. – 59.330+X	$2s^22p^2 - 2s^22p^2$	$g\,^3P - ^1D$	0 – 2	F,P	375,751
		1797.	3.685 – 59.330+X	$2s^22p^2 - 2s^22p^2$	$g\,^3P - ^1D$	1 – 2	F,P	375,751
		1989.	9.055 – 59.330+X	$2s^22p^2 - 2s^22p^2$	$g\,^3P - ^1D$	2 – 2	F,P	375,751

PHOSPHORUS XI (P^{10+}), Z = 15
Ground State $1s^22s^22p(^2P^\circ_{1/2})$ (5 electrons)
Ionization Potential 3 868 100 cm^{-1}; 479.59 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	30.15	9.700 – 3326.4	$2s^22p - 2s^2(^1S)5d$	$g^2P^\circ - ^2D$	3/2 - 5/2		852
	10	32.67	316.910 – 3378.1	$2s2p^2 - 2s2p(^1P^\circ)4d$	$^2D - ^2F^\circ$	5/2 - 7/2		852
	100	33.04	186.355+X – 3213.+X	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^4P - ^4D^\circ$	5/2 - 7/2		852
	100	33.15	0. – 3019.	$2s^22p - 2s^2(^1S)4d$	$g^2P^\circ - ^2D$	1/2 - 3/2		852
	150	33.24	9.700 – 3019.	$2s^22p - 2s^2(^1S)4d$	$g^2P^\circ - ^2D$	3/2 - 5/2		852
	10	34.32	316.910 – 3230.7	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2D - ^2F^\circ$	5/2 - 7/2		852
	10	34.37	316.805 – 3226.3	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2D - ^2F^\circ$	3/2 - 5/2		852
	10	39.753	0. – 2515.36	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2S$	1/2 - 1/2		852
	10	39.911	9.700 – 2515.36	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2S$	3/2 - 1/2		852
	50	41.125	9.700 – 2441.3	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - ^2P$	3/2 - 3/2		852
	100	41.998	316.805 – 2697.82	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2D - ^2F^\circ$	3/2 - 5/2		852
	10	42.227	181.395+X – 2549.45+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	3/2 - 3/2		852
	100	42.351	186.355+X – 2547.29+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4P^\circ$	5/2 - 5/2		852
	100	42.409	177.900+X – 2536.+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4D^\circ$	1/2 - 3/2		852
	250	42.471	181.395+X – 2536.+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4D^\circ$	3/2 - 5/2		852
	350	42.483	186.355+X – 2540.5+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - ^4D^\circ$	5/2 - 7/2		852
	500	42.599	0. – 2347.47	$2s^22p - 2s^2(^1S)3d$	$g^2P^\circ - ^2D$	1/2 - 3/2		852
	800	42.764	9.700 – 2348.13	$2s^22p - 2s^2(^1S)3d$	$g^2P^\circ - ^2D$	3/2 - 5/2		852
	50	43.488	559.695+X – 2858.97+X	$2p^3 - 2p^2(^3P)3d$	$^4S^\circ - ^4P$	3/2 - 3/2		249
	70	43.529	559.695+X – 2856.82+X	$2p^3 - 2p^2(^3P)3d$	$^4S^\circ - ^4P$	3/2 - 5/2		249
	10	43.809	426.885 – 2707.51	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2P - ^2D^\circ$	1/2 - 3/2		852
	10	43.894	432.160 – 2709.4	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2P - ^2D^\circ$	3/2 - 5/2		852
	350	44.115	316.910 – 2584.	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2F^\circ$	5/2 - 7/2		852
	250	44.232	316.805 – 2578.	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2F^\circ$	3/2 - 5/2		852
	50	44.987	316.910 – 2540.05	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2D^\circ$	5/2 - 5/2		852
	10	45.690	403.340 – 2593.09	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2S - ^2P^\circ$	1/2 - 1/2		852
	10	45.747	403.340 – 2589.46	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2S - ^2P^\circ$	1/2 - 3/2		852
	400	45.997	0. – 2174.06	$2s^22p - 2s^2(^1S)3s$	$g^2P^\circ - ^2S$	1/2 - 1/2		249
	450	46.203	9.700 – 2174.06	$2s^22p - 2s^2(^1S)3s$	$g^2P^\circ - ^2S$	3/2 - 1/2		249
	100	231.40	0. – 432.160	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	1/2 - 3/2		751
	200	234.25	0. – 426.885	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	1/2 - 1/2		751
	500	236.71	9.700 – 432.160	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	3/2 - 3/2		751
	200	239.71	9.700 – 426.885	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	3/2 - 1/2		751
	100	247.95	0. – 403.340	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2S$	1/2 - 1/2		751
	150	253.90	316.910 – 710.760	$2s2p^2 - 2p^3$	$^2D - ^2P^\circ$	5/2 - 3/2		751
	90	254.04	9.700 – 403.340	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2S$	3/2 - 1/2		751
	70	254.54	316.805 – 709.660	$2s2p^2 - 2p^3$	$^2D - ^2P^\circ$	3/2 - 1/2		751
	70	261.92	177.900+X – 559.695+X	$2s2p^2 - 2p^3$	$^4P - ^4S^\circ$	1/2 - 3/2		751
	150	264.34	181.395+X – 559.695+X	$2s2p^2 - 2p^3$	$^4P - ^4S^\circ$	3/2 - 3/2		751
	200	267.85	186.355+X – 559.695+X	$2s2p^2 - 2p^3$	$^4P - ^4S^\circ$	5/2 - 3/2		751
	80	315.65	0. – 316.805	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2D$	1/2 - 3/2		751
	80	317.20	316.910 – 632.170	$2s2p^2 - 2p^3$	$^2D - ^2D^\circ$	5/2 - 5/2		751
	30	325.31	403.340 – 710.760	$2s2p^2 - 2p^3$	$^2S - ^2P^\circ$	1/2 - 3/2		751
	150	325.51	9.700 – 316.910	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2D$	3/2 - 5/2		751
	10	326.45	403.340 – 709.660	$2s2p^2 - 2p^3$	$^2S - ^2P^\circ$	1/2 - 1/2		751
	20	352.26	426.885 – 710.760	$2s2p^2 - 2p^3$	$^2P - ^2P^\circ$	1/2 - 3/2		751
	20	353.60	426.885 – 709.660	$2s2p^2 - 2p^3$	$^2P - ^2P^\circ$	1/2 - 1/2		751
	20	358.94	432.160 – 710.760	$2s2p^2 - 2p^3$	$^2P - ^2P^\circ$	3/2 - 3/2		751
	20	360.36	432.160 – 709.660	$2s2p^2 - 2p^3$	$^2P - ^2P^\circ$	3/2 - 1/2		751
		487.43	426.885 – 632.040	$2s2p^2 - 2p^3$	$^2P - ^2D^\circ$	1/2 - 3/2		250
		499.98	432.160 – 632.170	$2s2p^2 - 2p^3$	$^2P - ^2D^\circ$	3/2 - 5/2	P	375

PHOSPHORUS XII (P^{11+}), Z = 15
Ground State $1s^22s^2(^1S_0)$ (4 electrons)
Ionization Potential 4 520 100 cm^{-1}; 560.43 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	0	25.788	0.0 - 3878.	$2s^2$ - 2s5p	g^1S - $^1P°$	0 - 1		275
	10	27.049	187.94+X - 3884.9+X	2s2p - 2s5d	$^3P°$ - ^3D	1 - 2		275
	10	27.101	195.09+X - 3884.9+X	2s2p - 2s5d	$^3P°$ - ^3D	2 - 3		275
	0	27.677	493.52+X - 4106.5+X	$2p^2$ - 2p5d	^3P - $^3D°$	2 - 3		275
	10	28.017	541.72 - 4110.9	$2p^2$ - 2p5d	^1D - $^1F°$	2 - 3		275
	30	28.304	195.09+X - 3728.1+X	2s2p - 2p4p	$^3P°$ - ^3P	2 - 2		275
	10	28.549	0.0 - 3502.8	$2s^2$ - 2s4p	g^1S - $^1P°$	0 - 1		275
	10	29.622	359.375 - 3735.4	2s2p - 2p4p	$^1P°$ - ^1D	1 - 2		275
	10	29.970	184.69+X - 3521.3+X	2s2p - 2s4d	$^3P°$ - ^3D	0 - 1		275
	40	29.996	187.94+X - 3521.7+X	2s2p - 2s4d	$^3P°$ - ^3D	1 - 2		275
	60	30.060	195.09+X - 3521.8+X	2s2p - 2s4d	$^3P°$ - ^3D	2 - 3		275
	0	30.667	487.45+X - 3748.5+X	$2p^2$ - 2p4d	^3P - $^3P°$	1 - 1		275
	40	30.722	493.52+X - 3748.5+X	$2p^2$ - 2p4d	^3P - $^3P°$	2 - 2		275
	40	30.749	493.52+X - 3745.7+X	$2p^2$ - 2p4d	^3P - $^3D°$	2 - 3		275
	40	31.090	541.72 - 3758.3	$2p^2$ - 2p4d	^1D - $^1F°$	2 - 3		275
	10	31.327	541.72 - 3733.9	$2p^2$ - 2p4d	^1D - $^1D°$	2 - 2		275
	30	31.527	359.375 - 3531.2	2s2p - 2s4d	$^1P°$ - ^1D	1 - 2		275
	0	32.304	666.1+Y - 3761.7+Y	$2p^2$ - 2p4d	^1S - $^1P°$	0 - 1		275
	30	36.520	187.94+X - 2926.4+X	2s2p - 2p3p	$^3P°$ - ^3P	1 - 2		275
	50	36.562	187.94+X - 2923.+X	2s2p - 2p3p	$^3P°$ - ^3P	1 - 1		275
	80	36.613	195.09+X - 2926.4+X	2s2p - 2p3p	$^3P°$ - ^3P	2 - 2		275
	60	36.655	195.09+X - 2923.+X	2s2p - 2p3p	$^3P°$ - ^3P	2 - 1		275
	40	36.697	187.94+X - 2913.+X	2s2p - 2p3p	$^3P°$ - ^3S	1 - 1		275
	70	36.792	195.09+X - 2913.+X	2s2p - 2p3p	$^3P°$ - ^3S	2 - 1		275
	100	36.975	195.09+X - 2899.7+X	2s2p - 2p3p	$^3P°$ - ^3D	2 - 3		275
	10	37.041	187.94+X - 2887.6+X	2s2p - 2p3p	$^3P°$ - ^3D	1 - 1		275
	10	37.074	195.09+X - 2892.4+X	2s2p - 2p3p	$^3P°$ - ^3D	2 - 2		275
	150	37.287	0.0 - 2681.9+Y	$2s^2$ - 2s3p	g^1S - $^3P°$	0 - 1		852
	150	37.347	0.0 - 2677.6	$2s^2$ - 2s3p	g^1S - $^1P°$	0 - 1		275
	90	38.629	359.375 - 2948.1	2s2p - 2p3p	$^1P°$ - ^1D	1 - 2		275
	120	39.310	184.69+X - 2728.7+X	2s2p - 2s3d	$^3P°$ - ^3D	0 - 1		275
	300	39.354	187.94+X - 2728.9+X	2s2p - 2s3d	$^3P°$ - ^3D	1 - 2		275
	500	39.456	195.09+X - 2729.5+X	2s2p - 2s3d	$^3P°$ - ^3D	2 - 3		275
	40	39.664	359.375 - 2880.6	2s2p - 2p3p	$^1P°$ - ^1P	1 - 1		275
	10	40.157	487.45+X - 2977.8+X	$2p^2$ - 2p3d	^3P - $^3P°$	1 - 1		275
	30	40.171	487.45+X - 2974.8+X	$2p^2$ - 2p3d	^3P - $^3P°$	1 - 2		275
	200	40.301	493.52+X - 2974.8+X	$2p^2$ - 2p3d	^3P - $^3P°$	2 - 2		275
	50	40.348	483.44+X - 2961.8+X	$2p^2$ - 2p3d	^3P - $^3D°$	0 - 1		275
	120	40.388	487.45+X - 2963.5+X	$2p^2$ - 2p3d	^3P - $^3D°$	1 - 2		275
	150	40.429	493.52+X - 2967.+X	$2p^2$ - 2p3d	^3P - $^3D°$	2 - 3		275
	20	40.478	541.72 - 3012.2	$2p^2$ - 2p3d	^1D - $^1P°$	2 - 1		275
	120	40.613	541.72 - 3004.3	$2p^2$ - 2p3d	^1D - $^1F°$	2 - 3		275
	50	41.471	184.69+X - 2596.9+X	2s2p - 2s3s	$^3P°$ - ^3S	0 - 1		275
	60	41.518	187.94+X - 2596.9+X	2s2p - 2s3s	$^3P°$ - ^3S	1 - 1		275
	120	41.634	195.09+X - 2596.9+X	2s2p - 2s3s	$^3P°$ - ^3S	2 - 1		275
	50	41.661	359.375 - 2761.2	2s2p - 2s3d	$^1P°$ - ^1D	1 - 2		852
	70	41.700	541.72 - 2939.8	$2p^2$ - 2p3d	^1D - $^1D°$	2 - 2		275
	20	42.553	487.45+X - 2838.3+X	$2p^2$ - 2p3s	^3P - $^3P°$	1 - 2		275
	40	42.647	493.52+X - 2838.3+X	$2p^2$ - 2p3s	^3P - $^3P°$	2 - 2		275
	20	42.679	487.45+X - 2830.6+X	$2p^2$ - 2p3s	^3P - $^3P°$	1 - 1		275
	140	42.763	541.72 - 2880.2	$2p^2$ - 2p3s	^1D - $^1P°$	2 - 1		275
	20	42.779	493.52+X - 2830.6+X	$2p^2$ - 2p3s	^3P - $^3P°$	2 - 1		275
	10	44.044	359.375 - 2629.9	2s2p - 2s3s	$^1P°$ - ^1S	1 - 0		275
	350	278.26	0.0 - 359.375	$2s^2$ - 2s2p	g^1S - $^1P°$	0 - 1		751

P XII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	327.25	187.94+X - 493.52+X	$2s2p - 2p^2$	$^3P^\circ - ^3P$	1 - 2	P	751
	40	330.31	184.69+X - 487.45+X	$2s2p - 2p^2$	$^3P^\circ - ^3P$	0 - 1		751
	20	333.83	187.94+X - 487.45+X	$2s2p - 2p^2$	$^3P^\circ - ^3P$	1 - 1		751
	150	335.09	195.09+X - 493.52+X	$2s2p - 2p^2$	$^3P^\circ - ^3P$	2 - 2	P	751
	20	338.36	187.94+X - 483.44+X	$2s2p - 2p^2$	$^3P^\circ - ^3P$	1 - 0		751
	50	342.02	195.09+X - 487.45+X	$2s2p - 2p^2$	$^3P^\circ - ^3P$	2 - 1		751
		548.38	359.375 - 541.72	$2s2p - 2p^2$	$^1P^\circ - ^1D$	1 - 2		250

PHOSPHORUS XIII (P^{12+}), Z = 15
Ground State $1s^22s(^2S_{1/2})$ (3 electrons)
Ionization Potential 4 935 000 cm^{-1}; 611.9 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		4.788	0. - 20886.	$1s^22s - 1s2s4p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		624
		4.807	219.46 - 21022.5	$1s^22p - 1s2p4p$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		624
		5.0126	0. - 19949.7	$1s^22s - 1s(2s3p(^1P^\circ))$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		643
		5.0199	219.46 - 20140.2	$1s^22p - 1s2p(^3P^\circ)3p$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		643
		5.0203	219.46 - 20138.6	$1s^22p - 1s2p(^3P^\circ)3p$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		643
		5.0395	219.46 - 20062.7	$1s^22p - 1s2p(^3P^\circ)3p$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		643
		5.3802	2849.4 - 21436.1	$1s^23p - 1s2p(^1P^\circ)3p$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		643
		5.3859	2849.4 - 21416.4	$1s^23p - 1s2p(^1P^\circ)3p$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		643
		5.7642	2846.1 - 20169.2	$1s^23p - 1s2p(^1P^\circ)3p$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		624
		5.7702	2849.4 - 20169.2	$1s^23p - 1s2p(^1P^\circ)3p$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		624
		5.7870	219.46 - 17499.6	$1s^22p - 1s2p^2$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		643
		5.7919	0. - 17265.5	$1s^22s - 1s(2s2p(^1P^\circ))$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		643
		5.8169	0. - 17191.3	$1s^22s - 1s(2s2p(^3P^\circ))$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		643
		5.8230	219.46 - 17392.8	$1s^22p - 1s2p^2$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		643
		5.8316	208.15 - 17356.2	$1s^22p - 1s2p^2$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		643
		5.8365	219.46 - 17353.1	$1s^22p - 1s2p^2$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		643
		5.869	219.46 - 17258.5	$1s^22p - 1s2p^2$	$^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		643
	50	22.64	219.46 - 4636.2	$1s^22p - 1s^28d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		249
	50	23.08	219.46 - 4552.	$1s^22p - 1s^27d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		249
		23.75	208.15 - 4419.	$1s^22p - 1s^26d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	P	275
	10	23.810	219.46 - 4419.	$1s^22p - 1s^26d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		275
	20	25.103	208.15 - 4191.8	$1s^22p - 1s^25d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		275
	20	25.169	219.46 - 4192.3	$1s^22p - 1s^25d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		275
	10	26.608	0. - 3758.3	$1s^22s - 1s^24p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		275
	50	28.044	208.15 - 3774.	$1s^22p - 1s^24d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		275
	70	28.128	219.46 - 3774.6	$1s^22p - 1s^24d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		275
	150	28.66	219.46 - 3709.4	$1s^22p - 1s^24s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		249
	150	35.095	0. - 2849.4	$1s^22s - 1s^23p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		275
	100	35.136	0. - 2846.1	$1s^22s - 1s^23p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		275
	150	37.561	208.15 - 2870.5	$1s^22p - 1s^23d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		275
	200	37.706	219.46 - 2871.5	$1s^22p - 1s^23d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		275
	20	37.723	219.46 - 2870.5	$1s^22p - 1s^23d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		275
	30	38.754	208.15 - 2788.6	$1s^22p - 1s^23s$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		275
	50	38.921	219.46 - 2788.6	$1s^22p - 1s^23s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		275
	10	455.67	0. - 219.46	$1s^22s - 1s^22p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		751
		480.42	0. - 208.15	$1s^22s - 1s^22p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		730

PHOSPHORUS XIV (P^{13+}), Z = 15
Ground State $1s^2(^1S_0)$ (2 electrons)
Ionization Potential 22 720 600 cm^{-1}; 2817.02 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		4.485	0.0 – 22297.	$1s^2$ – 1s7p	g^1S – $^1P^o$	0 – 1		643
		4.520	0.0 – 22124.	$1s^2$ – 1s6p	g^1S – $^1P^o$	0 – 1		643
		4.5745	0.0 – 21860.55	$1s^2$ – 1s5p	g^1S – $^1P^o$	0 – 1	P	643
		4.6779	0.0 – 21377.12	$1s^2$ – 1s4p	g^1S – $^1P^o$	0 – 1	P	643
		4.9180	0.0 – 20333.65	$1s^2$ – 1s3p	g^1S – $^1P^o$	0 – 1		643
		4.9245	0.0 – 20306.34	$1s^2$ – 1s3p	g^1S – $^3P^o$	0 – 1		644
		5.4485	17361.24 – 35714.9	1s2p – $2p^2$	$^1P^o$ – ^1D	1 – 2		643
		5.7600	0.0 – 17361.24	$1s^2$ – 1s2p	g^1S – $^1P^o$	0 – 1	P	446
		5.7931	0.0 – 17261.88	$1s^2$ – 1s2p	g^1S – $^3P^o$	0 – 1	P	446
		5.836	0.0 – 17136.48	$1s^2$ – 1s2s	g^1S – ^3S	0 – 1	F,P	375,918
		31.52	17136.48 – 20309.23	1s2s – 1s3p	^3S – $^3P^o$	1 – 2	P	375
		32.64	17269.49 – 20333.65	1s2s – 1s3p	^1S – $^1P^o$	0 – 1	P	375
		55.76	20328.0+R – 22121.4+R	1s3d – 1s6f	^3D – $^3F^o$	3 – 4	P	087
		55.80	20340.0+K – 22132.1+K	1s3d – 1s6f	^1D – $^1F^o$	2 – 3	P	087
		65.34	20328.0+R – 21858.5+R	1s3d – 1s5f	^3D – $^3F^o$	3 – 4	P	087
		65.39	20340.0+K – 21869.3+K	1s3d – 1s5f	^1D – $^1F^o$	2 – 3	P	087
		91.29	20271.77 – 21367.13	1s3s – 1s4p	^3S – $^3P^o$	1 – 2	P	375
		93.44	20306.90 – 21377.12	1s3s – 1s4p	^1S – $^1P^o$	0 – 1	P	375
		95.56	20328.0+R – 21374.5+R	1s3d – 1s4f	^3D – $^3F^o$	3 – 4	P	087
		95.66	20340.0+K – 21385.4+K	1s3d – 1s4f	^1D – $^1F^o$	2 – 3	P	087
		740.25	17136.48 – 17271.57	1s2s – 1s2p	^3S – $^3P^o$	1 – 2	P	375
		1089.92	17269.49 – 17361.24	1s2s – 1s2p	^1S – $^1P^o$	0 – 1	P	375

PHOSPHORUS XV (P^{14+}), Z = 15
Ground State $1s(^2S_{1/2})$ (1 electron)
Ionization Potential 24 759 900 cm^{-1}; 3069.86 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		4.080	0.0 – 24512.8698	1s – 10p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		4.089	0.0 – 24454.9106	1s – 9p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		4.103	0.0 – 24373.8770	1s – 8p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		4.123	0.0 – 24255.6745	1s – 7p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		4.154	0.0 – 24073.5406	1s – 6p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		4.207	0.0 – 23771.4538	1s – 5p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
	10	4.308	0.0 – 23215.3028	1s – 4p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309,375
	20	4.543	0.0 – 22013.7795	1s – 3p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309,375
	10	4.544	0.0 – 22008.2465	1s – 3p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{1}{2}$	P	309,375
	65	5.381	0.0 – 18582.6788	1s – 2p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309,375
	35	5.387	0.0 – 18564.0090	1s – 2p	g^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{1}{2}$	P	309,375
		16.812	18564.6940 – 24512.8698	2s – 10p	^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		16.863	18582.6788 – 24512.9191	2p – 10d	$^2P^o$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		16.977	18564.6940 – 24454.9106	2s – 9p	^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		17.029	18582.6788 – 24454.9781	2p – 9d	$^2P^o$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		17.214	18564.6940 – 24373.8770	2s – 8p	^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		17.267	18582.6788 – 24373.9732	2p – 8d	$^2P^o$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		17.572	18564.6940 – 24255.6745	2s – 7p	^2S – $^2P^o$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309

P XV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		17.627	18582.6788 – 24255.8181	2p – 7d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		18.153	18564.6940 – 24073.5406	2s – 6p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		18.211	18582.6788 – 24073.7687	2p – 6d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		19.206	18564.6940 – 23771.4538	2s – 5p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		19.271	18582.6788 – 23771.8480	2p – 5d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		21.503	18564.6940 – 23215.3028	2s – 4p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		21.582	18582.6788 – 23216.0727	2p – 4d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		28.993	18564.6940 – 22013.7795	2s – 3p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		29.130	18582.6788 – 22015.6041	2p – 3d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		39.929	22008.4518 – 24512.8698	3s – 10p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		40.014	22013.7795 – 24512.9191	3p – 10d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		40.043	22015.6041 – 24512.9437	3d – 10f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		40.875	22008.4518 – 24454.9106	3s – 9p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		40.964	22013.7795 – 24454.9781	3p – 9d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		40.994	22015.6041 – 24455.0119	3d – 9f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		42.276	22008.4518 – 24373.8770	3s – 8p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		42.369	22013.7795 – 24373.9732	3p – 8d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		42.401	22015.6041 – 24374.0214	3d – 8f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		44.499	22008.4518 – 24255.6745	3s – 7p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		44.602	22013.7795 – 24255.8181	3p – 7d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		44.637	22015.6041 – 24255.8900	3d – 7f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		48.424	22008.4518 – 24073.5406	3s – 6p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		48.544	22013.7795 – 24073.7687	3p – 6d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		48.584	22015.6041 – 24073.8828	3d – 6f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		56.721	22008.4518 – 23771.4538	3s – 5p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		56.881	22013.7795 – 23771.8480	3p – 5d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		56.933	22015.6041 – 23772.0452	3d – 5f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		76.934	23213.0561 – 24512.8698	4s – 10p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		77.064	23215.3028 – 24512.9191	4p – 10d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		77.109	23216.0727 – 24512.9437	4d – 10f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		80.525	23213.0561 – 24454.9106	4s – 9p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		80.666	23215.3028 – 24454.9781	4p – 9d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		80.714	23216.0727 – 24455.0119	4d – 9f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		82.860	22008.4518 – 23215.3028	3s – 4p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		83.174	22013.7795 – 23216.0727	3p – 4d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		83.274	22015.6041 – 23216.4578	3d – 4f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		86.146	23213.0561 – 24373.8770	4s – 8p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		86.306	23215.3028 – 24373.9732	4p – 8d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		86.360	23216.0727 – 24374.0214	4d – 8f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		95.912	23213.0561 – 24255.6745	4s – 7p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		96.106	23215.3028 – 24255.8181	4p – 7d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		96.171	23216.0727 – 24255.8900	4d – 7f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		116.214	23213.0561 – 24073.5406	4s – 6p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		116.487	23215.3028 – 24073.7687	4p – 6d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		116.576	23216.0727 – 24073.8828	4d – 6f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		134.668	23770.3039 – 24512.8698	5s – 10p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		134.868	23771.4538 – 24512.9191	5p – 10d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		134.935	23771.8480 – 24512.9437	5d – 10f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		146.069	23770.3039 – 24454.9106	5s – 9p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		146.301	23771.4538 – 24454.9781	5p – 9d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		146.378	23771.8480 – 24455.0119	5d – 9f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		165.680	23770.3039 – 24373.8770	5s – 8p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		165.970	23771.4538 – 24373.9732	5p – 8d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		166.065	23771.8480 – 24374.0214	5d – 8f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309

P XV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		179.084	23213.0561 – 23771.4538	4s – 5p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		179.680	23215.3028 – 23771.8480	4p – 5d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		179.865	23216.0727 – 23772.0452	4d – 5f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		206.028	23770.3039 – 24255.6745	5s – 7p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		206.456	23771.4538 – 24255.8181	5p – 7d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		206.594	23771.8480 – 24255.8900	5d – 7f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		329.775	23770.3039 – 24073.5406	5s – 6p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		330.781	23771.4538 – 24073.7687	5p – 6d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		331.088	23771.8480 – 24073.8828	5d – 6f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309

SULFUR , Z = 16
Unclassified Lines

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		5.113						624
	103	626.53						123
	10	962.						107
	100	1133.						107
	50	1171.						107
	100	1216.						107
	50	1290.						107
	10	1318.						107
	50	1362.						107
	50	1367.						107
	50	1370.						107
	500	1502.						107
	10	1512.						107
	50	1520.						107
	10	1527.						107
	50	1560.						107
	100	1572.						107
	10	1638.						107
	10	1657.						107
	10	1680.						107
	10	1764.						107
	10	1772.						107
	10	1869.						107
	10	1925.						107
	10	1943.						107
	10	1955.						107
	10	1964.						107

SULFUR I (S^{0+}), Z = 16
Ground State $1s^22s^22p^63s^23p^4(^3P_2)$ (16 electrons)
Ionization Potential 83 558.0 cm^{-1}; 10.360 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		941.0	0.0 – 106.27	$3s^23p^4 - 3s^23p^3(^2P°)8d$	$g^3P - ^3D°$	2 – 3	A	841
		946.3	0.0 – 105.67	$3s^23p^4 - 3s^23p^3(^2P°)7d$	$g^3P - ^3D°$	2 – 3	A	841
		952.2	0.0 – 105.02	$3s^23p^4 - 3s^23p^3(^2P°)8s$	$g^3P - ^3P°$	2 – 2	A	841
		954.7	0.0 – 104.74	$3s^23p^4 - 3s^23p^3(^2P°)6d$	$g^3P - ^3D°$	2 – 3	A	841
		965.0	0.0 – 103.63	$3s^23p^4 - 3s^23p^3(^2P°)7s$	$g^3P - ^3P°$	2 – 2	A	841
		969.5	0.0 – 103.15	$3s^23p^4 - 3s^23p^3(^2P°)5d$	$g^3P - ^3D°$	2 – 3	A	841
		989.9	0.0 – 101.02	$3s^23p^4 - 3s^23p^3(^2P°)6s$	$g^3P - ^3P°$	2 – 2	A	841
		1000.4	0.0 – 99.96	$3s^23p^4 - 3s^23p^3(^2P°)4d$	$g^3P - ^3D°$	2 – 3	A	841
		1049.82	0.0 – 95.254	$3s^23p^4 - 3s^23p^3(^2P°)5s$	$g^3P - ^3P°$	2 – 2	A	841
		1050.30	0.0 – 95.211	$3s^23p^4 - 3s^23p^3(^2P°)5s$	$g^3P - ^3P°$	2 – 1	A	841
		1054.17	0.39609 – 95.254	$3s^23p^4 - 3s^23p^3(^2P°)5s$	$g^3P - ^3P°$	1 – 2	A	841
		1054.81	0.39609 – 95.200	$3s^23p^4 - 3s^23p^3(^2P°)5s$	$g^3P - ^3P°$	1 – 0	A	841

S I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		1056.67	0.57365 – 95.211	$3s^23p^4 - 3s^23p^3(^2P^\circ)5s$	$g^3P - ^3P^\circ$	0 – 1	A	841
		1065.	0.0 – 93.897	$3s^23p^4 - 3s^23p^3(^2D^\circ)5d$	$g^3P - ^3D^\circ$	2 – 3	A	841
		1092.62	0.0 – 91.523	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - ^3P^\circ$	2 – 2	A	841
		1092.99	0.0 – 91.492	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - ^3P^\circ$	2 – 1	A	841
		1094.3	0.0 – 91.383	$3s^23p^4 - 3s^23p^3(^2D^\circ)6s$	$g^3P - ^3D^\circ$	2 – 3	A	841
		1095.59	0.0 – 91.2764	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - ^1D^\circ$	2 – 2	A	841
		1096.6	0.0 – 91.191	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - ^3S^\circ$	2 – 1	A	841
		1097.31	0.39609 – 91.523	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - ^3P^\circ$	1 – 2	A	841
		1097.74	0.39609 – 91.492	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - ^3P^\circ$	1 – 1	A	841
		1097.96	0.39609 – 91.474	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - ^3P^\circ$	1 – 0	A	841
		1099.1	0.39609 – 91.383	$3s^23p^4 - 3s^23p^3(^2D^\circ)6s$	$g^3P - ^3D^\circ$	1 – 2	A	841
		1099.87	0.57365 – 91.492	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - ^3P^\circ$	0 – 1	A	841
		1101.2	0.57365 – 91.383	$3s^23p^4 - 3s^23p^3(^2D^\circ)6s$	$g^3P - ^3D^\circ$	0 – 1	A	841
		1103.60	0.57365 – 91.191	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - ^3S^\circ$	0 – 1	A	841
		1105.	0.0 – 90.498	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - ^3D^\circ$	2 – 3	A	841
		1132.88	9.23858 – 97.510	$3s^23p^4 - 3s^23p^3(^2D^\circ)11d$	$^1D - ^1D^\circ$	2 – 2	A	841
		1134.98	9.23858 – 97.346	$3s^23p^4 - 3s^23p^3(^2D^\circ)12s$	$^1D - ^1D^\circ$	2 – 2	A	841
		1135.37	9.23858 – 97.316	$3s^23p^4 - 3s^23p^3(^2D^\circ)10d$	$^1D - ^1D^\circ$	2 – 2	A	841
		1138.35	9.23858 – 97.083	$3s^23p^4 - 3s^23p^3(^2D^\circ)11s$	$^1D - ^1D^\circ$	2 – 2	A	841
		1138.79	9.23858 – 97.051	$3s^23p^4 - 3s^23p^3(^2D^\circ)9d$	$^1D - ^1D^\circ$	2 – 2	A	841
		1143.07	9.23858 – 96.723	$3s^23p^4 - 3s^23p^3(^2D^\circ)10s$	$^1D - ^1D^\circ$	2 – 2	A	841
		1143.66	9.23858 – 96.678	$3s^23p^4 - 3s^23p^3(^2D^\circ)8d$	$^1D - ^1D^\circ$	2 – 2	A	841
		1149.99	9.23858 – 96.196	$3s^23p^4 - 3s^23p^3(^2D^\circ)9s$	$^1D - ^1D^\circ$	2 – 2	A	841
		1150.82	9.23858 – 96.134	$3s^23p^4 - 3s^23p^3(^2D^\circ)7d$	$^1D - ^1D^\circ$	2 – 2	A	841
		1154.27	9.23858 – 95.8736	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - ^1P^\circ$	2 – 1	A	841
		1155.99	0.0 – 86.506	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^3P^\circ$	2 – 2	A	841
		1156.26	0.0 – 86.486	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^3P^\circ$	2 – 1	A	841
		1157.40	9.23858 – 95.6403	$3s^23p^4 - 3s^23p^3(^2P^\circ)5s$	$^1D - ^1P^\circ$	2 – 1	A	841
		1160.78	9.23858 – 95.388	$3s^23p^4 - 3s^23p^3(^2D^\circ)8s$	$^1D - ^1D^\circ$	2 – 2	A	841
		1161.35	0.39609 – 86.506	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^3P^\circ$	1 – 2	A	841
		1161.57	0.39609 – 86.486	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^3P^\circ$	1 – 1	A	841
		1161.72	0.39609 – 86.475	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^3P^\circ$	1 – 0	A	841
		1161.97	9.23858 – 95.300	$3s^23p^4 - 3s^23p^3(^2D^\circ)6d$	$^1D - ^1D^\circ$	2 – 2	A	841
		1163.98	0.57365 – 86.486	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^3P^\circ$	0 – 1	A	841
		1167.3	0.0 – 85.670	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$g^3P - ^3D^\circ$	2 – 2	A	841
		1168.04	0.0 – 85.6156	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^1D^\circ$	2 – 2	A	841
		1170.5	0.0 – 85.430	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^3S^\circ$	2 – 1	A	841
		1172.7	.39609 – 85.670	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$g^3P - ^3D^\circ$	1 – 2	A	841
	50	1175.28	0.57365 – 85.660	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$g^3P - ^3D^\circ$	0 – 1	A	841,107
		1176.0	0.39609 – 85.430	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^3S^\circ$	1 – 1	A	841
		1179.30	9.23858 – 94.035	$3s^23p^4 - 3s^23p^3(^2D^\circ)7s$	$^1D - ^1D^\circ$	2 – 2	A	841
		1181.59	9.23858 – 93.871	$3s^23p^4 - 3s^23p^3(^2D^\circ)5d$	$^1D - ^1D^\circ$	2 – 2	A	841
		1195.	0.0 – 83.682	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3	A	841
		1202.04	0.0 – 83.192	$3s^23p^4 - 3s^23p^3(^4S^\circ)18d$	$g^3P - ^3D^\circ$	2 – 3	A	841
		1202.61	0.0 – 83.1525	$3s^23p^4 - 3s^23p^3(^4S^\circ)17d$	$g^3P - ^3D^\circ$	2 – 3	A	841
		1203.44	0.0 – 83.0951	$3s^23p^4 - 3s^23p^3(^4S^\circ)16d$	$g^3P - ^3D^\circ$	2 – 3	A	841
	500	1204.35	0.0 – 83.0323	$3s^23p^4 - 3s^23p^3(^4S^\circ)15d$	$g^3P - ^3D^\circ$	2 – 3	A	841,599
		1205.59	0.0 – 82.9469	$3s^23p^4 - 3s^23p^3(^4S^\circ)14d$	$g^3P - ^3D^\circ$	2 – 3	A	841
		1206.13	0.0 – 82.9098	$3s^23p^4 - 3s^23p^3(^4S^\circ)15s$	$g^3P - ^3S^\circ$	2 – 1	A	841
		1207.04	0.0 – 82.8473	$3s^23p^4 - 3s^23p^3(^4S^\circ)13d$	$g^3P - ^3D^\circ$	2 – 3	A	841
		1207.76	0.0 – 82.7979	$3s^23p^4 - 3s^23p^3(^4S^\circ)14s$	$g^3P - ^3S^\circ$	2 – 1	A	841
		1208.86	0.0 – 82.7226	$3s^23p^4 - 3s^23p^3(^4S^\circ)12d$	$g^3P - ^3D^\circ$	2 – 3	A	841
		1209.87	0.0 – 82.6535	$3s^23p^4 - 3s^23p^3(^4S^\circ)13s$	$g^3P - ^3S^\circ$	2 – 1	A	841
		1210.18	0.39609 – 83.0284	$3s^23p^4 - 3s^23p^3(^4S^\circ)15d$	$g^3P - ^3D^\circ$	1 – 2	A	841

S I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		1211.22	0.0 – 82.5614	$3s^23p^4 - 3s^23p^3(^4S°)11d$	$g^3P - {}^3D°$	2 – 3	A	841
		1211.38	0.39609 – 82.9469	$3s^23p^4 - 3s^23p^3(^4S°)14d$	$g^3P - {}^3D°$	1 – 2	A	841
		1212.66	0.0 – 82.4633	$3s^23p^4 - 3s^23p^3(^4S°)12s$	$g^3P - {}^3S°$	2 – 1	A	841
		1212.82	0.39609 – 82.8473	$3s^23p^4 - 3s^23p^3(^4S°)13d$	$g^3P - {}^3D°$	1 – 2	A	841
		1213.99	0.57365 – 82.9469	$3s^23p^4 - 3s^23p^3(^4S°)14d$	$g^3P - {}^3D°$	0 – 1	A	841
	1	1214.295	0.0 – 82.35232	$3s^23p^4 - 3s^23p^3(^4S°)10d$	$g^3P - {}^3D°$	2 – 2		379
	7	1214.318	0.0 – 82.35077	$3s^23p^4 - 3s^23p^3(^4S°)10d$	$g^3P - {}^3D°$	2 – 3		379
		1214.66	0.39609 – 82.7226	$3s^23p^4 - 3s^23p^3(^4S°)12d$	$g^3P - {}^3D°$	1 – 2	A	841
		1214.98	9.23858 – 91.5445	$3s^23p^4 - 3s^23p^3(^2D°)6s$	$^1D - {}^1D°$	2 – 2	A	841
		1215.45	0.57365 – 82.8473	$3s^23p^4 - 3s^23p^3(^4S°)13d$	$g^3P - {}^3D°$	0 – 1	A	841
		1216.45	0.0 – 82.2064	$3s^23p^4 - 3s^23p^3(^4S°)11s$	$g^3P - {}^3S°$	2 – 1	A	841
		1217.05	0.39609 – 82.5614	$3s^23p^4 - 3s^23p^3(^4S°)11d$	$g^3P - {}^3D°$	1 – 2	A	841
		1217.27	0.57365 – 82.7226	$3s^23p^4 - 3s^23p^3(^4S°)12d$	$g^3P - {}^3D°$	0 – 1	A	841
		1218.30	0.57365 – 82.6535	$3s^23p^4 - 3s^23p^3(^4S°)13s$	$g^3P - {}^3S°$	0 – 1	A	841
		1218.51	0.39609 – 82.4633	$3s^23p^4 - 3s^23p^3(^4S°)12s$	$g^3P - {}^3S°$	1 – 1	A	841
	2	1218.571	0.0 – 82.06334	$3s^23p^4 - 3s^23p^3(^4S°)9d$	$g^3P - {}^3D°$	2 – 2		379
	10	1218.595	0.0 – 82.06170	$3s^23p^4 - 3s^23p^3(^4S°)9d$	$g^3P - {}^3D°$	2 – 3		379
		1218.95	9.23858 – 91.2764	$3s^23p^4 - 3s^23p^3(^2D°)4d$	$^1D - {}^1D°$	2 – 2	A	841
		1219.67	0.57365 – 82.5614	$3s^23p^4 - 3s^23p^3(^4S°)11d$	$g^3P - {}^3D°$	0 – 1	A	841
	5	1220.162	0.39609 – 82.35232	$3s^23p^4 - 3s^23p^3(^4S°)10d$	$g^3P - {}^3D°$	1 – 2		379
		1221.13	0.57365 – 82.4633	$3s^23p^4 - 3s^23p^3(^4S°)12s$	$g^3P - {}^3S°$	0 – 1	A	841
	6	1221.753	0.0 – 81.84960	$3s^23p^4 - 3s^23p^3(^4S°)10s$	$g^3P - {}^3S°$	2 – 1		379
		1222.33	0.39609 – 82.2064	$3s^23p^4 - 3s^23p^3(^4S°)11s$	$g^3P - {}^3S°$	1 – 1	A	841
	1	1222.799	0.57365 – 82.35326	$3s^23p^4 - 3s^23p^3(^4S°)10d$	$g^3P - {}^3D°$	0 – 1		379
	1	1224.424	0.39609 – 82.06715	$3s^23p^4 - 3s^23p^3(^4S°)9d$	$g^3P - {}^3D°$	1 – 1		379
	7	1224.479	0.39609 – 82.06334	$3s^23p^4 - 3s^23p^3(^4S°)9d$	$g^3P - {}^3D°$	1 – 2		379
	7	1224.544	0.0 – 81.6634	$3s^23p^4 - 3s^23p^3(^4S°)8d$	$g^3P - {}^3D°$	2 – 3		379
		1224.99	0.57365 – 82.2064	$3s^23p^4 - 3s^23p^3(^4S°)11s$	$g^3P - {}^3S°$	0 – 1	A	841
	4	1227.089	0.57365 – 82.06715	$3s^23p^4 - 3s^23p^3(^4S°)9d$	$g^3P - {}^3D°$	0 – 1		379
	5	1227.692	0.39609 – 81.84960	$3s^23p^4 - 3s^23p^3(^4S°)10s$	$g^3P - {}^3S°$	1 – 1		379
	10	1229.608	0.0 – 81.3267	$3s^23p^4 - 3s^23p^3(^4S°)9s$	$g^3P - {}^3S°$	2 – 1		379
	2	1230.374	0.57365 – 81.84960	$3s^23p^4 - 3s^23p^3(^4S°)10s$	$g^3P - {}^3S°$	0 – 1		379
	4	1230.473	0.39609 – 81.666	$3s^23p^4 - 3s^23p^3(^4S°)8d$	$g^3P - {}^3D°$	1 – 2		379
	1	1233.132	0.57365 – 81.668	$3s^23p^4 - 3s^23p^3(^4S°)8d$	$g^3P - {}^3D°$	0 – 1		379
	3	1233.922	0.39609 – 81.4374	$3s^23p^4 - 3s3p^5$	$g^3P - {}^1P°$	1 – 1		379
	7	1235.624	0.39609 – 81.3267	$3s^23p^4 - 3s^23p^3(^4S°)9s$	$g^3P - {}^3S°$	1 – 1		379
	4	1236.632	0.57365 – 81.4374	$3s^23p^4 - 3s3p^5$	$g^3P - {}^1P°$	0 – 1		379
	5	1238.340	0.57365 – 81.3267	$3s^23p^4 - 3s^23p^3(^4S°)9s$	$g^3P - {}^3S°$	0 – 1		379
		1239.33	0.39609 – 81.08283	$3s^23p^4 - 3s^23p^3(^4S°)7d$	$g^3P - {}^3D°$	1 – 2	A	841
	30	1241.905	0.0 – 80.52199	$3s^23p^4 - 3s^23p^3(^4S°)8s$	$g^3P - {}^3S°$	2 – 1		379
	45	1247.160	0.0 – 80.18254	$3s^23p^4 - 3s^23p^3(^4S°)6d$	$g^3P - {}^3D°$	2 – 3		379
	22	1248.045	0.39609 – 80.52199	$3s^23p^4 - 3s^23p^3(^4S°)8s$	$g^3P - {}^3S°$	1 – 1		379
	12	1250.814	0.57365 – 80.52199	$3s^23p^4 - 3s^23p^3(^4S°)8s$	$g^3P - {}^3S°$	0 – 1		379
	20	1253.297	0.39609 – 80.18578	$3s^23p^4 - 3s^23p^3(^4S°)6d$	$g^3P - {}^3D°$	1 – 1		379
	40	1253.325	0.39609 – 80.18393	$3s^23p^4 - 3s^23p^3(^4S°)6d$	$g^3P - {}^3D°$	1 – 2		379
	22	1256.093	0.57365 – 80.18578	$3s^23p^4 - 3s^23p^3(^4S°)6d$	$g^3P - {}^3D°$	0 – 1		379
	70	1262.8596	0.0 – 79.18537	$3s^23p^4 - 3s^23p^3(^4S°)7s$	$g^3P - {}^3S°$	2 – 1		379
	50	1269.2086	0.39609 – 79.18537	$3s^23p^4 - 3s^23p^3(^4S°)7s$	$g^3P - {}^3S°$	1 – 1		379
	100	1270.7821	0.0 – 78.69170	$3s^23p^4 - 3s^23p^3(^4S°)5d$	$g^3P - {}^3D°$	2 – 3		379
	30	1272.0749	0.57365 – 79.18537	$3s^23p^4 - 3s^23p^3(^4S°)7s$	$g^3P - {}^3S°$	0 – 1		379
	40	1277.199	0.39609 – 78.69255	$3s^23p^4 - 3s^23p^3(^4S°)5d$	$g^3P - {}^3D°$	1 – 1		379
	90	1277.216	0.39609 – 78.69148	$3s^23p^4 - 3s^23p^3(^4S°)5d$	$g^3P - {}^3D°$	1 – 2		379
	50	1280.0991	0.57365 – 78.69255	$3s^23p^4 - 3s^23p^3(^4S°)5d$	$g^3P - {}^3D°$	0 – 1		379
	110	1295.6526	0.0 – 77.18141	$3s^23p^4 - 3s^23p^3(^2P°)4s$	$g^3P - {}^3P°$	2 – 2		379

S I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	70	1296.1738	0.0 – 77.15059	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	2 – 1		379
		1300.91	9.23858 – 86.1079	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$^1D - {}^1D^\circ$	2 – 2	A	841
	100	1302.3370	0.39609 – 77.18141	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 2		379
	80	1302.8633	0.39609 – 77.15059	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 1		379
	80	1303.1105	0.39609 – 77.13610	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 0		379
	85	1303.4295	0.0 – 76.72090	$3s^23p^4 - 3s^23p^3(^4S^\circ)6s$	$g^3P - {}^3S^\circ$	2 – 1		379
	95	1305.8834	0.57365 – 77.15059	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	0 – 1		379
		1308.2	9.23858 – 85.680	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$^1D - {}^3D^\circ$	2 – 3	A	841
		1309.3	9.23858 – 85.6156	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - {}^1D^\circ$	2 – 2	A	841
	100	1310.1940	0.39609 – 76.72090	$3s^23p^4 - 3s^23p^3(^4S^\circ)6s$	$g^3P - {}^3S^\circ$	1 – 1		379
	60	1313.2493	0.57365 – 76.72090	$3s^23p^4 - 3s^23p^3(^4S^\circ)6s$	$g^3P - {}^3S^\circ$	0 – 1		379
	160	1316.5423	0.0 – 75.95654	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - {}^3D^\circ$	2 – 3		379
	120	1316.6183	0.0 – 75.95235	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - {}^3D^\circ$	2 – 2		379
	180	1323.5153	0.39609 – 75.95235	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - {}^3D^\circ$	1 – 2		379
	45	1323.5220	0.39609 – 75.95194	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - {}^3D^\circ$	1 – 1		379
	160	1326.6432	0.57365 – 75.95194	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - {}^3D^\circ$	0 – 1		379
	2	1333.792	0.0 – 74.97430	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - {}^5D^\circ$	2 – 3		379
		1356.97	22.17999 – 95.8736	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1S - {}^1P^\circ$	0 – 1	A	841
		1361.28	22.17999 – 95.6403	$3s^23p^4 - 3s^23p^3(^2P^\circ)5s$	$^1S - {}^1P^\circ$	0 – 1	A	841
	650	1381.5521	0.0 – 72.38236	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	2 – 1		379
	1	1385.041	9.23858 – 81.4374	$3s^23p^4 - 3s3p^5$	$^1D - {}^1P^\circ$	2 – 1		379
	550	1385.5100	0.39609 – 72.57168	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	1 – 0		379
	950	1388.4347	0.0 – 72.02355	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	2 – 2		379
	450	1389.1538	0.39609 – 72.38236	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	1 – 1		379
	650	1392.5878	0.57365 – 72.38236	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	0 – 1		379
	1000	1396.1122	0.39609 – 72.02355	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	1 – 2		379
	100	1401.5136	0.0 – 71.35143	$3s^23p^4 - 3s^23p^3(^4S^\circ)5s$	$g^3P - {}^3S^\circ$	2 – 1		379
	125	1409.3369	0.39609 – 71.35143	$3s^23p^4 - 3s^23p^3(^4S^\circ)5s$	$g^3P - {}^3S^\circ$	1 – 1		379
	100	1412.8726	0.57365 – 71.35143	$3s^23p^4 - 3s^23p^3(^4S^\circ)5s$	$g^3P - {}^3S^\circ$	0 – 1		379
	2	1414.365	0.0 – 70.7031	$3s^23p^4 - 3s^23p^3(^4S^\circ)5s$	$g^3P - {}^5S^\circ$	2 – 2		379
	300	1425.0301	0.0 – 70.17396	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		379
	90	1425.1882	0.0 – 70.16617	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 2		379
	65	1425.2190	0.0 – 70.16466	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 1		379
	225	1433.2800	0.39609 – 70.16617	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		379
	100	1433.3105	0.39609 – 70.16466	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 1		379
	125	1436.9675	0.57365 – 70.16466	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	0 – 1		379
	30	1444.2967	0.0 – 69.23783	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^1D^\circ$	2 – 2		379
	125	1448.2290	9.23858 – 78.28845	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$^1D - {}^1P^\circ$	2 – 1		379
	25	1471.832	9.23858 – 77.18141	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$^1D - {}^3P^\circ$	2 – 2		379
	4	1472.503	9.23858 – 77.15059	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$^1D - {}^3P^\circ$	2 – 1		379
	225	1472.972	0.0 – 67.88994	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - {}^5D^\circ$	2 – 3		379
	120	1473.019	0.0 – 67.88775	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - {}^5D^\circ$	2 – 2		379
	350	1473.995	0.0 – 67.84283	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	2 – 3		379
	125	1474.380	0.0 – 67.82514	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	2 – 2		379
	60	1474.572	0.0 – 67.81631	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	2 – 1		379
	170	1481.665	0.39609 – 67.88775	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - {}^5D^\circ$	1 – 2		379
	100	1481.712	0.39609 – 67.88458	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - {}^5D^\circ$	1 – 1		379
	280	1483.039	0.39609 – 67.82514	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	1 – 2		379
	125	1483.233	0.39609 – 67.81631	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	1 – 1		379
	150	1485.622	0.57365 – 67.88458	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - {}^5D^\circ$	0 – 1		379
	200	1487.150	0.57365 – 67.81631	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	0 – 1		379
	2	1498.850	9.23858 – 75.95654	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$^1D - {}^3D^\circ$	2 – 3		379
	1	1498.942	9.23858 – 75.95235	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$^1D - {}^3D^\circ$	2 – 2		379
	1	1583.683	9.23858 – 72.38236	$3s^23p^4 - 3s3p^5$	$^1D - {}^3P^\circ$	2 – 1		379

S I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	4	1592.736	9.23858 – 72.02355	$3s^23p^4 - 3s3p^5$	$^1D - ^3P^\circ$	2 – 2		379
	7	1641.085	9.23858 – 70.17396	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$^1D - ^3D^\circ$	2 – 3		379
	10	1641.296	9.23858 – 70.16617	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$^1D - ^3D^\circ$	2 – 2		379
	500	1666.6875	9.23858 – 69.23783	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$^1D - ^1D^\circ$	2 – 2		379
	450	1687.5305	22.17999 – 81.4374	$3s^23p^4 - 3s3p^5$	$^1S - ^1P^\circ$	0 – 1		379
	5	1704.986	9.23858 – 67.88994	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$^1D - ^5D^\circ$	2 – 3		379
	3	1705.115	9.23858 – 67.88458	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$^1D - ^5D^\circ$	2 – 1		379
	10	1706.360	9.23858 – 67.84283	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$^1D - ^3D^\circ$	2 – 3		379
	8	1707.132	9.23858 – 67.81631	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$^1D - ^3D^\circ$	2 – 1		379
	50	1782.2626	22.17999 – 78.28845	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$^1S - ^1P^\circ$	0 – 1		379
	10	1787.						107
	550	1807.3108	0.0 – 55.33083	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - ^3S^\circ$	2 – 1		379
	500	1820.3426	0.39609 – 55.33083	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - ^3S^\circ$	1 – 1		379
	450	1826.2451	0.57365 – 55.33083	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - ^3S^\circ$	0 – 1		379
	550	1900.2863	0.0 – 52.62365	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - ^5S^\circ$	2 – 2		379
	350	1914.6982	0.39609 – 52.62365	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - ^5S^\circ$	1 – 2		379
	8	1991.9369	22.17999 – 72.38236	$3s^23p^4 - 3s3p^5$	$^1S - ^3P^\circ$	0 – 1		379

SULFUR II (S^{1+}), Z = 16
Ground State $1s^22s^22p^63s^23p^3(^4S^\circ_{3/2})$ (15 electrons)
Ionization Potential 188 200 cm^{-1}; 23.33 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	210	500.36						123
	98	527.88						123
	50	581.13						123
	75	608.17						123
	328	634.81						123
	253	636.65						123
	50	640.41	0.0 – 156.14819	$3s^23p^3 - 3s^23p^2(^3P)4d$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{1}{2}$		322
	50	640.93	0.0 – 156.02928	$3s^23p^3 - 3s^23p^2(^3P)4d$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		322
	100	641.81	0.0 – 155.81837	$3s^23p^3 - 3s^23p^2(^3P)4d$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		322
	152	647.50						123
	207	669.13	14.8848 – 164.33671	$3s^23p^3 - 3s^23p^2(^1D)4d$	$^2D^\circ - ^2G$	$\frac{5}{2} - \frac{7}{2}$		123
	186	669.77	14.8848 – 164.18063	$3s^23p^3 - 3s^23p^2(^1D)4d$	$^2D^\circ - ^2F$	$\frac{5}{2} - \frac{7}{2}$	Q	123,375
	130	686.20						123
	50	694.71	14.8848 – 158.82687	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^2D$	$\frac{5}{2} - \frac{5}{2}$		322
	50	705.62	14.8848 – 156.60367	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^2F$	$\frac{5}{2} - \frac{7}{2}$		322
	50	707.86	14.8530 – 156.12133	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^2F$	$\frac{3}{2} - \frac{5}{2}$		322
	224	721.64						123
	128	727.71	14.8848 – 152.30471	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^4F$	$\frac{5}{2} - \frac{7}{2}$	Q	123,375
	244	765.62						123
	50	798.92	14.8530 – 140.0157	$3s^23p^3$ –	$^2D^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		322
	50	799.14	14.8848 – 140.0157	$3s^23p^3$ –	$^2D^\circ - ^2P$	$\frac{5}{2} - \frac{3}{2}$		322
	50	800.04	14.8530 – 139.8456	$3s^23p^3$ –	$^2D^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		322
	327	808.70						123
	216	840.75						123
	200	843.82	14.8530 – 133.3594	$3s^23p^3$ –	$^2D^\circ$ – 1	$\frac{3}{2} - \frac{1}{2}$		322
	50	865.87	24.5249 – 140.0157	$3s^23p^3$ –	$^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		322
	100	866.23	24.5718 – 140.0157	$3s^23p^3$ –	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		322
	100	867.15	24.5249 – 139.8456	$3s^23p^3$ –	$^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		322
	100	867.50	24.5718 – 139.8456	$3s^23p^3$ –	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		322
2	300	906.87	0.0 – 110.26833	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		322,488

S II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	121	909.15						123
2	300	910.49	0.0 – 109.83128	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		322,488
2	300	912.74	0.0 – 109.56050	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		322,488
	185	915.27						123
	300	918.82	24.5249 – 133.3594	$3s^23p^3$ –	$^2P^\circ - 1$	$\frac{1}{2}-\frac{1}{2}$		322
	100	919.24	24.5718 – 133.3594	$3s^23p^3$ –	$^2P^\circ - 1$	$\frac{3}{2}-\frac{1}{2}$		322
6	300	937.41	14.8530 – 121.52820	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		322,488
6	300	937.69	14.8848 – 121.52949	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		322,488
	100	957.88	14.8530 – 119.24213	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$	Q	322
	50	968.37	14.8848 – 118.14650	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		322
	142	991.73						123
5	200	996.00	14.8848 – 115.28531	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		322,488
5	200	1000.48	14.8530 – 114.80411	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$		322,488
5	65	1000.75	14.8848 – 114.80411	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{5}{2}$	Q	599,375
	270	1006.15	14.8848 – 114.27911	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^4D$	$\frac{5}{2}-\frac{7}{2}$	Q	599,375
	35	1006.95	14.8530 – 114.16220	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^4D$	$\frac{3}{2}-\frac{1}{2}$	Q	599,375
4	50	1014.09	14.8530 – 113.46122	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		322
4	200	1014.42	14.8848 – 113.46122	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		322,488
4	200	1019.53	14.8530 – 112.93733	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		322,488
9	100	1030.87	24.5249 – 121.52820	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		322,488
9	100	1031.34	24.5718 – 121.52949	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		322,488
	65	1045.74	14.8848 – 110.50848	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^4F$	$\frac{5}{2}-\frac{7}{2}$	Q	599,375
	35	1047.56	14.8530 – 110.31313	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^4F$	$\frac{3}{2}-\frac{5}{2}$	Q	599,375
	35	1047.86	14.8848 – 110.31313	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^4F$	$\frac{5}{2}-\frac{5}{2}$	Q	599,375
	35	1048.43	14.8848 – 110.26833	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - {}^4P$	$\frac{5}{2}-\frac{5}{2}$	Q	599,375
	35	1049.06	14.8530 – 110.17683	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^4F$	$\frac{3}{2}-\frac{3}{2}$		599,375
	35	1053.21	14.8848 – 109.83128	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - {}^4P$	$\frac{5}{2}-\frac{3}{2}$	Q	599,375
	51	1071.04						123
	50	1071.83						123
3	200	1096.57	14.8530 – 106.04416	$3s^23p^3 - 3s3p^4$	$^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		322,488
	220	1098.91						123
3	300	1102.32	14.8848 – 105.59902	$3s^23p^3 - 3s3p^4$	$^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		322,488
8	100	1124.39	24.5249 – 113.46122	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		322,488
8	100	1125.00	24.5718 – 113.46122	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		322,488
8	200	1131.05	24.5249 – 112.93733	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		322,488
8	200	1131.65	24.5718 – 112.93733	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		322,488
7	100	1226.70	24.5249 – 106.04416	$3s^23p^3 - 3s3p^4$	$^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		322,488
7	100	1227.45	24.5718 – 106.04416	$3s^23p^3 - 3s3p^4$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		322,488
7	50	1233.36	24.5249 – 105.59902	$3s^23p^3 - 3s3p^4$	$^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		322,488
7	300	1234.14	24.5718 – 105.59902	$3s^23p^3 - 3s3p^4$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		322,488
1	300	1250.50	0.0 – 79.9680	$3s^23p^3 - 3s3p^4$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		322,488
1	500	1253.79	0.0 – 79.7579	$3s^23p^3 - 3s3p^4$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		322,488
1	500	1259.53	0.0 – 79.3948	$3s^23p^3 - 3s3p^4$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		322,488
	10	1813.						107
	300	1936.71	79.3948 – 131.02876	$3s3p^4 - 3s^23p^2(^3P)4p$	$^4P - {}^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		285
	300	1950.45	79.7579 – 131.02876	$3s3p^4 - 3s^23p^2(^3P)4p$	$^4P - {}^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		285
	300	1958.45	79.9680 – 131.02876	$3s3p^4 - 3s^23p^2(^3P)4p$	$^4P - {}^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		285
	400	1970.86	79.3948 – 130.13408	$3s3p^4 - 3s^23p^2(^3P)4p$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		285
	200	1981.64	79.3948 – 129.85807	$3s3p^4 - 3s^23p^2(^3P)4p$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		285
	200	1985.07	79.7579 – 130.13408	$3s3p^4 - 3s^23p^2(^3P)4p$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		285
	200	1998.80	79.7579 – 129.78771	$3s3p^4 - 3s^23p^2(^3P)4p$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		285

SULFUR III (S^{2+}), Z = 16
Ground State $1s^22s^22p^63s^23p^2(^3P_0)$ (14 electrons)
Ionization Potential 280 900 cm^{-1}; 34.83 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	484.58	0.2972 – 206.67161	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - {}^3D^\circ$	1 – 2		323
	50	485.22	0.8325 – 206.91097	$3s^23p^2 - 3s^23p(^2P^\circ)4d$	$g^3P - {}^3D^\circ$	2 – 3		323
	300	499.98	11.32 – 211.3268	$3s^23p^2 - 3s^23p(^2P^\circ)5s$	$^1D - {}^1P^\circ$	2 – 1		598
	111	517.39						123
	62	524.56						123
	135	534.70						123
	167	539.83						123
	200	543.03	27.163 – 211.3268	$3s^23p^2 - 3s^23p(^2P^\circ)5s$	$^1S - {}^1P^\circ$	0 – 1		598
	121	545.99						123
	126	547.28						123
	210	580.17						123
	101	585.03						123
	198	596.53						123
	196	623.57						123
	177	637.99						123
	217	644.92						123
	244	645.59						123
	271	670.80						123
	268	675.95						123
7	200	677.75	0.0 – 147.55032	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	0 – 1		323,488
7	200	678.46	0.2972 – 147.69099	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		323,488
7	200	679.11	0.2972 – 147.55032	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 1		323,488
7	200	680.69	0.8325 – 147.74454	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		323,488
7	200	680.95	0.8325 – 147.69099	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 2		323,488
6	100	681.50	0.0 – 146.73654	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	0 – 1		323,488
6	50	683.07	0.2972 – 146.69619	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 0		323,488
6	100	683.47	0.8325 – 147.14600	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	2 – 2		323,488
6	50	685.35	0.8325 – 146.73654	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	2 – 1		323,488
	167	687.59						123
5	200	698.73	0.0 – 143.11619	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	0 – 1		323,488
5	300	700.15	0.2972 – 143.12393	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 2		323,488
5	300	700.29	0.2972 – 143.09591	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 0		323,488
5		702.78	0.8325 – 143.12393	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 2		488
5		702.82	0.8325 – 143.11619	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 1		488
	193	705.54						123
	387	710.98						123
	197	711.55						123
4	300	724.29	0.0 – 138.0614	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3S^\circ$	0 – 1		323,488
4	3	725.86	0.2972 – 138.0614	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3S^\circ$	1 – 1		323,488
4	300	728.69	0.8325 – 138.0614	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3S^\circ$	2 – 1		323,488
12	400	729.53	11.32 – 148.3978	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	$^1D - {}^1P^\circ$	2 – 1		598
3	300	730.78	0.0 – 136.839	$3s^23p^2 - 3s3p^3$	$g^3P - {}^1P^\circ$	0 – 1		598
3	500	732.38	0.2972 – 136.839	$3s^23p^2 - 3s3p^3$	$g^3P - {}^1P^\circ$	1 – 1		598
	50	732.98	11.32 – 147.74454	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$^1D - {}^3D^\circ$	2 – 3		598
	50	733.34	11.32 – 147.69099	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$^1D - {}^3D^\circ$	2 – 2		598
	100	734.05	11.32 – 147.55032	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$^1D - {}^3D^\circ$	2 – 1		598
3	400	735.25	0.8325 – 136.839	$3s^23p^2 - 3s3p^3$	$g^3P - {}^1P^\circ$	2 – 1		598
11	200	736.25	11.32 – 147.14600	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	$^1D - {}^3P^\circ$	2 – 2		598
11	400	738.47	11.32 – 146.73654	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	$^1D - {}^3P^\circ$	2 – 1		598
	228	741.01						123
	232	774.40						123
10	400	788.98	11.32 – 138.0614	$3s^23p^2 - 3s3p^3$	$^1D - {}^3S^\circ$	2 – 1		598
9	400	796.69	11.32 – 136.839	$3s^23p^2 - 3s3p^3$	$^1D - {}^1P^\circ$	2 – 1		598
14	400	824.88	27.163 – 148.3978	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	$^1S - {}^1P^\circ$	0 – 1		598

S III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	240	826.97						123
13	400	836.31	27.163 – 146.73654	$3s^23p^2$ – $3s^23p(^2P^\circ)4s$	^1S – $^3P^\circ$	0 – 1		598
	127	842.27						123
	125	846.12						123
	248	894.46						123
	20	911.77	27.163 – 136.839	$3s^23p^2$ – $3s3p^3$	^1S – $^1P^\circ$	0 – 1		598
	212	978.56						123
	224	979.85						123
	252	982.00						123
	114	986.60						123
·	112	1009.03						123
	180	1011.91						123
2	300	1012.49	0.0 – 98.7656	$3s^23p^2$ – $3s3p^3$	g^3P – $^3P^\circ$	0 – 1		323,488
2	200	1015.51	0.2972 – 98.7656	$3s^23p^2$ – $3s3p^3$	g^3P – $^3P^\circ$	1 – 1		323,488
2	100	1015.76	0.2972 – 98.7430	$3s^23p^2$ – $3s3p^3$	g^3P – $^3P^\circ$	1 – 2		323,488
	253	1016.85						123
2	100	1021.10	0.8325 – 98.7656	$3s^23p^2$ – $3s3p^3$	g^3P – $^3P^\circ$	2 – 1		323,488
2	200	1021.32	0.8325 – 98.7430	$3s^23p^2$ – $3s3p^3$	g^3P – $^3P^\circ$	2 – 2		323,488
8	800	1077.13	11.32 – 104.159	$3s^23p^2$ – $3s3p^3$	^1D – $^1D^\circ$	2 – 2		598
	135	1113.15						123
	110	1117.65						123
	200	1122.42	84.0995 – 173.19173	$3s3p^3$ – $3s^23p(^2P^\circ)4p$	$^3D^\circ$ – ^3P	3 – 2		323
	50	1126.55	84.0189 – 172.78577	$3s3p^3$ – $3s^23p(^2P^\circ)4p$	$^3D^\circ$ – ^3P	1 – 1	P	323
	100	1126.85	84.0464 – 172.78577	$3s3p^3$ – $3s^23p(^2P^\circ)4p$	$^3D^\circ$ – ^3P	2 – 1		323
	95	1136.60						123
	200	1155.41	84.0995 – 170.64894	$3s3p^3$ – $3s^23p(^2P^\circ)4p$	$^3D^\circ$ – ^3D	3 – 3	P	323
	100	1162.52	84.0464 – 170.06731	$3s3p^3$ – $3s^23p(^2P^\circ)4p$	$^3D^\circ$ – ^3D	2 – 2		323
	50	1166.13	84.0189 – 169.77004	$3s3p^3$ – $3s^23p(^2P^\circ)4p$	$^3D^\circ$ – ^3D	1 – 1		323
1	200	1190.17	0.0 – 84.0189	$3s^23p^2$ – $3s3p^3$	g^3P – $^3D^\circ$	0 – 1		323,488
1	400	1194.02	0.2972 – 84.0464	$3s^23p^2$ – $3s3p^3$	g^3P – $^3D^\circ$	1 – 2		323,488
1	300	1194.40	0.2972 – 84.0189	$3s^23p^2$ – $3s3p^3$	g^3P – $^3D^\circ$	1 – 1		323,488
1	400	1200.97	0.8325 – 84.0995	$3s^23p^2$ – $3s3p^3$	g^3P – $^3D^\circ$	2 – 3		323,488
1	200	1201.71	0.8325 – 84.0464	$3s^23p^2$ – $3s3p^3$	g^3P – $^3D^\circ$	2 – 2		323,488
1	50	1202.10	0.8325 – 84.0189	$3s^23p^2$ – $3s3p^3$	g^3P – $^3D^\circ$	2 – 1		323,488
	50	1328.12	98.7430 – 174.03619	$3s3p^3$ – $3s^23p(^2P^\circ)4p$	$^3P^\circ$ – ^3S	2 – 1		323
	50	1328.52	98.7656 – 174.03619	$3s3p^3$ – $3s^23p(^2P^\circ)4p$	$^3P^\circ$ – ^3S	1 – 1		323
	50	1343.25	98.7430 – 173.19173	$3s3p^3$ – $3s^23p(^2P^\circ)4p$	$^3P^\circ$ – ^3P	2 – 2		323
	50	1343.61	98.7656 – 173.19173	$3s3p^3$ – $3s^23p(^2P^\circ)4p$	$^3P^\circ$ – ^3P	1 – 2	P	323
	10	1351.	98.7656 – 172.78577	$3s3p^3$ – $3s^23p(^2P^\circ)4p$	$^3P^\circ$ – ^3P	1 – 1		107,375
	50	1390.67	98.7430 – 170.64894	$3s3p^3$ – $3s^23p(^2P^\circ)4p$	$^3P^\circ$ – ^3D	2 – 3		323
	20	1683.49	0.8325 – 60.233+B	$3s^23p^2$ – $3s3p^3$	g^3P – $^5S^\circ$	2 – 2		089

SULFUR IV (S^{3+}), Z = 16
Ground State $1s^22s^22p^63s^23p(^2P^\circ_{1/2})$ (13 electrons)
Ionization Potential 381 541.4 cm^{-1}; 47.305 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	519.30	71.524+X – 264.081+X	$3s3p^2$ – $3s3p(^3P^\circ)4s$	^4P – $^4P^\circ$	$\frac{3}{2}$ – $\frac{5}{2}$		041
	200	520.11	71.186+X – 263.445+X	$3s3p^2$ – $3s3p(^3P^\circ)4s$	^4P – $^4P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$		041
	300	520.83	72.071+X – 264.081+X	$3s3p^2$ – $3s3p(^3P^\circ)4s$	^4P – $^4P^\circ$	$\frac{5}{2}$ – $\frac{5}{2}$		041
	100	521.03	71.524+X – 263.445+X	$3s3p^2$ – $3s3p(^3P^\circ)4s$	^4P – $^4P^\circ$	$\frac{3}{2}$ – $\frac{3}{2}$		041
	200	521.99	71.524+X – 263.099+X	$3s3p^2$ – $3s3p(^3P^\circ)4s$	^4P – $^4P^\circ$	$\frac{3}{2}$ – $\frac{1}{2}$		041
	200	522.54	72.071+X – 263.445+X	$3s3p^2$ – $3s3p(^3P^\circ)4s$	^4P – $^4P^\circ$	$\frac{5}{2}$ – $\frac{3}{2}$		041

S IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	68	527.20						123
5	200	551.17	0.0 – 181.4422	$3s^2(^1S)3p - 3s^2(^1S)4s$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		485,488
	119	564.00						123
	55	565.81						123
	270	568.21						123
	88	571.92						123
	97	576.65						123
	105	585.62						123
	106	587.48						123
	25	589.60						123
	104	599.41						123
	322	611.07						123
	370	611.72						123
	164	614.06						123
	151	625.70						123
	226	628.03						123
8	300	652.52	71.186+X – 224.434+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		041
8	300	653.00	71.186+X – 224.331+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{1}{2}$		041
8	400	653.56	71.524+X – 224.534+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		041
8	300	653.98	71.524+X – 224.434+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		041
8	100	654.42	71.524+X – 224.331+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{1}{2}$	P	041
8	400	655.55	72.071+X – 224.614+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		041
8	200	655.89	72.071+X – 224.534+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		041
8	100	656.30	72.071+X – 224.434+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{3}{2}$		041
4	500	657.34	0.0 – 152.1271	$3s^2(^1S)3p - 3s^2(^1S)3d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		485,488
7	300	660.94	71.186+X – 222.483+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		041
4	600	661.42	.9511 – 152.1414	$3s^2(^1S)3p - 3s^2(^1S)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		485,488
7	300	663.70	71.524+X – 222.194+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		041
7	300	664.82	72.071+X – 222.483+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		041
7	400	666.11	72.071+X – 222.194+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		041
	171	672.70						123
		675.5						750
	186	688.89						123
	103	692.25						123
	182	708.78						123
	119	720.85						123
	207	725.00						123
3	160	744.907	0.0 – 134.2444	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		726
3	220	748.400	0.0 – 133.6184	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		726
	141	749.24						123
3	285	750.228	.9511 – 134.2444	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		726
3	160	753.764	.9511 – 133.6184	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		726
	233	758.35						123
	141	759.34						123
	255	760.62						123
	213	791.62						123
	217	797.17						123
6	300	798.28	71.186+X – 196.45+X	$3s3p^2 - 3p^3$	$^4P - ^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		041
6	400	800.47	71.524+X – 196.45+X	$3s3p^2 - 3p^3$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		041
6	400	803.99	72.071+X – 196.45+X	$3s3p^2 - 3p^3$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		041
2	160	809.668	0.0 – 123.5073	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		726
2	220	815.952	.9511 – 123.5073	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		726
	400	836.34	94.1486 – 213.7174	$3s3p^2 - 3s^2(^1S)4p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		038
	400	837.48	94.1025 – 213.5074	$3s3p^2 - 3s^2(^1S)4p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		038

S IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	300	852.76	94.1025 – 211.368	$3s3p^2 - 3p^3$	$^2D - ^2P^o$	$\frac{3}{2}-\frac{1}{2}$		038
	300	853.10	94.1486 – 211.368	$3s3p^2 - 3p^3$	$^2D - ^2P^o$	$\frac{5}{2}-\frac{3}{2}$		038
	191	879.73						123
	204	887.90						123
	292	890.68						123
	91	893.41						123
	286	897.81						123
	212	924.08						123
	100	928.06						123
	104	930.16						123
1	360	1062.671	0.0 – 94.1025	$3s^2(^1S)3p - 3s3p^2$	$g^2P^o - ^2D$	$\frac{1}{2}-\frac{3}{2}$		726
1	450	1072.990	.9511 – 94.1486	$3s^2(^1S)3p - 3s3p^2$	$g^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$		726
1	70	1073.520	.9511 – 94.1025	$3s^2(^1S)3p - 3s3p^2$	$g^2P^o - ^2D$	$\frac{3}{2}-\frac{3}{2}$		726
	10	1088.83	94.1486 – 185.99	$3s3p^2 - 3p^3$	$^2D - ^2D^o$	$\frac{5}{2}-\frac{5}{2}$	P	90,107
	177	1099.53						123
	107	1108.01						123
	200	1108.48	123.5073 – 213.7174	$3s3p^2 - 3s^2(^1S)4p$	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$		485,375
	200	1111.08	123.5073 – 213.5074	$3s3p^2 - 3s^2(^1S)4p$	$^2S - ^2P^o$	$\frac{1}{2}-\frac{1}{2}$		485,375
	166	1122.13						123
	116	1128.68						123
	100	1138.12	123.5073 – 211.368	$3s3p^2 - 3p^3$	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$		038
	107	1172.58						123
	88	1222.18						123
	100	1286.17	133.6184 – 211.368	$3s3p^2 - 3p^3$	$^2P - ^2P^o$	$\frac{1}{2}-\frac{1}{2}$		038
	200	1296.61	134.2444 – 211.368	$3s3p^2 - 3p^3$	$^2P - ^2P^o$	$\frac{3}{2}-\frac{3}{2}$		038
		1398.13	0.0 – 71.524+X	$3s^2(^1S)3p - 3s3p^2$	$g^2P^o - ^4P$	$\frac{1}{2}-\frac{3}{2}$		375
	70	1404.77	0.0 – 71.186+X	$3s^2(^1S)3p - 3s3p^2$	$g^2P^o - ^4P$	$\frac{1}{2}-\frac{1}{2}$		213
	30	1406.06	.9511 – 72.071+X	$3s^2(^1S)3p - 3s3p^2$	$g^2P^o - ^4P$	$\frac{3}{2}-\frac{5}{2}$		442,213
	10	1416.93	.9511 – 71.524+X	$3s^2(^1S)3p - 3s3p^2$	$g^2P^o - ^4P$	$\frac{3}{2}-\frac{3}{2}$		442,213
	0	1423.89	.9511 – 71.186+X	$3s^2(^1S)3p - 3s3p^2$	$^2P^o - ^4P$	$\frac{3}{2}-\frac{1}{2}$		442
	50	1623.62	152.1271 – 213.7174	$3s^2(^1S)3d - 3s^2(^1S)4p$	$^2D - ^2P^o$	$\frac{3}{2}-\frac{3}{2}$		485
	200	1624.00	152.1414 – 213.7174	$3s^2(^1S)3d - 3s^2(^1S)4p$	$^2D - ^2P^o$	$\frac{5}{2}-\frac{3}{2}$		485
	200	1629.20	152.1271 – 213.5074	$3s^2(^1S)3d - 3s^2(^1S)4p$	$^2D - ^2P^o$	$\frac{3}{2}-\frac{1}{2}$		485
	50	1688.	152.1271 – 211.368	$3s^2(^1S)3d - 3p^3$	$^2D - ^2P^o$	$\frac{3}{2}-\frac{1}{2}$		107,375
	150	1696.69	196.45+X – 255.3898	$3p^3 - 3s^2(^1S)4d$	$^4S^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$		089,375
	50	1739.03	213.5074 – 271.0104	$3s^2(^1S)4p - 3s^2(^1S)5s$	$^2P^o - ^2S$	$\frac{1}{2}-\frac{1}{2}$		485
	100	1745.42	213.7174 – 271.0104	$3s^2(^1S)4p - 3s^2(^1S)5s$	$^2P^o - ^2S$	$\frac{3}{2}-\frac{1}{2}$		485
	10	1908.	133.6184 – 186.03	$3s3p^2 - 3p^3$	$^2P - ^2D^o$	$\frac{1}{2}-\frac{3}{2}$		90,107
		1932.	134.2444 – 185.99	$3s3p^2 - 3p^3$	$^2P - ^2D^o$	$\frac{3}{2}-\frac{5}{2}$		90

SULFUR V (S^{4+}), Z = 16
Ground State $1s^22s^22p^63s^2(^1S_0)$ (12 electrons)
Ionization Potential [586 200] cm^{-1}; [72.68] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
4	100	437.48	82.674+E – 311.254+E	$3s(^2S)3p - 3s(^2S)4s$	$^3P^o - ^3S$	0 – 1	P	041
4	100	438.19	83.036+E – 311.254+E	$3s(^2S)3p - 3s(^2S)4s$	$^3P^o - ^3S$	1 – 1		041
4	100	439.65	83.803+E – 311.254+E	$3s(^2S)3p - 3s(^2S)4s$	$^3P^o - ^3S$	2 – 1		041
	165	577.55						123
3	300	658.26	82.674+E – 234.590+E	$3s(^2S)3p - 3s(^2S)3d$	$^3P^o - ^3D$	0 – 1		041
3	400	659.85	83.036+E – 234.590+E	$3s(^2S)3p - 3s(^2S)3d$	$^3P^o - ^3D$	1 – 2		041

S V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
3	500	663.16	83.803+E – 234.590+E	$3s(^2S)3p - 3s(^2S)3d$	$^3P^o - ^3D$	2 – 3		041
	424	674.41						123
	100	676.21	199.603+E – 347.486+E	$3p^2 - 3p(^2P^o)3d$	$^3P - ^3D^o$	0 – 1		041
	100	677.34	200.020+E – 347.654+E	$3p^2 - 3p(^2P^o)3d$	$^3P - ^3D^o$	1 – 2		041
	200	678.08	200.020+E – 347.486+E	$3p^2 - 3p(^2P^o)3d$	$^3P - ^3D^o$	1 – 1		041
	300	680.33	200.789+E – 347.771+E	$3p^2 - 3p(^2P^o)3d$	$^3P - ^3D^o$	2 – 3		041
	500	680.94	200.789+E – 347.654+E	$3p^2 - 3p(^2P^o)3d$	$^3P - ^3D^o$	2 – 2		041
	300	681.68	200.789+E – 347.486+E	$3p^2 - 3p(^2P^o)3d$	$^3P - ^3D^o$	2 – 1		041
	100	686.15	199.603+E – 345.353+E	$3p^2 - 3p(^2P^o)3d$	$^3P - ^3P^o$	0 – 1		041
	100	686.93	200.020+E – 345.590+E	$3p^2 - 3p(^2P^o)3d$	$^3P - ^3P^o$	1 – 0		041
	50	688.04	200.020+E – 345.353+E	$3p^2 - 3p(^2P^o)3d$	$^3P - ^3P^o$	1 – 1		041
	100	689.84	200.020+E – 344.979+E	$3p^2 - 3p(^2P^o)3d$	$^3P - ^3P^o$	1 – 2		041
	100	691.74	200.789+E – 345.353+E	$3p^2 - 3p(^2P^o)3d$	$^3P - ^3P^o$	2 – 1		041
	200	693.52	200.789+E – 344.979+E	$3p^2 - 3p(^2P^o)3d$	$^3P - ^3P^o$	2 – 2		041
	315	696.612	127.149 – 270.701	$3s(^2S)3p - 3s(^2S)3d$	$^1P^o - ^1D$	1 – 2		220,123
	277	716.83						123
		742.2						750
1	800	786.48	0.0 – 127.149	$3s^2 - 3s(^2S)3p$	$g^1S - ^1P^o$	0 – 1		041
	110	790.36						123
	164	828.46						123
2	600	849.24	83.036+E – 200.789+E	$3s(^2S)3p - 3p^2$	$^3P^o - ^3P$	1 – 2		041
2	500	852.18	82.674+E – 200.020+E	$3s(^2S)3p - 3p^2$	$^3P^o - ^3P$	0 – 1		041
2	700	854.80	83.803+E – 200.789+E	$3s(^2S)3p - 3p^2$	$^3P^o - ^3P$	2 – 2		041
2	500	857.87	83.036+E – 199.603+E	$3s(^2S)3p - 3p^2$	$^3P^o - ^3P$	1 – 0		041
2	500	860.46	83.803+E – 200.020+E	$3s(^2S)3p - 3p^2$	$^3P^o - ^3P$	2 – 1		041
		873.0						750
	200	883.59	234.590+E – 347.771+E	$3s(^2S)3d - 3p(^2P^o)3d$	$^3D - ^3D^o$	3 – 3		041
	200	884.46	234.590+E – 347.654+E	$3s(^2S)3d - 3p(^2P^o)3d$	$^3D - ^3D^o$	2 – 2		041
	100	885.77	234.590+E – 347.486+E	$3s(^2S)3d - 3p(^2P^o)3d$	$^3D - ^3D^o$	1 – 1		041
	89	888.93						123
	200	900.93	234.590+E – 345.590+E	$3s(^2S)3d - 3p(^2P^o)3d$	$^3D - ^3P^o$	1 – 0		041
	100	902.80	234.590+E – 345.353+E	$3s(^2S)3d - 3p(^2P^o)3d$	$^3D - ^3P^o$	2 – 1		041
	200	905.92	234.590+E – 344.979+E	$3s(^2S)3d - 3p(^2P^o)3d$	$^3D - ^3P^o$	3 – 2		041
	10	1053.						107
		1122.0	234.590+E – 323.72+E	$3s(^2S)3d - 3p(^2P^o)3d$	$^3D - ^3F^o$	3 – 4		750
	64	1133.93						123
	18	1199.18						442
	4	1204.30	0.0 – 83.036+E	$3s^2 - 3s(^2S)3p$	$g^1S - ^3P^o$	0 – 1		856
		1501.799	127.149 – 193.736	$3s(^2S)3p - 3p^2$	$^1P^o - ^1D$	1 – 2		220

SULFUR VI (S^{5+}), Z = 16
Ground State $1s^22s^22p^63s(^2S_{1/2})$ (11 electrons)
Ionization Potential 710 195 cm^{-1}; 88.054 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	171.33	0.0 – 583.679	$2p^63s - 2p^66p$	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$		598
	20	191.48	0.0 – 522.248	$2p^63s - 2p^65p$	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{3}{2}$		598
	50	191.56	0.0 – 522.03	$2p^63s - 2p^65p$	$g^2S - ^2P^o$	$\frac{1}{2} - \frac{1}{2}$		598
	20	192.27	107.137 – 627.231	$2p^63p - 2p^67d$	$^2P^o - ^2D$	$\frac{3}{2} - \frac{5}{2}$		598
	50	204.19	107.137 – 596.877	$2p^63p - 2p^66d$	$^2P^o - ^2D$	$\frac{3}{2} - \frac{5}{2}$		598
	20	214.28	107.137 – 573.823	$2p^63p - 2p^66s$	$^2P^o - ^2S$	$\frac{3}{2} - \frac{1}{2}$		598

S VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	227.20	105.874 – 546.021	$2p^63p - 2p^65d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		598
	200	227.84	107.137 – 546.032	$2p^63p - 2p^65d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		598
2	400	248.99	0.0 – 401.621	$2p^63s - 2p^64p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		598
2	400	249.27	0.0 – 401.164	$2p^63s - 2p^64p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		598
	200	251.91	107.137 – 504.112	$2p^63p - 2p^65s$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		598
	50	261.81	247.452 – 629.395	$2p^63d - 2p^67f$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		598
	300	283.50	247.452 – 600.17	$2p^63d - 2p^66f$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		598
	200	289.09	105.874 – 451.785	$2p^63p - 2p^64d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		598
	300	290.13	107.137 – 451.808	$2p^63p - 2p^64d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		598
	600	328.51	247.452 – 551.848	$2p^63d - 2p^65f$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		598
4	600	388.94	105.874 – 362.983	$2p^63p - 2p^64s$	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		598
4	800	390.86	107.137 – 362.983	$2p^63p - 2p^64s$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		598
5	1000	464.68	247.452 – 462.653	$2p^63d - 2p^64f$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		598
	10	627.9	362.983 – 522.248	$2p^64s - 2p^65p$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		750,107
	100	648.63	247.452 – 401.621	$2p^63d - 2p^64p$	$^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		598
	100	650.43	247.42 – 401.164	$2p^63d - 2p^64p$	$^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		598
		672.2						750
		692.5	401.621 – 546.032	$2p^64p - 2p^65d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		750
3	600	706.48	105.874 – 247.42	$2p^63p - 2p^63d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		598
3	400	712.68	107.137 – 247.452	$2p^63p - 2p^63d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		598
3	300	712.84	107.137 – 247.42	$2p^63p - 2p^63d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		598
		725.8	462.653 – 600.43	$2p^64f - 2p^66g$	$^2F^\circ - {}^2G$	$\frac{7}{2}-\frac{9}{2}$		750
	140	742.16						123
	176	803.20						123
	126	805.15						123
1	400	933.38	0.0 – 107.137	$2p^63s - 2p^63p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		598
1	500	944.52	0.0 – 105.874	$2p^63s - 2p^63p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		598
		999.6	451.808 – 551.848	$2p^64d - 2p^65f$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	750
	100	1117.91	462.653 – 552.106	$2p^64f - 2p^65g$	$^2F^\circ - {}^2G$	$\frac{7}{2}-\frac{9}{2}$		052,107
		1286.8	551.848 – 629.56	$2p^65f - 2p^67g$	$^2F^\circ - {}^2G$	$\frac{7}{2}-\frac{9}{2}$	P	90
		1289.3	552.106 – 629.67	$2p^65g - 2p^67h$	$^2G - {}^2H^\circ$	$\frac{9}{2}-\frac{11}{2}$	P	90
	100	1336.1	522.03 – 596.877	$2p^65p - 2p^66d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	P	107
	10	1847.1	546.032 – 600.17	$2p^65d - 2p^66f$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	107
	10	1930.8	522.03 – 573.823	$2p^65p - 2p^66s$	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$	P	107
	50	1992.5	401.621 – 451.808	$2p^64p - 2p^64d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	107

SULFUR VII (S^{6+}), Z = 16
Ground State $1s^22s^22p^6(^1S_0)$ (10 electrons)
Ionization Potential 2 265 900 cm^{-1}; 280.94 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	46.212	0.0 – 2163.94	$2s^22p^6 - 2s^22p^5(^2P^\circ)7d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		233
	50	47.098	0.0 – 2123.23	$2s^22p^6 - 2s^22p^5(^2P^\circ)6d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		233
	50	47.307	0.0 – 2113.85	$2s^22p^6 - 2s^22p^5(^2P^\circ)6d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		233
	150	48.647	0.0 – 2055.63	$2s^22p^6 - 2s^22p^5(^2P^\circ)5d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		233
	100	48.874	0.0 – 2046.08	$2s^22p^6 - 2s^22p^5(^2P^\circ)5d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		233
	120	49.990	0.0 – 2000.4	$2s^22p^6 - 2s2p^6(^2S)3p$	$g^1S - {}^1P^\circ$	0 – 1	Q	233,375
	70	50.027	0.0 – 1998.92	$2s^22p^6 - 2s^22p^5(^2P^\circ)5s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		233
	350	51.807	0.0 – 1930.24	$2s^22p^6 - 2s^22p^5(^2P^\circ)4d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		233
	200	52.097	0.0 – 1919.5	$2s^22p^6 - 2s^22p^5(^2P^\circ)4d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		233
	100	54.652	0.0 – 1829.76	$2s^22p^6 - 2s^22p^5(^2P^\circ)4s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		233
	100	54.938	0.0 – 1820.23	$2s^22p^6 - 2s^22p^5(^2P^\circ)4s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		233
	1000	60.161	0.0 – 1662.21	$2s^22p^6 - 2s^22p^5(^2P^\circ)3d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		233

S VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	750	60.804	0.0 – 1644.63	$2s^22p^6 - 2s^22p^5(^2P^\circ)3d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 - 1		233
	200	61.547	0.0 – 1624.77	$2s^22p^6 - 2s^22p^5(^2P^\circ)3d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 - 1		233
	1000	72.029	0.0 – 1388.33	$2s^22p^6 - 2s^22p^5(^2P^\circ)3s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 - 1		233
	1000	72.663	0.0 – 1376.22	$2s^22p^6 - 2s^22p^5(^2P^\circ)3s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 - 1		233
		769.8						750
		781.3						750
		887.7						750
		924.2						750

SULFUR VIII (S^{7+}), Z = 16
Ground State $1s^22s^22p^5(^2P^\circ_{3/2})$ (9 electrons)
Ionization Potential 2 647 400 cm^{-1}; 328.24 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	44.350	0.0 – 2254.79	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - ^2F$	$\frac{3}{2} - \frac{5}{2}$		233
	100	44.374	0.0 – 2253.57	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		233
	50	44.547	10.11 – 2253.57	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$	Q	233,375
	50	45.279	0.0 – 2208.53	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		233
	50	45.290	0.0 – 2207.77	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		233
	20	45.370	0.0 – 2204.1	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		233
	20	45.458	0.0 – 2199.83	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		233
	20	45.508	10.11 – 2207.77	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		233
	10	47.566	0.0 – 2102.34	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		233
	10	47.594	10.11 – 2111.24	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		233
	10	47.793	10.11 – 2102.34	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		233
	100	51.227	0.0 – 1952.1	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		233
	70	51.470	10.11 – 1953.01	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		233
	20	52.681	0.0 – 1898.22	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		233
	20	52.702	0.0 – 1897.46	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		233
	300	52.756	0.0 – 1895.52	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		233
	300	52.789	0.0 – 1894.33	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		233
	100	52.854	0.0 – 1892.	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2F$	$\frac{3}{2} - \frac{5}{2}$		233
	350	52.958	0.0 – 1888.46	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		233
	70	52.985	10.11 – 1897.46	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		233
	50	53.073	10.11 – 1894.33	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		233
	30	53.239	10.11 – 1888.46	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		233
	500	54.118	0.0 – 1847.81	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		233
	100	54.266	0.0 – 1842.77	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		233
	20	54.370	0.0 – 1839.25	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		233
	100	54.385	0.0 – 1838.74	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		233
	150	54.424	10.11 – 1847.55	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		233
	20	54.501	0.0 – 1834.83	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		233
	50	54.566	10.11 – 1842.77	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		233
	50	54.604	0.0 – 1831.37	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4D$	$\frac{3}{2} - \frac{5}{2}$		233
	70	59.236	0.0 – 1688.17	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		233
	20	59.593	10.11 – 1688.17	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		233
	500	61.600	0.0 – 1623.38	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		233
	250	61.978	10.11 – 1623.61	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		233
	50	63.026	0.0 – 1586.65	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		233
	500	63.304	0.0 – 1579.7	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		233

S VIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	63.431	10.11 – 1586.65	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		233
	50	63.711	10.11 – 1579.7	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		233
	250	63.886	0.0 – 1565.25	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		233
	50	64.120	0.0 – 1559.58	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		233
	100	64.137	10.11 – 1569.29	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{1}{2}$		233
	20	64.305	10.11 – 1565.25	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{3}{2}$		233
	20	64.874	503.65 – 2045.04	$2s2p^6 - 2s2p^5(^3P^\circ)3s$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		233
	50	65.149	503.65 – 2038.53	$2s2p^6 - 2s2p^5(^3P^\circ)3s$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		233
	50	198.550	0.0 – 503.65	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		598
	50	202.605	10.11 – 503.65	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		598

SULFUR IX (S^{8+}), Z = 16
Ground State $1s^22s^22p^4(^3P_2)$ (8 electrons)
Ionization Potential 3 057 700 cm^{-1}; 379.11 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	150	39.383	0.0 – 2539.2	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - {}^3P^\circ$	2 – 2		853
	200	39.516	0.0 – 2530.6	$2s^22p^4 - 2s^22p^3(^2D^\circ)4d$	$g^3P - {}^3D^\circ$	2 – 3		853
	250	46.373	0.0 – 2156.43	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		853
	150	46.413	0.0 – 2154.6	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 2		853
	20	46.514	7.97 – 2158.9	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 1		947
	150	46.549	10.63 – 2158.9	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	0 – 1		853
	250	46.585	0.0 – 2146.61	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 2		853
	150	46.624	0.0 – 2144.82	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 1		853
	50	46.713	0.0 – 2142.3	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3F^\circ$	2 – 2	Q	233,375
	50	46.760	7.97 – 2146.61	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 2		853
	100	46.799	7.97 – 2144.82	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 1		853
	100	46.843	7.97 – 2142.8	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 0		853
	50	46.906	58.294+E – 2190.2+E	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	${}^1D - {}^1P^\circ$	2 – 1		853
	250	47.047	0.0 – 2125.31	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3S^\circ$	2 – 1		853
	200	47.188	0.0 – 2119.18	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 1		853
	300	47.249	0.0 – 2116.45	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 2		853
	50	47.360	7.97 – 2119.4	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 0		853
	450	47.433	0.0 – 2108.19	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		853
	250	47.518	58.294+E – 2162.8+E	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	${}^1D - {}^1D^\circ$	2 – 2		853
	200	47.616	7.97 – 2108.1	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		853
	50	47.740	10.63 – 2105.3	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	0 – 1		853
	400	48.160	58.294+E – 2134.7+E	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	${}^1D - {}^1F^\circ$	2 – 3		853
	40	48.291						947
	200	48.367	122.678+E – 2190.2+E	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	${}^1S - {}^1P^\circ$	0 – 1		853
	250	48.564	58.294+E – 2117.4+E	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	${}^1D - {}^1D^\circ$	2 – 2		853
	100	48.766	58.294+E – 2108.9+E	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	${}^1D - {}^1P^\circ$	2 – 1		853
	300	49.119	0.0 – 2035.87	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		853
	250	49.328	7.97 – 2035.22	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		853
	150	49.390	10.63 – 2035.3	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	0 – 1		853
	300	52.859	0.0 – 1891.8	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	2 – 2		853
	450	54.175	0.0 – 1845.77	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	2 – 3		853
	200	54.431	7.97 – 1846.34	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	1 – 2		853
	50	54.516	10.63 – 1844.95	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	0 – 1		853
	250	55.540	58.294+E – 1858.79+E	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	${}^1D - {}^1D^\circ$	2 – 2		853
	200	56.081	0.0 – 1783.15	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - {}^3S^\circ$	2 – 1		853
	150	56.125	122.678+E – 1904.42+E	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	${}^1S - {}^1P^\circ$	0 – 1		853

S IX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	150	56.332	7.97 - 1783.15	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^3S^\circ$	1 - 1		853
	50	56.418	10.63 - 1783.15	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^3S^\circ$	0 - 1		853
		56.89	0.0 - 1757.80	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^5S^\circ$	2 - 2	P	680
		57.15	7.97 - 1757.80	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^5S^\circ$	1 - 2	P	680
	450	179.27	58.294+E - 616.11+E	$2s^22p^4 - 2s2p^5$	$^1D - ^1P^\circ$	2 - 1	P	160,372
	250	202.66	122.678+E - 616.11+E	$2s^22p^4 - 2s2p^5$	$^1S - ^1P^\circ$	0 - 1	P	160,372
	100	221.27	0.0 - 451.93	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	2 - 1	P	160,372
	100	223.28	7.97 - 455.83	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	1 - 0	P	160,372
	450	224.77	0.0 - 444.90	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	2 - 2	P	160,372
	50	225.25	7.97 - 451.93	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	1 - 1	P	160,372
	100	226.60	10.63 - 451.93	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	0 - 1	P	160,372
	100	228.87	7.97 - 444.90	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	1 - 2	P	160,372
		236.34	616.11+E - 1039.13+E	$2s2p^5 - 2p^6$	$^1P^\circ - ^1S$	1 - 0		868
		815.	0.0 - 122.678+E	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1S$	2 - 0	F,P	375,225
		872.	7.97 - 122.678+E	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1S$	1 - 0	F,P	375,225
		1553.	58.2937 - 122.678+E	$2s^22p^4 - 2s^22p^4$	$^1D - ^1S$	2 - 0	F,P	375,225
	2	1715.45	0.0 - 58.2937	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1D$	2 - 2	F	940
		1987.	7.97 - 58.2937	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1D$	1 - 2	F,P	375,940

SULFUR X (S^{9+}), Z = 16
Ground State $1s^22s^22p^3(^4S^\circ_{3/2})$ (7 electrons)
Ionization Potential 3 606 100 cm^{-1}; 447.10 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	34.31	0.0 - 2914.6	$2s^22p^3 - 2s^22p^2(^3P)4d$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		852
	50	41.357	0.0 - 2417.97	$2s^22p^3 - 2s2p^3(^5S^\circ)3p$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		852
	250	42.485	0.0 - 2353.8	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{1}{2}$		852
	350	42.495	0.0 - 2353.2	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		852
	500	42.543	0.0 - 2350.6	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		852
	50	42.698	83.591+E - 2425.59+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2P$	$\frac{5}{2} - \frac{3}{2}$		852
		42.937	83.591+E - 2412.88+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2D$	$\frac{5}{2} - \frac{5}{2}$		680
	600	43.002	83.591+E - 2409.03+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{5}{2} - \frac{7}{2}$		852
	100	43.782	128.812+E - 2412.88+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		852
	50	43.854	126.982+E - 2407.28+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		852
		43.984						680
	350	44.094	83.591+E - 2351.44+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2F$	$\frac{5}{2} - \frac{7}{2}$		852
	150	44.237	82.441+E - 2342.98+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2F$	$\frac{3}{2} - \frac{5}{2}$		852
	500	44.367	126.982+E - 2380.92+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		852
	500	44.406	128.812+E - 2380.79+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		852
	10	45.406	128.812+E - 2331.19+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		852
	500	45.997	378.45 - 2552.50	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2} - \frac{7}{2}$		852
	350	46.298	385.32 - 2545.24	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	$^4P - ^4D^\circ$	$\frac{3}{2} - \frac{5}{2}$		852
	100	46.430	388.87 - 2542.65	$2s2p^4 - 2s2p^3(^5S^\circ)3d$	$^4P - ^4D^\circ$	$\frac{1}{2} - \frac{3}{2}$		852
		47.190	126.982+E - 2246.10+E	$2s^22p^3 - 2s^22p^2(^1S)3s$	$^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		680
		47.229	128.812+E - 2246.10+E	$2s^22p^3 - 2s^22p^2(^1S)3s$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		680
	500	47.655	0.0 - 2098.46	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		852
	350	47.791	0.0 - 2092.36	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		852
	100	47.905	0.0 - 2087.46	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{1}{2}$		852

S X — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		48.116	82.441+E – 2160.75+E	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		680
	10	48.157	83.591+E – 2160.10+E	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		852
		49.102	83.591+E – 2120.12+E	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		853
		49.166	126.982+E – 2160.75+E	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	Q	680
		49.211	128.812+E – 2160.75+E	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		853
		49.255	128.812+E – 2160.10+E	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		853
		50.164	126.982+E – 2120.12+E	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		853
	50	50.219	128.812+E – 2120.12+E	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		852
	10	50.332	126.982+E – 2113.80+E	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		852
		50.397	128.812+E – 2113.80+E	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		853
	250	177.55	82.441+E – 645.66+E	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		161,249
	150	180.36	82.441+E – 636.86+E	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		161,249
	350	180.72	83.591+E – 636.86+E	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		161,249
	150	189.99	82.441+E – 608.84+E	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		561
	50	192.80	126.982+E – 645.66+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$	P	249
	150	193.49	128.812+E – 645.66+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		161,249
	100	196.14	126.982+E – 636.86+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		249
	200	196.83	128.812+E – 636.86+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		161,249
	200	207.53	126.982+E – 608.84+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		161,249
	200	208.33	128.812+E – 608.84+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		161,249
		212.60	520.82+E – 991.19+E	$2s2p^4 - 2p^5$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		248
	40	228.167	82.441+E – 520.69+E	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		856
	350	228.70	83.591+E – 520.82+E	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		161,249
		254.00	126.982+E – 520.69+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		161
	20	255.08	128.812+E – 520.82+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		161,372
	100	257.16	0.0 – 388.87	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		161,249
	150	259.52	0.0 – 385.32	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		161,249
	200	264.24	0.0 – 378.45	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		161,249
		521.1	2120.12+E – 2312.04+E	$2s^22p^2(^3P)3s - 2s^22p^2(^1D)3p$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	P	680
		538.7	2113.80+E – 2299.44+E	$2s^22p^2(^3P)3s - 2s^22p^2(^1D)3p$	$^2P - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	680
		558.9	2120.12+E – 2299.04+E	$2s^22p^2(^3P)3s - 2s^22p^2(^1D)3p$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$	P	680
		645.4	2092.36 – 2247.3	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)3p$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$	P	680
		658.2	2160.10+E – 2312.04+E	$2s^22p^2(^1D)3s - 2s^22p^2(^1D)3p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$	P	680
		661.0	2160.75+E – 2312.04+E	$2s^22p^2(^1D)3s - 2s^22p^2(^1D)3p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	P	680
		671.9	2098.46 – 2247.3	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)3p$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$	P	680
		673.2	2232.24+E – 2380.79+E	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	680
		681.3	2234.14+E – 2380.92+E	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	P	680
		687.8	2160.75+E – 2306.14+E	$2s^22p^2(^1D)3s - 2s^22p^2(^1D)3p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	P	680
		719.7	2160.10+E – 2299.04+E	$2s^22p^2(^1D)3s - 2s^22p^2(^1D)3p$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$	P	680
		721.0	2160.75+E – 2299.44+E	$2s^22p^2(^1D)3s - 2s^22p^2(^1D)3p$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$	P	680
		759.9	2264.64+E – 2396.24+E	$2s^22p^2(^1D)3p - 2s^22p^2(^1D)3d$	$^2F^\circ - ^2G$	$\frac{5}{2}-\frac{7}{2}$	P	680
		761.0	2205.4 – 2336.8	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)3d$	$^4P^\circ - ^4D$	$\frac{3}{2}-\frac{5}{2}$	P	680
		766.3	2266.74+E – 2397.24+E	$2s^22p^2(^1D)3p - 2s^22p^2(^1D)3d$	$^2F^\circ - ^2G$	$\frac{7}{2}-\frac{9}{2}$	P	680
		769.2	2209.4 – 2339.4	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)3d$	$^4P^\circ - ^4D$	$\frac{5}{2}-\frac{7}{2}$	P	680
		776.	0.0 – 128.812+E	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,225
		778.2	2222.94+E – 2351.44+E	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$	P	680
		778.8	2193.1 – 2321.5	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)3d$	$^4D^\circ - ^4F$	$\frac{3}{2}-\frac{5}{2}$	P	680
		779.8	2214.74+E – 2342.98+E	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$	P	680
		783.7	2197.2 – 2324.8	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)3d$	$^4D^\circ - ^4F$	$\frac{5}{2}-\frac{7}{2}$	P	680
		788.	0.0 – 126.982+E	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	F,P	375,225
		790.5	2366.94+E – 2493.44+E	$2s^22p^2(^1S)3p - 2s^22p^2(^1S)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	680
		791.1	2202.9 – 2329.3	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)3d$	$^4D^\circ - ^4F$	$\frac{7}{2}-\frac{9}{2}$	P	680
		833.3	2246.94+E – 2366.94+E	$2s^22p^2(^1S)3s - 2s^22p^2(^1S)3p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	680
		835.4	2246.94+E – 2366.64+E	$2s^22p^2(^1S)3s - 2s^22p^2(^1S)3p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	680

S X — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		901.4	2098.46 – 2209.4	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)3p$	${}^4P - {}^4P^\circ$	$\frac{5}{2} - \frac{5}{2}$	P	680
		903.0	2092.36 – 2203.1	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)3p$	${}^4P - {}^4P^\circ$	$\frac{3}{2} - \frac{1}{2}$	P	680
		937.7	2160.10+E – 2266.74+E	$2s^22p^2(^1D)3s - 2s^22p^2(^1D)3p$	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	680
		953.8	2092.36 – 2197.2	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)3p$	${}^4P - {}^4D^\circ$	$\frac{3}{2} - \frac{5}{2}$	P	680
		957.5	2098.46 – 2202.9	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)3p$	${}^4P - {}^4D^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	680
		992.7	2092.36 – 2193.1	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)3p$	${}^4P - {}^4D^\circ$	$\frac{3}{2} - \frac{3}{2}$	P	680
		1012.8	2098.46 – 2197.2	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)3p$	${}^4P - {}^4D^\circ$	$\frac{5}{2} - \frac{5}{2}$	P	680
	1	1196.26	0.0 – 83.5939	$2s^22p^3 - 2s^22p^3$	$g{}^4S^\circ - {}^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$	F	940
	3	1213.00	0.0 – 82.4402	$2s^22p^3 - 2s^22p^3$	$g{}^4S^\circ - {}^2D^\circ$	$\frac{3}{2} - \frac{3}{2}$	F	940

SULFUR XI (S^{10+}), Z = 16
Ground State $1s^22s^22p^2(^3P_0)$ (6 electrons)
Ionization Potential 4 071 400 cm^{-1}; 504.79 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	31.04	12.375 – 3233.98	$2s^22p^2 - 2s^22p4d$	$g{}^3P - {}^3D^\circ$	2 – 3		852
	10	37.773	12.375 – 2659.77	$2s^22p^2 - 2s2p^2(^4P)3p$	$g{}^3P - {}^3D^\circ$	2 – 3		852
	100	38.996	185.38+K – 2749.75+K	$2s2p^3 - 2s2p^2(^4P)3d$	${}^5S^\circ - {}^5P$	2 – 2		852
		39.025	0.0 – 2562.1	$2s^22p^2 - 2s^22p3d$	$g{}^3P - {}^3P^\circ$	0 – 1	P	949
	100	39.049	185.38+K – 2746.26+K	$2s2p^3 - 2s2p^2(^4P)3d$	${}^5S^\circ - {}^5P$	2 – 3		852
		39.089	5.19 – 2563.5	$2s^22p^2 - 2s^22p3d$	$g{}^3P - {}^3P^\circ$	1 – 0	P	949
	100	39.11	5.19 – 2562.1	$2s^22p^2 - 2s^22p3d$	$g{}^3P - {}^3P^\circ$	1 – 1		852
		39.131	5.19 – 2560.8	$2s^22p^2 - 2s^22p3d$	$g{}^3P - {}^3P^\circ$	1 – 2	P	949
		39.214	12.375 – 2562.1	$2s^22p^2 - 2s^22p3d$	$g{}^3P - {}^3P^\circ$	2 – 1	P	949
	150	39.24	12.375 – 2560.8	$2s^22p^2 - 2s^22p3d$	$g{}^3P - {}^3P^\circ$	2 – 2		852
	500	39.300	5.19 – 2549.72	$2s^22p^2 - 2s^22p3d$	$g{}^3P - {}^3D^\circ$	1 – 2		852
	800	39.323	12.375 – 2555.42	$2s^22p^2 - 2s^22p3d$	$g{}^3P - {}^3D^\circ$	2 – 3		852
		39.336	5.19 – 2547.12	$2s^22p^2 - 2s^22p3d$	$g{}^3P - {}^3D^\circ$	1 – 1	P	949
		39.408	12.375 – 2549.72	$2s^22p^2 - 2s^22p3d$	$g{}^3P - {}^3D^\circ$	2 – 2	P	949
		39.555	5.19 – 2532.25+E	$2s^22p^2 - 2s^22p3d$	$g{}^3P - {}^1D^\circ$	1 – 2		949
	50	39.572	355.32 – 2882.36	$2s2p^3 - 2s2p^2(^2D)3d$	${}^3D^\circ - {}^3F$	3 – 4		852
	800	39.648	67.130+E – 2589.33+E	$2s^22p^2 - 2s^22p3d$	${}^1D - {}^1F^\circ$	2 – 3		852
		39.728	12.375 – 2529.50	$2s^22p^2 - 2s^22p3d$	$g{}^3P - {}^3F^\circ$	2 – 3	P	949
		39.782	12.375 – 2526.08	$2s^22p^2 - 2s^22p3d$	$g{}^3P - {}^3F^\circ$	2 – 2	P	949
		40.103	67.130+E – 2560.8	$2s^22p^2 - 2s^22p3d$	${}^1D - {}^3P^\circ$	2 – 2	P	949
		40.277	67.130+E – 2549.72	$2s^22p^2 - 2s^22p3d$	${}^1D - {}^3D^\circ$	2 – 2	P	949
	100	40.566	67.130+E – 2532.25+E	$2s^22p^2 - 2s^22p3d$	${}^1D - {}^1D^\circ$	2 – 2		852
		40.580	67.130+E – 2529.50	$2s^22p^2 - 2s^22p3d$	${}^1D - {}^3F^\circ$	2 – 3	P	949
	50	40.707	132.956+E – 2589.51+E	$2s^22p^2 - 2s^22p3d$	${}^1S - {}^1P^\circ$	0 – 1		852
	50	41.386	355.32 – 2771.6	$2s2p^3 - 2s2p^2(^4P)3d$	${}^3D^\circ - {}^3F$	3 – 4		852
	10	41.474	355.04 – 2766.19	$2s2p^3 - 2s2p^2(^4P)3d$	${}^3D^\circ - {}^3F$	2 – 3		852
	10	41.543	355.36 – 2762.5	$2s2p^3 - 2s2p^2(^4P)3d$	${}^3D^\circ - {}^3F$	1 – 2		852
	10	42.751	185.38+K – 2524.5+K	$2s2p^3 - 2s2p^2(^4P)3s$	${}^5S^\circ - {}^5P$	2 – 3		852
	150	43.123	12.375 – 2331.32	$2s^22p^2 - 2s^22p3s$	$g{}^3P - {}^3P^\circ$	2 – 2		852
	100	43.900	67.130+E – 2345.03+E	$2s^22p^2 - 2s^22p3s$	${}^1D - {}^1P^\circ$	2 – 1		852
	300	54.108	811.69 – 2659.77	$2p^4 - 2s2p^2(^4P)3p$	${}^3P - {}^3D^\circ$	2 – 3	Q	853,375
	200	186.85	0.0 – 535.2	$2s^22p^2 - 2s2p^3$	$g{}^3P - {}^3S^\circ$	0 – 1		561
	225	188.68	5.19 – 535.2	$2s^22p^2 - 2s2p^3$	$g{}^3P - {}^3S^\circ$	1 – 1		561
	250	190.37	67.130+E – 592.48+E	$2s^22p^2 - 2s2p^3$	${}^1D - {}^1P^\circ$	2 – 1		561
	250	191.26	12.375 – 535.2	$2s^22p^2 - 2s2p^3$	$g{}^3P - {}^3S^\circ$	2 – 1		561
	125	213.55	355.36 – 823.61	$2s2p^3 - 2p^4$	${}^3D^\circ - {}^3P$	1 – 0		561

S XI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	125	214.85	355.04 – 820.5	$2s2p^3 - 2p^4$	$^3D^\circ - {}^3P$	2 – 1		561
	100	214.98	355.36 – 820.5	$2s2p^3 - 2p^4$	$^3D^\circ - {}^3P$	1 – 1		561
	250	215.95	67.130+E – 530.22+E	$2s^22p^2 - 2s2p^3$	$^1D - {}^1D^\circ$	2 – 2		561
	200	217.63	132.956+E – 592.48+E	$2s^22p^2 - 2s2p^3$	$^1S - {}^1P^\circ$	0 – 1		561
	125	218.99	355.04 – 811.69	$2s2p^3 - 2p^4$	$^3D^\circ - {}^3P$	2 – 2		561
	200	219.13	355.32 – 811.69	$2s2p^3 - 2p^4$	$^3D^\circ - {}^3P$	3 – 2		561
	150	239.81	0.0 – 416.99	$2s^22p^2 - 2s2p^3$	$g\,^3P - {}^3P^\circ$	0 – 1		561
	125	242.57	5.19 – 417.42	$2s^22p^2 - 2s2p^3$	$g\,^3P - {}^3P^\circ$	1 – 2		561
	175	242.82	5.19 – 416.99	$2s^22p^2 - 2s2p^3$	$g\,^3P - {}^3P^\circ$	1 – 1		561
	75	245.94	416.99 – 823.61	$2s2p^3 - 2p^4$	$^3P^\circ - {}^3P$	1 – 0		561
	200	246.90	12.375 – 417.42	$2s^22p^2 - 2s2p^3$	$g\,^3P - {}^3P^\circ$	2 – 2		561
	250	247.12	12.375 – 416.99	$2s^22p^2 - 2s2p^3$	$g\,^3P - {}^3P^\circ$	2 – 1		561
	75	247.83	416.99 – 820.5	$2s2p^3 - 2p^4$	$^3P^\circ - {}^3P$	1 – 1		561
	75	248.09	417.42 – 820.5	$2s2p^3 - 2p^4$	$^3P^\circ - {}^3P$	2 – 1		561
	25	252.93	592.48+E – 987.84+E	$2s2p^3 - 2p^4$	$^1P^\circ - {}^1S$	1 – 0		561
	50	253.36	416.99 – 811.69	$2s2p^3 - 2p^4$	$^3P^\circ - {}^3P$	1 – 2		561
	150	253.62	417.42 – 811.69	$2s2p^3 - 2p^4$	$^3P^\circ - {}^3P$	2 – 2		561
	175	281.40	0.0 – 355.36	$2s^22p^2 - 2s2p^3$	$g\,^3P - {}^3D^\circ$	0 – 1		561
	250	285.58	5.19 – 355.36	$2s^22p^2 - 2s2p^3$	$g\,^3P - {}^3D^\circ$	1 – 1		561
	200	285.83	5.19 – 355.04	$2s^22p^2 - 2s2p^3$	$g\,^3P - {}^3D^\circ$	1 – 2		561
	200	291.59	12.375 – 355.32	$2s^22p^2 - 2s2p^3$	$g\,^3P - {}^3D^\circ$	2 – 3		561
	0	291.83	12.375 – 355.04	$2s^22p^2 - 2s2p^3$	$g\,^3P - {}^3D^\circ$	2 – 2		561
	200	295.63	530.22+E – 868.49+E	$2s2p^3 - 2p^4$	$^1D^\circ - {}^1D$	2 – 2		561
	0	350.50	535.2 – 820.5	$2s2p^3 - 2p^4$	$^3S^\circ - {}^3P$	1 – 1		561
	0	362.34	592.48+E – 868.49+E	$2s2p^3 - 2p^4$	$^1P^\circ - {}^1D$	1 – 2		561
		555.0	5.19 – 185.38+K	$2s^22p^2 - 2s2p^3$	$g\,^3P - {}^5S^\circ$	1 – 2	P	680
		578.0	12.375 – 185.38+K	$2s^22p^2 - 2s2p^3$	$g\,^3P - {}^5S^\circ$	2 – 2	P	680
		783.	5.1921 – 132.956+E	$2s^22p^2 - 2s^22p^2$	$g\,^3P - {}^1S$	1 – 0	F,P	375,225
		829.	12.3728 – 132.956+E	$2s^22p^2 - 2s^22p^2$	$g\,^3P - {}^1S$	2 – 0	F,P	375,225
		1489.6	0.0 – 67.1304	$2s^22p^2 - 2s^22p^2$	$g\,^3P - {}^1D$	0 – 2	F,P	375,940
		1519.	67.1304 – 132.956+E	$2s^22p^2 - 2s^22p^2$	$^1D - {}^1S$	2 – 0	F,P	375,225
	0	1614.47	5.1921 – 67.1304	$2s^22p^2 - 2s^22p^2$	$g\,^3P - {}^1D$	1 – 2	F	940,442
	3	1826.23	12.3728 – 67.1304	$2s^22p^2 - 2s^22p^2$	$g\,^3P - {}^1D$	2 – 2	F	940,442

SULFUR XII (S^{11+}), Z = 16
Ground State $1s^22s^22p(^2P^\circ_{1/2})$ (5 electrons)
Ionization Potential 4 554 300 cm^{-1}; 564.67 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		4.490						839
		5.18	13.1 – 19310.	$1s^22s^22p - 1s2s^22p^2$	$g\,^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		839
	10	25.65	13.1 – 3911.8	$2s^22p - 2s^25d$	$g\,^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		852
	10	26.89	13.1 – 3732.	$2s^22p - 2s2p(^3P^\circ)4p$	$g\,^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		852
	10	27.89	346.99 – 3932.5	$2s2p^2 - 2s2p(^1P^\circ)4d$	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		852
	50	28.18	205.63+S – 3754.23+S	$2s2p^2 - 2s2p(^3P)4d$	$^4P - {}^4D^\circ$	$\frac{5}{2} - \frac{7}{2}$		852
	50	28.22	0.0 – 3543.6	$2s^22p - 2s^24d$	$g\,^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		852
	100	28.33	13.1 – 3542.9	$2s^22p - 2s^24d$	$g\,^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		852
	100	29.20	346.99 – 3771.6	$2s2p^2 - 2s2p(^3P)4d$	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		852
	50	29.24	346.68 – 3766.7	$2s2p^2 - 2s2p(^3P)4d$	$^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		852
	50	32.926	13.1 – 3050.25	$2s^22p - 2s2p(^1P^\circ)3p$	$g\,^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		852
	10	34.132	0.0 – 2929.8	$2s^22p - 2s2p(^3P^\circ)3p$	$g\,^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		852

S XII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	34.533	0.0 – 2895.78	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		852
	100	34.586	13.1 – 2904.56	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		852
	50	35.203	0.0 – 2840.67	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		852
	50	35.275	13.1 – 2848.	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		852
	100	35.955	346.99 – 3128.24	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		852
	50	36.124	198.87+S – 2967.11+S	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4P^\circ$	$\frac{3}{2} - \frac{3}{2}$		852
	100	36.253	205.63+S – 2964.02+S	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4P^\circ$	$\frac{5}{2} - \frac{5}{2}$		852
	350	36.335	205.63+S – 2957.8+S	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{5}{2} - \frac{7}{2}$		852
	500	36.398	0.0 – 2747.4	$2s^22p - 2s^23d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		852
	800	36.563	13.1 – 2748.13	$2s^22p - 2s^23d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		852
	10	37.463	471.387 – 3140.69	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2P - {}^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$		852
	350	37.603	346.99 – 3006.35	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		852
	250	37.714	346.68 – 2998.22	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		852
	100	38.32	346.99 – 2956.29	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^2D - {}^2D^\circ$	$\frac{5}{2} - \frac{5}{2}$		852
	10	38.824	439.56 – 3015.29	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		852
	10	38.882	439.56 – 3011.44	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		852
	20	212.127	0.0 – 471.387	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		856
	30	215.165	0.0 – 464.71	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		856
	30	218.193	13.1 – 471.387	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		856
	30	221.429	13.1 – 464.71	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		856
	30	227.482	0.0 – 439.56	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		856
	75	234.48	13.1 – 439.56	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		561
	175	240.26	194.07+S – 610.29+S	$2s2p^2 - 2p^3$	${}^4P - {}^4S^\circ$	$\frac{1}{2} - \frac{3}{2}$		561
	200	243.06	198.87+S – 610.29+S	$2s2p^2 - 2p^3$	${}^4P - {}^4S^\circ$	$\frac{3}{2} - \frac{3}{2}$		561
	250	247.12	205.63+S – 610.29+S	$2s2p^2 - 2p^3$	${}^4P - {}^4S^\circ$	$\frac{5}{2} - \frac{3}{2}$		561
	20	288.45	0.0 – 346.68	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		561,856
	175	299.50	13.1 – 346.99	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		561
		323.18	471.387 – 780.81	$2s2p^2 - 2p^3$	${}^2P - {}^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		250
		328.39	464.71 – 769.23	$2s2p^2 - 2p^3$	${}^2P - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		250
		444.16	464.71 – 689.85	$2s2p^2 - 2p^3$	${}^2P - {}^2D^\circ$	$\frac{1}{2} - \frac{3}{2}$		250
		456.55	471.387 – 690.42	$2s2p^2 - 2p^3$	${}^2P - {}^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$		250

SULFUR XIII (S^{12+}), Z = 16
Ground State $1s^22s^2(^1S_0)$ (4 electrons)
Ionization Potential 5 255 900 cm^{-1}; 651.65 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		4.454	0.0 – 22452.	$1s^22s^2 - 1s2s^23p$	$g^1S - {}^1P^\circ$	0 – 1		839
		5.137	0.0 – 19467.	$1s^22s^2 - 1s2s^22p$	$g^1S - {}^1P^\circ$	0 – 1		839
	10	23.24	213.22+X – 4514.32+X	$2s2p - 2s5d$	${}^3P^\circ - {}^3D$	2 – 3		852
	250	23.70	536.94+X – 4756.35+X	$2p^2 - 2p5d$	${}^3P - {}^3D^\circ$	2 – 3		249
	10	24.59	0.0 – 4066.7	$2s^2 - 2s4p$	$g^1S - {}^1P^\circ$	0 – 1		852
	10	25.76	203.48+X – 4085.42+X	$2s2p - 2s4d$	${}^3P^\circ - {}^3D$	1 – 2		852
	50	25.83	213.22+X – 4085.42+X	$2s2p - 2s4d$	${}^3P^\circ - {}^3D$	2 – 3		852
	10	26.35	536.94+X – 4332.02+X	$2p^2 - 2p4d$	${}^3P - {}^3D^\circ$	2 – 3		852
		30.08	0.0 – 3324.79	$2s^2 - 2p3s$	$g^1S - {}^1P^\circ$	0 – 1		374
	50	31.649	213.22+X – 3372.82+X	$2s2p - 2p3p$	${}^3P^\circ - {}^3P$	2 – 2		280
	10	31.72	203.48+X – 3355.02+X	$2s2p - 2p3p$	${}^3P^\circ - {}^3S$	1 – 1		852
	0	31.829	213.22+X – 3355.02+X	$2s2p - 2p3p$	${}^3P^\circ - {}^3S$	2 – 1		280

S XIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	31.934	213.22+X - 3344.64+X	2s2p - 2p3p	$^3P^o$ - ^3D	2 - 3		280
	100	32.191	0.0 - 3106.46	$2s^2$ - 2s3p	g^1S - $^3P^o$	0 - 1		852
	100	32.236	0.0 - 3102.15	$2s^2$ - 2s3p	g^1S - $^1P^o$	0 - 1		280
	100	33.252	389.66 - 3396.96	2s2p - 2p3p	$^1P^o$ - ^1D	1 - 2		280
	50	33.796	199.20+X - 3158.10+X	2s2p - 2s3d	$^3P^o$ - ^3D	0 - 1		280
	100	33.843	203.48+X - 3158.28+X	2s2p - 2s3d	$^3P^o$ - ^3D	1 - 2		280
	150	33.945	213.22+X - 3159.22+X	2s2p - 2s3d	$^3P^o$ - ^3D	2 - 3		280
	0	34.118	389.66 - 3320.63	2s2p - 2p3p	$^1P^o$ - ^1P	1 - 1		280
	0	34.633	523.30+X - 3410.72+X	$2p^2$ - 2p3d	^3P - $^3D^o$	0 - 1		280
	100	34.678	528.84+X - 3412.54+X	$2p^2$ - 2p3d	^3P - $^3D^o$	1 - 2		280
	150	34.712	536.94+X - 3417.74+X	$2p^2$ - 2p3d	^3P - $^3D^o$	2 - 3		280
	0	34.771	589.49 - 3465.39	$2p^2$ - 2p3d	^1D - $^1P^o$	2 - 1		280
	150	34.854	589.49 - 3458.49	$2p^2$ - 2p3d	^1D - $^1F^o$	2 - 3		280
	10	35.614	203.48+X - 3011.62+X	2s2p - 2s3s	$^3P^o$ - ^3S	1 - 1		852
	100	35.665	389.66 - 3193.56	2s2p - 2s3d	$^1P^o$ - ^1D	1 - 2		280
	50	35.751	589.49 - 3386.59	$2p^2$ - 2p3d	^1D - $^1D^o$	2 - 2		280
	150	36.393	528.84+X - 3276.74+X	$2p^2$ - 2p3s	^3P - $^3P^o$	1 - 2		280
	0	36.499	536.94+X - 3276.74+X	$2p^2$ - 2p3s	^3P - $^3P^o$	2 - 2		280
	150	36.559	589.49 - 3324.79	$2p^2$ - 2p3s	^1D - $^1P^o$	2 - 1		280
	0	36.642	536.94+X - 3266.04+X	$2p^2$ - 2p3s	^3P - $^3P^o$	2 - 1		280
	150	37.600	389.66 - 3049.26	2s2p - 2s3s	$^1P^o$ - ^1S	1 - 0		280
		39.8	589.49 - 3102.15	$2p^2$ - 2s3p	^1D - $^1P^o$	2 - 1	P	374
	250	256.66	0.0 - 389.66	$2s^2$ - 2s2p	g^1S - $^1P^o$	0 - 1		561
	75	299.89	203.48+X - 536.94+X	2s2p - $2p^2$	$^3P^o$ - ^3P	1 - 2		561
	50	303.37	199.20+X - 528.84+X	2s2p - $2p^2$	$^3P^o$ - ^3P	0 - 1		561
	50	307.36	203.48+X - 528.84+X	2s2p - $2p^2$	$^3P^o$ - ^3P	1 - 1		561
	125	308.91	213.22+X - 536.94+X	2s2p - $2p^2$	$^3P^o$ - ^3P	2 - 2		561
	25	312.68	203.48+X - 523.30+X	2s2p - $2p^2$	$^3P^o$ - ^3P	1 - 0		561
	50	316.84	213.22+X - 528.84+X	2s2p - $2p^2$	$^3P^o$ - ^3P	2 - 1		561
		491.44	0.0 - 203.48+X	$2s^2$ - 2s2p	g^1S - $^3P^o$	0 - 1		443
		500.42	389.66 - 589.49	2s2p - $2p^2$	$^1P^o$ - ^1D	1 - 2		250
		518.05	3193.56 - 3386.59	2s3d - 2p3d	^1D - $^1D^o$	2 - 2	P	374

SULFUR XIV (S^{13+}), Z = 16
Ground State $1s^22s(^2S_{1/2})$ (3 electrons)
Ionization Potential 5 703 600 cm^{-1}; 707.16 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		4.1924	239.46 - 24092.2	$1s^22p$ - 1s2p4p	$^2P^o$ - ^2D	$\frac{3}{2}$ - $\frac{5}{2}$		624
		4.3705	239.46 - 23120.1	$1s^22p$ - $1s2p(^1P^o)3p$	$^2P^o$ - ^2P	$\frac{3}{2}$ - $\frac{3}{2}$		643
		4.3765	0.0 - 22849.3	$1s^22s$ - 1s2s3p	g^2S - $^2P^o$	$\frac{1}{2}$ - $\frac{3}{2}$		624
		4.3822	239.46 - 23059.0	$1s^22p$ - $1s2p(^3P^o)3p$	$^2P^o$ - ^2S	$\frac{3}{2}$ - $\frac{1}{2}$		643
		4.386	224.33 - 23023.2	$1s^22p$ - $1s2p(^3P^o)3p$	$^2P^o$ - ^2P	$\frac{1}{2}$ - $\frac{1}{2}$		283
		4.3891	239.46 - 23023.2	$1s^22p$ - $1s2p(^3P^o)3p$	$^2P^o$ - ^2P	$\frac{3}{2}$ - $\frac{3}{2}$		643
		4.395	224.33 - 22960.0	$1s^22p$ - $1s2p(^3P^o)3p$	$^2P^o$ - ^2D	$\frac{1}{2}$ - $\frac{3}{2}$		283
		4.4013	239.46 - 22960.0	$1s^22p$ - $1s2p(^3P^o)3p$	$^2P^o$ - ^2D	$\frac{3}{2}$ - $\frac{5}{2}$		643
		5.0415	3287. - 23122.4	$1s^23p$ - $1s2p(^1P^o)3p$	$^2P^o$ - ^2S	$\frac{3}{2}$ - $\frac{1}{2}$		643
		5.0468	3287. - 23101.5	$1s^23p$ - $1s2p(^1P^o)3p$	$^2P^o$ - ^2D	$\frac{3}{2}$ - $\frac{5}{2}$		643
		5.0565	3282.64 - 23059.0	$1s^23p$ - $1s2p(^3P^o)3p$	$^2P^o$ - ^2S	$\frac{1}{2}$ - $\frac{1}{2}$		643
		5.0607	239.46 - 19998.6	$1s^22p$ - $1s2p^2$	$^2P^o$ - ^2S	$\frac{3}{2}$ - $\frac{1}{2}$		643

S XIV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		5.0648	0.0 – 19743.3	$1s^22s - 1s(2s2p(^1P^\circ))$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		643
		5.066	0.0 – 19743.3	$1s^22s - 1s(2s2p(^1P^\circ))$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	283
		5.067	0.0 – 19739.4	$1s^22s - 1s(2s2p(^1P^\circ))$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	P	283
	7	5.0861	0.0 – 19669.6	$1s^22s - 1s(2s2p(^3P^\circ))$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		643,809
		5.087	0.0 – 19661.8	$1s^22s - 1s(2s2p(^3P^\circ))$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	P	283
		5.0903	239.46 – 19882.0	$1s^22p - 1s2p^2$	${}^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		643
		5.0964	224.33 – 19840.0	$1s^22p - 1s2p^2$	${}^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		643
		5.1010	239.46 – 19840.0	$1s^22p - 1s2p^2$	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		643
		5.122	0.0 – 19523.6	$1s^22s - 1s(2s2p(^3P^\circ))$	$g^2S - {}^4P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	629
		5.127	224.33 – 19732.7	$1s^22p - 1s2p^2$	${}^2P^\circ - {}^4P$	$\frac{1}{2} - \frac{3}{2}$	P	629
	1	5.128	239.46 – 19740.2	$1s^22p - 1s2p^2$	${}^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$	P	629,809
		5.130	239.46 – 19732.7	$1s^22p - 1s2p^2$	${}^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$	P	629
	1	5.132	239.46 – 19725.0	$1s^22p - 1s2p^2$	${}^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{1}{2}$	P	629,809
		21.72	224.33 – 4828.4	$1s^22p - 1s^25d$	${}^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		280
	50	21.79	239.46 – 4828.8	$1s^22p - 1s^25d$	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		249
	150	23.04	0.0 – 4341.8	$1s^22s - 1s^24p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		249
	100	24.26	239.46 – 4361.5	$1s^22p - 1s^24d$	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		249
	150	24.43	239.46 – 4332.8	$1s^22p - 1s^24s$	${}^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		249
	100	30.423	0.0 – 3287.	$1s^22s - 1s^23p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		280,852
	50	30.463	0.0 – 3282.64	$1s^22s - 1s^23p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		280,852
	250	32.430	224.33 – 3307.84	$1s^22p - 1s^23d$	${}^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		280,852
	800	32.554	239.46 – 3311.07	$1s^22p - 1s^23d$	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		280,852
	10	33.259	224.33 – 3231.10	$1s^22p - 1s^23s$	${}^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		852
	50	33.426	239.46 – 3231.10	$1s^22p - 1s^23s$	${}^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		852
	300	417.61	0. – 239.46	$1s^22s - 1s^22p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	730
	300	445.77	0. – 224.33	$1s^22s - 1s^22p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	P	730

SULFUR XV (S^{14+}), Z = 16
Ground State $1s^2(^1S_0)$ (2 electrons)
Ionization Potential 26 002 400 cm^{-1}; 3323.92 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		3.949	0.0 – 25322.9	$1s^2 - 1s6p$	$g^1S - {}^1P^\circ$	0 – 1		643
		3.998	0.0 – 25014.92	$1s^2 - 1s5p$	$g^1S - {}^1P^\circ$	0 – 1		643
		4.0883	0.0 – 24459.76	$1s^2 - 1s4p$	$g^1S - {}^1P^\circ$	0 – 1	P	643
	1	4.2990	0.0 – 23261.37	$1s^2 - 1s3p$	$g^1S - {}^1P^\circ$	0 – 1	P	643,856
		4.3045	0.0 – 23231.48	$1s^2 - 1s3p$	$g^1S - {}^3P^\circ$	0 – 1	P	644
	3	5.0385	0.0 – 19847.25	$1s^2 - 1s2p$	$g^1S - {}^1P^\circ$	0 – 1	P	643,856
	1	5.0662	0.0 – 19738.53	$1s^2 - 1s2p$	$g^1S - {}^3P^\circ$	0 – 1	P	643,856
	2	5.101	0.0 – 19603.07	$1s^2 - 1s2s$	$g^1S - {}^3S$	0 – 1	F,P	375,856,918
		27.53	19603.07 – 23235.34	$1s2s - 1s3p$	${}^3S - {}^3P^\circ$	1 – 2	P	375
		28.45	19746.39 – 23261.37	$1s2s - 1s3p$	${}^1S - {}^1P^\circ$	0 – 1	P	375
		48.58	23259.50+R – 25317.96+R	$1s3d - 1s6f$	${}^3D - {}^3F^\circ$	3 – 4	P	087
		48.61	23261.80+K – 25318.99+K	$1s3d - 1s6f$	${}^1D - {}^1F^\circ$	2 – 3	P	087
		56.92	23259.50+R – 25016.35+R	$1s3d - 1s5f$	${}^3D - {}^3F^\circ$	3 – 4	P	087
		56.96	23261.80+K – 25017.42+K	$1s3d - 1s5f$	${}^1D - {}^1F^\circ$	2 – 3	P	087
		79.68	23194.10 – 24449.12	$1s3s - 1s4p$	${}^3S - {}^3P^\circ$	1 – 2	P	375
		81.44	23231.94 – 24459.76	$1s3s - 1s4p$	${}^1S - {}^1P^\circ$	0 – 1	P	375
		83.25	23259.50+R – 24460.70+R	$1s3d - 1s4f$	${}^3D - {}^3F^\circ$	3 – 4	P	087
		83.33	23261.80+K – 24461.80+K	$1s3d - 1s4f$	${}^1D - {}^1F^\circ$	2 – 3	P	087

S XV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		673.85	19603.07 – 19751.47	1s2s – 1s2p	${}^3S - {}^3P^\circ$	1 – 2	P	375
		991.47	19746.39 – 19847.25	1s2s – 1s2p	${}^1S - {}^1P^\circ$	0 – 1	P	375

SULFUR XVI (S^{15+}), Z = 16
Ground State $1s(^2S_{1/2})$ (1 electron)
Ionization Potential 28 182 460 cm^{-1}; 3494.21 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		3.584	0.0 – 27901.5278	1s – 10p	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		3.593	0.0 – 27835.6273	1s – 9p	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		3.604	0.0 – 27743.4950	1s – 8p	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		3.622	0.0 – 27609.1085	1s – 7p	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		3.649	0.0 – 27402.0454	1s – 6p	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		3.696	0.0 – 27057.6973	1s – 5p	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
	10	3.784	0.0 – 26424.8240	1s – 4p	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309,375
	20	3.991	0.0 – 25057.5537	1s – 3p	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309,375
	10	3.992	0.0 – 25050.3835	1s – 3p	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	P	309,375
	65	4.727	0.0 – 21153.4280	1s – 2p	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309,856
	35	4.733	0.0 – 21129.2350	1s – 2p	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	P	309,856
		14.768	21130.0950 – 27901.5278	2s – 10p	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		14.819	21153.4280 – 27901.5278	2p – 10d	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		14.913	21130.0950 – 27835.6273	2s – 9p	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		14.965	21153.4280 – 27835.6273	2p – 9d	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		15.121	21130.0950 – 27743.4950	2s – 8p	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		15.174	21153.4280 – 27743.4950	2p – 8d	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		15.434	21130.0950 – 27609.1085	2s – 7p	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		15.490	21153.4280 – 27609.1085	2p – 7d	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		15.944	21130.0950 – 27402.0454	2s – 6p	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		16.004	21153.4280 – 27402.0454	2p – 6d	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		16.870	21130.0950 – 27057.6973	2s – 5p	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		16.935	21153.4280 – 27058.2077	2p – 5d	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		18.887	21130.0950 – 26424.8240	2s – 4p	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		18.967	21153.4280 – 26425.8210	2p – 4d	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		25.462	21130.0950 – 25057.5537	2s – 3p	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		25.598	21153.4280 – 25059.9163	2p – 3d	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		35.077	25050.6412 – 27901.5278	3s – 10p	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		35.162	25057.5537 – 27901.5278	3p – 10d	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		35.191	25059.9163 – 27901.5278	3d – 10f	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		35.907	25050.6412 – 27835.6273	3s – 9p	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		35.996	25057.5537 – 27835.6273	3p – 9d	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		36.027	25059.9163 – 27835.6273	3d – 9f	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		37.135	25050.6412 – 27743.4950	3s – 8p	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		37.231	25057.5537 – 27743.4950	3p – 8d	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		37.264	25059.9163 – 27743.4950	3d – 8f	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		39.086	25050.6412 – 27609.1085	3s – 7p	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		39.192	25057.5537 – 27609.1085	3p – 7d	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		39.228	25059.9163 – 27609.1085	3d – 7f	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		42.528	25050.6412 – 27402.0454	3s – 6p	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		42.653	25057.5537 – 27402.0454	3p – 6d	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		42.696	25059.9163 – 27402.0454	3d – 6f	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309

S XVI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		49.824	25050.6412 – 27057.6973	3s – 5p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		49.984	25057.5537 – 27058.2077	3p – 5d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		50.036	25059.9163 – 27058.4630	3d – 5f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		67.585	26421.9090 – 27901.5278	4s – 10p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		67.718	26424.8240 – 27901.5278	4p – 10d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		67.764	26425.8210 – 27901.5278	4d – 10f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		70.735	26421.9090 – 27835.6273	4s – 9p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		70.882	26424.8240 – 27835.6273	4p – 9d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		70.932	26425.8210 – 27835.6273	4d – 9f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		72.770	25050.6412 – 26424.8240	3s – 4p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		73.085	25057.5537 – 26425.8210	3p – 4d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		73.185	25059.9163 – 26426.3195	3d – 4f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		75.667	26421.9090 – 27743.4950	4s – 8p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		75.834	26424.8240 – 27743.4950	4p – 8d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		75.891	26425.8210 – 27743.4950	4d – 8f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		84.232	26421.9090 – 27609.1085	4s – 7p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		84.439	26424.8240 – 27609.1085	4p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		84.510	26425.8210 – 27609.1085	4d – 7f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		102.027	26421.9090 – 27402.0454	4s – 6p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		102.331	26424.8240 – 27402.0454	4p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		102.436	26425.8210 – 27402.0454	4d – 6f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		118.298	27056.2054 – 27901.5278	5s – 10p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		118.507	27057.6973 – 27901.5278	5p – 10d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		118.579	27058.2077 – 27901.5278	5d – 10f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		128.300	27056.2054 – 27835.6273	5s – 9p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		128.546	27057.6973 – 27835.6273	5p – 9d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		128.631	27058.2077 – 27835.6273	5d – 9f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		145.499	27056.2054 – 27743.4950	5s – 8p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		145.816	27057.6973 – 27743.4950	5p – 8d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		145.924	27058.2077 – 27743.4950	5d – 8f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		157.285	26421.9090 – 27057.6973	4s – 5p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		157.882	26424.8240 – 27058.2077	4p – 5d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		158.067	26425.8210 – 27058.4630	4d – 5f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		180.864	27056.2054 – 27609.1085	5s – 7p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		181.353	27057.6973 – 27609.1085	5p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		181.521	27058.2077 – 27609.1085	5d – 7f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309
		289.151	27056.2054 – 27402.0454	5s – 6p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	309
		290.404	27057.6973 – 27402.0454	5p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		290.835	27058.2077 – 27402.0454	5d – 6f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	309

CHLORINE , Z = 17
Unclassified Lines

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	34.31						250
	200	34.66						250
	40	35.33						250
	1	39.559						179
	10	47.990						179

CHLORINE I (Cl^{0+}), Z = 17
Ground State $1s^2 2s^2 2p^6 3s^2 3p^5 (^2P^\circ_{3/2})$ (17 electrons)
Ionization Potential 104 591.0 cm^{-1}; 12.968 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	969.917	0.0 – 103.10134	$3s^2 3p^5 - 3s^2 3p^4(^1D)5s$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		611
	1	976.452	0.0 – 102.41157	$3s^2 3p^5 - 3s^2 3p^4(^3P_0)8s$	$g^2P^\circ - 0[0]$	$\frac{3}{2} - \frac{1}{2}$		611
	13	978.2844	0.88236 – 103.10212	$3s^2 3p^5 - 3s^2 3p^4(^1D)5s$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		611
	1	979.963	0.0 – 102.04507	$3s^2 3p^5 - 3s^2 3p^4(^3P_2)7d$	$g^2P^\circ - 2[2]$	$\frac{3}{2} - \frac{5}{2}$		611
	3	980.5061	0.0 – 101.98814	$3s^2 3p^5 - 3s^2 3p^4(^3P_0)6d$	$g^2P^\circ - 0[2]$	$\frac{3}{2} - \frac{5}{2}$		611
	4	980.9191	0.0 – 101.94520	$3s^2 3p^5 - 3s^2 3p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		611
	2	981.879	0.0 – 101.84564	$3s^2 3p^5 - 3s^2 3p^4(^3P_1)6d$	$g^2P^\circ - 1[2]$	$\frac{3}{2} - \frac{3}{2}$		611
	2	982.285	0.0 – 101.803442	$3s^2 3p^5 - 3s^2 3p^4(^3P_1)6d$	$g^2P^\circ - 1[3]$	$\frac{3}{2} - \frac{5}{2}$		611
	7	984.2864	0.0 – 101.59644	$3s^2 3p^5 - 3s^2 3p^4(^1S)4s$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		611
	8	984.3230	0.0 – 101.59267	$3s^2 3p^5 - 3s^2 3p^4(^3P_1)6d$	$g^2P^\circ - 1[1]$	$\frac{3}{2} - \frac{1}{2}$		611
	2	984.939	0.88236 – 102.41157	$3s^2 3p^5 - 3s^2 3p^4(^3P_0)8s$	$g^2P^\circ - 0[0]$	$\frac{1}{2} - \frac{1}{2}$		611
	1	987.599	0.88236 – 102.13811	$3s^2 3p^5 - 3s^2 3p^4(^3P_1)8s$	$g^2P^\circ - 1[1]$	$\frac{1}{2} - \frac{1}{2}$		611
	2	987.885	0.88236 – 102.10884	$3s^2 3p^5 - 3s^2 3p^4(^3P_1)8s$	$g^2P^\circ - 1[1]$	$\frac{1}{2} - \frac{3}{2}$		611
	1	987.916	0.0 – 101.22333	$3s^2 3p^5 - 3s^2 3p^4(^3P_2)6d$	$g^2P^\circ - 2[3]$	$\frac{3}{2} - \frac{5}{2}$		611
	2	988.410	0.0 – 101.172553	$3s^2 3p^5 - 3s^2 3p^4(^3P_2)6d$	$g^2P^\circ - 2[1]$	$\frac{3}{2} - \frac{3}{2}$		611
	5	988.9436	0.88236 – 102.00036	$3s^2 3p^5 - 3s^2 3p^4(^3P_0)6d$	$g^2P^\circ - 0[2]$	$\frac{1}{2} - \frac{3}{2}$		611
	2	989.484	0.88236 – 101.94520	$3s^2 3p^5 - 3s^2 3p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		611
	4	989.6543	0.0 – 101.045386	$3s^2 3p^5 - 3s^2 3p^4(^3P_2)6d$	$g^2P^\circ - 2[2]$	$\frac{3}{2} - \frac{3}{2}$		611
	1	989.713	0.0 – 101.039413	$3s^2 3p^5 - 3s^2 3p^4(^3P_0)7s$	$g^2P^\circ - 0[0]$	$\frac{3}{2} - \frac{1}{2}$		611
	5	990.4591	0.88236 – 101.84564	$3s^2 3p^5 - 3s^2 3p^4(^3P_1)6d$	$g^2P^\circ - 1[2]$	$\frac{1}{2} - \frac{3}{2}$		611
	2	990.629	0.0 – 100.94601	$3s^2 3p^5 - 3s^2 3p^4(^3P_2)6d$	$g^2P^\circ - 2[1]$	$\frac{3}{2} - \frac{1}{2}$		611
	2	991.640	0.88236 – 101.72537	$3s^2 3p^5 - 3s^2 3p^4(^3P_1)6d$	$g^2P^\circ - 1[1]$	$\frac{1}{2} - \frac{3}{2}$		611
	1	992.679	0.0 – 100.73765	$3s^2 3p^5 - 3s^2 3p^4(^3P_1)7s$	$g^2P^\circ - 1[1]$	$\frac{3}{2} - \frac{1}{2}$		611
	8	992.9098	0.88236 – 101.59644	$3s^2 3p^5 - 3s^2 3p^4(^1S)4s$	$g^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		611
	5	992.9470	0.88236 – 101.59267	$3s^2 3p^5 - 3s^2 3p^4(^3P_1)6d$	$g^2P^\circ - 1[1]$	$\frac{1}{2} - \frac{1}{2}$		611
	2	993.007	0.0 – 100.704230	$3s^2 3p^5 - 3s^2 3p^4(^3P_1)7s$	$g^2P^\circ - 1[1]$	$\frac{3}{2} - \frac{3}{2}$		611
	3	994.1414	0.0 – 100.589312	$3s^2 3p^5 - 3s^2 3p^4(^3P_0)5d$	$g^2P^\circ - 0[2]$	$\frac{3}{2} - \frac{5}{2}$		611
	4	994.9965	0.0 – 100.502871	$3s^2 3p^5 - 3s^2 3p^4(^3P_0)5d$	$g^2P^\circ - 0[2]$	$\frac{3}{2} - \frac{3}{2}$		611
	3	996.5402	0.0 – 100.347182	$3s^2 3p^5 - 3s^2 3p^4(^3P_1)5d$	$g^2P^\circ - 1[2]$	$\frac{3}{2} - \frac{5}{2}$		611
	3	996.5591	0.88236 – 101.22763	$3s^2 3p^5 - 3s^2 3p^4(^3P_2)6d$	$g^2P^\circ - 2[0]$	$\frac{1}{2} - \frac{1}{2}$		611
	4	997.1064	0.88236 – 101.172553	$3s^2 3p^5 - 3s^2 3p^4(^3P_2)6d$	$g^2P^\circ - 2[1]$	$\frac{1}{2} - \frac{3}{2}$		611
	4	997.5099	0.0 – 100.249636	$3s^2 3p^5 - 3s^2 3p^4(^3P_1)5d$	$g^2P^\circ - 1[3]$	$\frac{3}{2} - \frac{5}{2}$		611
	4	997.5375	0.0 – 100.246855	$3s^2 3p^5 - 3s^2 3p^4(^3P_1)5d$	$g^2P^\circ - 1[2]$	$\frac{3}{2} - \frac{3}{2}$		611
	2	998.294	0.0 – 100.170980	$3s^2 3p^5 - 3s^2 3p^4(^3P_1)5d$	$g^2P^\circ - 1[1]$	$\frac{3}{2} - \frac{3}{2}$		611
	9	998.3723	0.88236 – 101.045386	$3s^2 3p^5 - 3s^2 3p^4(^3P_2)6d$	$g^2P^\circ - 2[2]$	$\frac{1}{2} - \frac{3}{2}$		611
	9	998.4319	0.88236 – 101.039413	$3s^2 3p^5 - 3s^2 3p^4(^3P_0)7s$	$g^2P^\circ - 0[0]$	$\frac{1}{2} - \frac{1}{2}$		611

CL I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	8	999.3638	0.88236 – 100.94601	$3s^23p^5 - 3s^23p^4(^3P_2)6d$	$g^2P^\circ - 2[1]$	$\frac{1}{2} - \frac{1}{2}$		611
	5	999.4929	0.0 – 100.050736	$3s^23p^5 - 3s^23p^4(^3P_2)7s$	$g^2P^\circ - 2[2]$	$\frac{3}{2} - \frac{3}{2}$		611
	2	1000.113	0.0 – 99.988501	$3s^23p^5 - 3s^23p^4(^3P_2)7s$	$g^2P^\circ - 2[2]$	$\frac{3}{2} - \frac{5}{2}$		611
	2	1000.278	0.0 – 99.97214	$3s^23p^5 - 3s^23p^4(^3P_1)5d$	$g^2P^\circ - 1[1]$	$\frac{3}{2} - \frac{1}{2}$		611
	3	1001.4491	0.88236 – 100.73765	$3s^23p^5 - 3s^23p^4(^3P_1)7s$	$g^2P^\circ - 1[1]$	$\frac{1}{2} - \frac{1}{2}$		611
	20	1002.3464	0.0 – 99.765906	$3s^23p^5 - 3s^23p^4(^3P_2)5d$	$g^2P^\circ - 2[3]$	$\frac{3}{2} - \frac{5}{2}$		611
	3	1002.8952	0.0 – 99.711309	$3s^23p^5 - 3s^23p^4(^3P_2)5d$	$g^2P^\circ - 2[0]$	$\frac{3}{2} - \frac{1}{2}$		611
	2	1003.191	0.0 – 99.681887	$3s^23p^5 - 3s^23p^4(^3P_2)5d$	$g^2P^\circ - 2[1]$	$\frac{3}{2} - \frac{3}{2}$		611
	5	1003.8093	0.88236 – 100.502871	$3s^23p^5 - 3s^23p^4(^3P_0)5d$	$g^2P^\circ - 0[2]$	$\frac{1}{2} - \frac{3}{2}$		611
	8	1004.6776	0.0 – 99.534419	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		611
	1	1005.956	0.0 – 99.407907	$3s^23p^5 - 3s^23p^4(^3P_2)5d$	$g^2P^\circ - 2[1]$	$\frac{3}{2} - \frac{1}{2}$		611
	3	1006.3957	0.88236 – 100.246855	$3s^23p^5 - 3s^23p^4(^3P_1)5d$	$g^2P^\circ - 1[2]$	$\frac{1}{2} - \frac{3}{2}$		611
	1	1006.495	0.0 – 99.354670	$3s^23p^5 - 3s^23p^4(^3P_2)5d$	$g^2P^\circ - 2[2]$	$\frac{3}{2} - \frac{3}{2}$		611
	8	1007.1647	0.88236 – 100.170980	$3s^23p^5 - 3s^23p^4(^3P_1)5d$	$g^2P^\circ - 1[1]$	$\frac{1}{2} - \frac{3}{2}$		611
	3	1007.3626	0.0 – 99.269121	$3s^23p^5 - 3s^23p^4(^3P_2)5d$	$g^2P^\circ - 2[2]$	$\frac{3}{2} - \frac{5}{2}$		611
	5	1008.3859	0.88236 – 100.050736	$3s^23p^5 - 3s^23p^4(^3P_2)7s$	$g^2P^\circ - 2[2]$	$\frac{1}{2} - \frac{3}{2}$		611
	4	1009.1857	0.88236 – 99.97214	$3s^23p^5 - 3s^23p^4(^3P_1)5d$	$g^2P^\circ - 1[1]$	$\frac{1}{2} - \frac{1}{2}$		611
	10	1011.8492	0.88236 – 99.711309	$3s^23p^5 - 3s^23p^4(^3P_2)5d$	$g^2P^\circ - 2[0]$	$\frac{1}{2} - \frac{1}{2}$		611
	6	1012.1505	0.88236 – 99.681887	$3s^23p^5 - 3s^23p^4(^3P_2)5d$	$g^2P^\circ - 2[1]$	$\frac{1}{2} - \frac{3}{2}$		611
	30	1013.6635	0.88236 – 99.534419	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		611
	6	1015.5139	0.88236 – 99.354670	$3s^23p^5 - 3s^23p^4(^3P_2)5d$	$g^2P^\circ - 2[2]$	$\frac{1}{2} - \frac{3}{2}$		611
	3	1016.3558	0.0 – 98.390740	$3s^23p^5 - 3s^23p^4(^3P_0)6s$	$g^2P^\circ - 0[0]$	$\frac{3}{2} - \frac{1}{2}$		611
	4	1019.3644	0.0 – 98.100340	$3s^23p^5 - 3s^23p^4(^3P_1)6s$	$g^2P^\circ - 1[1]$	$\frac{3}{2} - \frac{1}{2}$		611
	9	1019.9400	0.0 – 98.044980	$3s^23p^5 - 3s^23p^4(^3P_1)6s$	$g^2P^\circ - 1[1]$	$\frac{3}{2} - \frac{3}{2}$		611
	3	1022.0478	0.0 – 97.842783	$3s^23p^5 - 3s^23p^4(^3P_0)4d$	$g^2P^\circ - 0[2]$	$\frac{3}{2} - \frac{3}{2}$		611
	15	1022.4143	0.0 – 97.807707	$3s^23p^5 - 3s^23p^4(^3P_0)4d$	$g^2P^\circ - 0[2]$	$\frac{3}{2} - \frac{5}{2}$		611
	7	1025.2821	0.0 – 97.534130	$3s^23p^5 - 3s^23p^4(^3P_1)4d$	$g^2P^\circ - 1[2]$	$\frac{3}{2} - \frac{5}{2}$		611
	22	1025.5528	0.88236 – 98.390740	$3s^23p^5 - 3s^23p^4(^3P_0)6s$	$g^2P^\circ - 0[0]$	$\frac{1}{2} - \frac{1}{2}$		611
	8	1025.8444	0.0 – 97.480664	$3s^23p^5 - 3s^23p^4(^3P_2)6s$	$g^2P^\circ - 2[2]$	$\frac{3}{2} - \frac{3}{2}$		611
	10	1027.1785	0.0 – 97.354057	$3s^23p^5 - 3s^23p^4(^3P_1)4d$	$g^2P^\circ - 1[2]$	$\frac{3}{2} - \frac{3}{2}$		611
	15	1027.3386	0.0 – 97.338887	$3s^23p^5 - 3s^23p^4(^3P_1)4d$	$g^2P^\circ - 1[3]$	$\frac{3}{2} - \frac{5}{2}$		611
	6	1028.1739	0.0 – 97.259811	$3s^23p^5 - 3s^23p^4(^3P_1)4d$	$g^2P^\circ - 1[1]$	$\frac{3}{2} - \frac{3}{2}$		611
	8	1028.4075	0.0 – 97.237723	$3s^23p^5 - 3s^23p^4(^3P_2)6s$	$g^2P^\circ - 2[2]$	$\frac{3}{2} - \frac{5}{2}$		611
	15	1028.6162	0.88236 – 98.100340	$3s^23p^5 - 3s^23p^4(^3P_1)6s$	$g^2P^\circ - 1[1]$	$\frac{1}{2} - \frac{1}{2}$		611
	3	1029.2023	0.88236 – 98.044980	$3s^23p^5 - 3s^23p^4(^3P_1)6s$	$g^2P^\circ - 1[1]$	$\frac{1}{2} - \frac{3}{2}$		611
	7	1029.3432	0.0 – 97.149323	$3s^23p^5 - 3s^23p^4(^3P_1)4d$	$g^2P^\circ - 1[1]$	$\frac{3}{2} - \frac{1}{2}$		611
	10	1030.8845	0.0 – 97.004081	$3s^23p^5 - 3s^23p^4(^3P_2)4d$	$g^2P^\circ - 2[1]$	$\frac{3}{2} - \frac{3}{2}$		611
	20	1031.3486	0.88236 – 97.842783	$3s^23p^5 - 3s^23p^4(^3P_0)4d$	$g^2P^\circ - 0[2]$	$\frac{1}{2} - \frac{3}{2}$		611
	15	1031.5070	0.0 – 96.945536	$3s^23p^5 - 3s^23p^4(^3P_2)4d$	$g^2P^\circ - 2[3]$	$\frac{3}{2} - \frac{5}{2}$		611
	6	1031.6704	0.0 – 96.930181	$3s^23p^5 - 3s^23p^4(^3P_2)4d$	$g^2P^\circ - 2[0]$	$\frac{3}{2} - \frac{1}{2}$		611
	30	1035.2148	0.88236 – 97.480664	$3s^23p^5 - 3s^23p^4(^3P_2)6s$	$g^2P^\circ - 2[2]$	$\frac{1}{2} - \frac{3}{2}$		611
	5	1036.5734	0.88236 – 97.354057	$3s^23p^5 - 3s^23p^4(^3P_1)4d$	$g^2P^\circ - 1[2]$	$\frac{1}{2} - \frac{3}{2}$		611
	27	1037.5871	0.88236 – 97.259811	$3s^23p^5 - 3s^23p^4(^3P_1)4d$	$g^2P^\circ - 1[1]$	$\frac{1}{2} - \frac{3}{2}$		611
	25	1038.7779	0.88236 – 97.149323	$3s^23p^5 - 3s^23p^4(^3P_1)4d$	$g^2P^\circ - 1[1]$	$\frac{1}{2} - \frac{1}{2}$		611
	30	1040.3475	0.88236 – 97.004081	$3s^23p^5 - 3s^23p^4(^3P_2)4d$	$g^2P^\circ - 2[1]$	$\frac{1}{2} - \frac{3}{2}$		611
	15	1041.1480	0.88236 – 96.930181	$3s^23p^5 - 3s^23p^4(^3P_2)4d$	$g^2P^\circ - 2[0]$	$\frac{1}{2} - \frac{1}{2}$		611
	4	1041.7148	0.0 – 95.995561	$3s^23p^5 - 3s^23p^4(^3P_2)4d$	$g^2P^\circ - 2[1]$	$\frac{3}{2} - \frac{1}{2}$		611
	8	1042.7793	0.0 – 95.897565	$3s^23p^5 - 3s^23p^4(^3P_2)4d$	$g^2P^\circ - 2[2]$	$\frac{3}{2} - \frac{3}{2}$		611
	7	1043.9857	0.0 – 95.786752	$3s^23p^5 - 3s^23p^4(^3P_2)4d$	$g^2P^\circ - 2[2]$	$\frac{3}{2} - \frac{5}{2}$		611
	9	1051.3787	0.88236 – 95.995561	$3s^23p^5 - 3s^23p^4(^3P_2)4d$	$g^2P^\circ - 2[1]$	$\frac{1}{2} - \frac{1}{2}$		611
	4	1052.4631	0.88236 – 95.897565	$3s^23p^5 - 3s^23p^4(^3P_2)4d$	$g^2P^\circ - 2[2]$	$\frac{1}{2} - \frac{3}{2}$		611
	30	1079.8821	0.0 – 92.60270	$3s^23p^5 - 3s^23p^4(^3P_0)5s$	$g^2P^\circ - 0[0]$	$\frac{3}{2} - \frac{1}{2}$		611
	40	1084.6671	0.0 – 92.19419	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		611
	40	1085.1709	0.0 – 92.15138	$3s^23p^5 - 3s^23p^4(^3P_1)5s$	$g^2P^\circ - 1[1]$	$\frac{3}{2} - \frac{1}{2}$		611

CL I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	45	1085.3035	0.0 – 92.140127	$3s^23p^5 - 3s^23p^4(^3P_1)5s$	$g^2P° - 1[1]$	$\frac{3}{2} - \frac{3}{2}$		611
	60	1088.062	0.0 – 91.90679	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P° - {}^2F$	$\frac{3}{2} - \frac{5}{2}$		611
	55	1090.2706	0.88236 – 92.60270	$3s^23p^5 - 3s^23p^4(^3P_0)5s$	$g^2P° - 0[0]$	$\frac{1}{2} - \frac{1}{2}$		611
	40	1090.7386	0.0 – 91.68099	$3s^23p^5 - 3s^23p^4(^3P_2)5s$	$g^2P° - 2[2]$	$\frac{3}{2} - \frac{3}{2}$		611
	45	1090.9815	0.0 – 91.66058	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P° - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		611
	40	1092.1287	0.0 – 91.56430	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P° - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		611
	45	1092.4366	0.0 – 91.53850	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P° - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		611
	60	1094.7686	0.0 – 91.34350	$3s^23p^5 - 3s^23p^4(^3P_2)5s$	$g^2P° - 2[2]$	$\frac{3}{2} - \frac{5}{2}$		611
	55	1095.1483	0.88236 – 92.19419	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P° - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		611
	55	1095.6619	0.88236 – 92.15138	$3s^23p^5 - 3s^23p^4(^3P_1)5s$	$g^2P° - 1[1]$	$\frac{1}{2} - \frac{1}{2}$		611
	60	1095.7971	0.88236 – 92.140127	$3s^23p^5 - 3s^23p^4(^3P_1)5s$	$g^2P° - 1[1]$	$\frac{1}{2} - \frac{3}{2}$		611
	45	1096.8098	0.0 – 91.17351	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P° - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		611
	50	1097.3692	0.0 – 91.12703	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P° - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		611
	40	1098.0682	0.0 – 91.06902	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P° - {}^4P$	$\frac{3}{2} - \frac{1}{2}$		611
	40	1099.5230	0.0 – 90.94853	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P° - {}^4F$	$\frac{3}{2} - \frac{3}{2}$		611
	50	1101.3381	0.88236 – 91.68099	$3s^23p^5 - 3s^23p^4(^3P_2)5s$	$g^2P° - 2[2]$	$\frac{1}{2} - \frac{3}{2}$		611
	40	1101.9362	0.0 – 90.74936	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P° - {}^4F$	$\frac{3}{2} - \frac{5}{2}$		611
	40	1102.755	0.88236 – 91.56430	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P° - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		611
	50	1103.069	0.88236 – 91.53850	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P° - {}^4P$	$\frac{1}{2} - \frac{3}{2}$		611
	70	1107.5282	0.88236 – 91.17351	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P° - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		611
	15	1108.8113	0.88236 – 91.06902	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P° - {}^4P$	$\frac{1}{2} - \frac{1}{2}$		611
	60	1110.2948	0.88236 – 90.94853	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P° - {}^4F$	$\frac{1}{2} - \frac{3}{2}$		611
	45	1132.8528	0.0 – 88.27272	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P° - {}^4D$	$\frac{3}{2} - \frac{1}{2}$		611
	50	1133.9341	0.0 – 88.18855	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P° - {}^4D$	$\frac{3}{2} - \frac{3}{2}$		611
	50	1135.3310	0.0 – 88.080042	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P° - {}^4D$	$\frac{3}{2} - \frac{5}{2}$		611
	60	1144.2909	0.88236 – 88.27272	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P° - {}^4D$	$\frac{1}{2} - \frac{1}{2}$		611
	30	1145.3941	0.88236 – 88.18855	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P° - {}^4D$	$\frac{1}{2} - \frac{3}{2}$		611
	100	1167.1479	0.0 – 85.67894	$3s^23p^5 - 3s3p^6$	$g^2P° - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		611
	250	1179.2927	0.88236 – 85.67894	$3s^23p^5 - 3s3p^6$	$g^2P° - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		611
	50	1188.7515	0.0 – 84.121872	$3s^23p^5 - 3s^23p^4(^1D)4s$	$g^2P° - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		611
	130	1188.7743	0.0 – 84.120263	$3s^23p^5 - 3s^23p^4(^1D)4s$	$g^2P° - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		611
	100	1201.3527	0.88236 – 84.121872	$3s^23p^5 - 3s^23p^4(^1D)4s$	$g^2P° - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		611
	250	1335.7257	0.0 – 74.865667	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P° - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		611
	550	1347.2397	0.0 – 74.225846	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P° - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		611
	350	1351.6568	0.88236 – 74.865667	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P° - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		611
	600	1363.4471	0.88236 – 74.225846	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P° - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		611
	200	1373.1163	0.0 – 72.827038	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P° - {}^4P$	$\frac{3}{2} - \frac{1}{2}$		611
	900	1379.5278	0.0 – 72.488568	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P° - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		611
	1000	1389.6928	0.0 – 71.958363	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P° - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		611
	900	1389.9569	0.88236 – 72.827038	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P° - {}^4P$	$\frac{1}{2} - \frac{1}{2}$		611
	600	1396.5267	0.88236 – 72.488568	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P° - {}^4P$	$\frac{1}{2} - \frac{3}{2}$		611

CHLORINE II (Cl^{1+}), Z = 17
Ground State $1s^22s^22p^63s^23p^4(^3P_2)$ (16 electrons)
Ionization Potential 192 070 cm^{-1}; 23.814 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	7	535.047	0.0 – 186.90016	$3s^23p^4 - 3s^23p^3(^2D°)6s$	$g^3P - {}^3D°$	2 – 3		613
	100	538.0062	0.0 – 185.87193	$3s^23p^4 - 3s^23p^3(^2P°)4d$	$g^3P - {}^3P°$	2 – 1		613
	140	538.3083	0.0 – 185.76716	$3s^23p^4 - 3s^23p^3(^2P°)4d$	$g^3P - {}^3P°$	2 – 2		613
	100	540.0270	0.69600 – 185.87193	$3s^23p^4 - 3s^23p^3(^2P°)4d$	$g^3P - {}^3P°$	1 – 1		613
	115	540.3330	0.69600 – 185.76716	$3s^23p^4 - 3s^23p^3(^2P°)4d$	$g^3P - {}^3P°$	1 – 2		613
	100	540.9047	0.99647 – 185.87193	$3s^23p^4 - 3s^23p^3(^2P°)4d$	$g^3P - {}^3P°$	0 – 1		613

CL II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	15	548.088	0.0 – 182.45075	$3s^23p^4 - 3s^23p^3(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	2 – 2		613
	25	550.188	0.69600 – 182.45075	$3s^23p^4 - 3s^23p^3(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	1 – 2		613
	20	551.333	0.99647 – 182.37441	$3s^23p^4 - 3s^23p^3(^2P^\circ)5s$	$g^3P - {}^3P^\circ$	0 – 1		613
	5	555.955	0.0 – 179.86907	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^1P^\circ$	2 – 1		613
	60	557.5192	0.0 – 179.36602	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^1F^\circ$	2 – 3		613
	100	558.14	0.69600 – 179.86907	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^1P^\circ$	1 – 1		345
	185	559.3057	0.0 – 178.79309	$3s^23p^4 - 3s^23p^3(^4S^\circ)6d$	$g^3P - {}^3D^\circ$	2 – 3		613
	160	559.4065	0.0 – 178.76088	$3s^23p^4 - 3s^23p^3(^4S^\circ)6d$	$g^3P - {}^3D^\circ$	2 – 2		613
	170	559.5279	0.0 – 178.7221	$3s^23p^4 - 3s^23p^3(^4S^\circ)6d$	$g^3P - {}^3D^\circ$	2 – 1		613
	8	560.091	0.0 – 178.54120	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^1D^\circ$	2 – 2		613
	140	561.5930	0.69600 – 178.76088	$3s^23p^4 - 3s^23p^3(^4S^\circ)6d$	$g^3P - {}^3D^\circ$	1 – 2		613
	25	561.714	0.69600 – 178.7221	$3s^23p^4 - 3s^23p^3(^4S^\circ)6d$	$g^3P - {}^3D^\circ$	1 – 1		613
	110	562.2867	0.69600 – 178.54120	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^1D^\circ$	1 – 2		613
	170	562.3684	0.0 – 177.81938	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^3P^\circ$	2 – 2		613
	170	562.5662	0.0 – 177.75686	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^3P^\circ$	2 – 1		613
	140	562.6651	0.99647 – 178.7221	$3s^23p^4 - 3s^23p^3(^4S^\circ)6d$	$g^3P - {}^3D^\circ$	0 – 1		613
	160	563.6169	0.0 – 177.42547	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^3S^\circ$	2 – 1		613
	160	564.5782	0.69600 – 177.81938	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^3P^\circ$	1 – 2		613
	140	564.7775	0.69600 – 177.75686	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^3P^\circ$	1 – 1		613
	140	564.9716	0.69600 – 177.69603	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^3P^\circ$	1 – 0		613
	80	565.1082	0.0 – 176.95725	$3s^23p^4 - 3s^23p^3(^4S^\circ)7s$	$g^3P - {}^3S^\circ$	2 – 1		613
	170	565.7376	0.99647 – 177.75686	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^3P^\circ$	0 – 1		613
	160	565.8366	0.69600 – 177.42547	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^3S^\circ$	1 – 1		613
	160	566.8002	0.99647 – 177.42547	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^3S^\circ$	0 – 1		613
	25	567.3397	0.69600 – 176.95725	$3s^23p^4 - 3s^23p^3(^4S^\circ)7s$	$g^3P - {}^3S^\circ$	1 – 1		613
	10	568.2952	0.99647 – 176.95725	$3s^23p^4 - 3s^23p^3(^4S^\circ)7s$	$g^3P - {}^3S^\circ$	0 – 1		613
	140	569.8349	11.65358 – 187.14301	$3s^23p^4 - 3s^23p^3(^2D^\circ)6s$	${}^1D - {}^1D^\circ$	2 – 2		613
	200	571.9033	0.0 – 174.85474	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^3D^\circ$	2 – 3		613
	170	572.0083	0.0 – 174.82264	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^3D^\circ$	2 – 2		613
	40	572.1215	0.0 – 174.78805	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^3D^\circ$	2 – 1		613
	220	574.2946	0.69600 – 174.82264	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^3D^\circ$	1 – 2		613
	280	574.4088	0.69600 – 174.78805	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^3D^\circ$	1 – 1		613
	160	575.4019	0.99647 – 174.78805	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^3D^\circ$	0 – 1		613
	25	578.007	11.65358 – 184.66032	$3s^23p^4 - 3s^23p^3(^2P^\circ)4d$	${}^1D - {}^3F^\circ$	2 – 2		613
	40	579.1982	0.0 – 172.65248	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^3F^\circ$	2 – 3		613
	9	581.797	0.69600 – 172.57476	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^3F^\circ$	1 – 2		613
	50	582.4268	11.65358 – 183.34899	$3s^23p^4 - 3s^23p^3(^2P^\circ)5s$	${}^1D - {}^1P^\circ$	2 – 1		613
	6	584.067	0.0 – 171.21094	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$g^3P - {}^1D^\circ$	2 – 2		613
	20	584.611	0.0 – 171.05255	$3s^23p^4 - 3s^23p^3(^4S^\circ)5d$	$g^3P - {}^3D^\circ$	2 – 1		613
	170	584.7718	0.0 – 171.00687	$3s^23p^4 - 3s^23p^3(^4S^\circ)5d$	$g^3P - {}^3D^\circ$	2 – 2		613
	170	584.8829	0.0 – 170.97441	$3s^23p^4 - 3s^23p^3(^4S^\circ)5d$	$g^3P - {}^3D^\circ$	2 – 3		613
	10	585.484	11.65358 – 182.45075	$3s^23p^4 - 3s^23p^3(^2P^\circ)5s$	${}^1D - {}^3P^\circ$	2 – 2		613
	220	586.2442	0.0 – 170.57738	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$g^3P - {}^3D^\circ$	2 – 3		613
	200	586.3828	0.0 – 170.53708	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$g^3P - {}^3D^\circ$	2 – 2		613
	100	586.4528	0.0 – 170.51669	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$g^3P - {}^3D^\circ$	2 – 1		613
	125	587.0041	0.69600 – 171.05255	$3s^23p^4 - 3s^23p^3(^4S^\circ)5d$	$g^3P - {}^3D^\circ$	1 – 1		613
	140	587.1616	0.69600 – 171.00687	$3s^23p^4 - 3s^23p^3(^4S^\circ)5d$	$g^3P - {}^3D^\circ$	1 – 2		613
	140	588.0413	0.99647 – 171.05255	$3s^23p^4 - 3s^23p^3(^4S^\circ)5d$	$g^3P - {}^3D^\circ$	0 – 1		613
	185	588.7857	0.69600 – 170.53708	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$g^3P - {}^3D^\circ$	1 – 2		613
	140	588.8564	0.69600 – 170.51669	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$g^3P - {}^3D^\circ$	1 – 1		613
	160	589.9001	0.99647 – 170.51669	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$g^3P - {}^3D^\circ$	0 – 1		613
	170	590.8491	0.0 – 169.24796	$3s^23p^4 - 3s^23p^3(^4S^\circ)6s$	$g^3P - {}^3S^\circ$	2 – 1		613
	9	590.955	0.99647 – 170.21205	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^1P^\circ$	0 – 1		613
	140	593.2888	0.69600 – 169.24796	$3s^23p^4 - 3s^23p^3(^4S^\circ)6s$	$g^3P - {}^3S^\circ$	1 – 1		613

CL II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	80	594.3484	0.99647 – 169.24796	$3s^23p^4 - 3s^23p^3(^4S^\circ)6s$	$g^3P - {}^3S^\circ$	0 – 1		613
	170	594.4756	11.65358 – 179.86907	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$^1D - {}^1P^\circ$	2 – 1		613
	100	598.3026	11.65358 – 178.79309	$3s^23p^4 - 3s^23p^3(^4S^\circ)6d$	$^1D - {}^3D^\circ$	2 – 3		613
	100	598.4179	11.65358 – 178.76088	$3s^23p^4 - 3s^23p^3(^4S^\circ)6d$	$^1D - {}^3D^\circ$	2 – 2		613
	220	599.2056	11.65358 – 178.54120	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$^1D - {}^1D^\circ$	2 – 2		613
	40	601.8086	11.65358 – 177.81938	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$^1D - {}^3P^\circ$	2 – 2		613
	2	602.029	11.65358 – 177.75686	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$^1D - {}^3P^\circ$	2 – 1		613
	3	612.738	11.65358 – 174.85474	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$^1D - {}^3D^\circ$	2 – 3		613
	120	615.3233	0.69600 – 163.21219	$3s^23p^4 - 3s3p^5$	$g^3P - {}^1P^\circ$	1 – 1		613
	100	616.4631	0.99647 – 163.21219	$3s^23p^4 - 3s3p^5$	$g^3P - {}^1P^\circ$	0 – 1		613
	150	617.3161	0.0 – 161.99157	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - {}^3D^\circ$	2 – 1		613
	220	617.6293	0.0 – 161.90941	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - {}^3D^\circ$	2 – 2		613
	260	618.0539	0.0 – 161.79818	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - {}^3D^\circ$	2 – 3		613
	25	618.920	11.65358 – 173.22481	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$^1D - {}^3G^\circ$	2 – 3		613
	250	619.9798	0.69600 – 161.99157	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - {}^3D^\circ$	1 – 1		613
	280	620.2958	0.69600 – 161.90941	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - {}^3D^\circ$	1 – 2		613
	210	621.1369	0.99647 – 161.99157	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - {}^3D^\circ$	0 – 1		613
	185	623.0617	0.0 – 160.49776	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^1F^\circ$	2 – 3		613
	260	626.7339	11.65358 – 171.21094	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$^1D - {}^1D^\circ$	2 – 2		613
	15	627.533	11.65358 – 171.00687	$3s^23p^4 - 3s^23p^3(^4S^\circ)5d$	$^1D - {}^3D^\circ$	2 – 2		613
	10	627.662	11.65358 – 170.97441	$3s^23p^4 - 3s^23p^3(^4S^\circ)5d$	$^1D - {}^3D^\circ$	2 – 3		613
	6	629.228	11.65358 – 170.57738	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$^1D - {}^3D^\circ$	2 – 3		613
	8	629.387	11.65358 – 170.53708	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$^1D - {}^3D^\circ$	2 – 2		613
	110	630.6835	11.65358 – 170.21205	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - {}^1P^\circ$	2 – 1		613
	200	631.8314	0.0 – 158.27007	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^1D^\circ$	2 – 2		613
	220	634.2568	0.0 – 157.66484	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 1		613
	200	634.6222	0.69600 – 158.27007	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^1D^\circ$	1 – 2		613
	280	635.8802	0.69600 – 157.95833	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 0		613
	320	636.6244	0.0 – 157.07849	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 2		613
	260	637.0691	0.69600 – 157.66484	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 1		613
	300	638.2909	0.99647 – 157.66484	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	0 – 1		613
	200	639.4578	0.69600 – 157.07849	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 2		613
	140	643.2069	27.87802 – 183.34899	$3s^23p^4 - 3s^23p^3(^2P^\circ)5s$	$^1S - {}^1P^\circ$	0 – 1		613
	140	646.7435	0.0 – 154.62097	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - {}^5D^\circ$	2 – 2		613
	185	649.6718	0.69600 – 154.62097	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - {}^5D^\circ$	1 – 2		613
	320	650.8935	0.0 – 153.63497	$3s^23p^4 - 3s^23p^3(^4S^\circ)5s$	$g^3P - {}^3S^\circ$	2 – 1		613
	125	650.944	0.99647 – 154.61910	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - {}^5D^\circ$	0 – 1		613
	220	653.8556	0.69600 – 153.63497	$3s^23p^4 - 3s^23p^3(^4S^\circ)5s$	$g^3P - {}^3S^\circ$	1 – 1		613
	260	655.1427	0.99647 – 153.63497	$3s^23p^4 - 3s^23p^3(^4S^\circ)5s$	$g^3P - {}^3S^\circ$	0 – 1		613
	60	656.8795	0.0 – 152.23491	$3s^23p^4 - 3s^23p^3(^4S^\circ)5s$	$g^3P - {}^5S^\circ$	2 – 2		613
	130	657.9335	27.87802 – 179.86907	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$^1S - {}^1P^\circ$	0 – 1		613
	320	659.8107	11.65358 – 163.21219	$3s^23p^4 - 3s3p^5$	$^1D - {}^1P^\circ$	2 – 1		613
	170	661.6588	0.0 – 151.13531	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 1		613
	360	661.8394	0.0 – 151.09406	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^1F^\circ$	2 – 3		613
	320	662.1637	0.0 – 151.02006	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 2		613
	440	663.0723	0.0 – 150.81312	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^3S^\circ$	2 – 1		613
	320	663.6432	0.0 – 150.68338	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		613
	320	664.7199	0.69600 – 151.13531	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 1		613
	200	665.1679	11.65358 – 161.99157	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$^1D - {}^3D^\circ$	2 – 1		613
	220	665.2295	0.69600 – 151.02006	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		613
	140	665.5316	11.65358 – 161.90941	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$^1D - {}^3D^\circ$	2 – 2		613
	220	666.0246	11.65358 – 161.79818	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$^1D - {}^3D^\circ$	2 – 3		613
	220	666.0502	0.99647 – 151.13531	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	0 – 1		613
	260	666.1465	0.69600 – 150.81312	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^3S^\circ$	1 – 1		613

CL II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	170	667.4825	0.99647 – 150.81312	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^3S^\circ$	0 – 1		613
	260	671.8436	11.65358 – 160.49776	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - {}^1F^\circ$	2 – 3		613
	380	682.0516	11.65358 – 158.27007	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - {}^1D^\circ$	2 – 2		613
	320	684.8623	0.0 – 146.01475	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 2		613
	380	687.6575	0.0 – 145.42124	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 1		613
	260	688.1424	0.69600 – 146.01475	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 2		613
	280	690.9645	0.69600 – 145.42124	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 1		613
	50	692.4020	0.99647 – 145.42124	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	0 – 1		613
	185	692.7820	0.0 – 144.34556	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3F^\circ$	2 – 2		613
	380	693.5947	0.0 – 144.17642	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3F^\circ$	2 – 3		613
	340	696.1386	0.69600 – 144.34556	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3F^\circ$	1 – 2		613
	160	698.4482	27.87802 – 171.05255	$3s^23p^4 - 3s^23p^3(^4S^\circ)5d$	$^1S - {}^3D^\circ$	0 – 1		613
	160	701.0721	27.87802 – 170.51669	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$^1S - {}^3D^\circ$	0 – 1		613
	280	702.5714	27.87802 – 170.21205	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1S - {}^1P^\circ$	0 – 1		613
	370	707.4581	0.0 – 141.35114	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		613
	300	709.1616	0.0 – 141.01158	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 2		613
	250	710.5210	0.0 – 140.74180	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 1		613
	370	712.6792	0.69600 – 141.01158	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		613
	100	712.9584	0.0 – 140.26064	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	2 – 1		613
	360	714.0521	0.69600 – 140.74180	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 1		613
	360	715.5874	0.99647 – 140.74180	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	0 – 1		613
	70	716.5138	0.69600 – 140.26064	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 1		613
	340	717.1519	11.65358 – 151.09406	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - {}^1F^\circ$	2 – 3		613
	130	717.5327	11.65358 – 151.02006	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - {}^3D^\circ$	2 – 2		613
	340	719.2703	11.65358 – 150.68338	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - {}^3D^\circ$	2 – 3		613
	440	725.2717	0.0 – 137.87937	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	2 – 2		613
	320	725.6570	0.0 – 137.80615	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	2 – 1		613
	500	728.9513	0.69600 – 137.87937	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 2		613
	380	729.3406	0.69600 – 137.80615	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 1		613
	340	729.5235	0.69600 – 137.77177	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 0		613
	380	730.9424	0.99647 – 137.80615	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	0 – 1		613
	140	738.9117	27.87802 – 163.21219	$3s^23p^4 - 3s3p^5$	$^1S - {}^1P^\circ$	0 – 1		613
	40	744.2627	11.65358 – 146.01475	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - {}^3P^\circ$	2 – 2		613
	50	745.6368	27.87802 – 161.99157	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$^1S - {}^3D^\circ$	0 – 1		613
	100	747.5649	11.65358 – 145.42124	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - {}^3P^\circ$	2 – 1		613
	250	753.6251	11.65358 – 144.34556	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - {}^3F^\circ$	2 – 2		613
	280	754.5869	11.65358 – 144.17642	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - {}^3F^\circ$	2 – 3		613
	12	756.632	0.0 – 132.16413	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^3G^\circ$	2 – 3		613
	60	771.0246	11.65358 – 141.35114	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - {}^3D^\circ$	2 – 3		613
	250	774.7916	0.0 – 129.06696	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^1D^\circ$	2 – 2		613
	440	777.5623	11.65358 – 140.26064	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$^1D - {}^3P^\circ$	2 – 1		613
	60	778.9924	0.69600 – 129.06696	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^1D^\circ$	1 – 2		613
	100	787.15						345
	700	787.5805	11.65358 – 138.62473	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - {}^1D^\circ$	2 – 2		613
	700	788.7408	0.0 – 126.78437	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	2 – 3		613
	550	788.9860	0.0 – 126.74497	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	2 – 2		613
	280	789.0997	0.0 – 126.72670	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	2 – 1		613
	550	792.2628	0.0 – 126.22074	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^3F^\circ$	2 – 3		613
	15	792.694	11.65358 – 137.80615	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$^1D - {}^3P^\circ$	2 – 1		613
	700	793.3424	0.69600 – 126.74497	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	1 – 2		613
	630	793.4574	0.69600 – 126.72670	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	1 – 1		613
	630	795.3537	0.99647 – 126.72670	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	0 – 1		613
	320	797.8455	0.69600 – 126.03354	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^3F^\circ$	1 – 2		613
	140	802.8911	0.69600 – 125.24589	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^1S^\circ$	1 – 0		613

CL II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	827.85						345
	280	829.8029	11.65358 – 132.16413	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - ^3G^\circ$	2 – 3		613
	320	834.4229	0.0 – 119.84331	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	2 – 1		613
	550	834.6463	0.0 – 119.81122	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		613
	440	834.7223	0.0 – 119.80032	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	2 – 2		613
	770	839.2972	0.69600 – 119.84331	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	1 – 1		613
	900	839.6001	0.69600 – 119.80032	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		613
	850	841.4191	0.99647 – 119.84331	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	0 – 1		613
	140	850.7509	27.87802 – 145.42124	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1S - ^3P^\circ$	0 – 1		613
	700	851.6917	11.65358 – 129.06696	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$^1D - ^1D^\circ$	2 – 2		613
	320	864.6198	0.0 – 115.65777	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^1P^\circ$	2 – 1		613
	380	868.5774	11.65358 – 126.78437	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$^1D - ^3D^\circ$	2 – 3		613
	220	869.0127	11.65358 – 126.72670	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$^1D - ^3D^\circ$	2 – 1		613
	220	872.1338	0.99647 – 115.65777	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^1P^\circ$	0 – 1		613
	320	872.8505	11.65358 – 126.22074	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - ^3F^\circ$	2 – 3		613
	220	874.2790	11.65358 – 126.03354	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - ^3F^\circ$	2 – 2		613
	440	888.0256	0.0 – 112.60936	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - ^3S^\circ$	2 – 1		613
	220	889.8173	27.87802 – 140.26064	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$^1S - ^3P^\circ$	0 – 1		613
	440	893.5483	0.69600 – 112.60936	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - ^3S^\circ$	1 – 1		613
	420	895.9539	0.99647 – 112.60936	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - ^3S^\circ$	0 – 1		613
	380	906.6153	0.0 – 110.30056	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - ^5D^\circ$	2 – 2		613
	10	910.25						345
	220	912.3468	0.69600 – 110.30312	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - ^5D^\circ$	1 – 1		613
	185	914.8574	0.99647 – 110.30312	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - ^5D^\circ$	0 – 1		613
	100	924.3022	11.65358 – 119.84331	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$^1D - ^3D^\circ$	2 – 1		613
	75	924.5764	11.65358 – 119.81122	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$^1D - ^3D^\circ$	2 – 3		613
	340	926.9588	0.0 – 107.87966	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - ^5S^\circ$	2 – 2		613
	220	932.9780	0.69600 – 107.87966	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - ^5S^\circ$	1 – 2		613
	440	961.4997	11.65358 – 115.65777	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - ^1P^\circ$	2 – 1		613
	160	990.5327	11.65358 – 112.60936	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$^1D - ^3S^\circ$	2 – 1		613
	60	1011.6472	27.87802 – 126.72670	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$^1S - ^3D^\circ$	0 – 1		613
	775	1063.8311	0.0 – 93.99988	$3s^23p^4 - 3s3p^5$	$g^3P - ^3P^\circ$	2 – 1		613
	550	1067.9442	0.69600 – 94.33384	$3s^23p^4 - 3s3p^5$	$g^3P - ^3P^\circ$	1 – 0		613
	950	1071.0358	0.0 – 93.36756	$3s^23p^4 - 3s3p^5$	$g^3P - ^3P^\circ$	2 – 2		613
	770	1071.7667	0.69600 – 93.99988	$3s^23p^4 - 3s3p^5$	$g^3P - ^3P^\circ$	1 – 1		613
	700	1075.2293	0.99647 – 93.99988	$3s^23p^4 - 3s3p^5$	$g^3P - ^3P^\circ$	0 – 1		613
	700	1079.0796	0.69600 – 93.36756	$3s^23p^4 - 3s3p^5$	$g^3P - ^3P^\circ$	1 – 2		613
	15	1123.8445	93.36756 – 182.34776	$3s3p^5 - 3s^23p^3(^2D^\circ)4f$	$^3P^\circ - ^3P$	2 – 1		613
	125	1124.2757	93.36756 – 182.31351	$3s3p^5 - 3s^23p^3(^2D^\circ)4f$	$^3P^\circ - ^3P$	2 – 2		613
	50	1125.0403	93.36756 – 182.25322	$3s3p^5 - 3s^23p^3(^2D^\circ)4f$	$^3P^\circ - ^3F$	2 – 3		613
	140	1125.9030	93.36756 – 182.18510	$3s3p^5 - 3s^23p^3(^2D^\circ)4f$	$^3P^\circ - ^3D$	2 – 3		613
	3	1125.959	93.36756 – 182.18042	$3s3p^5 - 3s^23p^3(^2D^\circ)4f$	$^3P^\circ - ^3D$	2 – 2		613
	6	1131.794	93.99988 – 182.35510	$3s3p^5 - 3s^23p^3(^2D^\circ)4f$	$^3P^\circ - ^3P$	1 – 0		613
	3	1131.888	93.99988 – 182.34776	$3s3p^5 - 3s^23p^3(^2D^\circ)4f$	$^3P^\circ - ^3P$	1 – 1		613
	100	1132.1919	93.99988 – 182.32413	$3s3p^5 - 3s^23p^3(^2D^\circ)4f$	$^3P^\circ - ^1D$	1 – 2		613
	40	1132.2939	93.99988 – 182.31629	$3s3p^5 - 3s^23p^3(^2D^\circ)4f$	$^3P^\circ - ^3D$	1 – 1		613
	100	1134.04	93.99988 – 182.18042	$3s3p^5 - 3s^23p^3(^2D^\circ)4f$	$^3P^\circ - ^3D$	1 – 2		613
	10	1136.1849	94.33384 – 182.34776	$3s3p^5 - 3s^23p^3(^2D^\circ)4f$	$^3P^\circ - ^3P$	0 – 1		613
	50	1136.5905	94.33384 – 182.31629	$3s3p^5 - 3s^23p^3(^2D^\circ)4f$	$^3P^\circ - ^3D$	0 – 1		613
	280	1139.2145	27.87802 – 115.65777	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1S - ^1P^\circ$	0 – 1		613
	50	1179.1097	93.36756 – 178.17736	$3s3p^5 - 3s^23p^3(^2D^\circ)5p$	$^3P^\circ - ^3P$	2 – 1		613
	100	1179.4619	93.36756 – 178.15200	$3s3p^5 - 3s^23p^3(^2D^\circ)5p$	$^3P^\circ - ^3P$	2 – 2		613
	140	1187.9150	93.36756 – 177.54875	$3s3p^5 - 3s^23p^3(^2D^\circ)5p$	$^3P^\circ - ^3D$	2 – 3		613
	5	1187.963	93.99988 – 178.17736	$3s3p^5 - 3s^23p^3(^2D^\circ)5p$	$^3P^\circ - ^3P$	1 – 1		613

Cl II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	80	1188.3235	93.99988 – 178.15200	$3s3p^5 - 3s^23p^3(^2D^\circ)5p$	$^3P^\circ - {}^3P$	1 – 2		613
	4	1192.6978	94.33384 – 178.17736	$3s3p^5 - 3s^23p^3(^2D^\circ)5p$	$^3P^\circ - {}^3P$	0 – 1		613
	75	1197.9053	93.99988 – 177.47912	$3s3p^5 - 3s^23p^3(^2D^\circ)5p$	$^3P^\circ - {}^3D$	1 – 2		613
	35	1214.3851	11.65358 – 93.99988	$3s^23p^4 - 3s3p^5$	$^1D - {}^3P^\circ$	2 – 1		613
	200	1223.7814	11.65358 – 93.36756	$3s^23p^4 - 3s3p^5$	$^1D - {}^3P^\circ$	2 – 2		613
	6	1293.134	110.29684 – 187.62837	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)10f$	$^5D^\circ - {}^5F$	4 – 5		613
	50	1310.8951	110.29684 – 186.58060	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)9f$	$^5D^\circ - {}^5F$	4 – 5		613
	125	1336.5928	110.29684 – 185.11390	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)8f$	$^5D^\circ - {}^5F$	4 – 5		613
	85	1336.6431	110.30056 – 185.11390	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)8f$	$^5D^\circ - {}^5F$	2 – 3		613
	65	1336.6895	110.30312 – 185.11390	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)8f$	$^5D^\circ - {}^5F$	1 – 2		613
	3	1344.188	107.87966 – 182.27406	$3s^23p^3(^4S^\circ)4s - 3s^23p^3(^4S^\circ)8p$	$^5S^\circ - {}^5P$	2 – 3		613
	2	1344.258	107.87966 – 182.27012	$3s^23p^3(^4S^\circ)4s - 3s^23p^3(^4S^\circ)8p$	$^5S^\circ - {}^5P$	2 – 2		613
	1	1344.298	107.87966 – 182.26794	$3s^23p^3(^4S^\circ)4s - 3s^23p^3(^4S^\circ)8p$	$^5S^\circ - {}^5P$	2 – 1		613
	185	1375.9678	110.29684 – 182.97289	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)7f$	$^5D^\circ - {}^5F$	4 – 5		613
	170	1376.0241	110.30056 – 182.97370	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)7f$	$^5D^\circ - {}^5F$	2 – 3		613
	100	1376.0707	110.30312 – 182.97370	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)7f$	$^5D^\circ - {}^5F$	1 – 2		613
	80	1376.1000	110.30452 – 182.97370	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)7f$	$^5D^\circ - {}^5F$	0 – 1		613
	3	1389.327	110.29684 – 182.27406	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)8p$	$^5D^\circ - {}^5P$	4 – 3		613
	10	1401.16						345
	100	1415.7360	107.87966 – 178.51422	$3s^23p^3(^4S^\circ)4s - 3s^23p^3(^4S^\circ)7p$	$^5S^\circ - {}^5P$	2 – 3		613
	60	1415.8503	107.87966 – 178.50859	$3s^23p^3(^4S^\circ)4s - 3s^23p^3(^4S^\circ)7p$	$^5S^\circ - {}^5P$	2 – 2		613
	20	1415.9323	107.87966 – 178.50450	$3s^23p^3(^4S^\circ)4s - 3s^23p^3(^4S^\circ)7p$	$^5S^\circ - {}^5P$	2 – 1		613
	220	1441.4697	110.29684 – 179.67039	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)6f$	$^5D^\circ - {}^5F$	4 – 5		613
	220	1441.5265	110.30056 – 179.67118	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)6f$	$^5D^\circ - {}^5F$	2 – 3		613
	220	1441.5793	110.30312 – 179.67154	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)6f$	$^5D^\circ - {}^5F$	1 – 2		613
	125	1441.6021	110.30452 – 179.67179	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)6f$	$^5D^\circ - {}^5F$	0 – 1		613
	15	1448.4940	119.81122 – 188.84839	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^2P^\circ)5p$	$^3D^\circ - {}^3D$	3 – 3		613
	15	1448.9013	119.80032 – 188.81808	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^2P^\circ)5p$	$^3D^\circ - {}^3D$	2 – 2		613
	140	1464.3649	93.36756 – 161.65659	$3s3p^5 - 3s^23p^3(^4S^\circ)5p$	$^3P^\circ - {}^3P$	2 – 1		613
	200	1464.7860	93.36756 – 161.63689	$3s3p^5 - 3s^23p^3(^4S^\circ)5p$	$^3P^\circ - {}^3P$	2 – 2		613
	125	1465.9037	110.29684 – 178.51422	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)7p$	$^5D^\circ - {}^5P$	4 – 3		613
	200	1471.06						345
	140	1477.6980	93.99988 – 161.67262	$3s3p^5 - 3s^23p^3(^4S^\circ)5p$	$^3P^\circ - {}^3P$	1 – 0		613
	100	1478.0495	93.99988 – 161.65659	$3s3p^5 - 3s^23p^3(^4S^\circ)5p$	$^3P^\circ - {}^3P$	1 – 1		613
	160	1478.4781	93.99988 – 161.63689	$3s3p^5 - 3s^23p^3(^4S^\circ)5p$	$^3P^\circ - {}^3P$	1 – 2		613
	10	1484.66						345
	125	1485.3814	94.33384 – 161.65659	$3s3p^5 - 3s^23p^3(^4S^\circ)5p$	$^3P^\circ - {}^3P$	0 – 1		613
	10	1497.2715	119.81122 – 186.59938	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)9f$	$^3D^\circ - {}^3F$	3 – 4		613
	30	1499.4764	115.65777 – 182.34776	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^1P^\circ - {}^3P$	1 – 1		613
	185	1500.0065	115.65777 – 182.32413	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^1P^\circ - {}^1D$	1 – 2		613
	100	1500.2465	115.65777 – 182.31351	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^1P^\circ - {}^3P$	1 – 2		613
	50	1500.7415	93.36756 – 160.00142	$3s3p^5 - 3s^23p^3(^2D^\circ)4p$	$^3P^\circ - {}^3P$	2 – 1		613
	200	1500.9869	115.65777 – 182.28059	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^1P^\circ - {}^1P$	1 – 1		613
	140	1501.1520	115.65777 – 182.27329	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^1P^\circ - {}^3F$	1 – 2		613
	160	1503.2483	115.65777 – 182.18042	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^1P^\circ - {}^3D$	1 – 2		613
	100	1510.3849	93.36756 – 159.57591	$3s3p^5 - 3s^23p^3(^2D^\circ)4p$	$^3P^\circ - {}^1P$	2 – 1		613
	125	1512.3604	27.87802 – 93.99988	$3s^23p^4 - 3s3p^5$	$^1S - {}^3P^\circ$	0 – 1		613
	50	1524.8894	112.60936 – 178.18789	$3s^23p^3(^4S^\circ)4s - 3s^23p^3(^2D^\circ)5p$	$^3S^\circ - {}^3P$	1 – 0		613
	50	1525.1345	112.60936 – 178.17736	$3s^23p^3(^4S^\circ)4s - 3s^23p^3(^2D^\circ)5p$	$^3S^\circ - {}^3P$	1 – 1		613
	100	1525.7274	112.60936 – 178.15200	$3s^23p^3(^4S^\circ)4s - 3s^23p^3(^2D^\circ)5p$	$^3S^\circ - {}^3P$	1 – 2		613
	220	1528.5691	93.36756 – 158.78825	$3s3p^5 - 3s^23p^3(^2D^\circ)4p$	$^3P^\circ - {}^3D$	2 – 3		613
	160	1528.9839	93.36756 – 158.77058	$3s3p^5 - 3s^23p^3(^2D^\circ)4p$	$^3P^\circ - {}^3D$	2 – 2		613
	35	1530.4783	119.80032 – 185.13937	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)8f$	$^3D^\circ - {}^3F$	2 – 3		613
	100	1530.7333	119.81122 – 185.13939	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)8f$	$^3D^\circ - {}^3F$	3 – 4		613

CL II — *Continued*

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	220	1542.9423	93.36756 – 158.17878	$3s3p^5 - 3s^23p^3(^2D^\circ)4p$	$^3P^\circ - {}^3S$	2 – 1		613
	200	1543.9084	93.99988 – 158.77058	$3s3p^5 - 3s^23p^3(^2D^\circ)4p$	$^3P^\circ - {}^3D$	1 – 2		613
	160	1544.9822	93.99988 – 158.72556	$3s3p^5 - 3s^23p^3(^2D^\circ)4p$	$^3P^\circ - {}^3D$	1 – 1		613
	160	1552.9947	94.33384 – 158.72556	$3s3p^5 - 3s^23p^3(^2D^\circ)4p$	$^3P^\circ - {}^3D$	0 – 1		613
	100	1557.2538	115.65777 – 179.87342	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)5p$	$^1P^\circ - {}^1D$	1 – 2		613
	140	1558.0222	107.87966 – 172.06364	$3s^23p^3(^4S^\circ)4s - 3s^23p^3(^4S^\circ)6p$	$^5S^\circ - {}^5P$	2 – 3		613
	220	1558.1445	93.99988 – 158.17878	$3s3p^5 - 3s^23p^3(^2D^\circ)4p$	$^3P^\circ - {}^3S$	1 – 1		613
	100	1558.3023	107.87966 – 172.05210	$3s^23p^3(^4S^\circ)4s - 3s^23p^3(^4S^\circ)6p$	$^5S^\circ - {}^5P$	2 – 2		613
	50	1558.4726	107.87966 – 172.04505	$3s^23p^3(^4S^\circ)4s - 3s^23p^3(^4S^\circ)6p$	$^5S^\circ - {}^5P$	2 – 1		613
	220	1565.0503	110.29684 – 174.19265	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)5f$	$^5D^\circ - {}^5F$	4 – 5		613
	210	1565.1142	110.30056 – 174.19379	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)5f$	$^5D^\circ - {}^5F$	2 – 2		613
	210	1565.1732	110.30312 – 174.19379	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)5f$	$^5D^\circ - {}^5F$	1 – 2		613
	210	1565.201	110.30452 – 174.19402	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)5f$	$^5D^\circ - {}^5F$	0 – 1		613
	210	1566.2958	94.33384 – 158.17878	$3s3p^5 - 3s^23p^3(^2D^\circ)4p$	$^3P^\circ - {}^3S$	0 – 1		613
	100	1582.0909	119.80032 – 183.00786	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)7f$	$^3D^\circ - {}^3F$	2 – 3		613
	125	1582.3581	119.81122 – 183.00806	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)7f$	$^3D^\circ - {}^3F$	3 – 4		613
	50	1583.1677	119.84331 – 183.00783	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)7f$	$^3D^\circ - {}^3F$	1 – 2		613
	45	1597.5117	126.22074 – 188.81808	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2P^\circ)5p$	$^3F^\circ - {}^3D$	3 – 2		613
	50	1598.78	119.80032 – 182.34776	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3D^\circ - {}^3P$	2 – 1		613
	125	1599.3909	119.80032 – 182.32413	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3D^\circ - {}^1D$	2 – 2		613
	50	1599.69	119.84331 – 182.35510	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3D^\circ - {}^3P$	1 – 0		613
	125	1599.9306	119.81122 – 182.31351	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3D^\circ - {}^3P$	3 – 2		613
	170	1601.2082	119.80032 – 182.25322	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3D^\circ - {}^3F$	2 – 3		613
	170	1601.4864	119.81122 – 182.25322	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3D^\circ - {}^3F$	3 – 3		613
	125	1601.7970	119.84331 – 182.27329	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3D^\circ - {}^3F$	1 – 2		613
	200	1602.0105	119.81122 – 182.23274	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3D^\circ - {}^3F$	3 – 4		613
	35	1602.8157	126.45810 – 188.84839	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2P^\circ)5p$	$^3F^\circ - {}^3D$	4 – 3		613
	125	1603.2362	119.81122 – 182.18510	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3D^\circ - {}^3D$	3 – 3		613
	170	1604.1806	119.84331 – 182.18042	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3D^\circ - {}^3D$	1 – 2		613
	185	1604.9999	119.81122 – 182.11652	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3D^\circ - {}^3G$	3 – 4		613
	125	1605.2479	119.80032 – 182.09596	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3D^\circ - {}^3G$	2 – 3		613
	140	1611.0049	126.74497 – 188.81808	$3s^23p^3(^2D^\circ)4s - 3s^23p^3(^2P^\circ)5p$	$^3D^\circ - {}^3D$	2 – 2		613
	125	1615.1372	115.65777 – 177.57197	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)5p$	$^1P^\circ - {}^1P$	1 – 1		613
	185	1618.9917	110.29684 – 172.06364	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)6p$	$^5D^\circ - {}^5P$	4 – 3		613
	100	1619.3179	110.29772 – 172.05210	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)6p$	$^5D^\circ - {}^5P$	3 – 2		613
	50	1619.3922	110.30056 – 172.05210	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)6p$	$^5D^\circ - {}^5P$	2 – 2		613
	50	1668.9739	119.80032 – 179.71739	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)6f$	$^3D^\circ - {}^3F$	2 – 2		613
		1669.29	119.81122 – 179.71780	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)6f$	$^3D^\circ - {}^3F$	3 – 4		613
	220	1669.67	93.36756 – 153.25861	$3s3p^5 - 3s^23p^3(^2D^\circ)4p$	$^3P^\circ - {}^1D$	2 – 2		613
	170	1670.1742	119.84331 – 179.71739	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)6f$	$^3D^\circ - {}^3F$	1 – 2		613
	100	1687.53	93.99988 – 153.25861	$3s3p^5 - 3s^23p^3(^2D^\circ)4p$	$^3P^\circ - {}^1D$	1 – 2		613
	100	1731.9759	119.81122 – 177.54875	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^2D^\circ)5p$	$^3D^\circ - {}^3D$	3 – 3		613
	200	1767.2027	93.36756 – 149.95418	$3s3p^5 - 3s^23p^3(^2D^\circ)4p$	$^3P^\circ - {}^3P$	2 – 1		613
	200	1772.0258	93.36756 – 149.80012	$3s3p^5 - 3s^23p^3(^2D^\circ)4p$	$^3P^\circ - {}^3P$	2 – 2		613
	60	1778.1019	126.03354 – 182.27329	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3F^\circ - {}^3F$	2 – 2		613
	2	1778.7350	126.03354 – 182.25322	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3F^\circ - {}^3F$	2 – 3		613
	60	1781.0431	126.03354 – 182.18042	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3F^\circ - {}^3D$	2 – 2		613
	50	1783.0131	126.22074 – 182.30556	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3F^\circ - {}^1G$	3 – 4		613
	185	1783.7251	126.03354 – 182.09596	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3F^\circ - {}^3G$	2 – 3		613
	100	1784.6792	126.22074 – 182.25322	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3F^\circ - {}^3F$	3 – 3		613
	170	1785.0445	93.99988 – 150.02090	$3s3p^5 - 3s^23p^3(^2D^\circ)4p$	$^3P^\circ - {}^3P$	1 – 0		613
	125	1785.3314	126.22074 – 182.23274	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3F^\circ - {}^3F$	3 – 4		613
	50	1786.8508	126.22074 – 182.18510	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3F^\circ - {}^3D$	3 – 3		613
	140	1787.1723	93.99988 – 149.95418	$3s3p^5 - 3s^23p^3(^2D^\circ)4p$	$^3P^\circ - {}^3P$	1 – 1		613

CL II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	170	1789.0429	126.22074 – 182.11652	$3s^23p^3(^2D^o)3d - 3s^23p^3(^2D^o)4f$	$^3F^o - ^3G$	3 – 4		613
	185	1792.1067	93.99988 – 149.80012	$3s3p^5 - 3s^23p^3(^2D^o)4p$	$^3P^o - ^3P$	1 – 2		613
	10	1792.2707	126.45810 – 182.25322	$3s^23p^3(^2D^o)3d - 3s^23p^3(^2D^o)4f$	$^3F^o - ^3F$	4 – 3		613
	125	1792.9286	126.45810 – 182.23274	$3s^23p^3(^2D^o)3d - 3s^23p^3(^2D^o)4f$	$^3F^o - ^3F$	4 – 4		613
	200	1793.1533	126.45810 – 182.22575	$3s^23p^3(^2D^o)3d - 3s^23p^3(^2D^o)4f$	$^3F^o - ^3G$	4 – 5		613
	140	1794.2533	126.45810 – 182.19160	$3s^23p^3(^2D^o)3d - 3s^23p^3(^2D^o)4f$	$^3F^o - ^3H$	4 – 5		613
	160	1797.9035	94.33384 – 149.95418	$3s3p^5 - 3s^23p^3(^2D^o)4p$	$^3P^o - ^3P$	0 – 1		613
	10	1813.75						345
	10	1814.43						345
	10	1815.16						345
	10	1815.61	131.76941 – 186.84596	$3s^23p^3(^4S^o)4p - 3s^23p^3(^2D^o)6s$	$^3P - ^3D^o$	0 – 1		345
	140	1836.2912	119.80032 – 174.25794	$3s^23p^3(^4S^o)3d - 3s^23p^3(^4S^o)5f$	$^3D^o - ^3F$	2 – 3		613
	125	1836.3726	134.39327 – 188.84839	$3s^23p^3(^2D^o)3d - 3s^23p^3(^2P^o)5p$	$^1G^o - ^3D$	4 – 3		613
	160	1836.6459	119.81122 – 174.25836	$3s^23p^3(^4S^o)3d - 3s^23p^3(^4S^o)5f$	$^3D^o - ^3F$	3 – 4		613
	85	1837.7447	119.84331 – 174.25783	$3s^23p^3(^4S^o)3d - 3s^23p^3(^4S^o)5f$	$^3D^o - ^3F$	1 – 2		613
	220	1857.4876	110.29684 – 164.13302	$3s^23p^3(^4S^o)3d - 3s^23p^3(^4S^o)4f$	$^5D^o - ^5F$	4 – 5		613
	185	1857.5769	110.30056 – 164.13391	$3s^23p^3(^4S^o)3d - 3s^23p^3(^4S^o)4f$	$^5D^o - ^5F$	2 – 3		613
	210	1857.6594	110.30312 – 164.13429	$3s^23p^3(^4S^o)3d - 3s^23p^3(^4S^o)4f$	$^5D^o - ^5F$	1 – 2		613
	140	1857.684	110.30452 – 164.13461	$3s^23p^3(^4S^o)3d - 3s^23p^3(^4S^o)4f$	$^5D^o - ^5F$	0 – 1		613
	50	1860.1192	93.36756 – 147.12757	$3s3p^5 - 3s^23p^3(^2D^o)4p$	$^3P^o - ^3F$	2 – 3		613
	185	1883.1313	93.36756 – 146.47064	$3s3p^5 - 3s^23p^3(^2D^o)4p$	$^3P^o - ^3D$	2 – 3		613
	3	1884.8108	93.99988 – 147.05561	$3s3p^5 - 3s^23p^3(^2D^o)4p$	$^3P^o - ^3F$	1 – 2		613
	100	1887.9334	93.36756 – 146.33555	$3s3p^5 - 3s^23p^3(^2D^o)4p$	$^3P^o - ^3D$	2 – 2		613
	2	1894.5004	128.73082 – 181.51518	$3s^23p^3(^4S^o)4p - 3s^23p^3(^4S^o)7d$	$^5P - ^5D^o$	3 – 4		613
	160	1910.7442	93.99988 – 146.33555	$3s3p^5 - 3s^23p^3(^2D^o)4p$	$^3P^o - ^3D$	1 – 2		613
	100	1910.8830	93.99988 – 146.33176	$3s3p^5 - 3s^23p^3(^2D^o)4p$	$^3P^o - ^3D$	1 – 1		613
	160	1923.1553	94.33384 – 146.33176	$3s3p^5 - 3s^23p^3(^2D^o)4p$	$^3P^o - ^3D$	0 – 1		613
	125	1937.5678	107.87966 – 159.49082	$3s^23p^3(^4S^o)4s - 3s^23p^3(^4S^o)5p$	$^5S^o - ^5P$	2 – 3		613
	80	1938.4724	107.87966 – 159.46666	$3s^23p^3(^4S^o)4s - 3s^23p^3(^4S^o)5p$	$^5S^o - ^5P$	2 – 2		613
	60	1939.0336	107.87966 – 159.45170	$3s^23p^3(^4S^o)4s - 3s^23p^3(^4S^o)5p$	$^5S^o - ^5P$	2 – 1		613
	65	1942.8687	93.99988 – 145.47016	$3s3p^5 - 3s^23p^3(^2D^o)4p$	$^3P^o - ^1P$	1 – 1		613
	35	1943.2155	126.22074 – 177.68190	$3s^23p^3(^2D^o)3d - 3s^23p^3(^2D^o)5p$	$^3F^o - ^3F$	3 – 3		613
	15	1945.1017	126.03354 – 177.44474	$3s^23p^3(^2D^o)3d - 3s^23p^3(^2D^o)5p$	$^3F^o - ^3D$	2 – 1		613
	70	1950.3642	126.45810 – 177.73059	$3s^23p^3(^2D^o)3d - 3s^23p^3(^2D^o)5p$	$^3F^o - ^3F$	4 – 4		613
	45	1950.8992	126.22074 – 177.47912	$3s^23p^3(^2D^o)3d - 3s^23p^3(^2D^o)5p$	$^3F^o - ^3D$	3 – 2		613
	65	1957.3047	126.45810 – 177.54875	$3s^23p^3(^2D^o)3d - 3s^23p^3(^2D^o)5p$	$^3F^o - ^3D$	4 – 3		613
	140	1959.1619	115.65777 – 166.70000	$3s^23p^3(^2D^o)3d - 3s^23p^3(^2D^o)4p$	$^1P^o - ^1S$	1 – 0		613
	40	1962.853	126.78437 – 177.73059	$3s^23p^3(^2D^o)4s - 3s^23p^3(^2D^o)5p$	$^3D^o - ^3F$	3 – 4		613
	30	1963.211	126.74497 – 177.68190	$3s^23p^3(^2D^o)4s - 3s^23p^3(^2D^o)5p$	$^3D^o - ^3F$	2 – 3		613
	35	1968.251	129.06696 – 179.87342	$3s^23p^3(^2D^o)4s - 3s^23p^3(^2D^o)5p$	$^1D^o - ^1D$	2 – 2		613
	160	1996.7136	132.17511 – 182.25740	$3s^23p^3(^2D^o)3d - 3s^23p^3(^2D^o)4f$	$^3G^o - ^1H$	4 – 5		613
	85	1997.2619	132.16413 – 182.23274	$3s^23p^3(^2D^o)3d - 3s^23p^3(^2D^o)4f$	$^3G^o - ^3F$	3 – 4		613
	210	1997.3705	132.19312 – 182.25895	$3s^23p^3(^2D^o)3d - 3s^23p^3(^2D^o)4f$	$^3G^o - ^3H$	5 – 6		613
		1997.9784	132.17511 – 182.22575	$3s^23p^3(^2D^o)3d - 3s^23p^3(^2D^o)4f$	$^3G^o - ^3G$	4 – 5		613
		1998.5853	132.16413 – 182.19952	$3s^23p^3(^2D^o)3d - 3s^23p^3(^2D^o)4f$	$^3G^o - ^3H$	3 – 4		613
		1998.6950	132.19312 – 182.22575	$3s^23p^3(^2D^o)3d - 3s^23p^3(^2D^o)4f$	$^3G^o - ^3G$	5 – 5		613
		1999.0230	132.17511 – 182.19952	$3s^23p^3(^2D^o)3d - 3s^23p^3(^2D^o)4f$	$^3G^o - ^3H$	4 – 4		613
		1999.3406	132.17511 – 182.19160	$3s^23p^3(^2D^o)3d - 3s^23p^3(^2D^o)4f$	$^3G^o - ^3H$	4 – 5		613

CHLORINE III (Cl^{2+}), Z = 17
Ground State $1s^22s^22p^63s^23p^3(^4S^\circ_{3/2})$ (15 electrons)
Ionization Potential 319 500 cm^{-1}; 39.61 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	406.27	0.0 – 246.1372	$3s^23p^3 - 3s^23p^2(^3P)5s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		043
	10	407.51	0.0 – 245.3924	$3s^23p^3 - 3s^23p^2(^3P)5s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		043
	300	411.16	0.0 – 243.2072	$3s^23p^3 - 3s^23p^2(^3P)4d$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		043
	400	411.37	0.0 – 243.0807	$3s^23p^3 - 3s^23p^2(^3P)4d$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		043
	400	411.81	0.0 – 242.8228	$3s^23p^3 - 3s^23p^2(^3P)4d$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		043
	100	415.20	18.053 – 258.8908	$3s^23p^3 - 3s^23p^2(^1D)5s$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		043
	100	415.33	18.1186 – 258.8858	$3s^23p^3 - 3s^23p^2(^1D)5s$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		043
	300	421.77	18.053 – 255.1404	$3s^23p^3 - 3s^23p^2(^1D)4d$	$^2D^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		043
	300	421.99	18.1186 – 255.0863	$3s^23p^3 - 3s^23p^2(^1D)4d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		043
	100	422.71	18.1186 – 254.6834	$3s^23p^3 - 3s^23p^2(^1D)4d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		043
	10	433.66	18.053 – 248.6577	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		043
	10	433.77	18.1186 – 248.6577	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		043
	300	441.40	18.1186 – 244.6849	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		043
	200	442.95	18.053 – 243.8284	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2D^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		043
	300	457.17	29.907 – 248.6577	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		043
	200	457.24	29.812 – 248.5282	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		043
	10	457.44	29.907 – 248.5282	$3s^23p^3 - 3s^23p^2(^3P)4d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		043
	200	552.91	18.1186 – 198.9839	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		043
3	600	556.23	0.0 – 179.7810	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		043
3	700	556.61	0.0 – 179.6635	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		043
3	700	557.12	0.0 – 179.4952	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		043
	100	558.39	0.0 – 179.0761	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		043
	100	560.64	0.0 – 178.3697	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		043
5	700	561.53	18.053 – 196.1379	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		043
5	700	561.68	18.1186 – 196.1558	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		043
5	700	561.74	18.1186 – 196.1379	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{5}{2}$		043
	400	564.29	18.053 – 195.2682	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		043
	200	564.51	18.1186 – 195.2682	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{3}{2}$		043
	300	565.27	18.053 – 194.9595	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		043
	400	565.48	18.1186 – 194.9595	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		043
2	400	572.69	0.0 – 174.6139	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		038
2	300	574.41	0.0 – 174.0938	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		038
2	300	575.58	0.0 – 173.7360	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		038
	400	586.87	18.053 – 188.4481	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		043
	300	587.08	18.053 – 188.3901	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		043
	400	587.30	18.1186 – 188.3901	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		043
6	300	591.12	29.812 – 198.9839	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		043
6	400	591.43	29.907 – 198.9839	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		043
6	400	591.65	29.812 – 198.8355	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		043
6	200	591.96	29.907 – 198.8355	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		043
	400	594.64	18.053 – 186.2204	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		043
	300	595.99	18.053 – 185.8383	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		043
	400	596.24	18.1186 – 185.8383	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		043
	100	605.86	29.907 – 194.9595	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		043
4	200	606.10	18.053 – 183.0427	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		043
4	500	606.35	18.1186 – 183.0427	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		043
4	400	609.67	18.053 – 182.0763	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		043
4	10	609.90	18.1186 – 182.0763	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{3}{2}$		043
	100	619.03	18.1186 – 179.6635	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^4P$	$\frac{5}{2}-\frac{3}{2}$		043
	300	621.03	18.053 – 179.0761	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		043
	400	621.28	18.1186 – 179.0761	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		043
	300	623.77	18.053 – 178.3697	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		043
	100	630.38	29.812 – 188.4481	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		043
	100	630.75	29.907 – 188.4481	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		043

Cl III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	631.01	29.907 – 188.3901	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2P^\circ - ^2D$	3/2 – 5/2		043
	100	639.76	29.907 – 186.2204	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2P$	3/2 – 1/2		043
	100	640.93	29.812 – 185.8383	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2P$	1/2 – 3/2		043
	100	641.30	29.907 – 185.8383	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2P$	3/2 – 3/2		043
	200	653.01	29.907 – 183.0427	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2D$	3/2 – 5/2		043
	200	656.77	29.812 – 182.0763	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2D$	1/2 – 3/2		043
	200	657.17	29.907 – 182.0763	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2D$	3/2 – 3/2		043
	200	669.95	29.812 – 179.0761	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2P$	1/2 – 3/2		043
	300	670.38	29.907 – 179.0761	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2P$	3/2 – 3/2		043
	300	673.13	29.812 – 178.3697	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2P$	1/2 – 1/2		043
	100	673.60	29.907 – 178.3697	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2P$	3/2 – 1/2		043
	100	746.86	18.053 – 151.9464	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^4D$	3/2 – 1/2		043
	100	747.42	18.053 – 151.8486	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^4D$	3/2 – 5/2		043
	100	747.60	18.1186 – 151.8799	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^4D$	5/2 – 3/2	P	043
	100	930.94	98.52 – 205.9385	$3s3p^4 - 3s^23p^2(^3P)4p$	$^4P - ^4S^\circ$	5/2 – 3/2		038
	100	936.28	99.13 – 205.9385	$3s3p^4 - 3s^23p^2(^3P)4p$	$^4P - ^4S^\circ$	3/2 – 3/2		038
	10	939.31	99.475 – 205.9385	$3s3p^4 - 3s^23p^2(^3P)4p$	$^4P - ^4S^\circ$	1/2 – 3/2		038
	100	943.22	98.52 – 204.5412	$3s3p^4 - 3s^23p^2(^3P)4p$	$^4P - ^4P^\circ$	5/2 – 5/2		038
	100	946.97	98.52 – 204.1240	$3s3p^4 - 3s^23p^2(^3P)4p$	$^4P - ^4P^\circ$	5/2 – 3/2		038
	100	948.67	99.13 – 204.5412	$3s3p^4 - 3s^23p^2(^3P)4p$	$^4P - ^4P^\circ$	3/2 – 5/2	P	038
	200	953.40	99.13 – 204.0216	$3s3p^4 - 3s^23p^2(^3P)4p$	$^4P - ^4P^\circ$	3/2 – 1/2		038
1	500	1005.28	0.0 – 99.475	$3s^23p^3 - 3s3p^4$	$g^4S^\circ - ^4P$	3/2 – 1/2		038
1	600	1008.78	0.0 – 99.13	$3s^23p^3 - 3s3p^4$	$g^4S^\circ - ^4P$	3/2 – 3/2		038
1	700	1015.02	0.0 – 98.52	$3s^23p^3 - 3s3p^4$	$g^4S^\circ - ^4P$	3/2 – 5/2		038
	10	1683.18	146.5256 – 205.9385	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4F - ^4S^\circ$	3/2 – 3/2		043
	100	1689.50	146.7499 – 205.9385	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4F - ^4S^\circ$	5/2 – 3/2		043
7	200	1797.98	146.7499 – 202.3676	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4F - ^4D^\circ$	5/2 – 7/2		043
7	400	1808.51	147.0730 – 202.3676	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4F - ^4D^\circ$	7/2 – 7/2		043
7	100	1810.26	146.5256 – 201.7651	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4F - ^4D^\circ$	3/2 – 5/2		043
7	400	1817.68	146.7499 – 201.7651	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4F - ^4D^\circ$	5/2 – 5/2	P	043
7	600	1822.50	147.4979 – 202.3676	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4F - ^4D^\circ$	9/2 – 7/2		043
7	300	1824.59	146.5256 – 201.3320	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4F - ^4D^\circ$	3/2 – 3/2		043
7	500	1828.40	147.0730 – 201.7651	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4F - ^4D^\circ$	7/2 – 5/2		043
7	400	1832.08	146.7499 – 201.3320	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4F - ^4D^\circ$	5/2 – 3/2		043
7	400	1833.25	146.5256 – 201.0734	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4F - ^4D^\circ$	3/2 – 1/2	P	043
	10	1848.74	151.8486 – 205.9385	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4D - ^4S^\circ$	5/2 – 3/2		043
	10	1849.56	151.8799 – 205.9469	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4D - ^2D^\circ$	3/2 – 5/2	P	043
	200	1852.11	151.9464 – 205.9385	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4D - ^4S^\circ$	1/2 – 3/2		043
	300	1880.10	151.8486 – 205.0373	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4D - ^2D^\circ$	5/2 – 3/2		043
	10	1888.97	205.9469 – 258.8858	$3s^23p^2(^3P)4p - 3s^23p^2(^1D)5s$	$^2D^\circ - ^2D$	5/2 – 5/2	P	043
8	300	1897.80	151.8486 – 204.5412	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4D - ^4P^\circ$	5/2 – 5/2	P	043
8	500	1901.61	151.9535 – 204.5412	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4D - ^4P^\circ$	7/2 – 5/2		043
8	400	1912.90	151.8486 – 204.1240	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4D - ^4P^\circ$	5/2 – 3/2		043
8	300	1914.09	151.8799 – 204.1240	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4D - ^4P^\circ$	3/2 – 3/2		043
8	400	1916.53	151.9464 – 204.1240	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4D - ^4P^\circ$	1/2 – 3/2		043
8	400	1917.87	151.8799 – 204.0216	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4D - ^4P^\circ$	3/2 – 1/2		043
8	400	1920.32	151.9464 – 204.0216	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4D - ^4P^\circ$	1/2 – 1/2		043
	300	1979.46	151.8486 – 202.3676	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4D - ^4D^\circ$	5/2 – 7/2		043
	500	1983.61	151.9535 – 202.3676	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4p$	$^4D - ^4D^\circ$	7/2 – 7/2		043

CHLORINE IV (Cl^{3+}), Z = 17
Ground State $1s^2 2s^2 2p^6 3s^2 3p^2 (^3P_0)$ (14 electrons)
Ionization Potential 431 226 cm^{-1}; 53.466 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	318.75	.4920 – 314.225	$3s^23p^2 - 3s^23p(^2P^o)5s$	$g^3P - ^3P^o$	1 – 2		043
	100	319.51	0. – 312.991	$3s^23p^2 - 3s^23p(^2P^o)5s$	$g^3P - ^3P^o$	0 – 1		043
	300	319.62	1.3419 – 314.225	$3s^23p^2 - 3s^23p(^2P^o)5s$	$g^3P - ^3P^o$	2 – 2		043
	10	319.99	.4920 – 312.991	$3s^23p^2 - 3s^23p(^2P^o)5s$	$g^3P - ^3P^o$	1 – 1		043
	100	320.25	.4920 – 312.747	$3s^23p^2 - 3s^23p(^2P^o)5s$	$g^3P - ^3P^o$	1 – 0		043
	100	320.88	1.3419 – 312.991	$3s^23p^2 - 3s^23p(^2P^o)5s$	$g^3P - ^3P^o$	2 – 1		043
	200	331.84	13.7676 – 315.121	$3s^23p^2 - 3s^23p(^2P^o)5s$	$^1D - ^1P^o$	2 – 1		044
	400	437.83	65.+X – 293.4+X	$3s3p^3 - 3s3p^2(^4P)4s$	$^5S^o - ^5P$	2 – 3		043
	300	439.26	65.+X – 292.66+X	$3s3p^3 - 3s3p^2(^4P)4s$	$^5S^o - ^5P$	2 – 2		043
	200	440.25	65.+X – 292.15+X	$3s3p^3 - 3s3p^2(^4P)4s$	$^5S^o - ^5P$	2 – 1		043
	300	463.01	.4920 – 216.4681	$3s^23p^2 - 3s^23p(^2P^o)4s$	$g^3P - ^3P^o$	1 – 2		038
	300	464.29	0. – 215.3893	$3s^23p^2 - 3s^23p(^2P^o)4s$	$g^3P - ^3P^o$	0 – 1		038
	400	464.86	1.3419 – 216.4681	$3s^23p^2 - 3s^23p(^2P^o)4s$	$g^3P - ^3P^o$	2 – 2		038
	300	465.35	.4920 – 215.3893	$3s^23p^2 - 3s^23p(^2P^o)4s$	$g^3P - ^3P^o$	1 – 1		038
	300	466.13	.4920 – 215.0260	$3s^23p^2 - 3s^23p(^2P^o)4s$	$g^3P - ^3P^o$	1 – 0		038
	300	467.19	1.3419 – 215.3893	$3s^23p^2 - 3s^23p(^2P^o)4s$	$g^3P - ^3P^o$	2 – 1		038
	800	486.17	13.7676 – 219.454	$3s^23p^2 - 3s^23p(^2P^o)4s$	$^1D - ^1P^o$	2 – 1		044
	800	534.73	0. – 187.008	$3s^23p^2 - 3s^23p(^2P^o)3d$	$g^3P - ^3D^o$	0 – 1		043
	400	535.04	32.5478 – 219.454	$3s^23p^2 - 3s^23p(^2P^o)4s$	$^1S - ^1P^o$	0 – 1		044
	700	535.67	.4920 – 187.174	$3s^23p^2 - 3s^23p(^2P^o)3d$	$g^3P - ^3D^o$	1 – 2		043
	600	536.15	.4920 – 187.008	$3s^23p^2 - 3s^23p(^2P^o)3d$	$g^3P - ^3D^o$	1 – 1		043
	900	537.61	1.3419 – 187.346	$3s^23p^2 - 3s^23p(^2P^o)3d$	$g^3P - ^3D^o$	2 – 3		043
	600	538.12	1.3419 – 187.174	$3s^23p^2 - 3s^23p(^2P^o)3d$	$g^3P - ^3D^o$	2 – 2		043
	400	538.60	1.3419 – 187.008	$3s^23p^2 - 3s^23p(^2P^o)3d$	$g^3P - ^3D^o$	2 – 1		043
	500	549.22	0. – 182.073	$3s^23p^2 - 3s^23p(^2P^o)3d$	$g^3P - ^3P^o$	0 – 1		043
	400	550.02	.4920 – 182.300	$3s^23p^2 - 3s^23p(^2P^o)3d$	$g^3P - ^3P^o$	1 – 0		043
	300	550.71	.4920 – 182.073	$3s^23p^2 - 3s^23p(^2P^o)3d$	$g^3P - ^3P^o$	1 – 1		043
	200	551.12	187.174 – 368.62	$3s^23p(^2P^o)3d - 3s^23p(^2P^o)5p$	$^3D^o - ^3D$	2 – 2		043
	100	551.64	187.346 – 368.62	$3s^23p(^2P^o)3d - 3s^23p(^2P^o)5p$	$^3D^o - ^3D$	3 – 2		043
	700	552.02	.4920 – 181.643	$3s^23p^2 - 3s^23p(^2P^o)3d$	$g^3P - ^3P^o$	1 – 2		043
	600	553.30	1.3419 – 182.073	$3s^23p^2 - 3s^23p(^2P^o)3d$	$g^3P - ^3P^o$	2 – 1		043
	100	554.21	181.643 – 362.08	$3s^23p(^2P^o)3d - 3s^23p(^2P^o)5p$	$^3P^o - ^3P$	2 – 2		043
	700	554.62	1.3419 – 181.643	$3s^23p^2 - 3s^23p(^2P^o)3d$	$g^3P - ^3P^o$	2 – 2		043
	100	555.49	182.073 – 362.08	$3s^23p(^2P^o)3d - 3s^23p(^2P^o)5p$	$^3P^o - ^3P$	1 – 2		043
	200	599.73	0. – 166.742	$3s^23p^2 - 3s3p^3$	$g^3P - ^1P^o$	0 – 1		044
	500	601.50	.4920 – 166.742	$3s^23p^2 - 3s3p^3$	$g^3P - ^1P^o$	1 – 1		044
	500	604.59	1.3419 – 166.742	$3s^23p^2 - 3s3p^3$	$g^3P - ^1P^o$	2 – 1		044
	300	607.09	0. – 164.721	$3s^23p^2 - 3s3p^3$	$g^3P - ^3S^o$	0 – 1		038
	400	608.90	.4920 – 164.721	$3s^23p^2 - 3s3p^3$	$g^3P - ^3S^o$	1 – 1		038
	400	612.07	1.3419 – 164.721	$3s^23p^2 - 3s3p^3$	$g^3P - ^3S^o$	2 – 1		038
	400	653.70	13.7676 – 166.742	$3s^23p^2 - 3s3p^3$	$^1D - ^1P^o$	2 – 1		044
	300	662.45	13.7676 – 164.721	$3s^23p^2 - 3s3p^3$	$^1D - ^3S^o$	2 – 1		044
	200	668.77	102.869 – 252.3967	$3s3p^3 - 3s^23p(^2P^o)4p$	$^3D^o - ^3P$	3 – 2		043
	10	672.43	102.752 – 251.4714	$3s3p^3 - 3s^23p(^2P^o)4p$	$^3D^o - ^3P$	1 – 0		043
	10	684.49	102.869 – 248.964	$3s3p^3 - 3s^23p(^2P^o)4p$	$^3D^o - ^3D$	3 – 3		043
	400	745.21	32.5478 – 166.742	$3s^23p^2 - 3s3p^3$	$^1S - ^1P^o$	0 – 1		044
	100	756.56	32.5478 – 164.721	$3s^23p^2 - 3s3p^3$	$^1S - ^3S^o$	0 – 1		044
	10	776.91	120.256 – 248.964	$3s3p^3 - 3s^23p(^2P^o)4p$	$^3P^o - ^3D$	2 – 3		043
	400	831.43	0. – 120.274	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P^o$	0 – 1		038
	300	834.66	.4920 – 120.300	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P^o$	1 – 0		038
	500	834.84	.4920 – 120.274	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P^o$	1 – 1		038
	500	834.97	.4920 – 120.256	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P^o$	1 – 2		038
	400	840.81	1.3419 – 120.274	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P^o$	2 – 1		038
	600	840.93	1.3419 – 120.256	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P^o$	2 – 2		038

CL IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		865.3	13.7676 – 129.34	$3s^23p^2 - 3s3p^3$	$^1D - {}^1D^\circ$	2 – 2		92
	500	973.21	0. – 102.752	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D^\circ$	0 – 1		038
	600	977.56	.4920 – 102.787	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D^\circ$	1 – 2		038
	400	977.90	.4920 – 102.752	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D^\circ$	1 – 1		038
	700	984.95	1.3419 – 102.869	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D^\circ$	2 – 3		038
	400	985.75	1.3419 – 102.787	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D^\circ$	2 – 2		038
	100	1413.39	181.643 – 252.3967	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)4p$	$^3P^\circ - {}^3P$	2 – 2		043
	100	1421.97	182.073 – 252.3967	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)4p$	$^3P^\circ - {}^3P$	1 – 2		043
	100	1426.89	181.643 – 251.7258	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)4p$	$^3P^\circ - {}^3P$	2 – 1		043
	10	1440.95	182.073 – 251.4714	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)4p$	$^3P^\circ - {}^3P$	1 – 0		043
	10	1529.28	187.008 – 252.3967	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)4p$	$^3D^\circ - {}^3P$	1 – 2		043
	100	1532.10	182.300 – 247.570	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)4p$	$^3P^\circ - {}^3D$	0 – 1	P	043
	100	1533.21	187.174 – 252.3967	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)4p$	$^3D^\circ - {}^3P$	2 – 2	P	043
	300	1537.26	187.346 – 252.3967	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)4p$	$^3D^\circ - {}^3P$	3 – 2	P	043
	200	1539.24	248.024 – 312.991	$3s^23p(^2P^\circ)4p - 3s^23p(^2P^\circ)5s$	$^3D - {}^3P^\circ$	2 – 1	P	043
	200	1545.19	187.008 – 251.7258	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)4p$	$^3D^\circ - {}^3P$	1 – 1		043
	200	1549.15	187.174 – 251.7258	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)4p$	$^3D^\circ - {}^3P$	2 – 1		043
	100	1551.27	187.008 – 251.4714	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)4p$	$^3D^\circ - {}^3P$	1 – 0		043
	100	1617.38	252.3967 – 314.225	$3s^23p(^2P^\circ)4p - 3s^23p(^2P^\circ)5s$	$^3P - {}^3P^\circ$	2 – 2	P	043
	200	1622.86	187.346 – 248.964	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)4p$	$^3D^\circ - {}^3D$	3 – 3		043
	10	1638.95	187.008 – 248.024	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)4p$	$^3D^\circ - {}^3D$	1 – 2		043
	100	1643.40	187.174 – 248.024	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)4p$	$^3D^\circ - {}^3D$	2 – 2		043
	10	1648.04	187.346 – 248.024	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)4p$	$^3D^\circ - {}^3D$	3 – 2		043
	100	1651.21	187.008 – 247.570	$3s^23p(^2P^\circ)3d - 3s^23p(^2P^\circ)4p$	$^3D^\circ - {}^3D$	1 – 1		043

CHLORINE V (Cl^{4+}), Z = 17
Ground State $1s^22s^22p^63s^23p(^2P^\circ_{1/2})$ (13 electrons)
Ionization Potential 547 000 cm^{-1}; 67.8 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	236.44	0.0 – 422.949	$3s^2(^1S)3p - 3s^2(^1S)5d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		549
	200	237.23	1.4908 – 423.022	$3s^2(^1S)3p - 3s^2(^1S)5d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		549
	200	286.13	0.0 – 349.511	$3s^2(^1S)3p - 3s^2(^1S)4d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		043
	300	287.33	1.4908 – 349.511	$3s^2(^1S)3p - 3s^2(^1S)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		043
	200	372.59	86.538+X – 354.925+X	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - {}^4P^\circ$	$\frac{3}{2} - \frac{5}{2}$		043
	200	373.17	86.+X – 353.978+X	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - {}^4P^\circ$	$\frac{1}{2} - \frac{3}{2}$		043
	300	373.78	87.381+X – 354.925+X	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - {}^4P^\circ$	$\frac{5}{2} - \frac{5}{2}$		043
	10	373.91	86.538+X – 353.978+X	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - {}^4P^\circ$	$\frac{3}{2} - \frac{3}{2}$		043
	100	374.66	86.538+X – 353.445+X	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - {}^4P^\circ$	$\frac{3}{2} - \frac{1}{2}$		043
	200	375.10	87.381+X – 353.978+X	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - {}^4P^\circ$	$\frac{5}{2} - \frac{3}{2}$		043
	400	390.15	0.0 – 256.313	$3s^2(^1S)3p - 3s^2(^1S)4s$	$g^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		043
	500	392.43	1.4908 – 256.313	$3s^2(^1S)3p - 3s^2(^1S)4s$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		043
	200	535.46	86.+X – 272.757+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{1}{2} - \frac{3}{2}$		043
	200	535.92	86.+X – 272.596+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{1}{2} - \frac{1}{2}$		043
	300	536.53	86.538+X – 272.919+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{3}{2} - \frac{5}{2}$		043
	400	537.01	86.538+X – 272.757+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{3}{2} - \frac{3}{2}$		043
	300	537.46	86.538+X – 272.596+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{3}{2} - \frac{1}{2}$		549
	500	538.03	0.0 – 185.861	$3s^2(^1S)3p - 3s^2(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		038

CL V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	400	538.68	87.381+X – 273.02+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		043
	300	538.98	87.381+X – 272.919+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		043
	10	539.44	87.381+X – 272.757+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{3}{2}$		043
	300	541.28	86.+X – 270.745+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$		549
	800	542.23	86.+X – 270.423+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		549
	600	542.30	1.4908 – 185.893	$3s^2(^1S)3p - 3s^2(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		038
	300	542.40	1.4908 – 185.861	$3s^2(^1S)3p - 3s^2(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		038
	400	542.87	86.538+X – 270.745+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		549
	100	543.82	86.538+X – 270.423+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		549
	1000	545.11	86.538+X – 269.986+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		549
	600	546.33	87.381+X – 270.423+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		549
	1000	547.63	87.381+X – 269.986+X	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		549
	300	629.35	0.0 – 158.892	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		038
	400	633.19	0.0 – 157.931	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		038
	400	635.32	1.4908 – 158.892	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		038
	300	639.23	1.4908 – 157.931	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		038
	300	676.79	86.+X – 233.757+X	$3s3p^2 - 3p^3$	$^4P - {}^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		038
	300	679.26	86.538+X – 233.757+X	$3s3p^2 - 3p^3$	$^4P - {}^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		038
	400	681.92	0.0 – 146.644	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		038
	400	683.17	87.381+X – 233.757+X	$3s3p^2 - 3p^3$	$^4P - {}^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		038
	400	688.93	1.4908 – 146.644	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		038
		715.55	113.234 – 252.99	$3s3p^2 - 3p^3$	$^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		251
		716.19	113.306 – 252.93	$3s3p^2 - 3p^3$	$^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		251
	400	883.13	0.0 – 113.234	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		038
	400	894.34	1.4908 – 113.306	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		038
	100	894.91	1.4908 – 113.234	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		038
		914.5	113.306 – 222.65	$3s3p^2 - 3p^3$	$^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		92

CHLORINE VI (Cl^{5+}), Z = 17
Ground State $1s^22s^22p^63s^2(^1S_0)$ (12 electrons)
Ionization Potential [782 600] cm^{-1}; [97.03] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	194.80	97.958+E – 611.316+E	$3s(^2S)3p - 3s(^2S)5d$	$^3P^\circ - {}^3D$	1 – 2		535
	150	195.23	99.123+E – 611.347+E	$3s(^2S)3p - 3s(^2S)5d$	$^3P^\circ - {}^3D$	2 – 3		535
	250	242.89	97.405+E – 509.126+E	$3s(^2S)3p - 3s(^2S)4d$	$^3P^\circ - {}^3D$	0 – 1		535
	400	243.19	97.958+E – 509.154+E	$3s(^2S)3p - 3s(^2S)4d$	$^3P^\circ - {}^3D$	1 – 2		535
	100	243.21	97.958+E – 509.126+E	$3s(^2S)3p - 3s(^2S)4d$	$^3P^\circ - {}^3D$	1 – 1		535
	600	243.85	99.123+E – 509.205+E	$3s(^2S)3p - 3s(^2S)4d$	$^3P^\circ - {}^3D$	2 – 3		535
	150	243.88	99.123+E – 509.154+E	$3s(^2S)3p - 3s(^2S)4d$	$^3P^\circ - {}^3D$	2 – 2		535
	600	323.36	97.405+E – 406.662+E	$3s(^2S)3p - 3s(^2S)4s$	$^3P^\circ - {}^3S$	0 – 1		535
	800	323.94	97.958+E – 406.662+E	$3s(^2S)3p - 3s(^2S)4s$	$^3P^\circ - {}^3S$	1 – 1		535
	1000	325.16	99.123+E – 406.662+E	$3s(^2S)3p - 3s(^2S)4s$	$^3P^\circ - {}^3S$	2 – 1		535
	250	399.94	279.103+E – 529.147+E	$3s(^2S)3d - 3s(^2S)4f$	$^3D - {}^3F^\circ$	1 – 2		535
	350	399.96	279.118+E – 529.147+E	$3s(^2S)3d - 3s(^2S)4f$	$^3D - {}^3F^\circ$	2 – 3		535
	400	400.00	279.146+E – 529.147+E	$3s(^2S)3d - 3s(^2S)4f$	$^3D - {}^3F^\circ$	3 – 4		535
	250	550.36	97.405+E – 279.103+E	$3s(^2S)3p - 3s(^2S)3d$	$^3P^\circ - {}^3D$	0 – 1		535
	500	551.99	97.958+E – 279.118+E	$3s(^2S)3p - 3s(^2S)3d$	$^3P^\circ - {}^3D$	1 – 2		535
	100	552.05	97.958+E – 279.103+E	$3s(^2S)3p - 3s(^2S)3d$	$^3P^\circ - {}^3D$	1 – 1		535
	1000	555.49	99.123+E – 279.146+E	$3s(^2S)3p - 3s(^2S)3d$	$^3P^\circ - {}^3D$	2 – 3		535
	150	555.58	99.123+E – 279.118+E	$3s(^2S)3p - 3s(^2S)3d$	$^3P^\circ - {}^3D$	2 – 2		535

CL VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	400	565.48	234.218+E - 411.06+E	$3p^2 - 3p({}^2P^\circ)3d$	${}^3P - {}^3D^\circ$	0 - 1		549
	200	566.63	234.854+E - 411.333+E	$3p^2 - 3p({}^2P^\circ)3d$	${}^3P - {}^3D^\circ$	1 - 2		549
	100	567.48	234.854+E - 411.06+E	$3p^2 - 3p({}^2P^\circ)3d$	${}^3P - {}^3D^\circ$	1 - 1		549
	400	570.03	236.055+E - 411.486+E	$3p^2 - 3p({}^2P^\circ)3d$	${}^3P - {}^3D^\circ$	2 - 3		549
	200	570.53	236.055+E - 411.333+E	$3p^2 - 3p({}^2P^\circ)3d$	${}^3P - {}^3D^\circ$	2 - 2		549
	10	570.88	234.854+E - 410.02+E	$3p^2 - 3p({}^2P^\circ)3d$	${}^3P - {}^3P^\circ$	1 - 0		549
	100	571.38	234.218+E - 409.233+E	$3p^2 - 3p({}^2P^\circ)3d$	${}^3P - {}^3P^\circ$	0 - 1		549
	10	571.44	236.055+E - 411.06+E	$3p^2 - 3p({}^2P^\circ)3d$	${}^3P - {}^3D^\circ$	2 - 1		549
	200	576.42	234.854+E - 408.337+E	$3p^2 - 3p({}^2P^\circ)3d$	${}^3P - {}^3P^\circ$	1 - 2		549
	100	577.44	236.055+E - 409.233+E	$3p^2 - 3p({}^2P^\circ)3d$	${}^3P - {}^3P^\circ$	2 - 1		549
	200	580.44	236.055+E - 408.337+E	$3p^2 - 3p({}^2P^\circ)3d$	${}^3P - {}^3P^\circ$	2 - 2		549
		582.6	148.949 - 320.59	$3s({}^2S)3p - 3s({}^2S)3d$	${}^1P^\circ - {}^1D$	1 - 2		111
		624.11	229.22+F - 389.45+F	$3p^2 - 3p({}^2P^\circ)3d$	${}^1D - {}^1D^\circ$	2 - 2		242
		668.30	276.10 - 425.74	$3p^2 - 3p({}^2P^\circ)3d$	${}^1S - {}^1P^\circ$	0 - 1		242
	400	671.37	0.0 - 148.949	$3s^2 - 3s({}^2S)3p$	$g{}^1S - {}^1P^\circ$	0 - 1		051
	150	724.13	97.958+E - 236.055+E	$3s({}^2S)3p - 3p^2$	${}^3P^\circ - {}^3P$	1 - 2		535
	150	727.54	97.405+E - 234.854+E	$3s({}^2S)3p - 3p^2$	${}^3P^\circ - {}^3P$	0 - 1		535
	200	730.31	99.123+E - 236.055+E	$3s({}^2S)3p - 3p^2$	${}^3P^\circ - {}^3P$	2 - 2		535
	150	733.89	97.958+E - 234.218+E	$3s({}^2S)3p - 3p^2$	${}^3P^\circ - {}^3P$	1 - 0		535
	150	736.76	99.123+E - 234.854+E	$3s({}^2S)3p - 3p^2$	${}^3P^\circ - {}^3P$	2 - 1		535
		755.63	279.146+E - 411.486+E	$3s({}^2S)3d - 3p({}^2P^\circ)3d$	${}^3D - {}^3D^\circ$	3 - 3	P	251
		756.34	279.118+E - 411.333+E	$3s({}^2S)3d - 3p({}^2P^\circ)3d$	${}^3D - {}^3D^\circ$	2 - 2	P	251
		757.82	279.103+E - 411.06+E	$3s({}^2S)3d - 3p({}^2P^\circ)3d$	${}^3D - {}^3D^\circ$	1 - 1	P	251
		774.04	279.146+E - 408.337+E	$3s({}^2S)3d - 3p({}^2P^\circ)3d$	${}^3D - {}^3P^\circ$	3 - 2	P	251
		786.44	148.949 - 276.10	$3s({}^2S)3p - 3p^2$	${}^1P^\circ - {}^1S$	1 - 0		251
		949.2	279.146+E - 384.50+E	$3s({}^2S)3d - 3p({}^2P^\circ)3d$	${}^3D - {}^3F^\circ$	3 - 4		111
		955.6	279.118+E - 383.764+E	$3s({}^2S)3d - 3p({}^2P^\circ)3d$	${}^3D - {}^3F^\circ$	2 - 3		111
		961.0	279.103+E - 383.16+E	$3s({}^2S)3d - 3p({}^2P^\circ)3d$	${}^3D - {}^3F^\circ$	1 - 2		111
		1245.77	148.949 - 229.22+F	$3s({}^2S)3p - 3p^2$	${}^1P^\circ - {}^1D$	1 - 2		854
		1256.0	630.00+K - 709.618+K	$3s({}^2S)5g - 3s({}^2S)7h$	${}^1G - {}^1H^\circ$	4 - 5		111
		1767.7	452.555+E - 509.126+E	$3s({}^2S)4p - 3s({}^2S)4d$	${}^3P^\circ - {}^3D$	0 - 1		92
		1772.0	452.72+E - 509.154+E	$3s({}^2S)4p - 3s({}^2S)4d$	${}^3P^\circ - {}^3D$	1 - 2		92
		1783.3	453.13+E - 509.205+E	$3s({}^2S)4p - 3s({}^2S)4d$	${}^3P^\circ - {}^3D$	2 - 3		92
		1985.0	630.00+K - 680.378+K	$3s({}^2S)5g - 3s({}^2S)6h$	${}^1G - {}^1H^\circ$	4 - 5		111

CHLORINE VII (Cl^{6+}), Z = 17
Ground State $1s^22s^22p^63s({}^2S_{1/2})$ (11 electrons)
Ionization Potential 921 051 cm^{-1}; 114.197 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		133.11	0.0 - 751.26	$2p^63s - 2p^66p$	$g{}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		160
		149.37	0.0 - 669.48	$2p^63s - 2p^65p$	$g{}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		160
		149.43	0.0 - 669.21	$2p^63s - 2p^65p$	$g{}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		160
		155.32	123.007 - 766.83	$2p^63p - 2p^66d$	${}^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		160
		155.78	124.900 - 766.83	$2p^63p - 2p^66d$	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		160
	150	174.04	123.007 - 697.598	$2p^63p - 2p^65d$	${}^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		546
	200	174.60	124.900 - 697.619	$2p^63p - 2p^65d$	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		546
	100	190.59	123.007 - 647.677	$2p^63p - 2p^65s$	${}^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		546
	200	191.28	124.900 - 647.677	$2p^63p - 2p^65s$	${}^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		546
	500	196.12	0.0 - 509.885	$2p^63s - 2p^64p$	$g{}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		546
	400	196.39	0.0 - 509.197	$2p^63s - 2p^64p$	$g{}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		546
	200	207.76	290.249 - 771.346	$2p^63d - 2p^66f$	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		546

CL VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	300	224.14	123.007 – 569.142	$2p^63p - 2p^64d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		546
	500	225.08	124.900 – 569.182	$2p^63p - 2p^64d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		546
	300	240.83	290.172 – 705.398	$2p^63d - 2p^65f$	$^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		546
	200	240.87	290.249 – 705.409	$2p^63d - 2p^65f$	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		546
	400	293.25	123.007 – 464.003	$2p^63p - 2p^64s$	$^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		546
	500	294.90	124.900 – 464.003	$2p^63p - 2p^64s$	$^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		546
	750	340.23	290.172 – 584.086	$2p^63d - 2p^64f$	$^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		546
	900	340.30	290.249 – 584.099	$2p^63d - 2p^64f$	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		546
	100	455.27	290.249 – 509.885	$2p^63d - 2p^64p$	$^2D - {}^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		546
	50	456.56	290.172 – 509.197	$2p^63d - 2p^64p$	$^2D - {}^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		546
		532.7	509.885 – 697.619	$2p^64p - 2p^65d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	Q	92
	600	598.211	123.007 – 290.172	$2p^63p - 2p^63d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		753,546
	1000	604.783	124.900 – 290.249	$2p^63p - 2p^63d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		753,546
	50	605.05	124.900 – 290.172	$2p^63p - 2p^63d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		546
	150	800.641	0.0 – 124.900	$2p^63s - 2p^63p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		753,546
	100	812.960	0.0 – 123.007	$2p^63s - 2p^63p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		753,546
		820.7	584.099 – 705.946	$2p^64f - 2p^65g$	$^2F^\circ - {}^2G$	$\frac{7}{2} - \frac{9}{2}$	Q	92
		944.1	705.409 – 811.330	$2p^65f - 2p^67g$	$^2F^\circ - {}^2G$	$\frac{7}{2} - \frac{9}{2}$	P	92
		949.1	705.946 – 811.310	$2p^65g - 2p^67h$	$^2G - {}^2H^\circ$	$\frac{9}{2} - \frac{11}{2}$	P	92
		1356.3	697.619 – 771.346	$2p^65d - 2p^66f$	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		92
		1509.2	705.409 – 771.669	$2p^65f - 2p^66g$	$^2F^\circ - {}^2G$	$\frac{7}{2} - \frac{9}{2}$	Q	92
		1531.0	771.692 – 837.01	$2p^66h - 2p^68i$	$^2H^\circ - {}^2I$	$\frac{11}{2} - \frac{13}{2}$	Q	92
		1668.2	509.197 – 569.142	$2p^64p - 2p^64d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$	P	92
		1686.4	509.885 – 569.182	$2p^64p - 2p^64d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	92

CHLORINE VIII (Cl^{7+}), Z = 17
Ground State $1s^22s^22p^6(^1S_0)$ (10 electrons)
Ionization Potential 2 809 100 cm^{-1}; 348.29 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	39.462	0.0 – 2534.08	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})5d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		179
	10	39.655	0.0 – 2521.75	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})5d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		179
	1	41.636	0.0 – 2401.77	$2s^22p^6 - 2s2p^6(^2S)3p$	$g^1S - {}^1P^\circ$	0 – 1		179
	10	42.166	0.0 – 2371.58	$2s^22p^6 - 2s2p^6(^2S)3p$	$g^1S - {}^3P^\circ$	0 – 1		179
	200	42.220	0.0 – 2368.55	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})4d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		179
	100	42.430	0.0 – 2356.82	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		179
	200	44.361	0.0 – 2254.2	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})4s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		179
	200	44.603	0.0 – 2242.	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		179
	700	49.487	0.0 – 2020.73	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})3d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		179
	500	50.074	0.0 – 1997.04	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		179
	200	50.700	0.0 – 1972.39	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		179
	1000	58.673	0.0 – 1704.36	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})3s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		179
	900	59.191	0.0 – 1689.45	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		179
		1161.9	2613.249+B – 2699.315+B	$2s^22p^5(^2P^\circ)5f - 2s^22p^5(^2P^\circ)6g$	$^1G - {}^1H^\circ$	4 – 5		111
		1169.6	2699.315+B – 2784.814+B	$2s^22p^5(^2P^\circ)6g - 2s^22p^5(^2P^\circ)8h$	$^1H^\circ - {}^1I$	5 – 6		111
		1766.0	2751.075+B – 2807.700+B	$2s^22p^5(^2P^\circ)7h - 2s^22p^5(^2P^\circ)9i$	$^1I - {}^1K^\circ$	6 – 7		111
		1932.0	2699.315+B – 2751.075+B	$2s^22p^5(^2P^\circ)6f - 2s^22p^5(^2P^\circ)7g$	$^1G - {}^1H^\circ$	4 – 5		111

CHLORINE IX (Cl^{8+}), Z = 17
Ground State $1s^22s^22p^5(^2P^\circ_{3/2})$ (9 electrons)
Ionization Potential 3 226 700 cm^{-1}; 400.06 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	42.940	0.0 – 2328.83	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		179
	120	43.168	13.6 – 2330.13	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		179
	200	44.003	0.0 – 2272.57	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		179
	400	44.088	0.0 – 2268.00	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		179
	200	44.183	0.0 – 2263.31	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$		179
	300	44.267	13.6 – 2272.57	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		179
	100	44.530	13.6 – 2259.28	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		179
	400	45.112	0.0 – 2216.71	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		179
	200	45.261	0.0 – 2209.47	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		179
	100	45.332	0.0 – 2205.95	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		179
	300	45.378	0.0 – 2203.85	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$		179
	10	45.465	0.0 – 2199.54	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		179
	200	45.519	0.0 – 2196.89	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		179
	200	45.539	13.6 – 2209.47	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		179
	15	45.626	13.6 – 2205.95	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		179
	10	45.745	13.6 – 2199.54	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{3}{2}$		179
	100	46.098	553.4 – 2722.69	$2s2p^6 - 2s2p^5(^3P^\circ)3d$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		179
	10	46.242	553.4 – 2715.94	$2s2p^6 - 2s2p^5(^3P^\circ)3d$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		179
	100	49.234	0.0 – 2031.08	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		179
	100	49.568	13.6 – 2031.08	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		179
	400	51.026	0.0 – 1959.79	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		179
	300	51.378	13.6 – 1959.96	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		179
	200	52.055	0.0 – 1921.05	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		179
	400	52.303	0.0 – 1911.95	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		179
	300	52.426	13.6 – 1921.05	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		179
	200	52.677	13.6 – 1911.95	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		179
	300	52.726	0.0 – 1896.6	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		179
	10	52.939	0.0 – 1888.97	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		179
	1	52.959	13.6 – 1901.85	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{1}{2}$		179
	1	53.108	13.6 – 1896.6	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{3}{2}$		179
	10	53.448	553.4 – 2424.38	$2s2p^6 - 2s2p^5(^3P^\circ)3s$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		179
	100	53.696	553.4 – 2415.74	$2s2p^6 - 2s2p^5(^3P^\circ)3s$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		179
		180.71	0.0 – 553.4	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		160
		185.26	13.6 – 553.4	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		160
		918.2	3050.02+B – 3158.93+B	$2s^22p^4(^3P)5g - 2s^22p^4(^3P)6h$	${}^2H - {}^2I^\circ$	$\frac{11}{2}-\frac{13}{2}$		111
		1526.0	3158.93+B – 3224.46+B	$2s^22p^4(^3P)6h - 2s^22p^4(^3P)7i$	${}^2I^\circ - {}^2K$	$\frac{13}{2}-\frac{15}{2}$		111

CHLORINE X (Cl^{9+}), Z = 17
Ground State $1s^22s^22p^4(^3P_2)$ (8 electrons)
Ionization Potential 3 674 900 cm^{-1}; 455.63 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	110	34.79	0.0 – 2874.+Z	$2s^22p^4 - 2s^22p^3(^4S^\circ)4s$	$g^3P - {}^3S^\circ$	2 – 1		250,375
	40	38.66	0.0 – 2588.6+E	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^1P^\circ$	2 – 1		250
	250	39.01	0.0 – 2563.6+E	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^1F^\circ$	2 – 3	Q	250,375
	250	39.15	0.0 – 2554.3	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 2	Q	250,375
	10	39.253	0.0 – 2547.58	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		179
	20	39.422	10.849 – 2547.6	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 1		947

CL X — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	39.528	0.0 – 2529.8	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3F^\circ$	2 – 3		179,375
	1	39.634	10.849 – 2534.1	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 1		179,375
	250	39.77	0.0 – 2512.2	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3S^\circ$	2 – 1	Q	250,375
	100	39.956	0.0 – 2502.75	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 2		179
	90	40.019	64.816+E – 2563.6+E	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	${}^1D - {}^1F^\circ$	2 – 3		947
	200	40.085	0.0 – 2494.7	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		179
	1	40.136	10.849 – 2502.75	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 2		179
	250	40.49	0.0 – 2471.0	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3F^\circ$	2 – 2	Q	250,375
	100	40.660	64.816+E – 2524.24+E	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	${}^1D - {}^1F^\circ$	2 – 3		179
	40	40.759	135.197+E – 2588.6+E	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	${}^1S - {}^1P^\circ$	0 – 1		947
	10	40.994	64.816+E – 2504.20+E	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	${}^1D - {}^1D^\circ$	2 – 2		179
	100	41.390	0.0 – 2416.04	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		179
	10	41.589	10.849 – 2415.36	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		179
	300	45.396	0.0 – 2202.8	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	2 – 3		179
	10	45.431	64.816+E – 2265.96+E	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	${}^1D - {}^1P^\circ$	2 – 1		179
	400	45.655	10.849 – 2201.3	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	1 – 2		865
	150	45.732	14.105 – 2200.7	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	0 – 1		865
	500	46.477	64.816+E – 2216.47+E	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	${}^1D - {}^1D^\circ$	2 – 2		865
	400	46.845	0.0 – 2134.7	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - {}^3S^\circ$	2 – 1		865
	150	46.908	135.197+E – 2265.96+E	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	${}^1S - {}^1P^\circ$	0 – 1		865
	150	47.085	10.849 – 2134.7	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - {}^3S^\circ$	1 – 1		865
	50	47.158	14.105 – 2134.7	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - {}^3S^\circ$	0 – 1		865
		164.5	64.816+E – 672.67+E	$2s^22p^4 - 2s2p^5$	${}^1D - {}^1P^\circ$	2 – 1		160
		186.06	135.197+E – 672.67+E	$2s^22p^4 - 2s2p^5$	${}^1S - {}^1P^\circ$	0 – 1		248
		201.50	0.0 – 496.26	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	2 – 1		160
		203.80	10.849 – 501.51	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	1 – 0		160
		205.40	0.0 – 486.85	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	2 – 2		160
		206.02	10.849 – 496.26	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	1 – 1		160
		207.41	14.105 – 496.26	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	0 – 1		160
		210.08	10.849 – 486.85	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	1 – 2		160
		740.	0.0 – 135.197+E	$2s^22p^4 - 2s^22p^4$	$g^3P - {}^1S$	2 – 0	F,P	375,225
		804.	10.849 – 135.197+E	$2s^22p^4 - 2s^22p^4$	$g^3P - {}^1S$	1 – 0	F,P	375,225
		1421.	64.816+E – 135.197+E	$2s^22p^4 - 2s^22p^4$	${}^1D - {}^1S$	2 – 0	F,P	375,225
		1543.	0.0 – 64.816+E	$2s^22p^4 - 2s^22p^4$	$g^3P - {}^1D$	2 – 2	F,P	375,225
		1853.	10.849 – 64.816+E	$2s^22p^4 - 2s^22p^4$	$g^3P - {}^1D$	1 – 2	F,P	375,225
		1903.	3447.47+B – 3500.00+B	$2s^22p^3(^4S^\circ)7h - 2s^22p^3(^4S^\circ)8i$	${}^1H - {}^1I^\circ$	5 – 6		111
		1972.	14.105 – 64.816+E	$2s^22p^4 - 2s^22p^4$	$g^3P - {}^1D$	0 – 2	F,P	375,225

CHLORINE XI (Cl^{10+}), Z = 17
Ground State $1s^22s^22p^3(^4S^\circ_{3/2})$ (7 electrons)
Ionization Potential 4 268 900 cm^{-1}; 529.28 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	70	35.92	0.0 – 2782.41+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		250,375
	350	36.286	0.0 – 2755.88	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		852
	500	36.334	0.0 – 2752.24	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		852
	10	36.441	90.693+E – 2834.70+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	${}^2D^\circ - {}^2P$	$\frac{5}{2} - \frac{3}{2}$		852
	600	36.674	90.693+E – 2817.42+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	${}^2D^\circ - {}^2F$	$\frac{5}{2} - \frac{7}{2}$		852
	300	37.05	88.659+E – 2787.63+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	${}^2D^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		250

Cl XI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	37.123	140.936+E – 2834.70+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		852
	100	37.259	140.936+E – 2824.86+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		852
	150	37.537	90.693+E – 2754.73+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		852
	100	37.673	88.659+E – 2743.08+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		852
	150	37.783	140.936+E – 2787.63+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		852
	200	37.88	90.693+E – 2731.25+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		250
	10	38.603	140.936+E – 2731.25+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		852
	350	40.392	0.0 – 2475.74	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		852
	100	40.505	0.0 – 2468.83	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		852
	10	40.787	90.693+E – 2542.45+E	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		852
		162.83	88.659+E – 702.80+E	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		161
		166.07	88.659+E – 690.82+E	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		161
		166.63	90.693+E – 690.82+E	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		161
		177.00	137.867+E – 702.80+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		161
		177.96	140.936+E – 702.80+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		161
		180.85	137.867+E – 690.82+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		248
		181.84	140.936+E – 690.82+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		161
		190.03	566.72+E – 1092.95+E	$2s2p^4 - 2p^5$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		248
		190.94	137.867+E – 661.59+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		161
		192.06	140.936+E – 661.59+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		161
		195.69	567.04+E – 1078.05+E	$2s2p^4 - 2p^5$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		248
		209.18	88.659+E – 566.72+E	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		161
		209.93	90.693+E – 567.04+E	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		161
		233.17	137.867+E – 566.72+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		161
		234.67	140.936+E – 567.04+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		161
		234.84	0.0 – 425.83	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		161
		237.42	0.0 – 421.19	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		161
		242.76	0.0 – 411.93	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		161
		710.	0.0 – 140.936+E	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,225
		725.	0.0 – 137.867+E	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	F,P	375,225
		1103.	0.0 – 90.693+E	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$	F,P	375,225
		1128.	0.0 – 88.659+E	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,225
		1913.	88.659+E – 140.936+E	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,225
		1990.	90.693+E – 140.936+E	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$	F,P	375,225

CHLORINE XII (Cl^{11+}), Z = 17
Ground State $1s^22s^22p^2(^3P_0)$ (6 electrons)
Ionization Potential 4 774 700 cm^{-1}; 591.99 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	32.531	16.619 – 3090.62	$2s^22p^2 - 2s2p^2(^4P)3p$	$g^3P - ^3D^\circ$	2 – 3		852
	150	33.531	0.0 – 2982.6	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3P^\circ$	0 – 1		852
	50	33.542	500.+L – 3481.34+L	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^\circ - ^5P$	2 – 2		852
	100	33.596	500.+L – 3476.54+L	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^\circ - ^5P$	2 – 3		852
		33.597	7.248 – 2983.7	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3P^\circ$	1 – 0		949
		33.610	7.248 – 2982.6	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3P^\circ$	1 – 1		949
		33.613	7.248 – 2982.2	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3P^\circ$	1 – 2	P	949
		33.716	16.619 – 2982.6	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3P^\circ$	2 – 1		949
		33.720	16.619 – 2982.2	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3P^\circ$	2 – 2	P	949
		33.736	0.0 – 2964.02	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3D^\circ$	0 – 1		949
	500	33.774	7.248 – 2968.10	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3D^\circ$	1 – 2		852
	800	33.789	16.619 – 2976.16	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3D^\circ$	2 – 3		852

CL XII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		33.802	7.248 - 2965.6	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3D°$	1 - 1	P	949
		33.886	16.619 - 2968.10	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3D°$	2 - 2		949
	10	34.000	388.69 - 3329.86	$2s2p^3 - 2s2p^2(^2D)3d$	${}^3D° - {}^3F$	3 - 4		852
		34.047	75.512+E - 3012.8+E	$2s^22p^2 - 2s^22p3d$	${}^1D - {}^1P°$	2 - 1	P	949
	600	34.052	75.512+E - 3012.1+E	$2s^22p^2 - 2s^22p3d$	${}^1D - {}^1F°$	2 - 3		852
		34.101	16.619 - 2948.7+E	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^1D°$	2 - 2		949
		34.146	16.619 - 2946.4	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3F°$	2 - 3		949
		34.236	16.619 - 2937.5	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3F°$	2 - 2		949
		34.422	577.09+E - 3481.34+L	$2s2p^3 - 2s2p^2(^4P)3d$	${}^1D° - {}^5P$	2 - 2	Q	949
		34.576	75.512+E - 2968.10	$2s^22p^2 - 2s^22p3d$	${}^1D - {}^3D°$	2 - 2		949
	100	34.804	75.512+E - 2948.7+E	$2s^22p^2 - 2s^22p3d$	${}^1D - {}^1D°$	2 - 2		852
		34.857	75.512+E - 2946.4	$2s^22p^2 - 2s^22p3d$	${}^1D - {}^3F°$	2 - 3	Q	949
	50	34.894	146.957+E - 3012.8+E	$2s^22p^2 - 2s^22p3d$	${}^1S - {}^1P°$	0 - 1		852
		34.958	75.512+E - 2937.5	$2s^22p^2 - 2s^22p3d$	${}^1D - {}^3F°$	2 - 2	Q	949
	10	35.429	388.69 - 3211.24	$2s2p^3 - 2s2p^2(^4P)3d$	${}^3D° - {}^3F$	3 - 4		852
	10	36.566	500.+L - 3234.8+L	$2s2p^3 - 2s2p^2(^4P)3s$	${}^5S° - {}^5P$	2 - 3		852
	50	36.865	16.619 - 2729.23	$2s^22p^2 - 2s^22p3s$	$g^3P - {}^3P°$	2 - 2		852
	10	37.464	75.512+E - 2744.74+E	$2s^22p^2 - 2s^22p3s$	${}^1D - {}^1P°$	2 - 1		852
		172.06	0.0 - 581.24	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3S°$	0 - 1		161
		174.21	7.248 - 581.24	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3S°$	1 - 1		161
		175.71	75.512+E - 644.63+E	$2s^22p^2 - 2s2p^3$	${}^1D - {}^1P°$	2 - 1		161
		177.11	16.619 - 581.24	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3S°$	2 - 1		161
		196.33	388.46 - 897.81	$2s2p^3 - 2p^4$	${}^3D° - {}^3P$	1 - 0		248
		197.82	388.06 - 893.60	$2s2p^3 - 2p^4$	${}^3D° - {}^3P$	2 - 1		375
		199.37	75.512+E - 577.09+E	$2s^22p^2 - 2s2p^3$	${}^1D - {}^1D°$	2 - 2		161
		202.54	388.69 - 882.48	$2s2p^3 - 2p^4$	${}^3D° - {}^3P$	3 - 2		248
		219.53	0.0 - 455.54	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P°$	0 - 1		161
		222.72	7.248 - 456.24	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P°$	1 - 2		161
		223.11	7.248 - 455.46	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P°$	1 - 0		161
		227.47	16.619 - 456.24	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P°$	2 - 2		161
		227.83	16.619 - 455.54	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P°$	2 - 1		161
		228.29	455.54 - 893.60	$2s2p^3 - 2p^4$	${}^3P° - {}^3P$	1 - 1		248
		234.64	456.24 - 882.48	$2s2p^3 - 2p^4$	${}^3P° - {}^3P$	2 - 2		248
		257.43	0.0 - 388.46	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D°$	0 - 1		248
		262.32	7.248 - 388.46	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D°$	1 - 1		248
		262.60	7.248 - 388.06	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D°$	1 - 2		248
		268.77	16.619 - 388.69	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D°$	2 - 3		248
		269.21	16.619 - 388.06	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D°$	2 - 2		248
		331.94	581.24 - 882.48	$2s2p^3 - 2p^4$	${}^3S° - {}^3P$	1 - 2		250
		716.	7.248 - 146.957+E	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1S$	1 - 0	F,P	375,225
		767.	16.619 - 146.957+E	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1S$	2 - 0	F,P	375,225
		1324.	0.0 - 75.512+E	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1D$	0 - 2	F,P	375,225
		1400.	75.512+E - 146.957+E	$2s^22p^2 - 2s^22p^2$	${}^1D - {}^1S$	2 - 0	F,P	375,225
		1465.	7.248 - 75.512+E	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1D$	1 - 2	F,P	375,225
		1698.	16.619 - 75.512+E	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1D$	2 - 2	F,P	375,225

CHLORINE XIII (Cl^{12+}), Z = 17
Ground State $1s^22s^22p(^2P^\circ_{1/2})$ (5 electrons)
Ionization Potential 5 296 700 cm^{-1}; 656.71 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	24.09	378.2 – 4529.3	$2s2p^2 - 2s2p(^1P^\circ)4d$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		250
	200	24.29	0.0 – 4116.92	$2s^22p - 2s^24d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		250
	50	24.40	17.411 – 4116.92	$2s^22p - 2s^24d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		250
	50	24.79	504.066 – 4536.4	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2P - {}^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		250
	50	24.86	512.23 – 4536.4	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2P - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		250
	50	24.97	378.2 – 4383.	$2s2p^2 - 2s2p(^3P^\circ)4d$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		250
	10	28.665	17.411 – 3506.	$2s^22p - 2s2p(^1P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		852
	10	29.940	0.0 – 3340.	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		852
	50	30.010	17.411 – 3349.6	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		852
	50	31.126	378.2 – 3590.95	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		852
	10	31.253	391.16+R – 3590.86+R	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		852
	50	31.360	384.68+R – 3573.66+R	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		852
	50	31.365	400.00+R – 3588.27+R	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		852
	250	31.448	400.00+R – 3579.85+R	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		852
	500	31.465	0.0 – 3178.13	$2s^22p - 2s^23d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		852
	800	31.620	17.411 – 3180.	$2s^22p - 2s^23d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		852
	150	32.05						250
	10	32.32	512.23 – 3606.33	$2s2p^2 - 2s2p(^1P^\circ)3d$	$^2P - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		852
	10	32.43	377.67 – 3460.34	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		852
	250	32.445	378.2 – 3460.34	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		852
	50	33.020	378.2 – 3406.67	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		852
	160	36.30	750.63 – 3506.	$2p^3 - 2s2p(^1P^\circ)3p$	$^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		250,375
	110	38.46	750.63 – 3349.6	$2p^3 - 2s2p(^3P^\circ)3p$	$^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		250,375
	40	38.61	749.48 – 3340.	$2p^3 - 2s2p(^3P^\circ)3p$	$^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		250,375
		195.22	0.0 – 512.23	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		248
		198.40	0.0 – 504.066	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		248
		202.10	17.411 – 512.23	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		248
		205.47	17.411 – 504.066	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		248
		209.81	0.0 – 476.62	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		248
		217.77	17.411 – 476.62	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		248
		221.38	384.68+R – 836.4+R	$2s2p^2 - 2p^3$	$^4P - {}^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		248
		224.60	391.16+R – 836.4+R	$2s2p^2 - 2p^3$	$^4P - {}^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		248
		229.15	400.00+R – 836.4+R	$2s2p^2 - 2p^3$	$^4P - {}^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		248
		264.78	0.0 – 377.67	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		248
		277.17	17.411 – 378.2	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		248
		277.59	17.411 – 377.67	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		248
		302.24	512.23 – 843.09	$2s2p^2 - 2p^3$	$^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		250
		407.48	504.066 – 749.48	$2s2p^2 - 2p^3$	$^2P - {}^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		250
		419.46	512.23 – 750.63	$2s2p^2 - 2p^3$	$^2P - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		250

CHLORINE XIV (Cl^{13+}), Z = 17
Ground State $1s^22s^2(^1S_0)$ (4 electrons)
Ionization Potential 6 047 200 cm^{-1}; 749.76 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	18.63	232.66+K – 5600.36+K	$2s2p - 2s7d$	$^3P^\circ - {}^3D$	2 – 3		250
	50	19.58	232.66+K – 5339.86+K	$2s2p - 2s6d$	$^3P^\circ - {}^3D$	2 – 3		250
	50	20.55	232.66+K – 5098.86+K	$2s2p - 2s5d$	$^3P^\circ - {}^3D$	2 – 3		250
	50	20.84	582.01+K – 5380.46+K	$2p^2 - 2p5d$	$^3P - {}^3D^\circ$	2 – 3		250
	50	22.00	232.66+K – 4778.06+K	$2s2p - 2p4p$	$^3P^\circ - {}^3P$	2 – 2		250
	50	22.11	232.66+K – 4755.46+K	$2s2p - 2p4p$	$^3P^\circ - {}^3D$	2 – 3		250

CL XIV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	22.37	219.86+K – 4690.16+K	2s2p – 2s4d	$^3P^\circ - ^3D$	1 – 2		250
	100	22.42	232.66+K – 4692.96+K	2s2p – 2s4d	$^3P^\circ - ^3D$	2 – 3		250
	100	22.86	582.01+K – 4956.46+K	$2p^2$ – 2p4d	$^3P - ^3D^\circ$	2 – 3		250
	10	27.65	232.66+K – 3849.26+K	2s2p – 2p3p	$^3P^\circ - ^3P$	2 – 2		852
	10	27.88	232.66+K – 3819.46+K	2s2p – 2p3p	$^3P^\circ - ^3D$	2 – 3		852
	50	28.059	0.0 – 3564.76+K	$2s^2$ – 2s3p	$g^1S - ^3P^\circ$	0 – 1		852
	100	28.113	0.0 – 3557.07	$2s^2$ – 2s3p	$g^1S - ^1P^\circ$	0 – 1		852
	50	29.383	213.46+K – 3616.76+K	2s2p – 2s3d	$^3P^\circ - ^3D$	0 – 1		852
	150	29.423	219.86+K – 3618.76+K	2s2p – 2s3d	$^3P^\circ - ^3D$	1 – 2		852
	350	29.529	232.66+K – 3619.76+K	2s2p – 2s3d	$^3P^\circ - ^3D$	2 – 3		852
	10	30.085	571.59+K – 3895.51+K	$2p^2$ – 2p3d	$^3P - ^3D^\circ$	1 – 2		852
	10	30.145	582.01+K – 3899.31+K	$2p^2$ – 2p3d	$^3P - ^3D^\circ$	2 – 3		852
	10	30.25	638.86 – 3944.64	$2p^2$ – 2p3d	$^1D - ^1F^\circ$	2 – 3		852
	50	30.900	420.70 – 3656.95	2s2p – 2s3d	$^1P^\circ - ^1D$	1 – 2		852
	10	30.995	232.66+K – 3458.96+K	2s2p – 2s3s	$^3P^\circ - ^3S$	2 – 1		852
		237.70	0.0 – 420.70	$2s^2$ – 2s2p	$g^1S - ^1P^\circ$	0 – 1		250
		276.13	219.86+K – 582.01+K	2s2p – $2p^2$	$^3P^\circ - ^3P$	1 – 2		248
		284.31	219.86+K – 571.59+K	2s2p – $2p^2$	$^3P^\circ - ^3P$	1 – 1		248
		286.26	232.66+K – 582.01+K	2s2p – $2p^2$	$^3P^\circ - ^3P$	2 – 2		248
		290.51	219.86+K – 564.08+K	2s2p – $2p^2$	$^3P^\circ - ^3P$	1 – 0		248
		295.05	232.66+K – 571.59+K	2s2p – $2p^2$	$^3P^\circ - ^3P$	2 – 1		248
		454.84	0.0 – 219.86+K	$2s^2$ – 2s2p	$g^1S - ^3P^\circ$	0 – 1	P	386
		458.39	420.70 – 638.86	2s2p – $2p^2$	$^1P^\circ - ^1D$	1 – 2		250

CHLORINE XV (Cl^{14+}), Z = 17
Ground State $1s^22s(^2S_{1/2})$ (3 electrons)
Ionization Potential 6 528 300 cm^{-1}; 809.41 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		4.4474	3750.94 – 26235.0	$1s^23p$ – $1s2p(^1P^\circ)3p$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		643
		4.4516	3750.94 – 26213.8	$1s^23p$ – $1s2p(^1P^\circ)3p$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		643
		4.4585	240.67 – 22667.9	$1s^22p$ – $1s2p^2$	$^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		643
		4.4630	260.44 – 22667.9	$1s^22p$ – $1s2p^2$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		643
		4.4669	0.0 – 22386.9	$1s^22s$ – $1s(2s2p(^1P^\circ))$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		643
		4.468	3778. – 26160.0	$1s^23d$ – $1s2p(^1P^\circ)3s$	$^2D - ^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$	P	283
		4.469	3779. – 26160.0	$1s^23d$ – $1s2p(^1P^\circ)3s$	$^2D - ^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$	P	283
		4.4837	0.0 – 22303.0	$1s^22s$ – $1s(2s2p(^3P^\circ))$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		643
		4.485	240.67 – 22532.4	$1s^22p$ – $1s2p^2$	$^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$	P	283
		4.488	260.44 – 22542.4	$1s^22p$ – $1s2p^2$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$	P	283
		4.4925	240.67 – 22500.0	$1s^22p$ – $1s2p^2$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		643
		4.4970	260.44 – 22500.0	$1s^22p$ – $1s2p^2$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		643
		4.5215	0.0 – 22116.6	$1s^22s$ – $1s(2s2p(^3P^\circ))$	$g^2S - ^4P^\circ$	$\frac{1}{2} - \frac{3}{2}$		643
	50	17.10	240.67 – 6101.8	$1s^22p$ – $1s^28d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		250
	50	17.25	0.0 – 5797.1	$1s^22s$ – $1s^26p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		250
	50	17.46	260.44 – 5981.2	$1s^22p$ – $1s^27d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		250
	50	17.96	260.44 – 5821.8	$1s^22p$ – $1s^26d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		250
	50	18.13	0.0 – 5515.7	$1s^22s$ – $1s^25p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		250

CL XV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	18.99	260.44 – 5519.8	$1s^22p - 1s^25d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		250
	150	20.13	0.0 – 4967.7	$1s^22s - 1s^24p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		250
	100	21.10	240.67 – 4980.	$1s^22p - 1s^24d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		250
	150	21.18	260.44 – 4981.9	$1s^22p - 1s^24d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		250
	50	21.41	260.44 – 4924.6	$1s^22p - 1s^24s$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		250
	350	26.66	0.0 – 3750.94	$1s^22s - 1s^23p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		250
	350	26.67	0.0 – 3749.	$1s^22s - 1s^23p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		250
	300	28.27	240.67 – 3778.	$1s^22p - 1s^23d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		250
	450	28.42	260.44 – 3779.	$1s^22p - 1s^23d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		250
	200	28.93	240.67 – 3698.	$1s^22p - 1s^23s$	$^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		250
	200	29.09	260.44 – 3698.	$1s^22p - 1s^23s$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		250
		383.96	0.0 – 260.44	$1s^22s - 1s^22p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		250
		415.50	0.0 – 240.67	$1s^22s - 1s^22p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		250

CHLORINE XVI (Cl^{15+}), Z = 17
Ground State $1s^2(^1S_0)$ (2 electrons)
Ionization Potential 29 507 700 cm^{-1}; 3658.51 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		3.481	0.0 – 28725.8	$1s^2 - 1s6p$	$g^1S - ^1P^\circ$	0 – 1	P	728
		3.523	0.0 – 28383.85	$1s^2 - 1s5p$	$g^1S - ^1P^\circ$	0 – 1	P	728
		3.603	0.0 – 27751.97	$1s^2 - 1s4p$	$g^1S - ^1P^\circ$	0 – 1	P	918
		3.7896	0.0 – 26387.90	$1s^2 - 1s3p$	$g^1S - ^1P^\circ$	0 – 1	P	918
		3.7943	0.0 – 26355.22	$1s^2 - 1s3p$	$g^1S - ^3P^\circ$	0 – 1	P	918
		3.8620						624
		4.4442	0.0 – 22501.32	$1s^2 - 1s2p$	$g^1S - ^1P^\circ$	0 – 1	P	918
		4.4677	0.0 – 22382.67	$1s^2 - 1s2p$	$g^1S - ^3P^\circ$	0 – 1	P	918
		4.497	0.0 – 22236.86	$1s^2 - 1s2s$	$g^1S - ^3S$	0 – 1	F,P	375,918
		24.25	22236.86 – 26360.30	$1s2s - 1s3p$	$^3S - ^3P^\circ$	1 – 2	P	375
		25.02	22390.60 – 26387.90	$1s2s - 1s3p$	$^1S - ^1P^\circ$	0 – 1	P	375
		70.14	26314.96 – 27740.69	$1s3s - 1s4p$	$^3S - ^3P^\circ$	1 – 2	P	375
		71.61	26355.55 – 27751.97	$1s3s - 1s4p$	$^1S - ^1P^\circ$	0 – 1	P	375
		614.25	22236.86 – 22399.66	$1s2s - 1s2p$	$^3S - ^3P^\circ$	1 – 2	P	375
		903.18	22390.60 – 22501.32	$1s2s - 1s2p$	$^1S - ^1P^\circ$	0 – 1	P	375

CHLORINE XVII (Cl^{16+}), Z = 17
Ground State $1s(^2S_{1/2})$ (1 electron)
Ionization Potential 31 829 000 cm^{-1}; 3946.32 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		3.173	0.0 – 31511.7520	1s – 10p	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		3.181	0.0 – 31437.3557	1s – 9p	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		3.192	0.0 – 31333.3455	1s – 8p	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		3.207	0.0 – 31181.6332	1s – 7p	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		3.231	0.0 – 30947.8730	1s – 6p	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		3.272	0.0 – 30558.9902	1s – 5p	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309

Cl XVII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	3.351	0.0 – 29844.4183	1s – 4p	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309,375
	20	3.534	0.0 – 28300.6520	1s – 3p	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309,375
	10	3.535	0.0 – 28291.5038	1s – 3p	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{1}{2}$	P	309,375
	65	4.185	0.0 – 23892.9010	1s – 2p	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309,375
	35	4.191	0.0 – 23862.0340	1s – 2p	$g^2S - {}^2P^o$	$\frac{1}{2}-\frac{1}{2}$	P	309,375
		13.074	23863.0990 – 31511.7520	2s – 10p	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		13.125	23892.9010 – 31511.7520	2p – 10d	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		13.203	23863.0990 – 31437.3557	2s – 9p	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		13.255	23892.9010 – 31437.3557	2p – 9d	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		13.386	23863.0990 – 31333.3455	2s – 8p	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		13.440	23892.9010 – 31333.3455	2p – 8d	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		13.664	23863.0990 – 31181.6332	2s – 7p	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		13.720	23892.9010 – 31181.6332	2p – 7d	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		14.115	23863.0990 – 30947.8730	2s – 6p	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		14.174	23892.9010 – 30947.8730	2p – 6d	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		14.934	23863.0990 – 30558.9902	2s – 5p	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		15.000	23892.9010 – 30559.6409	2p – 5d	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		16.719	23863.0990 – 29844.4183	2s – 4p	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		16.799	23892.9010 – 29845.6892	2p – 4d	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		22.535	23863.0990 – 28300.6520	2s – 3p	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		22.672	23892.9010 – 28303.6639	2p – 3d	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		31.057	28291.8230 – 31511.7520	3s – 10p	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		31.142	28300.6520 – 31511.7520	3p – 10d	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		31.171	28303.6639 – 31511.7520	3d – 10f	${}^2D - {}^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		31.791	28291.8230 – 31437.3557	3s – 9p	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		31.881	28300.6520 – 31437.3557	3p – 9d	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		31.911	28303.6639 – 31437.3557	3d – 9f	${}^2D - {}^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		32.878	28291.8230 – 31333.3455	3s – 8p	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		32.974	28300.6520 – 31333.3455	3p – 8d	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		33.007	28303.6639 – 31333.3455	3d – 8f	${}^2D - {}^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		34.604	28291.8230 – 31181.6332	3s – 7p	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		34.710	28300.6520 – 31181.6332	3p – 7d	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		34.747	28303.6639 – 31181.6332	3d – 7f	${}^2D - {}^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		37.650	28291.8230 – 30947.8730	3s – 6p	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		37.776	28300.6520 – 30947.8730	3p – 6d	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		37.818	28303.6639 – 30947.8730	3d – 6f	${}^2D - {}^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		44.108	28291.8230 – 30558.9902	3s – 5p	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		44.268	28300.6520 – 30559.6409	3p – 5d	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		44.320	28303.6639 – 30559.9663	3d – 5f	${}^2D - {}^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		59.842	29840.6952 – 31511.7520	4s – 10p	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		59.976	29844.4183 – 31511.7520	4p – 10d	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		60.022	29845.6892 – 31511.7520	4d – 10f	${}^2D - {}^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		62.631	29840.6952 – 31437.3557	4s – 9p	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		62.777	29844.4183 – 31437.3557	4p – 9d	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		62.827	29845.6892 – 31437.3557	4d – 9f	${}^2D - {}^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		64.408	28291.8230 – 29844.4183	3s – 4p	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		64.723	28300.6520 – 29845.6892	3p – 4d	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		64.823	28303.6639 – 29846.3247	3d – 4f	${}^2D - {}^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		66.995	29840.6952 – 31333.3455	4s – 8p	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		67.162	29844.4183 – 31333.3455	4p – 8d	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		67.220	29845.6892 – 31333.3455	4d – 8f	${}^2D - {}^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		74.575	29840.6952 – 31181.6332	4s – 7p	${}^2S - {}^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		74.782	29844.4183 – 31181.6332	4p – 7d	${}^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		74.853	29845.6892 – 31181.6332	4d – 7f	${}^2D - {}^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309

CL XVII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		90.320	29840.6952 - 30947.8730	4s - 6p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		90.624	29844.4183 - 30947.8730	4p - 6d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		90.729	29845.6892 - 30947.8730	4d - 6f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		104.748	30557.0847 - 31511.7520	5s - 10p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		104.958	30558.9902 - 31511.7520	5p - 10d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		105.030	30559.6409 - 31511.7520	5d - 10f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		113.601	30557.0847 - 31437.3557	5s - 9p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		113.848	30558.9902 - 31437.3557	5p - 9d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		113.932	30559.6409 - 31437.3557	5d - 9f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		128.823	30557.0847 - 31333.3455	5s - 8p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		129.140	30558.9902 - 31333.3455	5p - 8d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		129.248	30559.6409 - 31333.3455	5d - 8f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		139.219	29840.6952 - 30558.9902	4s - 5p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		139.817	29844.4183 - 30559.6409	4p - 5d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		140.002	29845.6892 - 30559.9663	4d - 5f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		160.116	30557.0847 - 31181.6332	5s - 7p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		160.606	30558.9902 - 31181.6332	5p - 7d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		160.774	30559.6409 - 31181.6332	5d - 7f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309
		255.893	30557.0847 - 30947.8730	5s - 6p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	309
		257.147	30558.9902 - 30947.8730	5p - 6d	$^2P^o - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	309
		257.578	30559.6409 - 30947.8730	5d - 6f	$^2D - ^2F^o$	$\frac{5}{2}-\frac{7}{2}$	P	309

ARGON , Z = 18
Unclassified Lines

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	125	21.69						736
	50	27.90						248
	100	40.64						248
	150	41.38						248
	100	44.19						248
	150	45.67						248
	50	46.26						248
	100	46.39						248
	20	405.42						707
	20	409.12						707
	20	410.10						707
	20	415.86						707
	10	417.12						707
	10	429.80						707
	10	438.64						707
	40	439.96						707
	30	440.91						707
	30	441.83						707
	20	454.76						707
	150	465.02						707
	80	468.38						707
	60	485.79						707
	300	486.60						707
	40	496.91						707
	40	502.42						707
	60	505.45						707
	200	509.02						707
	20	515.62						707
	40	538.41						707
	30	539.19						707
	50	539.79						707
	120	554.50						707
	40	557.04						707
	40	559.48						707
	30	562.18						707
	20	565.31						707
	20	613.40						707
	10	614.69						707
	200	618.63						707
	200	619.04						707
	20	620.05						707
	20	621.05						707
	60	631.68						707
	50	649.03						707
	10	663.93						707
	50	664.93						707
	20	670.39						707
	20	675.28						707
	20	680.60						707
	10	681.15						707
	100	684.81						707
	100	694.85						707
	20	698.08						707
	150	701.11						707

AR UNCLASSIFIED LINES — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	716.42						707
	10	720.94						707
	10	727.58						707
	10	772.41						707
	13	780.044					A	732
	250	783.14						707
	30	784.38						707
	10	792.08						707
	10	796.62						707
	20	803.59						707
	60	804.59						707
	30	807.46						707
	30	815.14						707
	20	820.56						707
	50	820.98						707
	40	828.86						707
	150	845.68						707
	10	855.71						707
	10	868.20						707
	10	869.24						707
	10	892.07						707
	10	892.74						707
	50	893.50						707
	10	894.97						707
	80	904.89						707
	10	912.91						707
	10	913.80						707
	10	917.72						707
	20	934.84						707

ARGON I (Ar^{0+}), Z = 18
Ground State $1s^22s^22p^63s^23p^6(^1S_0)$ (18 electrons)
Ionization Potential 127 109.80 cm^{-1}; 15.760 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		427.5	0.0 – 233.918	$3s^23p^6 - 3s3p^69p$	$g^1S - {}^1P°$	0 – 1	A	440
		428.8	0.0 – 233.209	$3s^23p^6 - 3s3p^68p$	$g^1S - {}^1P°$	0 – 1	A	440
		431.0	0.0 – 232.019	$3s^23p^6 - 3s3p^67p$	$g^1S - {}^1P°$	0 – 1	A	440
		435.0	0.0 – 229.885	$3s^23p^6 - 3s3p^66p$	$g^1S - {}^1P°$	0 – 1	A	440
		443.1	0.0 – 225.683	$3s^23p^6 - 3s3p^65p$	$g^1S - {}^1P°$	0 – 1	A	440
		466.2	0.0 – 214.500	$3s^23p^6 - 3s3p^64p$	$g^1S - {}^1P°$	0 – 1	A	440
	1	778.224	0.0 – 128.4977	$3p^6 - 3p^5(^2P°_{1/2})52s$	$g^1S - \frac{1}{2}[\frac{1}{2}]°$	0 – 1	A	732
	1	778.237	0.0 – 128.4955	$3p^6 - 3p^5(^2P°_{1/2})51s$	$g^1S - \frac{1}{2}[\frac{1}{2}]°$	0 – 1	A	732
	1	778.247	0.0 – 128.4939	$3p^6 - 3p^5(^2P°_{1/2})50s$	$g^1S - \frac{1}{2}[\frac{1}{2}]°$	0 – 1	A	732
	2	778.260	0.0 – 128.4918	$3p^6 - 3p^5(^2P°_{1/2})49s$	$g^1S - \frac{1}{2}[\frac{1}{2}]°$	0 – 1	A	732
	2	778.273	0.0 – 128.4896	$3p^6 - 3p^5(^2P°_{1/2})48s$	$g^1S - \frac{1}{2}[\frac{1}{2}]°$	0 – 1	A	732
	3	778.286	0.0 – 128.4875	$3p^6 - 3p^5(^2P°_{1/2})47s$	$g^1S - \frac{1}{2}[\frac{1}{2}]°$	0 – 1	A	732
	4	778.302	0.0 – 128.4848	$3p^6 - 3p^5(^2P°_{1/2})46s$	$g^1S - \frac{1}{2}[\frac{1}{2}]°$	0 – 1	A	732
	4	778.319	0.0 – 128.4820	$3p^6 - 3p^5(^2P°_{1/2})45s$	$g^1S - \frac{1}{2}[\frac{1}{2}]°$	0 – 1	A	732
	5	778.335	0.0 – 128.4794	$3p^6 - 3p^5(^2P°_{1/2})44s$	$g^1S - \frac{1}{2}[\frac{1}{2}]°$	0 – 1	A	732
	6	778.354	0.0 – 128.4762	$3p^6 - 3p^5(^2P°_{1/2})43s$	$g^1S - \frac{1}{2}[\frac{1}{2}]°$	0 – 1	A	732
	8	778.379	0.0 – 128.4727	$3p^6 - 3p^5(^2P°_{1/2})42s$	$g^1S - \frac{1}{2}[\frac{1}{2}]°$	0 – 1	A	732
	8	778.396	0.0 – 128.4693	$3p^6 - 3p^5(^2P°_{1/2})41s$	$g^1S - \frac{1}{2}[\frac{1}{2}]°$	0 – 1	A	732

AR I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	9	778.420	0.0 – 128.4654	$3p^6 - 3p^5(^2P^\circ_{1/2})40s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	11	778.447	0.0 – 128.4610	$3p^6 - 3p^5(^2P^\circ_{1/2})39s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	13	778.474	0.0 – 128.4565	$3p^6 - 3p^5(^2P^\circ_{1/2})38s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	14	778.504	0.0 – 128.4515	$3p^6 - 3p^5(^2P^\circ_{1/2})37s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	14	778.537	0.0 – 128.4461	$3p^6 - 3p^5(^2P^\circ_{1/2})36s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	14	778.572	0.0 – 128.4403	$3p^6 - 3p^5(^2P^\circ_{1/2})35s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	17	778.612	0.0 – 128.4337	$3p^6 - 3p^5(^2P^\circ_{1/2})34s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	18	778.655	0.0 – 128.4265	$3p^6 - 3p^5(^2P^\circ_{1/2})33s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	18	778.703	0.0 – 128.4187	$3p^6 - 3p^5(^2P^\circ_{1/2})32s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	19	778.756	0.0 – 128.4100	$3p^6 - 3p^5(^2P^\circ_{1/2})31s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	21	778.814	0.0 – 128.4004	$3p^6 - 3p^5(^2P^\circ_{1/2})30s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	22	778.879	0.0 – 128.3896	$3p^6 - 3p^5(^2P^\circ_{1/2})29s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	23	778.952	0.0 – 128.3776	$3p^6 - 3p^5(^2P^\circ_{1/2})28s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	25	779.034	0.0 – 128.3641	$3p^6 - 3p^5(^2P^\circ_{1/2})27s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	25	779.126	0.0 – 128.3490	$3p^6 - 3p^5(^2P^\circ_{1/2})26s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	27	779.230	0.0 – 128.3318	$3p^6 - 3p^5(^2P^\circ_{1/2})25s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	29	779.350	0.0 – 128.3121	$3p^6 - 3p^5(^2P^\circ_{1/2})24s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	11	779.486	0.0 – 128.2896	$3p^6 - 3p^5(^2P^\circ_{1/2})23s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
		779.49	0.0 – 128.289	$3p^6 - 3p^5(^2P^\circ_{1/2})21d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	11	779.645	0.0 – 128.2635	$3p^6 - 3p^5(^2P^\circ_{1/2})22s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
		779.65	0.0 – 128.262	$3p^6 - 3p^5(^2P^\circ_{1/2})20d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	11	779.828	0.0 – 128.2334	$3p^6 - 3p^5(^2P^\circ_{1/2})21s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
		779.84	0.0 – 128.232	$3p^6 - 3p^5(^2P^\circ_{1/2})19d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	13	780.044	0.0 – 128.1979	$3p^6 - 3p^5(^2P^\circ_{1/2})20s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
		780.05	0.0 – 128.196	$3p^6 - 3p^5(^2P^\circ_{1/2})18d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	13	780.300	0.0 – 128.1558	$3p^6 - 3p^5(^2P^\circ_{1/2})19s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
		780.31	0.0 – 128.154	$3p^6 - 3p^5(^2P^\circ_{1/2})17d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	15	780.606	0.0 – 128.1056	$3p^6 - 3p^5(^2P^\circ_{1/2})18s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
		780.62	0.0 – 128.103	$3p^6 - 3p^5(^2P^\circ_{1/2})16d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	21	780.975	0.0 – 128.0450	$3p^6 - 3p^5(^2P^\circ_{1/2})17s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
		780.99	0.0 – 128.042	$3p^6 - 3p^5(^2P^\circ_{1/2})15d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	23	781.427	0.0 – 127.9710	$3p^6 - 3p^5(^2P^\circ_{1/2})16s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
		781.45	0.0 – 127.967	$3p^6 - 3p^5(^2P^\circ_{1/2})14d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	24	781.992	0.0 – 127.8785	$3p^6 - 3p^5(^2P^\circ_{1/2})15s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
		782.02	0.0 – 127.874	$3p^6 - 3p^5(^2P^\circ_{1/2})13d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	31	782.705	0.0 – 127.7620	$3p^6 - 3p^5(^2P^\circ_{1/2})14s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
		782.74	0.0 – 127.756	$3p^6 - 3p^5(^2P^\circ_{1/2})12d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	43	783.627	0.0 – 127.6118	$3p^6 - 3p^5(^2P^\circ_{1/2})13s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	120	783.67	0.0 – 127.605	$3p^6 - 3p^5(^2P^\circ_{1/2})11d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732,707
	57	784.845	0.0 – 127.4137	$3p^6 - 3p^5(^2P^\circ_{1/2})12s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
		784.90	0.0 – 127.404	$3p^6 - 3p^5(^2P^\circ_{1/2})10d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	63	786.506	0.0 – 127.1446	$3p^6 - 3p^5(^2P^\circ_{1/2})11s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
		786.59	0.0 – 127.131	$3p^6 - 3p^5(^2P^\circ_{1/2})9d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	0	786.923	0.0 – 127.0773	$3p^6 - 3p^5(^2P^\circ_{3/2})58d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	0	786.929	0.0 – 127.0762	$3p^6 - 3p^5(^2P^\circ_{3/2})57d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	0	786.938	0.0 – 127.0749	$3p^6 - 3p^5(^2P^\circ_{3/2})56d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	2	786.947	0.0 – 127.0734	$3p^6 - 3p^5(^2P^\circ_{3/2})55d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	3	786.955	0.0 – 127.0720	$3p^6 - 3p^5(^2P^\circ_{3/2})54d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	3	786.964	0.0 – 127.0706	$3p^6 - 3p^5(^2P^\circ_{3/2})53d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	4	786.973	0.0 – 127.0692	$3p^6 - 3p^5(^2P^\circ_{3/2})52d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	6	786.984	0.0 – 127.0674	$3p^6 - 3p^5(^2P^\circ_{3/2})51d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	9	786.994	0.0 – 127.0657	$3p^6 - 3p^5(^2P^\circ_{3/2})50d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	10	787.006	0.0 – 127.0639	$3p^6 - 3p^5(^2P^\circ_{3/2})49d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	12	787.017	0.0 – 127.0620	$3p^6 - 3p^5(^2P^\circ_{3/2})48d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	14	787.030	0.0 – 127.0599	$3p^6 - 3p^5(^2P^\circ_{3/2})47d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	17	787.044	0.0 – 127.0577	$3p^6 - 3p^5(^2P^\circ_{3/2})46d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	21	787.058	0.0 – 127.0555	$3p^6 - 3p^5(^2P^\circ_{3/2})45d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	22	787.074	0.0 – 127.0528	$3p^6 - 3p^5(^2P^\circ_{3/2})44d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	24	787.090	0.0 – 127.0503	$3p^6 - 3p^5(^2P^\circ_{3/2})43d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	25	787.108	0.0 – 127.0477	$3p^6 - 3p^5(^2P^\circ_{3/2})42d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	25	787.128	0.0 – 127.0442	$3p^6 - 3p^5(^2P^\circ_{3/2})41d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	25	787.148	0.0 – 127.0410	$3p^6 - 3p^5(^2P^\circ_{3/2})40d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	26	787.170	0.0 – 127.0373	$3p^6 - 3p^5(^2P^\circ_{3/2})39d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	28	787.194	0.0 – 127.0335	$3p^6 - 3p^5(^2P^\circ_{3/2})38d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	29	787.220	0.0 – 127.0293	$3p^6 - 3p^5(^2P^\circ_{3/2})37d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	29	787.249	0.0 – 127.0247	$3p^6 - 3p^5(^2P^\circ_{3/2})36d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	30	787.280	0.0 – 127.0197	$3p^6 - 3p^5(^2P^\circ_{3/2})35d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	32	787.312	0.0 – 127.0144	$3p^6 - 3p^5(^2P^\circ_{3/2})34d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	10	787.322	0.0 – 127.0144	$3p^6 - 3p^5(^2P^\circ_{3/2})34d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	32	787.349	0.0 – 127.0084	$3p^6 - 3p^5(^2P^\circ_{3/2})33d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	10	787.361	0.0 – 127.0065	$3p^6 - 3p^5(^2P^\circ_{3/2})33d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	33	787.389	0.0 – 127.0020	$3p^6 - 3p^5(^2P^\circ_{3/2})32d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	12	787.403	0.0 – 126.9997	$3p^6 - 3p^5(^2P^\circ_{3/2})32d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	34	787.434	0.0 – 126.9948	$3p^6 - 3p^5(^2P^\circ_{3/2})31d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	12	787.450	0.0 – 126.9922	$3p^6 - 3p^5(^2P^\circ_{3/2})31d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	36	787.482	0.0 – 126.9870	$3p^6 - 3p^5(^2P^\circ_{3/2})30d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	13	787.500	0.0 – 126.9840	$3p^6 - 3p^5(^2P^\circ_{3/2})30d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	36	787.535	0.0 – 126.9785	$3p^6 - 3p^5(^2P^\circ_{3/2})29d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	14	787.557	0.0 – 126.9750	$3p^6 - 3p^5(^2P^\circ_{3/2})29d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	39	787.595	0.0 – 126.9688	$3p^6 - 3p^5(^2P^\circ_{3/2})28d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	15	787.619	0.0 – 126.9650	$3p^6 - 3p^5(^2P^\circ_{3/2})28d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	39	787.661	0.0 – 126.9581	$3p^6 - 3p^5(^2P^\circ_{3/2})27d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	14	787.688	0.0 – 126.9539	$3p^6 - 3p^5(^2P^\circ_{3/2})27d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	40	787.736	0.0 – 126.9461	$3p^6 - 3p^5(^2P^\circ_{3/2})26d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	16	787.763	0.0 – 126.9417	$3p^6 - 3p^5(^2P^\circ_{3/2})26d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	38	787.819	0.0 – 126.9327	$3p^6 - 3p^5(^2P^\circ_{3/2})25d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	17	787.850	0.0 – 126.9277	$3p^6 - 3p^5(^2P^\circ_{3/2})25d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	36	787.913	0.0 – 126.9175	$3p^6 - 3p^5(^2P^\circ_{3/2})24d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	19	787.948	0.0 – 126.9119	$3p^6 - 3p^5(^2P^\circ_{3/2})24d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	37	788.020	0.0 – 126.9004	$3p^6 - 3p^5(^2P^\circ_{3/2})23d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	20	788.059	0.0 – 126.8940	$3p^6 - 3p^5(^2P^\circ_{3/2})23d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	36	788.141	0.0 – 126.8808	$3p^6 - 3p^5(^2P^\circ_{3/2})22d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	24	788.185	0.0 – 126.8738	$3p^6 - 3p^5(^2P^\circ_{3/2})22d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	41	788.280	0.0 – 126.8585	$3p^6 - 3p^5(^2P^\circ_{3/2})21d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	28	788.329	0.0 – 126.8506	$3p^6 - 3p^5(^2P^\circ_{3/2})21d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	59	788.440	0.0 – 126.8328	$3p^6 - 3p^5(^2P^\circ_{3/2})20d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	29	788.496	0.0 – 126.8238	$3p^6 - 3p^5(^2P^\circ_{3/2})20d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	40	788.623	0.0 – 126.8032	$3p^6 - 3p^5(^2P^\circ_{3/2})19d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	34	788.629	0.0 – 126.8023	$3p^6 - 3p^5(^2P^\circ_{3/2})21s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	30	788.686	0.0 – 126.7932	$3p^6 - 3p^5(^2P^\circ_{3/2})19d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	41	788.827	0.0 – 126.7705	$3p^6 - 3p^5(^2P^\circ_{3/2})18d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	36	788.841	0.0 – 126.7683	$3p^6 - 3p^5(^2P^\circ_{3/2})20s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	30	788.863	0.0 – 126.7647	$3p^6 - 3p^5(^2P^\circ_{3/2})18d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	34	788.902	0.0 – 126.7585	$3p^6 - 3p^5(^2P^\circ_{1/2})10s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	39	789.031	0.0 – 126.7377	$3p^6 - 3p^5(^2P^\circ_{1/2})8d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
		789.077	0.0 – 126.7303	$3p^6 - 3p^5(^2P^\circ_{3/2})17f$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
	30	789.113	0.0 – 126.7245	$3p^6 - 3p^5(^2P^\circ_{3/2})19s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	18	789.140	0.0 – 126.7202	$3p^6 - 3p^5(^2P^\circ_{3/2})17d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732

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Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	34	789.257	0.0 – 126.7014	$3p^6 - 3p^5(^2P^\circ_{3/2})17d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
		789.387	0.0 – 126.6805	$3p^6 - 3p^5(^2P^\circ_{3/2})16f$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
	33	789.425	0.0 – 126.6744	$3p^6 - 3p^5(^2P^\circ_{3/2})18s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	29	789.440	0.0 – 126.6720	$3p^6 - 3p^5(^2P^\circ_{3/2})16d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	23	789.568	0.0 – 126.6515	$3p^6 - 3p^5(^2P^\circ_{3/2})16d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	1	789.625	0.0 – 126.6424	$3p^6 - 3p^5(^2P^\circ_{3/2})17p$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
		789.756	0.0 – 126.6214	$3p^6 - 3p^5(^2P^\circ_{3/2})15f$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
	36	789.803	0.0 – 126.6139	$3p^6 - 3p^5(^2P^\circ_{3/2})17s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	34	789.813	0.0 – 126.6123	$3p^6 - 3p^5(^2P^\circ_{3/2})15d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	9	789.962	0.0 – 126.5883	$3p^6 - 3p^5(^2P^\circ_{3/2})15d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	2	790.046	0.0 – 126.5749	$3p^6 - 3p^5(^2P^\circ_{3/2})16p$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
		790.208	0.0 – 126.5490	$3p^6 - 3p^5(^2P^\circ_{3/2})14f$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
		790.210	0.0 – 126.5486	$3p^6 - 3p^5(^2P^\circ_{3/2})14f$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	36	790.266	0.0 – 126.5396	$3p^6 - 3p^5(^2P^\circ_{3/2})16s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	45	790.270	0.0 – 126.5390	$3p^6 - 3p^5(^2P^\circ_{3/2})14d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	22	790.451	0.0 – 126.50965	$3p^6 - 3p^5(^2P^\circ_{3/2})14d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	2	790.535	0.0 – 126.4966	$3p^6 - 3p^5(^2P^\circ_{3/2})15p$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	4	790.559	0.0 – 126.4928	$3p^6 - 3p^5(^2P^\circ_{3/2})15p$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
		790.768	0.0 – 126.4593	$3p^6 - 3p^5(^2P^\circ_{3/2})13f$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
		790.771	0.0 – 126.4588	$3p^6 - 3p^5(^2P^\circ_{3/2})13f$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	60	790.840	0.0 – 126.4479	$3p^6 - 3p^5(^2P^\circ_{3/2})13d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	29	791.059	0.0 – 126.41294	$3p^6 - 3p^5(^2P^\circ_{3/2})13d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	1	791.202	0.0 – 126.3900	$3p^6 - 3p^5(^2P^\circ_{3/2})14p$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	2	791.222	0.0 – 126.3867	$3p^6 - 3p^5(^2P^\circ_{3/2})14p$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
		791.478	0.0 – 126.3459	$3p^6 - 3p^5(^2P^\circ_{3/2})12f$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
		791.482	0.0 – 126.3453	$3p^6 - 3p^5(^2P^\circ_{3/2})12f$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	42	791.551	0.0 – 126.3342	$3p^6 - 3p^5(^2P^\circ_{3/2})12d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	30	791.566	0.0 – 126.3320	$3p^6 - 3p^5(^2P^\circ_{3/2})14s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	30	791.811	0.0 – 126.29265	$3p^6 - 3p^5(^2P^\circ_{3/2})12d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	1	792.033	0.0 – 126.2574	$3p^6 - 3p^5(^2P^\circ_{3/2})13p$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	3	792.059	0.0 – 126.2533	$3p^6 - 3p^5(^2P^\circ_{3/2})13p$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
	43	792.3207	0.0 – 126.21152	$3p^6 - 3p^5(^2P^\circ_{1/2})9s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	st,A	517,732
	47	792.367	0.0 – 126.2041	$3p^6 - 3p^5(^2P^\circ_{3/2})11d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	28	792.513	0.0 – 126.1812	$3p^6 - 3p^5(^2P^\circ_{3/2})13s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	25	792.632	0.0 – 126.1619	$3p^6 - 3p^5(^2P^\circ_{1/2})7d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	35	793.025	0.0 – 126.09936	$3p^6 - 3p^5(^2P^\circ_{3/2})11d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	1	793.115	0.0 – 126.0851	$3p^6 - 3p^5(^2P^\circ_{3/2})12p$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	4	793.151	0.0 – 126.0794	$3p^6 - 3p^5(^2P^\circ_{3/2})12p$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
	1	793.586	0.0 – 126.0103	$3p^6 - 3p^5(^2P^\circ_{3/2})10f$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
	2	793.598	0.0 – 126.0084	$3p^6 - 3p^5(^2P^\circ_{3/2})10f$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	42	793.750	0.0 – 125.98432	$3p^6 - 3p^5(^2P^\circ_{3/2})12s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	42	793.781	0.0 – 125.9794	$3p^6 - 3p^5(^2P^\circ_{3/2})10d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	27	794.291	0.0 – 125.89858	$3p^6 - 3p^5(^2P^\circ_{3/2})10d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	A	732
	2	794.574	0.0 – 125.85377	$3p^6 - 3p^5(^2P^\circ_{3/2})11p$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	4	794.619	0.0 – 125.8465	$3p^6 - 3p^5(^2P^\circ_{3/2})11p$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
	5	794.964	0.0 – 125.79195	$3p^6 - 3p^5(^2P^\circ_{1/2})8p$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	1	795.212	0.0 – 125.7526	$3p^6 - 3p^5(^2P^\circ_{3/2})9f$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
	3	795.236	0.0 – 125.74875	$3p^6 - 3p^5(^2P^\circ_{3/2})9f$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	49	795.430	0.0 – 125.71811	$3p^6 - 3p^5(^2P^\circ_{3/2})9d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	30	795.4474	0.0 – 125.71541	$3p^6 - 3p^5(^2P^\circ_{3/2})11s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st,A	517,732
	30	796.0955	0.0 – 125.61307	$3p^6 - 3p^5(^2P^\circ_{3/2})9d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	st,A	517,732
	2	796.599	0.0 – 125.53383	$3p^6 - 3p^5(^2P^\circ_{3/2})10p$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	4	796.665	0.0 – 125.5232	$3p^6 - 3p^5(^2P^\circ_{3/2})10p$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
	3	796.918	0.0 – 125.483362	$3p^6 - 3p^5(^2P^\circ_{3/2})6f$	$g^1S - \frac{1}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732

AR I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	53	797.595	0.0 – 125.3769	$3p^6 - 3p^5(^2P^\circ_{3/2})8d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	732
	38	797.7457	0.0 – 125.35323	$3p^6 - 3p^5(^2P^\circ_{1/2})8s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	st,A	517,732
	15	797.8818	0.0 – 125.33184	$3p^6 - 3p^5(^2P^\circ_{3/2})10s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st,A	517,732
	26	798.1721	0.0 – 125.28626	$3p^6 - 3p^5(^2P^\circ_{1/2})6d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	st,A	517,732
	10	799.1316	0.0 – 125.135831	$3p^6 - 3p^5(^2P^\circ_{3/2})8d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	st	517
	2	799.518	0.0 – 125.07514	$3p^6 - 3p^5(^2P^\circ_{3/2})9p$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	5	799.616	0.0 – 125.05976	$3p^6 - 3p^5(^2P^\circ_{3/2})9p$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
	2	800.864	0.0 – 124.86509	$3p^6 - 3p^5(^2P^\circ_{3/2})7f$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
	3	800.914	0.0 – 124.85733	$3p^6 - 3p^5(^2P^\circ_{3/2})7f$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	51	801.3577	0.0 – 124.78822	$3p^6 - 3p^5(^2P^\circ_{3/2})7d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	517,732
	41	801.3937	0.0 – 124.78261	$3p^6 - 3p^5(^2P^\circ_{3/2})9s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	517,732
	7	802.190	0.0 – 124.65844	$3p^6 - 3p^5(^2P^\circ_{1/2})7p$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	20	802.8590	0.0 – 124.554874	$3p^6 - 3p^5(^2P^\circ_{3/2})7d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	st	517
	3	803.981	0.0 – 124.38116	$3p^6 - 3p^5(^2P^\circ_{3/2})8p$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	7	804.138	0.0 – 124.35689	$3p^6 - 3p^5(^2P^\circ_{3/2})8p$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
	4	805.560	0.0 – 124.137436	$3p^6 - 3p^5(^2P^\circ_{3/2})5f$	$g^1S - \frac{1}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
	4	806.119	0.0 – 124.051630	$3p^6 - 3p^5(^2P^\circ_{3/2})6f$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
	5	806.186	0.0 – 124.04126	$3p^6 - 3p^5(^2P^\circ_{3/2})6f$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	100	806.4711	0.0 – 123.99701	$3p^6 - 3p^5(^2P^\circ_{3/2})6d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	517
	60	806.8689	0.0 – 123.935870	$3p^6 - 3p^5(^2P^\circ_{3/2})8s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	517
	30	807.2184	0.0 – 123.882203	$3p^6 - 3p^5(^2P^\circ_{1/2})7s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	st	517
	40	807.6529	0.0 – 123.815560	$3p^6 - 3p^5(^2P^\circ_{1/2})5d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	st	517
	50	809.9266	0.0 – 123.467973	$3p^6 - 3p^5(^2P^\circ_{3/2})6d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	st	517
	5	811.282	0.0 – 123.261525	$3p^6 - 3p^5(^2P^\circ_{3/2})7p$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	10	811.552	0.0 – 123.22069	$3p^6 - 3p^5(^2P^\circ_{3/2})7p$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
	4	814.942	0.0 – 122.708126	$3p^6 - 3p^5(^2P^\circ_{3/2})5f$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
	5	815.087	0.0 – 122.686410	$3p^6 - 3p^5(^2P^\circ_{3/2})5f$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	9	815.429	0.0 – 122.635054	$3p^6 - 3p^5(^2P^\circ_{1/2})6p$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	120	816.2320	0.0 – 122.514192	$3p^6 - 3p^5(^2P^\circ_{3/2})5d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	517
	70	816.4640	0.0 – 122.479382	$3p^6 - 3p^5(^2P^\circ_{3/2})7s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	517
	80	820.1236	0.0 – 121.932848	$3p^6 - 3p^5(^2P^\circ_{3/2})5d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	st	517
	6	821.999	0.0 – 121.654580	$3p^6 - 3p^5(^2P^\circ_{3/2})4f$	$g^1S - \frac{1}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
	8	824.603	0.0 – 121.270617	$3p^6 - 3p^5(^2P^\circ_{3/2})6p$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	12	825.141	0.0 – 121.191805	$3p^6 - 3p^5(^2P^\circ_{3/2})6p$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
	120	825.3460	0.0 – 121.161314	$3p^6 - 3p^5(^2P^\circ_{1/2})6s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	st	517
	120	826.3649	0.0 – 121.011920	$3p^6 - 3p^5(^2P^\circ_{1/2})4d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	st	517
	5	831.738	0.0 – 120.230063	$3p^6 - 3p^5(^2P^\circ_{3/2})4f$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
	7	832.025	0.0 – 120.188631	$3p^6 - 3p^5(^2P^\circ_{3/2})4f$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	150	834.3918	0.0 – 119.847769	$3p^6 - 3p^5(^2P^\circ_{3/2})4d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	517
	100	835.0021	0.0 – 119.760173	$3p^6 - 3p^5(^2P^\circ_{3/2})6s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	517
	100	842.8051	0.0 – 118.651395	$3p^6 - 3p^5(^2P^\circ_{3/2})4d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	st	517
	12	844.100	0.0 – 118.469051	$3p^6 - 3p^5(^2P^\circ_{1/2})5p$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	12	853.361	0.0 – 117.183590	$3p^6 - 3p^5(^2P^\circ_{3/2})5p$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	13	854.705	0.0 – 116.999326	$3p^6 - 3p^5(^2P^\circ_{3/2})5p$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
	180	866.8000	0.0 – 115.366866	$3p^6 - 3p^5(^2P^\circ_{1/2})3d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	st	517
	150	869.7542	0.0 – 114.975019	$3p^6 - 3p^5(^2P^\circ_{1/2})5s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	st	517
	180	876.0577	0.0 – 114.147732	$3p^6 - 3p^5(^2P^\circ_{3/2})3d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	517
	180	879.9466	0.0 – 113.643260	$3p^6 - 3p^5(^2P^\circ_{3/2})5s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	517
	150	894.3102	0.0 – 111.818028	$3p^6 - 3p^5(^2P^\circ_{3/2})3d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1	st	517
	15	932.058	0.0 – 107.289700	$3p^6 - 3p^5(^2P^\circ_{1/2})4p$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	14	941.288	0.0 – 106.237552	$3p^6 - 3p^5(^2P^\circ_{3/2})4p$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 2	F,A	732
	15	946.816	0.0 – 105.617270	$3p^6 - 3p^5(^2P^\circ_{3/2})4p$	$g^1S - \frac{3}{2}[\frac{5}{2}]^\circ$	0 – 2	F,A	732
	1000	1048.2199	0.0 – 95.399828	$3p^6 - 3p^5(^2P^\circ_{1/2})4s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	st	517
	500	1066.6599	0.0 – 93.750598	$3p^6 - 3p^5(^2P^\circ_{3/2})4s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	st	517

ARGON II (Ar^{1+}), Z = 18
Ground State $1s^22s^22p^63s^23p^5(^2P^\circ_{3/2})$ (17 electrons)
Ionization Potential 222 848.2 cm^{-1}; 27.630 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	15	465.8365	0.0 – 214.66748	$3s^23p^5 - 3s^23p^4(^1D)5d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	st	512
	30	469.6301	0.0 – 212.93346	$3s^23p^5 - 3s^23p^4(^1D)6s$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	st	512
	30	472.8114	1.43158 – 212.93232	$3s^23p^5 - 3s^23p^4(^1D)6s$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	st	512
	180	475.9054	0.0 – 210.12570	$3s^23p^5 - 3s^23p^4(^3P)6d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	st	512
	120	477.1048	0.0 – 209.59745	$3s^23p^5 - 3s^23p^4(^3P)6d$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$	st	512
	30	477.6068	0.0 – 209.37717	$3s^23p^5 - 3s^23p^4(^3P)6d$	$g^2P^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$	st	512
	30	479.1678	0.0 – 208.69507	$3s^23p^5 - 3s^23p^4(^3P)6d$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$	st	512
	60	479.2177	0.0 – 208.67332	$3s^23p^5 - 3s^23p^4(^3P)6d$	$g^2P^\circ - {}^4F$	$\frac{3}{2}-\frac{5}{2}$	st	512
	30	480.8108	1.43158 – 209.41348	$3s^23p^5 - 3s^23p^4(^3P)6d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	st	512
	15	482.4451	0.0 – 207.27735	$3s^23p^5 - 3s^23p^4(^3P)7s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$	st	512
	300	487.2272	0.0 – 205.24297	$3s^23p^5 - 3s^23p^4(^1D)4d$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	st	512
	270	488.7926	0.0 – 204.58564	$3s^23p^5 - 3s^23p^4(^3P)5d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	st	512
	120	488.9615	0.0 – 204.51500	$3s^23p^5 - 3s^23p^4(^3P)5d$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$	st	512
	240	489.1953	0.0 – 204.41723	$3s^23p^5 - 3s^23p^4(^3P)5d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$	st	512
	290	490.6495	1.43158 – 205.24297	$3s^23p^5 - 3s^23p^4(^1D)4d$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$	st	512
	70	490.7012	1.43158 – 205.22147	$3s^23p^5 - 3s^23p^4(^3P)5d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$	st	512
	150	492.4083	1.43158 – 204.51500	$3s^23p^5 - 3s^23p^4(^3P)5d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$	st	512
	30	492.6454	1.43158 – 204.41723	$3s^23p^5 - 3s^23p^4(^3P)5d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	st	512
	15	494.6676	0.0 – 202.15586	$3s^23p^5 - 3s^23p^4(^3P)5d$	$g^2P^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$	st	512
	15	496.6436	0.0 – 201.35155	$3s^23p^5 - 3s^23p^4(^3P)5d$	$g^2P^\circ - {}^4F$	$\frac{3}{2}-\frac{5}{2}$	st	512
	15	496.6592	0.0 – 201.34522	$3s^23p^5 - 3s^23p^4(^3P)5d$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$	st	512
	0	499.9192	0.0 – 200.03223	$3s^23p^5 - 3s^23p^4(^3P)6s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$	st	512
	30	500.8016	0.0 – 199.67976	$3s^23p^5 - 3s^23p^4(^1D)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	st	512
	60	501.1897	0.0 – 199.52515	$3s^23p^5 - 3s^23p^4(^1D)4d$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$	st	512
	15	501.3872	0.0 – 199.44654	$3s^23p^5 - 3s^23p^4(^1D)4d$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$	st	512
	15	502.0276	1.43158 – 200.62370	$3s^23p^5 - 3s^23p^4(^3P)6s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$	st	512
	60	502.1629	0.0 – 199.13845	$3s^23p^5 - 3s^23p^4(^3P)6s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$	st	512
	60	503.6503	1.43158 – 199.98194	$3s^23p^5 - 3s^23p^4(^1D)4d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	st	512
		504.8117	1.43158 – 199.52515	$3s^23p^5 - 3s^23p^4(^1D)4d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$	st	512
	30	505.0121	1.43158 – 199.44654	$3s^23p^5 - 3s^23p^4(^1D)4d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$	st	512
	30	510.5509	0.0 – 195.86676	$3s^23p^5 - 3s^23p^4(^1D)5s$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$	st	512
	200	510.5564	0.0 – 195.86464	$3s^23p^5 - 3s^23p^4(^1D)5s$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	st	512
	210	514.3100	1.43158 – 195.86676	$3s^23p^5 - 3s^23p^4(^1D)5s$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	st	512
12	150	518.9088	0.0 – 192.71200	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$	st	512
12	300	519.3269	0.0 – 192.55684	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	st	512
12	450	522.7924	1.43158 – 192.71200	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	st	512
	450	524.6803	0.0 – 190.59217	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$	st	512
	210	526.4969	0.0 – 189.93455	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$	st	512
	30	528.6511	1.43158 – 190.59217	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$	st	512
	450	530.4954	1.43158 – 189.93455	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$	st	512
	30	533.0794	0.0 – 187.58923	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$	st	512
	15	535.0711	0.0 – 186.89095	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$	st	512
	150	537.1396	0.0 – 186.17126	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$	st	512
	30	537.4193	0.0 – 186.07435	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^4F$	$\frac{3}{2}-\frac{5}{2}$	st	512
	30	540.8066	1.43158 – 186.34048	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^4F$	$\frac{1}{2}-\frac{3}{2}$	st	512
	60	541.3019	1.43158 – 186.17126	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{1}{2}$	st	512
	300	542.9123	0.0 – 184.19171	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^4D$	$\frac{3}{2}-\frac{1}{2}$	st	512
	450	543.2032	0.0 – 184.09306	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	st	512
	20	543.508	0.0 – 183.98594	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^4D$	$\frac{3}{2}-\frac{3}{2}$		501,506
	270	543.7305	0.0 – 183.91456	$3s^23p^5 - 3s^23p^4(^3P)5s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$	st	512
	240	546.1768	0.0 – 183.09081	$3s^23p^5 - 3s^23p^4(^3P)5s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$	st	512
	270	547.1650	1.43158 – 184.19171	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^4D$	$\frac{1}{2}-\frac{1}{2}$	st	512
	360	547.4605	1.43158 – 184.09306	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$	st	512
	120	547.9960	1.43158 – 183.91456	$3s^23p^5 - 3s^23p^4(^3P)5s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$	st	512

AR II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	210	548.7808	0.0 – 182.22203	$3s^23p^5 - 3s^23p^4(^3P)5s$	$g\,^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$	st	512
	120	550.4810	1.43158 – 183.09081	$3s^23p^5 - 3s^23p^4(^3P)5s$	$g\,^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$	st	512
	30	550.9045	1.43158 – 182.95115	$3s^23p^5 - 3s^23p^4(^3P)5s$	$g\,^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{1}{2}$	st	512
	60	553.1263	1.43158 – 182.22203	$3s^23p^5 - 3s^23p^4(^3P)5s$	$g\,^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{3}{2}$	st	512
	90	555.7659	0.0 – 179.931846	$3s^23p^5 - 3s^23p^4(^1S)3d$	$g\,^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$	st	512
	360	556.8169	0.0 – 179.592231	$3s^23p^5 - 3s^23p^4(^1S)3d$	$g\,^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	st	512
	270	560.2232	1.43158 – 179.931846	$3s^23p^5 - 3s^23p^4(^1S)3d$	$g\,^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	st	512
11	270	572.0136	0.0 – 174.82101	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g\,^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$	st	512
11	360	573.3619	0.0 – 174.40991	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g\,^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$	st	512
11	300	576.7364	1.43158 – 174.82101	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g\,^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$	st	512
11	270	578.1071	1.43158 – 174.40991	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g\,^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$	st	512
10	270	578.6043	0.0 – 172.82966	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g\,^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$	st	512
10	360	580.2631	0.0 – 172.33560	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g\,^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	st	512
10	300	583.4371	1.43158 – 172.82966	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g\,^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	st	512
9	360	597.7000	0.0 – 167.30800	$3s^23p^5 - 3s^23p^4(^1S)4s$	$g\,^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	st	512
9	300	602.8584	1.43158 – 167.30800	$3s^23p^5 - 3s^23p^4(^1S)4s$	$g\,^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$	st	512
	300	612.3715	0.0 – 163.29955	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g\,^2P^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$	st	512
8	540	661.8689	0.0 – 151.087305	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g\,^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	st	512
8	300	664.5622	0.0 – 150.474983	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g\,^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$	st	512
7	450	666.0108	0.0 – 150.147694	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g\,^2P^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$	st	512
8	600	670.9455	1.43158 – 150.474983	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g\,^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	st	512
6	900	671.8513	0.0 – 148.842454	$3s^23p^5 - 3s^23p^4(^1D)4s$	$g\,^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	st	512
6	240	672.8562	0.0 – 148.620153	$3s^23p^5 - 3s^23p^4(^1D)4s$	$g\,^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$	st	512
	360	676.2424	0.0 – 147.875949	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g\,^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$	st	512
	300	677.9518	0.0 – 147.503108	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g\,^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$	st	512
	300	679.2183	0.0 – 147.228051	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g\,^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$	st	512
6	450	679.4005	1.43158 – 148.620153	$3s^23p^5 - 3s^23p^4(^1D)4s$	$g\,^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	st	512
	180	686.4883	0.0 – 145.668890	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g\,^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$	st	512
	150	691.0373	0.0 – 144.709986	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g\,^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$	st	512
	180	693.3018	1.43158 – 145.668890	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g\,^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$	st	512
5	150	697.4890	0.0 – 143.371432	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g\,^2P^\circ - {}^4F$	$\frac{3}{2}-\frac{3}{2}$	st	512
	180	697.9418	1.43158 – 144.709986	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g\,^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$	st	512
5	270	698.7745	0.0 – 143.107676	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g\,^2P^\circ - {}^4F$	$\frac{3}{2}-\frac{5}{2}$	st	512
5	270	704.5237	1.43158 – 143.371432	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g\,^2P^\circ - {}^4F$	$\frac{1}{2}-\frac{3}{2}$	st	512
4	450	718.0898	0.0 – 139.258334	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g\,^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$	st	512
4	900	723.3605	0.0 – 138.243639	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g\,^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$	st	512
4	540	725.5485	1.43158 – 139.258334	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g\,^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$	st	512
4	360	730.9297	1.43158 – 138.243639	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g\,^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$	st	512
3	60	737.4537	0.0 – 135.601732	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g\,^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$	st	512
3	450	740.2691	0.0 – 135.085996	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g\,^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$	st	512
3	450	744.9247	0.0 – 134.241744	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g\,^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$	st	512
3	360	745.3222	1.43158 – 135.601732	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g\,^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{1}{2}$	st	512
3	210	748.1982	1.43158 – 135.085996	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g\,^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{3}{2}$	st	512
2	15	753.3654	0.0 – 132.737697	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g\,^2P^\circ - {}^4D$	$\frac{3}{2}-\frac{1}{2}$	st	512
2	210	754.8239	0.0 – 132.481228	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g\,^2P^\circ - {}^4D$	$\frac{3}{2}-\frac{5}{2}$	st	512
2	60	761.5791	1.43158 – 132.737697	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g\,^2P^\circ - {}^4D$	$\frac{1}{2}-\frac{1}{2}$	st	512
2	180	762.2000	1.43158 – 132.630730	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g\,^2P^\circ - {}^4D$	$\frac{1}{2}-\frac{3}{2}$	st	512
1	1000	919.7810	0.0 – 108.72153	$3s^23p^5 - 3s3p^6$	$g\,^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	st	512,501
1	1000	932.0537	1.43158 – 108.72153	$3s^23p^5 - 3s3p^6$	$g\,^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$	st	512,501
	1	1001.29	108.72153 – 208.59211	$3s3p^6 - 3s^23p^4(^1D)4f$	$^2S - 2[1]^\circ$	$\frac{1}{2}-\frac{3}{2}$	Q	712
	100	1268.483	132.737697 – 211.57227	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)6f$	$^4D - 1[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		501,506
	100	1280.225	132.327356 – 210.4385	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)6f$	$^4D - 2[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		501,506
	100	1282.620	132.481228 – 210.44701	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)6f$	$^4D - 2[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	100	1284.793	132.630730 – 210.46471	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)6f$	$^4D - 2[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506

AR II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	30	1324.51	135.085996 – 210.58488	$3s^23p^4(^3P)4s - 3s^23p^4(^3P)6f$	$^4P - 2[1]^\circ$	$\frac{3}{2}-\frac{3}{2}$	Q	712
	100	1348.751	132.481228 – 206.62380	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4D - 0[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	100	1351.333	132.630730 – 206.63167	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4D - 0[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506
	200	1354.915	132.327356 – 206.13266	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4D - 1[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		501,506
	20	1357.435	132.481228 – 206.14894	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4D - 1[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	100	1360.735	132.630730 – 206.12035	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4D - 1[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506
	200	1363.032	132.737697 – 206.10345	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4D - 1[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		501,506
	50	1376.106	132.327356 – 204.99609	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4D - 2[3]^\circ$	$\frac{7}{2}-\frac{7}{2}$		501,506
	100	1376.956	132.327356 – 204.95109	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4D - 2[4]^\circ$	$\frac{7}{2}-\frac{7}{2}$		501,506
	400	1377.211	132.327356 – 204.93780	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4D - 2[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		501,506
	20	1377.442	132.481228 – 205.07907	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4D - 2[2]^\circ$	$\frac{5}{2}-\frac{5}{2}$		501,506
	100	1379.378	132.481228 – 204.97759	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4D - 2[3]^\circ$	$\frac{5}{2}-\frac{5}{2}$		501,506
	300	1379.884	132.481228 – 204.95109	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4D - 2[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	100	1380.728	132.630730 – 205.05622	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4D - 2[2]^\circ$	$\frac{3}{2}-\frac{3}{2}$		501,506
	200	1382.228	132.630730 – 204.97759	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4D - 2[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506
	100	1382.770	132.737697 – 205.05622	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4D - 2[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		501,506
	100	1396.231	142.186350 – 213.80751	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)7f$	$^4F - 2[5]^\circ$	$\frac{9}{2}-\frac{11}{2}$		501,506
	100	1451.879	142.717091 – 211.59344	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)6f$	$^4F - 1[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		501,506
	100	1455.484	143.371432 – 212.07698	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)6f$	$^4F - 0[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506
	100	1459.878	143.107676 – 211.60647	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)6f$	$^4F - 1[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	200	1463.155	142.186350 – 210.5317	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)6f$	$^4F - 2[5]^\circ$	$\frac{9}{2}-\frac{11}{2}$		501,506
	100	1464.176	143.371432 – 211.66918	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)6f$	$^4F - 1[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506
	100	1465.153	142.186350 – 210.4385	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)6f$	$^4F - 2[4]^\circ$	$\frac{9}{2}-\frac{9}{2}$		501,506
	100	1474.537	142.717091 – 210.53490	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)6f$	$^4F - 2[5]^\circ$	$\frac{7}{2}-\frac{9}{2}$		501,506
	200	1544.177	154.18151 – 218.9409	$3s^23p^4(^1D)3d - 3s^23p^4(^1D)5f$	$^2G - 2[5]^\circ$	$\frac{9}{2}-\frac{9}{2}$		501,506
	200	1544.711	154.20405 – 218.9409	$3s^23p^4(^1D)3d - 3s^23p^4(^1D)5f$	$^2G - 2[5]^\circ$	$\frac{7}{2}-\frac{9}{2}$		501,506
	100	1547.356	108.72153 – 173.34790	$3s3p^6 - 3s^23p^4(^1D)4p$	$^2S - {}^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		501,506
	100	1557.305	144.709986 – 208.92341	$3s^23p^4(^3P)3d - 3s^23p^4(^1D)4f$	$^2P - 2[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		501,506
	300	1559.072	132.481228 – 196.62189	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 0[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
14	400	1560.191	108.72153 – 172.81628	$3s3p^6 - 3s^23p^4(^1D)4p$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		501,506
	200	1562.442	132.630730 – 196.63302	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 0[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506
	100	1563.043	132.327356 – 196.30504	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 1[3]^\circ$	$\frac{7}{2}-\frac{7}{2}$		501,506
	100	1565.377	144.709986 – 208.59211	$3s^23p^4(^3P)3d - 3s^23p^4(^1D)4f$	$^2P - 2[1]^\circ$	$\frac{1}{2}-\frac{3}{2}$		501,506
	100	1566.811	132.481228 – 196.30504	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 1[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	400	1567.987	132.327356 – 196.10331	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 1[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		501,506
	100	1571.391	132.481228 – 196.11902	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 1[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	100	1574.401	143.107676 – 206.62380	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4F - 0[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
14	600	1574.993	108.72153 – 172.21387	$3s3p^6 - 3s^23p^4(^1D)4p$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		501,506
	300	1575.815	132.630730 – 196.08986	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 1[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506
	300	1576.898	142.717091 – 206.13266	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4F - 1[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		501,506
	300	1578.812	132.737697 – 196.07638	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 1[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		501,506
	200	1580.770	143.371432 – 206.63167	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4F - 0[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506
	100	1580.960	145.668890 – 208.92120	$3s^23p^4(^3P)3d - 3s^23p^4(^1D)4f$	$^2P - 2[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506
	100	1583.833	143.107676 – 206.24557	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4F - 1[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	200	1586.261	143.107676 – 206.14894	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4F - 1[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	500	1589.465	142.186350 – 205.10053	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4F - 2[5]^\circ$	$\frac{9}{2}-\frac{11}{2}$		501,506
	200	1590.233	143.371432 – 206.25523	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4F - 1[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506
	1	1591.939	132.481228 – 195.29761	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 2[1]^\circ$	$\frac{5}{2}-\frac{3}{2}$		501,506
	200	1593.587	142.186350 – 204.93780	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4F - 2[4]^\circ$	$\frac{9}{2}-\frac{9}{2}$		501,506
	100	1594.799	132.327356 – 195.03112	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 2[2]^\circ$	$\frac{7}{2}-\frac{5}{2}$		501,506
	100	1595.737	132.630730 – 195.29761	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 2[1]^\circ$	$\frac{3}{2}-\frac{3}{2}$		501,506
	100	1596.151	132.630730 – 195.28138	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 2[1]^\circ$	$\frac{3}{2}-\frac{1}{2}$		501,506
	100	1598.575	132.327356 – 194.88300	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 2[3]^\circ$	$\frac{7}{2}-\frac{7}{2}$		501,506
	200	1598.722	132.481228 – 195.03112	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 2[2]^\circ$	$\frac{5}{2}-\frac{5}{2}$		501,506

AR II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	1598.880	132.737697 – 195.28138	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 2[1]^\circ$	$\frac{1}{2}-\frac{1}{2}$		501,506
	100	1599.130	132.327356 – 194.86127	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 2[3]^\circ$	$\frac{7}{2}-\frac{5}{2}$		501,506
	100	1599.607	132.481228 – 194.99649	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 2[2]^\circ$	$\frac{5}{2}-\frac{3}{2}$		501,506
	400	1600.133	132.327356 – 194.82210	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 2[4]^\circ$	$\frac{7}{2}-\frac{7}{2}$		501,506
	600	1600.694	132.327356 – 194.80018	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 2[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		501,506
	200	1602.554	132.630730 – 195.03112	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 2[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506
	200	1602.891	142.717091 – 205.10432	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4F - 2[5]^\circ$	$\frac{7}{2}-\frac{9}{2}$		501,506
	400	1603.075	132.481228 – 194.86127	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 2[3]^\circ$	$\frac{5}{2}-\frac{5}{2}$		501,506
	400	1603.442	132.630730 – 194.99649	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 2[2]^\circ$	$\frac{3}{2}-\frac{3}{2}$		501,506
	500	1604.082	132.481228 – 194.82210	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 2[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	300	1606.197	132.737697 – 194.99649	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 2[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		501,506
	400	1606.926	132.630730 – 194.86127	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - 2[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506
	100	1607.180	142.717091 – 204.93780	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4F - 2[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		501,506
	50	1615.807	143.107676 – 204.99609	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4F - 2[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	100	1616.972	143.107676 – 204.95109	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4F - 2[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	20	1627.085	150.147694 – 211.60647	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)6f$	$^2F - 1[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	100	1628.825	144.709986 – 206.10345	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^2P - 1[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		501,506
	100	1629.834	149.179246 – 210.53490	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)6f$	$^2F - 2[5]^\circ$	$\frac{7}{2}-\frac{9}{2}$		501,506
	100	1640.343	145.668890 – 206.63167	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^2P - 0[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506
	100	1650.535	145.668890 – 206.25523	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^2P - 1[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506
	100	1653.322	144.709986 – 205.19404	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^2P - 2[1]^\circ$	$\frac{1}{2}-\frac{3}{2}$		501,506
	100	1662.253	149.179246 – 209.33821	$3s^23p^4(^3P)3d - 3s^23p^4(^1D)4f$	$^2F - 2[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		501,506
	50	1686.076	145.668890 – 204.97759	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^2P - 2[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506
	50	1689.470	150.147694 – 209.33787	$3s^23p^4(^3P)3d - 3s^23p^4(^1D)4f$	$^2F - 2[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	100	1701.358	150.474983 – 209.25146	$3s^23p^4(^3P)3d - 3s^23p^4(^1D)4f$	$^2D - 2[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506
	100	1702.188	147.875949 – 206.62380	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4P - 0[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	100	1705.980	147.503108 – 206.12035	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4P - 1[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506
	50	1710.909	150.474983 – 208.92341	$3s^23p^4(^3P)3d - 3s^23p^4(^1D)4f$	$^2D - 2[2]^\circ$	$\frac{3}{2}-\frac{3}{2}$		501,506
	200	1713.218	147.875949 – 206.24557	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4P - 1[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	100	1718.680	132.327356 – 190.51119	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5p$	$^4D - {}^2D^\circ$	$\frac{7}{2}-\frac{5}{2}$		501,506
	200	1719.346	151.087305 – 209.24855	$3s^23p^4(^3P)3d - 3s^23p^4(^1D)4f$	$^2D - 2[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	100	1725.147	147.228051 – 205.19404	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4P - 2[1]^\circ$	$\frac{1}{2}-\frac{3}{2}$		501,506
	50	1725.549	147.228051 – 205.18036	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4P - 2[1]^\circ$	$\frac{1}{2}-\frac{1}{2}$		501,506
	100	1729.075	151.087305 – 208.92120	$3s^23p^4(^3P)3d - 3s^23p^4(^1D)4f$	$^2D - 2[2]^\circ$	$\frac{5}{2}-\frac{5}{2}$		501,506
	100	1729.259	147.228051 – 205.05622	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4P - 2[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		501,506
	100	1733.372	147.503108 – 205.19404	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4P - 2[1]^\circ$	$\frac{3}{2}-\frac{3}{2}$		501,506
	50	1735.378	132.481228 – 190.10623	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5p$	$^4D - {}^4D^\circ$	$\frac{5}{2}-\frac{3}{2}$		501,506
	100	1736.834	147.503108 – 205.07907	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4P - 2[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506
	50	1750.694	147.875949 – 204.99609	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^4P - 2[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	200	1751.679	132.327356 – 189.41496	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5p$	$^4D - {}^4D^\circ$	$\frac{7}{2}-\frac{7}{2}$		501,506
	100	1755.819	149.179246 – 206.13266	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^2F - 1[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		501,506
	50	1763.669	132.737697 – 189.43769	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5p$	$^4D - {}^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$		501,506
	100	1768.043	132.481228 – 189.04087	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5p$	$^4D - {}^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		501,506
	100	1770.658	150.147694 – 206.62380	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^2F - 0[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	200	1771.829	132.327356 – 188.76615	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5p$	$^4D - {}^4P^\circ$	$\frac{7}{2}-\frac{5}{2}$		501,506
	100	1776.672	132.481228 – 188.76615	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5p$	$^4D - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		501,506
	100	1782.596	150.147694 – 206.24557	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^2F - 1[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	100	1785.672	150.147694 – 206.14894	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^2F - 1[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	300	1788.104	149.179246 – 205.10432	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^2F - 2[5]^\circ$	$\frac{7}{2}-\frac{9}{2}$		501,506
	100	1791.561	149.179246 – 204.99609	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^2F - 2[3]^\circ$	$\frac{7}{2}-\frac{7}{2}$		501,506
	50	1793.435	149.179246 – 204.93780	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^2F - 2[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		501,506
	30	1795.10	158.167795 – 213.87380	$3s^23p^4(^3P)4p - 3s^23p^4(^3P)7g$	$^4D^\circ - 2[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$	Q	712
	50	1812.475	134.241744 – 189.41496	$3s^23p^4(^3P)4s - 3s^23p^4(^3P)5p$	$^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	100	1813.014	154.18151 – 209.33821	$3s^23p^4(^1D)3d - 3s^23p^4(^1D)4f$	$^2G - 2[4]^\circ$	$\frac{9}{2}-\frac{9}{2}$		501,506

AR II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	1813.766	154.20405 – 209.33787	$3s^23p^4(^1D)3d - 3s^23p^4(^1D)4f$	$^2G - 2[4]^\circ$	$\frac{7}{2}-\frac{7}{2}$		501,506
	15	1815.98	154.18151 – 209.24855	$3s^23p^4(^1D)3d - 3s^23p^4(^1D)4f$	$^2G - 2[3]^\circ$	$\frac{9}{2}-\frac{7}{2}$	Q	712
	50	1816.14	151.087305 – 206.14894	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^2D - 1[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	100	1823.205	150.147694 – 204.99609	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^2F - 2[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	50	1824.842	134.241744 – 189.04087	$3s^23p^4(^3P)4s - 3s^23p^4(^3P)5p$	$^4P - {^4P^\circ}$	$\frac{5}{2}-\frac{3}{2}$		501,506
	500	1830.770	154.18151 – 208.80324	$3s^23p^4(^1D)3d - 3s^23p^4(^1D)4f$	$^2G - 2[5]^\circ$	$\frac{9}{2}-\frac{11}{2}$		501,506
	500	1831.527	154.20405 – 208.80324	$3s^23p^4(^1D)3d - 3s^23p^4(^1D)4f$	$^2G - 2[5]^\circ$	$\frac{7}{2}-\frac{9}{2}$		501,506
	200	1834.038	134.241744 – 188.76615	$3s^23p^4(^3P)4s - 3s^23p^4(^3P)5p$	$^4P - {^4P^\circ}$	$\frac{5}{2}-\frac{5}{2}$		501,506
	50	1854.986	151.087305 – 204.99609	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)5f$	$^2D - 2[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	100	1866.089	142.717091 – 196.30504	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - 1[3]^\circ$	$\frac{7}{2}-\frac{7}{2}$		501,506
	300	1868.660	143.107676 – 196.62189	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - 0[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	100	1872.589	142.717091 – 196.11902	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - 1[4]^\circ$	$\frac{7}{2}-\frac{7}{2}$		501,506
	600	1873.140	142.717091 – 196.10331	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - 1[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		501,506
	400	1877.523	143.371432 – 196.63302	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - 0[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506
	100	1879.420	143.107676 – 196.31551	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - 1[3]^\circ$	$\frac{5}{2}-\frac{5}{2}$		501,506
	200	1879.790	143.107676 – 196.30504	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - 1[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	400	1886.386	143.107676 – 196.11902	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - 1[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	30	1887.42	143.107676 – 196.08986	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - 1[2]^\circ$	$\frac{5}{2}-\frac{5}{2}$	Q	712
	400	1888.782	143.371432 – 196.31551	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - 1[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506
	600	1889.029	142.186350 – 195.12354	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - 2[5]^\circ$	$\frac{9}{2}-\frac{11}{2}$		501,506
	50	1897.352	143.371432 – 196.07638	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - 1[2]^\circ$	$\frac{3}{2}-\frac{3}{2}$		501,506
	15	1898.36	150.474983 – 203.15120	$3s^23p^4(^3P)3d - 3s^23p^4(^1D)5p$	$^2D - {^2F^\circ}$	$\frac{3}{2}-\frac{5}{2}$	Q	712
	100	1899.287	155.043161 – 207.69442	$3s^23p^4(^3P)4p - 3s^23p^4(^3P)6d$	$^4P^\circ - {^4D}$	$\frac{5}{2}-\frac{7}{2}$	Q	501,506
	100	1899.847	142.186350 – 194.82210	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - 2[4]^\circ$	$\frac{9}{2}-\frac{7}{2}$		501,506
	400	1900.638	142.186350 – 194.80018	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - 2[4]^\circ$	$\frac{9}{2}-\frac{9}{2}$		501,506
	400	1907.988	142.717091 – 195.12827	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - 2[5]^\circ$	$\frac{7}{2}-\frac{9}{2}$		501,506
	50	1909.5689	108.72153 – 161.089390	$3s3p^6 - 3s^23p^4(^3P)4p$	$^2S - {^2S^\circ}$	$\frac{1}{2}-\frac{1}{2}$	ST	308,501,506
	50	1911.053	108.72153 – 161.048725	$3s3p^6 - 3s^23p^4(^3P)4p$	$^2S - {^4S^\circ}$	$\frac{1}{2}-\frac{3}{2}$		501,506
	30	1917.79	157.234011 – 209.37717	$3s^23p^4(^3P)4p - 3s^23p^4(^3P)6d$	$^4D^\circ - {^2F}$	$\frac{7}{2}-\frac{5}{2}$	Q	712
	300	1919.199	142.717091 – 194.82210	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - 2[4]^\circ$	$\frac{7}{2}-\frac{7}{2}$		501,506
	200	1920.007	142.717091 – 194.80018	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - 2[4]^\circ$	$\frac{7}{2}-\frac{9}{2}$		501,506
	10	1927.19	143.107676 – 194.99649	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - 2[2]^\circ$	$\frac{5}{2}-\frac{3}{2}$	Q	712
	100	1931.419	143.107676 – 194.88300	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - 2[3]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	200	1932.230	143.107676 – 194.86127	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - 2[3]^\circ$	$\frac{5}{2}-\frac{5}{2}$		501,506
	200	1933.694	143.107676 – 194.82210	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - 2[4]^\circ$	$\frac{5}{2}-\frac{7}{2}$		501,506
	100	1937.041	143.371432 – 194.99649	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - 2[2]^\circ$	$\frac{3}{2}-\frac{3}{2}$		501,506
13	300	1941.0724	108.72153 – 160.239434	$3s3p^6 - 3s^23p^4(^3P)4p$	$^2S - {^2P^\circ}$	$\frac{1}{2}-\frac{3}{2}$	ST	308,501,506
	30	1942.13	143.371432 – 194.86127	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - 2[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$	Q	712
	200	1946.795	144.709986 – 196.07638	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^2P - 1[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		501,506
13	400	1961.3610	108.72153 – 159.706538	$3s3p^6 - 3s^23p^4(^3P)4p$	$^2S - {^2P^\circ}$	$\frac{1}{2}-\frac{1}{2}$	ST	308,501,506
	300	1962.161	145.668890 – 196.63302	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^2P - 0[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506
	100	1966.953	158.428114 – 209.26831	$3s^23p^4(^3P)4p - 3s^23p^4(^3P)6d$	$^4D^\circ - {^4F}$	$\frac{1}{2}-\frac{3}{2}$	Q	501,506
	200	1972.274	157.234011 – 207.93683	$3s^23p^4(^3P)4p - 3s^23p^4(^3P)6d$	$^4D^\circ - {^4F}$	$\frac{7}{2}-\frac{9}{2}$	Q	501,506
	200	1973.4837	108.72153 – 159.393381	$3s3p^6 - 3s^23p^4(^3P)4p$	$^2S - {^2D^\circ}$	$\frac{1}{2}-\frac{3}{2}$	ST	308,501,506
	300	1974.462	145.668890 – 196.31551	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^2P - 1[3]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506
	300	1976.765	144.709986 – 195.29761	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^2P - 2[1]^\circ$	$\frac{1}{2}-\frac{3}{2}$		501,506
	20	1977.200	157.673408 – 208.24974	$3s^23p^4(^3P)4p - 3s^23p^4(^3P)7s$	$^4D^\circ - {^2P}$	$\frac{5}{2}-\frac{3}{2}$	Q	501,506
	100	1981.74	157.234011 – 207.69442	$3s^23p^4(^3P)4p - 3s^23p^4(^3P)6d$	$^4D^\circ - {^4D}$	$\frac{7}{2}-\frac{7}{2}$	Q	501,506
	100	1983.299	145.668890 – 196.08986	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^2P - 1[2]^\circ$	$\frac{3}{2}-\frac{5}{2}$		501,506
	100	1983.829	145.668890 – 196.07638	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^2P - 1[2]^\circ$	$\frac{3}{2}-\frac{3}{2}$		501,506
	300	1988.620	144.709986 – 194.99649	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^2P - 2[2]^\circ$	$\frac{1}{2}-\frac{3}{2}$		501,506
	20	1993.555	158.167795 – 208.32908	$3s^23p^4(^3P)4p - 3s^23p^4(^3P)7s$	$^4D^\circ - {^4P}$	$\frac{3}{2}-\frac{1}{2}$	Q	501,506

ARGON III (Ar^{2+}), Z = 18
Ground State $1s^22s^22p^63s^23p^4(^3P_2)$ (16 electrons)
Ionization Potential 328 600 cm^{-1}; 40.74 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	125	382.61	14.0100 – 275.37	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$^1D - ^1F^\circ$	2 – 3		271
	100	387.45	14.0100 – 272.11	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$^1D - ^1D^\circ$	2 – 2		271
	25	389.49	14.0100 – 270.76	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$^1D - ^1P^\circ$	2 – 1		271
	50	395.92	0.0 – 252.57588	$3s^23p^4 - 3s^23p^3(^4S^\circ)5s$	$g^3P - ^3S^\circ$	2 – 1		059
	200	396.37	0.0 – 252.28902	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - ^3D^\circ$	2 – 3		271
	50	397.67	1.1121 – 252.57588	$3s^23p^4 - 3s^23p^3(^4S^\circ)5s$	$g^3P - ^3S^\circ$	1 – 1		059
	125	398.17	1.1121 – 252.25369	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - ^3D^\circ$	1 – 2		271
	50	398.91	1.57020 – 252.27292	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - ^3D^\circ$	0 – 1		271
	250	466.53	0.0 – 214.34670	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	2 – 1		059
	300	467.39	0.0 – 213.95087	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	2 – 2		059
	200	468.47	1.1121 – 214.56849	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	1 – 0		059
	150	468.96	1.1121 – 214.34670	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	1 – 1		059
	200	469.83	1.1121 – 213.95087	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	1 – 2		059
	200	469.97	1.57020 – 214.34670	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	0 – 1		059
	300	473.03						059
	300	473.92	0.0 – 211.00485	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	2 – 2		059
	350	476.43	1.1121 – 211.00485	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		059
	300	481.85	0.0 – 207.53215	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - ^3P^\circ$	2 – 1		059
	400	482.55	0.0 – 207.23309	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - ^3P^\circ$	2 – 2		059
	250	484.12	1.1121 – 207.67316	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - ^3P^\circ$	1 – 0		059
	250	484.45	1.1121 – 207.53215	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - ^3P^\circ$	1 – 1		059
	300	485.15	1.1121 – 207.23309	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - ^3P^\circ$	1 – 2		059
	200	485.52	1.57020 – 207.53215	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - ^3P^\circ$	0 – 1		059
	350	487.03						059
	350	487.99						059
	350	488.45	0.0 – 204.72747	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^3S^\circ$	2 – 1		059
	200	491.12	1.1121 – 204.72747	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^3S^\circ$	1 – 1		059
	150	492.23	1.57020 – 204.72747	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^3S^\circ$	0 – 1		059
	450	508.44	0.0 – 196.67980	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	2 – 3		337
	300	508.61	0.0 – 196.61391	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	2 – 2		337
	180	508.68	0.0 – 196.58920	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	2 – 1		337
	300	511.51	1.1121 – 196.61391	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	1 – 2		337
	180	511.57	1.1121 – 196.58920	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	1 – 1		337
	180	512.77	1.57020 – 196.58920	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	0 – 1		337
	450	529.90	0.0 – 188.71405	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		059
	350	532.41	0.0 – 187.82305	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^3D^\circ$	2 – 2		059
	50	534.26	0.0 – 187.17112	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^3D^\circ$	2 – 1		059
	350	535.58	1.1121 – 187.82305	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		059
	300	537.46	1.1121 – 187.17112	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^3D^\circ$	1 – 1		059
	300	538.79	1.57020 – 187.17112	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^3D^\circ$	0 – 1		059
4	450	553.47	0.0 – 180.67900	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - ^3S^\circ$	2 – 1		059
4	300	556.89	1.1121 – 180.67900	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - ^3S^\circ$	1 – 1		059
4	250	558.32	1.57020 – 180.67900	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - ^3S^\circ$	0 – 1		059
	200	573.47	0.0 – 174.37500	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - ^5S^\circ$	2 – 2		059
	150	577.15	1.1121 – 174.37500	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - ^5S^\circ$	1 – 2		059
	200	578.39	14.0100 – 186.90305	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - ^3F^\circ$	2 – 2		060
	150	579.21	14.0100 – 186.65720	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - ^3F^\circ$	2 – 3		060
	500	604.15						059
3	150	636.82	0.0 – 157.03140	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	2 – 1		059
3	1000	637.28	0.0 – 156.91762	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		059
3	250	641.36	1.1121 – 157.03140	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	1 – 1	P	059
3	600	641.81	1.1121 – 156.92468	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		059
3	450	643.25	1.57020 – 157.03140	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	0 – 1	P	059
2	400	690.17	0.0 – 144.89295	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - ^5D^\circ$	2 – 3		059

AR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
2	300	695.54	1.1121 – 144.88597	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - {}^5D^\circ$	1 – 2		059
2	100	697.74	1.57020 – 144.88293	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - {}^5D^\circ$	0 – 1		059
	50	699.72	14.0100 – 156.91762	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	${}^1D - {}^3D^\circ$	2 – 3		060
5	600	769.15	14.0100 – 144.023	$3s^23p^4 - 3s3p^5$	${}^1D - {}^1P^\circ$	2 – 1		059
1	500	871.10	0.0 – 114.79760	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	2 – 1		059
1	450	875.53	1.1121 – 115.32840	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	1 – 0		059
1	600	878.73	0.0 – 113.80070	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	2 – 2		059
1	400	879.62	1.1121 – 114.79760	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	1 – 1		059
1	450	883.18	1.57020 – 114.79760	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	0 – 1		059
1	500	887.40	1.1121 – 113.80070	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	1 – 2		059
	150	1002.10	14.0100 – 113.80070	$3s^23p^4 - 3s3p^5$	${}^1D - {}^3P^\circ$	2 – 2		060
	200	1460.17	156.91762 – 225.40259	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^2D^\circ)4p$	${}^3D^\circ - {}^3D$	3 – 3	P	059
	100	1460.32	156.92468 – 225.40259	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^2D^\circ)4p$	${}^3D^\circ - {}^3D$	2 – 3	P	059
	100	1465.62	156.91762 – 225.14793	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^2D^\circ)4p$	${}^3D^\circ - {}^3D$	3 – 2	P	059
	150	1465.78	156.92468 – 225.14793	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^2D^\circ)4p$	${}^3D^\circ - {}^3D$	2 – 2	P	059
	150	1467.92	157.03140 – 225.15518	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^2D^\circ)4p$	${}^3D^\circ - {}^3D$	1 – 1	P	059
	100	1468.07	157.03140 – 225.14793	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^2D^\circ)4p$	${}^3D^\circ - {}^3D$	1 – 2	P	059
6	50	1669.10	144.88597 – 204.79737	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4p$	${}^5D^\circ - {}^5P$	2 – 3		059
6	250	1669.30	144.89295 – 204.79737	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4p$	${}^5D^\circ - {}^5P$	3 – 3		059
6	350	1669.67	144.90700 – 204.79737	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4p$	${}^5D^\circ - {}^5P$	4 – 3		059,488
6	50	1673.14	144.88293 – 204.64924	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4p$	${}^5D^\circ - {}^5P$	1 – 2		059
6	150	1673.24	144.88597 – 204.64924	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4p$	${}^5D^\circ - {}^5P$	2 – 2		059
6	350	1673.43	144.89295 – 204.64924	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4p$	${}^5D^\circ - {}^5P$	3 – 2		059,488
6	350	1675.58	144.88293 – 204.56353	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4p$	${}^5D^\circ - {}^5P$	1 – 1		059
6	200	1675.64	144.88597 – 204.56353	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4p$	${}^5D^\circ - {}^5P$	2 – 1		059,488
7	450	1914.40	156.91762 – 209.15182	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4p$	${}^3D^\circ - {}^3P$	3 – 2		059
7	150	1914.65	156.92468 – 209.15182	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4p$	${}^3D^\circ - {}^3P$	2 – 2		059
7	350	1915.56	156.92468 – 209.12704	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4p$	${}^3D^\circ - {}^3P$	2 – 1		059
7	50	1918.06	157.03140 – 209.16635	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4p$	${}^3D^\circ - {}^3P$	1 – 0		059
7	200	1918.67	157.03140 – 209.15182	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4p$	${}^3D^\circ - {}^3P$	1 – 2		059
7	200	1919.52	157.03140 – 209.12704	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4p$	${}^3D^\circ - {}^3P$	1 – 1		059
	50	1957.83	180.67900 – 231.75480	$3s^23p^3(^4S^\circ)4s - 3s^23p^3(^2D^\circ)4p$	${}^3S^\circ - {}^3P$	1 – 0		059
	100	1962.74	180.67900 – 231.62730	$3s^23p^3(^4S^\circ)4s - 3s^23p^3(^2D^\circ)4p$	${}^3S^\circ - {}^3P$	1 – 1		059
	200	1973.78	180.67900 – 231.34180	$3s^23p^3(^4S^\circ)4s - 3s^23p^3(^2D^\circ)4p$	${}^3S^\circ - {}^3P$	1 – 2		059

ARGON IV (Ar^{3+}), Z = 18
Ground State $1s^22s^22p^63s^23p^3(^4S^\circ_{3/2})$ (15 electrons)
Ionization Potential 482 400 cm^{-1}; 59.81 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	160	396.87	0. – 251.972	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		059
	160	398.55	0. – 250.907	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		059
	120	399.63	0. – 250.219	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{1}{2}$		059
	10	423.48	21.2193 – 257.349	$3s^23p^3 - 3s^23p^2(^3P)4s$	${}^2D^\circ - {}^2P$	$\frac{5}{2} - \frac{3}{2}$	Q	707,375
	80	443.40	21.2193 – 246.74	$3s^23p^3 - 3s^23p^2(^1D)3d$	${}^2D^\circ - {}^2F$	$\frac{5}{2} - \frac{7}{2}$		295,707
	15	451.20	0. – 221.63	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{1}{2}$		242,707
	45	451.87	0. – 221.3	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		242,707
	80	452.91	0. – 220.79	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		242,707
		458.1	21.2193 – 239.5	$3s^23p^3 - 3s^23p^2(^1D)3d$	${}^2D^\circ - {}^2D$	$\frac{5}{2} - \frac{5}{2}$		242
	60	471.09	34.8555 – 247.13	$3s^23p^3 - 3s^23p^2(^1D)3d$	${}^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		707,213
	60	471.97	35.0326 – 246.91	$3s^23p^3 - 3s^23p^2(^1D)3d$	${}^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		707,213
	50	492.64	21.0904 – 224.08	$3s^23p^3 - 3s^23p^2(^3P)3d$	${}^2D^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		707,213

AR IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	80	495.55	21.2193 – 223.02	$3s^23p^3 - 3s^23p^2(^3P)3d$	${}^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		707,213
	20	561.06	117.564 – 295.80677	$3s3p^4 - 3s^23p^2(^3P)4p$	${}^4P - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$	Q	707,375
	250	623.77	145.922 – 306.23628	$3s3p^4 - 3s^23p^2(^1D)4p$	${}^2D - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$	Q	060,375
3	400	683.28	21.0904 – 167.445	$3s^23p^3 - 3s3p^4$	${}^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		059
3	300	688.39	21.0904 – 166.357	$3s^23p^3 - 3s3p^4$	${}^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		059
3	500	689.01	21.2193 – 166.357	$3s^23p^3 - 3s3p^4$	${}^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		059
	100	694.85	145.922 – 289.83468	$3s3p^4 - 3s^23p^2(^3P)4p$	${}^2D - {}^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$	Q	707,375
	240	699.41	34.8555 – 177.834	$3s^23p^3 - 3s3p^4$	${}^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		059
	320	700.28	35.0326 – 177.834	$3s^23p^3 - 3s3p^4$	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		059
	160	754.21	34.8555 – 167.445	$3s^23p^3 - 3s3p^4$	${}^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		059
	120	755.21	35.0326 – 167.445	$3s^23p^3 - 3s3p^4$	${}^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		059
	120	760.44	34.8555 – 166.357	$3s^23p^3 - 3s3p^4$	${}^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		059
	200	761.47	35.0326 – 166.357	$3s^23p^3 - 3s3p^4$	${}^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		059
	10	772.49	166.357 – 295.80677	$3s3p^4 - 3s^23p^2(^3P)4p$	${}^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	Q	707,375
2	200	800.57	21.0904 – 146.	$3s^23p^3 - 3s3p^4$	${}^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		059
2	400	801.09	21.0904 – 145.922	$3s^23p^3 - 3s3p^4$	${}^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		059
2	400	801.41	21.2193 – 146.	$3s^23p^3 - 3s3p^4$	${}^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		059
2	200	801.91	21.2193 – 145.922	$3s^23p^3 - 3s3p^4$	${}^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{3}{2}$		059
1	600	840.03	0. – 119.044	$3s^23p^3 - 3s3p^4$	$g{}^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		059
1	800	843.77	0. – 118.515	$3s^23p^3 - 3s3p^4$	$g{}^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		059
1	1000	850.60	0. – 117.564	$3s^23p^3 - 3s3p^4$	$g{}^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		059
	200	900.36	34.8555 – 145.922	$3s^23p^3 - 3s3p^4$	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		059
	400	901.17	35.0326 – 146.	$3s^23p^3 - 3s3p^4$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		059
	80	901.80	35.0326 – 145.922	$3s^23p^3 - 3s3p^4$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		059
	40	1037.93	21.2193 – 117.564	$3s^23p^3 - 3s3p^4$	${}^2D^\circ - {}^4P$	$\frac{5}{2}-\frac{5}{2}$		059
	40	1187.80	34.8555 – 119.044	$3s^23p^3 - 3s3p^4$	${}^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{1}{2}$		059
	80	1190.35	35.0326 – 119.044	$3s^23p^3 - 3s3p^4$	${}^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		059
	40	1197.84	35.0326 – 118.515	$3s^23p^3 - 3s3p^4$	${}^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		059

ARGON V (Ar^{4+}), Z = 18
Ground State $1s^22s^22p^63s^23p^2(^3P_0)$ (14 electrons)
Ionization Potential 605 100 cm^{-1}; 75.02 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
6	150	336.56	.7639 – 297.893	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	$g{}^3P - {}^3P^\circ$	1 – 2		549
6	150	337.56	0. – 296.249	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	$g{}^3P - {}^3P^\circ$	0 – 1		549
6	300	338.00	2.0292 – 297.893	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	$g{}^3P - {}^3P^\circ$	2 – 2		549
6	100	338.43	.7639 – 296.249	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	$g{}^3P - {}^3P^\circ$	1 – 1		549
6	150	339.01	.7639 – 295.742	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	$g{}^3P - {}^3P^\circ$	1 – 0		549
6	150	339.89	2.0292 – 296.249	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	$g{}^3P - {}^3P^\circ$	2 – 1		549
8	150	350.88	16.2994 – 301.3	$3s^23p^2 - 3s^23p(^2P^\circ)4s$	${}^1D - {}^1P^\circ$	2 – 1		549
	120	436.67	16.2994 – 245.31	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	${}^1D - {}^1F^\circ$	2 – 3		707,213
5	250	445.997	0. – 224.216	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g{}^3P - {}^3D^\circ$	0 – 1		197,549
5	400	446.949	.7639 – 224.505	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g{}^3P - {}^3D^\circ$	1 – 2		197,549
5	200	447.53	.7639 – 224.216	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g{}^3P - {}^3D^\circ$	1 – 1		549
5	900	449.065	2.0292 – 224.717	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g{}^3P - {}^3D^\circ$	2 – 3		197,549
5	200	449.49	2.0292 – 224.505	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g{}^3P - {}^3D^\circ$	2 – 2		549
5	50	450.08	2.0292 – 224.216	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g{}^3P - {}^3D^\circ$	2 – 1		549
4	150	458.12	0. – 218.286	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g{}^3P - {}^3P^\circ$	0 – 1		549
4	100	458.98	.7639 – 218.642	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g{}^3P - {}^3P^\circ$	1 – 0		549
4	50	459.73	.7639 – 218.286	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g{}^3P - {}^3P^\circ$	1 – 1		549
4	300	461.23	.7639 – 217.578	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g{}^3P - {}^3P^\circ$	1 – 2		549

AR V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
4	150	462.42	2.0292 – 218.286	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 1		549
4	350	463.938	2.0292 – 217.578	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 2		197,549
	60	466.82	37.9125 – 252.13	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	${}^1S - {}^1P^\circ$	0 – 1		707,213
	25	511.89	0. – 195.356	$3s^23p^2 - 3s3p^3$	$g^3P - {}^1P^\circ$	0 – 1		549
	50	513.91	.7639 – 195.356	$3s^23p^2 - 3s3p^3$	$g^3P - {}^1P^\circ$	1 – 1		549
	25	517.25	2.0292 – 195.356	$3s^23p^2 - 3s3p^3$	$g^3P - {}^1P^\circ$	2 – 1		549
3	150	522.09	0. – 191.537	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3S^\circ$	0 – 1		549
3	250	524.19	.7639 – 191.537	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3S^\circ$	1 – 1		549
3	300	527.69	2.0292 – 191.537	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3S^\circ$	2 – 1		549
	400	536.75	37.9125 – 224.216	$3s^23p^2 - 3s^23p(^2P^\circ)3d$	${}^1S - {}^3D^\circ$	0 – 1	Q	059,375
7	250	558.48	16.2994 – 195.356	$3s^23p^2 - 3s3p^3$	${}^1D - {}^1P^\circ$	2 – 1		549
	80	570.61	16.2994 – 191.537	$3s^23p^2 - 3s3p^3$	${}^1D - {}^3S^\circ$	2 – 1		707,213
	150	635.12	37.9125 – 195.356	$3s^23p^2 - 3s3p^3$	${}^1S - {}^1P^\circ$	0 – 1		707,213
2	150	705.35	0. – 141.773	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P^\circ$	0 – 1		549
2	250	709.20	.7639 – 141.764	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P^\circ$	1 – 2		549
2	200	715.60	2.0292 – 141.773	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P^\circ$	2 – 1		549
2	150	715.65	2.0292 – 141.764	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P^\circ$	2 – 2		549
	100	725.11	16.2994 – 154.21	$3s^23p^2 - 3s3p^3$	${}^1D - {}^1D^\circ$	2 – 2		707,213
1	200	822.161	0. – 121.632	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D^\circ$	0 – 1		197,549
1	250	827.052	.7639 – 121.678	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D^\circ$	1 – 2		197,549
1	150	827.35	.7639 – 121.632	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D^\circ$	1 – 1		549
1	200	834.88	2.0292 – 121.81	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D^\circ$	2 – 3		549
1	50	835.79	2.0292 – 121.678	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D^\circ$	2 – 2		549
1	100	836.13	2.0292 – 121.632	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D^\circ$	2 – 1		549

ARGON VI (Ar^{5+}), Z = 18
Ground State $1s^22s^22p^63s^23p(^2P^\circ_{1/2})$ (13 electrons)
Ionization Potential 734 040 cm^{-1}; 91.010 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	80	180.07	0.0 – 555.33	$3s^2(^1S)3p - 3s^2(^1S)5d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		549
	120	180.72	2.2075 – 555.555	$3s^2(^1S)3p - 3s^2(^1S)5d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		549
	120	219.90	0.0 – 454.76	$3s^2(^1S)3p - 3s^2(^1S)4d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		549
	200	220.95	2.2075 – 454.81	$3s^2(^1S)3p - 3s^2(^1S)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		549
	120	281.43	100.959 – 456.280	$3s3p^2 - 3s3p(^3P^\circ)4s$	${}^4P - {}^4P^\circ$	$\frac{3}{2} - \frac{5}{2}$		549
	160	281.92	100.157 – 454.867	$3s3p^2 - 3s3p(^3P^\circ)4s$	${}^4P - {}^4P^\circ$	$\frac{1}{2} - \frac{3}{2}$		549
	240	282.42	102.191 – 456.280	$3s3p^2 - 3s3p(^3P^\circ)4s$	${}^4P - {}^4P^\circ$	$\frac{5}{2} - \frac{5}{2}$		549
	40	282.56	100.959 – 454.867	$3s3p^2 - 3s3p(^3P^\circ)4s$	${}^4P - {}^4P^\circ$	$\frac{3}{2} - \frac{3}{2}$		549
	120	283.16	100.959 – 454.116	$3s3p^2 - 3s3p(^3P^\circ)4s$	${}^4P - {}^4P^\circ$	$\frac{3}{2} - \frac{1}{2}$		549
	200	292.15	0.0 – 342.286	$3s^2(^1S)3p - 3s^2(^1S)4s$	$g^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		549
	240	294.05	2.2075 – 342.286	$3s^2(^1S)3p - 3s^2(^1S)4s$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		549
	80	455.81	100.157 – 319.547	$3s3p^2 - 3s3p(^3P^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{1}{2} - \frac{3}{2}$		549
	120	456.38	100.157 – 319.280	$3s3p^2 - 3s3p(^3P^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{1}{2} - \frac{1}{2}$		549
	200	457.01	100.959 – 319.772	$3s3p^2 - 3s3p(^3P^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{3}{2} - \frac{5}{2}$		549
	800	457.48	0.0 – 218.592	$3s^2(^1S)3p - 3s^2(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		549
	40	458.04	100.959 – 319.280	$3s3p^2 - 3s3p(^3P^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{3}{2} - \frac{1}{2}$		549
	400	459.32	102.191 – 319.904	$3s3p^2 - 3s3p(^3P^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{5}{2} - \frac{7}{2}$		549
	100	459.60	102.191 – 319.772	$3s3p^2 - 3s3p(^3P^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{5}{2} - \frac{5}{2}$		549

AR VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	40	460.06	102.191 – 319.547	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{3}{2}$		549
	40	460.20	100.157 – 317.455	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$		549
	300	461.23	100.157 – 316.972	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		549
	40	461.90	100.959 – 317.455	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		549
	1000	462.007	2.2075 – 218.657	$3s^2(^1S)3p - 3s^2(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		197,549
	160	462.15	2.2075 – 218.592	$3s^2(^1S)3p - 3s^2(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		549
	160	464.26	100.959 – 316.356	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		549
	80	465.59	102.191 – 316.972	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		549
	160	466.93	102.191 – 316.356	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		549
	160	544.73	0.0 – 183.577	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		549
	200	548.91	0.0 – 182.182	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		549
	320	551.37	2.2075 – 183.577	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		549
	160	555.64	2.2075 – 182.182	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		549
	40	587.01	100.157 – 270.513	$3s3p^2 - 3p^3$	$^4P - {}^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		549
	200	588.92	0.0 – 169.801	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		549
	80	589.78	100.959 – 270.513	$3s3p^2 - 3p^3$	$^4P - {}^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		549
	100	594.10	102.191 – 270.513	$3s3p^2 - 3p^3$	$^4P - {}^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		549
	160	596.69	2.2075 – 169.801	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		549,252
	100	754.93	0.0 – 132.463	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		252
	200	767.06	2.2075 – 132.578	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		252
	100	767.71	2.2075 – 132.463	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		252
	30	998.43	0.0 – 100.157	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{1}{2}$		213
	40	1000.16	2.2075 – 102.191	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		213
	10	1012.67	2.2075 – 100.959	$3s^2(^1S)3p - 3s3p^2$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		213

ARGON VII (Ar^{6+}), Z = 18
Ground State $1s^22s^22p^63s^2(^1S_0)$ (12 electrons)
Ionization Potential 1 002 730 cm^{-1}; 124.324 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	151.70	112.119+E – 771.324+E	$3s(^2S)3p - 3s(^2S)5d$	$^3P^\circ - {}^3D$	0 – 1		549
	100	151.88	112.924+E – 771.349+E	$3s(^2S)3p - 3s(^2S)5d$	$^3P^\circ - {}^3D$	1 – 2		549
	150	152.26	114.605+E – 771.379+E	$3s(^2S)3p - 3s(^2S)5d$	$^3P^\circ - {}^3D$	2 – 3		549
	500	176.57	0.0 – 566.362	$3s^2 - 3s(^2S)4p$	$g^1S - {}^1P^\circ$	0 – 1		549
	150	191.76	112.119+E – 633.608+E	$3s(^2S)3p - 3s(^2S)4d$	$^3P^\circ - {}^3D$	0 – 1		549
	250	192.04	112.924+E – 633.646+E	$3s(^2S)3p - 3s(^2S)4d$	$^3P^\circ - {}^3D$	1 – 2		549
	350	192.64	114.605+E – 633.721+E	$3s(^2S)3p - 3s(^2S)4d$	$^3P^\circ - {}^3D$	2 – 3		549
	100	249.38	112.119+E – 513.107+E	$3s(^2S)3p - 3s(^2S)4s$	$^3P^\circ - {}^3S$	0 – 1		549
	250	249.886	112.924+E – 513.107+E	$3s(^2S)3p - 3s(^2S)4s$	$^3P^\circ - {}^3S$	1 – 1		197,549
	350	250.940	114.605+E – 513.107+E	$3s(^2S)3p - 3s(^2S)4s$	$^3P^\circ - {}^3S$	2 – 1		197,549
	150	297.62	323.117+E – 659.116+E	$3s(^2S)3d - 3s(^2S)4f$	$^3D - {}^3F^\circ$	1 – 2		549
	200	297.66	323.160+E – 659.116+E	$3s(^2S)3d - 3s(^2S)4f$	$^3D - {}^3F^\circ$	2 – 3		549
	300	297.70	323.208+E – 659.116+E	$3s(^2S)3d - 3s(^2S)4f$	$^3D - {}^3F^\circ$	3 – 4		549
	200	473.938	112.119+E – 323.117+E	$3s(^2S)3p - 3s(^2S)3d$	$^3P^\circ - {}^3D$	0 – 1		197,549
	400	475.656	112.924+E – 323.160+E	$3s(^2S)3p - 3s(^2S)3d$	$^3P^\circ - {}^3D$	1 – 2		197,549
	100	475.73	112.924+E – 323.117+E	$3s(^2S)3p - 3s(^2S)3d$	$^3P^\circ - {}^3D$	1 – 1		549
	600	479.379	114.605+E – 323.208+E	$3s(^2S)3p - 3s(^2S)3d$	$^3P^\circ - {}^3D$	2 – 3		197,549
	100	479.49	114.605+E – 323.160+E	$3s(^2S)3p - 3s(^2S)3d$	$^3P^\circ - {}^3D$	2 – 2		549

AR VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	120	501.07	170.72 – 370.293	$3s(^2S)3p - 3s(^2S)3d$	${}^1P^o - {}^1D$	1 – 2		220,707
	750	585.75	0.0 – 170.72	$3s^2 - 3s(^2S)3p$	$g^1S - {}^1P^o$	0 – 1		549
	100	630.31	112.924+E – 271.578+E	$3s(^2S)3p - 3p^2$	${}^3P^o - {}^3P$	1 – 2		549
	100	634.21	112.119+E – 269.794+E	$3s(^2S)3p - 3p^2$	${}^3P^o - {}^3P$	0 – 1		549
	200	637.05	114.605+E – 271.578+E	$3s(^2S)3p - 3p^2$	${}^3P^o - {}^3P$	2 – 2		549
	50	637.47	112.924+E – 269.794+E	$3s(^2S)3p - 3p^2$	${}^3P^o - {}^3P$	1 – 1		549
	100	641.32	112.924+E – 268.853+E	$3s(^2S)3p - 3p^2$	${}^3P^o - {}^3P$	1 – 0		549
	100	644.39	114.605+E – 269.794+E	$3s(^2S)3p - 3p^2$	${}^3P^o - {}^3P$	2 – 1		549
		885.55	0.0 – 112.924+E	$3s^2 - 3s(^2S)3p$	$g^1S - {}^3P^o$	0 – 1	P	375
		1063.55	170.72 – 264.745	$3s(^2S)3p - 3p^2$	${}^1P^o - {}^1D$	1 – 2		220

ARGON VIII (Ar^{7+}), Z = 18
Ground State $1s^22s^22p^63s(^2S_{1/2})$ (11 electrons)
Ionization Potential 1 157 056 cm^{-1}; 143.458 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	120.09	0.0 – 832.720	$2p^63s - 2p^65p$	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{3}{2}$		549
	50	120.16	0.0 – 832.270	$2p^63s - 2p^65p$	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{1}{2}$		549
	10	122.62	140.0929 – 955.62	$2p^63p - 2p^66d$	${}^2P^o - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		549
	50	123.03	142.8072 – 955.62	$2p^63p - 2p^66d$	${}^2P^o - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		549
	150	137.93	140.0929 – 865.098	$2p^63p - 2p^65d$	${}^2P^o - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		549
	250	138.44	142.8072 – 865.143	$2p^63p - 2p^65d$	${}^2P^o - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		549
	100	148.73	140.0929 – 812.461	$2p^63p - 2p^65s$	${}^2P^o - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		549
	150	149.33	142.8072 – 812.461	$2p^63p - 2p^65s$	${}^2P^o - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		549
	400	158.92	0.0 – 629.269	$2p^63s - 2p^64p$	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{3}{2}$		549
	250	159.18	0.0 – 628.272	$2p^63s - 2p^64p$	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{1}{2}$		549
	500	179.40	140.0929 – 697.507	$2p^63p - 2p^64d$	${}^2P^o - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		549
	750	180.25	142.8072 – 697.592	$2p^63p - 2p^64d$	${}^2P^o - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		549
	150	184.27	332.608 – 875.295	$2p^63d - 2p^65f$	${}^2D - {}^2F^o$	$\frac{3}{2} - \frac{5}{2}$		549
	250	184.32	332.759 – 875.330	$2p^63d - 2p^65f$	${}^2D - {}^2F^o$	$\frac{5}{2} - \frac{7}{2}$		549
		200.03	332.759 – 832.720	$2p^63d - 2p^65p$	${}^2D - {}^2P^o$	$\frac{5}{2} - \frac{3}{2}$		847
		200.13	332.608 – 832.270	$2p^63d - 2p^65p$	${}^2D - {}^2P^o$	$\frac{3}{2} - \frac{1}{2}$		847
	250	229.44	140.0929 – 575.942	$2p^63p - 2p^64s$	${}^2P^o - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		549
	350	230.88	142.8072 – 575.942	$2p^63p - 2p^64s$	${}^2P^o - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		549
	200	260.25	332.608 – 716.850	$2p^63d - 2p^64f$	${}^2D - {}^2F^o$	$\frac{3}{2} - \frac{5}{2}$		549
	300	260.33	332.759 – 716.884	$2p^63d - 2p^64f$	${}^2D - {}^2F^o$	$\frac{5}{2} - \frac{7}{2}$		549
	100	337.26	332.759 – 629.269	$2p^63d - 2p^64p$	${}^2D - {}^2P^o$	$\frac{5}{2} - \frac{3}{2}$		549
	10	338.22	332.608 – 628.272	$2p^63d - 2p^64p$	${}^2D - {}^2P^o$	$\frac{3}{2} - \frac{1}{2}$		549
		389.43	575.942 – 832.720	$2p^64s - 2p^65p$	${}^2S - {}^2P^o$	$\frac{1}{2} - \frac{3}{2}$		847
		390.12	575.942 – 832.270	$2p^64s - 2p^65p$	${}^2S - {}^2P^o$	$\frac{1}{2} - \frac{1}{2}$		847
	150	519.43	140.0929 – 332.608	$2p^63p - 2p^63d$	${}^2P^o - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		549
	250	526.46	142.8072 – 332.759	$2p^63p - 2p^63d$	${}^2P^o - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		549
	50	526.87	142.8072 – 332.608	$2p^63p - 2p^63d$	${}^2P^o - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		549
		562.46	697.507 – 875.295	$2p^64d - 2p^65f$	${}^2D - {}^2F^o$	$\frac{3}{2} - \frac{5}{2}$		847
		562.61	697.592 – 875.330	$2p^64d - 2p^65f$	${}^2D - {}^2F^o$	$\frac{5}{2} - \frac{7}{2}$		847
	1000	700.245	0.0 – 142.8072	$2p^63s - 2p^63p$	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{3}{2}$		753,252
	500	713.812	0.0 – 140.0929	$2p^63s - 2p^63p$	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{1}{2}$		753,252
		740.0	697.592 – 832.720	$2p^64d - 2p^65p$	${}^2D - {}^2P^o$	$\frac{5}{2} - \frac{3}{2}$	P	375,847
		742.0	697.507 – 832.270	$2p^64d - 2p^65p$	${}^2D - {}^2P^o$	$\frac{3}{2} - \frac{1}{2}$	P	375,847

ARGON IX (Ar^{8+}), Z = 18
Ground State $1s^22s^22p^6(^1S_0)$ (10 electrons)
Ionization Potential 3 407 300 cm^{-1}; 422.45 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	600	31.52	0.0 – 3172.59	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})6d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		255
	700	31.66	0.0 – 3158.56	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})6d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		255
	400	32.64	0.0 – 3063.73	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})5d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		255
	700	35.02	0.0 – 2855.51	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})4d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		255
	300	35.28	0.0 – 2834.47	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		255
	500	35.82	0.0 – 2791.74	$2s^22p^6 - 2s2p^6(^2S)3p$	$g\,^1S - {}^1P^\circ$	0 – 1		259,255
	150	36.78	0.0 – 2718.9	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})4s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	Q	248,807
	100	36.96	0.0 – 2705.6	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4s$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	Q	248,807
	600	41.48	0.0 – 2410.8	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})3d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		255
	200	42.02	0.0 – 2379.82	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		255
	200	42.56	0.0 – 2349.62	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3d$	$g\,^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		255
	500	48.73	0.0 – 2052.12	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})3s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		549
	500	49.18	0.0 – 2033.35	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3s$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		549

ARGON X (Ar^{9+}), Z = 18
Ground State $1s^22s^22p^5(^2P^\circ_{3/2})$ (9 electrons)
Ionization Potential 3 860 900 cm^{-1}; 478.69 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	29.1	0.0 – 3436.0	$2s^22p^5 - 2s^22p^4(^1D)5d$	$g\,^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		248
	50	29.2	18.11 – 3443.1	$2s^22p^5 - 2s^22p^4(^1D)5d$	$g\,^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		248
	150	30.96	0.0 – 3230.0	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g\,^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		248
	100	31.08	18.11 – 3235.6	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g\,^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		248
	320	32.45	0.0 – 3081.7	$2s^22p^5 - 2s2p^5(^3P^\circ)3p$	$g\,^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		132
	50	32.55	0.0 – 3072.2	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g\,^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		248
	200	32.61	0.0 – 3066.5	$2s^22p^5 - 2s2p^5(^3P^\circ)3p$	$g\,^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		132
	50	32.74	18.11 – 3072.2	$2s^22p^5 - 2s^22p^4(^3P)4s$	$g\,^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		248
	100	36.56	0.0 – 2735.8	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g\,^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	Q	248,375
	150	36.78	18.11 – 2737.6	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g\,^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		248
	50	37.10						248
	250	37.43	0.0 – 2671.2	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g\,^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		248
	200	37.60	18.11 – 2677.1	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g\,^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		248
	150	38.23	0.0 – 2615.7	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g\,^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		248
	500	38.40	0.0 – 2603.	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g\,^2P^\circ - {}^2F$	$\frac{3}{2} - \frac{5}{2}$	Q	255,375
	420	38.51	18.11 – 2614.4	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g\,^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		132
	700	38.64	18.11 – 2605.4	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g\,^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$	Q	255,374
	500	38.88	18.11 – 2591.1	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g\,^2P^\circ - {}^4P$	$\frac{1}{2} - \frac{1}{2}$	Q	255,374
	200	41.57	0.0 – 2405.6	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g\,^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		248
	100	41.89	18.11 – 2405.6	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g\,^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		248
	250	42.94	0.0 – 2328.8	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g\,^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		248
	150	43.27	18.11 – 2329.2	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g\,^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		248
	350	43.69	0.0 – 2288.7	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g\,^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		248
	450	43.92	0.0 – 2276.9	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g\,^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		248
	350	44.05	18.11 – 2288.7	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g\,^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		248
	450	44.27	18.11 – 2276.9	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g\,^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		248
	450	44.45	0.0 – 2249.7	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g\,^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		248
	400	44.63	18.11 – 2258.9	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g\,^2P^\circ - {}^4P$	$\frac{1}{2} - \frac{3}{2}$		248
	300	44.84	604.13 – 2833.7	$2s2p^6 - 2s2p^5(^3P^\circ)3s$	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		248
	350	45.03	604.13 – 2823.8	$2s2p^6 - 2s2p^5(^3P^\circ)3s$	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		248

AR X — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	400	165.53	0.0 – 604.13	$2s^22p^5 - 2s2p^6$	$g^2P^o - ^2S$	$\frac{3}{2}-\frac{1}{2}$		160,255
	200	170.63	18.11 – 604.13	$2s^22p^5 - 2s2p^6$	$g^2P^o - ^2S$	$\frac{1}{2}-\frac{1}{2}$		160,255

ARGON XI (Ar^{10+}), Z = 18
Ground State $1s^22s^22p^4(^3P_2)$ (8 electrons)
Ionization Potential 4 347 000 cm^{-1}; 538.96 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	150	29.57	14.456 – 3396.3	$2s^22p^4 - 2s2p^4(^4S^o)3p$	$g^3P - ^3S^o$	1 – 1		255,132
	150	30.40	0.0 – 3289.5	$2s^22p^4 - 2s2p^4(^4S^o)3p$	$g^3P - ^3P^o$	2 – 2		132
	200	31.10	148.439+E – 3363.83+E	$2s^22p^4 - 2s2p^4(^2P^o)3p$	$^1S - ^1P^o$	0 – 1		132
	300	31.36	148.439+E – 3337.23+E	$2s^22p^4 - 2s2p^4(^2D^o)3p$	$^1S - ^1P^o$	0 – 1		132
	100	33.53	0.0 – 2979.0	$2s^22p^4 - 2s^22p^3(^2P^o)3d$	$g^3P - ^3D^o$	2 – 1	Q	248
	300	33.65	0.0 – 2971.8	$2s^22p^4 - 2s^22p^3(^2P^o)3d$	$g^3P - ^3D^o$	2 – 3		248
		33.73	14.456 – 2979.0	$2s^22p^4 - 2s^22p^3(^2P^o)3d$	$g^3P - ^3D^o$	1 – 1	P	947
		33.78	18.274 – 2979.0	$2s^22p^4 - 2s^22p^3(^2P^o)3d$	$g^3P - ^3D^o$	0 – 1	P	947
	200	33.84	14.456 – 2969.5	$2s^22p^4 - 2s^22p^3(^2P^o)3d$	$g^3P - ^3D^o$	1 – 2		248
		33.88	14.456 – 2965.33+E	$2s^22p^4 - 2s^22p^3(^2P^o)3d$	$g^3P - ^1D^o$	1 – 2	P	947
	100	33.96	71.833+E – 3015.43+E	$2s^22p^4 - 2s^22p^3(^2P^o)3d$	$^1D - ^1P^o$	2 – 1		248
	100	34.10	0.0 – 2932.6	$2s^22p^4 - 2s^22p^3(^2D^o)3d$	$g^3P - ^3S^o$	2 – 1		248
	150	34.24	0.0 – 2920.6	$2s^22p^4 - 2s^22p^3(^2D^o)3d$	$g^3P - ^3P^o$	2 – 2		248
	300	34.33	0.0 – 2912.9	$2s^22p^4 - 2s^22p^3(^2D^o)3d$	$g^3P - ^3D^o$	2 – 3		248
	480	34.35	71.833+E – 2984.73+E	$2s^22p^4 - 2s^22p^3(^2P^o)3d$	$^1D - ^1F^o$	2 – 3		132
	100	34.52	14.456 – 2911.3	$2s^22p^4 - 2s^22p^3(^2D^o)3d$	$g^3P - ^3D^o$	1 – 2		248
	500	34.80	71.833+E – 2945.43+E	$2s^22p^4 - 2s^22p^3(^2D^o)3d$	$^1D - ^1F^o$	2 – 3		248,834
	40	34.88	148.439+E – 3015.43+E	$2s^22p^4 - 2s^22p^3(^2P^o)3d$	$^1S - ^1P^o$	0 – 1		947
	100	35.07	71.833+E – 2923.23+E	$2s^22p^4 - 2s^22p^3(^2D^o)3d$	$^1D - ^1D^o$	2 – 2		248
	200	35.37	0.0 – 2827.3	$2s^22p^4 - 2s^22p^3(^4S^o)3d$	$g^3P - ^3D^o$	2 – 3		248
	150	35.58	14.456 – 2825.0	$2s^22p^4 - 2s^22p^3(^4S^o)3d$	$g^3P - ^3D^o$	1 – 2		248
	100	35.70	18.274 – 2819.4	$2s^22p^4 - 2s^22p^3(^4S^o)3d$	$g^3P - ^3D^o$	0 – 1		248
	200	36.16	148.439+E – 2911.7	$2s^22p^4 - 2s^22p^3(^2D^o)3d$	$^1S - ^3D^o$	0 – 1	Q	248,375
	200	36.31	148.439+E – 2902.63+E	$2s^22p^4 - 2s^22p^3(^2D^o)3d$	$^1S - ^1P^o$	0 – 1		248
	150	37.79	0.0 – 2644.8	$2s^22p^4 - 2s^22p^3(^2P^o)3s$	$g^3P - ^3P^o$	2 – 2	Q	248,834
	150	38.00	14.456 – 2644.8	$2s^22p^4 - 2s^22p^3(^2P^o)3s$	$g^3P - ^3P^o$	1 – 2		248
	380	38.33	71.833+E – 2680.73+E	$2s^22p^4 - 2s^22p^3(^2P^o)3s$	$^1D - ^1P^o$	2 – 1		132
	400	38.62	0.0 – 2589.3	$2s^22p^4 - 2s^22p^3(^2D^o)3s$	$g^3P - ^3D^o$	2 – 3		248
	300	38.79	14.456 – 2592.5	$2s^22p^4 - 2s^22p^3(^2D^o)3s$	$g^3P - ^3D^o$	1 – 2		248
	250	38.87	18.274 – 2589.	$2s^22p^4 - 2s^22p^3(^2D^o)3s$	$g^3P - ^3D^o$	0 – 1		248
	300	39.49	71.833+E – 2604.13+E	$2s^22p^4 - 2s^22p^3(^2D^o)3s$	$^1D - ^1D^o$	2 – 2		248
	300	39.64	71.833+E – 2592.5	$2s^22p^4 - 2s^22p^3(^2D^o)3s$	$^1D - ^3D^o$	2 – 2	Q	248,375
	150	39.79						248
	150	39.98	14.456 – 2517.8	$2s^22p^4 - 2s^22p^3(^4S^o)3s$	$g^3P - ^3S^o$	1 – 1		248
	100	40.02	18.274 – 2517.8	$2s^22p^4 - 2s^22p^3(^4S^o)3s$	$g^3P - ^3S^o$	0 – 1		248
	250	40.04						248
		40.19	0.0 – 2488.5+K	$2s^22p^4 - 2s^22p^3(^4S^o)3s$	$g^3P - ^5S^o$	2 – 2	P	680
	50	40.42	14.456 – 2488.5+K	$2s^22p^4 - 2s^22p^3(^4S^o)3s$	$g^3P - ^5S^o$	1 – 2		248,680
		151.86	71.833+E – 730.33+E	$2s^22p^4 - 2s2p^5$	$^1D - ^1P^o$	2 – 1		160
		184.51	0.0 – 541.96	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^o$	2 – 1		160
		187.08	14.456 – 548.99	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^o$	1 – 0		160
		188.82	0.0 – 529.63	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^o$	2 – 2		160

AR XI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		189.57	14.456 – 541.96	$2s^22p^4 - 2s2p^5$	g^{3}P – ^{3}P°	1 – 1		160
		190.96	18.274 – 541.96	$2s^22p^4 - 2s2p^5$	g^{3}P – ^{3}P°	0 – 1		160
		194.09	14.456 – 529.63	$2s^22p^4 - 2s2p^5$	g^{3}P – ^{3}P°	1 – 2		160
		674.	0.0 – 148.439+E	$2s^22p^4 - 2s^22p^4$	g^{3}P – ^{1}S	2 – 0	F,P	375,225
		746.	14.456 – 148.439+E	$2s^22p^4 - 2s^22p^4$	g^{3}P – ^{1}S	1 – 0	F,P	375,225
		1305.	71.8329 – 148.439+E	$2s^22p^4 - 2s^22p^4$	^{1}D – ^{1}S	2 – 0	F,P	375,225
	0	1392.12	0.0 – 71.8329	$2s^22p^4 - 2s^22p^4$	g^{3}P – ^{1}D	2 – 2	F	940
		1743.	14.456 – 71.8329	$2s^22p^4 - 2s^22p^4$	g^{3}P – ^{1}D	1 – 2	F,P	375,940
		1867.	18.274 – 71.8329	$2s^22p^4 - 2s^22p^4$	g^{3}P – ^{1}D	0 – 2	F,P	375,940

ARGON XII (Ar^{11+}), Z = 18
Ground State $1s^22s^22p^3(^4S^\circ_{3/2})$ (7 electrons)
Ionization Potential 4 986 600 cm^{-1}; 618.26 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	25.04	0.0 – 3993.6	$2s^22p^3 - 2s^22p^2(^3P)4d$	g^{4}S° – ^{4}P	$\frac{3}{2}-\frac{5}{2}$		852
	100	25.19						248
	100	25.24						248
	100	28.05	153.854+E – 3718.95+E	$2s^22p^3 - 2s2p^3(^4P^\circ)3p$	^{2}P° – ^{2}P	$\frac{3}{2}-\frac{3}{2}$		132
	50	30.58	0.0 – 3270.1	$2s^22p^3 - 2s2p^3(^5S^\circ)3p$	g^{4}S° – ^{4}P	$\frac{3}{2}-\frac{5}{2}$		852
	150	30.65	94.586+E – 3355.9+E	$2s^22p^3 - 2s^22p^2(^1S)3d$	^{2}D° – ^{2}D	$\frac{3}{2}-\frac{3}{2}$		132
	50	31.18	148.992+E – 3355.9+E	$2s^22p^3 - 2s^22p^2(^1S)3d$	^{2}P° – ^{2}D	$\frac{1}{2}-\frac{3}{2}$	Q	248,375
	350	31.347	0.0 – 3190.1	$2s^22p^3 - 2s^22p^2(^3P)3d$	g^{4}S° – ^{4}P	$\frac{3}{2}-\frac{3}{2}$		852
	500	31.388	0.0 – 3185.8	$2s^22p^3 - 2s^22p^2(^3P)3d$	g^{4}S° – ^{4}P	$\frac{3}{2}-\frac{5}{2}$		852
	100	31.458	97.922+E – 3276.3+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	^{2}D° – ^{2}P	$\frac{5}{2}-\frac{3}{2}$		852
	50	31.483	94.586+E – 3270.9+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	^{2}D° – ^{2}P	$\frac{3}{2}-\frac{1}{2}$		852
	100	31.55	94.586+E – 3264.3+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	^{2}D° – ^{2}F	$\frac{3}{2}-\frac{5}{2}$		248,680
	600	31.643	97.922+E – 3257.9+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	^{2}D° – ^{2}F	$\frac{5}{2}-\frac{7}{2}$		852
	350	31.66	97.922+E – 3256.9+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	^{2}D° – ^{2}D	$\frac{5}{2}-\frac{5}{2}$		132,375
	100	31.962	97.922+E – 3226.4+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	^{2}D° – ^{2}D	$\frac{5}{2}-\frac{5}{2}$		852
	50	31.984	94.586+E – 3220.7+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	^{2}D° – ^{2}D	$\frac{3}{2}-\frac{3}{2}$		852
	10	32.027	153.854+E – 3276.3+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	^{2}P° – ^{2}P	$\frac{3}{2}-\frac{3}{2}$		852
	100	32.147	153.854+E – 3264.3+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	^{2}P° – ^{2}F	$\frac{3}{2}-\frac{5}{2}$		852
	50	32.20	153.854+E – 3256.9+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	^{2}P° – ^{2}D	$\frac{3}{2}-\frac{5}{2}$		248
	200	32.25	148.992+E – 3251.3+E	$2s^22p^3 - 2s^22p^2(^1D)3d$	^{2}P° – ^{2}D	$\frac{1}{2}-\frac{3}{2}$		132,375
	100	32.344	97.922+E – 3189.5+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	^{2}D° – ^{2}F	$\frac{5}{2}-\frac{7}{2}$		852
	50	32.459	94.586+E – 3174.9+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	^{2}D° – ^{2}F	$\frac{3}{2}-\frac{5}{2}$		852
	100	32.546	153.854+E – 3226.4+E	$2s^22p^3 - 2s^22p^2(^3P)3d$	^{2}P° – ^{2}D	$\frac{3}{2}-\frac{5}{2}$		852
	100	32.74	97.922+E – 3152.5	$2s^22p^3 - 2s^22p^2(^3P)3d$	^{2}D° – ^{4}F	$\frac{5}{2}-\frac{7}{2}$	Q	248,375
	250	34.67	0.0 – 2884.3	$2s^22p^3 - 2s^22p^2(^3P)3s$	g^{4}S° – ^{4}P	$\frac{3}{2}-\frac{5}{2}$		852
	150	34.78	0.0 – 2875.2	$2s^22p^3 - 2s^22p^2(^3P)3s$	g^{4}S° – ^{4}P	$\frac{3}{2}-\frac{3}{2}$		852
	50	34.88	0.0 – 2867.0	$2s^22p^3 - 2s^22p^2(^3P)3s$	g^{4}S° – ^{4}P	$\frac{3}{2}-\frac{1}{2}$		852
		35.0	97.922+E – 2955.5+E	$2s^22p^3 - 2s^22p^2(^1D)3s$	^{2}D° – ^{2}D	$\frac{5}{2}-\frac{5}{2}$	P	680
		35.54	97.922+E – 2911.75+E	$2s^22p^3 - 2s^22p^2(^3P)3s$	^{2}D° – ^{2}P	$\frac{5}{2}-\frac{3}{2}$	P	375
	220	35.68	94.586+E – 2897.8+E	$2s^22p^3 - 2s^22p^2(^3P)3s$	^{2}D° – ^{2}P	$\frac{3}{2}-\frac{1}{2}$		132
	100	35.96	94.586+E – 2875.2	$2s^22p^3 - 2s^22p^2(^3P)3s$	^{2}D° – ^{4}P	$\frac{3}{2}-\frac{3}{2}$	Q	248,375
	10	36.26	153.854+E – 2911.75+E	$2s^22p^3 - 2s^22p^2(^3P)3s$	^{2}P° – ^{2}P	$\frac{3}{2}-\frac{3}{2}$		852
	100	36.39	148.992+E – 2897.8+E	$2s^22p^3 - 2s^22p^2(^3P)3s$	^{2}P° – ^{2}P	$\frac{1}{2}-\frac{1}{2}$	P	680,248
	500	36.67	153.854+E – 2884.3	$2s^22p^3 - 2s^22p^2(^3P)3s$	^{2}P° – ^{4}P	$\frac{3}{2}-\frac{5}{2}$	Q	255,374
	200	39.30	458.106 – 3002.6	$2s2p^4 - 2s^22p^2(^3P)3p$	^{4}P – ^{4}D°	$\frac{3}{2}-\frac{5}{2}$	Q	248,375
	250	39.75	613.635+E – 3129.8+E	$2s2p^4 - 2s^22p^2(^1D)3p$	^{2}D – ^{2}P°	$\frac{3}{2}-\frac{1}{2}$	Q	248,375

AR XII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	41.08	614.238+E – 3046.9+E	$2s2p^4 - 2s^22p^2(^3P)3p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$	Q	248,375
	150	43.42	745.465+E – 3046.9+E	$2s2p^4 - 2s^22p^2(^3P)3p$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	Q	248,375
	150	44.79	761.564+E – 2995.1	$2s2p^4 - 2s^22p^2(^3P)3p$	$^2P - ^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$	Q	248,375
	50	45.38	97.922+E – 2301.5+E	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		248,255
	100	45.49	94.586+E – 2292.9+E	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		248
	150	46.53	153.854+E – 2301.5+E	$2s^22p^3 - 2s^22p^2(^1D)3s$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	Q	248,375
		149.93	94.586+E – 761.564+E	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		161
		153.63	94.586+E – 745.465+E	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		161
		154.43	97.922+E – 745.465+E	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		161
		163.23	148.992+E – 761.564+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		161
		164.51	153.854+E – 761.564+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		248
		167.62	148.992+E – 745.465+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		161
		169.00	153.854+E – 745.465+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		161
		176.62	148.992+E – 715.179+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		161
		178.15	153.854+E – 715.179+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		161
		192.66	94.586+E – 613.635+E	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		161
	30	193.68	97.922+E – 614.238+E	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		161,93
		215.49	0.0 – 464.059	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		161
		217.21	153.854+E – 614.238+E	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		161
		218.29	0.0 – 458.106	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		161
		224.25	0.0 – 445.931	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		161
		436.8	2911.75+E – 3140.7+E	$2s^22p^2(^3P)3s - 2s^22p^2(^1D)3p$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	P	680
		447.0	2897.8+E – 3121.5+E	$2s^22p^2(^3P)3s - 2s^22p^2(^1D)3p$	$^2P - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	680
	80	450.44	3035.9+E – 3257.9+E	$2s^22p^2(^3P)3p - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$	Q	707,375
	80	470.57	3140.7+E – 3353.2+E	$2s^22p^2(^1D)3p - 2s^22p^2(^1S)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	Q	707,375
		474.7	2911.75+E – 3122.4+E	$2s^22p^2(^3P)3s - 2s^22p^2(^1D)3p$	$^2P - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$	P	680
		538.2	2875.2 – 3061.0	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)3p$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$	P	680
		540.0	2955.5+E – 3140.7+E	$2s^22p^2(^1D)3s - 2s^22p^2(^1D)3p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$	P	680
		542.0	2956.2+E – 3140.7+E	$2s^22p^2(^1D)3s - 2s^22p^2(^1D)3p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	P	680
		557.1	3046.9+E – 3226.4+E	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	680
		565.9	2884.3 – 3061.0	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)3p$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$	P	680
		567.9	3044.6+E – 3220.7+E	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	P	680
		576.0	2956.2+E – 3129.8+E	$2s^22p^2(^1D)3s - 2s^22p^2(^1D)3p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	P	680
		599.2	2955.5+E – 3122.4+E	$2s^22p^2(^1D)3s - 2s^22p^2(^1D)3p$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$	P	680
		605.0	2956.2+E – 3121.5+E	$2s^22p^2(^1D)3s - 2s^22p^2(^1D)3p$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$	P	680
		636.9	3081.6+E – 3238.6+E	$2s^22p^2(^1D)3p - 2s^22p^2(^1D)3d$	$^2F^\circ - ^2G$	$\frac{5}{2}-\frac{7}{2}$	P	680
		643.5	3015.0 – 3170.4	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)3d$	$^4P^\circ - ^4D$	$\frac{5}{2}-\frac{7}{2}$	P	680
		643.9	3085.0+E – 3240.3+E	$2s^22p^2(^1D)3p - 2s^22p^2(^1D)3d$	$^2F^\circ - ^2G$	$\frac{7}{2}-\frac{9}{2}$	P	680
		650.	0.0 – 153.854+E	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,161
	10	651.04	3035.9+E – 3189.5+E	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$	Q	707,680
		653.2	3021.8+E – 3174.9+E	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$	P	680
		659.2	3201.5+E – 3353.2+E	$2s^22p^2(^1S)3p - 2s^22p^2(^1S)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	680
		660.1	2995.1 – 3146.6	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)3d$	$^4D^\circ - ^4F$	$\frac{3}{2}-\frac{5}{2}$	P	680
		667.1	3002.6 – 3152.5	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)3d$	$^4D^\circ - ^4F$	$\frac{5}{2}-\frac{7}{2}$	P	680
		668.0	3010.7 – 3160.4	$2s^22p^2(^3P)3p - 2s^22p^2(^3P)3d$	$^4D^\circ - ^4F$	$\frac{7}{2}-\frac{9}{2}$	P	680
		671.	0.0 – 148.992+E	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	F,P	375,161
		690.1	3056.6+E – 3201.5+E	$2s^22p^2(^1S)3s - 2s^22p^2(^1S)3p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	680
		694.4	3056.6+E – 3200.6+E	$2s^22p^2(^1S)3s - 2s^22p^2(^1S)3p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	680
		745.2	2867.0 – 3001.2	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)3p$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	680
		765.1	2884.3 – 3015.0	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)3p$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$	P	680
		772.2	2955.5+E – 3085.0+E	$2s^22p^2(^1D)3s - 2s^22p^2(^1D)3p$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	680
		784.9	2875.2 – 3002.6	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)3p$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$	P	680
		791.1	2884.3 – 3010.7	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)3p$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	680
		834.0	2875.2 – 2995.1	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)3p$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$	P	680

AR XII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		855.4	2884.3 – 3001.2	$2s^22p^2(^3P)3s - 2s^22p^2(^3P)3p$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$	P	680
		1021.	0.0 – 97.922+E	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$	F,P	375,225
		1057.	0.0 – 94.586+E	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - {}^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,225
		1687.	94.586+E – 153.854+E	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,161
		1788.	97.922+E – 153.854+E	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$	F,P	375,161
		1838.	94.586+E – 148.992+E	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	F,P	375,161
		1958.	97.922+E – 148.992+E	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - {}^2P^\circ$	$\frac{5}{2}-\frac{1}{2}$	F,P	375,161

ARGON XIII (Ar^{12+}), Z = 18
Ground State $1s^22s^22p^2(^3P_0)$ (6 electrons)
Ionization Potential 5 533 800 cm^{-1}; 686.11 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	23.03	21.893 – 4364.0	$2s^22p^2 - 2s^22p4d$	$g^3P - {}^3P^\circ$	2 – 2		132
	50	23.39	84.947+E – 4360.24+E	$2s^22p^2 - 2s^22p4d$	$^1D - {}^1D^\circ$	2 – 2		132
	200	23.57	9.845 – 4252.6	$2s^22p^2 - 2s^22p4s$	$g^3P - {}^3P^\circ$	1 – 2		132
	50	23.93	162.056+E – 4341.04+E	$2s^22p^2 - 2s^22p4d$	$^1S - {}^1P^\circ$	0 – 1		132
	80	24.61	162.056+E – 4225.54+E	$2s^22p^2 - 2s^22p4s$	$^1S - {}^1P^\circ$	0 – 1		132
	100	26.30	9.845 – 3815.5	$2s^22p^2 - 2s2p^23p$	$g^3P - {}^3S^\circ$	1 – 1	Q	248,375
	110	26.36	21.893 – 3815.5	$2s^22p^2 - 2s2p^23p$	$g^3P - {}^3S^\circ$	2 – 1		132
	60	26.53	21.893 – 3791.2	$2s^22p^2 - 2s2p^23p$	$g^3P - {}^3P^\circ$	2 – 2		132
	40	26.72	21.893 – 3765.44+E	$2s^22p^2 - 2s2p^23p$	$g^3P - {}^1D^\circ$	2 – 2	Q	132,375
	40	26.82	84.947+E – 3813.54+E	$2s^22p^2 - 2s2p^23p$	$^1D - {}^1P^\circ$	2 – 1		132
	60	27.17	84.947+E – 3765.44+E	$2s^22p^2 - 2s2p^23p$	$^1D - {}^1D^\circ$	2 – 2		132
	100	27.60	21.893 – 3644.0	$2s^22p^2 - 2s2p^23p$	$g^3P - {}^3D^\circ$	2 – 3		132
	80	28.68	162.056+E – 3644.0	$2s^22p^2 - 2s2p^23p$	$^1S - {}^3D^\circ$	0 – 1		132
		29.016	21.893 – 3466.84+E	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^1P^\circ$	2 – 1		949
		29.191	9.845 – 3435.6	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3P^\circ$	1 – 0		949
	50	29.208	225.9+K – 3649.7+K	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^\circ - {}^5P$	2 – 2		852
		29.220	9.845 – 3432.5	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3P^\circ$	1 – 2		949
	50	29.249	225.9+K – 3644.92+K	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^\circ - {}^5P$	2 – 3		852
		29.304	21.893 – 3434.3	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3P^\circ$	2 – 1		949
	100	29.32	21.893 – 3432.5	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3P^\circ$	2 – 2		852
		29.352	9.845 – 3417.05	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3D^\circ$	1 – 2		949
	500	29.37	21.893 – 3426.7	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3D^\circ$	2 – 3		852
		29.403	9.845 – 3410.6	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3D^\circ$	1 – 1		949
		29.454	21.893 – 3417.05	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3D^\circ$	2 – 2		949
		29.534	9.845 – 3394.64+E	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^1D^\circ$	1 – 2		949
	250	29.565	84.947+E – 3467.34+E	$2s^22p^2 - 2s^22p3d$	$^1D - {}^1F^\circ$	2 – 3		852
		29.575	84.947+E – 3466.84+E	$2s^22p^2 - 2s^22p3d$	$^1D - {}^1P^\circ$	2 – 1		949
		29.639	21.893 – 3394.64+E	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^1D^\circ$	2 – 2		949
	50	29.689	21.893 – 3392.3	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3F^\circ$	2 – 3		949,248
		29.769	21.893 – 3381.3	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3F^\circ$	2 – 2		949
	50	29.873	84.947+E – 3432.5	$2s^22p^2 - 2s^22p3d$	$^1D - {}^3P^\circ$	2 – 2		949,248
		30.014	84.947+E – 3417.05	$2s^22p^2 - 2s^22p3d$	$^1D - {}^3D^\circ$	2 – 2		949
	200	30.06	84.947+E – 3410.6	$2s^22p^2 - 2s^22p3d$	$^1D - {}^3D^\circ$	2 – 1	Q	255,375
	50	30.214	84.947+E – 3394.64+E	$2s^22p^2 - 2s^22p3d$	$^1D - {}^1D^\circ$	2 – 2		852
	50	30.236	84.947+E – 3392.3	$2s^22p^2 - 2s^22p3d$	$^1D - {}^3F^\circ$	2 – 3		949,248
	10	30.260	162.056+E – 3466.84+E	$2s^22p^2 - 2s^22p3d$	$^1S - {}^1P^\circ$	0 – 1		852

AR XIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	30.350	84.947+E - 3381.3	$2s^22p^2 - 2s^22p3d$	${}^1D - {}^3F^\circ$	2 - 2		949,248
	50	30.77	162.056+E - 3410.6	$2s^22p^2 - 2s^22p3d$	${}^1S - {}^3D^\circ$	0 - 1		248
	50	30.84						248
		31.74	9.845 - 3160.20	$2s^22p^2 - 2s^22p3s$	$g^3P - {}^3P^\circ$	1 - 2	Q	375
	10	31.864	21.893 - 3160.20	$2s^22p^2 - 2s^22p3s$	$g^3P - {}^3P^\circ$	2 - 2		852
	10	32.34	84.947+E - 3177.04+E	$2s^22p^2 - 2s^22p3s$	${}^1D - {}^1P^\circ$	2 - 1		852
		159.08	0.0 - 628.62	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3S^\circ$	0 - 1		161
		161.61	9.845 - 628.62	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3S^\circ$	1 - 1		161
		162.96	84.947+E - 698.59+E	$2s^22p^2 - 2s2p^3$	${}^1D - {}^1P^\circ$	2 - 1		161
		164.82	21.893 - 628.62	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3S^\circ$	2 - 1	P	161
		184.90	84.947+E - 625.78+E	$2s^22p^2 - 2s2p^3$	${}^1D - {}^1D^\circ$	2 - 2		248
		186.38	162.056+E - 698.59+E	$2s^22p^2 - 2s2p^3$	${}^1S - {}^1P^\circ$	0 - 1		248
		201.69	0.0 - 495.814	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^\circ$	0 - 1		248
		205.24	9.845 - 497.040	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^\circ$	1 - 2		248
		205.77	9.845 - 495.814	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^\circ$	1 - 1		248
		205.94	9.845 - 495.460	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^\circ$	1 - 0		248
		210.46	21.893 - 497.040	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^\circ$	2 - 2		248
		211.00	21.893 - 495.814	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^\circ$	2 - 1		248
		236.27	0.0 - 423.24	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	0 - 1		248
		241.90	9.845 - 423.24	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	1 - 1		248
		242.22	9.845 - 422.72	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	1 - 2		248
		248.68	21.893 - 423.97	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	2 - 3		248
		249.46	21.893 - 422.72	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	2 - 2		248
		462.8	9.845 - 225.9+K	$2s^22p^2 - 2s2p^3$	$g^3P - {}^5S^\circ$	1 - 2	P	680
		490.2	21.893 - 225.9+K	$2s^22p^2 - 2s2p^3$	$g^3P - {}^5S^\circ$	2 - 2	P	680
		657.	9.845 - 162.056+E	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1S$	1 - 0	F,P	375,248
		713.	21.893 - 162.056+E	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1S$	2 - 0	F,P	375,248
		1177.	0.0 - 84.9473	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1D$	0 - 2	F,P	375,442
		1297.	84.9473 - 162.056+E	$2s^22p^2 - 2s^22p^2$	${}^1D - {}^1S$	2 - 0	F,P	375,248
		1331.52	9.845 - 84.9473	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1D$	1 - 2	F	442
		1586.	21.893 - 84.9473	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1D$	2 - 2	F,P	375,442

ARGON XIV (Ar^{13+}), Z = 18
Ground State $1s^22s^22p(^2P^\circ_{1/2})$ (5 electrons)
Ionization Potential 6 095 500 cm^{-1}; 755.75 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		4.058	22.657 - 24643.0	$1s^22s^22p - 1s2s^22p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		839
	100	21.17	22.657 - 4751.5	$2s^22p - 2s^24d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	Q	132
	60	25.42	0.0 - 3933.9	$2s^22p - 2s2p3p$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		132
	60	25.58	22.657 - 3933.9	$2s^22p - 2s2p3p$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		132
	50	27.22	411.2 - 4085.0	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		248
	200	27.42	554.66 - 4201.7	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2P - {}^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$		248
	300	27.47	0.0 - 3640.3	$2s^22p - 2s^23d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		248
	300	27.63	22.657 - 3642.0	$2s^22p - 2s^23d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		248
	150	28.32	554.66 - 4085.0	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2P - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$	Q	248,375
	150	29.49	22.657 - 3413.8	$2s^22p - 2s^23s$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		132
	50	29.90	545.23 - 3890.+U	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^2P - {}^2D^\circ$	$\frac{1}{2} - \frac{3}{2}$	Q	248,375
	50	33.03	554.66 - 3581.	$2s2p^2 - 2s^23p$	${}^2P - {}^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$	Q	248,375

AR XIV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		180.29	0.0 – 554.66	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		248
		183.41	0.0 – 545.23	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		248
		187.95	22.657 – 554.66	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		248
		191.35	22.657 – 545.23	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		248
		194.39	0.0 – 514.43	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		248
		203.35	22.657 – 514.43	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		248
		204.64	196.7+F – 685.36+F	$2s2p^2 - 2p^3$	${}^4P - {}^4S^\circ$	$\frac{1}{2} - \frac{3}{2}$		248
		208.31	205.31+F – 685.36+F	$2s2p^2 - 2p^3$	${}^4P - {}^4S^\circ$	$\frac{3}{2} - \frac{3}{2}$		248
		213.42	216.8+F – 685.36+F	$2s2p^2 - 2p^3$	${}^4P - {}^4S^\circ$	$\frac{5}{2} - \frac{3}{2}$		248
		243.74	0.0 – 410.273	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		248
		257.37	22.657 – 411.2	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		248
		257.98	22.657 – 410.273	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		248

ARGON XV (Ar^{14+}), Z = 18
Ground State $1s^22s^2({}^1S_0)$ (4 electrons)
Ionization Potential 6 894 200 cm^{-1}; 854.78 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	5	3.33	0.0 – 30030.	$1s^22s^2 - 1s2s^24p$	$g^1S - {}^1P^\circ$	0 – 1		559
	5	3.45	0.0 – 28986.	$1s^22s^2 - 1s2s^23p$	$g^1S - {}^1P^\circ$	0 – 1		559
	70	4.010	0.0 – 24938.	$1s^22s^2 - 1s2s^22p$	$g^1S - {}^1P^\circ$	0 – 1		559
	100	25.05	0.0 – 3992.	$1s^22s^2 - 1s^22s3p$	$g^1S - {}^1P^\circ$	0 – 1		132
	40	25.72	228.384+W – 4116.4+W	$1s^22s2p - 1s^22s3d$	${}^3P^\circ - {}^3D$	0 – 1		132
	60	25.84	235.843+W – 4105.8+W	$1s^22s2p - 1s^22s3d$	${}^3P^\circ - {}^3D$	1 – 2		132
	80	26.00	252.570+W – 4098.8+W	$1s^22s2p - 1s^22s3d$	${}^3P^\circ - {}^3D$	2 – 3		132
	120	27.41	452.180+W – 4100.5+W	$1s^22s2p - 1s^22s3d$	${}^1P^\circ - {}^1D$	1 – 2		132
	200	221.15	0.0 – 452.180+W	$1s^22s^2 - 1s^22s2p$	$g^1S - {}^1P^\circ$	0 – 1		443,730
	120	424.01	0.0 – 235.843+W	$1s^22s^2 - 1s^22s2p$	$g^1S - {}^3P^\circ$	0 – 1		443,730

ARGON XVI (Ar^{15+}), Z = 18
Ground State $1s^22s({}^2S_{1/2})$ (3 electrons)
Ionization Potential [7 404 400] cm^{-1}; [918.04] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	5	3.25	0.0 – 30769.	$1s^22s - 1s2s4p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		559
	5	3.268	282.55 – 30882.6	$1s^22p - 1s2p4p$	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		559
		3.392	0.0 – 29481.	$1s^22s - 1s2s3p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		839
	5	3.42	282.55 – 29450.	$1s^22p - 1s2p({}^3P^\circ)3p$	${}^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		559
	150	3.430	282.55 – 29435.	$1s^22p - 1s2p({}^3P^\circ)3p$	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		559
		3.961	256.98 – 25510.	$1s^22p - 1s2p^2$	${}^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$	P	629
		3.964	282.55 – 25510.	$1s^22p - 1s2p^2$	${}^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$	P	629
		3.967	0.0 – 25208.	$1s^22s - 1s(2s2p({}^1P^\circ))$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	629
		3.968	0.0 – 25202.	$1s^22s - 1s(2s2p({}^1P^\circ))$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	P	629
		3.981	0.0 – 25119.	$1s^22s - 1s(2s2p({}^3P^\circ))$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	629
		3.983	0.0 – 25107.	$1s^22s - 1s(2s2p({}^3P^\circ))$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	P	629
		3.985	282.55 – 25377.	$1s^22p - 1s2p^2$	${}^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$	P	629

AR XVI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	260	3.989	256.98 – 25326.	$1s^22p - 1s2p^2$	$^2P° - ^2D$	$\frac{1}{2}-\frac{3}{2}$		559
	260	3.992	282.55 – 25327.	$1s^22p - 1s2p^2$	$^2P° - ^2D$	$\frac{3}{2}-\frac{5}{2}$		559
		4.005	0.0 – 24969.	$1s^22s - 1s(2s2p(^3P°))$	$g^2S - ^4P°$	$\frac{1}{2}-\frac{3}{2}$	P	629
		4.010	256.98 – 25196.	$1s^22p - 1s2p^2$	$^2P° - ^4P$	$\frac{1}{2}-\frac{3}{2}$	P	629
		4.012	282.55 – 25208.	$1s^22p - 1s2p^2$	$^2P° - ^4P$	$\frac{3}{2}-\frac{5}{2}$	P	629
		4.014	282.55 – 25196.	$1s^22p - 1s2p^2$	$^2P° - ^4P$	$\frac{3}{2}-\frac{3}{2}$	P	629
		4.015	0.0 – 24907.	$1s^22s - 1s(2s2p(^3P°))$	$g^2S - ^4P°$	$\frac{1}{2}-\frac{1}{2}$	P	629
	300	353.92	0.0 – 282.55	$1s^22s - 1s^22p$	$g^2S - ^2P°$	$\frac{1}{2}-\frac{3}{2}$		730
	300	389.14	0.0 – 256.98	$1s^22s - 1s^22p$	$g^2S - ^2P°$	$\frac{1}{2}-\frac{1}{2}$		730

ARGON XVII (Ar^{16+}), Z = 18
Ground State $1s^2(^1S_0)$ (2 electrons)
Ionization Potential 33 236 800 cm^{-1}; 4120.87 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	5	3.095	0.0 – 32310.	$1s^2 - 1s6p$	$g^1S - ^1P°$	0 – 1		559
	5	3.128	0.0 – 31967.86	$1s^2 - 1s5p$	$g^1S - ^1P°$	0 – 1	P	559
	130	3.200	0.0 – 31254.28	$1s^2 - 1s4p$	$g^1S - ^1P°$	0 – 1	P	559
	190	3.365	0.0 – 29713.74	$1s^2 - 1s3p$	$g^1S - ^1P°$	0 – 1	P	559
		3.370	0.0 – 29678.06	$1s^2 - 1s3p$	$g^1S - ^3P°$	0 – 1	P	839
	1000	3.9488	0.0 – 25323.95	$1s^2 - 1s2p$	$g^1S - ^1P°$	0 – 1	P	559
	550	3.9691	0.0 – 25194.66	$1s^2 - 1s2p$	$g^1S - ^3P°$	0 – 1	P	559
	5	3.994	0.0 – 25038.23	$1s^2 - 1s2s$	$g^1S - ^3S$	0 – 1	F,P	375,856,918
		21.52	25038.23 – 29684.63	1s2s – 1s3p	$^3S - ^3P°$	1 – 2	P	375
	40	22.17	25202.48 – 29713.74	1s2s – 1s3p	$^1S - ^1P°$	0 – 1	P	132
		62.21	29634.85 – 31242.39	1s3s – 1s4p	$^3S - ^3P°$	1 – 2	P	375
		63.45	29678.21 – 31254.28	1s3s – 1s4p	$^1S - ^1P°$	0 – 1	P	375
		560.54	25038.23 – 25216.63	1s2s – 1s2p	$^3S - ^3P°$	1 – 2	P	375
		823.25	25202.48 – 25323.95	1s2s – 1s2p	$^1S - ^1P°$	0 – 1	P	375

ARGON XVIII (Ar^{17+}), Z = 18
Ground State $1s(^2S_{1/2})$ (1 electron)
Ionization Potential 35 699 780 cm^{-1}; 4426.24 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		2.829	0.0 – 35344.2207	1s – 10p	$g^2S - ^2P°$	$\frac{1}{2}-\frac{3}{2}$	P	309
		2.836	0.0 – 35260.8134	1s – 9p	$g^2S - ^2P°$	$\frac{1}{2}-\frac{3}{2}$	P	309
		2.845	0.0 – 35144.2051	1s – 8p	$g^2S - ^2P°$	$\frac{1}{2}-\frac{3}{2}$	P	309
		2.859	0.0 – 34974.1162	1s – 7p	$g^2S - ^2P°$	$\frac{1}{2}-\frac{3}{2}$	P	309
		2.881	0.0 – 34712.0395	1s – 6p	$g^2S - ^2P°$	$\frac{1}{2}-\frac{3}{2}$	P	309
		2.917	0.0 – 34275.8861	1s – 5p	$g^2S - ^2P°$	$\frac{1}{2}-\frac{3}{2}$	P	309
		2.918	0.0 – 34273.4014	1s – 5p	$g^2S - ^2P°$	$\frac{1}{2}-\frac{1}{2}$	P	309
	7	2.987	0.0 – 33474.6346	1s – 4p	$g^2S - ^2P°$	$\frac{1}{2}-\frac{3}{2}$	P	309,375
	3	2.988	0.0 – 33469.7798	1s – 4p	$g^2S - ^2P°$	$\frac{1}{2}-\frac{1}{2}$	P	309,375
	20	3.150	0.0 – 31743.6133	1s – 3p	$g^2S - ^2P°$	$\frac{1}{2}-\frac{3}{2}$	P	309,375
	10	3.151	0.0 – 31732.1010	1s – 3p	$g^2S - ^2P°$	$\frac{1}{2}-\frac{1}{2}$	P	309,375
	65	3.731	0.0 – 26801.6220	1s – 2p	$g^2S - ^2P°$	$\frac{1}{2}-\frac{3}{2}$	P	309,559

AR XVIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	35	3.737	0.0 – 26762.7820	1s – 2p	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	P	309,559
		11.655	26764.0830 – 35344.2207	2s – 10p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		11.706	26801.6220 – 35344.2207	2p – 10d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		11.769	26764.0830 – 35260.8134	2s – 9p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		11.822	26801.6220 – 35260.8134	2p – 9d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		11.933	26764.0830 – 35144.2051	2s – 8p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		11.987	26801.6220 – 35144.2051	2p – 8d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		12.180	26764.0830 – 34974.1162	2s – 7p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		12.236	26801.6220 – 34974.1162	2p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		12.582	26764.0830 – 34712.0395	2s – 6p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		12.642	26801.6220 – 34712.0395	2p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		13.312	26764.0830 – 34275.8861	2s – 5p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		13.378	26801.6220 – 34276.7043	2p – 5d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		14.902	26764.0830 – 33474.6346	2s – 4p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		14.982	26801.6220 – 33476.2326	2p – 4d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		20.082	26764.0830 – 31743.6133	2s – 3p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		20.219	26801.6220 – 31747.4000	2p – 3d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		27.688	31732.4910 – 35344.2207	3s – 10p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		27.773	31743.6133 – 35344.2207	3p – 10d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		27.802	31747.4000 – 35344.2207	3d – 10f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		28.342	31732.4910 – 35260.8134	3s – 9p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		28.432	31743.6133 – 35260.8134	3p – 9d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		28.462	31747.4000 – 35260.8134	3d – 9f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		29.311	31732.4910 – 35144.2051	3s – 8p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		29.407	31743.6133 – 35144.2051	3p – 8d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		29.439	31747.4000 – 35144.2051	3d – 8f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		30.849	31732.4910 – 34974.1162	3s – 7p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		30.955	31743.6133 – 34974.1162	3p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		30.991	31747.4000 – 34974.1162	3d – 7f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		33.562	31732.4910 – 34712.0395	3s – 6p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		33.688	31743.6133 – 34712.0395	3p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		33.731	31747.4000 – 34712.0395	3d – 6f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		39.318	31732.4910 – 34275.8861	3s – 5p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		39.478	31743.6133 – 34276.7043	3p – 5d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		39.530	31747.4000 – 34277.1134	3d – 5f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		53.354	33469.9449 – 35344.2207	4s – 10p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		53.488	33474.6346 – 35344.2207	4p – 10d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		53.534	33476.2326 – 35344.2207	4d – 10f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		55.839	33469.9449 – 35260.8134	4s – 9p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		55.985	33474.6346 – 35260.8134	4p – 9d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		56.036	33476.2326 – 35260.8134	4d – 9f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		57.400	31732.4910 – 33474.6346	3s – 4p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		57.716	31743.6133 – 33476.2326	3p – 4d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		57.816	31747.4000 – 33477.0314	3d – 4f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		59.728	33469.9449 – 35144.2051	4s – 8p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		59.896	33474.6346 – 35144.2051	4p – 8d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		59.953	33476.2326 – 35144.2051	4d – 8f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		66.482	33469.9449 – 34974.1162	4s – 7p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		66.690	33474.6346 – 34974.1162	4p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		66.761	33476.2326 – 34974.1162	4d – 7f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		80.509	33469.9449 – 34712.0395	4s – 6p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309
		80.814	33474.6346 – 34712.0395	4p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	309
		80.919	33476.2326 – 34712.0395	4d – 6f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	309
		93.394	34273.4862 – 35344.2207	5s – 10p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	309

AR XVIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		93.604	34275.8861 – 35344.2207	5p – 10d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		93.675	34276.7043 – 35344.2207	5d – 10f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		101.284	34273.4862 – 35260.8134	5s – 9p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		101.530	34275.8861 – 35260.8134	5p – 9d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		101.615	34276.7043 – 35260.8134	5d – 9f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		114.848	34273.4862 – 35144.2051	5s – 8p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		115.165	34275.8861 – 35144.2051	5p – 8d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		115.274	34276.7043 – 35144.2051	5d – 8f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		124.078	33469.9449 – 34275.8861	4s – 5p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		124.677	33474.6346 – 34276.7043	4p – 5d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		124.862	33476.2326 – 34277.1134	4d – 5f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		142.729	34273.4862 – 34974.1162	5s – 7p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		143.219	34275.8861 – 34974.1162	5p – 7d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		143.387	34276.7043 – 34974.1162	5d – 7f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309
		228.022	34273.4862 – 34712.0395	5s – 6p	^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$	P	309
		229.277	34275.8861 – 34712.0395	5p – 6d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	309
		229.708	34276.7043 – 34712.0395	5d – 6f	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$	P	309

POTASSIUM , Z = 19
Unclassified Lines

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	122.811						935
	1	123.675						935
	10	137.753						935
	10	137.961						935
	10	142.041						935
	10	142.146						935
	40	142.209						935
	10	142.690						935
	90	144.211						935
	10	144.305						935
	10	145.425						935
	10	145.542						935
	90	146.089						935
	10	146.459						935
	10	146.552						935
	1	149.454						935
	10	149.842						935
	1	150.305						935
	90	153.350						935
	10	154.453						935
	90	157.037						935
	16	157.478						935
	90	157.820						935
	10	158.380						935
	40	158.616						935
	40	159.105						935
	10	159.460						935
	1	159.522						935
	10	160.509						935
	10	160.773						935
	40	161.005						935
	40	161.145						935
	10	161.386						935
	10	161.427						935
	90	161.618						935
	40	161.662						935
	40	161.808						935
	160	162.206						935
	40	164.478						935
	10	169.618						935
	40	169.836						935
	10	170.738						935
	10	170.814						935
	10	171.969						935
	40	172.325						935
	160	172.605						935
	10	174.502						935
	1	174.907						935
	10	175.147						935
	40	177.046						935
	40	177.812						935
	40	177.918						935
	90	178.100						935
	10	180.780						935

K UNCLASSIFIED LINES — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	180.917						935
	20	181.974						192
	90	181.991						935
	20	182.818						192
	1	190.379						935
	1	190.475						935
	10	190.852						935
	90	192.161						935
	1	193.313						935
	1	194.217						935
	50	194.593						192
	10	194.657						935
	1	194.954						935
	10	195.572						935
	10	196.423						935
	40	196.975						935
	40	197.743						935
	90	198.074						935
	1	199.316						935
	90	200.339						935
	50	203.034						192
	90	203.045						935
	100	203.823						192
	150	203.890						192
	10	204.064						935
	10	204.374						935
	1	206.012						935
	20	207.350						192
	1	207.474						935
	1	207.964						935
	1	209.087						935
	1	209.190						935
	10	209.352						935
	1	212.762						935
	10	213.276						935
	40	213.865						935
	10	215.727						935
	1	216.471						935
	1	216.729						935
	10	222.864						935
	10	223.410						935
	10	223.545						935
	90	224.009						935
	90	224.257						935
	160	224.509						935
	90	225.087						935
	10	226.679						935
	20	226.691						192
	50	227.471						192
	1	227.851						935
	10	228.098						935
	10	228.134						935
	50	239.608						192
	100	247.202						192

K UNCLASSIFIED LINES — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	247.561						192
	20	250.123						192
	20	252.581						192
	20	255.267						192
	50	255.530						192
	20	255.729						192
	20	256.402						192
	20	256.512						192
	20	257.131						192
	20	259.184						192
	100	263.716						192
	100	263.819						192
	100	264.339						192
	50	265.353						192
	100	267.036						192
	20	275.525						192
	20	276.428						192
	20	276.890						192
	20	285.458						192
	50	294.515						192
	100	303.690						192
	100	306.620						192
	50	306.888						192
	100	308.129						192
	50	322.146						192
	50	331.966						192
	20	332.207						192
	20	332.515						192
	20	333.420						192
	20	347.063						192
	20	352.136						192
	50	353.246						192
	150	353.325						192
	150	353.455						192
	50	354.397						192
	20	354.627						192
	100	355.133						192
	50	355.330						192
	50	355.469						192
	20	357.950						192
	50	363.647						192
	20	364.725						192
	20	364.871						192
	50	368.465						192
	100	368.580						192
	20	369.392						192
	150	376.061						192
	20	376.477						192
	50	384.689						192
	50	406.912						192
	400	409.737						192
	20	415.289						192
	20	419.539						192
	20	419.823						192

K Unclassified Lines — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	423.371						192
	50	423.558						192
	50	423.821						192
	20	430.895						192
	20	430.968						192
	250	446.830						192,359
	50	451.078						192
	20	453.882						192
	20	458.535						192
	20	481.759						192
	50	482.281						192
	20	483.405						192
	50	484.637						192
	250	485.084						192
	150	485.513						192
	100	485.626						192
	50	502.798						192
	20	504.503						192
	20	504.817						192
	50	511.371						192
	20	512.593						192
	150	520.493						192
	50	527.565						192
	100	528.519						192
	20	533.587						192
	50	533.726						192
	50	533.858						192
	100	534.059						192
	20	534.225						192
	50	543.225						192
	50	544.855						192
	100	545.232						192
	20	566.836						192
	20	568.534						192
	20	572.180						192
	20	572.451						192
	50	610.850						192
	50	612.272						192
	20	626.186						192
	20	638.805						192
	20	648.932						192
	50	655.188						192
	20	655.554						192
	20	659.135						192
	20	662.832						192
	20	663.957						192
	20	670.987						192
	50	675.335						192
	20	677.833						192
	20	678.458						192
	20	679.107						192
	50	688.182						192
	20	691.206						192
	150	695.820						192

K UNCLASSIFIED LINES — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	696.202						192
	50	696.608						192
	20	710.645						192
	20	711.571						192
	50	713.489						192
	20	727.295						192
	50	737.761						192
	50	738.075						192
	20	738.696						192
	150	747.677						192
	100	748.393						192
	50	748.783						192
	20	752.952						192
	50	774.192						192
	150	774.738						192
	50	781.338						192
	20	782.265						192
	20	793.464						192
	20	794.341						192
	20	805.002						192
	50	812.493						192
	50	843.317						192
	50	858.555						192
	20	859.455						192
	20	900.266						192
	20	902.135						192
	20	931.864						192
	50	940.839						192
	20	946.534						192
	20	963.538						192
	50	986.203						192
	50	986.763						192
	20	987.140						192
	20	987.639						192
	20	999.027						192
	20	1003.293						192
	50	1017.337						192
	20	1020.566						192
	20	1022.202						192
	20	1023.009						192
	100	1032.768						192
	100	1033.875						192

POTASSIUM I (K^{0+}), Z = 19
Ground State $1s^22s^22p^63s^23p^64s(^2S_{1/2})$ (19 electrons)
Ionization Potential 35 009.78 cm^{-1}; 4.34069 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		498.06	0.0 – 200.780	$3p^6(^1S)4s - 3p^54s(^1P^\circ)15s$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	975
		498.36	0.0 – 200.658	$3p^6(^1S)4s - 3p^54s(^1P^\circ)14s$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	975
		498.77	0.0 – 200.493	$3p^6(^1S)4s - 3p^54s(^1P^\circ)13s$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	975
		499.33	0.0 – 200.268	$3p^6(^1S)4s - 3p^54s(^1P^\circ)12s$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	975
		500.05	0.0 – 199.980	$3p^6(^1S)4s - 3p^54s(^1P^\circ)11s$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	975
		501.13	0.0 – 199.549	$3p^6(^1S)4s - 3p^54s(^1P^\circ)10s$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	975
		502.74	0.0 – 198.911	$3p^6(^1S)4s - 3p^54s(^1P^\circ)9s$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	975
		505.16	0.0 – 197.959	$3p^6(^1S)4s - 3p^54s(^1P^\circ)8s$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	975
		508.06	0.0 – 196.826	$3p^6(^1S)4s - 3p^54s(^1P^\circ)6d$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975
		508.34	0.0 – 196.718	$3p^6(^1S)4s - 3p^54s(^1P^\circ)6d$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	975
		509.26	0.0 – 196.362	$3p^6(^1S)4s - 3p^54s(^1P^\circ)6d$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975
		509.37	0.0 – 196.319	$3p^6(^1S)4s - 3p^54s(^1P^\circ)7s$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	975
		514.73	0.0 – 194.275	$3p^6(^1S)4s - 3p^54s(^3P^\circ)6d$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975
		515.28	0.0 – 194.068	$3p^6(^1S)4s - 3p^54s(^1P^\circ)5d$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975
		515.60	0.0 – 193.948	$3p^6(^1S)4s - 3p^54s(^1P^\circ)5d$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	975
		516.13	0.0 – 193.749	$3p^6(^1S)4s - 3p^54s(^1P^\circ)5d$	$g^2S - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975
		517.48	0.0 – 193.244	$3p^6(^1S)4s - 3p^54s(^3P^\circ)6d$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	975
		517.81	0.0 – 193.122	$3p^6(^1S)4s - 3p^54s(^3P^\circ)6d$	$g^2S - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975
		517.96	0.0 – 193.065	$3p^6(^1S)4s - 3p^54s(^1P^\circ)6s$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	975
		520.15	0.0 – 192.251	$3p^6(^1S)4s - 3p^54s(^3P^\circ)5d$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975
		521.81	0.0 – 191.641	$3p^6(^1S)4s - 3p^54s(^3P^\circ)5d$	$g^2S - ^4F^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975
		522.58	0.0 – 191.359	$3p^6(^1S)4s - 3p^54s(^3P^\circ)5d$	$g^2S - ^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975
		523.72	0.0 – 190.942	$3p^6(^1S)4s - 3p^54s(^3P^\circ)5d$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	975
		525.11	0.0 – 190.434	$3p^6(^1S)4s - 3p^54s(^3P^\circ)5d$	$g^2S - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975
		526.59	0.0 – 189.900	$3p^6(^1S)4s - 3p^54s(^3P^\circ)5d$	$g^2S - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975
		530.32	0.0 – 188.565	$3p^6(^1S)4s - 3p^54d(^1P^\circ)4s$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	975
		532.46	0.0 – 187.806	$3p^6(^1S)4s - 3p^54d(^3D^\circ)4s$	$g^2S - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975
		535.75	0.0 – 186.656	$3p^6(^1S)4s - 3p^54d(^1D^\circ)4s$	$g^2S - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975
		540.09	0.0 – 185.153	$3p^6(^1S)4s - 3p^54s(^1P^\circ)5s$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	975
		542.47	0.0 – 184.342	$3p^6(^1S)4s - 3p^54s(^1P^\circ)5s$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975
		544.86	0.0 – 183.532	$3p^6(^1S)4s - 3p^54s(^3P^\circ)5s$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975
		545.49	0.0 – 183.322	$3p^6(^1S)4s - 3p^54s(^3P^\circ)5s$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	975
		548.99	0.0 – 182.152	$3p^6(^1S)4s - 3p^54s(^3P^\circ)5s$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975
		550.91	0.0 – 181.517	$3p^6(^1S)4s - 3p^54s(^3P^\circ)5s$	$g^2S - ^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	975
		552.94	0.0 – 180.850	$3p^6(^1S)4s - 3p^54s(^3P^\circ)5s$	$g^2S - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975
		553.12	0.0 – 180.791	$3p^6(^1S)4s - 3p^53d(^1P^\circ)4s$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975
		553.86	0.0 – 180.551	$3p^6(^1S)4s - 3p^53d(^1P^\circ)4s$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	975
		555.91	0.0 – 179.886	$3p^6(^1S)4s - 3p^53d(^3D^\circ)4s$	$g^2S - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975
		577.89	0.0 – 173.043	$3p^6(^1S)4s - 3p^53d(^1D^\circ)4s$	$g^2S - ^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975
		578.70	0.0 – 172.800	$3p^6(^1S)4s - 3p^53d(^3D^\circ)4s$	$g^2S - ^4D^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	975
		579.30	0.0 – 172.623	$3p^6(^1S)4s - 3p^53d(^3D^\circ)4s$	$g^2S - ^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975
		613.47	0.0 – 163.006	$3p^6(^1S)4s - 3p^53d(^3P^\circ)4s$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975
		615.75	0.0 – 162.404	$3p^6(^1S)4s - 3p^53d(^3P^\circ)4s$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	975
		626.26	0.0 – 159.678	$3p^6(^1S)4s - 3p^53d(^3P^\circ)4s$	$g^2S - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975
		627.48	0.0 – 159.367	$3p^6(^1S)4s - 3p^53d(^3P^\circ)4s$	$g^2S - ^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	975
		653.23	0.0 – 153.085	$3p^6(^1S)4s - 3p^54s^2$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	A	975
	20	662.22	0.0 – 151.008	$3p^6(^1S)4s - 3p^54s^2$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	A	975,192

POTASSIUM II (K^{1+}), Z = 19
Ground State $1s^22s^22p^63s^23p^6(^1S_0)$ (18 electrons)
Ionization Potential 255 100 cm^{-1}; 31.63 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	261.200						192
	250	441.812						192
	50	465.078	0.0 – 215.0188	$3p^6 - 3p^5(^2P^\circ_{1/2})5s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		192,366
		469.50	0.0 – 212.9929	$3p^6 - 3p^5(^2P^\circ_{3/2})5s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		366
	100	476.029						192
	300	495.144						192
2	300	600.765	0.0 – 166.4615	$3p^6 - 3p^5(^2P^\circ_{1/2})4s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		192,488
3	250	607.931	0.0 – 164.4961	$3p^6 - 3p^5(^2P^\circ_{3/2})3d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		192,488
1	300	612.621	0.0 – 163.2370	$3p^6 - 3p^5(^2P^\circ_{3/2})4s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		192,488

POTASSIUM III (K^{2+}), Z = 19
Ground State $1s^22s^22p^63s^23p^5(^2P^\circ_{3/2})$ (17 electrons)
Ionization Potential 369 450 cm^{-1}; 45.806 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	325.278	0.0 – 307.429	$3s^23p^5 -$	$g^2P^\circ - 2$	$\frac{3}{2} - \frac{3}{2}$		192,762
	50	327.605	2.1661 – 307.429	$3s^23p^5 -$	$g^2P^\circ - 2$	$\frac{1}{2} - \frac{1}{2}$		192,762
	100	328.845						192
	150	328.933						192
	100	329.053	0.0 – 303.902	$3s^23p^5 - 3s^23p^4(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		192,762
	250	330.684	0.0 – 302.404	$3s^23p^5 - 3s^23p^4(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		192,762
	50	331.416	2.1661 – 303.902	$3s^23p^5 - 3s^23p^4(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		192,762
	300	341.924						192
	200	344.270						192
	200	344.635						192
	100	345.405	0.0 – 289.515	$3s^23p^5 - 3s^23p^4(^1D)5s$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		192,762
	100	345.545	0.0 – 289.4	$3s^23p^5 - 3s^23p^4(^1D)5s$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		192,762
	150	347.999	2.1661 – 289.515	$3s^23p^5 - 3s^23p^4(^1D)5s$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		192,762
	300	379.118	0.0 – 263.77	$3s^23p^5 - 3s^23p^4(^3P)5s$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		192,762
	250	380.477	0.0 – 262.828	$3s^23p^5 - 3s^23p^4(^3P)5s$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		192,762
	300	382.229	2.1661 – 263.77	$3s^23p^5 - 3s^23p^4(^3P)5s$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		192,762
	200	391.918						192
	20	396.763	0.0 – 252.04	$3s^23p^5 -$	$g^2P^\circ - 1$	$\frac{3}{2} - \frac{3}{2}$		192,762
	150	398.633	0.0 – 250.857	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		192,762
	200	402.104	2.1661 – 250.857	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		192,762
	300	406.484	0.0 – 246.012	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		192,762
	400	408.959	0.0 – 244.523	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		192,762
	400	410.102	2.1661 – 246.012	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		192,762
	250	412.289	0.0 – 242.548	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		192,762
6	500	413.792	0.0 – 241.667	$3s^23p^5 - 3s^23p^4(^1S)4s$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		192,762
	300	414.870	0.0 – 241.039	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		192,762
	300	416.001	2.1661 – 242.548	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		192,762
6	300	417.535	2.1661 – 241.667	$3s^23p^5 - 3s^23p^4(^1S)4s$	$g^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		192,762
	300	418.623	2.1661 – 241.039	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		192,762
	50	431.622	0.0 – 231.69	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - {}^4D$	$\frac{3}{2} - \frac{3}{2}$	Q	192,375

K III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	750	434.722	0.0 – 230.032	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - {}^4D$	$\frac{3}{2}-\frac{5}{2}$	Q	192,375
	500	435.676	2.1661 – 231.69	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - {}^4D$	$\frac{1}{2}-\frac{3}{2}$	Q	192,375
	150	437.216						192
	750	440.429						192
	150	442.913						192
5	750	444.344	0.0 – 225.051	$3s^23p^5 - 3s^23p^4(^1D)4s$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		192,182
5	750	448.595	2.1661 – 225.082	$3s^23p^5 - 3s^23p^4(^1D)4s$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		192,182
4	750	466.793	0.0 – 214.2323	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		192,488
4	1000	470.089	0.0 – 212.7254	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		192,488
4	750	471.569	2.1661 – 214.2323	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		192,488
4	450	474.920	2.1661 – 212.7254	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		192,488
	400	479.185	0.0 – 208.6878	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		192,182
	100	482.107	0.0 – 207.4219	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		192,182
	100	482.408	2.1661 – 209.4613	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{1}{2}$		192,182
	50	484.200	2.1661 – 208.6878	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{3}{2}$		192,182
3	750	497.104	0.0 – 201.165	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$		192,488
	100	514.943						192
2	500	520.611	0.0 – 192.082	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		192,488
2	250	523.792	0.0 – 190.916	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		192,488
2	400	529.796	2.1661 – 190.916	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		192,488
	150	539.731	0.0 – 185.277	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		192,711
	150	546.123	2.1661 – 185.277	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		192,711
	50	550.323	2.1661 – 183.874	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		192,711
	200	708.838						192
	200	765.314						192
1	300	765.644	0.0 – 130.609	$3s^23p^5 - 3s3p^6$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		192,488
1	350	778.528	2.1661 – 130.609	$3s^23p^5 - 3s3p^6$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		192,488
	200	872.313						192
	100	873.865						192
	150	874.045						192

POTASSIUM IV (K^{3+}), Z = 19
Ground State $1s^22s^22p^63s^23p^4(^3P_2)$ (16 electrons)
Ionization Potential 491 300 cm^{-1}; 60.91 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	150	271.820	0. – 367.89	$3s^23p^4 - 3s^23p^3(^4S^\circ)5s$	$g^3P - {}^3S^\circ$	2 – 1		045
	100	273.065	1.6714 – 367.89	$3s^23p^4 - 3s^23p^3(^4S^\circ)5s$	$g^3P - {}^3S^\circ$	1 – 1		192,045
	50	273.546	2.3212 – 367.89	$3s^23p^4 - 3s^23p^3(^4S^\circ)5s$	$g^3P - {}^3S^\circ$	0 – 1		045
	150	274.552						192
		279.877						242
	300	340.462	0. – 293.72	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	2 – 2		192,375
	150	340.745	0. – 293.473	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	2 – 1	Q	192,375
	150	342.410	1.6714 – 293.72	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 2		192,375
	100	342.703	1.6714 – 293.473	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 1		192
	100	342.805	1.6714 – 293.384	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 0		192,375
	150	343.468	2.3212 – 293.473	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	0 – 1		192
	100	354.139	0. – 282.373	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^1D^\circ$	2 – 2		192,045

K IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	300	354.927	16.3841 – 298.134	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$^1D - {^1P^\circ}$	2 – 1		192,045
	150	356.260	1.6714 – 282.373	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {^1D^\circ}$	1 – 2		192,045
	150	357.645	0. – 279.627	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {^1F^\circ}$	2 – 3		192
	300	359.730	0. – 277.986	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {^3D^\circ}$	2 – 3		192,358
	200	359.907	0. – 277.851	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {^3D^\circ}$	2 – 2		192,375
	100	360.568	16.3841 – 293.72	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$^1D - {^3P^\circ}$	2 – 2		192,045
	250	362.085	1.6714 – 277.851	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {^3D^\circ}$	1 – 2		192,375
	150	362.154	1.6714 – 277.795	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {^3D^\circ}$	1 – 1		192,375
	150	363.021	2.3212 – 277.795	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {^3D^\circ}$	0 – 1		192,375
	100	368.030	1.6714 – 273.409	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {^1D^\circ}$	1 – 2		192,711
	300	375.955	16.3841 – 282.373	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$^1D - {^1D^\circ}$	2 – 2		192,358
	100	379.279	0. – 263.659	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {^3D^\circ}$	2 – 1		045
	300	379.877	16.3841 – 279.627	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - {^1F^\circ}$	2 – 3		192,711
	250	380.477	0. – 262.831	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {^3D^\circ}$	2 – 2		192,711
	200	381.702	1.6714 – 263.659	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {^3D^\circ}$	1 – 1		192,711
	300	382.229	0. – 261.65	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {^3D^\circ}$	2 – 3		192,711
	150	382.487	0. – 261.44	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {^1P^\circ}$	2 – 1		045
	200	382.646	2.3212 – 263.659	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {^3D^\circ}$	0 – 1		045,711
	300	382.906	1.6714 – 262.831	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {^3D^\circ}$	1 – 2		192,711
	250	384.095	0. – 260.352	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - {^3S^\circ}$	2 – 1		192,375
	200	386.610	1.6714 – 260.352	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - {^3S^\circ}$	1 – 1	Q	192,375
	250	388.920	0. – 257.124	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {^3P^\circ}$	2 – 1		192,711
	250	389.069	16.3841 – 273.409	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - {^1D^\circ}$	2 – 2		192,711
	250	390.415	1.6714 – 257.811	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {^3P^\circ}$	1 – 0		192,711
	300	390.574	0. – 256.034	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {^3P^\circ}$	2 – 2		192,711
	200	391.462	1.6714 – 257.124	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {^3P^\circ}$	1 – 1		192,711
	100	392.274	38.5463 – 293.473	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$^1S - {^3P^\circ}$	0 – 1		192,169
	200	392.467	2.3212 – 257.124	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {^3P^\circ}$	0 – 1		192,711
	500	393.142	1.6714 – 256.034	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {^3P^\circ}$	1 – 2		192,711
	400	400.210	0. – 249.87	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {^3S^\circ}$	2 – 1		192,711
	300	402.907	1.6714 – 249.87	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {^3S^\circ}$	1 – 1		192,711
	250	403.967	2.3212 – 249.87	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {^3S^\circ}$	0 – 1		192,711
	150	404.412	16.3841 – 263.659	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - {^3D^\circ}$	2 – 1		192,711
	100	405.773	16.3841 – 262.831	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - {^3D^\circ}$	2 – 2		192,711
	250	408.076	16.3841 – 261.44	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - {^1P^\circ}$	2 – 1		192,045
	150	417.280	16.3841 – 256.034	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - {^3P^\circ}$	2 – 2		192,711
	100	440.905						192
	200	442.300	0. – 226.09	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {^3P^\circ}$	2 – 1		192,762
	100	442.518	1.6714 – 227.652	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {^3P^\circ}$	1 – 0		192,762
	300	443.567	0. – 225.445	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {^3P^\circ}$	2 – 2		192,762
	200	445.607	1.6714 – 226.09	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {^3P^\circ}$	1 – 1		192,762
	250	446.830	1.6714 – 225.445	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {^3P^\circ}$	1 – 2	Q	192,375
	100	446.926	2.3212 – 226.09	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {^3P^\circ}$	0 – 1		192,762
	400	456.328	16.3841 – 235.527	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - {^1P^\circ}$	2 – 1		192,762
	100	473.207	38.5463 – 249.87	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1S - {^3S^\circ}$	0 – 1		192,375
	100	485.359	16.3841 – 222.42	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - {^1F^\circ}$	2 – 3		192,762
	100	499.993	16.3841 – 216.39	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - {^1D^\circ}$	2 – 2	Q	192,711
	100	500.047	16.3841 – 216.39	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - {^1D^\circ}$	2 – 2		192
	150	500.125						192
	50	505.761						192
	250	523.001	0. – 191.204	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - {^3D^\circ}$	2 – 2		192,762
	200	526.448	0. – 189.952	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - {^3D^\circ}$	2 – 3		192,762
	100	527.064	1.6714 – 191.403	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - {^3D^\circ}$	1 – 1		192,762
	150	527.617	1.6714 – 191.204	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - {^3D^\circ}$	1 – 2		192,762

K IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	528.879	2.3212 – 191.403	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	0 – 1		192,762
	100	543.640						192
	50	543.973						192
	1	584.314	0. – 171.1395	$3s^23p^4 - 3s3p^5$	$g^3P - {}^1P^\circ$	2 – 1		726
	50	591.237						192
	50	591.311						192
	50	605.316						192
	50	605.908						192
	550	646.181	16.3841 – 171.1395	$3s^23p^4 - 3s3p^5$	$^1D - {}^1P^\circ$	2 – 1		726
	250	672.941						192
	150	705.641						192
	50	725.848						192
	450	737.146	0. – 135.6583	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	2 – 1		726
	450	741.941	1.6714 – 136.4530	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	1 – 0		726
	650	745.258	0. – 134.1818	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	2 – 2		726
	360	746.342	1.6714 – 135.6583	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	1 – 1		726
	450	749.979	2.3212 – 135.6583	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	0 – 1		726
	5	754.187	38.5463 – 171.1395	$3s^23p^4 - 3s3p^5$	$^1S - {}^1P^\circ$	0 – 1		726
	450	754.658	1.6714 – 134.1818	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	1 – 2		726
	100	855.815						192
	100	892.621						192

POTASSIUM V (K^{4+}), Z = 19
Ground State $1s^22s^22p^63s^23p^3(^4S^\circ_{3/2})$ (15 electrons)
Ionization Potential [666 700] cm^{-1}; [82.66] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	213.121						192
	100	214.351						192
	50	232.673						192
	150	282.355						192
		293.050	39.7581 – 380.992	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		213
	150	293.332	40.0802 – 380.992	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		192
	300	294.836	0. – 339.172	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		192,045
	200	296.169	0. – 337.645	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		192,045
	200	297.064	0. – 336.628	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		192,045
	200	300.252	24.0125 – 357.042	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		192,045
	200	300.503	24.2496 – 357.014	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		192,045
	200	311.243	24.2496 – 345.539	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		192,045
	250	312.770	24.0125 – 343.736	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		192,045
	200	315.181	39.7581 – 357.042	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		192,045
	150	315.537	40.0802 – 357.014	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		192,045
	50	318.969						192
	100	327.031	39.7581 – 345.539	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		192,045
	250	327.376	40.0802 – 345.539	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		192,045
	100	328.973	39.7581 – 343.736	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		045
	50	329.307	40.0802 – 343.736	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		192,045
	50	331.168						192
	200	349.504	24.0125 – 310.12	$3s^23p^3$ –	$^2D^\circ$ – 6	$\frac{3}{2}-\frac{5}{2}$		192,762
	150	349.793	24.2496 – 310.12	$3s^23p^3$ –	$^2D^\circ$ – 6	$\frac{5}{2}-\frac{5}{2}$		192,762
	100	352.463	24.0125 – 307.717	$3s^23p^3$ –	$^2D^\circ$ – 5	$\frac{3}{2}-\frac{3}{2}$		192,762

K V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	352.750	24.2496 – 307.717	$3s^23p^3$ –	$^2D^\circ$ – 5	5/2 – 3/2		192,762
	50	355.800	0. – 281.035	$3s^23p^3 - 3s^23p^2(^1D)3d$	$g^4S^\circ - ^2D$	3/2 – 3/2		192,375
	50	356.372	0. – 280.584	$3s^23p^3 - 3s^23p^2(^1D)3d$	$g^4S^\circ - ^2D$	3/2 – 5/2		192,375
	150	356.615	24.0125 – 304.474	$3s^23p^3 - 3s^23p^2(^1S)3d$	$^2D^\circ - ^2D$	3/2 – 3/2		192,375
	150	357.685	24.2496 – 303.847	$3s^23p^3 - 3s^23p^2(^1S)3d$	$^2D^\circ - ^2D$	5/2 – 5/2		192,375
	150	370.523						192
	150	370.580						192
	500	372.148	24.2496 – 292.96	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2F$	5/2 – 7/2		192,213
	200	372.462	24.0125 – 292.497	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2F$	3/2 – 5/2		192,213
	200	372.774	24.2496 – 292.497	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2F$	5/2 – 5/2		192
	100	373.074	0. – 268.043	$3s^23p^3$ –	g^4S° – 3	3/2 – 3/2		192,762
	150	373.318						192
	250	377.763	39.7581 – 304.474	$3s^23p^3 - 3s^23p^2(^1S)3d$	$^2P^\circ - ^2D$	1/2 – 3/2		192,762
	150	378.219	40.0802 – 304.474	$3s^23p^3 - 3s^23p^2(^1S)3d$	$^2P^\circ - ^2D$	3/2 – 3/2		192,762
	300	379.118	40.0802 – 303.847	$3s^23p^3 - 3s^23p^2(^1S)3d$	$^2P^\circ - ^2D$	3/2 – 5/2		213
	100	383.318	0. – 260.879	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^2P$	3/2 – 1/2		192
	100	384.400						192
	50	385.020	0. – 259.726	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4P$	3/2 – 1/2		192,762
	100	385.689	0. – 259.276	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4P$	3/2 – 3/2		192,762
	300	387.809	0. – 257.865	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4P$	3/2 – 5/2		213
	250	389.069	24.0125 – 281.035	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2D$	3/2 – 3/2		192,762
	100	389.428	24.2496 – 281.035	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2D$	5/2 – 3/2		192,762
	100	389.750	24.0125 – 280.584	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2D$	3/2 – 5/2		192,213
	250	390.114	24.2496 – 280.584	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2D$	5/2 – 5/2		192,213
	150	394.909	39.7581 – 292.968	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2S$	1/2 – 1/2		192,762
	200	398.363	39.7581 – 290.782	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	1/2 – 3/2		192,762
	200	398.878	40.0802 – 290.782	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	3/2 – 3/2		192,762
	200	399.754	40.0802 – 290.235	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	3/2 – 1/2		192,213
	300	412.080						192
	150	414.465	39.7581 – 281.035	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2D$	1/2 – 3/2		192,762
	250	415.052	24.0125 – 264.932	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2D$	3/2 – 3/2		192,762
	150	415.465	24.2496 – 264.932	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2D$	5/2 – 3/2		192,762
	200	415.793	40.0802 – 280.584	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2D$	3/2 – 5/2		192,762
	200	415.793	24.2496 – 264.741	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2D$	5/2 – 5/2		192,762
	100	419.045	24.2496 – 262.874	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2F$	5/2 – 7/2		192,762
	100	419.310	24.0125 – 262.487	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2F$	3/2 – 5/2		192,762
	50	419.731	24.2496 – 262.487	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2F$	5/2 – 5/2		192,762
	400	422.178	24.0125 – 260.879	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2P$	3/2 – 1/2		192,045
	300	425.159	24.0125 – 259.218	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2P$	3/2 – 3/2		192,045
	500	425.588	24.2496 – 259.218	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2P$	5/2 – 3/2		192,045
	250	438.023	39.7581 – 268.043	$3s^23p^3$ –	$^2P^\circ$ – 3	1/2 – 3/2		192,762
	100	438.647	40.0802 – 268.043	$3s^23p^3$ –	$^2P^\circ$ – 3	3/2 – 3/2		192,762
	50	445.878						192
	150	447.085						192
	150	449.013	0. – 222.711	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4D$	3/2 – 3/2		192,762
	200	449.708	0. – 222.367	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4D$	3/2 – 5/2		192,762
	100	452.227	39.7581 – 260.879	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2P$	1/2 – 1/2		045
	200	452.900	40.0802 – 260.879	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2P$	3/2 – 1/2		192,045
	250	455.670	39.7581 – 259.218	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2P$	1/2 – 3/2		192,045
	400	456.328	40.0802 – 259.218	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2P$	3/2 – 3/2		192,045
	150	459.005						192
	100	468.447						192
	200	482.706	0. – 207.165	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4F$	3/2 – 5/2		192,762
	200	483.745	0. – 206.72	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4F$	3/2 – 3/2		192,762

K V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	515.320						192
	100	534.873						192
	100	536.216						192
	50	544.537						192
	50	544.627						192
	450	580.320	24.0125 – 196.3312	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		726
	160	585.506	24.0125 – 194.8051	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		726
	450	586.321	24.2496 – 194.8051	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		726
	160	602.257	39.7581 – 205.7999	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		726
	220	603.429	40.0802 – 205.7999	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		726
	40	638.681	39.7581 – 196.3312	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		726
	20	639.994	40.0802 – 196.3312	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		726
	20	644.964	39.7581 – 194.8051	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		726
	40	646.308	40.0802 – 194.8051	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		726
	40	686.373	24.0125 – 169.7058	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		726
	360	686.968	24.0125 – 169.5795	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		726
	360	687.492	24.2496 – 169.7058	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		726
	40	688.091	24.2496 – 169.5795	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{3}{2}$		726
	100	694.477						192
	150	695.042						192
	50	713.041						192
	285	720.440	0. – 138.8041	$3s^23p^3 - 3s3p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		726
	360	724.441	0. – 138.0375	$3s^23p^3 - 3s3p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		726
	450	731.869	0. – 136.6365	$3s^23p^3 - 3s3p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		726
	100	743.292						192
	150	750.230						192
	50	750.381						192
	200	757.112						192
	50	758.559						192
	100	769.402						192
	70	770.289	39.7581 – 169.5795	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		726
	150	771.376						192
	110	771.454	40.0802 – 169.7058	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		726
	100	784.713						192
	100	786.464						192
	100	802.122						192
	100	803.826						192
	50	810.215						192
	50	810.893						192
	150	823.047					Q	192
	150	823.358					Q	192
	50	825.559					Q	192
	50	826.395						192
	50	830.785						192
	50	839.439						192
	100	854.416						192
	50	854.771						192
	50	867.921						192
	50	868.140						192
	50	868.552						192
	150	869.965						192
	50	874.883						192
	50	874.985						192
	150	881.405						192

K V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	917.498						192
		1017.51	39.7581 – 138.0375	$3s^23p^3$ – $3s3p^4$	$^2P^\circ$ – ^4P	$\frac{1}{2}$ – $\frac{3}{2}$	P	375
	100	1021.332						192
	100	1027.174						192
		1035.67	40.0802 – 136.6365	$3s^23p^3$ – $3s3p^4$	$^2P^\circ$ – ^4P	$\frac{3}{2}$ – $\frac{5}{2}$	P	375

POTASSIUM VI (K^{5+}), Z = 19
Ground State $1s^22s^22p^63s^23p^2(^3P_0)$ (14 electrons)
Ionization Potential 802 000 cm^{-1}; 99.4 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	157.433						192
	50	181.265						192
	50	200.341						192
	20	222.858						192
	150	256.831	1.1334 – 390.493	$3s^23p^2$ – $3s^23p4s$	g^3P – $^3P^\circ$	1 – 2		192,793
	100	257.657	0. – 388.115	$3s^23p^2$ – $3s^23p4s$	g^3P – $^3P^\circ$	0 – 1		192,793
	200	258.018	2.9272 – 390.493	$3s^23p^2$ – $3s^23p4s$	g^3P – $^3P^\circ$	2 – 2		192,793
	50	258.411	1.1334 – 388.115	$3s^23p^2$ – $3s^23p4s$	g^3P – $^3P^\circ$	1 – 1		192,793
	150	258.873	1.1334 – 387.421	$3s^23p^2$ – $3s^23p4s$	g^3P – $^3P^\circ$	1 – 0		192,793
	100	259.609	2.9272 – 388.115	$3s^23p^2$ – $3s^23p4s$	g^3P – $^3P^\circ$	2 – 1		192,793
	200	266.344	18.9778 – 394.431	$3s^23p^2$ – $3s^23p4s$	^1D – $^1P^\circ$	2 – 1		213
	20	284.860	43.3588 – 394.431	$3s^23p^2$ – $3s^23p4s$	^1S – $^1P^\circ$	0 – 1		213
	100	293.438						192
	100	302.657						192
	150	335.175						192
	150	338.161						192
	150	356.615						192
	150	357.685						192
	100	367.378						192
	100	370.115						192
	250	374.940	18.9778 – 285.686	$3s^23p^2$ – $3s^23p3d$	^1D – $^1F^\circ$	2 – 3		213
	100	377.263						192
	100	384.514	0. – 260.069	$3s^23p^2$ – $3s^23p3d$	g^3P – $^3D^\circ$	0 – 1		213
	200	385.547	1.1334 – 260.495	$3s^23p^2$ – $3s^23p3d$	g^3P – $^3D^\circ$	1 – 2		213
		386.193	1.1334 – 260.069	$3s^23p^2$ – $3s^23p3d$	g^3P – $^3D^\circ$	1 – 1		213
	100	386.505						192
	300	387.809	2.9272 – 260.782	$3s^23p^2$ – $3s^23p3d$	g^3P – $^3D^\circ$	2 – 3		213
	150	388.241	2.9272 – 260.495	$3s^23p^2$ – $3s^23p3d$	g^3P – $^3D^\circ$	2 – 2		213
	100	388.485						192
	100	389.531						192
	150	394.480	0. – 253.501	$3s^23p^2$ – $3s^23p3d$	g^3P – $^3P^\circ$	0 – 1		213
	150	395.407	1.1334 – 254.035	$3s^23p^2$ – $3s^23p3d$	g^3P – $^3P^\circ$	1 – 0		213
	50	396.242	1.1334 – 253.501	$3s^23p^2$ – $3s^23p3d$	g^3P – $^3P^\circ$	1 – 1		213
	20	396.858						192
	150	398.104	1.1334 – 252.324	$3s^23p^2$ – $3s^23p3d$	g^3P – $^3P^\circ$	1 – 2		213
	100	399.075	2.9272 – 253.501	$3s^23p^2$ – $3s^23p3d$	g^3P – $^3P^\circ$	2 – 1		213
	100	399.419	43.3588 – 293.745	$3s^23p^2$ – $3s^23p3d$	^1S – $^1P^\circ$	0 – 1		213
	200	400.963	2.9272 – 252.324	$3s^23p^2$ – $3s^23p3d$	g^3P – $^3P^\circ$	2 – 2		213
	200	404.684						192
	100	405.178						192
	50	405.475						192
	100	405.675						192

K VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	406.102						192
	50	412.790						192
	50	416.509						192
	100	418.160						192
	200	420.807						192
	100	426.338						192
	100	428.315						192
	250	428.538	18.9778 – 252.324	$3s^23p^2 - 3s^23p3d$	$^1D - ^3P°$	2 – 2		192
	100	429.438						192
	150	439.047						192
	200	446.009						192
	1	449.021	1.1334 – 223.8401	$3s^23p^2 - 3s3p^3$	$g^3P - ^1P°$	1 – 1		726
	100	451.320						192
	1	452.667	2.9272 – 223.8401	$3s^23p^2 - 3s3p^3$	$g^3P - ^1P°$	2 – 1		726
	50	457.323						192
	20	457.427						192
	20	458.045	0. – 218.3173	$3s^23p^2 - 3s3p^3$	$g^3P - ^3S°$	0 – 1		726
	70	460.440	1.1334 – 218.3173	$3s^23p^2 - 3s3p^3$	$g^3P - ^3S°$	1 – 1		726
	150	461.737						192
	110	464.275	2.9272 – 218.3173	$3s^23p^2 - 3s3p^3$	$g^3P - ^3S°$	2 – 1		726
	100	473.207						192
	50	480.397						192
	110	488.132	18.9778 – 223.8401	$3s^23p^2 - 3s3p^3$	$^1D - ^1P°$	2 – 1		726
	100	490.423						192
	1	501.657	18.9778 – 218.3173	$3s^23p^2 - 3s3p^3$	$^1D - ^3S°$	2 – 1		726
	20	510.311						192
	20	511.062						192
		554.072	43.3588 – 223.8401	$3s^23p^2 - 3s3p^3$	$^1S - ^1P°$	0 – 1		726
	20	569.696						192
	20	569.915						192
	1	571.564	43.3588 – 218.3173	$3s^23p^2 - 3s3p^3$	$^1S - ^3S°$	0 – 1		726
	70	611.864	0. – 163.4350	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P°$	0 – 1		726
	70	616.122	1.1334 – 163.4389	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P°$	1 – 2		726
	40	616.189	1.1334 – 163.4213	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P°$	1 – 0		726
	20	620.808						192
	360	623.012	2.9272 – 163.4389	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P°$	2 – 2		726
	285	625.410	18.9778 – 178.8729	$3s^23p^2 - 3s3p^3$	$^1D - ^1D°$	2 – 2		726
	100	627.560						192
	50	630.940						192
	50	637.195						192
	20	637.890						192
	150	657.931						192
	150	661.402						192
	150	668.864						192
	220	710.526	0. – 140.7413	$3s^23p^2 - 3s3p^3$	$g^3P - ^3D°$	0 – 1		726
	50	710.932						192
	50	712.728						192
	360	716.016	1.1334 – 140.7954	$3s^23p^2 - 3s3p^3$	$g^3P - ^3D°$	1 – 2		726
	110	716.289	1.1334 – 140.7413	$3s^23p^2 - 3s3p^3$	$g^3P - ^3D°$	1 – 1		726
	450	724.278	2.9272 – 140.9957	$3s^23p^2 - 3s3p^3$	$g^3P - ^3D°$	2 – 3		726
	70	725.328	2.9272 – 140.7954	$3s^23p^2 - 3s3p^3$	$g^3P - ^3D°$	2 – 2		726
	50	739.177						192
	100	747.848						192
	150	753.877						192

K VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	757.199						192
	50	770.022						192
	250	771.103						192
	200	776.957						192
	100	882.184						192
	100	918.581						192
	50	929.374						192
	50	930.318						192
	100	938.287						192
	250	968.518						192
	100	982.115						192
	100	1000.056						192
	20	1030.345						192

POTASSIUM VII (K^{6+}), Z = 19
Ground State $1s^22s^22p^63s^23p(^2P^\circ_{1/2})$ (13 electrons)
Ionization Potential 948 200 cm^{-1}; 117.56 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	126.654	0.0 – 789.578	$3s^23p - 3s^26d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		935
	10	127.156	3.1340 – 789.599	$3s^23p - 3s^26d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		935
	10	133.084	3.1340 – 754.538	$3s^23p - 3s^26s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		213
	40	139.480	0.0 – 716.949	$3s^23p - 3s^25d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		935
	90	140.084	3.1340 – 716.985	$3s^23p - 3s^25d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		935
	40	152.889	0.0 – 654.073	$3s^23p - 3s^25s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		935
	90	153.624	3.1340 – 654.073	$3s^23p - 3s^25s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		935
	90	172.294	152.0517 – 732.516	$3s3p^2 - 3s^25f$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		935
	160	175.205	0.0 – 570.74	$3s^23p - 3s^24d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		935
	250	176.120	3.1340 – 570.921	$3s^23p - 3s^24d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		935
	40	176.181	3.1340 – 570.74	$3s^23p - 3s^24d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		935
	40	207.568	250.78 – 732.516	$3s^23d - 3s^25f$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		935
	10	218.990	151.8839 – 608.528	$3s3p^2 - 3s^24f$	$^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		935
	40	219.071	152.0517 – 608.535	$3s3p^2 - 3s^24f$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		935
	90	220.629	115.786 – 569.033	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		935
	90	221.035	114.650 – 567.063	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		935
	250	221.479	117.523 – 569.033	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		935
	10	221.564	114.650 – 565.986	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$		935
	10	221.595	115.786 – 567.063	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		935
	90	222.121	115.786 – 565.986	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		935
	90	222.449	117.523 – 567.063	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		935
	250	227.625	0.0 – 439.321	$3s^23p - 3s^24s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		935
	360	229.258	3.1340 – 439.321	$3s^23p - 3s^24s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		935
	20	279.433	250.662 – 608.528	$3s^23d - 3s^24f$	$^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		213
	20	279.521	250.78 – 608.535	$3s^23d - 3s^24f$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		213
	20	397.691	114.650 – 366.101	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		213
	50	398.354	114.650 – 365.694	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{1}{2}-\frac{1}{2}$		213
	200	398.943	0.0 – 250.662	$3s^23p - 3s^23d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		213
		399.006	115.786 – 366.414	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		213
	50	399.495	115.786 – 366.101	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - {}^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		213

K VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	400.147	115.786 – 365.694	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{3}{2} - \frac{1}{2}$		213
	150	401.553	117.523 – 366.556	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2} - \frac{7}{2}$		213
	100	401.790	117.523 – 366.414	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2} - \frac{5}{2}$		213
	100	402.132	114.650 – 363.321	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{1}{2} - \frac{3}{2}$		213
	20	402.291	117.523 – 366.101	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2} - \frac{3}{2}$		213
	300	403.800	3.1340 – 250.78	$3s^23p - 3s^23d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		213
	150	403.991	115.786 – 363.321	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{3}{2} - \frac{3}{2}$		213
	100	405.345	115.786 – 362.492	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{3}{2} - \frac{5}{2}$		213
	20	406.850	117.523 – 363.321	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{5}{2} - \frac{3}{2}$		213
	50	408.210	117.523 – 362.492	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{5}{2} - \frac{5}{2}$		213
	5	479.770	0.0 – 208.4325	$3s^23p - 3s3p^2$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		726
	40	484.254	0.0 – 206.5029	$3s^23p - 3s3p^2$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		726
	110	487.097	3.1340 – 208.4325	$3s^23p - 3s3p^2$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		726
	20	491.718	3.1340 – 206.5029	$3s^23p - 3s3p^2$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		726
	50	516.853						192
	50	517.794	114.650 – 307.777	$3s3p^2 - 3p^3$	$^4P - ^4S^\circ$	$\frac{1}{2} - \frac{3}{2}$		213
	40	517.909	0.0 – 193.0845	$3s^23p - 3s3p^2$	$g^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		726
	100	520.857	115.786 – 307.777	$3s3p^2 - 3p^3$	$^4P - ^4S^\circ$	$\frac{3}{2} - \frac{3}{2}$		213
	100	524.639						192
	150	525.612	117.523 – 307.777	$3s3p^2 - 3p^3$	$^4P - ^4S^\circ$	$\frac{5}{2} - \frac{3}{2}$		213
	70	526.452	3.1340 – 193.0845	$3s^23p - 3s3p^2$	$g^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		726
	110	658.398	0.0 – 151.8839	$3s^23p - 3s3p^2$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		726
	160	671.512	3.1340 – 152.0517	$3s^23p - 3s3p^2$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		726
	1	672.269	3.1340 – 151.8839	$3s^23p - 3s3p^2$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		726

POTASSIUM VIII (K^{7+}), Z = 19
Ground State $1s^22s^22p^63s^2(^1S_0)$ (12 electrons)
Ionization Potential 1 247 800 cm^{-1}; 154.71 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	91.917	0.0 – 1087.914	$3s^2 - 3s7p$	$g^1S - ^1P^\circ$	0 – 1		935
	10	97.793	0.0 – 1022.558	$3s^2 - 3s6p$	$g^1S - ^1P^\circ$	0 – 1		935
	1	103.086	129.277+C – 1099.330+C	$3s3p - 3s7d$	$^3P^\circ - ^3D$	1 – 2		935
	1	103.351	131.650+C – 1099.330+C	$3s3p - 3s7d$	$^3P^\circ - ^3D$	2 – 3		935
	10	106.178						935
	1	109.303	128.165+C – 1043.053+C	$3s3p - 3s6d$	$^3P^\circ - ^3D$	0 – 1		935
	10	109.434	129.277+C – 1043.086+C	$3s3p - 3s6d$	$^3P^\circ - ^3D$	1 – 2		935
	90	109.535	0.0 – 912.975	$3s^2 - 3s5p$	$g^1S - ^1P^\circ$	0 – 1		935
	40	109.711	131.650+C – 1043.144+C	$3s3p - 3s6d$	$^3P^\circ - ^3D$	2 – 3		935
	1	113.858	129.277+C – 1007.539+C	$3s3p - 3s6s$	$^3P^\circ - ^3S$	1 – 1		935
	1	114.173	131.650+C – 1007.539+C	$3s3p - 3s6s$	$^3P^\circ - ^3S$	2 – 1		935
	10	121.885	128.165+C – 948.617+C	$3s3p - 3s5d$	$^3P^\circ - ^3D$	0 – 1		935
	90	122.054	129.277+C – 948.586+C	$3s3p - 3s5d$	$^3P^\circ - ^3D$	1 – 2		935
	160	122.413	131.650+C – 948.557+C	$3s3p - 3s5d$	$^3P^\circ - ^3D$	2 – 3		935
	1	132.105	128.165+C – 885.127+C	$3s3p - 3s5s$	$^3P^\circ - ^3S$	0 – 1		935
		132.301	129.277+C – 885.127+C	$3s3p - 3s5s$	$^3P^\circ - ^3S$	1 – 1		220
	1	132.519	192.537 – 947.117	$3s3p - 3s5d$	$^1P^\circ - ^1D$	1 – 2		935
	40	132.715	131.650+C – 885.127+C	$3s3p - 3s5s$	$^3P^\circ - ^3S$	2 – 1		935

K VIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	135.889	368.385+C – 1104.301+C	3s3d – 3s7f	^{3}D – ^{3}F°	3 – 4		935
	1	136.979	129.277+C – 859.338+C	3s3p – 3p4p	^{3}P° – ^{3}S	1 – 1		935
	10	137.118	129.277+C – 858.594+C	3s3p – 3p4p	^{3}P° – ^{3}P	1 – 2		935
	40	137.248	128.165+C – 856.802+C	3s3p – 3p4p	^{3}P° – ^{3}P	0 – 1		935
	90	137.424	131.650+C – 859.338+C	3s3p – 3p4p	^{3}P° – ^{3}S	2 – 1		935
	10	137.458	129.277+C – 856.802+C	3s3p – 3p4p	^{3}P° – ^{3}P	1 – 1		935
	160	137.563	131.650+C – 858.594+C	3s3p – 3p4p	^{3}P° – ^{3}P	2 – 2		935
	40	137.601	129.277+C – 856.032+C	3s3p – 3p4p	^{3}P° – ^{3}P	1 – 0		935
	1	137.906	131.650+C – 856.802+C	3s3p – 3p4p	^{3}P° – ^{3}P	2 – 1		935
	250	138.632	131.650+C – 852.979+C	3s3p – 3p4p	^{3}P° – ^{3}D	2 – 3		935
	10	138.842	129.277+C – 849.520+C	3s3p – 3p4p	^{3}P° – ^{3}D	1 – 1		935
	10	139.101	131.650+C – 850.542+C	3s3p – 3p4p	^{3}P° – ^{3}D	2 – 2		935
	1	142.751	192.537 – 893.057	3s3p – 3s5s	^{1}P° – ^{1}S	1 – 0		220
	360	143.805	0.0 – 695.376	3s^2 – 3s4p	g^{1}S – ^{1}P°	0 – 1		935
	10	144.645						935
	40	146.352	368.254+C – 1051.522+C	3s3d – 3s6f	^{3}D – ^{3}F°	2 – 3		935
	40	146.382	368.385+C – 1051.522+C	3s3d – 3s6f	^{3}D – ^{3}F°	3 – 4		935
	160	148.174						935
	10	155.358						935
	160	155.701	128.165+C – 770.418+C	3s3p – 3s4d	^{3}P° – ^{3}D	0 – 1		935
	250	155.951	129.277+C – 770.474+C	3s3p – 3s4d	^{3}P° – ^{3}D	1 – 2		935
	90	155.976	129.277+C – 770.418+C	3s3p – 3s4d	^{3}P° – ^{3}D	1 – 1		935
	360	156.495	131.650+C – 770.624+C	3s3p – 3s4d	^{3}P° – ^{3}D	2 – 3		935
	90	156.533	131.650+C – 770.474+C	3s3p – 3s4d	^{3}P° – ^{3}D	2 – 2		935
	1	156.551	131.650+C – 770.418+C	3s3p – 3s4d	^{3}P° – ^{3}D	2 – 1		220
	40	158.437						935
	10	165.169						935
	90	167.896	368.254+C – 963.858+C	3s3d – 3s5f	^{3}D – ^{3}F°	2 – 3		935
	90	167.934	368.385+C – 963.858+C	3s3d – 3s5f	^{3}D – ^{3}F°	3 – 4		935
	40	172.028	192.537 – 773.844	3s3p – 3s4d	^{1}P° – ^{1}D	1 – 2		935
	40	182.643	419.1 – 966.616	3s3d – 3s5f	^{1}D – ^{1}F°	2 – 3		935
	40	196.461	300.387 – 809.388	3p^2 – 3s4f	^{1}D – ^{1}F°	2 – 3		935
	90	198.538	128.165+C – 631.839+C	3s3p – 3s4s	^{3}P° – ^{3}S	0 – 1		935
	250	198.978	129.277+C – 631.839+C	3s3p – 3s4s	^{3}P° – ^{3}S	1 – 1		935
	360	199.922	131.650+C – 631.839+C	3s3p – 3s4s	^{3}P° – ^{3}S	2 – 1		935
	20	202.883	308.804+C – 801.728+C	3p^2 – 3s4f	^{3}P – ^{3}F°	2 – 3		192
	40	203.137	306.227+C – 798.515+C	3p^2 – 3p4s	^{3}P – ^{3}P°	1 – 2		935
	10	203.701	304.868+C – 795.792+C	3p^2 – 3p4s	^{3}P – ^{3}P°	0 – 1		935
	90	204.201	308.804+C – 798.515+C	3p^2 – 3p4s	^{3}P – ^{3}P°	2 – 2		935
	10	204.260	306.227+C – 795.792+C	3p^2 – 3p4s	^{3}P – ^{3}P°	1 – 1		935
	40	204.644	306.227+C – 794.885+C	3p^2 – 3p4s	^{3}P – ^{3}P°	1 – 0		935
	40	205.344	308.804+C – 795.792+C	3p^2 – 3p4s	^{3}P – ^{3}P°	2 – 1		935
	160	221.281	192.537 – 644.451	3s3p – 3s4s	^{1}P° – ^{1}S	1 – 0		935
	40	230.656	368.175+C – 801.728+C	3s3d – 3s4f	^{3}D – ^{3}F°	1 – 2		935
	90	230.694	368.254+C – 801.728+C	3s3d – 3s4f	^{3}D – ^{3}F°	2 – 3		935
	160	230.750	368.385+C – 801.728+C	3s3d – 3s4f	^{3}D – ^{3}F°	3 – 4		935
	1	256.222	419.1 – 809.388	3s3d – 3s4f	^{1}D – ^{1}F°	2 – 3		220
	100	264.478	644.451 – 1022.558	3s4s – 3s6p	^{1}S – ^{1}P°	0 – 1		192
	50	394.063	850.542+C – 1104.301+C	3p4p – 3s7f	^{3}D – ^{3}F°	2 – 3		192
	5	416.654	128.165+C – 368.175+C	3s3p – 3s3d	^{3}P° – ^{3}D	0 – 1		220
	20	418.456	129.277+C – 368.254+C	3s3p – 3s3d	^{3}P° – ^{3}D	1 – 2		220
	5	418.582	129.277+C – 368.175+C	3s3p – 3s3d	^{3}P° – ^{3}D	1 – 1		220
	70	422.414	131.650+C – 368.385+C	3s3p – 3s3d	^{3}P° – ^{3}D	2 – 3		220
	5	422.643	131.650+C – 368.254+C	3s3p – 3s3d	^{3}P° – ^{3}D	2 – 2		220

K VIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	150	441.370	192.537 – 419.1	$3s3p - 3s3d$	$^1P° - ^1D$	1 – 2		192
	70	441.379	192.537 – 419.1	$3s3p - 3s3d$	$^1P° - ^1D$	1 – 2		220
	50	503.697	852.979+C – 1051.522+C	$3p4p - 3s6f$	$^3D - ^3F°$	3 – 4	Q	192
	500	519.382	0.0 – 192.537	$3s^2 - 3s3p$	$g^1S - ^1P°$	0 – 1		220
	20	557.016	129.277+C – 308.804+C	$3s3p - 3p^2$	$^3P° - ^3P$	1 – 2		220
	20	561.595	128.165+C – 306.227+C	$3s3p - 3p^2$	$^3P° - ^3P$	0 – 1		220
	100	564.480	131.650+C – 308.804+C	$3s3p - 3p^2$	$^3P° - ^3P$	2 – 2		220
	1	565.132	129.277+C – 306.227+C	$3s3p - 3p^2$	$^3P° - ^3P$	1 – 1		220
	5	569.506	129.277+C – 304.868+C	$3s3p - 3p^2$	$^3P° - ^3P$	1 – 0		220
	20	572.820	131.650+C – 306.227+C	$3s3p - 3p^2$	$^3P° - ^3P$	2 – 1		220
		773.5	0.0 – 129.277+C	$3s^2 - 3s3p$	$g^1S - ^3P°$	0 – 1	P	1135
	1	927.213	192.537 – 300.387	$3s3p - 3p^2$	$^1P° - ^1D$	1 – 2		220

POTASSIUM IX (K^{8+}), Z = 19
Ground State $1s^22s^22p^63s(^2S_{1/2})$ (11 electrons)
Ionization Potential 1 418 060 cm^{-1}; 175.818 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	76.913	0. – 1300.170	$2p^63s - 2p^69p$	$g^2S - ^2P°$	$\frac{1}{2} - \frac{3}{2}$		935
	1	78.902	0. – 1267.395	$2p^63s - 2p^68p$	$g^2S - ^2P°$	$\frac{1}{2} - \frac{3}{2}$		935
	10	82.036	0. – 1218.977	$2p^63s - 2p^67p$	$g^2S - ^2P°$	$\frac{1}{2} - \frac{3}{2}$		935
	0	85.732	160.913 – 1327.346	$2p^63p - 2p^610d$	$^2P° - ^2D$	$\frac{3}{2} - \frac{5}{2}$		118
	1	87.048	157.152 – 1305.900	$2p^63p - 2p^69d$	$^2P° - ^2D$	$\frac{1}{2} - \frac{3}{2}$		935,118
	1	87.337	160.913 – 1305.903	$2p^63p - 2p^69d$	$^2P° - ^2D$	$\frac{3}{2} - \frac{5}{2}$		935
	40	87.508	0. – 1142.753	$2p^63s - 2p^66p$	$g^2S - ^2P°$	$\frac{1}{2} - \frac{3}{2}$		935
	1	87.534	0. – 1142.413	$2p^63s - 2p^66p$	$g^2S - ^2P°$	$\frac{1}{2} - \frac{1}{2}$		935
	1	89.396	157.152 – 1275.770	$2p^63p - 2p^68d$	$^2P° - ^2D$	$\frac{1}{2} - \frac{3}{2}$		935
	10	89.697	160.913 – 1275.777	$2p^63p - 2p^68d$	$^2P° - ^2D$	$\frac{3}{2} - \frac{5}{2}$		935
	10	93.069	157.152 – 1231.624	$2p^63p - 2p^67d$	$^2P° - ^2D$	$\frac{1}{2} - \frac{3}{2}$		935
	40	93.395	160.913 – 1231.638	$2p^63p - 2p^67d$	$^2P° - ^2D$	$\frac{3}{2} - \frac{5}{2}$		935
		95.058	157.152 – 1209.143	$2p^63p - 2p^67s$	$^2P° - ^2S$	$\frac{1}{2} - \frac{1}{2}$		935
	1	95.399	160.913 – 1209.143	$2p^63p - 2p^67s$	$^2P° - ^2S$	$\frac{3}{2} - \frac{1}{2}$		935
	250	98.796	0. – 1012.208	$2p^63s - 2p^65p$	$g^2S - ^2P°$	$\frac{1}{2} - \frac{3}{2}$		935
	160	98.866	0. – 1011.515	$2p^63s - 2p^65p$	$g^2S - ^2P°$	$\frac{1}{2} - \frac{1}{2}$		935
	90	99.394	157.152 – 1163.249	$2p^63p - 2p^66d$	$^2P° - ^2D$	$\frac{1}{2} - \frac{3}{2}$		935
	160	99.761	160.913 – 1163.313	$2p^63p - 2p^66d$	$^2P° - ^2D$	$\frac{3}{2} - \frac{5}{2}$		935
	1	103.163	157.152 – 1126.514	$2p^63p - 2p^66s$	$^2P° - ^2S$	$\frac{1}{2} - \frac{1}{2}$		935
	10	103.561	160.913 – 1126.514	$2p^63p - 2p^66s$	$^2P° - ^2S$	$\frac{3}{2} - \frac{1}{2}$		935
	1	107.183	375.122 – 1308.004	$2p^63d - 2p^69f$	$^2D - ^2F°$	$\frac{5}{2} - \frac{7}{2}$		935
	1	110.650	375.122 – 1278.771	$2p^63d - 2p^68f$	$^2D - ^2F°$	$\frac{3}{2} - \frac{7}{2}$		935
	160	112.120	157.152 – 1049.054	$2p^63p - 2p^65d$	$^2P° - ^2D$	$\frac{1}{2} - \frac{3}{2}$		935
	250	112.586	160.913 – 1049.129	$2p^63p - 2p^65d$	$^2P° - ^2D$	$\frac{3}{2} - \frac{5}{2}$		935
	360	112.595	160.913 – 1049.054	$2p^63p - 2p^65d$	$^2P° - ^2D$	$\frac{3}{2} - \frac{3}{2}$	P	935,375
	1	116.109	374.867 – 1236.127	$2p^63d - 2p^67f$	$^2D - ^2F°$	$\frac{3}{2} - \frac{5}{2}$		935
	10	116.139	375.122 – 1236.159	$2p^63d - 2p^67f$	$^2D - ^2F°$	$\frac{5}{2} - \frac{7}{2}$		935
	40	121.091	157.152 – 982.977	$2p^63p - 2p^65s$	$^2P° - ^2S$	$\frac{1}{2} - \frac{1}{2}$		935
	90	121.645	160.913 – 982.977	$2p^63p - 2p^65s$	$^2P° - ^2S$	$\frac{3}{2} - \frac{1}{2}$		935
	40	125.697	374.867 – 1170.431	$2p^63d - 2p^66f$	$^2D - ^2F°$	$\frac{3}{2} - \frac{5}{2}$		935

K IX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	90	125.735	375.122 – 1170.445	$2p^63d - 2p^66f$	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		935
	650	131.633	0. – 759.685	$2p^63s - 2p^64p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		935
	500	131.880	0. – 758.262	$2p^63s - 2p^64p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		935
	160	145.659	374.867 – 1061.402	$2p^63d - 2p^65f$	$^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		935
	250	145.712	375.122 – 1061.407	$2p^63d - 2p^65f$	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		935
	500	147.120	157.152 – 836.869	$2p^63p - 2p^64d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		935
	650	147.912	160.913 – 837.003	$2p^63p - 2p^64d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		935
	160	147.941	160.913 – 836.869	$2p^63p - 2p^64d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		935
	10	156.963	375.122 – 1012.208	$2p^63d - 2p^65p$	$^2D - {}^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		935
	1	157.071	374.867 – 1011.515	$2p^63d - 2p^65p$	$^2D - {}^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		935
	250	184.590	157.152 – 698.893	$2p^63p - 2p^64s$	$^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		935
	360	185.881	160.913 – 698.893	$2p^63p - 2p^64s$	$^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		935
	360	205.769	374.867 – 860.849	$2p^63d - 2p^64f$	$^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		935
	500	205.860	375.122 – 860.889	$2p^63d - 2p^64f$	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		935
	650	205.877	375.122 – 860.849	$2p^63d - 2p^64f$	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{5}{2}$	P	935,375
	20	226.372	837.003 – 1278.771	$2p^64d - 2p^68f$	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		192
	50	247.777	759.685 – 1163.313	$2p^64p - 2p^66d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		192
	40	260.042	375.122 – 759.685	$2p^63d - 2p^64p$	$^2D - {}^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		935
		260.828	374.867 – 758.262	$2p^63d - 2p^64p$	$^2D - {}^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		935
	160	459.317	157.152 – 374.867	$2p^63p - 2p^63d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		935
	250	466.835	160.913 – 375.122	$2p^63p - 2p^63d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		935
	40	467.391	160.913 – 374.867	$2p^63p - 2p^63d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		935
	360	621.452	0. – 160.913	$2p^63s - 2p^63p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		935
	250	636.325	0. – 157.152	$2p^63s - 2p^63p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		935

POTASSIUM X (K^{9+}), Z = 19
Ground State $1s^22s^22p^6(^1S_0)$ (10 electrons)
Ionization Potential 4 063 000 cm^{-1}; 503.8 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	29.588	0.0 – 3379.7	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})4d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		189
	50	29.794	0.0 – 3356.4	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		189
	50	30.887	0.0 – 3237.6	$2s^22p^6 - 2s2p^63p$	$g^1S - {}^1P^\circ$	0 – 1		189
	20	30.937	0.0 – 3232.4	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})4s$	$g^1S - (\frac{1}{2},\frac{1}{2})^\circ$	0 – 1		189
	20	31.062	0.0 – 3219.4	$2s^22p^6 - 2s2p^63p$	$g^1S - {}^3P^\circ$	0 – 1		189
	20	31.200	0.0 – 3205.10	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4s$	$g^1S - (\frac{3}{2},\frac{1}{2})^\circ$	0 – 1		189
	400	35.307	0.0 – 2832.30	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})3d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		189
	200	35.779	0.0 – 2794.90	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		189
	100	36.229	0.0 – 2760.20	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		189
	700	41.148	0.0 – 2430.25	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})3s$	$g^1S - (\frac{1}{2},\frac{1}{2})^\circ$	0 – 1		189
	700	41.541	0.0 – 2407.26	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3s$	$g^1S - (\frac{3}{2},\frac{1}{2})^\circ$	0 – 1		189
		114.76	2395.6+C – 3266.9+C	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)4p$	$^3P^\circ - {}^1P$	2 – 1		1055
		127.35	2579.6+C – 3364.8+C	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})4d$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 3		1055
		127.56	2555.1+C – 3339.0+C	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})4d$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{7}{2}]^\circ$	3 – 4		1055
		128.93	2589.2+C – 3364.8+C	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ_{3/2})4d$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 3		1055
		164.77	2763.5+C – 3370.4+C	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$\frac{3}{2}[\frac{3}{2}]^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		1055
		165.54	2767.7+C – 3371.8+C	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$\frac{3}{2}[\frac{7}{2}]^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 5		1055
		166.48	2771.2+C – 3371.9+C	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$\frac{3}{2}[\frac{7}{2}]^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		1055

K X — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		166.90	2782.2+C – 3381.4+C	$2s^22p^5(^2P^\circ_{1/2})3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$\frac{1}{2}[\frac{5}{2}] - \frac{1}{2}[\frac{7}{2}]^\circ$	2 – 3		1055
		167.62	2796.7+C – 3393.3+C	$2s^22p^5(^2P^\circ_{1/2})3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$\frac{1}{2}[\frac{3}{2}] - \frac{1}{2}[\frac{5}{2}]^\circ$	2 – 3		1055
		167.76	2802.4+C – 3398.5+C	$2s^22p^5(^2P^\circ_{1/2})3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$\frac{1}{2}[\frac{5}{2}] - \frac{1}{2}[\frac{7}{2}]^\circ$	3 – 4		1055
		168.79	2781.3+C – 3373.8+C	$2s^22p^5(^2P^\circ_{3/2})3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{7}{2}]^\circ$	3 – 4		1055

POTASSIUM XI (K^{10+}), Z = 19
Ground State $1s^22s^22p^5(^2P^\circ_{3/2})$ (9 electrons)
Ionization Potential 4 550 000 cm^{-1}; 564.7 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	31.457	0.0 – 3179.1	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		850
	100	31.483	0.0 – 3176.3	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		850
	90	31.688	23.530 – 3179.1	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		850
	100	32.099	0.0 – 3115.4	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		850
	200	32.178	0.0 – 3107.7	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		850
	80	32.278	0.0 – 3098.1	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2F$	$\frac{3}{2} - \frac{5}{2}$		850
	100	32.318	0.0 – 3094.3	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		850
	180	32.341	23.530 – 3115.4	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		850
	80	32.421	23.530 – 3107.9	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		850
	60	32.563	23.530 – 3094.3	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		850
	200	32.808	0.0 – 3048.0	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		850
	100	32.956	0.0 – 3034.4	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		850
	100	33.012	0.0 – 3029.2	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		850
	20	33.028	0.0 – 3027.7	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		850
	100	33.087	23.530 – 3045.7	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		850
	80	33.107	0.0 – 3020.5	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4F$	$\frac{3}{2} - \frac{5}{2}$		850
	30	33.134	0.0 – 3018.0	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{1}{2}$		850
	60	33.211	23.530 – 3034.4	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		850
	60	33.285	23.530 – 3027.7	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		850
	40	33.34	23.530 – 3022.4	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4P$	$\frac{1}{2} - \frac{3}{2}$		850
	40	35.563	0.0 – 2811.9	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		850
	40	35.865	23.530 – 2811.9	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		850
	200	36.660	0.0 – 2727.8	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		850
	100	36.968	23.530 – 2728.7	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		850
	60	37.236	0.0 – 2685.6	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		850
	200	37.431	0.0 – 2671.7	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		850
	100	37.564	23.530 – 2685.6	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		850
	100	37.692	0.0 – 2653.1	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		850
	50	37.766	23.530 – 2671.7	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		850
	50	37.871	0.0 – 2640.5	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		850
	10	37.891	23.530 – 2662.5	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{1}{2} - \frac{1}{2}$		850
	30	38.030	23.530 – 2653.1	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{1}{2} - \frac{3}{2}$		850
	20	38.112	655.901 – 3279.8	$2s2p^6 - 2s2p^5(^3P^\circ)3s$	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		850
	60	38.317	655.901 – 3265.8	$2s2p^6 - 2s2p^5(^3P^\circ)3s$	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		850
	560	152.462	0.0 – 655.901	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		1119
	450	158.135	23.530 – 655.901	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		1119

POTASSIUM XII (K^{11+}), Z = 19
Ground State $1s^22s^22p^4(^3P_2)$ (8 electrons)
Ionization Potential [5 077 000] cm^{-1}; [629.4] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	110	29.168	0.0 – 3428.41	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		877
	110	29.342	18.954 – 3426.88	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		877
	110	29.367	0.0 – 3405.18	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	2 – 2		877
	65	29.43	23.207 – 3421.07	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	0 – 1		877
	10	29.493	18.954 – 3409.6+B	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	1 – 1	Q	947
	30	29.53	23.207 – 3409.6+B	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	0 – 1		877
	65	29.559	0.0 – 3383.06	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3S^\circ$	2 – 1		877
	110	29.667	79.654 – 3450.35	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$^1D - ^1F^\circ$	2 – 3		877
	175	29.68	0.0 – 3369.27	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3P^\circ$	2 – 2		877
	350	29.735	0.0 – 3363.04	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		877
	175	29.921	18.954 – 3360.93	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		877
	110	29.986	23.207 – 3358.07	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3D^\circ$	0 – 1		877
	30	30.151	79.654 – 3396.24	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1D - ^1F^\circ$	2 – 3		877
	40	30.202	163.019 – 3473.9+E	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$^1S - ^1P^\circ$	0 – 1	Q	947
	65	30.351	79.654 – 3374.38	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1D - ^1D^\circ$	2 – 2		877
	350	30.571	0.0 – 3271.1	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		877
	65	30.800	18.954 – 3265.7	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		877
	400	33.237	0.0 – 3008.7	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - ^3D^\circ$	2 – 3		865
	0	33.276	0.0 – 3005.2	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - ^3D^\circ$	2 – 2		865
	400	33.486	18.954 – 3005.2	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - ^3D^\circ$	1 – 2		865
	150	33.547	23.207 – 3004.1	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - ^3D^\circ$	0 – 1		865
	200	33.957	79.654 – 3024.50	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$^1D - ^1D^\circ$	2 – 2		865
	250	34.126	0.0 – 2930.3	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^3S^\circ$	2 – 1		865
	100	34.200	163.019 – 3086.78	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$^1S - ^1P^\circ$	0 – 1		865
	150	34.349	18.954 – 2930.3	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^3S^\circ$	1 – 1		865
	0	34.393	23.207 – 2930.3	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^3S^\circ$	0 – 1		865
	3	126.650	0.0 – 789.574	$2s^22p^4 - 2s2p^5$	$g^3P - ^1P^\circ$	2 – 1		1119
		133.76	589.176 – 1336.764	$2s2p^5 - 2p^6$	$^3P^\circ - ^1S$	1 – 0	P	375,1119
	600	140.862	79.654 – 789.574	$2s^22p^4 - 2s2p^5$	$^1D - ^1P^\circ$	2 – 1		1119
	70	159.603	163.019 – 789.574	$2s^22p^4 - 2s2p^5$	$^1S - ^1P^\circ$	0 – 1		1119
	225	169.726	0.0 – 589.176	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	2 – 1		1119
	225	172.584	18.954 – 598.382	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	1 – 0		1119
	275	174.412	0.0 – 573.363	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	2 – 2		1119
	200	175.373	18.954 – 589.176	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	1 – 1		1119
	200	176.691	23.207 – 589.176	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	0 – 1		1119
	200	180.370	18.954 – 573.363	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	1 – 2		1119
	30	182.752	789.574 – 1336.764	$2s2p^5 - 2p^6$	$^1P^\circ - ^1S$	1 – 0		1119
	40	202.545	79.654 – 573.363	$2s^22p^4 - 2s2p^5$	$^1D - ^3P^\circ$	2 – 2		1119
		613.43	0.0 – 163.019	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1S$	2 – 0	F,P	375,1119
		694.13	18.954 – 163.019	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1S$	1 – 0	F,P	375,1119
		1200.	79.654 – 163.019	$2s^22p^4 - 2s^22p^4$	$^1D - ^1S$	2 – 0	F,P	375,1119
		1255.	0.0 – 79.654	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1D$	2 – 2	F,P	375,1119
		1647.	18.954 – 79.654	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1D$	1 – 2	F,P	375,1119
		1772.	23.207 – 79.654	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1D$	0 – 2	F,P	375,1119

POTASSIUM XIII (K^{12+}), Z = 19
Ground State $1s^22s^22p^3(^4S^\circ_{3/2})$ (7 electrons)
Ionization Potential [5 764 000] cm^{-1}; [714.6] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		27.22	160.743+X - 3834.2+X	$2s^22p^3-2s^22p^2(^1S)3d$	$^2P^\circ-{}^2D$	1/2 - 3/2		950
		27.30	168.177+X - 3830.6+X	$2s^22p^3-2s^22p^2(^1S)3d$	$^2P^\circ-{}^2D$	3/2 - 5/2		950
	450	27.337	0.0 - 3658.045	$2s^22p^3-2s^22p^2(^3P)3d$	$g^4S^\circ-{}^4P$	3/2 - 3/2		877
	450	27.384	0.0 - 3651.767	$2s^22p^3-2s^22p^2(^3P)3d$	$g^4S^\circ-{}^4P$	3/2 - 5/2		877
	30	27.44	105.805+X - 3750.12+X	$2s^22p^3-2s^22p^2(^1D)3d$	$^2D^\circ-{}^2P$	5/2 - 3/2		877
	65	27.507	100.647+X - 3736.10+X	$2s^22p^3-2s^22p^2(^1D)3d$	$^2D^\circ-{}^2F$	3/2 - 5/2		877
	65	27.53	105.805+X - 3738.14+X	$2s^22p^3-2s^22p^2(^1D)3d$	$^2D^\circ-{}^2D$	5/2 - 5/2		877
	550	27.586	105.805+X - 3730.85+X	$2s^22p^3-2s^22p^2(^1D)3d$	$^2D^\circ-{}^2F$	5/2 - 7/2		877
		27.61	100.647+X - 3722.2+X	$2s^22p^3-2s^22p^2(^1D)3d$	$^2D^\circ-{}^2D$	3/2 - 3/2		950
	30	27.835	105.805+X - 3698.40+X	$2s^22p^3-2s^22p^2(^3P)3d$	$^2D^\circ-{}^2D$	5/2 - 5/2		877
		27.88	105.805+X - 3691.0+X	$2s^22p^3-2s^22p^2(^3P)3d$	$^2D^\circ-{}^2D$	5/2 - 3/2		950
		27.94	168.177+X - 3742.7+X	$2s^22p^3-2s^22p^2(^1D)3d$	$^2P^\circ-{}^2P$	3/2 - 1/2		950
	110	28.012	168.177+X - 3738.14+X	$2s^22p^3-2s^22p^2(^1D)3d$	$^2P^\circ-{}^2D$	3/2 - 5/2		877
		28.10	160.743+X - 3722.2+X	$2s^22p^3-2s^22p^2(^1D)3d$	$^2P^\circ-{}^2D$	1/2 - 3/2		950
	110	28.160	105.805+X - 3656.96+X	$2s^22p^3-2s^22p^2(^3P)3d$	$^2D^\circ-{}^2F$	5/2 - 7/2		877
	175	28.327	168.177+X - 3698.40+X	$2s^22p^3-2s^22p^2(^3P)3d$	$^2P^\circ-{}^2D$	3/2 - 5/2		877
	30	28.958	168.177+X - 3621.45+X	$2s^22p^3-2s^22p^2(^3P)3d$	$^2P^\circ-{}^2P$	3/2 - 3/2		877
		125.	0.0 - 801.50+X	$2s^22p^3-2s2p^4$	$g^4S^\circ-{}^2P$	3/2 - 3/2	P	1140
	150	138.500	100.647+X - 822.67+X	$2s^22p^3-2s2p^4$	$^2D^\circ-{}^2P$	3/2 - 1/2		1140
	150	142.681	100.647+X - 801.50+X	$2s^22p^3-2s2p^4$	$^2D^\circ-{}^2P$	3/2 - 3/2		1140
	450	143.741	105.805+X - 801.50+X	$2s^22p^3-2s2p^4$	$^2D^\circ-{}^2P$	5/2 - 3/2		1140
	30	149.447	100.647+X - 769.78+X	$2s^22p^3-2s2p^4$	$^2D^\circ-{}^2S$	3/2 - 1/2		1140
	6	151.073	160.743+X - 822.67+X	$2s^22p^3-2s2p^4$	$^2P^\circ-{}^2P$	1/2 - 1/2		1140
	100	152.793	168.177+X - 822.67+X	$2s^22p^3-2s2p^4$	$^2P^\circ-{}^2P$	3/2 - 1/2		1140
	5	156.067	160.743+X - 801.50+X	$2s^22p^3-2s2p^4$	$^2P^\circ-{}^2P$	1/2 - 3/2		1140
	40	157.902	168.177+X - 801.50+X	$2s^22p^3-2s2p^4$	$^2P^\circ-{}^2P$	3/2 - 3/2		1140
	20	161.302	661.81+X - 1281.76+X	$2s2p^4-2p^5$	$^2D-{}^2P^\circ$	3/2 - 1/2		1140
	40	164.193	160.743+X - 769.78+X	$2s^22p^3-2s2p^4$	$^2P^\circ-{}^2S$	1/2 - 1/2		1140
	20	166.214	168.177+X - 769.78+X	$2s^22p^3-2s2p^4$	$^2P^\circ-{}^2S$	3/2 - 1/2		1140
	5	168.165	661.81+X - 1256.46+X	$2s2p^4-2p^5$	$^2D-{}^2P^\circ$	3/2 - 3/2		1140
	40	168.471	662.88+X - 1256.46+X	$2s2p^4-2p^5$	$^2D-{}^2P^\circ$	5/2 - 3/2		1140
	150	178.205	100.647+X - 661.81+X	$2s^22p^3-2s2p^4$	$^2D^\circ-{}^2D$	3/2 - 3/2		1140
	225	179.514	105.805+X - 662.88+X	$2s^22p^3-2s2p^4$	$^2D^\circ-{}^2D$	5/2 - 5/2		1140
	3	179.855	105.805+X - 661.81+X	$2s^22p^3-2s2p^4$	$^2D^\circ-{}^2D$	5/2 - 3/2		1140
	20	198.524	0.0 - 503.717	$2s^22p^3-2s2p^4$	$g^4S^\circ-{}^4P$	3/2 - 1/2		1140
	10	199.567	160.743+X - 661.81+X	$2s^22p^3-2s2p^4$	$^2P^\circ-{}^2D$	1/2 - 3/2		1140
	225	201.505	0.0 - 496.266	$2s^22p^3-2s2p^4$	$g^4S^\circ-{}^4P$	3/2 - 3/2		1140
	225	202.140	168.177+X - 662.88+X	$2s^22p^3-2s2p^4$	$^2P^\circ-{}^2D$	3/2 - 5/2		1140
	150	208.106	0.0 - 480.524	$2s^22p^3-2s2p^4$	$g^4S^\circ-{}^4P$	3/2 - 5/2		1140
	15	219.793	801.50+X - 1256.46+X	$2s2p^4-2p^5$	$^2P-{}^2P^\circ$	3/2 - 3/2		1140
		595.	0.0 - 168.177+X	$2s^22p^3-2s^22p^3$	$g^4S^\circ-{}^2P^\circ$	3/2 - 3/2	F,P	375,1140
		622.	0.0 - 160.743+X	$2s^22p^3-2s^22p^3$	$g^4S^\circ-{}^2P^\circ$	3/2 - 1/2	F,P	375,1140
		945.	0.0 - 105.805+X	$2s^22p^3-2s^22p^3$	$g^4S^\circ-{}^2D^\circ$	3/2 - 5/2	F,P	375,1140
		994.	0.0 - 100.647+X	$2s^22p^3-2s^22p^3$	$g^4S^\circ-{}^2D^\circ$	3/2 - 3/2	F,P	375,1140
		1481.	100.647+X - 168.177+X	$2s^22p^3-2s^22p^3$	$^2D^\circ-{}^2P^\circ$	3/2 - 3/2	F,P	375,1140
		1603.	105.805+X - 168.177+X	$2s^22p^3-2s^22p^3$	$^2D^\circ-{}^2P^\circ$	5/2 - 3/2	F,P	375,1140
		1664.	100.647+X - 160.743+X	$2s^22p^3-2s^22p^3$	$^2D^\circ-{}^2P^\circ$	3/2 - 1/2	F,P	375,1140
		1820.	105.805+X - 160.743+X	$2s^22p^3-2s^22p^3$	$^2D^\circ-{}^2P^\circ$	5/2 - 1/2	F,P	375,1140

POTASSIUM XIV (K^{13+}), Z = 19
Ground State $1s^22s^22p^2(^3P_0)$ (6 electrons)
Ionization Potential [6 345 000] cm^{-1}; [786.6] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		25.583	13.235 – 3922.1+B	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - {}^3P^o$	1 – 0	P	949
		25.592	13.235 – 3920.6+B	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - {}^3P^o$	1 – 1	P	949
		25.607	13.235 – 3919.22	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - {}^3P^o$	1 – 2	P	949
		25.696	0.0 – 3891.6+B	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - {}^3D^o$	0 – 1	P	949
	110	25.700	28.225 – 3919.22	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - {}^3P^o$	2 – 2		877
		25.726	13.235 – 3900.4+B	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - {}^3D^o$	1 – 2	P	949
	175	25.750	28.225 – 3911.67	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - {}^3D^o$	2 – 3		877
		25.784	13.235 – 3891.6+B	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - {}^3D^o$	1 – 1	P	949
		25.818	28.225 – 3900.4+B	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - {}^3D^o$	2 – 2	Q	949
		25.887	95.913 – 3958.8	$2s^22p^2 - 2s^22p(^2P^o)3d$	${}^1D - {}^1P^o$	2 – 1	P	949
	350	25.909	95.913 – 3955.57	$2s^22p^2 - 2s^22p(^2P^o)3d$	${}^1D - {}^1F^o$	2 – 3		877
		26.018	28.225 – 3872.0+B	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - {}^3F^o$	2 – 3	Q	949
		26.107	28.225 – 3858.6+B	$2s^22p^2 - 2s^22p(^2P^o)3d$	$g^3P - {}^3F^o$	2 – 2	P	949
		26.284	95.913 – 3900.4+B	$2s^22p^2 - 2s^22p(^2P^o)3d$	${}^1D - {}^3D^o$	2 – 2	Q	949
		26.456	178.914 – 3958.8	$2s^22p^2 - 2s^22p(^2P^o)3d$	${}^1S - {}^1P^o$	0 – 1		949
		26.591	95.913 – 3858.6+B	$2s^22p^2 - 2s^22p(^2P^o)3d$	${}^1D - {}^3F^o$	2 – 2	Q	949
	30	26.816	461.002 – 4190.3	$2s2p^3 - 2s2p^2(^4P)3d$	${}^3D^o - {}^3F$	3 – 4		877
	15	147.556	0.0 – 677.71	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3S^o$	0 – 1		1141
	60	150.495	13.235 – 677.71	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3S^o$	1 – 1		1141
	160	151.713	95.913 – 755.05	$2s^22p^2 - 2s2p^3$	${}^1D - {}^1P^o$	2 – 1		1141
	175	153.970	28.225 – 677.71	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3S^o$	2 – 1		1141
	1	154.265	28.225 – 676.46	$2s^22p^2 - 2s2p^3$	$g^3P - {}^1D^o$	2 – 2		1141
	8	168.961	458.754 – 1050.62	$2s2p^3 - 2p^4$	${}^3D^o - {}^3P$	2 – 1		1141
	4	169.165	459.498 – 1050.62	$2s2p^3 - 2p^4$	${}^3D^o - {}^3P$	1 – 1		1141
	225	172.252	95.913 – 676.46	$2s^22p^2 - 2s2p^3$	${}^1D - {}^1D^o$	2 – 2		1141
	15	173.570	178.914 – 755.05	$2s^22p^2 - 2s2p^3$	${}^1S - {}^1P^o$	0 – 1		1141
	8	175.024	458.754 – 1030.09	$2s2p^3 - 2p^4$	${}^3D^o - {}^3P$	2 – 2		1141
	200	175.723	461.002 – 1030.09	$2s2p^3 - 2p^4$	${}^3D^o - {}^3P$	3 – 2		1141
	125	185.883	0.0 – 538.032	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^o$	0 – 1		1141
		189.85	13.235 – 539.938	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^o$	1 – 2		1084
	7	190.551	13.235 – 538.032	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^o$	1 – 1		1141
	5	190.779	13.235 – 537.402	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^o$	1 – 0		1141
		192.85	538.032 – 1056.57	$2s2p^3 - 2p^4$	${}^3P^o - {}^3P$	1 – 0		1084
	40	195.422	28.225 – 539.938	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^o$	2 – 2		1141
		195.79	539.938 – 1050.62	$2s2p^3 - 2p^4$	${}^3P^o - {}^3P$	2 – 1		1084
	8	196.151	28.225 – 538.032	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^o$	2 – 1		1141
	2	200.097	755.05 – 1254.81	$2s2p^3 - 2p^4$	${}^1P^o - {}^1S$	1 – 0		1141
		203.23	538.032 – 1030.09	$2s2p^3 - 2p^4$	${}^3P^o - {}^3P$	1 – 2	P	375,1141
	3	204.014	539.938 – 1030.09	$2s2p^3 - 2p^4$	${}^3P^o - {}^3P$	2 – 2		1141
	3	217.615	0.0 – 459.498	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^o$	0 – 1		1141
	6	224.457	13.235 – 458.754	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^o$	1 – 2		1141
	3	231.066	28.225 – 461.002	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^o$	2 – 3		1141
	6	231.297	676.46 – 1108.80	$2s2p^3 - 2p^4$	${}^1D^o - {}^1D$	2 – 2		1141
		283.78	677.71 – 1030.09	$2s2p^3 - 2p^4$	${}^3S^o - {}^3P$	1 – 2	P	375,1141
		452.	28.225 – 249.30+U	$2s^22p^2 - 2s2p^3$	$g^3P - {}^5S^o$	2 – 2	P	375,1141
		603.58	13.235 – 178.914	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1S$	1 – 0	F,P	375,1141
		663.62	28.225 – 178.914	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1S$	2 – 0	F,P	375,1141
		1043.	0.0 – 95.913	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1D$	0 – 2	F,P	375,1141
		1205.	95.913 – 178.914	$2s^22p^2 - 2s^22p^2$	${}^1D - {}^1S$	2 – 0	F,P	375,1141
		1210.	13.235 – 95.913	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1D$	1 – 2	F,P	375,1141
		1477.	28.225 – 95.913	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1D$	2 – 2	F,P	375,1141

POTASSIUM XV (K^{14+}), Z = 19
Ground State $1s^22s^22p(^2P^{\circ}_{1/2})$ (5 electrons)
Ionization Potential [6 945 000] cm^{-1}; [861.6] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	23.146	0.0 – 4320.4	$2s^22p - 2s2p(^3P)3p$	$g\,^2P^{\circ} - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		877
	30	23.180	28.99 – 4343.07	$2s^22p - 2s2p(^3P)3p$	$g\,^2P^{\circ} - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		877
	10	23.588	0.0 – 4239.44	$2s^22p - 2s2p(^3P)3p$	$g\,^2P^{\circ} - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		877
	10	23.633	28.99 – 4260.38	$2s^22p - 2s2p(^3P)3p$	$g\,^2P^{\circ} - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		877
	65	23.981	445.51 – 4615.48	$2s2p^2 - 2s2p(^1P)3d$	${}^2D - {}^2F^{\circ}$	$\frac{5}{2}-\frac{7}{2}$		877
	250	24.13	259.63+X – 4403.8+X	$2s2p^2 - 2s2p(^3P)3d$	${}^4P - {}^4P^{\circ}$	$\frac{3}{2}-\frac{5}{2}$		877
	450	24.20	0.0 – 4132.2	$2s^22p - 2s^23d$	$g\,^2P^{\circ} - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		877
	450	24.328	28.99 – 4139.50	$2s^22p - 2s^23d$	$g\,^2P^{\circ} - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		877
	30	24.77	599.08 – 4636.2	$2s2p^2 - 2s2p(^1P)3d$	${}^2P - {}^2D^{\circ}$	$\frac{3}{2}-\frac{5}{2}$		877
	65	24.889	445.51 – 4463.35	$2s2p^2 - 2s2p(^3P)3d$	${}^2D - {}^2F^{\circ}$	$\frac{5}{2}-\frac{7}{2}$		877
	30	24.946	443.93 – 4452.59	$2s2p^2 - 2s2p(^3P)3d$	${}^2D - {}^2F^{\circ}$	$\frac{3}{2}-\frac{5}{2}$		877
	30	25.265	445.51 – 4403.55	$2s2p^2 - 2s2p(^3P)3d$	${}^2D - {}^2D^{\circ}$	$\frac{5}{2}-\frac{5}{2}$		877
	15	166.925	0.0 – 599.08	$2s^22p - 2s2p^2$	$g\,^2P^{\circ} - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		1142
	3	169.989	0.0 – 588.26	$2s^22p - 2s2p^2$	$g\,^2P^{\circ} - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		1142
	150	175.406	28.99 – 599.08	$2s^22p - 2s2p^2$	$g\,^2P^{\circ} - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		1142
	20	178.807	28.99 – 588.26	$2s^22p - 2s2p^2$	$g\,^2P^{\circ} - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		1142
	20	180.878	0.0 – 552.86	$2s^22p - 2s2p^2$	$g\,^2P^{\circ} - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		1142
		184.58	443.93 – 985.69	$2s2p^2 - 2p^3$	${}^2D - {}^2P^{\circ}$	$\frac{3}{2}-\frac{3}{2}$		1084
	15	185.123	445.51 – 985.69	$2s2p^2 - 2p^3$	${}^2D - {}^2P^{\circ}$	$\frac{5}{2}-\frac{3}{2}$		1142
	3	186.799	443.93 – 979.26	$2s2p^2 - 2p^3$	${}^2D - {}^2P^{\circ}$	$\frac{3}{2}-\frac{1}{2}$		1142
	1	189.766	248.32+X – 775.28+X	$2s2p^2 - 2p^3$	${}^4P - {}^4S^{\circ}$	$\frac{1}{2}-\frac{3}{2}$		1142
		190.90	28.99 – 552.86	$2s^22p - 2s2p^2$	$g\,^2P^{\circ} - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	P	375
	3	193.930	259.63+X – 775.28+X	$2s2p^2 - 2p^3$	${}^4P - {}^4S^{\circ}$	$\frac{3}{2}-\frac{3}{2}$		1142
	10	199.567	274.20+X – 775.28+X	$2s2p^2 - 2p^3$	${}^4P - {}^4S^{\circ}$	$\frac{5}{2}-\frac{3}{2}$		1142
		230.71	443.93 – 877.37	$2s2p^2 - 2p^3$	${}^2D - {}^2D^{\circ}$	$\frac{3}{2}-\frac{5}{2}$		1084
		231.00	552.86 – 985.69	$2s2p^2 - 2p^3$	${}^2S - {}^2P^{\circ}$	$\frac{1}{2}-\frac{3}{2}$		1084
		231.54	445.51 – 877.37	$2s2p^2 - 2p^3$	${}^2D - {}^2D^{\circ}$	$\frac{5}{2}-\frac{5}{2}$		1084
		232.34	443.93 – 874.33	$2s2p^2 - 2p^3$	${}^2D - {}^2D^{\circ}$	$\frac{3}{2}-\frac{3}{2}$		1084
		233.22	445.51 – 874.33	$2s2p^2 - 2p^3$	${}^2D - {}^2D^{\circ}$	$\frac{5}{2}-\frac{3}{2}$		1084
	3	240.083	28.99 – 445.51	$2s^22p - 2s2p^2$	$g\,^2P^{\circ} - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		1142
		255.76	588.26 – 979.26	$2s2p^2 - 2p^3$	${}^2P - {}^2P^{\circ}$	$\frac{1}{2}-\frac{1}{2}$		1084
		258.62	599.08 – 985.69	$2s2p^2 - 2p^3$	${}^2P - {}^2P^{\circ}$	$\frac{3}{2}-\frac{3}{2}$		1084

POTASSIUM XVI (K^{15+}), Z = 19
Ground State $1s^22s^2(^1S_0)$ (4 electrons)
Ionization Potential [7 810 000] cm^{-1}; [968] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		3.6020						624
		16.70	0.0 – 5986.6+Z	$2s^2 - 2s4p$	$g\,^1S - {}^3P^{\circ}$	0 – 1	P	375
	65	21.737	274.130 – 4874.58	$2s2p - 2p3p$	${}^3P^{\circ} - {}^3D$	2 – 3		877
	10	21.911	0.0 – 4563.92	$2s^2 - 2s3p$	$g\,^1S - {}^1P^{\circ}$	0 – 1		877
	65	22.813	252.523 – 4635.99	$2s2p - 2s3d$	${}^3P^{\circ} - {}^3D$	1 – 2		877
	175	22.921	274.130 – 4636.94	$2s2p - 2s3d$	${}^3P^{\circ} - {}^3D$	2 – 3		877
	30	23.27	660.172 – 4957.57	$2p^2 - 2p3d$	${}^3P - {}^3D^{\circ}$	1 – 2		877
	110	23.315	676.482 – 4965.56	$2p^2 - 2p3d$	${}^3P - {}^3D^{\circ}$	2 – 3		877
	175	23.399	742.647 – 5016.34	$2p^2 - 2p3d$	${}^1D - {}^1F^{\circ}$	2 – 3		877
	65	23.84	484.846 – 4679.60	$2s2p - 2s3d$	${}^1P^{\circ} - {}^1D$	1 – 2		877
		206.251	0.0 – 484.846	$2s^2 - 2s2p$	$g\,^1S - {}^1P^{\circ}$	0 – 1	P	1104
		213.439	274.130 – 742.647	$2s2p - 2p^2$	${}^3P^{\circ} - {}^1D$	2 – 2	P	1104

K XVI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		235.871	252.523 – 676.482	$2s2p - 2p^2$	$^3P^\circ - {}^3P$	1 – 2	P	1104
		239.244	484.846 – 902.83	$2s2p - 2p^2$	$^1P^\circ - {}^1S$	1 – 0	P	1104
		239.981	243.472 – 660.172	$2s2p - 2p^2$	$^3P^\circ - {}^3P$	0 – 1	P	1104
		245.309	252.523 – 660.172	$2s2p - 2p^2$	$^3P^\circ - {}^3P$	1 – 1	P	1104
		248.539	274.130 – 676.482	$2s2p - 2p^2$	$^3P^\circ - {}^3P$	2 – 2	P	1104
		253.677	252.523 – 646.725	$2s2p - 2p^2$	$^3P^\circ - {}^3P$	1 – 0	P	1104
		259.039	274.130 – 660.172	$2s2p - 2p^2$	$^3P^\circ - {}^3P$	2 – 1	P	1104
		387.896	484.846 – 742.647	$2s2p - 2p^2$	$^1P^\circ - {}^1D$	1 – 2	P	1104
		396.004	0.0 – 252.523	$2s^2 - 2s2p$	$g\,^1S - {}^3P^\circ$	0 – 1	P	1104

POTASSIUM XVII (K^{16+}), Z = 19
Ground State $1s^22s(^2S_{1/2})$ (3 electrons)
Ionization Potential 8 344 000 cm^{-1}; 1033.4 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		3.5357	4701.22 – 32982.14	$1s^23s - 1s2p(^1P^\circ)3s$	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		643
		3.5411	273.481 – 28511.	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		643
		3.5456	306.019 – 28511.	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		643
		3.5484	0.0 – 28182.	$1s^22s - 1s(^2S)(2s2p(^1P^\circ))$	$g\,^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		643
		3.550	4817.64 – 32982.14	$1s^23d - 1s2p(^1P^\circ)3s$	$^2D - {}^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$	P	283
		3.5614	306.019 – 28385.	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		643
		3.563	273.481 – 28339.5	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$	P	283
		3.5657	273.481 – 28318.	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		643
		3.5695	306.019 – 28321.	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		643
		3.5880	306.019 – 28182.2	$1s^22p - 1s2p^2$	$^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		643
		12.576	0.0 – 7951.65	$1s^22s - 1s^29p$	$g\,^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		643
		12.744	0.0 – 7846.83	$1s^22s - 1s^28p$	$g\,^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		643
		12.996	0.0 – 7694.68	$1s^22s - 1s^27p$	$g\,^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		643
		13.025	273.481 – 7951.04	$1s^22p - 1s^29d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		643
		13.080	306.019 – 7951.30	$1s^22p - 1s^29d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		643
		13.204	273.481 – 7846.69	$1s^22p - 1s^28d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		643
		13.261	306.019 – 7847.13	$1s^22p - 1s^28d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		643
		13.407	0.0 – 7458.80	$1s^22s - 1s^26p$	$g\,^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		643
		13.475	273.481 – 7694.65	$1s^22p - 1s^27d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		643
		13.533	306.019 – 7695.38	$1s^22p - 1s^27d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		643
		13.914	273.481 – 7460.49	$1s^22p - 1s^26d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		643
		13.977	306.019 – 7460.63	$1s^22p - 1s^26d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		643
		14.147	0.0 – 7068.64	$1s^22s - 1s^25p$	$g\,^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		643
		14.715	273.481 – 7069.27	$1s^22p - 1s^25d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		643
		14.776	306.019 – 7073.75	$1s^22p - 1s^25d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		643
		15.755	0.0 – 6347.19	$1s^22s - 1s^24p$	$g\,^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	977
		15.765	0.0 – 6343.17	$1s^22s - 1s^24p$	$g\,^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	P	977
		16.427	273.481 – 6361.02	$1s^22p - 1s^24d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		643
		16.497	306.019 – 6367.73	$1s^22p - 1s^24d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		643
		16.559	273.481 – 6312.40	$1s^22p - 1s^24s$	$^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$	P	977
		16.649	306.019 – 6312.40	$1s^22p - 1s^24s$	$^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$	P	977
		20.896	0.0 – 4785.60	$1s^22s - 1s^23p$	$g\,^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	977
		20.938	0.0 – 4776.01	$1s^22s - 1s^23p$	$g\,^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	P	977
		22.021	273.481 – 4814.60	$1s^22p - 1s^23d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$	P	977
		22.165	306.019 – 4817.64	$1s^22p - 1s^23d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	977
		22.189	306.019 – 4814.60	$1s^22p - 1s^23d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$	P	643

K XVII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		22.585	273.481 – 4701.22	$1s^22p - 1s^23s$	$^2P^o - ^2S$	$\frac{1}{2}-\frac{1}{2}$	P	977
		22.752	306.019 – 4701.22	$1s^22p - 1s^23s$	$^2P^o - ^2S$	$\frac{3}{2}-\frac{1}{2}$	P	977
		326.777	0.0 – 306.019	$1s^22s - 1s^22p$	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	977
		365.656	0.0 – 273.481	$1s^22s - 1s^22p$	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{1}{2}$	P	977

POTASSIUM XVIII (K^{17+}), Z = 19
Ground State $1s^2(^1S_0)$ (2 electrons)
Ionization Potential 37 190 000 cm^{-1}; 4611.06 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		2.763	0.000 – 36195.6	$1s^2 - 1s6p$	$g^1S - ^3P^o$	0 – 1	P	728
		2.797	0.000 – 35759.32	$1s^2 - 1s5p$	$g^1S - ^3P^o$	0 – 1	P	728
		2.861	0.000 – 34951.14	$1s^2 - 1s4p$	$g^1S - ^3P^o$	0 – 1	P	728
		3.008	0.000 – 33239.39	$1s^2 - 1s3p$	$g^1S - ^1P^o$	0 – 1	P	728
		3.012	0.000 – 33200.41	$1s^2 - 1s3p$	$g^1S - ^3P^o$	0 – 1	P	728
	3	3.5316	0.000 – 28315.64	$1s^2 - 1s2p$	$g^1S - ^1P^o$	0 – 1	P	283,856,918
	1	3.5493	0.000 – 28174.81	$1s^2 - 1s2p$	$g^1S - ^3P^o$	0 – 1	P	283,856,918
	2	3.570	0.000 – 28007.497	$1s^2 - 1s2s$	$g^1S - ^3S$	0 – 1	F,P	375,856,918
		19.23	28007.497 – 33208.81	$1s2s - 1s3p$	$^3S - ^3P^o$	1 – 2	P	375,918
		19.77	28182.37 – 33239.39	$1s2s - 1s3p$	$^1S - ^1P^o$	0 – 1	P	375,918
		55.54	33154.18 – 34954.69	$1s3s - 1s4p$	$^3S - ^3P^o$	1 – 2	P	375,918
		56.60	33200.34 – 34967.17	$1s3s - 1s4p$	$^1S - ^1P^o$	0 – 1	P	375,918
		511.89	28007.497 – 28202.85	$1s2s - 1s2p$	$^3S - ^3P^o$	1 – 2	P	375,918
		750.36	28182.37 – 28315.64	$1s2s - 1s2p$	$^1S - ^1P^o$	0 – 1	P	375,918
		1830.50	33154.18 – 33208.81	$1s3s - 1s3p$	$^3S - ^3P^o$	1 – 2	P	375,918

POTASSIUM XIX (K^{18+}), Z = 19
Ground State $1s(^2S_{1/2})$ (1 electron)
Ionization Potential 39 795 630 cm^{-1}; 4934.07 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		2.538	0.0 – 39399.4649	1s – 10p	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		2.544	0.0 – 39306.5317	1s – 9p	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		2.553	0.0 – 39176.6053	1s – 8p	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		2.565	0.0 – 38987.0893	1s – 7p	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		2.584	0.0 – 38695.0773	1s – 6p	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		2.617	0.0 – 38208.9125	1s – 5p	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		2.680	0.0 – 37315.9973	1s – 4p	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		2.826	0.0 – 35386.9563	1s – 3p	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		2.827	0.0 – 35372.6470	1s – 3p	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{1}{2}$	P	1042
		3.347	0.0 – 29880.1090	1s – 2p	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		3.352	0.0 – 29831.8320	1s – 2p	$g^2S - ^2P^o$	$\frac{1}{2}-\frac{1}{2}$	P	1042
		10.454	29833.4050 – 39399.4649	2s – 10p	$^2S - ^2P^o$	$\frac{1}{2}-\frac{3}{2}$	P	1042

K XIX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		10.505	29880.1090 – 39399.4649	2p – 10d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	1042
		10.556	29833.4050 – 39306.5317	2s – 9p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		10.608	29880.1090 – 39306.5317	2p – 9d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	1042
		10.703	29833.4050 – 39176.6053	2s – 8p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		10.757	29880.1090 – 39176.6053	2p – 8d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	1042
		10.925	29833.4050 – 38987.0893	2s – 7p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		10.981	29880.1090 – 38987.0893	2p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	1042
		11.285	29833.4050 – 38695.0773	2s – 6p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		11.344	29880.1090 – 38695.0773	2p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	1042
		11.940	29833.4050 – 38208.9125	2s – 5p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		12.005	29880.1090 – 38209.9286	2p – 5d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	1042
		13.364	29833.4050 – 37315.9973	2s – 4p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		13.445	29880.1090 – 37317.9818	2p – 4d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	1042
		18.006	29833.4050 – 35386.9563	2s – 3p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		18.144	29880.1090 – 35391.6586	2p – 3d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	1042
		24.836	35373.1180 – 39399.4649	3s – 10p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		24.922	35386.9563 – 39399.4649	3p – 10d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	1042
		24.951	35391.6586 – 39399.4649	3d – 10f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	1042
		25.423	35373.1180 – 39306.5317	3s – 9p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		25.513	35386.9563 – 39306.5317	3p – 9d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	1042
		25.544	35391.6586 – 39306.5317	3d – 9f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	1042
		26.292	35373.1180 – 39176.6053	3s – 8p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		26.388	35386.9563 – 39176.6053	3p – 8d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	1042
		26.420	35391.6586 – 39176.6053	3d – 8f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	1042
		27.670	35373.1180 – 38987.0893	3s – 7p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		27.777	35386.9563 – 38987.0893	3p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	1042
		27.813	35391.6586 – 38987.0893	3d – 7f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	1042
		30.103	35373.1180 – 38695.0773	3s – 6p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		30.229	35386.9563 – 38695.0773	3p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	1042
		30.272	35391.6586 – 38695.0773	3d – 6f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	1042
		35.264	35373.1180 – 38208.9125	3s – 5p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		35.424	35386.9563 – 38209.9286	3p – 5d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	1042
		35.476	35391.6586 – 38210.4365	3d – 5f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	1042
		47.863	37310.1627 – 39399.4649	4s – 10p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		47.997	37315.9973 – 39399.4649	4p – 10d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	1042
		48.043	37317.9818 – 39399.4649	4d – 10f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	1042
		50.091	37310.1627 – 39306.5317	4s – 9p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		50.238	37315.9973 – 39306.5317	4p – 9d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	1042
		50.288	37317.9818 – 39306.5317	4d – 9f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	1042
		51.470	35373.1180 – 37315.9973	3s – 4p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		51.786	35386.9563 – 37317.9818	3p – 4d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	1042
		51.886	35391.6586 – 37318.9736	3d – 4f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	1042
		53.578	37310.1627 – 39176.6053	4s – 8p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		53.746	37315.9973 – 39176.6053	4p – 8d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	1042
		53.803	37317.9818 – 39176.6053	4d – 8f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	1042
		59.633	37310.1627 – 38987.0893	4s – 7p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		59.841	37315.9973 – 38987.0893	4p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	1042
		59.912	37317.9818 – 38987.0893	4d – 7f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	1042
		72.207	37310.1627 – 38695.0773	4s – 6p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		72.512	37315.9973 – 38695.0773	4p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	1042
		72.617	37317.9818 – 38695.0773	4d – 6f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	1042
		83.784	38205.9266 – 39399.4649	5s – 10p	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	1042
		83.995	38208.9125 – 39399.4649	5p – 10d	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	1042
		84.066	38209.9286 – 39399.4649	5d – 10f	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	1042

K XIX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		90.859	38205.9266 - 39306.5317	5s - 9p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		91.106	38208.9125 - 39306.5317	5p - 9d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	1042
		91.191	38209.9286 - 39306.5317	5d - 9f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	1042
		103.021	38205.9266 - 39176.6053	5s - 8p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		103.339	38208.9125 - 39176.6053	5p - 8d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	1042
		103.447	38209.9286 - 39176.6053	5d - 8f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	1042
		111.266	37310.1627 - 38208.9125	4s - 5p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		111.865	37315.9973 - 38209.9286	4p - 5d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	1042
		112.050	37317.9818 - 38210.4365	4d - 5f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	1042
		128.014	38205.9266 - 38987.0893	5s - 7p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		128.506	38208.9125 - 38987.0893	5p - 7d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	1042
		128.674	38209.9286 - 38987.0893	5d - 7f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	1042
		204.436	38205.9266 - 38695.0773	5s - 6p	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		205.692	38208.9125 - 38695.0773	5p - 6d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	1042
		206.122	38209.9286 - 38695.0773	5d - 6f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	1042

CALCIUM , Z = 20
Unclassified Lines

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	88.171						935
	90	88.308						935
	10	88.347						935
	10	89.580						935
	10	89.802						935
	10	90.552						935
	40	91.190						935
	1	91.343						935
	10	93.372						935
	1	98.919						935
	1	98.956						935
	10	99.861						935
	1	100.375						935
	10	100.602						935
	1	100.624						935
	10	101.183						935
	40	101.223						935
	1	102.897						935
	40	106.718						935
	1	108.006						935
	1	117.359						935
	10	118.971						935
	1	119.071						935
	10	119.430						935
	90	120.458						935
	40	121.475						935
	40	121.536						935
	10	121.929						935
	1	123.128						935
	90	123.474						935
	1	126.148						935
	1	127.203						935
	90	127.570						935
	10	127.904						935
	1	129.022						935
	1	130.329						935
	160	130.497						935
	90	130.933						935
	1	131.006						935
	1	132.381						935
	40	133.023						935
	1	133.264						935
	1	133.630						935
	90	134.035						935
	1	136.256						935
	1	139.169						935
	90	139.443						935
	10	141.432						935
	40	141.521						935
	250	141.656						935
	1	141.829						935
	250	142.000						935
	1	144.265						935
	40	145.457						935

CA UNCLASSIFIED LINES — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	40	145.589						935
	90	147.147						935
	40	147.565						935
	10	147.669						935
	1	153.985						935
	10	154.217						935
	40	154.398						935
	10	155.632						935
	10	155.692						935
	10	157.838						935
	40	157.929						935
	1	158.136						935
	90	158.283						935
	10	158.337						935
	1	158.818						935
	1	159.916						935
	10	160.127						935
	10	161.261						935
	160	161.839						935
	90	162.960						935
	10	167.353						935
	1	168.166						935
	10	168.707						935
	10	171.073						935
	10	175.655						935
	40	175.998						935
	10	178.413						935
	40	178.984						935
	90	180.582						935
	1	182.794						935
	1	183.184						935
	1	183.648						935
	10	183.733						935
	10	186.052						935
	40	187.515						192
	90	187.534						935
	10	188.331						935
	10	189.737						935
	1	192.032						935
	90	197.002						935
	90	197.695						935
	40	197.821						935
	160	198.100						935
	1	198.201						935
	40	198.415						935
	10	198.663						935
	10	198.860						935
	1	199.030						935
	10	199.093						935
	1	201.055						935
	40	202.315						935
	40	207.238						935
	50	209.188						192
	10	209.213						935

CA UNCLASSIFIED LINES — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	210.611						935
	1	212.841						935
	10	213.275						935
	90	216.009						935
	100	227.895						192
	50	330.809						192
	50	337.020						192
	100	337.396						192
	150	368.303						192
	250	369.647						192
	50	427.655						192
	100	440.118						192
	50	442.607						192
	50	444.254						192
	50	459.811						192
	50	468.540						192
	100	476.177						192
	50	477.300						192
	200	478.305						192
	100	480.345						192
	150	480.471						192
	50	482.663						192
	100	482.769						192
	150	484.368						192
	50	514.498						192
	0	526.604						220
	400	528.286						192
	50	569.122						192
	50	576.662						192
	150	603.622						192
	50	611.186						192
	50	620.566						192
	100	642.812						192
	50	659.694						192
	100	667.126						192
	50	668.462						192
	50	672.083						192
	100	686.190						192
	100	693.824						192
	1	698.757						220
	50	769.602						192
	100	772.641						192
	50	780.116						192
	100	828.451						192
	150	846.611						192
	150	850.966						192
	200	856.635						192
	50	860.983						192
	100	890.892						192
	50	897.972						192
	100	916.917						192
	115	917.278						192
	50	934.875						192
	50	938.699						192

CA UNCLASSIFIED LINES — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	250	987.336						192
	150	998.397						192
	200	1028.560						192
	200	1031.760						192

CALCIUM I (Ca^{0+}), Z = 20
Ground State $1s^22s^22p^63s^23p^64s^2(^1S_0)$ (20 electrons)
Ionization Potential 49 305.96 cm^{-1}; 6.11321 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		359.417	0.0 – 278.228	$3p^64s^2 - 3p^54s^2(^2P^\circ_{1/2})10d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	973
		359.820	0.0 – 277.917	$3p^64s^2 - 3p^54s^2(^2P^\circ_{1/2})9d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	973
		360.452	0.0 – 277.430	$3p^64s^2 - 3p^54s^2(^2P^\circ_{1/2})8d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	973
		361.492	0.0 – 276.631	$3p^64s^2 - 3p^54s^2(^2P^\circ_{1/2})7d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	973
		362.452	0.0 – 275.898	$3p^64s^2 - 3p^54s^2(^2P^\circ_{3/2})12d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	973
		362.679	0.0 – 275.726	$3p^64s^2 - 3p^54s^2(^2P^\circ_{3/2})11d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	973
		362.972	0.0 – 275.503	$3p^64s^2 - 3p^54s^2(^2P^\circ_{3/2})10d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	973
		363.278	0.0 – 275.272	$3p^64s^2 - 3p^54s^2(^2P^\circ_{3/2})9d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	973
		364.097	0.0 – 274.652	$3p^64s^2 - 3p^54s^2(^2P^\circ_{3/2})8d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	973
		364.910	0.0 – 274.040	$3p^64s^2 - 3p^54s^2(^2P^\circ_{1/2})5d$	$g\,^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1	A	973
		365.019	0.0 – 273.959	$3p^64s^2 - 3p^54s^2(^2P^\circ_{3/2})7d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	973
		365.499	0.0 – 273.598	$3p^64s^2 - 3p^54s^2(^2P^\circ_{1/2})7s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	973
		366.121	0.0 – 273.134	$3p^64s^2 - 3p^54s^2(^2P^\circ_{3/2})6d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	973
		368.671	0.0 – 271.245	$3p^64s^2 - 3p^54s^2(^2P^\circ_{3/2})7s$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	973
		368.973	0.0 – 271.023	$3p^64s^2 - 3p^53d^2(^2P^\circ)5s$	$g\,^1S - {}^3P^\circ$	0 – 1	A	973
		369.154	0.0 – 270.889	$3p^64s^2 - 3p^54s^2(^2P^\circ_{3/2})5d$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	973
		369.380	0.0 – 270.724	$3p^64s^2 - 3p^54p^2(^2P^\circ)4s$	$g\,^1S - {}^1P^\circ$	0 – 1	A	973
		369.495	0.0 – 270.640	$3p^64s^2 - 3p^54s^24d$	$g\,^1S - {}^1P^\circ$	0 – 1	A	973
		370.774	0.0 – 269.706	$3p^64s^2 - 3p^54s^2(^2P^\circ_{1/2})6s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	973
		372.980	0.0 – 268.111	$3p^64s^2 - 3p^54p^2(^2P^\circ)3d$	$g\,^1S - {}^3D^\circ$	0 – 1	A	973
		373.195	0.0 – 267.956	$3p^64s^2 - 3p^54s^24d$	$g\,^1S - {}^3D^\circ$	0 – 1	A	973
		373.619	0.0 – 267.652	$3p^64s^2 - 3p^54p^2(^2P^\circ)4s$	$g\,^1S - {}^3P^\circ$	0 – 1	A	973
		373.948	0.0 – 267.417	$3p^64s^2 - 3p^54s^2(^2P^\circ_{3/2})6s$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	973
		378.454	0.0 – 264.233	$3p^64s^2 - 3p^54p^2(^2D^\circ)4s$	$g\,^1S - {}^3D^\circ$	0 – 1	A	973
		384.330	0.0 – 260.193	$3p^64s^2 - 3p^54s^2(^2P^\circ_{1/2})5s$	$g\,^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1	A	973
		387.858	0.0 – 257.827	$3p^64s^2 - 3p^5(3d^3(^2D))$	$g\,^1S - {}^3P^\circ$	0 – 1	A	973
		387.993	0.0 – 257.737	$3p^64s^2 - 3p^54s^2(^2P^\circ_{3/2})5s$	$g\,^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1	A	973
		389.677	0.0 – 256.623	$3p^64s^2 - 3p^5(3d^3(^4P))$	$g\,^1S - {}^3D^\circ$	0 – 1	A	973
		392.122	0.0 – 255.022	$3p^64s^2 - 3p^54s^24d$	$g\,^1S - {}^3P^\circ$	0 – 1	A	973
		392.603	0.0 – 254.710	$3p^64s^2 - 3p^53d^2(^2P^\circ)4s$	$g\,^1S - {}^1P^\circ$	0 – 1	A	973
		393.073	0.0 – 254.406	$3p^64s^2 - 3p^54p^2(^2P^\circ)3d$	$g\,^1S - {}^3D^\circ$	0 – 1	A	973
		393.362	0.0 – 254.219	$3p^64s^2 - 3p^5(3d^3(^2D))$	$g\,^1S - {}^1P^\circ$	0 – 1	A	973
		394.773	0.0 – 253.310	$3p^64s^2 - 3p^54s^23d$	$g\,^1S - {}^1P^\circ$	0 – 1	A	973
		396.535	0.0 – 252.184	$3p^64s^2 - 3p^5(3d^3(^2P))$	$g\,^1S - {}^3S^\circ$	0 – 1	A	973
		397.192	0.0 – 251.768	$3p^64s^2 - 3p^5(3d^3(^4P))$	$g\,^1S - {}^5P^\circ$	0 – 1	A	973
		401.936	0.0 – 248.796	$3p^64s^2 - 3p^53d^2(^2P^\circ)4s$	$g\,^1S - {}^3P^\circ$	0 – 1	A	973
		402.109	0.0 – 248.689	$3p^64s^2 - 3p^53d^3$	$g\,^1S - {}^3D^\circ$	0 – 1	A	973
		413.542	0.0 – 241.813	$3p^64s^2 - 3p^5(3d^3(^2P))$	$g\,^1S - {}^3P^\circ$	0 – 1	A	973
		446.101	0.0 – 224.165	$3p^64s^2 - 3p^53d^2(^2P^\circ)4s$	$g\,^1S - {}^1P^\circ$	0 – 1	A	973
		456.640	0.0 – 218.991	$3p^64s^2 - 3p^54s^23d$	$g\,^1S - {}^3D^\circ$	0 – 1	A	973
		1622.781	0.0 – 61.62260	$3p^64s^2 - 3p^63d9f$	$g\,^1S - {}^1P^\circ$	0 – 1	A	101
		1623.464	0.0 – 61.59669	$3p^64s^2 - 3p^63d9f$	$g\,^1S - {}^3P^\circ$	0 – 1	A	101

CA I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		1627.92	0.0 – 61.4281	$3p^64s^2 - 3p^63d10p$	$g^1S - {}^1P^\circ$	0 – 1	A	101
		1630.105	0.0 – 61.34574	$3p^64s^2 - 3p^63d10p$	$g^1S - {}^3P^\circ$	0 – 1	A	101
		1631.144	0.0 – 61.30665	$3p^64s^2 - 3p^63d10p$	$g^1S - {}^3D^\circ$	0 – 1	A	101
		1632.616	0.0 – 61.25139	$3p^64s^2 - 3p^63d8f$	$g^1S - {}^1P^\circ$	0 – 1	A	101
		1633.222	0.0 – 61.22865	$3p^64s^2 - 3p^63d8f$	$g^1S - {}^3P^\circ$	0 – 1	A	101
		1634.720	0.0 – 61.17254	$3p^64s^2 - 3p^63d8f$	$g^1S - {}^3D^\circ$	0 – 1	A	101
		1640.05	0.0 – 60.9736	$3p^64s^2 - 3p^63d9p$	$g^1S - {}^1P^\circ$	0 – 1	A	101
		1642.865	0.0 – 60.86928	$3p^64s^2 - 3p^63d9p$	$g^1S - {}^3P^\circ$	0 – 1	A	101
		1644.540	0.0 – 60.80728	$3p^64s^2 - 3p^63d9p$	$g^1S - {}^3D^\circ$	0 – 1	A	101
		1647.188	0.0 – 60.70954	$3p^64s^2 - 3p^63d7f$	$g^1S - {}^1P^\circ$	0 – 1	A	101
		1647.711	0.0 – 60.69027	$3p^64s^2 - 3p^63d7f$	$g^1S - {}^3P^\circ$	0 – 1	A	101
		1649.289	0.0 – 60.63218	$3p^64s^2 - 3p^63d7f$	$g^1S - {}^3D^\circ$	0 – 1	A	101
		1658.4	0.0 – 60.300	$3p^64s^2 - 3p^63d8p$	$g^1S - {}^1P^\circ$	0 – 1	A	101
		1662.503	0.0 – 60.15026	$3p^64s^2 - 3p^63d8p$	$g^1S - {}^3P^\circ$	0 – 1	A	101
		1665.386	0.0 – 60.04613	$3p^64s^2 - 3p^63d8p$	$g^1S - {}^3D^\circ$	0 – 1	A	101
		1670.048	0.0 – 59.87852	$3p^64s^2 - 3p^63d6f$	$g^1S - {}^1P^\circ$	0 – 1	A	101
		1670.502	0.0 – 59.86226	$3p^64s^2 - 3p^63d6f$	$g^1S - {}^3P^\circ$	0 – 1	A	101
		1672.179	0.0 – 59.80221	$3p^64s^2 - 3p^63d6f$	$g^1S - {}^3D^\circ$	0 – 1	A	101
		1689.3	0.0 – 59.197	$3p^64s^2 - 3p^63d7p$	$g^1S - {}^1P^\circ$	0 – 1	A	101
		1694.603	0.0 – 59.01087	$3p^64s^2 - 3p^63d7p$	$g^1S - {}^3P^\circ$	0 – 1	A	101
		1700.712	0.0 – 58.79892	$3p^64s^2 - 3p^63d7p$	$g^1S - {}^3D^\circ$	0 – 1	A	101
		1709.230	0.0 – 58.50589	$3p^64s^2 - 3p^63d5f$	$g^1S - {}^1P^\circ$	0 – 1	A	101
		1709.638	0.0 – 58.49191	$3p^64s^2 - 3p^63d5f$	$g^1S - {}^3P^\circ$	0 – 1	A	101
		1711.411	0.0 – 58.43131	$3p^64s^2 - 3p^63d5f$	$g^1S - {}^3D^\circ$	0 – 1	A	101
		1725.328	0.0 – 57.960	$3p^64s^2 - 3p^64p5s$	$g^1S - {}^1P^\circ$	0 – 1	A	101
		1740.260	0.0 – 57.462	$3p^64s^2 - 3p^64p5s$	$g^1S - {}^3P^\circ$	0 – 1	A	101
		1765.2	0.0 – 56.651	$3p^64s^2 - 3p^63d6p$	$g^1S - {}^1P^\circ$	0 – 1	A	101
		1768.890	0.0 – 56.53263	$3p^64s^2 - 3p^63d6p$	$g^1S - {}^3P^\circ$	0 – 1	A	101
		1777.6	0.0 – 56.256	$3p^64s^2 - 3p^63d6p$	$g^1S - {}^3D^\circ$	0 – 1	A	101
		1786.28	0.0 – 55.9823	$3p^64s^2 - 3p^63d4f$	$g^1S - {}^1P^\circ$	0 – 1	A	101
		1787.42	0.0 – 55.9466	$3p^64s^2 - 3p^63d4f$	$g^1S - {}^3P^\circ$	0 – 1	A	101
		1788.82	0.0 – 55.9028	$3p^64s^2 - 3p^63d4f$	$g^1S - {}^3D^\circ$	0 – 1	A	101
		1883.2	0.0 – 53.100	$3p^64s^2 - 3p^63d5p$	$g^1S - {}^1P^\circ$	0 – 1	A	101
		1926.5	0.0 – 51.908	$3p^64s^2 - 3p^63d5p$	$g^1S - {}^3D^\circ$	0 – 1	A	101
		1933.88	0.0 – 51.7095	$3p^64s^2 - 3p^63d5p$	$g^1S - {}^3D^\circ$	0 – 1	A	101

CALCIUM II (Ca^{1+}), Z = 20
Ground State $1s^22s^22p^63s^23p^64s(^2S_{1/2})$ (19 electrons)
Ionization Potential 95 751.87 cm^{-1}; 11.87181 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
2	240	1341.889	0.0 – 74.52175	4s – 6p	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		197,186
2	120	1342.535	0.0 – 74.48492	4s – 6p	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		197,186
7	120	1432.503	13.65019 – 83.45808	3d – 6f	${}^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		197,186
7	200	1433.749	13.71088 – 83.45808	3d – 6f	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		197,186
6	200	1553.176	13.65019 – 78.03439	3d – 5f	${}^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		197,186
6	320	1554.642	13.71088 – 78.03439	3d – 5f	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		197,186
5	40	1642.802	13.65019 – 74.52175	3d – 6p	${}^2D - {}^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		197,186
5	200	1643.770	13.65019 – 74.48492	3d – 6p	${}^2D - {}^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		197,186
5	360	1644.442	13.71088 – 74.52175	3d – 6p	${}^2D - {}^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		197,186
1	600	1649.858	0.0 – 60.61128	4s – 5p	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		197,186
1	320	1651.991	0.0 – 60.53302	4s – 5p	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		197,186
	120	1673.860	25.19151 – 84.93365	4p – 7d	${}^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		197,186

CA II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	1680.051	25.41440 – 84.93641	4p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		197,186
	20	1680.129	25.41440 – 84.93365	4p – 7d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		197,186
	80	1691.779	25.19151 – 84.30089	4p – 8s	$^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		197,186
	160	1698.183	25.41440 – 84.30089	4p – 8s	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		197,186
11	200	1807.337	25.19151 – 80.52153	4p – 6d	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		197,186
11	400	1814.495	25.41440 – 80.52616	4p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		197,186
11	40	1814.647	25.41440 – 80.52153	4p – 6d	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		197,186
4	400	1838.008	13.65019 – 68.05691	3d – 4f	$^2D - ^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		197,186
4	600	1840.061	13.71088 – 68.05691	3d – 4f	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		197,186
10	200	1843.088	25.19151 – 79.44828	4p – 7s	$^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		197,186
10	400	1850.691	25.41440 – 79.44828	4p – 7s	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		197,186

CALCIUM III (Ca^{2+}), Z = 20
Ground State $1s^22s^22p^63s^23p^6(^1S_0)$ (18 electrons)
Ionization Potential 410 642 cm^{-1}; 50.9135 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		202.900	0.0 – 492.854	$3s^23p^6 - 3s3p^65p$	$g^1S - ^1P^\circ$	0 – 1	A	440
		231.967	0.0 – 431.096	$3s^23p^6 - 3s3p^64p$	$g^1S - ^1P^\circ$	0 – 1	A	440
	50	273.695	0.0 – 365.36388	$3s^23p^6 - 3s^23p^5(^2P^\circ_{1/2})5d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		064
	10	274.461	0.0 – 364.34385	$3s^23p^6 - 3s^23p^5(^2P^\circ_{1/2})6s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		064
	300	296.958	0.0 – 336.74911	$3s^23p^6 - 3s^23p^5(^2P^\circ)4d$	$g^1S - ^1P^\circ$	0 – 1		085
	200	301.741	0.0 – 331.40320	$3s^23p^6 - 3s^23p^5(^2P^\circ_{1/2})5s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		085
	150	304.330	0.0 – 328.58245	$3s^23p^6 - 3s^23p^5(^2P^\circ_{3/2})5s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		085
	150	304.910	0.0 – 327.96211	$3s^23p^6 - 3s^23p^5(^2P^\circ)4d$	$g^1S - ^3D^\circ$	0 – 1		085
	150	357.980	0.0 – 279.35364	$3s^23p^6 - 3s^23p^5(^2P^\circ)3d$	$g^1S - ^1D^\circ$	0 – 1		085
	450	403.724	0.0 – 247.69639	$3s^23p^6 - 3s^23p^5(^2P^\circ)4s$	$g^1S - ^1P^\circ$	0 – 1		085
	350	409.954	0.0 – 243.93044	$3s^23p^6 - 3s^23p^5(^2P^\circ)4s$	$g^1S - ^3P^\circ$	0 – 1		085
	250	439.691	0.0 – 227.43211	$3s^23p^6 - 3s^23p^5(^2P^\circ)3d$	$g^1S - ^3D^\circ$	0 – 1		085
	200	490.549	0.0 – 203.85195	$3s^23p^6 - 3s^23p^5(^2P^\circ)3d$	$g^1S - ^3P^\circ$	0 – 1		085
	10	552.411	204.84264 – 385.8672	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})6f$	$^3P^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		064
	20	561.969	204.84264 – 382.7915	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})6f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		064
	10	562.607	212.31004 – 390.0540	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})7f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 5		085
	10	580.058	213.37940 – 385.7755	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})6f$	$^3F^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		085
	10	583.350	214.33406 – 385.7576	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})6f$	$^3F^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		085
	10	586.547	212.31004 – 382.7985	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})6f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	4 – 4		085
	50	587.354	212.31004 – 382.5651	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})6f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 5		085
	25	589.013	203.85195 – 373.62685	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5f$	$^3P^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		085
	25	590.987	213.37940 – 382.5879	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})6f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		085
	150	591.584	204.84264 – 373.88037	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5f$	$^3P^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		085
	10	593.645	214.33406 – 382.7847	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})6f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		891
	50	594.978	203.37322 – 371.44758	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	0 – 1		085
	50	596.675	203.85195 – 371.44758	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		085
	100	597.291	203.85195 – 371.27448	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		085
	10	600.221	204.84264 – 371.44758	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 1		891
	25	600.852	204.84264 – 371.27448	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		085
	10	606.756	228.41395 – 393.2249	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})7f$	$^1F^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		085
	10	610.225	226.33356 – 390.2076	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})7f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		085
	25	616.581	204.84264 – 367.02665	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})6p$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		891
	10	618.923	212.31004 – 373.88037	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5f$	$^3F^\circ - \frac{1}{2}[\frac{5}{2}]$	4 – 3		891
	50	624.821	213.37940 – 373.42551	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5f$	$^3F^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		085
	10	625.269	225.82622 – 385.7576	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})6f$	$^1D^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		085
	150	628.663	214.33406 – 373.40187	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5f$	$^3F^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		085

CA III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	25	629.921	212.31004 – 371.05995	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	4 – 3		891
	25	629.922	212.31004 – 371.05995	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	4 – 3		085
	25	631.015	227.43211 – 385.9069	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})6f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		085
	50	632.017	212.31004 – 370.53307	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	4 – 4		085
	25	633.325	213.37940 – 371.27448	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{3}{2}]$	3 – 2		085
	10	633.468	212.31004 – 370.17243	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 4		085
	250	633.588	212.31004 – 370.14177	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 5		085
	25	635.481	228.41395 – 385.7755	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})6f$	$^1F^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		085
	25	636.318	213.37940 – 370.53307	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		085
	10	636.388	213.37940 – 370.51536	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 3		085
	10	636.482	214.33406 – 371.44758	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 1		891
	10	636.641	213.37940 – 370.45404	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})6p$	$^3F^\circ - \frac{1}{2}[\frac{3}{2}]$	3 – 2		891
	25	637.111	225.82622 – 382.7847	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})6f$	$^1D^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		085
	10	637.788	213.37940 – 370.17243	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		085
	50	639.124	226.33356 – 382.7985	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})6f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		085
	100	640.280	214.33406 – 370.51536	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		085
	10	643.426	227.43211 – 382.8523	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})6f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		891
	10	643.482	227.38856 – 382.7915	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})6f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		891
	25	644.484	212.31004 – 367.47291	$3s^23p^5(^2P^\circ)3d - 3s3p^63d$	$^3F^\circ - {}^3D$	4 – 3		891
	150	646.343	212.31004 – 367.02665	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})6p$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	4 – 3		
	25	648.618	228.41395 – 382.5879	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})6f$	$^1F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		085
	10	650.842	213.37940 – 367.02665	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})6p$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		891
	10	655.342	214.33406 – 366.92633	$3s^23p^5(^2P^\circ)3d - 3s3p^63d$	$^3F^\circ - {}^3D$	2 – 2		891
	10	662.991	226.33356 – 377.1681	$3s^23p^5(^2P^\circ)3d - 3s3p^63d$	$^3D^\circ - {}^1D$	3 – 2		891
	50	672.249	228.41395 – 377.1681	$3s^23p^5(^2P^\circ)3d - 3s3p^63d$	$^1F^\circ - {}^1D$	3 – 2		891
	10	675.424	225.82622 – 373.88037	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5f$	$^1D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		085
	100	677.620	225.82622 – 373.40187	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5f$	$^1D^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		085
	10	679.845	226.33356 – 373.42551	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5f$	$^3D^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		085
	50	680.049	203.85195 – 350.90004	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3P^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		085
	150	682.632	227.38856 – 373.88037	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		085
	100	684.018	227.43211 – 373.62685	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		085
	25	684.659	204.84264 – 350.90004	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3P^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 2		085
	250	685.408	204.84264 – 350.74119	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3P^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		085
	25	688.543	225.82622 – 371.05995	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^1D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		085
	150	689.602	228.41395 – 373.42551	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5f$	$^1F^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		085
	10	689.708	228.41395 – 373.40187	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5f$	$^1F^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 3		085
	100	690.963	226.33356 – 371.05995	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		085
	150	691.136	225.82622 – 370.51536	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^1D^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		085
	10	691.432	225.82622 – 370.45404	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})6p$	$^1D^\circ - \frac{1}{2}[\frac{3}{2}]$	2 – 2		891
	20	692.148	225.82622 – 370.30454	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^1D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		064
	200	693.487	226.33356 – 370.53307	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		085
	10	694.154	227.38856 – 371.44758	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 1		085
	25	694.370	227.43211 – 371.44758	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		085
	100	694.898	203.85195 – 347.75822	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		085
	100	694.994	227.38856 – 371.27448	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		085
	50	695.219	226.33356 – 370.17243	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3D^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		085
	10	695.382						085
	50	696.031	227.38856 – 371.05995	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		085
	250	697.551	203.37322 – 346.73219	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	0 – 1		085
	10	698.690	227.38856 – 370.51536	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		085
	250	699.085	203.85195 – 346.89626	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		085
	10	699.715	204.84264 – 347.75822	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		891
	250	699.891	203.85195 – 346.73219	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		085
	300	701.390	204.84264 – 347.41705	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		085

CA III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	250	703.958	204.84264 – 346.89626	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		891
	50	704.772	204.84264 – 346.73219	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 1		085
	150	705.426	228.41395 – 370.17243	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^1F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		085
	25	708.521	226.33356 – 367.47291	$3s^23p^5(^2P^\circ)3d - 3s3p^63d$	$^3D^\circ - {}^3D$	3 – 3		891
	10	709.802	203.37322 – 344.25792	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5p$	$^3P^\circ - \frac{1}{2}[\frac{1}{2}]$	0 – 1		085
	25	713.856	227.38856 – 367.47291	$3s^23p^5(^2P^\circ)3d - 3s3p^63d$	$^3D^\circ - {}^3D$	2 – 3		891
	25	714.628	203.85195 – 343.78496	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5p$	$^3P^\circ - \frac{1}{2}[\frac{3}{2}]$	1 – 1		085
	10	716.136	227.38856 – 367.02665	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})6p$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		891
	10	716.654	227.38856 – 366.92633	$3s^23p^5(^2P^\circ)3d - 3s3p^63d$	$^3D^\circ - {}^3D$	2 – 2		891
	10	716.876	227.43211 – 366.92633	$3s^23p^5(^2P^\circ)3d - 3s3p^63d$	$^3D^\circ - {}^3D$	1 – 2		891
	50	717.283	204.84264 – 344.25792	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5p$	$^3P^\circ - \frac{1}{2}[\frac{1}{2}]$	2 – 1		085
	10	717.638	227.43211 – 366.77885	$3s^23p^5(^2P^\circ)3d - 3s3p^63d$	$^3D^\circ - {}^3D$	1 – 1		891
	50	717.836	204.84264 – 344.14981	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5p$	$^3P^\circ - \frac{1}{2}[\frac{3}{2}]$	2 – 2		085
	10	719.124	228.41395 – 367.47291	$3s^23p^5(^2P^\circ)3d - 3s3p^63d$	$^1F^\circ - {}^3D$	3 – 3		891
	10	722.382	212.31004 – 350.74119	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{5}{2}]$	4 – 3		891
	10	724.762	203.37322 – 341.34919	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	0 – 1		085
	50	725.956	203.85195 – 341.60146	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		085
	250	727.656	213.37940 – 350.80532	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		085
	50	728.004	213.37940 – 350.74119	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{5}{2}]$	3 – 3		085
	25	730.474	203.85195 – 340.74872	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		085
	100	731.215	204.84264 – 341.60146	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		085
	100	732.244	214.33406 – 350.90004	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 2		085
	250	732.894	214.33406 – 350.77947	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		085
	10	733.096	214.33406 – 350.74119	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		085
	50	736.239	203.37322 – 339.19809	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{1}{2}]$	0 – 1		085
	200	736.693	212.31004 – 348.05186	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	4 – 4		085
	25	736.823	212.31004 – 348.02813	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	4 – 3		085
	100	738.845	203.85195 – 339.19809	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{1}{2}]$	1 – 1		085
	10	740.160	212.31004 – 347.41705	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	4 – 3		891
	100	740.330	212.31004 – 347.38351	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 4		085
	400	740.553	212.31004 – 347.34437	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 5		085
	200	742.541	213.37940 – 348.05186	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		085
	150	742.672	213.37940 – 348.02813	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 3		085
	50	744.293	204.84264 – 339.19809	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{1}{2}]$	2 – 1		085
	50	746.060	213.37940 – 347.41705	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		085
	300	746.248	213.37940 – 347.38351	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		085
	250	747.978	214.33406 – 348.02813	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		085
	150	749.479	214.33406 – 347.75822	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		085
	10	755.303	214.33406 – 346.73219	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 1		891
	100	764.699	213.37940 – 344.14981	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5p$	$^3F^\circ - \frac{1}{2}[\frac{3}{2}]$	3 – 2		085
	10	770.321	214.33406 – 344.14981	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5p$	$^3F^\circ - \frac{1}{2}[\frac{3}{2}]$	2 – 2		085
	100	772.498	214.33406 – 343.78496	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5p$	$^3F^\circ - \frac{1}{2}[\frac{3}{2}]$	2 – 1		085
	250	779.608	212.31004 – 340.58015	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	4 – 3		085
	10	779.902	213.37940 – 341.60146	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3F^\circ - \frac{3}{2}[\frac{3}{2}]$	3 – 2		085
	150	785.120	213.37940 – 340.74872	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 2		085
	50	786.159	213.37940 – 340.58015	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		085
	25	791.051	214.33406 – 340.74872	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		085
	50	799.529	225.82622 – 350.90004	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^1D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 2		085
	250	800.301	225.82622 – 350.77947	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^1D^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		085
	200	800.550	225.82622 – 350.74119	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^1D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		085
	10	800.886	214.33406 – 339.19809	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3F^\circ - \frac{3}{2}[\frac{1}{2}]$	2 – 1		085
	200	803.396	226.33356 – 350.80532	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		085
	10	803.553	226.33356 – 350.77947	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 3		085
	100	809.642	227.38856 – 350.90004	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 2		085

CA III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	250	809.930	227.43211 – 350.90004	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		085
	150	810.434	227.38856 – 350.77947	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		085
	200	810.687	227.38856 – 350.74119	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		085
	10	814.609	247.69639 – 370.45404	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{1/2})6p$	$^1P^\circ - \frac{1}{2}[\frac{3}{2}]$	1 – 2		891
	250	817.056	228.41395 – 350.80532	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^1F^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		085
	50	817.223	228.41395 – 350.77947	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^1F^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 3		085
	100	817.480	228.41395 – 350.74119	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^1F^\circ - \frac{1}{2}[\frac{5}{2}]$	3 – 3		085
	200	818.321	225.82622 – 348.02813	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1D^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		085
	150	820.131	225.82622 – 347.75822	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		085
	300	821.572	226.33356 – 348.05186	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		085
	150	822.432	225.82622 – 347.41705	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		085
	200	825.880	226.33356 – 347.41705	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		085
	200	826.108	226.33356 – 347.38351	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		085
	150	828.920	227.38856 – 348.02813	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		085
	50	829.445	226.33356 – 346.89626	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	3 – 2		085
	50	830.777	227.38856 – 347.75822	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		085
	200	831.077	227.43211 – 347.75822	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		085
	150	833.141	227.38856 – 347.41705	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		085
	50	835.861	228.41395 – 348.05186	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		085
	100	836.024	228.41395 – 348.02813	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 3		085
	200	836.769	227.38856 – 346.89626	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		085
	50	837.918	227.38856 – 346.73219	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 1		085
	200	838.237	227.43211 – 346.73219	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		085
	20	838.501	227.43211 – 346.69234	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5p$	$^3D^\circ - \frac{1}{2}[\frac{1}{2}]$	1 – 0		064
	25	840.317	228.41395 – 347.41705	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		085
	300	840.558	228.41395 – 347.38351	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		085
	50	847.757	225.82622 – 343.78496	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5p$	$^1D^\circ - \frac{1}{2}[\frac{3}{2}]$	2 – 1		085
	100	855.660	227.38856 – 344.25792	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5p$	$^3D^\circ - \frac{1}{2}[\frac{1}{2}]$	2 – 1		085
	25	855.978	227.43211 – 344.25792	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5p$	$^3D^\circ - \frac{1}{2}[\frac{1}{2}]$	1 – 1		085
	200	856.791	227.43211 – 344.14981	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5p$	$^3D^\circ - \frac{1}{2}[\frac{3}{2}]$	1 – 2		192
	150	864.035	228.41395 – 344.14981	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5p$	$^1F^\circ - \frac{1}{2}[\frac{3}{2}]$	3 – 2		085
	50	864.470	227.43211 – 343.11024	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3D^\circ - \frac{3}{2}[\frac{1}{2}]$	1 – 0		064
	100	865.629	225.82622 – 341.34919	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^1D^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 1		085
	200	867.545	226.33356 – 341.60146	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	3 – 2		085
	25	870.152	225.82622 – 340.74872	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^1D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		085
	25	874.009	226.33356 – 340.74872	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 2		085
	25	875.301	226.33356 – 340.58015	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		085
	20	938.497	279.35364 – 385.9069	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})6f$	$^1D^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		064
	20	966.186	279.35364 – 382.8523	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})6f$	$^1D^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		064
	25	984.919	278.62101 – 380.15221	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})6d$	$^3D - \frac{1}{2}[\frac{5}{2}]^\circ$	1 – 2		085
	10	995.135	279.74180 – 380.23050	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})6d$	$^1D - \frac{1}{2}[\frac{5}{2}]^\circ$	2 – 3		085
	50	997.804	243.93044 – 344.14981	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{1/2})5p$	$^3P^\circ - \frac{1}{2}[\frac{3}{2}]$	1 – 2		085
	25	1002.143	277.02240 – 376.80860	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})6d$	$^3D - \frac{3}{2}[\frac{7}{2}]^\circ$	3 – 4		085
	10	1005.000	277.38086 – 376.88336	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})6d$	$^3D - \frac{3}{2}[\frac{7}{2}]^\circ$	2 – 3		085
	50	1009.546	242.54719 – 341.60146	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		085
	10	1012.125	242.54719 – 341.34919	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 1		085
	50	1013.715	245.61188 – 344.25792	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{1/2})5p$	$^3P^\circ - \frac{1}{2}[\frac{1}{2}]$	0 – 1		085
	100	1018.302	242.54719 – 340.74872	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		085
	100	1018.600	245.61188 – 343.78496	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{1/2})5p$	$^3P^\circ - \frac{1}{2}[\frac{3}{2}]$	0 – 1		085
	300	1020.071	242.54719 – 340.58015	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		085
	100	1023.849	243.93044 – 341.60146	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		085
	100	1026.495	243.93044 – 341.34919	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		085
	200	1032.862	243.93044 – 340.74872	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		085
	250	1034.650	242.54719 – 339.19809	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{1}{2}]$	2 – 1		085

CA III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	1035.607	247.69639 – 344.25792	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{1/2})5p$	$^1P^\circ - \frac{1}{2}[\frac{1}{2}]$	1 – 1		085
	150	1036.766	247.69639 – 344.14981	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{1/2})5p$	$^1P^\circ - \frac{1}{2}[\frac{3}{2}]$	1 – 2		085
	100	1040.705	247.69639 – 343.78496	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{1/2})5p$	$^1P^\circ - \frac{1}{2}[\frac{3}{2}]$	1 – 1		085
	10	1044.518	245.61188 – 341.34919	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	0 – 1		085
	150	1049.673	243.93044 – 339.19809	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{1}{2}]$	1 – 1		085
	50	1060.751	279.35364 – 373.62685	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5f$	$^1D^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		085
	50	1064.899	247.69639 – 341.60146	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{3/2})5p$	$^1P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		085
	25	1067.781	247.69639 – 341.34919	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{3/2})5p$	$^1P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		085
	10	1074.667	247.69639 – 340.74872	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{3/2})5p$	$^1P^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		085
	50	1099.495	279.35364 – 370.30454	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5f$	$^1D^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		064
	100	1124.039	272.18870 – 361.15407	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})6s$	$^3S - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		064
	100	1145.062	272.18870 – 359.52060	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5d$	$^3S - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		064
	100	1148.399	203.85195 – 290.93430	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^1S$	1 – 0		085
	150	1149.848	272.18870 – 359.15683	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5d$	$^3S - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 1		064
	100	1152.706	272.18870 – 358.94091	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5d$	$^3S - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 0		064
	150	1181.988	279.74180 – 364.34385	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})6s$	$^1D - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		064
	250	1187.303	281.13955 – 365.36388	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5d$	$^1P - \frac{1}{2}[\frac{3}{2}]^\circ$	1 – 1		064
	400	1188.606	277.02240 – 361.15407	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})6s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	3 – 2		064
	250	1190.864	277.38086 – 361.35331	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})6s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		064
	150	1193.697	277.38086 – 361.15407	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})6s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		064
	50	1200.772	279.74180 – 363.02127	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5d$	$^1D - \frac{1}{2}[\frac{3}{2}]^\circ$	2 – 2		064
	200	1202.309	278.62101 – 361.79408	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5d$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		064
	10	1203.507	281.13955 – 364.22989	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})6s$	$^1P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		064
	150	1207.341	277.38086 – 360.20716	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5d$	$^3D - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 2		064
	200	1207.838	282.57143 – 365.36388	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5d$	$^3P - \frac{1}{2}[\frac{3}{2}]^\circ$	1 – 1		064
	150	1208.046	277.02240 – 359.80057	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5d$	$^3D - \frac{3}{2}[\frac{7}{2}]^\circ$	3 – 3		085
	50	1208.716	278.62101 – 361.35331	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})6s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		064
	450	1211.822	277.02240 – 359.54308	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5d$	$^3D - \frac{3}{2}[\frac{7}{2}]^\circ$	3 – 4		064
	250	1211.889						085
	200	1212.682	281.88224 – 364.34385	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})6s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		064
	300	1213.301	277.38086 – 359.80057	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5d$	$^3D - \frac{3}{2}[\frac{7}{2}]^\circ$	2 – 3		085
	50	1217.450	277.38086 – 359.52060	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5d$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		064
	50	1218.738	279.74180 – 361.79408	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5d$	$^1D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		064
	200	1222.895	282.57143 – 364.34385	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})6s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		064
	450	1223.185	281.13955 – 362.89347	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5d$	$^1P - \frac{1}{2}[\frac{5}{2}]^\circ$	1 – 2		064
	200	1225.321	279.74180 – 361.35331	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})6s$	$^1D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		064
	350	1225.699	278.62101 – 360.20716	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5d$	$^3D - \frac{3}{2}[\frac{5}{2}]^\circ$	1 – 2		064
	200	1228.317	279.74180 – 361.15407	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})6s$	$^1D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		064
	400	1230.975	281.88224 – 363.11875	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5d$	$^3P - \frac{1}{2}[\frac{5}{2}]^\circ$	2 – 3		064
	100	1234.400	281.88224 – 362.89347	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5d$	$^3P - \frac{1}{2}[\frac{5}{2}]^\circ$	2 – 2		064
	50	1236.102	278.62101 – 359.52060	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5d$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		064
	150	1239.863	281.13955 – 361.79408	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5d$	$^1P - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		064
	400	1239.976	279.74180 – 360.38868	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5d$	$^1D - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 3		064
	350	1243.008	282.57143 – 363.02127	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5d$	$^3P - \frac{1}{2}[\frac{3}{2}]^\circ$	1 – 2		064
	300	1253.464	279.74180 – 359.52060	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5d$	$^1D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		064
	100	1254.413	282.07515 – 361.79408	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5d$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		064
	150	1259.209	279.74180 – 359.15683	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5d$	$^1D - \frac{3}{2}[\frac{1}{2}]^\circ$	2 – 1		064
	150	1261.381	282.07515 – 361.35331	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})6s$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		064
	500	1262.653	203.37322 – 282.57143	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3P$	0 – 1		085
	10	1269.333	282.57143 – 361.35331	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})6s$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		064
	450	1270.333	203.85195 – 282.57143	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3P$	1 – 1		085
	100	1272.544	282.57143 – 361.15407	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})6s$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		064
	100	1273.775	281.88224 – 360.38868	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5d$	$^3P - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 3		064
	550	1278.392	203.85195 – 282.07515	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3P$	1 – 0		085

CA III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	500	1281.553	203.85195 – 281.88224	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - {}^3P$	1 – 2		085
	400	1285.908	203.37322 – 281.13955	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - {}^1P$	0 – 1		085
	600	1286.523	204.84264 – 282.57143	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - {}^3P$	2 – 1		085
	100	1288.029	281.88224 – 359.52060	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5d$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		064
	450	1293.871	203.85195 – 281.13955	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - {}^1P$	1 – 1		085
	600	1298.035	204.84264 – 281.88224	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - {}^3P$	2 – 2		085
	50	1309.418	282.57143 – 358.94091	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5d$	$^3P - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 0		064
	450	1310.669	204.84264 – 281.13955	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - {}^1P$	2 – 1		085
	550	1317.699	203.85195 – 279.74180	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - {}^1D$	1 – 2		085
	500	1328.945	203.37322 – 278.62101	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - {}^3D$	0 – 1		085
	550	1335.129	204.84264 – 279.74180	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - {}^1D$	2 – 2		085
	200	1337.466	203.85195 – 278.62101	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - {}^3D$	1 – 1		085
	450	1355.415	204.84264 – 278.62101	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - {}^3D$	2 – 1		085
	500	1360.010	203.85195 – 277.38086	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - {}^3D$	1 – 2		085
	200	1362.222	290.93430 – 364.34385	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})6s$	$^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		064
	250	1378.584	204.84264 – 277.38086	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - {}^3D$	2 – 2		085
	550	1385.426	204.84264 – 277.02240	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - {}^3D$	2 – 3		085
	550	1397.687	279.35364 – 350.90004	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^1D^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		085
	200	1420.067	290.93430 – 361.35331	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})6s$	$^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		064
	650	1453.157	203.37322 – 272.18870	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - {}^3S$	0 – 1		085
	600	1459.787	213.37940 – 281.88224	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - {}^3P$	3 – 2		085
	550	1461.875	279.35364 – 347.75822	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1D^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		085
	750	1463.335	203.85195 – 272.18870	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - {}^3S$	1 – 1		085
	300	1465.477	214.33406 – 282.57143	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - {}^3P$	2 – 1		085
	450	1480.425	214.33406 – 281.88224	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - {}^3P$	2 – 2		085
	450	1480.527	279.35364 – 346.89626	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1D^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		085
	800	1484.869	204.84264 – 272.18870	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - {}^3S$	2 – 1		085
	600	1496.884	214.33406 – 281.13955	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - {}^1P$	2 – 1		085
	550	1506.876	213.37940 – 279.74180	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - {}^1D$	3 – 2		085
	450	1528.866	214.33406 – 279.74180	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - {}^1D$	2 – 2		085
	1000	1545.294	212.31004 – 277.02240	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - {}^3D$	4 – 3		085
	750	1555.527	214.33406 – 278.62101	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - {}^3D$	2 – 1		085
	900	1562.473	213.37940 – 277.38086	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - {}^3D$	3 – 2		085
	650	1571.268	213.37940 – 277.02240	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - {}^3D$	3 – 3		085
	650	1586.125	214.33406 – 277.38086	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - {}^3D$	2 – 2		085
	450	1595.193	214.33406 – 277.02240	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - {}^3D$	2 – 3		085
	25	1684.392	277.38086 – 336.74911	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - {}^1P^\circ$	2 – 1		085
	450	1688.770	272.18870 – 331.40320	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^3S - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		085
	450	1698.939	272.18870 – 331.04886	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^3S - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		085
	300	1720.334	278.62101 – 336.74911	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - {}^1P^\circ$	1 – 1		085
	100	1754.153	279.74180 – 336.74911	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^1D - {}^1P^\circ$	2 – 1		085
	500	1762.259	225.82622 – 282.57143	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1D^\circ - {}^3P$	2 – 1		085
	400	1773.241	272.18870 – 328.58245	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3S - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		085
	500	1783.929	225.82622 – 281.88224	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1D^\circ - {}^3P$	2 – 2		085
	200	1788.827	272.18870 – 328.09099	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3S - {}^1D^\circ$	1 – 2		085
	500	1794.223	272.18870 – 327.92287	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3S - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		085
	450	1798.246	281.13955 – 336.74911	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^1P - {}^1P^\circ$	1 – 1		085
	600	1800.208	226.33356 – 281.88224	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^3P$	3 – 2		085
	650	1807.885	225.82622 – 281.13955	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1D^\circ - {}^1P$	2 – 1		085
	700	1812.153	227.38856 – 282.57143	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^3P$	2 – 1		085
	550	1813.585	227.43211 – 282.57143	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^3P$	1 – 1		085
	25	1822.592	281.88224 – 336.74911	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3P - {}^1P^\circ$	2 – 1		085
	600	1830.059	227.43211 – 282.07515	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^3P$	1 – 0		085
	200	1835.072	227.38856 – 281.88224	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^3P$	2 – 2		085

CA III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	450	1845.775	282.57143 – 336.74911	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3P - {}^1P^\circ$	1 – 1		085
	150	1851.090	277.38086 – 331.40320	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^3D - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		085
	500	1860.432	227.38856 – 281.13955	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^1P$	2 – 1		085
	700	1870.263	228.41395 – 281.88224	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1F^\circ - {}^3P$	3 – 2		085
	700	1872.367	226.33356 – 279.74180	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^1D$	3 – 2		085
	10	1876.915	272.18870 – 325.46767	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3S - {}^3F^\circ$	1 – 2		085
	500	1894.124	225.82622 – 278.62101	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1D^\circ - {}^3D$	2 – 1		085
	250	1894.582	278.62101 – 331.40320	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^3D - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		085
	450	1907.385	278.62101 – 331.04886	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^3D - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		085
	550	1910.097	227.38856 – 279.74180	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^1D$	2 – 2		085
	450	1911.692	227.43211 – 279.74180	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^1D$	1 – 2		085
	600	1935.72	279.74180 – 331.40320	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^1D - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		085
	150	1938.572	277.02240 – 328.60678	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - {}^3D^\circ$	3 – 2		085
	400	1939.244	277.02240 – 328.58876	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - {}^3D^\circ$	3 – 3		085
	500	1939.683	225.82622 – 277.38086	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1D^\circ - {}^3D$	2 – 2		085
	550	1943.012	272.18870 – 323.65506	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3S - {}^3P^\circ$	1 – 2		085
	600	1948.257	228.41395 – 279.74180	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1F^\circ - {}^1D$	3 – 2		085
	150	1951.888	227.38856 – 278.62101	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^3D$	2 – 1		085
	450	1952.133	277.38086 – 328.60678	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - {}^3D^\circ$	2 – 2		085
	200	1952.823	277.38086 – 328.58876	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - {}^3D^\circ$	2 – 3		085
	450	1953.064	277.38086 – 328.58245	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		085
	150	1953.295	225.82622 – 277.02240	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1D^\circ - {}^3D$	2 – 3		085
	500	1953.546	227.43211 – 278.62101	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^3D$	1 – 1		085
	300	1958.149	277.02240 – 328.09099	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - {}^1D^\circ$	3 – 2		085
	500	1958.971	226.33356 – 277.38086	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^3D$	3 – 2		085
	650	1964.614	277.02240 – 327.92287	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	3 – 2		085
	650	1967.936	272.18870 – 323.00356	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3S - {}^3P^\circ$	1 – 1		085
	250	1971.992	277.38086 – 328.09099	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - {}^1D^\circ$	2 – 2		085
	600	1972.823	226.33356 – 277.02240	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^3D$	3 – 3		085
	500	1977.013	277.38086 – 327.96211	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - {}^3D^\circ$	2 – 1		085
	500	1978.551	277.38086 – 327.92287	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		085
	550	1981.192	272.18870 – 322.66328	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3S - {}^3P^\circ$	1 – 0		085
	450	1989.512	281.13955 – 331.40320	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^1P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		085

CALCIUM IV (Ca^{3+}), Z = 20
Ground State $1s^22s^22p^63s^23p^5(^2P^\circ_{3/2})$ (17 electrons)
Ionization Potential 542 600 cm^{-1}; 67.27 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	150	249.408	0.0 – 400.949	$3s^23p^5 - 3s^23p^4(^1D)5s$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		192,762
	150	250.153	0.0 – 399.755	$3s^23p^5 - 3s^23p^4(^1D)5s$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		192,762
	150	251.354	3.1179 – 400.949	$3s^23p^5 - 3s^23p^4(^1D)5s$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		192,762
	250	296.554	0.0 – 337.207	$3s^23p^5 - 3s^23p^4(^1S)4s$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		192,359
	200	299.315	3.1179 – 337.207	$3s^23p^5 - 3s^23p^4(^1S)4s$	$g^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		192,359
	200	318.094	0.0 – 314.373	$3s^23p^5 - 3s^23p^4(^1D)4s$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		192,359
	50	318.385	0.0 – 314.079	$3s^23p^5 - 3s^23p^4(^1D)4s$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		192,359
	120	321.593	3.1179 – 314.079	$3s^23p^5 - 3s^23p^4(^1D)4s$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		359
	50	328.577						192
	250	329.116	0.0 – 303.844	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		192,260
	150	329.391	0.0 – 303.59	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		192,295
	200	331.442	0.0 – 301.71	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		192,295

CA IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	250	331.991	0.0 – 301.21	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^o - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		192,295
	235	332.531	3.1179 – 303.844	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^o - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		192,295
	150	332.808	3.1179 – 303.59	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^o - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		192,295
	40	334.904	3.1179 – 301.71	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^o - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		547
	200	338.828	0.0 – 295.14	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^o - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		192,260
	150	339.790	0.0 – 294.291	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^o - {}^4P$	$\frac{3}{2} - \frac{1}{2}$		192,359
	200	340.286	0.0 – 293.87	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^o - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		192,295
	200	341.284	0.0 – 293.011	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^o - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		192,359
	200	341.455	0.0 – 292.864	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^o - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		192,260
	250	342.447	3.1179 – 295.14	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^o - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		192,260
	100	343.194	0.0 – 291.373	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^o - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		192,359
	200	343.438	3.1179 – 294.291	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^o - {}^4P$	$\frac{1}{2} - \frac{1}{2}$		192,359
	250	343.933	3.1179 – 293.87	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^o - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		192,295
	200	344.958	3.1179 – 293.011	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^o - {}^4P$	$\frac{1}{2} - \frac{3}{2}$		192,359
	215	345.130	3.1179 – 292.864	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^o - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		192,260
	250	374.744	0.0 – 266.84	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^o - {}^2F$	$\frac{3}{2} - \frac{5}{2}$		192,762
	600	434.570	0.0 – 230.113	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^o - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		192,762
	100	437.271	0.0 – 228.691	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^o - {}^4D$	$\frac{3}{2} - \frac{1}{2}$		192,762
	250	437.773	0.0 – 228.429	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^o - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		192,762
	200	438.930	0.0 – 227.827	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^o - {}^4D$	$\frac{3}{2} - \frac{3}{2}$		192,762
	750	443.821	3.1179 – 228.429	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^o - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		192,762
	150	444.766						192
	50	445.018	3.1179 – 227.827	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^o - {}^4D$	$\frac{1}{2} - \frac{3}{2}$		192,762
	500	450.565	0.0 – 221.943	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^o - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		192,711
	50	454.553	0.0 – 219.996	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^o - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		192,711
	250	456.981	3.1179 – 221.943	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^o - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		192,711
	250	461.085	3.1179 – 219.996	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^o - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		192,711
	85	536.790						192
	150	565.463	152.438 – 329.277	$3s3p^6 - 3s^23p^4(^3P)4p$	$^2S - {}^2P^o$	$\frac{1}{2} - \frac{3}{2}$		192,762
	750	655.998	0.0 – 152.438	$3s^23p^5 - 3s3p^6$	$g^2P^o - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		085,192
	500	669.696	3.1179 – 152.438	$3s^23p^5 - 3s3p^6$	$g^2P^o - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		085,192
	150	775.526						192
	150	892.671						192
	300	994.311						192
	350	997.579						192
	250	1024.339						192
	250	1027.309						192
	150	1029.566						192
	200	1030.273						192

CALCIUM V (Ca^{4+}), Z = 20
Ground State $1s^22s^22p^63s^23p^4(^3P_2)$ (16 electrons)
Ionization Potential 681 600 cm^{-1}; 84.50 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	150	184.280	0. – 542.65	$3s^23p^4 - 3s^23p^3(^2P^o)5s$	$g^3P - {}^3P^o$	2 – 2		045
	50	184.415	0. – 542.249	$3s^23p^4 - 3s^23p^3(^2P^o)5s$	$g^3P - {}^3P^o$	2 – 1		045
	100	185.102	2.4047 – 542.65	$3s^23p^4 - 3s^23p^3(^2P^o)5s$	$g^3P - {}^3P^o$	1 – 2		045
	50	185.288	2.4047 – 542.106	$3s^23p^4 - 3s^23p^3(^2P^o)5s$	$g^3P - {}^3P^o$	1 – 0		045
	100	185.540	3.2756 – 542.249	$3s^23p^4 - 3s^23p^3(^2P^o)5s$	$g^3P - {}^3P^o$	0 – 1		045
	200	190.363	18.8303 – 544.143	$3s^23p^4 - 3s^23p^3(^2P^o)5s$	$^1D - {}^1P^o$	2 – 1		045

CA V — *Continued*

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	250	190.457	0. – 525.053	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$g^3P - {}^3D^\circ$	2 – 3		045
	150	190.558	0. – 524.77	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$g^3P - {}^3D^\circ$	2 – 2		045
	150	191.439	2.4047 – 524.77	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$g^3P - {}^3D^\circ$	1 – 2		045
	100	191.480	2.4047 – 524.651	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$g^3P - {}^3D^\circ$	1 – 1		045
	100	191.801	3.2756 – 524.651	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$g^3P - {}^3D^\circ$	0 – 1		045
	250	196.970	18.8303 – 526.523	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$^1D - {}^1D^\circ$	2 – 2		045
	100	197.531	18.8303 – 525.053	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$^1D - {}^3D^\circ$	2 – 3		045
	100	197.648	18.8303 – 524.77	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$^1D - {}^3D^\circ$	2 – 2		045
	20	197.685	18.8303 – 524.651	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$^1D - {}^3D^\circ$	2 – 1		192,375
	300	199.553	0. – 501.127	$3s^23p^4 - 3s^23p^3(^4S^\circ)5s$	$g^3P - {}^3S^\circ$	2 – 1		045,345
	150	199.890	43.8365 – 544.143	$3s^23p^4 - 3s^23p^3(^2P^\circ)5s$	$^1S - {}^1P^\circ$	0 – 1		045
	250	200.512	2.4047 – 501.127	$3s^23p^4 - 3s^23p^3(^4S^\circ)5s$	$g^3P - {}^3S^\circ$	1 – 1		045
	150	200.860	3.2756 – 501.127	$3s^23p^4 - 3s^23p^3(^4S^\circ)5s$	$g^3P - {}^3S^\circ$	0 – 1		045
	265	257.976	0. – 387.652	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	2 – 2		192,375
	150	258.251	0. – 387.226	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	2 – 1		192,375
	150	259.576	2.4047 – 387.652	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 2		192,375
	150	259.856	2.4047 – 387.226	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 1		192,375
	150	259.978	2.4047 – 387.039	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 0		192,375
	165	260.446	3.2756 – 387.226	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	0 – 1		192,375
	150	266.863	0. – 374.728	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^1D^\circ$	2 – 2		045
	400	267.772	18.8303 – 392.283	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$^1D - {}^1P^\circ$	2 – 1		045
	100	268.583	2.4047 – 374.728	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^1D^\circ$	1 – 2		045
	300	270.305	0. – 369.959	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	2 – 3		192,375
	150	270.494	0. – 369.696	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	2 – 2		192,375
	100	270.570	0. – 369.59	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	2 – 1		045
	200	271.141	18.8303 – 387.652	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$^1D - {}^3P^\circ$	2 – 2		045
	50	271.440	18.8303 – 387.226	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$^1D - {}^3P^\circ$	2 – 1		045
	250	272.265	2.4047 – 369.696	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	1 – 2		192,375
	150	272.336	2.4047 – 369.59	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	1 – 1		192,375
	200	272.982	3.2756 – 369.59	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	0 – 1		192,375
	400	280.992	18.8303 – 374.728	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$^1D - {}^1D^\circ$	2 – 2		045
	100	284.794	18.8303 – 369.959	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$^1D - {}^3D^\circ$	2 – 3		045
	300	284.978	0. – 350.914	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - {}^3S^\circ$	2 – 1		192,375
	450	286.96	2.4047 – 350.914	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - {}^3S^\circ$	1 – 1		045,375
	150	287.657	3.2756 – 350.914	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - {}^3S^\circ$	0 – 1		192,375
	20	301.139	18.8303 – 350.914	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$^1D - {}^3S^\circ$	2 – 1		045
	150	316.115	2.4047 – 318.735	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^1D^\circ$	1 – 2		192,711
	120	321.609	0. – 310.945	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 1		045
	500	322.166	18.8303 – 329.23	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - {}^1F^\circ$	2 – 3		192,295
	250	322.757	0. – 309.834	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 2		192,295
	300	323.223	43.8365 – 353.23	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1S - {}^1P^\circ$	0 – 1		192,711
	150	324.110	2.4047 – 310.945	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 1		192,295
	250	324.477	0. – 308.185	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		192,295
	150	325.020	3.2756 – 310.945	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	0 – 1		192,295
	250	325.282	2.4047 – 309.834	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		192,295
	300	330.937	0. – 302.17	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^1P^\circ$	2 – 1		045
	200	333.438	18.8303 – 318.735	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - {}^1D^\circ$	2 – 2		192,260
	200	333.570	2.4047 – 302.17	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^1P^\circ$	1 – 1		045
	150	333.857	0. – 299.535	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 1		192,711
	300	334.545	3.2756 – 302.17	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^1P^\circ$	0 – 1		045
	250	335.344	0. – 298.204	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 2		192,711
	200	336.554	2.4047 – 299.535	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 1		192,711
	200	337.541	3.2756 – 299.535	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	0 – 1		192,711
	250	338.056	2.4047 – 298.204	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 2		192,711

CA V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	150	340.389	0. – 293.78	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^3S^\circ$	2 – 1		192,711
	100	343.194	2.4047 – 293.78	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^3S^\circ$	1 – 1		192,711
	200	343.640	18.8303 – 309.834	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - {}^3D^\circ$	2 – 2		045
	100	344.219	3.2756 – 293.78	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - {}^3S^\circ$	0 – 1		192,711
	450	352.915	18.8303 – 302.17	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - {}^1P^\circ$	2 – 1		045
	250	356.246	18.8303 – 299.535	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - {}^3P^\circ$	2 – 1		045
	300	371.225						192
	300	372.904						192
	150	375.333						192
	250	377.181	18.8303 – 283.955	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - {}^1F^\circ$	2 – 3		192,711
	250	380.396						192
	150	381.601						192
	200	387.080	43.8365 – 302.17	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1S - {}^1P^\circ$	0 – 1		192,711
	750	425.000	18.8303 – 254.125	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - {}^1D^\circ$	2 – 2		192,711
	50	445.933						192
	50	446.036						192
	100	476.606						192
	20	505.446	0. – 197.8445	$3s^23p^4 - 3s3p^5$	$g^3P - {}^1P^\circ$	2 – 1		726
	100	509.293						192
	150	549.070						192
	450	558.615	18.8303 – 197.8445	$3s^23p^4 - 3s3p^5$	$^1D - {}^1P^\circ$	2 – 1		726
	50	593.404						192
	50	593.472						192
	50	594.239						192
	285	637.917	0. – 156.7602	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	2 – 1		726
	220	643.104	2.4047 – 157.9005	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	1 – 0		726
	450	646.534	0. – 154.6708	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	2 – 2		726
	160	647.855	2.4047 – 156.7602	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	1 – 1		726
	20	649.317	43.8365 – 197.8445	$3s^23p^4 - 3s3p^5$	$^1S - {}^1P^\circ$	0 – 1		726
	220	651.531	3.2756 – 156.7602	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	0 – 1		726
	220	656.745	2.4047 – 154.6708	$3s^23p^4 - 3s3p^5$	$g^3P - {}^3P^\circ$	1 – 2		726
	50	725.088						192
	250	730.257						192
	250	774.088						192
	150	774.354						192
	150	842.950						192
	100	962.896						192
	300	966.466						192
	150	968.236						192
	315	973.437						192
	200	975.825						192
	150	987.680						192
	150	994.946						192
	300	1000.310						192
	150	1001.544						192
	150	1009.638						192
	150	1012.613						192
	200	1014.162						192
	150	1021.139						192

CALCIUM VI (Ca^{5+}), Z = 20
Ground State $1s^22s^22p^63s^23p^3(^4S^\circ_{3/2})$ (15 electrons)
Ionization Potential [877 400] cm^{-1}; [108.78] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	227.642	44.5867 – 483.87	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2S$	1/2 – 1/2		213
	100	227.922	45.1427 – 483.87	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2S$	3/2 – 1/2		213
	350	228.628	0. – 437.372	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - ^4P$	3/2 – 5/2		045
	350	229.734	0. – 435.266	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - ^4P$	3/2 – 3/2		045
	250	230.495	0. – 433.829	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - ^4P$	3/2 – 1/2		045
	300	232.275	26.8351 – 457.356	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - ^2D$	3/2 – 3/2		213
	250	232.531	27.2466 – 457.294	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - ^2D$	5/2 – 5/2		045
	20	239.296	26.8351 – 444.722	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - ^2P$	3/2 – 3/2		045
	350	239.535	27.2466 – 444.722	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - ^2P$	5/2 – 3/2		045
	300	240.721	26.8351 – 442.252	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - ^2P$	3/2 – 1/2		045
	150	242.265	44.5867 – 457.356	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2D$	1/2 – 3/2		045
	150	242.592	45.1427 – 457.356	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2D$	3/2 – 3/2		045
	250	242.631	45.1427 – 457.294	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2D$	3/2 – 5/2		045
	150	249.914	44.5867 – 444.722	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2P$	1/2 – 3/2		045
	200	250.265	45.1427 – 444.722	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2P$	3/2 – 3/2		045
	200	251.465	44.5867 – 442.252	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2P$	1/2 – 1/2		045
	50	251.816	45.1427 – 442.252	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2P$	3/2 – 1/2		045
	50	291.976						192
	20	316.389						192
	165	316.947						192
	100	320.445						192
	300	323.223	27.2466 – 336.631	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2F$	5/2 – 7/2		192,213
	200	327.806	44.5867 – 349.642	$3s^23p^3 - 3s^23p^2(^1S)3d$	$^2P^\circ - ^2D$	1/2 – 3/2		213
	150	329.298	45.1427 – 348.819	$3s^23p^3 - 3s^23p^2(^1S)3d$	$^2P^\circ - ^2D$	3/2 – 5/2		213
		333.44	0. – 299.904	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4P$	3/2 – 1/2		242
		334.14	0. – 299.276	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4P$	3/2 – 3/2		242
		335.33	0. – 298.214	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4P$	3/2 – 5/2		242
	150	339.463	26.8351 – 321.41	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2D$	3/2 – 3/2		213
	150	339.953	27.2466 – 321.41	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2D$	5/2 – 3/2		213
	200	340.037	26.8351 – 320.918	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2D$	3/2 – 5/2		213
	150	340.516	27.2466 – 320.918	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2D$	5/2 – 5/2		213
	100	346.335	44.5867 – 333.323	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	1/2 – 3/2		192,762
	200	347.005	45.1427 – 333.323	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	3/2 – 3/2		192,762
	50	347.334						192
	150	347.967	44.5867 – 331.964	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	1/2 – 1/2		192,762
	50	348.650	45.1427 – 331.964	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	3/2 – 1/2		192,762
	50	348.927						192
	150	358.153						192
	200	361.114						192
	20	361.241	44.5867 – 321.41	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2D$	1/2 – 3/2		213
	100	361.645						192
	100	362.617	45.1427 – 320.918	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2D$	3/2 – 5/2		213
	50	362.788						192
	100	363.525						192
	250	370.033	26.8351 – 297.08	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2P$	3/2 – 1/2		213
	100	373.417	26.8351 – 294.627	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2P$	3/2 – 3/2		213
	200	374.000	27.2466 – 294.627	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2P$	5/2 – 3/2		213
	135	376.279						192
	50	378.653						192
	50	378.745						192
	100	379.138						192
	50	380.003						192
	100	381.464						192
	100	381.849						192

CA VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	385.091						192
	50	385.941						192
	50	386.106						192
	50	386.254						192
	150	388.685						192,375
	20	389.495						192,375
	100	396.044	44.5867 – 297.08	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		213
	100	396.918	45.1427 – 297.08	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		213
	50	399.928	44.5867 – 294.627	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		213
	200	400.827	45.1427 – 294.627	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		213
	220	505.206	26.8351 – 224.7733	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		726
	70	510.427	26.8351 – 222.7497	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		726
	450	511.500	27.2466 – 222.7497	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		726
	110	528.747	44.5867 – 233.7128	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		726
	160	530.308	45.1427 – 233.7128	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		726
	20	536.008						192
	300	537.613						192
	150	547.898						192
	40	554.983	44.5867 – 224.7733	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		726
	20	561.281	44.5867 – 222.7497	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		726
	150	562.250						192
	70	563.042	45.1427 – 222.7497	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		726
	200	578.732						192
	100	579.775						192
	150	581.466						192
	100	587.604						192
	50	587.872						192
	150	590.396						192
	40	600.206	26.8351 – 193.4448	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		726
	285	600.917	26.8351 – 193.2470	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		726
	360	601.692	27.2466 – 193.4448	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		726
	40	602.408	27.2466 – 193.2470	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{3}{2}$		726
	150	614.015						192
	200	617.517						192
	220	629.602	0. – 158.8305	$3s^23p^3 - 3s3p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		726
	360	633.844	0. – 157.7675	$3s^23p^3 - 3s3p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		726
	450	641.904	0. – 155.7865	$3s^23p^3 - 3s3p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		726
	20	672.315						192
	20	672.676	44.5867 – 193.2470	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		726
	50	673.367	27.2466 – 175.758+X	$3s^23p^3 -$	$^2D^\circ - 1$	$\frac{5}{2}-\frac{3}{2}$		192
	50	674.046						192
	70	674.297	45.1427 – 193.4448	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		726
	150	689.539						192
	50	758.465						192
	50	766.522						192
	50	770.928						192
	50	777.508						192
	50	778.718						192
	100	816.805						192
	150	854.923						192
	100	860.827						192
	300	969.652						192
	150	975.055						192
	200	1021.508						192

CA VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	1032.612						192

CALCIUM VII (Ca^{6+}), Z = 20
Ground State $1s^22s^22p^63s^23p^2(^3P_0)$ (14 electrons)
Ionization Potential 1 026 000 cm^{-1}; 127.2 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	90	202.990	1.6249 – 494.266	$3s^23p^2 - 3s^23p4s$	$g^3P - {}^3P°$	1 – 2		935
	40	203.704	0. – 490.921	$3s^23p^2 - 3s^23p4s$	$g^3P - {}^3P°$	0 – 1		935
	250	204.003	4.0714 – 494.266	$3s^23p^2 - 3s^23p4s$	$g^3P - {}^3P°$	2 – 2		935
	40	204.377	1.6249 – 490.921	$3s^23p^2 - 3s^23p4s$	$g^3P - {}^3P°$	1 – 1		935
	90	204.739	1.6249 – 490.062	$3s^23p^2 - 3s^23p4s$	$g^3P - {}^3P°$	1 – 0		935
	90	205.404	4.0714 – 490.921	$3s^23p^2 - 3s^23p4s$	$g^3P - {}^3P°$	2 – 1		935
	250	209.722	21.8640 – 498.683	$3s^23p^2 - 3s^23p4s$	${}^1D - {}^1P°$	2 – 1		935
	10	213.194	21.8640 – 490.921	$3s^23p^2 - 3s^23p4s$	${}^1D - {}^3P°$	2 – 1		213
		222.373	48.9814 – 498.683	$3s^23p^2 - 3s^23p4s$	${}^1S - {}^1P°$	0 – 1		213
	50	226.292	48.9814 – 490.921	$3s^23p^2 - 3s^23p4s$	${}^1S - {}^3P°$	0 – 1	Q	192,375
	150	272.866						192
	150	295.171						192
	150	295.396						192
	100	307.563						192
	100	313.478						192
	100	314.609						192
	100	315.702						192
	200	330.010	21.8640 – 324.885	$3s^23p^2 - 3s^23p3d$	${}^1D - {}^1F°$	2 – 3		213
	100	330.403						547
	160	331.650						547
	60	332.184						547
	100	334.357						547
	100	338.824	0. – 295.14	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3D°$	0 – 1		213
	150	339.965	1.6249 – 295.776	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3D°$	1 – 2		213
	50	340.700	1.6249 – 295.14	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3D°$	1 – 1		213
	150	342.394	4.0714 – 296.136	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3D°$	2 – 3		213
	50	342.818	4.0714 – 295.776	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3D°$	2 – 2		213
	100	347.021	0. – 288.162	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3P°$	0 – 1		213
	100	347.972	1.6249 – 289.007	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3P°$	1 – 0		213
	150	348.043						192
	20	348.999	1.6249 – 288.162	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3P°$	1 – 1		213
	100	351.373	1.6249 – 286.227	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3P°$	1 – 2		213
	100	351.469	48.9814 – 333.508	$3s^23p^2 - 3s^23p3d$	${}^1S - {}^1P°$	0 – 1		213
	50	352.008	4.0714 – 288.162	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3P°$	2 – 1		213
	150	354.418	4.0714 – 286.227	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3P°$	2 – 2		213
	150	367.011						192
	150	378.258	21.8640 – 286.227	$3s^23p^2 - 3s^23p3d$	${}^1D - {}^3P°$	2 – 2		192
	50	389.195						192
	5	396.049	0. – 252.4899	$3s^23p^2 - 3s3p^3$	$g^3P - {}^1P°$	0 – 1		726
	20	398.623	1.6249 – 252.4899	$3s^23p^2 - 3s3p^3$	$g^3P - {}^1P°$	1 – 1		726
	40	402.551	4.0714 – 252.4899	$3s^23p^2 - 3s3p^3$	$g^3P - {}^1P°$	2 – 1		726
	40	407.764	0. – 245.2405	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3S°$	0 – 1		726

CA VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	110	410.481	1.6249 – 245.2405	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3S°$	1 – 1		726
	100	412.175						192
	70	414.648	4.0714 – 245.2405	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3S°$	2 – 1		726
	50	420.191						192
	50	428.819						192
	160	433.598	21.8640 – 252.4899	$3s^23p^2 - 3s3p^3$	${}^1D - {}^1P°$	2 – 1		726
	5	447.678	21.8640 – 245.2405	$3s^23p^2 - 3s3p^3$	${}^1D - {}^3S°$	2 – 1		726
	100	486.838						192
	50	489.700						192
	50	491.097						192
	70	491.381	48.9814 – 252.4899	$3s^23p^2 - 3s3p^3$	${}^1S - {}^1P°$	0 – 1		726
	1	501.134	4.0714 – 203.6161	$3s^23p^2 - 3s3p^3$	$g^3P - {}^1D°$	2 – 2		726
	150	504.591						192
	1	509.526	48.9814 – 245.2405	$3s^23p^2 - 3s3p^3$	${}^1S - {}^3S°$	0 – 1		726
	40	539.396	0. – 185.3929	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P°$	0 – 1		726
	70	544.107	1.6249 – 185.4122	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P°$	1 – 2		726
	70	544.164	1.6249 – 185.3929	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P°$	1 – 1		726
	70	544.272	1.6249 – 185.3566	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P°$	1 – 0		726
	160	550.202	21.8640 – 203.6161	$3s^23p^2 - 3s3p^3$	${}^1D - {}^1D°$	2 – 2		726
	110	551.448	4.0714 – 185.4122	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P°$	2 – 2		726
	40	551.506	4.0714 – 185.3929	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P°$	2 – 1		726
	110	624.385	0. – 160.1575	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D°$	0 – 1		726
	160	630.537	1.6249 – 160.2203	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D°$	1 – 2		726
	40	630.785	1.6249 – 160.1575	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D°$	1 – 1		726
	160	639.150	4.0714 – 160.5292	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D°$	2 – 3		726
	20	640.412	4.0714 – 160.2203	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D°$	2 – 2		726
	1	640.679	4.0714 – 160.1575	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D°$	2 – 1		726
	100	647.292						192
	50	673.885						192
	150	676.563						192
	150	681.363						192
	100	684.383						192
	250	684.743						192
	100	687.985						192
	50	688.223						192
	100	697.281						192
	100	697.809						192
	100	697.972						192
	100	709.001						192
	100	709.932						192
	100	710.671						192
	100	711.390						192
	150	713.793						192
	135	714.176						192
	50	721.514						192
	100	722.456						192
	50	727.185						192
	150	954.270						192
	100	970.887						192
	200	983.432						192
	150	987.867						192
	150	989.973						192
	50	992.740						192
	250	1002.398						192

CA VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	1003.611						192
	150	1019.799						192
	100	1022.010						192
	150	1027.110						192
	100	1028.366						192

CALCIUM VIII (Ca^{7+}), Z = 20
Ground State $1s^22s^22p^63s^23p(^2P^\circ_{1/2})$ (13 electrons)
Ionization Potential 1 187 600 cm^{-1}; 147.24 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	102.081	0.0 – 979.614	$3s^23p - 3s^26d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		935
	10	102.495	4.3083 – 979.966	$3s^23p - 3s^26d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		935
	40	112.908	0.0 – 885.677	$3s^23p - 3s^25d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		935
	90	113.453	4.3083 – 885.731	$3s^23p - 3s^25d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		935
	40	114.566						547
	1	122.095	171.8307 – 991.023	$3s3p^2 - 3s^26f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	Q	935
	1	131.419	282.354 – 1043.238	$3s^23d - 3s^27f$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		935
	1	131.470	282.573 – 1043.238	$3s^23d - 3s^27f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		935
	10	141.115	282.354 – 991.023	$3s^23d - 3s^26f$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		935
	10	141.155	282.573 – 991.023	$3s^23d - 3s^26f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		935
	250	143.218	0.0 – 698.238	$3s^23p - 3s^24d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		935
	360	144.070	4.3083 – 698.416	$3s^23p - 3s^24d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		935
	90	144.111	4.3083 – 698.238	$3s^23p - 3s^24d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		935
	10	160.592	282.354 – 905.050	$3s^23d - 3s^25f$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		935
	40	160.638	282.573 – 905.083	$3s^23d - 3s^25f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		935
	10	174.916	171.5722 – 743.279	$3s3p^2 - 3s^24f$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		935
	40	174.980	171.8307 – 743.315	$3s3p^2 - 3s^24f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		935
	1	176.087	411.816 – 979.614	$3s3p(^3P^\circ)3d - 3s^26d$	$^4D^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	Q	935
	160	177.892	130.678 – 692.814	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		935
	90	178.250	129.100 – 690.112	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		935
	160	178.645	133.042 – 692.814	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		935
	10	178.687	129.100 – 688.696	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$		935
	1	178.751	130.678 – 690.112	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		935
	40	179.219	130.678 – 688.696	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		935
	90	179.511	133.042 – 690.112	$3s3p^2 - 3s3p(^3P^\circ)4s$	$^4P - ^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		935
	160	182.710	0.0 – 547.312	$3s^23p - 3s^24s$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		935
	250	184.162	4.3083 – 547.312	$3s^23p - 3s^24s$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		935
	90	216.954	282.354 – 743.279	$3s^23d - 3s^24f$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		935
	160	217.041	282.573 – 743.315	$3s^23d - 3s^24f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		935
		352.998	129.100 – 412.388	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		213
	20	353.699	129.100 – 411.816	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{1}{2}-\frac{1}{2}$		213
	150	354.165	0.0 – 282.354	$3s^23p - 3s^23d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		213
	50	354.488	130.678 – 412.772	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		213
	100	354.975	130.678 – 412.388	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		213
	100	355.704	130.678 – 411.816	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{3}{2}-\frac{1}{2}$		213
	50	356.907	129.100 – 409.291	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		213
	150	357.348	133.042 – 412.881	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		213
	50	357.492	133.042 – 412.772	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		213
	100	357.977	133.042 – 412.388	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4D^\circ$	$\frac{5}{2}-\frac{3}{2}$		213
	200	359.364	4.3083 – 282.573	$3s^23p - 3s^23d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		213
	50	359.647	4.3083 – 282.354	$3s^23p - 3s^23d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		213
	100	360.298	130.678 – 408.227	$3s3p^2 - 3s3p(^3P^\circ)3d$	$^4P - ^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		213

CA VIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	361.984	133.042 – 409.291	$3s3p^2 - 3s3p(^3P^o)3d$	$^4P - ^4P^o$	$\frac{5}{2} - \frac{3}{2}$		213
	50	363.391	133.042 – 408.227	$3s3p^2 - 3s3p(^3P^o)3d$	$^4P - ^4P^o$	$\frac{5}{2} - \frac{5}{2}$		213
	285	428.094	0.0 – 233.5928	$3s^23p - 3s3p^2$	$g^2P^o - ^2P$	$\frac{1}{2} - \frac{3}{2}$		726
	285	432.869	0.0 – 231.0163	$3s^23p - 3s3p^2$	$g^2P^o - ^2P$	$\frac{1}{2} - \frac{1}{2}$		726
	450	436.141	4.3083 – 233.5928	$3s^23p - 3s3p^2$	$g^2P^o - ^2P$	$\frac{3}{2} - \frac{3}{2}$		726
	285	441.089	4.3083 – 231.0163	$3s^23p - 3s3p^2$	$g^2P^o - ^2P$	$\frac{3}{2} - \frac{1}{2}$		726
	220	461.711	0.0 – 216.5849	$3s^23p - 3s3p^2$	$g^2P^o - ^2S$	$\frac{1}{2} - \frac{1}{2}$		726
	50	462.591	129.100 – 345.274	$3s3p^2 - 3p^3$	$^4P - ^4S^o$	$\frac{1}{2} - \frac{3}{2}$		213
	100	465.993	130.678 – 345.274	$3s3p^2 - 3p^3$	$^4P - ^4S^o$	$\frac{3}{2} - \frac{3}{2}$		213
	285	471.085	4.3083 – 216.5849	$3s^23p - 3s3p^2$	$g^2P^o - ^2S$	$\frac{3}{2} - \frac{1}{2}$		726
	100	471.183	133.042 – 345.274	$3s3p^2 - 3p^3$	$^4P - ^4S^o$	$\frac{5}{2} - \frac{3}{2}$		213
	360	582.845	0.0 – 171.5722	$3s^23p - 3s3p^2$	$g^2P^o - ^2D$	$\frac{1}{2} - \frac{3}{2}$		726
	450	596.935	4.3083 – 171.8307	$3s^23p - 3s3p^2$	$g^2P^o - ^2D$	$\frac{3}{2} - \frac{5}{2}$		726
		597.851	4.3083 – 171.5722	$3s^23p - 3s3p^2$	$g^2P^o - ^2D$	$\frac{3}{2} - \frac{3}{2}$		726

CALCIUM IX (Ca^{8+}), Z = 20
Ground State $1s^22s^22p^63s^2(^1S_0)$ (12 electrons)
Ionization Potential 1 519 000 cm^{-1}; 186.3 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	76.026	0.0 – 1315.305	$3s^2 - 3s7p$	$g^1S - ^1P^o$	0 – 1		935
	40	80.917	0.0 – 1235.834	$3s^2 - 3s6p$	$g^1S - ^1P^o$	0 – 1		935
	1	81.094	143.180+C – 1376.394+C	3s3p – 3s8d	$^3P^o - ^3D$	0 – 1		935
	1	81.190	144.679+C – 1376.394+C	3s3p – 3s8d	$^3P^o - ^3D$	1 – 2		935
	10	81.399	147.916+C – 1376.394+C	3s3p – 3s8d	$^3P^o - ^3D$	2 – 3		935
	1	84.270	144.679+C – 1331.331+C	3s3p – 3s7d	$^3P^o - ^3D$	1 – 2		935
	1	84.500	147.916+C – 1331.331+C	3s3p – 3s7d	$^3P^o - ^3D$	2 – 3		935
	10	89.555	143.180+C – 1259.650+C	3s3p – 3s6d	$^3P^o - ^3D$	0 – 1		935
	90	89.672	144.679+C – 1259.829+C	3s3p – 3s6d	$^3P^o - ^3D$	1 – 2		935
	160	89.916	147.916+C – 1260.016+C	3s3p – 3s6d	$^3P^o - ^3D$	2 – 3		935
	90	91.109	0.0 – 1097.574	$3s^2 - 3s5p$	$g^1S - ^1P^o$	0 – 1		935
	1	93.297	147.916+C – 1219.785+C	3s3p – 3s6s	$^3P^o - ^3S$	2 – 1		935
	1	95.619	214.482 – 1260.387	3s3p – 3s6d	$^1P^o - ^1D$	1 – 2		935
	1	99.813	143.180+C – 1145.050+C	3s3p – 3s5d	$^3P^o - ^3D$	0 – 1		935
	40	99.951	144.679+C – 1145.174+C	3s3p – 3s5d	$^3P^o - ^3D$	1 – 2		935
	40	100.226	147.916+C – 1145.661+C	3s3p – 3s5d	$^3P^o - ^3D$	2 – 3		935
	10	100.824	147.916+C – 1139.808	3s3p – 3s5d	$^3P^o - ^1D$	2 – 2	Q	935
	1	108.032	143.180+C – 1068.805+C	3s3p – 3s5s	$^3P^o - ^3S$	0 – 1		935
	90	108.071	214.482 – 1139.808	3s3p – 3s5d	$^1P^o - ^1D$	1 – 2		935
	40	108.208	144.679+C – 1068.805+C	3s3p – 3s5s	$^3P^o - ^3S$	1 – 1		935
	40	108.591	147.916+C – 1068.805+C	3s3p – 3s5s	$^3P^o - ^3S$	2 – 1		935
	1	114.816	144.679+C – 1015.624+C	3s3p – 3p4p	$^3P^o - ^3S$	1 – 1		935
	10	114.977	144.679+C – 1014.393+C	3s3p – 3p4p	$^3P^o - ^3P$	1 – 2		935
	10	115.096	143.180+C – 1012.035+C	3s3p – 3p4p	$^3P^o - ^3P$	0 – 1		935
	40	115.246	147.916+C – 1015.624+C	3s3p – 3p4p	$^3P^o - ^3S$	2 – 1		935
	10	115.293	144.679+C – 1012.035+C	3s3p – 3p4p	$^3P^o - ^3P$	1 – 1		935
	90	115.412	147.916+C – 1014.393+C	3s3p – 3p4p	$^3P^o - ^3P$	2 – 2		935
	10	115.445	144.679+C – 1010.900+C	3s3p – 3p4p	$^3P^o - ^3P$	1 – 0		935
	1	116.056	214.482 – 1076.113	3s3p – 3s5s	$^1P^o - ^1S$	1 – 0		935
	250	116.176	147.916+C – 1008.679+C	3s3p – 3p4p	$^3P^o - ^3D$	2 – 3		935

CA IX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	90	116.203	144.679+C - 1005.240+C	3s3p - 3p4p	$^3P^\circ$ - ^3D	1 - 2		935
	10	116.492	412.195+C - 1270.614+C	3s3d - 3s6f	^3D - $^3F^\circ$	2 - 3		935
	10	116.523	412.409+C - 1270.614+C	3s3d - 3s6f	^3D - $^3F^\circ$	3 - 4		935
	1	116.638	147.916+C - 1005.240+C	3s3p - 3p4p	$^3P^\circ$ - ^3D	2 - 2		935
	360	120.146	0.0 - 832.314	$3s^2$ - 3s4p	g^1S - $^1P^\circ$	0 - 1		935
	1	121.014						935
	1	121.333	336.245 - 1160.422	$3p^2$ - 3s5f	^1D - $^1F^\circ$	2 - 3	Q	935
	90	129.198	143.180+C - 917.204+C	3s3p - 3s4d	$^3P^\circ$ - ^3D	0 - 1		935
	250	129.423	144.679+C - 917.318+C	3s3p - 3s4d	$^3P^\circ$ - ^3D	1 - 2		935
	90	129.448	144.679+C - 917.204+C	3s3p - 3s4d	$^3P^\circ$ - ^3D	1 - 1		935
	360	129.935	147.916+C - 917.532+C	3s3p - 3s4d	$^3P^\circ$ - ^3D	2 - 3		935
	90	129.973	147.916+C - 917.318+C	3s3p - 3s4d	$^3P^\circ$ - ^3D	2 - 2		935
	90	130.191	467.631 - 1235.834	3s3d - 3s6p	^1D - $^1P^\circ$	2 - 1	Q	935
	10	132.331	341.876+C - 1097.574	$3p^2$ - 3s5p	^3P - $^1P^\circ$	1 - 1	Q	935
	10	133.180	339.967+C - 1090.83+C	$3p^2$ - 3p4d	^3P - $^3D^\circ$	0 - 1		935
	160	133.510	341.876+C - 1090.83+C	$3p^2$ - 3p4d	^3P - $^3D^\circ$	1 - 1		935
	40	133.767	412.082+C - 1159.682+C	3s3d - 3s5f	^3D - $^3F^\circ$	1 - 2		935
	90	133.785	412.195+C - 1159.682+C	3s3d - 3s5f	^3D - $^3F^\circ$	2 - 3		935
	90	133.820	412.409+C - 1159.682+C	3s3d - 3s5f	^3D - $^3F^\circ$	3 - 4		935
	90	141.358	214.482 - 921.921	3s3p - 3s4d	$^1P^\circ$ - ^1D	1 - 2		935
	40	143.887						935
	150	144.038	565.73+C - 1260.016+C	3p3d - 3s6d	$^3F^\circ$ - ^3D	3 - 3	Q	192
	250	144.345	467.631 - 1160.422	3s3d - 3s5f	^1D - $^1F^\circ$	2 - 3		220
		156.683	467.631 - 1105.85	3s3d - 3p4d	^1D - $^1F^\circ$	2 - 3		970
	160	158.718	467.631 - 1097.574	3s3d - 3s5p	^1D - $^1P^\circ$	2 - 1	Q	935
	160	159.538	336.245 - 963.050	$3p^2$ - 3s4f	^1D - $^1F^\circ$	2 - 3		935
	160	161.979	143.180+C - 760.542+C	3s3p - 3s4s	$^3P^\circ$ - ^3S	0 - 1		935
	250	162.375	144.679+C - 760.542+C	3s3p - 3s4s	$^3P^\circ$ - ^3S	1 - 1		935
	360	163.230	147.916+C - 760.542+C	3s3p - 3s4s	$^3P^\circ$ - ^3S	2 - 1		935
	10	165.423	341.876+C - 946.382+C	$3p^2$ - 3p4s	^3P - $^3P^\circ$	1 - 2		935
	10	165.920	339.967+C - 942.662+C	$3p^2$ - 3p4s	^3P - $^3P^\circ$	0 - 1		935
	90	166.414	345.476+C - 946.382+C	$3p^2$ - 3p4s	^3P - $^3P^\circ$	2 - 2		935
	1	166.442	341.876+C - 942.662+C	$3p^2$ - 3p4s	^3P - $^3P^\circ$	1 - 1		935
	10	166.776	341.876+C - 941.475+C	$3p^2$ - 3p4s	^3P - $^3P^\circ$	1 - 0		935
	10	167.457	345.476+C - 942.662+C	$3p^2$ - 3p4s	^3P - $^3P^\circ$	2 - 1		935
	160	178.577	214.482 - 774.480	3s3p - 3s4s	$^1P^\circ$ - ^1S	1 - 0		935
	160	178.944	568.20+C - 1127.01+C	3p3d - 3p4f	$^3F^\circ$ - ^3G	4 - 5		935
	160	184.333	412.082+C - 954.577+C	3s3d - 3s4f	^3D - $^3F^\circ$	1 - 2		935
	250	184.372	412.195+C - 954.578+C	3s3d - 3s4f	^3D - $^3F^\circ$	2 - 3		935
	360	184.432	412.409+C - 954.614+C	3s3d - 3s4f	^3D - $^3F^\circ$	3 - 4		935
	90	189.491	602.73+C - 1130.46+C	3p3d - 3p4f	$^3D^\circ$ - ^3F	3 - 4		935
	1	201.572	336.245 - 832.314	$3p^2$ - 3s4p	^1D - $^1P^\circ$	2 - 1	Q	935
	160	201.846	467.631 - 963.050	3s3d - 3s4f	^1D - $^1F^\circ$	2 - 3		935
		202.35	571.90 - 1066.10	3p3d - 3p4f	$^1F^\circ$ - ^1G	3 - 4		899
	1	213.568	345.476+C - 813.71+C	$3p^2$ - 3s4p	^3P - $^3P^\circ$	2 - 2	Q	935
	150	242.384	598.33+C - 1010.900+C	3p3d - 3p4p	$^3D^\circ$ - ^3P	1 - 0		192
	10	371.893	143.180+C - 412.082+C	3s3p - 3s3d	$^3P^\circ$ - ^3D	0 - 1		220
	10	373.807	144.679+C - 412.195+C	3s3p - 3s3d	$^3P^\circ$ - ^3D	1 - 2		220
	40	373.988	144.679+C - 412.082+C	3s3p - 3s3d	$^3P^\circ$ - ^3D	1 - 1		220
	40	378.082	147.916+C - 412.409+C	3s3p - 3s3d	$^3P^\circ$ - ^3D	2 - 3		220
	1	378.390	147.916+C - 412.195+C	3s3p - 3s3d	$^3P^\circ$ - ^3D	2 - 2		220
	1	378.540	147.916+C - 412.082+C	3s3p - 3s3d	$^3P^\circ$ - ^3D	2 - 1		220
		386.92	341.876+C - 600.33+C	$3p^2$ - 3p3d	^3P - $^3D^\circ$	1 - 2		242
		388.72	345.476+C - 602.73+C	$3p^2$ - 3p3d	^3P - $^3D^\circ$	2 - 3		242

CA IX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	40	395.025	214.482 – 467.631	3s3p – 3s3d	$^1P^\circ - {}^1D$	1 – 2		220
		424.34	336.245 – 571.90	$3p^2$ – 3p3d	$^1D - {}^1F^\circ$	2 – 3		242
		455.34	398.895 – 618.51	$3p^2$ – 3p3d	$^1S - {}^1P^\circ$	0 – 1		242
	160	466.240	0.0 – 214.482	$3s^2$ – 3s3p	$g^1S - {}^1P^\circ$	0 – 1		220
	40	498.014	144.679+C – 345.476+C	3s3p – $3p^2$	$^3P^\circ - {}^3P$	1 – 2		220
	10	503.282	143.180+C – 341.876+C	3s3p – $3p^2$	$^3P^\circ - {}^3P$	0 – 1		220
	90	506.179	147.916+C – 345.476+C	3s3p – $3p^2$	$^3P^\circ - {}^3P$	2 – 2		220
	1	507.106	144.679+C – 341.876+C	3s3p – $3p^2$	$^3P^\circ - {}^3P$	1 – 1		220
	10	512.063	144.679+C – 339.967+C	3s3p – $3p^2$	$^3P^\circ - {}^3P$	1 – 0		220
	10	515.567	147.916+C – 341.876+C	3s3p – $3p^2$	$^3P^\circ - {}^3P$	2 – 1		220
		525.43	412.409+C – 602.73+C	3s3d – 3p3d	$^3D - {}^3D^\circ$	3 – 3		242
		542.26	214.482 – 398.895	3s3p – $3p^2$	$^1P^\circ - {}^1S$	1 – 0		242
		641.88	412.409+C – 568.20+C	3s3d – 3p3d	$^3D - {}^3F^\circ$	3 – 4		242
		651.31	412.195+C – 565.73+C	3s3d – 3p3d	$^3D - {}^3F^\circ$	2 – 3		242
		659.48	412.082+C – 563.72+C	3s3d – 3p3d	$^3D - {}^3F^\circ$	1 – 2		242
		691.2	0.0 – 144.679+C	$3s^2$ – 3s3p	$g^1S - {}^3P^\circ$	0 – 1	P	1131
	10	821.269	214.482 – 336.245	3s3p – $3p^2$	$^1P^\circ - {}^1D$	1 – 2		220
	100	1019.371	467.631 – 565.73+C	3s3d – 3p3d	$^1D - {}^3F^\circ$	2 – 3	Q	192

CALCIUM X (Ca^{9+}), Z = 20
Ground State $1s^22s^22p^63s(^2S_{1/2})$ (11 electrons)
Ionization Potential 1 704 047 cm^{-1}; 211.277 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		61.12	0. – 1636.1+F	$2p^63s$ – $2p^613p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	899
		61.58	0. – 1623.9+F	$2p^63s$ – $2p^612p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	899
		62.18	0. – 1608.2+F	$2p^63s$ – $2p^611p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	899
	1	62.992	0. – 1587.5+F	$2p^63s$ – $2p^610p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	Q	935
	10	64.133	0. – 1559.260	$2p^63s$ – $2p^69p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		935
	40	65.824	0. – 1519.203	$2p^63s$ – $2p^68p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		935
	90	68.497	0. – 1459.918	$2p^63s$ – $2p^67p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		935
	1	70.525	174.213 – 1592.153	$2p^63p$ – $2p^610d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		935
	10	70.773	179.287 – 1592.256	$2p^63p$ – $2p^610d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		935
	10	71.864	174.213 – 1565.730	$2p^63p$ – $2p^69d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		935
	40	72.127	179.287 – 1565.732	$2p^63p$ – $2p^69d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		935
	160	73.159	0. – 1366.886	$2p^63s$ – $2p^66p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		935
	90	73.187	0. – 1366.363	$2p^63s$ – $2p^66p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		935
	40	73.840	174.213 – 1528.493	$2p^63p$ – $2p^68d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		935
	90	74.117	179.287 – 1528.507	$2p^63p$ – $2p^68d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		935
	1	75.047	179.287 – 1511.785	$2p^63p$ – $2p^68s$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		935
	90	76.933	174.213 – 1474.045	$2p^63p$ – $2p^67d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		935
	160	77.232	179.287 – 1474.090	$2p^63p$ – $2p^67d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		935
	1	78.462	174.213 – 1448.712	$2p^63p$ – $2p^67s$	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		935
	40	78.776	179.287 – 1448.712	$2p^63p$ – $2p^67s$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		935
	1	81.820	417.112 – 1639.0+K	$2p^63d$ – $2p^613f$	$^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$	Q	118
	1	81.846	417.522 – 1639.0+K	$2p^63d$ – $2p^613f$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$	Q	118
	160	82.262	174.213 – 1389.841	$2p^63p$ – $2p^66d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		935
	250	82.605	179.287 – 1389.872	$2p^63p$ – $2p^66d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		935

CA X — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	360	82.798	0. – 1207.763	$2p^63s - 2p^65p$	$g^2S - {}^2P^o$	1/2 – 3/2		935
	250	82.860	0. – 1206.850	$2p^63s - 2p^65p$	$g^2S - {}^2P^o$	1/2 – 1/2		935
	5	83.578	417.112 – 1613.2+K	$2p^63d - 2p^611f$	${}^2D - {}^2F^o$	3/2 – 5/2	Q	118
	8	83.615	417.112 – 1613.2+K	$2p^63d - 2p^611f$	${}^2D - {}^2F^o$	3/2 – 5/2	Q	118
		83.987	417.522 – 1608.2+F	$2p^63d - 2p^611p$	${}^2D - {}^2P^o$	5/2 – 3/2	Q	899
	3	84.946	417.112 – 1594.1+K	$2p^63d - 2p^610f$	${}^2D - {}^2F^o$	3/2 – 5/2	Q	118
	4	84.983	417.522 – 1594.1+K	$2p^63d - 2p^610f$	${}^2D - {}^2F^o$	5/2 – 7/2	Q	118
	40	85.169	174.213 – 1348.379	$2p^63p - 2p^66s$	${}^2P^o - {}^2S$	1/2 – 1/2		935
	90	85.535	179.287 – 1348.379	$2p^63p - 2p^66s$	${}^2P^o - {}^2S$	3/2 – 1/2		935
	3	86.860	417.112 – 1568.159	$2p^63d - 2p^69f$	${}^2D - {}^2F^o$	3/2 – 5/2		118
	5	86.889	417.522 – 1568.159	$2p^63d - 2p^69f$	${}^2D - {}^2F^o$	5/2 – 5/2		118
	40	89.720	417.522 – 1532.098	$2p^63d - 2p^68f$	${}^2D - {}^2F^o$	5/2 – 7/2		935
	360	93.049	174.213 – 1248.916	$2p^63p - 2p^65d$	${}^2P^o - {}^2D$	1/2 – 3/2		935
	500	93.481	179.287 – 1249.033	$2p^63p - 2p^65d$	${}^2P^o - {}^2D$	3/2 – 5/2		935
		93.490	179.287 – 1248.916	$2p^63p - 2p^65d$	${}^2P^o - {}^2D$	3/2 – 3/2	P	935
	40	94.137	417.112 – 1479.394	$2p^63d - 2p^67f$	${}^2D - {}^2F^o$	3/2 – 5/2		935
	90	94.170	417.522 – 1479.431	$2p^63d - 2p^67f$	${}^2D - {}^2F^o$	5/2 – 7/2		935
		95.933	417.522 – 1459.918	$2p^63d - 2p^67p$	${}^2D - {}^2P^o$	5/2 – 3/2	P	375,935
	40	99.951	174.213 – 1174.708	$2p^63p - 2p^65s$	${}^2P^o - {}^2S$	1/2 – 1/2		935
	90	100.460	179.287 – 1174.708	$2p^63p - 2p^65s$	${}^2P^o - {}^2S$	3/2 – 1/2		935
	90	101.917	417.112 – 1398.303	$2p^63d - 2p^66f$	${}^2D - {}^2F^o$	3/2 – 5/2		935
	160	101.960	417.522 – 1398.299	$2p^63d - 2p^66f$	${}^2D - {}^2F^o$	5/2 – 7/2		935
		105.334	417.112 – 1366.363	$2p^63d - 2p^66p$	${}^2D - {}^2P^o$	3/2 – 1/2	P	375,935
	850	110.963	0. – 901.205	$2p^63s - 2p^64p$	$g^2S - {}^2P^o$	1/2 – 3/2		935
	650	111.198	0. – 899.293	$2p^63s - 2p^64p$	$g^2S - {}^2P^o$	1/2 – 1/2		935
	250	118.123	417.112 – 1263.687	$2p^63d - 2p^65f$	${}^2D - {}^2F^o$	3/2 – 5/2		935
	360	118.176	417.522 – 1263.718	$2p^63d - 2p^65f$	${}^2D - {}^2F^o$	5/2 – 7/2		935
	650	122.989	174.213 – 987.299	$2p^63p - 2p^64d$	${}^2P^o - {}^2D$	1/2 – 3/2		935
	850	123.731	179.287 – 987.492	$2p^63p - 2p^64d$	${}^2P^o - {}^2D$	3/2 – 5/2		935
	250	123.756	179.287 – 987.299	$2p^63p - 2p^64d$	${}^2P^o - {}^2D$	3/2 – 3/2		935
	10	126.543	417.522 – 1207.763	$2p^63d - 2p^65p$	${}^2D - {}^2P^o$	5/2 – 3/2		935
	1	126.625	417.112 – 1206.850	$2p^63d - 2p^65p$	${}^2D - {}^2P^o$	3/2 – 1/2		935
	500	151.843	174.213 – 832.788	$2p^63p - 2p^64s$	${}^2P^o - {}^2S$	1/2 – 1/2		935
	650	153.022	179.287 – 832.788	$2p^63p - 2p^64s$	${}^2P^o - {}^2S$	3/2 – 1/2		935
	1	159.445	832.788 – 1459.918	$2p^64s - 2p^67p$	${}^2S - {}^2P^o$	1/2 – 3/2	Q	935
	250	161.048	987.299 – 1608.2+F	$2p^64d - 2p^611p$	${}^2D - {}^2P^o$	3/2 – 1/2	Q	935
	650	166.949	417.112 – 1016.097	$2p^63d - 2p^64f$	${}^2D - {}^2F^o$	3/2 – 5/2		935
	850	167.049	417.522 – 1016.152	$2p^63d - 2p^64f$	${}^2D - {}^2F^o$	5/2 – 7/2		935
		167.064	417.522 – 1016.097	$2p^63d - 2p^64f$	${}^2D - {}^2F^o$	5/2 – 5/2	P	935
	40	182.644	901.205 – 1448.712	$2p^64p - 2p^67s$	${}^2P^o - {}^2S$	3/2 – 1/2	Q	935
	90	206.746	417.522 – 901.205	$2p^63d - 2p^64p$	${}^2D - {}^2P^o$	5/2 – 3/2		935
	40	207.392	417.112 – 899.293	$2p^63d - 2p^64p$	${}^2D - {}^2P^o$	3/2 – 1/2		935
	250	411.695	174.213 – 417.112	$2p^63p - 2p^63d$	${}^2P^o - {}^2D$	1/2 – 3/2		935
	360	419.754	179.287 – 417.522	$2p^63p - 2p^63d$	${}^2P^o - {}^2D$	3/2 – 5/2		935
	90	420.473	179.287 – 417.112	$2p^63p - 2p^63d$	${}^2P^o - {}^2D$	3/2 – 3/2		935
	500	557.763	0. – 179.287	$2p^63s - 2p^63p$	$g^2S - {}^2P^o$	1/2 – 3/2		935
	360	574.010	0. – 174.213	$2p^63s - 2p^63p$	$g^2S - {}^2P^o$	1/2 – 1/2		935

CALCIUM XI (Ca^{10+}), Z = 20
Ground State $1s^22s^22p^6(^1S_0)$ (10 electrons)
Ionization Potential 4 774 000 cm^{-1}; 591.9 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	25.327	0.0 – 3948.4	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})4d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		189
	100	25.517	0.0 – 3919.0	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		189
	20	26.442	0.0 – 3781.9	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})4s$	$g^1S - (\frac{1}{2},\frac{1}{2})^\circ$	0 – 1		189
	20	26.639	0.0 – 3753.9	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4s$	$g^1S - (\frac{3}{2},\frac{1}{2})^\circ$	0 – 1		189
	100	26.962	0.0 – 3708.9	$2s^22p^6 - 2s2p^6(^2S)3p$	$g^1S - {}^1P^\circ$	0 – 1		189
	20	27.079	0.0 – 3692.9	$2s^22p^6 - 2s2p^6(^2S)3p$	$g^1S - {}^3P^\circ$	0 – 1		189
	600	30.448	0.0 – 3284.3	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})3d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		189
	300	30.867	0.0 – 3239.7	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		189
	200	31.257	0.0 – 3199.3	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		189
	800	35.212	0.0 – 2839.94	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})3s$	$g^1S - (\frac{1}{2},\frac{1}{2})^\circ$	0 – 1		189
	800	35.576	0.0 – 2810.88	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3s$	$g^1S - (\frac{3}{2},\frac{1}{2})^\circ$	0 – 1		189
		97.23	3208.1+C – 4236.6+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 5		1055
	10	98.429	2831.8+C – 3847.7+C	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)4p$	$^3P^\circ - {}^3D$	0 – 1	Q	935
	10	105.636	2989.8+C – 3936.61+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^3P - {}^3F^\circ$	2 – 2	Q	935
		107.67	2974.1+C – 3902.86+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^3D - {}^3D^\circ$	2 – 2		1055
		107.944	2982.8+C – 3909.21+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^1P - {}^1D^\circ$	1 – 2		395
		108.025	2974.1+C – 3899.81+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^3D - {}^3D^\circ$	2 – 3		395
	10	108.265	2974.7+C – 3898.36+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^3D - {}^3F^\circ$	3 – 4		395,935
		108.683	3016.5+C – 3936.61+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^3P - {}^3F^\circ$	1 – 2		395
		108.828	3016.6+C – 3935.48+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^1D - {}^1F^\circ$	2 – 3		395
		109.003	2985.5+C – 3902.86+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^3D - {}^3D^\circ$	1 – 2		395
		109.333	2989.8+C – 3904.44+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^3P - {}^3F^\circ$	2 – 3		395
	10	129.322	2974.1+C – 3747.3+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2	Q	935
	1	130.883	3016.5+C – 3780.6+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{1/2})4s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0	Q	935
	10	133.366	3212.1+C – 3962.0+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 3	Q	935
	90	133.960	3223.7+C – 3970.2+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4	Q	935
	90	135.582	3212.1+C – 3949.7+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 3	Q	935
	1	137.320	3208.1+C – 3936.3+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 4		935,1055
		138.09	3212.1+C – 3936.3+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		1055
		138.30	3226.6+C – 3949.7+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		1055
		138.83	3251.2+C – 3971.5+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^1D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		1055
		139.04	3242.8+C – 3962.0+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		1055
	40	139.919	3223.7+C – 3938.4+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		935,1055
	40	140.654	3251.0+C – 3962.0+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 3	Q	935
	100	143.173	3251.2+C – 3949.7+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^1D^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3	Q	192

CALCIUM XII (Ca^{11+}), Z = 20
Ground State $1s^22s^22p^5(^2P^\circ_{3/2})$ (9 electrons)
Ionization Potential [5 301 000] cm^{-1}; [657.2] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	0	27.379	0.0 – 3652.2	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		850
	50	27.413	0.0 – 3647.9	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		850
	50	27.608	30.041 – 3652.2	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		850
	50	27.894	0.0 – 3584.8	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		850
	60	27.973	0.0 – 3574.9	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		850
	20	28.068	0.0 – 3562.8	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - {}^2F$	$\frac{3}{2} - \frac{5}{2}$		850

CA XII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	30	28.096	0.0 – 3559.3	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		850
	40	28.131	30.041 – 3584.8	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		850
	40	28.210	30.041 – 3574.9	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		850
	30	28.334	30.041 – 3559.3	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		850
	40	28.478	0.0 – 3511.5	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		850
	10	28.505	0.0 – 3508.2	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		850
	50	28.613	0.0 – 3494.9	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2F$	$\frac{3}{2} - \frac{5}{2}$		850
	30	28.658	0.0 – 3489.4	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		850
	20	28.681	0.0 – 3486.8	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		850
	60	28.744	0.0 – 3479.1	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4F$	$\frac{3}{2} - \frac{5}{2}$		850
	20	28.770	0.0 – 3475.8	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4P$	$\frac{3}{2} - \frac{1}{2}$		850
	40	28.864	30.041 – 3494.6	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		850
	30	28.929	30.041 – 3486.8	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		850
	20	28.989	30.041 – 3479.6	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4P$	$\frac{1}{2} - \frac{3}{2}$		850
	30	30.774	0.0 – 3249.6	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		850
	40	31.060	30.041 – 3249.6	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		850
	300	31.661	0.0 – 3158.5	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		850
	300	31.956	30.041 – 3159.3	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		850
	200	32.106	0.0 – 3114.7	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		850
	200	32.281	0.0 – 3097.9	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		850
	100	32.418	30.041 – 3114.7	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		850
	200	32.498	0.0 – 3077.1	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		850
	60	32.596	30.041 – 3097.9	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		850
	50	32.657	0.0 – 3062.1	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		850
	40	32.688	30.041 – 3089.3	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^4P$	$\frac{1}{2} - \frac{1}{2}$		850
	50	32.820	30.041 – 3077.1	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^4P$	$\frac{1}{2} - \frac{3}{2}$		850
	200	33.014	709.029 – 3738.0	$2s2p^6 - 2s2p^5(^3P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		850
	400	141.038	0.0 – 709.029	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		1119
	360	147.278	30.041 – 709.029	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		1119

CALCIUM XIII (Ca^{12+}), Z = 20
Ground State $1s^22s^22p^4(^3P_2)$ (8 electrons)
Ionization Potential [5 861 000] cm^{-1}; [726.6] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	110	25.53	0.0 – 3917.0	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		877
	65	25.674	24.427 – 3919.5	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		877
	65	25.710	0.0 – 3889.5	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	2 – 2		877
	20	25.770	28.855 – 3909.4	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	0 – 1	Q	947
	65	25.880	0.0 – 3864.0	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3S^\circ$	2 – 1		877
	70	25.964	0.0 – 3851.5	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3P^\circ$	2 – 1	Q	947
	175	26.00	0.0 – 3846.0	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3P^\circ$	2 – 2		877
	350	26.033	0.0 – 3841.3	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		877
	10	26.124	0.0 – 3827.8	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3D^\circ$	2 – 1	Q	947
	110	26.219	24.427 – 3838.5	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		877
	65	26.323	28.855 – 3827.8	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3D^\circ$	0 – 1		877
	110	26.383	88.188 – 3878.6	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1D - ^1F^\circ$	2 – 3		877
		26.550	88.188 – 3854.7	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1D - ^1D^\circ$	2 – 2		877
	250	26.719	0.0 – 3742.66	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		877
	65	26.920	24.427 – 3740.26	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		877
	200	28.916	0.0 – 3458.3	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - ^3D^\circ$	2 – 3		865
	150	28.935	88.188 – 3544.3	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$^1D - ^1P^\circ$	2 – 1		865
	150	28.956	0.0 – 3452.9	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - ^3D^\circ$	2 – 2		865

CA XIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	29.168	24.427 – 3452.9	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - ^3D^\circ$	1 – 2		865
	100	29.207	28.855 – 3452.6	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - ^3D^\circ$	0 – 1		865
	200	29.530	88.188 – 3474.6	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$^1D - ^1D^\circ$	2 – 2		865
	200	29.633	0.0 – 3374.6	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^3S^\circ$	2 – 1		865
	150	29.707	178.594 – 3544.3	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$^1S - ^1P^\circ$	0 – 1		865
	150	29.850	24.427 – 3374.6	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^3S^\circ$	1 – 1		865
	100	29.888	28.855 – 3374.6	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^3S^\circ$	0 – 1		865
		29.97	0.0 – 3336.8+K	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^5S^\circ$	2 – 2	P	680
		30.19	24.427 – 3336.8+K	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^5S^\circ$	1 – 2	P	680
	70	117.611	0.0 – 850.28	$2s^22p^4 - 2s2p^5$	$g^3P - ^1P^\circ$	2 – 1		1119
	1	121.737	28.855 – 850.28	$2s^22p^4 - 2s2p^5$	$g^3P - ^1P^\circ$	0 – 1		1119
		124.68	638.216 – 1440.30	$2s2p^5 - 2p^6$	$^3P^\circ - ^1S$	1 – 0	P	375,1119
	500	131.217	88.188 – 850.28	$2s^22p^4 - 2s2p^5$	$^1D - ^1P^\circ$	2 – 1		1119
	275	148.879	178.594 – 850.28	$2s^22p^4 - 2s2p^5$	$^1S - ^1P^\circ$	0 – 1		1119
	300	156.686	0.0 – 638.216	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	2 – 1		1119
	250	159.835	24.427 – 650.072	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	1 – 0		1119
	450	161.747	0.0 – 618.252	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	2 – 2		1119
	290	162.923	24.427 – 638.216	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	1 – 1		1119
	245	164.107	28.855 – 638.216	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	0 – 1		1119
	320	168.399	24.427 – 618.252	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	1 – 2		1119
	245	169.485	850.28 – 1440.30	$2s2p^5 - 2p^6$	$^1P^\circ - ^1S$	1 – 0		1119
		181.81	88.188 – 638.216	$2s^22p^4 - 2s2p^5$	$^1D - ^3P^\circ$	2 – 1	P	375,1119
	15	188.658	88.188 – 618.252	$2s^22p^4 - 2s2p^5$	$^1D - ^3P^\circ$	2 – 2		1119
		559.93	0.0 – 178.594	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1S$	2 – 0	F,P	375,1119
		648.65	24.427 – 178.594	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1S$	1 – 0	F,P	375,1119
		1106.	88.188 – 178.594	$2s^22p^4 - 2s^22p^4$	$^1D - ^1S$	2 – 0	F,P	375,1119
		1134.	0.0 – 88.188	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1D$	2 – 2	F,P	375,1119
		1568.	24.427 – 88.188	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1D$	1 – 2	F,P	375,1119
		1685.	28.855 – 88.188	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1D$	0 – 2	F,P	375,1119

CALCIUM XIV (Ca^{13+}), Z = 20
Ground State $1s^22s^22p^3(^4S^\circ_{3/2})$ (7 electrons)
Ionization Potential [6 595 000] cm^{-1}; [817.6] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		22.07	0.0 – 4531.0	$2s^22p^3 - 2s^22p^2(^3P)4s$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$	Q	268
		23.97	172.40 – 4342.7+R	$2s^22p^3 - 2s^22p^2(^1S)3d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$	P	950
		24.073	0.0 – 4154.03	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		680
	450	24.110	0.0 – 4147.67	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		680,877
	65	24.168	105.87 – 4243.57	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{3}{2} - \frac{5}{2}$		877
	110	24.208	113.52 – 4244.50	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2D$	$\frac{5}{2} - \frac{5}{2}$		680,877
	550	24.271	113.52 – 4233.66	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{5}{2} - \frac{7}{2}$		680,877
	30	24.480	113.52 – 4198.49	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2D$	$\frac{5}{2} - \frac{5}{2}$		877
		24.51	105.87 – 4189.27	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$	Q	950
	110	24.623	183.36 – 4244.50	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		680,877
	110	24.749	113.52 – 4154.09	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2F$	$\frac{5}{2} - \frac{7}{2}$		877
	110	24.895	172.40 – 4189.27	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		680,877
	30	25.441	183.36 – 4114.02	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		877
		26.180	172.40 – 3992.14	$2s^22p^3 - 2s^22p^2(^1S)3s$	$^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		680
		26.255	183.36 – 3992.14	$2s^22p^3 - 2s^22p^2(^1S)3s$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		680
		26.372	0.0 – 3791.90	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		680
		26.514	0.0 – 3771.59	$2s^22p^3 - 2s^22p^2(^3P)3s$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		680
		27.050	113.52 – 3810.38	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - ^2P$	$\frac{5}{2} - \frac{3}{2}$		680

CA XIV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		27.110	105.87 – 3791.90	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2D^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$	Q	680
		27.571	183.36 – 3810.38	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		680
		27.638	172.40 – 3790.61	$2s^22p^3 - 2s^22p^2(^3P)3s$	$^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		680
	15	116.517	0.0 – 858.24	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		1140
	245	128.241	105.87 – 885.61	$2s^22p^3 - 2s2p^4$	$^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		1140
	225	132.914	105.87 – 858.24	$2s^22p^3 - 2s2p^4$	$^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		1140
	450	134.276	113.52 – 858.24	$2s^22p^3 - 2s2p^4$	$^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		1140
	175	139.050	105.87 – 825.05	$2s^22p^3 - 2s2p^4$	$^2D^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		1140
	40	140.211	172.40 – 885.61	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		1140
	385	142.398	183.36 – 885.61	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		1140
	70	145.802	172.40 – 858.24	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		1140
	265	148.168	183.36 – 858.24	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		1140
	225	149.388	710.71 – 1380.11	$2s2p^4 - 2p^5$	$^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		1140
	175	153.228	172.40 – 825.05	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		1140
	125	155.847	183.36 – 825.05	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		1140
	225	156.948	710.71 – 1347.87	$2s2p^4 - 2p^5$	$^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		1140
	225	157.390	712.50 – 1347.87	$2s2p^4 - 2p^5$	$^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		1140
	385	165.343	105.87 – 710.71	$2s^22p^3 - 2s2p^4$	$^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		1140
	450	166.956	113.52 – 712.50	$2s^22p^3 - 2s2p^4$	$^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		1140
	150	183.457	0.0 – 545.09	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		1140
	100	185.763	172.40 – 710.71	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		1140
	225	186.613	0.0 – 535.87	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		1140
	150	188.991	183.36 – 712.50	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		1140
	30	191.273	825.05 – 1347.87	$2s2p^4 - 2p^5$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		1140
	50	191.614	858.24 – 1380.11	$2s2p^4 - 2p^5$	$^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		1140
	265	193.874	0.0 – 515.80	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		1140
	25	202.218	885.61 – 1380.11	$2s2p^4 - 2p^5$	$^2P - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		1140
	70	204.226	858.24 – 1347.87	$2s2p^4 - 2p^5$	$^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		1140
	5	216.320	885.61 – 1347.87	$2s2p^4 - 2p^5$	$^2P - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		1140
		545.4	0.0 – 183.36	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,1140
		580.0	0.0 – 172.40	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	F,P	375,1140
		880.9	0.0 – 113.52	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$	F,P	375,1140
		944.6	0.0 – 105.87	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - {}^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,1140
		1290.	105.87 – 183.36	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,1140
		1432.	113.52 – 183.36	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$	F,P	375,1140
		1503.	105.87 – 172.40	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	F,P	375,1140
		1698.	113.52 – 172.40	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - {}^2P^\circ$	$\frac{5}{2}-\frac{1}{2}$	F,P	375,1140

CALCIUM XV (Ca^{14+}), Z = 20
Ground State $1s^22s^22p^2(^3P_0)$ (6 electrons)
Ionization Potential [7 215 000] cm^{-1}; [894.5] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		22.524	35.934 – 4475.06	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^1F^\circ$	2 – 3	Q	949
		22.623	17.566 – 4437.8	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3P^\circ$	1 – 0	Q	949
		22.640	17.566 – 4435.29	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3P^\circ$	1 – 2		949
		22.725	0.0 – 4400.4	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3D^\circ$	0 – 1	Q	949
	30	22.730	35.934 – 4435.29	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3P^\circ$	2 – 2		877
		22.750	17.566 – 4413.2	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3D^\circ$	1 – 2	Q	949

CA XV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	65	22.779	35.934 – 4425.83	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3D^o$	2 – 3		877
		22.816	17.566 – 4400.4	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3D^o$	1 – 1	Q	949
		22.845	35.934 – 4413.2	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3D^o$	2 – 2	Q	949
		22.898	17.566 – 4384.88	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^1D^o$	1 – 2		949
	450	22.902	108.632 – 4475.06	$2s^22p^2 - 2s^22p3d$	${}^1D - {}^1F^o$	2 – 3		877
		22.909	108.632 – 4473.6	$2s^22p^2 - 2s^22p3d$	${}^1D - {}^1P^o$	2 – 1	Q	949
		22.994	35.934 – 4384.88	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^1D^o$	2 – 2	Q	949
		23.023	35.934 – 4379.9	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3F^o$	2 – 3		949
		23.107	35.934 – 4363.8	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3F^o$	2 – 2	Q	949
		23.112	108.632 – 4435.29	$2s^22p^2 - 2s^22p3d$	${}^1D - {}^3P^o$	2 – 2	Q	949
		23.158	108.632 – 4425.83	$2s^22p^2 - 2s^22p3d$	${}^1D - {}^3D^o$	2 – 3		949
		23.385	108.632 – 4384.88	$2s^22p^2 - 2s^22p3d$	${}^1D - {}^1D^o$	2 – 2	Q	949
		23.388	197.698 – 4473.6	$2s^22p^2 - 2s^22p3d$	${}^1S - {}^1P^o$	0 – 1		949
		23.412	108.632 – 4379.9	$2s^22p^2 - 2s^22p3d$	${}^1D - {}^3F^o$	2 – 3	Q	949
		23.500	108.632 – 4363.8	$2s^22p^2 - 2s^22p3d$	${}^1D - {}^3F^o$	2 – 2		949
	175	23.660	500.240 – 4726.68	$2s2p^3 - 2s2p^2({}^4P)3d$	${}^3D^o - {}^3F$	3 – 4		877
	20	125.493	17.566 – 814.40	$2s^22p^2 - 2s2p^3$	$g^3P - {}^1P^o$	1 – 1		1141
	175	137.194	0.0 – 728.89	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3S^o$	0 – 1		1141
	200	140.582	17.566 – 728.89	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3S^o$	1 – 1		1141
	385	141.693	108.632 – 814.40	$2s^22p^2 - 2s2p^3$	${}^1D - {}^1P^o$	2 – 1		1141
	15	143.903	500.240 – 1195.14	$2s2p^3 - 2p^4$	${}^3D^o - {}^1D$	3 – 2		1141
	20	144.150	35.934 – 729.68	$2s^22p^2 - 2s2p^3$	$g^3P - {}^1D^o$	2 – 2		1141
	445	144.311	35.934 – 728.89	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3S^o$	2 – 1		1141
	80	155.671	497.572 – 1139.98	$2s2p^3 - 2p^4$	${}^3D^o - {}^3P$	1 – 0		1141
	225	156.948	496.685 – 1133.85	$2s2p^3 - 2p^4$	${}^3D^o - {}^3P$	2 – 1		1141
	125	157.161	497.572 – 1133.85	$2s2p^3 - 2p^4$	${}^3D^o - {}^3P$	1 – 1		1141
	445	161.014	108.632 – 729.68	$2s^22p^2 - 2s2p^3$	${}^1D - {}^1D^o$	2 – 2		1141
	200	162.152	197.698 – 814.40	$2s^22p^2 - 2s2p^3$	${}^1S - {}^1P^o$	0 – 1		1141
	125	163.702	496.685 – 1107.55	$2s2p^3 - 2p^4$	${}^3D^o - {}^3P$	2 – 2		1141
	30	163.96	497.572 – 1107.55	$2s2p^3 - 2p^4$	${}^3D^o - {}^3P$	1 – 2		394
	225	164.655	500.240 – 1107.55	$2s2p^3 - 2p^4$	${}^3D^o - {}^3P$	3 – 2		1141
	125	171.593	0.0 – 582.789	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^o$	0 – 1		1141
	70	176.018	17.566 – 585.676	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^o$	1 – 2		1141
	125	176.921	17.566 – 582.789	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^o$	1 – 1		1141
	100	177.252	17.566 – 581.734	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^o$	1 – 0		1141
	10	179.463	582.789 – 1139.98	$2s2p^3 - 2p^4$	${}^3P^o - {}^3P$	1 – 0		1141
	175	181.908	35.934 – 585.676	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^o$	2 – 2		1141
	15	182.41	585.676 – 1133.85	$2s2p^3 - 2p^4$	${}^3P^o - {}^3P$	2 – 1		394
	30	182.859	35.934 – 582.789	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^o$	2 – 1		1141
	60	186.391	814.40 – 1350.91	$2s2p^3 - 2p^4$	${}^1P^o - {}^1S$	1 – 0		1141
	20	190.571	582.789 – 1107.55	$2s2p^3 - 2p^4$	${}^3P^o - {}^3P$	1 – 2		1141
	50	191.614	585.676 – 1107.55	$2s2p^3 - 2p^4$	${}^3P^o - {}^3P$	2 – 2		1141
	100	200.973	0.0 – 497.572	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^o$	0 – 1		1141
	30	208.334	17.566 – 497.572	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^o$	1 – 1		1141
	110	208.722	17.566 – 496.685	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^o$	1 – 2		1141
	150	214.843	729.68 – 1195.14	$2s2p^3 - 2p^4$	${}^1D^o - {}^1D$	2 – 2		1141
	200	215.375	35.934 – 500.240	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^o$	2 – 3		1141
	8	217.031	35.934 – 496.685	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^o$	2 – 2		1141
	10	243.26	728.89 – 1139.98	$2s2p^3 - 2p^4$	${}^3S^o - {}^3P$	1 – 0	P	394
	20	246.94	728.89 – 1133.85	$2s2p^3 - 2p^4$	${}^3S^o - {}^3P$	1 – 1		394
	10	264.09	728.89 – 1107.55	$2s2p^3 - 2p^4$	${}^3S^o - {}^3P$	1 – 2		394
		389.7	17.566 – 274.20+U	$2s^22p^2 - 2s2p^3$	$g^3P - {}^5S^o$	1 – 2	P	375,1141
		420.	35.934 – 274.20+U	$2s^22p^2 - 2s2p^3$	$g^3P - {}^5S^o$	2 – 2	P	375,1141
		555.15	17.566 – 197.698	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1S$	1 – 0	F,P	375,1141

CA XV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		618.18	35.934 – 197.698	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1S$	2 – 0	F,P	375,1141
		920.54	0.0 – 108.632	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1D$	0 – 2	F,P	375,1141
		1098.	17.566 – 108.632	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1D$	1 – 2	F,P	375,1141
		1123.	108.632 – 197.698	$2s^22p^2 - 2s^22p^2$	${}^1D - {}^1S$	2 – 0	F,P	375,1141
	0	1375.98	35.934 – 108.632	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1D$	2 – 2	F	940

CALCIUM XVI (Ca^{15+}), Z = 20
Ground State $1s^22s^22p({}^2P^\circ_{1/2})$ (5 electrons)
Ionization Potential [7 860 000] cm^{-1}; [974] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		16.81	36.52 – 5986.8+L	$2s^22p - 2s^24s$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$	Q	375
		20.568	0.0 – 4861.92	$2s^22p - 2s2p({}^3P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$	P	877
		20.627	36.52 – 4884.53	$2s^22p - 2s2p({}^3P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	877
	10	20.95	0.0 – 4773.27	$2s^22p - 2s2p({}^3P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		877
	10	21.018	36.52 – 4794.35	$2s^22p - 2s2p({}^3P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		877
	110	21.33	481.86 – 5170.1	$2s2p^2 - 2s2p({}^1P^\circ)3d$	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		877
	350	21.45	300.80+X – 4962.8+X	$2s2p^2 - 2s2p({}^3P^\circ)3d$	${}^4P - {}^4P^\circ$	$\frac{5}{2} - \frac{5}{2}$		877
	350	21.50	300.80+X – 4952.0+X	$2s2p^2 - 2s2p({}^3P^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{5}{2} - \frac{7}{2}$		877
	550	21.609	36.52 – 4664.22	$2s^22p - 2s^23d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		877
	30	21.966	645.66 – 5198.15	$2s2p^2 - 2s2p({}^1P^\circ)3d$	${}^2P - {}^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$		877
	110	22.027	481.86 – 5021.74	$2s2p^2 - 2s2p({}^3P^\circ)3d$	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		877
	30	22.12	479.42 – 5000.22	$2s2p^2 - 2s2p({}^3P^\circ)3d$	${}^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		877
		22.385	481.86 – 4949.14	$2s2p^2 - 2s2p({}^3P^\circ)3d$	${}^2D - {}^2D^\circ$	$\frac{5}{2} - \frac{5}{2}$		877
		22.95	36.52 – 4394.3+R	$2s^22p - 2s^23s$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$	Q	375
		23.240	645.66 – 4949.14	$2s2p^2 - 2s2p({}^3P^\circ)3d$	${}^2P - {}^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$	Q	949
	150	154.878	0.0 – 645.66	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		1142
	60	157.791	0.0 – 633.76	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		1142
	285	164.172	36.52 – 645.66	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		1142
	285	167.433	36.52 – 633.76	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		1142
	245	168.866	0.0 – 592.18	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		1142
		171.63	479.42 – 1062.03	$2s2p^2 - 2p^3$	${}^2D - {}^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		1084
	100	172.362	481.86 – 1062.03	$2s2p^2 - 2p^3$	${}^2D - {}^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		1142
	70	174.436	479.42 – 1052.70	$2s2p^2 - 2p^3$	${}^2D - {}^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		1142
	70	176.407	267.99+X – 834.86+X	$2s2p^2 - 2p^3$	${}^4P - {}^4S^\circ$	$\frac{1}{2} - \frac{3}{2}$		1142
	70	181.041	282.50+X – 834.86+X	$2s2p^2 - 2p^3$	${}^4P - {}^4S^\circ$	$\frac{3}{2} - \frac{3}{2}$		1142
	150	187.246	300.80+X – 834.86+X	$2s2p^2 - 2p^3$	${}^4P - {}^4S^\circ$	$\frac{5}{2} - \frac{3}{2}$		1142
	60	208.586	0.0 – 479.42	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		1142
		212.81	592.18 – 1062.03	$2s2p^2 - 2p^3$	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1084
	60	214.92	479.42 – 944.70	$2s2p^2 - 2p^3$	${}^2D - {}^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$	P	394,1142
	150	216.059	481.86 – 944.70	$2s2p^2 - 2p^3$	${}^2D - {}^2D^\circ$	$\frac{5}{2} - \frac{5}{2}$		1142
	15	217.118	479.42 – 940.00	$2s2p^2 - 2p^3$	${}^2D - {}^2D^\circ$	$\frac{3}{2} - \frac{3}{2}$		1142
	5	218.27	481.86 – 940.00	$2s2p^2 - 2p^3$	${}^2D - {}^2D^\circ$	$\frac{5}{2} - \frac{3}{2}$	P	394,1142
	150	224.549	36.52 – 481.86	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		1142
	30	225.78	36.52 – 479.42	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$	P	730,1142
	10	233.50	633.76 – 1062.03	$2s2p^2 - 2p^3$	${}^2P - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	394,1142
	15	238.70	633.76 – 1052.70	$2s2p^2 - 2p^3$	${}^2P - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	P	394,1142
	20	240.17	645.66 – 1062.03	$2s2p^2 - 2p^3$	${}^2P - {}^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$	P	394,1142
	7	326.54	633.76 – 940.00	$2s2p^2 - 2p^3$	${}^2P - {}^2D^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	394,1142
	35	334.40	645.66 – 944.70	$2s2p^2 - 2p^3$	${}^2P - {}^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$	P	394,1142
	4	339.74	645.66 – 940.00	$2s2p^2 - 2p^3$	${}^2P - {}^2D^\circ$	$\frac{3}{2} - \frac{3}{2}$	P	394,1142

CALCIUM XVII (Ca^{16+}), Z = 20
Ground State $1s^22s^2(^1S_0)$ (4 electrons)
Ionization Potential [8 770 000] cm^{-1}; [1087] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		13.41	0.0 – 7456.	$2s^2 - 2s5p$	$g^1S - ^3P°$	0 – 1		375
		14.90	0.0 – 6711.5	$2s^2 - 2s4p$	$g^1S - ^3P°$	0 – 1		375
		18.47	0.0 – 5411.12	$2s^2 - 2p3s$	$g^1S - ^1P°$	0 – 1		375
	100	19.195	269.515 – 5479.20	2s2p – 2p3p	$^3P° - ^3P$	1 – 2		890
	20	19.249	269.515 – 5465.40	2s2p – 2p3p	$^3P° - ^3P$	1 – 1		890
	10	19.275	258.316 – 5447.60	2s2p – 2p3p	$^3P° - ^3S$	0 – 1		890
	100	19.296	296.922 – 5479.20	2s2p – 2p3p	$^3P° - ^3P$	2 – 2		890
	20	19.315	269.515 – 5447.60	2s2p – 2p3p	$^3P° - ^3S$	1 – 1		890
	20	19.345	296.922 – 5465.40	2s2p – 2p3p	$^3P° - ^3P$	2 – 1		890
	30	19.414	296.922 – 5447.60	2s2p – 2p3p	$^3P° - ^3S$	2 – 1		877
	200	19.505	296.922 – 5423.81	2s2p – 2p3p	$^3P° - ^3D$	2 – 3		890
	10	19.558	0.0 – 5113.00	$2s^2 - 2s3p$	$g^1S - ^1P°$	0 – 1		877
	200	20.02	518.516 – 5513.52	2s2p – 2p3p	$^1P° - ^1D$	1 – 2		890
	65	20.34	269.515 – 5186.90	2s2p – 2s3d	$^3P° - ^3D$	1 – 2		877
	175	20.439	296.922 – 5189.53	2s2p – 2s3d	$^3P° - ^3D$	2 – 3		877
	100	20.489	518.516 – 5399.18	2s2p – 2p3p	$^1P° - ^1P$	1 – 1		890
	100	20.677	706.688 – 5542.98	$2p^2 - 2p3d$	$^3P - ^3P°$	1 – 2		890
	10	20.72	706.688 – 5533.18	$2p^2 - 2p3d$	$^3P - ^3D°$	1 – 2		877
	65	20.748	726.458 – 5546.20	$2p^2 - 2p3d$	$^3P - ^3D°$	2 – 3		877
	175	20.832	798.052 – 5598.36	$2p^2 - 2p3d$	$^1D - ^1F°$	2 – 3		877
	20	21.098	258.316 – 4999.00	2s2p – 2s3s	$^3P° - ^3S$	0 – 1		890
	100	21.143	269.515 – 4999.00	2s2p – 2s3s	$^3P° - ^3S$	1 – 1		890
	65	21.20	518.516 – 5235.40	2s2p – 2s3d	$^1P° - ^1D$	1 – 2		877
	200	21.267	296.922 – 4999.00	2s2p – 2s3s	$^3P° - ^3S$	2 – 1		890
	200	21.300	798.052 – 5492.89	$2p^2 - 2p3d$	$^1D - ^1D°$	2 – 2		890
	300	21.606	726.458 – 5354.80	$2p^2 - 2p3s$	$^3P - ^3P°$	2 – 2		890
	100	21.677	798.052 – 5411.12	$2p^2 - 2p3s$	$^1D - ^1P°$	2 – 1		890
	100	21.762	726.458 – 5321.63	$2p^2 - 2p3s$	$^3P - ^3P°$	2 – 1		890
	200	22.113	518.516 – 5040.74	2s2p – 2s3s	$^1P° - ^1S$	1 – 0		890
	250	192.858	0.0 – 518.516	$2s^2 - 2s2p$	$g^1S - ^1P°$	0 – 1	P	1104,730
		199.549	296.922 – 798.052	$2s2p - 2p^2$	$^3P° - ^1D$	2 – 2	P	1104
	250	218.846	269.515 – 726.458	$2s2p - 2p^2$	$^3P° - ^3P$	1 – 2	P	1104,281
	300	222.866	518.516 – 967.216	$2s2p - 2p^2$	$^1P° - ^1S$	1 – 0	P	1104,281
		223.029	258.316 – 706.688	$2s2p - 2p^2$	$^3P° - ^3P$	0 – 1	P	1104
	200	228.742	269.515 – 706.688	$2s2p - 2p^2$	$^3P° - ^3P$	1 – 1	P	1104,281
	30	232.809	296.922 – 726.458	$2s2p - 2p^2$	$^3P° - ^3P$	2 – 2	P	1104,437
		238.321	269.515 – 689.118	$2s2p - 2p^2$	$^3P° - ^3P$	1 – 0	P	1104
	100	244.042	296.922 – 706.688	$2s2p - 2p^2$	$^3P° - ^3P$	2 – 1	P	1104,281
	100	357.736	518.516 – 798.052	$2s2p - 2p^2$	$^1P° - ^1D$	1 – 2	P	1104,281
	120	371.037	0.0 – 269.515	$2s^2 - 2s2p$	$g^1S - ^3P°$	0 – 1	P	1104,730

CALCIUM XVIII (Ca^{17+}), Z = 20
Ground State $1s^22s(^2S_{1/2})$ (3 electrons)
Ionization Potential 9 332 000 cm^{-1}; 1157.0 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		2.750	330.8898 – 36784.	$1s^22p - 1s2p(^1P^\circ)3p$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		839
		3.1809	5349.31 – 36784.	$1s^23p - 1s2p(^1P^\circ)3p$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		643
		3.185	290.0464 – 31688.	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$	P	283
		3.189	330.8898 – 31688.	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	P	283
		3.1926	0.0 – 31322.	$1s^22s - 1s(2s2p(^1P^\circ))$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		643
		3.2003	0.0 – 31250.	$1s^22s - 1s(2s2p(^3P^\circ))$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	Q	1059
		3.2031	0.0 – 31220.	$1s^22s - 1s(2s2p(^3P^\circ))$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		643
		3.2058	290.0464 – 31484.	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		643
		3.2097	330.8898 – 31486.	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		643
		3.221	290.0464 – 31337.	$1s^22p - 1s2p^2$	$^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{3}{2}$	P	629
		3.223	330.8898 – 31358.	$1s^22p - 1s2p^2$	$^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$	P	629
		3.225	330.8898 – 31337.	$1s^22p - 1s2p^2$	$^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$	P	629
		11.243	0.0 – 8894.4	$1s^22s - 1s^29p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	643
		11.394	0.0 – 8776.6	$1s^22s - 1s^28p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	643
		11.621	0.0 – 8605.1	$1s^22s - 1s^27p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		643
		11.675	330.8898 – 8896.2	$1s^22p - 1s^29d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	643
		11.780	290.0464 – 8779.0	$1s^22p - 1s^28d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	P	643
		11.836	330.8898 – 8779.7	$1s^22p - 1s^28d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	643
		11.989	0.0 – 8341.0	$1s^22s - 1s^26p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		643
		12.021	290.0464 – 8608.8	$1s^22p - 1s^27d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	P	643
		12.078	330.8898 – 8610.4	$1s^22p - 1s^27d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		643
		12.411	290.0464 – 8347.4	$1s^22p - 1s^26d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		643
	10	12.478	330.8898 – 8344.9	$1s^22p - 1s^26d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		273
	20	12.636	0.0 – 7914.9	$1s^22s - 1s^25p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		273
	20	13.118	290.0464 – 7913.1	$1s^22p - 1s^25d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		273
	20	13.191	330.8898 – 7911.8	$1s^22p - 1s^25d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		273
	100	14.086	0.0 – 7099.25	$1s^22s - 1s^24p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	977,273
		14.097	0.0 – 7093.71	$1s^22s - 1s^24p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	977
	100	14.659	290.0464 – 7111.79	$1s^22p - 1s^24d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	P	977,273
	300	14.744	330.8898 – 7113.31	$1s^22p - 1s^24d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	977,273
		14.767	290.0464 – 7061.7	$1s^22p - 1s^24s$	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$	P	977
		14.857	330.8898 – 7061.7	$1s^22p - 1s^24s$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	P	977
	500	18.694	0.0 – 5349.31	$1s^22s - 1s^23p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	977,273
	300	18.736	0.0 – 5337.32	$1s^22s - 1s^23p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	977,273
	600	19.646	290.0464 – 5380.14	$1s^22p - 1s^23d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	P	977,273
	600	19.790	330.8898 – 5383.95	$1s^22p - 1s^23d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	977,273
	100	20.129	290.0464 – 5258.02	$1s^22p - 1s^23s$	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$	P	977,273
	100	20.296	330.8898 – 5258.02	$1s^22p - 1s^23s$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	P	977,273
	300	302.215	0.0 – 330.8898	$1s^22s - 1s^22p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	977,730
	300	344.772	0.0 – 290.0464	$1s^22s - 1s^22p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	977,730

CALCIUM XIX (Ca^{18+}), Z = 20
Ground State $1s^2(^1S_0)$ (2 electrons)
Ionization Potential 41 369 000 cm^{-1}; 5129.16 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		2.484	0.0 – 40265.3	$1s^2$ – 1s6p	g^1S – $^1P°$	0 – 1	P	728
		2.514	0.0 – 39783.30	$1s^2$ – 1s5p	g^1S – $^1P°$	0 – 1	P	839
		2.571	0.0 – 38891.35	$1s^2$ – 1s4p	g^1S – $^1P°$	0 – 1	P	839
	1	2.705	0.0 – 36965.52	$1s^2$ – 1s3p	g^1S – $^1P°$	0 – 1	P	839,856
	7	3.1769	0.0 – 31477.03	$1s^2$ – 1s2p	g^1S – $^1P°$	0 – 1	P	918,856
		3.1889	0.0 – 31323.66	$1s^2$ – 1s2p	g^1S – $^3P°$	0 – 2	F	1059
	4	3.1925	0.0 – 31323.66	$1s^2$ – 1s2p	g^1S – $^3P°$	0 – 1	P	918,856
	5	3.2111	0.0 – 31145.16	$1s^2$ – 1s2s	g^1S – ^3S	0 – 1	F	1059,856
		17.28	31145.16 – 36933.52	1s2s – 1s3p	^3S – $^3P°$	1 – 2	P	375,918
		17.75	31330.78 – 36965.52	1s2s – 1s3p	^1S – $^1P°$	0 – 1	P	375,918
		49.88	36873.60 – 38878.30	1s3s – 1s4p	^3S – $^3P°$	1 – 2	P	375,918
		50.79	36922.60 – 38891.35	1s3s – 1s4p	^1S – $^1P°$	0 – 1	P	375,918
		467.68	31145.16 – 31358.98	1s2s – 1s2p	^3S – $^3P°$	1 – 2	P	375,918
		683.76	31330.78 – 31477.03	1s2s – 1s2p	^1S – $^1P°$	0 – 1	P	375,918
		1668.89	36873.60 – 36933.52	1s3s – 1s3p	^3S – $^3P°$	1 – 2	P	375,918

CALCIUM XX (Ca^{19+}), Z = 20
Ground State $1s(^2S_{1/2})$ (1 electron)
Ionization Potential 44 117 210 cm^{-1}; 5469.88 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		2.314	0.0 – 43221.3102	1s – 7p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		2.331	0.0 – 42897.7430	1s – 6p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		2.361	0.0 – 42358.8177	1s – 5p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		2.417	0.0 – 41369.2472	1s – 4p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		2.549	0.0 – 39231.4050	1s – 3p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		3.018	0.0 – 33129.0560	1s – 2p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		3.024	0.0 – 33069.7060	1s – 2p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{1}{2}$	P	1042
		9.853	33071.5890 – 43221.3102	2s – 7p	^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		9.909	33129.0560 – 43221.3102	2p – 7d	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		10.177	33071.5890 – 42897.7430	2s – 6p	^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		10.237	33129.0560 – 42897.7430	2p – 6d	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		10.768	33071.5890 – 42358.8177	2s – 5p	^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		10.833	33129.0560 – 42360.0656	2p – 5d	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		12.052	33071.5890 – 41369.2472	2s – 4p	^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		12.132	33129.0560 – 41371.6845	2p – 4d	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		16.234	33071.5890 – 39231.4050	2s – 3p	^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		16.372	33129.0560 – 39237.1802	2p – 3d	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		24.957	39214.3780 – 43221.3102	3s – 7p	^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		25.063	39231.4050 – 43221.3102	3p – 7d	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		25.100	39237.1802 – 43221.3102	3d – 7f	^2D – $^2F°$	$\frac{5}{2}$ – $\frac{7}{2}$	P	1042
		27.149	39214.3780 – 42897.7430	3s – 6p	^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		27.275	39231.4050 – 42897.7430	3p – 6d	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		27.318	39237.1802 – 42897.7430	3d – 6f	^2D – $^2F°$	$\frac{5}{2}$ – $\frac{7}{2}$	P	1042
		31.802	39214.3780 – 42358.8177	3s – 5p	^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042

CA XX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		31.963	39231.4050 – 42360.0656	3p – 5d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	1042
		32.015	39237.1802 – 42360.6893	3d – 5f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	1042
		46.406	39214.3780 – 41369.2472	3s – 4p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		46.723	39231.4050 – 41371.6845	3p – 4d	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	1042
		46.823	39237.1802 – 41372.9024	3d – 4f	$^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	1042
		1740.129	33071.5890 – 33129.0560	2s – 2p	$^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1042

SCANDIUM , Z = 21
Unclassified Lines

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	84.777						017
	200	98.180						017
	100	100.676						017
	100	100.739						017
	100	100.781						017
	100	100.924						017
	200	101.918						017
	300	102.251						017
	230	102.835						017
	100	102.868						017
	100	102.975						017
	300	104.592						017
	100	104.658						017
	300	105.578						017
	100	106.557						17
	100	107.273						017
	200	107.929						017
	100	108.026						017
	100	108.296						017
	300	110.498						017
	200	111.402						017
	200	111.711						017
	100	111.757						017
	40	111.937						017
	100	112.337						017
	100	112.434						017
	200	112.677						017
	40	112.895						017
	300	113.014						017
	100	113.767						017
	200	113.937						017
	300	116.158						017
	200	116.770						017
	100	117.373						017
	200	118.048						017
	100	118.179						017
	400	118.552						017
	400	119.049						017
	100	119.332						017
	50	120.324						017
	100	120.881						017
	200	121.022						017
	400	122.676						017
	100	122.741						017
	200	123.223						017
	100	124.464						017
	100	125.610						017
	200	127.844						017
	100	128.088						017
	40	128.780						017
	100	129.283						017
	200	129.454						017
	200	130.213						017
	300	130.642						017

SC UNCLASSIFIED LINES — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	130.683						017
	200	130.886						017
	270	131.068						017
	100	131.354						017
	400	132.714						017
	300	133.882						017
	300	134.794						017
	200	134.971						017
	100	139.980						017
	200	142.836						017
	200	143.120						017
	100	143.487						017
	100	148.249						017
	200	148.287						017
	40	148.434						017
	100	148.580						017
	100	148.743						017
	200	148.805						017
	200	152.681						017
	300	153.172						017
	230	154.006						017
	100	154.507						017
	300	154.643						017
	230	160.337						017
	200	160.387						017
	330	160.725						017
	230	160.949						017
	200	161.162						017
	200	161.908						017
	200	162.172						017
	100	164.444						017
	100	168.165						017
	100	169.105						017
	200	169.451						017
	100	170.105						017
	200	171.530						017
	100	171.823						017
	100	173.346						017
	300	176.325						017
	200	177.686						017
	100	182.618						017
	100	183.673						017
	100	185.219						017
	200	193.332						017
	40	201.476						017
	170	211.505						017
	200	277.809						017
	300	285.966						017
	300	286.078						017
	400	287.873						017
	300	288.104						017
	200	298.66						017
	200	300.817						017
	200	301.233						017

SC UNCLASSIFIED LINES — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	300	308.895						017
	300	315.786						017
	200	315.890						017
	200	316.567						017
	150	322.35						251
	400	326.791						017
	100	330.39						251
	200	333.521						017
	100	335.18						251
	50	335.58						251
	200	337.911						017
	200	338.447						017
	100	354.350						017
	50	355.16						251
	250	358.22						251
	50	363.31						251
	50	363.82						251
	50	365.89						251
	50	369.42						251
	400	370.034						017
	50	377.79						251
	50	379.77						251
	200	382.650						017
	400	396.440						017
	100	403.84						251
	150	407.85						251
	50	431.82						251
	50	436.20						251
	150	439.28						251
	200	441.72						251
	50	442.30						251
	50	456.83						251
	50	461.91						251
	200	462.61						251
	50	463.74						251
	300	466.24						251
	200	480.51						251
	200	483.40						251
	50	484.69						251
	250	487.89						251
	300	496.52						251
	150	497.19						251
	100	499.70						251
	350	507.32						251
	100	508.16						251
	100	523.490						017
	100	524.43						251
	200	525.49						251
	150	525.79						251
	200	526.28						251
	200	526.99						251
	350	528.58						251
	300	529.16						251
	350	541.31						251

SC UNCLASSIFIED LINES — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	150	542.11						251
	300	542.68						251
	300	544.06						251
	150	546.75						251
	200	548.45						251
	350	567.23						251
	150	574.11						251
	150	574.48						251
	350	580.10						251
	150	586.29						251
	400	589.83						251
	300	591.37						251
	300	591.75						251
	50	595.06						251
	50	597.10						251
	250	599.57						251
	40	628.111						017
	250	695.72						251
	150	707.72						251
	300	714.87						251
	250	754.49						251
	300	757.56						251
	400	761.50						251
	150	768.62						251
	400	769.80						251
	450	785.21						251
	450	789.21						251
	250	793.93						251
	250	799.97						251
	300	835.70						017
	300	837.76						017
	300	838.70						017
	600	846.90						017
	200	867.01						017
	600	868.32						017
	300	874.18						017
	200	905.28						017
	700	906.95						017
	700	908.18						017
	700	908.23						017
	200	911.50						017
	200	912.15						017
	200	915.85						017
	500	930.67						017
	300	932.40						017
	300	932.58						017
	600	936.77						017
	700	937.30						017
	100	938.35						017
	600	961.32						017
	1000	964.46						017
	300	974.65						017
	600	974.81						017
	200	975.04						017

SC UNCLASSIFIED LINES — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	300	984.49						017
	800	985.20						017
	300	994.36						017
	400	994.86						017
	200	995.52						017
	300	996.01						017
	200	999.12						017
	700	1003.00						017
	900	1015.50						017
	500	1015.71						017
	500	1016.04						017
	400	1016.72						017
	200	1023.90						017
	800	1030.32						017
	400	1033.38						017
	300	1048.89						017
	200	1082.62						017
	200	1107.13						017
	200	1107.77						017
	200	1109.40						017
	200	1110.96						017
	200	1122.32						017
	200	1123.96						017
	400	1128.79						017
	200	1133.53						017
	200	1139.53						017
	300	1147.69						017
	200	1151.09						017
	200	1160.91						017
	200	1162.77						017
	300	1173.03						017
	200	1177.14						017
	300	1181.91						017
	400	1193.69						017
	300	1613.11						017

SCANDIUM I (Sc^{0+}), Z = 21
Ground State $1s^22s^22p^63s^23p^63d4s^2(^2D_{3/2})$ (21 electrons)
Ionization Potential 59 220.0 cm^{-1}; 6.56154 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		1948.196	0.0 – 51.32954+Y	$3d4s^2$ –	$ga^2D - u^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$	P	375
		1951.924	0.0 – 51.23150+Y	$3d4s^2$ –	$ga^2D - u^2D^\circ$	$\frac{3}{2} - \frac{3}{2}$	P	375
		1954.606	0.16834 – 51.32954+Y	$3d4s^2$ –	$ga^2D - u^2D^\circ$	$\frac{5}{2} - \frac{5}{2}$	P	375
		1958.359	0.16834 – 51.23150+Y	$3d4s^2$ –	$ga^2D - u^2D^\circ$	$\frac{5}{2} - \frac{3}{2}$	P	375

SCANDIUM II (Sc^{1+}), Z = 21
Ground State $1s^22s^22p^63s^23p^63d4s(^3D_1)$ (20 electrons)
Ionization Potential 103 237.1 cm^{-1}; 12.79987 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	1160.212	4.88357 - 91.0744	$3d^2$ - $3d(^2D)6f$	^3F - $^3G°$	3 - 4		1063
	4	1161.347	4.98779 - 91.0947	$3d^2$ - $3d(^2D)6f$	^3F - $^3G°$	4 - 5		1063
	1	1161.624	4.98779 - 91.0744	$3d^2$ - $3d(^2D)6f$	^3F - $^3G°$	4 - 4		1063
	1	1161.781	4.98779 - 91.0625	$3d^2$ - $3d(^2D)6f$	^3F - $^3F°$	4 - 4		1063
	1	1162.544	4.80287 - 90.8211	$3d^2$ - $3d(^2D)6f$	^3F - $^3G°$	2 - 3		1063
	1	1163.464	4.98779 - 90.9379	$3d^2$ - $3d(^2D)6f$	^3F - $^3H°$	4 - 5		1063
	1	1203.635	2.54095 - 85.6226	$3d(^2D)4s$ - $3d(^2D)5f$	^1D - $^1F°$	2 - 3		1063
	1	1237.170	4.98779 - 85.81740	$3d^2$ - $3d(^2D)5f$	^3F - $^1H°$	4 - 5		1063
	4	1237.317	4.80287 - 85.6226	$3d^2$ - $3d(^2D)5f$	^3F - $^1F°$	2 - 3		1063
	4	1238.571	4.88357 - 85.6226	$3d^2$ - $3d(^2D)5f$	^3F - $^1F°$	3 - 3		1063
	30	1238.813	4.88357 - 85.60599	$3d^2$ - $3d(^2D)5f$	^3F - $^3G°$	3 - 4		1063
	1	1238.963	4.98779 - 85.7007	$3d^2$ - $3d(^2D)5f$	^3F - $^3D°$	4 - 3		1063
	50	1239.952	4.98779 - 85.63605	$3d^2$ - $3d(^2D)5f$	^3F - $^3G°$	4 - 5		1063
	4	1240.415	4.98779 - 85.60599	$3d^2$ - $3d(^2D)5f$	^3F - $^3G°$	4 - 4		1063
	10	1240.656	4.80287 - 85.40539	$3d^2$ - $3d(^2D)5f$	^3F - $^3G°$	2 - 3		1063
	4	1240.810	4.98779 - 85.5803	$3d^2$ - $3d(^2D)5f$	^3F - $^3F°$	4 - 4		1063
	10	1241.166	4.88357 - 85.45299	$3d^2$ - $3d(^2D)5f$	^3F - $^3F°$	3 - 3		1063
	4	1241.283	4.88357 - 85.44535	$3d^2$ - $3d(^2D)5f$	^3F - $^3H°$	3 - 4		1063
	1	1241.979	4.98779 - 85.50442	$3d^2$ - $3d(^2D)5f$	^3F - $^3H°$	4 - 5		1063
	1	1242.693	4.88357 - 85.35396	$3d^2$ - $3d(^2D)5f$	^3F - $^1G°$	3 - 4		1063
	1	1247.834	10.94456 - 91.0834	$3d^2$ - $3d(^2D)6f$	^1D - $^1F°$	2 - 3		1063
	1	1265.653	12.15442 - 91.1650	$3d^2$ - $3d(^2D)6f$	^3P - $^3P°$	2 - 2		1063
	1	1266.246	12.15442 - 91.1280	$3d^2$ - $3d(^2D)6f$	^3P - $^3D°$	2 - 3		1063
	4	1299.787	14.26132 - 91.1970	$3d^2$ - $3d(^2D)6f$	^1G - $^1H°$	4 - 5		1063
	1	1304.182	14.26132 - 90.9379	$3d^2$ - $3d(^2D)6f$	^1G - $^3H°$	4 - 5		1063
	1	1337.684	10.94456 - 85.7007	$3d^2$ - $3d(^2D)5f$	^1D - $^3D°$	2 - 3		1063
	4	1338.413	10.94456 - 85.6610	$3d^2$ - $3d(^2D)5f$	^1D - $^3D°$	2 - 2		1063
	10	1339.077	10.94456 - 85.6226	$3d^2$ - $3d(^2D)5f$	^1D - $^1F°$	2 - 3		1063
	4	1340.237	10.94456 - 85.55824	$3d^2$ - $3d(^2D)5f$	^1D - $^1D°$	2 - 2		1063
	10	1342.130	10.94456 - 85.45299	$3d^2$ - $3d(^2D)5f$	^1D - $^3F°$	2 - 3		1063
	1	1356.287	12.10150 - 85.83220	$3d^2$ - $3d(^2D)5f$	^3P - $^3P°$	1 - 0		1063
	1	1356.868	12.10150 - 85.80062	$3d^2$ - $3d(^2D)5f$	^3P - $^3P°$	1 - 1		1063
	1	1357.843	12.15442 - 85.80062	$3d^2$ - $3d(^2D)5f$	^3P - $^3P°$	2 - 1		1063
	10	1358.246	12.15442 - 85.77878	$3d^2$ - $3d(^2D)5f$	^3P - $^3P°$	2 - 2		1063
	4	1359.439	12.10150 - 85.6610	$3d^2$ - $3d(^2D)5f$	^3P - $^3D°$	1 - 2		1063
	10	1359.688	12.15442 - 85.7007	$3d^2$ - $3d(^2D)5f$	^3P - $^3D°$	2 - 3		1063
	4	1360.221	12.07410 - 85.59159	$3d^2$ - $3d(^2D)5f$	^3P - $^3D°$	0 - 1		1063
	4	1361.345	12.10150 - 85.55824	$3d^2$ - $3d(^2D)5f$	^3P - $^1D°$	1 - 2		1063
	1	1366.591	2.54095 - 75.71575	$3d(^2D)4s$ - $3d(^2D)4f$	^1D - $^3D°$	2 - 3		1063
	10	1368.927	2.54095 - 75.59084	$3d(^2D)4s$ - $3d(^2D)4f$	^1D - $^1D°$	2 - 2		1063
	10	1369.647	2.54095 - 75.55246	$3d(^2D)4s$ - $3d(^2D)4f$	^1D - $^1F°$	2 - 3		1063
	4	1373.020	2.54095 - 75.37310	$3d(^2D)4s$ - $3d(^2D)4f$	^1D - $^3F°$	2 - 3		1063
	30	1397.505	14.26132 - 85.81740	$3d^2$ - $3d(^2D)5f$	^1G - $^1H°$	4 - 5		1063
	4	1403.645	14.26132 - 85.50442	$3d^2$ - $3d(^2D)5f$	^1G - $^3H°$	4 - 5		1063
	1	1406.615	14.26132 - 85.35396	$3d^2$ - $3d(^2D)5f$	^1G - $^1G°$	4 - 4		1063
	1	1409.802	4.98779 - 75.91975	$3d^2$ - $3d(^2D)4f$	^3F - $^1H°$	4 - 5		1063
	4	1411.472	4.80287 - 75.65090	$3d^2$ - $3d(^2D)4f$	^3F - $^3D°$	2 - 1		1063
	4	1412.487	4.88357 - 75.68069	$3d^2$ - $3d(^2D)4f$	^3F - $^3D°$	3 - 2		1063
	1	1412.669	4.80287 - 75.59084	$3d^2$ - $3d(^2D)4f$	^3F - $^1D°$	2 - 2		1063
	30	1413.436	4.80287 - 75.55246	$3d^2$ - $3d(^2D)4f$	^3F - $^1F°$	2 - 3		1063
	10	1413.868	4.98779 - 75.71575	$3d^2$ - $3d(^2D)4f$	^3F - $^3D°$	4 - 3		1063
	30	1414.879	4.88357 - 75.56100	$3d^2$ - $3d(^2D)4f$	^3F - $^3H°$	3 - 4		1063
	10	1415.050	4.88357 - 75.55246	$3d^2$ - $3d(^2D)4f$	^3F - $^1F°$	3 - 3		1063
	50	1415.968	4.98779 - 75.61083	$3d^2$ - $3d(^2D)4f$	^3F - $^3H°$	4 - 5		1063

SC II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	30	1416.698	4.88357 – 75.47024	$3d^2$ – $3d(^2D)4f$	^3F – $^3F°$	3 – 4		1063
	50	1416.968	4.98779 – 75.56100	$3d^2$ – $3d(^2D)4f$	^3F – $^3H°$	4 – 4		1063
	50	1417.028	4.80287 – 75.37310	$3d^2$ – $3d(^2D)4f$	^3F – $^3F°$	2 – 3		1063
	1	1417.139	4.98779 – 75.55246	$3d^2$ – $3d(^2D)4f$	^3F – $^1F°$	4 – 3		1063
	80	1418.301	4.88357 – 75.39049	$3d^2$ – $3d(^2D)4f$	^3F – $^3G°$	3 – 4		1063
	80	1418.322	4.80287 – 75.30870	$3d^2$ – $3d(^2D)4f$	^3F – $^3G°$	2 – 3		1063
	80	1418.334	4.80287 – 75.30813	$3d^2$ – $3d(^2D)4f$	^3F – $^3F°$	2 – 2		1063
	30	1418.650	4.88357 – 75.37310	$3d^2$ – $3d(^2D)4f$	^3F – $^3F°$	3 – 3		1063
	110	1418.773	4.98779 – 75.47125	$3d^2$ – $3d(^2D)4f$	^3F – $^3G°$	4 – 5		1063
	110	1418.793	4.98779 – 75.47024	$3d^2$ – $3d(^2D)4f$	^3F – $^3F°$	4 – 4		1063
	10	1419.948	4.88357 – 75.30870	$3d^2$ – $3d(^2D)4f$	^3F – $^3G°$	3 – 3		1063
	10	1419.959	4.88357 – 75.30813	$3d^2$ – $3d(^2D)4f$	^3F – $^3F°$	3 – 2		1063
	10	1420.400	4.98779 – 75.39049	$3d^2$ – $3d(^2D)4f$	^3F – $^3G°$	4 – 4		1063
	30	1421.709	4.88357 – 75.22147	$3d^2$ – $3d(^2D)4f$	^3F – $^1G°$	3 – 4		1063
	4	1423.818	4.98779 – 75.22147	$3d^2$ – $3d(^2D)4f$	^3F – $^1G°$	4 – 4		1063
	10	1502.828	0.17776 – 66.71899	$3d(^2D)4s$ – $3d(^2D)5p$	g^3D – $^3F°$	3 – 4		1063
	1	1503.395	0.06772 – 66.58386	$3d(^2D)4s$ – $3d(^2D)5p$	g^3D – $^3D°$	2 – 3		1063
	4	1503.850	0.06772 – 66.56373	$3d(^2D)4s$ – $3d(^2D)5p$	g^3D – $^3F°$	2 – 3		1063
	4	1504.673	0.0 – 66.45964	$3d(^2D)4s$ – $3d(^2D)5p$	g^3D – $^3F°$	1 – 2		1063
	1	1505.459	0.06772 – 66.49266	$3d(^2D)4s$ – $3d(^2D)5p$	g^3D – $^3D°$	2 – 2		1063
	4	1505.886	0.17776 – 66.58386	$3d(^2D)4s$ – $3d(^2D)5p$	g^3D – $^3D°$	3 – 3		1063
	1	1506.208	0.06772 – 66.45964	$3d(^2D)4s$ – $3d(^2D)5p$	g^3D – $^3F°$	2 – 2		1063
	1	1506.257	0.0 – 66.38974	$3d(^2D)4s$ – $3d(^2D)5p$	g^3D – $^3D°$	1 – 1		1063
	10	1516.137	2.54095 – 68.49806	$3d(^2D)4s$ – $3d(^2D)5p$	^1D – $^1P°$	2 – 1		1063
	1	1533.677	2.54095 – 67.74372	$3d(^2D)4s$ – $3d(^2D)5p$	^1D – $^1F°$	2 – 3		1063
	4	1535.421	10.94456 – 76.07328	$3d^2$ – $3d(^2D)4f$	^1D – $^1P°$	2 – 1		1063
	1	1538.288	10.94456 – 75.95188	$3d^2$ – $3d(^2D)4f$	^1D – $^3P°$	2 – 1		1063
	10	1543.896	10.94456 – 75.71575	$3d^2$ – $3d(^2D)4f$	^1D – $^3D°$	2 – 3		1063
	1	1544.241	2.54095 – 67.29768	$3d(^2D)4s$ – $3d(^2D)5p$	^1D – $^3P°$	2 – 1		1063
	10	1544.733	10.94456 – 75.68069	$3d^2$ – $3d(^2D)4f$	^1D – $^3D°$	2 – 2		1063
	80	1546.880	10.94456 – 75.59084	$3d^2$ – $3d(^2D)4f$	^1D – $^1D°$	2 – 2		1063
	110	1547.798	10.94456 – 75.55246	$3d^2$ – $3d(^2D)4f$	^1D – $^1F°$	2 – 3		1063
	50	1552.107	10.94456 – 75.37310	$3d^2$ – $3d(^2D)4f$	^1D – $^3F°$	2 – 3		1063
	4	1553.660	10.94456 – 75.30870	$3d^2$ – $3d(^2D)4f$	^1D – $^3G°$	2 – 3		1063
	4	1553.674	10.94456 – 75.30813	$3d^2$ – $3d(^2D)4f$	^1D – $^3F°$	2 – 2		1063
	1	1564.488	2.54095 – 66.45964	$3d(^2D)4s$ – $3d(^2D)5p$	^1D – $^3F°$	2 – 2		1063
	10	1565.118	12.10150 – 75.99443	$3d^2$ – $3d(^2D)4f$	^3P – $^3P°$	1 – 0		1063
	1	1565.490	12.07410 – 75.95188	$3d^2$ – $3d(^2D)4f$	^3P – $^3P°$	0 – 1		1063
	1	1565.952	26.08134 – 89.94027	$3d(^2D)4p$ – $4s(^2S)4d$	$^1D°$ – ^1D	2 – 2		1063
	10	1566.161	12.10150 – 75.95188	$3d^2$ – $3d(^2D)4f$	^3P – $^3P°$	1 – 1		1063
	1	1567.126	12.10150 – 75.91258	$3d^2$ – $3d(^2D)4f$	^3P – $^3P°$	1 – 2		1063
	10	1567.460	12.15442 – 75.95188	$3d^2$ – $3d(^2D)4f$	^3P – $^3P°$	2 – 1		1063
	80	1568.427	12.15442 – 75.91258	$3d^2$ – $3d(^2D)4f$	^3P – $^3P°$	2 – 2		1063
	110	1572.842	12.10150 – 75.68069	$3d^2$ – $3d(^2D)4f$	^3P – $^3D°$	1 – 2		1063
	110	1572.901	12.07410 – 75.65090	$3d^2$ – $3d(^2D)4f$	^3P – $^3D°$	0 – 1		1063
	80	1573.283	12.15442 – 75.71575	$3d^2$ – $3d(^2D)4f$	^3P – $^3D°$	2 – 3		1063
	10	1573.579	12.10150 – 75.65090	$3d^2$ – $3d(^2D)4f$	^3P – $^3D°$	1 – 1		1063
	4	1574.152	12.15442 – 75.68069	$3d^2$ – $3d(^2D)4f$	^3P – $^3D°$	2 – 2		1063
	10	1574.619	2.54095 – 66.04839	$3d(^2D)4s$ – $3d(^2D)5p$	^1D – $^1D°$	2 – 2		1063
	10	1575.068	12.10150 – 75.59084	$3d^2$ – $3d(^2D)4f$	^3P – $^1D°$	1 – 2		1063
	10	1581.811	12.15442 – 75.37310	$3d^2$ – $3d(^2D)4f$	^3P – $^3F°$	2 – 3		1063
	1	1582.112	12.10150 – 75.30813	$3d^2$ – $3d(^2D)4f$	^3P – $^3F°$	1 – 2		1063
	1	1583.424	12.15442 – 75.30870	$3d^2$ – $3d(^2D)4f$	^3P – $^3G°$	2 – 3		1063
	1	1583.438	12.15442 – 75.30813	$3d^2$ – $3d(^2D)4f$	^3P – $^3F°$	2 – 2		1063

SC II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	1619.926	4.98779 – 66.71899	3d^2 – 3d(^{2}D)5p	^{3}F – ^{3}F°	4 – 4		1063
	4	1620.738	4.88357 – 66.58386	3d^2 – 3d(^{2}D)5p	^{3}F – ^{3}D°	3 – 3		1063
	4	1621.014	4.80287 – 66.49266	3d^2 – 3d(^{2}D)5p	^{3}F – ^{3}D°	2 – 2		1063
	1	1621.267	4.88357 – 66.56373	3d^2 – 3d(^{2}D)5p	^{3}F – ^{3}F°	3 – 3		1063
	10	1623.137	4.88357 – 66.49266	3d^2 – 3d(^{2}D)5p	^{3}F – ^{3}D°	3 – 2		1063
	10	1623.480	4.98779 – 66.58386	3d^2 – 3d(^{2}D)5p	^{3}F – ^{3}D°	4 – 3		1063
	10	1623.723	4.80287 – 66.38974	3d^2 – 3d(^{2}D)5p	^{3}F – ^{3}D°	2 – 1		1063
	30	1624.008	4.88357 – 66.45964	3d^2 – 3d(^{2}D)5p	^{3}F – ^{3}F°	3 – 2		1063
	30	1624.011	4.98779 – 66.56373	3d^2 – 3d(^{2}D)5p	^{3}F – ^{3}F°	4 – 3		1063
	30	1630.005	14.26132 – 75.61083	3d^2 – 3d(^{2}D)4f	^{1}G – ^{3}H°	4 – 5		1063
	4	1631.330	14.26132 – 75.56100	3d^2 – 3d(^{2}D)4f	^{1}G – ^{3}H°	4 – 4		1063
	4	1631.557	14.26132 – 75.55246	3d^2 – 3d(^{2}D)4f	^{1}G – ^{1}F°	4 – 3		1063
	10	1633.722	14.26132 – 75.47125	3d^2 – 3d(^{2}D)4f	^{1}G – ^{3}G°	4 – 5		1063
	10	1633.749	14.26132 – 75.47024	3d^2 – 3d(^{2}D)4f	^{1}G – ^{3}F°	4 – 4		1063
	30	1635.880	14.26132 – 75.39049	3d^2 – 3d(^{2}D)4f	^{1}G – ^{3}G°	4 – 4		1063
	4	1636.346	14.26132 – 75.37310	3d^2 – 3d(^{2}D)4f	^{1}G – ^{3}F°	4 – 3		1063
	50	1640.416	14.26132 – 75.22147	3d^2 – 3d(^{2}D)4f	^{1}G – ^{1}G°	4 – 4		1063
	1	1670.971	25.9552 – 85.80062	3d^2 – 3d(^{2}D)5f	^{1}S – ^{3}P°	0 – 1		1063
	4	1672.538	27.44371 – 87.23309	3d(^{2}D)4p – 3d(^{2}D)6d	^{3}F° – ^{3}G	2 – 3		1063
	4	1675.245	27.60245 – 87.29523	3d(^{2}D)4p – 3d(^{2}D)6d	^{3}F° – ^{3}G	3 – 4		1063
	1	1676.828	25.9552 – 85.59159	3d^2 – 3d(^{2}D)5f	^{1}S – ^{3}D°	0 – 1		1063
	4	1678.863	27.84135 – 87.40548	3d(^{2}D)4p – 3d(^{2}D)6d	^{3}F° – ^{3}G	4 – 5		1063
	10	1691.344	30.81570 – 89.94027	3d(^{2}D)4p – 4s(^{2}S)4d	^{1}P° – ^{1}D	1 – 2		1063
	1	1691.647	27.44371 – 86.5577	3d(^{2}D)4p – 3d(^{2}D)7s	^{3}F° – ^{3}D	2 – 1		1063
	1	1694.770	27.60245 – 86.6075	3d(^{2}D)4p – 3d(^{2}D)7s	^{3}F° – ^{3}D	3 – 2		1063
	4	1697.514	27.84135 – 86.7510	3d(^{2}D)4p – 3d(^{2}D)7s	^{3}F° – ^{3}D	4 – 3		1063
	1	1706.780	28.16117 – 86.7510	3d(^{2}D)4p – 3d(^{2}D)7s	^{3}D° – ^{3}D	3 – 3		1063
	30	1736.404	32.34998 – 89.94027	3d(^{2}D)4p – 4s(^{2}S)4d	^{1}F° – ^{1}D	3 – 2		1063
	10	1737.514	10.94456 – 68.49806	3d^2 – 3d(^{2}D)5p	^{1}D – ^{1}P°	2 – 1		1063
	10	1760.590	10.94456 – 67.74372	3d^2 – 3d(^{2}D)5p	^{1}D – ^{1}F°	2 – 3		1063
	80	1761.751	11.73636 – 68.49806	4s^2 – 3d(^{2}D)5p	^{1}S – ^{1}P°	0 – 1		1063
	1	1797.021	0.06772 – 55.71536	3d(^{2}D)4s – 4s(^{2}S)4p	g^{3}D – ^{1}P°	2 – 1		1063
	1	1808.492	12.10150 – 67.39619	3d^2 – 3d(^{2}D)5p	^{3}P – ^{3}P°	1 – 2		1063
	4	1810.224	12.15442 – 67.39619	3d^2 – 3d(^{2}D)5p	^{3}P – ^{3}P°	2 – 2		1063
	1	1810.821	12.07410 – 67.29768	3d^2 – 3d(^{2}D)5p	^{3}P – ^{3}P°	0 – 1		1063
	1	1811.719	12.10150 – 67.29768	3d^2 – 3d(^{2}D)5p	^{3}P – ^{3}P°	1 – 1		1063
	1	1813.458	12.15442 – 67.29768	3d^2 – 3d(^{2}D)5p	^{3}P – ^{3}P°	2 – 1		1063
	1	1813.725	12.10150 – 67.2367	3d^2 – 3d(^{2}D)5p	^{3}P – ^{3}P°	1 – 0		1063
	30	1814.756	10.94456 – 66.04839	3d^2 – 3d(^{2}D)5p	^{1}D – ^{1}D°	2 – 2		1063
	2	1829.713	11.73636 – 66.38974	4s^2 – 3d(^{2}D)5p	^{1}S – ^{3}D°	0 – 1		1063
	30	1841.145	26.08134 – 80.39538	3d(^{2}D)4p – 3d(^{2}D)5d	^{1}D° – ^{1}D	2 – 2		1063
	4	1843.062	32.34998 – 86.6075	3d(^{2}D)4p – 3d(^{2}D)7s	^{1}F° – ^{3}D	3 – 2		1063
	10	1869.774	14.26132 – 67.74372	3d^2 – 3d(^{2}D)5p	^{1}G – ^{1}F°	4 – 3		1063
	200	1880.604	2.54095 – 55.71536	3d(^{2}D)4s – 4s(^{2}S)4p	^{1}D – ^{1}P°	2 – 1		1063
	4	1882.442	27.91778 – 81.04025	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}D° – ^{3}P	1 – 1		1063
	4	1883.861	28.02129 – 81.10375	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}D° – ^{3}P	2 – 2		1063
	10	1884.520	29.74216 – 82.8063	3d(^{2}D)4p – 4s(^{2}S)4d	^{3}P° – ^{3}D	1 – 2		1063
	4	1884.759	27.91778 – 80.97494	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}D° – ^{3}P	1 – 0		1063
	4	1884.814	29.73627 – 82.7918	3d(^{2}D)4p – 4s(^{2}S)4d	^{3}P° – ^{3}D	0 – 1		1063
	4	1885.032	29.74216 – 82.7918	3d(^{2}D)4p – 4s(^{2}S)4d	^{3}P° – ^{3}D	1 – 1		1063
	10	1886.118	28.02129 – 81.04025	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}D° – ^{3}P	2 – 1		1063
	30	1886.641	29.82393 – 82.8283	3d(^{2}D)4p – 4s(^{2}S)4d	^{3}P° – ^{3}D	2 – 3		1063
	4	1887.438	29.82393 – 82.8063	3d(^{2}D)4p – 4s(^{2}S)4d	^{3}P° – ^{3}D	2 – 2		1063
	50	1888.839	28.16117 – 81.10375	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}D° – ^{3}P	3 – 2		1063

SC II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	4	1898.393	26.08134 – 78.75746	3d(^{2}D)4p – 3d(^{2}D)5d	^{1}D° – ^{1}P	2 – 1		1063
	10	1908.094	27.44371 – 79.85202	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}F° – ^{3}F	2 – 2		1063
	10	1911.200	27.60245 – 79.92559	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}F° – ^{3}F	3 – 3		1063
	30	1911.581	26.08134 – 78.39405	3d(^{2}D)4p – 3d(^{2}D)5d	^{1}D° – ^{1}F	2 – 3		1063
	1	1913.891	27.60245 – 79.85202	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}F° – ^{3}F	3 – 2		1063
	30	1917.182	27.84135 – 80.00124	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}F° – ^{3}F	4 – 4		1063
	4	1919.967	27.84135 – 79.92559	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}F° – ^{3}F	4 – 3		1063
	10	1925.512	27.91778 – 79.85202	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}D° – ^{3}F	1 – 2		1063
	50	1926.623	28.02129 – 79.92559	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}D° – ^{3}F	2 – 3		1063
	50	1929.010	28.16117 – 80.00124	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}D° – ^{3}F	3 – 4		1063
	1	1929.357	28.02129 – 79.85202	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}D° – ^{3}F	2 – 2		1063
	4	1931.829	28.16117 – 79.92559	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}D° – ^{3}F	3 – 3		1063
	50	1932.272	26.08134 – 77.83388	3d(^{2}D)4p – 3d(^{2}D)6s	^{1}D° – ^{1}D	2 – 2		1063
	4	1946.980	29.74216 – 81.10375	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}P° – ^{3}P	1 – 2		1063
	4	1949.167	29.73627 – 81.04025	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}P° – ^{3}P	0 – 1		1063
	4	1949.390	29.74216 – 81.04025	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}P° – ^{3}P	1 – 1		1063
	30	1950.085	29.82393 – 81.10375	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}P° – ^{3}P	2 – 2		1063
	4	1951.875	29.74216 – 80.97494	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}P° – ^{3}P	1 – 0		1063
	4	1952.503	29.82393 – 81.04025	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}P° – ^{3}P	2 – 1		1063
	50	1952.959	27.44371 – 78.64806	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}F° – ^{3}G	2 – 3		1063
	1	1954.054	26.08134 – 77.25699	3d(^{2}D)4p – 3d(^{2}D)6s	^{1}D° – ^{3}D	2 – 2		1063
	4	1954.317	27.44371 – 78.61248	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}F° – ^{3}D	2 – 3		1063
	80	1956.535	27.60245 – 78.71321	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}F° – ^{3}G	3 – 4		1063
	1	1959.032	27.60245 – 78.64806	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}F° – ^{3}G	3 – 3		1063
	1	1959.419	27.44371 – 78.47925	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}F° – ^{3}D	2 – 1		1063
	80	1961.596	27.84135 – 78.82024	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}F° – ^{3}G	4 – 5		1063
	1	1963.190	27.60245 – 78.53996	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}F° – ^{3}D	3 – 2		1063
	1	1965.723	27.84135 – 78.71321	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}F° – ^{3}G	4 – 4		1063
	4	1969.623	27.84135 – 78.61248	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}F° – ^{3}D	4 – 3		1063
	1	1975.419	27.91778 – 78.53996	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}D° – ^{3}D	1 – 2		1063
	1	1976.629	28.02129 – 78.61248	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}D° – ^{3}D	2 – 3		1063
	4	1977.790	27.91778 – 78.47925	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}D° – ^{3}D	1 – 1		1063
	10	1979.466	28.02129 – 78.53996	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}D° – ^{3}D	2 – 2		1063
	1	1980.712	28.16117 – 78.64806	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}D° – ^{3}G	3 – 3		1063
	1	1981.848	28.02129 – 78.47925	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}D° – ^{3}D	2 – 1		1063
	10	1982.109	28.16117 – 78.61248	3d(^{2}D)4p – 3d(^{2}D)5d	^{3}D° – ^{3}D	3 – 3		1063
	10	1987.832	30.81570 – 81.12177	3d(^{2}D)4p – 4s(^{2}S)5s	^{1}P° – ^{1}S	1 – 0		1063
	80	1995.288	25.9552 – 76.07328	3d^2 – 3d(^{2}D)4f	^{1}S – ^{1}P°	0 – 1		1063

SCANDIUM III (Sc^{2+}), Z = 21
Ground State $1s^22s^22p^63s^23p^63d(^2D_{3/2})$ (19 electrons)
Ionization Potential 199 677.37 cm^{-1}; 24.75704 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	557.995	0.0 – 179.21470	3p^{6}3d – 3p^{6}7f	g^{2}D – ^{2}F°	$\frac{3}{2}$ – $\frac{5}{2}$		840
	1	558.608	0.19764 – 179.21470	3p^{6}3d – 3p^{6}7f	g^{2}D – ^{2}F°	$\frac{5}{2}$ – $\frac{7}{2}$		840
	2	582.1144	0.0 – 171.78764	3p^{6}3d – 3p^{6}6f	g^{2}D – ^{2}F°	$\frac{3}{2}$ – $\frac{5}{2}$		840
	3	582.7846	0.19764 – 171.78764	3p^{6}3d – 3p^{6}6f	g^{2}D – ^{2}F°	$\frac{5}{2}$ – $\frac{7}{2}$		840
	0	589.320	0.0 – 169.6859	3p^{6}3d – 3p^{6}7p	g^{2}D – ^{2}P°	$\frac{3}{2}$ – $\frac{3}{2}$		863
	20	589.487	0.0 – 169.63796	3p^{6}3d – 3p^{6}7p	g^{2}D – ^{2}P°	$\frac{3}{2}$ – $\frac{1}{2}$		863

SC III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	30	590.006	0.19764 – 169.6859	$3p^63d - 3p^67p$	$g^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		863
	7	627.0693	0.0 – 159.47224	$3p^63d - 3p^65f$	$g^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		840
	8	627.8465	0.19764 – 159.47224	$3p^63d - 3p^65f$	$g^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		840
	10	642.766	0.0 – 155.57520	$3p^63d - 3p^66p$	$g^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		863
	2	643.133	0.0 – 155.48978	$3p^63d - 3p^66p$	$g^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		840
	2	643.597	0.19764 – 155.57520	$3p^63d - 3p^66p$	$g^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		840
	30	693.724	25.53932 – 169.6859	$3p^64s - 3p^67p$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		863
	10	693.969	25.53932 – 169.63796	$3p^64s - 3p^67p$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		863
2	10	730.5997	0.0 – 136.87387	$3p^63d - 3p^64f$	$g^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		840
2	15	731.6549	0.19764 – 136.87412	$3p^63d - 3p^64f$	$g^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		840
	1	769.019	25.53932 – 155.57520	$3p^64s - 3p^66p$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		840
	1	769.524	25.53932 – 155.48978	$3p^64s - 3p^66p$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		840
	60	779.538	0.0 – 128.28315	$3p^63d - 3p^65p$	$g^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		863
	6	780.5966	0.0 – 128.10712	$3p^63d - 3p^65p$	$g^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		840
	8	780.729	0.19764 – 128.28315	$3p^63d - 3p^65p$	$g^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		840
	2	961.052	62.10430 – 166.15717	$3p^64p - 3p^67s$	${}^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		840
	4	965.4484	62.57818 – 166.15717	$3p^64p - 3p^67s$	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		840
	3	966.293	62.10430 – 165.59255	$3p^64p - 3p^66d$	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		840
	4	970.638	62.57818 – 165.60329	$3p^64p - 3p^66d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		840
		970.740	62.57818 – 165.59255	$3p^64p - 3p^66d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		863
	8	973.295	25.53932 – 128.28315	$3p^64s - 3p^65p$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		840
	6	974.965	25.53932 – 128.10712	$3p^64s - 3p^65p$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		840
	15	1148.241	62.10430 – 149.19403	$3p^64p - 3p^66s$	${}^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		840
	20	1154.523	62.57818 – 149.19403	$3p^64p - 3p^66s$	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		840
	20	1162.4431	62.10430 – 148.13003	$3p^64p - 3p^65d$	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		840
	25	1168.6077	62.57818 – 148.15014	$3p^64p - 3p^65d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		840
	10	1168.883	62.57818 – 148.13003	$3p^64p - 3p^65d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		840
	1	1493.502	112.25762 – 179.21470	$3p^64d - 3p^67f$	${}^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		840
	1	1494.506	112.30295 – 179.21470	$3p^64d - 3p^67f$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		840
1	80	1598.002	0.0 – 62.57818	$3p^63d - 3p^64p$	$g^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		840
	180	1603.0637	0.19764 – 62.57818	$3p^63d - 3p^64p$	$g^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		840
1	150	1610.1945	0.0 – 62.10430	$3p^63d - 3p^64p$	$g^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		840
	5	1679.824	112.25762 – 171.78764	$3p^64d - 3p^66f$	${}^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		840
	7	1681.105	112.30295 – 171.78764	$3p^64d - 3p^66f$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		840
	2	1742.69	112.30295 – 169.6859	$3p^64d - 3p^67p$	${}^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		840
5	40	1895.441	62.10430 – 114.86248	$3p^64p - 3p^65s$	${}^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		840
5	60	1912.620	62.57818 – 114.86248	$3p^64p - 3p^65s$	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		840
4	90	1993.886	62.10430 – 112.25762	$3p^64p - 3p^64d$	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		840

SCANDIUM IV (Sc^{3+}), Z = 21
Ground State $1s^22s^22p^63s^23p^6(^1S_0)$ (18 electrons)
Ionization Potential 592 732 cm^{-1}; 73.4900 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	174.57						271
	200	175.89						271
	5	184.484	0.0 – 542.052	$3s^23p^6 - 3s^23p^5(^2P^\circ_{1/2})7s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		720
	5	185.927	0.0 – 537.845	$3s^23p^6 - 3s^23p^5(^2P^\circ_{3/2})7s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		720
	40	193.897	0.0 – 515.738	$3s^23p^6 - 3s^23p^5(^2P^\circ_{1/2})6s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		720
	40	195.455	0.0 – 511.6303	$3s^23p^6 - 3s^23p^5(^2P^\circ_{3/2})6s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		720

SC IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	110	215.304	0.0 – 464.4572	$3s^23p^6 - 3s^23p^5(^2P^\circ_{1/2})5s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		720
	100	215.522						017
	110	217.192	0.0 – 460.4269	$3s^23p^6 - 3s^23p^5(^2P^\circ_{3/2})5s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		720
	285	220.280	0.0 – 453.9727	$3s^23p^6 - 3s^23p^5(^2P^\circ)4d$	$g^1S - {^1P^\circ}$	0 – 1		720
	110	223.407	0.0 – 447.6224	$3s^23p^6 - 3s^23p^5(^2P^\circ)4d$	$g^1S - {^3D^\circ}$	0 – 1		720
	5	226.764	0.0 – 440.9830	$3s^23p^6 - 3s^23p^5(^2P^\circ)4d$	$g^1S - {^3P^\circ}$	0 – 1		720
	40	286.677						017
	1000	289.851	0.0 – 345.0054	$3s^23p^6 - 3s^23p^5(^2P^\circ)3d$	$g^1S - {^1P^\circ}$	0 – 1		720
	300	290.487						017
2	1000	296.311	0.0 – 337.4835	$3s^23p^6 - 3s^23p^5(^2P^\circ)4s$	$g^1S - {^1P^\circ}$	0 – 1		720
1	1000	299.037	0.0 – 334.4051	$3s^23p^6 - 3s^23p^5(^2P^\circ)4s$	$g^1S - {^3P^\circ}$	0 – 1		720
	450	371.160	0.0 – 269.4265	$3s^23p^6 - 3s^23p^5(^2P^\circ)3d$	$g^1S - {^3D^\circ}$	0 – 1		720
	300	372.415						017
	300	376.449						017
	70	410.080	240.4030 – 484.2576	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3P^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		720
	5	412.468	241.8140 – 484.2576	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3P^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 2		720
	1	412.868	239.7232 – 481.9399	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5p$	$^3P^\circ - \frac{1}{2}[\frac{1}{2}]$	0 – 1		720
	110	412.968	241.8140 – 483.9628	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3P^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		720
	5	413.948	240.4030 – 481.9752	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5p$	$^3P^\circ - \frac{1}{2}[\frac{3}{2}]$	1 – 2		720
	220	415.968	0.0 – 240.4030	$3s^23p^6 - 3s^23p^5(^2P^\circ)3d$	$g^1S - {^3P^\circ}$	0 – 1		720
	70	416.440	241.8140 – 481.9399	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5p$	$^3P^\circ - \frac{1}{2}[\frac{1}{2}]$	2 – 1		720
	20	416.863	240.4030 – 480.2866	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{1}{2}]$	1 – 0		720
	20	417.195	240.4030 – 480.0979	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		720
	110	418.811	239.7232 – 478.4959	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	0 – 1		720
	160	419.524	240.4030 – 478.7677	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		720
	110	419.999	241.8140 – 479.9089	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		720
	70	420.121	239.7232 – 477.7476	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	0 – 1		720
	110	420.504	240.4030 – 478.2132	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		720
	160	420.807	241.8140 – 479.4529	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		720
	40	421.324	240.4030 – 477.7476	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		720
	110	422.027	241.8140 – 478.7677	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		720
	20	422.507	241.8140 – 478.4959	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 1		720
	40	422.626	240.4030 – 477.0180	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		720
	70	425.520	241.8140 – 476.8185	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		720
	70	426.685	240.4030 – 474.7644	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{1}{2}]$	1 – 1		720
	20	429.281	241.8140 – 474.7644	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{1}{2}]$	2 – 1		720
	150	430.74	252.1083 – 484.2576	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{5}{2}]$	3 – 2		251
	110	431.780	252.1083 – 483.7080	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		720
	1	433.749	253.4057 – 483.9628	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		720
	110	434.395	253.4057 – 483.6094	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		720
	110	436.144	250.7082 – 479.9932	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	4 – 4		720
	1	437.160	250.7082 – 479.4529	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	4 – 3		720
	40	438.477	250.7082 – 478.7684	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 4		720
	20	438.660	253.4057 – 481.3774	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5p$	$^3F^\circ - \frac{1}{2}[\frac{3}{2}]$	2 – 1		720
	360	438.789	250.7082 – 478.6095	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 5		720
	110	438.972	252.1083 – 479.9089	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 3		720
	5	439.856	252.1083 – 479.4529	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		720
	220	441.185	252.1083 – 478.7684	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		720
	220	441.494	253.4057 – 479.9089	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		720
	160	442.261	250.7082 – 476.8185	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	4 – 3		720
	1	444.268	253.4057 – 478.4959	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 1		720
	70	444.624	252.1083 – 477.0180	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 2		720
	5	445.021	252.1083 – 476.8185	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		720
	40	445.745	253.4057 – 477.7476	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3F^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 1		720

SC IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	5	447.194	253.4057 – 477.0180	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3F^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		720
	5	461.184	267.4244 – 484.2576	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^1D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 2		720
	40	461.817	267.4244 – 483.9628	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^1D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		720
	160	462.570	267.4244 – 483.6094	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^1D^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		720
	5	463.118	268.0342 – 483.9628	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	3 – 3		720
	70	463.666	268.0342 – 483.7080	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		720
	5	463.934	269.4265 – 484.9729	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5p$	$^3D^\circ - \frac{1}{2}[\frac{1}{2}]$	1 – 0		720
	110	465.485	269.4265 – 484.2576	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		720
	110	466.192	269.4599 – 483.9628	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		720
	40	466.964	269.4599 – 483.6094	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		720
	40	467.398	267.4244 – 481.3774	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5p$	$^1D^\circ - \frac{1}{2}[\frac{3}{2}]$	2 – 1		720
	20	469.692	271.0554 – 483.9628	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^1F^\circ - \frac{1}{2}[\frac{5}{2}]$	3 – 3		720
	110	470.249	271.0554 – 483.7080	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^1F^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		720
	110	470.625	267.4244 – 479.9089	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1D^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		720
	20	471.632	267.4244 – 479.4529	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		720
	110	471.790	268.0342 – 479.9932	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		720
	110	473.000	268.0342 – 479.4529	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		720
	70	474.120	271.0554 – 481.9752	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})5p$	$^1F^\circ - \frac{1}{2}[\frac{3}{2}]$	3 – 2		720
	40	474.250	269.4265 – 480.2866	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3D^\circ - \frac{3}{2}[\frac{1}{2}]$	1 – 0		720
	70	474.533	268.0342 – 478.7677	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	3 – 2		720
	110	474.679	269.4265 – 480.0979	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		720
	20	475.176	269.4599 – 479.9089	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		720
	20	475.462	267.4244 – 477.7476	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^1D^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 1		720
	70	475.788	268.0342 – 478.2132	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	3 – 2		720
	40	476.210	269.4599 – 479.4529	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		720
	5	477.564	267.4244 – 476.8185	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^1D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		720
	70	477.764	269.4599 – 478.7677	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		720
	220	478.299	269.4265 – 478.4959	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		720
	1	478.511	268.0342 – 477.0180	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 2		720
	40	478.609	271.0554 – 479.9932	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		720
	20	478.804	271.0554 – 479.9089	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 3		720
	5	480.106	269.4599 – 477.7476	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 1		720
	160	481.434	271.0554 – 478.7684	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		720
	400	482.220	269.4599 – 476.8185	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		017
	1	482.729	271.0554 – 478.2132	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^1F^\circ - \frac{3}{2}[\frac{3}{2}]$	3 – 2		720
	20	487.087	269.4599 – 474.7644	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3D^\circ - \frac{3}{2}[\frac{1}{2}]$	2 – 1		720
	160	526.388	239.7232 – 429.6957	$3s^23p^5(^2P^\circ)3d - 3s3p^63d$	$^3P^\circ - {}^3D$	0 – 1		720
	220	527.879	240.4030 – 429.8424	$3s^23p^5(^2P^\circ)3d - 3s3p^6$	$^3P^\circ - {}^3D$	1 – 2		720
	160	528.287	240.4030 – 429.6957	$3s^23p^5(^2P^\circ)3d - 3s3p^63d$	$^3P^\circ - {}^3D$	1 – 1		720
	220	531.170	241.8140 – 430.0785	$3s^23p^5(^2P^\circ)3d - 3s3p^6$	$^3P^\circ - {}^3D$	2 – 3		720
	160	531.833	241.8140 – 429.8424	$3s^23p^5(^2P^\circ)3d - 3s3p^6$	$^3P^\circ - {}^3D$	2 – 2		720
	20	532.245	241.8140 – 429.6957	$3s^23p^5(^2P^\circ)3d - 3s3p^63d$	$^3P^\circ - {}^3D$	2 – 1		720
	285	557.505	250.7082 – 430.0785	$3s^23p^5(^2P^\circ)3d - 3s3p^6$	$^3F^\circ - {}^3D$	4 – 3		720
	70	561.891	252.1083 – 430.0785	$3s^23p^5(^2P^\circ)3d - 3s3p^6$	$^3F^\circ - {}^3D$	3 – 3		720
	220	562.640	252.1083 – 429.8424	$3s^23p^5(^2P^\circ)3d - 3s3p^6$	$^3F^\circ - {}^3D$	3 – 2		720
	110	566.773	253.4057 – 429.8424	$3s^23p^5(^2P^\circ)3d - 3s3p^6$	$^3F^\circ - {}^3D$	2 – 2		720
	160	567.251	253.4057 – 429.6957	$3s^23p^5(^2P^\circ)3d - 3s3p^63d$	$^3F^\circ - {}^3D$	2 – 1		720
	220	572.667	267.4244 – 442.0460	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1D^\circ - {}^1D$	2 – 2		720
	160	574.669	268.0342 – 442.0460	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^1D$	3 – 2		720
	70	579.427	269.4599 – 442.0460	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^1D$	2 – 2		720
	285	584.826	271.0554 – 442.0460	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1F^\circ - {}^1D$	3 – 2		720
	40	615.694	267.4244 – 429.8424	$3s^23p^5(^2P^\circ)3d - 3s3p^6$	$^1D^\circ - {}^3D$	2 – 2		720
	360	617.081	268.0342 – 430.0785	$3s^23p^5(^2P^\circ)3d - 3s3p^6$	$^3D^\circ - {}^3D$	3 – 3		720
	110	622.598	269.4599 – 430.0785	$3s^23p^5(^2P^\circ)3d - 3s3p^6$	$^3D^\circ - {}^3D$	2 – 3		720

SC IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	70	623.377	269.4265 – 429.8424	$3s^23p^5(^2P^\circ)3d - 3s3p^6$	$^3D^\circ - ^3D$	1 – 2		720
	160	623.507	269.4599 – 429.8424	$3s^23p^5(^2P^\circ)3d - 3s3p^6$	$^3D^\circ - ^3D$	2 – 2		720
	160	623.951	269.4265 – 429.6957	$3s^23p^5(^2P^\circ)3d - 3s3p^63d$	$^3D^\circ - ^3D$	1 – 1		720
	110	628.834	271.0554 – 430.0785	$3s^23p^5(^2P^\circ)3d - 3s3p^6$	$^1F^\circ - ^3D$	3 – 3		720
	5	681.323	337.4835 – 484.2576	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{1/2})4f$	$^1P^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		720
	70	685.654	239.7232 – 385.5700	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3P$	0 – 1		720
	5	686.377	334.4051 – 480.0979	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		720
	40	688.867	240.4030 – 385.5700	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3P$	1 – 1		720
	1	689.060	333.0908 – 478.2132	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		720
	1	691.550	337.3401 – 481.9399	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{1/2})5p$	$^3P^\circ - \frac{1}{2}[\frac{1}{2}]$	0 – 1		720
	20	692.089	337.4835 – 481.9752	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{1/2})5p$	$^1P^\circ - \frac{1}{2}[\frac{3}{2}]$	1 – 2		720
	110	692.453	240.4030 – 384.8178	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3P$	1 – 0		720
	70	693.201	240.4030 – 384.6613	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^1D$	1 – 2		720
	1	694.255	337.3401 – 481.3774	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{1/2})5p$	$^3P^\circ - \frac{1}{2}[\frac{3}{2}]$	0 – 1		720
	1	694.798	333.0908 – 477.0180	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		720
	1	694.949	337.4835 – 481.3774	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{1/2})5p$	$^1P^\circ - \frac{1}{2}[\frac{3}{2}]$	1 – 1		720
	5	695.391	239.7232 – 383.5271	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^1P$	0 – 1		720
	160	695.626	241.8140 – 385.5700	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3P$	2 – 1		720
	1	697.630	334.4051 – 477.7476	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		720
	40	698.698	240.4030 – 383.5271	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^1P$	1 – 1		720
	220	700.051	241.8140 – 384.6613	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^1D$	2 – 2		720
	40	701.194	337.4835 – 480.0979	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1P^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		720
	40	705.651	241.8140 – 383.5271	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^1P$	2 – 1		720
	40	705.846	333.0908 – 474.7644	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{1}{2}]$	2 – 1		720
	110	707.673	240.4030 – 381.7120	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3P$	1 – 2		720
	20	712.122	239.7232 – 380.1483	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3D$	0 – 1		720
	1	712.452	334.4051 – 474.7644	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ_{3/2})5p$	$^3P^\circ - \frac{3}{2}[\frac{1}{2}]$	1 – 1		720
	220	714.805	241.8140 – 381.7120	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3P$	2 – 2		720
	1	716.880	371.7352 – 511.2282	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})6s$	$^3S - \frac{3}{2}[\frac{3}{2}]$	1 – 2		720
	40	718.128	345.0054 – 484.2576	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^1P^\circ - \frac{1}{2}[\frac{5}{2}]$	1 – 2		720
	20	722.881	241.8140 – 380.1483	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3D$	2 – 1		720
	40	724.561	240.4030 – 378.4186	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3D$	1 – 2		720
	70	733.881	241.8140 – 378.0770	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3D$	2 – 3		720
	40	740.228	345.0054 – 480.0979	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1P^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		720
	5	747.596	345.0054 – 478.7677	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		720
	20	750.698	345.0054 – 478.2132	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})5p$	$^1P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		720
	20	751.027	378.0770 – 511.2282	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})6s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	3 – 2		720
	160	754.419	252.1083 – 384.6613	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - ^1D$	3 – 2		720
	1	756.616	253.4057 – 385.5700	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - ^3P$	2 – 1		720
	160	757.505	239.7232 – 371.7352	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3S$	0 – 1		720
	285	761.428	240.4030 – 371.7352	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3S$	1 – 1		720
	20	761.863	253.4057 – 384.6613	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - ^1D$	2 – 2		720
	110	768.515	253.4057 – 383.5271	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - ^1P$	2 – 1		720
	285	769.696	241.8140 – 371.7352	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3S$	2 – 1		720
	70	771.582	252.1083 – 381.7120	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - ^3P$	3 – 2		720
	5	779.393	253.4057 – 381.7120	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - ^3P$	2 – 2		720
	450	785.122	250.7082 – 378.0770	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - ^3D$	4 – 3		720
	285	789.001	253.4057 – 380.1483	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - ^3D$	2 – 1		720
	285	791.706	252.1083 – 378.4186	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - ^3D$	3 – 2		720
	160	793.851	252.1083 – 378.0770	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - ^3D$	3 – 3		720
	160	799.920	253.4057 – 378.4186	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - ^3D$	2 – 2		720
	1	802.108	253.4057 – 378.0770	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - ^3D$	2 – 3		720
	700	845.07	253.4057 – 371.7352	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - ^3S$	2 – 1		017
	5	846.411	267.4244 – 385.5700	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1D^\circ - ^3P$	2 – 1		720

SC IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	70	852.980	267.4244 – 384.6613	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1D^\circ - {}^1D$	2 – 2		720
	160	857.434	268.0342 – 384.6613	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^1D$	3 – 2		720
	70	861.007	269.4265 – 385.5700	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^3P$	1 – 1		720
	285	861.243	269.4599 – 385.5700	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^3P$	2 – 1		720
	285	861.298	267.4244 – 383.5271	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1D^\circ - {}^1P$	2 – 1		720
	110	866.619	269.4265 – 384.8178	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^3P$	1 – 0		720
	20	874.981	267.4244 – 381.7120	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1D^\circ - {}^3P$	2 – 2		720
	5	876.674	269.4599 – 383.5271	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^1P$	2 – 1		720
	220	879.675	268.0342 – 381.7120	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^3P$	3 – 2		720
	220	880.236	271.0554 – 384.6613	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1F^\circ - {}^1D$	3 – 2		720
	40	887.121	267.4244 – 380.1483	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1D^\circ - {}^3D$	2 – 1		720
	285	890.866	269.4599 – 381.7120	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^3P$	2 – 2		720
	40	900.948	267.4244 – 378.4186	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1D^\circ - {}^3D$	2 – 2		720
	70	903.165	269.4265 – 380.1483	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^3D$	1 – 1		720
	110	903.687	271.0554 – 381.7120	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1F^\circ - {}^3P$	3 – 2		720
	20	905.922	268.0342 – 378.4186	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^3D$	3 – 2		720
	110	908.731	268.0342 – 378.0770	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^3D$	3 – 3		720
	5	917.495	269.4265 – 378.4186	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^3D$	1 – 2		720
	40	917.777	269.4599 – 378.4186	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^3D$	2 – 2		720
	5	920.665	269.4599 – 378.0770	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3D^\circ - {}^3D$	2 – 3		720
	70	931.418	271.0554 – 378.4186	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1F^\circ - {}^3D$	3 – 2		720
	20	934.391	271.0554 – 378.0770	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1F^\circ - {}^3D$	3 – 3		720
	200	1030.50	345.0054 – 442.0460	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1P^\circ - {}^1D$	1 – 2		017
	160	1139.449	371.7352 – 459.4969	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3S - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		720
	5	1195.869	380.1483 – 463.7689	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^3D - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		720
	20	1208.521	381.7120 – 464.4572	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		720
	285	1219.399	378.4186 – 460.4269	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		720
	360	1228.204	378.0770 – 459.4969	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	3 – 2		720
	160	1233.376	378.4186 – 459.4969	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		720
	110	1235.627	383.5271 – 464.4572	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^1P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		720
	160	1245.661	380.1483 – 460.4269	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		720
	40	1246.224	383.5271 – 463.7689	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^1P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		720
	220	1253.195	384.6613 – 464.4572	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^1D - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		720
	5	1255.663	384.8178 – 464.4572	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		720
	1	1260.248	380.1483 – 459.4969	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		720
	110	1267.628	385.5700 – 464.4572	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		720
	70	1270.408	381.7120 – 460.4269	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		720
	70	1278.784	385.5700 – 463.7689	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		720
	160	1285.595	381.7120 – 459.4969	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		720
	20	1300.393	383.5271 – 460.4269	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^1P - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		720
	220	1317.742	371.7352 – 447.6224	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3S - {}^3D^\circ$	1 – 1		720
	1	1319.853	384.6613 – 460.4269	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^1D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		720
	5	1322.588	384.8178 – 460.4269	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		720
	20	1336.259	384.6613 – 459.4969	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^1D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		720
	5	1415.477	378.0770 – 448.7251	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - {}^3D^\circ$	3 – 2		720
	110	1417.824	378.0770 – 448.6078	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - {}^1F^\circ$	3 – 3		720
	160	1419.537	383.5271 – 453.9727	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^1P - {}^1P^\circ$	1 – 1		720
	20	1422.343	378.4186 – 448.7251	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - {}^3D^\circ$	2 – 2		720
	360	1424.663	371.7352 – 441.9273	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3S - {}^3P^\circ$	1 – 2		720
	5	1435.890	378.4186 – 448.0620	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - {}^1D^\circ$	2 – 2		720
	5	1442.769	384.6613 – 453.9727	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^1D - {}^1P^\circ$	2 – 1		720
	360	1444.096	371.7352 – 440.9830	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3S - {}^3P^\circ$	1 – 1		720
	70	1445.003	378.4186 – 447.6224	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - {}^3D^\circ$	2 – 1		720
	220	1453.861	371.7352 – 440.5179	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3S - {}^3P^\circ$	1 – 0		720

SC IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	5	1458.212	380.1483 – 448.7251	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - ^3D^\circ$	1 – 2		720
	70	1461.931	385.5700 – 453.9727	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3P - ^1P^\circ$	1 – 1		720
	70	1472.456	380.1483 – 448.0620	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - ^1D^\circ$	1 – 2		720
	220	1482.042	380.1483 – 447.6224	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - ^3D^\circ$	1 – 1		720
	285	1489.637	378.0770 – 445.2075	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - ^3D^\circ$	3 – 3		720
	220	1492.247	381.7120 – 448.7251	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3P - ^3D^\circ$	2 – 2		720
	1	1493.722	397.5107 – 464.4572	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		720
	20	1494.854	381.7120 – 448.6078	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3P - ^1F^\circ$	2 – 3		720
	5	1497.260	378.4186 – 445.2075	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - ^3D^\circ$	2 – 3		720
	20	1507.156	381.7120 – 448.0620	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3P - ^1D^\circ$	2 – 2		720
	285	1514.961	378.4186 – 444.4274	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - ^3F^\circ$	2 – 2		720
	1	1535.001	478.4959 – 543.6424	$3s^23p^5(^2P^\circ_{3/2})4f - 3s^23p^5(^2P^\circ_{3/2})6g$	$\frac{3}{2}[\frac{3}{2}] - \frac{3}{2}[\frac{5}{2}]^\circ$	1 – 2		720
	285	1535.762	378.0770 – 443.1913	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - ^3F^\circ$	3 – 3		720
	5	1536.126	478.6095 – 543.7083	$3s^23p^5(^2P^\circ_{3/2})4f - 3s^23p^5(^2P^\circ_{3/2})6g$	$\frac{3}{2}[\frac{9}{2}] - \frac{3}{2}[\frac{11}{2}]^\circ$	5 – 6		720
	360	1543.861	378.4186 – 443.1913	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - ^3F^\circ$	2 – 3		720
	360	1549.552	383.5271 – 448.0620	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^1P - ^1D^\circ$	1 – 2		720
	1000	1550.797	378.0770 – 442.5586	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - ^3F^\circ$	3 – 4		720
	5	1552.884	483.7080 – 548.1043	$3s^23p^5(^2P^\circ_{1/2})4f - 3s^23p^5(^2P^\circ_{1/2})6g$	$\frac{1}{2}[\frac{7}{2}] - \frac{1}{2}[\frac{9}{2}]^\circ$	4 – 5		720
	1	1553.470	479.4529 – 543.8249	$3s^23p^5(^2P^\circ_{3/2})4f - 3s^23p^5(^2P^\circ_{3/2})6g$	$\frac{3}{2}[\frac{5}{2}] - \frac{3}{2}[\frac{7}{2}]^\circ$	3 – 4		720
	285	1555.724	380.1483 – 444.4274	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - ^3F^\circ$	1 – 2		720
	1	1559.014	483.9628 – 548.1059	$3s^23p^5(^2P^\circ_{1/2})4f - 3s^23p^5(^2P^\circ_{1/2})6g$	$\frac{1}{2}[\frac{5}{2}] - \frac{1}{2}[\frac{7}{2}]^\circ$	3 – 4		720
	5	1560.916	384.6613 – 448.7251	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^1D - ^3D^\circ$	2 – 2		720
	1	1562.911	479.9089 – 543.8921	$3s^23p^5(^2P^\circ_{3/2})4f - 3s^23p^5(^2P^\circ_{3/2})6g$	$\frac{3}{2}[\frac{7}{2}] - \frac{3}{2}[\frac{9}{2}]^\circ$	3 – 4		720
	360	1563.811	384.6613 – 448.6078	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^1D - ^1F^\circ$	2 – 3		720
	1	1564.942	479.9932 – 543.8933	$3s^23p^5(^2P^\circ_{3/2})4f - 3s^23p^5(^2P^\circ_{3/2})6g$	$\frac{3}{2}[\frac{7}{2}] - \frac{3}{2}[\frac{9}{2}]^\circ$	4 – 5		720
	20	1566.155	378.0770 – 441.9273	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - ^3P^\circ$	3 – 2		720
	5	1574.587	378.4186 – 441.9273	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - ^3P^\circ$	2 – 2		720
	450	1574.923	381.7120 – 445.2075	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3P - ^3D^\circ$	2 – 3		720
	220	1577.275	384.6613 – 448.0620	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^1D - ^1D^\circ$	2 – 2		720
	360	1583.407	385.5700 – 448.7251	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3P - ^3D^\circ$	1 – 2		720
	285	1584.645	334.4051 – 397.5107	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^1S$	1 – 0		720
	285	1592.233	384.8178 – 447.6224	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3P - ^3D^\circ$	0 – 1		720
	20	1598.347	378.4186 – 440.9830	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - ^3P^\circ$	2 – 1		720
	5	1611.550	385.5700 – 447.6224	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3P - ^3D^\circ$	1 – 1		720
	5	1656.457	380.1483 – 440.5179	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3D - ^3P^\circ$	1 – 0		720
	285	1660.708	381.7120 – 441.9273	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3P - ^3P^\circ$	2 – 2		720
	450	1665.918	337.4835 – 397.5107	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ)4p$	$^1P^\circ - ^1S$	1 – 0		720
	160	1687.163	381.7120 – 440.9830	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3P - ^3P^\circ$	2 – 1		720
	285	1746.233	384.6613 – 441.9273	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^1D - ^3P^\circ$	2 – 2		720
	220	1771.103	397.5107 – 453.9727	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^1S - ^1P^\circ$	0 – 1		720
	1	1774.399	385.5700 – 441.9273	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3P - ^3P^\circ$	1 – 2		720
	70	1780.469	384.8178 – 440.9830	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3P - ^3P^\circ$	0 – 1		720
	40	1804.636	385.5700 – 440.9830	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3P - ^3P^\circ$	1 – 1		720
	40	1819.910	385.5700 – 440.5179	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^3P - ^3P^\circ$	1 – 0		720
	160	1905.521	333.0908 – 385.5700	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3P$	2 – 1		720
	220	1939.088	333.0908 – 384.6613	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^1D$	2 – 2		720
	5	1982.704	333.0908 – 383.5271	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^1P$	2 – 1		720
	160	1983.623	334.4051 – 384.8178	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3P$	1 – 0		720
	110	1989.809	334.4051 – 384.6613	$3s^23p^5(^2P^\circ)4s - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^1D$	1 – 2		720
	1	1995.567	397.5107 – 447.6224	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ)4d$	$^1S - ^3D^\circ$	0 – 1		720

SCANDIUM V (Sc^{4+}), Z = 21
Ground State $1s^22s^22p^63s^23p^5(^2P^\circ_{3/2})$ (17 electrons)
Ionization Potential [741 000] cm^{-1}; [91.9] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	150	179.42	0.0 – 557.35	$3s^23p^5 - 3s^23p^4(^1D)5s$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		271
	350	180.14	0.0 – 555.124	$3s^23p^5 - 3s^23p^4(^1D)5s$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		271
	200	180.82	4.3256 – 557.35	$3s^23p^5 - 3s^23p^4(^1D)5s$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		271
	200	180.96	0.0 – 552.608	$3s^23p^5 - 3s^23p^4(^3P)5s$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		271
	50	181.55	0.0 – 550.812	$3s^23p^5 - 3s^23p^4(^3P)5s$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		271
	200	182.392	4.3256 – 552.608	$3s^23p^5 - 3s^23p^4(^3P)5s$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$	Q	017,375
	300	228.565	0.0 – 437.512	$3s^23p^5 - 3s^23p^4(^1S)4s$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		017
	100	230.848	4.3256 – 437.512	$3s^23p^5 - 3s^23p^4(^1S)4s$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		017
	40	243.823	0.0 – 410.133	$3s^23p^5 - 3s^23p^4(^1D)4s$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		017
	500	243.872	0.0 – 410.05	$3s^23p^5 - 3s^23p^4(^1D)4s$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		017
	400	246.424	4.3256 – 410.133	$3s^23p^5 - 3s^23p^4(^1D)4s$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		017
	400	250.978	0.0 – 398.447	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		017
	500	252.846	0.0 – 395.503	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		017
	500	253.733	4.3256 – 398.447	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		017
	50	255.379	0.0 – 391.575	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		359
	300	255.636	4.3256 – 395.503	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		017
	200	257.157	0.0 – 388.868	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		017
	150	258.238	4.3256 – 391.575	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - ^4P$	$\frac{1}{2}-\frac{1}{2}$		359,059
	40	258.808	0.0 – 386.387	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		017
	50	260.054	4.3256 – 388.868	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$		359
	400	280.997	0.0 – 355.872	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		017,260
	900	283.911	0.0 – 352.224	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		017,260
	800	284.450	4.3256 – 355.872	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		017,260
	600	288.286	0.0 – 346.876	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		017,260
	900	289.589	0.0 – 345.316	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		017,260
	1000	291.932	4.3256 – 346.876	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		017,260
	800	293.248	4.3256 – 345.316	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		017,260
	400	296.166	0.0 – 337.644	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		017,260
	700	300.004	4.3256 – 337.644	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		017,260
	400	375.048	0.0 – 266.633	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		017,711
	100	378.677	0.0 – 264.077	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		017,711
	200	388.682	0.0 – 257.28	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		017,711
	400	395.317	4.3256 – 257.28	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		017,711
	200	399.501	4.3256 – 254.64	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		017,711
	1000	573.356	0.0 – 174.412	$3s^23p^5 - 3s3p^6$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		017
	600	587.935	4.3256 – 174.412	$3s^23p^5 - 3s3p^6$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		017

SCANDIUM VI (Sc^{5+}), Z = 21
Ground State $1s^22s^22p^63s^23p^4(^3P_2)$ (16 electrons)
Ionization Potential 892 700 cm^{-1}; 110.7 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	147.740	0. – 676.705	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$g^3P - ^1D^\circ$	2 – 2	Q	017,375
	100	147.90	21.3930 – 697.53	$3s^23p^4 - 3s^23p^3(^2P^\circ)5s$	$^1D - ^1P^\circ$	2 – 1		271
	150	148.18	0. – 674.855	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$g^3P - ^3D^\circ$	2 – 3		271
	100	148.536	3.3461 – 676.705	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$g^3P - ^1D^\circ$	1 – 2	Q	017,375
	250	152.60	21.3930 – 676.705	$3s^23p^4 - 3s^23p^3(^2D^\circ)5s$	$^1D - ^1D^\circ$	2 – 2		271
	50	154.25	49.2246 – 697.53	$3s^23p^4 - 3s^23p^3(^2P^\circ)5s$	$^1S - ^1P^\circ$	0 – 1		271

SC VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	250	154.29	0. – 648.13	$3s^23p^4 - 3s^23p^3(^4S^\circ)5s$	$g^3P - ^3S^\circ$	2 – 1		271
	150	155.10	3.3461 – 648.13	$3s^23p^4 - 3s^23p^3(^4S^\circ)5s$	$g^3P - ^3S^\circ$	1 – 1		271
	50	155.36	4.4571 – 648.13	$3s^23p^4 - 3s^23p^3(^4S^\circ)5s$	$g^3P - ^3S^\circ$	0 – 1		271
	300	160.637	0. – 622.539	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - ^1F^\circ$	2 – 3	Q	017,375
	350	166.35	21.3930 – 622.539	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$^1D - ^1F^\circ$	2 – 3		271
	200	166.957	49.2246 – 648.13	$3s^23p^4 - 3s^23p^3(^4S^\circ)5s$	$^1S - ^3S^\circ$	0 – 1	Q	17,375
	200	167.17	21.3930 – 619.59	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$^1D - ^1D^\circ$	2 – 2		271
	350	169.26	0. – 590.807	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - ^3D^\circ$	2 – 3		271
	250	170.25	3.3461 – 590.724	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - ^3D^\circ$	1 – 2		271
	150	170.54	4.4571 – 590.826	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - ^3D^\circ$	0 – 1		271
	100	200.810	0. – 497.984	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - ^1P^\circ$	2 – 1		358
	50	202.638	4.4571 – 497.984	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - ^1P^\circ$	0 – 1		358
	200	202.921	0. – 492.802	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - ^3P^\circ$	2 – 2		017,358
	50	203.216	0. – 492.087	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - ^3P^\circ$	2 – 1		017,358
	100	204.310	3.3461 – 492.802	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - ^3P^\circ$	1 – 2		017,358
	50	204.610	3.3461 – 492.087	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - ^3P^\circ$	1 – 1		017,358
	200	204.719	3.3461 – 491.826	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - ^3P^\circ$	1 – 0		017,358
	100	205.072	4.4571 – 492.087	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - ^3P^\circ$	0 – 1		017,358
	100	209.050	0. – 478.354	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - ^1D^\circ$	2 – 2		358
	200	209.821	21.3930 – 497.984	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$^1D - ^1P^\circ$	2 – 1		017,358
	40	210.523	3.3461 – 478.354	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - ^1D^\circ$	1 – 2		017,358
	400	211.416	0. – 473.001	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	2 – 3		017,358
	200	211.612	0. – 472.563	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	2 – 2		017,358
	50	211.696	0. – 472.4	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	2 – 1		358
	50	212.121	21.3930 – 492.802	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$^1D - ^3P^\circ$	2 – 2		017,358
	200	213.118	3.3461 – 472.563	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	1 – 2		017,358
	100	213.192	3.3461 – 472.4	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	1 – 1		017,358
	100	213.702	4.4571 – 472.4	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	0 – 1		017,358
	400	218.837	21.3930 – 478.354	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$^1D - ^1D^\circ$	2 – 2		017,358
	330	221.204	0. – 452.07	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - ^3S^\circ$	2 – 1		017,358
	150	222.844	3.3461 – 452.07	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - ^3S^\circ$	1 – 1		358
	300	222.855	3.3461 – 452.07	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - ^3S^\circ$	1 – 1		358
	100	223.408	4.4571 – 452.07	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - ^3S^\circ$	0 – 1		017,358
		247.03	454.035+S – 858.844+S	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3F^\circ - ^3G$	2 – 3		854
		247.31	454.494+S – 858.844+S	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3F^\circ - ^3G$	3 – 4		854
		247.62	455.+S – 858.844+S	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3F^\circ - ^3G$	4 – 5		854
		249.60	385.+D – 785.641+D	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4f$	$^5D^\circ - ^5F$	4 – 5		854
	300	277.943						017
	200	281.327	0. – 355.478	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	2 – 1		017,711
	700	282.209	21.3930 – 375.743	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - ^1F^\circ$	2 – 3		017,711
	600	282.497	0. – 353.99	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	2 – 2		017,711
	300	282.587	49.2246 – 403.11	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1S - ^1P^\circ$	0 – 1		017,711
	40	283.99	3.3461 – 355.478	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	1 – 1		017,711
	900	284.263	0. – 351.791	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		017,711
	600	284.884	4.4571 – 355.478	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	0 – 1		017,711
	800	285.191	3.3461 – 353.99	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		017,711
	600	292.344	21.3930 – 363.464	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - ^1D^\circ$	2 – 2		017,711
	700	294.292	0. – 339.8	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	2 – 1		017,711
	900	295.478	0. – 338.432	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	2 – 2		017,711
	800	298.194	4.4571 – 339.8	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	0 – 1		017,711
	800	298.428	0. – 335.09	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^3S^\circ$	2 – 1		017,711
	300	300.677	21.3930 – 353.99	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - ^3D^\circ$	2 – 2		017,711
	400	301.426	3.3461 – 335.09	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^3S^\circ$	1 – 1		017,711
	100	302.436	4.4571 – 335.09	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^3S^\circ$	0 – 1		017,711

SC VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	400	311.947	21.3930 – 341.964	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - ^1P^\circ$	2 – 1		017,711
	400	314.049	21.3930 – 339.8	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - ^3P^\circ$	2 – 1		017,711
	200	331.309	21.3930 – 323.23	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - ^1F^\circ$	2 – 3		017,711
	200	341.62	49.2246 – 341.964	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1S - ^1P^\circ$	0 – 1		017,711
	20	445.493	0. – 224.4704	$3s^23p^4 - 3s3p^5$	$g^3P - ^1P^\circ$	2 – 1		726
	750	492.423	21.3930 – 224.4704	$3s^23p^4 - 3s3p^5$	$^1D - ^1P^\circ$	2 – 1		726
	650	561.160	0. – 178.2021	$3s^23p^4 - 3s3p^5$	$g^3P - ^3P^\circ$	2 – 1		726
	650	566.770	3.3461 – 179.7845	$3s^23p^4 - 3s3p^5$	$g^3P - ^3P^\circ$	1 – 0		726
	1000	570.300	0. – 175.3466	$3s^23p^4 - 3s3p^5$	$g^3P - ^3P^\circ$	2 – 2		726
	70	570.627	49.2246 – 224.4704	$3s^23p^4 - 3s3p^5$	$^1S - ^1P^\circ$	0 – 1		726
	550	571.900	3.3461 – 178.2021	$3s^23p^4 - 3s3p^5$	$g^3P - ^3P^\circ$	1 – 1		726
	650	575.556	4.4571 – 178.2021	$3s^23p^4 - 3s3p^5$	$g^3P - ^3P^\circ$	0 – 1		726
	650	581.393	3.3461 – 175.3466	$3s^23p^4 - 3s3p^5$	$g^3P - ^3P^\circ$	1 – 2		726

SCANDIUM VII (Sc^{6+}), Z = 21
Ground State $1s^22s^22p^63s^23p^3(^4S^\circ_{3/2})$ (15 electrons)
Ionization Potential [1 113 000] cm^{-1}; [138.0] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	180.260	0. – 554.761	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$	Q	017,375
	100	182.743	50.3009 – 597.514	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		213
	400	182.993	0. – 546.46	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		213
	200	183.96	0. – 543.59	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		017,213
	200	184.607	0. – 541.682	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		213
	300	185.526	29.5625 – 568.571	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		213
	40	185.575	29.5625 – 568.429	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		358,213
	330	185.808	30.2399 – 568.429	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		017,213
	400	190.654	30.2399 – 554.761	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		358,213
	300	191.602	29.5625 – 551.483	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		358,213
	150	192.607	49.3871 – 568.571	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		358,213
	300	193.004	50.3009 – 568.429	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		017,213
	40	194.813	30.2399 – 543.59	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - ^4P$	$\frac{5}{2}-\frac{3}{2}$	Q	017,375
	50	197.875	49.3871 – 554.761	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		017,213
	200	198.232	50.3009 – 554.761	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		017,213
	100	199.166	49.3871 – 551.483	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		017,213
	50	199.522	50.3009 – 551.483	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		017,213
		210.56	450.+D – 924.924+D	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4f$	$^4F - ^4G^\circ$	$\frac{9}{2}-\frac{11}{2}$		854
		215.51	540.+S – 1004.015+S	$3s^23p^2(^1D)3d - 3s^23p^2(^1D)4f$	$^2G - ^2H^\circ$	$\frac{7}{2}-\frac{9}{2}$		854
		215.87	540.+S – 1003.241+S	$3s^23p^2(^1D)3d - 3s^23p^2(^1D)4f$	$^2G - ^2H^\circ$	$\frac{9}{2}-\frac{11}{2}$		854
	200	266.800	0. – 374.783	$3s^23p^3 - 3s^23p^2(^1D)3d$	$g^4S^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$	Q	017,375
	1000	286.927	30.2399 – 378.758	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		017,213
	40	287.48	30.2399 – 378.076	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{5}{2}$	Q	017,375
	800	290.232	30.2399 – 374.783	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		017,213
	600	290.700	49.3871 – 393.382	$3s^23p^3 - 3s^23p^2(^1S)3d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		017,213
	600	292.344	50.3009 – 392.36	$3s^23p^3 - 3s^23p^2(^1S)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		017,213
	400	296.539	0. – 337.224	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		017,213
	700	297.269	0. – 336.396	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		017,213
	600	298.557	0. – 334.944	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		017,213
	300	301.301	50.3009 – 382.191	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		017,213

SC VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	500	301.820	29.5625 – 360.879	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		017,213
	100	302.436	30.2399 – 360.879	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{3}{2}$		017,213
	200	307.320	49.3871 – 374.783	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		017,213
	600	308.180	50.3009 – 374.783	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		017,213
	500	309.161	49.3871 – 372.823	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		017,213
	100	310.043	50.3009 – 372.823	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		017,213
	100	320.406						017
	200	325.121						017
	300	329.640	29.5625 – 332.917	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		017,213
	200	333.386	29.5625 – 329.513	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		017,213
	500	334.138	30.2399 – 329.513	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		017,213
	200	353.845	50.3009 – 332.917	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$	Q	017,375
	160	447.560	29.5625 – 252.9953	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		726
	70	452.734	29.5625 – 250.4436	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		726
	220	454.125	30.2399 – 250.4436	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		726
	110	470.780	49.3871 – 261.8006	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		726
	285	472.814	50.3009 – 261.8006	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		726
	110	491.141	49.3871 – 252.9953	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		726
		493.350	50.3009 – 252.9953	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		213
	20	497.369	49.3871 – 250.4436	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		726
	110	499.645	50.3009 – 250.4436	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		726
	20	532.585	29.5625 – 217.3265	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		726
	650	533.442	29.5625 – 217.0239	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		726
	650	534.513	30.2399 – 217.3265	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		726
	20	535.377	30.2399 – 217.0239	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{3}{2}$		726
	450	558.044	0. – 179.1973	$3s^23p^3 - 3s3p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		726
	650	562.504	0. – 177.7765	$3s^23p^3 - 3s3p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		726
	200	563.401						017
	100	568.329						017
	650	571.249	0. – 175.0550	$3s^23p^3 - 3s3p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		726
	70	596.530	49.3871 – 217.0239	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		726
	160	598.707	50.3009 – 217.3265	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		726
		1988.0	0. – 50.3009	$3s^23p^3 - 3s^23p^3$	$g^4S^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,726

SCANDIUM VIII (Sc^{7+}), Z = 21
Ground State $1s^22s^22p^63s^23p^2(^3P_0)$ (14 electrons)
Ionization Potential 1 275 000 cm^{-1}; 158.1 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	300	161.353						017
	200	162.236	25.0269 – 641.508+D	$3s^23p^2 - 3s^23p3d$	$^1D - ^3F^\circ$	2 – 3		017
	300	164.772	2.2719 – 609.173	$3s^23p^2 - 3s^23p4s$	$g^3P - ^3P^\circ$	1 – 2		017,213
	300	165.395	0. – 604.608	$3s^23p^2 - 3s^23p4s$	$g^3P - ^3P^\circ$	0 – 1		017,213
	400	165.654	5.5077 – 609.173	$3s^23p^2 - 3s^23p4s$	$g^3P - ^3P^\circ$	2 – 2		017,213
	200	166.022	2.2719 – 604.608	$3s^23p^2 - 3s^23p4s$	$g^3P - ^3P^\circ$	1 – 1		017,213
	300	166.317	2.2719 – 603.533	$3s^23p^2 - 3s^23p4s$	$g^3P - ^3P^\circ$	1 – 0		017,213
	300	166.916	5.5077 – 604.608	$3s^23p^2 - 3s^23p4s$	$g^3P - ^3P^\circ$	2 – 1		017,213
	400	169.759	25.0269 – 614.085	$3s^23p^2 - 3s^23p4s$	$^1D - ^1P^\circ$	2 – 1		017,213
	200	178.821	54.8644 – 614.085	$3s^23p^2 - 3s^23p4s$	$^1S - ^1P^\circ$	0 – 1		017,213
	130	183.626	640.+D – 1184.632+D	$3s^23p3d - 3s^23p4f$	$^3F^\circ - ^3G$	4 – 5		017
		184.12	641.508+D – 1184.632+D	$3s^23p3d - 3s^23p4f$	$^3F^\circ - ^3G$	3 – 4		854

SC VIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	287.55	25.0269 – 372.789	$3s^23p^2 - 3s^23p3d$	$^1D - {}^1P°$	2 – 1		017,213
	900	295.478	25.0269 – 363.453	$3s^23p^2 - 3s^23p3d$	$^1D - {}^1F°$	2 – 3		017,213
		303.157	0. – 329.862	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3D°$	0 – 1		213
	100	304.456	2.2719 – 330.715	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3D°$	1 – 2		017,213
	100	305.260	2.2719 – 329.862	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3D°$	1 – 1		017,213
	600	307.083	5.5077 – 331.15	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3D°$	2 – 3		017,213
	40	307.447	5.5077 – 330.715	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3D°$	2 – 2	Q	017,213
	500	310.042	0. – 322.54	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3P°$	0 – 1		360,213
	200	311.138	2.2719 – 323.673	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3P°$	1 – 0		360,213
	100	311.332						017
	200	312.239	2.2719 – 322.54	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3P°$	1 – 1		360,213
	200	314.53	54.8644 – 372.789	$3s^23p^2 - 3s^23p3d$	$^1S - {}^1P°$	0 – 1		017,213
	350	315.163	2.2719 – 319.568	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3P°$	1 – 2		360,213
	300	315.420	5.5077 – 322.54	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3P°$	2 – 1		360,213
	400	317.437						017
	500	318.408	5.5077 – 319.568	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3P°$	2 – 2		360,213
	200	339.52	25.0269 – 319.568	$3s^23p^2 - 3s^23p3d$	$^1D - {}^3P°$	2 – 2		017
	50	358.107	2.2719 – 281.5221	$3s^23p^2 - 3s3p^3$	$g^3P - {}^1P°$	1 – 1		547,213
	20	362.300	5.5077 – 281.5221	$3s^23p^2 - 3s3p^3$	$g^3P - {}^1P°$	2 – 1		726
	40	367.085	0. – 272.4174	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3S°$	0 – 1		726
	100	368.088						017
	110	370.169	2.2719 – 272.4174	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3S°$	1 – 1		726
	160	374.660	5.5077 – 272.4174	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3S°$	2 – 1		726
	300	375.705						017
	450	389.883	25.0269 – 281.5221	$3s^23p^2 - 3s3p^3$	$^1D - {}^1P°$	2 – 1		726
	70	404.201	25.0269 – 272.4174	$3s^23p^2 - 3s3p^3$	$^1D - {}^3S°$	2 – 1		726
	110	441.194	54.8644 – 281.5221	$3s^23p^2 - 3s3p^3$	$^1S - {}^1P°$	0 – 1		726
	20	481.321	0. – 207.7610	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P°$	0 – 1		726
	40	486.525	2.2719 – 207.8144	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P°$	1 – 2		726
	40	486.645	2.2719 – 207.7610	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P°$	1 – 1		726
	40	486.810	2.2719 – 207.6909	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P°$	1 – 0		726
	450	491.180	25.0269 – 228.6183	$3s^23p^2 - 3s3p^3$	$^1D - {}^1D°$	2 – 2		726
	110	494.295	5.5077 – 207.8144	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P°$	2 – 2		726
	20	494.430	5.5077 – 207.7610	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P°$	2 – 1		726
	220	555.672	0. – 179.9623	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D°$	0 – 1		726
	450	562.547	2.2719 – 180.0327	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D°$	1 – 2		726
	70	562.777	2.2719 – 179.9623	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D°$	1 – 1		726
	650	571.442	5.5077 – 180.5036	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D°$	2 – 3		726
	20	572.987	5.5077 – 180.0327	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D°$	2 – 2		726
	1	573.206	5.5077 – 179.9623	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D°$	2 – 1		726
	5	643.183	25.0269 – 180.5036	$3s^23p^2 - 3s3p^3$	$^1D - {}^3D°$	2 – 3		726
		1901.4	2.2719 – 54.8644	$3s^23p^2 - 3s^23p^2$	$g^3P - {}^1S$	1 – 0	F,P	375,726

SCANDIUM IX (Sc^{8+}), Z = 21
Ground State $1s^22s^22p^63s^23p(^2P^\circ_{1/2})$ (13 electrons)
Ionization Potential 1 452 000 cm^{-1}; 180.02 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	93.393	0.0 – 1070.744	$3s^23p - 3s^25d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		017
	100	93.889	5.7611 – 1070.848	$3s^23p - 3s^25d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		017
	50	102.047	0.0 – 979.919	$3s^23p - 3s^25s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		017
	100	102.653	5.7611 – 979.919	$3s^23p - 3s^25s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		017
	100	110.718	191.9871 – 1095.25	$3s3p^2 - 3s^25f$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		017
	400	119.444	0.0 – 837.212	$3s^23p - 3s^24d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		017
	500	120.236	5.7611 – 837.459	$3s^23p - 3s^24d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		017
	50	127.985	313.859 – 1095.201	$3s^23d - 3s^25f$	${}^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		017
	50	128.035	314.214 – 1095.25	$3s^23d - 3s^25f$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		017
	230	143.324	191.6093 – 889.329	$3s3p^2 - 3s^24f$	${}^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		017
	200	143.393	191.9871 – 889.396	$3s3p^2 - 3s^24f$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		017
	300	146.628	145.62 – 827.62	$3s3p^2 - 3s3p(^3P^\circ)4s$	${}^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		017
	400	146.954	143.5 – 823.986	$3s3p^2 - 3s3p(^3P^\circ)4s$	${}^4P - {}^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		017
	300	147.310	148.78 – 827.62	$3s3p^2 - 3s3p(^3P^\circ)4s$	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		017
	200	147.834	145.62 – 822.054	$3s3p^2 - 3s3p(^3P^\circ)4s$	${}^4P - {}^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		017
	200	148.103	148.78 – 823.986	$3s3p^2 - 3s3p(^3P^\circ)4s$	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		017
	500	150.092	0.0 – 666.259	$3s^23p - 3s^24s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		213,017
	400	151.401	5.7611 – 666.259	$3s^23p - 3s^24s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		017
	300	173.771	313.859 – 889.329	$3s^23d - 3s^24f$	${}^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		017
	400	173.858	314.214 – 889.396	$3s^23d - 3s^24f$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		017
	400	318.615	0.0 – 313.859	$3s^23p - 3s^23d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		360
	600	324.199	5.7611 – 314.214	$3s^23p - 3s^23d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		360
	50	324.570	5.7611 – 313.859	$3s^23p - 3s^23d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		360
	160	385.869	0.0 – 259.1537	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		726
	40	387.906	837.459 – 1095.25	$3s^24d - 3s^25f$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		017
	285	390.888	0.0 – 255.8294	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		726
	285	394.647	5.7611 – 259.1537	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		726
	160	399.888	5.7611 – 255.8294	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		726
	70	416.041	0.0 – 240.3614	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		726
		417.46	143.5 – 383.044	$3s3p^2 - 3p^3$	${}^4P - {}^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		251
		421.18	145.62 – 383.044	$3s3p^2 - 3p^3$	${}^4P - {}^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		251
	70	426.256	5.7611 – 240.3614	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		726
		426.86	148.78 – 383.044	$3s3p^2 - 3p^3$	${}^4P - {}^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		251
	285	521.894	0.0 – 191.6093	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		726
	450	536.982	5.7611 – 191.9871	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		726
	300	537.612						017
	5	538.075	5.7611 – 191.6093	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		726

SCANDIUM X (Sc^{9+}), Z = 21
Ground State $1s^22s^22p^63s^2(^1S_0)$ (12 electrons)
Ionization Potential 1 815 600 cm^{-1}; 225.1 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	76.343	0.0 – 1309.878	$3s^2 - 3s5p$	$g^1S - {}^1P^\circ$	0 – 1		017
	40	83.760	158.124 – 1352.01	$3s3p - 3s5d$	${}^3P^\circ - {}^3D$	0 – 1		220
	100	83.901	160.130 – 1352.020	$3s3p - 3s5d$	${}^3P^\circ - {}^3D$	1 – 2		220
	200	84.116	164.437 – 1353.28	$3s3p - 3s5d$	${}^3P^\circ - {}^3D$	2 – 3	P	220
	40	89.736	236.49 – 1350.87	$3s3p - 3s5d$	${}^1P^\circ - {}^1D$	1 – 2		220
	40	95.022	455.899 – 1508.155	$3s3d - 3s6f$	${}^3D - {}^3F^\circ$	1 – 2		017

SC X — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	40	95.052	456.086 - 1508.155	3s3d - 3s6f	^{3}D - ^{3}F°	2 - 3		017
	40	95.09	456.400 - 1508.155	3s3d - 3s6f	^{3}D - ^{3}F°	3 - 4		017
	40	98.010	158.124 - 1178.392	3s3p - 3p4p	^{3}P° - ^{3}P	0 - 1		220
	100	98.192	164.437 - 1182.850	3s3p - 3p4p	^{3}P° - ^{3}S	2 - 1		220
	40	98.210	160.130 - 1178.392	3s3p - 3p4p	^{3}P° - ^{3}P	1 - 1		220
	300	98.323	164.437 - 1181.493	3s3p - 3p4p	^{3}P° - ^{3}P	2 - 2		220
	40	98.363	160.130 - 1176.772	3s3p - 3p4p	^{3}P° - ^{3}P	1 - 0		220
	300	98.889	164.437 - 1175.672	3s3p - 3p4p	^{3}P° - ^{3}D	2 - 3		220
	100	98.911	160.130 - 1171.140	3s3p - 3p4p	^{3}P° - ^{3}D	1 - 2		220
	600	101.978	0.0 - 980.604	3s^2 - 3s4p	g^{1}S - ^{1}P°	0 - 1		017
	100	106.655	372.398 - 1309.878	3p^2 - 3s5p	^{1}D - ^{1}P°	2 - 1	Q	017
	100	109.072	158.124 - 1074.961	3s3p - 3s4d	^{3}P° - ^{3}D	0 - 1		017
	40	109.202	455.899 - 1371.585	3s3d - 3s5f	^{3}D - ^{3}F°	1 - 2		017
	100	109.227	456.086 - 1371.585	3s3d - 3s5f	^{3}D - ^{3}F°	2 - 3		017
	300	109.285	160.130 - 1075.142	3s3p - 3s4d	^{3}P° - ^{3}D	1 - 2		017
	10	109.307	160.130 - 1074.961	3s3p - 3s4d	^{3}P° - ^{3}D	1 - 1		017
	400	109.765	164.437 - 1075.474	3s3p - 3s4d	^{3}P° - ^{3}D	2 - 3		017
	200	109.805	164.437 - 1075.142	3s3p - 3s4d	^{3}P° - ^{3}D	2 - 2		017
	300	109.897	372.398 - 1282.22	3p^2 - 3p4d	^{1}D - ^{1}F°	2 - 3		017,970
	100	110.306	377.780 - 1284.30	3p^2 - 3p4d	^{3}P - ^{3}P°	1 - 1		017,970
	200	110.920	382.715 - 1284.30	3p^2 - 3p4d	^{3}P - ^{3}P°	2 - 1		017,970
	300	112.210	375.179 - 1266.35	3p^2 - 3p4d	^{3}P - ^{3}D°	0 - 1		017,970
	300	112.544	377.780 - 1266.35	3p^2 - 3p4d	^{3}P - ^{3}D°	1 - 1		017,970
	300	118.297	236.49 - 1081.82	3s3p - 3s4d	^{1}P° - ^{1}D	1 - 2		220
	300	118.616	440.48 - 1283.54	3p^2 - 3p4d	^{1}S - ^{1}P°	0 - 1		017,970
	200	130.304	516.218 - 1283.54	3s3d - 3p4d	^{1}D - ^{1}P°	2 - 1		017
	100	130.558	516.218 - 1282.22	3s3d - 3p4d	^{1}D - ^{1}F°	2 - 3		017,970
	400	132.318	372.398 - 1128.153	3p^2 - 3s4f	^{1}D - ^{1}F°	2 - 3		220
	300	134.767	158.124 - 900.157	3s3p - 3s4s	^{3}P° - ^{3}S	0 - 1		017
	400	135.128	160.130 - 900.157	3s3p - 3s4s	^{3}P° - ^{3}S	1 - 1		017
	500	135.921	164.437 - 900.157	3s3p - 3s4s	^{3}P° - ^{3}S	2 - 1		017
	100	137.352	372.398 - 1100.496	3p^2 - 3p4s	^{1}D - ^{3}P°	2 - 1	Q	017,375
	70	137.418	377.780 - 1105.487	3p^2 - 3p4s	^{3}P - ^{3}P°	1 - 2		220
	200	137.870	375.179 - 1100.496	3p^2 - 3p4s	^{3}P - ^{3}P°	0 - 1		220
	500	138.380	377.780 - 1100.496	3p^2 - 3p4s	^{3}P - ^{3}P°	1 - 1		220
	200	138.662	377.780 - 1098.96	3p^2 - 3p4s	^{3}P - ^{3}P°	1 - 0		220
	100	139.319	633.10 - 1350.87	3p3d - 3s5d	^{1}D° - ^{1}D	2 - 2		220
	300	146.816	629.77 - 1310.893	3p3d - 3p4f	^{3}F° - ^{3}G	4 - 5		899,017
	400	146.961	626.46 - 1306.911	3p3d - 3p4f	^{3}F° - ^{3}G	3 - 4		899,17
	200	147.346	236.49 - 915.165	3s3p - 3s4s	^{1}P° - ^{1}S	1 - 0		220
	100	149.357	629.77 - 1299.320	3p3d - 3p4f	^{3}F° - ^{3}F	4 - 3		017
	300	150.900	455.899 - 1118.590	3s3d - 3s4f	^{3}D - ^{3}F°	1 - 2		017
	400	150.939	456.086 - 1118.605	3s3d - 3s4f	^{3}D - ^{3}F°	2 - 3		017
	500	150.995	456.400 - 1118.674	3s3d - 3s4f	^{3}D - ^{3}F°	3 - 4		017
		152.702	665.02 - 1319.888	3p3d - 3p4f	^{3}D° - ^{3}D	2 - 2		899
	200	154.897	665.56 - 1311.148	3p3d - 3p4f	^{3}D° - ^{3}F	3 - 4		899,17
	300	163.022	720.000+K - 1333.414+K	3p3d - 3p4f	^{1}F° - ^{1}G	3 - 4		899,017
	400	163.416	516.218 - 1128.153	3s3d - 3s4f	^{1}D - ^{1}F°	2 - 3		220
	370	183.593	626.46 - 1171.140	3p3d - 3p4p	^{3}F° - ^{3}D	3 - 2		017
	100	193.128	665.02 - 1182.850	3p3d - 3p4p	^{3}D° - ^{3}S	2 - 1		017
	50	335.89	1075.142 - 1372.85	3s4d - 3s5f	^{3}D - ^{1}F°	2 - 3	Q	251,375
	30	342.51	164.437 - 456.400	3s3p - 3s3d	^{3}P° - ^{3}D	2 - 3	P	251
	20	343.10	164.437 - 455.899	3s3p - 3s3d	^{3}P° - ^{3}D	2 - 1	P	251
		348.14	377.780 - 665.02	3p^2 - 3p3d	^{3}P - ^{3}D°	1 - 2		251

SC X — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		353.55	382.715 – 665.56	$3p^2$ – 3p3d	^3P – $^3D^\circ$	2 – 3		251
	100	354.24	382.715 – 665.02	$3p^2$ – 3p3d	^3P – $^3D^\circ$	2 – 2	Q	251,375
	40	357.490	236.49 – 516.218	3s3p – 3s3d	$^1P^\circ$ – ^1D	1 – 2		220
		357.85	382.715 – 662.16	$3p^2$ – 3p3d	^3P – $^3P^\circ$	2 – 2		251
		383.58	372.398 – 633.10	$3p^2$ – 3p3d	^1D – $^1D^\circ$	2 – 2		251
		410.89	440.48 – 683.85	$3p^2$ – 3p3d	^1S – $^1P^\circ$	0 – 1		251
	400	422.850	0.0 – 236.49	$3s^2$ – 3s3p	g^1S – $^1P^\circ$	0 – 1		220
		449.27	160.130 – 382.715	3s3p – $3p^2$	$^3P^\circ$ – ^3P	1 – 2	P	251
		455.26	158.124 – 377.780	3s3p – $3p^2$	$^3P^\circ$ – ^3P	0 – 1	P	251
	40	458.13	164.437 – 382.715	3s3p – $3p^2$	$^3P^\circ$ – ^3P	2 – 2	P	251,17
		459.45	160.130 – 377.780	3s3p – $3p^2$	$^3P^\circ$ – ^3P	1 – 1	P	251
		465.01	160.130 – 375.179	3s3p – $3p^2$	$^3P^\circ$ – ^3P	1 – 0		251
		468.73	164.437 – 377.780	3s3p – $3p^2$	$^3P^\circ$ – ^3P	2 – 1	P	251
		478.09	456.400 – 665.56	3s3d – 3p3d	^3D – $^3D^\circ$	3 – 3	P	251
		490.23	236.49 – 440.48	3s3p – $3p^2$	$^1P^\circ$ – ^1S	1 – 0		251
	150	496.84	1118.605 – 1319.888	3s4f – 3p4f	$^3F^\circ$ – ^3D	3 – 2	Q	251
	250	531.13	1319.888 – 1508.155	3p4f – 3s6f	^3D – $^3F^\circ$	2 – 3	Q	251
		576.79	456.400 – 629.77	3s3d – 3p3d	^3D – $^3F^\circ$	3 – 4		251
		586.96	456.086 – 626.46	3s3d – 3p3d	^3D – $^3F^\circ$	2 – 3		251
		595.98	455.899 – 623.69	3s3d – 3p3d	^3D – $^3F^\circ$	1 – 2		251
	21	624.5	0.0 – 160.130	$3s^2$ – 3s3p	g^1S – $^3P^\circ$	0 – 1		1131
		735.792	236.49 – 372.398	3s3p – $3p^2$	$^1P^\circ$ – ^1D	1 – 2	P	970
	200	869.13	1169.24 – 1284.30	3p4p – 3p4d	^3D – $^3P^\circ$	1 – 1	Q	017

SCANDIUM XI (Sc^{10+}), Z = 21
Ground State $1s^22s^22p^63s(^2S_{1/2})$ (11 electrons)
Ionization Potential 2 015 050 cm^{-1}; 249.837 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		53.334	0. – 1874.87	$2p^63s$ – $2p^610p$	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{1}{2}$		118
		54.325	0. – 1840.63	$2p^63s$ – $2p^69p$	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{1}{2}$		118
		55.788	0. – 1792.50	$2p^63s$ – $2p^68p$	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{1}{2}$		899
		58.082	0. – 1721.70	$2p^63s$ – $2p^67p$	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$		118
		60.637	197.978 – 1847.1	$2p^63p$ – $2p^69d$	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$		899
	35	62.132	0. – 1609.48	$2p^63s$ – $2p^66p$	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$		118
	20	62.320	197.978 – 1802.6	$2p^63p$ – $2p^68d$	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$		118
	10	64.70	191.286 – 1736.9	$2p^63p$ – $2p^67d$	$^2P^\circ$ – ^2D	$\frac{1}{2}$ – $\frac{3}{2}$		017
	40	64.98	197.978 – 1736.9	$2p^63p$ – $2p^67d$	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$		118
	40	69.252	191.286 – 1635.28	$2p^63p$ – $2p^66d$	$^2P^\circ$ – ^2D	$\frac{1}{2}$ – $\frac{3}{2}$		118
	100	69.575	197.978 – 1635.29	$2p^63p$ – $2p^66d$	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$		118
	200	70.445	0. – 1419.55	$2p^63s$ – $2p^65p$	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$		118
	100	70.509	0. – 1418.26	$2p^63s$ – $2p^65p$	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{1}{2}$		118
	28	71.527	191.286 – 1589.20	$2p^63p$ – $2p^66s$	$^2P^\circ$ – ^2S	$\frac{1}{2}$ – $\frac{1}{2}$		118
		71.542	191.286 – 1589.20	$2p^63p$ – $2p^66s$	$^2P^\circ$ – ^2S	$\frac{1}{2}$ – $\frac{1}{2}$		899
	40	71.887	197.978 – 1589.20	$2p^63p$ – $2p^66s$	$^2P^\circ$ – ^2S	$\frac{3}{2}$ – $\frac{1}{2}$		118
		74.221	460.045 – 1807.4	$2p^63d$ – $2p^68f$	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$		899
		77.87	459.425 – 1743.46	$2p^63d$ – $2p^67f$	^2D – $^2F^\circ$	$\frac{3}{2}$ – $\frac{5}{2}$		118
	40	77.917	460.045 – 1743.46	$2p^63d$ – $2p^67f$	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$		118
	100	78.509	191.286 – 1465.03	$2p^63p$ – $2p^65d$	$^2P^\circ$ – ^2D	$\frac{1}{2}$ – $\frac{3}{2}$		118
	300	78.917	197.978 – 1465.13	$2p^63p$ – $2p^65d$	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$		118
	40	83.958	191.286 – 1382.35	$2p^63p$ – $2p^65s$	$^2P^\circ$ – ^2S	$\frac{1}{2}$ – $\frac{1}{2}$		118
	40	84.351	459.425 – 1644.95	$2p^63d$ – $2p^66f$	^2D – $^2F^\circ$	$\frac{3}{2}$ – $\frac{5}{2}$		118
	50	84.393	460.045 – 1644.98	$2p^63d$ – $2p^66f$	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$		118

SC XI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	84.433	197.978 – 1382.35	$2p^63p - 2p^65s$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		118
	600	94.888	0. – 1053.87	$2p^63s - 2p^64p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		118
	500	95.117	0. – 1051.34	$2p^63s - 2p^64p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		017
	300	97.777	459.425 – 1482.16	$2p^63d - 2p^65f$	$^2D - ^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		118
	400	97.830	460.045 – 1482.23	$2p^63d - 2p^65f$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		118
	40	104.142	459.425 – 1419.55	$2p^63d - 2p^65p$	$^2D - ^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$	Q	017
	40	104.219	460.045 – 1419.55	$2p^63d - 2p^65p$	$^2D - ^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		118
	500	104.435	191.286 – 1148.82	$2p^63p - 2p^64d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		118
	600	105.140	197.978 – 1149.09	$2p^63p - 2p^64d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		118
	200	105.170	197.978 – 1148.82	$2p^63p - 2p^64d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		118
	500	127.156	191.286 – 977.722	$2p^63p - 2p^64s$	$^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		118
	500	128.247	197.978 – 977.722	$2p^63p - 2p^64s$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		118
	500	138.283	459.425 – 1182.58	$2p^63d - 2p^64f$	$^2D - ^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		118
	500	138.380	460.045 – 1182.69	$2p^63d - 2p^64f$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		118
	400	168.396	460.045 – 1053.87	$2p^63d - 2p^64p$	$^2D - ^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		118
	200	168.942	459.425 – 1051.34	$2p^63d - 2p^64p$	$^2D - ^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		118
	300	372.940	191.286 – 459.425	$2p^63p - 2p^63d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$	P	753,361
	700	381.580	197.978 – 460.045	$2p^63p - 2p^63d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	753,361
	50	440.29	1382.35 – 1609.48	$2p^65s - 2p^66p$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	Q	251
	400	505.108	0. – 197.978	$2p^63s - 2p^63p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	753,361
	200	522.777	0. – 191.286	$2p^63s - 2p^63p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	P	753,361

SCANDIUM XII (Sc^{11+}), Z = 21
Ground State $1s^22s^22p^6(^1S_0)$ (10 electrons)
Ionization Potential 5 543 900 cm^{-1}; 687.36 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	20.298	0.0 – 4926.6	$2s^22p^6 - 2s^22p^5(^2P^\circ)5d$	$g^1S - ^1P^\circ$	0 – 1		232
	50	20.438	0.0 – 4892.8	$2s^22p^6 - 2s^22p^5(^2P^\circ)5d$	$g^1S - ^3D^\circ$	0 – 1		232
	250	21.940	0.0 – 4557.9	$2s^22p^6 - 2s^22p^5(^2P^\circ)4d$	$g^1S - ^1P^\circ$	0 – 1		232
	200	22.119	0.0 – 4521.0	$2s^22p^6 - 2s^22p^5(^2P^\circ)4d$	$g^1S - ^3D^\circ$	0 – 1		232
	50	22.837	0.0 – 4378.8	$2s^22p^6 - 2s^22p^5(^2P^\circ)4s$	$g^1S - ^1P^\circ$	0 – 1		232
	50	23.045	0.0 – 4339.3	$2s^22p^6 - 2s^22p^5(^2P^\circ)4s$	$g^1S - ^3P^\circ$	0 – 1		232
	350	23.725	0.0 – 4215.4	$2s^22p^6 - 2s2p^63p$	$g^1S - ^1P^\circ$	0 – 1		232
	50	23.821	0.0 – 4198.	$2s^22p^6 - 2s2p^63p$	$g^1S - ^3P^\circ$	0 – 1		232
		26.544	0.0 – 3767.3	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})3d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		189
		26.920	0.0 – 3714.7	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		189
		27.260	0.0 – 3668.4	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		189
		30.480	0.0 – 3280.8	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})3s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		189
		30.816	0.0 – 3245.1	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		189
		81.93	3678.9+C – 4899.5+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 5		1055
		84.84	3231.7+C – 4410.4+C	$2s^22p^5(^2P^\circ)3s - 2s^22p^5(^2P^\circ)4p$	$^3P^\circ - ^3D$	2 – 3		1055
		85.44	3245.1 – 4415.5	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ)4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - ^3D$	1 – 1		1055
		92.49	3425.0+C – 4506.1+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^3D - ^3F^\circ$	3 – 3		1055
		92.798	3423.2+C – 4500.8+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^3D - ^3D^\circ$	2 – 3		395
		93.075	3425.0+C – 4499.4+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^3D - ^3F^\circ$	3 – 4		395
		93.397	3475.5+C – 4546.2+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^3P - ^3F^\circ$	1 – 2		395
		93.507	3476.1+C – 4545.5+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^1D - ^1F^\circ$	2 – 3		395
		93.619	3463.2+C – 4531.4+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^3D - ^3D^\circ$	1 – 2		395
		93.699	3433.6+C – 4500.8+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^1P - ^1D^\circ$	1 – 2		395
		93.930	3441.5+C – 4506.1+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^3P - ^3F^\circ$	2 – 3		395

SC XII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		115.40	3672.2+C – 4538.8+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		1055
		115.82	3678.9+C – 4542.3+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 5		1055
		116.44	3731.4+C – 4590.2+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		1055
		116.54	3702.0+C – 4560.1+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		1055
		117.19	3683.3+C – 4536.6+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		1055
		117.90	3696.4+C – 4544.6+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		1055

SCANDIUM XIII (Sc^{12+}), Z = 21
Ground State $1s^22s^22p^5(^2P^\circ_{3/2})$ (9 electrons)
Ionization Potential [6 103 000] cm^{-1}; [756.7] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		18.57	0.0 – 5384.0+C	$2s^22p^5 - 2p^63d$	$g\,^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	139
		18.71	37.908 – 5382.3+C	$2s^22p^5 - 2p^63d$	$g\,^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	P	139
		19.93	0.0 – 5017.6	$2s^22p^5 - 2s^22p^44d$	$g\,^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		245
		20.4	0.0 – 4902.0	$2s^22p^5 - 2s^22p^44d$	$g\,^2P^\circ - ^4D$	$\frac{3}{2}-\frac{5}{2}$		245
	10	24.061	0.0 – 4156.1	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g\,^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		850
	90	24.097	0.0 – 4149.9	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g\,^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		850
	90	24.284	37.908 – 4156.1	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g\,^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		850
	100	24.484	0.0 – 4084.3	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g\,^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		850
	200	24.560	0.0 – 4071.7	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g\,^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		850
	70	24.648	0.0 – 4057.1	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g\,^2P^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		850
	90	24.666	0.0 – 4054.2	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g\,^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		850
	120	24.715	37.908 – 4084.3	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g\,^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		850
	20	24.899	37.908 – 4054.2	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g\,^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		850
	100	24.970	0.0 – 4004.8	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g\,^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		850
	20	24.998	0.0 – 4000.3	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g\,^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		850
	50	25.079	0.0 – 3987.4	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g\,^2P^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		850
	60	25.099	0.0 – 3984.2	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g\,^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		850
	80	25.133	0.0 – 3978.8	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g\,^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		850
	10	25.163	0.0 – 3974.1	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g\,^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		850
	120	25.200	0.0 – 3968.3	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g\,^2P^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		850
	100	25.242	0.0 – 3961.7	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g\,^2P^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		850
	80	25.341	37.908 – 3984.2	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g\,^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		850
	40	25.40	37.908 – 3974.1	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g\,^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		850
	90	25.440	37.908 – 3968.3	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g\,^2P^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$		850
	40	26.893	0.0 – 3718.4	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g\,^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		850
	30	27.170	37.908 – 3718.4	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g\,^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		850
	120	27.628	0.0 – 3619.5	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g\,^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		850
	100	27.911	37.908 – 3620.8	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g\,^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		850
	80	27.979	0.0 – 3574.1	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g\,^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		850
	150	28.131	0.0 – 3554.8	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g\,^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		850
	100	28.280	37.908 – 3574.1	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g\,^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		850
	150	28.324	0.0 – 3530.6	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g\,^2P^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		850
	40	28.434	37.908 – 3554.8	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g\,^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		850
	40	28.463	0.0 – 3513.3	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g\,^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		850
	10	28.497	37.908 – 3547.2	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g\,^2P^\circ - ^4P$	$\frac{1}{2}-\frac{1}{2}$		850
	30	28.566	763.622 – 4264.2	$2s2p^6 - 2s2p^5(^3P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		850

SC XIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	28.633	37.908 – 3530.6	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{3}{2}$		850
	40	28.748	763.622 – 4242.1	$2s2p^6 - 2s2p^5(^3P^\circ)3s$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		850
	610	130.952	0.0 – 763.622	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		1119
	500	137.799	37.908 – 763.622	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		1119

SCANDIUM XIV (Sc^{13+}), Z = 21
Ground State $1s^22s^22p^4(^3P_2)$ (8 electrons)
Ionization Potential [6 701 000] cm^{-1}; [830.8] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	22.522	0.0 – 4441.2	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 2	Q	303
	65	22.558	0.0 – 4433.0	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		877
	150	22.650	0.0 – 4414.5	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 1		834
	110	22.697	0.0 – 4405.9	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 2		877
	20	22.754	97.796 – 4493.3	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	${}^1D - {}^1P^\circ$	2 – 1		947
	10	22.810	31.179 – 4414.5	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 1	Q	947
	50	22.825	31.179 – 4412.8	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 0	Q	834
	110	22.841	0.0 – 4378.1	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3S^\circ$	2 – 1		877
	70	22.926	0.0 – 4361.9	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 2		947
	300	22.964	97.796 – 4452.2	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	${}^1D - {}^1F^\circ$	2 – 3		834
	10	23.057	31.179 – 4368.2	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 1		947
	110	23.156	31.179 – 4349.7	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		877
	250	23.274	35.353 – 4332.4	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	0 – 1		834
	110	23.422	97.796 – 4367.6	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	${}^1D - {}^1D^\circ$	2 – 2		877
	350	23.536	0.0 – 4248.8	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		877
	100	23.568	0.0 – 4241.7	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 2	Q	834
	100	23.740	31.179 – 4241.7	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		834
	70	24.791	0.0 – 4034.0	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - {}^1P^\circ$	2 – 1	Q	850,375
	50	24.971	0.0 – 4004.7	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	2 – 2		834
	350	25.392	0.0 – 3938.2	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	2 – 3		865
	200	25.403	97.796 – 4034.0	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	${}^1D - {}^1P^\circ$	2 – 1		865
	300	25.439	0.0 – 3931.0	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	2 – 2		865
	150	25.644	31.179 – 3931.0	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	1 – 2		865
	100	25.680	35.353 – 3929.3	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	0 – 1		865
	300	25.921	97.796 – 3956.0	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	${}^1D - {}^1D^\circ$	2 – 2		865
	300	25.985	0.0 – 3848.4	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - {}^3S^\circ$	2 – 1		865
	150	26.056	195.990 – 4034.0	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	${}^1S - {}^1P^\circ$	0 – 1		865
		26.16	0.0 – 3823.3+K	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - {}^5S^\circ$	2 – 2	P	375
	150	26.197	31.179 – 3848.4	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - {}^3S^\circ$	1 – 1		865
	100	26.224	35.353 – 3848.4	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - {}^3S^\circ$	0 – 1		865
		26.37	31.179 – 3823.3+K	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - {}^5S^\circ$	1 – 2	P	375
	200	109.528	0.0 – 913.01	$2s^22p^4 - 2s2p^5$	$g^3P - {}^1P^\circ$	2 – 1		1119
	25	113.928	35.353 – 913.01	$2s^22p^4 - 2s2p^5$	$g^3P - {}^1P^\circ$	0 – 1		1119
		116.66	689.448 – 1546.64	$2s2p^5 - 2p^6$	${}^3P^\circ - {}^1S$	1 – 0	P	375,1119
	500	122.671	97.796 – 913.01	$2s^22p^4 - 2s2p^5$	${}^1D - {}^1P^\circ$	2 – 1		1119
	245	139.469	195.990 – 913.01	$2s^22p^4 - 2s2p^5$	${}^1S - {}^1P^\circ$	0 – 1		1119
	400	145.047	0.0 – 689.448	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	2 – 1		1119
	275	148.498	31.179 – 704.589	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	1 – 0		1119
	500	150.490	0.0 – 664.486	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	2 – 2		1119
	320	151.910	31.179 – 689.448	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	1 – 1		1119
	400	152.880	35.353 – 689.448	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P^\circ$	0 – 1		1119
	250	157.820	913.01 – 1546.64	$2s2p^5 - 2p^6$	${}^1P^\circ - {}^1S$	1 – 0		1119

SC XIV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	360	157.904	31.179 – 664.486	$2s^22p^4 - 2s2p^5$	$g^3P - {}^3P°$	1 – 2		1119
	30	176.455	97.796 – 664.486	$2s^22p^4 - 2s2p^5$	${}^1D - {}^3P°$	2 – 2		1119
		510.23	0.0 – 195.990	$2s^22p^4 - 2s^22p^4$	$g^3P - {}^1S$	2 – 0	F,P	375,1119
		606.76	31.179 – 195.990	$2s^22p^4 - 2s^22p^4$	$g^3P - {}^1S$	1 – 0	F,P	375,1119
		1018.	97.796 – 195.990	$2s^22p^4 - 2s^22p^4$	${}^1D - {}^1S$	2 – 0	F,P	375,1119
		1023.	0.0 – 97.796	$2s^22p^4 - 2s^22p^4$	$g^3P - {}^1D$	2 – 2	F,P	375,1119
		1501.	31.179 – 97.796	$2s^22p^4 - 2s^22p^4$	$g^3P - {}^1D$	1 – 2	F,P	375,1119
		1601.	35.353 – 97.796	$2s^22p^4 - 2s^22p^4$	$g^3P - {}^1D$	0 – 2	F,P	375,1119

SCANDIUM XV (Sc^{14+}), Z = 21
Ground State $1s^22s^22p^3({}^4S°_{3/2})$ (7 electrons)
Ionization Potential [7 481 000] cm^{-1}; [927.5] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		21.26	184.840 – 4888.6	$2s^22p^3 - 2s^22p^2({}^1S)3d$	${}^2P° - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		950
	450	21.372	0.0 – 4679.0	$2s^22p^3 - 2s^22p^2({}^3P)3d$	$g^4S° - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		877
	450	21.405	0.0 – 4671.8	$2s^22p^3 - 2s^22p^2({}^3P)3d$	$g^4S° - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		877
	110	21.426	111.198 – 4778.5	$2s^22p^3 - 2s^22p^2({}^1D)3d$	${}^2D° - {}^2F$	$\frac{3}{2} - \frac{5}{2}$		877
	175	21.49	111.198 – 4761.3	$2s^22p^3 - 2s^22p^2({}^1D)3d$	${}^2D° - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	Q	877
	450	21.521	121.966 – 4768.6	$2s^22p^3 - 2s^22p^2({}^1D)3d$	${}^2D° - {}^2F$	$\frac{5}{2} - \frac{7}{2}$		877
		21.57	121.966 – 4761.3	$2s^22p^3 - 2s^22p^2({}^1D)3d$	${}^2D° - {}^2D$	$\frac{5}{2} - \frac{5}{2}$		950
	10	21.705	184.840 – 4792.0	$2s^22p^3 - 2s^22p^2({}^1D)3d$	${}^2P° - {}^2S$	$\frac{1}{2} - \frac{1}{2}$	Q	877
		21.74	121.966 – 4720.1	$2s^22p^3 - 2s^22p^2({}^3P)3d$	${}^2D° - {}^2D$	$\frac{5}{2} - \frac{3}{2}$		950
		21.78	200.448 – 4789.3	$2s^22p^3 - 2s^22p^2({}^1D)3d$	${}^2P° - {}^2P$	$\frac{3}{2} - \frac{3}{2}$	Q	950
	110	21.924	121.966 – 4683.2	$2s^22p^3 - 2s^22p^2({}^3P)3d$	${}^2D° - {}^2F$	$\frac{5}{2} - \frac{7}{2}$		877
		22.05	184.840 – 4720.1	$2s^22p^3 - 2s^22p^2({}^3P)3d$	${}^2P° - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		950
	110	22.061	200.448 – 4733.4	$2s^22p^3 - 2s^22p^2({}^3P)3d$	${}^2P° - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		877
	65	22.544	200.448 – 4636.2	$2s^22p^3 - 2s^22p^2({}^3P)3d$	${}^2P° - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		877
	50	109.084	0.0 – 916.728	$2s^22p^3 - 2s2p^4$	$g^4S° - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		1140
	225	118.980	111.198 – 951.666	$2s^22p^3 - 2s2p^4$	${}^2D° - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		1140
	450	124.140	111.198 – 916.728	$2s^22p^3 - 2s2p^4$	${}^2D° - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		1140
	775	125.817	121.966 – 916.728	$2s^22p^3 - 2s2p^4$	${}^2D° - {}^2P$	$\frac{5}{2} - \frac{3}{2}$		1140
	225	129.751	111.198 – 881.881	$2s^22p^3 - 2s2p^4$	${}^2D° - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		1140
	50	130.409	184.840 – 951.666	$2s^22p^3 - 2s2p^4$	${}^2P° - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		1140
	450	133.118	200.448 – 951.666	$2s^22p^3 - 2s2p^4$	${}^2P° - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		1140
	150	136.638	184.840 – 916.728	$2s^22p^3 - 2s2p^4$	${}^2P° - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		1140
	125	138.715	761.228 – 1482.20	$2s2p^4 - 2p^5$	${}^2D - {}^2P°$	$\frac{3}{2} - \frac{1}{2}$		1140
	225	139.615	200.448 – 916.728	$2s^22p^3 - 2s2p^4$	${}^2P° - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		1140
	225	143.465	184.840 – 881.881	$2s^22p^3 - 2s2p^4$	${}^2P° - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		1140
	80	146.754	200.448 – 881.881	$2s^22p^3 - 2s2p^4$	${}^2P° - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		1140
	125	146.966	761.228 – 1441.71	$2s2p^4 - 2p^5$	${}^2D - {}^2P°$	$\frac{3}{2} - \frac{3}{2}$		1140
	150	147.558	763.980 – 1441.71	$2s2p^4 - 2p^5$	${}^2D - {}^2P°$	$\frac{5}{2} - \frac{3}{2}$		1140
	6	153.197	111.198 – 763.980	$2s^22p^3 - 2s2p^4$	${}^2D° - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		1140
	550	153.843	111.198 – 761.228	$2s^22p^3 - 2s2p^4$	${}^2D° - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		1140
	630	155.765	121.966 – 763.980	$2s^22p^3 - 2s2p^4$	${}^2D° - {}^2D$	$\frac{5}{2} - \frac{5}{2}$		1140
	6	156.436	121.966 – 761.228	$2s^22p^3 - 2s2p^4$	${}^2D° - {}^2D$	$\frac{5}{2} - \frac{3}{2}$		1140
	175	169.964	0.0 – 588.360	$2s^22p^3 - 2s2p^4$	$g^4S° - {}^4P$	$\frac{3}{2} - \frac{1}{2}$		1140
	245	173.245	0.0 – 577.217	$2s^22p^3 - 2s2p^4$	$g^4S° - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		1140
	50	173.481	184.840 – 761.228	$2s^22p^3 - 2s2p^4$	${}^2P° - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		1140
	50	176.834	916.728 – 1482.20	$2s2p^4 - 2p^5$	${}^2P - {}^2P°$	$\frac{3}{2} - \frac{1}{2}$		1140

SC XV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	150	177.436	200.448 – 763.980	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		1140
	20	178.631	881.881 – 1441.71	$2s2p^4 - 2p^5$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		1140
	345	181.165	0.0 – 551.983	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		1140
	60	188.476	951.666 – 1482.20	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		1140
	150	190.479	916.728 – 1441.71	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		1140
	4	204.038	951.666 – 1441.71	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		1140
		498.9	0.0 – 200.448	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,1140
		541.0	0.0 – 184.840	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	F,P	375,1140
		819.9	0.0 – 121.966	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$	F,P	375,1140
		899.3	0.0 – 111.198	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,1140
		1120.	111.198 – 200.448	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,1140
		1274.	121.966 – 200.448	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$	F,P	375,1140
		1358.	111.198 – 184.840	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	F,P	375,1140
		1590.	121.966 – 184.840	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - ^2P^\circ$	$\frac{5}{2}-\frac{1}{2}$	F,P	375,1140

SCANDIUM XVI (Sc^{15+}), Z = 21
Ground State $1s^22s^22p^2(^3P_0)$ (6 electrons)
Ionization Potential [8 140 000] cm^{-1}; [1009] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		20.144	22.963 – 4987.2	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3P^\circ$	1 – 0		949
	80	20.160	22.963 – 4983.2	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3P^\circ$	1 – 2		949,303
	20	20.224	301.40+U – 5246.0+U	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^\circ - ^5P$	2 – 3		303
		20.240	45.033 – 4985.9	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3P^\circ$	2 – 1		949
	65	20.251	22.963 – 4961.0	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3D^\circ$	1 – 2		877
	110	20.284	45.033 – 4975.0	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3D^\circ$	2 – 3		877
	80	20.330	22.963 – 4941.6	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3D^\circ$	1 – 1	Q	303
	450	20.390	123.408 – 5027.8	$2s^22p^2 - 2s^22p3d$	$^1D - ^1F^\circ$	2 – 3		877
	80	20.458	542.038 – 5430.1	$2s2p^3 - 2s2p^2(^2D)3d$	$^3D^\circ - ^3F$	3 – 4		303
		20.489	45.033 – 4926.7	$2s^22p^2 - 2s^22p3d$	$g^3P - ^1D^\circ$	2 – 2	P	949
		20.511	45.033 – 4920.5	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3F^\circ$	2 – 3		949
		20.597	45.033 – 4900.1	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3F^\circ$	2 – 2		949
		20.612	123.408 – 4975.0	$2s^22p^2 - 2s^22p3d$	$^1D - ^3D^\circ$	2 – 3	P	949
		20.672	123.408 – 4961.0	$2s^22p^2 - 2s^22p3d$	$^1D - ^3D^\circ$	2 – 2	P	949
		20.787	218.747 – 5029.5	$2s^22p^2 - 2s^22p3d$	$^1S - ^1P^\circ$	0 – 1		949
		20.819	123.408 – 4926.7	$2s^22p^2 - 2s^22p3d$	$^1D - ^1D^\circ$	2 – 2		949
	40	20.842	123.408 – 4920.5	$2s^22p^2 - 2s^22p3d$	$^1D - ^3F^\circ$	2 – 3	Q	949,303
	30	21.017	542.038 – 5300.1	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3F$	3 – 4		877
	20	21.114	536.613 – 5272.8	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3F$	2 – 3		303
	40	21.637	22.963 – 4645.6	$2s^22p^2 - 2s^22p3s$	$g^3P - ^3P^\circ$	1 – 2		303
	60	21.670	301.40+U – 4916.0+U	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^\circ - ^5P$	2 – 3		303
	80	21.732	45.033 – 4645.6	$2s^22p^2 - 2s^22p3s$	$g^3P - ^3P^\circ$	2 – 2		303
	40	21.816	536.613 – 5120.5	$2s2p^3 - 2s2p^2(^2D)3s$	$^3D^\circ - ^3D$	2 – 2		303
	40	21.927	45.033 – 4605.6	$2s^22p^2 - 2s^22p3s$	$g^3P - ^3P^\circ$	2 – 1		303
	20	22.016	123.408 – 4665.6	$2s^22p^2 - 2s^22p3s$	$^1D - ^1P^\circ$	2 – 1		303
	15	117.090	22.963 – 877.032	$2s^22p^2 - 2s2p^3$	$g^3P - ^1P^\circ$	1 – 1		1141
	175	127.813	0.0 – 782.360	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^\circ$	0 – 1		1141
	315	131.684	22.963 – 782.360	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^\circ$	1 – 1		1141
	445	132.688	123.408 – 877.032	$2s^22p^2 - 2s2p^3$	$^1D - ^1P^\circ$	2 – 1		1141
	15	134.503	542.038 – 1285.50	$2s2p^3 - 2p^4$	$^3D^\circ - ^1D$	3 – 2		1141

SC XVI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	60	135.004	45.033 – 785.778	$2s^22p^2 - 2s2p^3$	$g^3P - {}^1D^\circ$	2 – 2		1141
	550	135.631	45.033 – 782.360	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3S^\circ$	2 – 1		1141
	125	144.913	537.722 – 1227.77	$2s2p^3 - 2p^4$	${}^3D^\circ - {}^3P$	1 – 0		1141
	225	146.052	536.613 – 1221.30	$2s2p^3 - 2p^4$	${}^3D^\circ - {}^3P$	2 – 1		1141
	150	146.286	537.722 – 1221.30	$2s2p^3 - 2p^4$	${}^3D^\circ - {}^3P$	1 – 1		1141
	550	150.973	123.408 – 785.778	$2s^22p^2 - 2s2p^3$	${}^1D - {}^1D^\circ$	2 – 2		1141
	315	151.910	218.747 – 877.032	$2s^22p^2 - 2s2p^3$	${}^1S - {}^1P^\circ$	0 – 1		1141
	150	153.564	536.613 – 1187.83	$2s2p^3 - 2p^4$	${}^3D^\circ - {}^3P$	2 – 2		1141
	225	154.849	542.038 – 1187.83	$2s2p^3 - 2p^4$	${}^3D^\circ - {}^3P$	3 – 2		1141
	60	158.671	0.0 – 630.259	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^\circ$	0 – 1		1141
	20	163.541	22.963 – 634.431	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^\circ$	1 – 2		1141
	175	164.665	22.963 – 630.259	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^\circ$	1 – 1		1141
	150	165.113	22.963 – 628.609	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^\circ$	1 – 0		1141
	15	167.369	630.259 – 1227.77	$2s2p^3 - 2p^4$	${}^3P^\circ - {}^3P$	1 – 0		1141
	200	169.664	45.033 – 634.431	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^\circ$	2 – 2		1141
	30	170.400	634.431 – 1221.30	$2s2p^3 - 2p^4$	${}^3P^\circ - {}^3P$	2 – 1		1141
	40	170.867	45.033 – 630.259	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P^\circ$	2 – 1		1141
	50	174.111	877.032 – 1451.38	$2s2p^3 - 2p^4$	${}^1P^\circ - {}^1S$	1 – 0		1141
	20	179.343	630.259 – 1187.83	$2s2p^3 - 2p^4$	${}^3P^\circ - {}^3P$	1 – 2		1141
	285	180.687	634.431 – 1187.83	$2s2p^3 - 2p^4$	${}^3P^\circ - {}^3P$	2 – 2		1141
	150	185.972	0.0 – 537.722	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	0 – 1		1141
	20	194.263	22.963 – 537.722	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	1 – 1		1141
	245	194.685	22.963 – 536.613	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	1 – 2		1141
	200	200.115	785.778 – 1285.50	$2s2p^3 - 2p^4$	${}^1D^\circ - {}^1D$	2 – 2		1141
	265	201.205	45.033 – 542.038	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	2 – 3		1141
	30	203.447	45.033 – 536.613	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D^\circ$	2 – 2		1141
		390.	45.033 – 301.40+U	$2s^22p^2 - 2s2p^3$	$g^3P - {}^5S^\circ$	2 – 2	P	375,1141
		510.77	22.963 – 218.747	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1S$	1 – 0	F,P	375,1141
		575.66	45.033 – 218.747	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1S$	2 – 0	F,P	375,1141
		810.32	0.0 – 123.408	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1D$	0 – 2	F,P	375,1141
		995.57	22.963 – 123.408	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1D$	1 – 2	F,P	375,1141
		1049.	123.408 – 218.747	$2s^22p^2 - 2s^22p^2$	${}^1D - {}^1S$	2 – 0	F,P	375,1141
		1276.	45.033 – 123.408	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1D$	2 – 2	F,P	375,1141

SCANDIUM XVII (Sc^{16+}), Z = 21
Ground State $1s^22s^22p(^2P^\circ_{1/2})$ (5 electrons)
Ionization Potential [8 820 000] cm^{-1}; [1094] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		14.99	45.637 – 6718.1	$2s^22p - 2s^24s$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$	P	375
	10	18.412	0.0 – 5431.2	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		877
	30	18.48	45.637 – 5456.9	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		877
	10	18.78	0.0 – 5324.8	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		877
	10	18.83	45.637 – 5356.3	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		877
	250	19.069	520.63 – 5764.8	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		877
	350	19.16	0.0 – 5219.2	$2s^22p - 2s^23d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		877
	250	19.22	329.55 – 5532.5	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4P^\circ$	$\frac{5}{2} - \frac{5}{2}$		877
	550	19.311	45.637 – 5224.0	$2s^22p - 2s^23d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		877
	175	19.598	694.95 – 5797.5	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2P - {}^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$		877
	175	19.651	520.63 – 5609.5	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		877
	65	19.732	516.64 – 5584.6	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		877

SC XVII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	65	19.967	520.63 – 5528.9	$2s2p^2 - 2s2p(^3P^\circ)3d$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		877
		20.47	45.637 – 4930.7	$2s^22p - 2s^23s$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$	P	375
	1	142.617	306.91 – 1008.09	$2s2p^2 - 2p^3$	$^4P - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		1142
	160	143.888	0.0 – 694.95	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		1142
	1	145.836	329.55 – 1015.25	$2s2p^2 - 2p^3$	$^4P - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		1142
	100	146.574	0.0 – 682.22	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		1142
	550	154.018	45.637 – 694.95	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		1142
	300	157.095	45.637 – 682.22	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		1142
	315	158.136	0.0 – 632.37	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		1142
	20	159.768	516.64 – 1142.56	$2s2p^2 - 2p^3$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		1142
	80	160.777	520.63 – 1142.56	$2s2p^2 - 2p^3$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		1142
	80	163.288	516.64 – 1129.04	$2s2p^2 - 2p^3$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		1142
	100	164.293	288.43 – 897.10	$2s2p^2 - 2p^3$	$^4P - ^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		1142
	90	169.451	306.91 – 897.10	$2s2p^2 - 2p^3$	$^4P - ^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		1142
		170.45	45.637 – 632.37	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$	P	375,1142
	200	176.181	329.55 – 897.10	$2s2p^2 - 2p^3$	$^4P - ^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		1142
	200	193.558	0.0 – 516.64	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		1142
	20	196.010	632.37 – 1142.56	$2s2p^2 - 2p^3$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		1142
	10	200.559	516.64 – 1015.25	$2s2p^2 - 2p^3$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		1142
	125	202.172	520.63 – 1015.25	$2s2p^2 - 2p^3$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		1142
	60	203.467	516.64 – 1008.09	$2s2p^2 - 2p^3$	$^2D - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		1142
	1	205.154	520.63 – 1008.09	$2s2p^2 - 2p^3$	$^2D - ^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		1142
	225	210.531	45.637 – 520.63	$2s^22p - 2s2p^2$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		1142
	50	223.424	694.95 – 1142.56	$2s2p^2 - 2p^3$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		1142
	20	223.821	682.22 – 1129.04	$2s2p^2 - 2p^3$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		1142
	1	230.357	694.95 – 1129.04	$2s2p^2 - 2p^3$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		1142

SCANDIUM XVIII (Sc^{17+}), Z = 21
Ground State $1s^22s^2(^1S_0)$ (4 electrons)
Ionization Potential [9 780 000] cm^{-1}; [1213] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	30	17.443	321.237 – 6054.18	$1s^22s2p - 1s^22p3p$	$^3P^\circ - ^3D$	2 – 3		877
	10	17.57	0.0 – 5691.5	$1s^22s^2 - 1s^22s3p$	$g^1S - ^1P^\circ$	0 – 1		877
	65	18.213	286.858 – 5777.44	$1s^22s2p - 1s^22s3d$	$^3P^\circ - ^3D$	1 – 2		877
	110	18.337	321.237 – 5774.68	$1s^22s2p - 1s^22s3d$	$^3P^\circ - ^3D$	2 – 3		877
		18.552	754.850 – 6145.10	$1s^22p^2 - 1s^22p3d$	$^3P - ^3D^\circ$	1 – 2		877
	30	18.581	778.375 – 6160.22	$1s^22p^2 - 1s^22p3d$	$^3P - ^3D^\circ$	2 – 3		877
	65	18.649	856.230 – 6218.45	$1s^22p^2 - 1s^22p3d$	$^1D - ^1F^\circ$	2 – 3		877
		18.959	553.395 – 5827.94	$1s^22s2p - 1s^22s3d$	$^1P^\circ - ^1D$	1 – 2		877
		180.703	0.0 – 553.395	$1s^22s^2 - 1s^22s2p$	$g^1S - ^1P^\circ$	0 – 1	P	1104
		186.918	321.237 – 856.230	$1s^22s2p - 1s^22p^2$	$^3P^\circ - ^1D$	2 – 2	P	1104
		203.452	286.858 – 778.375	$1s^22s2p - 1s^22p^2$	$^3P^\circ - ^3P$	1 – 2	P	1104
		207.621	273.202 – 754.850	$1s^22s2p - 1s^22p^2$	$^3P^\circ - ^3P$	0 – 1	P	1104
		207.986	553.395 – 1034.20	$1s^22s2p - 1s^22p^2$	$^1P^\circ - ^1S$	1 – 0	P	1104
		213.679	286.858 – 754.850	$1s^22s2p - 1s^22p^2$	$^3P^\circ - ^3P$	1 – 1	P	1104
		218.752	321.237 – 778.375	$1s^22s2p - 1s^22p^2$	$^3P^\circ - ^3P$	2 – 2	P	1104
		224.574	286.858 – 732.145	$1s^22s2p - 1s^22p^2$	$^3P^\circ - ^3P$	1 – 0	P	1104
		230.620	321.237 – 754.850	$1s^22s2p - 1s^22p^2$	$^3P^\circ - ^3P$	2 – 1	P	1104
		330.213	553.395 – 856.230	$1s^22s2p - 1s^22p^2$	$^1P^\circ - ^1D$	1 – 2	P	1104

SC XVIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		348.605	0.0 – 286.858	$1s^22s^2 - 1s^22s2p$	$g^1S - {}^3P^\circ$	0 – 1	P	1104

SCANDIUM XIX (Sc^{18+}), Z = 21
Ground State $1s^22s(^2S_{1/2})$ (3 electrons)
Ionization Potential 10 388 000 cm^{-1}; 1288.0 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		2.8755	5945.26 – 40722.2	$1s^23p - 1s2p(^3P^\circ)3p$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		643
		2.8780	306.722 – 35047.24	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		643
		2.8827	357.376 – 35047.24	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		643
		2.8848	0.0 – 34664.4	$1s^22s - 1s(2s2p(^1P^\circ))$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		643
		2.8964	357.376 – 34883.14	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		643
		2.8999	357.376 – 34841.44	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		643
		10.104	0.0 – 9897.07	$1s^22s - 1s^29p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	643
		10.240	0.0 – 9765.63	$1s^22s - 1s^28p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	643
		10.426	306.722 – 9898.13	$1s^22p - 1s^29d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	P	643
		10.443	0.0 – 9575.79	$1s^22s - 1s^27p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		643
		10.481	357.376 – 9898.45	$1s^22p - 1s^29d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	643
		10.576	306.722 – 9762.09	$1s^22p - 1s^28d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		643
		10.628	357.376 – 9766.48	$1s^22p - 1s^28d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		643
		10.785	0.0 – 9272.14	$1s^22s - 1s^26p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		643
		10.846	357.376 – 9577.36	$1s^22p - 1s^27d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		643
		11.141	306.722 – 9282.58	$1s^22p - 1s^26d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		643
		11.204	357.376 – 9282.76	$1s^22p - 1s^26d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		643
		11.377	0.0 – 8789.66	$1s^22s - 1s^25p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		643
		11.777	306.722 – 8797.85	$1s^22p - 1s^25d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		643
	20	11.845	357.376 – 8799.76	$1s^22p - 1s^25d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		643,273
	20	12.667	0.0 – 7894.32	$1s^22s - 1s^24p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	977,273
		12.678	0.0 – 7887.99	$1s^22s - 1s^24p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	977
	20	13.156	306.722 – 7908.81	$1s^22p - 1s^24d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	P	977,273
	100	13.241	357.376 – 7910.68	$1s^22p - 1s^24d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	977,273
	100	13.250	306.722 – 7853.813	$1s^22p - 1s^24s$	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$	P	977,273
		13.340	357.376 – 7853.813	$1s^22p - 1s^24s$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	P	977
	200	16.820	0.0 – 5945.26	$1s^22s - 1s^23p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	977,273
	200	16.863	0.0 – 5930.20	$1s^22s - 1s^23p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	977,273
	200	17.633	306.722 – 5977.90	$1s^22p - 1s^23d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	P	977,273
	300	17.777	357.376 – 5982.63	$1s^22p - 1s^23d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	977,273
		18.051	306.722 – 5846.655	$1s^22p - 1s^23s$	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$	P	977
		18.217	357.376 – 5846.655	$1s^22p - 1s^23s$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	P	977
		279.817	0.0 – 357.376	$1s^22s - 1s^22p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	977
		326.028	0.0 – 306.722	$1s^22s - 1s^22p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	977

SCANDIUM XX (Sc^{19+}), Z = 21
Ground State $1s^2(^1S_0)$ (2 electrons)
Ionization Potential 45 774 000 cm^{-1}; 5675.26 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		2.245	0.0 – 44550.2	$1s^2$ – 1s6p	g^1S – $^1P°$	0 – 1	P	728
		2.272	0.0 – 44016.13	$1s^2$ – 1s5p	g^1S – $^1P°$	0 – 1	P	728
		2.324	0.0 – 43027.50	$1s^2$ – 1s4p	g^1S – $^1P°$	0 – 1	P	728
		2.445	0.0 – 40893.31	$1s^2$ – 1s3p	g^1S – $^1P°$	0 – 1	P	918
		2.8728	0.0 – 34808.80	$1s^2$ – 1s2p	g^1S – $^1P°$	0 – 1	P	918
		2.8867	0.0 – 34641.64	$1s^2$ – 1s2p	g^1S – $^3P°$	0 – 1	P	918
		2.903	0.0 – 34451.70	$1s^2$ – 1s2s	g^1S – ^3S	0 – 1	F,P	375,918
		15.61	34451.70 – 40859.44	1s2s – 1s3p	^3S – $^3P°$	1 – 2	P	375
		16.01	34648.19 – 40893.31	1s2s – 1s3p	^1S – $^1P°$	0 – 1	P	375
		45.04	40793.73 – 43013.88	1s3s – 1s4p	^3S – $^3P°$	1 – 2	P	375
		45.83	40845.60 – 43027.50	1s3s – 1s4p	^1S – $^1P°$	0 – 1	P	375
		427.35	34451.70 – 34685.70	1s2s – 1s2p	^3S – $^3P°$	1 – 2	P	375
		622.63	34648.19 – 34808.80	1s2s – 1s2p	^1S – $^1P°$	0 – 1	P	375
		1521.84	40793.73 – 40859.44	1s3s – 1s3p	^3S – $^3P°$	1 – 2	P	375

SCANDIUM XXI (Sc^{20+}), Z = 21
Ground State $1s(^2S_{1/2})$ (1 electron)
Ionization Potential 48 665 240 cm^{-1}; 6038.769 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		2.140	0.0 – 46726.3126	1s – 5p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		2.191	0.0 – 45635.0888	1s – 4p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		2.192	0.0 – 45626.0600	1s – 4p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{1}{2}$	P	1042
		2.311	0.0 – 43277.6510	1s – 3p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		2.312	0.0 – 43256.2370	1s – 3p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{1}{2}$	P	1042
		2.736	0.0 – 36549.1300	1s – 2p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		2.742	0.0 – 36476.8920	1s – 2p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{1}{2}$	P	1042
		9.759	36479.1300 – 46726.3126	2s – 5p	^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		9.824	36549.1300 – 46727.8301	2p – 5d	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		10.922	36479.1300 – 45635.0888	2s – 4p	^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		11.002	36549.1300 – 45638.0525	2p – 4d	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		14.709	36479.1300 – 43277.6510	2s – 3p	^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		14.847	36549.1300 – 43284.6728	2p – 3d	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		1428.571	36479.1300 – 36549.1300	2s – 2p	^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042

TITANIUM , Z = 22
Unclassified Lines

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	72.093						714
	1	72.234						714
	1	72.772						714
	1	72.991						714
	1	76.030						714
	1	76.490						714
	1	77.435						714
	1	77.506						714
	1	77.541						714
	1	77.823						714
	1	77.935						714
	1	81.306						714
	6	87.972						714
	1	88.284						714
	1	88.642						714
	1	88.961						714
	1	89.181						714
	3	89.814						714
	1	92.272						714
	1	92.581						714
	3	94.570						714
	3	95.293						714
	3	96.017						714
	6	99.377						714
	6	100.208						714
	3	100.359						714
	3	100.638						714
	3	101.111						714
	6	104.015						714
	6	104.348						714
	1	104.466						714
	3	104.659						714
	3	104.861						714
	3	107.801						714
	3	108.493						714
	1	109.153						714
	3	109.509						714
	3	109.593						714
	1	109.963						714
	1	110.072						714
	3	111.942						714
	1	112.002						714
	1	112.116						714
	1	112.153						714
	3	112.178						714
	3	113.151						714
	3	113.289						714
	1	113.643						714
	3	114.053						714
	6	118.131						714
	6	118.915						714
	6	119.050						714
	10	119.268						714
	1	120.226						714

Tl Unclassified Lines — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	120.406						714
	20	120.559						714
	6	121.464						714
	1	121.783						714
	3	121.922						714
	1	122.136						714
	6	122.376						714
	6	122.847						714
	3	123.196						714
	6	123.253						714
	3	124.104						714
	1	124.632						714
	6	124.940						714
	1	125.195						714
	3	125.744						714
	6	128.111						714
	3	128.591						714
	3	128.731						714
	0	129.288						302
		129.384						714
	1	129.418						302,269
	3	131.102						714
	1	131.474						714
	3	131.623						714
	1	132.924						714
	3	133.053						714
	1	133.170						302
	6	133.482						714
	1	133.568						714
	1	133.721						714
	0	133.866						302
	0	133.990						302
	1	134.287						714
	3	134.894						714
	1	135.326						714
	1	135.458						714
	3	140.240						714
	1	141.208						714
	1	142.543						714
	1	144.092						714
	1	144.461						714
	1	147.268						714
	1	147.316						714
	3	149.842						714
	1	155.456						714
	1	155.494						714
	1	155.545						714
	6	157.378						714
	3	158.391						714
	3	158.952						714
	1	165.653						714
	1	166.566						714
	1	167.625						714
	1	167.701						714

Ti Unclassified Lines — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	167.930						714
	1	169.036						714
	1	176.105						714
	1	176.538						714
	1	177.729						714
	1	179.842						714
	250	179.91						384
	1	186.417						714
	1	187.671						714
	1	187.752						714
	1	187.819						714
	1	190.762						714
	1	193.737						714
	1	193.791						714
	1	194.420						714
	3	194.490						714
	1	196.443						714
	1	196.785						714
	3	197.178						714
	6	197.629						714
	6	197.697						714
	3	197.843						714
	1	198.079						714
	3	198.137						714
	3	198.311						714
	3	198.540						714
	3	199.960						714
	1	199.993						714
	1	200.691						714
	1	202.303						714
	1	205.880						714
	1	220.045						714
	1	220.739						714
	1	222.021						714
	1	224.169						714
	1	224.818						714
	1	225.033						714
	1	226.409						714
	1	226.462						714
	1	226.629						714
	1	226.680						714
	1	226.722						714
	1	227.639						714
	1	228.135						714
	1	230.155						714
	1	230.304						714
	1	230.425						714
	1	230.591						714
	1	231.553						714
	1	232.361						714
	1	232.466						714
	1	232.711						714
	1	232.847						714
	1	233.787						714

Tl UNCLASSIFIED LINES — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	3	234.184						714
	1	234.680						714
	1	234.902						714
	10	235.096						714
	6	235.353						714
	6	235.450						714
	20	235.683						714
	10	235.887						714
	1	236.914						714
	3	237.059						714
	1	237.250						714
	1	237.519						714
	1	237.826						714
	6	238.054						714
	1	238.294						714
	3	238.689						714
	3	239.404						714
	1	239.933						714
	1	240.009						714
	3	240.321						714
	10	240.926						714
	1	241.013						714
	1	241.750						714
	3	241.917						714
	1	242.059						714
	1	242.403						714
	3	242.475						714
	1	242.604						714
	3	242.847						714
	3	243.035						714
	1	243.259						714
	1	243.503						714
	3	243.968						714
	1	244.291						714
	1	244.482						714
	1	244.779						714
	1	245.535						714
	1	245.637						714
	1	245.894						714
	1	245.937						714
	6	246.198						714
	3	246.395						714
	10	246.564						714
	1	246.699						714
	1	246.743						714
	1	247.135						714
	1	247.278						714
	1	247.385						714
	1	247.536						714
	3	247.719						714
	3	247.929						714
	1	248.481						714
	1	248.592						714
	6	248.980						714

Ti UNCLASSIFIED LINES — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	249.229						714
	1	249.278						714
	1	249.471						714
	1	249.529						714
	1	249.632						714
	1	249.688						714
	1	249.785						714
	20	249.920						714
	1	250.050						714
		250.339						714
	3	250.790						714
	10	250.999						714
	6	251.266						714
	35	251.622						714
	1	251.715						714
	6	251.800						714
	20	252.065						714
	3	252.874						714
	1	253.427						714
	1	253.518						714
	1	253.591						714
	3	253.906						714
	3	254.188						714
	20	254.288						714
	6	254.485						714
	1	254.574						714
	1	254.859						714
	1	255.439						714
	3	255.628						714
	1	255.754						714
	10	255.813						714
	6	255.875						714
	6	256.149						714
	10	256.305						714
	10	256.454						714
	1	256.525						714
	20	256.586						714
	6	256.732						714
	1	256.815						714
	1	256.869						714
	10	257.003						714
	1	257.382						714
	6	257.645						714
	1	258.008						714
	1	258.056						714
	1	258.178						714
	1	258.467						714
	3	258.868						714
	3	258.930						714
	3	258.969						714
	35	259.448						714
	20	259.649						714
	10	259.835						714
	3	259.895						714

TI UNCLASSIFIED LINES — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	260.145						714
	60	260.251						714
	1	260.408						714
	6	260.522						714
	1	260.566						714
	3	260.986						714
	10	261.026						714
	1	261.224						714
	1	261.365						714
	10	261.493						714
	1	261.916						714
	3	262.300						714
	1	262.499						714
	1	262.894						714
	1	262.967						714
	6	263.384						714
	6	263.658						714
	1	263.822						714
	20	264.272						714
	3	264.367						714
	1	264.650						714
	1	264.739						714
	1	264.958						714
	3	265.145						714
	1	265.255						714
	1	265.666						714
	3	266.180						714
	3	266.670						714
	3	267.024						714
	1	267.187						714
	6	268.269						714
	1	268.566						714
	1	268.699						714
	1	268.748						714
	1	269.010						714
	1	269.314						714
	1	269.708						714
	10	269.939						714
	3	270.067						714
	10	270.281						714
	1	270.443						714
	10	270.675						714
	6	270.913						714
	6	271.030						714
	6	271.234						714
	6	271.488						714
	1	271.892						714
	3	272.417						714
	3	272.569						714
	1	272.707						714
	6	273.562						714
	3	273.916						714
	6	274.028						714
	3	275.128						714

Ti Unclassified Lines — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	275.979						714
	35	276.565						714
	1	276.909						714
	1	277.034						714
	3	277.111						714
	1	277.168						714
	1	277.760						714
	3	277.866						714
	3	277.984						714
	35	278.065						714
	60	278.331						714
	10	278.627						714
	6	278.926						714
	35	279.140						714
	3	279.195						714
	6	279.654						714
	20	280.284						714
	1	281.193						714
	6	282.086						714
	1	282.520						714
	1	283.204						714
	1	283.316						714
	20	284.349						714
	90	285.417						714
	35	285.543						714
	3	285.726						714
	10	285.860						714
	1	286.233						714
	1	286.333						714
	20	286.532						714
	10	287.041						714
	6	287.355						714
	6	287.400						714
	6	288.125						714
	6	288.232						714
	3	289.019						714
	1	289.178						714
	10	289.318						714
	1	289.456						714
	1	289.731						714
	1	289.992						714
	10	290.215						714
	3	290.344						714
	20	290.385						714
	1	290.506						714
	3	290.726						714
	60	291.186						714
	6	291.403						714
	3	291.585						714
	1	291.958						714
	1	292.401						714
	1	293.033						714
	1	293.240						714
	1	293.549						714

Ti Unclassified Lines — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	293.640						714
	20	293.944						714
	1	294.239						714
	6	295.070						714
	6	295.207						714
	3	297.106						714
	1	297.312						714
	1	297.418						714
	6	297.527						714
	1	297.858						714
	3	298.014						714
	1	298.380						714
	3	299.563						714
	1	299.889						714
	1	300.416						714
	1	301.244						714
	1	302.007						714
	1	302.558						714
	1	302.906						714
	1	303.791						714
	35	303.891						714
	1	306.083						714
	1	307.493						714
	3	308.408						714
	1	310.518						714
	1	311.659						714
	3	314.940						714
	1	315.670						714
	3	315.779						714
	3	315.844						714
	1	318.543						714
	1	319.887						714
	1	324.047						714
	1	325.767						714
	1	326.259						714
	1	328.248						714
	1	331.074						714
	1	332.554						714
	1	334.859						714
	1	343.668						714
	1	349.299						714
	1	350.732						714
	6	351.126						714
	1	351.351						714
	1	352.348						714
	1	352.574						714
	1	353.757						714
	1	354.843						714
	3	368.818						714
	1	370.408						714
	1	370.789						714
	1	371.332						714
	6	371.410						714
	1	375.508						714

Ti UNCLASSIFIED LINES — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	378.630						714
	1	385.211						714
	1	394.153						714
	1	396.288						714

TITANIUM II (Ti^{1+}), Z = 22
Ground State $1s^22s^22p^63s^23p^63d^24s(^4F_{3/2})$ (21 electrons)
Ionization Potential 109 500 cm^{-1}; 13.58 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		1545.009	4.89760 – 69.62215	$3d^2(a^3F)4s - 3d4s(b^1D)4p$	$a^2F - v^2D^\circ$	$\frac{7}{2}-\frac{5}{2}$	P	375
		1545.626	4.62861 – 69.32732	$3d^2(a^3F)4s - 3d4s(b^1D)4p$	$a^2F - v^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$	P	375
		1609.043	8.74427 – 70.89300	$3d^2(a^1D)4s - 3d4s(b^1D)4p$	$a^2D - v^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	375
		1615.616	8.71047 – 70.60635	$3d^2(a^1D)4s - 3d4s(b^1D)4p$	$a^2D - v^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$	P	375
		1618.782	9.11815 – 70.89300	$3d^3 - 3d4s(b^1D)4p$	$a^2G - v^2F^\circ$	$\frac{9}{2}-\frac{7}{2}$	P	375
		1628.148	8.99769 – 70.60635	$3d^3 - 3d4s(b^1D)4p$	$a^2G - v^2F^\circ$	$\frac{7}{2}-\frac{5}{2}$	P	375
		1642.633	8.74427 – 69.62215	$3d^2(a^1D)4s - 3d4s(b^1D)4p$	$a^2D - v^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$	P	375
		1649.706	8.71047 – 69.32732	$3d^2(a^1D)4s - 3d4s(b^1D)4p$	$a^2D - v^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$	P	375
		1676.552	9.97592 – 69.62215	$3d^3 - 3d4s(b^1D)4p$	$a^2P - v^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$	P	375
		1681.339	9.85090 – 69.32732	$3d^3 - 3d4s(b^1D)4p$	$a^2P - v^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	375
		1720.139	12.75815 – 70.89300	$3d^3 - 3d4s(b^1D)4p$	$b^2D - v^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	375
		1724.805	12.62877 – 70.60635	$3d^3 - 3d4s(b^1D)4p$	$b^2D - v^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$	P	375
		1758.582	12.75815 – 69.62215	$3d^3 - 3d4s(b^1D)4p$	$b^2D - v^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$	P	375
		1763.714	12.62877 – 69.32732	$3d^3 - 3d4s(b^1D)4p$	$b^2D - v^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$	P	375
		1797.414	15.25753 – 70.89300	$3d^2(a^1G)4s - 3d4s(b^1D)4p$	$b^2G - v^2F^\circ$	$\frac{9}{2}-\frac{7}{2}$	P	375
		1806.987	15.26560 – 70.60635	$3d^2(a^1G)4s - 3d4s(b^1D)4p$	$b^2G - v^2F^\circ$	$\frac{7}{2}-\frac{5}{2}$	P	375
		1828.382	4.62861 – 59.32179	$3d^2(a^3F)4s - 3d(^2D)4s4p(^3P^\circ)$	$a^2F - w^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$	P	375
		1832.502	4.89760 – 59.46781	$3d^2(a^3F)4s - 3d(^2D)4s4p(^3P^\circ)$	$a^2F - w^2F^\circ$	$\frac{7}{2}-\frac{7}{2}$	P	375
		1903.416	0.09394 – 52.63107	$3d^2(a^3F)4s - 3d(^2D)4s4p(^3P^\circ)$	$ga^4F - {}^4F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	375
		1905.797	0.0 – 52.47148	$3d^2(a^3F)4s - 3d(^2D)4s4p(^3P^\circ)$	$ga^4F - {}^4F^\circ$	$\frac{3}{2}-\frac{5}{2}$	P	375
	300	1906.251	0.0 – 52.45898	$3d^2(a^3F)4s - 3d(^2D)4s4p(^3P^\circ)$	$ga^4F - {}^4F^\circ$	$\frac{3}{2}-\frac{3}{2}$	P	488,601
	300	1908.193	0.22547 – 52.63107	$3d^2(a^3F)4s - 3d(^2D)4s4p(^3P^\circ)$	$ga^4F - {}^4F^\circ$	$\frac{7}{2}-\frac{7}{2}$	P	488,601
	200	1909.215	0.09394 – 52.47148	$3d^2(a^3F)4s - 3d(^2D)4s4p(^3P^\circ)$	$ga^4F - {}^4F^\circ$	$\frac{5}{2}-\frac{5}{2}$	P	488
	200	1909.671	0.09394 – 52.45898	$3d^2(a^3F)4s - 3d(^2D)4s4p(^3P^\circ)$	$ga^4F - {}^4F^\circ$	$\frac{5}{2}-\frac{3}{2}$	P	488
	50	1911.958	0.0 – 52.32978	$3d^2(a^3F)4s -$	$ga^4F - x^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$	P	488
	25	1914.022	0.22547 – 52.47148	$3d^2(a^3F)4s - 3d(^2D)4s4p(^3P^\circ)$	$ga^4F - {}^4F^\circ$	$\frac{7}{2}-\frac{5}{2}$	P	488
		1914.321	0.39322 – 52.63107	$3d^2(a^3F)4s - 3d(^2D)4s4p(^3P^\circ)$	$ga^4F - {}^4F^\circ$	$\frac{9}{2}-\frac{7}{2}$	P	488

TITANIUM III (Ti^{2+}), Z = 22
Ground State $1s^22s^22p^63s^23p^63d^2(^3F_2)$ (20 electrons)
Ionization Potential 221 735.6 cm^{-1}; 27.4919 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	3	629.572	.1849 – 159.02293	$3d^2$ – 3d4f	$g^3F - {}^3H^\circ$	3 – 4		227
	3	629.957	0.000 – 158.74092	$3d^2$ – 3d4f	$g^3F - {}^3G^\circ$	2 – 3		227
	3	630.086	.4204 – 159.12894	$3d^2$ – 3d4f	$g^3F - {}^3H^\circ$	4 – 5		227
	1	630.199	.1849 – 158.86503	$3d^2$ – 3d4f	$g^3F - {}^3G^\circ$	3 – 4		227
	3	630.685	0.000 – 158.55776	$3d^2$ – 3d4f	$g^3F - {}^3F^\circ$	2 – 3		227
	3	630.692	.1849 – 158.74092	$3d^2$ – 3d4f	$g^3F - {}^3G^\circ$	3 – 3		227
	1	630.769	0.000 – 158.53663	$3d^2$ – 3d4f	$g^3F - {}^3F^\circ$	2 – 2		227
	3	630.891	.1849 – 158.69085	$3d^2$ – 3d4f	$g^3F - {}^3F^\circ$	3 – 4		227
	7	630.982	.4204 – 158.90355	$3d^2$ – 3d4f	$g^3F - {}^3G^\circ$	4 – 5		227
	1	631.135	.4204 – 158.86503	$3d^2$ – 3d4f	$g^3F - {}^3G^\circ$	4 – 4		227
	0	631.421	.1849 – 158.55776	$3d^2$ – 3d4f	$g^3F - {}^3F^\circ$	3 – 3		227
	0	631.830	.4204 – 158.69085	$3d^2$ – 3d4f	$g^3F - {}^3F^\circ$	4 – 4		227
	0	632.509	.1849 – 158.28534	$3d^2$ – 3d4f	$g^3F - {}^1G^\circ$	3 – 4		227
	3	663.541	8.4735 – 159.18024	$3d^2$ – 3d4f	${}^1D - {}^1F^\circ$	2 – 3		227
	1	663.789	8.4735 – 159.12378	$3d^2$ – 3d4f	${}^1D - {}^1D^\circ$	2 – 2		227
	3	669.926	10.7212 – 159.99154	$3d^2$ – 3d4f	${}^3P - {}^3P^\circ$	2 – 2		227
	1	671.788	10.5384 – 159.39489	$3d^2$ – 3d4f	${}^3P - {}^3D^\circ$	0 – 1		227
	3	672.042	10.6036 – 159.40391	$3d^2$ – 3d4f	${}^3P - {}^3D^\circ$	1 – 2		227
	7	672.220	10.7212 – 159.48195	$3d^2$ – 3d4f	${}^3P - {}^3D^\circ$	2 – 3		227
	0	675.722	.4204 – 148.41024	$3d^2$ – 3d5p	$g^3F - {}^3F^\circ$	4 – 4		227
	0	675.982	10.6036 – 158.53663	$3d^2$ – 3d4f	${}^3P - {}^3F^\circ$	1 – 2		227
	0	675.989	0.000 – 147.93147	$3d^2$ – 3d5p	$g^3F - {}^3F^\circ$	2 – 2		227
	0	676.013	.1849 – 148.11110	$3d^2$ – 3d5p	$g^3F - {}^3F^\circ$	3 – 3		227
	1	677.667	.1849 – 147.74989	$3d^2$ – 3d5p	$g^3F - {}^3D^\circ$	3 – 2		227
	1	677.681	0.000 – 147.56214	$3d^2$ – 3d5p	$g^3F - {}^3D^\circ$	2 – 1		227
	1	677.878	.4204 – 147.93947	$3d^2$ – 3d5p	$g^3F - {}^3D^\circ$	4 – 3		227
	15	686.543	14.3976 – 160.05490	$3d^2$ – 3d4f	${}^1G - {}^1H^\circ$	4 – 5		227
	1	694.986	14.3976 – 158.28534	$3d^2$ – 3d4f	${}^1G - {}^1G^\circ$	4 – 4		227
	1	739.327	14.3976 – 149.65577	$3d^2$ – 3d5p	${}^1G - {}^1F^\circ$	4 – 3		227
	0	865.802	41.70427 – 157.20416	3d4s – 4s4p	${}^1D - {}^1P^\circ$	2 – 1		227
	3	1002.384	38.19895 – 137.9612	3d4s – 4s4p	${}^3D - {}^3P^\circ$	2 – 2		227
	40	1004.670	38.42599 – 137.9612	3d4s – 4s4p	${}^3D - {}^3P^\circ$	3 – 2		227
	3	1005.798	38.06435 – 137.4878	3d4s – 4s4p	${}^3D - {}^3P^\circ$	1 – 1		227
	25	1007.163	38.19895 – 137.4878	3d4s – 4s4p	${}^3D - {}^3P^\circ$	2 – 1		227
	7	1008.119	38.06435 – 137.2589	3d4s – 4s4p	${}^3D - {}^3P^\circ$	1 – 0		227
	0	1077.234	77.42445 – 170.25475	3d4p – 3d6s	${}^3D^\circ - {}^3D$	3 – 3		227
	0	1081.225	77.42445 – 169.91211	3d4p – 3d5d	${}^3D^\circ - {}^3F$	3 – 4		227
	1	1082.899	77.42445 – 169.76913	3d4p – 3d5d	${}^3D^\circ - {}^3F$	3 – 3		227
	0	1104.233	77.74644 – 168.30706	3d4p – 3d5d	${}^3F^\circ - {}^3G$	3 – 4		227
	1	1106.661	78.15861 – 168.52052	3d4p – 3d5d	${}^3F^\circ - {}^3G$	4 – 5		227
	1	1136.041	83.11693 – 171.14193	3d4p – 3d5d	${}^1F^\circ - {}^1G$	3 – 4		227
	7	1235.495	0.000 – 80.93919	$3d^2$ – 3d4p	$g^3F - {}^3P^\circ$	2 – 1		227
	0	1237.018	.1849 – 81.02447	$3d^2$ – 3d4p	$g^3F - {}^3P^\circ$	3 – 2		227
2	60	1282.484	.1849 – 78.15861	$3d^2$ – 3d4p	$g^3F - {}^3F^\circ$	3 – 4		227
2	60	1286.233	0.000 – 77.74644	$3d^2$ – 3d4p	$g^3F - {}^3F^\circ$	2 – 3		227
2	360	1286.369	.4204 – 78.15861	$3d^2$ – 3d4p	$g^3F - {}^3F^\circ$	4 – 4		227
2	160	1289.299	.1849 – 77.74644	$3d^2$ – 3d4p	$g^3F - {}^3F^\circ$	3 – 3		227
1		1291.581	0.000 – 77.42445	$3d^2$ – 3d4p	$g^3F - {}^3D^\circ$	2 – 3		227
2	160	1291.624	0.000 – 77.42186	$3d^2$ – 3d4p	$g^3F - {}^3F^\circ$	2 – 2		227
2	160	1293.226	.4204 – 77.74644	$3d^2$ – 3d4p	$g^3F - {}^3F^\circ$	4 – 3		227
1	200	1294.673	.1849 – 77.42445	$3d^2$ – 3d4p	$g^3F - {}^3D^\circ$	3 – 3		227
2	160	1294.716	.1849 – 77.42186	$3d^2$ – 3d4p	$g^3F - {}^3F^\circ$	3 – 2		227
1	160	1295.884	0.000 – 77.16743	$3d^2$ – 3d4p	$g^3F - {}^3D^\circ$	2 – 2		227
1	700	1298.634	.4204 – 77.42445	$3d^2$ – 3d4p	$g^3F - {}^3D^\circ$	4 – 3		227

Tl III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
1	300	1298.698	0.000 – 77.00023	$3d^2$ – 3d4p	g^3F – $^3D^o$	2 – 1		227
1	640	1298.997	.1849 – 77.16743	$3d^2$ – 3d4p	g^3F – $^3D^o$	3 – 2		227
4	230	1327.609	8.4735 – 83.79686	$3d^2$ – 3d4p	^1D – $^1P^o$	2 – 1		227
	25	1329.819	0.000 – 75.19821	$3d^2$ – 3d4p	g^3F – $^1D^o$	2 – 2		227
	40	1339.703	8.4735 – 83.11693	$3d^2$ – 3d4p	^1D – $^1F^o$	2 – 3		227
	0	1365.029	10.5384 – 83.79686	$3d^2$ – 3d4p	^3P – $^1P^o$	0 – 1		227
	7	1368.444	10.7212 – 83.79686	$3d^2$ – 3d4p	^3P – $^1P^o$	2 – 1		227
	7	1379.963	8.4735 – 80.93919	$3d^2$ – 3d4p	^1D – $^3P^o$	2 – 1		227
	160	1420.033	10.6036 – 81.02447	$3d^2$ – 3d4p	^3P – $^3P^o$	1 – 2		227
	160	1420.438	10.5384 – 80.93919	$3d^2$ – 3d4p	^3P – $^3P^o$	0 – 1		227
	160	1421.640	10.6036 – 80.94487	$3d^2$ – 3d4p	^3P – $^3P^o$	1 – 0		227
	160	1421.755	10.6036 – 80.93919	$3d^2$ – 3d4p	^3P – $^3P^o$	1 – 1		227
	230	1422.408	10.7212 – 81.02447	$3d^2$ – 3d4p	^3P – $^3P^o$	2 – 2		227
	160	1424.136	10.7212 – 80.93919	$3d^2$ – 3d4p	^3P – $^3P^o$	2 – 1		227
	40	1433.85						604
		1450.305	8.4735 – 77.42445	$3d^2$ – 3d4p	^1D – $^3D^o$	2 – 3		227
	15	1450.360	8.4735 – 77.42186	$3d^2$ – 3d4p	^1D – $^3F^o$	2 – 2		227
5	850	1455.195	14.3976 – 83.11693	$3d^2$ – 3d4p	^1G – $^1F^o$	4 – 3		227
	3	1455.733	8.4735 – 77.16743	$3d^2$ – 3d4p	^1D – $^3D^o$	2 – 2		227
	15	1491.976	10.7212 – 77.74644	$3d^2$ – 3d4p	^3P – $^3F^o$	2 – 3		227
	20	1495.08						604
	7	1496.596	10.6036 – 77.42186	$3d^2$ – 3d4p	^3P – $^3F^o$	1 – 2		227
3	160	1498.695	8.4735 – 75.19821	$3d^2$ – 3d4p	^1D – $^1D^o$	2 – 2		227
	80	1499.176	10.7212 – 77.42445	$3d^2$ – 3d4p	^3P – $^3D^o$	2 – 3		227
	25	1502.318	10.6036 – 77.16743	$3d^2$ – 3d4p	^3P – $^3D^o$	1 – 2		227
	15	1504.624	10.5384 – 77.00023	$3d^2$ – 3d4p	^3P – $^3D^o$	0 – 1		227
	7	1504.977	10.7212 – 77.16743	$3d^2$ – 3d4p	^3P – $^3D^o$	2 – 2		227
	15	1506.101	10.6036 – 77.00023	$3d^2$ – 3d4p	^3P – $^3D^o$	1 – 1		227
	1	1652.256	75.19821 – 135.72151	3d4p – 3d4d	$^1D^o$ – ^3P	2 – 2		227
	25	1660.935	75.19821 – 135.40527	3d4p – 3d4d	$^1D^o$ – ^1D	2 – 2		227
	1	1684.647	75.19821 – 134.55784	3d4p – 3d5s	$^1D^o$ – ^1D	2 – 2		227
	0	1689.501	102.66515 – 161.85424	$4s^2$ – 3d4f	^1S – $^1P^o$	0 – 1		227
	1	1711.331	77.16743 – 135.60147	3d4p – 3d4d	$^3D^o$ – ^3P	2 – 1		227
	3	1715.352	77.42445 – 135.72151	3d4p – 3d4d	$^3D^o$ – ^3P	3 – 2		227
	1	1757.523	77.00023 – 133.89850	3d4p – 3d5s	$^3D^o$ – ^3D	1 – 1		227
	15	1758.994	77.42445 – 134.27512	3d4p – 3d5s	$^3D^o$ – ^3D	3 – 3		227
	3	1759.561	77.16743 – 133.99979	3d4p – 3d5s	$^3D^o$ – ^3D	2 – 2		227
	7	1770.644	77.42186 – 133.89850	3d4p – 3d5s	$^3F^o$ – ^3D	2 – 1		227
	15	1777.672	77.74644 – 133.99979	3d4p – 3d5s	$^3F^o$ – ^3D	3 – 2		227
	3	1778.651	83.79686 – 140.01924	3d4p – 3d4d	$^1P^o$ – ^1S	1 – 0		227
	15	1782.007	78.15861 – 134.27512	3d4p – 3d5s	$^3F^o$ – ^3D	4 – 3		227
	25	1783.644	77.00023 – 133.06524	3d4p – 3d4d	$^3D^o$ – ^3F	1 – 2		227
	25	1784.450	77.16743 – 133.20710	3d4p – 3d4d	$^3D^o$ – ^3F	2 – 3		227
	40	1787.418	77.42445 – 133.37107	3d4p – 3d4d	$^3D^o$ – ^3F	3 – 4		227
	7	1788.979	77.16743 – 133.06524	3d4p – 3d4d	$^3D^o$ – ^3F	2 – 2		227
	3	1792.589	77.42186 – 133.20710	3d4p – 3d4d	$^3F^o$ – ^3F	2 – 3		227
	3	1792.672	77.42445 – 133.20710	3d4p – 3d4d	$^3D^o$ – ^3F	3 – 3		227
	3	1797.159	77.42186 – 133.06524	3d4p – 3d4d	$^3F^o$ – ^3F	2 – 2		227
	7	1797.765	77.74644 – 133.37107	3d4p – 3d4d	$^3F^o$ – ^3F	3 – 4		227
	3	1803.080	77.74644 – 133.20710	3d4p – 3d4d	$^3F^o$ – ^3F	3 – 3		227
	40	1811.185	78.15861 – 133.37107	3d4p – 3d4d	$^3F^o$ – ^3F	4 – 4		227
	1	1825.406	80.93919 – 135.72151	3d4p – 3d4d	$^3P^o$ – ^3P	1 – 2		227
	15	1828.252	81.02447 – 135.72151	3d4p – 3d4d	$^3P^o$ – ^3P	2 – 2		227
	1	1829.415	80.93919 – 135.60147	3d4p – 3d4d	$^3P^o$ – ^3P	1 – 1		227

Ti III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	1829.605	80.94487 – 135.60147	3d4p – 3d4d	$^3P^o - ^3P$	0 – 1		227
	1	1831.426	80.93919 – 135.54146	3d4p – 3d4d	$^3P^o - ^3P$	1 – 0		227
	3	1832.274	81.02447 – 135.60147	3d4p – 3d4d	$^3P^o - ^3P$	2 – 1		227
	1	1833.550	102.66515 – 157.20416	$4s^2$ – 4s4p	$^1S - ^1P^o$	0 – 1		227
	3	1849.961	75.19821 – 129.25341	3d4p – 3d4d	$^1D^o - ^1P$	2 – 1		227
	3	1877.911	81.02447 – 134.27512	3d4p – 3d5s	$^3P^o - ^3D$	2 – 3		227
	80	1878.894	83.11693 – 136.33974	3d4p – 3d4d	$^1F^o - ^1G$	3 – 4		227
	1	1884.638	80.93919 – 133.99979	3d4p – 3d5s	$^3P^o - ^3D$	1 – 2		227
	10	1897.27						604
	80	1901.417	75.19821 – 127.79057	3d4p – 3d4d	$^1D^o - ^1F$	2 – 3		227
	3	1925.823	77.16743 – 129.09328	3d4p – 3d4d	$^3D^o - ^3G$	2 – 3		227
	7	1929.448	77.42445 – 129.25274	3d4p – 3d4d	$^3D^o - ^3G$	3 – 4		227
	80	1935.306	77.42186 – 129.09328	3d4p – 3d4d	$^3F^o - ^3G$	2 – 3		227
	3	1940.009	77.00023 – 128.54638	3d4p – 3d4d	$^3D^o - ^3D$	1 – 2		227
	3	1940.909	77.16743 – 128.68967	3d4p – 3d4d	$^3D^o - ^3D$	2 – 3		227
	80	1941.510	77.74644 – 129.25274	3d4p – 3d4d	$^3F^o - ^3G$	3 – 4		227
	7	1943.978	83.11693 – 134.55784	3d4p – 3d5s	$^1F^o - ^1D$	3 – 2		227
	7	1944.271	77.00023 – 128.43340	3d4p – 3d4d	$^3D^o - ^3D$	1 – 1		227
	15	1946.322	77.16743 – 128.54638	3d4p – 3d4d	$^3D^o - ^3D$	2 – 2		227
	1	1947.540	77.74644 – 129.09328	3d4p – 3d4d	$^3F^o - ^3G$	3 – 3		227
	40	1948.508	32.4755 – 83.79686	$3d^2$ – 3d4p	$^1S - ^1P^o$	0 – 1		227
	100	1948.909	78.15861 – 129.46937	3d4p – 3d4d	$^3F^o - ^3G$	4 – 5		227
		1950.612	77.16743 – 128.43340	3d4p – 3d4d	$^3D^o - ^3D$	2 – 1		227
	40	1950.640	77.42445 – 128.68967	3d4p – 3d4d	$^3D^o - ^3D$	3 – 3		227
	3	1956.009	77.42186 – 128.54638	3d4p – 3d4d	$^3F^o - ^3D$	2 – 2		227
	3	1956.108	77.42445 – 128.54638	3d4p – 3d4d	$^3D^o - ^3D$	3 – 2		227
	3	1957.172	78.15861 – 129.25274	3d4p – 3d4d	$^3F^o - ^3G$	4 – 4		227
	7	1962.969	77.74644 – 128.68967	3d4p – 3d4d	$^3F^o - ^3D$	3 – 3		227
	1	1965.298	83.11693 – 133.99979	3d4p – 3d5s	$^1F^o - ^3D$	3 – 2		227
	25	1970.017	83.79686 – 134.55784	3d4p – 3d5s	$^1P^o - ^1D$	1 – 2		227
	1	1978.981	78.15861 – 128.68967	3d4p – 3d4d	$^3F^o - ^3D$	4 – 3		227

TITANIUM IV (Ti^{3+}), Z = 22
Ground State $1s^22s^22p^63s^23p^63d(^2D_{3/2})$ (19 electrons)
Ionization Potential 348 973.3 cm^{-1}; 43.2675 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	362.520	0.0 – 275.84701	$3p^63d$ – $3p^65f$	$^2D - ^2F^o$	$\frac{3}{2} - \frac{5}{2}$		714
	1	363.003	0.3821 – 275.86194	$3p^63d$ – $3p^65f$	$^2D - ^2F^o$	$\frac{5}{2} - \frac{7}{2}$		714
		363.023	0.3821 – 275.84701	$3p^63d$ – $3p^65f$	$^2D - ^2F^o$	$\frac{5}{2} - \frac{5}{2}$	P	721
		363.794	0.0 – 274.88121	$3p^63d$ – $3p^66p$	$^2D - ^2P^o$	$\frac{3}{2} - \frac{3}{2}$	P	721
		363.848	0.0 – 274.83982	$3p^63d$ – $3p^53d^2$	$^2D - ^2F^o$	$\frac{3}{2} - \frac{5}{2}$	P	721
		363.999	0.0 – 274.72629	$3p^63d$ – $3p^66p$	$^2D - ^2P^o$	$\frac{3}{2} - \frac{1}{2}$	P	721
		364.300	0.3821 – 274.88121	$3p^63d$ – $3p^66p$	$^2D - ^2P^o$	$\frac{5}{2} - \frac{3}{2}$	P	721
		364.355	0.3821 – 274.83982	$3p^63d$ – $3p^53d^2$	$^2D - ^2F^o$	$\frac{5}{2} - \frac{5}{2}$	P	721
	6	423.487	0.0 – 236.13529	$3p^63d$ – $3p^64f$	$^2D - ^2F^o$	$\frac{3}{2} - \frac{5}{2}$		714
	6	424.160	0.3821 – 236.14230	$3p^63d$ – $3p^64f$	$^2D - ^2F^o$	$\frac{5}{2} - \frac{7}{2}$		714
		424.172	0.3821 – 236.13529	$3p^63d$ – $3p^64f$	$^2D - ^2F^o$	$\frac{5}{2} - \frac{5}{2}$	P	721
		433.042	0.0 – 230.92438	$3p^63d$ – $3p^65p$	$^2D - ^2P^o$	$\frac{3}{2} - \frac{3}{2}$	P	721

Ti IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		433.635	0.0 – 230.60889	$3p^63d - 3p^65p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	P	721
		433.760	0.3821 – 230.92438	$3p^63d - 3p^65p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$	P	721
		664.295	80.38893 – 230.92438	$3p^64s - 3p^65p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	721
		665.690	80.38893 – 230.60889	$3p^64s - 3p^65p$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	721
	1	725.026	127.92136 – 265.84742	$3p^64p - 3p^66s$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$	P	721
	4	729.353	128.73959 – 265.84742	$3p^64p - 3p^66s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$	P	721
		763.842	127.92136 – 258.83848	$3p^64p - 3p^65d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$	P	721
		768.418	128.73959 – 258.87708	$3p^64p - 3p^65d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	P	721
		768.646	128.73959 – 258.83848	$3p^64p - 3p^65d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$	P	721
1	250	776.762	0.0 – 128.73959	$3p^63d - 3p^64p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		721
1	800	779.074	0.3821 – 128.73959	$3p^63d - 3p^64p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		721
1	650	781.730	0.0 – 127.92136	$3p^63d - 3p^64p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		721
	150	1183.635	127.92136 – 212.40704	$3p^64p - 3p^65s$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		721
	250	1195.208	128.73959 – 212.40704	$3p^64p - 3p^65s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		721
	4	1265.138	196.80427 – 275.84701	$3p^64d - 3p^65f$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$	P	721
	10	1266.272	196.88996 – 275.86194	$3p^64d - 3p^65f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	721
		1280.788	196.80427 – 274.88121	$3p^64d - 3p^66p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	P	721
	10	1282.195	196.88996 – 274.88121	$3p^64d - 3p^66p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$	P	721
	4	1283.334	196.80427 – 274.72629	$3p^64d - 3p^66p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	P	721
3	800	1451.736	127.92136 – 196.80427	$3p^64p - 3p^64d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		721
3	1000	1467.338	128.73959 – 196.88996	$3p^64p - 3p^64d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		721
3	350	1469.188	128.73959 – 196.80427	$3p^64p - 3p^64d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		721
	4	1564.685	236.13529 – 300.0459	$3p^64f - 3p^66g$	$^2F^\circ - ^2G$	$\frac{5}{2}-\frac{7}{2}$	P	721
	10	1564.850	236.14230 – 300.0462	$3p^64f - 3p^66g$	$^2F^\circ - ^2G$	$\frac{7}{2}-\frac{9}{2}$	P	721

TITANIUM V (Ti^{4+}), Z = 22
Ground State $1s^22s^22p^63s^23p^6(^1S_0)$ (18 electrons)
Ionization Potential 800 900 cm^{-1}; 99.300 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	0	103.059	0.000 – 970.32	$3s^23p^6 - 3s3p^611p$	$g^1S - ^1P^\circ$	0 – 1	A	440
	1	103.733	0.000 – 964.01	$3s^23p^6 - 3s3p^610p$	$g^1S - ^1P^\circ$	0 – 1	A	440
	1	103.754	0.000 – 963.82	$3s^23p^6 - 3s3p^610p$	$g^1S - ^3P^\circ$	0 – 1	A	440
	1	104.711	0.000 – 955.01	$3s^23p^6 - 3s3p^69p$	$g^1S - ^1P^\circ$	0 – 1	A	440
	0	104.732	0.000 – 954.82	$3s^23p^6 - 3s3p^69p$	$g^1S - ^3P^\circ$	0 – 1	A	440
	3	106.154	0.000 – 942.03	$3s^23p^6 - 3s3p^68p$	$g^1S - ^1P^\circ$	0 – 1	A	440
	0	106.308	0.000 – 940.66	$3s^23p^6 - 3s3p^68p$	$g^1S - ^3P^\circ$	0 – 1	A	440
	6	108.443	0.000 – 922.14	$3s^23p^6 - 3s3p^67p$	$g^1S - ^1P^\circ$	0 – 1	A	440
	0	108.611	0.000 – 920.72	$3s^23p^6 - 3s3p^67p$	$g^1S - ^3P^\circ$	0 – 1	A	440
	11	112.495	0.000 – 888.93	$3s^23p^6 - 3s3p^66p$	$g^1S - ^1P^\circ$	0 – 1	A	440
	0	112.896	0.000 – 885.77	$3s^23p^6 - 3s3p^66p$	$g^1S - ^3P^\circ$	0 – 1	A	440
	12	120.824	0.000 – 827.65	$3s^23p^6 - 3s3p^65p$	$g^1S - ^1P^\circ$	0 – 1	A	440
	2	121.138	0.000 – 825.50	$3s^23p^6 - 3s3p^65p$	$g^1S - ^3P^\circ$	0 – 1	A	440
	12	144.551	0.000 – 691.797	$3s^23p^6 - 3s3p^64p$	$g^1S - ^1P^\circ$	0 – 1		727
	6	145.354	0.000 – 687.98	$3s^23p^6 - 3s3p^64p$	$g^1S - ^3P^\circ$	0 – 1		440
	0	145.79	0.000 – 685.940	$3s^23p^6 - 3s^23p^5(^2P^\circ_{1/2})6s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		727
	4	146.897	0.000 – 680.748	$3s^23p^6 - 3s^23p^5(^2P^\circ_{3/2})6s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		727
	50	162.984	0.000 – 613.5582	$3s^23p^6 - 3s^23p^5(^2P^\circ_{1/2})5s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		727

Ti V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	80	164.446	0.000 – 608.1007	$3s^23p^6 - 3s^23p^5(^2P^\circ_{3/2})5s$	$g^1S - {}^2[\frac{3}{2}]^\circ$	0 – 1		727
	450	225.347	0.000 – 443.7527	$3s^23p^6 - 3s^23p^54s$	$g^1S - {}^1P^\circ$	0 – 1		727
	300	228.909	0.000 – 436.8498	$3s^23p^6 - 3s^23p^54s$	$g^1S - {}^3P^\circ$	0 – 1		727
	1	241.240	506.2247 – 920.72	$3s3p^63d - 3s3p^67p$	${}^1D - {}^3P^\circ$	2 – 1	Q	714
	1	241.271	506.2247 – 920.72	$3s3p^63d - 3s3p^67p$	${}^1D - {}^3P^\circ$	2 – 1	Q	714
	1	246.235	514.6087 – 920.72	$3s^23p^54p - 3s3p^67p$	${}^1S - {}^3P^\circ$	0 – 1	Q	714
	3	249.589	488.2257 – 888.93	$3s^23p^54p - 3s3p^66p$	${}^3D - {}^1P^\circ$	2 – 1	Q	714
	3	249.984	488.9287 – 888.93	$3s3p^63d - 3s3p^66p$	${}^3D - {}^1P^\circ$	1 – 1	Q	714
	6	251.533	488.2257 – 885.77	$3s^23p^54p - 3s3p^66p$	${}^3D - {}^3P^\circ$	2 – 1	Q	714
	900	252.958	0.000 – 395.3209	$3s^23p^6 - 3s^23p^53d$	$g^1S - {}^1P^\circ$	0 – 1		727
	1	253.674	491.5587 – 885.77	$3s3p^63d - 3s3p^66p$	${}^3D - {}^3P^\circ$	2 – 1	Q	714
	3	256.685	499.3362 – 888.93	$3s^23p^54p - 3s3p^66p$	${}^3P - {}^1P^\circ$	1 – 1	Q	714
	6	257.155	496.8907 – 885.77	$3s^23p^54p - 3s3p^66p$	${}^1P - {}^3P^\circ$	1 – 1	Q	714
	1	261.280	506.2247 – 888.93	$3s3p^63d - 3s3p^66p$	${}^1D - {}^1P^\circ$	2 – 1	Q	714
	150	323.365	0.000 – 309.2521	$3s^23p^6 - 3s^23p^53d$	$g^1S - {}^3D^\circ$	0 – 1		727
	1	363.145	0.000 – 275.3719	$3s^23p^6 - 3s^23p^53d$	$g^1S - {}^3P^\circ$	0 – 1		727
	0	433.202	275.3719 – 506.2247	$3s^23p^53d - 3s3p^63d$	${}^3P^\circ - {}^1D$	1 – 2		727
	0	436.839	277.3106 – 506.2247	$3s^23p^53d - 3s3p^63d$	${}^3P^\circ - {}^1D$	2 – 2		727
	12	444.643	274.4397 – 499.3362	$3s^23p^53d - 3s^23p^54p$	${}^3P^\circ - {}^3P$	0 – 1		727
	4	446.493	275.3719 – 499.3362	$3s^23p^53d - 3s^23p^54p$	${}^3P^\circ - {}^3P$	1 – 1		727
	30	448.822	275.3719 – 498.1764	$3s^23p^53d - 3s^23p^54p$	${}^3P^\circ - {}^3P$	1 – 0		727
	30	449.063	275.3719 – 498.0572	$3s^23p^53d - 3s^23p^54p$	${}^3P^\circ - {}^3P$	1 – 2		727
	2	449.541	274.4397 – 496.8907	$3s^23p^53d - 3s^23p^54p$	${}^3P^\circ - {}^1P$	0 – 1		727
	50	450.397	277.3106 – 499.3362	$3s^23p^53d - 3s^23p^54p$	${}^3P^\circ - {}^3P$	2 – 1		727
	0	451.429	275.3719 – 496.8907	$3s^23p^53d - 3s^23p^54p$	${}^3P^\circ - {}^1P$	1 – 1		727
	80	453.006	277.3106 – 498.0572	$3s^23p^53d - 3s^23p^54p$	${}^3P^\circ - {}^3P$	2 – 2		727
	4	455.419	277.3106 – 496.8907	$3s^23p^53d - 3s^23p^54p$	${}^3P^\circ - {}^1P$	2 – 1		727
	4	457.321	275.3719 – 494.0357	$3s^23p^53d - 3s^23p^54p$	${}^3P^\circ - {}^1D$	1 – 2		727
	12	458.861	275.3719 – 493.3005	$3s^23p^53d - 3s^23p^54p$	${}^3P^\circ - {}^3D$	1 – 1		727
	150	461.414	277.3106 – 494.0357	$3s^23p^53d - 3s^23p^54p$	${}^3P^\circ - {}^1D$	2 – 2		727
	30	462.565	275.3719 – 491.5587	$3s^23p^53d - 3s3p^63d$	${}^3P^\circ - {}^3D$	1 – 2		727
	30	462.982	277.3106 – 493.3005	$3s^23p^53d - 3s^23p^54p$	${}^3P^\circ - {}^3D$	2 – 1		727
	0	464.143	290.7787 – 506.2247	$3s^23p^53d - 3s3p^63d$	${}^3F^\circ - {}^1D$	2 – 2		727
	80	464.562	277.3106 – 492.5671	$3s^23p^53d - 3s3p^63d$	${}^3P^\circ - {}^3D$	2 – 3		727
	50	466.224	274.4397 – 488.9287	$3s^23p^53d - 3s3p^63d$	${}^3P^\circ - {}^3D$	0 – 1		727
	4	466.749	277.3106 – 491.5587	$3s^23p^53d - 3s3p^63d$	${}^3P^\circ - {}^3D$	2 – 2		727
	30	468.257	275.3719 – 488.9287	$3s^23p^53d - 3s3p^63d$	${}^3P^\circ - {}^3D$	1 – 1		727
	110	469.808	275.3719 – 488.2257	$3s^23p^53d - 3s^23p^54p$	${}^3P^\circ - {}^3D$	1 – 2		727
	12	474.124	277.3106 – 488.2257	$3s^23p^53d - 3s^23p^54p$	${}^3P^\circ - {}^3D$	2 – 2		727
	200	474.690	277.3106 – 487.9746	$3s^23p^53d - 3s^23p^54p$	${}^3P^\circ - {}^3D$	2 – 3		727
	30	478.455	289.0502 – 498.0572	$3s^23p^53d - 3s^23p^54p$	${}^3F^\circ - {}^3P$	3 – 2		727
	0	479.497	290.7787 – 499.3362	$3s^23p^53d - 3s^23p^54p$	${}^3F^\circ - {}^3P$	2 – 1		727
	80	481.818	274.4397 – 481.9877	$3s^23p^53d - 3s^23p^54p$	${}^3P^\circ - {}^3S$	0 – 1		727
	0	482.447	290.7787 – 498.0572	$3s^23p^53d - 3s^23p^54p$	${}^3F^\circ - {}^3P$	2 – 2		727
	200	483.992	275.3719 – 481.9877	$3s^23p^53d - 3s^23p^54p$	${}^3P^\circ - {}^3S$	1 – 1		727
	30	485.175	290.7787 – 496.8907	$3s^23p^53d - 3s^23p^54p$	${}^3F^\circ - {}^1P$	2 – 1		727
	50	487.115	287.2765 – 492.5671	$3s^23p^53d - 3s3p^63d$	${}^3F^\circ - {}^3D$	4 – 3		727
	50	487.845	289.0502 – 494.0357	$3s^23p^53d - 3s^23p^54p$	${}^3F^\circ - {}^1D$	3 – 2		727
	300	488.582	277.3106 – 481.9877	$3s^23p^53d - 3s^23p^54p$	${}^3P^\circ - {}^3S$	2 – 1		727
	4	491.358	289.0502 – 492.5671	$3s^23p^53d - 3s3p^63d$	${}^3F^\circ - {}^3D$	3 – 3		727
	1	491.981	290.7787 – 494.0357	$3s^23p^53d - 3s^23p^54p$	${}^3F^\circ - {}^1D$	2 – 2		727
	110	493.783	289.0502 – 491.5587	$3s^23p^53d - 3s3p^63d$	${}^3F^\circ - {}^3D$	3 – 2		727
	1	498.050	290.7787 – 491.5587	$3s^23p^53d - 3s3p^63d$	${}^3F^\circ - {}^3D$	2 – 2		727
	700	498.260	287.2765 – 487.9746	$3s^23p^53d - 3s^23p^54p$	${}^3F^\circ - {}^3D$	4 – 3		727

Tl V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	12	501.631	306.8745 – 506.2247	$3s^23p^53d - 3s3p^63d$	$^1D^\circ - {}^1D$	2 – 2		727
	600	502.077	289.0502 – 488.2257	$3s^23p^53d - 3s^23p^54p$	$^3F^\circ - {}^3D$	3 – 2		727
	150	502.711	289.0502 – 487.9746	$3s^23p^53d - 3s^23p^54p$	$^3F^\circ - {}^3D$	3 – 3		727
	30	503.031	307.4292 – 506.2247	$3s^23p^53d - 3s3p^63d$	$^3D^\circ - {}^1D$	3 – 2		727
	450	504.665	290.7787 – 488.9287	$3s^23p^53d - 3s3p^63d$	$^3F^\circ - {}^3D$	2 – 1		727
	150	506.468	290.7787 – 488.2257	$3s^23p^53d - 3s^23p^54p$	$^3F^\circ - {}^3D$	2 – 2		727
	110	507.683	309.2521 – 506.2247	$3s^23p^53d - 3s3p^63d$	$^3D^\circ - {}^1D$	1 – 2		727
	200	513.374	311.4338 – 506.2247	$3s^23p^53d - 3s3p^63d$	$^1F^\circ - {}^1D$	3 – 2		727
	4	519.575	306.8745 – 499.3362	$3s^23p^53d - 3s^23p^54p$	$^1D^\circ - {}^3P$	2 – 1		727
	150	523.050	306.8745 – 498.0572	$3s^23p^53d - 3s^23p^54p$	$^1D^\circ - {}^3P$	2 – 2		727
	450	524.578	307.4292 – 498.0572	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^3P$	3 – 2		727
	110	526.076	309.2521 – 499.3362	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^3P$	1 – 1		727
	110	526.266	306.8745 – 496.8907	$3s^23p^53d - 3s^23p^54p$	$^1D^\circ - {}^1P$	2 – 1		727
	520	526.570	309.4331 – 499.3362	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^3P$	2 – 1		727
	200	529.315	309.2521 – 498.1764	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^3P$	1 – 0		727
	2	529.635	309.2521 – 498.0572	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^3P$	1 – 2		727
	4	530.167	309.4331 – 498.0572	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^3P$	2 – 2		727
	1	532.935	309.2521 – 496.8907	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^1P$	1 – 1		727
	4	533.457	309.4331 – 496.8907	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^1P$	2 – 1		727
	1	534.297	306.8745 – 494.0357	$3s^23p^53d - 3s^23p^54p$	$^1D^\circ - {}^1D$	2 – 2		727
	300	535.836	311.4338 – 498.0572	$3s^23p^53d - 3s^23p^54p$	$^1F^\circ - {}^3P$	3 – 2		727
	300	535.888	307.4292 – 494.0357	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^1D$	3 – 2		727
	50	536.406	306.8745 – 493.3005	$3s^23p^53d - 3s^23p^54p$	$^1D^\circ - {}^3D$	2 – 1		727
	1	538.511	306.8745 – 492.5671	$3s^23p^53d - 3s3p^63d$	$^1D^\circ - {}^3D$	2 – 3		727
	200	540.145	307.4292 – 492.5671	$3s^23p^53d - 3s3p^63d$	$^3D^\circ - {}^3D$	3 – 3		727
	30	541.181	309.2521 – 494.0357	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^1D$	1 – 2		727
	200	541.459	306.8745 – 491.5587	$3s^23p^53d - 3s3p^63d$	$^1D^\circ - {}^3D$	2 – 2		727
	250	541.711	309.4331 – 494.0357	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^1D$	2 – 2		727
	150	543.103	307.4292 – 491.5587	$3s^23p^53d - 3s3p^63d$	$^3D^\circ - {}^3D$	3 – 2		727
	150	543.339	309.2521 – 493.3005	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^3D$	1 – 1		727
	1	543.858	309.4331 – 493.3005	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^3D$	2 – 1		727
	80	546.062	309.4331 – 492.5671	$3s^23p^53d - 3s3p^63d$	$^3D^\circ - {}^3D$	2 – 3		727
	30	547.642	311.4338 – 494.0357	$3s^23p^53d - 3s^23p^54p$	$^1F^\circ - {}^1D$	3 – 2		727
	50	548.533	309.2521 – 491.5587	$3s^23p^53d - 3s3p^63d$	$^3D^\circ - {}^3D$	1 – 2		727
	110	549.083	309.4331 – 491.5587	$3s^23p^53d - 3s3p^63d$	$^3D^\circ - {}^3D$	2 – 2		727
	4	551.410	306.8745 – 488.2257	$3s^23p^53d - 3s^23p^54p$	$^1D^\circ - {}^3D$	2 – 2		727
	0	552.079	311.4338 – 492.5671	$3s^23p^53d - 3s3p^63d$	$^1F^\circ - {}^3D$	3 – 3		727
	0	552.185	306.8745 – 487.9746	$3s^23p^53d - 3s^23p^54p$	$^1D^\circ - {}^3D$	2 – 3		727
	4	553.122	307.4292 – 488.2257	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^3D$	3 – 2		727
	0	553.857	307.4292 – 487.9746	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^3D$	3 – 3		727
	80	555.164	311.4338 – 491.5587	$3s^23p^53d - 3s3p^63d$	$^1F^\circ - {}^3D$	3 – 2		727
	1	556.562	309.2521 – 488.9287	$3s^23p^53d - 3s3p^63d$	$^3D^\circ - {}^3D$	1 – 1		727
	0	557.115	309.4331 – 488.9287	$3s^23p^53d - 3s3p^63d$	$^3D^\circ - {}^3D$	2 – 1		727
	0	559.323	309.4331 – 488.2257	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^3D$	2 – 2		727
	1	560.056	309.4331 – 487.9746	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^3D$	2 – 3	Q	727
	30	565.627	311.4338 – 488.2257	$3s^23p^53d - 3s^23p^54p$	$^1F^\circ - {}^3D$	3 – 2		727
	0	566.461	311.4338 – 487.9746	$3s^23p^53d - 3s^23p^54p$	$^1F^\circ - {}^3D$	3 – 3		727
	12	571.095	306.8745 – 481.9877	$3s^23p^53d - 3s^23p^54p$	$^1D^\circ - {}^3S$	2 – 1	Q	727
	0	578.905	309.2521 – 481.9877	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^3S$	1 – 1		727
	1	579.518	309.4331 – 481.9877	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^3S$	2 – 1		727
	0	792.948	481.9877 – 608.1007	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3S - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		727
	4	799.714	481.9877 – 607.0330	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3S - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		727
	0	807.347	488.9287 – 612.7932	$3s3p^63d - 3s^23p^5(^2P^\circ_{1/2})5s$	$^3D - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		727
	4	834.199	488.2257 – 608.1007	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		727

Tl V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	0	836.656	494.0357 – 613.5582	$3s^23p^54p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^1D - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		727
	30	838.315	395.3209 – 514.6087	$3s^23p^53d - 3s^23p^54p$	$^1P^\circ - {}^1S$	1 – 0		727
	12	839.926	487.9746 – 607.0330	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	3 – 2		727
	0	841.691	488.2257 – 607.0330	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		727
	1	857.136	496.8907 – 613.5582	$3s^23p^54p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^1P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		727
	4	858.073	491.5587 – 608.1007	$3s3p^63d - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		727
	1	862.786	496.8907 – 612.7932	$3s^23p^54p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^1P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		727
	4	865.806	498.0572 – 613.5582	$3s^23p^54p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		727
	0	866.676	498.1764 – 613.5582	$3s^23p^54p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		727
	4	871.085	493.3005 – 608.1007	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		727
	4	873.618	492.5671 – 607.0330	$3s3p^63d - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	3 – 2		727
	1	875.489	499.3362 – 613.5582	$3s^23p^54p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		727
	0	876.686	494.0357 – 608.1007	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^1D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		727
	0	879.268	493.3005 – 607.0330	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		727
	0	881.379	499.3362 – 612.7932	$3s^23p^54p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^3P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 0		727
	4	884.982	494.0357 – 607.0330	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^1D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		727
	0	899.171	496.8907 – 608.1007	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^1P - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		727
	4	901.692	395.3209 – 506.2247	$3s^23p^53d - 3s3p^63d$	$^1P^\circ - {}^1D$	1 – 2		727
	0	908.740	498.0572 – 608.1007	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		727
	1	928.507	499.3362 – 607.0330	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		727
	0	931.652	506.2247 – 613.5582	$3s3p^63d - 3s^23p^5(^2P^\circ_{1/2})5s$	$^1D - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		727
	0	961.376	395.3209 – 499.3362	$3s^23p^53d - 3s^23p^54p$	$^1P^\circ - {}^3P$	1 – 1		727
	0	972.188	395.3209 – 498.1764	$3s^23p^53d - 3s^23p^54p$	$^1P^\circ - {}^3P$	1 – 0	Q	727
	0	973.357	395.3209 – 498.0572	$3s^23p^53d - 3s^23p^54p$	$^1P^\circ - {}^3P$	1 – 2		727
	0	981.585	506.2247 – 608.1007	$3s3p^63d - 3s^23p^5(^2P^\circ_{3/2})5s$	$^1D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1	P	727
	1	984.530	395.3209 – 496.8907	$3s^23p^53d - 3s^23p^54p$	$^1P^\circ - {}^1P$	1 – 1		727
	1	1039.125	395.3209 – 491.5587	$3s^23p^53d - 3s3p^63d$	$^1P^\circ - {}^3D$	1 – 2		727
	30	1094.583	487.9746 – 579.3346	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{5}{2}]^\circ$	3 – 3		727
	1	1097.585	488.2257 – 579.3346	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 3		727
	50	1113.952	488.9287 – 578.6985	$3s3p^63d - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{5}{2}]^\circ$	1 – 2		727
	4	1123.288	488.2257 – 577.2498	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		727
	150	1128.546	481.9877 – 570.5978	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3S - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		727
	80	1132.237	488.9287 – 577.2498	$3s3p^63d - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		727
	4	1136.050	491.5587 – 579.5842	$3s3p^63d - 3s^23p^5(^2P^\circ_{1/2})4d$	$^3D - \frac{1}{2}[\frac{3}{2}]^\circ$	2 – 2		727
	4	1139.275	491.5587 – 579.3346	$3s3p^63d - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 3		727
	80	1145.256	481.9877 – 569.3045	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3S - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 1		727
	1	1147.571	491.5587 – 578.6985	$3s3p^63d - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 2		727
	0	1152.509	492.5671 – 579.3346	$3s3p^63d - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{5}{2}]^\circ$	3 – 3		727
	80	1153.274	487.9746 – 574.6838	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{5}{2}]^\circ$	3 – 3		727
	50	1163.520	496.8907 – 582.8365	$3s^23p^54p - 3s^23p^5(^2P^\circ_{1/2})4d$	$^1P - \frac{1}{2}[\frac{3}{2}]^\circ$	1 – 1		727
	1	1164.634	487.9746 – 573.8383	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{5}{2}]^\circ$	3 – 2		727
	0	1166.982	491.5587 – 577.2498	$3s3p^63d - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		727
	50	1168.043	488.2257 – 573.8383	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 2		727
	30	1168.927	494.0357 – 579.5842	$3s^23p^54p - 3s^23p^5(^2P^\circ_{1/2})4d$	$^1D - \frac{1}{2}[\frac{3}{2}]^\circ$	2 – 2		727
	1	1172.340	494.0357 – 579.3346	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^1D - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 3		727
	50	1177.719	488.9287 – 573.8383	$3s3p^63d - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{5}{2}]^\circ$	1 – 2		727
	0	1179.541	498.0572 – 582.8365	$3s^23p^54p - 3s^23p^5(^2P^\circ_{1/2})4d$	$^3P - \frac{1}{2}[\frac{3}{2}]^\circ$	2 – 1		727
	12	1181.192	498.1764 – 582.8365	$3s^23p^54p - 3s^23p^5(^2P^\circ_{1/2})4d$	$^3P - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		727
	30	1188.796	487.9746 – 572.0939	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{7}{2}]^\circ$	3 – 3		727
	80	1191.195	493.3005 – 577.2498	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		727
	200	1192.353	488.2257 – 572.0939	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{7}{2}]^\circ$	2 – 3		727
	50	1197.598	499.3362 – 582.8365	$3s^23p^54p - 3s^23p^5(^2P^\circ_{1/2})4d$	$^3P - \frac{1}{2}[\frac{3}{2}]^\circ$	1 – 1		727
	250	1198.659	487.9746 – 571.4011	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{7}{2}]^\circ$	3 – 4		727
	50	1203.011	491.5587 – 574.6838	$3s3p^63d - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 3		727

Ti V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	0	1210.290	487.9746 – 570.5978	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	3 – 2		727
	0	1214.000	488.2257 – 570.5978	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		727
	50	1215.373	491.5587 – 573.8383	$3s3p^63d - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 2		727
	30	1217.779	492.5671 – 574.6838	$3s3p^63d - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{5}{2}]^\circ$	3 – 3		727
	250	1222.359	496.8907 – 578.6985	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^1P - \frac{3}{2}[\frac{5}{2}]^\circ$	1 – 2		727
	0	1224.469	488.9287 – 570.5978	$3s3p^63d - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		727
	1	1226.588	498.0572 – 579.5842	$3s^23p^54p - 3s^23p^5(^2P^\circ_{1/2})4d$	$^3P - \frac{1}{2}[\frac{3}{2}]^\circ$	2 – 2		727
	300	1230.361	498.0572 – 579.3346	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3P - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 3		727
	0	1233.387	488.2257 – 569.3045	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{1}{2}]^\circ$	2 – 1		727
	375	1239.958	494.0357 – 574.6838	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^1D - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 3		727
	300	1241.671	491.5587 – 572.0939	$3s3p^63d - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{7}{2}]^\circ$	2 – 3		727
	0	1244.405	496.8907 – 577.2498	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^1P - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		727
	150	1246.131	499.3362 – 579.5842	$3s^23p^54p - 3s^23p^5(^2P^\circ_{1/2})4d$	$^3P - \frac{1}{2}[\frac{3}{2}]^\circ$	1 – 2		727
	1	1253.079	494.0357 – 573.8383	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^1D - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 2		727
	30	1257.442	492.5671 – 572.0939	$3s3p^63d - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{7}{2}]^\circ$	3 – 3		727
	80	1264.659	498.1764 – 577.2498	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		727
	200	1268.490	492.5671 – 571.4011	$3s3p^63d - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{7}{2}]^\circ$	3 – 4		727
	0	1281.091	494.0357 – 572.0939	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^1D - \frac{3}{2}[\frac{7}{2}]^\circ$	2 – 3		727
	2	1281.541	492.5671 – 570.5978	$3s3p^63d - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	3 – 2		727
	1	1283.463	499.3362 – 577.2498	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		727
	12	1286.036	436.8498 – 514.6087	$3s^23p^54s - 3s^23p^54p$	$^3P^\circ - {}^1S$	1 – 0		727
	4	1293.710	493.3005 – 570.5978	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		727
	0	1305.018	498.0572 – 574.6838	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3P - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 3		727
	200	1306.108	494.0357 – 570.5978	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^1D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		727
	0	1315.712	493.3005 – 569.3045	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 1		727
	1	1326.279	493.3005 – 568.6985	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 0		727
	50	1328.572	494.0357 – 569.3045	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^1D - \frac{3}{2}[\frac{1}{2}]^\circ$	2 – 1		727
	1	1356.724	496.8907 – 570.5978	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^1P - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		727
	0	1363.148	506.2247 – 579.5842	$3s3p^63d - 3s^23p^5(^2P^\circ_{1/2})4d$	$^1D - \frac{1}{2}[\frac{3}{2}]^\circ$	2 – 2		727
	12	1367.797	506.2247 – 579.3346	$3s3p^63d - 3s^23p^5(^2P^\circ_{3/2})4d$	$^1D - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 3		727
	110	1378.552	498.0572 – 570.5978	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		727
	0	1380.935	496.8907 – 569.3045	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^1P - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 1		727
	0	1403.280	499.3362 – 570.5978	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		727
	4	1403.562	498.0572 – 569.3045	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3P - \frac{3}{2}[\frac{1}{2}]^\circ$	2 – 1		727
	12	1405.911	498.1764 – 569.3045	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3P - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		727
	200	1411.309	443.7527 – 514.6087	$3s^23p^54s - 3s^23p^54p$	$^1P^\circ - {}^1S$	1 – 0		727
	12	1429.222	499.3362 – 569.3045	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3P - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 1		727
	2	1441.426	436.8498 – 506.2247	$3s^23p^54s - 3s3p^63d$	$^3P^\circ - {}^1D$	1 – 2		727
	50	1441.713	499.3362 – 568.6985	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3P - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 0		727
	12	1460.723	506.2247 – 574.6838	$3s3p^63d - 3s^23p^5(^2P^\circ_{3/2})4d$	$^1D - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 3		727
	110	1465.683	514.6087 – 582.8365	$3s^23p^54p - 3s^23p^5(^2P^\circ_{1/2})4d$	$^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		727
	0	1518.181	506.2247 – 572.0939	$3s3p^63d - 3s^23p^5(^2P^\circ_{3/2})4d$	$^1D - \frac{3}{2}[\frac{7}{2}]^\circ$	2 – 3		727
	80	1538.546	434.3394 – 499.3362	$3s^23p^54s - 3s^23p^54p$	$^3P^\circ - {}^3P$	2 – 1		727
	80	1569.423	434.3394 – 498.0572	$3s^23p^54s - 3s^23p^54p$	$^3P^\circ - {}^3P$	2 – 2		727
	4	1598.697	434.3394 – 496.8907	$3s^23p^54s - 3s^23p^54p$	$^3P^\circ - {}^1P$	2 – 1		727
	1	1600.353	436.8498 – 499.3362	$3s^23p^54s - 3s^23p^54p$	$^3P^\circ - {}^3P$	1 – 1		727
	80	1600.726	443.7527 – 506.2247	$3s^23p^54s - 3s3p^63d$	$^1P^\circ - {}^1D$	1 – 2		727
	80	1630.613	436.8498 – 498.1764	$3s^23p^54s - 3s^23p^54p$	$^3P^\circ - {}^3P$	1 – 0		727
	110	1633.780	436.8498 – 498.0572	$3s^23p^54s - 3s^23p^54p$	$^3P^\circ - {}^3P$	1 – 2		727
	250	1675.150	434.3394 – 494.0357	$3s^23p^54s - 3s^23p^54p$	$^3P^\circ - {}^1D$	2 – 2		727
	200	1687.165	440.0652 – 499.3362	$3s^23p^54s - 3s^23p^54p$	$^3P^\circ - {}^3P$	0 – 1		727
	30	1696.031	434.3394 – 493.3005	$3s^23p^54s - 3s^23p^54p$	$^3P^\circ - {}^3D$	2 – 1		727
	375	1717.396	434.3394 – 492.5671	$3s^23p^54s - 3s3p^63d$	$^3P^\circ - {}^3D$	2 – 3		727
	50	1747.639	434.3394 – 491.5587	$3s^23p^54s - 3s3p^63d$	$^3P^\circ - {}^3D$	2 – 2		727

Ti V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	30	1748.671	436.8498 – 494.0357	$3s^23p^54s - 3s^23p^54p$	$^3P^\circ - {}^1D$	1 – 2		727
	200	1759.757	440.0652 – 496.8907	$3s^23p^54s - 3s^23p^54p$	$^3P^\circ - {}^1P$	0 – 1		727
	150	1771.452	436.8498 – 493.3005	$3s^23p^54s - 3s^23p^54p$	$^3P^\circ - {}^3D$	1 – 1		727
	110	1799.082	443.7527 – 499.3362	$3s^23p^54s - 3s^23p^54p$	$^1P^\circ - {}^3P$	1 – 1		727
	110	1827.899	436.8498 – 491.5587	$3s^23p^54s - 3s3p^63d$	$^3P^\circ - {}^3D$	1 – 2		727
	110	1828.292	514.6087 – 569.3045	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		727
	12	1831.875	434.3394 – 488.9287	$3s^23p^54s - 3s3p^63d$	$^3P^\circ - {}^3D$	2 – 1		727
	30	1837.436	443.7527 – 498.1764	$3s^23p^54s - 3s^23p^54p$	$^1P^\circ - {}^3P$	1 – 0		727
	300	1841.490	443.7527 – 498.0572	$3s^23p^54s - 3s^23p^54p$	$^1P^\circ - {}^3P$	1 – 2		727
	30	1855.765	434.3394 – 488.2257	$3s^23p^54s - 3s^23p^54p$	$^3P^\circ - {}^3D$	2 – 2		727
	150	1864.451	434.3394 – 487.9746	$3s^23p^54s - 3s^23p^54p$	$^3P^\circ - {}^3D$	2 – 3		727
	12	1878.458	440.0652 – 493.3005	$3s^23p^54s - 3s^23p^54p$	$^3P^\circ - {}^3D$	0 – 1		727
	150	1881.886	443.7527 – 496.8907	$3s^23p^54s - 3s^23p^54p$	$^1P^\circ - {}^1P$	1 – 1		727
	150	1920.163	436.8498 – 488.9287	$3s^23p^54s - 3s3p^63d$	$^3P^\circ - {}^3D$	1 – 1		727
	50	1946.434	436.8498 – 488.2257	$3s^23p^54s - 3s^23p^54p$	$^3P^\circ - {}^3D$	1 – 2		727
	150	1988.750	443.7527 – 494.0357	$3s^23p^54s - 3s^23p^54p$	$^1P^\circ - {}^1D$	1 – 2		727

TITANIUM VI (Ti^{5+}), Z = 22
Ground State $1s^22s^22p^63s^23p^5(^2P^\circ_{3/2})$ (17 electrons)
Ionization Potential 964 100 cm^{-1}; 119.53 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	125.456	0.0 – 797.092	$3s^23p^5 - 3s^23p^4(^1D)5d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		711
	6	125.689	0.0 – 795.615	$3s^23p^5 - 3s^23p^4(^1D)5d$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		711
	3	126.330	5.8293 – 797.406	$3s^23p^5 - 3s^23p^4(^1D)5d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		711
	1	128.450	0.0 – 778.513	$3s^23p^5 - 3s^23p^4(^3P)5d$	$g^2P^\circ - {}^4F$	$\frac{3}{2} - \frac{5}{2}$		711
	3	129.148	0.0 – 774.306	$3s^23p^5 - 3s^23p^4(^3P)5d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		711
	6	129.249	0.0 – 773.702	$3s^23p^5 - 3s^23p^4(^3P)5d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		711
	3	130.113	5.8293 – 774.306	$3s^23p^5 - 3s^23p^4(^3P)5d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		714
	6	136.714	0.0 – 731.455	$3s^23p^5 - 3s^23p^4(^1D)5s$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		711
	3	137.813	5.8293 – 731.453	$3s^23p^5 - 3s^23p^4(^1D)5s$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		711
	3	139.911	0.0 – 714.742	$3s^23p^5 - 3s^23p^4(^3P)5s$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		711
	20	140.443	0.0 – 712.034	$3s^23p^5 - 3s^23p^4(^3P)5s$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		711
	3	141.061	5.8293 – 714.742	$3s^23p^5 - 3s^23p^4(^3P)5s$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		711
	10	141.113	0.0 – 708.652	$3s^23p^5 - 3s^23p^4(^3P)5s$	$g^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		711
	3	141.988	0.0 – 704.283	$3s^23p^5 - 3s^23p^4(^1S)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		711
	1	143.176	5.8293 – 704.270	$3s^23p^5 - 3s^23p^4(^1S)4d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		711
	3	148.104	0.0 – 675.207	$3s^23p^5 - 3s^23p^4(^1D)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		711
	20	148.303	0.0 – 674.297	$3s^23p^5 - 3s^23p^4(^1D)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		711
	20	149.010	0.0 – 671.096	$3s^23p^5 - 3s^23p^4(^1D)4d$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		711
	10	149.392	5.8293 – 675.207	$3s^23p^5 - 3s^23p^4(^1D)4d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		711
	10	149.560	0.0 – 668.630	$3s^23p^5 - 3s^23p^4(^1D)4d$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		711
	3	150.213	5.8293 – 671.549	$3s^23p^5 - 3s^23p^4(^1D)4d$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		711
	3	150.315	5.8293 – 671.096	$3s^23p^5 - 3s^23p^4(^1D)4d$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		711
	1	151.897	0.0 – 658.339	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		711
	10	152.338	0.0 – 656.437	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^2F$	$\frac{3}{2} - \frac{5}{2}$		711
	10	152.960	0.0 – 653.766	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^4F$	$\frac{3}{2} - \frac{5}{2}$		711
	3	153.255	5.8293 – 658.339	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		711
	3	153.384	0.0 – 651.960	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		711
	35	153.550	0.0 – 651.255	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		711
	1	154.161	5.8293 – 654.503	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^4F$	$\frac{1}{2} - \frac{3}{2}$		711
	6	154.768	5.8293 – 651.960	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		711

Ti VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	90	182.151	0.0 – 548.995	$3s^23p^5 - 3s^23p^4(^1S)4s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		711
	35	184.106	5.8293 – 548.995	$3s^23p^5 - 3s^23p^4(^1S)4s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		711
	20	192.710	0.0 – 518.914	$3s^23p^5 - 3s^23p^4(^1D)4s$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		182
	250	192.754	0.0 – 518.797	$3s^23p^5 - 3s^23p^4(^1D)4s$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		711
	200	194.900	5.8293 – 518.914	$3s^23p^5 - 3s^23p^4(^1D)4s$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		711
	200	197.460	0.0 – 506.432	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		711
	400	198.977	0.0 – 502.571	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		711
	200	199.759	5.8293 – 506.432	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		711
	90	201.311	5.8293 – 502.571	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		711
	125	201.865	0.0 – 495.380	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		711
	6	203.200	0.0 – 492.126	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		711
	3	203.434	5.8293 – 497.389	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{1}{2}$		711
	10	226.561	81.+D – 522.382+D	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - {}^4F^\circ$	$\frac{7}{2}-\frac{9}{2}$	Q	714
		235.066	86.382+S – 511.794+S	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - {}^4G^\circ$	$\frac{5}{2}-\frac{7}{2}$		854
	3	235.316	100.+L – 524.971+L	$3s^23p^4(^1D)3d - 3s^23p^4(^1D)4f$	$^2G - {}^2H^\circ$	$\frac{9}{2}-\frac{11}{2}$		714,854
		235.408	87.+S – 511.794+S	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - {}^4G^\circ$	$\frac{9}{2}-\frac{11}{2}$		854
		235.836	87.771+S – 511.794+S	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - {}^4G^\circ$	$\frac{7}{2}-\frac{9}{2}$		854
	250	247.450	0.0 – 404.123	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		711
	1000	250.482	0.0 – 399.231	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		711
	700	251.071	5.8293 – 404.123	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		711
	200	254.037	0.0 – 393.644	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$	P	256
	300	255.375	0.0 – 391.583	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		711
	250	257.855	5.8293 – 393.644	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		711
	250	259.232	5.8293 – 391.583	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		711
	250	263.246	0.0 – 379.874	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		711
	200	267.343	5.8293 – 379.874	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		711
	1	282.215	0.0 – 354.340	$3s^23p^5 - 3s^23p^4(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		711
	20	283.586	0.0 – 352.625	$3s^23p^5 - 3s^23p^4(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		711
	60	288.355	5.8293 – 352.625	$3s^23p^5 - 3s^23p^4(^1S)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		711
	20	301.913	0.0 – 331.221	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2F$	$\frac{3}{2}-\frac{5}{2}$		711
	60	330.703	0.0 – 302.386	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		711
	6	331.767	0.0 – 301.417	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		711
	20	334.457	0.0 – 298.991	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		711
	20	341.109	5.8293 – 298.991	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		711
	35	342.595	0.0 – 291.890	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		711
	1	346.728	0.0 – 288.412	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		711
	6	349.574	5.8293 – 291.890	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		711
	6	353.877	5.8293 – 288.412	$3s^23p^5 - 3s^23p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		711
	1000	508.575	0.0 – 196.628	$3s^23p^5 - 3s3p^6$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		718
	900	524.113	5.8293 – 196.628	$3s^23p^5 - 3s3p^6$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		718

TITANIUM VII (Ti^{6+}), Z = 22
Ground State $1s^22s^22p^63s^23p^4(^3P_2)$ (16 electrons)
Ionization Potential 1 136 000 cm^{-1}; 140.8 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	128.269	0. – 779.699	$3s^23p^4 - 3s^23p^3(^2P^\circ)4d$	$g^3P - {}^3D^\circ$	2 – 3		302
	1	129.603	4.5333 – 776.118	$3s^23p^4 - 3s^23p^3(^2P^\circ)4d$	$g^3P - {}^3D^\circ$	1 – 1		711
	3	129.722	4.5333 – 775.412	$3s^23p^4 - 3s^23p^3(^2P^\circ)4d$	$g^3P - {}^3D^\circ$	1 – 2		711
	1	131.284	24.123 – 785.717	$3s^23p^4 - 3s^23p^3(^2P^\circ)4d$	$^1D - {}^1P^\circ$	2 – 1	Q	714
	6	131.937	0. – 757.984	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^1D^\circ$	2 – 2	Q	714
	1	132.093	24.123 – 781.17	$3s^23p^4 - 3s^23p^3(^2P^\circ)4d$	$^1D - {}^1F^\circ$	2 – 3		711

Ti VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	3	132.149	24.123 – 780.853	$3s^23p^4 - 3s^23p^3(^2P^\circ)4d$	$^1D - ^1D^\circ$	2 – 2		711
	1	132.322	0. – 755.732	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - ^3P^\circ$	2 – 1		711
	1	132.351	24.123 – 779.699	$3s^23p^4 - 3s^23p^3(^2P^\circ)4d$	$^1D - ^3D^\circ$	2 – 3		711
	6	132.522	0. – 754.591	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - ^3D^\circ$	2 – 2		711
	10	132.733	0. – 753.393	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - ^3D^\circ$	2 – 3		711
	3	132.837	0. – 752.846	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - ^3P^\circ$	2 – 2		714
	1	132.982	4.5333 – 756.514	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - ^3S^\circ$	1 – 1		711
	6	133.218	5.8871 – 756.514	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - ^3S^\circ$	0 – 1		714
	1	133.385	5.8871 – 755.732	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - ^3P^\circ$	0 – 1		714
	3	133.633	4.5333 – 752.846	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - ^3P^\circ$	1 – 2		711
	20	135.801	24.123 – 760.504	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$^1D - ^1F^\circ$	2 – 3		711
	6	136.267	24.123 – 757.984	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$^1D - ^1D^\circ$	2 – 2		711
	3	136.815	54.794 – 785.717	$3s^23p^4 - 3s^23p^3(^2P^\circ)4d$	$^1S - ^1P^\circ$	0 – 1		711
	20	137.661	0. – 726.424	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - ^3D^\circ$	2 – 3		711
	10	138.548	4.5333 – 726.299	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - ^3D^\circ$	1 – 2		711
	1	138.814	5.8871 – 726.273	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - ^3D^\circ$	0 – 1		711
	10	164.173	0. – 609.115	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - ^3P^\circ$	2 – 2		711
	3	164.478	0. – 607.979	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - ^3P^\circ$	2 – 1		711
	6	165.403	4.5333 – 609.115	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - ^3P^\circ$	1 – 2		711
	1	165.716	4.5333 – 607.979	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - ^3P^\circ$	1 – 1		711
	3	165.836	4.5333 – 607.534	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - ^3P^\circ$	1 – 0		711
	10	166.087	5.8871 – 607.979	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - ^3P^\circ$	0 – 1		711
	10	168.652	0. – 592.918	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - ^1D^\circ$	2 – 2		711
	20	169.301	24.123 – 614.795	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$^1D - ^1P^\circ$	2 – 1		711
	125	170.358	0. – 586.998	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	2 – 3		711
	20	170.559	0. – 586.306	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	2 – 2		711
	3	170.938	24.123 – 609.115	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$^1D - ^3P^\circ$	2 – 2		711
	20	171.888	4.5333 – 586.306	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	1 – 2		711
	6	171.952	4.5333 – 586.088	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	1 – 1		711
	6	172.353	5.8871 – 586.088	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - ^3D^\circ$	0 – 1		711
	90	175.812	24.123 – 592.918	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$^1D - ^1D^\circ$	2 – 2		711
	60	177.238	0. – 564.214	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - ^3S^\circ$	2 – 1		711
	10	178.572	54.794 – 614.795	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$^1S - ^1P^\circ$	0 – 1		711
	20	178.673	4.5333 – 564.214	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - ^3S^\circ$	1 – 1		711
	10	179.107	5.8871 – 564.214	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - ^3S^\circ$	0 – 1		711
	3	192.102	618.994+S – 1139.55+S	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3F^\circ - ^3G$	2 – 3	Q	714
	3	192.272	619.454+S – 1139.55+S	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3F^\circ - ^3G$	3 – 4	Q	714
	6	192.474	620.+S – 1139.55+S	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3F^\circ - ^3G$	4 – 5	Q	714
	1	193.501	529.554+D – 1046.347+D	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4f$	$^5D^\circ - ^5F$	1 – 2	Q	714
	3	193.534	529.642+D – 1046.347+D	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4f$	$^5D^\circ - ^5F$	2 – 3	Q	714
	6	193.585	529.779+D – 1046.347+D	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4f$	$^5D^\circ - ^5F$	3 – 4	Q	714
	10	193.668	530.+D – 1046.347+D	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4f$	$^5D^\circ - ^5F$	4 – 5	Q	714
	1	245.258	0. – 407.701	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^1D^\circ$	2 – 2	Q	714
	3	248.037	4.5333 – 407.701	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^1D^\circ$	1 – 2		711
	3	250.913	0. – 398.524	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	2 – 1		711
	200	252.162	0. – 396.571	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	2 – 2		711
	800	252.275	24.123 – 420.522	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - ^1F^\circ$	2 – 3		711
	60	252.571	54.794 – 450.73	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1S - ^1P^\circ$	0 – 1		711
	200	253.811	4.5333 – 398.524	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	1 – 1		711
	800	254.022	0. – 393.667	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		711
	200	254.687	5.8871 – 398.524	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	0 – 1		711
	250	255.076	4.5333 – 396.571	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		711
	250	260.704	24.123 – 407.701	$3s^23p^4 - 3s^23p^3(^2P^\circ)3d$	$^1D - ^1D^\circ$	2 – 2		711
	60	261.851	0. – 381.893	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g^3P - ^1P^\circ$	2 – 1		711

Ti VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	35	263.944	0. – 378.872	$3s^23p^4 - 3s^23p^3(^2P°)3d$	$g^3P - ^3P°$	2 – 1		711
	250	264.823	0. – 377.613	$3s^23p^4 - 3s^23p^3(^2P°)3d$	$g^3P - ^3P°$	2 – 2		711
	35	264.997	4.5333 – 381.893	$3s^23p^4 - 3s^23p^3(^2D°)3d$	$g^3P - ^1P°$	1 – 1		711
	90	265.059	4.5333 – 381.804	$3s^23p^4 - 3s^23p^3(^2P°)3d$	$g^3P - ^3P°$	1 – 0		711
	60	265.951	5.8871 – 381.893	$3s^23p^4 - 3s^23p^3(^2D°)3d$	$g^3P - ^1P°$	0 – 1		711
	200	266.502	0. – 375.232	$3s^23p^4 - 3s^23p^3(^2D°)3d$	$g^3P - ^3S°$	2 – 1		711
	60	267.136	4.5333 – 378.872	$3s^23p^4 - 3s^23p^3(^2P°)3d$	$g^3P - ^3P°$	1 – 1		711
	200	268.035	4.5333 – 377.613	$3s^23p^4 - 3s^23p^3(^2P°)3d$	$g^3P - ^3P°$	1 – 2		711
	35	268.106	5.8871 – 378.872	$3s^23p^4 - 3s^23p^3(^2P°)3d$	$g^3P - ^3P°$	0 – 1		711
	1	268.493	24.123 – 396.571	$3s^23p^4 - 3s^23p^3(^2P°)3d$	$^1D - ^3D°$	2 – 2		711
	90	269.759	4.5333 – 375.232	$3s^23p^4 - 3s^23p^3(^2D°)3d$	$g^3P - ^3S°$	1 – 1		711
	10	270.748	5.8871 – 375.232	$3s^23p^4 - 3s^23p^3(^2D°)3d$	$g^3P - ^3S°$	0 – 1		711
	200	279.516	24.123 – 381.893	$3s^23p^4 - 3s^23p^3(^2D°)3d$	$^1D - ^1P°$	2 – 1		711
	200	281.898	24.123 – 378.872	$3s^23p^4 - 3s^23p^3(^2P°)3d$	$^1D - ^3P°$	2 – 1		711
	1	282.898	24.123 – 377.613	$3s^23p^4 - 3s^23p^3(^2P°)3d$	$^1D - ^3P°$	2 – 2		711
	1	284.829	24.123 – 375.232	$3s^23p^4 - 3s^23p^3(^2D°)3d$	$^1D - ^3S°$	2 – 1	Q	714
	35	296.056	24.123 – 361.904	$3s^23p^4 - 3s^23p^3(^2D°)3d$	$^1D - ^1F°$	2 – 3		711
	1	305.730	54.794 – 381.893	$3s^23p^4 - 3s^23p^3(^2D°)3d$	$^1S - ^1P°$	0 – 1		711
	6	332.081	24.123 – 325.261	$3s^23p^4 - 3s^23p^3(^2D°)3d$	$^1D - ^1D°$	2 – 2		711
	200	440.361	24.123 – 251.209	$3s^23p^4 - 3s3p^5$	$^1D - ^1P°$	2 – 1		718
	200	499.853	0. – 200.0588	$3s^23p^4 - 3s3p^5$	$g^3P - ^3P°$	2 – 1		718
	200	505.899	4.5333 – 202.2012	$3s^23p^4 - 3s3p^5$	$g^3P - ^3P°$	1 – 0		718
	12	509.127	54.794 – 251.209	$3s^23p^4 - 3s3p^5$	$^1S - ^1P°$	0 – 1		718
	600	509.511	0. – 196.2666	$3s^23p^4 - 3s3p^5$	$g^3P - ^3P°$	2 – 2		718
	200	511.442	4.5333 – 200.0588	$3s^23p^4 - 3s3p^5$	$g^3P - ^3P°$	1 – 1		718
	200	515.008	5.8871 – 200.0588	$3s^23p^4 - 3s3p^5$	$g^3P - ^3P°$	0 – 1		718
	300	521.561	4.5333 – 196.2666	$3s^23p^4 - 3s3p^5$	$g^3P - ^3P°$	1 – 2		718
		1825.0	0. – 54.794	$3s^23p^4 - 3s^23p^4$	$g^3P - ^1S$	2 – 0	F,P	375,726
		1989.6	4.5333 – 54.794	$3s^23p^4 - 3s^23p^4$	$g^3P - ^1S$	1 – 0	F,P	375,726

TITANIUM VIII (Ti^{7+}), Z = 22
Ground State $1s^22s^22p^63s^23p^3(^4S°_{3/2})$ (15 electrons)
Ionization Potential [1 374 000] cm^{-1}; [170.4] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	148.014	0. – 675.631+X	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S° - ^2P$	$\frac{3}{2}-\frac{3}{2}$	Q	714
	1	148.498						714
	1	148.820						714
	3	149.653	54.1892+X – 722.394+X	$3s^23p^3 - 3s^23p^2(^1S)4s$	$^2P° - ^2S$	$\frac{1}{2}-\frac{1}{2}$		213,714
	1	149.981	55.6336+X – 722.394+X	$3s^23p^3 - 3s^23p^2(^1S)4s$	$^2P° - ^2S$	$\frac{3}{2}-\frac{1}{2}$		213,714
	60	150.039	0. – 666.493	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S° - ^4P$	$\frac{3}{2}-\frac{5}{2}$		213
	35	150.867	0. – 662.835	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S° - ^4P$	$\frac{3}{2}-\frac{3}{2}$		213
	10	151.484	0. – 660.135	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S° - ^4P$	$\frac{3}{2}-\frac{1}{2}$		213
	10	151.864	32.1905+X – 690.672+X	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2D° - ^2D$	$\frac{3}{2}-\frac{3}{2}$		213
	1	151.915	32.1905+X – 690.446+X	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2D° - ^2D$	$\frac{3}{2}-\frac{5}{2}$		213
	20	152.164	33.2564+X – 690.446+X	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2D° - ^2D$	$\frac{5}{2}-\frac{5}{2}$		213
	20	155.675	33.2564+X – 675.631+X	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D° - ^2P$	$\frac{5}{2}-\frac{3}{2}$		213
	10	156.444	32.1905+X – 671.405+X	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D° - ^2P$	$\frac{3}{2}-\frac{1}{2}$		213
	3	157.112	54.1892+X – 690.672+X	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2P° - ^2D$	$\frac{1}{2}-\frac{3}{2}$		213
	3	157.472	55.6336+X – 690.672+X	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2P° - ^2D$	$\frac{3}{2}-\frac{3}{2}$		213
	3	157.528	55.6336+X – 690.446+X	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2P° - ^2D$	$\frac{3}{2}-\frac{5}{2}$		213
	1	160.914	54.1892+X – 675.631+X	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P° - ^2P$	$\frac{1}{2}-\frac{3}{2}$		213
	6	161.290	55.6336+X – 675.631+X	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P° - ^2P$	$\frac{3}{2}-\frac{3}{2}$		213

Ti VIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	162.016	54.1892+X - 671.405+X	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2P$	1/2 - 1/2		213
	1	162.401	55.6336+X - 671.405+X	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2P$	3/2 - 1/2		358
	10	168.162	540.+D - 1134.664+D	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4f$	$^4F - ^4G^\circ$	7/2 - 9/2	Q	714,854
	10	168.192	540.+D - 1134.558+D	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4f$	$^4F - ^4G^\circ$	9/2 - 11/2	Q	714,854
	3	171.392	650.+S - 1233.457+S	$3s^23p^2(^1D)3d - 3s^23p^2(^1D)4f$	$^2G - ^2H^\circ$	7/2 - 9/2	Q	714,854
	3	171.723	650.+S - 1232.333+S	$3s^23p^2(^1D)3d - 3s^23p^2(^1D)4f$	$^2G - ^2H^\circ$	9/2 - 11/2	Q	714,854
	1	248.150	33.2564+X - 436.270+X	$3s^23p^3 - 3s^23p^2(^1S)3d$	$^2D^\circ - ^2D$	5/2 - 3/2	Q	714
	20	248.908	33.2564+X - 435.049+X	$3s^23p^3 - 3s^23p^2(^1S)3d$	$^2D^\circ - ^2D$	5/2 - 5/2	Q	714
	700	258.610	33.2564+X - 419.939+X	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2F$	5/2 - 7/2		213
	6	259.311	33.2564+X - 418.873+X	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2F$	5/2 - 5/2	Q	714
	1	260.829	32.1905+X - 415.589+X	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2P$	3/2 - 3/2	Q	714
	1	261.578	33.2564+X - 415.589+X	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2P$	5/2 - 3/2	Q	714
	60	261.725	54.1892+X - 436.270+X	$3s^23p^3 - 3s^23p^2(^1S)3d$	$^2P^\circ - ^2D$	1/2 - 3/2		213
	10	262.651	32.1905+X - 412.858+X	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2P$	3/2 - 1/2	Q	714
	10	262.718	55.6336+X - 436.270+X	$3s^23p^3 - 3s^23p^2(^1S)3d$	$^2P^\circ - ^2D$	3/2 - 3/2		213
	120	263.564	55.6336+X - 435.049+X	$3s^23p^3 - 3s^23p^2(^1S)3d$	$^2P^\circ - ^2D$	3/2 - 5/2		213
	60	267.401	0. - 373.971	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4P$	3/2 - 1/2		213
	120	268.178	0. - 372.887	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4P$	3/2 - 3/2		213
	175	269.533	0. - 371.012	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4P$	3/2 - 5/2		213
	1	270.530	54.1892+X - 423.834+X	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2S$	1/2 - 1/2		213
	3	271.591	55.6336+X - 423.834+X	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2S$	3/2 - 1/2		213
	90	272.037	32.1905+X - 399.772+X	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2D$	3/2 - 3/2		213
	10	272.369	32.1905+X - 399.323+X	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2D$	3/2 - 5/2		213
	6	272.843	33.2564+X - 399.772+X	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2D$	5/2 - 3/2		213
	90	273.178	33.2564+X - 399.323+X	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2D$	5/2 - 5/2		213
	3	274.514						714
	10	276.701	54.1892+X - 415.589+X	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	1/2 - 3/2		213
	35	277.813	55.6336+X - 415.589+X	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	3/2 - 3/2		213
	20	278.806	54.1892+X - 412.858+X	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	1/2 - 1/2		213
	20	279.940	55.6336+X - 412.858+X	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	3/2 - 1/2		213
	1	289.375	54.1892+X - 399.772+X	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2D$	1/2 - 3/2		213
	6	290.601	55.6336+X - 399.772+X	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2D$	3/2 - 3/2	Q	714
	35	290.971	55.6336+X - 399.323+X	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2D$	3/2 - 5/2		213
	20	297.197	32.1905+X - 368.663+X	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2P$	3/2 - 1/2		213
	6	301.297	32.1905+X - 364.082+X	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2P$	3/2 - 3/2		213
	60	302.272	33.2564+X - 364.082+X	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2P$	5/2 - 3/2		213
	1	317.992	54.1892+X - 368.663+X	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2P$	1/2 - 1/2		213
	1	319.463	55.6336+X - 368.663+X	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2P$	3/2 - 1/2		213
	1	322.698	54.1892+X - 364.082+X	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2P$	1/2 - 3/2		213
	1	324.207	55.6336+X - 364.082+X	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2P$	3/2 - 3/2		213
	160	401.739	32.1905+X - 281.1081+X	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2P$	3/2 - 1/2		726
	40	406.756	32.1905+X - 278.0377+X	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2P$	3/2 - 3/2		726
	220	408.528	33.2564+X - 278.0377+X	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2P$	5/2 - 3/2		726
	40	423.649	54.1892+X - 290.2336+X	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2S$	1/2 - 1/2		726
	160	426.258	55.6336+X - 290.2336+X	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2S$	3/2 - 1/2		726
	20	440.687	54.1892+X - 281.1081+X	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2P$	1/2 - 1/2		726
	5	449.633	55.6336+X - 278.0377+X	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2P$	3/2 - 3/2		726
	450	478.971	32.1905+X - 240.9716+X	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2D$	3/2 - 3/2		726
	550	480.376	33.2564+X - 241.4260+X	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2D$	5/2 - 5/2		726
	40	481.428	33.2564+X - 240.9716+X	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2D$	5/2 - 3/2		726
	110	500.116	0. - 199.9536	$3s^23p^3 - 3s3p^4$	$g^4S^\circ - ^4P$	3/2 - 1/2		726
	285	504.801	0. - 198.0979	$3s^23p^3 - 3s3p^4$	$g^4S^\circ - ^4P$	3/2 - 3/2		726
	650	514.206	0. - 194.4746	$3s^23p^3 - 3s3p^4$	$g^4S^\circ - ^4P$	3/2 - 5/2		726
	5	535.381	54.1892+X - 240.9716+X	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2D$	1/2 - 3/2		726

Ti VIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	70	538.241	55.6336+X - 241.4260+X	$3s^23p^3 - 3s3p^4$	$^2P^o - ^2D$	$\frac{3}{2} - \frac{5}{2}$		726
		1797.5	0. - 55.6336+X	$3s^23p^3 - 3s^23p^3$	$g^4S^o - ^2P^o$	$\frac{3}{2} - \frac{3}{2}$	F,P	375,726
		1845.4	0. - 54.1892+X	$3s^23p^3 - 3s^23p^3$	$g^4S^o - ^2P^o$	$\frac{3}{2} - \frac{1}{2}$	F,P	375,726

TITANIUM IX (Ti^{8+}), Z = 22
Ground State $1s^22s^22p^63s^23p^2(^3P_0)$ (14 electrons)
Ionization Potential 1 549 000 cm^{-1}; 192.1 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	110.283	7.282 - 914.047	$3s^23p^2 - 3s^23p4d$	$g^3P - ^3D^o$	2 - 3		714,854
	20	111.345	28.555 - 926.66	$3s^23p^2 - 3s^23p4d$	$^1D - ^1F^o$	2 - 3		714,854
	6	136.595	3.119 - 735.213	$3s^23p^2 - 3s^23p4s$	$g^3P - ^3P^o$	1 - 2		714,213
	3	137.153	0. - 729.112	$3s^23p^2 - 3s^23p4s$	$g^3P - ^3P^o$	0 - 1		714,213
	20	137.377	7.282 - 735.213	$3s^23p^2 - 3s^23p4s$	$g^3P - ^3P^o$	2 - 2		714,213
	1	137.743	3.119 - 729.112	$3s^23p^2 - 3s^23p4s$	$g^3P - ^3P^o$	1 - 1		714,213
	3	137.991	3.119 - 727.81	$3s^23p^2 - 3s^23p4s$	$g^3P - ^3P^o$	1 - 0		714,213
	10	138.548	7.282 - 729.112	$3s^23p^2 - 3s^23p4s$	$g^3P - ^3P^o$	2 - 1		714,213
	35	140.443	28.555 - 740.644	$3s^23p^2 - 3s^23p4s$	$^1D - ^1P^o$	2 - 1		714,213
	1	147.157	61.100 - 740.644	$3s^23p^2 - 3s^23p4s$	$^1S - ^1P^o$	0 - 1		714,213
		149.560	778.35+D - 1446.977+D	$3s^23p3d - 3s^23p4f$	$^3F^o - ^3G$	4 - 5		854
	6	260.916	28.555 - 411.817	$3s^23p^2 - 3s^23p3d$	$^1D - ^1P^o$	2 - 1		714,213
	120	267.941	28.555 - 401.771	$3s^23p^2 - 3s^23p3d$	$^1D - ^1F^o$	2 - 3		714,213
	10	274.411	0. - 364.415	$3s^23p^2 - 3s^23p3d$	$g^3P - ^3D^o$	0 - 1		714,213
	60	275.867	3.119 - 365.617	$3s^23p^2 - 3s^23p3d$	$g^3P - ^3D^o$	1 - 2		714,213
	20	276.785	3.119 - 364.415	$3s^23p^2 - 3s^23p3d$	$g^3P - ^3D^o$	1 - 1		714,213
	225	278.713	7.282 - 366.081	$3s^23p^2 - 3s^23p3d$	$g^3P - ^3D^o$	2 - 3		714,213
	20	279.074	7.282 - 365.617	$3s^23p^2 - 3s^23p3d$	$g^3P - ^3D^o$	2 - 2		714,213
	20	280.027	7.282 - 364.415	$3s^23p^2 - 3s^23p3d$	$g^3P - ^3D^o$	2 - 1	Q	714,213
	3	280.141	0. - 356.963	$3s^23p^2 - 3s^23p3d$	$g^3P - ^3P^o$	0 - 1		714,213
	6	281.446	3.119 - 358.432	$3s^23p^2 - 3s^23p3d$	$g^3P - ^3P^o$	1 - 0		714,213
		282.613	3.119 - 356.963	$3s^23p^2 - 3s^23p3d$	$g^3P - ^3P^o$	1 - 1		714,213
	20	285.128	61.100 - 411.817	$3s^23p^2 - 3s^23p3d$	$^1S - ^1P^o$	0 - 1		714,213
	1	285.992	7.282 - 356.963	$3s^23p^2 - 3s^23p3d$	$g^3P - ^3P^o$	2 - 1		714,213
	20	286.112	3.119 - 352.635	$3s^23p^2 - 3s^23p3d$	$g^3P - ^3P^o$	1 - 2		714,213
	90	289.579	7.282 - 352.635	$3s^23p^2 - 3s^23p3d$	$g^3P - ^3P^o$	2 - 2		714,213
	1	304.498	28.555 - 356.963	$3s^23p^2 - 3s^23p3d$	$^1D - ^3P^o$	2 - 1		213
	35	308.568	28.555 - 352.635	$3s^23p^2 - 3s^23p3d$	$^1D - ^3P^o$	2 - 2		714,213
	1	324.712	3.119 - 311.087	$3s^23p^2 - 3s3p^3$	$g^3P - ^1P^o$	1 - 1		726
	20	329.159	7.282 - 311.087	$3s^23p^2 - 3s3p^3$	$g^3P - ^1P^o$	2 - 1		726
	110	333.385	0. - 299.944	$3s^23p^2 - 3s3p^3$	$g^3P - ^3S^o$	0 - 1		726
	160	336.895	3.119 - 299.944	$3s^23p^2 - 3s3p^3$	$g^3P - ^3S^o$	1 - 1		726
	220	341.691	7.282 - 299.944	$3s^23p^2 - 3s3p^3$	$g^3P - ^3S^o$	2 - 1		726
	70	353.942	28.555 - 311.087	$3s^23p^2 - 3s3p^3$	$^1D - ^1P^o$	2 - 1		726
	1	368.482	28.555 - 299.944	$3s^23p^2 - 3s3p^3$	$^1D - ^3S^o$	2 - 1		726
	220	400.041	61.100 - 311.087	$3s^23p^2 - 3s3p^3$	$^1S - ^1P^o$	0 - 1		726
	1	405.272	7.282 - 254.028	$3s^23p^2 - 3s3p^3$	$g^3P - ^1D^o$	2 - 2		726
	5	433.567	0. - 230.645	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P^o$	0 - 1		726
	20	439.302	3.119 - 230.754	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P^o$	1 - 2		726
	40	439.513	3.119 - 230.645	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P^o$	1 - 1		726
	40	439.745	3.119 - 230.524	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P^o$	1 - 0		726
	450	443.512	28.555 - 254.028	$3s^23p^2 - 3s3p^3$	$^1D - ^1D^o$	2 - 2		726

Ti IX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	160	447.484	7.282 – 230.754	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P°$	2 – 2		726
	5	447.701	7.282 – 230.645	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3P°$	2 – 1		726
	20	499.479	0. – 200.209	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D°$	0 – 1		726
	160	507.174	3.119 – 200.293	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D°$	1 – 2		726
	285	507.365	3.119 – 200.209	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D°$	1 – 1		726
	1	516.215	7.282 – 201.000	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D°$	2 – 3		726
	1	518.100	7.282 – 200.293	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3D°$	2 – 2		726
	1	579.896	28.555 – 201.000	$3s^23p^2 - 3s3p^3$	${}^1D - {}^3D°$	2 – 3		726
		1724.7	3.119 – 61.100	$3s^23p^2 - 3s^23p^2$	$g^3P - {}^1S$	1 – 0	F,P	375,726
		1858.1	7.282 – 61.100	$3s^23p^2 - 3s^23p^2$	$g^3P - {}^1S$	2 – 0	F,P	375,726

TITANIUM X (Ti^{9+}), Z = 22
Ground State $1s^22s^22p^63s^23p(^2P°_{1/2})$ (13 electrons)
Ionization Potential 1 741 500 cm^{-1}; 215.9 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	0	70.265	0.0 – 1423.182	$3s^23p - 3s^26d$	$g^2P° - {}^2D$	1/2 – 3/2		213
	1	70.625	7.543 – 1423.471	$3s^23p - 3s^26d$	$g^2P° - {}^2D$	3/2 – 5/2		714,213
	1	78.655	0.0 – 1271.459	$3s^23p - 3s^25d$	$g^2P° - {}^2D$	1/2 – 3/2		714,213
	3	79.110	7.543 – 1271.678	$3s^23p - 3s^25d$	$g^2P° - {}^2D$	3/2 – 5/2		714,213
	6	84.711	0.0 – 1180.393	$3s^23p - 3s^25s$	$g^2P° - {}^2S$	1/2 – 1/2		714,213
	10	85.262	7.543 – 1180.393	$3s^23p - 3s^25s$	$g^2P° - {}^2S$	3/2 – 1/2		714,213
	0	91.806	345.329 – 1434.556	$3s^23d - 3s^26f$	${}^2D - {}^2F°$	3/2 – 5/2		213
	0	91.855	345.856 – 1434.556	$3s^23d - 3s^26f$	${}^2D - {}^2F°$	5/2 – 7/2		213
	35	101.353	0.0 – 986.656	$3s^23p - 3s^24d$	$g^2P° - {}^2D$	1/2 – 3/2		714,213
	20	102.106	7.543 – 986.918	$3s^23p - 3s^24d$	$g^2P° - {}^2D$	3/2 – 5/2		714,213
	0	104.516	345.329 – 1302.120	$3s^23d - 3s^25f$	${}^2D - {}^2F°$	3/2 – 5/2		213
	0	104.568	345.856 – 1302.172	$3s^23d - 3s^25f$	${}^2D - {}^2F°$	5/2 – 7/2		213
	3	108.886	505.134+X – 1423.471	$3s3p(^3P°)3d - 3s^26d$	${}^4D° - {}^2D$	5/2 – 5/2	Q	714
	1	113.374	164.764+X – 1046.694	$3s3p^2 - 3s^24f$	${}^4P - {}^2F°$	5/2 – 7/2	Q	714
	1	119.822	212.055 – 1046.618	$3s3p^2 - 3s^24f$	${}^2D - {}^2F°$	3/2 – 5/2		714,213
	6	119.891	212.606 – 1046.694	$3s3p^2 - 3s^24f$	${}^2D - {}^2F°$	5/2 – 7/2		714,213
	6	123.036	160.655+X – 973.441+X	$3s3p^2 - 3s3p(^3P°)4s$	${}^4P - {}^4P°$	3/2 – 5/2		714,213
	3	123.331	157.850+X – 968.680+X	$3s3p^2 - 3s3p(^3P°)4s$	${}^4P - {}^4P°$	1/2 – 3/2		714,213
	6	123.657	164.764+X – 973.441+X	$3s3p^2 - 3s3p(^3P°)4s$	${}^4P - {}^4P°$	5/2 – 5/2		714,213
	3	123.703	157.850+X – 966.176+X	$3s3p^2 - 3s3p(^3P°)4s$	${}^4P - {}^4P°$	1/2 – 1/2		714,213
	3	124.143	160.655+X – 966.176+X	$3s3p^2 - 3s3p(^3P°)4s$	${}^4P - {}^4P°$	3/2 – 1/2		714,213
	6	124.391	164.764+X – 968.680+X	$3s3p^2 - 3s3p(^3P°)4s$	${}^4P - {}^4P°$	5/2 – 3/2		714,213
	10	125.456	0.0 – 797.112	$3s^23p - 3s^24s$	$g^2P° - {}^2S$	1/2 – 1/2		714,213
	20	126.651	7.543 – 797.112	$3s^23p - 3s^24s$	$g^2P° - {}^2S$	3/2 – 1/2		714,213
	3	142.595	345.329 – 1046.618	$3s^23d - 3s^24f$	${}^2D - {}^2F°$	3/2 – 5/2		714,213
	10	142.687	345.856 – 1046.694	$3s^23d - 3s^24f$	${}^2D - {}^2F°$	5/2 – 7/2		714,213
	6	265.574	1046.618 – 1423.182	$3s^24f - 3s^26d$	${}^2F° - {}^2D$	5/2 – 3/2	Q	714
	1	288.462	157.850+X – 504.516+X	$3s3p^2 - 3s3p(^3P°)3d$	${}^4P - {}^4D°$	1/2 – 3/2		714,213
	90	289.579	0.0 – 345.329	$3s^23p - 3s^23d$	$g^2P° - {}^2D$	1/2 – 3/2		714,213
	1	290.294	160.655+X – 505.134+X	$3s3p^2 - 3s3p(^3P°)3d$	${}^4P - {}^4D°$	3/2 – 5/2		714,213
	1	290.815	160.655+X – 504.516+X	$3s3p^2 - 3s3p(^3P°)3d$	${}^4P - {}^4D°$	3/2 – 3/2		714,213
	10	293.684	164.764+X – 505.266+X	$3s3p^2 - 3s3p(^3P°)3d$	${}^4P - {}^4D°$	5/2 – 7/2		714,213
	1	293.798	164.764+X – 505.134+X	$3s3p^2 - 3s3p(^3P°)3d$	${}^4P - {}^4D°$	5/2 – 5/2		714,213
	3	294.302	164.764+X – 504.516+X	$3s3p^2 - 3s3p(^3P°)3d$	${}^4P - {}^4D°$	5/2 – 3/2	Q	714
	35	295.584	7.543 – 345.856	$3s^23p - 3s^23d$	$g^2P° - {}^2D$	3/2 – 5/2		714,213
	1	316.987	986.656 – 1302.120	$3s^24d - 3s^25f$	${}^2D - {}^2F°$	3/2 – 5/2	Q	714

Ti X — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	110	350.610	0.0 – 285.218	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		726
	160	355.815	0.0 – 281.045	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		726
	160	360.133	7.543 – 285.218	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		726
	110	365.628	7.543 – 281.045	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		726
	110	378.135	0.0 – 264.456	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		726
		379.74	157.850+X – 421.188+X	$3s3p^2 - 3p^3$	${}^4P - {}^4S^\circ$	$\frac{1}{2} - \frac{3}{2}$		213
		383.83	160.655+X – 421.188+X	$3s3p^2 - 3p^3$	${}^4P - {}^4S^\circ$	$\frac{3}{2} - \frac{3}{2}$		375
	160	389.237	7.543 – 264.456	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		726
		389.99	164.764+X – 421.188+X	$3s3p^2 - 3p^3$	${}^4P - {}^4S^\circ$	$\frac{5}{2} - \frac{3}{2}$		213
	110	471.574	0.0 – 212.055	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		726
	160	487.654	7.543 – 212.606	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		726
	1	488.971	7.543 – 212.055	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		726

TITANIUM XI (Ti^{10+}), Z = 22
Ground State $1s^22s^22p^63s^2(^1S_0)$ (12 electrons)
Ionization Potential 2 137 400 cm^{-1}; 265.0 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	52.218						714
	0	54.322	0.0 – 1840.882	$3s^2 - 3s7p$	$g^1S - {}^1P^\circ$	0 – 1		220
	0	57.891	0.0 – 1727.378	$3s^2 - 3s6p$	$g^1S - {}^1P^\circ$	0 – 1		220
	10	65.403	0.0 – 1528.982	$3s^2 - 3s5p$	$g^1S - {}^1P^\circ$	0 – 1		220
	1	71.201	173.097 – 1577.576	$3s3p - 3s5d$	${}^3P^\circ - {}^3D$	0 – 1		220
	10	71.323	175.650 – 1577.726	$3s3p - 3s5d$	${}^3P^\circ - {}^3D$	1 – 2		220
	40	71.603	181.296 – 1577.880	$3s3p - 3s5d$	${}^3P^\circ - {}^3D$	2 – 3		220
	1	73.281						714
	1	75.415	258.973 – 1584.967	$3s3p - 3s5d$	${}^1P^\circ - {}^1D$	1 – 2		220
	0	76.403	175.650 – 1484.522	$3s3p - 3s5s$	${}^3P^\circ - {}^3S$	1 – 1		220
	1	76.731	181.296 – 1484.522	$3s3p - 3s5s$	${}^3P^\circ - {}^3S$	2 – 1		220
	0	79.027	499.741 – 1765.165	$3s3d - 3s6f$	${}^3D - {}^3F^\circ$	1 – 2		220
	0	79.076	500.551 – 1765.165	$3s3d - 3s6f$	${}^3D - {}^3F^\circ$	3 – 4		220
	1	81.119	258.973 – 1491.736	$3s3p - 3s5s$	${}^1P^\circ - {}^1S$	1 – 0		220
	1	83.732	408.821 – 1603.135	$3p^2 - 3s5f$	${}^1D - {}^1F^\circ$	2 – 3		220
	0	84.321	175.650 – 1361.687	$3s3p - 3p4p$	${}^3P^\circ - {}^3S$	1 – 1		220
	0	84.433	175.650 – 1360.040	$3s3p - 3p4p$	${}^3P^\circ - {}^3P$	1 – 2		220
	0	84.525	173.097 – 1356.186	$3s3p - 3p4p$	${}^3P^\circ - {}^3P$	0 – 1		220
	40	84.711	181.296 – 1361.687	$3s3p - 3p4p$	${}^3P^\circ - {}^3S$	2 – 1		220
	40	84.835	181.296 – 1360.040	$3s3p - 3p4p$	${}^3P^\circ - {}^3P$	2 – 2		220
	0	84.876	175.650 – 1353.84	$3s3p - 3p4p$	${}^3P^\circ - {}^3P$	1 – 0		220
	0	85.114	181.296 – 1356.186	$3s3p - 3p4p$	${}^3P^\circ - {}^3P$	2 – 1		220
	10	85.290	181.296 – 1353.761	$3s3p - 3p4p$	${}^3P^\circ - {}^3D$	2 – 3		220
	250	87.725	0.0 – 1139.922	$3s^2 - 3s4p$	$g^1S - {}^1P^\circ$	0 – 1		220
	0	90.908	499.741 – 1599.75	$3s3d - 3s5f$	${}^3D - {}^3F^\circ$	1 – 2		220
	10	90.927	500.062 – 1599.841	$3s3d - 3s5f$	${}^3D - {}^3F^\circ$	2 – 3		220
	10	90.966	500.551 – 1599.86	$3s3d - 3s5f$	${}^3D - {}^3F^\circ$	3 – 4		220
	40	93.395	173.097 – 1243.822	$3s3p - 3s4d$	${}^3P^\circ - {}^3D$	0 – 1		220
	160	93.589	175.650 – 1244.159	$3s3p - 3s4d$	${}^3P^\circ - {}^3D$	1 – 2		220
	90	93.626	175.650 – 1243.822	$3s3p - 3s4d$	${}^3P^\circ - {}^3D$	1 – 1		220

Ti XI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	93.909	408.821 – 1473.62	$3p^2$ – 3p4d	^{1}D – ^{1}F°	2 – 3		714,970
	250	94.053	181.296 – 1244.532	3s3p – 3s4d	^{3}P° – ^{3}D	2 – 3		220
	10	94.085	181.296 – 1244.159	3s3p – 3s4d	^{3}P° – ^{3}D	2 – 2		220
	3	95.640	408.821 – 1454.38	$3p^2$ – 3p4d	^{1}D – ^{3}D°	2 – 3	Q	714,970
	3	95.929	410.535 – 1453.00	$3p^2$ – 3p4d	^{3}P – ^{3}D°	0 – 1		714,970
	1	96.170	414.049 – 1453.88	$3p^2$ – 3p4d	^{3}P – ^{3}D°	1 – 2	Q	714
	1	96.246	414.049 – 1453.00	$3p^2$ – 3p4d	^{3}P – ^{3}D°	1 – 1		714,970
	1	96.288	564.604 – 1603.135	3s3d – 3s5f	^{1}D – ^{1}F°	2 – 3		220
	3	96.731	420.598 – 1454.38	$3p^2$ – 3p4d	^{3}P – ^{3}D°	2 – 3		714,970
	1	97.142	499.741 – 1528.982	3s3d – 3s5p	^{3}D – ^{1}P°	1 – 1	Q	714,970
	40	100.591	258.973 – 1253.095	3s3p – 3s4d	^{1}P° – ^{1}D	1 – 2		220
	20	100.835	482.84 – 1474.56	$3p^2$ – 3p4d	^{1}S – ^{1}P°	0 – 1		714,970
	6	102.576	499.741 – 1474.56	3s3d – 3p4d	^{3}D – ^{1}P°	1 – 1	Q	714
	6	109.904	564.604 – 1474.56	3s3d – 3p4d	^{1}D – ^{1}P°	2 – 1	Q	714,970
	1	110.019	564.604 – 1473.62	3s3d – 3p4d	^{1}D – ^{1}F°	2 – 3		714,970
	40	111.664	408.821 – 1304.362	$3p^2$ – 3s4f	^{1}D – ^{1}F°	2 – 3		220
	40	113.940	173.097 – 1050.752	3s3p – 3s4s	^{3}P° – ^{3}S	0 – 1		220
	90	114.272	175.650 – 1050.752	3s3p – 3s4s	^{3}P° – ^{3}S	1 – 1		220
	160	115.015	181.296 – 1050.752	3s3p – 3s4s	^{3}P° – ^{3}S	2 – 1		220
	0	116.028	414.049 – 1275.944	$3p^2$ – 3p4s	^{3}P – ^{3}P°	1 – 2		220
	0	116.387	410.535 – 1269.740	$3p^2$ – 3p4s	^{3}P – ^{3}P°	0 – 1		220
	40	116.910	420.598 – 1275.944	$3p^2$ – 3p4s	^{3}P – ^{3}P°	2 – 2		220
	0	117.171	414.049 – 1267.503	$3p^2$ – 3p4s	^{3}P – ^{3}P°	1 – 0		220
	10	122.894	691.88 – 1505.52	3p3d – 3p4f	^{3}F° – ^{3}G	4 – 5		714,899
	6	123.063	687.48 – 1500.03	3p3d – 3p4f	^{3}F° – ^{3}G	3 – 4		714,899
	40	123.946	258.973 – 1065.777	3s3p – 3s4s	^{1}P° – ^{1}S	1 – 0		220
	40	125.940	499.741 – 1293.772	3s3d – 3s4f	^{3}D – ^{3}F°	1 – 2		220
	160	125.979	500.062 – 1293.84	3s3d – 3s4f	^{3}D – ^{3}F°	2 – 3		220
	250	126.042	500.551 – 1293.940	3s3d – 3s4f	^{3}D – ^{3}F°	3 – 4		220
	1	126.566	1050.752 – 1840.882	3s4s – 3s7p	^{3}S – ^{1}P°	1 – 1	Q	714
		127.268	728.82 – 1514.56	3p3d – 3p4f	^{3}D° – ^{3}D	2 – 2		899
	3	128.871	500.062 – 1275.944	3s3d – 3p4s	^{3}D – ^{3}P°	2 – 2	Q	714,970
		129.055	730.44 – 1505.32	3p3d – 3p4f	^{3}D° – ^{3}F	3 – 4		899
	3	134.701	692.00+K – 1434.37+K	3p3d – 3p4f	^{1}F° – ^{1}G	3 – 4		714,899
	90	135.179	564.604 – 1304.362	3s3d – 3s4f	^{1}D – ^{1}F°	2 – 3		220
	3	158.042	727.31 – 1360.040	3p3d – 3p4p	^{3}P° – ^{3}P	2 – 2	Q	714
	1	190.181	727.31 – 1253.095	3p3d – 3s4d	^{3}P° – ^{1}D	2 – 2	Q	714,220
	1	194.039	728.82 – 1244.159	3p3d – 3s4d	^{3}D° – ^{3}D	2 – 2	Q	714
	1	258.267	1065.777 – 1453.00	3s4s – 3p4d	^{1}S – ^{3}D°	0 – 1	Q	714,970
	6	285.672	1253.095 – 1603.135	3s4d – 3s5f	^{1}D – ^{1}F°	2 – 3	Q	714
	1	292.901	408.821 – 750.22	$3p^2$ – 3p3d	^{1}D – ^{1}P°	2 – 1	Q	714,375
	1	306.144	173.097 – 499.741	3s3p – 3s3d	^{3}P° – ^{3}D	0 – 1		220
	90	308.250	175.650 – 500.062	3s3p – 3s3d	^{3}P° – ^{3}D	1 – 2		220
	250	308.568	175.650 – 499.741	3s3p – 3s3d	^{3}P° – ^{3}D	1 – 1		220
	90	313.229	181.296 – 500.551	3s3p – 3s3d	^{3}P° – ^{3}D	2 – 3		220
	1	313.710	181.296 – 500.062	3s3p – 3s3d	^{3}P° – ^{3}D	2 – 2		220
		322.75	420.598 – 730.44	$3p^2$ – 3p3d	^{3}P – ^{3}D°	2 – 3		251
	10	327.192	258.973 – 564.604	3s3p – 3s3d	^{1}P° – ^{1}D	1 – 2		220
		349.91	408.821 – 694.61	$3p^2$ – 3p3d	^{1}D – ^{1}D°	2 – 2		251
		374.00	482.84 – 750.22	$3p^2$ – 3p3d	^{1}S – ^{1}P°	0 – 1		251
	10	386.140	0.0 – 258.973	$3s^2$ – 3s3p	g^{1}S – ^{1}P°	0 – 1		220
		408.25	175.650 – 420.598	3s3p – $3p^2$	^{3}P° – ^{3}P	1 – 2	P	270
		415.02	173.097 – 414.049	3s3p – $3p^2$	^{3}P° – ^{3}P	0 – 1	P	270
		417.88	181.296 – 420.598	3s3p – $3p^2$	^{3}P° – ^{3}P	2 – 2	P	270

Ti XI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		419.46	175.650 – 414.049	3s3p – 3p^2	$^3P^\circ$ – ^3P	1 – 1	P	270
		425.74	175.650 – 410.535	3s3p – 3p^2	$^3P^\circ$ – ^3P	1 – 0		270
		429.64	181.296 – 414.049	3s3p – 3p^2	$^3P^\circ$ – ^3P	2 – 1	P	270
		434.99	500.551 – 730.44	3s3d – 3p3d	^3D – $^3D^\circ$	3 – 3	P	251
		446.69	258.973 – 482.84	3s3p – 3p^2	$^1P^\circ$ – ^1S	1 – 0		251
		522.66	500.551 – 691.88	3s3d – 3p3d	^3D – $^3F^\circ$	3 – 4		251
		533.57	500.062 – 687.48	3s3d – 3p3d	^3D – $^3F^\circ$	2 – 3	P	251
		543.24	499.741 – 683.82	3s3d – 3p3d	^3D – $^3F^\circ$	1 – 2	P	251
		569.3	0.0 – 175.650	3s^2 – 3s3p	g^1S – $^3P^\circ$	0 – 1		1131
		667.34	258.973 – 408.821	3s3p – 3p^2	$^1P^\circ$ – ^1D	1 – 2	P	375,220

TITANIUM XII (Ti^{11+}), Z = 22
Ground State $1s^22s^22p^63s(^2S_{1/2})$ (11 electrons)
Ionization Potential 2 351 100 cm^{-1}; 291.502 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	3	26.574						979
	8	26.733						979
	10	26.847	217.042 – 3941.9	2p^{6}3p – 2p^{5}3s($^3P^\circ$)3p	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{3}{2}$		979
	8	26.870	501.922 – 4223.5	2p^{6}3d – 2p^{5}3s($^3P^\circ$)3d	^2D – $^2P^\circ$	$\frac{3}{2}$ – $\frac{3}{2}$		979
	6	27.052	502.814 – 4199.4	2p^{6}3d – 2p^{5}3s($^3P^\circ$)3d	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{5}{2}$		979
	10	27.125	0. – 3686.6	2p^{6}3s – 2p^{5}3s^2	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{1}{2}$		979
	10	27.151	502.814 – 4185.9	2p^{6}3d – 2p^{5}3s($^3P^\circ$)3d	^2D – $^2D^\circ$	$\frac{5}{2}$ – $\frac{3}{2}$		979
	17	27.228	217.042 – 3889.7	2p^{6}3p – 2p^{5}3s($^3P^\circ$)3p	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$		979
	24	27.305	502.814 – 4165.1	2p^{6}3d – 2p^{5}3s($^1P^\circ$)3d	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$		979
	9	27.346	501.922 – 4158.8	2p^{6}3d – 2p^{5}3s($^3P^\circ$)3d	^2D – $^4D^\circ$	$\frac{3}{2}$ – $\frac{5}{2}$		979
	4	27.434	217.042 – 3863.7	2p^{6}3p – 2p^{5}3s($^1P^\circ$)3p	$^2P^\circ$ – ^2S	$\frac{3}{2}$ – $\frac{1}{2}$		979
	6	27.459	0. – 3641.8	2p^{6}3s – 2p^{5}3s^2	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$		979
	20	27.499	217.042 – 3853.5	2p^{6}3p – 2p^{5}3s($^1P^\circ$)3p	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$		979
	9	27.537	502.814 – 4134.3	2p^{6}3d – 2p^{5}3s($^1P^\circ$)3d	^2D – $^2P^\circ$	$\frac{5}{2}$ – $\frac{3}{2}$		979
	20	27.584	501.922 – 4127.2	2p^{6}3d – 2p^{5}3s($^1P^\circ$)3d	^2D – $^2P^\circ$	$\frac{3}{2}$ – $\frac{1}{2}$		979
	9	27.601	501.922 – 4124.4	2p^{6}3d – 2p^{5}3s($^1P^\circ$)3d	^2D – $^2F^\circ$	$\frac{3}{2}$ – $\frac{5}{2}$		979
	9	27.617	502.814 – 4124.4	2p^{6}3d – 2p^{5}3s($^1P^\circ$)3d	^2D – $^2F^\circ$	$\frac{5}{2}$ – $\frac{5}{2}$		979
	5	27.649	501.922 – 4118.7	2p^{6}3d – 2p^{5}3s($^3P^\circ$)3d	^2D – $^4F^\circ$	$\frac{3}{2}$ – $\frac{3}{2}$		979
	6	27.707	501.922 – 4111.1	2p^{6}3d – 2p^{5}3s($^3P^\circ$)3d	^2D – $^4F^\circ$	$\frac{3}{2}$ – $\frac{5}{2}$		979
	10	27.740	208.385 – 3813.3	2p^{6}3p – 2p^{5}3s($^1P^\circ$)3p	$^2P^\circ$ – ^2D	$\frac{1}{2}$ – $\frac{3}{2}$		979
	5	27.758	502.814 – 4105.4	2p^{6}3d – 2p^{5}3s($^3P^\circ$)3d	^2D – $^4F^\circ$	$\frac{5}{2}$ – $\frac{7}{2}$		979
	15	27.803	208.385 – 3805.1	2p^{6}3p – 2p^{5}3s($^3P^\circ$)3p	$^2P^\circ$ – ^4D	$\frac{1}{2}$ – $\frac{1}{2}$		979
	14	27.820	217.042 – 3811.5	2p^{6}3p – 2p^{5}3s($^3P^\circ$)3p	$^2P^\circ$ – ^4P	$\frac{3}{2}$ – $\frac{5}{2}$		979
	10	27.863	208.385 – 3797.4	2p^{6}3p – 2p^{5}3s($^3P^\circ$)3p	$^2P^\circ$ – ^4D	$\frac{1}{2}$ – $\frac{3}{2}$		979
	7	27.971	217.042 – 3792.2	2p^{6}3p – 2p^{5}3s($^3P^\circ$)3p	$^2P^\circ$ – ^4D	$\frac{3}{2}$ – $\frac{5}{2}$		979
	0	28.000						265
	10	28.123						979
	2	28.150						979
		45.167	0. – 2214.005	2p^{6}3s – 2p^{6}11p	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$		118
		45.783	0. – 2184.216	2p^{6}3s – 2p^{6}10p	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$		118
		46.641	0. – 2144.036	2p^{6}3s – 2p^{6}9p	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$		118
		47.906	0. – 2087.421	2p^{6}3s – 2p^{6}8p	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$		118
		49.912	0. – 2003.526	2p^{6}3s – 2p^{6}7p	g^2S – $^2P^\circ$	$\frac{1}{2}$ – $\frac{3}{2}$		118
		50.448	208.385 – 2190.624	2p^{6}3p – 2p^{6}10d	$^2P^\circ$ – ^2D	$\frac{1}{2}$ – $\frac{3}{2}$		118
		50.674	217.042 – 2190.440	2p^{6}3p – 2p^{6}10d	$^2P^\circ$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$		118
		51.446	208.385 – 2152.170	2p^{6}3p – 2p^{6}9d	$^2P^\circ$ – ^2D	$\frac{1}{2}$ – $\frac{3}{2}$		118

Tl XII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		51.669	217.042 – 2152.438	$2p^63p - 2p^69d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		118
	1	52.896	208.385 – 2098.875	$2p^63p - 2p^68d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		230
	1	53.140	217.042 – 2098.875	$2p^63p - 2p^68d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		230
	3	53.433	0. – 1871.489	$2p^63s - 2p^66p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		230
	1	53.457	0. – 1870.655	$2p^63s - 2p^66p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		230
	3	55.443	217.042 – 2020.686	$2p^63p - 2p^67d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		230
	2	56.161	208.385 – 1989.049	$2p^63p - 2p^67s$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		118
	7	59.133	208.385 – 1899.497	$2p^63p - 2p^66d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		230
	15	59.435	217.042 – 1899.544	$2p^63p - 2p^66d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		230
	15	60.701	0. – 1647.436	$2p^63s - 2p^65p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		230
	3	60.762	0. – 1645.759	$2p^63s - 2p^65p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		230
	1	60.971	208.385 – 1848.641	$2p^63p - 2p^66s$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		230
	1	61.286	217.042 – 1848.641	$2p^63p - 2p^66s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		230
	1	62.433	501.922 – 2103.592	$2p^63d - 2p^68f$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		230
	1	62.470	502.814 – 2103.612	$2p^63d - 2p^68f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		230
	1	65.540	501.922 – 2027.701	$2p^63d - 2p^67f$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		230
	3	65.577	502.814 – 2027.730	$2p^63d - 2p^67f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		230
	15	67.171	208.385 – 1697.112	$2p^63p - 2p^65d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		230
	40	67.555	217.042 – 1697.315	$2p^63p - 2p^65d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		230
	3	70.986	501.922 – 1910.628	$2p^63d - 2p^66f$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		230
	7	71.031	502.814 – 1910.675	$2p^63d - 2p^66f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		230
	1	71.545	208.385 – 1606.155	$2p^63p - 2p^65s$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		230
	3	71.987	217.042 – 1606.155	$2p^63p - 2p^65s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		230
	80	82.121	0. – 1217.699	$2p^63s - 2p^64p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		230
	7	82.307	501.922 – 1716.838	$2p^63d - 2p^65f$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		230
	25	82.344	0. – 1214.388	$2p^63s - 2p^64p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		230
	7	82.368	502.814 – 1716.919	$2p^63d - 2p^65f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		230
	1	87.364	502.814 – 1647.436	$2p^63d - 2p^65p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		230
	1	87.426	501.922 – 1645.759	$2p^63d - 2p^65p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		230
	60	89.844	208.385 – 1321.432	$2p^63p - 2p^64d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		230
	80	90.512	217.042 – 1321.872	$2p^63p - 2p^64d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		230
	7	90.547	217.042 – 1321.432	$2p^63p - 2p^64d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		230
	15	108.086	208.385 – 1133.573	$2p^63p - 2p^64s$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		230
	40	109.107	217.042 – 1133.573	$2p^63p - 2p^64s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		230
	60	116.497	501.922 – 1360.313	$2p^63d - 2p^64f$	$^2D - ^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		230
	80	116.597	502.814 – 1360.471	$2p^63d - 2p^64f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		230
	3	121.622	1321.872 – 2144.036	$2p^64d - 2p^69p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$	Q	714
	1	124.555	1217.699 – 2020.686	$2p^64p - 2p^67d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$	Q	714
	1	126.276	1360.471 – 2152.438	$2p^64f - 2p^69d$	$^2F^\circ - ^2D$	$\frac{7}{2}-\frac{5}{2}$	Q	714
	3	139.884	502.814 – 1217.699	$2p^63d - 2p^64p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		230
	1	140.361	501.922 – 1214.388	$2p^63d - 2p^64p$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		230
	3	229.619	1716.919 – 2152.438	$2p^65f - 2p^69d$	$^2F^\circ - ^2D$	$\frac{7}{2}-\frac{5}{2}$	Q	714
	35	253.142	1321.872 – 1716.919	$2p^64d - 2p^65f$	$^2D - ^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		714
	3	256.338	1697.315 – 2087.421	$2p^65d - 2p^68p$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$	Q	714
	6	257.430	1217.699 – 1606.155	$2p^64p - 2p^65s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$	Q	714
	80	340.672	208.385 – 501.922	$2p^63p - 2p^63d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		230
	130	349.929	217.042 – 502.814	$2p^63p - 2p^63d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		230
	7	351.024	217.042 – 501.922	$2p^63p - 2p^63d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		230
	230	460.741	0. – 217.042	$2p^63s - 2p^63p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		230
	160	479.881	0. – 208.385	$2p^63s - 2p^63p$	$g^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		230
	1	959.945	1217.699 – 1321.872	$2p^64p - 2p^64d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		230

TITANIUM XIII (Ti^{12+}), Z = 22
Ground State $1s^22s^22p^6(^1S_0)$ (10 electrons)
Ionization Potential 6 354 300 cm^{-1}; 787.84 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	17.727	0.0 – 5641.1	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})5d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		232
	50	17.869	0.0 – 5596.3	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})5d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		232
	250	19.204	0.0 – 5207.2	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})4d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		232
	200	19.366	0.0 – 5163.7	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		232
	50	19.943	0.0 – 5014.3	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})4s$	$g^1S - (\frac{1}{2},\frac{1}{2})^\circ$	0 – 1		232
	50	20.135	0.0 – 4966.5	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4s$	$g^1S - (\frac{3}{2},\frac{1}{2})^\circ$	0 – 1		232
	350	21.035	0.0 – 4754.0	$2s^22p^6 - 2s2p^63p$	$g^1S - ^1P^\circ$	0 – 1		232
	100	21.127	0.0 – 4733.3	$2s^22p^6 - 2s2p^63p$	$g^1S - ^3P^\circ$	0 – 1		232
		23.356	0.0 – 4281.6	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})3d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		189
		23.698	0.0 – 4219.8	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		189
		23.991	0.0 – 4168.2	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		189
		26.641	0.0 – 3753.6	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})3s$	$g^1S - (\frac{1}{2},\frac{1}{2})^\circ$	0 – 1		189
		26.960	0.0 – 3709.2	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3s$	$g^1S - (\frac{3}{2},\frac{1}{2})^\circ$	0 – 1		189
		70.05	4178.4+C – 5606.0+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 5		1055
		74.08	3693.3+C – 5043.2+C	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		1055
		74.42	3753.6 – 5097.3	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	$(\frac{1}{2},\frac{1}{2})^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		1055
		74.59	3709.2 – 5049.9	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	$(\frac{3}{2},\frac{1}{2})^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		1055
		74.74	3709.2 – 5047.2	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ_{3/2})4p$	$(\frac{3}{2},\frac{1}{2})^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		1055
		80.290	3904.0+C – 5149.5+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^3D - ^3F^\circ$	3 – 4		395
		80.494	3912.9+C – 5155.2+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^1P - ^1D^\circ$	1 – 2		395
		80.602	3900.7+C – 5141.4+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^3D - ^3D^\circ$	2 – 3		395
		81.153	3964.8+C – 5197.0+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^3P - ^3F^\circ$	1 – 2		395
		81.255	3965.8+C – 5196.5+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^1D - ^1F^\circ$	2 – 3		395
		81.318	3950.2+C – 5179.9+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^3D - ^3D^\circ$	1 – 2		395
		81.611	3921.9+C – 5147.2+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^3P - ^3F^\circ$	2 – 3		395
		94.78	3904.0+C – 4959.1+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ_{3/2})4s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	3 – 2		1055
		98.76	4169.9+C – 5182.5+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		1055
		99.09	4169.9+C – 5179.1+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		1055
		99.60	4183.2+C – 5187.2+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		1055
		99.85	4242.8+C – 5244.3+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^1D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		1055
		100.16	4226.8+C – 5225.2+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		1055
		100.78	4197.9+C – 5190.2+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		1055

TITANIUM XIV (Ti^{13+}), Z = 22
Ground State $1s^22s^22p^5(^2P^\circ_{3/2})$ (9 electrons)
Ionization Potential [6 961 000] cm^{-1}; [863.1] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		17.58	0.0 – 5688.3	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		245
		17.73	0.0 – 5640.2	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		245
		17.80	0.0 – 5618.0	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		245
		17.88	47.219 – 5640.2	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		245
	60	21.304	0.0 – 4694.0	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		850
	400	21.341	0.0 – 4685.8	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		850
	500	21.522	47.219 – 4694.0	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		850
	700	21.657	0.0 – 4617.4	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		850
	700	21.732	0.0 – 4601.5	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		850
	600	21.818	0.0 – 4583.4	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		850
	700	21.883	47.219 – 4617.4	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		850
	500	21.958	47.219 – 4601.5	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		850

Ti XIV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	600	22.066	0.0 – 4531.9	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		850
	200	22.099	0.0 – 4525.1	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		850
	300	22.162	0.0 – 4512.2	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2F$	$\frac{3}{2}-\frac{5}{2}$		850
	300	22.190	0.0 – 4506.5	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		850
	300	22.215	0.0 – 4501.5	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		850
	100	22.248	0.0 – 4494.8	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		850
	400	22.279	0.0 – 4488.5	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4F$	$\frac{3}{2}-\frac{5}{2}$		850
	300	22.328	0.0 – 4478.7	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		850
	400	22.426	47.219 – 4506.5	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		850
	150	22.486	47.219 – 4494.8	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		850
	200	22.518	47.219 – 4488.5	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$		850
	900	23.690	0.0 – 4221.2	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		850
	200	23.960	47.219 – 4221.2	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		850
	600	24.315	0.0 – 4112.6	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		850
	750	24.592	47.219 – 4114.0	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		850
	700	24.728	0.0 – 4043.9	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		850
	600	24.891	47.219 – 4065.1	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		850
	700	24.907	0.0 – 4014.9	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		850
	500	25.025	0.0 – 3996.0	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		850
	40	25.071	47.219 – 4036.2	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^4P$	$\frac{1}{2}-\frac{1}{2}$		850
	200	25.086	819.766 – 4806.1	$2s2p^6 - 2s2p^5(^3P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		850
	60	25.206	47.219 – 4014.9	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^4P$	$\frac{1}{2}-\frac{3}{2}$		850
	300	25.260	819.766 – 4778.6	$2s2p^6 - 2s2p^5(^3P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		850
	625	121.986	0.0 – 819.766	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		1119
	600	129.440	47.219 – 819.766	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		1119

TITANIUM XV (Ti^{14+}), Z = 22
Ground State $1s^22s^22p^4(^3P_2)$ (8 electrons)
Ionization Potential [7 597 000] cm^{-1}; [941.9] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	65	20.051	0.0 – 4987.0	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		877
	65	20.133	39.284 – 5006.2	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		877
	100	20.169	0.0 – 4965.2	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	2 – 1	Q	834
		20.20	0.0 – 4949.9	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	2 – 2	P	877
	110	20.23	42.345 – 4986.0	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	0 – 1		877
	20	20.312	42.345 – 4965.2	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	0 – 1		947
	300	20.324	0.0 – 4920.3	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3S^\circ$	2 – 1		877,834
	10	20.364	39.284 – 4949.9	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3P^\circ$	1 – 2		877
	30	20.389	108.720 – 5013.4	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$^1D - ^1F^\circ$	2 – 3		877
		20.403	0.0 – 4901.24	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3P^\circ$	2 – 2	P	877
	175	20.418	0.0 – 4897.6	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		877
	10	20.538	0.0 – 4870.3	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^1P^\circ$	2 – 1		947
	65	20.611	39.284 – 4891.1	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		877
	30	20.700	215.521 – 5046.4	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$^1S - ^1P^\circ$	0 – 1		877
	110	20.823	108.720 – 4911.2	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$^1D - ^1D^\circ$	2 – 2		877
	110	20.897	0.0 – 4785.4	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		877
	50	21.094	39.284 – 4780.0	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		834
	100	22.109	0.0 – 4523.0	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - ^3P^\circ$	2 – 2		834

Ti XV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	900	22.464	0.0 – 4451.6	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g\,^3P - ^3D^\circ$	2 – 3		865
	450	22.482	108.720 – 4556.9	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$^1D - ^1P^\circ$	2 – 1		865
	600	22.518	0.0 – 4440.4	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g\,^3P - ^3D^\circ$	2 – 2		865
	450	22.724	39.284 – 4440.0	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g\,^3P - ^3D^\circ$	1 – 1		865
	360	22.739	42.345 – 4440.0	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g\,^3P - ^3D^\circ$	0 – 1		865
	540	22.936	108.720 – 4468.7	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$^1D - ^1D^\circ$	2 – 2		865
	360	22.966	0.0 – 4354.1	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g\,^3P - ^3S^\circ$	2 – 1		865
	180	23.034	215.521 – 4556.9	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$^1S - ^1P^\circ$	0 – 1		865
	360	23.177	39.284 – 4354.1	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g\,^3P - ^3S^\circ$	1 – 1		865
	150	23.193	42.345 – 4354.1	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g\,^3P - ^3S^\circ$	0 – 1		865
		23.20	0.0 – 4310.6+K	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g\,^3P - ^5S^\circ$	2 – 2	P	680
		23.41	39.284 – 4310.6+K	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g\,^3P - ^5S^\circ$	1 – 2	P	680
	40	102.247	0.0 – 978.03	$2s^22p^4 - 2s2p^5$	$g\,^3P - ^1P^\circ$	2 – 1		1119
	2	106.874	42.345 – 978.03	$2s^22p^4 - 2s2p^5$	$g\,^3P - ^1P^\circ$	0 – 1		1119
		109.48	742.882 – 1656.29	$2s2p^5 - 2p^6$	$^3P^\circ - ^1S$	1 – 0	P	375,1119
	625	115.031	108.720 – 978.03	$2s^22p^4 - 2s2p^5$	$^1D - ^1P^\circ$	2 – 1		1119
	200	131.146	215.521 – 978.03	$2s^22p^4 - 2s2p^5$	$^1S - ^1P^\circ$	0 – 1		1119
	320	134.609	0.0 – 742.882	$2s^22p^4 - 2s2p^5$	$g\,^3P - ^3P^\circ$	2 – 1		1119
	250	138.357	39.284 – 762.060	$2s^22p^4 - 2s2p^5$	$g\,^3P - ^3P^\circ$	1 – 0		1119
	600	140.395	0.0 – 712.285	$2s^22p^4 - 2s2p^5$	$g\,^3P - ^3P^\circ$	2 – 2		1119
	200	142.130	39.284 – 742.882	$2s^22p^4 - 2s2p^5$	$g\,^3P - ^3P^\circ$	1 – 1		1119
	200	142.750	42.345 – 742.882	$2s^22p^4 - 2s2p^5$	$g\,^3P - ^3P^\circ$	0 – 1		1119
	80	147.436	978.03 – 1656.29	$2s2p^5 - 2p^6$	$^1P^\circ - ^1S$	1 – 0		1119
	320	148.588	39.284 – 712.285	$2s^22p^4 - 2s2p^5$	$g\,^3P - ^3P^\circ$	1 – 2		1119
	2	165.690	108.720 – 712.285	$2s^22p^4 - 2s2p^5$	$^1D - ^3P^\circ$	2 – 2		1119
		463.99	0.0 – 215.521	$2s^22p^4 - 2s^22p^4$	$g\,^3P - ^1S$	2 – 0	F,P	375,1119
		567.42	39.284 – 215.521	$2s^22p^4 - 2s^22p^4$	$g\,^3P - ^1S$	1 – 0	F,P	375,1119
		919.79	0.0 – 108.720	$2s^22p^4 - 2s^22p^4$	$g\,^3P - ^1D$	2 – 2	F,P	375,1119
		936.32	108.720 – 215.521	$2s^22p^4 - 2s^22p^4$	$^1D - ^1S$	2 – 0	F,P	375,1119
		1440.	39.284 – 108.720	$2s^22p^4 - 2s^22p^4$	$g\,^3P - ^1D$	1 – 2	F,P	375,1119
		1507.	42.345 – 108.720	$2s^22p^4 - 2s^22p^4$	$g\,^3P - ^1D$	0 – 2	F,P	375,1119

TITANIUM XVI (Ti^{15+}), Z = 22
Ground State $1s^22s^22p^3(^4S^\circ_{3/2})$ (7 electrons)
Ionization Potential [8 420 000] cm^{-1}; [1044] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		19.01	197.70 – 5458.5	$2s^22p^3 - 2s^22p^2(^1S)3d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$	P	950
	110	19.089	0.0 – 5238.6	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g\,^4S^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		877
	110	19.112	0.0 – 5232.3	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g\,^4S^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		877
	350	19.210	130.72 – 5336.3	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{5}{2} - \frac{7}{2}$		877
		19.24	130.72 – 5329.1	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2D$	$\frac{5}{2} - \frac{5}{2}$	P	950
	110	19.370	130.72 – 5293.3	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2D$	$\frac{5}{2} - \frac{5}{2}$		877
		19.45	219.25 – 5360.9	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$	P	950
	110	19.551	130.72 – 5245.7	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2F$	$\frac{5}{2} - \frac{7}{2}$		877
		19.57	219.25 – 5329.1	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	950
	10	19.71	219.25 – 5293.3	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		877
	30	20.101	219.25 – 5194.1	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		877
	5	102.393	0.0 – 976.65	$2s^22p^3 - 2s2p^4$	$g\,^4S^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		1140

Ti XVI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	110.561	116.03 – 1020.50	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		1140
	280	116.198	116.03 – 976.65	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		1140
	315	118.215	130.72 – 976.65	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		1140
	175	121.382	116.03 – 939.92	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		1140
	15	121.538	197.70 – 1020.50	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		1140
	265	124.805	219.25 – 1020.50	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		1140
	50	128.373	197.70 – 976.65	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		1140
	30	129.075	813.08 – 1587.83	$2s2p^4 - 2p^5$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		1140
	100	132.022	219.25 – 976.65	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		1140
	175	134.724	197.70 – 939.92	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		1140
	5	138.020	813.08 – 1537.66	$2s2p^4 - 2p^5$	$^2D - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		1140
	10	138.760	219.25 – 939.92	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		1140
	125	138.800	817.21 – 1537.66	$2s2p^4 - 2p^5$	$^2D - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		1140
	200	143.459	116.03 – 813.08	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		1140
	450	145.665	130.72 – 817.21	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		1140
	30	146.55	130.72 – 813.08	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{3}{2}$	P	384
	175	157.812	0.0 – 633.66	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		1140
	280	161.168	0.0 – 620.47	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		1140
	20	162.503	197.70 – 813.08	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		1140
	2	163.610	976.65 – 1587.83	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		1140
	70	167.242	219.25 – 817.21	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		1140
	10	167.297	939.92 – 1537.66	$2s2p^4 - 2p^5$	$^2S - ^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		1140
	550	169.740	0.0 – 589.14	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		1140
	8	176.267	1020.50 – 1587.83	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		1140
	30	178.240	976.65 – 1537.66	$2s2p^4 - 2p^5$	$^2P - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		1140
		456.1	0.0 – 219.25	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,1140
		505.8	0.0 – 197.70	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	F,P	375,1140
		765.0	0.0 – 130.72	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$	F,P	375,1140
		861.8	0.0 – 116.03	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - ^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,1140
		968.8	116.03 – 219.25	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,1140
		1130.	130.72 – 219.25	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - ^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$	F,P	375,1140
		1224.	116.03 – 197.70	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	F,P	375,1140
		1493.	130.72 – 197.70	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - ^2P^\circ$	$\frac{5}{2}-\frac{1}{2}$	F,P	375,1140

TITANIUM XVII (Ti^{16+}), Z = 22
Ground State $1s^22s^22p^2(^3P_0)$ (6 electrons)
Ionization Potential [9 120 000] cm^{-1}; [1131] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		18.043	29.658 – 5572.0	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3P^\circ$	1 – 0	P	949
	80	18.056	29.658 – 5568.0	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3P^\circ$	1 – 2		949,303
		18.127	0.0 – 5517.7	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3D^\circ$	0 – 1		949
		18.134	55.730 – 5570.2	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3P^\circ$	2 – 1	P	949
	10	18.141	55.730 – 5568.0	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3P^\circ$	2 – 2		877
	60	18.154	330.50+U – 5838.9+U	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^\circ - ^5P$	2 – 3		303
	40	18.172	55.730 – 5558.7	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3D^\circ$	2 – 3		303
	40	18.215	29.658 – 5517.7	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3D^\circ$	1 – 1		303
		18.228	55.730 – 5541.9	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3D^\circ$	2 – 2		949
	100	18.268	140.629 – 5614.4	$2s^22p^2 - 2s^22p3d$	$^1D - ^1F^\circ$	2 – 3		303
		18.279	140.629 – 5611.9	$2s^22p^2 - 2s^22p3d$	$^1D - ^1P^\circ$	2 – 1	P	949
		18.350	55.730 – 5502.3	$2s^22p^2 - 2s^22p3d$	$g^3P - ^1D^\circ$	2 – 2	Q	949

Ti XVII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	60	18.387	586.764 – 6025.0	$2s2p^3 - 2s2p^2(^2D)3d$	$^3D^\circ - ^3F$	3 – 4		303
		18.426	140.629 – 5568.0	$2s^22p^2 - 2s^22p3d$	$^1D - ^3P^\circ$	2 – 2		949
		18.461	55.730 – 5472.5	$2s^22p^2 - 2s^22p3d$	$g^3P - ^3F^\circ$	2 – 2		949
		18.623	242.151 – 5611.9	$2s^22p^2 - 2s^22p3d$	$^1S - ^1P^\circ$	0 – 1		949
	20	18.651	140.629 – 5502.3	$2s^22p^2 - 2s^22p3d$	$^1D - ^1D^\circ$	2 – 2		949,303
		18.677	140.629 – 5494.9	$2s^22p^2 - 2s^22p3d$	$^1D - ^3F^\circ$	2 – 3		949
		18.757	140.629 – 5472.5	$2s^22p^2 - 2s^22p3d$	$^1D - ^3F^\circ$	2 – 2		949
	10	18.799	586.764 – 5906.2	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3F$	3 – 4		877
	20	18.939	578.891 – 5859.0	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - ^3F$	2 – 3		303
	180	19.369	29.658 – 5194.0	$2s^22p^2 - 2s^22p3s$	$g^3P - ^3P^\circ$	1 – 2		303
	40	19.415	330.50+U – 5481.2+U	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^\circ - ^5P$	2 – 3		303
	60	19.459	55.730 – 5194.0	$2s^22p^2 - 2s^22p3s$	$g^3P - ^3P^\circ$	2 – 2		303
	40	19.501	578.891 – 5707.0	$2s2p^3 - 2s2p^2(^2D)3s$	$^3D^\circ - ^3D$	2 – 2		303
	20	19.651	55.730 – 5144.5	$2s^22p^2 - 2s^22p3s$	$g^3P - ^3P^\circ$	2 – 1		303
	40	19.718	140.629 – 5212.1	$2s^22p^2 - 2s^22p3s$	$^1D - ^1P^\circ$	2 – 1		303
	20	20.183						303
	1	109.432	29.658 – 943.467	$2s^22p^2 - 2s2p^3$	$g^3P - ^1P^\circ$	1 – 1		1141
	30	119.284	0.0 – 838.338	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^\circ$	0 – 1		1141
	150	123.654	29.658 – 838.338	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^\circ$	1 – 1		1141
	245	124.553	140.629 – 943.467	$2s^22p^2 - 2s2p^3$	$^1D - ^1P^\circ$	2 – 1		1141
	15	126.004	586.764 – 1380.34	$2s2p^3 - 2p^4$	$^3D^\circ - ^1D$	3 – 2		1141
	25	126.676	55.730 – 845.146	$2s^22p^2 - 2s2p^3$	$g^3P - ^1D^\circ$	2 – 2		1141
	175	127.782	55.730 – 838.338	$2s^22p^2 - 2s2p^3$	$g^3P - ^3S^\circ$	2 – 1		1141
	6	135.202	580.114 – 1319.68	$2s2p^3 - 2p^4$	$^3D^\circ - ^3P$	1 – 0		1141
	20	136.160	578.891 – 1313.29	$2s2p^3 - 2p^4$	$^3D^\circ - ^3P$	2 – 1		1141
	6	136.393	580.114 – 1313.29	$2s2p^3 - 2p^4$	$^3D^\circ - ^3P$	1 – 1		1141
	175	141.948	140.629 – 845.146	$2s^22p^2 - 2s2p^3$	$^1D - ^1D^\circ$	2 – 2		1141
	30	142.589	242.151 – 943.467	$2s^22p^2 - 2s2p^3$	$^1S - ^1P^\circ$	0 – 1		1141
	10	144.405	578.891 – 1271.39	$2s2p^3 - 2p^4$	$^3D^\circ - ^3P$	2 – 2		1141
	30	146.067	586.764 – 1271.39	$2s2p^3 - 2p^4$	$^3D^\circ - ^3P$	3 – 2		1141
	10	146.856	0.0 – 680.913	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	0 – 1		1141
	1	152.174	29.658 – 686.784	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	1 – 2		1141
	25	153.554	29.658 – 680.913	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	1 – 1		1141
	3	154.133	29.658 – 678.448	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	1 – 0		1141
		156.57	680.913 – 1319.68	$2s2p^3 - 2p^4$	$^3P^\circ - ^3P$	1 – 0		1084
	160	158.469	55.730 – 686.784	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	2 – 2		1141
		159.62	686.784 – 1313.29	$2s2p^3 - 2p^4$	$^3P^\circ - ^3P$	2 – 1		1084
	1	159.955	55.730 – 680.913	$2s^22p^2 - 2s2p^3$	$g^3P - ^3P^\circ$	2 – 1		1141
	2	163.049	943.467 – 1556.78	$2s2p^3 - 2p^4$	$^1P^\circ - ^1S$	1 – 0		1141
		169.34	680.913 – 1271.39	$2s2p^3 - 2p^4$	$^3P^\circ - ^3P$	1 – 2		1084
		171.09	686.784 – 1271.39	$2s2p^3 - 2p^4$	$^3P^\circ - ^3P$	2 – 2	Q	1084
	20	172.380	0.0 – 580.114	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^\circ$	0 – 1		1141
	150	182.072	29.658 – 578.891	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^\circ$	1 – 2		1141
	40	186.863	845.146 – 1380.34	$2s2p^3 - 2p^4$	$^1D^\circ - ^1D$	2 – 2		1141
	100	188.312	55.730 – 586.764	$2s^22p^2 - 2s2p^3$	$g^3P - ^3D^\circ$	2 – 3		1141
		230.89	838.338 – 1271.39	$2s2p^3 - 2p^4$	$^3S^\circ - ^3P$	1 – 2		1084
		364.	55.730 – 330.50+U	$2s^22p^2 - 2s2p^3$	$g^3P - ^5S^\circ$	2 – 2	P	375,1141
		470.60	29.658 – 242.151	$2s^22p^2 - 2s^22p^2$	$g^3P - ^1S$	1 – 0	F,P	375,1141
		536.42	55.730 – 242.151	$2s^22p^2 - 2s^22p^2$	$g^3P - ^1S$	2 – 0	F,P	375,1141
		711.09	0.0 – 140.629	$2s^22p^2 - 2s^22p^2$	$g^3P - ^1D$	0 – 2	F,P	375,1141
		901.14	29.658 – 140.629	$2s^22p^2 - 2s^22p^2$	$g^3P - ^1D$	1 – 2	F,P	375,1141
		985.01	140.629 – 242.151	$2s^22p^2 - 2s^22p^2$	$^1D - ^1S$	2 – 0	F,P	375,1141
		1178.	55.730 – 140.629	$2s^22p^2 - 2s^22p^2$	$g^3P - ^1D$	2 – 2	F,P	375,1141
		1794.	0.0 – 55.730	$2s^22p^2 - 2s^22p^2$	$g^3P - g^3P$	0 – 2	F,P	375,1141

TITANIUM XVIII (Ti^{17+}), Z = 22
Ground State $1s^22s^22p(^2P^\circ_{1/2})$ (5 electrons)
Ionization Potential [9 850 000] cm^{-1}; [1221] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		13.45	56.240 - 7491.3	$2s^22p - 2s^24s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	P	375
	10	16.561	0.00 - 6038.3	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		877
	10	16.624	56.240 - 6071.6	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		877
	10	16.90	0.00 - 5917.2	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		877
	10	16.939	56.240 - 5959.8	$2s^22p - 2s2p(^3P^\circ)3p$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		877
	30	17.150	561.704 - 6392.6	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		877
	30	17.22	0.00 - 5807.2	$2s^22p - 2s^23d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		877
	30	17.28	360.80+X - 6147.8+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		877
	30	17.30	360.80+X - 6141.1+X	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		877
	65	17.365	56.240 - 5815.0	$2s^22p - 2s^23d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		877
	110	17.587	747.069 - 6433.1	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2P - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		877
	110	17.630	561.704 - 6233.9	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		877
	30	17.715	555.858 - 6200.9	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		877
	30	17.920	561.704 - 6142.1	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		877
		18.38	56.240 - 5497.9	$2s^22p - 2s^23s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	P	375
	5	133.852	0.00 - 747.069	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		1142
	6	136.280	0.00 - 733.749	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		1142
	40	144.759	56.240 - 747.069	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		1142
	15	147.607	56.240 - 733.749	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		1142
	20	148.438	0.00 - 673.682	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		1142
		148.83	555.858 - 1227.70	$2s2p^2 - 2p^3$	${}^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		1084
		150.15	561.704 - 1227.70	$2s2p^2 - 2p^3$	${}^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		1084
		153.15	555.858 - 1208.80	$2s2p^2 - 2p^3$	${}^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		1084
	10	153.23	309.78+X - 962.39+X	$2s2p^2 - 2p^3$	${}^4P - {}^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		877
	65	159.00	333.46+X - 962.39+X	$2s2p^2 - 2p^3$	${}^4P - {}^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		877
	5	166.225	360.80+X - 962.39+X	$2s2p^2 - 2p^3$	${}^4P - {}^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		1142
	4	179.902	0.00 - 555.858	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		1142
		180.52	673.682 - 1227.70	$2s2p^2 - 2p^3$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		1084
		187.55	555.858 - 1089.00	$2s2p^2 - 2p^3$	${}^2D - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		1084
	5	189.663	561.704 - 1089.00	$2s2p^2 - 2p^3$	${}^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		1142
		191.23	555.858 - 1078.79	$2s2p^2 - 2p^3$	${}^2D - {}^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		1084
		193.39	561.704 - 1078.79	$2s2p^2 - 2p^3$	${}^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$	P	1084
	4	197.838	56.240 - 561.704	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		1142
		208.07	747.069 - 1227.70	$2s2p^2 - 2p^3$	${}^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		1084
		210.51	733.749 - 1208.80	$2s2p^2 - 2p^3$	${}^2P - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		1084
		1778.1	0.00 - 56.240	$2s^22p - 2s^22p$	$g^2P^\circ - g^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	F	1137

TITANIUM XIX (Ti^{18+}), Z = 22
Ground State $1s^22s^2(^1S_0)$ (4 electrons)
Ionization Potential [10 860 000] cm^{-1}; [1346] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		2.6540						624
		15.581	304.566 - 6722.7+B	$1s^22s2p - 1s^22p3p$	${}^3P^\circ - {}^3P$	1 - 2	P	619
	0	15.671	304.566 - 6685.8	$1s^22s2p - 1s^22p3p$	${}^3P^\circ - {}^3P$	1 - 0		643
		15.685	347.204 - 6722.7+B	$1s^22s2p - 1s^22p3p$	${}^3P^\circ - {}^3P$	2 - 2	P	619
	0	15.738	347.204 - 6701.3	$1s^22s2p - 1s^22p3p$	${}^3P^\circ - {}^3S$	2 - 1		643
	30	15.742	347.204 - 6699.6	$1s^22s2p - 1s^22p3p$	${}^3P^\circ - {}^3D$	2 - 3		877

Ti XIX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		15.801	288.131 – 6616.8+B	$1s^22s2p - 1s^22p3p$	$^3P^\circ - {}^3D$	0 – 1	P	619
		15.831	0.0 – 6316.7+B	$1s^22s^2 - 1s^22s3p$	$g^1S - {}^3P^\circ$	0 – 1	P	619
		15.842	304.566 – 6616.8+B	$1s^22s2p - 1s^22p3p$	$^3P^\circ - {}^3D$	1 – 1	P	619
	10	15.865	0.0 – 6303.2	$1s^22s^2 - 1s^22s3p$	$g^1S - {}^1P^\circ$	0 – 1		877
		16.002	589.658 – 6838.9+B	$1s^22s2p - 1s^22s3s$	$^1P^\circ - {}^1S$	1 – 0	P	619
	0	16.178	589.658 – 6770.9	$1s^22s2p - 1s^22p3p$	$^1P^\circ - {}^1D$	1 – 2		643
		16.288	304.566 – 6445.8	$1s^22s2p - 1s^22s3d$	$^3P^\circ - {}^1D$	1 – 2	Q	623
	0	16.414	288.131 – 6380.5	$1s^22s2p - 1s^22s3d$	$^3P^\circ - {}^3D$	0 – 1		643
	30	16.430	304.566 – 6391.0	$1s^22s2p - 1s^22s3d$	$^3P^\circ - {}^3D$	1 – 2		877
	65	16.514	347.204 – 6402.7	$1s^22s2p - 1s^22s3d$	$^3P^\circ - {}^3D$	2 – 3		877
		16.637	804.847 – 6815.5+B	$1s^22p^2 - 1s^22p3d$	$^3P - {}^3P^\circ$	1 – 0	P	619
	10	16.70	804.847 – 6792.8	$1s^22p^2 - 1s^22p3d$	$^3P - {}^3D^\circ$	1 – 2		877
	0	16.719	832.361 – 6813.6	$1s^22p^2 - 1s^22p3d$	$^3P - {}^3P^\circ$	2 – 2		643
	10	16.736	832.361 – 6807.5	$1s^22p^2 - 1s^22p3d$	$^3P - {}^3D^\circ$	2 – 3		877
	30	16.802	917.603 – 6869.3	$1s^22p^2 - 1s^22p3d$	$^1D - {}^1F^\circ$	2 – 3		877
	0	16.811	917.603 – 6866.1	$1s^22p^2 - 1s^22p3d$	$^1D - {}^1P^\circ$	2 – 1		643
	0	17.076	589.658 – 6445.8	$1s^22s2p - 1s^22s3d$	$^1P^\circ - {}^1D$	1 – 2		643
	0	17.181	917.603 – 6738.0	$1s^22p^2 - 1s^22p3d$	$^1D - {}^1D^\circ$	2 – 2		643
		17.354	1104.16 – 6866.1	$1s^22p^2 - 1s^22p3d$	$^1S - {}^1P^\circ$	0 – 1	P	619
		17.553	804.847 – 6501.9	$1s^22p^2 - 1s^22p3s$	$^3P - {}^3P^\circ$	1 – 0	P	619
		17.583	917.603 – 6604.9+B	$1s^22p^2 - 1s^22p3s$	$^1D - {}^1P^\circ$	2 – 1	P	619
	300	169.590	0.0 – 589.658	$1s^22s^2 - 1s^22s2p$	$g^1S - {}^1P^\circ$	0 – 1	P	1104,281
		175.316	347.204 – 917.603	$1s^22s2p - 1s^22p^2$	$^3P^\circ - {}^1D$	2 – 2	P	1104
	100	189.468	304.566 – 832.361	$1s^22s2p - 1s^22p^2$	$^3P^\circ - {}^3P$	1 – 2	P	1104,281
	0	193.530	288.131 – 804.847	$1s^22s2p - 1s^22p^2$	$^3P^\circ - {}^3P$	0 – 1	P	1104,281
		194.361	589.658 – 1104.16	$1s^22s2p - 1s^22p^2$	$^1P^\circ - {}^1S$	1 – 0	P	1104
	50	199.888	304.566 – 804.847	$1s^22s2p - 1s^22p^2$	$^3P^\circ - {}^3P$	1 – 1	P	1104,281
	150	206.119	347.204 – 832.361	$1s^22s2p - 1s^22p^2$	$^3P^\circ - {}^3P$	2 – 2	P	1104,281
		212.207	304.566 – 775.804	$1s^22s2p - 1s^22p^2$	$^3P^\circ - {}^3P$	1 – 0	P	1104
	50	218.511	347.204 – 804.847	$1s^22s2p - 1s^22p^2$	$^3P^\circ - {}^3P$	2 – 1	P	1104,281
	150	304.929	589.658 – 917.603	$1s^22s2p - 1s^22p^2$	$^1P^\circ - {}^1D$	1 – 2	P	1104,281
		328.336	0.0 – 304.566	$1s^22s^2 - 1s^22s2p$	$g^1S - {}^3P^\circ$	0 – 1	P	1104

TITANIUM XX (Ti^{19+}), Z = 22
Ground State $1s^22s(^2S_{1/2})$ (3 electrons)
Ionization Potential 11 496 000 cm^{-1}; 1425.3 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		2.6141	6573.58 – 44828.3	$1s^23p - 1s2p3p$	$^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		624
		2.616	323.516 – 38550.	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$	P	283
		2.6204	0. – 38162.	$1s^22s - 1s(2s2p(^1P^\circ))$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		624
		2.6295	0. – 38030.	$1s^22s - 1s(2s2p(^3P^\circ))$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		624
		2.6319	323.516 – 38319.	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		624
		2.6355	385.659 – 38329.	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		624
		2.6480	0. – 37764.	$1s^22s - 1s(2s2p(^3P^\circ))$	$g^2S - {}^4P^\circ$	$\frac{1}{2} - \frac{3}{2}$		624
		9.128	0. – 10955.3	$1s^22s - 1s^29p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		623
		9.246	0. – 10815.5	$1s^22s - 1s^28p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		623
		9.405	323.516 – 10956.5	$1s^22p - 1s^29d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$	P	643
		9.434	0. – 10600.0	$1s^22s - 1s^27p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		623
		9.459	385.659 – 10957.7	$1s^22p - 1s^29d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	643

Ti XX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		9.534	323.516 – 10812.1	$1s^22p - 1s^28d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		623
		9.591	385.659 – 10812.4	$1s^22p - 1s^28d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		623
		9.733	0. – 10274.3	$1s^22s - 1s^26p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		623
		9.788	385.659 – 10602.5	$1s^22p - 1s^27d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		623
		10.046	323.516 – 10277.5	$1s^22p - 1s^26d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		623
		10.109	385.659 – 10278.0	$1s^22p - 1s^26d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		623
		10.278	0. – 9729.5	$1s^22s - 1s^25p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		623
		10.620	323.516 – 9739.5	$1s^22p - 1s^25d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		623
		10.690	385.659 – 9740.5	$1s^22p - 1s^25d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		623
		11.451	0. – 8732.61	$1s^22s - 1s^24p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	977
		11.462	0. – 8724.84	$1s^22s - 1s^24p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	977
		11.872	323.516 – 8746.70	$1s^22p - 1s^24d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	P	977
		11.954	323.516 – 8688.93	$1s^22p - 1s^24s$	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$	P	977
		11.957	385.659 – 8748.96	$1s^22p - 1s^24d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	977
		12.043	385.659 – 8688.93	$1s^22p - 1s^24s$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	P	977
	20	15.212	0. – 6573.58	$1s^22s - 1s^23p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	977,273
	20	15.255	0. – 6555.09	$1s^22s - 1s^23p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	977,273
	20	15.912	323.516 – 6608.08	$1s^22p - 1s^23d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	P	977,273
	30	16.056	385.659 – 6613.86	$1s^22p - 1s^23d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	977,273
		16.277	323.516 – 6467.22	$1s^22p - 1s^23s$	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$	P	977
		16.443	385.659 – 6467.22	$1s^22p - 1s^23s$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	P	977
	30	259.296	0. – 385.659	$1s^22s - 1s^22p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	977,730
		309.104	0. – 323.516	$1s^22s - 1s^22p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	P	977

TITANIUM XXI (Ti^{20+}), Z = 22
Ground State $1s^2(^1S_0)$ (2 electrons)
Ionization Potential 50 405 000 cm^{-1}; 6249.2 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		2.063	0.0 – 48466.5	$1s^2 - 1s5p$	$g^1S - {}^1P^\circ$	0 – 1	P	728
		2.111	0.0 – 47371.2	$1s^2 - 1s4p$	$g^1S - {}^1P^\circ$	0 – 1	P	728
		2.221	0.0 – 45021.9	$1s^2 - 1s3p$	$g^1S - {}^1P^\circ$	0 – 1	P	728
		2.507	37927.5 – 77815.5	$1s2s - 2s2p$	$^3S - {}^3P^\circ$	1 – 2		618
		2.510	37927.5 – 77768.5	$1s2s - 2s2p$	$^3S - {}^3P^\circ$	1 – 1		618
		2.513	38311.6 – 78104.6	$1s2p - 2p^2$	$^1P^\circ - {}^1D$	1 – 2		618
		2.517	37927.5 – 77657.5	$1s2s - 2s2p$	$^3S - {}^3P^\circ$	1 – 0		618
		2.6101	0.0 – 38311.6	$1s^2 - 1s2p$	$g^1S - {}^1P^\circ$	0 – 1		624
		2.6229	0.0 – 38129.2	$1s^2 - 1s2p$	$g^1S - {}^3P^\circ$	0 – 1		624
		2.637	0.0 – 37927.5	$1s^2 - 1s2s$	$g^1S - {}^3S$	0 – 1	F,P	375,1013
		14.16	37927.5 – 44987.2	$1s2s - 1s3p$	$^3S - {}^3P^\circ$	1 – 2	P	375
		14.52	38135.0 – 45021.9	$1s2s - 1s3p$	$^1S - {}^1P^\circ$	0 – 1	P	375
		390.47	37927.5 – 38183.6	$1s2s - 1s2p$	$^3S - {}^3P^\circ$	1 – 2	P	375
		566.25	38135.0 – 38311.6	$1s2s - 1s2p$	$^1S - {}^1P^\circ$	0 – 1	P	375
		1386.96	44915.1 – 44987.2	$1s3s - 1s3p$	$^3S - {}^3P^\circ$	1 – 2	P	375
		1923.08	44969.9 – 45021.9	$1s3s - 1s3p$	$^1S - {}^1P^\circ$	0 – 1	P	375

TITANIUM XXII (Ti^{21+}), Z = 22
Ground State $1s(^2S_{1/2})$ (1 electron)
Ionization Potential 53 440 400 cm^{-1}; 6625.82 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		1.910	0.0 – 52356.3340	1s – 7p	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		1.924	0.0 – 51964.7957	1s – 6p	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		1.949	0.0 – 51312.0728	1s – 5p	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		1.995	0.0 – 50114.1931	1s – 4p	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		2.104	0.0 – 47526.3550	1s – 3p	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		2.105	0.0 – 47500.5240	1s – 3p	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	P	1042
		2.491	0.0 – 40140.9890	1s – 2p	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		2.497	0.0 – 40053.8500	1s – 2p	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	P	1042
		8.130	40056.4800 – 52356.3340	2s – 7p	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		8.186	40140.9890 – 52356.3340	2p – 7d	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	1042
		8.398	40056.4800 – 51964.7957	2s – 6p	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		8.458	40140.9890 – 51964.7957	2p – 6d	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	1042
		8.885	40056.4800 – 51312.0728	2s – 5p	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		8.950	40140.9890 – 51313.9014	2p – 5d	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	1042
		9.943	40056.4800 – 50114.1931	2s – 4p	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		10.023	40140.9890 – 50117.7644	2p – 4d	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	1042
		13.387	40056.4800 – 47526.3550	2s – 3p	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		13.525	40140.9890 – 47534.8169	2p – 3d	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	1042
		20.597	47501.3130 – 52356.3340	3s – 7p	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		20.704	47526.3550 – 52356.3340	3p – 7d	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	1042
		20.740	47534.8169 – 52356.3340	3d – 7f	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	1042
		22.404	47501.3130 – 51964.7957	3s – 6p	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		22.530	47526.3550 – 51964.7957	3p – 6d	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	1042
		22.574	47534.8169 – 51964.7957	3d – 6f	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	1042
		26.242	47501.3130 – 51312.0728	3s – 5p	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		26.402	47526.3550 – 51313.9014	3p – 5d	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	1042
		26.455	47534.8169 – 51314.8149	3d – 5f	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	1042
		38.272	47501.3130 – 50114.1931	3s – 4p	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		38.589	47526.3550 – 50117.7644	3p – 4d	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	1042
		38.689	47534.8169 – 50119.5482	3d – 4f	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$	P	1042
		1183.306	40056.4800 – 40140.9890	2s – 2p	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	1042

VANADIUM , Z = 23
Unclassified Lines

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	222.20						256
	200	223.11						256
	200	241.14						256
	200	245.89						256
	100	251.87						256

VANADIUM I (V^{0+}), Z = 23
Ground State $1s^2 2s^2 2p^6 3s^2 3p^6 3d^3 4s^2 (^4F_{3/2})$ (23 electrons)
Ionization Potential 54 360 cm^{-1}; 6.740 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	25	1872.66						489
	15	1890.82						489
	40	1894.47						489
	25	1897.49						489
	10	1897.90						489
		1899.82	0.13738 – 52.77408	$3d^34s^2$ –	$ga^4F - p^2G°$	$\frac{5}{2}-\frac{7}{2}$	P	375
	30	1900.00						489
		1900.25	0.32342 – 52.94798	$3d^34s^2$ –	$ga^4F - p^2G°$	$\frac{7}{2}-\frac{9}{2}$	P	375
		1906.55	0.32342 – 52.77408	$3d^34s^2$ –	$ga^4F - p^2G°$	$\frac{7}{2}-\frac{7}{2}$	P	375
		1908.58	0.55302 – 52.94798	$3d^34s^2$ –	$ga^4F - p^2G°$	$\frac{9}{2}-\frac{9}{2}$	P	375
55	250	1957.90	0.32342 – 51.398100	$3d^34s^2$ –	$ga^4F - m^4D°$	$\frac{7}{2}-\frac{7}{2}$		489
55	60	1958.18	0.0 – 51.067700	$3d^34s^2$ –	$ga^4F - m^4D°$	$\frac{3}{2}-\frac{3}{2}$		489
	0	1958.60	0.13738 – 51.194200	$3d^34s^2$ –	$ga^4F - 31°$	$\frac{5}{2}-\frac{5}{2}$		489
59	150	1959.12	0.32342 – 51.366600	$3d^34s^2$ –	$ga^4F - n^4F°$	$\frac{7}{2}-\frac{9}{2}$		489
54	150	1959.36	0.13738 – 51.174500	$3d^34s^2$ –	$ga^4F - n^4F°$	$\frac{5}{2}-\frac{7}{2}$		489
54	200	1959.97	0.0 – 51.021200	$3d^34s^2$ –	$ga^4F - n^4F°$	$\frac{3}{2}-\frac{5}{2}$		489
55	300	1961.69	0.0 – 50.976500	$3d^34s^2$ –	$ga^4F - m^4D°$	$\frac{3}{2}-\frac{1}{2}$		489
55	350	1963.47	0.13738 – 51.067700	$3d^34s^2$ –	$ga^4F - m^4D°$	$\frac{5}{2}-\frac{3}{2}$		489
54	300	1964.27	0.0 – 50.909700	$3d^34s^2$ –	$ga^4F - n^4F°$	$\frac{3}{2}-\frac{3}{2}$		489
55	300	1965.07	0.32342 – 51.212200	$3d^34s^2$ –	$ga^4F - m^4D°$	$\frac{7}{2}-\frac{5}{2}$		489
54	300	1965.26	0.13738 – 51.021200	$3d^34s^2$ –	$ga^4F - n^4F°$	$\frac{5}{2}-\frac{5}{2}$		489
54	300	1966.52	0.32342 – 51.174500	$3d^34s^2$ –	$ga^4F - n^4F°$	$\frac{7}{2}-\frac{7}{2}$		489
55	300	1966.76	0.55302 – 51.398100	$3d^34s^2$ –	$ga^4F - m^4D°$	$\frac{9}{2}-\frac{7}{2}$		489
54	400	1967.98	0.55302 – 51.366600	$3d^34s^2$ –	$ga^4F - n^4F°$	$\frac{9}{2}-\frac{9}{2}$		489
54	75	1969.57	0.13738 – 50.909700	$3d^34s^2$ –	$ga^4F - n^4F°$	$\frac{5}{2}-\frac{3}{2}$		489
54	75	1972.48	0.32342 – 51.021200	$3d^34s^2$ –	$ga^4F - n^4F°$	$\frac{7}{2}-\frac{5}{2}$		489
54	100	1975.42	0.55302 – 51.174500	$3d^34s^2$ –	$ga^4F - n^4F°$	$\frac{9}{2}-\frac{7}{2}$		489
	5	1981.85	0.13738 – 50.595730	$3d^34s^2$ –	$ga^4F - 30°$	$\frac{5}{2}-\frac{7}{2}$		489
53	200	1982.06	0.0 – 50.452600	$3d^34s^2$ –	$ga^4F - p^4G°$	$\frac{3}{2}-\frac{5}{2}$		489
53	200	1982.45	0.13738 – 50.579411	$3d^34s^2$ –	$ga^4F - p^4G°$	$\frac{5}{2}-\frac{7}{2}$		489
53	250	1983.37	0.32342 – 50.742400	$3d^34s^2$ –	$ga^4F - p^4G°$	$\frac{7}{2}-\frac{9}{2}$		489
		1983.96	0.0 – 50.40414	$3d^34s^2$ –	$ga^4F - r^2F°$	$\frac{3}{2}-\frac{5}{2}$	P	375
		1984.05	0.13738 – 50.53927	$3d^34s^2$ –	$ga^4F - r^2F°$	$\frac{5}{2}-\frac{7}{2}$	P	375
	30	1984.43	0.13738 – 50.530260	$3d^34s^2$ –	$ga^4F - 29°$	$\frac{5}{2}-\frac{7}{2}$		489
53	250	1984.91	0.55302 – 50.933580	$3d^34s^2$ –	$ga^4F - p^4G°$	$\frac{9}{2}-\frac{11}{2}$		489
	50	1987.25						489

V I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	40	1988.97						489
	1	1989.17	0.32342 – 50.595730	$3d^34s^2$ –	ga^{4}F – 30°	$\frac{7}{2}$ – $\frac{7}{2}$		489
		1989.39	0.13738 – 50.40414	$3d^34s^2$ –	ga^{4}F – r^{2}F°	$\frac{5}{2}$ – $\frac{5}{2}$	P	375
53	60	1989.82	0.32342 – 50.579411	$3d^34s^2$ –	ga^{4}F – p^{4}G°	$\frac{7}{2}$ – $\frac{7}{2}$		489
	0	1991.31	0.13738 – 50.355890	$3d^34s^2$ –	ga^{4}F – 27°	$\frac{5}{2}$ – $\frac{3}{2}$		489
		1991.40	0.32342 – 50.53927	$3d^34s^2$ –	ga^{4}F – r^{2}F°	$\frac{7}{2}$ – $\frac{7}{2}$	P	375
	10	1991.75	0.32342 – 50.530260	$3d^34s^2$ –	ga^{4}F – 29°	$\frac{7}{2}$ – $\frac{7}{2}$		489
53	1	1992.46	0.55302 – 50.742400	$3d^34s^2$ –	ga^{4}F – p^{4}G°	$\frac{9}{2}$ – $\frac{9}{2}$		489
	1	1995.43	0.32342 – 50.438439	$3d^34s^2$ –	ga^{4}F – 28°	$\frac{7}{2}$ – $\frac{5}{2}$		489
		1996.78	0.32342 – 50.40414	$3d^34s^2$ –	ga^{4}F – r^{2}F°	$\frac{7}{2}$ – $\frac{5}{2}$	P	375

VANADIUM II (V^{1+}), Z = 23
Ground State $1s^22s^22p^63s^23p^63d^4(^5D_0)$ (22 electrons)
Ionization Potential 118 200 cm^{-1}; 14.66 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	5	1313.82	0.10663 – 76.2204	$3d^4$ –	ga^{5}D – u^{3}F°	2 – 2		478
	50	1358.44	2.60482 – 76.2204	$3d^3(a^4F)4s$ –	a^{5}F – u^{3}F°	1 – 2		478
	0	1358.769	2.80872 – 76.4054	$3d^3(a^4F)4s$ –	a^{5}F – 2°	3 – 3		782
	3	1360.896	3.16280 – 76.6435	$3d^3(a^4F)4s$ –	a^{5}F – u^{3}F°	5 – 4		782
	2	1372.115	2.96822 – 75.8480	$3d^3(a^4F)4s$ – $3d^2(^1D)4s4p(^3P°)$	a^{5}F – t^{3}D°	4 – 3		782
	3	1372.547	2.96822 – 75.8255	$3d^3(a^4F)4s$ –	a^{5}F – 5°	4 – 5		782
	10	1374.279	2.80872 – 75.5733	$3d^3(a^4F)4s$ –	a^{5}F – 4°	3 – 4		782
	15	1376.220	3.16280 – 75.8255	$3d^3(a^4F)4s$ –	a^{5}F – 5°	5 – 5		782
	10	1377.295	2.96822 – 75.5733	$3d^3(a^4F)4s$ –	a^{5}F – 4°	4 – 4		782
	5	1449.262	8.64021 – 77.6405	$3d^3(a^4F)4s$ –	a^{3}F – ^{1}D°	2 – 2		782
	2	1453.515	8.84197 – 77.6405	$3d^3(a^4F)4s$ –	a^{3}F – ^{1}D°	3 – 2		782
	0	1474.876	8.84197 – 76.6435	$3d^3(a^4F)4s$ –	a^{3}F – u^{3}F°	3 – 4		782
	0	1476.116	8.64021 – 76.3858	$3d^3(a^4F)4s$ –	a^{3}F – u^{3}F°	2 – 3		782
	5	1479.720	8.64021 – 76.2204	$3d^3(a^4F)4s$ –	a^{3}F – u^{3}F°	2 – 2		782
	10	1480.487	9.09781 – 76.6435	$3d^3(a^4F)4s$ –	a^{3}F – u^{3}F°	4 – 4		782
	1	1484.135	8.84197 – 76.2204	$3d^3(a^4F)4s$ –	a^{3}F – u^{3}F°	3 – 2		782
	1	1486.153	9.09781 – 76.3858	$3d^3(a^4F)4s$ –	a^{3}F – u^{3}F°	4 – 3		782
	10	1489.620	11.90827 – 79.0404	$3d^4$ –	a^{3}P – 3°	2 – 3		782
	4	1490.837	8.64021 – 75.7160	$3d^3(a^4F)4s$ – $3d^2(^1D)4s4p(^3P°)$	a^{3}F – t^{3}D°	2 – 1		782
	6	1498.114	9.09781 – 75.8480	$3d^3(a^4F)4s$ – $3d^2(^1D)4s4p(^3P°)$	a^{3}F – t^{3}D°	4 – 3		782
	4	1498.604	9.09781 – 75.8255	$3d^3(a^4F)4s$ –	a^{3}F – 5°	4 – 5		782
	10	1508.078						782
	2	1511.606	2.60482 – 68.7592	$3d^3(a^4F)4s$ – $3d^2(^3F)4s4p(^3P°)$	a^{5}F – u^{3}D°	1 – 1		782
	2	1512.018	2.80872 – 68.9449	$3d^3(a^4F)4s$ – $3d^2(^3F)4s4p(^3P°)$	a^{5}F – u^{3}D°	3 – 3		782
	1	1515.675	2.96822 – 68.9449	$3d^3(a^4F)4s$ – $3d^2(^3F)4s4p(^3P°)$	a^{5}F – u^{3}D°	4 – 3		782
	1	1520.241	0.03605 – 65.8152	$3d^4$ – $3d^2(^3F)4s4p(^3P°)$	ga^{5}D – x^{5}D°	1 – 1		782
	2	1531.405	13.74161 – 79.0404	$3d^3(a^4P)4s$ –	a^{5}P – 3°	3 – 3		782
	4	1538.818	3.16280 – 68.1470	$3d^3(a^4F)4s$ – $3d^2(^3F)4s4p(^3P°)$	a^{5}F – v^{3}F°	5 – 4		782
	150	1547.20						478
	5	1550.47	0.10663 – 64.60347	$3d^4$ – $3d^3(a^2F)4p$	ga^{5}D – v^{3}D°	2 – 3		478
	3	1550.858	0.10663 – 64.58614	$3d^4$ – $3d^3(a^2F)4p$	ga^{5}D – x^{1}D°	2 – 2		782
	1	1552.268	11.29557 – 75.7160	$3d^4$ – $3d^2(^1D)4s4p(^3P°)$	a^{3}P – t^{3}D°	0 – 1		782
	150	1553.09						478
	5	1556.05	0.33921 – 64.60347	$3d^4$ – $3d^3(a^2F)4p$	ga^{5}D – v^{3}D°	4 – 3		478
	2	1556.561	11.51476 – 75.7582	$3d^4$ – $3d^2(^1D)4s4p(^3P°)$	a^{3}P – t^{3}D°	1 – 2		782
	1	1557.569	11.51476 – 75.7160	$3d^4$ – $3d^2(^1D)4s4p(^3P°)$	a^{3}P – t^{3}D°	1 – 1		782

V II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	150	1558.76						478
	2	1559.347	13.51175 – 77.6405	$3d^3(a^4P)4s$ –	$a^5P - {}^1D°$	1 – 2		782
	100	1562.98						478
	2	1563.954	11.90827 – 75.8480	$3d^4 - 3d^2(^1D)4s4p(^3P°)$	$a^3P - t^3D°$	2 – 3		782
	2	1564.999	13.74161 – 77.6405	$3d^3(a^4P)4s$ –	$a^5P - {}^1D°$	3 – 2		782
	80	1565.98						478
	1	1566.166	11.90827 – 75.7582	$3d^4 - 3d^2(^1D)4s4p(^3P°)$	$a^3P - t^3D°$	2 – 2		782
	20	1571.74						478
	5	1573.78						478
	0	1576.805						782
	4	1578.542	2.80872 – 66.1576	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P°)$	$a^5F - x^5D°$	3 – 4		782
	4	1579.550	2.68701 – 65.9956	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P°)$	$a^5F - x^5D°$	2 – 3		782
	5	1580.261	12.54514 – 75.8255	$3d^4$ –	$a^3H - 5°$	4 – 5		782
19	80	1581.99	2.60482 – 65.8152	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P°)$	$a^5F - x^5D°$	1 – 1		478
19	80	1582.32	2.68701 – 65.8844	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P°)$	$a^5F - x^5D°$	2 – 2		478
19	150	1582.57	2.96822 – 66.1576	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P°)$	$a^5F - x^5D°$	4 – 4		478
19	80	1582.80	14.46175 – 77.6405	$3d^4$ –	$a^3G - {}^1D°$	3 – 2		478
19	150	1584.06	2.68701 – 65.8152	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P°)$	$a^5F - x^5D°$	2 – 1		478
19	300	1585.361	2.80872 – 65.8844	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P°)$	$a^5F - x^5D°$	3 – 2		478
19	400	1586.58	2.96822 – 65.9956	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P°)$	$a^5F - x^5D°$	4 – 3		478
19	500	1587.40	3.16280 – 66.1576	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P°)$	$a^5F - x^5D°$	5 – 4		478
	3	1589.761	13.74161 – 76.6435	$3d^3(a^4P)4s$ –	$a^5P - u^3F°$	3 – 4		782
	1	1594.129	13.49087 – 76.2204	$3d^4$ –	$b^3F - u^3F°$	2 – 2		782
	6	1606.685	13.60896 – 75.8480	$3d^4 - 3d^2(^1D)4s4p(^3P°)$	$b^3F - t^3D°$	4 – 3		782
	4	1607.046	13.49087 – 75.7160	$3d^4 - 3d^2(^1D)4s4p(^3P°)$	$b^3F - t^3D°$	2 – 1		782
	5	1607.294	13.54267 – 75.7582	$3d^4 - 3d^2(^1D)4s4p(^3P°)$	$b^3F - t^3D°$	3 – 2		782
	2	1610.487	8.84197 – 70.93597	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P°)$	$a^3F - {}^1F°$	3 – 3		782
	2	1610.615	14.55609 – 76.6435	$3d^4$ –	$a^3G - u^3F°$	4 – 4		782
	0	1613.016	2.80872 – 64.80417	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^5F - v^3D°$	3 – 2		782
99	150	1613.20	14.65563 – 76.6435	$3d^4$ –	$a^3G - u^3F°$	5 – 4		478
	5	1613.40	2.60482 – 64.58614	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^5F - x^1D°$	1 – 2		478
	5	1614.871	0.20889 – 62.13330	$3d^4 - 3d^3(a^2F)4p$	$ga^5D - w^3F°$	3 – 3		782
99	100	1617.35	14.55609 – 76.3858	$3d^4$ –	$a^3G - u^3F°$	4 – 3		478
99	100	1619.18	14.46175 – 76.2204	$3d^4$ –	$a^3G - u^3F°$	3 – 2		478
	3	1622.432	2.96822 – 64.60347	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^5F - v^3D°$	4 – 3		782
	5	1630.717	2.80872 – 64.13080	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^5F - w^3G°$	3 – 4		782
18	200	1630.82	2.96822 – 64.2866	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P°)$	$a^5F - y^5F°$	4 – 5		478
	0	1632.135	14.55609 – 75.8255	$3d^4$ –	$a^3G - 5°$	4 – 5		782
	5	1632.343	2.96822 – 64.22919	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^5F - w^3G°$	4 – 5		782
18	250	1633.51	2.80872 – 64.0262	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P°)$	$a^5F - y^5F°$	3 – 4		478
	6	1634.783	14.65563 – 75.8255	$3d^4$ –	$a^3G - 5°$	5 – 5		782
	0	1634.98	2.96822 – 64.13080	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^5F - w^3G°$	4 – 4		478
18	200	1635.86	2.68701 – 63.8167	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P°)$	$a^5F - y^5F°$	2 – 3		478
18	400	1636.02	3.16280 – 64.2866	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P°)$	$a^5F - y^5F°$	5 – 5		478
	10	1637.439	8.84197 – 69.9118	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P°)$	$a^3F - v^3G°$	3 – 4		782
	50	1637.55	3.16280 – 64.22919	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^5F - w^3G°$	5 – 5		478
18	500	1637.77	2.96822 – 64.0262	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P°)$	$a^5F - y^5F°$	4 – 4		478
18	100	1637.93	2.60482 – 63.6568	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P°)$	$a^5F - y^5F°$	1 – 2		478
	3H	1638.858	14.55609 – 75.5733	$3d^4$ –	$a^3G - 4°$	4 – 4		782
18	400	1639.13	2.80872 – 63.8167	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P°)$	$a^5F - y^5F°$	3 – 3		478
18	350	1640.15	2.68701 – 63.6568	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P°)$	$a^5F - y^5F°$	2 – 2		478
18	300	1640.86	2.60482 – 63.5492	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P°)$	$a^5F - y^5F°$	1 – 1		478
18	300	1643.03	3.16280 – 64.0262	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P°)$	$a^5F - y^5F°$	5 – 4		478
18	300	1643.43	2.96822 – 63.8167	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P°)$	$a^5F - y^5F°$	4 – 3		478

V II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	4	1644.334	9.09781 – 69.9118	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3F - v^3G^\circ$	4 – 4		782
	5	1644.665	8.84197 – 69.6439	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3F - v^3G^\circ$	3 – 3		782
109	80	1660.53	16.42151 – 76.6435	$3d^3(a^2G)4s -$	$b^3G - u^3F^\circ$	4 – 4		478
	600	1661.27	3.16280 – 63.3573	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^5F - {^5G^\circ}$	5 – 6		478
34	5	1662.28	8.64021 – 68.7974	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3F - u^3D^\circ$	2 – 2		478
34	30	1663.34	8.64021 – 68.7592	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3F - u^3D^\circ$	2 – 1		478
109	150	1663.60	16.53300 – 76.6435	$3d^3(a^2G)4s -$	$b^3G - u^3F^\circ$	5 – 4		478
	5	1664.87	16.34097 – 76.4054	$3d^3(a^2G)4s -$	$b^3G - 2^\circ$	3 – 3		478
	1	1667.084	16.42151 – 76.4054	$3d^3(a^2G)4s -$	$b^3G - 2^\circ$	4 – 3		782
109	100	1667.66	16.42151 – 76.3858	$3d^3(a^2G)4s -$	$b^3G - u^3F^\circ$	4 – 3		478
34	50	1667.88	8.84197 – 68.7974	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3F - u^3D^\circ$	3 – 2		478
109	100	1670.01	16.34097 – 76.2204	$3d^3(a^2G)4s -$	$b^3G - u^3F^\circ$	3 – 2		478
34	50	1670.90	9.09781 – 68.9449	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3F - u^3D^\circ$	4 – 3		478
	150	1672.44	2.96822 – 62.7619	$3d^3(a^4F)4s -$	$a^5F - 1^\circ$	4 – 4		478
	80	1674.09						478
	30	1677.88	2.68701 – 62.2858	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^5F - {^5G^\circ}$	2 – 2		478
	50	1681.22	2.60482 – 62.08494	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^5F - w^3F^\circ$	1 – 2		478
	5	1682.17	2.68701 – 62.13330	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^5F - w^3F^\circ$	2 – 3		478
	2	1682.997	16.34097 – 75.7582	$3d^3(a^2G)4s - 3d^2(^1D)4s4p(^3P^\circ)$	$b^3G - t^3D^\circ$	3 – 2		782
	1	1683.392	16.42151 – 75.8255	$3d^3(a^2G)4s -$	$b^3G - 5^\circ$	4 – 5		782
	2	1683.548	2.68701 – 62.08494	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^5F - w^3F^\circ$	2 – 2		782
	5	1685.014	18.29388 – 77.6405	$3d^4 -$	$a^3D - {^1D^\circ}$	2 – 2		782
33	10	1686.19	8.84197 – 68.1470	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3F - v^3F^\circ$	3 – 4		478
	10	1686.550	16.53300 – 75.8255	$3d^3(a^2G)4s -$	$b^3G - 5^\circ$	5 – 5		782
	15	1686.748	18.35388 – 77.6405	$3d^4 -$	$a^3D - {^1D^\circ}$	3 – 2		782
33	25	1687.40	8.64021 – 67.9048	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3F - v^3F^\circ$	2 – 3		478
33	100	1692.11	8.64021 – 67.7377	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3F - v^3F^\circ$	2 – 2		478
33	100	1693.09	8.84197 – 67.9048	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3F - v^3F^\circ$	3 – 3		478
33	120	1693.49	9.09781 – 68.1470	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3F - v^3F^\circ$	4 – 4		478
	15	1693.756	16.53300 – 75.5733	$3d^3(a^2G)4s -$	$b^3G - 4^\circ$	5 – 4		782
33	20	1697.90	8.84197 – 67.7377	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3F - v^3F^\circ$	3 – 2		478
33	30	1700.47	9.09781 – 67.9048	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3F - v^3F^\circ$	4 – 3		478
	2	1710.147	17.91094 – 76.3858	$3d^4 -$	$a^1G - u^3F^\circ$	4 – 3		782
	20	1715.57	18.35388 – 76.6435	$3d^4 -$	$a^3D - u^3F^\circ$	3 – 4		478
	3	1721.422	18.29388 – 76.3858	$3d^4 -$	$a^3D - u^3F^\circ$	2 – 3		782
129	200	1722.62	18.35388 – 76.4054	$3d^4 -$	$a^3D - 2^\circ$	3 – 3		478
	3	1725.597	18.26949 – 76.2204	$3d^4 -$	$a^3D - u^3F^\circ$	1 – 2		782
182	100	1729.78	20.98092 – 78.7913	$3d^3(a^2D)4s -$	$a^1D - w^1D^\circ$	2 – 2		478
	3	1732.035	11.90827 – 69.6439	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3P - v^3G^\circ$	2 – 3		782
	0	1736.498	20.98092 – 78.5691	$3d^3(a^2D)4s - 3d^3(b^2D)4p$	$a^1D - v^3P^\circ$	2 – 1		782
	5	1737.02						478
	10	1737.479	18.29388 – 75.8480	$3d^4 - 3d^2(^1D)4s4p(^3P^\circ)$	$a^3D - t^3D^\circ$	2 – 3		782
	10	1737.577	20.08960 – 77.6405	$3d^3(a^4P)4s -$	$c^3P - {^1D^\circ}$	1 – 2		782
128	150	1739.33	18.35388 – 75.8480	$3d^4 - 3d^2(^1D)4s4p(^3P^\circ)$	$a^3D - t^3D^\circ$	3 – 3		478
	10	1740.224	11.29557 – 68.7592	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3P - u^3D^\circ$	0 – 1		782
	3	1740.291	8.84197 – 66.30384	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^3F - x^1F^\circ$	3 – 3		782
	4	1740.741	18.26949 – 75.7160	$3d^4 - 3d^2(^1D)4s4p(^3P^\circ)$	$a^3D - t^3D^\circ$	1 – 1		782
	4	1742.334	13.54267 – 70.93597	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3F - {^1F^\circ}$	3 – 3		782
	150	1742.72	13.54267 – 70.92328	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3F - {^1D^\circ}$	3 – 2		324
		1745.264	20.34301 – 77.6405	$3d^3(a^4P)4s -$	$c^3P - {^1D^\circ}$	2 – 2		782
	2	1747.640	18.35388 – 75.5733	$3d^4 -$	$a^3D - 4^\circ$	3 – 4		782
32	50	1748.99	8.64021 – 65.8152	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3F - x^5D^\circ$	2 – 1		478
	8	1753.665	20.61703 – 77.6405	$3d^3(a^2D)4s -$	$b^3D - {^1D^\circ}$	2 – 2		782
	8	1753.852	20.62295 – 77.6405	$3d^3(a^2D)4s -$	$b^3D - {^1D^\circ}$	3 – 2		782

V II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	5	1763.20	19.13275 – 75.8480	$3d^3(a^2P)4s - 3d^2(^1D)4s4p(^3P^\circ)$	$b^3P - t^3D^\circ$	2 – 3		478
	4	1764.916	20.98092 – 77.6405	$3d^3(a^2D)4s$ –	$a^1D - {}^1D^\circ$	2 – 2		782
	5	1767.02	19.16627 – 75.7582	$3d^3(a^2P)4s - 3d^2(^1D)4s4p(^3P^\circ)$	$b^3P - t^3D^\circ$	1 – 2		478
	2	1768.175	19.16137 – 75.7160	$3d^3(a^2P)4s - 3d^2(^1D)4s4p(^3P^\circ)$	$b^3P - t^3D^\circ$	0 – 1		782
	3	1768.334	19.16627 – 75.7160	$3d^3(a^2P)4s - 3d^2(^1D)4s4p(^3P^\circ)$	$b^3P - t^3D^\circ$	1 – 1		782
	3	1770.698	14.46175 – 70.93597	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3G - {}^1F^\circ$	3 – 3		782
	2	1773.985	18.29388 – 74.6645	$3d^4 - 3d^24s(b^2G)4p$	$a^3D - w^1F^\circ$	2 – 3		782
	3	1774.209	20.28023 – 76.6435	$3d^3(a^2H)4s$ –	$b^3H - u^3F^\circ$	5 – 4		782
	3	1776.104	13.60896 – 69.9118	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3F - v^3G^\circ$	4 – 4		782
	0	1776.48	8.64021 – 64.93069	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^3F - v^3D^\circ$	2 – 1		478
	100	1780.52	8.64021 – 64.80417	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^3F - v^3D^\circ$	2 – 2		478
	2	1780.829	13.49087 – 69.6439	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3F - v^3G^\circ$	2 – 3		782
	3	1782.454	13.54267 – 69.6439	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3F - v^3G^\circ$	3 – 3		782
	10	1783.744	20.34301 – 76.4054	$3d^3(a^4P)4s$ –	$c^3P - 2^\circ$	2 – 3		782
	8	1784.128	13.59473 – 69.6439	$3d^3(a^4P)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^5P - v^3G^\circ$	2 – 3		782
175	50	1785.07	20.62295 – 76.6435	$3d^3(a^2D)4s$ –	$b^3D - u^3F^\circ$	3 – 4		478
	5	1786.91	8.84197 – 64.80417	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^3F - v^3D^\circ$	3 – 2		478
	75	1789.62	20.34301 – 76.2204	$3d^3(a^4P)4s$ –	$c^3P - u^3F^\circ$	2 – 2		478
176	50	1792.49	20.61703 – 76.4054	$3d^3(a^2D)4s$ –	$b^3D - 2^\circ$	2 – 3		478
175	30	1793.13	20.61703 – 76.3858	$3d^3(a^2D)4s$ –	$b^3D - u^3F^\circ$	2 – 3		478
175	5	1795.38	20.52211 – 76.2204	$3d^3(a^2D)4s$ –	$b^3D - u^3F^\circ$	1 – 2		478
98	5	1796.26	14.55609 – 70.2276	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3G - v^3G^\circ$	4 – 5		478
	30	1796.52	0.0 – 55.66323	$3d^4 - 3d^3(a^4P)4p$	$ga^5D - y^3S^\circ$	0 – 1		478
98	120	1799.47	14.65563 – 70.2276	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3G - v^3G^\circ$	5 – 5		478
	30	1799.97	0.10663 – 55.66323	$3d^4 - 3d^3(a^4P)4p$	$ga^5D - y^3S^\circ$	2 – 1		478
	0	1800.962	12.62155 – 68.1470	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3H - v^3F^\circ$	5 – 4		782
	6	1801.613	9.09781 – 64.60347	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^3F - v^3D^\circ$	4 – 3		782
	1	1803.279	13.49087 – 68.9449	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3F - u^3D^\circ$	2 – 3		782
	4	1803.401	14.46175 – 69.9118	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3G - v^3G^\circ$	3 – 4		782
	2	1804.979	13.54267 – 68.9449	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3F - u^3D^\circ$	3 – 3		782
	20	1805.932	20.34301 – 75.7160	$3d^3(a^4P)4s - 3d^2(^1D)4s4p(^3P^\circ)$	$c^3P - t^3D^\circ$	2 – 1		782
98	80	1806.49	14.55609 – 69.9118	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3G - v^3G^\circ$	4 – 4		478
76	10	1807.15	13.60896 – 68.9449	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3F - u^3D^\circ$	4 – 3		478
	3	1808.097	13.49087 – 68.7974	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3F - u^3D^\circ$	2 – 2		782
31	5	1808.66	8.84197 – 64.13080	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^3F - w^3G^\circ$	3 – 4		478
76	80	1809.81	13.54267 – 68.7974	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3F - u^3D^\circ$	3 – 2		478
174	60	1810.60	20.61703 – 75.8480	$3d^3(a^2D)4s - 3d^2(^1D)4s4p(^3P^\circ)$	$b^3D - t^3D^\circ$	2 – 3		478
	0	1811.51	13.59473 – 68.7974	$3d^3(a^4P)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^5P - u^3D^\circ$	2 – 2		478
	100	1812.195	14.46175 – 69.6439	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3G - v^3G^\circ$	3 – 3		782
31	80	1813.87	9.09781 – 64.22919	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^3F - w^3G^\circ$	4 – 5		478
	10	1814.900	20.61703 – 75.7160	$3d^3(a^2D)4s - 3d^2(^1D)4s4p(^3P^\circ)$	$b^3D - t^3D^\circ$	2 – 1		782
31	0	1817.09	9.09781 – 64.13080	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^3F - w^3G^\circ$	4 – 4		478
	10	1822.593	0.33921 – 55.20679	$3d^4 - 3d^3(a^2H)4p$	$ga^5D - x^3G^\circ$	4 – 5		782
	6	1824.328	8.84197 – 63.6568	$3d^3(a^4F)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3F - y^5F^\circ$	3 – 2		782
	8	1825.571	0.03605 – 54.81340	$3d^4 - 3d^3(a^2D)4p$	$ga^5D - x^3P^\circ$	1 – 0		782
	500	1828.84	0.03605 – 54.71566	$3d^4 - 3d^3(a^2D)4p$	$ga^5D - x^3P^\circ$	1 – 2		478
	2	1831.349	13.54267 – 68.1470	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3F - v^3F^\circ$	3 – 4		782
75	100	1833.58	13.60896 – 68.1470	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3F - v^3F^\circ$	4 – 4		478
	0	1834.165	11.29557 – 65.8152	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3P - x^5D^\circ$	0 – 1		782
	0	1834.371	16.42151 – 70.9364	$3d^3(a^2G)4s - 3d^24s(b^2G)4p$	$b^3G - x^1H^\circ$	4 – 5		782
75	0	1837.76	13.49087 – 67.9048	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3F - v^3F^\circ$	2 – 3		478
	10	1838.10	16.53300 – 70.9364	$3d^3(a^2G)4s - 3d^24s(b^2G)4p$	$b^3G - x^1H^\circ$	5 – 5		324
	0	1838.606	14.55609 – 68.9449	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3G - u^3D^\circ$	4 – 3		782
117	250	1838.86	17.91094 – 72.2924	$3d^4$ –	$a^1G - w^1G^\circ$	4 – 4		478

V II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
75	200	1839.54	13.54267 – 67.9048	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3F - v^3F^\circ$	3 – 3		478
	10	1840.438	14.46175 – 68.7974	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3G - u^3D^\circ$	3 – 2		782
	100	1841.781	13.60896 – 67.9048	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3F - v^3F^\circ$	4 – 3		
75	50	1843.43	13.49087 – 67.7377	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3F - v^3F^\circ$	2 – 2		478
	1	1846.268	13.74161 – 67.9048	$3d^3(a^4P)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^5P - v^3F^\circ$	3 – 3		782
	0	1846.965	13.59473 – 67.7377	$3d^3(a^4P)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^5P - v^3F^\circ$	2 – 2		782
	5	1848.80	11.90827 – 65.9956	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3P - x^5D^\circ$	2 – 3		478
	75	1852.017	13.74161 – 67.7377	$3d^3(a^4P)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^5P - v^3F^\circ$	3 – 2		782
	2	1854.064	0.20889 – 54.14417	$3d^4 - 3d^3(a^2H)4p$	$ga^5D - y^1G^\circ$	3 – 4		782
108	20	1858.50	16.42151 – 70.2276	$3d^3(a^2G)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3G - v^3G^\circ$	4 – 5		478
108	300	1862.37	16.53300 – 70.2276	$3d^3(a^2G)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3G - v^3G^\circ$	5 – 5		478
181	250	1862.76	20.98092 – 74.6645	$3d^3(a^2D)4s - 3d^24s(b^2G)4p$	$a^1D - w^1F^\circ$	2 – 3		478
	5	1863.44	9.09781 – 62.7619	$3d^3(a^4F)4s -$	$a^3F - 1^\circ$	4 – 4		324
	20	1865.68	25.19104 – 78.7913	$3d^4 -$	$b^1D - w^1D^\circ$	2 – 2		478
97	30	1865.99	14.55609 – 68.1470	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3G - v^3F^\circ$	4 – 4		478
	1	1866.080	0.33921 – 53.92717	$3d^4 - 3d^3(a^2D)4p$	$ga^5D - w^3D^\circ$	4 – 3		782
108	50	1866.68	16.34097 – 69.9118	$3d^3(a^2G)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3G - v^3G^\circ$	3 – 4		478
	200	1867.47						478
97	500	1869.47	14.65563 – 68.1470	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3G - v^3F^\circ$	5 – 4		478
30	120	1871.08	8.64021 – 62.08494	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^3F - w^3F^\circ$	2 – 2		478
108	100	1873.39	16.53300 – 69.9118	$3d^3(a^2G)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3G - v^3G^\circ$	5 – 4		478
97	120	1874.45	14.55609 – 67.9048	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3G - v^3F^\circ$	4 – 3		478
30	10	1874.97	8.84197 – 62.17619	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^3F - w^3F^\circ$	3 – 4		478
108	200	1876.06	16.34097 – 69.6439	$3d^3(a^2G)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3G - v^3G^\circ$	3 – 3		478
30	100	1876.47	8.84197 – 62.13330	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^3F - w^3F^\circ$	3 – 3		478
97	100	1877.00	14.46175 – 67.7377	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3G - v^3F^\circ$	3 – 2		478
	0	1877.85	23.39114 – 76.6435	$3d^3(a^2H)4s -$	$a^1H - u^3F^\circ$	5 – 4		478
30	5	1878.19	8.84197 – 62.08494	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^3F - w^3F^\circ$	3 – 2		478
108	100	1878.90	16.42151 – 69.6439	$3d^3(a^2G)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3G - v^3G^\circ$	4 – 3		478
	1	1880.811	12.62155 – 65.79018	$3d^4 - 3d^3(a^2F)4p$	$a^3H - x^1G^\circ$	5 – 4		782
30	200	1883.98	9.09781 – 62.17619	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^3F - w^3F^\circ$	4 – 4		478
	5	1884.254	11.51476 – 64.58614	$3d^4 - 3d^3(a^2F)4p$	$a^3P - x^1D^\circ$	1 – 2		782
	3	1885.520	9.09781 – 62.13330	$3d^3(a^4F)4s - 3d^3(a^2F)4p$	$a^3F - w^3F^\circ$	4 – 3		782
116	100	1885.90	17.91094 – 70.93597	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^1G - {}^1F^\circ$	4 – 3		478
	20	1890.50	11.90827 – 64.80417	$3d^4 - 3d^3(a^2F)4p$	$a^3P - v^3D^\circ$	2 – 2		489
	10	1897.70	11.90827 – 64.60347	$3d^4 - 3d^3(a^2F)4p$	$a^3P - v^3D^\circ$	2 – 3		478
	25	1898.78	25.19104 – 77.8570	$3d^4 - 3d^3(b^2D)4p$	$b^1D - t^3F^\circ$	2 – 2		489
	0	1904.54	13.49087 – 65.9956	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3F - x^5D^\circ$	2 – 3		478
	1	1906.451	13.54267 – 65.9956	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3F - x^5D^\circ$	3 – 3		782
	1	1906.618	0.20889 – 52.65747	$3d^4 - 3d^3(a^2D)4p$	$ga^5D - x^3F^\circ$	3 – 4		782
	1	1907.361	0.33921 – 52.76730	$3d^4 - 3d^3(a^4P)4p$	$ga^5D - x^3D^\circ$	4 – 3		782
80	300	1907.80	13.74161 – 66.1576	$3d^3(a^4P)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^5P - x^5D^\circ$	3 – 4		478
80	400	1908.32	13.59473 – 65.9956	$3d^3(a^4P)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^5P - x^5D^\circ$	2 – 3		478
80	400	1909.36	13.51175 – 65.8844	$3d^3(a^4P)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^5P - x^5D^\circ$	1 – 2		478
	4	1911.108	13.49087 – 65.8152	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3F - x^5D^\circ$	2 – 1		782
80	400	1911.88	13.51175 – 65.8152	$3d^3(a^4P)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^5P - x^5D^\circ$	1 – 1		478
80	400	1912.39	13.59473 – 65.8844	$3d^3(a^4P)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^5P - x^5D^\circ$	2 – 2		478
80	200	1913.10	13.51175 – 65.7818	$3d^3(a^4P)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^5P - x^5D^\circ$	1 – 0		478
80	350	1913.70	13.74161 – 65.9956	$3d^3(a^4P)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^5P - x^5D^\circ$	3 – 3		478
	1	1914.295	2.96822 – 55.20679	$3d^3(a^4F)4s - 3d^3(a^2H)4p$	$a^5F - x^3G^\circ$	4 – 5		782
80	150	1914.91	13.59473 – 65.8152	$3d^3(a^4P)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^5P - x^5D^\circ$	2 – 1		478
	0	1915.71	26.83977 – 79.0404	$3d^4 -$	$a^1F - 3^\circ$	3 – 3		478
	0	1916.404	0.0 – 52.18118	$3d^4 - 3d^3(a^2P)4p$	$ga^5D - z^3S^\circ$	0 – 1		782
80	150	1917.79	0.03605 – 52.18118	$3d^4 - 3d^3(a^2P)4p$	$ga^5D - z^3S^\circ$	1 – 1		478

V II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	1919.35						478
195	300	1924.87	26.83977 – 78.7913	$3d^4$ –	$a^1F - w^1D^\circ$	3 – 2		478
139	600	1929.61	19.11293 – 70.93597	$3d^3(a^2G)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$b^1G - {}^1F^\circ$	4 – 3		478
	5	1932.55	19.19140 – 70.9364	$3d^4 - 3d^24s(b^2G)4p$	$a^1I - x^1H^\circ$	6 – 5		478
	30	1932.99	17.91094 – 69.6439	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^1G - v^3G^\circ$	4 – 3		478
106	100	1933.28	16.42151 – 68.1470	$3d^3(a^2G)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3G - v^3F^\circ$	4 – 4		478
	1	1935.531	12.62155 – 64.2866	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3H - y^5F^\circ$	5 – 5		782
106	600	1937.44	16.53300 – 68.1470	$3d^3(a^2G)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3G - v^3F^\circ$	5 – 4		478
59	70	1937.68	12.62155 – 64.22919	$3d^4 - 3d^3(a^2F)4p$	$a^3H - w^3G^\circ$	5 – 5		478
59	100	1938.50	12.54514 – 64.13080	$3d^4 - 3d^3(a^2F)4p$	$a^3H - w^3G^\circ$	4 – 4		478
58	80	1938.70	12.70625 – 64.2866	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3H - y^5F^\circ$	6 – 5		478
106	80	1939.32	16.34097 – 67.9048	$3d^3(a^2G)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3G - v^3F^\circ$	3 – 3		478
59	400	1940.86	12.70625 – 64.22919	$3d^4 - 3d^3(a^2F)4p$	$a^3H - w^3G^\circ$	6 – 5		478
59	300	1941.27	12.54514 – 64.05754	$3d^4 - 3d^3(a^2F)4p$	$a^3H - w^3G^\circ$	4 – 3		478
59	300	1941.40	12.62155 – 64.13080	$3d^4 - 3d^3(a^2F)4p$	$a^3H - w^3G^\circ$	5 – 4		478
106	400	1942.35	16.42151 – 67.9048	$3d^3(a^2G)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3G - v^3F^\circ$	4 – 3		478
	0	1943.99	13.49087 – 64.93069	$3d^4 - 3d^3(a^2F)4p$	$b^3F - v^3D^\circ$	2 – 1		478
58	300	1945.35	12.62155 – 64.0262	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3H - y^5F^\circ$	5 – 4		478
106	300	1945.64	16.34097 – 67.7377	$3d^3(a^2G)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3G - v^3F^\circ$	3 – 2		478
	220	1947.37	18.29388 – 69.6439	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3D - v^3G^\circ$	2 – 3		489
	5	1950.77	13.54267 – 64.80417	$3d^4 - 3d^3(a^2F)4p$	$b^3F - v^3D^\circ$	3 – 2		478
	2	1954.061	2.96822 – 54.14417	$3d^3(a^4F)4s - 3d^3(a^2H)4p$	$a^5F - y^1G^\circ$	4 – 4		782
	1	1958.446	13.54267 – 64.60347	$3d^4 - 3d^3(a^2F)4p$	$b^3F - v^3D^\circ$	3 – 3		782
	3	1960.137	0.10663 – 51.12321	$3d^4 - 3d^3(a^2P)4p$	$ga^5D - y^3P^\circ$	2 – 2		782
	0	1960.445	13.59473 – 64.60347	$3d^3(a^4P)4s - 3d^3(a^2F)4p$	$a^5P - v^3D^\circ$	2 – 3		782
	20	1960.98	13.60896 – 64.60347	$3d^4 - 3d^3(a^2F)4p$	$b^3F - v^3D^\circ$	4 – 3		478
	1	1964.091	0.20889 – 51.12321	$3d^4 - 3d^3(a^2P)4p$	$ga^5D - y^3P^\circ$	3 – 2		782
	3	1966.752	13.74161 – 64.58614	$3d^3(a^4P)4s - 3d^3(a^2F)4p$	$a^5P - x^1D^\circ$	3 – 2		782
	4	1967.185	20.08960 – 70.92328	$3d^3(a^4P)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$c^3P - {}^1D^\circ$	1 – 2		782
	0	1970.877	0.0 – 50.73875	$3d^4 - 3d^3(a^2P)4p$	$ga^5D - y^3P^\circ$	0 – 1		782
	1	1972.278	0.03605 – 50.73875	$3d^4 - 3d^3(a^2P)4p$	$ga^5D - y^3P^\circ$	1 – 1		782
163	200	1972.62	20.24237 – 70.93597	$3d^3(a^2H)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3H - {}^1F^\circ$	4 – 3		478
	25	1973.55	0.10663 – 50.77547	$3d^4 - 3d^3(a^2P)4p$	$ga^5D - y^3D^\circ$	2 – 2		489
	1	1974.278	18.29388 – 68.9449	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3D - u^3D^\circ$	2 – 3		782
	1	1975.021	0.10663 – 50.73875	$3d^4 - 3d^3(a^2P)4p$	$ga^5D - y^3P^\circ$	2 – 1		782
	1	1975.489	13.60896 – 64.22919	$3d^4 - 3d^3(a^2F)4p$	$b^3F - w^3G^\circ$	4 – 5		782
127	600	1976.62	18.35388 – 68.9449	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3D - u^3D^\circ$	3 – 3		478
	5	1977.60	13.49087 – 64.05754	$3d^4 - 3d^3(a^2F)4p$	$b^3F - w^3G^\circ$	2 – 3		478
138	200	1978.96	19.11293 – 69.6439	$3d^3(a^2G)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$b^1G - v^3G^\circ$	4 – 3		478
	5	1979.087	18.26949 – 68.7974	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3D - u^3D^\circ$	1 – 2		782
	1	1979.618	13.54267 – 64.05754	$3d^4 - 3d^3(a^2F)4p$	$b^3F - w^3G^\circ$	3 – 3		782
127	400	1980.04	18.29388 – 68.7974	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3D - u^3D^\circ$	2 – 2		478
127	250	1980.59	18.26949 – 68.7592	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3D - u^3D^\circ$	1 – 1		478
	0	1981.245	0.0 – 50.47373	$3d^4 - 3d^3(a^2P)4p$	$ga^5D - y^3D^\circ$	0 – 1		782
127	80	1981.53	18.29388 – 68.7592	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3D - u^3D^\circ$	2 – 1		478
	5	1982.21	13.60896 – 64.05754	$3d^4 - 3d^3(a^2F)4p$	$b^3F - w^3G^\circ$	4 – 3		478
127	80	1982.41	18.35388 – 68.7974	$3d^4 - 3d^2(^3F)4s4p(^3P^\circ)$	$a^3D - u^3D^\circ$	3 – 2		478
	100	1984.05	20.52211 – 70.92328	$3d^3(a^2D)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3D - {}^1D^\circ$	1 – 2		782
	10	1987.314	20.61703 – 70.93597	$3d^3(a^2D)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3D - {}^1F^\circ$	2 – 3		782
	4	1987.547	20.62295 – 70.93597	$3d^3(a^2D)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3D - {}^1F^\circ$	3 – 3		782
	3	1987.82	20.61703 – 70.92328	$3d^3(a^2D)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3D - {}^1D^\circ$	2 – 2		782
	8	1988.031	20.62295 – 70.92328	$3d^3(a^2D)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$b^3D - {}^1D^\circ$	3 – 2		782
	0	1988.674	13.74161 – 64.0262	$3d^3(a^4P)4s - 3d^2(^3F)4s4p(^3P^\circ)$	$a^5P - y^5F^\circ$	3 – 4		782
	100	1994.34	14.46175 – 64.60347	$3d^4 - 3d^3(a^2F)4p$	$a^3G - v^3D^\circ$	3 – 3		489

V II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	5	1995.02	14.46175 – 64.58614	$3d^4 - 3d^3(a^2F)4p$	$a^3G - x^1D^\circ$	3 – 2		478

VANADIUM III (V^{2+}), Z = 23
Ground State $1s^22s^22p^63s^23p^63d^3(^4F_{3/2})$ (21 electrons)
Ionization Potential 236 410 cm^{-1}; 29.311 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	612.85	11.7697 – 174.9389	$3d^3 - 3d^2(a^3P)5p$	$a^4P - y^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	10	612.99						324
	0	614.63	11.7697 – 174.4673	$3d^3 - 3d^2(a^3F)4f$	$a^4P - {}^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		325
	0	614.94	11.5918 – 174.2077	$3d^3 - 3d^2(a^3F)4f$	$a^4P - {}^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		325
	0	615.48	11.5918 – 174.0693	$3d^3 - 3d^2(a^3F)4f$	$a^4P - {}^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		325
	0	615.90	11.5918 – 173.9546	$3d^3 - 3d^2(a^3F)4f$	$a^4P - {}^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		325
	25	616.09	12.1870 – 174.50046	$3d^3 - 3d^2(a^3F)4f$	$a^2G - {}^2H^\circ$	$\frac{9}{2}-\frac{11}{2}$		325
	10	617.05	12.1870 – 174.23776	$3d^3 - 3d^2(a^3F)4f$	$a^2G - {}^4G^\circ$	$\frac{9}{2}-\frac{11}{2}$		325
	0	617.34	12.1870 – 174.1706	$3d^3 - 3d^2(a^3F)4f$	$a^2G - {}^2H^\circ$	$\frac{9}{2}-\frac{9}{2}$		325
	0	618.02	0.5838 – 162.38582	$3d^3 - 3d^2(a^3F)5p$	$ga^4F - w^4D^\circ$	$\frac{9}{2}-\frac{7}{2}$		325
	0	618.41	11.9663 – 173.67002	$3d^3 - 3d^2(a^3F)4f$	$a^2G - {}^2G^\circ$	$\frac{7}{2}-\frac{9}{2}$		325
	0	618.89	0.3415 – 161.92400	$3d^3 - 3d^2(a^3F)5p$	$ga^4F - w^4D^\circ$	$\frac{7}{2}-\frac{5}{2}$		325
	5	619.29	11.7697 – 173.24654	$3d^3 - 3d^2(a^3F)4f$	$a^4P - {}^4H^\circ$	$\frac{5}{2}-\frac{7}{2}$		325
	5	620.17	16.8109 – 178.05305	$3d^3 - 3d^2(a^1G)5p$	$a^2H - w^2G^\circ$	$\frac{9}{2}-\frac{7}{2}$		325
	0	620.69	16.9776 – 178.08562	$3d^3 - 3d^2(a^1G)5p$	$a^2H - w^2G^\circ$	$\frac{11}{2}-\frac{9}{2}$		325
	0	622.92	0.3415 – 160.88067	$3d^3 - 3d^2(a^3F)5p$	$ga^4F - y^4G^\circ$	$\frac{7}{2}-\frac{9}{2}$		325
	5	623.27	0.5838 – 161.02802	$3d^3 - 3d^2(a^3F)5p$	$ga^4F - y^4F^\circ$	$\frac{9}{2}-\frac{9}{2}$		324
	5	623.67	0.3415 – 160.68219	$3d^3 - 3d^2(a^3F)5p$	$ga^4F - y^4F^\circ$	$\frac{7}{2}-\frac{7}{2}$		324
	0	624.08	0.1455 – 160.38035	$3d^3 - 3d^2(a^3F)5p$	$ga^4F - y^4F^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	0	624.42	0.0 – 160.14492	$3d^3 - 3d^2(a^3F)5p$	$ga^4F - y^4F^\circ$	$\frac{3}{2}-\frac{3}{2}$		325
	10	627.90	27.7278 – 186.9892	$3d^3 - 3d^2(a^3P)4f$	$a^2F - {}^2G^\circ$	$\frac{7}{2}-\frac{9}{2}$		324
	5	628.86	27.8468 – 186.8616	$3d^3 - 3d^2(a^3P)4f$	$a^2F - {}^2G^\circ$	$\frac{5}{2}-\frac{7}{2}$		324
	0	633.37	16.3747 – 174.25915	$3d^3 - 3d^2(a^3F)4f$	$a^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		325
	50	633.94	16.9776 – 174.72037	$3d^3 - 3d^2(a^3F)4f$	$a^2H - {}^2I^\circ$	$\frac{11}{2}-\frac{13}{2}$		325
	5	634.16	16.8109 – 174.50046	$3d^3 - 3d^2(a^3F)4f$	$a^2H - {}^2H^\circ$	$\frac{9}{2}-\frac{11}{2}$		325
	25	634.81	16.9776 – 174.50046	$3d^3 - 3d^2(a^3F)4f$	$a^2H - {}^2H^\circ$	$\frac{11}{2}-\frac{11}{2}$		325
	10	635.22	16.8109 – 174.23776	$3d^3 - 3d^2(a^3F)4f$	$a^2H - {}^4G^\circ$	$\frac{9}{2}-\frac{11}{2}$		325
	40	635.41	16.8109 – 174.19288	$3d^3 - 3d^2(a^3F)4f$	$a^2H - {}^2I^\circ$	$\frac{9}{2}-\frac{11}{2}$		325
	0	635.97	16.3305 – 173.56827	$3d^3 - 3d^2(a^3F)4f$	$a^2D - {}^4G^\circ$	$\frac{3}{2}-\frac{5}{2}$		325
	0	636.21	16.8109 – 173.99035	$3d^3 - 3d^2(a^3F)4f$	$a^2H - {}^4G^\circ$	$\frac{9}{2}-\frac{9}{2}$		325
	0	637.08	16.8109 – 173.77328	$3d^3 - 3d^2(a^3F)4f$	$a^2H - {}^4I^\circ$	$\frac{9}{2}-\frac{11}{2}$		325
	5	637.49	16.8109 – 173.67002	$3d^3 - 3d^2(a^3F)4f$	$a^2H - {}^2G^\circ$	$\frac{9}{2}-\frac{9}{2}$		325
	0	637.73	16.9776 – 173.78814	$3d^3 - 3d^2(a^3F)4f$	$a^2H - {}^4H^\circ$	$\frac{11}{2}-\frac{13}{2}$		325
	10	638.13	16.8109 – 173.51763	$3d^3 - 3d^2(a^3F)4f$	$a^2H - {}^4H^\circ$	$\frac{9}{2}-\frac{11}{2}$		325
	0	641.91	16.3305 – 172.1123	$3d^3 - 3d^2(a^1D)5p$	$a^2D - v^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		325
	0	663.15	11.9663 – 162.76084	$3d^3 - 3d^2(a^3F)5p$	$a^2G - x^2G^\circ$	$\frac{7}{2}-\frac{9}{2}$		325
	0	664.12	12.1870 – 162.76084	$3d^3 - 3d^2(a^3F)5p$	$a^2G - x^2G^\circ$	$\frac{9}{2}-\frac{9}{2}$		325
	0	665.00	11.9663 – 162.33636	$3d^3 - 3d^2(a^3F)5p$	$a^2G - x^2G^\circ$	$\frac{7}{2}-\frac{7}{2}$		325
	5	669.33	12.1870 – 161.58854	$3d^3 - 3d^2(a^3F)5p$	$a^2G - w^2F^\circ$	$\frac{9}{2}-\frac{7}{2}$		325
	5	670.25	11.9663 – 161.16633	$3d^3 - 3d^2(a^3F)5p$	$a^2G - w^2F^\circ$	$\frac{7}{2}-\frac{5}{2}$		325
	3	680.95	27.8468 – 174.6964	$3d^3 - 3d^2(a^3P)5p$	$a^2F - y^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		324
	5	685.96	16.9776 – 162.76084	$3d^3 - 3d^2(a^3F)5p$	$a^2H - x^2G^\circ$	$\frac{11}{2}-\frac{9}{2}$		325

V III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	15	849.15						324
	0	849.32	44.64696 – 162.38582	$3d^2(a^3F)4s - 3d^2(a^3F)5p$	$b^4F - w^4D^\circ$	$\frac{9}{2}-\frac{7}{2}$		325
	0	850.49	44.34582 – 161.92400	$3d^2(a^3F)4s - 3d^2(a^3F)5p$	$b^4F - w^4D^\circ$	$\frac{7}{2}-\frac{5}{2}$		325
	0	851.36	44.11004 – 161.57012	$3d^2(a^3F)4s - 3d^2(a^3F)5p$	$b^4F - w^4D^\circ$	$\frac{5}{2}-\frac{3}{2}$		325
	15	859.24	44.64696 – 161.02802	$3d^2(a^3F)4s - 3d^2(a^3F)5p$	$b^4F - y^4F^\circ$	$\frac{9}{2}-\frac{9}{2}$		324
	5	859.57	44.34582 – 160.68219	$3d^2(a^3F)4s - 3d^2(a^3F)5p$	$b^4F - y^4F^\circ$	$\frac{7}{2}-\frac{7}{2}$		324
	0	860.06	44.11004 – 160.38035	$3d^2(a^3F)4s - 3d^2(a^3F)5p$	$b^4F - y^4F^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	0	860.55	43.94249 – 160.14492	$3d^2(a^3F)4s - 3d^2(a^3F)5p$	$b^4F - y^4F^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	40	861.81	44.34582 – 160.38035	$3d^2(a^3F)4s - 3d^2(a^3F)5p$	$b^4F - y^4F^\circ$	$\frac{7}{2}-\frac{5}{2}$		324
	15	862.02	44.34582 – 160.3515	$3d^2(a^3F)4s - 3d4s(^3D)4p$	$b^4F - x^4D^\circ$	$\frac{7}{2}-\frac{7}{2}$		324
	25	862.92	44.11004 – 159.9960	$3d^2(a^3F)4s - 3d4s(^3D)4p$	$b^4F - x^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	10	863.22	43.94249 – 159.7878	$3d^2(a^3F)4s - 3d4s(^3D)4p$	$b^4F - x^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	25	863.99	43.94249 – 159.6844	$3d^2(a^3F)4s - 3d4s(^3D)4p$	$b^4F - x^4D^\circ$	$\frac{3}{2}-\frac{1}{2}$		324
	100	864.27	44.64696 – 160.3515	$3d^2(a^3F)4s - 3d4s(^3D)4p$	$b^4F - x^4D^\circ$	$\frac{9}{2}-\frac{7}{2}$		324
	40	864.47	44.11004 – 159.7878	$3d^2(a^3F)4s - 3d4s(^3D)4p$	$b^4F - x^4D^\circ$	$\frac{5}{2}-\frac{3}{2}$		324
	50	864.68	44.34582 – 159.9960	$3d^2(a^3F)4s - 3d4s(^3D)4p$	$b^4F - x^4D^\circ$	$\frac{7}{2}-\frac{5}{2}$		324
	0	879.76	16.3305 – 129.9983	$3d^3 - 3d^2(a^1S)4p$	$a^2D - x^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		325
	50	880.08	16.3747 – 129.9983	$3d^3 - 3d^2(a^1S)4p$	$a^2D - x^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		325
	0	884.42	16.3305 – 129.3974	$3d^3 - 3d^2(a^1S)4p$	$a^2D - x^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		325
	0	894.13	49.32774 – 161.16633	$3d^2(a^3F)4s - 3d^2(a^3F)5p$	$b^2F - w^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	0	894.59	49.80529 – 161.58854	$3d^2(a^3F)4s - 3d^2(a^3F)5p$	$b^2F - w^2F^\circ$	$\frac{7}{2}-\frac{7}{2}$		324
	5	895.88	63.31505 – 174.9389	$3d^2(a^1G)4s - 3d^2(a^3P)5p$	$b^2G - y^4P^\circ$	$\frac{7}{2}-\frac{5}{2}$		324
	5	899.18	85.87574 – 197.0895	$3d^2(a^3F)4p - 3d^2(a^3F3)5g$	$z^4G^\circ - \frac{5}{2}[\frac{7}{2}]^\circ$	$\frac{7}{2}-\frac{9}{2}$		324
	75	948.84						324
	50	951.35						324
	25	953.70						324
	5	955.20						324
	0	967.81	56.66905 – 159.9960	$3d^2(a^3P)4s - 3d4s(^3D)4p$	$b^4P - x^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		324
	0	968.41	56.52930 – 159.7878	$3d^2(a^3P)4s - 3d4s(^3D)4p$	$b^4P - x^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		324
	0	969.77	56.66905 – 159.7878	$3d^2(a^3P)4s - 3d4s(^3D)4p$	$b^4P - x^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	25	1003.42	0.1455 – 99.80457	$3d^3 - 3d^2(a^1D)4p$	$ga^4F - y^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	50	1004.02	0.3415 – 99.94120	$3d^3 - 3d^2(a^3P)4p$	$ga^4F - y^4D^\circ$	$\frac{7}{2}-\frac{7}{2}$		324
	10	1004.96	0.0 – 99.50850	$3d^3 - 3d^2(a^1D)4p$	$ga^4F - y^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	40	1005.41	0.3415 – 99.80457	$3d^3 - 3d^2(a^1D)4p$	$ga^4F - y^2D^\circ$	$\frac{7}{2}-\frac{5}{2}$		324
	0	1005.64	0.0 – 99.44010	$3d^3 - 3d^2(a^3P)4p$	$ga^4F - y^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		324
	500	1006.46	0.5838 – 99.94120	$3d^3 - 3d^2(a^3P)4p$	$ga^4F - y^4D^\circ$	$\frac{9}{2}-\frac{7}{2}$		324
	50	1007.10	0.1455 – 99.44010	$3d^3 - 3d^2(a^3P)4p$	$ga^4F - y^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	40	1008.26	0.0 – 99.18150	$3d^3 - 3d^2(a^3P)4p$	$ga^4F - y^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	100	1009.10	0.3415 – 99.44010	$3d^3 - 3d^2(a^3P)4p$	$ga^4F - y^4D^\circ$	$\frac{7}{2}-\frac{5}{2}$		324
	50	1009.36	0.0 – 99.07323	$3d^3 - 3d^2(a^3P)4p$	$ga^4F - y^4D^\circ$	$\frac{3}{2}-\frac{1}{2}$		324
	75	1009.73	0.1455 – 99.18150	$3d^3 - 3d^2(a^3P)4p$	$ga^4F - y^4D^\circ$	$\frac{5}{2}-\frac{3}{2}$		324
	5	1015.40	0.3415 – 98.82519	$3d^3 - 3d^2(a^1D)4p$	$ga^4F - y^2F^\circ$	$\frac{7}{2}-\frac{7}{2}$		324
	50	1018.18	11.9663 – 110.18147	$3d^3 - 3d^2(a^1G)4p$	$a^2G - x^2F^\circ$	$\frac{7}{2}-\frac{5}{2}$		325
	10	1019.97	0.3415 – 98.38353	$3d^3 - 3d^2(a^1D)4p$	$ga^4F - y^2F^\circ$	$\frac{7}{2}-\frac{5}{2}$		324
	50	1023.87	12.1870 – 109.85487	$3d^3 - 3d^2(a^1G)4p$	$a^2G - x^2F^\circ$	$\frac{9}{2}-\frac{7}{2}$		324
	0	1040.04	88.32796 – 184.47636	$3d^2(a^3F)4p - 3d^2(a^3F)6s$	$z^2F^\circ - j^2F$	$\frac{7}{2}-\frac{7}{2}$		324
	0	1040.37	87.88085 – 183.99950	$3d^2(a^3F)4p - 3d^2(a^3F)6s$	$z^2F^\circ - j^2F$	$\frac{5}{2}-\frac{5}{2}$		324
	0	1044.19	106.44131 – 202.2093	$3d^2(a^1G)4p - 3d^2(a^3F)7s$	$z^2H^\circ - j^4F$	$\frac{9}{2}-\frac{9}{2}$		324
	0	1044.60	86.30640 – 182.03567	$3d^2(a^3F)4p - 3d^2(a^3F)5d$	$z^4G^\circ - f^4G$	$\frac{9}{2}-\frac{9}{2}$		325
	5	1045.64	86.80939 – 182.44406	$3d^2(a^3F)4p - 3d^2(a^3F)5d$	$z^4G^\circ - f^4H$	$\frac{11}{2}-\frac{13}{2}$		324
	0	1048.83	86.30640 – 181.65016	$3d^2(a^3F)4p - 3d^2(a^3F)5d$	$z^4G^\circ - f^4H$	$\frac{9}{2}-\frac{7}{2}$		325
	50	1055.79	0.0 – 94.71425	$3d^3 - 3d^2(a^3P)4p$	$ga^4F - z^2S^\circ$	$\frac{3}{2}-\frac{1}{2}$		324
	5	1056.76	15.5503 – 110.18147	$3d^3 - 3d^2(a^1G)4p$	$a^2P - x^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		324
	50	1058.48	11.9663 – 106.44131	$3d^3 - 3d^2(a^1G)4p$	$a^2G - z^2H^\circ$	$\frac{7}{2}-\frac{9}{2}$		324

V III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	1065.51	16.3305 – 110.18147	$3d^3 - 3d^2(a^1G)4p$	$a^2D - x^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		324
	50	1069.74	16.3747 – 109.85487	$3d^3 - 3d^2(a^1G)4p$	$a^2D - x^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		324
	0	1074.76	16.8109 – 109.85487	$3d^3 - 3d^2(a^1G)4p$	$a^2H - x^2F^\circ$	$\frac{9}{2}-\frac{7}{2}$		324
	5	1079.72	89.41750 – 182.03567	$3d^2(a^3F)4p - 3d^2(a^3F)5d$	$z^4D^\circ - f^4G$	$\frac{7}{2}-\frac{9}{2}$		325
	0	1081.98	92.05255 – 184.47636	$3d^2(a^3F)4p - 3d^2(a^3F)6s$	$z^2G^\circ - j^2F$	$\frac{9}{2}-\frac{7}{2}$		325
	0	1086.53	92.05255 – 184.08790	$3d^2(a^3F)4p - 3d^2(a^3F)5d$	$z^2G^\circ - i^2G$	$\frac{9}{2}-\frac{9}{2}$		325
	5	1091.53	15.5503 – 107.16590	$3d^3 - 3d^2(a^3P)4p$	$a^2P - y^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	5	1091.86	15.5798 – 107.16590	$3d^3 - 3d^2(a^3P)4p$	$a^2P - y^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		324
	0	1093.15	15.5798 – 107.06041	$3d^3 - 3d^2(a^3P)4p$	$a^2P - y^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		324
	75	1098.96	11.9663 – 102.96128	$3d^3 - 3d^2(a^1G)4p$	$a^2G - y^2G^\circ$	$\frac{7}{2}-\frac{7}{2}$		324
	100	1100.75	12.1870 – 103.03465	$3d^3 - 3d^2(a^1G)4p$	$a^2G - y^2G^\circ$	$\frac{9}{2}-\frac{9}{2}$		324
	5	1100.87	16.3305 – 107.16590	$3d^3 - 3d^2(a^3P)4p$	$a^2D - y^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	25	1101.42	16.3747 – 107.16590	$3d^3 - 3d^2(a^3P)4p$	$a^2D - y^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		324
	5	1102.19	16.3305 – 107.06041	$3d^3 - 3d^2(a^3P)4p$	$a^2D - y^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		324
	25	1105.17	11.5918 – 102.07500	$3d^3 - 3d^2(a^3P)4p$	$a^4P - z^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		324
	100	1107.36	11.7697 – 102.07500	$3d^3 - 3d^2(a^3P)4p$	$a^4P - z^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	25	1107.76	11.5138 – 101.78581	$3d^3 - 3d^2(a^3P)4p$	$a^4P - z^4P^\circ$	$\frac{1}{2}-\frac{3}{2}$		324
	5	1108.71	11.5918 – 101.78581	$3d^3 - 3d^2(a^3P)4p$	$a^4P - z^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	5	1109.49	11.5138 – 101.64561	$3d^3 - 3d^2(a^3P)4p$	$a^4P - z^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$		324
	25	1110.45	11.5918 – 101.64561	$3d^3 - 3d^2(a^3P)4p$	$a^4P - z^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		324
	25	1110.92	11.7697 – 101.78581	$3d^3 - 3d^2(a^3P)4p$	$a^4P - z^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		324
	100	1112.03	16.9776 – 106.90335	$3d^3 - 3d^2(a^1G)4p$	$a^2H - z^2H^\circ$	$\frac{11}{2}-\frac{11}{2}$		324
	50	1115.71	16.8109 – 106.44131	$3d^3 - 3d^2(a^1G)4p$	$a^2H - z^2H^\circ$	$\frac{9}{2}-\frac{9}{2}$		324
	5	1117.78	16.9776 – 106.44131	$3d^3 - 3d^2(a^1G)4p$	$a^2H - z^2H^\circ$	$\frac{11}{2}-\frac{9}{2}$		324
3	50	1119.66	0.1455 – 89.45767	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
3	15	1121.16	0.0 – 89.19347	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	75	1122.13	0.3415 – 89.45767	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^2D^\circ$	$\frac{7}{2}-\frac{5}{2}$		324
3	5	1122.62	0.3415 – 89.41750	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4D^\circ$	$\frac{7}{2}-\frac{7}{2}$		324
3	75	1123.00	0.1455 – 89.19347	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4D^\circ$	$\frac{5}{2}-\frac{3}{2}$		324
3	50	1123.53	0.0 – 89.00564	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4D^\circ$	$\frac{3}{2}-\frac{1}{2}$		324
	5	1124.76	16.3747 – 105.28265	$3d^3 - 3d^2(a^3P)4p$	$a^2D - x^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		325
3	200	1125.70	0.5838 – 89.41750	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4D^\circ$	$\frac{9}{2}-\frac{7}{2}$		324
	0	1126.13	0.1455 – 88.94438	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	75	1128.63	0.3415 – 88.94438	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4D^\circ$	$\frac{7}{2}-\frac{5}{2}$		324
	60	1131.05	0.1455 – 88.55908	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		324
	50	1134.16	11.7697 – 99.94120	$3d^3 - 3d^2(a^3P)4p$	$a^4P - y^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		324
	0	1135.92	11.7697 – 99.80457	$3d^3 - 3d^2(a^1D)4p$	$a^4P - y^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	0	1136.54	0.3415 – 88.32796	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^2F^\circ$	$\frac{7}{2}-\frac{7}{2}$		324
	15	1138.32	11.5918 – 99.44010	$3d^3 - 3d^2(a^3P)4p$	$a^4P - y^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		324
	15	1139.54	12.1870 – 99.94120	$3d^3 - 3d^2(a^3P)4p$	$a^2G - y^4D^\circ$	$\frac{9}{2}-\frac{7}{2}$		324
	25	1139.67	0.5838 – 88.32796	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^2F^\circ$	$\frac{9}{2}-\frac{7}{2}$		324
	75	1139.85	42.2674 – 129.9983	$3d^3 - 3d^2(a^1S)4p$	$b^2D - x^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		325
	10	1140.66	11.5138 – 99.18150	$3d^3 - 3d^2(a^3P)4p$	$a^4P - y^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		324
	5	1141.20	42.3712 – 129.9983	$3d^3 - 3d^2(a^1S)4p$	$b^2D - x^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		325
	25	1141.68	11.5918 – 99.18150	$3d^3 - 3d^2(a^3P)4p$	$a^4P - y^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		325
	5	1142.08	11.5138 – 99.07323	$3d^3 - 3d^2(a^3P)4p$	$a^4P - y^4D^\circ$	$\frac{1}{2}-\frac{1}{2}$		324
	10	1142.34	0.3415 – 87.88085	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^2F^\circ$	$\frac{7}{2}-\frac{5}{2}$		324
	15	1143.19	11.9663 – 99.44010	$3d^3 - 3d^2(a^3P)4p$	$a^2G - y^4D^\circ$	$\frac{7}{2}-\frac{5}{2}$		324
2	75	1146.75	0.3415 – 87.54446	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4F^\circ$	$\frac{7}{2}-\frac{9}{2}$		324
2	100	1148.46	0.1455 – 87.21892	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4F^\circ$	$\frac{5}{2}-\frac{7}{2}$		324
	25	1149.08	42.3712 – 129.3974	$3d^3 - 3d^2(a^1S)4p$	$b^2D - x^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		325
2	500	1149.94	0.5838 – 87.54446	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4F^\circ$	$\frac{9}{2}-\frac{9}{2}$		324
2	60	1150.25	0.0 – 86.93801	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4F^\circ$	$\frac{3}{2}-\frac{5}{2}$		324
2	150	1151.05	0.3415 – 87.21892	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4F^\circ$	$\frac{7}{2}-\frac{7}{2}$		324

V III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	25	1151.30	11.9663 – 98.82519	$3d^3 - 3d^2(a^1D)4p$	$a^2G - y^2F^\circ$	$\frac{7}{2}-\frac{7}{2}$		325
2	150	1152.17	0.1455 – 86.93801	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4F^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
2	25	1153.18	0.0 – 86.71684	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4F^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
2	250	1154.23	0.5838 – 87.21892	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4F^\circ$	$\frac{9}{2}-\frac{7}{2}$		324
2	75	1154.77	0.3415 – 86.93801	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4F^\circ$	$\frac{7}{2}-\frac{5}{2}$		324
2	75	1155.11	0.1455 – 86.71684	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4F^\circ$	$\frac{5}{2}-\frac{3}{2}$		324
	5	1155.41	11.5138 – 98.06222	$3d^3 - 3d^2(a^1D)4p$	$a^4P - z^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		324
	15	1156.47	11.5918 – 98.06222	$3d^3 - 3d^2(a^1D)4p$	$a^4P - z^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	400	1157.18	11.9663 – 98.38353	$3d^3 - 3d^2(a^1D)4p$	$a^2G - y^2F^\circ$	$\frac{7}{2}-\frac{5}{2}$		324
	50	1158.86	11.7697 – 98.06222	$3d^3 - 3d^2(a^1D)4p$	$a^4P - z^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		324
1	200	1159.75	0.5838 – 86.80939	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4G^\circ$	$\frac{9}{2}-\frac{11}{2}$		324
	300	1160.77	16.8109 – 102.96128	$3d^3 - 3d^2(a^1G)4p$	$a^2H - y^2G^\circ$	$\frac{9}{2}-\frac{7}{2}$		324
	250	1162.02	16.9776 – 103.03465	$3d^3 - 3d^2(a^1G)4p$	$a^2H - y^2G^\circ$	$\frac{11}{2}-\frac{9}{2}$		324
	50	1162.81	11.5138 – 97.51200	$3d^3 - 3d^2(a^3P)4p$	$a^4P - z^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		324
1	75	1163.26	0.3415 – 86.30640	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4G^\circ$	$\frac{7}{2}-\frac{9}{2}$		324
	60	1163.87	11.5918 – 97.51200	$3d^3 - 3d^2(a^3P)4p$	$a^4P - z^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	75	1166.29	11.7697 – 97.51200	$3d^3 - 3d^2(a^3P)4p$	$a^4P - z^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		324
1	75	1166.45	0.1455 – 85.87574	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4G^\circ$	$\frac{5}{2}-\frac{7}{2}$		324
1	75	1166.58	0.5838 – 86.30640	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4G^\circ$	$\frac{9}{2}-\frac{9}{2}$		791,324
	0	1166.86	16.3747 – 102.07500	$3d^3 - 3d^2(a^3P)4p$	$a^2D - z^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
1	75	1169.11	0.3415 – 85.87574	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4G^\circ$	$\frac{7}{2}-\frac{7}{2}$		791,324
1	100	1169.26	0.0 – 85.52400	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4G^\circ$	$\frac{3}{2}-\frac{5}{2}$		324
1	20	1171.27	0.1455 – 85.52400	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4G^\circ$	$\frac{5}{2}-\frac{5}{2}$		791
1	5	1172.47	0.5838 – 85.87574	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4G^\circ$	$\frac{9}{2}-\frac{7}{2}$		791
	25	1186.89	15.5503 – 99.80457	$3d^3 - 3d^2(a^1D)4p$	$a^2P - y^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		324
	0	1191.07	15.5503 – 99.50850	$3d^3 - 3d^2(a^1D)4p$	$a^2P - y^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	0	1191.50	15.5798 – 99.50850	$3d^3 - 3d^2(a^1D)4p$	$a^2P - y^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		324
	00	1192.06	15.5503 – 99.44010	$3d^3 - 3d^2(a^3P)4p$	$a^2P - y^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		324
	0	1196.63	16.3747 – 99.94120	$3d^3 - 3d^2(a^3P)4p$	$a^2D - y^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		325
	100	1198.61	16.3747 – 99.80457	$3d^3 - 3d^2(a^1D)4p$	$a^2D - y^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	50	1202.25	16.3305 – 99.50850	$3d^3 - 3d^2(a^1D)4p$	$a^2D - y^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	5	1202.87	16.3747 – 99.50850	$3d^3 - 3d^2(a^1D)4p$	$a^2D - y^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		324
	0	1203.86	16.3747 – 99.44010	$3d^3 - 3d^2(a^3P)4p$	$a^2D - y^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	200	1206.99	16.3305 – 99.18150	$3d^3 - 3d^2(a^3P)4p$	$a^2D - y^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	100	1207.45	15.5798 – 98.39942	$3d^3 - 3d^2(a^1D)4p$	$a^2P - z^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		324
	50	1207.63	16.3747 – 99.18150	$3d^3 - 3d^2(a^3P)4p$	$a^2D - y^4D^\circ$	$\frac{5}{2}-\frac{3}{2}$		325
	100	1212.38	15.5798 – 98.06222	$3d^3 - 3d^2(a^1D)4p$	$a^2P - z^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		324
	10	1212.82	27.7278 – 110.18147	$3d^3 - 3d^2(a^1G)4p$	$a^2F - x^2F^\circ$	$\frac{7}{2}-\frac{5}{2}$		324
	100	1214.56	27.8468 – 110.18147	$3d^3 - 3d^2(a^1G)4p$	$a^2F - x^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	150	1217.64	27.7278 – 109.85487	$3d^3 - 3d^2(a^1G)4p$	$a^2F - x^2F^\circ$	$\frac{7}{2}-\frac{7}{2}$		324
	125	1218.50	16.3305 – 98.39942	$3d^3 - 3d^2(a^1D)4p$	$a^2D - z^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		324
	5	1219.38	27.8468 – 109.85487	$3d^3 - 3d^2(a^1G)4p$	$a^2F - x^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		324
	15	1220.09	15.5503 – 97.51200	$3d^3 - 3d^2(a^3P)4p$	$a^2P - z^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	0	1220.54	15.5798 – 97.51200	$3d^3 - 3d^2(a^3P)4p$	$a^2P - z^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		324
	125	1224.19	16.3747 – 98.06222	$3d^3 - 3d^2(a^1D)4p$	$a^2D - z^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		324
	50	1232.49	16.3747 – 97.51200	$3d^3 - 3d^2(a^3P)4p$	$a^2D - z^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		324
7	10	1248.65	11.9663 – 92.05255	$3d^3 - 3d^2(a^3F)4p$	$a^2G - z^2G^\circ$	$\frac{7}{2}-\frac{9}{2}$		324
7	500	1252.11	12.1870 – 92.05255	$3d^3 - 3d^2(a^3F)4p$	$a^2G - z^2G^\circ$	$\frac{9}{2}-\frac{9}{2}$		324
7	400	1254.01	11.9663 – 91.71043	$3d^3 - 3d^2(a^3F)4p$	$a^2G - z^2G^\circ$	$\frac{7}{2}-\frac{7}{2}$		324
7	75	1257.50	12.1870 – 91.71043	$3d^3 - 3d^2(a^3F)4p$	$a^2G - z^2G^\circ$	$\frac{9}{2}-\frac{7}{2}$		324
	150	1263.20	15.5503 – 94.71425	$3d^3 - 3d^2(a^3P)4p$	$a^2P - z^2S^\circ$	$\frac{3}{2}-\frac{1}{2}$		324
	125	1263.68	15.5798 – 94.71425	$3d^3 - 3d^2(a^3P)4p$	$a^2P - z^2S^\circ$	$\frac{1}{2}-\frac{1}{2}$		324
	75	1275.78	16.3305 – 94.71425	$3d^3 - 3d^2(a^3P)4p$	$a^2D - z^2S^\circ$	$\frac{3}{2}-\frac{1}{2}$		324
5	150	1284.27	11.5918 – 89.45767	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		324

V III — *Continued*

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
5	50	1287.19	11.7697 – 89.45767	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
5	75	1287.34	11.5138 – 89.19347	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		324
5	500	1287.87	11.7697 – 89.41750	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		324
5	100	1288.63	11.5918 – 89.19347	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	400	1289.42	27.7278 – 105.28265	$3d^3 - 3d^2(a^3P)4p$	$a^2F - x^2D^\circ$	$\frac{7}{2}-\frac{5}{2}$		324
5	100	1290.46	11.5138 – 89.00564	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^4D^\circ$	$\frac{1}{2}-\frac{1}{2}$		324
	300	1290.77	27.8468 – 105.32018	$3d^3 - 3d^2(a^3P)4p$	$a^2F - x^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		324
	15	1291.40	27.8468 – 105.28265	$3d^3 - 3d^2(a^3P)4p$	$a^2F - x^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
5	5	1291.59	11.7697 – 89.19347	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^4D^\circ$	$\frac{5}{2}-\frac{3}{2}$		324
5	25	1291.76	11.5918 – 89.00564	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^4D^\circ$	$\frac{3}{2}-\frac{1}{2}$		324
5	250	1292.79	11.5918 – 88.94438	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		324
	50	1294.82	12.1870 – 89.41750	$3d^3 - 3d^2(a^3F)4p$	$a^2G - z^4D^\circ$	$\frac{9}{2}-\frac{7}{2}$		324
	150	1295.76	11.7697 – 88.94438	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	50	1297.94	11.5138 – 88.55908	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		324
	50	1299.07	11.9663 – 88.94438	$3d^3 - 3d^2(a^3F)4p$	$a^2G - z^4D^\circ$	$\frac{7}{2}-\frac{5}{2}$		324
	50	1299.25	11.5918 – 88.55908	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	50	1306.21	11.7697 – 88.32796	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		324
6	400	1313.35	12.1870 – 88.32796	$3d^3 - 3d^2(a^3F)4p$	$a^2G - z^2F^\circ$	$\frac{9}{2}-\frac{7}{2}$		324
6	300	1317.27	11.9663 – 87.88085	$3d^3 - 3d^2(a^3F)4p$	$a^2G - z^2F^\circ$	$\frac{7}{2}-\frac{5}{2}$		324
	150	1327.87	27.7278 – 103.03465	$3d^3 - 3d^2(a^1G)4p$	$a^2F - y^2G^\circ$	$\frac{7}{2}-\frac{9}{2}$		324
9	25	1329.05	16.8109 – 92.05255	$3d^3 - 3d^2(a^3F)4p$	$a^2H - z^2G^\circ$	$\frac{9}{2}-\frac{9}{2}$		324
	100	1331.30	27.8468 – 102.96128	$3d^3 - 3d^2(a^1G)4p$	$a^2F - y^2G^\circ$	$\frac{5}{2}-\frac{7}{2}$		324
9	500	1331.99	16.9776 – 92.05255	$3d^3 - 3d^2(a^3F)4p$	$a^2H - z^2G^\circ$	$\frac{11}{2}-\frac{9}{2}$		324
9	500	1335.12	16.8109 – 91.71043	$3d^3 - 3d^2(a^3F)4p$	$a^2H - z^2G^\circ$	$\frac{9}{2}-\frac{7}{2}$		324
4	100	1353.05	15.5503 – 89.45767	$3d^3 - 3d^2(a^3F)4p$	$a^2P - z^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		324
	40	1357.90	15.5503 – 89.19347	$3d^3 - 3d^2(a^3F)4p$	$a^2P - z^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	50	1358.44	15.5798 – 89.19347	$3d^3 - 3d^2(a^3F)4p$	$a^2P - z^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		324
	5	1359.45	11.9663 – 85.52400	$3d^3 - 3d^2(a^3F)4p$	$a^2G - z^4G^\circ$	$\frac{7}{2}-\frac{5}{2}$		324
	50	1362.51	15.5503 – 88.94438	$3d^3 - 3d^2(a^3F)4p$	$a^2P - z^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		324
	100	1367.48	16.3305 – 89.45767	$3d^3 - 3d^2(a^3F)4p$	$a^2D - z^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		324
	100	1368.31	16.3747 – 89.45767	$3d^3 - 3d^2(a^3F)4p$	$a^2D - z^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	50	1369.06	16.3747 – 89.41750	$3d^3 - 3d^2(a^3F)4p$	$a^2D - z^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		324
4	100	1369.70	15.5503 – 88.55908	$3d^3 - 3d^2(a^3F)4p$	$a^2P - z^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
4	100	1370.26	15.5798 – 88.55908	$3d^3 - 3d^2(a^3F)4p$	$a^2P - z^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		324
	10	1372.43	16.3305 – 89.19347	$3d^3 - 3d^2(a^3F)4p$	$a^2D - z^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	5	1373.34						324
	5	1375.98	16.3305 – 89.00564	$3d^3 - 3d^2(a^3F)4p$	$a^2D - z^4D^\circ$	$\frac{3}{2}-\frac{1}{2}$		324
	125	1377.15	16.3305 – 88.94438	$3d^3 - 3d^2(a^3F)4p$	$a^2D - z^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		324
	100	1377.99	16.3747 – 88.94438	$3d^3 - 3d^2(a^3F)4p$	$a^2D - z^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	100	1382.45	110.18147 – 182.5178	$3d^2(a^1G)4p - 3d^2(a^3F)5d$	$x^2F^\circ - g^4G$	$\frac{5}{2}-\frac{7}{2}$		324
	75	1384.49	16.3305 – 88.55908	$3d^3 - 3d^2(a^3F)4p$	$a^2D - z^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	15	1385.34	16.3747 – 88.55908	$3d^3 - 3d^2(a^3F)4p$	$a^2D - z^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		324
	15	1387.40	27.7278 – 99.80457	$3d^3 - 3d^2(a^1D)4p$	$a^2F - y^2D^\circ$	$\frac{7}{2}-\frac{5}{2}$		324
8	200	1389.79	16.3747 – 88.32796	$3d^3 - 3d^2(a^3F)4p$	$a^2D - z^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		324
	5	1394.46	27.7278 – 99.44010	$3d^3 - 3d^2(a^3P)4p$	$a^2F - y^4D^\circ$	$\frac{7}{2}-\frac{5}{2}$		324
	0	1395.44	27.8468 – 99.50850	$3d^3 - 3d^2(a^1D)4p$	$a^2F - y^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		324
8	60	1397.62	16.3305 – 87.88085	$3d^3 - 3d^2(a^3F)4p$	$a^2D - z^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		324
8	75	1398.47	16.3747 – 87.88085	$3d^3 - 3d^2(a^3F)4p$	$a^2D - z^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	10	1400.80	15.5503 – 86.93801	$3d^3 - 3d^2(a^3F)4p$	$a^2P - z^4F^\circ$	$\frac{3}{2}-\frac{5}{2}$		324
	5	1405.14	15.5503 – 86.71684	$3d^3 - 3d^2(a^3F)4p$	$a^2P - z^4F^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	5	1405.74	15.5798 – 86.71684	$3d^3 - 3d^2(a^3F)4p$	$a^2P - z^4F^\circ$	$\frac{1}{2}-\frac{3}{2}$		324
	50	1406.52	27.7278 – 98.82519	$3d^3 - 3d^2(a^1D)4p$	$a^2F - y^2F^\circ$	$\frac{7}{2}-\frac{7}{2}$		324
	50	1417.71	27.8468 – 98.38353	$3d^3 - 3d^2(a^1D)4p$	$a^2F - y^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	5	1442.85	91.71043 – 161.01778	$3d^2(a^3F)4p - 3d^2(a^1G)4d$	$z^2G^\circ - g^2G$	$\frac{7}{2}-\frac{7}{2}$		324

V III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	1444.75	8.64021 – 77.8570	$3d^3(a^4F)4s - 3d^3(b^2D)4p$	$a^3F - t^3F^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	00	1445.03	8.64021 – 77.8419	$3d^3(a^4F)4s - 3d^3(b^2D)4p$	$a^3F - t^3F^\circ$	$\frac{3}{2}-\frac{5}{2}$		324
	00	1445.21	16.3305 – 85.52400	$3d^3 - 3d^2(a^3F)4p$	$a^2D - z^4G^\circ$	$\frac{3}{2}-\frac{5}{2}$		324
	10	1448.58	92.05255 – 161.08559	$3d^2(a^3F)4p - 3d^2(a^1G)4d$	$z^2G^\circ - g^2G$	$\frac{9}{2}-\frac{9}{2}$		324
	5	1453.00	89.41750 – 158.2402	$3d^2(a^3F)4p - 3d^2(a^3P)4d$	$z^4D^\circ - f^4P$	$\frac{7}{2}-\frac{5}{2}$		325
	15	1460.64	87.21892 – 155.6825	$3d^2(a^3F)4p - 3d^2(a^3P)4d$	$z^4F^\circ - g^4F$	$\frac{7}{2}-\frac{7}{2}$		324
	5	1463.21	88.32796 – 156.6717	$3d^2(a^3F)4p - 3d^2(a^1D)4d$	$z^2F^\circ - f^2D$	$\frac{7}{2}-\frac{5}{2}$		324
	00	1463.76	87.54446 – 155.8623	$3d^2(a^3F)4p - 3d^2(a^3P)4d$	$z^4F^\circ - g^4F$	$\frac{9}{2}-\frac{9}{2}$		324
	5	1472.45	42.2674 – 110.18147	$3d^3 - 3d^2(a^1G)4p$	$b^2D - x^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	125	1474.71	42.3712 – 110.18147	$3d^3 - 3d^2(a^1G)4p$	$b^2D - x^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		324
	150	1479.57	42.2674 – 109.85487	$3d^3 - 3d^2(a^1G)4p$	$b^2D - x^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		324
	10	1498.39	88.94438 – 155.6825	$3d^2(a^3F)4p - 3d^2(a^3P)4d$	$z^4D^\circ - g^4F$	$\frac{5}{2}-\frac{7}{2}$		325
	0	1503.95	89.00564 – 155.4973	$3d^2(a^3F)4p - 3d^2(a^3P)4d$	$z^4D^\circ - g^4F$	$\frac{1}{2}-\frac{3}{2}$		325
	25	1505.02	89.41750 – 155.8623	$3d^2(a^3F)4p - 3d^2(a^3P)4d$	$z^4D^\circ - g^4F$	$\frac{7}{2}-\frac{9}{2}$		325
	15	1506.57	89.19347 – 155.5698	$3d^2(a^3F)4p - 3d^2(a^3P)4d$	$z^4D^\circ - g^4F$	$\frac{3}{2}-\frac{5}{2}$		325
	15	1510.02	89.45767 – 155.6825	$3d^2(a^3F)4p - 3d^2(a^3P)4d$	$z^2D^\circ - g^4F$	$\frac{5}{2}-\frac{7}{2}$		325
	60	1524.52	94.71425 – 160.3084	$3d^2(a^3P)4p - 3d^2(a^3P)5s$	$z^2S^\circ - h^2P$	$\frac{1}{2}-\frac{3}{2}$		325
	0	1537.07	87.88085 – 152.9400	$3d^2(a^3F)4p - 3d^2(a^1D)4d$	$z^2F^\circ - g^2F$	$\frac{5}{2}-\frac{5}{2}$		325
	250	1540.87	42.2674 – 107.16590	$3d^3 - 3d^2(a^3P)4p$	$b^2D - y^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		324
	25	1543.33	42.3712 – 107.16590	$3d^3 - 3d^2(a^3P)4p$	$b^2D - y^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	150	1545.86	42.3712 – 107.06041	$3d^3 - 3d^2(a^3P)4p$	$b^2D - y^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		324
	0	1553.25	88.55908 – 152.9400	$3d^2(a^3F)4p - 3d^2(a^1D)4d$	$z^2D^\circ - g^2F$	$\frac{3}{2}-\frac{5}{2}$		325
	0	1554.61	27.7278 – 92.05255	$3d^3 - 3d^2(a^3F)4p$	$a^2F - z^2G^\circ$	$\frac{7}{2}-\frac{9}{2}$		324
	75	1556.17	89.00564 – 153.2664	$3d^2(a^3F)4p - 3d^2(a^3P)4d$	$z^4D^\circ - f^2P$	$\frac{1}{2}-\frac{1}{2}$		325
	10	1558.40	88.94438 – 153.1139	$3d^2(a^3F)4p - 3d^2(a^1D)4d$	$z^4D^\circ - g^2F$	$\frac{5}{2}-\frac{7}{2}$		325
	10	1570.96	89.45767 – 153.1139	$3d^2(a^3F)4p - 3d^2(a^1D)4d$	$z^2D^\circ - g^2F$	$\frac{5}{2}-\frac{7}{2}$		325
	25	1585.97	42.2674 – 105.32018	$3d^3 - 3d^2(a^3P)4p$	$b^2D - x^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		324
	250	1586.92	42.2674 – 105.28265	$3d^3 - 3d^2(a^3P)4p$	$b^2D - x^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	150	1588.59	42.3712 – 105.32018	$3d^3 - 3d^2(a^3P)4p$	$b^2D - x^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	15	1589.53	42.3712 – 105.28265	$3d^3 - 3d^2(a^3P)4p$	$b^2D - x^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		324
	10	1590.77	91.71043 – 154.5727	$3d^2(a^3F)4p - 3d^2(a^1D)4d$	$z^2G^\circ - f^2G$	$\frac{7}{2}-\frac{7}{2}$		325
	15	1596.58	98.38353 – 161.01778	$3d^2(a^1D)4p - 3d^2(a^1G)4d$	$y^2F^\circ - g^2G$	$\frac{5}{2}-\frac{7}{2}$		324
	10	1600.11	92.05255 – 154.5489	$3d^2(a^3F)4p - 3d^2(a^1D)4d$	$z^2G^\circ - f^2G$	$\frac{9}{2}-\frac{9}{2}$		325
	50	1604.99	102.96128 – 165.26723	$3d^2(a^1G)4p - 3d^2(a^1G)4d$	$y^2G^\circ - i^2F$	$\frac{7}{2}-\frac{5}{2}$		325
	25	1606.17	98.82519 – 161.08559	$3d^2(a^1D)4p - 3d^2(a^1G)4d$	$y^2F^\circ - g^2G$	$\frac{7}{2}-\frac{9}{2}$		324
	60	1608.39	103.03465 – 165.20847	$3d^2(a^1G)4p - 3d^2(a^1G)4d$	$y^2G^\circ - i^2F$	$\frac{9}{2}-\frac{7}{2}$		325
	5	1619.95	27.7278 – 89.45767	$3d^3 - 3d^2(a^3F)4p$	$a^2F - z^2D^\circ$	$\frac{7}{2}-\frac{5}{2}$		324
	40	1621.01	27.7278 – 89.41750	$3d^3 - 3d^2(a^3F)4p$	$a^2F - z^4D^\circ$	$\frac{7}{2}-\frac{7}{2}$		324
	10	1622.45	97.51200 – 159.1476	$3d^2(a^3P)4p - 3d^2(a^3P)5s$	$z^4S^\circ - g^4P$	$\frac{3}{2}-\frac{5}{2}$		324
	15	1623.73						324
	0	1624.53	97.51200 – 159.0676	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$z^4S^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		325
	50	1625.92						324
	150	1627.67	102.96128 – 164.39932	$3d^2(a^1G)4p - 3d^2(a^1G)5s$	$y^2G^\circ - h^2G$	$\frac{7}{2}-\frac{7}{2}$		324
	125	1629.64	103.03465 – 164.39844	$3d^2(a^1G)4p - 3d^2(a^1G)5s$	$y^2G^\circ - h^2G$	$\frac{9}{2}-\frac{9}{2}$		324
	10	1630.72	85.52400 – 146.84699	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - f^4F$	$\frac{5}{2}-\frac{3}{2}$		324
	50	1636.45	85.87574 – 146.98408	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - f^4F$	$\frac{7}{2}-\frac{5}{2}$		324
	25	1636.72	27.8468 – 88.94438	$3d^3 - 3d^2(a^3F)4p$	$a^2F - z^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	5	1636.77	86.30640 – 147.40129	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - f^4F$	$\frac{9}{2}-\frac{9}{2}$		324
	10	1637.05	98.06222 – 159.1476	$3d^2(a^1D)4p - 3d^2(a^3P)5s$	$z^2P^\circ - g^4P$	$\frac{3}{2}-\frac{5}{2}$		324
	50	1641.64	98.06222 – 158.9760	$3d^2(a^1D)4p - 3d^2(a^3P)4d$	$z^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		325
	1000	1643.03	86.30640 – 147.17006	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - f^4F$	$\frac{9}{2}-\frac{7}{2}$		324
	200	1646.69	97.51200 – 158.2402	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$z^4S^\circ - f^4P$	$\frac{3}{2}-\frac{5}{2}$		324
	75	1648.10	97.51200 – 158.1882	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$z^4S^\circ - f^4P$	$\frac{3}{2}-\frac{1}{2}$		324
	100	1648.99	97.51200 – 158.1555	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$z^4S^\circ - f^4P$	$\frac{3}{2}-\frac{3}{2}$		324

V III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1000	1650.14	27.7278 – 88.32796	$3d^3 - 3d^2(a^3F)4p$	$a^2F - z^2F^{\circ}$	$\frac{7}{2}-\frac{7}{2}$		324
	75	1650.40	86.80939 – 147.40129	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^{\circ} - f^4F$	$\frac{11}{2}-\frac{9}{2}$		324
	25	1653.41	27.8468 – 88.32796	$3d^3 - 3d^2(a^3F)4p$	$a^2F - z^2F^{\circ}$	$\frac{5}{2}-\frac{7}{2}$		324
	25	1654.14	85.52400 – 145.97899	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^4G^{\circ} - e^4F$	$\frac{5}{2}-\frac{5}{2}$		324
	200	1658.42	85.52400 – 145.82276	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^4G^{\circ} - e^4F$	$\frac{5}{2}-\frac{3}{2}$		324
	50	1659.27	86.71684 – 146.98408	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4F^{\circ} - f^4F$	$\frac{3}{2}-\frac{5}{2}$		324
	25	1659.94	86.30640 – 146.55032	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^4G^{\circ} - e^4F$	$\frac{9}{2}-\frac{9}{2}$		324
	50	1660.25	86.93801 – 147.17006	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4F^{\circ} - f^4F$	$\frac{5}{2}-\frac{7}{2}$		324
	15	1661.62	87.21892 – 147.40129	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4F^{\circ} - f^4F$	$\frac{7}{2}-\frac{9}{2}$		324
	15	1661.73	98.06222 – 158.2402	$3d^2(a^1D)4p - 3d^2(a^3P)4d$	$z^2P^{\circ} - f^4P$	$\frac{3}{2}-\frac{5}{2}$		325
	15	1662.41	27.7278 – 87.88085	$3d^3 - 3d^2(a^3F)4p$	$a^2F - z^2F^{\circ}$	$\frac{7}{2}-\frac{5}{2}$		324
	200	1663.07	86.71684 – 146.84699	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4F^{\circ} - f^4F$	$\frac{3}{2}-\frac{3}{2}$		324
	150	1663.82	85.87574 – 145.97899	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^4G^{\circ} - e^4F$	$\frac{7}{2}-\frac{5}{2}$		324
	200	1665.40	86.93801 – 146.98408	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4F^{\circ} - f^4F$	$\frac{5}{2}-\frac{5}{2}$		324
	250	1665.71	27.8468 – 87.88085	$3d^3 - 3d^2(a^3F)4p$	$a^2F - z^2F^{\circ}$	$\frac{5}{2}-\frac{5}{2}$		324
	10	1666.76						324
	300	1668.03	87.21892 – 147.17006	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4F^{\circ} - f^4F$	$\frac{7}{2}-\frac{7}{2}$		324
	50	1668.72	105.28265 – 165.20847	$3d^2(a^3P)4p - 3d^2(a^1G)4d$	$x^2D^{\circ} - i^2F$	$\frac{5}{2}-\frac{7}{2}$		325
	100	1668.98	86.30640 – 146.22374	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^4G^{\circ} - e^4F$	$\frac{9}{2}-\frac{7}{2}$		324
	15	1669.20	86.93801 – 146.84699	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4F^{\circ} - f^4F$	$\frac{5}{2}-\frac{3}{2}$		324
	300	1670.66	87.54446 – 147.40129	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4F^{\circ} - f^4F$	$\frac{9}{2}-\frac{9}{2}$		324
	10	1673.23	87.21892 – 146.98408	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4F^{\circ} - f^4F$	$\frac{7}{2}-\frac{5}{2}$		324
	150	1673.91	86.80939 – 146.55032	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^4G^{\circ} - e^4F$	$\frac{11}{2}-\frac{9}{2}$		324
	10	1674.85	99.44010 – 159.1476	$3d^2(a^3P)4p - 3d^2(a^3P)5s$	$y^4D^{\circ} - g^4P$	$\frac{5}{2}-\frac{5}{2}$		324
	100	1675.75						324
	5	1676.08	99.18150 – 158.8444	$3d^2(a^3P)4p - 3d^2(a^3P)5s$	$y^4D^{\circ} - g^4P$	$\frac{3}{2}-\frac{1}{2}$		325
	25	1677.18	87.54446 – 147.17006	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4F^{\circ} - f^4F$	$\frac{9}{2}-\frac{7}{2}$		324
	300	1679.19	102.96128 – 162.51319	$3d^2(a^1G)4p - 3d^2(a^1G)4d$	$y^2G^{\circ} - f^2H$	$\frac{7}{2}-\frac{9}{2}$		324
	5	1679.64	86.80939 – 146.34777	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^{\circ} - e^2H$	$\frac{11}{2}-\frac{11}{2}$		325
	250	1680.44	103.03465 – 162.54312	$3d^2(a^1G)4p - 3d^2(a^1G)4d$	$y^2G^{\circ} - f^2H$	$\frac{9}{2}-\frac{11}{2}$		324
	5	1681.05	99.44010 – 158.9274	$3d^2(a^3P)4p - 3d^2(a^3P)5s$	$y^4D^{\circ} - g^4P$	$\frac{5}{2}-\frac{3}{2}$		325
	5	1681.56	99.50850 – 158.9760	$3d^2(a^1D)4p - 3d^2(a^3P)4d$	$y^2D^{\circ} - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		325
	10	1681.91						324
	50	1685.47	87.21892 – 146.55032	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^4F^{\circ} - e^4F$	$\frac{7}{2}-\frac{9}{2}$		324
	50	1686.74	86.93801 – 146.22374	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^4F^{\circ} - e^4F$	$\frac{5}{2}-\frac{7}{2}$		324
	150	1686.95	88.32796 – 147.60708	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^2F^{\circ} - f^2F$	$\frac{7}{2}-\frac{7}{2}$		324
	25	1687.40	86.71684 – 145.97899	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^4F^{\circ} - e^4F$	$\frac{3}{2}-\frac{5}{2}$		324
	200	1687.87	87.88085 – 147.12746	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^2F^{\circ} - f^2F$	$\frac{5}{2}-\frac{5}{2}$		324
	150	1689.04	99.94120 – 159.1476	$3d^2(a^3P)4p - 3d^2(a^3P)5s$	$y^4D^{\circ} - g^4P$	$\frac{7}{2}-\frac{5}{2}$		324
	15	1690.35	97.51200 – 156.6717	$3d^2(a^3P)4p - 3d^2(a^1D)4d$	$z^4S^{\circ} - f^2D$	$\frac{3}{2}-\frac{5}{2}$		324
	75	1691.90	86.71684 – 145.82276	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^4F^{\circ} - e^4F$	$\frac{3}{2}-\frac{3}{2}$		324
	10	1692.82	88.32796 – 147.40129	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2F^{\circ} - f^4F$	$\frac{7}{2}-\frac{9}{2}$		324
	75	1693.76	86.93801 – 145.97899	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^4F^{\circ} - e^4F$	$\frac{5}{2}-\frac{5}{2}$		324
	1000	1694.78	87.54446 – 146.55032	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^4F^{\circ} - e^4F$	$\frac{9}{2}-\frac{9}{2}$		324
	50	1698.24	86.93801 – 145.82276	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^4F^{\circ} - e^4F$	$\frac{5}{2}-\frac{3}{2}$		324
	10	1698.68	27.8468 – 86.71684	$3d^3 - 3d^2(a^3F)4p$	$a^2F - z^4F^{\circ}$	$\frac{5}{2}-\frac{3}{2}$		324
	5	1699.75	97.51200 – 156.3446	$3d^2(a^3P)4p - 3d^2(a^1D)4d$	$z^4S^{\circ} - f^2D$	$\frac{3}{2}-\frac{3}{2}$		324
	50	1701.86	87.21892 – 145.97899	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^4F^{\circ} - e^4F$	$\frac{7}{2}-\frac{5}{2}$		324
	10	1702.01						324
	5	1703.12	99.44010 – 158.1555	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$y^4D^{\circ} - f^4P$	$\frac{5}{2}-\frac{3}{2}$		324
	50	1703.70	98.38353 – 157.0801	$3d^2(a^1D)4p - 3d^2(a^1D)5s$	$y^2F^{\circ} - g^2D$	$\frac{5}{2}-\frac{3}{2}$		325
	100	1704.17	87.54446 – 146.22374	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^4F^{\circ} - e^4F$	$\frac{9}{2}-\frac{7}{2}$		324
	50	1704.68	88.94438 – 147.60708	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^4D^{\circ} - f^2F$	$\frac{5}{2}-\frac{7}{2}$		324
	40	1705.19	98.38353 – 157.0276	$3d^2(a^1D)4p - 3d^2(a^3P)4d$	$y^2F^{\circ} - h^2F$	$\frac{5}{2}-\frac{5}{2}$		325

V III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	1706.22	98.06222 – 156.6717	$3d^2(a^1D)4p - 3d^2(a^1D)4d$	$z^2P^\circ - f^2D$	$\frac{3}{2}-\frac{5}{2}$		324
	150	1707.43	88.55908 – 147.12746	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^2D^\circ - f^2F$	$\frac{3}{2}-\frac{5}{2}$		324
	150	1707.89	94.71425 – 153.2664	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$z^2S^\circ - f^2P$	$\frac{1}{2}-\frac{1}{2}$		324
	100	1711.61	88.55908 – 146.98408	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2D^\circ - f^4F$	$\frac{3}{2}-\frac{5}{2}$		324
	50	1713.40						324
	50	1714.04	97.51200 – 155.8539	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$z^4S^\circ - f^4D$	$\frac{3}{2}-\frac{5}{2}$		324
	15	1715.32	99.94120 – 158.2402	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$y^4D^\circ - f^4P$	$\frac{7}{2}-\frac{5}{2}$		324
	25	1715.79	98.06222 – 156.3446	$3d^2(a^1D)4p - 3d^2(a^1D)4d$	$z^2P^\circ - f^2D$	$\frac{3}{2}-\frac{3}{2}$		324
	50	1716.47	87.88085 – 146.14008	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2F^\circ - e^2D$	$\frac{5}{2}-\frac{5}{2}$		324
	150	1717.01	98.82519 – 157.0668	$3d^2(a^1D)4p - 3d^2(a^1D)5s$	$y^2F^\circ - g^2D$	$\frac{7}{2}-\frac{5}{2}$		325
	100	1717.47	88.94438 – 147.17006	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - f^4F$	$\frac{5}{2}-\frac{7}{2}$		324
	100	1719.77	27.7278 – 85.87574	$3d^3 - 3d^2(a^3F)4p$	$a^2F - z^4G^\circ$	$\frac{7}{2}-\frac{7}{2}$		324
	400	1721.98	87.88085 – 145.95351	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2F^\circ - e^2D$	$\frac{5}{2}-\frac{3}{2}$		325
	150	1722.46	102.96128 – 161.01778	$3d^2(a^1G)4p - 3d^2(a^1G)4d$	$y^2G^\circ - g^2G$	$\frac{7}{2}-\frac{7}{2}$		324
	200	1722.62	103.03465 – 161.08559	$3d^2(a^1G)4p - 3d^2(a^1G)4d$	$y^2G^\circ - g^2G$	$\frac{9}{2}-\frac{9}{2}$		324
	300	1724.63	89.41750 – 147.40129	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - f^4F$	$\frac{7}{2}-\frac{9}{2}$		324
	200	1725.37	106.44131 – 164.39932	$3d^2(a^1G)4p - 3d^2(a^1G)5s$	$z^2H^\circ - h^2G$	$\frac{9}{2}-\frac{7}{2}$		324
	15	1725.78	98.39942 – 156.3446	$3d^2(a^1D)4p - 3d^2(a^1D)4d$	$z^2P^\circ - f^2D$	$\frac{1}{2}-\frac{3}{2}$		324
	10	1726.11	89.19347 – 147.12746	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^4D^\circ - f^2F$	$\frac{3}{2}-\frac{5}{2}$		324
	15	1728.66	98.82519 – 156.6717	$3d^2(a^1D)4p - 3d^2(a^1D)4d$	$y^2F^\circ - f^2D$	$\frac{7}{2}-\frac{5}{2}$		324
	50	1728.87	89.00564 – 146.84699	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - f^4F$	$\frac{1}{2}-\frac{3}{2}$		324
	100	1729.74	88.32796 – 146.14008	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2F^\circ - e^2D$	$\frac{7}{2}-\frac{5}{2}$		324
	100	1730.40	89.19347 – 146.98408	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - f^4F$	$\frac{3}{2}-\frac{5}{2}$		324
	15	1731.54	89.41750 – 147.17006	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - f^4F$	$\frac{7}{2}-\frac{7}{2}$		324
	150	1732.75	89.45767 – 147.17006	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2D^\circ - f^4F$	$\frac{5}{2}-\frac{7}{2}$		324
	50	1734.52	89.19347 – 146.84699	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - f^4F$	$\frac{3}{2}-\frac{3}{2}$		324
	40	1736.99	99.50850 – 157.0801	$3d^2(a^1D)4p - 3d^2(a^1D)5s$	$y^2D^\circ - g^2D$	$\frac{3}{2}-\frac{3}{2}$		325
	25	1738.00	42.2674 – 99.80457	$3d^3 - 3d^2(a^1D)4p$	$b^2D - y^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	25	1738.33	89.45767 – 146.98408	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2D^\circ - f^4F$	$\frac{5}{2}-\frac{5}{2}$		324
	25	1738.93	98.06222 – 155.5698	$3d^2(a^1D)4p - 3d^2(a^3P)4d$	$z^2P^\circ - g^4F$	$\frac{3}{2}-\frac{5}{2}$		325
	150	1739.25	106.90335 – 164.39844	$3d^2(a^1G)4p - 3d^2(a^1G)5s$	$z^2H^\circ - h^2G$	$\frac{11}{2}-\frac{9}{2}$		324
	25	1742.15						324
	150	1742.35	88.55908 – 145.95351	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2D^\circ - e^2D$	$\frac{3}{2}-\frac{3}{2}$		325
	25	1746.36	99.80457 – 157.0668	$3d^2(a^1D)4p - 3d^2(a^1D)5s$	$y^2D^\circ - g^2D$	$\frac{5}{2}-\frac{5}{2}$		325
	10	1747.31	99.44010 – 156.6717	$3d^2(a^3P)4p - 3d^2(a^1D)4d$	$y^4D^\circ - f^2D$	$\frac{5}{2}-\frac{5}{2}$		324
	400	1747.84						324
	150	1748.39	88.94438 – 146.14008	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - e^2D$	$\frac{5}{2}-\frac{5}{2}$		324
	5	1749.39	99.18150 – 156.3446	$3d^2(a^3P)4p - 3d^2(a^1D)4d$	$y^4D^\circ - f^2D$	$\frac{3}{2}-\frac{3}{2}$		324
	50	1750.17	42.3712 – 99.50850	$3d^3 - 3d^2(a^1D)4p$	$b^2D - y^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		324
	100	1750.34	89.41750 – 146.55032	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^4D^\circ - e^4F$	$\frac{7}{2}-\frac{9}{2}$		324
	500	1751.68	99.94120 – 157.0276	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$y^4D^\circ - h^2F$	$\frac{7}{2}-\frac{5}{2}$		324
	50	1752.19	102.07500 – 159.1476	$3d^2(a^3P)4p - 3d^2(a^3P)5s$	$z^4P^\circ - g^4P$	$\frac{5}{2}-\frac{5}{2}$		324
	10	1752.62	101.78581 – 158.8444	$3d^2(a^3P)4p - 3d^2(a^3P)5s$	$z^4P^\circ - g^4P$	$\frac{3}{2}-\frac{1}{2}$		325
	50	1754.11	88.94438 – 145.95351	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - e^2D$	$\frac{5}{2}-\frac{3}{2}$		325
	100	1755.30						324
	25	1756.02	89.19347 – 146.14008	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - e^2D$	$\frac{3}{2}-\frac{5}{2}$		325
	10	1756.57						324
	500	1757.73	87.88085 – 144.77260	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2F^\circ - e^2G$	$\frac{5}{2}-\frac{7}{2}$		324
	150	1758.50	99.80457 – 156.6717	$3d^2(a^1D)4p - 3d^2(a^1D)4d$	$y^2D^\circ - f^2D$	$\frac{5}{2}-\frac{5}{2}$		324
	50	1758.96	102.07500 – 158.9274	$3d^2(a^3P)4p - 3d^2(a^3P)5s$	$z^4P^\circ - g^4P$	$\frac{5}{2}-\frac{3}{2}$		325
	100	1759.46	99.50850 – 156.3446	$3d^2(a^1D)4p - 3d^2(a^1D)4d$	$y^2D^\circ - f^2D$	$\frac{3}{2}-\frac{3}{2}$		324
	1000	1760.07	88.32796 – 145.14400	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2F^\circ - e^2G$	$\frac{7}{2}-\frac{9}{2}$		324
	10	1760.41	89.41750 – 146.22374	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^4D^\circ - e^4F$	$\frac{7}{2}-\frac{7}{2}$		324
	50	1761.04	89.19347 – 145.97899	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^4D^\circ - e^4F$	$\frac{3}{2}-\frac{5}{2}$		324

V III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	1761.63	89.45767 – 146.22374	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^2D^\circ - e^4F$	$\frac{5}{2}-\frac{7}{2}$		324
	50	1761.84	89.19347 – 145.95351	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - e^2D$	$\frac{3}{2}-\frac{3}{2}$		325
	75	1762.27	88.32796 – 145.07342	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2F^\circ - e^4P$	$\frac{7}{2}-\frac{5}{2}$		325
	10	1762.78	99.07323 – 155.8020	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$y^4D^\circ - f^4D$	$\frac{1}{2}-\frac{3}{2}$		324
	25	1762.99	89.41750 – 146.14008	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - e^2D$	$\frac{7}{2}-\frac{5}{2}$		324
	10	1763.59	42.3712 – 99.07323	$3d^3 - 3d^2(a^3P)4p$	$b^2D - y^4D^\circ$	$\frac{3}{2}-\frac{1}{2}$		324
	250	1764.23	89.45767 – 146.14008	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2D^\circ - e^2D$	$\frac{5}{2}-\frac{5}{2}$		324
	15	1765.28	99.18150 – 155.8299	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$y^4D^\circ - f^4D$	$\frac{3}{2}-\frac{1}{2}$		325
	15	1765.92	89.19347 – 145.82276	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^4D^\circ - e^4F$	$\frac{3}{2}-\frac{3}{2}$		324
	50	1766.16	99.18150 – 155.8020	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$y^4D^\circ - f^4D$	$\frac{3}{2}-\frac{3}{2}$		324
	10	1767.79						324
	100	1768.09	42.2674 – 98.82519	$3d^3 - 3d^2(a^1D)4p$	$b^2D - y^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		324
	5	1768.66	99.80457 – 156.3446	$3d^2(a^1D)4p - 3d^2(a^1D)4d$	$y^2D^\circ - f^2D$	$\frac{5}{2}-\frac{3}{2}$		324
	15	1769.13						324
	10	1769.22	89.45767 – 145.97899	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^2D^\circ - e^4F$	$\frac{5}{2}-\frac{5}{2}$		324
	25	1769.60	101.64561 – 158.1555	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$z^4P^\circ - f^4P$	$\frac{1}{2}-\frac{3}{2}$		324
	25	1770.06	89.45767 – 145.95351	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2D^\circ - e^2D$	$\frac{5}{2}-\frac{3}{2}$		325
	75	1771.35	101.78581 – 158.2402	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$z^4P^\circ - f^4P$	$\frac{3}{2}-\frac{5}{2}$		324
	50	1771.67	88.32796 – 144.77260	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2F^\circ - e^2G$	$\frac{7}{2}-\frac{7}{2}$		324
	200	1772.31	99.07323 – 155.4973	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$y^4D^\circ - g^4F$	$\frac{1}{2}-\frac{3}{2}$		324
	100	1772.63	99.44010 – 155.8539	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$y^4D^\circ - f^4D$	$\frac{5}{2}-\frac{5}{2}$		324
	50	1772.99	101.78581 – 158.1882	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$z^4P^\circ - f^4P$	$\frac{3}{2}-\frac{1}{2}$		324
	300	1773.43	99.18150 – 155.5698	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$y^4D^\circ - g^4F$	$\frac{3}{2}-\frac{5}{2}$		324
	10	1774.02	101.78581 – 158.1555	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$z^4P^\circ - f^4P$	$\frac{3}{2}-\frac{3}{2}$		324
	25	1774.25	99.44010 – 155.8020	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$y^4D^\circ - f^4D$	$\frac{5}{2}-\frac{3}{2}$		324
	75	1775.72	99.18150 – 155.4973	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$y^4D^\circ - g^4F$	$\frac{3}{2}-\frac{3}{2}$		324
	50	1777.18	88.55908 – 144.82858	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2D^\circ - e^4P$	$\frac{3}{2}-\frac{3}{2}$		325
	400	1778.02	99.44010 – 155.6825	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$y^4D^\circ - g^4F$	$\frac{5}{2}-\frac{7}{2}$		324
	500	1779.72	98.38353 – 154.5727	$3d^2(a^1D)4p - 3d^2(a^1D)4d$	$y^2F^\circ - f^2G$	$\frac{5}{2}-\frac{7}{2}$		325
	100	1780.48	102.07500 – 158.2402	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$z^4P^\circ - f^4P$	$\frac{5}{2}-\frac{5}{2}$		324
	200	1781.61	88.94438 – 145.07342	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - e^4P$	$\frac{5}{2}-\frac{5}{2}$		324
	5	1782.04	42.2674 – 98.38353	$3d^3 - 3d^2(a^1D)4p$	$b^2D - y^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	20	1783.16	102.07500 – 158.1555	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$z^4P^\circ - f^4P$	$\frac{5}{2}-\frac{3}{2}$		324
	200	1783.41	106.44131 – 162.51319	$3d^2(a^1G)4p - 3d^2(a^1G)4d$	$z^2H^\circ - f^2H$	$\frac{9}{2}-\frac{9}{2}$		324
	50	1783.77	99.50850 – 155.5698	$3d^2(a^1D)4p - 3d^2(a^3P)4d$	$y^2D^\circ - g^4F$	$\frac{3}{2}-\frac{5}{2}$		325
	400	1784.44	99.94120 – 155.9820	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$y^4D^\circ - f^4D$	$\frac{7}{2}-\frac{7}{2}$		324
	50	1785.33	42.3712 – 98.38353	$3d^3 - 3d^2(a^1D)4p$	$b^2D - y^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		324
	150	1785.97	49.32774 – 105.32018	$3d^2(a^3F)4s - 3d^2(a^3P)4p$	$b^2F - x^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		324
	15	1787.15	49.32774 – 105.28265	$3d^2(a^3F)4s - 3d^2(a^3P)4p$	$b^2F - x^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	1000	1788.26	99.94120 – 155.8623	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$y^4D^\circ - g^4F$	$\frac{7}{2}-\frac{9}{2}$		325
	200	1789.47						325
	100	1789.62	99.80457 – 155.6825	$3d^2(a^1D)4p - 3d^2(a^3P)4d$	$y^2D^\circ - g^4F$	$\frac{5}{2}-\frac{7}{2}$		325
	50	1791.23	88.94438 – 144.77260	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - e^2G$	$\frac{5}{2}-\frac{7}{2}$		324
	500	1793.82	85.52400 – 141.27110	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4H$	$\frac{5}{2}-\frac{7}{2}$		324
	250	1794.00	99.94120 – 155.6825	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$y^4D^\circ - g^4F$	$\frac{7}{2}-\frac{7}{2}$		324
	1000	1794.60	98.82519 – 154.5489	$3d^2(a^1D)4p - 3d^2(a^1D)4d$	$y^2F^\circ - f^2G$	$\frac{7}{2}-\frac{9}{2}$		325
	300	1796.77	89.41750 – 145.07342	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - e^4P$	$\frac{7}{2}-\frac{5}{2}$		325
	100	1797.28	106.90335 – 162.54312	$3d^2(a^1G)4p - 3d^2(a^1G)4d$	$z^2H^\circ - f^2H$	$\frac{11}{2}-\frac{11}{2}$		324
	25	1797.44	89.19347 – 144.82858	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - e^4P$	$\frac{3}{2}-\frac{3}{2}$		325
	100	1797.63	99.94120 – 155.5698	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$y^4D^\circ - g^4F$	$\frac{7}{2}-\frac{5}{2}$		324
	500	1798.15	85.87574 – 141.48906	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4H$	$\frac{7}{2}-\frac{9}{2}$		324
	100	1800.07	92.05255 – 147.60708	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^2G^\circ - f^2F$	$\frac{9}{2}-\frac{7}{2}$		324
	300	1802.55	49.80529 – 105.28265	$3d^2(a^3F)4s - 3d^2(a^3P)4p$	$b^2F - x^2D^\circ$	$\frac{7}{2}-\frac{5}{2}$		324
	25	1803.15	44.34582 – 99.80457	$3d^2(a^3F)4s - 3d^2(a^1D)4p$	$b^4F - y^2D^\circ$	$\frac{7}{2}-\frac{5}{2}$		324

V III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	75	1803.76						324
	500	1804.13	86.30640 – 141.73542	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4H$	$\frac{9}{2}-\frac{11}{2}$		324
	75	1804.52	91.71043 – 147.12746	$3d^2(a^3F)4p - 3d^2(a^3F)5s$	$z^2G^\circ - f^2F$	$\frac{7}{2}-\frac{5}{2}$		324
	75	1804.76	85.52400 – 140.93385	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4G$	$\frac{5}{2}-\frac{7}{2}$		324
	150	1805.23	85.87574 – 141.27110	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4H$	$\frac{7}{2}-\frac{7}{2}$		324
	10	1806.55	109.85487 – 165.20847	$3d^2(a^1G)4p - 3d^2(a^1G)4d$	$x^2F^\circ - i^2F$	$\frac{7}{2}-\frac{7}{2}$		325
	25	1806.71	92.05255 – 147.40129	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2G^\circ - f^4F$	$\frac{9}{2}-\frac{9}{2}$		325
	50	1807.35	44.11004 – 99.44010	$3d^2(a^3F)4s - 3d^2(a^3P)4p$	$b^4F - y^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		324
	50	1807.74						324
	100	1808.51	44.64696 – 99.94120	$3d^2(a^3F)4s - 3d^2(a^3P)4p$	$b^4F - y^4D^\circ$	$\frac{9}{2}-\frac{7}{2}$		324
	150	1809.36	85.87574 – 141.14486	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4G$	$\frac{7}{2}-\frac{9}{2}$		324
	0	1810.31	43.94249 – 99.18150	$3d^2(a^3F)4s - 3d^2(a^3P)4p$	$b^4F - y^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		478
	250	1810.71	85.52400 – 140.75147	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4G$	$\frac{5}{2}-\frac{5}{2}$		324
	1000	1812.19	86.80939 – 141.99158	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4H$	$\frac{11}{2}-\frac{13}{2}$		324
	5	1814.05						324
	250	1814.95	86.30640 – 141.40580	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4G$	$\frac{9}{2}-\frac{11}{2}$		324
	50	1815.11	88.55908 – 143.6515	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2D^\circ - e^2P$	$\frac{3}{2}-\frac{3}{2}$		325
	100	1815.35	110.18147 – 165.26723	$3d^2(a^1G)4p - 3d^2(a^1G)4d$	$x^2F^\circ - i^2F$	$\frac{5}{2}-\frac{5}{2}$		325
	150	1816.30	85.87574 – 140.93385	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4G$	$\frac{7}{2}-\frac{7}{2}$		324
	250	1820.65	86.80939 – 141.73542	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4H$	$\frac{11}{2}-\frac{11}{2}$		324
	10	1821.33						324
	10	1821.99	101.78581 – 156.6717	$3d^2(a^3P)4p - 3d^2(a^1D)4d$	$z^4P^\circ - f^2D$	$\frac{3}{2}-\frac{5}{2}$		325
	15	1822.21	98.06222 – 152.9400	$3d^2(a^1D)4p - 3d^2(a^1D)4d$	$z^2P^\circ - g^2F$	$\frac{3}{2}-\frac{5}{2}$		324
	25	1822.31	85.87574 – 140.75147	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4G$	$\frac{7}{2}-\frac{5}{2}$		324
	50	1822.61	98.39942 – 153.2664	$3d^2(a^1D)4p - 3d^2(a^3P)4d$	$z^2P^\circ - f^2P$	$\frac{1}{2}-\frac{1}{2}$		324
	200	1823.57	86.30640 – 141.14486	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4G$	$\frac{9}{2}-\frac{9}{2}$		324
	50	1824.34	86.71684 – 141.53194	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4F^\circ - e^4D$	$\frac{3}{2}-\frac{3}{2}$		324
	75	1824.88	98.06222 – 152.8612	$3d^2(a^1D)4p - 3d^2(a^3P)4d$	$z^2P^\circ - f^2P$	$\frac{3}{2}-\frac{3}{2}$		325
	25	1825.60	86.93801 – 141.71520	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4F^\circ - e^4D$	$\frac{5}{2}-\frac{5}{2}$		324
	200	1827.96	86.71684 – 141.42187	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4F^\circ - e^4D$	$\frac{3}{2}-\frac{1}{2}$		325
	500	1828.84	86.80939 – 141.48906	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4H$	$\frac{11}{2}-\frac{9}{2}$		478
	50	1830.61	86.30640 – 140.93385	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4G$	$\frac{9}{2}-\frac{7}{2}$		324
	400	1831.15	88.55908 – 143.1690	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2D^\circ - e^2P$	$\frac{3}{2}-\frac{1}{2}$		325
	400	1831.64	86.80939 – 141.40580	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4G$	$\frac{11}{2}-\frac{11}{2}$		324
	15	1831.74	86.93801 – 141.53194	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4F^\circ - e^4D$	$\frac{5}{2}-\frac{3}{2}$		324
	25	1832.29	106.44131 – 161.01778	$3d^2(a^1G)4p - 3d^2(a^1G)4d$	$z^2H^\circ - g^2G$	$\frac{9}{2}-\frac{7}{2}$		324
	150	1832.99	98.38353 – 152.9400	$3d^2(a^1D)4p - 3d^2(a^1D)4d$	$y^2F^\circ - g^2F$	$\frac{5}{2}-\frac{5}{2}$		324
	25	1833.42	109.85487 – 164.39844	$3d^2(a^1G)4p - 3d^2(a^1G)5s$	$x^2F^\circ - h^2G$	$\frac{7}{2}-\frac{9}{2}$		324
	200	1835.01	87.21892 – 141.71520	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4F^\circ - e^4D$	$\frac{7}{2}-\frac{5}{2}$		324
	25	1835.56	44.34582 – 98.82519	$3d^2(a^3F)4s - 3d^2(a^1D)4p$	$b^4F - y^2F^\circ$	$\frac{7}{2}-\frac{7}{2}$		324
	10	1836.17	98.39942 – 152.8612	$3d^2(a^1D)4p - 3d^2(a^3P)4d$	$z^2P^\circ - f^2P$	$\frac{1}{2}-\frac{3}{2}$		325
	250	1836.78	87.54446 – 141.98795	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4F^\circ - e^4D$	$\frac{9}{2}-\frac{7}{2}$		324
	25	1840.45	86.80939 – 141.14486	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4G$	$\frac{11}{2}-\frac{9}{2}$		324
	250	1841.80	92.05255 – 146.34777	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2G^\circ - e^2H$	$\frac{9}{2}-\frac{11}{2}$		324
	150	1842.06						324
	25	1842.66	87.21892 – 141.48906	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4F^\circ - e^4H$	$\frac{7}{2}-\frac{9}{2}$		324
	100	1843.16	98.06222 – 152.3177	$3d^2(a^1D)4p - 3d^2(a^1D)4d$	$z^2P^\circ - e^2S$	$\frac{3}{2}-\frac{1}{2}$		325
	50	1844.43	110.18147 – 164.39932	$3d^2(a^1G)4p - 3d^2(a^1G)5s$	$x^2F^\circ - h^2G$	$\frac{5}{2}-\frac{7}{2}$		324
	300	1845.07	106.90335 – 161.10191	$3d^2(a^1G)4p - 3d^2(a^1G)4d$	$z^2H^\circ - e^2I$	$\frac{11}{2}-\frac{13}{2}$		325
	250	1845.29	91.71043 – 145.90331	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2G^\circ - e^2H$	$\frac{7}{2}-\frac{9}{2}$		324
	25	1845.60	106.90335 – 161.08559	$3d^2(a^1G)4p - 3d^2(a^1G)4d$	$z^2H^\circ - g^2G$	$\frac{11}{2}-\frac{9}{2}$		324
	75	1846.51	101.64561 – 155.8020	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$z^4P^\circ - f^4D$	$\frac{1}{2}-\frac{3}{2}$		324
	10	1848.97	99.18150 – 153.2664	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$y^4D^\circ - f^2P$	$\frac{3}{2}-\frac{1}{2}$		324
	250	1849.55	101.78581 – 155.8539	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$z^4P^\circ - f^4D$	$\frac{3}{2}-\frac{5}{2}$		324

V III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	300	1850.69	86.71684 – 140.75147	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4F^\circ - e^4G$	$\frac{3}{2}-\frac{5}{2}$		324
	150	1851.32	101.78581 – 155.8020	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$z^4P^\circ - f^4D$	$\frac{3}{2}-\frac{3}{2}$		324
	400	1852.01	86.93801 – 140.93385	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4F^\circ - e^4G$	$\frac{5}{2}-\frac{7}{2}$		324
	25	1852.70	89.19347 – 143.1690	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - e^2P$	$\frac{3}{2}-\frac{1}{2}$		325
	15	1853.12	87.54446 – 141.50826	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4F^\circ - e^2F$	$\frac{9}{2}-\frac{7}{2}$		324
	500	1854.42	56.25675 – 110.18147	$3d^2(a^1D)4s - 3d^2(a^1G)4p$	$c^2D - x^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		324
	5	1854.71	98.39942 – 152.3177	$3d^2(a^1D)4p - 3d^2(a^1D)4d$	$z^2P^\circ - e^2S$	$\frac{1}{2}-\frac{1}{2}$		325
	300	1855.06	102.07500 – 155.9820	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$z^4P^\circ - f^4D$	$\frac{5}{2}-\frac{7}{2}$		324
	500	1856.64	87.54446 – 141.40580	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4F^\circ - e^4G$	$\frac{9}{2}-\frac{11}{2}$		324
	25	1857.00	92.05255 – 145.90331	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2G^\circ - e^2H$	$\frac{9}{2}-\frac{9}{2}$		324
	75	1858.32	86.93801 – 140.75147	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4F^\circ - e^4G$	$\frac{5}{2}-\frac{5}{2}$		324
	50	1859.29	101.78581 – 155.5698	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$z^4P^\circ - g^4F$	$\frac{3}{2}-\frac{5}{2}$		325
	50	1859.49	102.07500 – 155.8539	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$z^4P^\circ - f^4D$	$\frac{5}{2}-\frac{5}{2}$		324
	75	1860.22	99.50850 – 153.2664	$3d^2(a^1D)4p - 3d^2(a^3P)4d$	$y^2D^\circ - f^2P$	$\frac{3}{2}-\frac{1}{2}$		324
	100	1863.14	99.44010 – 153.1139	$3d^2(a^3P)4p - 3d^2(a^1D)4d$	$y^4D^\circ - g^2F$	$\frac{5}{2}-\frac{7}{2}$		325
	300	1864.51	49.32774 – 102.96128	$3d^2(a^3F)4s - 3d^2(a^1G)4p$	$b^2F - y^2G^\circ$	$\frac{5}{2}-\frac{7}{2}$		324
	100	1864.74	87.88085 – 141.50826	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2F^\circ - e^2F$	$\frac{5}{2}-\frac{7}{2}$		324
	10	1865.41	102.07500 – 155.6825	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$z^4P^\circ - g^4F$	$\frac{5}{2}-\frac{7}{2}$		324
	200	1871.58	99.50850 – 152.9400	$3d^2(a^1D)4p - 3d^2(a^1D)4d$	$y^2D^\circ - g^2F$	$\frac{3}{2}-\frac{5}{2}$		324
	5	1873.01	87.54446 – 140.93385	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4F^\circ - e^4G$	$\frac{9}{2}-\frac{7}{2}$		324
	250	1875.62	87.88085 – 141.19687	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2F^\circ - e^2F$	$\frac{5}{2}-\frac{5}{2}$		324
	250	1875.88	99.80457 – 153.1139	$3d^2(a^1D)4p - 3d^2(a^1D)4d$	$y^2D^\circ - g^2F$	$\frac{5}{2}-\frac{7}{2}$		324
	300	1878.68	49.80529 – 103.03465	$3d^2(a^3F)4s - 3d^2(a^1G)4p$	$b^2F - y^2G^\circ$	$\frac{7}{2}-\frac{9}{2}$		324
	400	1880.41	88.32796 – 141.50826	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2F^\circ - e^2F$	$\frac{7}{2}-\frac{7}{2}$		324
	25	1881.28	49.80529 – 102.96128	$3d^2(a^3F)4s - 3d^2(a^1G)4p$	$b^2F - y^2G^\circ$	$\frac{7}{2}-\frac{7}{2}$		324
	10	1881.75	107.16590 – 160.3084	$3d^2(a^3P)4p - 3d^2(a^3P)5s$	$y^2P^\circ - h^2P$	$\frac{3}{2}-\frac{3}{2}$		325
	250	1883.57	92.05255 – 145.14400	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2G^\circ - e^2G$	$\frac{9}{2}-\frac{9}{2}$		324
	200	1884.61	91.71043 – 144.77260	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2G^\circ - e^2G$	$\frac{7}{2}-\frac{7}{2}$		324
	15	1885.26	88.94438 – 141.98795	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - e^4D$	$\frac{5}{2}-\frac{7}{2}$		324
	100	1887.79	88.55908 – 141.53194	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2D^\circ - e^4D$	$\frac{3}{2}-\frac{3}{2}$		325
	40	1889.22	56.92250 – 109.85487	$3d^2(a^3P)4s - 3d^2(a^1G)4p$	$b^4P - x^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		325
	50	1891.47	88.32796 – 141.19687	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2F^\circ - e^2F$	$\frac{7}{2}-\frac{5}{2}$		324
	10	1891.71	88.55908 – 141.42187	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2D^\circ - e^4D$	$\frac{3}{2}-\frac{1}{2}$		325
	300	1895.01	88.94438 – 141.71520	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - e^4D$	$\frac{5}{2}-\frac{5}{2}$		325
	5	1895.44						324
	10	1896.84	92.05255 – 144.77260	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2G^\circ - e^2G$	$\frac{9}{2}-\frac{7}{2}$		324
	10	1898.42						324
	400	1899.81	88.55908 – 141.19687	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2D^\circ - e^2F$	$\frac{3}{2}-\frac{5}{2}$		324
	50	1901.63	88.94438 – 141.53194	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - e^4D$	$\frac{5}{2}-\frac{3}{2}$		325
	500	1902.23	89.41750 – 141.98795	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - e^4D$	$\frac{7}{2}-\frac{7}{2}$		324
	150	1902.48	88.94438 – 141.50826	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - e^2F$	$\frac{5}{2}-\frac{7}{2}$		324
	50	1903.68	89.45767 – 141.98795	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2D^\circ - e^4D$	$\frac{5}{2}-\frac{7}{2}$		324
	15	1903.83	89.00564 – 141.53194	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - e^4D$	$\frac{1}{2}-\frac{3}{2}$		324
	75	1904.01	89.19347 – 141.71520	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - e^4D$	$\frac{3}{2}-\frac{5}{2}$		324
	300	1907.80	89.00564 – 141.42187	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - e^4D$	$\frac{1}{2}-\frac{1}{2}$		324
	200	1910.68	89.19347 – 141.53194	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - e^4D$	$\frac{3}{2}-\frac{3}{2}$		324
	50	1912.17	89.41750 – 141.71520	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - e^4D$	$\frac{7}{2}-\frac{5}{2}$		324
	350	1913.62	89.45767 – 141.71520	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2D^\circ - e^4D$	$\frac{5}{2}-\frac{5}{2}$		324
	15	1914.68	89.19347 – 141.42187	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - e^4D$	$\frac{3}{2}-\frac{1}{2}$		324
	25	1916.09	107.06041 – 159.2505	$3d^2(a^3P)4p - 3d^2(a^1D)4d$	$y^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		325
	75	1920.38	89.45767 – 141.53194	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2D^\circ - e^4D$	$\frac{5}{2}-\frac{3}{2}$		324
	100	1921.24	89.45767 – 141.50826	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2D^\circ - e^2F$	$\frac{5}{2}-\frac{7}{2}$		324
	25	1922.98	89.19347 – 141.19687	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4D^\circ - e^2F$	$\frac{3}{2}-\frac{5}{2}$		324
	25	1926.23	107.06041 – 158.9760	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$y^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		325

V III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	1926.75	107.16590 – 159.0676	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$y^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		325
	15	1928.05	107.06041 – 158.9274	$3d^2(a^3P)4p - 3d^2(a^3P)5s$	$y^2P^\circ - g^4P$	$\frac{1}{2}-\frac{3}{2}$		325
	250	1931.09	105.28265 – 157.0668	$3d^2(a^3P)4p - 3d^2(a^1D)5s$	$x^2D^\circ - g^2D$	$\frac{5}{2}-\frac{5}{2}$		325
	10	1932.59	105.28265 – 157.0276	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$x^2D^\circ - h^2F$	$\frac{5}{2}-\frac{5}{2}$		325
	25	1932.82	89.45767 – 141.19687	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^2D^\circ - e^2F$	$\frac{5}{2}-\frac{5}{2}$		325
	300	1934.00	105.32018 – 157.0276	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$x^2D^\circ - h^2F$	$\frac{3}{2}-\frac{5}{2}$		325
	25	1937.17	101.64561 – 153.2664	$3d^2(a^3P)4p - 3d^2(a^3P)4d$	$z^4P^\circ - f^2P$	$\frac{1}{2}-\frac{1}{2}$		324
	20	1947.37	105.32018 – 156.6717	$3d^2(a^3P)4p - 3d^2(a^1D)4d$	$x^2D^\circ - f^2D$	$\frac{3}{2}-\frac{5}{2}$		489
	150	1952.00	109.85487 – 161.08559	$3d^2(a^1G)4p - 3d^2(a^1G)4d$	$x^2F^\circ - g^2G$	$\frac{7}{2}-\frac{9}{2}$		324
	150	1967.11	110.18147 – 161.01778	$3d^2(a^1G)4p - 3d^2(a^1G)4d$	$x^2F^\circ - g^2G$	$\frac{5}{2}-\frac{7}{2}$		324
	5	1968.37	56.25675 – 107.06041	$3d^2(a^1D)4s - 3d^2(a^3P)4p$	$c^2D - y^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		324
	0	1990.33	56.92250 – 107.16590	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^4P - y^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		324
	100	1992.83	49.32774 – 99.50850	$3d^2(a^3F)4s - 3d^2(a^1D)4p$	$b^2F - y^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		324
	25	1994.57	49.80529 – 99.94120	$3d^2(a^3F)4s - 3d^2(a^3P)4p$	$b^2F - y^4D^\circ$	$\frac{7}{2}-\frac{7}{2}$		324

VANADIUM IV (V^{3+}), Z = 23
Ground State $1s^22s^22p^63s^23p^63d^2(^3F_2)$ (20 electrons)
Ionization Potential 376 730 cm^{-1}; 46.709 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	65	378.678	0.3254 – 264.4019	$3d^2 - 3d4f$	$g^3F - {}^3G^\circ$	3 – 4		745
	110	378.929	0.0 – 263.9023	$3d^2 - 3d4f$	$g^3F - {}^3G^\circ$	2 – 3		745
	110	378.993	0.7347 – 264.5919	$3d^2 - 3d4f$	$g^3F - {}^3G^\circ$	4 – 5		745
	110	379.093	0.3254 – 264.1131	$3d^2 - 3d4f$	$g^3F - {}^3F^\circ$	3 – 4		745
	175	379.353	0.0 – 263.6083	$3d^2 - 3d4f$	$g^3F - {}^3F^\circ$	2 – 3		745
	65	379.372	0.0 – 263.5930	$3d^2 - 3d4f$	$g^3F - {}^3F^\circ$	2 – 2		745
	65	379.395	0.3254 – 263.9023	$3d^2 - 3d4f$	$g^3F - {}^3G^\circ$	3 – 3		745
	175	379.512	0.3254 – 263.8224	$3d^2 - 3d4f$	$g^3F - {}^3H^\circ$	3 – 4		745
	350	379.613	0.7347 – 264.1618	$3d^2 - 3d4f$	$g^3F - {}^3H^\circ$	4 – 5		745
	110	379.682	0.7347 – 264.1131	$3d^2 - 3d4f$	$g^3F - {}^3F^\circ$	4 – 4		745
	1	380.101	0.7347 – 263.8224	$3d^2 - 3d4f$	$g^3F - {}^3H^\circ$	4 – 4		745
	1	380.537	0.3254 – 263.1114	$3d^2 - 3d4f$	$g^3F - {}^1G^\circ$	3 – 4		745
	1	391.362	0.7347 – 256.2517	$3d^2 - 3d5p$	$g^3F - {}^3F^\circ$	4 – 4		745
	65	392.428	0.0 – 254.8241	$3d^2 - 3d5p$	$g^3F - {}^3D^\circ$	2 – 1		745
	30	392.602	0.7347 – 255.4455	$3d^2 - 3d5p$	$g^3F - {}^3D^\circ$	4 – 3		745
	1	393.217	10.9593 – 265.2716	$3d^2 - 3d4f$	${}^1D - {}^1F^\circ$	2 – 3		745
	110	393.790	10.9593 – 264.9022	$3d^2 - 3d4f$	${}^1D - {}^3D^\circ$	2 – 3		745
	65	394.441	10.9593 – 264.4828	$3d^2 - 3d4f$	${}^1D - {}^1D^\circ$	2 – 2		745
	1	396.991	13.1228 – 265.0197	$3d^2 - 3d4f$	${}^3P - {}^3D^\circ$	0 – 1		745
	65	397.097	13.2392 – 265.0674	$3d^2 - 3d4f$	${}^3P - {}^3D^\circ$	1 – 2		745
	110	397.122	13.4583 – 265.2716	$3d^2 - 3d4f$	${}^3P - {}^1F^\circ$	2 – 3		745
	250	402.885	18.3912 – 266.6003	$3d^2 - 3d4f$	${}^1G - {}^1H^\circ$	4 – 5		745
	30	675.469	0.3254 – 148.3692	$3d^2 - 3d4p$	$g^3F - {}^3F^\circ$	3 – 4		829
	200	677.345	0.7347 – 148.3692	$3d^2 - 3d4p$	$g^3F - {}^3F^\circ$	4 – 4		829
	60	678.740	0.3254 – 147.6565	$3d^2 - 3d4p$	$g^3F - {}^3F^\circ$	3 – 3		829
	50	679.647	0.0 – 147.1352	$3d^2 - 3d4p$	$g^3F - {}^3F^\circ$	2 – 2		829
	40	680.632	0.7347 – 147.6565	$3d^2 - 3d4p$	$g^3F - {}^3F^\circ$	4 – 3		829
	40	681.145	0.3254 – 147.1352	$3d^2 - 3d4p$	$g^3F - {}^3F^\circ$	3 – 2		829
	40	682.455	0.3254 – 146.8551	$3d^2 - 3d4p$	$g^3F - {}^3D^\circ$	3 – 3		829
	40	682.923	0.0 – 146.4293	$3d^2 - 3d4p$	$g^3F - {}^3D^\circ$	2 – 2		829

V IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	500	684.368	0.7347 – 146.8551	$3d^2$ – 3d4p	$g^3F - {}^3D^\circ$	4 – 3		829
	100	684.450	0.3254 – 146.4293	$3d^2$ – 3d4p	$g^3F - {}^3D^\circ$	3 – 2		829
	100	691.530	10.9593 – 155.5655	$3d^2$ – 3d4p	${}^1D - {}^1P^\circ$	2 – 1		829
	50	693.128	0.0 – 144.2731	$3d^2$ – 3d4p	$g^3F - {}^1D^\circ$	2 – 2		829
	30	699.497	10.9593 – 153.9187	$3d^2$ – 3d4p	${}^1D - {}^1F^\circ$	2 – 3		829
	1	702.035	13.1228 – 155.5655	$3d^2$ – 3d4p	${}^3P - {}^1P^\circ$	0 – 1		829
	20	711.911	10.9593 – 151.4270	$3d^2$ – 3d4p	${}^1D - {}^3P^\circ$	2 – 1		829
	40	722.912	13.2392 – 151.5673	$3d^2$ – 3d4p	${}^3P - {}^3P^\circ$	1 – 2		829
	40	723.045	13.1228 – 151.4270	$3d^2$ – 3d4p	${}^3P - {}^3P^\circ$	0 – 1		829
	40	723.537	13.2392 – 151.4491	$3d^2$ – 3d4p	${}^3P - {}^3P^\circ$	1 – 0		829
	40	723.652	13.2392 – 151.4270	$3d^2$ – 3d4p	${}^3P - {}^3P^\circ$	1 – 1		829
	40	724.068	13.4583 – 151.5673	$3d^2$ – 3d4p	${}^3P - {}^3P^\circ$	2 – 2		829
	5	724.809	13.4583 – 151.4270	$3d^2$ – 3d4p	${}^3P - {}^3P^\circ$	2 – 1		829
	20	734.344	10.9593 – 147.1352	$3d^2$ – 3d4p	${}^1D - {}^3F^\circ$	2 – 2		829
	400	737.854	18.3912 – 153.9187	$3d^2$ – 3d4p	${}^1G - {}^1F^\circ$	4 – 3		829
	20	745.165	13.4583 – 147.6565	$3d^2$ – 3d4p	${}^3P - {}^3F^\circ$	2 – 3		829
	40	749.641	13.4583 – 146.8551	$3d^2$ – 3d4p	${}^3P - {}^3D^\circ$	2 – 3		829
	150	750.110	10.9593 – 144.2731	$3d^2$ – 3d4p	${}^1D - {}^1D^\circ$	2 – 2		829
	40	750.809	13.2392 – 146.4293	$3d^2$ – 3d4p	${}^3P - {}^3D^\circ$	1 – 2		829
	30	751.908	13.1228 – 146.1177	$3d^2$ – 3d4p	${}^3P - {}^3D^\circ$	0 – 1		829
	30	752.038	13.4583 – 146.4293	$3d^2$ – 3d4p	${}^3P - {}^3D^\circ$	2 – 2		829
	20	752.568	13.2392 – 146.1177	$3d^2$ – 3d4p	${}^3P - {}^3D^\circ$	1 – 1		829
	0	778.433	18.3912 – 146.8551	$3d^2$ – 3d4p	${}^1G - {}^3D^\circ$	4 – 3		829
	30	884.146	42.4621 – 155.5655	$3d^2$ – 3d4p	${}^1S - {}^1P^\circ$	0 – 1		829
	20	1071.054	144.2731 – 237.6388	3d4p – 3d5s	${}^1D^\circ - {}^1D$	2 – 2		829
	5	1086.382	144.2731 – 236.3224	3d4p – 3d5s	${}^1D^\circ - {}^3D$	2 – 2		829
	2	1096.375	146.4293 – 237.6388	3d4p – 3d5s	${}^3D^\circ - {}^1D$	2 – 2		829
	2	1110.720	146.1177 – 236.1486	3d4p – 3d5s	${}^3D^\circ - {}^3D$	1 – 1		829
	5	1112.199	146.8551 – 236.7669	3d4p – 3d5s	${}^3D^\circ - {}^3D$	3 – 3		829
	5	1112.436	146.4293 – 236.3224	3d4p – 3d5s	${}^3D^\circ - {}^3D$	2 – 2		829
	20	1127.836	147.6565 – 236.3224	3d4p – 3d5s	${}^3F^\circ - {}^3D$	3 – 2		829
	20	1131.255	148.3692 – 236.7669	3d4p – 3d5s	${}^3F^\circ - {}^3D$	4 – 3		829
	20	1194.462	153.9187 – 237.6388	3d4p – 3d5s	${}^1F^\circ - {}^1D$	3 – 2		829
	60	1226.523	144.2731 – 225.8041	3d4p – 3d4d	${}^1D^\circ - {}^1D$	2 – 2		829
	3	1242.248	146.1177 – 226.6171	3d4p – 3d4d	${}^3D^\circ - {}^3P$	1 – 1		829
	10	1243.718	146.1177 – 226.5216	3d4p – 3d4d	${}^3D^\circ - {}^3P$	1 – 0		829
	2	1244.287	146.4293 – 226.7963	3d4p – 3d4d	${}^3D^\circ - {}^3P$	2 – 2		829
	30	1247.069	146.4293 – 226.6171	3d4p – 3d4d	${}^3D^\circ - {}^3P$	2 – 1		829
	20	1250.918	146.8551 – 226.7963	3d4p – 3d4d	${}^3D^\circ - {}^3P$	3 – 2		829
	2	1271.153	147.1352 – 225.8041	3d4p – 3d4d	${}^3F^\circ - {}^1D$	2 – 2		829
	30	1272.972	155.5655 – 234.1218	3d4p – 3d4d	${}^1P^\circ - {}^1S$	1 – 0		829
	10	1273.529	144.2731 – 222.7946	3d4p – 3d4d	${}^1D^\circ - {}^3F$	2 – 2		829
	30	1304.173	146.1177 – 222.7946	3d4p – 3d4d	${}^3D^\circ - {}^3F$	1 – 2		829
	40	1305.420	146.4293 – 223.0330	3d4p – 3d4d	${}^3D^\circ - {}^3F$	2 – 3		829
	50	1308.061	146.8551 – 223.3046	3d4p – 3d4d	${}^3D^\circ - {}^3F$	3 – 4		829
	10	1309.502	146.4293 – 222.7946	3d4p – 3d4d	${}^3D^\circ - {}^3F$	2 – 2		829
	20	1312.717	146.8551 – 223.0330	3d4p – 3d4d	${}^3D^\circ - {}^3F$	3 – 3		829
	5	1317.566	147.1352 – 223.0330	3d4p – 3d4d	${}^3F^\circ - {}^3F$	2 – 3		829
	10	1321.719	147.1352 – 222.7946	3d4p – 3d4d	${}^3F^\circ - {}^3F$	2 – 2		829
	10	1321.917	147.6565 – 223.3046	3d4p – 3d4d	${}^3F^\circ - {}^3F$	3 – 4		829
	5	1326.666	147.6565 – 223.0330	3d4p – 3d4d	${}^3F^\circ - {}^3F$	3 – 3		829
	5	1326.807	151.4270 – 226.7963	3d4p – 3d4d	${}^3P^\circ - {}^3P$	1 – 2		829
	10	1329.288	151.5673 – 226.7963	3d4p – 3d4d	${}^3P^\circ - {}^3P$	2 – 2		829
	10	1329.968	151.4270 – 226.6171	3d4p – 3d4d	${}^3P^\circ - {}^3P$	1 – 1		829

V IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	1330.355	151.4491 – 226.6171	3d4p – 3d4d	$^3P^o - {}^3P$	0 – 1		829
	0	1331.665	151.4270 – 226.5216	3d4p – 3d4d	$^3P^o - {}^3P$	1 – 0		829
	3	1332.459	151.5673 – 226.6171	3d4p – 3d4d	$^3P^o - {}^3P$	2 – 1		829
		1334.493	148.3692 – 223.3046	3d4p – 3d4d	$^3F^o - {}^3F$	4 – 4		829
	5	1339.335	148.3692 – 223.0330	3d4p – 3d4d	$^3F^o - {}^3F$	4 – 3		829
	0	1344.493	151.4270 – 225.8041	3d4p – 3d4d	$^3P^o - {}^1D$	1 – 2		829
	1	1347.030	151.5673 – 225.8041	3d4p – 3d4d	$^3P^o - {}^1D$	2 – 2		829
	80	1355.131	153.9187 – 227.7125	3d4p – 3d4d	$^1F^o - {}^1G$	3 – 4		829
	10	1356.529	144.2731 – 217.9907	3d4p – 3d4d	$^1D^o - {}^1P$	2 – 1		829
	20	1391.105	153.9187 – 225.8041	3d4p – 3d4d	$^1F^o - {}^1D$	3 – 2		829
	60	1395.001	144.2731 – 215.9577	3d4p – 3d4d	$^1D^o - {}^1F$	2 – 3		829
	5	1400.416	146.4293 – 217.8363	3d4p – 3d4d	$^3D^o - {}^3G$	2 – 3		829
	8	1403.618	146.8551 – 218.1000	3d4p – 3d4d	$^3D^o - {}^3G$	3 – 4		829
	8	1408.639	146.1177 – 217.1080	3d4p – 3d4d	$^3D^o - {}^3D$	1 – 2		829
	8	1410.018	146.4293 – 217.3500	3d4p – 3d4d	$^3D^o - {}^3D$	2 – 3		829
	20	1412.686	146.1177 – 216.9050	3d4p – 3d4d	$^3D^o - {}^3D$	1 – 1		829
	50	1414.409	147.1352 – 217.8363	3d4p – 3d4d	$^3F^o - {}^3G$	2 – 3		829
	20	1414.842	146.4293 – 217.1080	3d4p – 3d4d	$^3D^o - {}^3D$	2 – 2		829
	30	1418.533	146.8551 – 217.3500	3d4p – 3d4d	$^3D^o - {}^3D$	3 – 3		829
	10	1418.921	146.4293 – 216.9050	3d4p – 3d4d	$^3D^o - {}^3D$	2 – 1		829
	80	1419.580	147.6565 – 218.1000	3d4p – 3d4d	$^3F^o - {}^3G$	3 – 4		829
	10	1423.420	146.8551 – 217.1080	3d4p – 3d4d	$^3D^o - {}^3D$	3 – 2		829
	30	1423.719	155.5655 – 225.8041	3d4p – 3d4d	$^1P^o - {}^1D$	1 – 2		829
	0	1424.197	147.1352 – 217.3500	3d4p – 3d4d	$^3F^o - {}^3D$	2 – 3		829
	10	1424.916	147.6565 – 217.8363	3d4p – 3d4d	$^3F^o - {}^3G$	3 – 3		829
	100	1426.654	148.3692 – 218.4636	3d4p – 3d4d	$^3F^o - {}^3G$	4 – 5		829
	10	1429.114	147.1352 – 217.1080	3d4p – 3d4d	$^3F^o - {}^3D$	2 – 2		829
	1	1433.276	147.1352 – 216.9050	3d4p – 3d4d	$^3F^o - {}^3D$	2 – 1		829
	15	1434.092	148.3692 – 218.1000	3d4p – 3d4d	$^3F^o - {}^3G$	4 – 4		829
	15	1434.842	147.6565 – 217.3500	3d4p – 3d4d	$^3F^o - {}^3D$	3 – 3		829
	1	1439.834	147.6565 – 217.1080	3d4p – 3d4d	$^3F^o - {}^3D$	3 – 2		829
	0	1447.120	146.8551 – 215.9577	3d4p – 3d4d	$^3D^o - {}^1F$	3 – 3		829
	20	1449.681	148.3692 – 217.3500	3d4p – 3d4d	$^3F^o - {}^3D$	4 – 3		829
	30	1451.042	151.4270 – 220.3435	3d4p – 3d4d	$^3P^o - {}^3S$	1 – 1		829
	10	1451.496	151.4491 – 220.3435	3d4p – 3d4d	$^3P^o - {}^3S$	0 – 1		829
	40	1454.000	151.5673 – 220.3435	3d4p – 3d4d	$^3P^o - {}^3S$	2 – 1		829
	60	1520.142	151.5673 – 217.3500	3d4p – 3d4d	$^3P^o - {}^3D$	2 – 3		829
	40	1522.493	151.4270 – 217.1080	3d4p – 3d4d	$^3P^o - {}^3D$	1 – 2		829
	10	1525.756	151.5673 – 217.1080	3d4p – 3d4d	$^3P^o - {}^3D$	2 – 2		829
	15	1527.223	151.4270 – 216.9050	3d4p – 3d4d	$^3P^o - {}^3D$	1 – 1		829
	15	1527.721	151.4491 – 216.9050	3d4p – 3d4d	$^3P^o - {}^3D$	0 – 1		829
	80	1601.915	155.5655 – 217.9907	3d4p – 3d4d	$^1P^o - {}^1P$	1 – 1		829
	80	1611.879	153.9187 – 215.9577	3d4p – 3d4d	$^1F^o - {}^1F$	3 – 3		829
	80	1806.184	100.2007 – 155.5655	3d4s – 3d4p	$^1D - {}^1P^o$	2 – 1		829
	60	1809.854	96.1961 – 151.4491	3d4s – 3d4p	$^3D - {}^3P^o$	1 – 0		829
	30	1810.566	96.1961 – 151.4270	3d4s – 3d4p	$^3D - {}^3P^o$	1 – 1		829
	50	1813.050	96.4121 – 151.5673	3d4s – 3d4p	$^3D - {}^3P^o$	2 – 2		829
	100	1817.676	96.4121 – 151.4270	3d4s – 3d4p	$^3D - {}^3P^o$	2 – 1		829
	200	1825.836	96.7980 – 151.5673	3d4s – 3d4p	$^3D - {}^3P^o$	3 – 2		829
	300	1861.558	100.2007 – 153.9187	3d4s – 3d4p	$^1D - {}^1F^o$	2 – 3		829
	500	1939.065	96.7980 – 148.3692	3d4s – 3d4p	$^3D - {}^3F^o$	3 – 4		829
	5	1946.772	100.2007 – 151.5673	3d4s – 3d4p	$^1D - {}^3P^o$	2 – 2		829
	400	1951.432	96.4121 – 147.6565	3d4s – 3d4p	$^3D - {}^3F^o$	2 – 3		829
	300	1963.103	96.1961 – 147.1352	3d4s – 3d4p	$^3D - {}^3F^o$	1 – 2		829

V IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	1966.244	96.7980 - 147.6565	3d4s - 3d4p	$^3D - {}^3F^\circ$	3 - 3		829
	40	1971.471	96.4121 - 147.1352	3d4s - 3d4p	$^3D - {}^3F^\circ$	2 - 2		829
	15	1982.422	96.4121 - 146.8551	3d4s - 3d4p	$^3D - {}^3D^\circ$	2 - 3		829
	40	1990.712	96.1961 - 146.4293	3d4s - 3d4p	$^3D - {}^3D^\circ$	1 - 2		829
	500	1997.722	96.7980 - 146.8551	3d4s - 3d4p	$^3D - {}^3D^\circ$	3 - 3		829
	200	1999.320	96.4121 - 146.4293	3d4s - 3d4p	$^3D - {}^3D^\circ$	2 - 2		829

VANADIUM V (V^{4+}), Z = 23
Ground State $1s^22s^22p^63s^23p^63d(^2D_{3/2})$ (19 electrons)
Ionization Potential 526 532 cm^{-1}; 65.2822 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	199.799	0.0 - 500.502	$3p^63d - 3p^53d(^3D^\circ)4s$	$g^2D - {}^2D^\circ$	$\frac{3}{2} - \frac{3}{2}$		929
	50	199.955	0.0 - 500.117	$3p^63d - 3p^53d(^3D^\circ)4s$	$g^2D - {}^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$		929
	50	200.050	0.62487 - 500.502	$3p^63d - 3p^53d(^3D^\circ)4s$	$g^2D - {}^2D^\circ$	$\frac{5}{2} - \frac{3}{2}$		929
	10	200.202	0.62487 - 500.117	$3p^63d - 3p^53d(^3D^\circ)4s$	$g^2D - {}^2D^\circ$	$\frac{5}{2} - \frac{5}{2}$		929
	40	201.235	0.62487 - 497.556	$3p^63d - 3p^53d(^1F^\circ)4s$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		929
	10	201.493	0.0 - 496.2968	$3p^63d - 3p^53d(^1F^\circ)4s$	$g^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		929
	20	201.746	0.62487 - 496.2968	$3p^63d - 3p^53d(^1F^\circ)4s$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{5}{2}$		929
	20	203.194	0.0 - 492.1443	$3p^63d - 3p^69f$	$g^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		929
	50	203.428	0.62487 - 492.2026	$3p^63d - 3p^69f$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		929
	40	207.031	0.0 - 483.019	$3p^63d - 3p^68f$	$g^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		929
	60	207.291	0.62487 - 483.039	$3p^63d - 3p^68f$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		929
	100	208.958	0.0 - 478.566	$3p^63d - 3p^53d(^3F^\circ)4s$	$g^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		929
	10	209.230	0.62487 - 478.566	$3p^63d - 3p^53d(^3F^\circ)4s$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{5}{2}$		929
	120	210.568	0.62487 - 475.531	$3p^63d - 3p^53d(^3F^\circ)4s$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		929
	70	212.901	0.0 - 469.7064	$3p^63d - 3p^67f$	$g^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		929
	90	213.178	0.62487 - 469.721	$3p^63d - 3p^67f$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		929
	100	222.533	0.0 - 449.37081	$3p^63d - 3p^66f$	$g^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		929
	130	222.818	0.62487 - 449.42247	$3p^63d - 3p^66f$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		929
	30	222.842	0.62487 - 449.37081	$3p^63d - 3p^66f$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{5}{2}$		929
	180	224.913	0.0 - 444.6208	$3p^63d - 3p^5(^2P^\circ)(3d^2(^3F))$	$g^2D - {}^2D^\circ$	$\frac{3}{2} - \frac{3}{2}$		929
	130	225.146	0.0 - 444.1537	$3p^63d - 3p^5(^2P^\circ)(3d^2(^3F))$	$g^2D - {}^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$		929
	130	225.225	0.62487 - 444.6208	$3p^63d - 3p^5(^2P^\circ)(3d^2(^3F))$	$g^2D - {}^2D^\circ$	$\frac{5}{2} - \frac{3}{2}$		929
	200	225.465	0.62487 - 444.1537	$3p^63d - 3p^5(^2P^\circ)(3d^2(^3F))$	$g^2D - {}^2D^\circ$	$\frac{5}{2} - \frac{5}{2}$		929
	100	227.561	0.0 - 439.4427	$3p^63d - 3p^5(^2P^\circ)(3d^2(^3P))$	$g^2D - {}^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		929
	170	227.885	0.62487 - 439.4427	$3p^63d - 3p^5(^2P^\circ)(3d^2(^3P))$	$g^2D - {}^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		929
	140	228.301	0.0 - 438.0183	$3p^63d - 3p^5(^2P^\circ)(3d^2(^3P))$	$g^2D - {}^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		929
	160	239.407	0.0 - 417.69910	$3p^63d - 3p^65f$	$g^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		929
	190	239.485	0.62487 - 418.18747	$3p^63d - 3p^65f$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		929
	70	239.765	0.62487 - 417.69910	$3p^63d - 3p^65f$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{5}{2}$		929
	10	240.572	0.0 - 415.67569	$3p^63d - 3p^66p$	$g^2D - {}^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		929
	40	240.719	0.0 - 415.42010	$3p^63d - 3p^66p$	$g^2D - {}^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		929
	70	240.933	0.62487 - 415.67569	$3p^63d - 3p^66p$	$g^2D - {}^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		929
	200	251.655	0.62487 - 397.99366	$3p^63d - 3p^5(^2P^\circ)(3d^2(^1D))$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		929
	180	252.440	0.0 - 396.13524	$3p^63d - 3p^5(^2P^\circ)(3d^2(^1D))$	$g^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		929
	80	252.838	0.62487 - 396.13524	$3p^63d - 3p^5(^2P^\circ)(3d^2(^1D))$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{5}{2}$		929
	20	284.075	0.0 - 352.01834	$3p^63d - 3p^65p$	$g^2D - {}^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		929

V V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	80	284.494	0.0 – 351.50051	$3p^63d - 3p^65p$	$g^2D - {}^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		929
	110	284.581	0.62487 – 352.01834	$3p^63d - 3p^65p$	$g^2D - {}^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		929
	180	285.979	0.0 – 349.67557	$3p^63d - 3p^64f$	$g^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		929
	50	286.490	0.62487 – 349.67557	$3p^63d - 3p^64f$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{5}{2}$		929
	200	286.839	0.62487 – 349.25240	$3p^63d - 3p^64f$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		929
	50	296.724	0.0 – 337.01259	$3p^63d - 3p^5({}^2P^\circ)(3d^2({}^1D))$	$g^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		929
	20	297.276	0.62487 – 337.01259	$3p^63d - 3p^5({}^2P^\circ)(3d^2({}^1D))$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{5}{2}$		929
	100	301.604	0.62487 – 332.1981	$3p^63d - 3p^5({}^2P^\circ)(3d^2({}^1D))$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		929
	170	312.394	0.62487 – 320.73160	$3p^63d - 3p^5({}^2P^\circ)(3d^2({}^1G))$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		929
	140	313.376	0.0 – 319.10619	$3p^63d - 3p^5({}^2P^\circ)(3d^2({}^1G))$	$g^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		929
	100	313.993	0.62487 – 319.10619	$3p^63d - 3p^5({}^2P^\circ)(3d^2({}^1G))$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{5}{2}$		929
	10	424.782	207.66000 – 443.07472	$3p^64p - 3p^67s$	${}^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		929
	80	481.556	0.0 – 207.66000	$3p^63d - 3p^64p$	$g^2D - {}^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		929
	350	483.009	0.62487 – 207.66000	$3p^63d - 3p^64p$	$g^2D - {}^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		929
	250	484.510	0.0 – 206.39372	$3p^63d - 3p^64p$	$g^2D - {}^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		929
	40	490.496	148.14335 – 352.01834	$3p^64s - 3p^65p$	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		929
	20	491.746	148.14335 – 351.50051	$3p^64s - 3p^65p$	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		929
	10	506.429	206.39372 – 403.85512	$3p^64p - 3p^66s$	${}^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		929
	20	509.697	207.66000 – 403.85512	$3p^64p - 3p^66s$	${}^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		929
	10	643.603	294.04724 – 449.42247	$3p^64d - 3p^66f$	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		929
	200	820.859	206.39372 – 328.21730	$3p^64p - 3p^65s$	${}^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		929
	10	821.202	293.90286 – 415.67569	$3p^64d - 3p^66p$	${}^2D - {}^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		929
	60	822.176	294.04724 – 415.67569	$3p^64d - 3p^66p$	${}^2D - {}^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		929
	10	822.668	328.21730 – 449.77279	$3p^65s - 3p^67p$	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		929
	30	822.927	293.90286 – 415.42010	$3p^64d - 3p^66p$	${}^2D - {}^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		929
	20	825.891	349.25240 – 470.33375	$3p^64f - 3p^67g$	${}^2F^\circ - {}^2G$	$\frac{7}{2} - \frac{9}{2}$		929
	10	828.791	349.67557 – 470.33335	$3p^64f - 3p^67g$	${}^2F^\circ - {}^2G$	$\frac{5}{2} - \frac{7}{2}$		929
	300	829.483	207.66000 – 328.21730	$3p^64p - 3p^65s$	${}^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		929
	20	897.124	349.25240 – 460.7197	$3p^64f - 3p^67d$	${}^2F^\circ - {}^2D$	$\frac{7}{2} - \frac{5}{2}$		929
	150	962.031	294.04724 – 397.99366	$3p^64d - 3p^5({}^2P^\circ)(3d^2({}^1D))$	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		929
	100	978.166	293.90286 – 396.13524	$3p^64d - 3p^5({}^2P^\circ)(3d^2({}^1D))$	${}^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		929
	10	979.547	294.04724 – 396.13524	$3p^64d - 3p^5({}^2P^\circ)(3d^2({}^1D))$	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{5}{2}$		929
	100	992.330	349.25240 – 450.02597	$3p^64f - 3p^66g$	${}^2F^\circ - {}^2G$	$\frac{7}{2} - \frac{9}{2}$		929
	50	996.521	349.67557 – 450.02454	$3p^64f - 3p^66g$	${}^2F^\circ - {}^2G$	$\frac{5}{2} - \frac{7}{2}$		929
	20	1045.711	320.73160 – 416.36178	$3p^5({}^2P^\circ)(3d^2({}^1G)) - 3p^65g$	${}^2F^\circ - {}^2G$	$\frac{7}{2} - \frac{9}{2}$		929
	10	1092.00	351.50051 – 443.07472	$3p^65p - 3p^67s$	${}^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		929
	20	1098.222	352.01834 – 443.07472	$3p^65p - 3p^67s$	${}^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		929
	150	1142.737	206.39372 – 293.90286	$3p^64p - 3p^64d$	${}^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		929
	10	1143.395	328.21730 – 415.67569	$3p^65s - 3p^66p$	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		929
	250	1157.575	207.66000 – 294.04724	$3p^64p - 3p^64d$	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		929
	60	1159.516	207.66000 – 293.90286	$3p^64p - 3p^64d$	${}^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		929
	40	1188.161	332.1981 – 416.36178	$3p^5({}^2P^\circ)(3d^2({}^1D)) - 3p^65g$	${}^2F^\circ - {}^2G$	$\frac{7}{2} - \frac{9}{2}$		223
	10	1260.278	337.01259 – 416.36029	$3p^5({}^2P^\circ)(3d^2({}^1D)) - 3p^65g$	${}^2F^\circ - {}^2G$	$\frac{5}{2} - \frac{7}{2}$		929
	200	1490.107	349.25240 – 416.36178	$3p^64f - 3p^65g$	${}^2F^\circ - {}^2G$	$\frac{7}{2} - \frac{9}{2}$		929
	100	1499.596	349.67557 – 416.36029	$3p^64f - 3p^65g$	${}^2F^\circ - {}^2G$	$\frac{5}{2} - \frac{7}{2}$		929
	1000	1680.204	148.14335 – 207.66000	$3p^64s - 3p^64p$	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		929
	500	1716.725	148.14335 – 206.39372	$3p^64s - 3p^64p$	${}^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		929
	40	1720.712	293.90286 – 352.01834	$3p^64d - 3p^65p$	${}^2D - {}^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		929
	150	1724.994	294.04724 – 352.01834	$3p^64d - 3p^65p$	${}^2D - {}^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		929
	100	1736.182	293.90286 – 351.50051	$3p^64d - 3p^65p$	${}^2D - {}^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		929
	250	1792.992	293.90286 – 349.67557	$3p^64d - 3p^64f$	${}^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		929
	60	1797.646	294.04724 – 349.67557	$3p^64d - 3p^64f$	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{5}{2}$		929
	300	1811.425	294.04724 – 349.25240	$3p^64d - 3p^64f$	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		929
	40	1910.062	351.50051 – 403.85512	$3p^65p - 3p^66s$	${}^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		929

V V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	1917.686	418.18747 – 470.33375	$3p^65f - 3p^67g$	$^2F^\circ - ^2G$	$\frac{7}{2}-\frac{9}{2}$		929
	10	1921.915	397.99366 – 450.02597	$3p^5(^2P^\circ)(3d^2(^1D)) - 3p^66g$	$^2F^\circ - ^2G$	$\frac{7}{2}-\frac{9}{2}$		929
	90	1929.138	352.01834 – 403.85512	$3p^65p - 3p^66s$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		929
	10	1962.154	337.01259 – 387.97707	$3p^5(^2P^\circ)(3d^2(^1D)) - 3p^65d$	$^2F^\circ - ^2D$	$\frac{5}{2}-\frac{3}{2}$		929

VANADIUM VI (V^{5+}), Z = 23
Ground State $1s^22s^22p^63s^23p^6(^1S_0)$ (18 electrons)
Ionization Potential 1 033 400 cm^{-1}; 128.13 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	85.071	0.0 – 1175.49	$3s^23p^6 - 3s3p^68p$	$g^1S - ^1P^\circ$	0 – 1	A	440
	3	87.106	0.0 – 1148.03	$3s^23p^6 - 3s3p^67p$	$g^1S - ^1P^\circ$	0 – 1	A	440
	6	90.700	0.0 – 1102.54	$3s^23p^6 - 3s3p^66p$	$g^1S - ^1P^\circ$	0 – 1	A	440
	4	97.932	0.0 – 1021.12	$3s^23p^6 - 3s3p^65p$	$g^1S - ^1P^\circ$	0 – 1	A	440
	4	98.319	0.0 – 1017.10	$3s^23p^6 - 3s3p^65p$	$g^1S - ^3P^\circ$	0 – 1	A	440
	20	117.770	0.0 – 849.17	$3s^23p^6 - 3s3p^64p$	$g^1S - ^1P^\circ$	0 – 1		906
	20	118.779	0.0 – 841.98	$3s^23p^6 - 3s3p^64p$	$g^1S - ^3P^\circ$	0 – 1		906
	6	119.3	0.0 – 838.22	$3s^23p^6 - 3s^23p^5(^2P^\circ_{3/2})5d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		271
	40	128.379	0.0 – 778.9440	$3s^23p^6 - 3s^23p^5(^2P^\circ_{1/2})5s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		906
	70	129.580	0.0 – 771.7231	$3s^23p^6 - 3s^23p^5(^2P^\circ_{3/2})5s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		906
	285	138.235	0.0 – 723.4216	$3s^23p^6 - 3s^23p^5(^2P^\circ_{1/2})4d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		906
	360	139.518	0.0 – 716.7604	$3s^23p^6 - 3s^23p^5(^2P^\circ_{3/2})4d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		906
	1	141.238	0.0 – 708.0446	$3s^23p^6 - 3s^23p^5(^2P^\circ_{3/2})4d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		906
	750	179.330	0.0 – 557.6361	$3s^23p^6 - 3s^23p^5(^2P^\circ_{1/2})4s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		906
	450	182.050	0.0 – 549.2988	$3s^23p^6 - 3s^23p^5(^2P^\circ_{3/2})4s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		906
	160	213.044	308.1498 – 777.5494	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	0 – 1		906
	220	213.313	309.3948 – 778.1941	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		906
	40	213.604	309.3948 – 777.5494	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		906
	285	213.871	311.9779 – 779.5509	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		906
	20	214.495	311.9779 – 778.1941	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		906
	1	217.597	322.7736 – 782.3454	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 4		906
	450	218.091	322.7736 – 781.2959	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 5		906
	360	218.636	324.9580 – 782.3454	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		906
	220	218.994	327.2149 – 783.8521	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		906
	5	222.370						906
	110	222.931						906
	285	223.062						906
	285	223.136						906
	360	223.300						906
	5	223.549						906
	20	223.759						906
	110	223.984						906
	1	224.052	345.5165 – 791.8396	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		906
	40	224.191						906
	1000	224.500	0.0 – 445.4356	$3s^23p^6 - 3s^23p^5(^2P^\circ)3d$	$g^1S - ^1P^\circ$	0 – 1		906
	160	224.583						906
	1	224.691						906
	110	224.851						906
	70	225.279						906
	220	225.895						906
	20	226.169						906
	160	226.656	350.6445 – 791.8396	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^1F^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		906

V VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	160	227.041						906
	70	227.077						906
	70	227.142	345.5165 – 785.7054	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		906
	110	227.172	345.5165 – 785.7054	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		906
	70	227.240						906
	110	227.331						906
	40	227.428						906
	20	228.266						906
	160	228.783						906
	5	229.606	348.3253 – 783.8521	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		906
	5	229.856	350.6445 – 785.7054	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		906
	5	230.398	345.5165 – 779.5509	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		906
	40	230.799	350.6445 – 783.8521	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 3		906
	70	230.841	350.6445 – 783.8521	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 3		906
	5	231.646	350.6445 – 782.3454	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		906
	360	231.818						906
	1	231.893	348.3253 – 779.5509	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		906
	360	232.571						906
	5	233.010						906
	360	233.440						906
	20	235.330						906
	28	238.776						906
	5	239.998						906
	160	242.455						906
	70	246.042						906
	20	248.225						906
	360	251.920						906
	285	253.000						906
	5	253.735						906
	285	253.809						906
	285	253.925						906
	70	258.643						906
	550	287.440	0.0 – 347.8999	$3s^23p^6 - 3s^23p^5(^2P^\circ)3d$	$g\,^1S - ^3D^\circ$	0 – 1		906
	1	317.006	308.1498 – 623.5945	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3P$	0 – 1		906
	20	318.265	309.3948 – 623.5945	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3P$	1 – 1		906
	5	319.149	309.3948 – 622.7245	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^1D$	1 – 2		906
	40	320.134	309.3948 – 621.7571	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3P$	1 – 0		906
	70	320.915	311.9779 – 623.5945	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3P$	2 – 1		906
	1	321.425	309.3948 – 620.5092	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^1P$	1 – 1		906
	40	321.810	311.9779 – 622.7245	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^1D$	2 – 2		906
	360	323.209	0.0 – 309.3948	$3s^23p^6 - 3s^23p^5(^2P^\circ)3d$	$g\,^1S - ^3P^\circ$	0 – 1		906
	1	324.105	311.9779 – 620.5092	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^1P$	2 – 1		906
	40	324.575	309.3948 – 617.4900	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3P$	1 – 2		906
	1	325.697	308.1498 – 615.1778	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3D$	0 – 1		906
	110	327.322	311.9779 – 617.4900	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3P$	2 – 2		906
	5	329.810	311.9779 – 615.1778	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3D$	2 – 1		906
	1	330.027	309.3948 – 612.3928	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3D$	1 – 2		906
	1	332.878	311.9779 – 612.3928	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3D$	2 – 2		906
	1	332.984	311.9779 – 612.2897	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3D$	2 – 3		906
	20	335.831	324.9580 – 622.7245	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - ^1D$	3 – 2		906
	5	338.392	327.2149 – 622.7245	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - ^1D$	2 – 2		906
	160	339.187	308.1498 – 602.9743	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3S$	0 – 1		906
	220	340.622	309.3948 – 602.9743	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3P^\circ - ^3S$	1 – 1		906
	70	340.953	327.2149 – 620.5092	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^3F^\circ - ^1P$	2 – 1		906

V VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	360	343.646	311.9779 – 602.9743	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^3P^o - ^3S$	2 – 1		906
	550	345.405	322.7736 – 612.2897	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^3F^o - ^3D$	4 – 3		906
	285	347.265	327.2149 – 615.1778	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^3F^o - ^3D$	2 – 1		906
	450	347.911	324.9580 – 612.3928	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^3F^o - ^3D$	3 – 2		906
	70	348.024	324.9580 – 612.2897	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^3F^o - ^3D$	3 – 3		906
	40	350.659	327.2149 – 612.3928	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^3F^o - ^3D$	2 – 2		906
	5	350.781	327.2149 – 612.2897	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^3F^o - ^3D$	2 – 3		906
	5	360.250	345.1394 – 622.7245	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^1D^o - ^1D$	2 – 2		906
	5	360.741	345.5165 – 622.7245	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^3D^o - ^1D$	3 – 2		906
	20	362.717	347.8999 – 623.5945	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^3D^o - ^3P$	1 – 1		906
	285	363.153	345.1394 – 620.5092	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^1D^o - ^1P$	2 – 1		906
	285	363.285	348.3253 – 623.5945	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^3D^o - ^3P$	2 – 1		906
	70	365.154	347.8999 – 621.7571	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^3D^o - ^3P$	1 – 0		906
	1	367.173	345.1394 – 617.4900	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^1D^o - ^3P$	2 – 2		906
	1	367.404	348.3253 – 620.5092	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^3D^o - ^1P$	2 – 1		906
	360	367.543	350.6445 – 622.7245	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^1F^o - ^1D$	3 – 2		906
	360	367.683	345.5165 – 617.4900	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^3D^o - ^3P$	3 – 2		906
	20	370.314	345.1394 – 615.1778	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^1D^o - ^3D$	2 – 1		906
	1	370.936	347.8999 – 617.4900	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^3D^o - ^3P$	1 – 2		906
	40	371.523	348.3253 – 617.4900	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^3D^o - ^3P$	2 – 2		906
	1	374.705	345.5165 – 612.3928	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^3D^o - ^3D$	3 – 2		906
	5	374.747	348.3253 – 615.1778	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^3D^o - ^3D$	2 – 1		906
	110	374.851	345.5165 – 612.2897	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^3D^o - ^3D$	3 – 3		906
	20	378.081	347.8999 – 612.3928	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^3D^o - ^3D$	1 – 2		906
	40	378.687	348.3253 – 612.3928	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^3D^o - ^3D$	2 – 2		906
	1	378.834	348.3253 – 612.2897	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^3D^o - ^3D$	2 – 3		906
	70	382.049	350.6445 – 612.3928	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^1F^o - ^3D$	3 – 2		906
	5	382.185	350.6445 – 612.2897	$3s^23p^5(^2P^o)3d - 3s^23p^5(^2P^o)4p$	$^1F^o - ^3D$	3 – 3		906
	1	392.990	311.9779 – 566.4330	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^3P^o - ^1D$	2 – 2		906
	160	414.273	308.1498 – 549.5380	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^3P^o - ^3D$	0 – 1		906
	220	415.861	309.3948 – 549.8636	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^3P^o - ^3D$	1 – 2		906
	70	416.418	309.3948 – 549.5380	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^3P^o - ^3D$	1 – 1		906
	1	418.041	327.2149 – 566.4330	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^3F^o - ^1D$	2 – 2		906
	285	419.458	311.9779 – 550.3846	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^3P^o - ^3D$	2 – 3		906
	110	420.370	311.9779 – 549.8636	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^3P^o - ^3D$	2 – 2		906
	1	420.940	311.9779 – 549.5380	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^3P^o - ^3D$	2 – 1		906
	450	439.344	322.7736 – 550.3846	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^3F^o - ^3D$	4 – 3		906
	1	443.601	324.9580 – 550.3846	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^3F^o - ^3D$	3 – 3		906
	360	444.634	324.9580 – 549.8636	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^3F^o - ^3D$	3 – 2		906
	1	449.129	327.2149 – 549.8636	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^3F^o - ^3D$	2 – 2		906
	285	449.795	327.2149 – 549.5380	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^3F^o - ^3D$	2 – 1		906
	220	451.890	345.1394 – 566.4330	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^1D^o - ^1D$	2 – 2		906
	40	452.660	345.5165 – 566.4330	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^3D^o - ^1D$	3 – 2		906
	40	458.487	348.3253 – 566.4330	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^3D^o - ^1D$	2 – 2		906
	160	463.418	350.6445 – 566.4330	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^1F^o - ^1D$	3 – 2		906
	1	487.217	345.1394 – 550.3846	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^1D^o - ^3D$	2 – 3		906
	160	488.120	345.5165 – 550.3846	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^3D^o - ^3D$	3 – 3		906
	5	488.462	345.1394 – 549.8636	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^1D^o - ^3D$	2 – 2		906
	1	489.360	345.5165 – 549.8636	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^3D^o - ^3D$	3 – 2		906
	20	494.909	348.3253 – 550.3846	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^3D^o - ^3D$	2 – 3		906
	20	495.138	347.8999 – 549.8636	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^3D^o - ^3D$	1 – 2		906
	40	495.940	347.8999 – 549.5380	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^3D^o - ^3D$	1 – 1		906
	70	496.180	348.3253 – 549.8636	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^3D^o - ^3D$	2 – 2		906
	5	496.985	348.3253 – 549.5380	$3s^23p^5(^2P^o)3d - 3s3p^63d$	$^3D^o - ^3D$	2 – 1		906

V VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	40	500.644	350.6445 – 550.3846	$3s^23p^5(^2P^\circ)3d - 3s3p^63d$	$^1F^\circ - ^3D$	3 – 3		906
	285	509.260	445.4356 – 641.8003	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1P^\circ - ^1S$	1 – 0		906
	1	561.297	445.4356 – 623.5945	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1P^\circ - ^3P$	1 – 1		906
	1	571.190	445.4356 – 620.5092	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1P^\circ - ^1P$	1 – 1		906
	1	581.214	445.4356 – 617.4900	$3s^23p^5(^2P^\circ)3d - 3s^23p^5(^2P^\circ)4p$	$^1P^\circ - ^3P$	1 – 2		906
	5	596.947	602.9743 – 770.4945	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3S - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		906
	20	627.627	612.3928 – 771.7231	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		906
	1	631.164	620.5092 – 778.9440	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^1P - \frac{1}{2}[\frac{1}{2}]^\circ$	1 – 1		906
	40	632.084	612.2897 – 770.4945	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	3 – 2		906
	1	632.509	612.3928 – 770.4945	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})5s$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		906
	5	640.135	622.7245 – 778.9440	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})5s$	$^1D - \frac{1}{2}[\frac{1}{2}]^\circ$	2 – 1		906
	1	826.458	445.4356 – 566.4330	$3s^23p^5(^2P^\circ)3d - 3s3p^63d$	$^1P^\circ - ^1D$	1 – 2		906
	40	936.557	602.9743 – 709.7474	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3S - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		906
	20	951.753	602.9743 – 708.0446	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3S - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 1		906
	1	958.156	612.3928 – 716.7604	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 1		906
	1	958.716	602.9743 – 707.2803	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3S - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 0		906
	1	964.341	617.4900 – 721.1876	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})4d$	$^3P - \frac{1}{2}[\frac{3}{2}]^\circ$	2 – 2		906
	1	971.700	620.5092 – 723.4216	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})4d$	$^1P - \frac{1}{2}[\frac{3}{2}]^\circ$	1 – 1		906
	5	976.767	612.2897 – 714.6679	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{5}{2}]^\circ$	3 – 3		906
	1	983.632	621.7571 – 723.4216	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})4d$	$^3P - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		906
	1	984.419	615.1778 – 716.7604	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		906
	5	986.681	612.3928 – 713.7423	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 2		906
	1	1001.714	623.5945 – 723.4216	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})4d$	$^3P - \frac{1}{2}[\frac{3}{2}]^\circ$	1 – 1		906
	70	1004.361	620.5092 – 720.0749	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})4d$	$^1P - \frac{1}{2}[\frac{5}{2}]^\circ$	1 – 2		906
	1	1008.709	612.2897 – 711.4262	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{7}{2}]^\circ$	3 – 3		906
	110	1009.758	612.3928 – 711.4262	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{7}{2}]^\circ$	2 – 3		906
	70	1014.565	615.1778 – 713.7423	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{5}{2}]^\circ$	1 – 2		906
	220	1016.204	612.2897 – 710.6952	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{7}{2}]^\circ$	3 – 4		906
	110	1019.249	622.7245 – 720.8360	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})4d$	$^1D - \frac{1}{2}[\frac{5}{2}]^\circ$	2 – 3		906
	70	1024.663	623.5945 – 721.1876	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})4d$	$^3P - \frac{1}{2}[\frac{3}{2}]^\circ$	1 – 2		906
	1	1027.219	622.7245 – 720.0749	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})4d$	$^1D - \frac{1}{2}[\frac{3}{2}]^\circ$	2 – 2		906
	110	1029.044	617.4900 – 714.6679	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3P - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 3		906
	1	1038.953	620.5092 – 716.7604	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^1P - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		906
	1	1052.591	621.7571 – 716.7604	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		906
	1	1057.438	615.1778 – 709.7474	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		906
	20	1083.917	617.4900 – 709.7474	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		906
	5	1085.742	615.1778 – 707.2803	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 0		906
	5	1104.300	617.4900 – 708.0446	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3P - \frac{3}{2}[\frac{1}{2}]^\circ$	2 – 1		906
	1	1184.130	623.5945 – 708.0446	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3P - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 1		906
	360	1188.159	557.6361 – 641.8003	$3s^23p^5(^2P^\circ_{1/2})4s - 3s^23p^5(^2P^\circ)4p$	$\frac{1}{2}[\frac{1}{2}]^\circ - ^1S$	1 – 0		906
	1	1194.950	623.5945 – 707.2803	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3P - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 0		906
	40	1225.178	641.8003 – 723.4216	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{1/2})4d$	$^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		906
	70	1293.483	546.2840 – 623.5945	$3s^23p^5(^2P^\circ_{3/2})4s - 3s^23p^5(^2P^\circ)4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - ^3P$	2 – 1		906
	5	1334.039	641.8003 – 716.7604	$3s^23p^5(^2P^\circ)4p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		906
	40	1361.923	549.2988 – 622.7245	$3s^23p^5(^2P^\circ_{3/2})4s - 3s^23p^5(^2P^\circ)4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - ^1D$	1 – 2		906
	110	1380.105	549.2988 – 621.7571	$3s^23p^5(^2P^\circ_{3/2})4s - 3s^23p^5(^2P^\circ)4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - ^3P$	1 – 0		906
	450	1404.376	546.2840 – 617.4900	$3s^23p^5(^2P^\circ_{3/2})4s - 3s^23p^5(^2P^\circ)4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - ^3P$	2 – 2		906
	40	1408.381	720.8360 – 791.8396	$3s^23p^5(^2P^\circ_{1/2})4d - 3s^23p^5(^2P^\circ_{1/2})4f$	$\frac{1}{2}[\frac{5}{2}]^\circ - \frac{1}{2}[\frac{7}{2}]^\circ$	3 – 4		906
	40	1410.054	711.4262 – 782.3454	$3s^23p^5(^2P^\circ_{3/2})4d - 3s^23p^5(^2P^\circ_{3/2})4f$	$\frac{3}{2}[\frac{7}{2}]^\circ - \frac{3}{2}[\frac{9}{2}]^\circ$	3 – 4		906
	110	1416.416	710.6952 – 781.2959	$3s^23p^5(^2P^\circ_{3/2})4d - 3s^23p^5(^2P^\circ_{3/2})4f$	$\frac{3}{2}[\frac{7}{2}]^\circ - \frac{3}{2}[\frac{9}{2}]^\circ$	4 – 5		906
	40	1423.100	707.2803 – 777.5494	$3s^23p^5(^2P^\circ_{3/2})4d - 3s^23p^5(^2P^\circ_{3/2})4f$	$\frac{3}{2}[\frac{1}{2}]^\circ - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		906
	20	1425.525	708.0446 – 778.1941	$3s^23p^5(^2P^\circ_{3/2})4d - 3s^23p^5(^2P^\circ_{3/2})4f$	$\frac{3}{2}[\frac{1}{2}]^\circ - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		906
	20	1426.335	713.7423 – 783.8521	$3s^23p^5(^2P^\circ_{3/2})4d - 3s^23p^5(^2P^\circ_{3/2})4f$	$\frac{3}{2}[\frac{5}{2}]^\circ - \frac{3}{2}[\frac{7}{2}]^\circ$	2 – 3		906
	20	1432.593	709.7474 – 779.5509	$3s^23p^5(^2P^\circ_{3/2})4d - 3s^23p^5(^2P^\circ_{3/2})4f$	$\frac{3}{2}[\frac{3}{2}]^\circ - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 3		906

V VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	110	1433.189	553.8201 – 623.5945	$3s^23p^5(^2P^\circ_{1/2})4s - 3s^23p^5(^2P^\circ)4p$	$\frac{1}{2}[\frac{1}{2}]^\circ - {}^3P$	0 – 1		906
	160	1451.517	546.2840 – 615.1778	$3s^23p^5(^2P^\circ_{3/2})4s - 3s^23p^5(^2P^\circ)4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - {}^3D$	2 – 1		906
	5	1460.991	709.7474 – 778.1941	$3s^23p^5(^2P^\circ_{3/2})4d - 3s^23p^5(^2P^\circ_{3/2})4f$	$\frac{3}{2}[\frac{3}{2}]^\circ - \frac{3}{2}[\frac{3}{2}]^\circ$	2 – 2		906
	220	1466.460	549.2988 – 617.4900	$3s^23p^5(^2P^\circ_{3/2})4s - 3s^23p^5(^2P^\circ)4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - {}^3P$	1 – 2		906
	360	1512.655	546.2840 – 612.3928	$3s^23p^5(^2P^\circ_{3/2})4s - 3s^23p^5(^2P^\circ)4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - {}^3D$	2 – 2		906
	650	1515.020	546.2840 – 612.2897	$3s^23p^5(^2P^\circ_{3/2})4s - 3s^23p^5(^2P^\circ)4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - {}^3D$	2 – 3		906
	285	1516.104	557.6361 – 623.5945	$3s^23p^5(^2P^\circ_{1/2})4s - 3s^23p^5(^2P^\circ)4p$	$\frac{1}{2}[\frac{1}{2}]^\circ - {}^3P$	1 – 1		906
	360	1517.931	549.2988 – 615.1778	$3s^23p^5(^2P^\circ_{3/2})4s - 3s^23p^5(^2P^\circ)4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - {}^3D$	1 – 1		906
	450	1536.373	557.6361 – 622.7245	$3s^23p^5(^2P^\circ_{1/2})4s - 3s^23p^5(^2P^\circ)4p$	$\frac{1}{2}[\frac{1}{2}]^\circ - {}^1D$	1 – 2		906
	450	1584.942	549.2988 – 612.3928	$3s^23p^5(^2P^\circ_{3/2})4s - 3s^23p^5(^2P^\circ)4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - {}^3D$	1 – 2		906
	360	1590.506	557.6361 – 620.5092	$3s^23p^5(^2P^\circ_{1/2})4s - 3s^23p^5(^2P^\circ)4p$	$\frac{1}{2}[\frac{1}{2}]^\circ - {}^1P$	1 – 1		906
	160	1629.786	553.8201 – 615.1778	$3s^23p^5(^2P^\circ_{1/2})4s - 3s^23p^5(^2P^\circ)4p$	$\frac{1}{2}[\frac{1}{2}]^\circ - {}^3D$	0 – 1		906

VANADIUM VII (V^{6+}), Z = 23
Ground State $1s^22s^22p^63s^23p^5(^2P^\circ_{3/2})$ (17 electrons)
Ionization Potential [1 215 000] cm^{-1}; [150.6] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		108.3	0.0 – 923.36	$3s^23p^5 - 3s^23p^4(^1D)5s$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		271
	150	117.2	0.0 – 853.200	$3s^23p^5 - 3s^23p^4(^1S)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		271
	300	121.89	0.0 – 820.440	$3s^23p^5 - 3s^23p^4(^1D)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		854,271
		121.95	0.0 – 820.010	$3s^23p^5 - 3s^23p^4(^1D)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		854
	250	122.60	0.0 – 815.660	$3s^23p^5 - 3s^23p^4(^1D)4d$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		854,271
	200	123.03	7.6684 – 820.440	$3s^23p^5 - 3s^23p^4(^1D)4d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		854,271
		123.07	0.0 – 812.550	$3s^23p^5 - 3s^23p^4(^1P)4d$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		854
		124.24	7.6684 – 812.550	$3s^23p^5 - 3s^23p^4(^1P)4d$	$g^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		854
	400	126.00	0.0 – 793.650	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		854,271
	200	127.08	7.6684 – 794.570	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		854,271
	300	148.903	0.0 – 671.570	$3s^23p^5 - 3s^23p^4(^1S)4s$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		182
	200	150.625	7.6684 – 671.570	$3s^23p^5 - 3s^23p^4(^1S)4s$	$g^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$		182
	700	156.608	0.0 – 638.540	$3s^23p^5 - 3s^23p^4(^1D)4s$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		182
	600	158.467	7.6684 – 638.710	$3s^23p^5 - 3s^23p^4(^1D)4s$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		182
	300	159.855	0.0 – 625.570	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		182
	600	161.122	0.0 – 620.650	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		182
	400	161.836	7.6684 – 625.570	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$		182
	200	163.135	7.6684 – 620.650	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		182
	400	163.182	0.0 – 612.810	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{3}{2}$		182
	100	164.302	0.0 – 608.640	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$		182
	50	164.523	7.6684 – 615.490	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - {}^4P$	$\frac{1}{2} - \frac{1}{2}$		182
		177.20	108.+D – 672.334+D	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	${}^4D - {}^4F^\circ$	$\frac{7}{2} - \frac{9}{2}$		854
		182.27	119.371+S – 668.007+S	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	${}^4F - {}^2G^\circ$	$\frac{7}{2} - \frac{9}{2}$		854
		182.43	116.293+S – 664.448+S	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	${}^4F - {}^4G^\circ$	$\frac{5}{2} - \frac{7}{2}$		854
		183.00	118.+S – 664.448+S	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	${}^4F - {}^4G^\circ$	$\frac{9}{2} - \frac{11}{2}$		854
		183.12	130.+L – 676.09+L	$3s^23p^4(^1D)3d - 3s^23p^4(^1D)4f$	${}^2G - {}^2H^\circ$	$\frac{9}{2} - \frac{11}{2}$		854
		183.46	119.371+S – 664.448+S	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	${}^4F - {}^4G^\circ$	$\frac{7}{2} - \frac{9}{2}$		854
	200	221.95	0.0 – 450.550	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		260,256
	800	225.16	0.0 – 444.130	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		260,256
	500	225.79	7.6684 – 450.550	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		260,256

V VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	400	227.88	0.0 – 438.770	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		260,256
	600	229.38	0.0 – 435.970	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		260,256
	300	231.99	7.6684 – 438.770	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		260,256
		233.47	7.6684 – 435.970	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		260
	300	237.50	0.0 – 421.050	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		260,256
	200	241.91	7.6684 – 421.050	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		260,256
	650	456.284	0.0 – 219.162	$3s^23p^5 - 3s3p^6$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		726
	650	472.828	7.6684 – 219.162	$3s^23p^5 - 3s3p^6$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		726

VANADIUM VIII (V^{7+}), Z = 23
Ground State $1s^22s^22p^63s^23p^4(^3P_2)$ (16 electrons)
Ionization Potential [1 399 000] cm^{-1}; [173.4] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		110.38	0. – 905.99	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^3D^\circ$	2 – 2	P	851
		110.55	0. – 904.57	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^3D^\circ$	2 – 3	P	851
		111.11	6.0078 – 905.99	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^3D^\circ$	1 – 2	P	851
		111.44	6.0078 – 903.35	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - {}^3P^\circ$	1 – 2	P	851
		113.27	27.072 – 909.92	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	${}^1D - {}^1F^\circ$	2 – 3		854
		113.60	27.072 – 907.35	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	${}^1D - {}^1D^\circ$	2 – 2		854
		113.92	60.641 – 938.45	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	${}^1S - {}^1P^\circ$	0 – 1		854
		114.59	0. – 872.68	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - {}^3D^\circ$	2 – 3		854
		115.42	6.0078 – 872.41	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - {}^3D^\circ$	1 – 2		854
		115.58	7.5796 – 872.78	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - {}^3D^\circ$	0 – 1		854
	200	135.751	0. – 736.64	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3P^\circ$	2 – 2		181
	100	136.078	0. – 734.89	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	2 – 1		181
	120	136.867	6.0078 – 736.64	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 2		181
	50	137.194	6.0078 – 734.89	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 1		181
	100	137.316	6.0078 – 734.25	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	1 – 0		181
	120	137.491	7.5796 – 734.89	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$g^3P - {}^3P^\circ$	0 – 1		181
	50	139.188	0. – 718.43	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^1D^\circ$	2 – 2		181
	200	139.730	27.072 – 742.72	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	${}^1D - {}^1P^\circ$	2 – 1		181
	600	140.451	0. – 711.99	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	2 – 3		181
	200	140.665	0. – 710.91	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	2 – 2		181
	50	140.934	27.072 – 736.64	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	${}^1D - {}^3P^\circ$	2 – 2		181
	200	141.864	6.0078 – 710.91	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	1 – 2		181
	100	141.924	6.0078 – 710.60	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	1 – 1		181
	100	142.247	7.5796 – 710.60	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g^3P - {}^3D^\circ$	0 – 1		181
	600	144.653	27.072 – 718.43	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	${}^1D - {}^1D^\circ$	2 – 2		181
	400	145.507	0. – 687.26	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - {}^3S^\circ$	2 – 1		181
	180	146.613	60.641 – 742.72	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	${}^1S - {}^1P^\circ$	0 – 1		181
	200	146.789	6.0078 – 687.26	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - {}^3S^\circ$	1 – 1		181
	100	147.126	7.5796 – 687.26	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g^3P - {}^3S^\circ$	0 – 1		181
		154.42	818.919+S – 1466.495+S	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	${}^3F^\circ - {}^3G$	2 – 3		854
		154.55	819.456+S – 1466.495+S	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	${}^3F^\circ - {}^3G$	3 – 4		854
		154.68	820.+S – 1466.495+S	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	${}^3F^\circ - {}^3G$	4 – 5		854
		155.38	699.71+D – 1343.293+D	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4f$	${}^5D^\circ - {}^5F$	3 – 4		854
		155.45	700.+D – 1343.293+D	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4f$	${}^5D^\circ - {}^5F$	4 – 5		854
		157.53	820.+L – 1454.799+L	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	${}^3G^\circ - {}^3H$	5 – 6		854
		158.04	920.+R – 1552.751+R	$3s^23p^3(^2P^\circ)3d - 3s^23p^3(^2P^\circ)4f$	${}^3F^\circ - {}^3G$	4 – 5		854

V VIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		228.15	0. – 438.30	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g\,^3P - {}^3D^\circ$	2 – 2		295
	400	228.67	27.072 – 464.38	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - {}^1F^\circ$	2 – 3		295,256
		230.00	6.0078 – 440.80	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g\,^3P - {}^3D^\circ$	1 – 1		295
	500	230.12	0. – 434.56	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g\,^3P - {}^3D^\circ$	2 – 3		295,256
	200	230.82	7.5796 – 440.80	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g\,^3P - {}^3D^\circ$	0 – 1		295,256
		231.33	6.0078 – 438.30	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g\,^3P - {}^3D^\circ$	1 – 2		295
	300	236.01	27.072 – 450.78	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - {}^1D^\circ$	2 – 2		260,256
	300	240.22	0. – 416.33	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g\,^3P - {}^3P^\circ$	2 – 2		260,256
	100	243.69	6.0078 – 416.33	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g\,^3P - {}^3P^\circ$	1 – 2		260,256
	1	359.454	0. – 278.200	$3s^23p^4 - 3s3p^5$	$g\,^3P - {}^1P^\circ$	2 – 1		726
	450	398.204	27.072 – 278.200	$3s^23p^4 - 3s3p^5$	$^1D - {}^1P^\circ$	2 – 1		726
	285	449.629	0. – 222.4056	$3s^23p^4 - 3s3p^5$	$g\,^3P - {}^3P^\circ$	2 – 1		726
	220	456.134	6.0078 – 225.2416	$3s^23p^4 - 3s3p^5$	$g\,^3P - {}^3P^\circ$	1 – 0		726
	5	459.647	60.641 – 278.200	$3s^23p^4 - 3s3p^5$	$^1S - {}^1P^\circ$	0 – 1		726
	450	459.799	0. – 217.4863	$3s^23p^4 - 3s3p^5$	$g\,^3P - {}^3P^\circ$	2 – 2		726
	160	462.112	6.0078 – 222.4056	$3s^23p^4 - 3s3p^5$	$g\,^3P - {}^3P^\circ$	1 – 1		726
	220	465.493	7.5796 – 222.4056	$3s^23p^4 - 3s3p^5$	$g\,^3P - {}^3P^\circ$	0 – 1		726
	650	472.839	6.0078 – 217.4863	$3s^23p^4 - 3s3p^5$	$g\,^3P - {}^3P^\circ$	1 – 2		726
		1649.	0. – 60.639	$3s^23p^4 - 3s^23p^4$	$g\,^3P - {}^1S$	2 – 0	F,P	375,726
		1830.	6.0078 – 60.639	$3s^23p^4 - 3s^23p^4$	$g\,^3P - {}^1S$	1 – 0	F,P	375,726

VANADIUM IX (V^{8+}), Z = 23
Ground State $1s^22s^22p^63s^23p^3(^4S^\circ_{3/2})$ (15 electrons)
Ionization Potential [1 660 000] cm^{-1}; [205.8] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	600	125.420	0.0 – 797.32	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		358
	400	126.152	0.0 – 792.69	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		358
	250	126.732	0.0 – 789.07	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		358
	250	126.765	34.708+X – 823.57+X	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		358
	20	126.810	34.708+X – 823.29+X	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		358
	500	127.068	36.319+X – 823.29+X	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		358
		129.66	36.319+X – 807.57+X	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		854
		130.32	34.708+X – 802.22+X	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		854
		131.13	61.224+X – 823.57+X	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		854
		131.22	61.224+X – 823.29+X	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		854
		133.99	61.224+X – 807.57+X	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		854
		134.54	59.028+X – 802.22+X	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		854
		137.83	650.+D – 1375.531+D	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4f$	$^4F - {}^4G^\circ$	$\frac{9}{2}-\frac{11}{2}$		854
		139.98	800.+S – 1514.387+S	$3s^23p^2(^1D)3d - 3s^23p^2(^1D)4f$	$^2G - {}^2H^\circ$	$\frac{7}{2}-\frac{9}{2}$		854
		140.31	800.+S – 1512.707+S	$3s^23p^2(^1D)3d - 3s^23p^2(^1D)4f$	$^2G - {}^2H^\circ$	$\frac{9}{2}-\frac{11}{2}$		854
	400	235.72	36.319+X – 460.55+X	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - {}^2F$	$\frac{5}{2}-\frac{7}{2}$		295,256
		237.66	59.028+X – 479.80+X	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		239
		240.30	61.224+X – 477.37+X	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		242
		243.58	0.0 – 410.54	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		267
	100	244.46	0.0 – 409.06	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		267,256
		244.89	0.0 – 408.35	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		267
		247.70	34.708+X – 438.42+X	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		242
		248.91	36.319+X – 438.07+X	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		242
		251.82	59.028+X – 456.15+X	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		242

V IX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		253.21	61.224+X – 456.15+X	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^o - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		242
		254.17	59.028+X – 452.47+X	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^o - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		242
		270.38	34.708+X – 404.56+X	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^o - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		242
		276.08	36.319+X – 398.53+X	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^o - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		242
	160	364.296	34.708+X – 309.210+X	$3s^23p^3 - 3s3p^4$	$^2D^o - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		726
	20	369.064	34.708+X – 305.664+X	$3s^23p^3 - 3s3p^4$	$^2D^o - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		726
	285	371.271	36.319+X – 305.664+X	$3s^23p^3 - 3s3p^4$	$^2D^o - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		726
	1	384.382	59.028+X – 319.184+X	$3s^23p^3 - 3s3p^4$	$^2P^o - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		726
	160	387.657	61.224+X – 319.184+X	$3s^23p^3 - 3s3p^4$	$^2P^o - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		726
	20	399.719	59.028+X – 309.210+X	$3s^23p^3 - 3s3p^4$	$^2P^o - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		726
	1	405.461	59.028+X – 305.664+X	$3s^23p^3 - 3s3p^4$	$^2P^o - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		726
	5	409.097	61.224+X – 305.664+X	$3s^23p^3 - 3s3p^4$	$^2P^o - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		726
	285	433.930	34.708+X – 265.160+X	$3s^23p^3 - 3s3p^4$	$^2D^o - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		726
	360	435.699	36.319+X – 265.835+X	$3s^23p^3 - 3s3p^4$	$^2D^o - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		726
	5	437.005	36.319+X – 265.160+X	$3s^23p^3 - 3s3p^4$	$^2D^o - {}^2D$	$\frac{5}{2}-\frac{3}{2}$		726
	110	452.132	0.0 – 221.174	$3s^23p^3 - 3s3p^4$	$g^4S^o - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		726
	220	457.010	0.0 – 218.814	$3s^23p^3 - 3s3p^4$	$g^4S^o - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		726
	450	467.143	0.0 – 214.067	$3s^23p^3 - 3s3p^4$	$g^4S^o - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		726
	70	485.110	59.028+X – 265.160+X	$3s^23p^3 - 3s3p^4$	$^2P^o - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		726
	160	488.735	61.224+X – 265.835+X	$3s^23p^3 - 3s3p^4$	$^2P^o - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		726
		1633.	0.0 – 61.224+X	$3s^23p^3 - 3s^23p^3$	$g^4S^o - {}^2P^o$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,1050
		1694.	0.0 – 59.028+X	$3s^23p^3 - 3s^23p^3$	$g^4S^o - {}^2P^o$	$\frac{3}{2}-\frac{1}{2}$	F,P	375,1050

VANADIUM X (V^{9+}), Z = 23
Ground State $1s^22s^22p^63s^23p^2(^3P_0)$ (14 electrons)
Ionization Potential [1 859 000] cm^{-1}; [230.5] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		94.23	9.421 – 1070.60	$3s^23p^2 - 3s^23p4d$	$g^3P - {}^3D^o$	2 – 3		854
		94.96	32.509 – 1085.60	$3s^23p^2 - 3s^23p4d$	$^1D - {}^1F^o$	2 – 3		854
		115.09	4.180 – 873.10	$3s^23p^2 - 3s^23p4s$	$g^3P - {}^3P^o$	1 – 2		854
		115.58	0. – 865.20	$3s^23p^2 - 3s^23p4s$	$g^3P - {}^3P^o$	0 – 1		854
		115.78	9.421 – 873.10	$3s^23p^2 - 3s^23p4s$	$g^3P - {}^3P^o$	2 – 2		854
		116.85	9.421 – 865.20	$3s^23p^2 - 3s^23p4s$	$g^3P - {}^3P^o$	2 – 1		854
		118.18	32.509 – 878.70	$3s^23p^2 - 3s^23p4s$	$^1D - {}^1P^o$	2 – 1		854
		124.40	927.55+D – 1731.408+D	$3s^23p3d - 3s^23p4f$	$^3F^o - {}^3G$	4 – 5		854
		245.35	32.509 – 440.09	$3s^23p^2 - 3s^23p3d$	$^1D - {}^1F^o$	2 – 3		267
		250.54	0. – 399.13	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3D^o$	0 – 1		239
	100	252.17	4.180 – 400.74	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3D^o$	1 – 2		267,256
		253.20	4.180 – 399.13	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3D^o$	1 – 1		239
		255.24	9.421 – 401.21	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3D^o$	2 – 3		267
		255.54	9.421 – 400.74	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3D^o$	2 – 2		267
		257.00	4.180 – 393.289	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3P^o$	1 – 0		239
		258.28	4.180 – 391.34	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3P^o$	1 – 1		242
		260.93	67.751 – 450.999	$3s^23p^2 - 3s^23p3d$	$^1S - {}^1P^o$	0 – 1		239
		261.84	9.421 – 391.34	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3P^o$	2 – 1		375
		262.04	4.180 – 385.79	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3P^o$	1 – 2		242
		265.70	9.421 – 385.79	$3s^23p^2 - 3s^23p3d$	$g^3P - {}^3P^o$	2 – 2		242
	5	301.283	9.421 – 341.335	$3s^23p^2 - 3s3p^3$	$g^3P - {}^1P^o$	2 – 1		726
	20	304.974	0. – 327.902	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3S^o$	0 – 1		726
	110	308.903	4.180 – 327.902	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3S^o$	1 – 1		726
	40	313.990	9.421 – 327.902	$3s^23p^2 - 3s3p^3$	$g^3P - {}^3S^o$	2 – 1		726

V X — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	5	323.811	32.509 – 341.335	$3s^23p^2$ – $3s3p^3$	^1D – $^1P°$	2 – 1		726
	5	365.518	67.751 – 341.335	$3s^23p^2$ – $3s3p^3$	^1S – $^1P°$	0 – 1		726
	5	369.612	9.421 – 279.969	$3s^23p^2$ – $3s3p^3$	g^3P – $^1D°$	2 – 2		726
	20	393.469	0. – 254.147	$3s^23p^2$ – $3s3p^3$	g^3P – $^3P°$	0 – 1		726
	40	399.749	4.180 – 254.337	$3s^23p^2$ – $3s3p^3$	g^3P – $^3P°$	1 – 2	P	726
	20	400.056	4.180 – 254.147	$3s^23p^2$ – $3s3p^3$	g^3P – $^3P°$	1 – 1		726
	20	400.390	4.180 – 253.936	$3s^23p^2$ – $3s3p^3$	g^3P – $^3P°$	1 – 0		726
	220	404.106	32.509 – 279.969	$3s^23p^2$ – $3s3p^3$	^1D – $^1D°$	2 – 2		726
	160	408.304	9.421 – 254.337	$3s^23p^2$ – $3s3p^3$	g^3P – $^3P°$	2 – 2		726
	70	408.630	9.421 – 254.147	$3s^23p^2$ – $3s3p^3$	g^3P – $^3P°$	2 – 1		726
	5	452.522	0. – 220.984	$3s^23p^2$ – $3s3p^3$	g^3P – $^3D°$	0 – 1		726
	40	461.059	4.180 – 221.072	$3s^23p^2$ – $3s3p^3$	g^3P – $^3D°$	1 – 2		726
	1	461.245	4.180 – 220.984	$3s^23p^2$ – $3s3p^3$	g^3P – $^3D°$	1 – 1		726
	40	470.183	9.421 – 222.104	$3s^23p^2$ – $3s3p^3$	g^3P – $^3D°$	2 – 3		726
	1	527.439	32.509 – 222.104	$3s^23p^2$ – $3s3p^3$	^1D – $^3D°$	2 – 3		726
		1573.	4.180 – 67.751	$3s^23p^2$ – $3s^23p^2$	g^3P – ^1S	1 – 0	F,P	375,726
		1714.	9.421 – 67.751	$3s^23p^2$ – $3s^23p^2$	g^3P – ^1S	2 – 0	F,P	375,726

VANADIUM XI (V^{10+}), Z = 23
Ground State $1s^22s^22p^63s^23p(^2P°_{1/2})$ (13 electrons)
Ionization Potential [2 062 000] cm^{-1}; [255.7] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	600	87.166	0.0 – 1147.24	$3s^23p$ – $3s^24d$	$g^2P°$ – ^2D	$\frac{1}{2}$ – $\frac{3}{2}$		180
	800	87.868	9.696 – 1147.77	$3s^23p$ – $3s^24d$	$g^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$		180
		104.74	169.60+X – 1124.30+X	$3s3p^2$ – $3s3p(^3P°)4s$	^4P – $^4P°$	$\frac{3}{2}$ – $\frac{5}{2}$		241
		105.03	166.30+X – 1118.40+X	$3s3p^2$ – $3s3p(^3P°)4s$	^4P – $^4P°$	$\frac{1}{2}$ – $\frac{3}{2}$		241
		105.34	175.00+X – 1124.30+X	$3s3p^2$ – $3s3p(^3P°)4s$	^4P – $^4P°$	$\frac{5}{2}$ – $\frac{5}{2}$		241
		106.00	175.00+X – 1118.40+X	$3s3p^2$ – $3s3p(^3P°)4s$	^4P – $^4P°$	$\frac{5}{2}$ – $\frac{3}{2}$		241
		106.42	0.0 – 939.50	$3s^23p$ – $3s^24s$	$g^2P°$ – ^2S	$\frac{1}{2}$ – $\frac{1}{2}$		241
		107.57	9.696 – 939.50	$3s^23p$ – $3s^24s$	$g^2P°$ – ^2S	$\frac{3}{2}$ – $\frac{1}{2}$		241
		112.34	950.00+F – 1840.16+F	3s3p3d – 3s3p4f	$^4F°$ – ^4G	$\frac{9}{2}$ – $\frac{11}{2}$		241
		112.63	950.00+F – 1837.86+F	3s3p3d – 3s3p4f	$^4F°$ – ^4G	$\frac{5}{2}$ – $\frac{7}{2}$		241
		112.76	952.00+F – 1838.84+F	3s3p3d – 3s3p4f	$^4F°$ – ^4G	$\frac{7}{2}$ – $\frac{9}{2}$		241
		119.28	376.92 – 1215.30	$3s^23d$ – $3s^24d$	^2D – $^2F°$	$\frac{3}{2}$ – $\frac{5}{2}$		241
		119.36	377.68 – 1215.50	$3s^23d$ – $3s^24d$	^2D – $^2F°$	$\frac{5}{2}$ – $\frac{7}{2}$		241
		265.31	0.0 – 376.92	$3s^23p$ – $3s^23d$	$g^2P°$ – ^2D	$\frac{1}{2}$ – $\frac{3}{2}$		295
		271.75	9.696 – 377.68	$3s^23p$ – $3s^23d$	$g^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$		295
	20	320.626	0.0 – 311.890	$3s^23p$ – $3s3p^2$	$g^2P°$ – ^2P	$\frac{1}{2}$ – $\frac{3}{2}$		726
	70	325.945	0.0 – 306.801	$3s^23p$ – $3s3p^2$	$g^2P°$ – ^2P	$\frac{1}{2}$ – $\frac{1}{2}$		726
	40	330.913	9.696 – 311.890	$3s^23p$ – $3s3p^2$	$g^2P°$ – ^2P	$\frac{3}{2}$ – $\frac{3}{2}$		726
	160	336.580	9.696 – 306.801	$3s^23p$ – $3s3p^2$	$g^2P°$ – ^2P	$\frac{3}{2}$ – $\frac{1}{2}$		726
	20	346.123	0.0 – 288.914	$3s^23p$ – $3s3p^2$	$g^2P°$ – ^2S	$\frac{1}{2}$ – $\frac{1}{2}$		726
	20	358.144	9.696 – 288.914	$3s^23p$ – $3s3p^2$	$g^2P°$ – ^2S	$\frac{3}{2}$ – $\frac{1}{2}$		726
	70	429.232	0.0 – 232.973	$3s^23p$ – $3s3p^2$	$g^2P°$ – ^2D	$\frac{1}{2}$ – $\frac{3}{2}$		726
	110	446.265	9.696 – 233.778	$3s^23p$ – $3s3p^2$	$g^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$		726
	1	447.881	9.696 – 232.973	$3s^23p$ – $3s3p^2$	$g^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{3}{2}$		726

VANADIUM XII (V^{11+}), Z = 23
Ground State $1s^22s^22p^63s^2(^1S_0)$ (12 electrons)
Ionization Potential 2 485 000 cm^{-1}; 308.1 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		43.358	0.0 – 2306.4	$3s^2$ – 3s10p	g^1S – $^1P°$	0 – 1		851
		44.03	0.0 – 2271.0	$3s^2$ – 3s9p	g^1S – $^1P°$	0 – 1		851
		45.071	0.0 – 2218.7	$3s^2$ – 3s8p	g^1S – $^1P°$	0 – 1		851
		46.913	0.0 – 2131.6	$3s^2$ – 3s7p	g^1S – $^1P°$	0 – 1		851
		49.226	198.58 – 2230.1	3s3p – 3s8d	$^3P°$ – ^3D	2 – 3		851
		50.056	0.0 – 1997.80	$3s^2$ – 3s6p	g^1S – $^1P°$	0 – 1		851
		51.208	198.58 – 2151.4	3s3p – 3s7d	$^3P°$ – ^3D	2 – 3		851
		52.315	198.58 – 2110.1	3s3p – 3s7s	$^3P°$ – ^3S	2 – 1		851
		54.493	191.42 – 2026.5	3s3p – 3s6d	$^3P°$ – ^3D	1 – 2		851
		54.702	198.58 – 2026.7	3s3p – 3s6d	$^3P°$ – ^3D	2 – 3		851
		56.588	191.42 – 1958.57	3s3p – 3s6s	$^3P°$ – ^3S	1 – 1	P	851
		56.655	0.0 – 1765.07	$3s^2$ – 3s5p	g^1S – $^1P°$	0 – 1		851
		59.092	545.00 – 2237.3	3s3d – 3s8f	^3D – $^3F°$	3 – 4		851
		61.352	188.33 – 1818.27	3s3p – 3s5d	$^3P°$ – ^3D	0 – 1		851
	50	61.455	191.42 – 1818.63	3s3p – 3s5d	$^3P°$ – ^3D	1 – 2		180
	100	61.717	198.58 – 1818.88	3s3p – 3s5d	$^3P°$ – ^3D	2 – 3		180
		61.921	545.00 – 2160.0	3s3d – 3s7f	^3D – $^3F°$	3 – 4		851
		64.920	281.60 – 1822.00	3s3p – 3s5d	$^1P°$ – ^1D	1 – 2		851
		65.425	188.33 – 1716.8	3s3p – 3s5s	$^3P°$ – ^3S	0 – 1	P	851,1050
		65.557	191.42 – 1716.8	3s3p – 3s5s	$^3P°$ – ^3S	1 – 1	P	851,1050
		65.867	198.58 – 1716.8	3s3p – 3s5s	$^3P°$ – ^3S	2 – 1	P	851,1050
		66.806	545.00 – 2041.9	3s3d – 3s6f	^3D – $^3F°$	3 – 4		851
		73.474	191.42 – 1552.5	3s3p – 3p4p	$^3P°$ – ^3S	1 – 1		851
		73.576	191.42 – 1550.5	3s3p – 3p4p	$^3P°$ – ^3P	1 – 2		851
		73.856	198.58 – 1552.5	3s3p – 3p4p	$^3P°$ – ^3S	2 – 1		851
		73.978	198.58 – 1550.5	3s3p – 3p4p	$^3P°$ – ^3P	2 – 2		851
		74.257	198.58 – 1545.3	3s3p – 3p4p	$^3P°$ – ^3P	2 – 1		851
		74.32	198.58 – 1544.1	3s3p – 3p4p	$^3P°$ – ^3D	2 – 3		851
	300	76.307	0.0 – 1310.50	$3s^2$ – 3s4p	g^1S – $^1P°$	0 – 1		180
	50	76.960	545.00 – 1844.38	3s3d – 3s5f	^3D – $^3F°$	3 – 4		180
	100	80.896	188.33 – 1424.50	3s3p – 3s4d	$^3P°$ – ^3D	0 – 1		180
	200	81.077	191.42 – 1424.82	3s3p – 3s4d	$^3P°$ – ^3D	1 – 2		180
	50	81.098	191.42 – 1424.50	3s3p – 3s4d	$^3P°$ – ^3D	1 – 1		180
	400	81.513	198.58 – 1425.38	3s3p – 3s4d	$^3P°$ – ^3D	2 – 3		180
	50	81.550	198.58 – 1424.82	3s3p – 3s4d	$^3P°$ – ^3D	2 – 2		180
		82.024	459.27 – 1678.5	$3p^2$ – 3p4d	^3P – $^3P°$	2 – 2		851
		82.348	744.27 – 1958.57	3p3d – 3s6s	$^3F°$ – ^3S	2 – 1		851
		82.514	446.17 – 1658.1	$3p^2$ – 3p4d	^3P – $^3D°$	0 – 1		851
		82.844	450.77 – 1657.9	$3p^2$ – 3p4d	^3P – $^3D°$	1 – 2		851
		83.134	459.27 – 1662.2	$3p^2$ – 3p4d	^3P – $^3D°$	2 – 3		851
		83.677	445.74 – 1640.8	$3p^2$ – 3p4d	^1D – $^1F°$	2 – 3		851
		87.363	281.60 – 1426.25	3s3p – 3s4d	$^1P°$ – ^1D	1 – 2		854
		95.58	445.74 – 1492.06	$3p^2$ – 3s4f	^1D – $^1F°$	2 – 3		854
	50	97.642	188.33 – 1212.47	3s3p – 3s4s	$^3P°$ – ^3S	0 – 1		180
	200	97.938	191.42 – 1212.47	3s3p – 3s4s	$^3P°$ – ^3S	1 – 1		180
	300	98.630	198.58 – 1212.47	3s3p – 3s4s	$^3P°$ – ^3S	2 – 1		180
		100.13	459.27 – 1457.97	$3p^2$ – 3p4s	^3P – $^3P°$	2 – 2		851
		100.37	450.77 – 1447.07	$3p^2$ – 3p4s	^3P – $^3P°$	1 – 0		851
		104.45	754.67 – 1712.07	3p3d – 3p4f	$^3F°$ – ^3G	4 – 5		241
		104.58	744.27 – 1700.48	3p3d – 3p4f	$^3F°$ – ^3G	2 – 3		241
		104.66	749.07 – 1704.54	3p3d – 3p4f	$^3F°$ – ^3G	3 – 4		241
		105.49	764.91+E – 1712.87+E	3p3d – 3p4f	$^1D°$ – ^3F	2 – 3		241
		105.74	281.60 – 1227.30	3s3p – 3s4s	$^1P°$ – ^1S	1 – 0		851
	200	106.781	544.06 – 1480.56	3s3d – 3s4f	^3D – $^3F°$	1 – 2		180

V XII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	300	106.820	544.39 - 1480.54	3s3d - 3s4f	$^3D - {}^3F^\circ$	2 - 3		180
	400	106.885	545.00 - 1480.59	3s3d - 3s4f	$^3D - {}^3F^\circ$	3 - 4		180
		107.25	789.82+E - 1722.17+E	3p3d - 3p4f	$^3P^\circ - {}^3D$	1 - 2		241
		107.29	789.82+E - 1721.87+E	3p3d - 3p4f	$^3P^\circ - {}^3D$	1 - 1		241
		107.83	795.07 - 1722.46	3p3d - 3p4f	$^3D^\circ - {}^3D$	3 - 3		241
		108.93	795.07 - 1713.09	3p3d - 3p4f	$^3D^\circ - {}^3F$	3 - 4		241
		113.39	770.00+Y - 1651.91+Y	3p3d - 3p4f	$^1F^\circ - {}^1G$	3 - 4		241
		113.78	613.28 - 1492.06	3s3d - 3s4f	$^1D - {}^1F^\circ$	2 - 3		854
		281.11	188.33 - 544.06	3s3p - 3s3d	$^3P^\circ - {}^3D$	0 - 1		854
		283.28	191.42 - 544.39	3s3p - 3s3d	$^3P^\circ - {}^3D$	1 - 2		854
		288.67	198.58 - 545.00	3s3p - 3s3d	$^3P^\circ - {}^3D$	2 - 3		854
		289.21	198.58 - 544.39	3s3p - 3s3d	$^3P^\circ - {}^3D$	2 - 2		854
		297.77	459.27 - 795.07	$3p^2$ - 3p3d	$^3P - {}^3D^\circ$	2 - 3		251
		301.50	281.60 - 613.28	3s3p - 3s3d	$^1P^\circ - {}^1D$	1 - 2		854
		343.12	524.84 - 816.28	$3p^2$ - 3p3d	$^1S - {}^1P^\circ$	0 - 1		251
		355.11	0.0 - 281.60	$3s^2$ - 3s3p	$g{}^1S - {}^1P^\circ$	0 - 1		270
		373.34	191.42 - 459.27	3s3p - $3p^2$	$^3P^\circ - {}^3P$	1 - 2	P	270
		381.04	188.33 - 450.77	3s3p - $3p^2$	$^3P^\circ - {}^3P$	0 - 1	P	270
		383.60	198.58 - 459.27	3s3p - $3p^2$	$^3P^\circ - {}^3P$	2 - 2	P	270
		385.58	191.42 - 450.77	3s3p - $3p^2$	$^3P^\circ - {}^3P$	1 - 1	P	270
		392.54	191.42 - 446.17	3s3p - $3p^2$	$^3P^\circ - {}^3P$	1 - 0	P	270
		396.53	198.58 - 450.77	3s3p - $3p^2$	$^3P^\circ - {}^3P$	2 - 1	P	270
		399.89	545.00 - 795.07	3s3d - 3p3d	$^3D - {}^3D^\circ$	3 - 3	P	251
		411.12	281.60 - 524.84	3s3p - $3p^2$	$^1P^\circ - {}^1S$	1 - 0		251
		476.94	545.00 - 754.67	3s3d - 3p3d	$^3D - {}^3F^\circ$	3 - 4	P	251
		488.57	544.39 - 749.07	3s3d - 3p3d	$^3D - {}^3F^\circ$	2 - 3	P	251
		499.48	544.06 - 744.27	3s3d - 3p3d	$^3D - {}^3F^\circ$	1 - 2	P	251
		522.4	0.0 - 191.42	$3s^2$ - 3s3p	$g{}^1S - {}^3P^\circ$	0 - 1		1129
		609.24	281.60 - 445.74	3s3p - $3p^2$	$^1P^\circ - {}^1D$	1 - 2		854

VANADIUM XIII (V^{12+}), Z = 23
Ground State $1s^22s^22p^63s(^2S_{1/2})$ (11 electrons)
Ionization Potential 2 712 300 cm^{-1}; 336.28 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	0	23.678						265
	20	23.96						265
	20	24.083						265
		24.202	0. - 4132.3	$2p^63s - 2p^53s^2$	$g{}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		265
	30	24.330						265
	0	24.440						265
		24.517	0. - 4079.0	$2p^63s - 2p^53s^2$	$g{}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		265
	0	24.654						265
	0	24.758						265
	3	39.181	0. - 2552.3	$2p^63s - 2p^611p$	$g{}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		118
	3	39.721	0. - 2517.56	$2p^63s - 2p^610p$	$g{}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		118
	3	40.477	0. - 2470.54	$2p^63s - 2p^69p$	$g{}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		118
	5	41.596	0. - 2404.08	$2p^63s - 2p^68p$	$g{}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		118
		42.909	225.515 - 2556.0	$2p^63p - 2p^611d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		118
		43.103	236.527 - 2556.6	$2p^63p - 2p^611d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		118
		43.268	236.527 - 2547.8	$2p^63p - 2p^611s$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		851
	8	43.371	0. - 2305.69	$2p^63s - 2p^67p$	$g{}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		118
	1	43.741	1846.05 - 4132.3	$2p^65s - 2p^53s^2$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		118

V XIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		44.013	236.527 – 2508.6	$2p^63p - 2p^610s$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		851
	2	44.376	225.515 – 2478.98	$2p^63p - 2p^69d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		118
	2	44.594	236.527 – 2478.99	$2p^63p - 2p^69d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		118
		44.919	236.527 – 2462.8	$2p^63p - 2p^69s$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		851
	2	45.645	225.515 – 2416.34	$2p^63p - 2p^68d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		118
	5	45.873	236.527 – 2416.46	$2p^63p - 2p^68d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		118
		46.137	225.515 – 2393.0	$2p^63p - 2p^68s$	$^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$	P	851
		46.373	236.527 – 2393.0	$2p^63p - 2p^68s$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$	P	851
	8	46.460	0. – 2152.39	$2p^63s - 2p^66p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		118
	12	46.482	0. – 2151.37	$2p^63s - 2p^66p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		118
	10	47.637	225.515 – 2324.72	$2p^63p - 2p^67d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		118
	10	47.884	236.527 – 2324.91	$2p^63p - 2p^67d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		118
	1	48.441	225.515 – 2289.9	$2p^63p - 2p^67s$	$^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		118
	2	48.682	236.527 – 2289.9	$2p^63p - 2p^67s$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		851,118
		49.642	545.933 – 2560.35	$2p^63d - 2p^611f$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		851
		50.494	545.933 – 2526.35	$2p^63d - 2p^610f$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		118
	10	51.091	225.515 – 2182.81	$2p^63p - 2p^66d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		118
	20	51.376	236.527 – 2182.96	$2p^63p - 2p^66d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		118
		51.620	545.933 – 2483.15	$2p^63d - 2p^69f$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		118
	2	52.590	225.515 – 2127.00	$2p^63p - 2p^66s$	$^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		118
	20	52.870	0. – 1891.43	$2p^63s - 2p^65p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		118
	15	52.928	0. – 1889.36	$2p^63s - 2p^65p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		118
		53.281	544.684 – 2421.48	$2p^63d - 2p^68f$	$^2D - ^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		118
	4	53.318	545.933 – 2421.52	$2p^63d - 2p^68f$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		118
	5	55.932	544.684 – 2332.54	$2p^63d - 2p^67f$	$^2D - ^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		118
	10	55.967	545.933 – 2332.75	$2p^63d - 2p^67f$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		118
	30	58.116	225.515 – 1946.21	$2p^63p - 2p^65d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		178,118
	50	58.482	236.527 – 1946.45	$2p^63p - 2p^65d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		178
	10	60.596	544.684 – 2194.94	$2p^63d - 2p^66f$	$^2D - ^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		118
	20	60.640	545.933 – 2195.05	$2p^63d - 2p^66f$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		118
	2	61.705	225.515 – 1846.05	$2p^63p - 2p^65s$	$^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		118
	9	62.132	236.527 – 1846.05	$2p^63p - 2p^65s$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		118
	50	70.262	544.684 – 1967.92	$2p^63d - 2p^65f$	$^2D - ^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		118
	55	70.323	545.933 – 1967.94	$2p^63d - 2p^65f$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		118
	60	71.799	0. – 1392.78	$2p^63s - 2p^64p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		118
	55	72.025	0. – 1388.41	$2p^63s - 2p^64p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		118
	30	74.313	545.933 – 1891.43	$2p^63d - 2p^65p$	$^2D - ^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		118
	50	78.101	225.515 – 1505.88	$2p^63p - 2p^64d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		178,118
	55	78.746	236.527 – 1506.43	$2p^63p - 2p^64f$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		178,118
	45	78.783	236.527 – 1505.88	$2p^63p - 2p^64d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		178,118
	40	93.025	225.515 – 1300.45	$2p^63p - 2p^64s$	$^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		118
	45	93.994	236.527 – 1300.45	$2p^63p - 2p^64s$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		118
	50	99.523	544.684 – 1549.48	$2p^63d - 2p^64f$	$^2D - ^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		118
	55	99.625	545.933 – 1549.69	$2p^63d - 2p^64f$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		118
	35	118.08	545.933 – 1392.78	$2p^63d - 2p^64p$	$^2D - ^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		118
	20	118.50	544.684 – 1388.41	$2p^63d - 2p^64p$	$^2D - ^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		118
		313.314	225.515 – 544.684	$2p^63p - 2p^63d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$	P	753
		323.200	236.527 – 545.933	$2p^63p - 2p^63d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	753
		422.785	0. – 236.527	$2p^63s - 2p^63p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	753
		443.429	0. – 225.515	$2p^63s - 2p^63p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	P	753

VANADIUM XIV (V^{13+}), Z = 23
Ground State $1s^22s^22p^6(^1S_0)$ (10 electrons)
Ionization Potential 7 227 000 cm^{-1}; 896.0 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	15.61	0.0 – 6407.0	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})5d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		265
	1	15.748	0.0 – 6350.0	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})5d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		232
	5	16.939	0.0 – 5904.0	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})4d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		232
	4	17.094	0.0 – 5850.0	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		232
	2	17.26	0.0 – 5794.0	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		259
	1	17.575	0.0 – 5690.0	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})4s$	$g^1S - (\frac{1}{2},\frac{1}{2})^\circ$	0 – 1		232
	1	17.754	0.0 – 5632.0	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})4s$	$g^1S - (\frac{3}{2},\frac{1}{2})^\circ$	0 – 1		232
	7	18.782	0.0 – 5324.0	$2s^22p^6 - 2s2p^63p$	$g^1S - ^1P^\circ$	0 – 1		232
	3	18.870	0.0 – 5299.0	$2s^22p^6 - 2s2p^63p$	$g^1S - ^3P^\circ$	0 – 1		232
		20.716	0.0 – 4827.2	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})3d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		189
		21.018	0.0 – 4757.8	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		189
	10	21.294	0.0 – 4696.0	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		232
		23.490	0.0 – 4257.1	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})3s$	$g^1S - (\frac{1}{2},\frac{1}{2})^\circ$	0 – 1		189
		23.794	0.0 – 4202.7	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3s$	$g^1S - (\frac{3}{2},\frac{1}{2})^\circ$	0 – 1		189
		70.573	4423.0+C – 5840.0+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^1P - ^1D^\circ$	1 – 2		395
		70.683	4408.6+C – 5823.4+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^3D - ^3D^\circ$	2 – 3		395
		71.024	4414.0+C – 5822.0+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^3D - ^3F^\circ$	3 – 4		395
		71.189	4486.8+C – 5891.5+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^3P - ^3F^\circ$	1 – 2		395
		71.292	4488.4+C – 5891.1+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^1D - ^1F^\circ$	2 – 3		395
		71.320	4469.6+C – 5871.7+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^3D - ^3D^\circ$	1 – 2		395
		71.592	4433.2+C – 5830.0+C	$2s^22p^5(^2P^\circ)3p - 2s^22p^5(^2P^\circ)4d$	$^3P - ^3F^\circ$	2 – 3		395
		85.48	4697.7+C – 5867.6+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		1055
		85.75	4708.7+C – 5874.9+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 5		1055
		86.13	4713.8+C – 5874.8+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		1055
		86.36	4786.5+C – 5944.4+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^1D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		1055
		86.65	4765.4+C – 5919.5+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		1055
		87.16	4730.1+C – 5877.4+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		1055

VANADIUM XV (V^{14+}), Z = 23
Ground State $1s^22s^22p^5(^2P^\circ_{3/2})$ (9 electrons)
Ionization Potential [7 870 000] cm^{-1}; [976] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	120	19.028	0.0 – 5255.4	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		850
	150	19.203	58.093 – 5265.6	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		850
	300	19.298	0.0 – 5181.7	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		850
	500	19.366	0.0 – 5163.7	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		850
	250	19.443	0.0 – 5143.2	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		850
	350	19.518	58.093 – 5181.7	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		850
	150	19.589	58.093 – 5163.0	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		850
	150	19.645	0.0 – 5090.4	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		850
	90	19.671	0.0 – 5083.6	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		850
	80	19.725	0.0 – 5069.7	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2F$	$\frac{3}{2} - \frac{5}{2}$		850
	60	19.757	0.0 – 5061.2	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		850
	100	19.782	0.0 – 5055.1	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		850

V XV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	19.80	0.0 – 5050.2	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		850
	250	19.844	0.0 – 5039.3	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4F$	$\frac{3}{2}-\frac{5}{2}$		850
	150	19.888	0.0 – 5028.2	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		850
	180	19.903	58.093 – 5083.6	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		850
	170	19.988	58.093 – 5061.2	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		850
	200	20.078	58.093 – 5039.1	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{3}{2}$		850
	400	21.019	0.0 – 4757.1	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		850
	200	21.285	58.093 – 4757.1	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		850
	300	21.568	0.0 – 4636.5	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		850
	200	21.800	0.0 – 4587.2	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		850
	200	21.832	58.093 – 4638.5	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		850
	300	21.909	0.0 – 4564.2	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		850
	350	22.083	0.0 – 4528.4	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		850
	180	22.192	0.0 – 4506.1	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		850
	120	22.214	877.732 – 5379.4	$2s2p^6 - 2s2p^5(^3P^\circ)3s$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		850
	60	22.232	58.093 – 4556.1	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{1}{2}$		850
	160	22.375	877.732 – 5347.0	$2s2p^6 - 2s2p^5(^3P^\circ)3s$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		850
	320	113.930	0.0 – 877.732	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		1119
	320	122.005	58.093 – 877.732	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		1119
		1721.	0.0 – 58.093	$2s^22p^5 - 2s^22p^5$	$g^2P^\circ - g^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	F,P	375,1119

VANADIUM XVI (V^{15+}), Z = 23
Ground State $1s^22s^22p^4(^3P_2)$ (8 electrons)
Ionization Potential [8 550 000] cm^{-1}; [1060] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	250	18.008	0.0 – 5553.1	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		869
		18.039	48.937 – 5592.5	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		877
	200	18.076	0.0 – 5532.2	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 2	Q	834
		18.100	0.0 – 5523.6	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3F^\circ$	2 – 3	Q	877
	65	18.121	121.039 – 5639.6	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	${}^1D - {}^1D^\circ$	2 – 2		869
	65	18.181	0.0 – 5500.3	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	2 – 2	Q	869
	50	18.223	48.937 – 5532.2	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 2	Q	834
	10	18.240	121.039 – 5603.6	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	${}^1D - {}^1F^\circ$	2 – 3		877
	90	18.265	0.0 – 5475.0	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		947
	400	18.344	48.937 – 5500.3	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3P^\circ$	1 – 2		834
	65	18.492	48.937 – 5456.7	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		869
	40	18.519	237.705 – 5637.7	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	${}^1S - {}^1P^\circ$	0 – 1		947
	65	18.525	121.039 – 5519.2	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	${}^1D - {}^1F^\circ$	2 – 3		869
	400	18.529	49.970 – 5446.6	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3D^\circ$	0 – 1		834
	600	18.630	48.937 – 5416.5	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - {}^3F^\circ$	1 – 2		834
	110	18.689	0.0 – 5350.7	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	2 – 3		869
	200	18.890	48.937 – 5342.7	$2s^22p^4 - 2s^22p^3(^4S^\circ)3d$	$g^3P - {}^3D^\circ$	1 – 2		834
	300	19.730	0.0 – 5068.4	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	$g^3P - {}^3P^\circ$	2 – 2		834
	450	20.017	0.0 – 4995.8	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	2 – 3		865
	30	20.038	121.039 – 5111.9	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	${}^1D - {}^1P^\circ$	2 – 1	Q	850
	600	20.082	0.0 – 4979.5	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	2 – 2		834
	400	20.282	48.937 – 4979.5	$2s^22p^4 - 2s^22p^3(^2D^\circ)3s$	$g^3P - {}^3D^\circ$	1 – 2		834
	600	20.447	0.0 – 4890.0	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - {}^3S^\circ$	2 – 1		834
	400	20.516	237.705 – 5111.9	$2s^22p^4 - 2s^22p^3(^2P^\circ)3s$	${}^1S - {}^1P^\circ$	0 – 1		834

V XVI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		20.60	0.0 – 4854.6+K	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^5S^\circ$	2 – 2	P	375
	250	20.663	49.970 – 4890.0	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^3S^\circ$	0 – 1		834
		20.81	48.937 – 4854.6+K	$2s^22p^4 - 2s^22p^3(^4S^\circ)3s$	$g^3P - ^5S^\circ$	1 – 2	P	375
	200	95.640	0.0 – 1045.59	$2s^22p^4 - 2s2p^5$	$g^3P - ^1P^\circ$	2 – 1		1119
	1	100.440	49.970 – 1045.59	$2s^22p^4 - 2s2p^5$	$g^3P - ^1P^\circ$	0 – 1		1119
	1	103.043	798.899 – 1769.36	$2s2p^5 - 2p^6$	$^3P^\circ - ^1S$	1 – 0		1119
	500	108.160	121.039 – 1045.59	$2s^22p^4 - 2s2p^5$	$^1D - ^1P^\circ$	2 – 1		1119
	100	123.780	237.705 – 1045.59	$2s^22p^4 - 2s2p^5$	$^1S - ^1P^\circ$	0 – 1		1119
	250	125.173	0.0 – 798.899	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	2 – 1		1119
	250	129.195	48.937 – 822.961	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	1 – 0		1119
	400	131.263	0.0 – 761.824	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	2 – 2		1119
	100	133.338	48.937 – 798.899	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	1 – 1		1119
	225	133.525	49.970 – 798.899	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	0 – 1		1119
	200	138.168	1045.59 – 1769.36	$2s2p^5 - 2p^6$	$^1P^\circ - ^1S$	1 – 0		1119
	225	140.277	48.937 – 761.824	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^\circ$	1 – 2		1119
	5	156.060	121.039 – 761.824	$2s^22p^4 - 2s2p^5$	$^1D - ^3P^\circ$	2 – 2		1119
		420.69	0.0 – 237.705	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1S$	2 – 0	F,P	375,1119
		529.75	48.937 – 237.705	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1S$	1 – 0	F,P	375,1119
		826.18	0.0 – 121.039	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1D$	2 – 2	F,P	375,1119
		857.15	121.039 – 237.705	$2s^22p^4 - 2s^22p^4$	$^1D - ^1S$	2 – 0	F,P	375,1119
		1387.	48.937 – 121.039	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1D$	1 – 2	F,P	375,1119
		1407.	49.970 – 121.039	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1D$	0 – 2	F,P	375,1119

VANADIUM XVII (V^{16+}), Z = 23
Ground State $1s^22s^22p^3(^4S^\circ_{3/2})$ (7 electrons)
Ionization Potential [9 420 000] cm^{-1}; [1168] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	17.158	0.0 – 5826.8	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		869
		17.206	140.26 – 5952.2	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2P$	$\frac{5}{2} - \frac{3}{2}$	P	877
	250	17.259	140.26 – 5934.3	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^\circ - ^2F$	$\frac{5}{2} - \frac{7}{2}$		869
	110	17.373	140.26 – 5896.6	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2D$	$\frac{5}{2} - \frac{5}{2}$		869
	65	17.490	240.50 – 5958.1	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		869
	65	17.536	140.26 – 5842.8	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2F$	$\frac{5}{2} - \frac{7}{2}$		869
	110	17.644	120.93 – 5788.6	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^\circ - ^2F$	$\frac{3}{2} - \frac{5}{2}$		869
		17.679	240.50 – 5896.6	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	877
		18.048	240.50 – 5781.3	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$	P	877
	1	96.270	0.0 – 1038.74	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		1140
	150	102.854	120.93 – 1093.20	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		1140
	100	108.952	120.93 – 1038.74	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		1140
	320	111.299	140.26 – 1038.74	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2P$	$\frac{5}{2} - \frac{3}{2}$		1140
	5	113.406	211.42 – 1093.20	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		1140
	30	113.785	120.93 – 999.84	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		1140
	150	117.276	240.50 – 1093.20	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		1140
	30	120.304	866.88 – 1698.10	$2s2p^4 - 2p^5$	$^2D - ^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		1140
	20	120.873	211.42 – 1038.74	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		1140
	10	125.278	240.50 – 1038.74	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		1140
	100	126.832	211.42 – 999.84	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		1140
	5	129.927	866.88 – 1636.53	$2s2p^4 - 2p^5$	$^2D - ^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		1140
	100	130.941	872.82 – 1636.53	$2s2p^4 - 2p^5$	$^2D - ^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		1140
	5	131.687	240.50 – 999.84	$2s^22p^3 - 2s2p^4$	$^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		1140
	150	134.056	120.93 – 866.88	$2s^22p^3 - 2s2p^4$	$^2D^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		1140

V XVII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	136.511	140.26 – 872.82	$2s^22p^3 - 2s2p^4$	$^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		1140
	50	146.719	0.0 – 681.58	$2s^22p^3 - 2s2p^4$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		1140
	100	150.103	0.0 – 666.21	$2s^22p^3 - 2s2p^4$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		1140
	3	151.656	1038.74 – 1698.10	$2s2p^4 - 2p^5$	$^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		1140
	5	152.566	211.42 – 866.88	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		1140
	5	157.070	999.84 – 1636.53	$2s2p^4 - 2p^5$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		1140
	10	158.143	240.50 – 872.82	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		1140
	200	159.347	0.0 – 627.56	$2s^22p^3 - 2s2p^4$	$g\,^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		1140
	5	165.322	1093.20 – 1698.10	$2s2p^4 - 2p^5$	$^2P - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		1140
	40	167.279	1038.74 – 1636.53	$2s2p^4 - 2p^5$	$^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		1140
		184.1	1093.20 – 1636.53	$2s2p^4 - 2p^5$	$^2P - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	P	375,1140
		415.8	0.0 – 240.50	$2s^22p^3 - 2s^22p^3$	$g\,^4S^\circ - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,1140
		473.0	0.0 – 211.42	$2s^22p^3 - 2s^22p^3$	$g\,^4S^\circ - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	F,P	375,1140
		713.0	0.0 – 140.26	$2s^22p^3 - 2s^22p^3$	$g\,^4S^\circ - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$	F,P	375,1140
		826.9	0.0 – 120.93	$2s^22p^3 - 2s^22p^3$	$g\,^4S^\circ - {}^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,1140
		836.3	120.93 – 240.50	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,1140
		997.6	140.26 – 240.50	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$	F,P	375,1140
		1105.	120.93 – 211.42	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	F,P	375,1140
		1405.	140.26 – 211.42	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - {}^2P^\circ$	$\frac{5}{2}-\frac{1}{2}$	F,P	375,1140

VANADIUM XVIII (V^{17+}), Z = 23
Ground State $1s^22s^22p^2(^3P_0)$ (6 electrons)
Ionization Potential [10 160 000] cm^{-1}; [1260] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	16.330	0.0 – 6123.7	$2s^22p^2 - 2s^22p3d$	$g\,^3P - {}^3D^\circ$	0 – 1		949,303
	100	16.341	363.60+S – 6483.2+S	$2s2p^3 - 2s2p^2(^4P)3d$	$^5S^\circ - {}^5P$	2 – 3		303
	100	16.378	68.189 – 6173.9	$2s^22p^2 - 2s^22p3d$	$g\,^3P - {}^3D^\circ$	2 – 3		303
	40	16.423	68.189 – 6157.9	$2s^22p^2 - 2s^22p3d$	$g\,^3P - {}^3D^\circ$	2 – 2		303
		16.431	37.963 – 6123.7	$2s^22p^2 - 2s^22p3d$	$g\,^3P - {}^3D^\circ$	1 – 1		949
	160	16.467	160.912 – 6223.7	$2s^22p^2 - 2s^22p3d$	$^1D - {}^1F^\circ$	2 – 3		303
	140	16.558	634.954 – 6674.1	$2s2p^3 - 2s2p^2(^2D)3d$	$^3D^\circ - {}^3F$	3 – 4		303
	30	16.777	269.00+U – 6229.5+U	$2s^22p^2 - 2s^22p3d$	$^1S - {}^1P^\circ$	0 – 1		869
	60	16.816	160.912 – 6107.0	$2s^22p^2 - 2s^22p3d$	$^1D - {}^1D^\circ$	2 – 2	Q	303
		16.915	634.954 – 6546.9	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - {}^3F$	3 – 4	P	877
	40	17.018	623.862 – 6499.5	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - {}^3F$	2 – 3		303
	180	17.400	37.963 – 5786.3	$2s^22p^2 - 2s^22p3s$	$g\,^3P - {}^3P^\circ$	1 – 2		303
	80	17.442	363.60+S – 6096.9+S	$2s2p^3 - 2s2p^2(^4P)3s$	$^5S^\circ - {}^5P$	2 – 3		303
	160	17.482	68.189 – 5786.3	$2s^22p^2 - 2s^22p3s$	$g\,^3P - {}^3P^\circ$	2 – 2		303
	40	17.545	623.862 – 6323.0	$2s2p^3 - 2s2p^2(^2D)3s$	$^3D^\circ - {}^3D$	2 – 2		303
	80	17.678	68.189 – 5724.6	$2s^22p^2 - 2s^22p3s$	$g\,^3P - {}^3P^\circ$	2 – 1		303
	20	17.717	160.912 – 5805.2	$2s^22p^2 - 2s^22p3s$	$^1D - {}^1P^\circ$	2 – 1		303
	1	102.410	37.963 – 1014.42	$2s^22p^2 - 2s2p^3$	$g\,^3P - {}^1P^\circ$	1 – 1		1141
	2	111.442	0.0 – 897.33	$2s^22p^2 - 2s2p^3$	$g\,^3P - {}^3S^\circ$	0 – 1		1141
	10	116.365	37.963 – 897.33	$2s^22p^2 - 2s2p^3$	$g\,^3P - {}^3S^\circ$	1 – 1		1141
	50	117.163	160.912 – 1014.42	$2s^22p^2 - 2s2p^3$	$^1D - {}^1P^\circ$	2 – 1		1141
	2	119.015	68.189 – 908.42	$2s^22p^2 - 2s2p^3$	$g\,^3P - {}^1D^\circ$	2 – 2		1141
	100	120.607	68.189 – 897.33	$2s^22p^2 - 2s2p^3$	$g\,^3P - {}^3S^\circ$	2 – 1		1141
	2	126.411	625.035 – 1416.11	$2s2p^3 - 2p^4$	$^3D^\circ - {}^3P$	1 – 0		1141

V XVIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	3	127.079	623.862 – 1410.77	$2s2p^3 - 2p^4$	$^3D° - ^3P$	2 – 1		1141
	30	127.27	625.035 – 1410.77	$2s2p^3 - 2p^4$	$^3D° - ^3P$	1 – 1	Q	877
	50	133.778	160.912 – 908.42	$2s^22p^2 - 2s2p^3$	$^1D - ^1D°$	2 – 2		1141
	10	135.98	0.0 – 735.425	$2s^22p^2 - 2s2p^3$	$g\,^3P - ^3P°$	0 – 1	P	1084,868
								1141
	150	138.168	634.954 – 1358.71	$2s2p^3 - 2p^4$	$^3D° - ^3P$	3 – 2		1141
	10	141.77	37.963 – 743.349	$2s^22p^2 - 2s2p^3$	$g\,^3P - ^3P°$	1 – 2	P	1084,868
								1141
	2	143.377	37.963 – 735.425	$2s^22p^2 - 2s2p^3$	$g\,^3P - ^3P°$	1 – 1		1141
	1	144.111	37.963 – 731.873	$2s^22p^2 - 2s2p^3$	$g\,^3P - ^3P°$	1 – 0		1141
		147.30	731.873 – 1410.77	$2s2p^3 - 2p^4$	$^3P° - ^3P$	0 – 1		1084
	10	148.113	68.189 – 743.349	$2s^22p^2 - 2s2p^3$	$g\,^3P - ^3P°$	2 – 2		1141
	10	149.87	68.189 – 735.425	$2s^22p^2 - 2s2p^3$	$g\,^3P - ^3P°$	2 – 1	P	1084,868
								1141
	2	152.933	1014.42 – 1668.30	$2s2p^3 - 2p^4$	$^1P° - ^1S$	1 – 0		1141
	2	159.991	0.0 – 625.035	$2s^22p^2 - 2s2p^3$	$g\,^3P - ^3D°$	0 – 1		1141
		160.44	735.425 – 1358.71	$2s2p^3 - 2p^4$	$^3P° - ^3P$	1 – 2	P	1084,1141
		162.51	743.349 – 1358.71	$2s2p^3 - 2p^4$	$^3P° - ^3P$	2 – 2	P	1084,1141
	10	170.678	37.963 – 623.862	$2s^22p^2 - 2s2p^3$	$g\,^3P - ^3D°$	1 – 2		1141
	10	174.852	908.42 – 1480.33	$2s2p^3 - 2p^4$	$^1D° - ^1D$	2 – 2		1141
	5	176.440	68.189 – 634.954	$2s^22p^2 - 2s2p^3$	$g\,^3P - ^3D°$	2 – 3		1141
		194.76	897.33 – 1410.77	$2s2p^3 - 2p^4$	$^3S° - ^3P$	1 – 1	P	879,1141
		216.74	897.33 – 1358.71	$2s2p^3 - 2p^4$	$^3S° - ^3P$	1 – 2	P	1084,1141
		339.	68.189 – 363.60+S	$2s^22p^2 - 2s2p^3$	$g\,^3P - ^5S°$	2 – 2	P	375,1141
		433.	37.963 – 269.00+U	$2s^22p^2 - 2s^22p^2$	$g\,^3P - ^1S$	1 – 0	F,P	375,1141
		498.	68.189 – 269.00+U	$2s^22p^2 - 2s^22p^2$	$g\,^3P - ^1S$	2 – 0	F,P	375,1141
		621.46	0.0 – 160.912	$2s^22p^2 - 2s^22p^2$	$g\,^3P - ^1D$	0 – 2	F,P	375,1141
		813.35	37.963 – 160.912	$2s^22p^2 - 2s^22p^2$	$g\,^3P - ^1D$	1 – 2	F,P	375,1141
		925.	160.912 – 269.00+U	$2s^22p^2 - 2s^22p^2$	$^1D - ^1S$	2 – 0	F,P	375,1141
		1078.	68.189 – 160.912	$2s^22p^2 - 2s^22p^2$	$g\,^3P - ^1D$	2 – 2	F,P	375,1141
		1467.	0.0 – 68.189	$2s^22p^2 - 2s^22p^2$	$g\,^3P - g\,^3P$	0 – 2	F,P	375,1141

VANADIUM XIX (V^{18+}), Z = 23
Ground State $1s^22s^22p(^2P°_{1/2})$ (5 electrons)
Ionization Potential [10 930 000] cm^{-1}; [1355] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		12.14	68.60 – 8306.5	$2s^22p - 2s^24s$	$g\,^2P° - ^2S$	$\frac{3}{2} - \frac{1}{2}$	P	375
	30	14.636	68.60 – 6901.1	$2s^22p - 2s2p(^1P°)3p$	$g\,^2P° - ^2D$	$\frac{3}{2} - \frac{5}{2}$		869
	250	15.039	68.60 – 6718.0	$2s^22p - 2s2p(^3P°)3p$	$g\,^2P° - ^2D$	$\frac{3}{2} - \frac{5}{2}$		869
		15.296	0.0 – 6537.7+F	$2s^22p - 2s2p(^3P°)3p$	$g\,^2P° - ^2P$	$\frac{1}{2} - \frac{1}{2}$	P	877
	65	15.333	68.60 – 6590.5	$2s^22p - 2s2p(^3P°)3p$	$g\,^2P° - ^2P$	$\frac{3}{2} - \frac{3}{2}$		869
	65	15.495	605.31 – 7059.0	$2s2p^2 - 2s2p(^1P°)3d$	$^2D - ^2F°$	$\frac{5}{2} - \frac{7}{2}$		869
	65	15.560	0.0 – 6426.7	$2s^22p - 2s^23d$	$g\,^2P° - ^2D$	$\frac{1}{2} - \frac{3}{2}$		869
	65	15.63	393.00+K – 6790.9+K	$2s^22p^2 - 2s3p(^3P°)3d$	$^4P - ^4D°$	$\frac{5}{2} - \frac{7}{2}$		877
	65	15.702	68.60 – 6437.2	$2s^22p - 2s^23d$	$g\,^2P° - ^2D$	$\frac{3}{2} - \frac{5}{2}$		869
		15.883	802.56 – 7098.6+F	$2s2p^2 - 2s2p(^1P°)3d$	$^2P - ^2D°$	$\frac{3}{2} - \frac{5}{2}$	P	877
	110	15.924	605.31 – 6885.1	$2s2p^2 - 2s2p(^3P°)3d$	$^2D - ^2F°$	$\frac{5}{2} - \frac{7}{2}$		869
	110	16.007	597.59 – 6844.9	$2s2p^2 - 2s2p(^3P°)3d$	$^2D - ^2F°$	$\frac{3}{2} - \frac{5}{2}$		869
		16.172	605.31 – 6788.8+F	$2s2p^2 - 2s2p(^3P°)3d$	$^2D - ^2D°$	$\frac{5}{2} - \frac{5}{2}$	P	877
	30	124.60	0.0 – 802.56	$2s^22p - 2s2p^2$	$g\,^2P° - ^2P$	$\frac{1}{2} - \frac{3}{2}$		877
	10	126.77	0.0 – 788.84	$2s^22p - 2s2p^2$	$g\,^2P° - ^2P$	$\frac{1}{2} - \frac{1}{2}$		877
	550	136.25	68.60 – 802.56	$2s^22p - 2s2p^2$	$g\,^2P° - ^2P$	$\frac{3}{2} - \frac{3}{2}$		877
		138.78	597.59 – 1318.23	$2s2p^2 - 2p^3$	$^2D - ^2P°$	$\frac{3}{2} - \frac{3}{2}$		1084
	350	138.84	68.60 – 788.84	$2s^22p - 2s2p^2$	$g\,^2P° - ^2P$	$\frac{3}{2} - \frac{1}{2}$		877

V XIX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	250	139.59	0.0 – 716.44	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		877
		140.25	605.31 – 1318.23	$2s2p^2 - 2p^3$	${}^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		1084
	10	143.13	330.59+K – 1029.25+K	$2s2p^2 - 2p^3$	${}^4P - {}^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		877
		143.82	597.59 – 1292.75	$2s2p^2 - 2p^3$	${}^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		1084
	65	149.42	360.00+K – 1029.25+K	$2s^22p^2 - 2p^3$	${}^4P - {}^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		877
	175	157.17	393.00+K – 1029.25+K	$2s^22p^2 - 2p^3$	${}^4P - {}^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		877
		166.19	716.44 – 1318.23	$2s2p^2 - 2p^3$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		1084
	65	167.34	0.0 – 597.59	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		877
		175.90	597.59 – 1166.10	$2s2p^2 - 2p^3$	${}^2D - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$	P	1084
		178.32	605.31 – 1166.10	$2s2p^2 - 2p^3$	${}^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		1084
		180.07	597.59 – 1152.93	$2s2p^2 - 2p^3$	${}^2D - {}^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		1084
		182.60	605.31 – 1152.93	$2s2p^2 - 2p^3$	${}^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$	P	1084
	175	186.32	68.60 – 605.31	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		877
		193.93	802.56 – 1318.23	$2s2p^2 - 2p^3$	${}^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		1084
		198.51	788.84 – 1292.75	$2s2p^2 - 2p^3$	${}^2P - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$	Q	1084
		1457.7	0.0 – 68.60	$2s^22p - 2s^22p$	$g^2P^\circ - g^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	F,P	375,877
		1458.	0.0 – 68.61	$2s^22p - 2s^22p$	$g^2P^\circ - g^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	F,P	375,1050

VANADIUM XX (V^{19+}), Z = 23
Ground State $1s^22s^2(^1S_0)$ (4 electrons)
Ionization Potential [11 990 000] cm^{-1}; [1486] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	10.838	375.057 – 9601.9	$1s^22s2p - 1s^22p4p$	${}^3P^\circ - {}^3D$	2 – 3		946
	10	10.941	0.0 – 9139.9	$1s^22s^2 - 1s^22s4p$	$g^1S - {}^1P^\circ$	0 – 1		946
	10	11.215	303.096 – 9218.4	$1s^22s2p - 1s^22s4d$	${}^3P^\circ - {}^3D$	0 – 1		946
	65	11.243	322.646 – 9218.4	$1s^22s2p - 1s^22s4d$	${}^3P^\circ - {}^3D$	1 – 2		946
	30	11.308	375.057 – 9218.4	$1s^22s2p - 1s^22s4d$	${}^3P^\circ - {}^3D$	2 – 3		946
	10	11.378	856.876 – 9645.8	$1s^22p^2 - 1s^22p4d$	${}^3P - {}^1D^\circ$	1 – 2		946
	110	11.427	888.544 – 9639.7	$1s^22p^2 - 1s^22p4d$	${}^3P - {}^3D^\circ$	2 – 3		946
	10	11.478	856.876 – 9569.2	$1s^22p^2 - 1s^22p4d$	${}^3P - {}^3D^\circ$	1 – 2		946
	110	11.523	982.626 – 9660.9	$1s^22p^2 - 1s^22p4d$	${}^1D - {}^1F^\circ$	2 – 3		946
	10	11.615	627.499 – 9237.1	$1s^22s2p - 1s^22s4d$	${}^1P^\circ - {}^1D$	1 – 2		946
		14.125	375.057 – 7453.9	$1s^22s2p - 1s^22p3p$	${}^3P^\circ - {}^1D$	2 – 2	P	619
		14.134	322.646 – 7397.8+B	$1s^22s2p - 1s^22p3p$	${}^3P^\circ - {}^3P$	1 – 1	P	619
	110	14.229	375.057 – 7402.3	$1s^22s2p - 1s^22p3p$	${}^3P^\circ - {}^3P$	2 – 2		946
	0	14.239	375.057 – 7397.8+B	$1s^22s2p - 1s^22p3p$	${}^3P^\circ - {}^3P$	2 – 1	Q	643
	175	14.279	375.057 – 7378.3	$1s^22s2p - 1s^22p3p$	${}^3P^\circ - {}^3D$	2 – 3		946
	0	14.291	322.646 – 7320.1	$1s^22s2p - 1s^22p3p$	${}^3P^\circ - {}^1P$	1 – 1		643
	0	14.332	303.096 – 7280.5	$1s^22s2p - 1s^22p3p$	${}^3P^\circ - {}^3D$	0 – 1		643
	65	14.360	0.0 – 6963.8	$1s^22s^2 - 1s^22s3p$	$g^1S - {}^1P^\circ$	0 – 1		946
	30	14.401	0.0 – 6944.0	$1s^22s^2 - 1s^22s3p$	$g^1S - {}^3P^\circ$	0 – 1		946
		14.503	627.499 – 7522.6	$1s^22s2p - 1s^22s3s$	${}^1P^\circ - {}^1S$	1 – 0	P	619
	10	14.649	627.499 – 7453.9	$1s^22s2p - 1s^22p3p$	${}^1P^\circ - {}^1D$	1 – 2		946
	10	14.829	303.096 – 7046.6	$1s^22s2p - 1s^22s3d$	${}^3P^\circ - {}^3D$	0 – 1		946
	65	14.870	322.646 – 7047.6	$1s^22s2p - 1s^22s3d$	${}^3P^\circ - {}^3D$	1 – 2		946
	0	14.886	856.876 – 7572.2	$1s^22p^2 - 1s^22p3d$	${}^3P - {}^1P^\circ$	1 – 1	Q	643
	0	14.929	627.499 – 7325.9	$1s^22s2p - 1s^22p3p$	${}^1P^\circ - {}^3D$	1 – 2		643
	175	14.976	375.057 – 7052.4	$1s^22s2p - 1s^22s3d$	${}^3P^\circ - {}^3D$	2 – 3		946
	0	14.986	375.057 – 7047.6	$1s^22s2p - 1s^22s3d$	${}^3P^\circ - {}^3D$	2 – 2	Q	643
	0	15.051	856.876 – 7500.9	$1s^22p^2 - 1s^22p3d$	${}^3P - {}^3P^\circ$	1 – 0		643
	350	15.114	856.876 – 7473.3	$1s^22p^2 - 1s^22p3d$	${}^3P - {}^3D^\circ$	1 – 2		946
	175	15.141	888.544 – 7493.1	$1s^22p^2 - 1s^22p3d$	${}^3P - {}^3D^\circ$	2 – 3		946

V XX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	30	15.216	982.626 – 7554.7	$1s^22p^2 - 1s^22p3d$	$^1D - {}^1F^\circ$	2 – 3		946
	30	15.229	856.876 – 7423.3	$1s^22p^2 - 1s^22p3d$	$^3P - {}^1D^\circ$	1 – 2		946
	30	15.336	888.544 – 7409.1	$1s^22p^2 - 1s^22p3d$	$^3P - {}^3F^\circ$	2 – 3		946
	30	15.427	627.499 – 7109.6	$1s^22s2p - 1s^22s3d$	$^1P^\circ - {}^1D$	1 – 2		946
		15.455	322.646 – 6793.5+B	$1s^22s2p - 1s^22s3s$	$^3P^\circ - {}^3S$	1 – 1	P	619
	0	15.551	982.626 – 7409.1	$1s^22p^2 - 1s^22p3d$	$^1D - {}^3F^\circ$	2 – 3	Q	643
		15.580	375.057 – 6793.5+B	$1s^22s2p - 1s^22s3s$	$^3P^\circ - {}^3S$	2 – 1	P	619
		15.639	1177.55 – 7572.2	$1s^22p^2 - 1s^22p3d$	$^1S - {}^1P^\circ$	0 – 1		946
		15.884	856.876 – 7152.5+B	$1s^22p^2 - 1s^22p3s$	$^3P - {}^3P^\circ$	1 – 0	P	619
		15.905	982.626 – 7269.6+B	$1s^22p^2 - 1s^22p3s$	$^1D - {}^1P^\circ$	2 – 1	P	619
		16.416	1177.55 – 7269.6+B	$1s^22p^2 - 1s^22p3s$	$^1S - {}^1P^\circ$	0 – 1	P	619
		159.363	0.0 – 627.499	$1s^22s^2 - 1s^22s2p$	$g^1S - {}^1P^\circ$	0 – 1	P	1104
		164.590	375.057 – 982.626	$1s^22s2p - 1s^22p^2$	$^3P^\circ - {}^1D$	2 – 2	P	1104
		176.710	322.646 – 888.544	$1s^22s2p - 1s^22p^2$	$^3P^\circ - {}^3P$	1 – 2	P	1104
		180.577	303.096 – 856.876	$1s^22s2p - 1s^22p^2$	$^3P^\circ - {}^3P$	0 – 1	P	1104
		181.801	627.499 – 1177.55	$1s^22s2p - 1s^22p^2$	$^1P^\circ - {}^1S$	1 – 0	P	1104
		187.185	322.646 – 856.876	$1s^22s2p - 1s^22p^2$	$^3P^\circ - {}^3P$	1 – 1	P	1104
		194.747	375.057 – 888.544	$1s^22s2p - 1s^22p^2$	$^3P^\circ - {}^3P$	2 – 2	P	1104
		201.035	322.646 – 820.073	$1s^22s2p - 1s^22p^2$	$^3P^\circ - {}^3P$	1 – 0	P	1104
		207.547	375.057 – 856.876	$1s^22s2p - 1s^22p^2$	$^3P^\circ - {}^3P$	2 – 1	P	1104
		281.589	627.499 – 982.626	$1s^22s2p - 1s^22p^2$	$^1P^\circ - {}^1D$	1 – 2	P	1104
		309.937	0.0 – 322.646	$1s^22s^2 - 1s^22s2p$	$g^1S - {}^3P^\circ$	0 – 1	P	1104

VANADIUM XXI (V^{20+}), Z = 23
Ground State $1s^22s(^2S_{1/2})$ (3 electrons)
Ionization Potential 12 660 000 cm^{-1}; 1569.6 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		2.3856	7234.52 – 49150.	$1s^23p - 1s2p(^3P^\circ)3p$	$^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$	Q	643
		2.3888	415.933 – 42279.	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$		643
		2.3907	0. – 41829.	$1s^22s - 1s(2s2p(^1P^\circ))$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		643
		2.3992	415.933 – 42097.	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		643
		2.4013	340.434 – 41985.	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		643
		2.4047	415.933 – 42002.	$1s^22p - 1s2p^2$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		643
		2.4140	0. – 41425.	$1s^22s - 1s2s(^3P^\circ)2p$	$g^2S - {}^4P^\circ$	$\frac{1}{2} - \frac{3}{2}$		643
		2.4210	415.933 – 41721.	$1s^22p - 1s2p^2$	$^2P^\circ - {}^4P$	$\frac{3}{2} - \frac{5}{2}$	Q	625
		8.288	0. – 12066.	$1s^22s - 1s^29p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	643
		8.399	0. – 11906.	$1s^22s - 1s^28p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	643
		8.527	340.434 – 12068.	$1s^22p - 1s^29d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$	P	643
		8.576	0. – 11660.5	$1s^22s - 1s^27p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	643
		8.582	415.933 – 12068.	$1s^22p - 1s^29d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	643
		8.643	340.434 – 11908.	$1s^22p - 1s^28d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$	P	643
		8.703	415.933 – 11908.	$1s^22p - 1s^38d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	643
		8.826	340.434 – 11673.	$1s^22p - 1s^27d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$	P	643
		8.843	0. – 11308.4	$1s^22s - 1s^26p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	643
		8.882	415.933 – 11673.	$1s^22p - 1s^27d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	643
		9.111	340.434 – 11316.	$1s^22p - 1s^26d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$	P	643
		9.175	415.933 – 11316.	$1s^22p - 1s^26d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	643
		9.352	0. – 10692.9	$1s^22s - 1s^25p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	643
		9.633	340.434 – 10721.	$1s^22p - 1s^25d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$	P	643
		9.704	415.933 – 10721.	$1s^22p - 1s^25d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	643
		10.401	0. – 9614.32	$1s^22s - 1s^24p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	977

V XXI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	10.411	0. – 9604.88	$1s^22s - 1s^24p$	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{1}{2}$	P	977,273
	20	10.766	340.434 – 9628.93	$1s^22p - 1s^24d$	${}^2P^o - {}^2D$	$\frac{1}{2} - \frac{3}{2}$	P	977,273
		10.838	340.434 – 9567.27	$1s^22p - 1s^24s$	${}^2P^o - {}^2S$	$\frac{1}{2} - \frac{1}{2}$	P	977
	30	10.850	415.933 – 9632.52	$1s^22p - 1s^24d$	${}^2P^o - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	977,273
		10.927	415.933 – 9567.27	$1s^22p - 1s^24s$	${}^2P^o - {}^2S$	$\frac{3}{2} - \frac{1}{2}$	P	977
	60	13.823	0. – 7234.52	$1s^22s - 1s^23p$	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	977,273
	30	13.866	0. – 7212.05	$1s^22s - 1s^23p$	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{1}{2}$	P	977,273
	100	14.429	340.434 – 7270.92	$1s^22p - 1s^23d$	${}^2P^o - {}^2D$	$\frac{1}{2} - \frac{3}{2}$	P	977,273
	80	14.573	415.933 – 7277.94	$1s^22p - 1s^23d$	${}^2P^o - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	977,273
		14.592	415.933 – 7270.92	$1s^22p - 1s^23d$	${}^2P^o - {}^2D$	$\frac{3}{2} - \frac{3}{2}$		643
	110	14.714						869
		14.750	340.434 – 7119.91	$1s^22p - 1s^23s$	${}^2P^o - {}^2S$	$\frac{1}{2} - \frac{1}{2}$	P	977
		14.917	415.933 – 7119.91	$1s^22p - 1s^23s$	${}^2P^o - {}^2S$	$\frac{3}{2} - \frac{1}{2}$	P	977
		240.423	0. – 415.933	$1s^22s - 1s^22p$	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	977
		293.742	0. – 340.434	$1s^22s - 1s^22p$	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{1}{2}$	P	977

VANADIUM XXII (V^{21+}), Z = 23
Ground State $1s^2({}^1S_0)$ (2 electrons)
Ionization Potential 55 263 000 cm^{-1}; 6851.77 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		1.882	0.0 – 53135.28	$1s^2 - 1s5p$	$g^1S - {}^1P^o$	0 – 1	P	728
		1.925	0.0 – 51938.26	$1s^2 - 1s4p$	$g^1S - {}^1P^o$	0 – 1	P	728
		2.026	0.0 – 49353.42	$1s^2 - 1s3p$	$g^1S - {}^1P^o$	0 – 1	P	728
		2.3817	0.0 – 41986.02	$1s^2 - 1s2p$	$g^1S - {}^1P^o$	0 – 1	P	918
		2.3931	0.0 – 41786.75	$1s^2 - 1s2p$	$g^1S - {}^3P^o$	0 – 1	P	918
		2.405	0.0 – 41573.15	$1s^2 - 1s2s$	$g^1S - {}^3S$	0 – 1	F,P	375,1050
		12.91	41573.15 – 49317.41	$1s2s - 1s3p$	${}^3S - {}^3P^o$	1 – 2	P	375
		13.22	41791.78 – 49353.42	$1s2s - 1s3p$	${}^1S - {}^1P^o$	0 – 1	P	375
		356.98	41573.15 – 41853.28	$1s2s - 1s2p$	${}^3S - {}^3P^o$	1 – 2	P	375
		514.83	41791.78 – 41986.02	$1s2s - 1s2p$	${}^1S - {}^1P^o$	0 – 1	P	375
		1265.98	49238.42 – 49317.41	$1s3s - 1s3p$	${}^3S - {}^3P^o$	1 – 2	P	375
		1745.81	49296.14 – 49353.42	$1s3s - 1s3p$	${}^1S - {}^1P^o$	0 – 1	P	375

VANADIUM XXIII (V^{22+}), Z = 23
Ground State $1s({}^2S_{1/2})$ (1 electron)
Ionization Potential 58 443 500 cm^{-1}; 7246.13 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		1.747	0.0 – 57258.6275	1s – 7p	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		1.760	0.0 – 56830.6732	1s – 6p	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		1.782	0.0 – 56116.8983	1s – 5p	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		1.825	0.0 – 54807.3540	1s – 4p	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		1.924	0.0 – 51978.2980	1s – 3p	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	1042
		2.278	0.0 – 43905.3880	1s – 2p	$g^2S - {}^2P^o$	$\frac{1}{2} - \frac{3}{2}$	P	1042

V XXIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		2.283	0.0 – 43801.1400	1s – 2p	g^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{1}{2}$	P	1042
		7.433	43804.2100 – 57258.6275	2s – 7p	^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		7.489	43905.3880 – 57258.6275	2p – 7d	^{2}P° – ^{2}D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		7.677	43804.2100 – 56830.6732	2s – 6p	^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		7.737	43905.3880 – 56830.6732	2p – 6d	^{2}P° – ^{2}D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		8.122	43804.2100 – 56116.8983	2s – 5p	^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		8.188	43905.3880 – 56119.0836	2p – 5d	^{2}P° – ^{2}D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		9.088	43804.2100 – 54807.3540	2s – 4p	^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		9.169	43905.3880 – 54811.6217	2p – 4d	^{2}P° – ^{2}D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		12.234	43804.2100 – 51978.2980	2s – 3p	^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		12.372	43905.3880 – 51988.4100	2p – 3d	^{2}P° – ^{2}D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		18.831	51948.3150 – 57258.6275	3s – 7p	^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		18.938	51978.2980 – 57258.6275	3p – 7d	^{2}P° – ^{2}D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		18.974	51988.4100 – 57258.6275	3d – 7f	^{2}D – ^{2}F°	$\frac{5}{2}$ – $\frac{7}{2}$	P	1042
		20.482	51948.3150 – 56830.6732	3s – 6p	^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		20.608	51978.2980 – 56830.6732	3p – 6d	^{2}P° – ^{2}D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		20.652	51988.4100 – 56830.6732	3d – 6f	^{2}D – ^{2}F°	$\frac{5}{2}$ – $\frac{7}{2}$	P	1042
		23.989	51948.3150 – 56116.8983	3s – 5p	^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		24.150	51978.2980 – 56119.0836	3p – 5d	^{2}P° – ^{2}D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		24.203	51988.4100 – 56120.1752	3d – 5f	^{2}D – ^{2}F°	$\frac{5}{2}$ – $\frac{7}{2}$	P	1042
		34.977	51948.3150 – 54807.3540	3s – 4p	^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		35.294	51978.2980 – 54811.6217	3p – 4d	^{2}P° – ^{2}D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		35.394	51988.4100 – 54813.7530	3d – 4f	^{2}D – ^{2}F°	$\frac{5}{2}$ – $\frac{7}{2}$	P	1042
		988.357	43804.2100 – 43905.3880	2s – 2p	^{2}S – ^{2}P°	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042

CHROMIUM , Z = 24
Unclassified Lines

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	0	12.201						716
	0	12.329						716
	0	12.435						716
	0	12.589						716
	0	12.778						716
	10	13.217						716
	2	13.394						1089
		14.53						716
	10	14.775						716
	20	15.21						716
	10	15.680						716
	80	17.107						716
	100	205.82						256
	100	206.53						256
	300	210.16						256
	300	215.38						256
	300	217.19						256
	200	217.55						256
	200	217.61						256
	100	218.06						256
	100	218.15						256
	400	219.29						256
	200	219.94						256
	200	222.16						256
	300	226.89						256
		334.95						251
		380.7						251
		419.2						251

CHROMIUM I (Cr^{0+}), Z = 24
Ground State $1s^22s^22p^63s^23p^63d^54s(^7S_3)$ (24 electrons)
Ionization Potential 54 575.6 cm^{-1}; 6.7666 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	1653.06	0.0 – 60.49342	$3d^5(a^6S)4s$ – $3d^44s(a^6D)6p$	ga^7S – $q^5D°$	3 – 3		490
	300	1747.14	0.0 – 57.23750	$3d^5(a^6S)4s$ – $3d^44s(a^6D)6p$	ga^7S – $p^5F°$	3 – 4		490
		1798.2					A	882
		1798.6					A	882
		1799.7					A	882
		1800.7					A	882
		1800.9					A	882
		1801.1					A	882
		1801.7					A	882
		1802.4					A	882
		1803.0					A	882
		1803.7					A	882

CR I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		1805.2					A	882
		1805.4					A	882
		1806.5					A	882
		1807.7					A	882
		1808.4					A	882
		1809.7					A	882
		1810.4					A	882
		1812.2					A	882
		1813.7					A	882
		1815.9					A	882
		1818.4	0.0 – 54.99293	$3d^5(a^6S)4s - 3d^5(a^2D)4p$	$ga^7S - v^3F^\circ$	3 – 2	A	882
	1	1835.2	0.0 – 54.4900	$3d^5(a^6S)4s - 3d^5(a^6S)38p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	1	1835.4	0.0 – 54.4840	$3d^5(a^6S)4s - 3d^5(a^6S)37p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	1	1835.5	0.0 – 54.4806	$3d^5(a^6S)4s - 3d^5(a^6S)36p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	1	1835.7	0.0 – 54.4748	$3d^5(a^6S)4s - 3d^5(a^6S)35p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	1	1835.9	0.0 – 54.4685	$3d^5(a^6S)4s - 3d^5(a^6S)34p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	1	1836.2	0.0 – 54.4603	$3d^5(a^6S)4s - 3d^5(a^6S)33p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	1	1836.4	0.0 – 54.4534	$3d^5(a^6S)4s - 3d^5(a^6S)32p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	1	1836.7	0.0 – 54.4450	$3d^5(a^6S)4s - 3d^5(a^6S)31p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	1	1837.0	0.0 – 54.4361	$3d^5(a^6S)4s - 3d^5(a^6S)30p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	1	1837.4	0.0 – 54.4254	$3d^5(a^6S)4s - 3d^5(a^6S)29p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	1	1837.8	0.0 – 54.4135	$3d^5(a^6S)4s - 3d^5(a^6S)28p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	5	1838.2	0.0 – 54.4005	$3d^5(a^6S)4s - 3d^5(a^6S)27p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	5	1838.7	0.0 – 54.3855	$3d^5(a^6S)4s - 3d^5(a^6S)26p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	0	1839.1					A	882
	5	1839.3	0.0 – 54.3686	$3d^5(a^6S)4s - 3d^5(a^6S)25p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	5	1839.9	0.0 – 54.3508	$3d^5(a^6S)4s - 3d^5(a^6S)24p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	10	1840.69	0.0 – 54.3272	$3d^5(a^6S)4s - 3d^5(a^6S)23p$	$ga^7S - {}^7P^\circ$	3 – 4		490
	10	1841.5	0.0 – 54.3036	$3d^5(a^6S)4s - 3d^5(a^6S)22p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	00	1842.4					A	882
	10	1842.6	0.0 – 54.2711	$3d^5(a^6S)4s - 3d^5(a^6S)21p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	00	1843.1					A	882
	5	1843.7	0.0 – 54.2388	$3d^5(a^6S)4s - 3d^5(a^6S)20p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	1	1844.6					A	882
	10	1845.1	0.0 – 54.1966	$3d^5(a^6S)4s - 3d^5(a^6S)19p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	1	1846.4					A	882
	10	1846.8	0.0 – 54.1477	$3d^5(a^6S)4s - 3d^5(a^6S)18p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	5	1847.2					A	882
	00	1847.3	0.0 – 54.13288	$3d^5(a^6S)4s - 3d^44s(a^4D)5p$	$ga^7S - s^5P^\circ$	3 – 3	A	882
	10	1848.8	0.0 – 54.0890	$3d^5(a^6S)4s - 3d^5(a^6S)17p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	1	1849.5					A	882
	10	1851.3	0.0 – 54.0171	$3d^5(a^6S)4s - 3d^5(a^6S)16p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	10	1854.3	0.0 – 53.9280	$3d^5(a^6S)4s - 3d^5(a^6S)15p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	15	1858.2	0.0 – 53.8158	$3d^5(a^6S)4s - 3d^5(a^6S)14p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	5	1859.3	0.0 – 53.78277	$3d^5(a^6S)4s - 3d^44s(a^6D)5p$	$ga^7S - s^5D^\circ$	3 – 4	A	882
	25	1863.2	0.0 – 53.6714	$3d^5(a^6S)4s - 3d^5(a^6S)13p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	1	1864.3	0.0 – 53.64074	$3d^5(a^6S)4s - 3d^44s(a^6D)5p$	$ga^7S - s^5D^\circ$	3 – 3	A	882
	25	1869.7					A	882
	25	1869.8	0.0 – 53.4826	$3d^5(a^6S)4s - 3d^5(a^6S)12p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882
	50	1873.7					A	882
	1	1874.4					A	882
	1	1878.0					A	882
	50	1878.4					A	882
	1	1878.8	0.0 – 53.2268	$3d^5(a^6S)4s - 3d^5(a^6S)11p$	$ga^7S - {}^7P^\circ$	3 – 4	A	882

CR I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	5	1879.1					A	882
	5	1879.2					A	882
	50	1880.39	7.92747 – 61.10795	$3d^44s^2 - 3d^44s(a^4D)6p$	$a^5D - r^5P^\circ$	2 – 2		341
	250	1881.87	7.92747 – 61.06596	$3d^44s^2 - 3d^44s(a^4D)6p$	$a^5D - r^5P^\circ$	2 – 1		341
	1	1882.6	0.0 – 53.11754	$3d^5(a^6S)4s - 3d^4(a^3D)4s4p(^3P^\circ)$	$ga^7S - r^7F^\circ$	3 – 4	A	882
	50	1883.11	8.09521 – 61.19868	$3d^44s^2 - 3d^44s(a^4D)6p$	$a^5D - r^5P^\circ$	3 – 3		341
	1	1884.2	0.0 – 53.07390	$3d^5(a^6S)4s - 3d^4(a^3D)4s4p(^3P^\circ)$	$ga^7S - r^7F^\circ$	3 – 3	A	882
	00	1885.3					A	882
	50	1885.50	7.59316 – 60.62987	$3d^5(a^6S)4s - 3d^5(a^2D)4p$	$a^5S - s^3D^\circ$	2 – 2		490
	500	1886.34	8.09521 – 61.10795	$3d^44s^2 - 3d^44s(a^4D)6p$	$a^5D - r^5P^\circ$	3 – 2		341
	150	1887.60	7.92747 – 60.90484	$3d^44s^2 - 3d^44s(a^4D)6p$	$a^5D - o^5F^\circ$	2 – 3		341
	50	1887.85	7.81082 – 60.78125	$3d^44s^2 - 3d^44s(a^4D)6p$	$a^5D - o^5F^\circ$	1 – 2		341
	150	1888.17	8.09521 – 61.05641	$3d^44s^2 - 3d^44s(a^4D)6p$	$a^5D - o^5F^\circ$	3 – 4		341
	50	1889.20	7.75078 – 60.68353	$3d^44s^2 - 3d^44s(a^4D)6p$	$a^5D - o^5F^\circ$	0 – 1		341
	1	1890.0					A	882
	50	1890.4					A	882
	300	1890.78	8.30757 – 61.19577	$3d^44s^2 - 3d^44s(a^4D)6p$	$a^5D - o^5F^\circ$	4 – 5		341
		1891.4	0.0 – 52.8695	$3d^5(a^6S)4s - 3d^5(a^6S)10p$	$ga^7S - {}^7P^\circ$	3 – 4	P	375
	50	1892.01	7.92747 – 60.78125	$3d^44s^2 - 3d^44s(a^4D)6p$	$a^5D - o^5F^\circ$	2 – 2		341
	50	1892.8					A	882
	50	1893.59	8.09521 – 60.90484	$3d^44s^2 - 3d^44s(a^4D)6p$	$a^5D - o^5F^\circ$	3 – 3		341
	5	1894.2					A	882
	50	1895.78	8.30757 – 61.05641	$3d^44s^2 - 3d^44s(a^4D)6p$	$a^5D - o^5F^\circ$	4 – 4		341
	1	1896.9					A	882
	150	1902.43	7.81082 – 60.37494	$3d^44s^2 - 3d^44s(a^6D)6p$	$a^5D - q^5D^\circ$	1 – 2		341
	50	1903.30	7.75078 – 60.29104	$3d^44s^2 - 3d^44s(a^6D)6p$	$a^5D - q^5D^\circ$	0 – 1		341
	50	1903.57	8.09521 – 60.62796	$3d^44s^2 - 3d^44s(a^6D)6p$	$a^5D - q^5D^\circ$	3 – 4		341
	100	1906.67	7.92747 – 60.37494	$3d^44s^2 - 3d^44s(a^6D)6p$	$a^5D - q^5D^\circ$	2 – 2		341
	100	1907.28	7.81082 – 60.2415	$3d^44s^2 - 3d^44s(a^6D)6p$	$a^5D - q^5D^\circ$	1 – 0		341
	200	1908.46	8.09521 – 60.49342	$3d^44s^2 - 3d^44s(a^6D)6p$	$a^5D - q^5D^\circ$	3 – 3		341
	100	1909.72	7.92747 – 60.29104	$3d^44s^2 - 3d^44s(a^6D)6p$	$a^5D - q^5D^\circ$	2 – 1		341
		1910.3	0.0 – 52.3488	$3d^5(a^6S)4s - 3d^5(a^6S)9p$	$ga^7S - {}^7P^\circ$	3 – 4	P	375
	350	1911.30	8.30757 – 60.62796	$3d^44s^2 - 3d^44s(a^6D)6p$	$a^5D - q^5D^\circ$	4 – 4		341
	200	1912.79	8.09521 – 60.37494	$3d^44s^2 - 3d^44s(a^6D)6p$	$a^5D - q^5D^\circ$	3 – 2		341
	100	1916.23	8.30757 – 60.49342	$3d^44s^2 - 3d^44s(a^6D)6p$	$a^5D - q^5D^\circ$	4 – 3		341
	10	1924.8					A	882
	15	1927.1					A	882
	10	1928.7					A	882
	10	1929.60	7.59316 – 59.41701	$3d^5(a^6S)4s - 3d^4(a^3F)4s4p(^1P^\circ)$	$a^5S - r^3F^\circ$	2 – 3		490
	50	1940.45	0.0 – 51.5344	$3d^5(a^6S)4s - 3d^5(a^6S)8p$	$ga^7S - v^7P^\circ$	3 – 4	A	882
	50	1940.56	0.0 – 51.5315	$3d^5(a^6S)4s - 3d^5(a^6S)8p$	$ga^7S - v^7P^\circ$	3 – 3	A	882
		1940.64	0.0 – 51.5294	$3d^5(a^6S)4s - 3d^5(a^6S)8p$	$ga^7S - v^7P^\circ$	3 – 2	A	882
49	40	1948.51	8.09521 – 59.41701	$3d^44s^2 - 3d^4(a^3F)4s4p(^1P^\circ)$	$a^5D - r^3F^\circ$	3 – 3		490
	10	1961.93						490
49	200	1989.05	7.92747 – 58.20265	$3d^44s^2 - 3d^5(a^2F)4p$	$a^5D - s^3F^\circ$	2 – 3	P	341
48	750	1989.92	7.81082 – 58.06380	$3d^44s^2 - 3d^44s(a^4D)5p$	$a^5D - r^5D^\circ$	1 – 2		341
48	400	1990.27	7.75078 – 57.99504	$3d^44s^2 - 3d^44s(a^4D)5p$	$a^5D - r^5D^\circ$	0 – 1		341
	750	1991.22	0.0 – 50.2210	$3d^5(a^6S)4s - 3d^5(a^6S)7p$	$ga^7S - {}^7P^\circ$	3 – 4		341,375
48	300	1992.12	8.09521 – 58.29262	$3d^44s^2 - 3d^44s(a^4D)5p$	$a^5D - r^5D^\circ$	3 – 4		341
48	250	1992.65	7.81082 – 57.99504	$3d^44s^2 - 3d^44s(a^4D)5p$	$a^5D - r^5D^\circ$	1 – 1		341
48	400	1994.10	7.81082 – 57.95842	$3d^44s^2 - 3d^44s(a^4D)5p$	$a^5D - r^5D^\circ$	1 – 0		341
48	750	1994.55	7.92747 – 58.06380	$3d^44s^2 - 3d^44s(a^4D)5p$	$a^5D - r^5D^\circ$	2 – 2		341
49	250	1995.69	8.09521 – 58.20265	$3d^44s^2 - 3d^5(a^2F)4p$	$a^5D - s^3F^\circ$	3 – 3		341
49	250	1997.09	8.09521 – 58.16789	$3d^44s^2 - 3d^5(a^2F)4p$	$a^5D - s^3F^\circ$	3 – 4		341

CR I — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
48	500	1997.30	7.92747 – 57.99504	$3d^44s^2 - 3d^44s(a^4D)5p$	$a^5D - r^5D^\circ$	2 – 1		341
48	600	1997.90	8.09521 – 58.14776	$3d^44s^2 - 3d^44s(a^4D)5p$	$a^5D - r^5D^\circ$	3 – 3		341

CHROMIUM II (Cr^{1+}), Z = 24
Ground State $1s^22s^22p^63s^23p^63d^5(^6S_{5/2})$ (23 electrons)
Ionization Potential 133 060 cm^{-1}; 16.4975 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	1392.83	19.63128 – 91.42631	$3d^4(a^5D)4s - 3d^4(b^3P)4p$	$a^4D - u^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		490
	100	1406.90	20.02418 – 91.10336	$3d^4(a^5D)4s - 3d^4(b^3F)4p$	$a^4D - w^4G^\circ$	$\frac{7}{2}-\frac{9}{2}$		490
	40	1492.23	0.0 – 67.01228	$3d^5 - 3d^4(a^3P)4p$	$ga^6S - y^4F^\circ$	$\frac{5}{2}-\frac{5}{2}$		490
	20	1504.16	20.02418 – 86.50738	$3d^4(a^5D)4s - 3d^4(a^1F)4p$	$a^4D - v^2D^\circ$	$\frac{7}{2}-\frac{5}{2}$		490
	20	1604.82	11.96200 – 74.27348	$3d^4(a^5D)4s - 3d^4(a^3D)4p$	$a^6D - w^4F^\circ$	$\frac{1}{2}-\frac{3}{2}$		490
	20	1606.67	12.03272 – 74.27348	$3d^4(a^5D)4s - 3d^4(a^3D)4p$	$a^6D - w^4F^\circ$	$\frac{3}{2}-\frac{3}{2}$		490
	50	1626.85	25.04310 – 86.51108	$3d^5 - 3d^4(a^1F)4p$	$b^4D - v^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		490
	10	1657.18	31.08311 – 91.42631	$3d^4(a^3F)4s - 3d^4(b^3P)4p$	$a^4F - u^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		490
	10	1661.02	31.35115 – 91.55654	$3d^5 - 3d^4(b^3P)4p$	$a^2D - u^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		490
	20	1665.98	31.53162 – 91.55654	$3d^5 - 3d^4(b^3P)4p$	$a^2D - u^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		490
	70	1696.27	32.60373 – 91.55654	$3d^5 - 3d^4(b^3P)4p$	$a^2F - u^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		490
	10	1712.85	32.60373 – 90.98631	$3d^5 - 3d^4(b^3F)4p$	$a^2F - w^4G^\circ$	$\frac{5}{2}-\frac{7}{2}$		490
	70	1727.11	47.46494 – 105.3652	$3d^4(a^5D)4p - 3d^4(a^3G)5s$	$z^6F^\circ - f^4G$	$\frac{9}{2}-\frac{9}{2}$		490
	10	1727.78	25.04310 – 82.92003	$3d^5 - 3d^4(a^1D)4p$	$b^4D - w^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		490
	40	1729.79	25.04310 – 82.85400	$3d^5 - 3d^4(a^1D)4p$	$b^4D - w^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		490
	200	1736.63	33.52123 – 91.10336	$3d^4(a^3G)4s - 3d^4(b^3F)4p$	$b^4G - w^4G^\circ$	$\frac{7}{2}-\frac{9}{2}$		490
	20	1754.36	12.49679 – 69.49827	$3d^4(a^5D)4s - 3d^4(a^3G)4p$	$a^6D - x^4F^\circ$	$\frac{9}{2}-\frac{9}{2}$		490
224	40	1786.11	35.56902 – 91.55654	$3d^4(a^3F)4s - 3d^4(b^3P)4p$	$b^2F - u^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$	P	340
	30	1789.24	21.82482 – 77.71366	$3d^5 - 3d^4(a^1S)4p$	$a^4P - x^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		490
224	40	1791.51	35.60760 – 91.42631	$3d^4(a^3F)4s - 3d^4(b^3P)4p$	$b^2F - u^2D^\circ$	$\frac{7}{2}-\frac{5}{2}$		340
	10	1794.47	12.14800 – 67.87568	$3d^4(a^5D)4s - 3d^4(a^3F)4p$	$a^6D - x^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		490
18	60	1808.66	19.63128 – 74.92080	$3d^4(a^5D)4s - 3d^4(a^3D)4p$	$a^4D - x^4P^\circ$	$\frac{3}{2}-\frac{1}{2}$		340
	100	1810.08	12.14800 – 67.39380	$3d^4(a^5D)4s - 3d^4(a^3P)4p$	$a^6D - y^4F^\circ$	$\frac{5}{2}-\frac{7}{2}$		340
	20	1812.91	31.35115 – 86.51108	$3d^5 - 3d^4(a^1F)4p$	$a^2D - v^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$	P	340
	20	1813.41	12.30398 – 67.44882	$3d^4(a^5D)4s - 3d^4(a^3P)4p$	$a^6D - y^4F^\circ$	$\frac{7}{2}-\frac{9}{2}$	P	340
	60	1815.32	19.63128 – 74.71805	$3d^4(a^5D)4s - 3d^4(a^3D)4p$	$a^4D - x^4P^\circ$	$\frac{3}{2}-\frac{3}{2}$		340
	20	1818.89	31.53162 – 86.51108	$3d^5 - 3d^4(a^1F)4p$	$a^2D - v^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		340
	100	1819.77	12.49679 – 67.44882	$3d^4(a^5D)4s - 3d^4(a^3P)4p$	$a^6D - y^4F^\circ$	$\frac{9}{2}-\frac{9}{2}$	P	340
	20	1820.77	12.14800 – 67.07048	$3d^4(a^5D)4s - 3d^4(a^3P)4p$	$a^6D - y^4F^\circ$	$\frac{5}{2}-\frac{3}{2}$		490
18	80	1820.84	19.79801 – 74.71805	$3d^4(a^5D)4s - 3d^4(a^3D)4p$	$a^4D - x^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		340
	160	1821.58	12.49679 – 67.39380	$3d^4(a^5D)4s - 3d^4(a^3P)4p$	$a^6D - y^4F^\circ$	$\frac{9}{2}-\frac{7}{2}$		340
	20	1823.07	19.63128 – 74.48425	$3d^4(a^5D)4s - 3d^4(a^3D)4p$	$a^4D - x^4P^\circ$	$\frac{3}{2}-\frac{5}{2}$		340
4	60	1825.34	0.0 – 54.78467	$3d^5 - 3d^4(a^5D)4p$	$ga^6S - z^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		340
	20	1828.56	19.63128 – 74.31886	$3d^4(a^5D)4s - 3d^4(a^3D)4p$	$a^4D - w^4F^\circ$	$\frac{3}{2}-\frac{5}{2}$		490
	60	1828.62	19.79801 – 74.48425	$3d^4(a^5D)4s - 3d^4(a^3D)4p$	$a^4D - x^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		340
4	100	1830.61	0.0 – 54.62576	$3d^5 - 3d^4(a^5D)4p$	$ga^6S - z^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		340
18	240	1836.23	20.02418 – 74.48425	$3d^4(a^5D)4s - 3d^4(a^3D)4p$	$a^4D - x^4P^\circ$	$\frac{7}{2}-\frac{5}{2}$		340
33	500	1852.13	20.51275 – 74.50451	$3d^5 - 3d^4(a^3D)4p$	$a^4G - w^4F^\circ$	$\frac{11}{2}-\frac{9}{2}$		340
	30	1852.31	20.51833 – 74.50451	$3d^5 - 3d^4(a^3D)4p$	$a^4G - w^4F^\circ$	$\frac{7}{2}-\frac{9}{2}$		490
33	60	1852.37	20.51985 – 74.50451	$3d^5 - 3d^4(a^3D)4p$	$a^4G - w^4F^\circ$	$\frac{9}{2}-\frac{9}{2}$		340
	20	1854.46	20.51262 – 74.43614	$3d^5 - 3d^4(a^1G)4p$	$a^4G - x^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		340
	60	1854.68	20.51833 – 74.43614	$3d^5 - 3d^4(a^1G)4p$	$a^4G - x^2F^\circ$	$\frac{7}{2}-\frac{5}{2}$		340

CR II — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
33	400	1855.14	20.51985 – 74.42384	$3d^5 - 3d^4(a^3D)4p$	$a^4G - w^4F^\circ$	$\frac{9}{2}-\frac{7}{2}$		340
33	400	1858.54	20.51262 – 74.31886	$3d^5 - 3d^4(a^3D)4p$	$a^4G - w^4F^\circ$	$\frac{5}{2}-\frac{5}{2}$		340
33	300	1858.72	20.51833 – 74.31886	$3d^5 - 3d^4(a^3D)4p$	$a^4G - w^4F^\circ$	$\frac{7}{2}-\frac{5}{2}$		340
33	240	1860.09	20.51262 – 74.27348	$3d^5 - 3d^4(a^3D)4p$	$a^4G - w^4F^\circ$	$\frac{5}{2}-\frac{3}{2}$	P	340
	20	1865.80	20.51833 – 74.11448	$3d^5 - 3d^4(a^1G)4p$	$a^4G - x^2F^\circ$	$\frac{7}{2}-\frac{7}{2}$		340
156	300	1866.22	32.35594 – 85.93950	$3d^5 - 3d^4(a^1F)4p$	$a^2F - v^2G^\circ$	$\frac{7}{2}-\frac{9}{2}$		340
	20	1870.51	20.02418 – 73.48560	$3d^4(a^5D)4s - 3d^4(a^3D)4p$	$a^4D - w^4D^\circ$	$\frac{7}{2}-\frac{7}{2}$	P	340
	60	1875.22	31.35115 – 84.67739	$3d^5 - 3d^4(a^1F)4p$	$a^2D - u^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		340
156	200	1879.08	32.35594 – 85.57343	$3d^5 - 3d^4(a^1F)4p$	$a^2F - v^2G^\circ$	$\frac{7}{2}-\frac{7}{2}$	P	340
	120	1881.06	21.82286 – 74.98493	$3d^5 - 3d^4(a^3D)4p$	$a^4P - y^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		340
40	200	1883.35	21.82425 – 74.92080	$3d^5 - 3d^4(a^3D)4p$	$a^4P - x^4P^\circ$	$\frac{1}{2}-\frac{1}{2}$		340
	20	1884.18	31.53162 – 84.60499	$3d^5 - 3d^4(a^1F)4p$	$a^2D - u^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$	P	340
	120	1887.96	20.51833 – 73.48560	$3d^5 - 3d^4(a^3D)4p$	$a^4G - w^4D^\circ$	$\frac{7}{2}-\frac{7}{2}$		340
40	600	1890.55	21.82286 – 74.71805	$3d^5 - 3d^4(a^3D)4p$	$a^4P - x^4P^\circ$	$\frac{5}{2}-\frac{3}{2}$		340
40	700	1898.92	21.82286 – 74.48425	$3d^5 - 3d^4(a^3D)4p$	$a^4P - x^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$		340
	30	1900.66	21.82286 – 74.43614	$3d^5 - 3d^4(a^1G)4p$	$a^4P - x^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		490
	60	1907.40	12.49679 – 64.92430	$3d^4(a^5D)4s - 3d^4(a^3P)4p$	$a^6D - y^4D^\circ$	$\frac{9}{2}-\frac{7}{2}$	P	340
155	140	1911.26	32.35594 – 84.67739	$3d^5 - 3d^4(a^1F)4p$	$a^2F - u^2F^\circ$	$\frac{7}{2}-\frac{7}{2}$	P	340
	80	1918.30	20.51985 – 72.64879	$3d^4$(a G)$4p^3$	$a^4G - x^2G^\circ$	$\frac{9}{2}-\frac{7}{2}$		340
155	160	1923.02	32.60373 – 84.60499	$3d^5 - 3d^4(a^1F)4p$	$a^2F - u^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		340
	10	1928.61	34.65948 – 86.51108	$3d^4(a^3P)4s - 3d^4(a^1F)4p$	$a^2P - v^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		490
285	240	1929.96	39.74236 – 91.55654	$3d^5 - 3d^4(b^3P)4p$	$c^2F - u^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		340
273	100	1932.64	39.68400 – 91.42631	$3d^4(a^1G)4s - 3d^4(b^3P)4p$	$c^2G - u^2D^\circ$	$\frac{7}{2}-\frac{5}{2}$		340
39	500	1935.63	21.82286 – 73.48560	$3d^5 - 3d^4(a^3D)4p$	$a^4P - w^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	340
39	400	1937.56	21.82482 – 73.43627	$3d^5 - 3d^4(a^3D)4p$	$a^4P - w^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		340
39	60	1938.42	21.82286 – 73.41194	$3d^5 - 3d^4(a^3D)4p$	$a^4P - w^4D^\circ$	$\frac{5}{2}-\frac{3}{2}$		340
136	120	1939.15	31.35115 – 82.92003	$3d^5 - 3d^4(a^1D)4p$	$a^2D - w^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		340
285	100	1939.90	39.87728 – 91.42631	$3d^5 - 3d^4(b^3P)4p$	$c^2F - u^2D^\circ$	$\frac{7}{2}-\frac{5}{2}$		340
136	200	1945.98	31.53162 – 82.92003	$3d^5 - 3d^4(a^1D)4p$	$a^2D - w^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		340
136	200	1948.47	31.53162 – 82.85400	$3d^5 - 3d^4(a^1D)4p$	$a^2D - w^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	P	340
205	800	1949.00	34.63114 – 85.93950	$3d^4(a^3H)4s - 3d^4(a^1F)4p$	$a^2H - v^2G^\circ$	$\frac{9}{2}-\frac{9}{2}$		340
272	700	1949.22	39.68400 – 90.98631	$3d^4(a^1G)4s - 3d^4(b^3F)4p$	$c^2G - w^4G^\circ$	$\frac{7}{2}-\frac{7}{2}$		340
272	1000	1950.12	39.82452 – 91.10336	$3d^4(a^1G)4s - 3d^4(b^3F)4p$	$c^2G - w^4G^\circ$	$\frac{9}{2}-\frac{9}{2}$	P	340
205	300	1955.93	34.81306 – 85.93950	$3d^4(a^3H)4s - 3d^4(a^1F)4p$	$a^2H - v^2G^\circ$	$\frac{11}{2}-\frac{9}{2}$		340
205	300	1963.00	34.63114 – 85.57343	$3d^4(a^3H)4s - 3d^4(a^1F)4p$	$a^2H - v^2G^\circ$	$\frac{9}{2}-\frac{7}{2}$		340
31	440	1985.42	20.51275 – 70.87995	$3d^5 - 3d^4(a^3G)4p$	$a^4G - x^4G^\circ$	$\frac{11}{2}-\frac{11}{2}$	P	340
31	240	1985.67	20.51985 – 70.87995	$3d^5 - 3d^4(a^3G)4p$	$a^4G - x^4G^\circ$	$\frac{9}{2}-\frac{11}{2}$		340
	10	1987.19	19.63128 – 69.95420	$3d^4(a^5D)4s - 3d^4(a^3P)4p$	$a^4D - y^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		490
154	100	1987.43	32.60373 – 82.92003	$3d^5 - 3d^4(a^1D)4p$	$a^2F - w^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		340
236	200	1990.79	35.70766 – 85.93950	$3d^5 - 3d^4(a^1F)4p$	$b^2H - v^2G^\circ$	$\frac{11}{2}-\frac{9}{2}$		340
31	300	1993.37	20.51275 – 70.67922	$3d^5 - 3d^4(a^3G)4p$	$a^4G - x^4G^\circ$	$\frac{11}{2}-\frac{9}{2}$		340
31	500	1993.63	20.51985 – 70.67922	$3d^5 - 3d^4(a^3G)4p$	$a^4G - x^4G^\circ$	$\frac{9}{2}-\frac{9}{2}$		340
	60	1996.62	20.02418 – 70.10783	$3d^4(a^5D)4s - 3d^4(a^3F)4p$	$a^4D - y^2G^\circ$	$\frac{7}{2}-\frac{9}{2}$		340
204	40	1998.14	34.63114 – 84.67739	$3d^4(a^3H)4s - 3d^4(a^1F)4p$	$a^2H - u^2F^\circ$	$\frac{9}{2}-\frac{7}{2}$		340

CHROMIUM III (Cr^{2+}), Z = 24
Ground State $1s^22s^22p^63s^23p^63d^4(^5D_0)$ (22 electrons)
Ionization Potential 249 700 cm^{-1}; 30.96 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	735.89						490
	80	748.35						490
	10	755.69						490
	1	756.567	17.16856 – 149.34403	3d^4 – 3d^3(b^{2}D)4p	a^{3}P - ^{3}F°	1 – 2		893
	1	763.107	18.58339 – 149.62630	3d^4 – 3d^3(b^{2}D)4p	a^{3}F - ^{3}F°	4 – 4		893
	10	767.30						490
	10	767.61						490
	20	767.83						490
	20	768.21	16.77136 – 146.93618	3d^4 – 3d^3(b^{2}D)4p	a^{3}P - ^{3}D°	0 – 1		490
	30	768.51	18.45184 – 148.57381	3d^4 – 3d^3(b^{2}D)4p	a^{3}F - ^{1}D°	2 – 2		490
	40	769.20						490
	30	769.66						490
	1	777.362	20.70364 – 149.34403	3d^4 – 3d^3(b^{2}D)4p	a^{3}G - ^{3}F°	3 – 2		893
	25	777.425	20.99604 – 149.62630	3d^4 – 3d^3(b^{2}D)4p	a^{3}G - ^{3}F°	5 – 4		893
	10	777.86						490
	10	778.026	20.85295 – 149.38364	3d^4 – 3d^3(b^{2}D)4p	a^{3}G - ^{3}F°	4 – 3		893
	40	778.165	18.58339 – 147.09073	3d^4 – 3d^3(b^{2}D)4p	a^{3}F - ^{3}D°	4 – 3		893
	4	778.306	18.45184 – 146.93618	3d^4 – 3d^3(b^{2}D)4p	a^{3}F - ^{3}D°	2 – 1		893
	25	778.438	18.51118 – 146.97333	3d^4 – 3d^3(b^{2}D)4p	a^{3}F - ^{3}D°	3 – 2		893
	10	779.43						490
	50	780.87						490
	40	781.42						490
	30	781.88						490
	20	782.26						490
	10	782.45						490
	10	788.032	25.13887 – 152.03721	3d^4 – 3d^3(b^{2}D)4p	a^{1}G - ^{1}F°	4 – 3		893
	30	788.90						490
	10	789.59						490
	10	789.81						490
	10	790.65						490
	4	794.246	25.78094 – 151.68744	3d^4 – 3d^3(b^{2}D)4p	a^{3}D - ^{3}P°	2 – 1		893
	10	796.025	25.72644 – 151.35127	3d^4 – 3d^3(b^{2}D)4p	a^{3}D - ^{3}P°	3 – 2		893
	10	798.31						490
	30	801.04						490
	10	814.71						490
	10	814.90						490
	10	815.40						490
	10	815.99						490
	10	816.57						490
	10	817.87						490
	20	821.74						490
	4	823.971	25.72644 – 147.09073	3d^4 – 3d^3(b^{2}D)4p	a^{3}D - ^{3}D°	3 – 3		893
	1	825.141	25.78094 – 146.97333	3d^4 – 3d^3(b^{2}D)4p	a^{3}D - ^{3}D°	2 – 2		893
	10	825.593	25.84831 – 146.97333	3d^4 – 3d^3(b^{2}D)4p	a^{3}D - ^{3}D°	1 – 2		893
	4	834.131	32.15199 – 152.03721	3d^4 – 3d^3(b^{2}D)4p	a^{1}D - ^{1}F°	2 – 3		893
	10	843.37						490
	10	845.90						490
	4	846.977	.35655 – 118.42299	3d^4 – 3d^3(a^{2}D)4p	ga^{5}D - ^{3}D°	3 – 2		893
	10	866.19						490
	40	869.327	37.00516 – 152.03721	3d^4 – 3d^3(b^{2}D)4p	a^{1}F - ^{1}F°	3 – 3		893
	20	875.05	18.45184 – 132.73422	3d^4 – 3d^3(a^{2}F)4p	a^{3}F - ^{3}D°	2 – 1		490
	4	875.147	17.85118 – 132.11750	3d^4 – 3d^3(a^{2}F)4p	a^{3}P - ^{3}D°	2 – 3		893
	10	876.785	17.39692 – 131.45016	3d^4 – 3d^3(a^{2}F)4p	a^{3}H - ^{3}G°	5 – 5		893
	200	877.255	17.27370 – 131.26566	3d^4 – 3d^3(a^{2}F)4p	a^{3}H - ^{3}G°	4 – 4		893

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	90	877.807	17.53065 – 131.45016	$3d^4 - 3d^3(a^2F)4p$	$a^3H - {}^3G°$	6 – 5		893
	90	878.203	17.39692 – 131.26566	$3d^4 - 3d^3(a^2F)4p$	$a^3H - {}^3G°$	5 – 4		893
	60	878.407	17.27370 – 131.11636	$3d^4 - 3d^3(a^2F)4p$	$a^3H - {}^3G°$	4 – 3		893
	50	883.00						490
	20	884.18						490
	25	886.007	18.58339 – 131.45016	$3d^4 - 3d^3(a^2F)4p$	$a^3F - {}^3G°$	4 – 5		893
	4	886.879	18.51118 – 131.26566	$3d^4 - 3d^3(a^2F)4p$	$a^3F - {}^3G°$	3 – 4		893
	4	887.588	18.45184 – 131.11636	$3d^4 - 3d^3(a^2F)4p$	$a^3F - {}^3G°$	2 – 3		893
	10	888.25						490
	10	888.54	.57608 – 113.11521	$3d^4 - 3d^3(a^2G)4p$	$ga^5D - {}^1G°$	4 – 4		490
	80	889.33						490
	10	892.09						490
	10	894.86						490
	10	895.19						490
	4	896.310	37.00516 – 148.57381	$3d^4 - 3d^3(b^2D)4p$	$a^1F - {}^1D°$	3 – 2		893
	50	896.82	17.27370 – 128.78413	$3d^4 - 3d^3(a^2F)4p$	$a^3H - {}^3F°$	4 – 3		490
	4	897.229	17.39692 – 128.85049	$3d^4 - 3d^3(a^2F)4p$	$a^3H - {}^3F°$	5 – 4		893
	4	901.454	17.85118 – 128.78413	$3d^4 - 3d^3(a^2F)4p$	$a^3P - {}^3F°$	2 – 3		893
	250	904.479	20.70364 – 131.26566	$3d^4 - 3d^3(a^2F)4p$	$a^3G - {}^3G°$	3 – 4		893
	60	905.354	20.99604 – 131.45016	$3d^4 - 3d^3(a^2F)4p$	$a^3G - {}^3G°$	5 – 5		893
	90	905.688	20.85295 – 131.26566	$3d^4 - 3d^3(a^2F)4p$	$a^3G - {}^3G°$	4 – 4		893
	10	905.92						490
	4	906.290	18.51118 – 128.85049	$3d^4 - 3d^3(a^2F)4p$	$a^3F - {}^3F°$	3 – 4		893
	4	906.358	18.45184 – 128.78413	$3d^4 - 3d^3(a^2F)4p$	$a^3F - {}^3F°$	2 – 3		893
	10	906.596	18.45184 – 128.75462	$3d^4 - 3d^3(a^2F)4p$	$a^3F - {}^3F°$	2 – 2		893
	40	906.844	18.51118 – 128.78413	$3d^4 - 3d^3(a^2F)4p$	$a^3F - {}^3F°$	3 – 3		893
	60	906.896	18.58339 – 128.85049	$3d^4 - 3d^3(a^2F)4p$	$a^3F - {}^3F°$	4 – 4		893
	10	910.763	.35655 – 110.15489	$3d^4 - 3d^3(a^4P)4p$	$ga^5D - {}^5D°$	3 – 4		893
	60	911.168	25.13887 – 134.88754	$3d^4 - 3d^3(a^2F)4p$	$a^1G - {}^1F°$	4 – 3		893
	10	912.26						490
	120	912.587	.57608 – 110.15489	$3d^4 - 3d^3(a^4P)4p$	$ga^5D - {}^5D°$	4 – 4		893
	60	912.911	.18316 – 109.72279	$3d^4 - 3d^3(a^4P)4p$	$ga^5D - {}^5D°$	2 – 3		893
	10	913.172	.0622 – 109.57089	$3d^4 - 3d^3(a^4P)4p$	$ga^5D - {}^5D°$	1 – 2		893
	30	913.75						490
	4	914.115	.0622 – 109.45811	$3d^4 - 3d^3(a^4P)4p$	$ga^5D - {}^3P°$	1 – 0		893
	60	914.178	.18316 – 109.57089	$3d^4 - 3d^3(a^4P)4p$	$ga^5D - {}^5D°$	2 – 2		893
	25	914.360	.35655 – 109.72279	$3d^4 - 3d^3(a^4P)4p$	$ga^5D - {}^5D°$	3 – 3		893
	10	914.67						490
	20	915.02						490
	150	915.631	.35655 – 109.57089	$3d^4 - 3d^3(a^4P)4p$	$ga^5D - {}^5D°$	3 – 2		893
	60	916.200	.57608 – 109.72279	$3d^4 - 3d^3(a^4P)4p$	$ga^5D - {}^5D°$	4 – 3		893
	10	917.40						490
	20	917.75	.57608 – 109.53425	$3d^4 - 3d^3(a^2G)4p$	$ga^5D - {}^3H°$	4 – 4		490
	40	918.183	.0622 – 108.97290	$3d^4 - 3d^3(a^4P)4p$	$ga^5D - {}^3P°$	1 – 2		893
	25	918.571	0. – 108.86498	$3d^4 - 3d^3(a^4P)4p$	$ga^5D - {}^5D°$	0 – 1		893
	25	918.859	25.13887 – 133.96957	$3d^4 - 3d^3(a^2F)4p$	$a^1G - {}^1G°$	4 – 4		893
	10	919.095	.0622 – 108.86498	$3d^4 - 3d^3(a^4P)4p$	$ga^5D - {}^5D°$	1 – 1		893
	120	919.200	.18316 – 108.97290	$3d^4 - 3d^3(a^4P)4p$	$ga^5D - {}^3P°$	2 – 2		893
	25	920.119	.18316 – 108.86498	$3d^4 - 3d^3(a^4P)4p$	$ga^5D - {}^5D°$	2 – 1		893
	25	920.511	.0622 – 108.69763	$3d^4 - 3d^3(a^4P)4p$	$ga^5D - {}^5D°$	1 – 0		893
4	90	920.699	.18316 – 108.79584	$3d^4 - 3d^3(a^4P)4p$	$ga^5D - {}^5P°$	2 – 3		893
4	250	922.171	.35655 – 108.79584	$3d^4 - 3d^3(a^4P)4p$	$ga^5D - {}^5P°$	3 – 3		893
4	120	922.517	.0622 – 108.46140	$3d^4 - 3d^3(a^4P)4p$	$ga^5D - {}^5P°$	1 – 2		893
4	250	923.543	.18316 – 108.46140	$3d^4 - 3d^3(a^4P)4p$	$ga^5D - {}^5P°$	2 – 2		893

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
4	150	923.784	0. – 108.25089	3d^4 – 3d^3(a^{4}P)4p	ga^{5}D – ^{5}P°	0 – 1		893
4	350	924.045	.57608 – 108.79584	3d^4 – 3d^3(a^{4}P)4p	ga^{5}D – ^{5}P°	4 – 3		893
4	300	924.310	.0622 – 108.25089	3d^4 – 3d^3(a^{4}P)4p	ga^{5}D – ^{5}P°	1 – 1		893
4	350	925.026	.35655 – 108.46140	3d^4 – 3d^3(a^{4}P)4p	ga^{5}D – ^{5}P°	3 – 2		893
27	25	925.237	20.70364 – 128.78413	3d^4 – 3d^3(a^{2}F)4p	a^{3}G – ^{3}F°	3 – 3		893
4	250	925.343	.18316 – 108.25089	3d^4 – 3d^3(a^{4}P)4p	ga^{5}D – ^{5}P°	2 – 1		893
27	250	925.487	20.70364 – 128.75462	3d^4 – 3d^3(a^{2}F)4p	a^{3}G – ^{3}F°	3 – 2		893
27	25	925.945	20.85295 – 128.85049	3d^4 – 3d^3(a^{2}F)4p	a^{3}G – ^{3}F°	4 – 4		893
27	300	926.510	20.85295 – 128.78413	3d^4 – 3d^3(a^{2}F)4p	a^{3}G – ^{3}F°	4 – 3		893
	90	926.703	43.44199 – 151.35127	3d^4 – 3d^3(b^{2}D)4p	b^{3}P – ^{3}P°	2 – 2		893
27	300	927.173	20.99604 – 128.85049	3d^4 – 3d^3(a^{2}F)4p	a^{3}G – ^{3}F°	5 – 4		893
	10	927.897	43.91659 – 151.68744	3d^4 – 3d^3(b^{2}D)4p	b^{3}P – ^{3}P°	1 – 1		893
	10	929.831	44.14136 – 151.68744	3d^4 – 3d^3(b^{2}D)4p	b^{3}P – ^{3}P°	0 – 1		893
	25	930.794	43.91659 – 151.35127	3d^4 – 3d^3(b^{2}D)4p	b^{3}P – ^{3}P°	1 – 2		893
	4	934.991	25.78094 – 132.73422	3d^4 – 3d^3(a^{2}F)4p	a^{3}D – ^{3}D°	2 – 1		893
	40	935.575	25.84831 – 132.73422	3d^4 – 3d^3(a^{2}F)4p	a^{3}D – ^{3}D°	1 – 1		893
	4	936.560	25.72644 – 132.49978	3d^4 – 3d^3(a^{2}F)4p	a^{3}D – ^{3}D°	3 – 2		893
	90	937.040	25.78094 – 132.49978	3d^4 – 3d^3(a^{2}F)4p	a^{3}D – ^{3}D°	2 – 2		893
	120	939.926	25.72644 – 132.11750	3d^4 – 3d^3(a^{2}F)4p	a^{3}D – ^{3}D°	3 – 3		893
	200	940.384	43.28671 – 149.62630	3d^4 – 3d^3(b^{2}D)4p	b^{3}F – ^{3}F°	4 – 4		893
	10	940.704	43.32217 – 149.62630	3d^4 – 3d^3(b^{2}D)4p	b^{3}F – ^{3}F°	3 – 4		893
	40	942.534	43.28671 – 149.38364	3d^4 – 3d^3(b^{2}D)4p	b^{3}F – ^{3}F°	4 – 3		893
	10	942.694	43.30453 – 149.38364	3d^4 – 3d^3(b^{2}D)4p	b^{3}F – ^{3}F°	2 – 3		893
	150	942.849	43.32217 – 149.38364	3d^4 – 3d^3(b^{2}D)4p	b^{3}F – ^{3}F°	3 – 3		893
	150	943.045	43.30453 – 149.34403	3d^4 – 3d^3(b^{2}D)4p	b^{3}F – ^{3}F°	2 – 2		893
	40	943.204	43.32217 – 149.34403	3d^4 – 3d^3(b^{2}D)4p	b^{3}F – ^{3}F°	3 – 2		893
	100	953.94						490
	100	954.07						490
	150	963.352	43.28671 – 147.09073	3d^4 – 3d^3(b^{2}D)4p	b^{3}F – ^{3}D°	4 – 3		893
	25	963.683	43.32217 – 147.09073	3d^4 – 3d^3(b^{2}D)4p	b^{3}F – ^{3}D°	3 – 3		893
	25	964.615	43.30453 – 146.97333	3d^4 – 3d^3(b^{2}D)4p	b^{3}F – ^{3}D°	2 – 2		893
	120	964.770	43.32217 – 146.97333	3d^4 – 3d^3(b^{2}D)4p	b^{3}F – ^{3}D°	3 – 2		893
	90	964.956	43.30453 – 146.93618	3d^4 – 3d^3(b^{2}D)4p	b^{3}F – ^{3}D°	2 – 1		893
	4	965.295	17.85118 – 121.44677	3d^4 – 3d^3(a^{4}P)4p	a^{3}P – ^{3}S°	2 – 1		893
11	200	966.238	17.27370 – 120.76726	3d^4 – 3d^3(a^{2}H)4p	a^{3}H – ^{3}G°	4 – 3		893
11	25	966.410	17.27370 – 120.74955	3d^4 – 3d^3(a^{2}H)4p	a^{3}H – ^{3}G°	4 – 4		893
11	250	967.555	17.39692 – 120.74955	3d^4 – 3d^3(a^{2}H)4p	a^{3}H – ^{3}G°	5 – 4		893
11	25	968.021	17.39692 – 120.70027	3d^4 – 3d^3(a^{2}H)4p	a^{3}H – ^{3}G°	5 – 5		893
11	200	969.272	17.53065 – 120.70027	3d^4 – 3d^3(a^{2}H)4p	a^{3}H – ^{3}G°	6 – 5		893
	120	969.703	25.72644 – 128.85049	3d^4 – 3d^3(a^{2}F)4p	a^{3}D – ^{3}F°	3 – 4		893
	90	970.840	25.78094 – 128.78413	3d^4 – 3d^3(a^{2}F)4p	a^{3}D – ^{3}F°	2 – 3		893
	60	971.758	25.84831 – 128.75462	3d^4 – 3d^3(a^{2}F)4p	a^{3}D – ^{3}F°	1 – 2		893
	10	973.374	32.15199 – 134.88754	3d^4 – 3d^3(a^{2}F)4p	a^{1}D – ^{1}F°	2 – 3		893
	4	974.915	17.27370 – 119.84647	3d^4 – 3d^3(a^{2}D)4p	a^{3}H – ^{1}F°	4 – 3		893
	90	977.809	49.76865 – 152.03721	3d^4 – 3d^3(b^{2}D)4p	b^{1}G – ^{1}F°	4 – 3		893
	10	984.54	17.85118 – 119.42142	3d^4 – 3d^3(a^{2}D)4p	a^{3}P – ^{3}P°	2 – 2		490
	10	984.95	.57608 – 102.10076	3d^4 – 3d^3(a^{4}F)4p	ga^{5}D – ^{3}F°	4 – 4		490
	4	985.189	17.39692 – 118.90053	3d^4 – 3d^3(a^{2}H)4p	a^{3}H – ^{1}G°	5 – 4		893
	10	986.250	16.77136 – 118.16515	3d^4 – 3d^3(a^{2}D)4p	a^{3}P – ^{3}D°	0 – 1		893
	60	987.530	.18316 – 101.44457	3d^4 – 3d^3(a^{4}F)4p	ga^{5}D – ^{3}F°	2 – 2		893
	10	987.611	17.16856 – 118.42299	3d^4 – 3d^3(a^{2}D)4p	a^{3}P – ^{3}D°	1 – 2		893
	120	992.572	17.85118 – 118.59911	3d^4 – 3d^3(a^{2}D)4p	a^{3}P – ^{3}D°	2 – 3		893
	20	994.08						490
	40	994.313	17.85118 – 118.42299	3d^4 – 3d^3(a^{2}D)4p	a^{3}P – ^{3}D°	2 – 2		893

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	150	996.084	17.53065 – 117.92389	$3d^4 - 3d^3(a^2H)4p$	$a^3H - {}^3I^\circ$	6 – 7		893
	10	996.50	32.15199 – 132.49978	$3d^4 - 3d^3(a^2F)4p$	$a^1D - {}^3D^\circ$	2 – 2		490
	150	999.082	17.39692 – 117.48895	$3d^4 - 3d^3(a^2H)4p$	$a^3H - {}^3I^\circ$	5 – 6		893
26	150	999.363	20.70364 – 120.76726	$3d^4 - 3d^3(a^2H)4p$	$a^3G - {}^3G^\circ$	3 – 3		893
26	10	999.541	20.70364 – 120.74955	$3d^4 - 3d^3(a^2H)4p$	$a^3G - {}^3G^\circ$	3 – 4		893
19	150	999.837	18.58339 – 118.59911	$3d^4 - 3d^3(a^2D)4p$	$a^3F - {}^3D^\circ$	4 – 3		893
19	40	1000.291	18.45184 – 118.42299	$3d^4 - 3d^3(a^2D)4p$	$a^3F - {}^3D^\circ$	2 – 2		893
	40	1000.421	17.53065 – 117.48895	$3d^4 - 3d^3(a^2H)4p$	$a^3H - {}^3I^\circ$	6 – 6		893
	120	1000.813	32.15199 – 132.07071	$3d^4 - 3d^3(a^2F)4p$	$a^1D - {}^1D^\circ$	2 – 2		893
19	150	1000.882	18.51118 – 118.42299	$3d^4 - 3d^3(a^2D)4p$	$a^3F - {}^3D^\circ$	3 – 2		893
26	150	1001.028	20.85295 – 120.74955	$3d^4 - 3d^3(a^2H)4p$	$a^3G - {}^3G^\circ$	4 – 4		893
	120	1001.277	17.27370 – 117.14585	$3d^4 - 3d^3(a^2H)4p$	$a^3H - {}^3I^\circ$	4 – 5		893
26	60	1001.531	20.85295 – 120.70027	$3d^4 - 3d^3(a^2H)4p$	$a^3G - {}^3G^\circ$	4 – 5		893
26	40	1002.469	20.99604 – 120.74955	$3d^4 - 3d^3(a^2H)4p$	$a^3G - {}^3G^\circ$	5 – 4		893
	25	1002.518	17.39692 – 117.14585	$3d^4 - 3d^3(a^2H)4p$	$a^3H - {}^3I^\circ$	5 – 5		893
19	200	1002.872	18.45184 – 118.16515	$3d^4 - 3d^3(a^2D)4p$	$a^3F - {}^3D^\circ$	2 – 1		893
26	200	1002.964	20.99604 – 120.70027	$3d^4 - 3d^3(a^2H)4p$	$a^3G - {}^3G^\circ$	5 – 5		893
	10	1003.213	16.77136 – 116.45119	$3d^4 - 3d^3(a^2P)4p$	$a^3P - {}^3S^\circ$	0 – 1		893
	90	1003.37						047
	90	1007.220	17.16856 – 116.45119	$3d^4 - 3d^3(a^2P)4p$	$a^3P - {}^3S^\circ$	1 – 1		893
	4	1008.647	20.70364 – 119.84647	$3d^4 - 3d^3(a^2D)4p$	$a^3G - {}^1F^\circ$	3 – 3		893
	1	1010.810	17.85118 – 116.78205	$3d^4 - 3d^3(a^4P)4p$	$a^3P - {}^3D^\circ$	2 – 2		893
	4	1010.888	17.85118 – 116.77400	$3d^4 - 3d^3(a^4P)4p$	$a^3P - {}^3D^\circ$	2 – 1		893
	10	1014.031	20.99604 – 119.61280	$3d^4 - 3d^3(a^2H)4p$	$a^3G - {}^1H^\circ$	5 – 5		893
	150	1014.193	17.85118 – 116.45119	$3d^4 - 3d^3(a^2P)4p$	$a^3P - {}^3S^\circ$	2 – 1		893
	60	1015.007	17.85118 – 116.37292	$3d^4 - 3d^3(a^2D)4p$	$a^3P - {}^1P^\circ$	2 – 1		893
18	40	1015.664	18.51118 – 116.96909	$3d^4 - 3d^3(a^2D)4p$	$a^3F - {}^3F^\circ$	3 – 3		893
9	90	1015.770	17.39692 – 115.84458	$3d^4 - 3d^3(a^2H)4p$	$a^3H - {}^3H^\circ$	5 – 6		893
9	150	1016.295	17.27370 – 115.67074	$3d^4 - 3d^3(a^2H)4p$	$a^3H - {}^3H^\circ$	4 – 5		893
18	200	1016.405	18.58339 – 116.96909	$3d^4 - 3d^3(a^2D)4p$	$a^3F - {}^3F^\circ$	4 – 3		893
	25	1016.983	18.45184 – 116.78205	$3d^4 - 3d^3(a^4P)4p$	$a^3F - {}^3D^\circ$	2 – 2		893
	60	1017.064	18.45184 – 116.77400	$3d^4 - 3d^3(a^4P)4p$	$a^3F - {}^3D^\circ$	2 – 1		893
9	500	1017.148	17.53065 – 115.84458	$3d^4 - 3d^3(a^2H)4p$	$a^3H - {}^3H^\circ$	6 – 6		893
9	300	1017.304	17.27370 – 115.57196	$3d^4 - 3d^3(a^2H)4p$	$a^3H - {}^3H^\circ$	4 – 4		893
9	400	1017.564	17.39692 – 115.67074	$3d^4 - 3d^3(a^2H)4p$	$a^3H - {}^3H^\circ$	5 – 5		893
9	10	1018.594	17.39692 – 115.57196	$3d^4 - 3d^3(a^2H)4p$	$a^3H - {}^3H^\circ$	5 – 4		893
9	10	1018.962	17.53065 – 115.67074	$3d^4 - 3d^3(a^2H)4p$	$a^3H - {}^3H^\circ$	6 – 5		893
	10	1019.60	18.45184 – 116.53295	$3d^4 - 3d^3(a^4P)4p$	$a^3F - {}^3D^\circ$	2 – 3	Q	490
	4	1019.914	20.85295 – 118.90053	$3d^4 - 3d^3(a^2H)4p$	$a^3G - {}^1G^\circ$	4 – 4		893
	40	1020.181	18.51118 – 116.53295	$3d^4 - 3d^3(a^4P)4p$	$a^3F - {}^3D^\circ$	3 – 3		893
	40	1020.273	17.16856 – 115.18215	$3d^4 - 3d^3(a^2P)4p$	$a^3P - {}^3D^\circ$	1 – 2		893
	150	1020.929	18.58339 – 116.53295	$3d^4 - 3d^3(a^4P)4p$	$a^3F - {}^3D^\circ$	4 – 3		893
18	10	1021.029	18.45184 – 116.39166	$3d^4 - 3d^3(a^2D)4p$	$a^3F - {}^3F^\circ$	2 – 2		893
	4	1021.230	18.45184 – 116.37292	$3d^4 - 3d^3(a^2D)4p$	$a^3F - {}^1P^\circ$	2 – 1		893
18	150	1021.642	18.51118 – 116.39166	$3d^4 - 3d^3(a^2D)4p$	$a^3F - {}^3F^\circ$	3 – 2		893
	60	1023.512	17.85118 – 115.55428	$3d^4 - 3d^3(a^2P)4p$	$a^3P - {}^3D^\circ$	2 – 3		893
	40	1025.137	17.16856 – 114.71679	$3d^4 - 3d^3(a^2P)4p$	$a^3P - {}^3D^\circ$	1 – 1		893
3	200	1025.633	.18316 – 97.68399	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^3D^\circ$	2 – 3		893
	120	1026.369	17.16856 – 114.59914	$3d^4 - 3d^3(a^2P)4p$	$a^3P - {}^3P^\circ$	1 – 2		893
3	120	1027.456	.35655 – 97.68399	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^3D^\circ$	3 – 3		893
3	250	1028.336	.0622 – 97.30659	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^3D^\circ$	1 – 2		893
	120	1029.567	16.77136 – 113.89943	$3d^4 - 3d^3(a^2P)4p$	$a^3P - {}^3P^\circ$	0 – 1		893
3	90	1029.785	.57608 – 97.68399	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^3D^\circ$	4 – 3		893
	120	1029.835	18.45184 – 115.55428	$3d^4 - 3d^3(a^2P)4p$	$a^3F - {}^3D^\circ$	2 – 3		893

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
3	150	1030.092	0. – 97.07796	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^3D°$	0 – 1		893
2	400	1030.461	.57608 – 97.61948	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^5F°$	4 – 5		893
3	40	1030.762	.0622 – 97.07796	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^3D°$	1 – 1		893
2	150	1030.890	.35655 – 97.35981	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^5F°$	3 – 4		893
	120	1031.239	18.58339 – 115.55428	$3d^4 - 3d^3(a^2P)4p$	$a^3F - {}^3D°$	4 – 3		893
3	90	1031.466	.35655 – 97.30659	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^3D°$	3 – 2		893
2	10	1031.586	.18316 – 97.12142	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^5F°$	2 – 3		893
3	25	1032.053	.18316 – 97.07796	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^3D°$	2 – 1		893
1	60	1032.421	.0622 – 96.92202	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^5D°$	1 – 2		893
2	350	1033.228	.57608 – 97.35981	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^5F°$	4 – 4		893
1	90	1033.339	0. – 96.77438	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^5D°$	0 – 1		893
2	350	1033.433	.35655 – 97.12142	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^5F°$	3 – 3		893
	150	1033.606	17.85118 – 114.59914	$3d^4 - 3d^3(a^2P)4p$	$a^3P - {}^3P°$	2 – 2		893
1	300	1033.693	.35655 – 97.09828	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^5D°$	3 – 4		893
	90	1033.807	18.45184 – 115.18215	$3d^4 - 3d^3(a^2P)4p$	$a^3F - {}^3D°$	2 – 2		893
1	150	1033.996	.0622 – 96.77438	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^5D°$	1 – 1		893
	120	1034.199	17.16856 – 113.86147	$3d^4 - 3d^3(a^2P)4p$	$a^3P - {}^3P°$	1 – 0		893
	120	1034.428	18.51118 – 115.18215	$3d^4 - 3d^3(a^2P)4p$	$a^3F - {}^3D°$	3 – 2		893
1	150	1034.853	.0622 – 96.69397	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^5D°$	1 – 0		893
	60	1035.031	25.78094 – 122.39649	$3d^4 - 3d^3(a^2P)4p$	$a^3D - {}^1P°$	2 – 1		893
	40	1035.212	17.16856 – 113.76713	$3d^4 - 3d^3(a^2P)4p$	$a^3P - {}^1D°$	1 – 2		893
1	250	1035.291	.18316 – 96.77438	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^5D°$	2 – 1		893
1	250	1035.565	.35655 – 96.92202	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^5D°$	3 – 2		893
2	200	1035.785	.57608 – 97.12142	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^5F°$	4 – 3		893
1	350	1035.938	.18316 – 96.71404	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^5D°$	2 – 3		893
1	350	1036.035	.57608 – 97.09828	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^5D°$	4 – 4		893
	250	1036.334	20.99604 – 117.48895	$3d^4 - 3d^3(a^2H)4p$	$a^3G - {}^3I°$	5 – 6		893
1	250	1037.807	.35655 – 96.71404	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^5D°$	3 – 3		893
2	300	1038.163	.0622 – 96.38631	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^5F°$	1 – 2		893
24	90	1038.794	20.70364 – 116.96909	$3d^4 - 3d^3(a^2D)4p$	$a^3G - {}^3F°$	3 – 3		893
24	60	1038.976	20.85295 – 117.10158	$3d^4 - 3d^3(a^2D)4p$	$a^3G - {}^3F°$	4 – 4		893
	20	1039.40						047
2	150	1040.046	0. – 96.14925	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^5F°$	0 – 1		893
1	150	1040.173	.57608 – 96.71404	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^5D°$	4 – 3		893
24	150	1040.410	20.85295 – 116.96909	$3d^4 - 3d^3(a^2D)4p$	$a^3G - {}^3F°$	4 – 3		893
24	250	1040.521	20.99604 – 117.10158	$3d^4 - 3d^3(a^2D)4p$	$a^3G - {}^3F°$	5 – 4		893
2	40	1040.723	.0622 – 96.14925	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^5F°$	1 – 1		893
	120	1040.811	20.70364 – 116.78205	$3d^4 - 3d^3(a^4P)4p$	$a^3G - {}^3D°$	3 – 2		893
	90	1041.135	17.85118 – 113.89943	$3d^4 - 3d^3(a^2P)4p$	$a^3P - {}^3P°$	2 – 1		893
2	120	1041.345	.35655 – 96.38631	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^5F°$	3 – 2		893
2	40	1042.036	.18316 – 96.14925	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^5F°$	2 – 1		893
	40	1042.578	17.85118 – 113.76713	$3d^4 - 3d^3(a^2P)4p$	$a^3P - {}^1D°$	2 – 2		893
	60	1042.866	17.53065 – 113.41993	$3d^4 - 3d^3(a^2G)4p$	$a^3H - {}^1H°$	6 – 5		893
	40	1043.389	17.27370 – 113.11521	$3d^4 - 3d^3(a^2G)4p$	$a^3H - {}^1G°$	4 – 4		893
	25	1043.529	20.70364 – 116.53295	$3d^4 - 3d^3(a^4P)4p$	$a^3G - {}^3D°$	3 – 3		893
	60	1044.729	17.39692 – 113.11521	$3d^4 - 3d^3(a^2G)4p$	$a^3H - {}^1G°$	5 – 4		893
	400	1045.06	20.70364 – 116.39166	$3d^4 - 3d^3(a^2D)4p$	$a^3G - {}^3F°$	3 – 2		490
	150	1045.150	20.85295 – 116.53295	$3d^4 - 3d^3(a^4P)4p$	$a^3G - {}^3D°$	4 – 3		893
	1	1045.306	25.78094 – 121.44677	$3d^4 - 3d^3(a^4P)4p$	$a^3D - {}^3S°$	2 – 1		893
	60	1045.719	25.13887 – 120.76726	$3d^4 - 3d^3(a^2H)4p$	$a^1G - {}^3G°$	4 – 3		893
	25	1047.061	17.85118 – 113.35704	$3d^4 - 3d^3(a^4P)4p$	$a^3P - {}^5S°$	2 – 2		893
	25	1049.152	18.45184 – 113.76713	$3d^4 - 3d^3(a^2P)4p$	$a^3F - {}^1D°$	2 – 2		893
	60	1050.494	17.27370 – 112.46701	$3d^4 - 3d^3(a^2G)4p$	$a^3H - {}^3F°$	4 – 3		893
	40	1051.532	17.27370 – 112.37288	$3d^4 - 3d^3(a^2G)4p$	$a^3H - {}^3F°$	4 – 4		893

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	120	1051.905	37.00516 – 132.07071	$3d^4 - 3d^3(a^2F)4p$	$a^1F - {}^1D^\circ$	3 – 2		893
	40	1052.365	27.37232 – 122.39649	$3d^4 - 3d^3(a^2P)4p$	$a^1S - {}^1P^\circ$	0 – 1		893
	25	1052.901	17.39692 – 112.37288	$3d^4 - 3d^3(a^2G)4p$	$a^3H - {}^3F^\circ$	5 – 4		893
	40	1054.000	18.45184 – 113.32880	$3d^4 - 3d^3(a^2G)4p$	$a^3F - {}^1F^\circ$	2 – 3		893
	60	1054.093	20.70364 – 115.57196	$3d^4 - 3d^3(a^2H)4p$	$a^3G - {}^3H^\circ$	3 – 4		893
	120	1054.313	20.99604 – 115.84458	$3d^4 - 3d^3(a^2H)4p$	$a^3G - {}^3H^\circ$	5 – 6		893
	4	1054.451	18.58339 – 113.41993	$3d^4 - 3d^3(a^2G)4p$	$a^3F - {}^1H^\circ$	4 – 5		893
	150	1054.655	20.85295 – 115.67074	$3d^4 - 3d^3(a^2H)4p$	$a^3G - {}^3H^\circ$	4 – 5		893
	25	1055.459	18.58339 – 113.32880	$3d^4 - 3d^3(a^2G)4p$	$a^3F - {}^1F^\circ$	4 – 3		893
	25	1055.763	20.85295 – 115.57196	$3d^4 - 3d^3(a^2H)4p$	$a^3G - {}^3H^\circ$	4 – 4		893
	400	1055.885	25.13887 – 119.84647	$3d^4 - 3d^3(a^2D)4p$	$a^1G - {}^1F^\circ$	4 – 3		893
	120	1056.131	26.01489 – 120.70027	$3d^4 - 3d^3(a^2H)4p$	$a^1I - {}^3G^\circ$	6 – 5		893
	40	1056.250	20.99604 – 115.67074	$3d^4 - 3d^3(a^2H)4p$	$a^3G - {}^3H^\circ$	5 – 5		893
	1	1057.041	18.51118 – 113.11521	$3d^4 - 3d^3(a^2G)4p$	$a^3F - {}^1G^\circ$	3 – 4		893
	5	1057.30	17.27370 – 111.85697	$3d^4 - 3d^3(a^2G)4p$	$a^3H - {}^3G^\circ$	4 – 5		490
	200	1057.840	18.58339 – 113.11521	$3d^4 - 3d^3(a^2G)4p$	$a^3F - {}^1G^\circ$	4 – 4		893
	3	1058.63	17.39692 – 111.85697	$3d^4 - 3d^3(a^2G)4p$	$a^3H - {}^3G^\circ$	5 – 5		047
	350	1059.116	26.01489 – 120.43299	$3d^4 - 3d^3(a^2H)4p$	$a^1I - {}^1I^\circ$	6 – 6		893
8	400	1060.150	17.53065 – 111.85697	$3d^4 - 3d^3(a^2G)4p$	$a^3H - {}^3G^\circ$	6 – 5		893
8	350	1061.035	17.39692 – 111.64476	$3d^4 - 3d^3(a^2G)4p$	$a^3H - {}^3G^\circ$	5 – 4		893
	1	1062.475	25.72644 – 119.84647	$3d^4 - 3d^3(a^2D)4p$	$a^3D - {}^1F^\circ$	3 – 3		893
8	300	1062.660	17.27370 – 111.37609	$3d^4 - 3d^3(a^2G)4p$	$a^3H - {}^3G^\circ$	4 – 3		893
	40	1063.089	25.78094 – 119.84647	$3d^4 - 3d^3(a^2D)4p$	$a^3D - {}^1F^\circ$	2 – 3		893
17	40	1063.663	18.45184 – 112.46701	$3d^4 - 3d^3(a^2G)4p$	$a^3F - {}^3F^\circ$	2 – 3		893
17	300	1064.324	18.51118 – 112.46701	$3d^4 - 3d^3(a^2G)4p$	$a^3F - {}^3F^\circ$	3 – 3		893
17	300	1064.422	18.45184 – 112.39984	$3d^4 - 3d^3(a^2G)4p$	$a^3F - {}^3F^\circ$	2 – 2		893
17	90	1065.085	18.51118 – 112.39984	$3d^4 - 3d^3(a^2G)4p$	$a^3F - {}^3F^\circ$	3 – 2		893
17	90	1065.152	18.58339 – 112.46701	$3d^4 - 3d^3(a^2G)4p$	$a^3F - {}^3F^\circ$	4 – 3		893
17	40	1065.398	18.51118 – 112.37288	$3d^4 - 3d^3(a^2G)4p$	$a^3F - {}^3F^\circ$	3 – 4		893
17	350	1066.213	18.58339 – 112.37288	$3d^4 - 3d^3(a^2G)4p$	$a^3F - {}^3F^\circ$	4 – 4		893
	90	1066.356	25.84831 – 119.62562	$3d^4 - 3d^3(a^2D)4p$	$a^3D - {}^3P^\circ$	1 – 0		893
	90	1066.531	25.13887 – 118.90053	$3d^4 - 3d^3(a^2H)4p$	$a^1G - {}^1G^\circ$	4 – 4		893
	120	1067.145	25.78094 – 119.48902	$3d^4 - 3d^3(a^2D)4p$	$a^3D - {}^3P^\circ$	2 – 1		893
	150	1067.289	25.72644 – 119.42142	$3d^4 - 3d^3(a^2D)4p$	$a^3D - {}^3P^\circ$	3 – 2		893
	120	1067.910	25.78094 – 119.42142	$3d^4 - 3d^3(a^2D)4p$	$a^3D - {}^3P^\circ$	2 – 2		893
	400	1068.401	26.01489 – 119.61280	$3d^4 - 3d^3(a^2H)4p$	$a^1I - {}^1H^\circ$	6 – 5		893
	1	1068.682	25.84831 – 119.42142	$3d^4 - 3d^3(a^2D)4p$	$a^3D - {}^3P^\circ$	1 – 2		893
	20	1069.45						490
	60	1069.979	25.13887 – 118.59911	$3d^4 - 3d^3(a^2D)4p$	$a^1G - {}^3D^\circ$	4 – 3		893
	30	1070.55	.35655 – 93.76621	$3d^4 - 3d^3(a^4F)4p$	$ga^5D - {}^5G^\circ$	3 – 2		490
16	200	1072.114	18.58339 – 111.85697	$3d^4 - 3d^3(a^2G)4p$	$a^3F - {}^3G^\circ$	4 – 5		893
16	150	1073.727	18.51118 – 111.64476	$3d^4 - 3d^3(a^2G)4p$	$a^3F - {}^3G^\circ$	3 – 4		893
	10	1073.993	17.39692 – 110.50718	$3d^4 - 3d^3(a^2G)4p$	$a^3H - {}^3H^\circ$	5 – 6		893
16	60	1074.546	18.58339 – 111.64476	$3d^4 - 3d^3(a^2G)4p$	$a^3F - {}^3G^\circ$	4 – 4		893
16	150	1076.147	18.45184 – 111.37609	$3d^4 - 3d^3(a^2G)4p$	$a^3F - {}^3G^\circ$	2 – 3		893
	25	1076.641	17.27370 – 110.15489	$3d^4 - 3d^3(a^4P)4p$	$a^3H - {}^5D^\circ$	4 – 4		893
32	120	1076.746	25.72644 – 118.59911	$3d^4 - 3d^3(a^2D)4p$	$a^3D - {}^3D^\circ$	3 – 3		893
16	10	1076.833	18.51118 – 111.37609	$3d^4 - 3d^3(a^2G)4p$	$a^3F - {}^3G^\circ$	3 – 3		893
32	10	1077.378	25.78094 – 118.59911	$3d^4 - 3d^3(a^2D)4p$	$a^3D - {}^3D^\circ$	2 – 3		893
	10	1077.598	16.77136 – 109.57062	$3d^4 - 3d^3(a^4P)4p$	$a^3P - {}^3P^\circ$	0 – 1		893
32	40	1078.794	25.72644 – 118.42299	$3d^4 - 3d^3(a^2D)4p$	$a^3D - {}^3D^\circ$	3 – 2		893
32	120	1079.423	25.78094 – 118.42299	$3d^4 - 3d^3(a^2D)4p$	$a^3D - {}^3D^\circ$	2 – 2		893
	10	1079.97						490
32	10	1080.211	25.84831 – 118.42299	$3d^4 - 3d^3(a^2D)4p$	$a^3D - {}^3D^\circ$	1 – 2		893

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	150	1082.098	17.53065 – 109.94498	$3d^4 - 3d^3(a^2G)4p$	$a^3H - {}^3H^\circ$	6 – 5		893
	25	1082.231	17.16856 – 109.57062	$3d^4 - 3d^3(a^4P)4p$	$a^3P - {}^3P^\circ$	1 – 1		893
32	25	1082.444	25.78094 – 118.16515	$3d^4 - 3d^3(a^2D)4p$	$a^3D - {}^3D^\circ$	2 – 1		893
32	90	1083.230	25.84831 – 118.16515	$3d^4 - 3d^3(a^2D)4p$	$a^3D - {}^3D^\circ$	1 – 1		893
	20	1083.72						490
	10	1083.889	17.27370 – 109.53425	$3d^4 - 3d^3(a^2G)4p$	$a^3H - {}^3H^\circ$	4 – 4		893
	20	1084.26						490
	20	1084.84						490
	40	1085.344	17.39692 – 109.53425	$3d^4 - 3d^3(a^2G)4p$	$a^3H - {}^3H^\circ$	5 – 4		893
	20	1085.96						490
	10	1087.70						490
	10	1088.28						490
	10	1089.30	17.16856 – 108.97290	$3d^4 - 3d^3(a^4P)4p$	$a^3P - {}^3P^\circ$	1 – 2		490
	60	1089.761	20.70364 – 112.46701	$3d^4 - 3d^3(a^2G)4p$	$a^3G - {}^3F^\circ$	3 – 3		893
	90	1090.282	17.85118 – 109.57062	$3d^4 - 3d^3(a^4P)4p$	$a^3P - {}^3P^\circ$	2 – 1		893
	1	1090.564	20.70364 – 112.39984	$3d^4 - 3d^3(a^2G)4p$	$a^3G - {}^3F^\circ$	3 – 2		893
	25	1091.546	20.85295 – 112.46701	$3d^4 - 3d^3(a^2G)4p$	$a^3G - {}^3F^\circ$	4 – 3		893
	60	1092.665	20.85295 – 112.37288	$3d^4 - 3d^3(a^2G)4p$	$a^3G - {}^3F^\circ$	4 – 4		893
	50	1093.17	16.77136 – 108.25089	$3d^4 - 3d^3(a^4P)4p$	$a^3P - {}^5P^\circ$	0 – 1		490
31	150	1094.387	25.72644 – 117.10158	$3d^4 - 3d^3(a^2D)4p$	$a^3D - {}^3F^\circ$	3 – 4		893
	60	1094.557	18.58339 – 109.94498	$3d^4 - 3d^3(a^2G)4p$	$a^3F - {}^3H^\circ$	4 – 5		893
31	40	1095.983	25.72644 – 116.96909	$3d^4 - 3d^3(a^2D)4p$	$a^3D - {}^3F^\circ$	3 – 3		893
31	150	1096.644	25.78094 – 116.96909	$3d^4 - 3d^3(a^2D)4p$	$a^3D - {}^3F^\circ$	2 – 3		893
	120	1096.899	65.76321 – 156.92993	$3d^4 - 3d^3(b^2D)4p$	$b^1D - {}^1P^\circ$	2 – 1		893
	100	1097.25	18.58339 – 109.72279	$3d^4 - 3d^3(a^4P)4p$	$a^3F - {}^5D^\circ$	4 – 3		490
	60	1097.438	17.85118 – 108.97290	$3d^4 - 3d^3(a^4P)4p$	$a^3P - {}^3P^\circ$	2 – 2		893
	60	1098.231	25.72644 – 116.78205	$3d^4 - 3d^3(a^4P)4p$	$a^3D - {}^3D^\circ$	3 – 2		893
	40	1098.626	18.51118 – 109.53425	$3d^4 - 3d^3(a^2G)4p$	$a^3F - {}^3H^\circ$	3 – 4		893
	25	1098.740	17.85118 – 108.86498	$3d^4 - 3d^3(a^4P)4p$	$a^3P - {}^5D^\circ$	2 – 1		893
	120	1098.888	25.78094 – 116.78205	$3d^4 - 3d^3(a^4P)4p$	$a^3D - {}^3D^\circ$	2 – 2		893
	60	1098.989	25.78094 – 116.77400	$3d^4 - 3d^3(a^4P)4p$	$a^3D - {}^3D^\circ$	2 – 1		893
	150	1099.454	32.15199 – 123.10584	$3d^4 - 3d^3(a^2D)4p$	$a^1D - {}^1D^\circ$	2 – 2		893
	90	1099.802	25.84831 – 116.77400	$3d^4 - 3d^3(a^4P)4p$	$a^3D - {}^3D^\circ$	1 – 1		893
23	300	1100.585	20.99604 – 111.85697	$3d^4 - 3d^3(a^2G)4p$	$a^3G - {}^3G^\circ$	5 – 5		893
	90	1101.247	25.72644 – 116.53295	$3d^4 - 3d^3(a^4P)4p$	$a^3D - {}^3D^\circ$	3 – 3		893
23	250	1101.422	20.85295 – 111.64476	$3d^4 - 3d^3(a^2G)4p$	$a^3G - {}^3G^\circ$	4 – 4		893
	120	1101.907	25.78094 – 116.53295	$3d^4 - 3d^3(a^4P)4p$	$a^3D - {}^3D^\circ$	2 – 3		893
23	200	1102.869	20.70364 – 111.37609	$3d^4 - 3d^3(a^2G)4p$	$a^3G - {}^3G^\circ$	3 – 3		893
31	25	1103.630	25.78094 – 116.39166	$3d^4 - 3d^3(a^2D)4p$	$a^3D - {}^3F^\circ$	2 – 2		893
	4	1103.727	25.84831 – 116.45119	$3d^4 - 3d^3(a^2P)4p$	$a^3D - {}^3S^\circ$	1 – 1		893
31	150	1104.444	25.84831 – 116.39166	$3d^4 - 3d^3(a^2D)4p$	$a^3D - {}^3F^\circ$	1 – 2		893
	60	1104.672	20.85295 – 111.37609	$3d^4 - 3d^3(a^2G)4p$	$a^3G - {}^3G^\circ$	4 – 3		893
	90	1105.797	25.13887 – 115.57196	$3d^4 - 3d^3(a^2H)4p$	$a^1G - {}^3H^\circ$	4 – 4		893
	200	1108.098	32.15199 – 122.39649	$3d^4 - 3d^3(a^2P)4p$	$a^1D - {}^1P^\circ$	2 – 1		893
	10	1112.60						490
30	250	1113.245	25.72644 – 115.55428	$3d^4 - 3d^3(a^2P)4p$	$a^3D - {}^3D^\circ$	3 – 3		893
30	25	1113.921	25.78094 – 115.55428	$3d^4 - 3d^3(a^2P)4p$	$a^3D - {}^3D^\circ$	2 – 3		893
22	250	1117.174	20.99604 – 110.50718	$3d^4 - 3d^3(a^2G)4p$	$a^3G - {}^3H^\circ$	5 – 6		893
30	60	1117.867	25.72644 – 115.18215	$3d^4 - 3d^3(a^2P)4p$	$a^3D - {}^3D^\circ$	3 – 2		893
30	250	1118.541	25.78094 – 115.18215	$3d^4 - 3d^3(a^2P)4p$	$a^3D - {}^3D^\circ$	2 – 2		893
30	25	1119.400	25.84831 – 115.18215	$3d^4 - 3d^3(a^2P)4p$	$a^3D - {}^3D^\circ$	1 – 2		893
	25	1119.892	32.15199 – 121.44677	$3d^4 - 3d^3(a^4P)4p$	$a^1D - {}^3S^\circ$	2 – 1		893
	90	1121.359	43.32217 – 132.49978	$3d^4 - 3d^3(a^2F)4p$	$b^3F - {}^3D^\circ$	3 – 2		893
22	150	1122.43	20.85295 – 109.94498	$3d^4 - 3d^3(a^2G)4p$	$a^3G - {}^3H^\circ$	4 – 5		490

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	90	1122.870	43.44199 – 132.49978	$3d^4 - 3d^3(a^2F)4p$	$b^3P - {}^3D^o$	2 – 2		893
	30	1123.37	20.70364 – 109.72279	$3d^4 - 3d^3(a^4P)4p$	$a^3G - {}^5D^o$	3 – 3		490
	150	1123.587	27.37232 – 116.37292	$3d^4 - 3d^3(a^2D)4p$	$a^1S - {}^1P^o$	0 – 1		893
30	40	1124.405	25.78094 – 114.71679	$3d^4 - 3d^3(a^2P)4p$	$a^3D - {}^3D^o$	2 – 1		893
30	120	1125.257	25.84831 – 114.71679	$3d^4 - 3d^3(a^2P)4p$	$a^3D - {}^3D^o$	1 – 1		893
22	300	1125.736	20.70364 – 109.53425	$3d^4 - 3d^3(a^2G)4p$	$a^3G - {}^3H^o$	3 – 4		893
	90	1125.902	25.78094 – 114.59914	$3d^4 - 3d^3(a^2P)4p$	$a^3D - {}^3P^o$	2 – 2		893
	10	1126.35						490
	250	1127.706	43.44199 – 132.11750	$3d^4 - 3d^3(a^2F)4p$	$b^3P - {}^3D^o$	2 – 3		893
	90	1128.757	44.14136 – 132.73422	$3d^4 - 3d^3(a^2F)4p$	$b^3P - {}^3D^o$	0 – 1		893
	120	1128.878	43.91659 – 132.49978	$3d^4 - 3d^3(a^2F)4p$	$b^3P - {}^3D^o$	1 – 2		893
	150	1131.90						490
	150	1132.742	25.13887 – 113.41993	$3d^4 - 3d^3(a^2G)4p$	$a^1G - {}^1H^o$	4 – 5		893
	90	1133.913	25.13887 – 113.32880	$3d^4 - 3d^3(a^2G)4p$	$a^1G - {}^1F^o$	4 – 3		893
	60	1134.256	43.28671 – 131.45016	$3d^4 - 3d^3(a^2F)4p$	$b^3F - {}^3G^o$	4 – 5		893
	90	1136.535	25.78094 – 113.76713	$3d^4 - 3d^3(a^2P)4p$	$a^3D - {}^1D^o$	2 – 2		893
	400	1136.666	25.13887 – 113.11521	$3d^4 - 3d^3(a^2G)4p$	$a^1G - {}^1G^o$	4 – 4		893
	10	1136.91						490
	90	1137.091	43.32217 – 131.26566	$3d^4 - 3d^3(a^2F)4p$	$b^3F - {}^3G^o$	3 – 4		893
	10	1137.408	25.84831 – 113.76713	$3d^4 - 3d^3(a^2P)4p$	$a^3D - {}^1D^o$	1 – 2		893
	90	1138.797	43.30453 – 131.11636	$3d^4 - 3d^3(a^2F)4p$	$b^3F - {}^3G^o$	2 – 3		893
	10	1139.024	43.32217 – 131.11636	$3d^4 - 3d^3(a^2F)4p$	$b^3F - {}^3G^o$	3 – 3		893
	10	1141.155	25.72644 – 113.35704	$3d^4 - 3d^3(a^4P)4p$	$a^3D - {}^5S^o$	3 – 2		893
	25	1142.226	25.78094 – 113.32880	$3d^4 - 3d^3(a^2G)4p$	$a^3D - {}^1F^o$	2 – 3		893
	150	1143.63						490
	250	1144.096	26.01489 – 113.41993	$3d^4 - 3d^3(a^2G)4p$	$a^1I - {}^1H^o$	6 – 5		893
	200	1144.308	25.72644 – 113.11521	$3d^4 - 3d^3(a^2G)4p$	$a^3D - {}^1G^o$	3 – 4		893
	300	1146.335	25.13887 – 112.37288	$3d^4 - 3d^3(a^2G)4p$	$a^1G - {}^3F^o$	4 – 4		893
29	40	1152.859	25.72644 – 112.46701	$3d^4 - 3d^3(a^2G)4p$	$a^3D - {}^3F^o$	3 – 3		893
29	200	1153.580	25.78094 – 112.46701	$3d^4 - 3d^3(a^2G)4p$	$a^3D - {}^3F^o$	2 – 3		893
29	200	1154.109	25.72644 – 112.37288	$3d^4 - 3d^3(a^2G)4p$	$a^3D - {}^3F^o$	3 – 4		893
29	25	1154.479	25.78094 – 112.39984	$3d^4 - 3d^3(a^2G)4p$	$a^3D - {}^3F^o$	2 – 2		893
29	150	1155.378	25.84831 – 112.39984	$3d^4 - 3d^3(a^2G)4p$	$a^3D - {}^3F^o$	1 – 2		893
	4	1155.710	27.37232 – 113.89943	$3d^4 - 3d^3(a^2P)4p$	$a^1S - {}^3P^o$	0 – 1		893
	20	1156.42						490
	25	1159.096	65.76321 – 152.03721	$3d^4 - 3d^3(b^2D)4p$	$b^1D - {}^1F^o$	2 – 3		893
	350	1161.428	37.00516 – 123.10584	$3d^4 - 3d^3(a^2D)4p$	$a^1F - {}^1D^o$	3 – 2		893
	10	1162.610	32.15199 – 118.16515	$3d^4 - 3d^3(a^2D)4p$	$a^1D - {}^3D^o$	2 – 1		893
	10	1166.23						490
	25	1168.292	25.78094 – 111.37609	$3d^4 - 3d^3(a^2G)4p$	$a^3D - {}^3G^o$	2 – 3		893
	120	1168.726	43.28671 – 128.85049	$3d^4 - 3d^3(a^2F)4p$	$b^3F - {}^3F^o$	4 – 4		893
	25	1169.208	43.32217 – 128.85049	$3d^4 - 3d^3(a^2F)4p$	$b^3F - {}^3F^o$	3 – 4		893
	90	1170.111	43.32217 – 128.78413	$3d^4 - 3d^3(a^2F)4p$	$b^3F - {}^3F^o$	3 – 3		893
	90	1170.273	43.30453 – 128.75462	$3d^4 - 3d^3(a^2F)4p$	$b^3F - {}^3F^o$	2 – 2		893
	30	1170.64						490
	40	1173.19						490
	50	1173.34						490
	100	1173.77						490
	300	1174.825	49.76865 – 134.88754	$3d^4 - 3d^3(a^2F)4p$	$b^1G - {}^1F^o$	4 – 3		893
	30	1178.55						490
	20	1178.80						490
	10	1178.99	32.15199 – 116.96909	$3d^4 - 3d^3(a^2D)4p$	$a^1D - {}^3F^o$	2 – 3		490
	30	1179.68						490
	4	1180.579	17.39692 – 102.10076	$3d^4 - 3d^3(a^4F)4p$	$a^3H - {}^3F^o$	5 – 4		893

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	60	1180.81						490
	10	1181.03						490
	10	1181.45						490
	50	1181.63	32.15199 – 116.78205	3d^4 – 3d^3(a^{4}P)4p	a^{1}D – ^{3}D°	2 – 2		490
	90	1181.723	32.15199 – 116.77400	3d^4 – 3d^3(a^{4}P)4p	a^{1}D – ^{3}D°	2 – 1		893
	120	1186.254	32.15199 – 116.45119	3d^4 – 3d^3(a^{2}P)4p	a^{1}D – ^{3}S°	2 – 1		893
	150	1187.350	32.15199 – 116.37292	3d^4 – 3d^3(a^{2}D)4p	a^{1}D – ^{1}P°	2 – 1		893
	250	1187.637	49.76865 – 133.96957	3d^4 – 3d^3(a^{2}F)4p	b^{1}G – ^{1}G°	4 – 4		893
	150	1192.686	25.72644 – 109.57089	3d^4 – 3d^3(a^{4}P)4p	a^{3}D – ^{5}D°	3 – 2		893
	200	1193.466	25.78094 – 109.57062	3d^4 – 3d^3(a^{4}P)4p	a^{3}D – ^{3}P°	2 – 1		893
	10	1193.89	63.17430 – 146.93618	3d^3(a^{4}P)4s – 3d^3(b^{2}D)4p	^{5}P – ^{3}D°	2 – 1		490
	30	1194.44	25.84831 – 109.57062	3d^4 – 3d^3(a^{4}P)4p	a^{3}D – ^{3}P°	1 – 1		490
	30	1194.96						490
	10	1195.42						490
	30	1196.04	25.84831 – 109.45811	3d^4 – 3d^3(a^{4}P)4p	a^{3}D – ^{3}P°	1 – 0		490
15	90	1196.328	18.51118 – 102.10076	3d^4 – 3d^3(a^{4}F)4p	a^{3}F – ^{3}F°	3 – 4		893
15	500	1197.365	18.58339 – 102.10076	3d^4 – 3d^3(a^{4}F)4p	a^{3}F – ^{3}F°	4 – 4		893
	10	1197.60						490
	70	1198.31	65.89238 – 149.34403	3d^3(a^{2}G)4s – 3d^3(b^{2}D)4p	^{3}G – ^{3}F°	3 – 2		490
15	120	1200.567	18.45184 – 101.74621	3d^4 – 3d^3(a^{4}F)4p	a^{3}F – ^{3}F°	2 – 3		893
	50	1200.91						490
	50	1201.00						490
	400	1201.247	25.72644 – 108.97290	3d^4 – 3d^3(a^{4}P)4p	a^{3}D – ^{3}P°	3 – 2		893
15	300	1201.426	18.51118 – 101.74621	3d^4 – 3d^3(a^{4}F)4p	a^{3}F – ^{3}F°	3 – 3		893
	60	1202.043	25.78094 – 108.97290	3d^4 – 3d^3(a^{4}P)4p	a^{3}D – ^{3}P°	2 – 2		893
15	120	1202.460	18.58339 – 101.74621	3d^4 – 3d^3(a^{4}F)4p	a^{3}F – ^{3}F°	4 – 3		893
	150	1203.604	25.78094 – 108.86498	3d^4 – 3d^3(a^{4}P)4p	a^{3}D – ^{5}D°	2 – 1		893
	20	1203.95						490
	1	1204.375	32.15199 – 115.18215	3d^4 – 3d^3(a^{2}P)4p	a^{1}D – ^{3}D°	2 – 2		893
7	90	1204.440	17.39692 – 100.42301	3d^4 – 3d^3(a^{4}F)4p	a^{3}H – ^{3}G°	5 – 5		893
	60	1204.580	25.84831 – 108.86498	3d^4 – 3d^3(a^{4}P)4p	a^{3}D – ^{5}D°	1 – 1		893
15	350	1204.929	18.45184 – 101.44457	3d^4 – 3d^3(a^{4}F)4p	a^{3}F – ^{3}F°	2 – 2		893
	10	1205.15						490
15	120	1205.787	18.51118 – 101.44457	3d^4 – 3d^3(a^{4}F)4p	a^{3}F – ^{3}F°	3 – 2		893
	10	1206.12						490
7	570	1206.381	17.53065 – 100.42301	3d^4 – 3d^3(a^{4}F)4p	a^{3}H – ^{3}G°	6 – 5		893
	30	1206.70	49.62825 – 132.49978	3d^3(a^{4}F)4s – 3d^3(a^{2}F)4p	^{5}F – ^{3}D°	2 – 2		490
	20	1206.99	25.84831 – 108.69763	3d^4 – 3d^3(a^{4}P)4p	a^{3}D – ^{5}D°	1 – 0		490
	200	1207.017	25.84831 – 108.69763	3d^4 – 3d^3(a^{4}P)4p	a^{3}D – ^{5}D°	1 – 0		893
	200	1207.124	37.00516 – 119.84647	3d^4 – 3d^3(a^{2}D)4p	a^{1}F – ^{1}F°	3 – 3		893
7	90	1207.340	17.27370 – 100.10066	3d^4 – 3d^3(a^{4}F)4p	a^{3}H – ^{3}G°	4 – 4		893
	350	1207.580	65.76321 – 148.57381	3d^4 – 3d^3(b^{2}D)4p	b^{1}D – ^{1}D°	2 – 2		893
	25	1208.684	25.72644 – 108.46140	3d^4 – 3d^3(a^{4}P)4p	a^{3}D – ^{5}P°	3 – 2		893
7	500	1209.133	17.39692 – 100.10066	3d^4 – 3d^3(a^{4}F)4p	a^{3}H – ^{3}G°	5 – 4		893
	10	1209.42	65.89238 – 148.57381	3d^3(a^{2}G)4s – 3d^3(b^{2}D)4p	^{3}G – ^{1}D°	3 – 2		490
	10	1209.66	49.82891 – 132.49978	3d^3(a^{4}F)4s – 3d^3(a^{2}F)4p	^{5}F – ^{3}D°	3 – 2		490
7	400	1211.123	17.27370 – 99.84167	3d^4 – 3d^3(a^{4}F)4p	a^{3}H – ^{3}G°	4 – 3		893
	10	1211.84						490
	50	1212.98	49.62825 – 132.07071	3d^3(a^{4}F)4s – 3d^3(a^{2}F)4p	^{5}F – ^{1}D°	2 – 2		490
	50	1213.51	25.84831 – 108.25089	3d^4 – 3d^3(a^{4}P)4p	a^{3}D – ^{5}P°	1 – 1		490
	10	1213.82						490
	100	1218.60						490
	50	1218.89						490
	50	1219.55						490

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	1220.14						490
	350	1221.076	37.00516 – 118.90053	$3d^4$ – $3d^3(a^2H)4p$	a^1F – $^1G°$	3 – 4		893
	10	1221.45						490
14	400	1221.908	18.58339 – 100.42301	$3d^4$ – $3d^3(a^4F)4p$	a^3F – $^3G°$	4 – 5		893
	25	1223.286	32.15199 – 113.89943	$3d^4$ – $3d^3(a^2P)4p$	a^1D – $^3P°$	2 – 1		893
	30	1224.43						490
	100	1225.02						490
	300	1225.263	32.15199 – 113.76713	$3d^4$ – $3d^3(a^2P)4p$	a^1D – $^1D°$	2 – 2		893
	150	1225.32						490
14	300	1225.645	18.51118 – 100.10066	$3d^4$ – $3d^3(a^4F)4p$	a^3F – $^3G°$	3 – 4		893
	10	1226.18						490
14	150	1226.735	18.58339 – 100.10066	$3d^4$ – $3d^3(a^4F)4p$	a^3F – $^3G°$	4 – 4		893
	20	1227.11	27.37232 – 108.86498	$3d^4$ – $3d^3(a^4P)4p$	a^1S – $^5D°$	0 – 1		490
	10	1228.03						490
	10	1228.37						490
14	350	1228.647	18.45184 – 99.84167	$3d^4$ – $3d^3(a^4F)4p$	a^3F – $^3G°$	2 – 3		893
14	200	1229.552	18.51118 – 99.84167	$3d^4$ – $3d^3(a^4F)4p$	a^3F – $^3G°$	3 – 3		893
	10	1230.35						490
	10	1230.49						490
21	250	1230.802	20.85295 – 102.10076	$3d^4$ – $3d^3(a^4F)4p$	a^3G – $^3F°$	4 – 4		893
	500	1231.878	32.15199 – 113.32880	$3d^4$ – $3d^3(a^2G)4p$	a^1D – $^1F°$	2 – 3		893
21	570	1232.975	20.99604 – 102.10076	$3d^4$ – $3d^3(a^4F)4p$	a^3G – $^3F°$	5 – 4		893
	10	1233.28						490
21	200	1233.919	20.70364 – 101.74621	$3d^4$ – $3d^3(a^4F)4p$	a^3G – $^3F°$	3 – 3		893
21	500	1236.197	20.85295 – 101.74621	$3d^4$ – $3d^3(a^4F)4p$	a^3G – $^3F°$	4 – 3		893
	40	1236.424	27.37232 – 108.25089	$3d^4$ – $3d^3(a^4P)4p$	a^1S – $^5P°$	0 – 1		893
	10	1236.51	70.98126 – 151.85212	$3d^3(a^2D)4s$ – $3d^3(b^2D)4p$	^3D – $^3P°$	1 – 0		490
	10	1236.71						490
21	400	1238.529	20.70364 – 101.44457	$3d^4$ – $3d^3(a^4F)4p$	a^3G – $^3F°$	3 – 2		893
	20	1241.32						490
	10	1242.08						490
	20	1243.43						490
	25	1243.627	17.27370 – 97.68399	$3d^4$ – $3d^3(a^4F)4p$	a^3H – $^3D°$	4 – 3		893
	40	1243.97						490
	10	1244.41	71.67719 – 152.03721	$3d^3(a^2H)4s$ – $3d^3(b^2D)4p$	^3H – $^1F°$	4 – 3		490
	100	1244.58	17.27370 – 97.61948	$3d^4$ – $3d^3(a^4F)4p$	a^3H – $^5F°$	4 – 5		490
	90	1245.097	32.15199 – 112.46701	$3d^4$ – $3d^3(a^2G)4p$	a^1D – $^3F°$	2 – 3		893
6	200	1245.231	16.77136 – 97.07796	$3d^4$ – $3d^3(a^4F)4p$	a^3P – $^3D°$	0 – 1		893
	100	1246.83						490
6	350	1247.846	17.16856 – 97.30659	$3d^4$ – $3d^3(a^4F)4p$	a^3P – $^3D°$	1 – 2		893
	90	1248.621	17.53065 – 97.61948	$3d^4$ – $3d^3(a^4F)4p$	a^3H – $^5F°$	6 – 5		893
	20	1250.33						490
	20	1250.57	17.39692 – 97.35981	$3d^4$ – $3d^3(a^4F)4p$	a^3H – $^5F°$	5 – 4		490
6	250	1251.424	17.16856 – 97.07796	$3d^4$ – $3d^3(a^4F)4p$	a^3P – $^3D°$	1 – 1		893
6	350	1252.616	17.85118 – 97.68399	$3d^4$ – $3d^3(a^4F)4p$	a^3P – $^3D°$	2 – 3		893
	5	1253.87	17.16856 – 96.92202	$3d^4$ – $3d^3(a^4F)4p$	a^3P – $^5D°$	1 – 2		490
	20	1256.066						047
20	150	1256.754	20.85295 – 100.42301	$3d^4$ – $3d^3(a^4F)4p$	a^3G – $^3G°$	4 – 5		893
6	250	1258.568	17.85118 – 97.30659	$3d^4$ – $3d^3(a^4F)4p$	a^3P – $^3D°$	2 – 2		893
20	570	1259.014	20.99604 – 100.42301	$3d^4$ – $3d^3(a^4F)4p$	a^3G – $^3G°$	5 – 5		893
20	400	1259.487	20.70364 – 100.10066	$3d^4$ – $3d^3(a^4F)4p$	a^3G – $^3G°$	3 – 4		893
	250	1259.794	16.77136 – 96.14925	$3d^4$ – $3d^3(a^4F)4p$	a^3P – $^5F°$	0 – 1		893
	20	1261.53	17.85118 – 97.12142	$3d^4$ – $3d^3(a^4F)4p$	a^3P – $^5F°$	2 – 3		490
20	570	1261.864	20.85295 – 100.10066	$3d^4$ – $3d^3(a^4F)4p$	a^3G – $^3G°$	4 – 4		893

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
6	40	1262.229	17.85118 – 97.07796	$3d^4 - 3d^3(a^4F)4p$	$a^3P - {}^3D^\circ$	2 – 1		893
	250	1262.347	17.16856 – 96.38631	$3d^4 - 3d^3(a^4F)4p$	$a^3P - {}^5F^\circ$	1 – 2		893
13	200	1263.064	18.51118 – 97.68399	$3d^4 - 3d^3(a^4F)4p$	$a^3F - {}^3D^\circ$	3 – 3		893
20	300	1263.617	20.70364 – 99.84167	$3d^4 - 3d^3(a^4F)4p$	$a^3G - {}^3G^\circ$	3 – 3		893
13	350	1264.206	18.58339 – 97.68399	$3d^4 - 3d^3(a^4F)4p$	$a^3F - {}^3D^\circ$	4 – 3		893
	200	1265.239	18.58339 – 97.61948	$3d^4 - 3d^3(a^4F)4p$	$a^3F - {}^5F^\circ$	4 – 5		893
20	40	1266.000	20.85295 – 99.84167	$3d^4 - 3d^3(a^4F)4p$	$a^3G - {}^3G^\circ$	4 – 3		893
	300	1266.125	17.16856 – 96.14925	$3d^4 - 3d^3(a^4F)4p$	$a^3P - {}^5F^\circ$	1 – 1		893
	40	1266.551	43.44199 – 122.39649	$3d^4 - 3d^3(a^2P)4p$	$b^3P - {}^1P^\circ$	2 – 1		893
5	250	1268.025	17.85118 – 96.71404	$3d^4 - 3d^3(a^4F)4p$	$a^3P - {}^5D^\circ$	2 – 3		893
13	60	1268.148	18.45184 – 97.30659	$3d^4 - 3d^3(a^4F)4p$	$a^3F - {}^3D^\circ$	2 – 2		893
13	400	1269.110	18.51118 – 97.30659	$3d^4 - 3d^3(a^4F)4p$	$a^3F - {}^3D^\circ$	3 – 2		893
13	250	1271.839	18.45184 – 97.07796	$3d^4 - 3d^3(a^4F)4p$	$a^3F - {}^3D^\circ$	2 – 1		893
	200	1273.312	17.85118 – 96.38631	$3d^4 - 3d^3(a^4F)4p$	$a^3P - {}^5F^\circ$	2 – 2		893
	150	1275.34	18.51118 – 96.92202	$3d^4 - 3d^3(a^4F)4p$	$a^3F - {}^5D^\circ$	3 – 2		047
	200	1276.76	18.45184 – 96.77438	$3d^4 - 3d^3(a^4F)4p$	$a^3F - {}^5D^\circ$	2 – 1		047
	25	1277.174	17.85118 – 96.14925	$3d^4 - 3d^3(a^4F)4p$	$a^3P - {}^5F^\circ$	2 – 1		893
12	20	1278.71	18.51118 – 96.71404	$3d^4 - 3d^3(a^4F)4p$	$a^3F - {}^5D^\circ$	3 – 3		490
12	250	1279.906	18.58339 – 96.71404	$3d^4 - 3d^3(a^4F)4p$	$a^3F - {}^5D^\circ$	4 – 3		893
	1	1281.055	71.32327 – 149.38364	$3d^3(a^2D)4s - 3d^3(b^2D)4p$	${}^3D - {}^3F^\circ$	2 – 3		893
	300	1281.977	43.44199 – 121.44677	$3d^4 - 3d^3(a^4P)4p$	$b^3P - {}^3S^\circ$	2 – 1		893
	60	1283.132	18.45184 – 96.38631	$3d^4 - 3d^3(a^4F)4p$	$a^3F - {}^5F^\circ$	2 – 2		893
	200	1284.103	18.51118 – 96.38631	$3d^4 - 3d^3(a^4F)4p$	$a^3F - {}^5F^\circ$	3 – 2		893
	10	1284.46						490
	10	1285.90						490
	400	1287.05	18.45184 – 96.14925	$3d^4 - 3d^3(a^4F)4p$	$a^3F - {}^5F^\circ$	2 – 1		490
	250	1289.824	43.91659 – 121.44677	$3d^4 - 3d^3(a^4P)4p$	$b^3P - {}^3S^\circ$	1 – 1		893
37	300	1290.940	43.30453 – 120.76726	$3d^4 - 3d^3(a^2H)4p$	$b^3F - {}^3G^\circ$	2 – 3		893
37	60	1291.240	43.32217 – 120.76726	$3d^4 - 3d^3(a^2H)4p$	$b^3F - {}^3G^\circ$	3 – 3		893
37	350	1291.531	43.32217 – 120.74955	$3d^4 - 3d^3(a^2H)4p$	$b^3F - {}^3G^\circ$	3 – 4		893
37	400	1291.763	43.28671 – 120.70027	$3d^4 - 3d^3(a^2H)4p$	$b^3F - {}^3G^\circ$	4 – 5		893
	200	1293.569	44.14136 – 121.44677	$3d^4 - 3d^3(a^4P)4p$	$b^3P - {}^3S^\circ$	0 – 1		893
	40	1296.01						490
	40	1299.56						490
	20	1302.45						490
	4	1302.739	37.00516 – 113.76713	$3d^4 - 3d^3(a^2P)4p$	$a^1F - {}^1D^\circ$	3 – 2		893
	5	1302.85	17.27370 – 94.02999	$3d^4 - 3d^3(a^4F)4p$	$a^3H - {}^5G^\circ$	4 – 3		490
	40	1303.47						490
	25	1305.088	20.99604 – 97.61948	$3d^4 - 3d^3(a^4F)4p$	$a^3G - {}^5F^\circ$	5 – 5		893
	10	1306.168	43.28671 – 119.84647	$3d^4 - 3d^3(a^2D)4p$	$b^3F - {}^1F^\circ$	4 – 3		893
	25	1306.479	43.30453 – 119.84647	$3d^4 - 3d^3(a^2D)4p$	$b^3F - {}^1F^\circ$	2 – 3		893
	100	1307.24						490
	10	1307.47						490
	60	1307.64						490
	150	1308.27						490
28	350	1309.348	25.72644 – 102.10076	$3d^4 - 3d^3(a^4F)4p$	$a^3D - {}^3F^\circ$	3 – 4		893
	60	1310.179	43.28671 – 119.61280	$3d^4 - 3d^3(a^2H)4p$	$b^3F - {}^1H^\circ$	4 – 5		893
	150	1314.968	43.44199 – 119.48902	$3d^4 - 3d^3(a^2D)4p$	$b^3P - {}^3P^\circ$	2 – 1		893
28	60	1315.450	25.72644 – 101.74621	$3d^4 - 3d^3(a^4F)4p$	$a^3D - {}^3F^\circ$	3 – 3		893
	350	1316.151	43.44199 – 119.42142	$3d^4 - 3d^3(a^2D)4p$	$b^3P - {}^3P^\circ$	2 – 2		893
28	300	1316.386	25.78094 – 101.74621	$3d^4 - 3d^3(a^4F)4p$	$a^3D - {}^3F^\circ$	2 – 3		893
	60	1320.844	43.91659 – 119.62562	$3d^4 - 3d^3(a^2D)4p$	$b^3P - {}^3P^\circ$	1 – 0		893
28	40	1321.639	25.78094 – 101.44457	$3d^4 - 3d^3(a^4F)4p$	$a^3D - {}^3F^\circ$	2 – 2		893
28	250	1322.819	25.84831 – 101.44457	$3d^4 - 3d^3(a^4F)4p$	$a^3D - {}^3F^\circ$	1 – 2		893

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	1323.240	43.91659 – 119.48902	$3d^4 - 3d^3(a^2D)4p$	$b^3P - {}^3P°$	1 – 1		893
	250	1324.415	43.91659 – 119.42142	$3d^4 - 3d^3(a^2D)4p$	$b^3P - {}^3P°$	1 – 2		893
	40	1327.180	44.14136 – 119.48902	$3d^4 - 3d^3(a^2D)4p$	$b^3P - {}^3P°$	0 – 1		893
	120	1327.806	43.28671 – 118.59911	$3d^4 - 3d^3(a^2D)4p$	$b^3F - {}^3D°$	4 – 3		893
	25	1328.421	43.32217 – 118.59911	$3d^4 - 3d^3(a^2D)4p$	$b^3F - {}^3D°$	3 – 3		893
	10	1328.78	18.51118 – 93.76621	$3d^4 - 3d^3(a^4F)4p$	$a^3F - {}^5G°$	3 – 2		490
	20	1329.11						490
	20	1329.29						490
	25	1331.224	43.30453 – 118.42299	$3d^4 - 3d^3(a^2D)4p$	$b^3F - {}^3D°$	2 – 2		893
	150	1331.543	43.32217 – 118.42299	$3d^4 - 3d^3(a^2D)4p$	$b^3F - {}^3D°$	3 – 2		893
	10	1341.17						490
	40	1342.24						490
	100	1345.12						490
	70	1345.46						490
	10	1351.94						490
	10	1354.16						490
36	25	1354.735	43.28671 – 117.10158	$3d^4 - 3d^3(a^2D)4p$	$b^3F - {}^3F°$	4 – 4		893
	10	1356.25						490
	20	1356.86						490
36	200	1357.180	43.28671 – 116.96909	$3d^4 - 3d^3(a^2D)4p$	$b^3F - {}^3F°$	4 – 3		893
	20	1357.69						490
36	5	1357.85	43.32217 – 116.96909	$3d^4 - 3d^3(a^2D)4p$	$b^3F - {}^3F°$	3 – 3		490
	30	1358.65						490
	20	1358.75						490
	60	1360.40						490
	20	1360.56						490
	40	1360.960	43.30453 – 116.78205	$3d^4 - 3d^3(a^4P)4p$	$b^3F - {}^3D°$	2 – 2		893
	250	1361.106	43.30453 – 116.77400	$3d^4 - 3d^3(a^4P)4p$	$b^3F - {}^3D°$	2 – 1		893
	300	1361.276	43.32217 – 116.78205	$3d^4 - 3d^3(a^4P)4p$	$b^3F - {}^3D°$	3 – 2		893
	50	1362.85						490
	20	1363.73	20.70364 – 94.02999	$3d^4 - 3d^3(a^4F)4p$	$a^3G - {}^5G°$	3 – 3		490
	50	1364.26						490
	40	1365.06						490
	300	1365.257	43.28671 – 116.53295	$3d^4 - 3d^3(a^4P)4p$	$b^3F - {}^3D°$	4 – 3		893
	60	1365.921	43.32217 – 116.53295	$3d^4 - 3d^3(a^4P)4p$	$b^3F - {}^3D°$	3 – 3		893
	70	1366.06						490
	120	1366.63						490
	20	1366.88						490
	40	1367.13	43.30453 – 116.45119	$3d^4 - 3d^3(a^2P)4p$	$b^3F - {}^3S°$	2 – 1		490
36	20	1368.23	43.30453 – 116.39166	$3d^4 - 3d^3(a^2D)4p$	$b^3F - {}^3F°$	2 – 2		490
36	200	1368.563	43.32217 – 116.39166	$3d^4 - 3d^3(a^2D)4p$	$b^3F - {}^3F°$	3 – 2		893
	20	1370.20						490
	20	1370.74						490
	60	1372.27						490
	10	1374.91						490
	60	1376.800	44.14136 – 116.77400	$3d^4 - 3d^3(a^4P)4p$	$b^3P - {}^3D°$	0 – 1		893
	30	1381.67						490
	100	1382.19						490
35	350	1383.749	43.28671 – 115.55428	$3d^4 - 3d^3(a^2P)4p$	$b^3F - {}^3D°$	4 – 3		893
35	60	1384.420	43.32217 – 115.55428	$3d^4 - 3d^3(a^2P)4p$	$b^3F - {}^3D°$	3 – 3		893
	10	1385.07						490
	40	1388.13						490
	20	1388.24						490
	70	1389.55	37.00516 – 108.97290	$3d^4 - 3d^3(a^4P)4p$	$a^1F - {}^3P°$	3 – 2		490

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	250	1389.699	25.72644 – 97.68399	$3d^4$ – $3d^3(a^4F)4p$	a^3D – $^3D°$	3 – 3		893
	120	1390.760	25.78094 – 97.68399	$3d^4$ – $3d^3(a^4F)4p$	a^3D – $^3D°$	2 – 3		893
35	40	1391.247	43.30453 – 115.18215	$3d^4$ – $3d^3(a^2P)4p$	b^3F – $^3D°$	2 – 2		893
35	250	1391.580	43.32217 – 115.18215	$3d^4$ – $3d^3(a^2P)4p$	b^3F – $^3D°$	3 – 2		893
	10	1391.78						490
	100	1392.40	49.62825 – 121.44677	$3d^3(a^4F)4s$ – $3d^3(a^4P)4p$	^5F – $^3S°$	2 – 1		490
	10	1393.00						490
	10	1393.22						490
	10	1393.98						490
	100	1394.33						490
	70	1394.58						490
	10	1396.26						490
	100	1396.42						490
	30	1396.63						490
	60	1397.033	25.72644 – 97.30659	$3d^4$ – $3d^3(a^4F)4p$	a^3D – $^3D°$	3 – 2		893
	30	1397.40						490
	10	1397.69						490
	30	1397.90						490
	150	1398.090	25.78094 – 97.30659	$3d^4$ – $3d^3(a^4F)4p$	a^3D – $^3D°$	2 – 2		893
	100	1399.05						490
	60	1399.415	25.84831 – 97.30659	$3d^4$ – $3d^3(a^4F)4p$	a^3D – $^3D°$	1 – 2		893
	25	1400.036	57.42340 – 128.85049	$3d^3(a^4F)4s$ – $3d^3(a^2F)4p$	^3F – $^3F°$	4 – 4		893
35	250	1400.316	43.30453 – 114.71679	$3d^4$ – $3d^3(a^2P)4p$	b^3F – $^3D°$	2 – 1		893
	10	1400.62	25.72644 – 97.12142	$3d^4$ – $3d^3(a^4F)4p$	a^3D – $^5F°$	3 – 3		490
	10	1400.72						490
	100	1401.55						490
	30	1402.07						490
	10	1402.589	25.78094 – 97.07796	$3d^4$ – $3d^3(a^4F)4p$	a^3D – $^3D°$	2 – 1		893
	40	1402.985	43.32217 – 114.59914	$3d^4$ – $3d^3(a^2P)4p$	b^3F – $^3P°$	3 – 2		893
	10	1403.200	43.91659 – 115.18215	$3d^4$ – $3d^3(a^2P)4p$	b^3P – $^3D°$	1 – 2		893
	70	1403.42						490
	120	1403.906	25.84831 – 97.07796	$3d^4$ – $3d^3(a^4F)4p$	a^3D – $^3D°$	1 – 1		893
	10	1404.50						490
	30	1405.37	43.44199 – 114.59914	$3d^4$ – $3d^3(a^2P)4p$	b^3P – $^3P°$	2 – 2		490
	40	1405.657	25.78094 – 96.92202	$3d^4$ – $3d^3(a^4F)4p$	a^3D – $^5D°$	2 – 2		893
	20	1405.72	49.62825 – 120.76726	$3d^3(a^4F)4s$ – $3d^3(a^2H)4p$	^5F – $^3G°$	2 – 3		490
	40	1406.31						490
	10	1407.22						490
	40	1407.89						490
	10	1408.477	49.76865 – 120.76726	$3d^4$ – $3d^3(a^2H)4p$	b^1G – $^3G°$	4 – 3		893
	120	1408.688	25.72644 – 96.71404	$3d^4$ – $3d^3(a^4F)4p$	a^3D – $^5D°$	3 – 3		893
	10	1409.10						490
	90	1409.796	25.78094 – 96.71404	$3d^4$ – $3d^3(a^4F)4p$	a^3D – $^5D°$	2 – 3		893
	20	1410.03	49.82891 – 120.74955	$3d^3(a^4F)4s$ – $3d^3(a^2H)4p$	^5F – $^3G°$	3 – 4		490
	20	1410.82						490
	10	1411.53	25.84831 – 96.69397	$3d^4$ – $3d^3(a^4F)4p$	a^3D – $^5D°$	1 – 0		490
	30	1412.67						490
	10	1413.32						490
	40	1413.77						490
	50	1414.62						490
	10	1414.780	43.91659 – 114.59914	$3d^4$ – $3d^3(a^2P)4p$	b^3P – $^3P°$	1 – 2		893
	60	1415.235	25.72644 – 96.38631	$3d^4$ – $3d^3(a^4F)4p$	a^3D – $^5F°$	3 – 2		893
	10	1415.81						490
	90	1416.315	25.78094 – 96.38631	$3d^4$ – $3d^3(a^4F)4p$	a^3D – $^5F°$	2 – 2		893

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	70	1417.13						490
	25	1417.667	25.84831 – 96.38631	$3d^4 - 3d^3(a^4F)4p$	$a^3D - {}^5F^o$	1 – 2		893
	10	1419.294	43.44199 – 113.89943	$3d^4 - 3d^3(a^2P)4p$	$b^3P - {}^3P^o$	2 – 1		893
	100	1420.81						490
	40	1421.091	25.78094 – 96.14925	$3d^4 - 3d^3(a^4F)4p$	$a^3D - {}^5F^o$	2 – 1		893
	50	1421.20						490
	10	1421.80						490
	40	1422.47	25.84831 – 96.14925	$3d^4 - 3d^3(a^4F)4p$	$a^3D - {}^5F^o$	1 – 1		490
	20	1422.58						490
	10	1425.30						490
	200	1426.988	49.76865 – 119.84647	$3d^4 - 3d^3(a^2D)4p$	$b^1G - {}^1F^o$	4 – 3		893
	10	1427.20						490
	10	1427.71	43.28671 – 113.32880	$3d^4 - 3d^3(a^2G)4p$	$b^3F - {}^1F^o$	4 – 3		490
	10	1428.46	43.32217 – 113.32880	$3d^4 - 3d^3(a^2G)4p$	$b^3F - {}^1F^o$	3 – 3		490
	50	1429.04						490
	50	1429.17						490
	10	1429.703	43.91659 – 113.86147	$3d^4 - 3d^3(a^2P)4p$	$b^3P - {}^3P^o$	1 – 0		893
	4	1430.023	49.49246 – 119.42142	$3d^3(a^4F)4s - 3d^3(a^2D)4p$	${}^5F - {}^3P^o$	1 – 2		893
	30	1430.15						490
	50	1430.42						490
	1	1431.620	43.91659 – 113.76713	$3d^4 - 3d^3(a^2P)4p$	$b^3P - {}^1D^o$	1 – 2		893
	250	1431.758	49.76865 – 119.61280	$3d^4 - 3d^3(a^2H)4p$	$b^1G - {}^1H^o$	4 – 5		893
	50	1433.26						490
	10	1434.19						490
	20	1436.65						490
	70	1437.17						490
	20	1437.76						490
	10	1438.03						490
	5	1438.90						490
	60	1441.06						490
	50	1441.90						490
	10	1442.78						490
	20	1443.08						490
	60	1443.82						490
	1	1444.305	25.13887 – 94.37629	$3d^4 - 3d^3(a^4F)4p$	$a^1G - {}^5G^o$	4 – 4		893
	20	1444.84						490
	10	1445.876	43.30453 – 112.46701	$3d^4 - 3d^3(a^2G)4p$	$b^3F - {}^3F^o$	2 – 3		893
	90	1446.247	43.32217 – 112.46701	$3d^4 - 3d^3(a^2G)4p$	$b^3F - {}^3F^o$	3 – 3		893
	300	1446.511	49.76865 – 118.90053	$3d^4 - 3d^3(a^2H)4p$	$b^1G - {}^1G^o$	4 – 4		893
	250	1446.673	65.76321 – 134.88754	$3d^4 - 3d^3(a^2F)4p$	$b^1D - {}^1F^o$	2 – 3		893
	40	1447.284	43.30453 – 112.39984	$3d^4 - 3d^3(a^2G)4p$	$b^3F - {}^3F^o$	2 – 2		893
	20	1447.50	43.28671 – 112.37288	$3d^4 - 3d^3(a^2G)4p$	$b^3F - {}^3F^o$	4 – 4		490
	4	1448.221	43.32217 – 112.37288	$3d^4 - 3d^3(a^2G)4p$	$b^3F - {}^3F^o$	3 – 4		893
	20	1449.89	49.62825 – 118.59911	$3d^3(a^4F)4s - 3d^3(a^2D)4p$	${}^5F - {}^3D^o$	2 – 3		490
	5	1450.22						490
	10	1450.52						490
	80	1451.95						490
	50	1454.00	27.37232 – 96.14925	$3d^4 - 3d^3(a^4F)4p$	$a^1S - {}^5F^o$	0 – 1		490
	30	1457.22						490
	10	1458.17						490
	80	1458.41						490
	30	1462.12						490
	10	1463.87						490
	20	1467.04						490

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	50	1467.68						490
	50	1468.05						490
	50	1469.55						490
	10	1470.60						490
	60	1471.842	63.17430 – 131.11636	$3d^3(a^4P)4s - 3d^3(a^2F)4p$	$^5P - ^3G°$	2 – 3		893
	20	1472.45						490
	30	1473.32						490
	10	1473.82						490
	50	1476.04						490
	10	1477.49						490
	20	1478.08						490
	20	1478.64						490
	100	1480.16						490
	20	1483.11						490
	10	1483.45						490
	50	1483.75						490
	10	1484.39						490
	10	1486.02						490
	10	1486.54						490
	40	1487.03						490
	10	1487.86						490
	20	1488.72						490
	20	1489.10	49.62825 – 116.78205	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	$^5F - ^3D°$	2 – 2		490
	20	1489.35						490
	40	1489.93						490
	20	1491.50						490
	40	1492.05						490
	50	1492.98						490
	10	1493.462	49.49246 – 116.45119	$3d^3(a^4F)4s - 3d^3(a^2P)4p$	$^5F - ^3S°$	1 – 1		893
	10	1493.68						490
	50	1494.45						490
	20	1495.01						490
	20	1495.21	49.49246 – 116.37292	$3d^3(a^4F)4s - 3d^3(a^2D)4p$	$^5F - ^1P°$	1 – 1		490
	20	1495.36						490
	10	1496.47	49.62825 – 116.45119	$3d^3(a^4F)4s - 3d^3(a^2P)4p$	$^5F - ^3S°$	2 – 1		490
	30	1501.38	65.89238 – 132.49978	$3d^3(a^2G)4s - 3d^3(a^2F)4p$	$^3G - ^3D°$	3 – 2		490
	30	1502.87						490
	30	1503.65						490
	100	1505.76						490
	10	1506.82						490
	10	1506.95						490
	30	1507.93						490
	200	1508.122	65.76321 – 132.07071	$3d^4 - 3d^3(a^2F)4p$	$b^1D - ^1D°$	2 – 2		893
	4	1508.740	43.44199 – 109.72279	$3d^4 - 3d^3(a^4P)4p$	$b^3P - ^5D°$	2 – 3		893
	30	1509.31						490
	10	1510.05	65.89238 – 132.11750	$3d^3(a^2G)4s - 3d^3(a^2F)4p$	$^3G - ^3D°$	3 – 3		490
	10	1510.62						490
	80	1511.78						490
	300	1512.205	43.44199 – 109.57062	$3d^4 - 3d^3(a^4P)4p$	$b^3P - ^3P°$	2 – 1		893
	10	1513.18	66.03001 – 132.11750	$3d^3(a^2G)4s - 3d^3(a^2F)4p$	$^3G - ^3D°$	4 – 3		490
	10	1513.39						490
	20	1515.01						490
	80	1515.44						490
	20	1517.43	49.76865 – 115.67074	$3d^4 - 3d^3(a^2H)4p$	$b^1G - ^3H°$	4 – 5		490

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	1517.85						490
	40	1518.48						490
	10	1519.66	49.76865 – 115.57196	$3d^4$ – $3d^3(a^2H)4p$	b^1G – $^3H^o$	4 – 4		490
	70	1520.01						490
	40	1520.79						490
	10	1521.29						490
	30	1521.59						490
	5	1522.29	49.49246 – 115.18215	$3d^3(a^4F)4s$ – $3d^3(a^2P)4p$	^5F – $^3D^o$	1 – 2		490
	200	1523.133	43.91659 – 109.57062	$3d^4$ – $3d^3(a^4P)4p$	b^3P – $^3P^o$	1 – 1		893
	80	1523.21	43.32217 – 108.97290	$3d^4$ – $3d^3(a^4P)4p$	b^3F – $^3P^o$	3 – 2		490
	20	1524.65						490
	10	1525.27	43.30453 – 108.86498	$3d^4$ – $3d^3(a^4P)4p$	b^3F – $^5D^o$	2 – 1		490
	5	1525.42	49.62825 – 115.18215	$3d^3(a^4F)4s$ – $3d^3(a^2P)4p$	^5F – $^3D^o$	2 – 2		490
	150	1525.751	43.91659 – 109.45811	$3d^4$ – $3d^3(a^4P)4p$	b^3P – $^3P^o$	1 – 0		893
	250	1525.993	43.44199 – 108.97290	$3d^4$ – $3d^3(a^4P)4p$	b^3P – $^3P^o$	2 – 2		893
	90	1528.362	44.14136 – 109.57062	$3d^4$ – $3d^3(a^4P)4p$	b^3P – $^3P^o$	0 – 1		893
	120	1528.517	43.44199 – 108.86498	$3d^4$ – $3d^3(a^4P)4p$	b^3P – $^5D^o$	2 – 1		893
	20	1528.91						490
	20	1529.16						490
	5	1530.59	63.42192 – 128.75462	$3d^3(a^4P)4s$ – $3d^3(a^2F)4p$	^5P – $^3F^o$	3 – 2		490
	20	1532.09						490
	40	1532.517	84.37412 – 149.62630	$3d^3(a^2F)4s$ – $3d^3(b^2D)4p$	^3F – $^3F^o$	4 – 4		893
	4	1532.906	66.03001 – 131.26566	$3d^3(a^2G)4s$ – $3d^3(a^2F)4p$	^3G – $^3G^o$	4 – 4		893
	90	1533.094	69.65974 – 134.88754	$3d^3(a^2G)4s$ – $3d^3(a^2F)4p$	^1G – $^1F^o$	4 – 3		893
	4	1533.176	66.22509 – 131.45016	$3d^3(a^2G)4s$ – $3d^3(a^2F)4p$	^3G – $^3G^o$	5 – 5		893
	80	1534.09						490
	10	1534.40						490
	10	1535.66						490
	1	1536.201	37.00516 – 102.10076	$3d^4$ – $3d^3(a^4F)4p$	a^1F – $^3F^o$	3 – 4		893
	150	1537.133	43.91659 – 108.97290	$3d^4$ – $3d^3(a^4P)4p$	b^3P – $^3P^o$	1 – 2		893
	40	1537.997	43.44199 – 108.46140	$3d^4$ – $3d^3(a^4P)4p$	b^3P – $^5P^o$	2 – 2		893
	10	1538.43	94.80170 – 159.8033	$3d^3(a^4F)4p$ – $3d^3(a^4F)5s$	$^5G^o$ – f^3F	5 – 4		490
	30	1539.70	43.91659 – 108.86498	$3d^4$ – $3d^3(a^4P)4p$	b^3P – $^5D^o$	1 – 1		490
	90	1540.865	84.48476 – 149.38364	$3d^3(a^2F)4s$ – $3d^3(b^2D)4p$	^3F – $^3F^o$	3 – 3		893
	10	1541.57						490
	10	1542.52						490
	150	1543.665	43.91659 – 108.69763	$3d^4$ – $3d^3(a^4P)4p$	b^3P – $^5D^o$	1 – 0		893
	4	1543.884	84.57253 – 149.34403	$3d^3(a^2F)4s$ – $3d^3(b^2D)4p$	^3F – $^3F^o$	2 – 2		893
	120	1545.031	44.14136 – 108.86498	$3d^4$ – $3d^3(a^4P)4p$	b^3P – $^5D^o$	0 – 1		893
	30	1546.34						490
	30	1546.55						490
	30	1547.05						490
	20	1548.86	32.15199 – 96.71404	$3d^4$ – $3d^3(a^4F)4p$	a^1D – $^5D^o$	2 – 3		490
	10	1549.306	43.91659 – 108.46140	$3d^4$ – $3d^3(a^4P)4p$	b^3P – $^5P^o$	1 – 2		893
	20	1550.09						490
	10	1550.94						490
	50	1551.43						490
	40	1552.31						490
	10	1552.95						490
	40	1553.30						490
	50	1553.38						490
	30	1554.71						490
	30	1555.94	49.62825 – 113.89943	$3d^3(a^4F)4s$ – $3d^3(a^2P)4p$	^5F – $^3P^o$	2 – 1		490
	30	1557.01						490

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	30	1558.14						490
	10	1559.67	56.65137 – 120.76726	$3d^3(a^4F)4s - 3d^3(a^2H)4p$	$^3F - ^3G^o$	2 – 3		490
	10	1561.72	109.53425 – 173.5659	$3d^3(a^2G)4p - 3d^3(a^2H)4d$	$^3H^o - g^3H$	4 – 5		490
	10	1564.07						490
	10	1564.32						490
	20	1565.40						490
	20	1565.54						490
	80	1567.41						490
	10	1567.80						490
	60	1568.471	56.99308 – 120.74955	$3d^3(a^4F)4s - 3d^3(a^2H)4p$	$^3F - ^3G^o$	3 – 4		893
	30	1569.07						490
	20	1569.36						490
	50	1569.51						490
	40	1570.67	109.53425 – 173.2005	$3d^3(a^2G)4p - 3d^3(a^2H)4d$	$^3H^o - f^3I$	4 – 5		490
	250	1571.055	49.76865 – 113.41993	$3d^4 - 3d^3(a^2G)4p$	$b^1G - ^1H^o$	4 – 5		893
	20	1571.38						490
	50	1571.98						490
	20	1572.13	94.02999 – 157.6373	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^5G^o - f^5F$	3 – 3		490
	10	1572.54						490
	20	1572.89						490
	10	1573.34	49.76865 – 113.32880	$3d^4 - 3d^3(a^2G)4p$	$b^1G - ^1F^o$	4 – 3		490
	70	1573.87	93.76621 – 157.3032	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^5G^o - f^5F$	2 – 1		490
	40	1574.00	94.37629 – 157.9080	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^5G^o - f^5F$	4 – 4		490
	20	1574.63						490
	20	1576.24						490
73	100	1577.14	94.02999 – 157.4351	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^5G^o - f^5F$	3 – 2		490,488
	50	1577.36						490
	10	1578.01	110.50718 – 173.8763	$3d^3(a^2G)4p - 3d^3(a^2H)4d$	$^3H^o - f^3I$	6 – 7		490
	10	1578.39						490
	120	1578.624	49.76865 – 113.11521	$3d^4 - 3d^3(a^2G)4p$	$b^1G - ^1G^o$	4 – 4		893
	90	1580.116	49.82891 – 113.11521	$3d^3(a^4F)4s - 3d^3(a^2G)4p$	$^5F - ^1G^o$	3 – 4		893
	10	1580.34	57.42340 – 120.70027	$3d^3(a^4F)4s - 3d^3(a^2H)4p$	$^3F - ^3G^o$	4 – 5		490
73	200	1580.73	94.37629 – 157.6373	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^5G^o - f^5F$	4 – 3		490,488
	100	1581.15						490
	20	1581.57						490
	250	1582.62						490
	200	1582.93						490
	20	1583.70						490
	25	1583.965	69.60150 – 132.73422	$3d^3(a^4P)4s - 3d^3(a^2F)4p$	$^3P - ^3D^o$	0 – 1		893
	10	1584.09						490
73	400	1584.60	94.80170 – 157.9080	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^5G^o - f^5F$	5 – 4		490,488
	30	1584.84						490
	30	1585.01	96.71404 – 159.8033	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^5D^o - f^5F$	3 – 4		490
	150	1586.35						490
	60	1586.779	65.76321 – 128.78413	$3d^4 - 3d^3(a^2F)4p$	$b^1D - ^3F^o$	2 – 3		893
	10	1587.35						490
	20	1587.54	65.76321 – 128.75462	$3d^4 - 3d^3(a^2F)4p$	$b^1D - ^3F^o$	2 – 2		490
	20	1588.00						490
	150	1588.42						490
	200	1588.87						490
	20	1589.91						490
	20	1590.49						490
	40	1590.789	65.89238 – 128.75462	$3d^3(a^2G)4s - 3d^3(a^2F)4p$	$^3G - ^3F^o$	3 – 2		893
	50	1591.09						490

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	100	1592.39						490
	40	1593.16	56.65137 – 119.42142	$3d^3(a^4F)4s - 3d^3(a^2D)4p$	$^3F - ^3P°$	2 – 2		490
	40	1593.38						490
	25	1593.523	66.03001 – 128.78413	$3d^3(a^2G)4s - 3d^3(a^2F)4p$	$^3G - ^3F°$	4 – 3		893
	10	1593.71						490
	80	1594.03						490
	40	1594.474	84.37412 – 147.09073	$3d^3(a^2F)4s - 3d^3(b^2D)4p$	$^3F - ^3D°$	4 – 3		893
	20	1595.86	96.71404 – 159.3756	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^5D° - f^3F$	3 – 3		490
	10	1596.06						490
	150	1596.52	49.82891 – 112.46701	$3d^3(a^4F)4s - 3d^3(a^2G)4p$	$^5F - ^3F°$	3 – 3		490
	10	1596.76	66.22509 – 128.85049	$3d^3(a^2G)4s - 3d^3(a^2F)4p$	$^3G - ^3F°$	5 – 4		490
	120	1597.46						490
	10	1597.86						490
	50	1598.05						490
	30	1598.48						490
	30	1599.01						490
	70	1600.02						490
	50	1600.21						490
	40	1601.57						490
	100	1602.17						490
	100	1602.79						490
	300	1603.19	50.09117 – 112.46701	$3d^3(a^4F)4s - 3d^3(a^2G)4p$	$^5F - ^3F°$	4 – 3		490
	10	1603.93						490
	10	1604.34						490
	20	1605.18						490
	10	1606.19	96.77438 – 159.0318	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^5D° - f^3F$	1 – 2		490
	60	1606.490	70.48701 – 132.73422	$3d^3(a^2P)4s - 3d^3(a^2F)4p$	$^3P - ^3D°$	0 – 1		893
	10	1607.57	70.29286 – 132.49978	$3d^3(a^4P)4s - 3d^3(a^2F)4p$	$^3P - ^3D°$	2 – 2		490
	20	1607.78						490
	30	1607.92						490
	10	1608.19						490
	30	1609.01						490
	200	1609.35						490
	150	1609.79	97.68399 – 159.8033	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^3D° - f^3F$	3 – 4		490
	200	1609.91						490
	10	1610.10	96.92202 – 159.0318	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^5D° - f^3F$	2 – 2		490
	40	1610.56	49.76865 – 111.85697	$3d^4 - 3d^3(a^2G)4p$	$b^1G - ^3G°$	4 – 5		490
	10	1610.88	96.38631 – 158.4636	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5F° - e^3F$	2 – 3		490
	100	1611.08	111.85697 – 173.9266	$3d^3(a^2G)4p - 3d^3(a^2H)4d$	$^3G° - g^3H$	5 – 6		490
	10	1611.57						490
	30	1612.07						490
	10	1612.57						490
	10	1613.02						490
	100	1614.04						490
	80	1614.17						490
	10	1615.21	97.12142 – 159.0318	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^5F° - f^3F$	3 – 2		490
	90	1616.040	70.19101 – 132.07071	$3d^3(a^2P)4s - 3d^3(a^2F)4p$	$^3P - ^1D°$	2 – 2		893
	10	1616.661	87.77068 – 149.62630	$3d^3(a^2F)4s - 3d^3(b^2D)4p$	$^1F - ^3F°$	3 – 4		893
	20	1617.23						490
	90	1617.475	70.29286 – 132.11750	$3d^3(a^4P)4s - 3d^3(a^2F)4p$	$^3P - ^3D°$	2 – 3		893
	5	1617.72	49.82891 – 111.64476	$3d^3(a^4F)4s - 3d^3(a^2G)4p$	$^5F - ^3G°$	3 – 4		490
	10	1617.90						490
	25	1619.359	70.98126 – 132.73422	$3d^3(a^2D)4s - 3d^3(a^2F)4p$	$^3D - ^3D°$	1 – 1		893
	100	1619.94	96.71404 – 158.4429	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5D° - e^3G$	3 – 4		490

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	25	1620.084	70.34556 – 132.07071	$3d^3(a^2P)4s - 3d^3(a^2F)4p$	$^3P - {}^1D°$	1 – 2		893
	10	1620.44						490
	10	1620.76						490
	30	1621.10						490
	10	1621.60						490
	30	1621.87						490
	10	1623.01	87.77068 – 149.38364	$3d^3(a^2F)4s - 3d^3(b^2D)4p$	$^1F - {}^3F°$	3 – 3		490
	30	1625.32	97.09828 – 158.6237	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5D° - e^3F$	4 – 4		490
	10	1625.78						490
	100	1626.33						490
	30	1627.25						490
	20	1627.80						490
	150	1628.381	71.32327 – 132.73422	$3d^3(a^2D)4s - 3d^3(a^2F)4p$	$^3D - {}^3D°$	2 – 1		893
	10	1628.58						490
	100	1628.98						490
	100	1629.56	97.09828 – 158.4636	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5D° - e^3F$	4 – 3		490
	100	1630.94						490
	20	1631.49						490
	20	1631.68	96.14925 – 157.4351	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^5F° - f^5F$	1 – 2		490
	20	1631.89						490
	100	1632.62	96.38631 – 157.6373	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^5F° - f^5F$	2 – 3		490
	20	1632.85						490
	20	1633.17						490
	20	1633.60						490
	120	1634.12	96.71404 – 157.9080	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^5D° - f^5F$	3 – 4		490
	10	1634.61	57.42340 – 118.59911	$3d^3(a^4F)4s - 3d^3(a^2D)4p$	$^3F - {}^3D°$	4 – 3		490
	100	1635.10	97.30659 – 158.4636	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^3D° - e^3F$	2 – 3		490
	100	1635.48	97.09828 – 158.2418	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^5D° - f^5F$	4 – 5		490
	200	1636.35						490
	10	1636.69						490
	100	1637.53						490
	100	1637.90						490
	10	1638.10						490
	10	1638.78	97.30659 – 158.3283	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^3D° - e^3F$	2 – 2		490
	10	1639.46						490
	20	1639.90						490
	100	1640.94	97.68399 – 158.6237	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^3D° - e^3F$	3 – 4		490
	50	1641.09						490
	100	1641.56	96.38631 – 157.3032	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^5F° - f^5F$	2 – 1		490
	10	1641.83						490
	100	1642.16						490
	70	1643.07						490
	100	1643.20						490
	80	1643.34						490
	50	1643.86						490
	150	1644.652	87.77068 – 148.57381	$3d^3(a^2F)4s - 3d^3(b^2D)4p$	$^1F - {}^1D°$	3 – 2		893
	90	1644.882	71.32306 – 132.11750	$3d^3(a^2D)4s - 3d^3(a^2F)4p$	$^3D - {}^3D°$	3 – 3		893
	50	1645.16						490
	70	1646.15	71.32306 – 132.07071	$3d^3(a^2D)4s - 3d^3(a^2F)4p$	$^3D - {}^1D°$	3 – 2		490
	20	1646.56						490
	5	1647.71						790
	50	1648.36						490
	10	1648.58						490
	50	1649.13						490

CR III — *Continued*

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	150	1649.51	97.61948 – 158.2418	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^5F^\circ - f^5F$	5 – 5		490
	40	1649.93	96.69397 – 157.3032	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^5D^\circ - f^5F$	0 – 1		490
	10	1651.32						490
	100	1651.56	97.35981 – 157.9080	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^5F^\circ - f^5F$	4 – 4		490
	20	1651.92						490
	50	1652.08	96.77438 – 157.3032	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^5D^\circ - f^5F$	1 – 1		490
	150	1652.46	97.12142 – 157.6373	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^5F^\circ - f^5F$	3 – 3		490
	10	1654.23	113.11521 – 173.5659	$3d^3(a^2G)4p - 3d^3(a^2H)4d$	$^1G^\circ - g^3H$	4 – 5		490
	10	1654.79						490
	70	1655.48						490
	20	1657.45						490
	20	1658.30	37.00516 – 97.30659	$3d^4 - 3d^3(a^4F)4p$	$a^1F - {}^3D^\circ$	3 – 2		490
	20	1658.63						490
	100	1659.26						490
	30	1659.82						490
	80	1660.24						490
	10	1660.44	97.68399 – 157.9080	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^3D^\circ - f^5F$	3 – 4		490
	150	1660.70						490
	20	1661.58						490
	40	1661.93						490
	25	1663.051	56.65137 – 116.78205	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	$^3F - {}^3D^\circ$	2 – 2		893
	40	1663.75						490
	90	1663.926	74.78888 – 134.88754	$3d^3(a^2D)4s - 3d^3(a^2F)4p$	$^1D - {}^1F^\circ$	2 – 3		893
	1	1664.049	49.62825 – 109.72279	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	$^5F - {}^5D^\circ$	2 – 3		893
	150	1664.35	113.11521 – 173.2005	$3d^3(a^2G)4p - 3d^3(a^2H)4d$	$^1G^\circ - f^3I$	4 – 5		490
	4	1664.491	49.49246 – 109.57089	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	$^5F - {}^5D^\circ$	1 – 2		893
	10	1664.90	50.09117 – 110.15489	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	$^5F - {}^5D^\circ$	4 – 4		490
	20	1665.18	94.80170 – 154.8546	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5G^\circ - e^5G$	5 – 6		490
	70	1665.53						490
	50	1665.62						490
	40	1667.337	56.99308 – 116.96909	$3d^3(a^4F)4s - 3d^3(a^2D)4p$	$^3F - {}^3F^\circ$	3 – 3		893
	30	1667.44						490
	250	1667.621	49.49246 – 109.45811	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	$^5F - {}^3P^\circ$	1 – 0		893
	20	1667.92	97.68399 – 157.6373	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^3D^\circ - f^5F$	3 – 3		490
	100	1668.24	49.62825 – 109.57089	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	$^5F - {}^5D^\circ$	2 – 2		490
	80	1668.33						490
	70	1668.96	37.00516 – 96.92202	$3d^4 - 3d^3(a^4F)4p$	$a^1F - {}^5D^\circ$	3 – 2		490
	40	1669.619	49.82891 – 109.72279	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	$^5F - {}^5D^\circ$	3 – 3		893
	150	1669.97	56.65137 – 116.53295	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	$^3F - {}^3D^\circ$	2 – 3		490
	50	1670.27						490
	150	1670.45	94.02999 – 153.8935	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5G^\circ - e^5F$	3 – 2		490
	20	1670.80						490
	10	1671.40						490
	30	1671.85						490
	10	1672.03						490
	20	1673.00	71.67719 – 131.45016	$3d^3(a^2H)4s - 3d^3(a^2F)4p$	$^3H - {}^3G^\circ$	4 – 5		490
	50	1673.58	97.68399 – 157.4351	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^3D^\circ - f^5F$	3 – 2		490
	150	1673.784	50.41006 – 110.15489	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	$^5F - {}^5D^\circ$	5 – 4		893
	90	1673.867	49.82891 – 109.57089	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	$^5F - {}^5D^\circ$	3 – 2		893
	1	1674.439	56.65137 – 116.37292	$3d^3(a^4F)4s - 3d^3(a^2D)4p$	$^3F - {}^1P^\circ$	2 – 1		893
	150	1674.73	94.37629 – 154.0857	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5G^\circ - e^5F$	4 – 3		490
	4	1674.896	49.82891 – 109.53425	$3d^3(a^4F)4s - 3d^3(a^2G)4p$	$^5F - {}^3H^\circ$	3 – 4		893
	200	1675.72						490
	150	1676.20						490

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	150	1676.955	50.09117 – 109.72279	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	$^5F - ^5D^\circ$	4 – 3		893
	10	1677.54						490
	10	1677.68						490
	150	1678.414	71.87017 – 131.45016	$3d^3(a^2H)4s - 3d^3(a^2F)4p$	$^3H - ^3G^\circ$	6 – 5		893
	300	1679.25						490
	150	1679.375	57.42340 – 116.96909	$3d^3(a^4F)4s - 3d^3(a^2D)4p$	$^3F - ^3F^\circ$	4 – 3		893
	200	1679.537	56.99308 – 116.53295	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	$^3F - ^3D^\circ$	3 – 3		893
	1	1679.691	50.41006 – 109.94498	$3d^3(a^4F)4s - 3d^3(a^2G)4p$	$^5F - ^3H^\circ$	5 – 5		893
	100	1679.83	71.73756 – 131.26566	$3d^3(a^2H)4s - 3d^3(a^2F)4p$	$^3H - ^3G^\circ$	5 – 4		490
	150	1682.383	71.67719 – 131.11636	$3d^3(a^2H)4s - 3d^3(a^2F)4p$	$^3H - ^3G^\circ$	4 – 3		893
	90	1683.540	56.99308 – 116.39166	$3d^3(a^4F)4s - 3d^3(a^2D)4p$	$^3F - ^3F^\circ$	3 – 2		893
	150	1684.02	100.42301 – 159.8033	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^3G^\circ - f^3F$	5 – 4		490
	100	1684.14						490
	4	1684.277	49.49246 – 108.86498	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	$^5F - ^5D^\circ$	1 – 1		893
	4	1685.072	49.62825 – 108.97290	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	$^5F - ^3P^\circ$	2 – 2		893
	10	1685.38						490
	150	1685.85						490
	40	1686.44						490
	150	1687.03	100.10066 – 159.3756	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^3G^\circ - f^3F$	4 – 3		490
	70	1687.56						490
	40	1688.134	49.62825 – 108.86498	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	$^5F - ^5D^\circ$	2 – 1		893
	40	1688.39						490
	1	1689.038	49.49246 – 108.69763	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	$^5F - ^5D^\circ$	1 – 0		893
	10	1689.14	87.77068 – 146.97333	$3d^3(a^2F)4s - 3d^3(b^2D)4p$	$^1F - ^3D^\circ$	3 – 2		490
	200	1689.457	99.84167 – 159.0318	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^3G^\circ - f^3F$	3 – 2		893
	80	1689.77						490
	30	1690.00						490
71	300	1690.28	93.76621 – 152.9273	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5G^\circ - e^5H$	2 – 3		490
	20	1690.52						490
	10	1690.72						490
	50	1691.09						490
	50	1691.64						490
	120	1691.774	57.42340 – 116.53295	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	$^3F - ^3D^\circ$	4 – 3		893
	30	1692.31						490
	20	1692.63						490
	600	1692.89	94.02999 – 153.0991	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5G^\circ - e^5H$	3 – 4		490
	30	1693.43						490
	20	1693.72						490
	70	1694.53						490
	70	1694.92						490
	70	1695.77	49.49246 – 108.46140	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	$^5F - ^5P^\circ$	1 – 2		490
	600	1696.64	94.37629 – 153.3146	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5G^\circ - e^5H$	4 – 5		490
	20	1696.85						490
	60	1697.43						490
71	40	1697.84	94.02999 – 152.9273	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5G^\circ - e^5H$	3 – 3		490
	40	1698.03						490
	200	1698.75						490
	10	1699.35						490
	20	1699.84						490
	20	1700.12						490
34	250	1700.269	43.28671 – 102.10076	$3d^4 - 3d^3(a^4F)4p$	$b^3F - ^3F^\circ$	4 – 4		893
	30	1701.05						490
34	60	1701.297	43.32217 – 102.10076	$3d^4 - 3d^3(a^4F)4p$	$b^3F - ^3F^\circ$	3 – 4		893
	600	1701.48						490

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
71	80	1702.89	94.37629 – 153.0991	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5G^\circ - e^5H$	4 – 4		490
	40	1703.73						490
	10	1704.79						490
	10	1705.36	109.94498 – 168.5823	$3d^3(a^2G)4p - 3d^3(a^2G)4d$	$^3H^\circ - f^3H$	5 – 6		490
	10	1705.76						490
	250	1705.961	75.35163 – 133.96957	$3d^3(a^2H)4s - 3d^3(a^2F)4p$	$^1H - ^1G^\circ$	5 – 4		893
	50	1706.15						490
	30	1706.65						490
	30	1707.27						490
	800	1707.43						490
	40	1707.608	56.99308 – 115.55428	$3d^3(a^4F)4s - 3d^3(a^2P)4p$	$^3F - ^3D^\circ$	3 – 3		893
	400	1707.78						490
	25	1708.498	56.65137 – 115.18215	$3d^3(a^4F)4s - 3d^3(a^2P)4p$	$^3F - ^3D^\circ$	2 – 2		893
71	60	1708.98	94.80170 – 153.3146	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5G^\circ - e^5H$	5 – 5		490
	30	1710.10						490
34	60	1710.586	43.28671 – 101.74621	$3d^4 - 3d^3(a^4F)4p$	$b^3F - ^3F^\circ$	4 – 3		893
	200	1711.02						490
34	5	1711.25						490
34	200	1711.63	43.32217 – 101.74621	$3d^4 - 3d^3(a^4F)4p$	$b^3F - ^3F^\circ$	3 – 3		490
	20	1712.24						490
	10	1712.52						490
	50	1713.43	100.10066 – 158.4636	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^3G^\circ - e^3F$	4 – 3		490
	150	1714.01	100.10066 – 158.4429	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^3G^\circ - e^3G$	4 – 4		490
	10	1714.26						490
	40	1714.63						490
	30	1715.17	43.44199 – 101.74621	$3d^4 - 3d^3(a^4F)4p$	$b^3P - ^3F^\circ$	2 – 3		490
	20	1715.65						490
	40	1716.21						490
	40	1716.33						490
	40	1716.50						490
	200	1717.43	99.84167 – 158.0667	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^3G^\circ - e^3G$	3 – 3		490
	40	1717.65						490
	40	1717.92						490
	40	1718.16	100.42301 – 158.6237	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^3G^\circ - e^3F$	5 – 4		490
	120	1718.530	56.99308 – 115.18215	$3d^3(a^4F)4s - 3d^3(a^2P)4p$	$^3F - ^3D^\circ$	3 – 2		893
	40	1719.735	57.42340 – 115.57196	$3d^3(a^4F)4s - 3d^3(a^2H)4p$	$^3F - ^3H^\circ$	4 – 4		893
34	80	1720.00	43.30453 – 101.44457	$3d^4 - 3d^3(a^4F)4p$	$b^3F - ^3F^\circ$	2 – 2		490
34	80	1720.00	100.10066 – 158.2418	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^3G^\circ - f^5F$	4 – 5		490
	200	1720.249	57.42340 – 115.55428	$3d^3(a^4F)4s - 3d^3(a^2P)4p$	$^3F - ^3D^\circ$	4 – 3		893
34	40	1720.512	43.32217 – 101.44457	$3d^4 - 3d^3(a^4F)4p$	$b^3F - ^3F^\circ$	3 – 2		893
	150	1721.18						490
	10	1721.43						490
	200	1721.67	115.84458 – 173.9266	$3d^3(a^2H)4p - 3d^3(a^2H)4d$	$^3H^\circ - g^3H$	6 – 6		490
	70	1721.84						490
	150	1722.191	56.65137 – 114.71679	$3d^3(a^4F)4s - 3d^3(a^2P)4p$	$^3F - ^3D^\circ$	2 – 1		893
	100	1723.16	115.84458 – 173.8763	$3d^3(a^2H)4p - 3d^3(a^2H)4d$	$^3H^\circ - f^3I$	6 – 7		490
	100	1723.50	100.42301 – 158.4429	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^3G^\circ - e^3G$	5 – 4		490
	10	1723.83						490
	120	1724.32	115.57196 – 173.5659	$3d^3(a^2H)4p - 3d^3(a^2H)4d$	$^3H^\circ - g^3H$	4 – 5		490
	100	1725.12	100.10066 – 158.0667	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^3G^\circ - e^3G$	4 – 3		490
	150	1725.29						490
	40	1725.60						490
	20	1726.61						490
	10	1727.51						490

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	1727.97						490
	20	1728.24						490
	80	1728.34						490
	10	1730.34						490
	5	1730.92	70.98126 – 128.75462	$3d^3(a^2D)4s - 3d^3(a^2F)4p$	$^3D - {}^3F°$	1 – 2		490
	20	1731.53	97.09828 – 154.8496	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5D° - e^5F$	4 – 5		490
	90	1731.76	96.14925 – 153.8935	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5F° - e^5F$	1 – 2		490
	50	1732.85						490
	200	1733.00	97.35981 – 155.0640	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5F° - e^5D$	4 – 4		490
	150	1733.13	96.38631 – 154.0857	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5F° - e^5F$	2 – 3		490
	70	1734.83						490
	70	1735.20	101.74621 – 159.3756	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^3F° - f^3F$	3 – 3		490
	10	1735.61						490
	10	1735.76						490
	30	1736.49	101.44457 – 159.0318	$3d^3(a^4F)4p - 3d^3(a^4F)5s$	$^3F° - f^3F$	2 – 2		490
	30	1737.47						490
	120	1738.23	115.67074 – 173.2005	$3d^3(a^2H)4p - 3d^3(a^2H)4d$	$^3H° - f^3I$	5 – 5		490
	4	1738.300	71.32306 – 128.85049	$3d^3(a^2D)4s - 3d^3(a^2F)4p$	$^3D - {}^3F°$	3 – 4		893
	10	1738.90	96.38631 – 153.8935	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5F° - e^5F$	2 – 2		490
	10	1740.06						490
	20	1740.31	71.32327 – 128.78413	$3d^3(a^2D)4s - 3d^3(a^2F)4p$	$^3D - {}^3F°$	2 – 3		490
	60	1740.78	97.61948 – 155.0640	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5F° - e^5D$	5 – 4		490
	150	1742.19						490
	20	1742.52						490
	70	1742.96						490
	100	1743.44	97.09828 – 154.4571	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5D° - e^5F$	4 – 4		490
	30	1743.65						490
	30	1743.87	65.76321 – 123.10584	$3d^4 - 3d^3(a^2D)4p$	$b^1D - {}^1D°$	2 – 2		490
	20	1744.07	97.12142 – 154.4571	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5F° - e^5F$	3 – 4		490
	30	1744.81						490
	40	1745.04						490
	80	1745.55						490
	120	1745.751	74.78888 – 132.07071	$3d^3(a^2D)4s - 3d^3(a^2F)4p$	$^1D - {}^1D°$	2 – 2		893
	10	1746.48						490
	200	1746.77	56.65137 – 113.89943	$3d^3(a^4F)4s - 3d^3(a^2P)4p$	$^3F - {}^3P°$	2 – 1		490
	70	1747.30	97.61948 – 154.8496	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5F° - e^5F$	5 – 5		490
	80	1748.74						490
	40	1748.87	96.71404 – 153.8935	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5D° - e^5F$	3 – 2		490
	70	1749.67						490
	10	1749.88						490
	20	1750.27						490
	10	1750.98						490
	100	1751.34						490
	80	1752.47						490
	30	1753.23						490
	30	1753.60	37.00516 – 94.02999	$3d^4 - 3d^3(a^4F)4p$	$a^1F - {}^5G°$	3 – 3		490
	300	1754.76	97.09828 – 154.0857	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5D° - e^5F$	4 – 3		490
	20	1754.94						490
	150	1755.24	96.92202 – 153.8935	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5D° - e^5F$	2 – 2		490
	200	1755.46	97.12142 – 154.0857	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5F° - e^5F$	3 – 3		490
	100	1755.78	96.77438 – 153.7298	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5D° - e^5F$	1 – 1		490
	30	1756.29						490
	10	1756.58						490
	10	1756.97						490

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	1757.45						490
	10	1757.95	101.44457 – 158.3283	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^3F^\circ - e^3F$	2 – 2		490
	50	1758.20	101.74621 – 158.6237	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^3F^\circ - e^3F$	3 – 4		490
	30	1759.19						490
	20	1759.34						490
	50	1759.50						490
	10	1760.31	96.92202 – 153.7298	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5D^\circ - e^5F$	2 – 1		490
	40	1761.38	97.12142 – 153.8935	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5F^\circ - e^5F$	3 – 2		490
	20	1761.73	37.00516 – 93.76621	$3d^4 - 3d^3(a^4F)4p$	$a^1F - {}^5G^\circ$	3 – 2		490
	30	1762.52						490
	70	1763.13	101.74621 – 158.4636	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^3F^\circ - e^3F$	3 – 3		490
	150	1763.77	101.74621 – 158.4429	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^3F^\circ - e^3G$	3 – 4		490
	10	1764.16						490
	120	1765.06						490
	10	1765.53						490
	60	1765.739	65.76321 – 122.39649	$3d^4 - 3d^3(a^2P)4p$	$b^1D - {}^1P^\circ$	2 – 1		893
	10	1765.93						490
	10	1766.08	101.44457 – 158.0667	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^3F^\circ - e^3G$	2 – 3		490
	60	1766.58						490
	300	1766.92						490
	10	1767.18	97.30659 – 153.8935	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^3D^\circ - e^5F$	2 – 2		490
	40	1768.32						490
	40	1768.50						490
	50	1768.78	43.30453 – 99.84167	$3d^4 - 3d^3(a^4F)4p$	$b^3F - {}^3G^\circ$	2 – 3		490
	100	1769.03						490
	300	1769.17	102.10076 – 158.6237	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^3F^\circ - e^3F$	4 – 4		490
	30	1770.10						490
	20	1770.35						490
	20	1770.66						490
	30	1770.96						490
	40	1772.46	117.14585 – 173.5659	$3d^3(a^2H)4p - 3d^3(a^2H)4d$	$^3I^\circ - g^3H$	5 – 5		490
	50	1772.60						490
	20	1773.32						490
	10	1773.70						490
	20	1774.51						490
	10	1774.89	102.10076 – 158.4429	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^3F^\circ - e^3G$	4 – 4		490
	30	1775.06	56.99308 – 113.32880	$3d^3(a^4F)4s - 3d^3(a^2G)4p$	$^3F - {}^1F^\circ$	3 – 3		490
	40	1777.27						490
	10	1777.49						490
	200	1778.93	96.71404 – 152.9273	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5D^\circ - e^5H$	3 – 3		490
	40	1779.91						490
	40	1779.99						490
	50	1780.14	117.48895 – 173.6628	$3d^3(a^2H)4p - 3d^3(a^2H)4d$	$^3I^\circ - f^3I$	6 – 6		490
	20	1781.45						490
	10	1781.73						490
	100	1782.07						490
	250	1782.99						490
	200	1783.95	117.14585 – 173.2005	$3d^3(a^2H)4p - 3d^3(a^2H)4d$	$^3I^\circ - f^3I$	5 – 5		490
	150	1784.43						490
	50	1784.72						490
	10	1785.53	96.92202 – 152.9273	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5D^\circ - e^5H$	2 – 3		490
	30	1786.16						490
	120	1787.18	97.35981 – 153.3146	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^5F^\circ - e^5H$	4 – 5		490
	1	1788.464	75.35163 – 131.26566	$3d^3(a^2H)4s - 3d^3(a^2F)4p$	$^1H - {}^3G^\circ$	5 – 4		893

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	40	1789.77						490
	40	1790.48						490
	10	1790.71						490
	30	1791.48						490
	80	1792.73						490
	10	1793.60						490
	50	1793.75	56.65137 – 112.39984	$3d^3(a^4F)4s - 3d^3(a^2G)4p$	$^3F - ^3F°$	2 – 2		490
	80	1793.95						490
	30	1795.58	57.42340 – 113.11521	$3d^3(a^4F)4s - 3d^3(a^2G)4p$	$^3F - ^1G°$	4 – 4		490
	10	1796.37						490
	10	1796.89						490
	20	1797.92	97.30659 – 152.9273	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^3D° - e^5H$	2 – 3		490
	50	1798.33						490
	20	1798.97						490
	10	1799.40						490
	10	1800.84						490
	10	1801.46						490
	120	1802.60	56.99308 – 112.46701	$3d^3(a^4F)4s - 3d^3(a^2G)4p$	$^3F - ^3F°$	3 – 3		490
	10	1803.47						490
	10	1804.85	56.99308 – 112.39984	$3d^3(a^4F)4s - 3d^3(a^2G)4p$	$^3F - ^3F°$	3 – 2		490
	10	1807.45						490
	10	1809.58						490
	30	1810.14	97.68399 – 152.9273	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^3D° - e^5H$	3 – 3		490
	30	1810.77						490
	40	1810.92						490
	40	1812.24						490
	10	1812.98						490
	20	1813.60						490
	80	1815.49						490
	10	1816.09						490
	100	1817.16						490
	20	1817.79						490
	40	1818.28						490
	60	1819.853	57.42340 – 112.37288	$3d^3(a^4F)4s - 3d^3(a^2G)4p$	$^3F - ^3F°$	4 – 4		893
	20	1821.08						490
	60	1822.333	65.89238 – 120.76726	$3d^3(a^2G)4s - 3d^3(a^2H)4p$	$^3G - ^3G°$	3 – 3		893
	10	1825.28						490
	10	1825.66						490
	300	1827.26						490
	20	1829.39						490
46	200	1829.761	56.99308 – 111.64476	$3d^3(a^4F)4s - 3d^3(a^2G)4p$	$^3F - ^3G°$	3 – 4		893
	40	1830.54						490
	100	1831.15						490
	10	1831.60	102.33349 – 156.92993	$3d^3(b^2D)4s - 3d^3(b^2D)4p$	$^3D - ^1P°$	2 – 1		490
	10	1832.34						490
	40	1832.87						490
	10	1833.00						490
	1	1833.915	102.40180 – 156.92993	$3d^3(b^2D)4s - 3d^3(b^2D)4p$	$^3D - ^1P°$	1 – 1		893
	10	1834.68						490
	90	1835.693	66.22509 – 120.70027	$3d^3(a^2G)4s - 3d^3(a^2H)4p$	$^3G - ^3G°$	5 – 5		893
46	250	1837.099	57.42340 – 111.85697	$3d^3(a^4F)4s - 3d^3(a^2G)4p$	$^3F - ^3G°$	4 – 5		893
	30	1838.34	43.28671 – 97.68399	$3d^4 - 3d^3(a^4F)4p$	$b^3F - ^3D°$	4 – 3		490
	25	1838.933	43.30453 – 97.68399	$3d^4 - 3d^3(a^4F)4p$	$b^3F - ^3D°$	2 – 3		893
	10	1839.72	100.10066 – 154.4571	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	$^3G° - e^5F$	4 – 4		490

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	1840.48	43.28671 – 97.61948	$3d^4 - 3d^3(a^4F)4p$	$b^3F - {}^5F°$	4 – 5		490
	10	1842.09						490
	100	1843.40						490
	100	1844.99						490
	80	1846.45						490
	10	1846.71						490
	100	1848.56						490
	120	1848.995	65.76321 – 119.84647	$3d^4 - 3d^3(a^2D)4p$	$b^1D - {}^1F°$	2 – 3		893
	10	1849.76						490
	30	1849.99						490
	10	1850.45						490
	25	1853.021	74.78888 – 128.75462	$3d^3(a^2D)4s - 3d^3(a^2F)4p$	${}^1D - {}^3F°$	2 – 2		893
	10	1853.36						490
	20	1854.63						490
	10	1856.20						490
	20	1857.59						490
	10	1858.03						490
	10	1866.12	119.61280 – 173.2005	$3d^3(a^2H)4p - 3d^3(a^2H)4d$	${}^1H° - f^3I$	5 – 5		490
	20	1866.63						490
	10	1867.52	63.42192 – 116.96909	$3d^3(a^4P)4s - 3d^3(a^2D)4p$	${}^5P - {}^3F°$	3 – 3		490
	20	1871.00						490
	10	1875.18	63.04574 – 116.37292	$3d^3(a^4P)4s - 3d^3(a^2D)4p$	${}^5P - {}^1P°$	1 – 1		490
	10	1875.52	101.74621 – 155.0640	$3d^3(a^4F)4p - 3d^3(a^4F)4d$	${}^3F° - e^5D$	3 – 4		490
	10	1877.93						490
	20	1878.77	120.70027 – 173.9266	$3d^3(a^2H)4p - 3d^3(a^2H)4d$	${}^3G° - g^3H$	5 – 6		490
	20	1878.99						490
	20	1881.02	56.99308 – 110.15489	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	${}^3F - {}^5D°$	3 – 4		490
	20	1881.33						490
	20	1881.73						490
	45	1883.32						490
	5	1884.30	56.65137 – 109.72279	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	${}^3F - {}^5D°$	2 – 3		490
	5	1884.49	43.32217 – 96.38631	$3d^4 - 3d^3(a^4F)4p$	$b^3F - {}^5F°$	3 – 2		490
	10	1888.83						490
	10	1893.30						490
	20	1894.05						490
	30	1896.09						490
	90	1896.406	57.42340 – 110.15489	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	${}^3F - {}^5D°$	4 – 4		893
	10	1899.15						490
	20	1899.56						490
	20	1900.02						490
	20	1902.19						490
	20	1902.59						490
	5	1903.29	56.99308 – 109.53425	$3d^3(a^4F)4s - 3d^3(a^2G)4p$	${}^3F - {}^3H°$	3 – 4		490
	10	1903.979	57.42340 – 109.94498	$3d^3(a^4F)4s - 3d^3(a^2G)4p$	${}^3F - {}^3H°$	4 – 5		893
	30	1904.84						490
	40	1906.12						490
	50	1910.33						490
	10	1911.263	56.65137 – 108.97290	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	${}^3F - {}^3P°$	2 – 2		893
	80	1911.66						490
	40	1912.50						490
	20	1913.85						490
	30	1914.87						490
	10	1917.52	63.42192 – 115.57196	$3d^3(a^4P)4s - 3d^3(a^2H)4p$	${}^5P - {}^3H°$	3 – 4		490
	1	1918.489	70.98126 – 123.10584	$3d^3(a^2D)4s - 3d^3(a^2D)4p$	${}^3D - {}^1D°$	1 – 2		893

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	40	1918.61						490
	30	1919.05						490
	20	1922.72	50.09117 – 102.10076	$3d^3(a^4F)4s - 3d^3(a^4F)4p$	$^5F - {}^3F^\circ$	4 – 4		490
	4	1922.790	63.17430 – 115.18215	$3d^3(a^4P)4s - 3d^3(a^2P)4p$	$^5P - {}^3D^\circ$	2 – 2		893
	10	1923.41						490
	10	1925.26						490
	40	1926.64						490
	250	1928.814	69.60150 – 121.44677	$3d^3(a^4P)4s - 3d^3(a^4P)4p$	$^3P - {}^3S^\circ$	0 – 1		893
	20	1930.39	56.99308 – 108.79584	$3d^3(a^4F)4s - 3d^3(a^4P)4p$	$^3F - {}^5P^\circ$	3 – 3		490
	10	1934.581	50.41006 – 102.10076	$3d^3(a^4F)4s - 3d^3(a^4F)4p$	$^5F - {}^3F^\circ$	5 – 4		893
	200	1935.550	69.78189 – 121.44677	$3d^3(a^4P)4s - 3d^3(a^4P)4p$	$^3P - {}^3S^\circ$	1 – 1		893
	4	1935.918	50.09117 – 101.74621	$3d^3(a^4F)4s - 3d^3(a^4F)4p$	$^5F - {}^3F^\circ$	4 – 3		893
	30	1937.84						490
	20	1939.44						490
	50	1942.30						490
	10	1942.73						490
	5	1944.94	70.98126 – 122.39649	$3d^3(a^2D)4s - 3d^3(a^2P)4p$	$^3D - {}^1P^\circ$	1 – 1		490
	10	1945.47						490
	150	1949.198	105.62689 – 156.92993	$3d^3(b^2D)4s - 3d^3(b^2D)4p$	$^1D - {}^1P^\circ$	2 – 1		893
	60	1950.997	70.19101 – 121.44677	$3d^3(a^2P)4s - 3d^3(a^4P)4p$	$^3P - {}^3S^\circ$	2 – 1		893
	50	1953.26						490
	250	1954.874	70.29286 – 121.44677	$3d^3(a^4P)4s - 3d^3(a^4P)4p$	$^3P - {}^3S^\circ$	2 – 1		893
	40	1956.36	66.03001 – 117.14585	$3d^3(a^2G)4s - 3d^3(a^2H)4p$	$^3G - {}^3I^\circ$	4 – 5		490
	120	1956.899	70.34556 – 121.44677	$3d^3(a^2P)4s - 3d^3(a^4P)4p$	$^3P - {}^3S^\circ$	1 – 1		893
	4	1957.839	65.89238 – 116.96909	$3d^3(a^2G)4s - 3d^3(a^2D)4p$	$^3G - {}^3F^\circ$	3 – 3		893
	1	1958.038	66.03001 – 117.10158	$3d^3(a^2G)4s - 3d^3(a^2D)4p$	$^3G - {}^3F^\circ$	4 – 4		893
	10	1959.224	69.65974 – 120.70027	$3d^3(a^2G)4s - 3d^3(a^2H)4p$	$^1G - {}^3G^\circ$	4 – 5		893
	10	1960.18						490
	10	1960.69						490
	5	1962.16						490
	10	1962.334	70.48701 – 121.44677	$3d^3(a^2P)4s - 3d^3(a^4P)4p$	$^3P - {}^3S^\circ$	0 – 1		893
	120	1963.119	66.03001 – 116.96909	$3d^3(a^2G)4s - 3d^3(a^2D)4p$	$^3G - {}^3F^\circ$	4 – 3		893
	90	1965.031	65.89238 – 116.78205	$3d^3(a^2G)4s - 3d^3(a^4P)4p$	$^3G - {}^3D^\circ$	3 – 2		893
	200	1965.541	66.22509 – 117.10158	$3d^3(a^2G)4s - 3d^3(a^2D)4p$	$^3G - {}^3F^\circ$	5 – 4		893
	10	1966.57						490
	20	1971.11						490
	100	1972.45						490
	70	1973.20						490
	50	1974.03	117.92389 – 168.5823	$3d^3(a^2H)4p - 3d^3(a^2G)4d$	$^3I^\circ - f^3H$	7 – 6		490
	60	1974.43						490
	10	1974.70	65.89238 – 116.53295	$3d^3(a^2G)4s - 3d^3(a^4P)4p$	$^3G - {}^3D^\circ$	3 – 3		490
	100	1975.56						490
	4	1975.902	65.76321 – 116.37292	$3d^4 - 3d^3(a^2D)4p$	$b^1D - {}^1P^\circ$	2 – 1		893
	30	1976.07						490
	40	1978.91						490
	120	1980.083	66.03001 – 116.53295	$3d^3(a^2G)4s - 3d^3(a^4P)4p$	$^3G - {}^3D^\circ$	4 – 3		893
	90	1980.225	65.89238 – 116.39166	$3d^3(a^2G)4s - 3d^3(a^2D)4p$	$^3G - {}^3F^\circ$	3 – 2		893
	1	1981.558	70.98126 – 121.44677	$3d^3(a^2D)4s - 3d^3(a^4P)4p$	$^3D - {}^3S^\circ$	1 – 1		893
	20	1981.82						490
	50	1985.72						490
	50	1986.54						490
	10	1986.82	50.09117 – 100.42301	$3d^3(a^4F)4s - 3d^3(a^4F)4p$	$^5F - {}^3G^\circ$	4 – 5		490
	10	1987.00						490
49	200	1987.620	63.04574 – 113.35704	$3d^3(a^4P)4s - 3d^3(a^4P)4p$	$^5P - {}^5S^\circ$	1 – 2		893

CR III — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	1989.64						490
	40	1991.17						490
	90	1992.556	69.65974 – 119.84647	$3d^3(a^2G)4s - 3d^3(a^2D)4p$	$^1G - ^1F^o$	4 – 3		893
49	250	1992.716	63.17430 – 113.35704	$3d^3(a^4P)4s - 3d^3(a^4P)4p$	$^5P - ^5S^o$	2 – 2		893
	10	1995.066	71.32327 – 121.44677	$3d^3(a^2D)4s - 3d^3(a^4P)4p$	$^3D - ^3S^o$	2 – 1		893
	10	1996.03						490
	20	1996.70						490
	20	1999.12						490
	90	1999.484	50.41006 – 100.42301	$3d^3(a^4F)4s - 3d^3(a^4F)4p$	$^5F - ^3G^o$	5 – 5		893

CHROMIUM IV (Cr^{3+}), Z = 24
Ground State $1s^22s^22p^63s^23p^63d^3(^4F_{3/2})$ (21 electrons)
Ionization Potential [396 000] cm^{-1}; [49.1] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	523.808	20.6643 – 211.5740	$3d^3 - 3d^2(a^1S)4p$	$a^2D - x^2P^o$	$\frac{5}{2} - \frac{3}{2}$		219
	5	573.356	0.5556 – 174.9674	$3d^3 - 3d^2(a^1D)4p$	$ga^4F - y^2D^o$	$\frac{7}{2} - \frac{5}{2}$		219
	20	573.758	0.5556 – 174.8449	$3d^3 - 3d^2(a^3P)4p$	$ga^4F - y^4D^o$	$\frac{7}{2} - \frac{7}{2}$		219
	160	575.048	0.9456 – 174.8449	$3d^3 - 3d^2(a^3P)4p$	$ga^4F - y^4D^o$	$\frac{9}{2} - \frac{7}{2}$		219
	20	575.175	0.2358 – 174.0948	$3d^3 - 3d^2(a^3P)4p$	$ga^4F - y^4D^o$	$\frac{5}{2} - \frac{5}{2}$		219
	20	575.850	0.0 – 173.6579	$3d^3 - 3d^2(a^3P)4p$	$ga^4F - y^4D^o$	$\frac{3}{2} - \frac{3}{2}$		219
	110	576.241	0.5556 – 174.0948	$3d^3 - 3d^2(a^3P)4p$	$ga^4F - y^4D^o$	$\frac{7}{2} - \frac{5}{2}$		219
	110	576.623	0.2358 – 173.6579	$3d^3 - 3d^2(a^3P)4p$	$ga^4F - y^4D^o$	$\frac{5}{2} - \frac{3}{2}$		219
	40	579.831	15.0518 – 187.5167	$3d^3 - 3d^2(a^1G)4p$	$a^2G - x^2F^o$	$\frac{7}{2} - \frac{5}{2}$		219
	40	582.824	15.4016 – 186.9788	$3d^3 - 3d^2(a^1G)4p$	$a^2G - x^2F^o$	$\frac{9}{2} - \frac{7}{2}$		219
	70	595.093	15.4016 – 183.4426	$3d^3 - 3d^2(a^1G)4p$	$a^2G - z^2H^o$	$\frac{9}{2} - \frac{11}{2}$		219
	40	596.569	15.0518 – 182.6777	$3d^3 - 3d^2(a^1G)4p$	$a^2G - z^2H^o$	$\frac{7}{2} - \frac{9}{2}$		219
	1	601.273	20.6643 – 186.9788	$3d^3 - 3d^2(a^1G)4p$	$a^2D - x^2F^o$	$\frac{5}{2} - \frac{7}{2}$		219
	5	608.138	19.4386 – 183.8739	$3d^3 - 3d^2(a^3P)4p$	$a^2P - y^2P^o$	$\frac{3}{2} - \frac{3}{2}$		219
	20	608.713	19.4386 – 183.7187	$3d^3 - 3d^2(a^3P)4p$	$a^2P - y^2P^o$	$\frac{3}{2} - \frac{1}{2}$		219
	5	609.013	19.5192 – 183.7187	$3d^3 - 3d^2(a^3P)4p$	$a^2P - y^2P^o$	$\frac{1}{2} - \frac{1}{2}$		219
	110	612.643	20.6499 – 183.8739	$3d^3 - 3d^2(a^3P)4p$	$a^2D - y^2P^o$	$\frac{3}{2} - \frac{3}{2}$		219
	110	612.643	14.1771 – 177.4050	$3d^3 - 3d^2(a^3P)4p$	$a^4P - y^4P^o$	$\frac{3}{2} - \frac{5}{2}$		219
	70	613.746	14.4713 – 177.4050	$3d^3 - 3d^2(a^3P)4p$	$a^4P - y^4P^o$	$\frac{5}{2} - \frac{5}{2}$		219
	70	614.028	14.0590 – 176.9153	$3d^3 - 3d^2(a^3P)4p$	$a^4P - y^4P^o$	$\frac{1}{2} - \frac{3}{2}$		219
	5	614.480	14.1771 – 176.9153	$3d^3 - 3d^2(a^3P)4p$	$a^4P - y^4P^o$	$\frac{3}{2} - \frac{3}{2}$		219
	70	614.903	15.4016 – 178.0281	$3d^3 - 3d^2(a^1G)4p$	$a^2G - y^2G^o$	$\frac{9}{2} - \frac{9}{2}$		219
	40	615.335	14.1771 – 176.6891	$3d^3 - 3d^2(a^3P)4p$	$a^4P - y^4P^o$	$\frac{3}{2} - \frac{1}{2}$		219
	40	615.598	14.4713 – 176.9153	$3d^3 - 3d^2(a^3P)4p$	$a^4P - y^4P^o$	$\frac{5}{2} - \frac{3}{2}$		219
	285	616.819	21.3207 – 183.4426	$3d^3 - 3d^2(a^1G)4p$	$a^2H - z^2H^o$	$\frac{11}{2} - \frac{11}{2}$		219
4	40	617.047	0.2358 – 162.2996	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^2D^o$	$\frac{5}{2} - \frac{5}{2}$		219
3	20	617.94	0.2358 – 162.0633	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4D^o$	$\frac{5}{2} - \frac{7}{2}$	P	791
3	70	618.230	0.0 – 161.7548	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4D^o$	$\frac{3}{2} - \frac{3}{2}$		219
4	70	618.262	0.5556 – 162.2996	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^2D^o$	$\frac{7}{2} - \frac{5}{2}$		219
	160	618.766	21.0659 – 182.6777	$3d^3 - 3d^2(a^1G)4p$	$a^2H - z^2H^o$	$\frac{9}{2} - \frac{9}{2}$		219
3	110	619.133	0.2358 – 161.7548	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4D^o$	$\frac{5}{2} - \frac{3}{2}$		219
3	110	619.758	0.0 – 161.3534	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4D^o$	$\frac{3}{2} - \frac{1}{2}$		219
3	5	620.125	0.2358 – 161.4939	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4D^o$	$\frac{5}{2} - \frac{5}{2}$		219
3	360	620.665	0.9456 – 162.0633	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4D^o$	$\frac{9}{2} - \frac{7}{2}$		219
3	285	621.358	0.5556 – 161.4939	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4D^o$	$\frac{7}{2} - \frac{5}{2}$		219
4	220	622.089	0.2358 – 160.9850	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^2D^o$	$\frac{5}{2} - \frac{3}{2}$		219

CR IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	70	623.541	14.4713 – 174.8449	$3d^3 - 3d^2(a^3P)4p$	$a^4P - y^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		219
	160	625.037	0.9456 – 160.9358	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^2F^\circ$	$\frac{9}{2}-\frac{7}{2}$		219
	20	625.323	14.1771 – 174.0948	$3d^3 - 3d^2(a^3P)4p$	$a^4P - y^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		219
	20	625.986	0.5556 – 160.3039	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^2F^\circ$	$\frac{7}{2}-\frac{5}{2}$		219
	1	626.564	14.0590 – 173.6579	$3d^3 - 3d^2(a^3P)4p$	$a^4P - y^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		219
	1	627.037	14.1771 – 173.6579	$3d^3 - 3d^2(a^3P)4p$	$a^4P - y^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		219
	40	627.185	15.4016 – 174.8449	$3d^3 - 3d^2(a^3P)4p$	$a^2G - y^4D^\circ$	$\frac{9}{2}-\frac{7}{2}$		219
	1	627.471	14.0590 – 173.4306	$3d^3 - 3d^2(a^3P)4p$	$a^4P - y^4D^\circ$	$\frac{1}{2}-\frac{1}{2}$		219
2	40	627.719	0.5556 – 159.8621	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4F^\circ$	$\frac{7}{2}-\frac{9}{2}$		219
2	110	628.482	0.2358 – 159.3505	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4F^\circ$	$\frac{5}{2}-\frac{7}{2}$		219
2	450	629.264	0.9456 – 159.8621	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4F^\circ$	$\frac{9}{2}-\frac{9}{2}$		219
2	110	629.355	0.0 – 158.8912	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4F^\circ$	$\frac{3}{2}-\frac{5}{2}$		219
2	360	629.743	0.5556 – 159.3505	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4F^\circ$	$\frac{7}{2}-\frac{7}{2}$		219
2	285	630.301	0.2358 – 158.8912	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4F^\circ$	$\frac{5}{2}-\frac{5}{2}$		219
	40	630.522	52.9753 – 211.5740	$3d^3 - 3d^2(a^1S)4p$	$b^2D - x^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		219
2	220	630.812	0.0 – 158.5259	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4F^\circ$	$\frac{3}{2}-\frac{3}{2}$		219
1	285	630.902	0.9456 – 159.4480	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4G^\circ$	$\frac{9}{2}-\frac{11}{2}$		219
2	40	631.289	0.9456 – 159.3505	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4F^\circ$	$\frac{9}{2}-\frac{7}{2}$		219
2	70	631.567	0.5556 – 158.8912	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4F^\circ$	$\frac{7}{2}-\frac{5}{2}$		219
	70	631.666	15.0518 – 173.3644	$3d^3 - 3d^2(a^1D)4p$	$a^2G - y^2F^\circ$	$\frac{7}{2}-\frac{7}{2}$		219
2	70	631.748	0.2358 – 158.5259	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4F^\circ$	$\frac{5}{2}-\frac{3}{2}$		219
1	220	632.623	0.5556 – 158.6275	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4G^\circ$	$\frac{7}{2}-\frac{9}{2}$		219
	285	633.059	15.4016 – 173.3644	$3d^3 - 3d^2(a^1D)4p$	$a^2G - y^2F^\circ$	$\frac{9}{2}-\frac{7}{2}$		219
1	220	634.133	0.2358 – 157.9311	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4G^\circ$	$\frac{5}{2}-\frac{7}{2}$		219
	285	634.582	15.0518 – 172.6347	$3d^3 - 3d^2(a^1D)4p$	$a^2G - y^2F^\circ$	$\frac{7}{2}-\frac{5}{2}$		219
	5	635.265	53.1420 – 210.5567	$3d^3 - 3d^2(a^1S)4p$	$b^2D - x^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		219
1	220	635.485	0.0 – 157.3595	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4G^\circ$	$\frac{3}{2}-\frac{5}{2}$		219
1	1	636.44	0.2358 – 157.3595	$3d^3 - 3d^2(a^3F)4p$	$ga^4F - z^4G^\circ$	$\frac{5}{2}-\frac{5}{2}$	P	791
	110	636.859	14.0590 – 171.0797	$3d^3 - 3d^2(a^3P)4p$	$a^4P - z^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		219
10	1	637.096	21.0659 – 178.0281	$3d^3 - 3d^2(a^1G)4p$	$a^2H - y^2G^\circ$	$\frac{9}{2}-\frac{9}{2}$		219
	160	637.338	14.1771 – 171.0797	$3d^3 - 3d^2(a^3P)4p$	$a^4P - z^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		219
10	220	637.553	21.0659 – 177.9144	$3d^3 - 3d^2(a^1G)4p$	$a^2H - y^2G^\circ$	$\frac{9}{2}-\frac{7}{2}$		219
	285	638.127	21.3207 – 178.0281	$3d^3 - 3d^2(a^1G)4p$	$a^2H - y^2G^\circ$	$\frac{11}{2}-\frac{9}{2}$		219
	285	638.535	14.4713 – 171.0797	$3d^3 - 3d^2(a^3P)4p$	$a^4P - z^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		219
	40	642.970	19.4386 – 174.9674	$3d^3 - 3d^2(a^1D)4p$	$a^2P - y^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		219
	5	644.756	19.4386 – 174.5384	$3d^3 - 3d^2(a^1D)4p$	$a^2P - y^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		219
	220	648.077	20.6643 – 174.9674	$3d^3 - 3d^2(a^1D)4p$	$a^2D - y^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		219
	160	649.821	20.6499 – 174.5384	$3d^3 - 3d^2(a^1D)4p$	$a^2D - y^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		219
	20	649.874	20.6643 – 174.5384	$3d^3 - 3d^2(a^1D)4p$	$a^2D - y^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		219
	1	651.766	20.6643 – 174.0948	$3d^3 - 3d^2(a^3P)4p$	$a^2D - y^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		219
	40	652.305	19.5192 – 172.8216	$3d^3 - 3d^2(a^1D)4p$	$a^2P - z^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		219
	160	653.762	34.5557 – 187.5167	$3d^3 - 3d^2(a^1G)4p$	$a^2F - x^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		219
	160	654.688	19.4386 – 172.1821	$3d^3 - 3d^2(a^1D)4p$	$a^2P - z^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		219
	5	655.039	19.5192 – 172.1821	$3d^3 - 3d^2(a^1D)4p$	$a^2P - z^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		219
	160	655.237	34.3628 – 186.9788	$3d^3 - 3d^2(a^1G)4p$	$a^2F - x^2F^\circ$	$\frac{7}{2}-\frac{7}{2}$		219
	1	656.065	34.5557 – 186.9788	$3d^3 - 3d^2(a^1G)4p$	$a^2F - x^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		219
	110	657.152	20.6499 – 172.8216	$3d^3 - 3d^2(a^1D)4p$	$a^2D - z^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		219
	110	659.986	20.6643 – 172.1821	$3d^3 - 3d^2(a^1D)4p$	$a^2D - z^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		219
	1	664.828	20.6643 – 171.0797	$3d^3 - 3d^2(a^3P)4p$	$a^2D - z^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		219
7	30	665.00	15.0518 – 165.4289	$3d^3 - 3d^2(a^3F)4p$	$a^2G - z^2G^\circ$	$\frac{7}{2}-\frac{9}{2}$	P	791
7	220	666.546	15.4016 – 165.4289	$3d^3 - 3d^2(a^3F)4p$	$a^2G - z^2G^\circ$	$\frac{9}{2}-\frac{9}{2}$		219
7	160	667.297	15.0518 – 164.9086	$3d^3 - 3d^2(a^3F)4p$	$a^2G - z^2G^\circ$	$\frac{7}{2}-\frac{7}{2}$		219
7	20	668.867	15.4016 – 164.9086	$3d^3 - 3d^2(a^3F)4p$	$a^2G - z^2G^\circ$	$\frac{9}{2}-\frac{7}{2}$		219
	40	673.596	19.4386 – 167.8951	$3d^3 - 3d^2(a^3P)4p$	$a^2P - z^2S^\circ$	$\frac{3}{2}-\frac{1}{2}$		219

CR IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	673.964	19.5192 – 167.8951	$3d^3 - 3d^2(a^3P)4p$	$a^2P - z^2S^\circ$	$\frac{1}{2} - \frac{1}{2}$		219
	5	675.110	14.1771 – 162.2996	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$		219
	1	676.457	14.4713 – 162.2996	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^2D^\circ$	$\frac{5}{2} - \frac{5}{2}$		219
5	20	677.070	14.0590 – 161.7548	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^4D^\circ$	$\frac{1}{2} - \frac{3}{2}$		219
5	160	677.552	14.4713 – 162.0633	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^4D^\circ$	$\frac{5}{2} - \frac{7}{2}$		219
5	110	678.808	14.1771 – 161.4939	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^4D^\circ$	$\frac{3}{2} - \frac{5}{2}$		219
5	40	678.904	14.0590 – 161.3534	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^4D^\circ$	$\frac{1}{2} - \frac{1}{2}$		219
	5	679.141	20.6499 – 167.8951	$3d^3 - 3d^2(a^3P)4p$	$a^2D - z^2S^\circ$	$\frac{3}{2} - \frac{1}{2}$		219
5	1	679.455	14.1771 – 161.3534	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^4D^\circ$	$\frac{3}{2} - \frac{1}{2}$		219
5	40	680.170	14.4713 – 161.4939	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^4D^\circ$	$\frac{5}{2} - \frac{5}{2}$		219
	5	680.619	14.0590 – 160.9850	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^2D^\circ$	$\frac{1}{2} - \frac{3}{2}$		219
	160	680.833	34.3628 – 181.2415	$3d^3 - 3d^2(a^3P)4p$	$a^2F - x^2D^\circ$	$\frac{7}{2} - \frac{5}{2}$		219
	20	681.166	14.1771 – 160.9850	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^2D^\circ$	$\frac{3}{2} - \frac{3}{2}$		219
	110	681.568	34.5557 – 181.2763	$3d^3 - 3d^2(a^3P)4p$	$a^2F - x^2D^\circ$	$\frac{5}{2} - \frac{3}{2}$		219
	20	681.841	15.4016 – 162.0633	$3d^3 - 3d^2(a^3F)4p$	$a^2G - z^4D^\circ$	$\frac{9}{2} - \frac{7}{2}$		219
	40	682.760	14.4713 – 160.9358	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		219
	20	684.338	14.1771 – 160.3039	$3d^3 - 3d^2(a^3F)4p$	$a^4P - z^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		219
6	285	687.125	15.4016 – 160.9358	$3d^3 - 3d^2(a^3F)4p$	$a^2G - z^2F^\circ$	$\frac{9}{2} - \frac{7}{2}$		219
6	220	688.463	15.0518 – 160.3039	$3d^3 - 3d^2(a^3F)4p$	$a^2G - z^2F^\circ$	$\frac{7}{2} - \frac{5}{2}$		219
9	5	692.705	21.0659 – 165.4289	$3d^3 - 3d^2(a^3F)4p$	$a^2H - z^2G^\circ$	$\frac{9}{2} - \frac{9}{2}$		219
9	360	693.924	21.3207 – 165.4289	$3d^3 - 3d^2(a^3F)4p$	$a^2H - z^2G^\circ$	$\frac{11}{2} - \frac{9}{2}$		219
9	285	695.208	21.0659 – 164.9086	$3d^3 - 3d^2(a^3F)4p$	$a^2H - z^2G^\circ$	$\frac{9}{2} - \frac{7}{2}$		219
	110	696.063	34.3628 – 178.0281	$3d^3 - 3d^2(a^1G)4p$	$a^2F - y^2G^\circ$	$\frac{7}{2} - \frac{9}{2}$		219
	110	697.554	34.5557 – 177.9144	$3d^3 - 3d^2(a^1G)4p$	$a^2F - y^2G^\circ$	$\frac{5}{2} - \frac{7}{2}$		219
	110	699.981	19.4386 – 162.2996	$3d^3 - 3d^2(a^3F)4p$	$a^2P - z^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$		219
	40	702.667	19.4386 – 161.7548	$3d^3 - 3d^2(a^3F)4p$	$a^2P - z^4D^\circ$	$\frac{3}{2} - \frac{3}{2}$		219
	40	703.060	19.5192 – 161.7548	$3d^3 - 3d^2(a^3F)4p$	$a^2P - z^4D^\circ$	$\frac{1}{2} - \frac{3}{2}$		219
8	160	705.975	20.6499 – 162.2996	$3d^3 - 3d^2(a^3F)4p$	$a^2D - z^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$		219
8	20	706.042	20.6643 – 162.2996	$3d^3 - 3d^2(a^3F)4p$	$a^2D - z^2D^\circ$	$\frac{5}{2} - \frac{5}{2}$		219
	70	706.481	19.4386 – 160.9850	$3d^3 - 3d^2(a^3F)4p$	$a^2P - z^2D^\circ$	$\frac{3}{2} - \frac{3}{2}$		219
	70	706.885	19.5192 – 160.9850	$3d^3 - 3d^2(a^3F)4p$	$a^2P - z^2D^\circ$	$\frac{1}{2} - \frac{3}{2}$		219
	40	709.900	19.4386 – 160.3039	$3d^3 - 3d^2(a^3F)4p$	$a^2P - z^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		219
	5	709.992	20.6499 – 161.4939	$3d^3 - 3d^2(a^3F)4p$	$a^2D - z^4D^\circ$	$\frac{3}{2} - \frac{5}{2}$		219
	5	710.077	20.6643 – 161.4939	$3d^3 - 3d^2(a^3F)4p$	$a^2D - z^4D^\circ$	$\frac{5}{2} - \frac{5}{2}$		219
	5	712.576	20.6499 – 160.9850	$3d^3 - 3d^2(a^3F)4p$	$a^2D - z^2D^\circ$	$\frac{3}{2} - \frac{3}{2}$		219
	220	712.901	20.6643 – 160.9358	$3d^3 - 3d^2(a^3F)4p$	$a^2D - z^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		219
	40	716.128	20.6643 – 160.3039	$3d^3 - 3d^2(a^3F)4p$	$a^2D - z^2F^\circ$	$\frac{5}{2} - \frac{5}{2}$		219
	1	719.420	34.3628 – 173.3644	$3d^3 - 3d^2(a^1D)4p$	$a^2F - y^2F^\circ$	$\frac{7}{2} - \frac{7}{2}$		219
	1	724.218	34.5557 – 172.6347	$3d^3 - 3d^2(a^1D)4p$	$a^2F - y^2F^\circ$	$\frac{5}{2} - \frac{5}{2}$		219
	0	743.271	52.9753 – 187.5167	$3d^3 - 3d^2(a^1G)4p$	$b^2D - x^2F^\circ$	$\frac{5}{2} - \frac{5}{2}$		219
	70	744.190	53.1420 – 187.5167	$3d^3 - 3d^2(a^1G)4p$	$b^2D - x^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		219
	110	746.248	52.9753 – 186.9788	$3d^3 - 3d^2(a^1G)4p$	$b^2D - x^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		219
	110	763.947	52.9753 – 183.8739	$3d^3 - 3d^2(a^3P)4p$	$b^2D - y^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		219
	1	764.923	53.1420 – 183.8739	$3d^3 - 3d^2(a^3P)4p$	$b^2D - y^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		219
	70	765.833	53.1420 – 183.7187	$3d^3 - 3d^2(a^3P)4p$	$b^2D - y^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		219
	40	779.627	52.9753 – 181.2415	$3d^3 - 3d^2(a^3P)4p$	$b^2D - x^2D^\circ$	$\frac{5}{2} - \frac{5}{2}$		219
	5	780.428	53.1420 – 181.2763	$3d^3 - 3d^2(a^3P)4p$	$b^2D - x^2D^\circ$	$\frac{3}{2} - \frac{3}{2}$		219
	20	790.058	34.3628 – 160.9358	$3d^3 - 3d^2(a^3F)4p$	$a^2F - z^2F^\circ$	$\frac{7}{2} - \frac{7}{2}$		219
	40	795.241	34.5557 – 160.3039	$3d^3 - 3d^2(a^3F)4p$	$a^2F - z^2F^\circ$	$\frac{5}{2} - \frac{5}{2}$		219
	10	816.92						490
	1	819.732	52.9753 – 174.9674	$3d^3 - 3d^2(a^1D)4p$	$b^2D - y^2D^\circ$	$\frac{5}{2} - \frac{5}{2}$		219
	10	820.88	53.1420 – 174.9674	$3d^3 - 3d^2(a^1D)4p$	$b^2D - y^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$		490
	1	914.714	52.9753 – 162.2996	$3d^3 - 3d^2(a^3F)4p$	$b^2D - z^2D^\circ$	$\frac{5}{2} - \frac{5}{2}$		219
	1	926.261	52.9753 – 160.9358	$3d^3 - 3d^2(a^3F)4p$	$b^2D - z^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		219

CR IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	0	933.172	53.1420 – 160.3039	$3d^3 - 3d^2(a^3F)4p$	$b^2D - z^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		219
	30	1002.39						490
	30	1090.97						490
	10	1092.23						490
	10	1098.06						490
	10	1111.17						490
	10	1227.43						490
	100	1315.00						490
	125	1315.69	157.3595 – 233.365	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4H$	$\frac{5}{2}-\frac{7}{2}$	P	791
	150	1319.49	157.9311 – 233.718	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4H$	$\frac{7}{2}-\frac{9}{2}$	P	791
	200	1324.85	158.6275 – 234.108	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4H$	$\frac{9}{2}-\frac{11}{2}$	P	791
	50	1325.66	157.9311 – 233.365	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4H$	$\frac{7}{2}-\frac{7}{2}$	P	791
	50	1331.73	158.6275 – 233.718	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4H$	$\frac{9}{2}-\frac{9}{2}$	P	791
	250	1332.27	159.4480 – 234.508	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4H$	$\frac{11}{2}-\frac{13}{2}$	P	791
	10	1338.02	158.6275 – 233.365	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4H$	$\frac{9}{2}-\frac{7}{2}$	P	791
	50	1339.41	159.4480 – 234.108	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4H$	$\frac{11}{2}-\frac{11}{2}$	P	791
	10	1346.44	159.4480 – 233.718	$3d^2(a^3F)4p - 3d^2(a^3F)4d$	$z^4G^\circ - e^4H$	$\frac{11}{2}-\frac{9}{2}$	P	791
	20	1348.44						490
	40	1351.63						490
	10	1359.93						490
	10	1364.49	104.6286 – 177.9144	$3d^2(a^3F)4s - 3d^2(a^1G)4p$	$b^4F - y^2G^\circ$	$\frac{7}{2}-\frac{7}{2}$		490
	150	1367.39						490
	20	1369.58						490
	20	1373.46	105.1041 – 177.9144	$3d^2(a^3F)4s - 3d^2(a^1G)4p$	$b^4F - y^2G^\circ$	$\frac{9}{2}-\frac{7}{2}$		490
	200	1375.56						490
	10	1383.24						490
	20	1388.49						490
	30	1395.83						490
	10	1399.50						490
	220	1401.822	109.9402 – 181.2763	$3d^2(a^3F)4s - 3d^2(a^3P)4p$	$b^2F - x^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		219
	20	1410.37						490
	30	1412.24						490
	450	1417.418	110.6904 – 181.2415	$3d^2(a^3F)4s - 3d^2(a^3P)4p$	$b^2F - x^2D^\circ$	$\frac{7}{2}-\frac{5}{2}$		219
	100	1423.16						490
	100	1424.62						490
	10	1426.58						490
	10	1429.41						490
	10	1447.03	104.2571 – 173.3644	$3d^2(a^3F)4s - 3d^2(a^1D)4p$	$b^4F - y^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		490
	20	1461.04						490
	30	1465.00	105.1041 – 173.3644	$3d^2(a^3F)4s - 3d^2(a^1D)4p$	$b^4F - y^2F^\circ$	$\frac{9}{2}-\frac{7}{2}$	Q	490
	20	1466.14						490
	70	1471.151	109.9402 – 177.9144	$3d^2(a^3F)4s - 3d^2(a^1G)4p$	$b^2F - y^2G^\circ$	$\frac{5}{2}-\frac{7}{2}$		219
	10	1475.10						490
	20	1482.07						490
	20	1482.36						490
	220	1485.052	110.6904 – 178.0281	$3d^2(a^3F)4s - 3d^2(a^1G)4p$	$b^2F - y^2G^\circ$	$\frac{7}{2}-\frac{9}{2}$		219
	10	1500.46						490
	120	1508.89						490
	10	1509.85						490
	20	1533.42						490
	10	1551.20						490
	10	1553.09						490
	5	1558.745	110.6904 – 174.8449	$3d^2(a^3F)4s - 3d^2(a^3P)4p$	$b^2F - y^4D^\circ$	$\frac{7}{2}-\frac{7}{2}$		219
	5	1576.691	109.9402 – 173.3644	$3d^2(a^3F)4s - 3d^2(a^1D)4p$	$b^2F - y^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		219

CR IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	5	1594.739	118.5700 – 181.2763	$3d^2(a^1D)4s - 3d^2(a^3P)4p$	$c^2D - x^2D^\circ$	5/2 – 3/2		219
	285	1595.039	109.9402 – 172.6347	$3d^2(a^3F)4s - 3d^2(a^1D)4p$	$b^2F - y^2F^\circ$	5/2 – 5/2		219
	300	1595.558	110.6904 – 173.3644	$3d^2(a^3F)4s - 3d^2(a^1D)4p$	$b^2F - y^2F^\circ$	7/2 – 7/2	P	219
	60	1595.622	118.5700 – 181.2415	$3d^2(a^1D)4s - 3d^2(a^3P)4p$	$c^2D - x^2D^\circ$	5/2 – 5/2	P	219
	40	1598.723	118.7265 – 181.2763	$3d^2(a^1D)4s - 3d^2(a^3P)4p$	$c^2D - x^2D^\circ$	3/2 – 3/2		219
	5	1599.619	118.7265 – 181.2415	$3d^2(a^1D)4s - 3d^2(a^3P)4p$	$c^2D - x^2D^\circ$	3/2 – 5/2		219
	20	1613.14	119.2506 – 181.2415	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^4P - x^2D^\circ$	3/2 – 5/2		490
	40	1657.71	105.1041 – 165.4289	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^2G^\circ$	9/2 – 9/2		490
	450	1658.083	127.2063 – 187.5167	$3d^2(a^1G)4s - 3d^2(a^1G)4p$	$b^2G - x^2F^\circ$	7/2 – 5/2		219
	120	1658.93	104.6286 – 164.9086	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^2G^\circ$	7/2 – 7/2		490
	100	1666.66	173.3644 – 233.365	$3d^2(a^1D)4p - 3d^2(a^3F)4d$	$y^2F^\circ - e^4H$	7/2 – 7/2		490
	550	1672.660	127.1939 – 186.9788	$3d^2(a^1G)4s - 3d^2(a^1G)4p$	$b^2G - x^2F^\circ$	9/2 – 7/2		219
	160	1673.021	127.2063 – 186.9788	$3d^2(a^1G)4s - 3d^2(a^1G)4p$	$b^2G - x^2F^\circ$	7/2 – 7/2		219
	110	1681.673	124.4092 – 183.8739	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^2P - y^2P^\circ$	1/2 – 3/2		219
	40	1685.02						490
	360	1686.072	124.4092 – 183.7187	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^2P - y^2P^\circ$	1/2 – 1/2		219
	450	1690.881	124.7329 – 183.8739	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^2P - y^2P^\circ$	3/2 – 3/2		219
	160	1695.328	124.7329 – 183.7187	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^2P - y^2P^\circ$	3/2 – 1/2		219
	30	1698.55	174.8449 – 233.718	$3d^2(a^3P)4p - 3d^2(a^3F)4d$	$y^4D^\circ - e^4H$	7/2 – 9/2		490
	110	1699.677	118.5700 – 177.4050	$3d^2(a^1D)4s - 3d^2(a^3P)4p$	$c^2D - y^4P^\circ$	5/2 – 5/2		219
	20	1704.203	118.7265 – 177.4050	$3d^2(a^1D)4s - 3d^2(a^3P)4p$	$c^2D - y^4P^\circ$	3/2 – 5/2		219
	10	1704.48						490
	50	1709.89						490
	50	1713.69						490
	30	1715.04						490
	110	1718.533	118.7265 – 176.9153	$3d^2(a^1D)4s - 3d^2(a^3P)4p$	$c^2D - y^4P^\circ$	3/2 – 3/2		219
	450	1719.560	119.2506 – 177.4050	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^4P - y^4P^\circ$	3/2 – 5/2	P	219
	70	1722.38	174.8449 – 232.905	$3d^2(a^3P)4p - 3d^2(a^3F)4d$	$y^4D^\circ - e^4G$	7/2 – 7/2		490
14	160	1722.857	104.2571 – 162.2996	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^2D^\circ$	5/2 – 5/2		219
	285	1725.257	118.7265 – 176.6891	$3d^2(a^1D)4s - 3d^2(a^3P)4p$	$c^2D - y^4P^\circ$	3/2 – 1/2		219
	20	1726.00	174.9674 – 232.905	$3d^2(a^1D)4p - 3d^2(a^3F)4d$	$y^2D^\circ - e^4G$	5/2 – 7/2		490
	360	1727.067	119.0133 – 176.9153	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^4P - y^4P^\circ$	1/2 – 3/2		219
13	70	1729.919	104.2571 – 162.0633	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4D^\circ$	5/2 – 7/2		219
13	220	1731.280	103.9947 – 161.7548	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4D^\circ$	3/2 – 3/2		219
	450	1732.043	119.6700 – 177.4050	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^4P - y^4P^\circ$	5/2 – 5/2		219
	220	1733.832	119.0133 – 176.6891	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^4P - y^4P^\circ$	1/2 – 1/2		219
14	450	1733.979	104.6286 – 162.2996	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^2D^\circ$	7/2 – 5/2		219
	285	1734.156	119.2506 – 176.9153	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^4P - y^4P^\circ$	3/2 – 3/2		219
	60	1734.68						490
13	450	1739.193	104.2571 – 161.7548	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4D^\circ$	5/2 – 3/2		219
	160	1740.988	119.2506 – 176.6891	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^4P - y^4P^\circ$	3/2 – 1/2		219
13	160	1741.100	104.6286 – 162.0633	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4D^\circ$	7/2 – 7/2		219
	30	1741.93						490
13	220	1743.421	103.9947 – 161.3534	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4D^\circ$	3/2 – 1/2		219
	220	1746.875	119.6700 – 176.9153	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^4P - y^4P^\circ$	5/2 – 3/2		219
13	285	1747.132	104.2571 – 161.4939	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4D^\circ$	5/2 – 5/2		219
	20	1754.52						490
14	110	1754.685	103.9947 – 160.9850	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^2D^\circ$	3/2 – 3/2	P	219
13	550	1755.643	105.1041 – 162.0633	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4D^\circ$	9/2 – 7/2		219
	50	1758.37						490
	250	1758.486	124.4092 – 181.2763	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^2P - x^2D^\circ$	1/2 – 3/2	P	219
13	400	1758.542	104.6286 – 161.4939	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4D^\circ$	7/2 – 5/2	P	219
	30	1762.52						490
14	285	1762.804	104.2571 – 160.9850	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^2D^\circ$	5/2 – 3/2		219

CR IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	360	1764.324	104.2571 – 160.9358	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		219
	110	1768.549	124.7329 – 181.2763	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^2P - x^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		219
	450	1769.635	124.7329 – 181.2415	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^2P - x^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		219
	360	1773.131	118.5700 – 174.9674	$3d^2(a^1D)4s - 3d^2(a^1D)4p$	$c^2D - y^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		219
	30	1775.909	103.9947 – 160.3039	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$	P	219
	10	1775.972	104.6286 – 160.9358	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^2F^\circ$	$\frac{7}{2}-\frac{7}{2}$	P	219
	20	1776.992	118.5700 – 174.8449	$3d^2(a^1D)4s - 3d^2(a^3P)4p$	$c^2D - y^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		219
	450	1777.821	127.1939 – 183.4426	$3d^2(a^1G)4s - 3d^2(a^1G)4p$	$b^2G - z^2H^\circ$	$\frac{9}{2}-\frac{11}{2}$		219
	110	1778.053	118.7265 – 174.9674	$3d^2(a^1D)4s - 3d^2(a^1D)4p$	$c^2D - y^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		219
	40	1784.223	104.2571 – 160.3039	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$	P	219
	220	1791.094	105.1041 – 160.9358	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^2F^\circ$	$\frac{9}{2}-\frac{7}{2}$		219
	285	1791.729	118.7265 – 174.5384	$3d^2(a^1D)4s - 3d^2(a^1D)4p$	$c^2D - y^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		219
	40	1794.796	119.2506 – 174.9674	$3d^2(a^3P)4s - 3d^2(a^1D)4p$	$b^4P - y^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		219
	70	1796.129	104.6286 – 160.3039	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^2F^\circ$	$\frac{7}{2}-\frac{5}{2}$		219
	220	1800.991	119.0133 – 174.5384	$3d^2(a^3P)4s - 3d^2(a^1D)4p$	$b^4P - y^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		219
	20	1802.340	127.1939 – 182.6777	$3d^2(a^1G)4s - 3d^2(a^1G)4p$	$b^2G - z^2H^\circ$	$\frac{9}{2}-\frac{9}{2}$		219
	870	1802.723	127.2063 – 182.6777	$3d^2(a^1G)4s - 3d^2(a^1G)4p$	$b^2G - z^2H^\circ$	$\frac{7}{2}-\frac{9}{2}$		219
	110	1808.410	119.6700 – 174.9674	$3d^2(a^3P)4s - 3d^2(a^1D)4p$	$b^4P - y^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		219
	110	1808.723	119.2506 – 174.5384	$3d^2(a^3P)4s - 3d^2(a^1D)4p$	$b^4P - y^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		219
12	360	1810.499	104.6286 – 159.8621	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4F^\circ$	$\frac{7}{2}-\frac{9}{2}$		219
	750	1812.413	119.6700 – 174.8449	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^4P - y^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		219
12	360	1815.100	104.2571 – 159.3505	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4F^\circ$	$\frac{5}{2}-\frac{7}{2}$		219
	10	1818.90						490
16	870	1819.231	109.9402 – 164.9086	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^2F - z^2G^\circ$	$\frac{5}{2}-\frac{7}{2}$		219
	70	1820.454	118.7265 – 173.6579	$3d^2(a^1D)4s - 3d^2(a^3P)4p$	$c^2D - y^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		219
12	220	1821.621	103.9947 – 158.8912	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4F^\circ$	$\frac{3}{2}-\frac{5}{2}$		219
	20	1822.49						490
	450	1823.341	119.2506 – 174.0948	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^4P - y^4D^\circ$	$\frac{3}{2}-\frac{5}{2}$		219
	450	1824.995	118.5700 – 173.3644	$3d^2(a^1D)4s - 3d^2(a^1D)4p$	$c^2D - y^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		219
12	750	1826.211	105.1041 – 159.8621	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4F^\circ$	$\frac{9}{2}-\frac{9}{2}$		219
16	650	1826.863	110.6904 – 165.4289	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^2F - z^2G^\circ$	$\frac{7}{2}-\frac{9}{2}$		219
12	650	1827.408	104.6286 – 159.3505	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4F^\circ$	$\frac{7}{2}-\frac{7}{2}$		219
	220	1830.010	119.0133 – 173.6579	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^4P - y^4D^\circ$	$\frac{1}{2}-\frac{3}{2}$		219
12	450	1830.350	104.2571 – 158.8912	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4F^\circ$	$\frac{5}{2}-\frac{5}{2}$		219
	10	1833.66						490
12	450	1833.812	103.9947 – 158.5259	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4F^\circ$	$\frac{3}{2}-\frac{3}{2}$		219
	1000	1837.400	119.6700 – 174.0948	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^4P - y^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$	P	219
	450	1837.642	119.0133 – 173.4306	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^4P - y^4D^\circ$	$\frac{1}{2}-\frac{1}{2}$		219
	220	1837.991	119.2506 – 173.6579	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^4P - y^4D^\circ$	$\frac{3}{2}-\frac{3}{2}$		219
11	1000	1840.139	105.1041 – 159.4480	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4G^\circ$	$\frac{9}{2}-\frac{11}{2}$		219
12	220	1842.686	104.2571 – 158.5259	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4F^\circ$	$\frac{5}{2}-\frac{3}{2}$		219
12	220	1842.897	104.6286 – 158.8912	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4F^\circ$	$\frac{7}{2}-\frac{5}{2}$		219
12	220	1843.448	105.1041 – 159.3505	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4F^\circ$	$\frac{9}{2}-\frac{7}{2}$		219
	40	1844.407	110.6904 – 164.9086	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^2F - z^2G^\circ$	$\frac{7}{2}-\frac{7}{2}$		219
	70	1845.705	119.2506 – 173.4306	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^4P - y^4D^\circ$	$\frac{3}{2}-\frac{1}{2}$		219
	285	1848.593	118.7265 – 172.8216	$3d^2(a^1D)4s - 3d^2(a^1D)4p$	$c^2D - z^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		219
	160	1849.632	118.5700 – 172.6347	$3d^2(a^1D)4s - 3d^2(a^1D)4p$	$c^2D - y^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		219
11	1000	1851.890	104.6286 – 158.6275	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4G^\circ$	$\frac{7}{2}-\frac{9}{2}$		219
	220	1852.277	119.6700 – 173.6579	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^4P - y^4D^\circ$	$\frac{5}{2}-\frac{3}{2}$		219
	285	1855.012	118.7265 – 172.6347	$3d^2(a^1D)4s - 3d^2(a^1D)4p$	$c^2D - y^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		219
	20	1858.449	119.0133 – 172.8216	$3d^2(a^3P)4s - 3d^2(a^1D)4p$	$b^4P - z^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		219
11	870	1863.108	104.2571 – 157.9311	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4G^\circ$	$\frac{5}{2}-\frac{7}{2}$		219
	360	1865.255	118.5700 – 172.1821	$3d^2(a^1D)4s - 3d^2(a^1D)4p$	$c^2D - z^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		219
	20	1866.685	119.2506 – 172.8216	$3d^2(a^3P)4s - 3d^2(a^1D)4p$	$b^4P - z^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		219

CR IV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
11	750	1868.344	105.1041 – 158.6275	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4G^\circ$	$\frac{9}{2}-\frac{9}{2}$		219
11	870	1873.892	103.9947 – 157.3595	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4G^\circ$	$\frac{3}{2}-\frac{5}{2}$		219
11	750	1876.083	104.6286 – 157.9311	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4G^\circ$	$\frac{7}{2}-\frac{7}{2}$		219
	1	1880.811	119.0133 – 172.1821	$3d^2(a^3P)4s - 3d^2(a^1D)4p$	$b^4P - z^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		219
11	650	1883.156	104.2571 – 157.3595	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4G^\circ$	$\frac{5}{2}-\frac{5}{2}$		219
11	40	1892.960	105.1041 – 157.9311	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4G^\circ$	$\frac{9}{2}-\frac{7}{2}$		219
11	20	1896.419	104.6286 – 157.3595	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^4F - z^4G^\circ$	$\frac{7}{2}-\frac{5}{2}$		219
	400	1904.323	119.6700 – 172.1821	$3d^2(a^3P)4s - 3d^2(a^1D)4p$	$b^4P - z^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$	P	219
	350	1904.410	118.5700 – 171.0797	$3d^2(a^1D)4s - 3d^2(a^3P)4p$	$c^2D - z^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$	P	219
	50	1909.88	109.9402 – 162.2996	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^2F - z^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$	P	47
	70	1910.107	118.7265 – 171.0797	$3d^2(a^1D)4s - 3d^2(a^3P)4p$	$c^2D - z^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		219
	5	1918.542	109.9402 – 162.0633	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^2F - z^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$		219
	160	1920.620	119.0133 – 171.0797	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^4P - z^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		219
	220	1929.422	119.2506 – 171.0797	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^4P - z^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		219
	285	1929.953	109.9402 – 161.7548	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^2F - z^4D^\circ$	$\frac{5}{2}-\frac{3}{2}$		219
	20	1934.13						490
	750	1937.630	110.6904 – 162.2996	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^2F - z^2D^\circ$	$\frac{7}{2}-\frac{5}{2}$		219
	110	1939.723	109.9402 – 161.4939	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^2F - z^4D^\circ$	$\frac{5}{2}-\frac{5}{2}$		219
	220	1945.160	119.6700 – 171.0797	$3d^2(a^3P)4s - 3d^2(a^3P)4p$	$b^4P - z^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		219
	360	1946.549	110.6904 – 162.0633	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^2F - z^4D^\circ$	$\frac{7}{2}-\frac{7}{2}$		219
	20	1948.28						490
	550	1959.060	109.9402 – 160.9850	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^2F - z^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		219
15	650	1960.950	109.9402 – 160.9358	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^2F - z^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		219
	870	1967.181	127.1939 – 178.0281	$3d^2(a^1G)4s - 3d^2(a^1G)4p$	$b^2G - y^2G^\circ$	$\frac{9}{2}-\frac{9}{2}$		219
	360	1968.364	110.6904 – 161.4939	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^2F - z^4D^\circ$	$\frac{7}{2}-\frac{5}{2}$		219
	70	1971.583	127.1939 – 177.9144	$3d^2(a^1G)4s - 3d^2(a^1G)4p$	$b^2G - y^2G^\circ$	$\frac{9}{2}-\frac{7}{2}$		219
	650	1972.075	127.2063 – 177.9144	$3d^2(a^1G)4s - 3d^2(a^1G)4p$	$b^2G - y^2G^\circ$	$\frac{7}{2}-\frac{7}{2}$		219
15	450	1985.552	109.9402 – 160.3039	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^2F - z^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		219
15	650	1990.247	110.6904 – 160.9358	$3d^2(a^3F)4s - 3d^2(a^3F)4p$	$b^2F - z^2F^\circ$	$\frac{7}{2}-\frac{7}{2}$		219
	450	1990.664	124.7329 – 174.9674	$3d^2(a^3P)4s - 3d^2(a^1D)4p$	$b^2P - y^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$	P	219
	20	1997.35						490

CHROMIUM V (Cr^{4+}), Z = 24
Ground State $1s^22s^22p^63s^23p^63d^2(^3F_2)$ (20 electrons)
Ionization Potential 560 200 cm^{-1}; 69.46 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	433.119	.5082 – 231.3929	$3d^2 - 3d4p$	$g^3F - {}^3F^\circ$	3 – 4		218
	5	434.180	0. – 230.3163	$3d^2 - 3d4p$	$g^3F - {}^3F^\circ$	2 – 3		218
	220	434.306	1.1417 – 231.3929	$3d^2 - 3d4p$	$g^3F - {}^3F^\circ$	4 – 4		218
	110	435.143	.5082 – 230.3163	$3d^2 - 3d4p$	$g^3F - {}^3F^\circ$	3 – 3		218
	110	435.636	0. – 229.5517	$3d^2 - 3d4p$	$g^3F - {}^3F^\circ$	2 – 2		218
	70	436.351	1.1417 – 230.3163	$3d^2 - 3d4p$	$g^3F - {}^3F^\circ$	4 – 3		218
	70	437.420	.5082 – 229.1208	$3d^2 - 3d4p$	$g^3F - {}^3D^\circ$	3 – 3		218
	40	437.655	0. – 228.4891	$3d^2 - 3d4p$	$g^3F - {}^3D^\circ$	2 – 2		218
	100	438.593	0. – 228.0018	$3d^2 - 3d4p$	$g^3F - {}^3D^\circ$	2 – 1	P	218
	130	438.633	.5082 – 228.4891	$3d^2 - 3d4p$	$g^3F - {}^3D^\circ$	3 – 2	P	218
	220	438.637	1.1417 – 229.1208	$3d^2 - 3d4p$	$g^3F - {}^3D^\circ$	4 – 3	P	218
	110	441.056	13.1880 – 239.9175	$3d^2 - 3d4p$	${}^1D - {}^1P^\circ$	2 – 1		218

CR V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	442.243	0. – 226.1198	$3d^2 - 3d4p$	$g^3F - {}^1D^\circ$	2 – 2		218
	20	445.751	13.1880 – 237.5295	$3d^2 - 3d4p$	$^1D - {}^1F^\circ$	2 – 3		218
	5	446.672	16.0410 – 239.9175	$3d^2 - 3d4p$	$^3P - {}^1P^\circ$	2 – 1		218
	5	451.141	13.1880 – 234.8464	$3d^2 - 3d4p$	$^1D - {}^3P^\circ$	2 – 2		218
	5	451.607	13.1880 – 234.6184	$3d^2 - 3d4p$	$^1D - {}^3P^\circ$	2 – 1		218
	110	456.272	15.6766 – 234.8464	$3d^2 - 3d4p$	$^3P - {}^3P^\circ$	1 – 2		218
	70	456.357	15.4918 – 234.6184	$3d^2 - 3d4p$	$^3P - {}^3P^\circ$	0 – 1		218
	70	456.637	15.6766 – 234.6685	$3d^2 - 3d4p$	$^3P - {}^3P^\circ$	1 – 0		218
	40	456.743	15.6766 – 234.6184	$3d^2 - 3d4p$	$^3P - {}^3P^\circ$	1 – 1		218
	160	457.028	16.0410 – 234.8464	$3d^2 - 3d4p$	$^3P - {}^3P^\circ$	2 – 2		218
	70	457.504	16.0410 – 234.6184	$3d^2 - 3d4p$	$^3P - {}^3P^\circ$	2 – 1		218
	450	464.015	22.0192 – 237.5295	$3d^2 - 3d4p$	$^1G - {}^1F^\circ$	4 – 3		218
	110	469.311	16.0410 – 229.1208	$3d^2 - 3d4p$	$^3P - {}^3D^\circ$	2 – 3		218
	220	469.634	13.1880 – 226.1198	$3d^2 - 3d4p$	$^1D - {}^1D^\circ$	2 – 2		218
	70	469.893	15.6766 – 228.4891	$3d^2 - 3d4p$	$^3P - {}^3D^\circ$	1 – 2		218
	40	470.567	15.4918 – 228.0018	$3d^2 - 3d4p$	$^3P - {}^3D^\circ$	0 – 1		218
	20	470.697	16.0410 – 228.4891	$3d^2 - 3d4p$	$^3P - {}^3D^\circ$	2 – 2		218
	5	470.976	15.6766 – 228.0018	$3d^2 - 3d4p$	$^3P - {}^3D^\circ$	1 – 1		218
	160	529.742	51.1464 – 239.9175	$3d^2 - 3d4p$	$^1S - {}^1P^\circ$	0 – 1		218
	110	754.521	226.1198 – 358.6538	$3d4p - 3d5s$	$^1D^\circ - {}^1D$	2 – 2		218
	1	764.151	226.1198 – 356.9813	$3d4p - 3d5s$	$^1D^\circ - {}^3D$	2 – 2		218
	1	768.251	228.4891 – 358.6538	$3d4p - 3d5s$	$^3D^\circ - {}^1D$	2 – 2		218
	1	774.079	228.4891 – 357.6759	$3d4p - 3d5s$	$^3D^\circ - {}^3D$	2 – 3		218
	1	775.308	228.0018 – 356.9813	$3d4p - 3d5s$	$^3D^\circ - {}^3D$	1 – 2		218
	5	776.743	228.0018 – 356.7448	$3d4p - 3d5s$	$^3D^\circ - {}^3D$	1 – 1		218
	160	777.873	229.1208 – 357.6759	$3d4p - 3d5s$	$^3D^\circ - {}^3D$	3 – 3		218
	40	778.253	228.4891 – 356.9813	$3d4p - 3d5s$	$^3D^\circ - {}^3D$	2 – 2		218
	1	779.209	230.3163 – 358.6538	$3d4p - 3d5s$	$^3F^\circ - {}^1D$	3 – 2		218
	40	786.210	229.5517 – 356.7448	$3d4p - 3d5s$	$^3F^\circ - {}^3D$	2 – 1		218
	110	789.492	230.3163 – 356.9813	$3d4p - 3d5s$	$^3F^\circ - {}^3D$	3 – 2		218
	160	791.872	231.3929 – 357.6759	$3d4p - 3d5s$	$^3F^\circ - {}^3D$	4 – 3		218
	40	814.148	234.8464 – 357.6759	$3d4p - 3d5s$	$^3P^\circ - {}^3D$	2 – 3		218
	5	817.246	234.6184 – 356.9813	$3d4p - 3d5s$	$^3P^\circ - {}^3D$	1 – 2		218
	1	818.803	234.6184 – 356.7448	$3d4p - 3d5s$	$^3P^\circ - {}^3D$	1 – 1		218
	1	819.153	234.6685 – 356.7448	$3d4p - 3d5s$	$^3P^\circ - {}^3D$	0 – 1		218
	220	825.600	237.5295 – 358.6538	$3d4p - 3d5s$	$^1F^\circ - {}^1D$	3 – 2		218
	1	832.309	237.5295 – 357.6759	$3d4p - 3d5s$	$^1F^\circ - {}^3D$	3 – 3		218
	1	837.157	237.5295 – 356.9813	$3d4p - 3d5s$	$^1F^\circ - {}^3D$	3 – 2		218
	20	842.195	239.9175 – 358.6538	$3d4p - 3d5s$	$^1P^\circ - {}^1D$	1 – 2		218
	220	968.703	226.1198 – 329.3503	$3d4p - 3d4d$	$^1D^\circ - {}^1D$	2 – 2		218
	1	978.064	228.0018 – 330.2451	$3d4p - 3d4d$	$^3D^\circ - {}^3P$	1 – 1		218
	1	979.590	228.0018 – 330.0848	$3d4p - 3d4d$	$^3D^\circ - {}^3P$	1 – 0		218
	1	979.934	228.4891 – 330.5368	$3d4p - 3d4d$	$^3D^\circ - {}^3P$	2 – 2		218
	70	982.736	228.4891 – 330.2451	$3d4p - 3d4d$	$^3D^\circ - {}^3P$	2 – 1		218
	110	986.035	229.1208 – 330.5368	$3d4p - 3d4d$	$^3D^\circ - {}^3P$	3 – 2		218
	1	997.709	229.1208 – 329.3503	$3d4p - 3d4d$	$^3D^\circ - {}^1D$	3 – 2		218
	1	1002.024	229.5517 – 329.3503	$3d4p - 3d4d$	$^3F^\circ - {}^1D$	2 – 2		218
	70	1029.842	228.0018 – 325.1041	$3d4p - 3d4d$	$^3D^\circ - {}^3F$	1 – 2		218
	110	1031.105	228.4891 – 325.4725	$3d4p - 3d4d$	$^3D^\circ - {}^3F$	2 – 3		218
	110	1033.452	229.1208 – 325.8842	$3d4p - 3d4d$	$^3D^\circ - {}^3F$	3 – 4		218
	5	1035.037	228.4891 – 325.1041	$3d4p - 3d4d$	$^3D^\circ - {}^3F$	2 – 2		218
	40	1042.544	234.6184 – 330.5368	$3d4p - 3d4d$	$^3P^\circ - {}^3P$	1 – 2		218
	220	1045.044	234.8464 – 330.5368	$3d4p - 3d4d$	$^3P^\circ - {}^3P$	2 – 2		218
	5	1045.733	234.6184 – 330.2451	$3d4p - 3d4d$	$^3P^\circ - {}^3P$	1 – 1		218

CR V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	20	1046.294	234.6685 – 330.2451	3d4p – 3d4d	$^3P^o - ^3P$	0 – 1		218
	40	1046.364	230.3163 – 325.8842	3d4p – 3d4d	$^3F^o - ^3F$	3 – 4		218
	20	1046.542	229.5517 – 325.1041	3d4p – 3d4d	$^3F^o - ^3F$	2 – 2		218
	5	1047.494	234.6184 – 330.0848	3d4p – 3d4d	$^3P^o - ^3P$	1 – 0		218
	20	1048.236	234.8464 – 330.2451	3d4p – 3d4d	$^3P^o - ^3P$	2 – 1		218
	70	1050.901	230.3163 – 325.4725	3d4p – 3d4d	$^3F^o - ^3F$	3 – 3		218
	1	1054.991	230.3163 – 325.1041	3d4p – 3d4d	$^3F^o - ^3F$	3 – 2		218
	110	1058.298	231.3929 – 325.8842	3d4p – 3d4d	$^3F^o - ^3F$	4 – 4		218
	285	1060.651	237.5295 – 331.8112	3d4p – 3d4d	$^1F^o - ^1G$	3 – 4		218
	1	1062.933	231.3929 – 325.4725	3d4p – 3d4d	$^3F^o - ^3F$	4 – 3		218
	20	1073.367	226.1198 – 319.2840	3d4p – 3d4d	$^1D^o - ^1P$	2 – 1		218
	5	1089.079	237.5295 – 329.3503	3d4p – 3d4d	$^1F^o - ^1D$	3 – 2		218
	40	1103.390	228.4891 – 319.1191	3d4p – 3d4d	$^3D^o - ^3G$	2 – 3		218
	160	1104.296	226.1198 – 316.6749	3d4p – 3d4d	$^1D^o - ^1F$	2 – 3		218
	20	1106.250	229.1208 – 319.5168	3d4p – 3d4d	$^3D^o - ^3G$	3 – 4		218
	5	1108.322	228.0018 – 318.2276	3d4p – 3d4d	$^3D^o - ^3D$	1 – 2		218
	5	1109.731	228.4891 – 318.6017	3d4p – 3d4d	$^3D^o - ^3D$	2 – 3		218
	220	1112.452	228.0018 – 317.8938	3d4p – 3d4d	$^3D^o - ^3D$	1 – 1		218
	285	1114.350	228.4891 – 318.2276	3d4p – 3d4d	$^3D^o - ^3D$	2 – 2		218
	450	1116.478	229.5517 – 319.1191	3d4p – 3d4d	$^3F^o - ^3G$	2 – 3		218
	360	1117.559	229.1208 – 318.6017	3d4p – 3d4d	$^3D^o - ^3D$	3 – 3		218
	220	1118.157	239.9175 – 329.3503	3d4p – 3d4d	$^1P^o - ^1D$	1 – 2		218
	5	1118.518	228.4891 – 317.8938	3d4p – 3d4d	$^3D^o - ^3D$	2 – 1		218
	650	1121.066	230.3163 – 319.5168	3d4p – 3d4d	$^3F^o - ^3G$	3 – 4		218
	5	1122.255	229.1208 – 318.2276	3d4p – 3d4d	$^3D^o - ^3D$	3 – 2		218
	20	1126.090	230.3163 – 319.1191	3d4p – 3d4d	$^3F^o - ^3G$	3 – 3		218
	650	1127.631	231.3929 – 320.0744	3d4p – 3d4d	$^3F^o - ^3G$	4 – 5		218
	40	1134.768	231.3929 – 319.5168	3d4p – 3d4d	$^3F^o - ^3G$	4 – 4		218
	160	1137.529	234.6184 – 322.5281	3d4p – 3d4d	$^3P^o - ^3S$	1 – 1		218
	20	1138.177	234.6685 – 322.5281	3d4p – 3d4d	$^3P^o - ^3S$	0 – 1		218
	160	1140.489	234.8464 – 322.5281	3d4p – 3d4d	$^3P^o - ^3S$	2 – 1		218
	40	1146.668	231.3929 – 318.6017	3d4p – 3d4d	$^3F^o - ^3D$	4 – 3		218
	450	1193.950	234.8464 – 318.6017	3d4p – 3d4d	$^3P^o - ^3D$	2 – 3		218
	360	1196.042	234.6184 – 318.2276	3d4p – 3d4d	$^3P^o - ^3D$	1 – 2		218
	70	1200.834	234.6184 – 317.8938	3d4p – 3d4d	$^3P^o - ^3D$	1 – 1		218
	110	1201.556	234.6685 – 317.8938	3d4p – 3d4d	$^3P^o - ^3D$	0 – 1		218
	70	1204.126	234.8464 – 317.8938	3d4p – 3d4d	$^3P^o - ^3D$	2 – 1		218
	220	1210.499	239.9175 – 322.5281	3d4p – 3d4d	$^1P^o - ^3S$	1 – 1		218
	220	1259.986	239.9175 – 319.2840	3d4p – 3d4d	$^1P^o - ^1P$	1 – 1		218
	450	1263.501	237.5295 – 316.6749	3d4p – 3d4d	$^1F^o - ^1F$	3 – 3		218
	650	1465.861	171.6981 – 239.9175	3d4s – 3d4p	$^1D - ^1P^o$	2 – 1		218
	5	1477.769	167.1764 – 234.8464	3d4s – 3d4p	$^3D - ^3P^o$	1 – 2		218
	220	1481.651	167.1764 – 234.6685	3d4s – 3d4p	$^3D - ^3P^o$	1 – 0		218
	220	1482.757	167.1764 – 234.6184	3d4s – 3d4p	$^3D - ^3P^o$	1 – 1		218
	220	1484.666	167.4910 – 234.8464	3d4s – 3d4p	$^3D - ^3P^o$	2 – 2		218
	450	1489.711	167.4910 – 234.6184	3d4s – 3d4p	$^3D - ^3P^o$	2 – 1		218
	650	1497.966	168.0895 – 234.8464	3d4s – 3d4p	$^3D - ^3P^o$	3 – 2		218
	750	1519.030	171.6981 – 237.5295	3d4s – 3d4p	$^1D - ^1F^o$	2 – 3		218
	1000	1579.696	168.0895 – 231.3929	3d4s – 3d4p	$^3D - ^3F^o$	3 – 4		218
	750	1591.721	167.4910 – 230.3163	3d4s – 3d4p	$^3D - ^3F^o$	2 – 3		218
	650	1603.191	167.1764 – 229.5517	3d4s – 3d4p	$^3D - ^3F^o$	1 – 2		218
	40	1607.035	168.0895 – 230.3163	3d4s – 3d4p	$^3D - ^3F^o$	3 – 3		218
	40	1611.330	167.4910 – 229.5517	3d4s – 3d4p	$^3D - ^3F^o$	2 – 2		218
	40	1622.607	167.4910 – 229.1208	3d4s – 3d4p	$^3D - ^3D^o$	2 – 3		218

CR V — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	110	1630.989	167.1764 – 228.4891	3d4s – 3d4p	$^3D - {}^3D^\circ$	1 – 2		218
	285	1638.495	168.0895 – 229.1208	3d4s – 3d4p	$^3D - {}^3D^\circ$	3 – 3		218
	220	1639.403	167.4910 – 228.4891	3d4s – 3d4p	$^3D - {}^3D^\circ$	2 – 2		218
	160	1644.053	167.1764 – 228.0018	3d4s – 3d4p	$^3D - {}^3D^\circ$	1 – 1		218
	70	1652.595	167.4910 – 228.0018	3d4s – 3d4p	$^3D - {}^3D^\circ$	2 – 1		218
	70	1655.639	168.0895 – 228.4891	3d4s – 3d4p	$^3D - {}^3D^\circ$	3 – 2		218
	70	1705.629	167.4910 – 226.1198	3d4s – 3d4p	$^3D - {}^1D^\circ$	2 – 2		218
	20	1705.968	171.6981 – 230.3163	3d4s – 3d4p	$^1D - {}^3F^\circ$	2 – 3		218
	110	1728.497	171.6981 – 229.5517	3d4s – 3d4p	$^1D - {}^3F^\circ$	2 – 2		218
	1000	1837.502	171.6981 – 226.1198	3d4s – 3d4p	$^1D - {}^1D^\circ$	2 – 2	P	218

CHROMIUM VI (Cr^{5+}), Z = 24
Ground State $1s^22s^22p^63s^23p^63d(^2D_{3/2})$ (19 electrons)
Ionization Potential 731 020 cm^{-1}; 90.636 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	1	144.76	0. – 690.781	$3p^63d - 3p^610f$	$g^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$	P	009
	1	144.961	.940 – 690.781	$3p^63d - 3p^610f$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		222
	1	146.776	0. – 681.307	$3p^63d - 3p^69f$	$g^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		222
	4	146.980	.940 – 681.307	$3p^63d - 3p^69f$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		222
	4	149.706	0. – 667.973	$3p^63d - 3p^68f$	$g^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		222
	12	149.918	.940 – 667.973	$3p^63d - 3p^68f$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		222
	30	154.197	0. – 648.521	$3p^63d - 3p^67f$	$g^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		222
	50	154.418	.940 – 648.533	$3p^63d - 3p^67f$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		222
	80	161.659	0. – 618.583	$3p^63d - 3p^66f$	$g^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		222
	80	161.687	.940 – 619.419	$3p^63d - 3p^53d(^3D^\circ)4s$	$g^2D - {}^2D^\circ$	$\frac{5}{2} - \frac{3}{2}$		222
	80	161.836	.940 – 618.849	$3p^63d - 3p^66f$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		222
	12	161.908	.940 – 618.583	$3p^63d - 3p^66f$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{5}{2}$		222
	1	161.930	.940 – 618.491	$3p^63d - 3p^53d(^3D^\circ)4s$	$g^2D - {}^2D^\circ$	$\frac{5}{2} - \frac{5}{2}$		222
	110	162.565	.940 – 616.079	$3p^63d - 3p^53d(^1F^\circ)4s$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		222
	12	162.764	0. – 614.385	$3p^63d - 3p^53d(^1F^\circ)4s$	$g^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		222
	50	163.014	.940 – 614.385	$3p^63d - 3p^53d(^1F^\circ)4s$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{5}{2}$		222
	12	163.514	0. – 611.568	$3p^63d - 3p^53d(^1D^\circ)4s$	$g^2D - {}^2D^\circ$	$\frac{3}{2} - \frac{3}{2}$		222
	12	163.801	0. – 610.497	$3p^63d - 3p^53d(^1D^\circ)4s$	$g^2D - {}^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$		222
	4	164.159	0. – 609.166	$3p^63d - 3p^53d(^3D^\circ)4s$	$g^2D - {}^4D^\circ$	$\frac{3}{2} - \frac{3}{2}$		222
	1	164.301	0. – 608.631	$3p^63d - 3p^53d(^3D^\circ)4s$	$g^2D - {}^4D^\circ$	$\frac{3}{2} - \frac{5}{2}$		222
	12	164.564	.940 – 608.631	$3p^63d - 3p^53d(^3D^\circ)4s$	$g^2D - {}^4D^\circ$	$\frac{5}{2} - \frac{5}{2}$		222
	12	164.833	.940 – 607.615	$3p^63d - 3p^53d(^3D^\circ)4s$	$g^2D - {}^4D^\circ$	$\frac{5}{2} - \frac{7}{2}$		222
	11	168.088	0. – 594.926	$3p^63d - 3p^53d(^3F^\circ)4s$	$g^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		222
	4	168.355	.940 – 594.926	$3p^63d - 3p^53d(^3F^\circ)4s$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{5}{2}$		222
	150	169.435	.940 – 591.137	$3p^63d - 3p^53d(^3F^\circ)4s$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		222
	12	170.569	0. – 586.273	$3p^63d - 3p^53d(^3F^\circ)4s$	$g^2D - {}^4F^\circ$	$\frac{3}{2} - \frac{5}{2}$		222
	30	171.400	.940 – 584.371	$3p^63d - 3p^53d(^3F^\circ)4s$	$g^2D - {}^4F^\circ$	$\frac{5}{2} - \frac{7}{2}$		222
	4	172.204	0. – 580.697	$3p^63d - 3p^53d(^3P^\circ)4s$	$g^2D - {}^2P^\circ$	$\frac{3}{2} - \frac{3}{2}$		222
	80	172.487	.940 – 580.697	$3p^63d - 3p^53d(^3P^\circ)4s$	$g^2D - {}^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		222
	50	172.841	0. – 578.566	$3p^63d - 3p^53d(^3P^\circ)4s$	$g^2D - {}^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		222
	4	173.973	.940 – 575.742	$3p^63d - 3p^66p$	$g^2D - {}^2P^\circ$	$\frac{5}{2} - \frac{3}{2}$		222
	12	174.175	0. – 574.135	$3p^63d - 3p^66p$	$g^2D - {}^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		222
	150	175.756	0. – 568.9574	$3p^63d - 3p^65f$	$g^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		222
	200	176.037	.940 – 568.9930	$3p^63d - 3p^65f$	$g^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		222
	375	201.007	0. – 497.495	$3p^63d - 3p^5(^2P^\circ)(3d^2(^3F))$	$g^2D - {}^2D^\circ$	$\frac{3}{2} - \frac{3}{2}$		222
	250	201.224	0. – 496.958	$3p^63d - 3p^5(^2P^\circ)(3d^2(^3F))$	$g^2D - {}^2D^\circ$	$\frac{3}{2} - \frac{5}{2}$		222

CR VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	201.388	.940 – 497.495	$3p^63d - 3p^5(^2P^\circ)(3d^2(^3F))$	$g^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		222
	450	201.606	.940 – 496.958	$3p^63d - 3p^5(^2P^\circ)(3d^2(^3F))$	$g^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		222
	110	202.057	0. – 494.9112	$3p^63d - 3p^5(^2P^\circ)(3d^2(^3P))$	$g^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		222
	375	202.442	.940 – 494.9112	$3p^63d - 3p^5(^2P^\circ)(3d^2(^3P))$	$g^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		222
	300	202.739	0. – 493.2471	$3p^63d - 3p^5(^2P^\circ)(3d^2(^3P))$	$g^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		222
	110	204.682	0. – 488.5619	$3p^63d - 3p^65p$	$g^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		222
	450	205.084	.940 – 488.5619	$3p^63d - 3p^65p$	$g^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		222
	375	207.489	0. – 481.9560	$3p^63d - 3p^64f$	$g^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		222
	450	207.651	.940 – 482.5171	$3p^63d - 3p^64f$	$g^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		222
	110	207.892	.940 – 481.9560	$3p^63d - 3p^64f$	$g^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		222
	450	226.241	.940 – 442.9454	$3p^63d - 3p^5(^2P^\circ)(3d^2(^3F))$	$g^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		222
	375	227.202	0. – 440.1352	$3p^63d - 3p^5(^2P^\circ)(3d^2(^3F))$	$g^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		222
	80	227.689	.940 – 440.1352	$3p^63d - 3p^5(^2P^\circ)(3d^2(^3F))$	$g^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		222
	250	264.078	0. – 378.677	$3p^63d - 3p^5(^2P^\circ)(3d^2(^1D))$	$g^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		222
	12	264.732	.940 – 378.677	$3p^63d - 3p^5(^2P^\circ)(3d^2(^1D))$	$g^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		222
	300	269.776	.940 – 371.618	$3p^63d - 3p^5(^2P^\circ)(3d^2(^1D))$	$g^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		222
	80	279.154	.940 – 359.165	$3p^63d - 3p^5(^2P^\circ)(3d^2(^1G))$	$g^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		222
	50	280.143	0. – 356.962	$3p^63d - 3p^5(^2P^\circ)(3d^2(^1G))$	$g^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		222
	12	280.879	.940 – 356.962	$3p^63d - 3p^5(^2P^\circ)(3d^2(^1G))$	$g^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		222
	150	335.123	0. – 298.3967	$3p^63d - 3p^64p$	$g^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		222
	600	336.184	.940 – 298.3967	$3p^63d - 3p^64p$	$g^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		222
	450	337.185	0. – 296.5732	$3p^63d - 3p^64p$	$g^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		222
	1	383.575	227.8579 – 488.5619	$3p^64s - 3p^65p$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		222
	1	385.015	227.8579 – 487.5895	$3p^64s - 3p^65p$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		222
	0	420.499	296.5732 – 534.3817	$3p^64p - 3p^65d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		222
	0	423.559	298.3967 – 534.4897	$3p^64p - 3p^65d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		222
	1	562.572	442.9454 – 620.7005	$3p^5(^2P^\circ)(3d^2(^3F)) - 3p^66g$	$^2F^\circ - {}^2G$	$\frac{7}{2}-\frac{9}{2}$		222
	1	602.011	402.8886 – 568.9930	$3p^64d - 3p^65f$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		222
	30	607.239	296.5732 – 461.2530	$3p^64p - 3p^65s$	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		222
	50	614.028	298.3967 – 461.2530	$3p^64p - 3p^65s$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		222
	4	720.771	481.9560 – 620.6963	$3p^64f - 3p^66g$	$^2F^\circ - {}^2G$	$\frac{5}{2}-\frac{7}{2}$		222
	4	723.675	482.5171 – 620.7005	$3p^64f - 3p^66g$	$^2F^\circ - {}^2G$	$\frac{7}{2}-\frac{9}{2}$		222
	12	756.786	440.1352 – 572.2723	$3p^5(^2P^\circ)(3d^2(^3F)) - 3p^65g$	$^2F^\circ - {}^2G$	$\frac{5}{2}-\frac{7}{2}$		222
	30	773.223	442.9454 – 572.2744	$3p^5(^2P^\circ)(3d^2(^3F)) - 3p^65g$	$^2F^\circ - {}^2G$	$\frac{7}{2}-\frac{9}{2}$		222
	520	942.610	296.5732 – 402.6617	$3p^64p - 3p^64d$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		222
	600	957.009	298.3967 – 402.8886	$3p^64p - 3p^64d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		222
	300	959.093	298.3967 – 402.6617	$3p^64p - 3p^64d$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		222
	12	1086.681	402.8886 – 494.9112	$3p^64d - 3p^5(^2P^\circ)(3d^2(^3P))$	$^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		222
	12	1103.926	402.6617 – 493.2471	$3p^64d - 3p^5(^2P^\circ)(3d^2(^3P))$	$^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		222
	150	1107.225	481.9560 – 572.2723	$3p^64f - 3p^65g$	$^2F^\circ - {}^2G$	$\frac{5}{2}-\frac{7}{2}$		222
	200	1114.114	482.5171 – 572.2744	$3p^64f - 3p^65g$	$^2F^\circ - {}^2G$	$\frac{7}{2}-\frac{9}{2}$		222
	12	1164.146	402.6617 – 488.5619	$3p^64d - 3p^65p$	$^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		222
	110	1167.222	402.8886 – 488.5619	$3p^64d - 3p^65p$	$^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		222
	80	1177.469	402.6617 – 487.5895	$3p^64d - 3p^65p$	$^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		222
	200	1255.832	402.8886 – 482.5171	$3p^64d - 3p^64f$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		222
	150	1261.128	402.6617 – 481.9560	$3p^64d - 3p^64f$	$^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		222
	50	1264.746	402.8886 – 481.9560	$3p^64d - 3p^64f$	$^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{5}{2}$		222
	80	1281.439	572.2744 – 650.3108	$3p^65g - 3p^67h$	$^2G - {}^2H^\circ$	$\frac{9}{2}-\frac{11}{2}$		222
	50	1342.741	487.5895 – 562.0641	$3p^65p - 3p^66s$	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		222
	80	1360.504	488.5619 – 562.0641	$3p^65p - 3p^66s$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		222
	800	1417.659	227.8579 – 298.3967	$3p^64s - 3p^64p$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		222
	700	1455.282	227.8579 – 296.5732	$3p^64s - 3p^64p$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		222
	50	1907.462	481.9560 – 534.3817	$3p^64f - 3p^65d$	$^2F^\circ - {}^2D$	$\frac{5}{2}-\frac{3}{2}$		222
	80	1924.089	482.5171 – 534.4897	$3p^64f - 3p^65d$	$^2F^\circ - {}^2D$	$\frac{7}{2}-\frac{5}{2}$		222

CR VI — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	12	1932.783	568.9574 – 620.6963	$3p^65f - 3p^66g$	$^2F^\circ - ^2G$	$\frac{5}{2} - \frac{7}{2}$		222
	30	1933.955	568.9930 – 620.7005	$3p^65f - 3p^66g$	$^2F^\circ - ^2G$	$\frac{7}{2} - \frac{9}{2}$		222

CHROMIUM VII (Cr^{6+}), Z = 24
Ground State $1s^22s^22p^63s^23p^6(^1S_0)$ (18 electrons)
Ionization Potential 1 291 900 cm^{-1}; 160.18 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		71.744	0. – 1393.84	$3s^23p^6 - 3s3p^67p$	$g^1S - ^1P^\circ$	0 – 1	A	440
	1	74.875	0. – 1335.56	$3s^23p^6 - 3s3p^66p$	$g^1S - ^1P^\circ$	0 – 1	A	440
	4	81.491	0. – 1227.13	$3s^23p^6 - 3s3p^65p$	$g^1S - ^1P^\circ$	0 – 1	A	440
	1	81.980	0. – 1219.81	$3s^23p^6 - 3s3p^65p$	$g^1S - ^3P^\circ$	0 – 1	A	440
	1	92.128	0. – 1085.446	$3s^23p^6 - 3s^23p^5(^2P^\circ_{1/2})6s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		907
	5	92.969	0. – 1075.627	$3s^23p^6 - 3s^23p^5(^2P^\circ_{3/2})6s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		907
	5	95.917	0. – 1042.568	$3s^23p^6 - 3s^23p^5(^2P^\circ_{1/2})5d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		907
	20	96.760	0. – 1033.485	$3s^23p^6 - 3s^23p^5(^2P^\circ_{3/2})5d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		907
	20	100.593	0. – 994.105	$3s^23p^6 - 3s3p^64p$	$g^1S - ^1P^\circ$	0 – 1		907
	1	101.565	0. – 984.59	$3s^23p^6 - 3s3p^64p$	$g^1S - ^3P^\circ$	0 – 1	A	440
	40	104.127	0. – 960.366	$3s^23p^6 - 3s^23p^5(^2P^\circ_{1/2})5s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		907
	40	105.139	0. – 951.122	$3s^23p^6 - 3s^23p^5(^2P^\circ_{3/2})5s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		907
	285	114.235	0. – 875.3805	$3s^23p^6 - 3s^23p^5(^2P^\circ_{1/2})4d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		907
	285	115.407	0. – 866.5028	$3s^23p^6 - 3s^23p^5(^2P^\circ_{3/2})4d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		907
	5	116.654	0. – 857.2345	$3s^23p^6 - 3s^23p^5(^2P^\circ_{3/2})4d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		907
	650	146.497	0. – 682.6102	$3s^23p^6 - 3s^23p^5(^2P^\circ_{1/2})4s$	$g^1S - \frac{1}{2}[\frac{1}{2}]^\circ$	0 – 1		907
	450	148.714	0. – 672.4277	$3s^23p^6 - 3s^23p^5(^2P^\circ_{3/2})4s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		907
	20	166.488	341.1793 – 941.811	$3s^23p^53d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	0 – 1		907
	70	166.560	342.7735 – 943.1491	$3s^23p^53d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		907
	40	166.936	342.7735 – 941.811	$3s^23p^53d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 1		907
	220	167.020	346.1371 – 944.8667	$3s^23p^53d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		907
	110	167.496	346.1371 – 943.1491	$3s^23p^53d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		907
	40	168.523	363.0609 – 956.454	$3s^23p^53d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		907
	5	169.084	357.5437 – 948.9439	$3s^23p^53d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	4 – 4		907
	5	169.842	360.1719 – 948.9439	$3s^23p^53d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		907
	5	170.086	357.5437 – 945.4757	$3s^23p^53d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 4		907
	20	170.139	360.1719 – 947.9174	$3s^23p^53d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 3		907
	450	170.393	357.5437 – 944.4168	$3s^23p^53d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 5		907
	285	170.850	360.1719 – 945.4757	$3s^23p^53d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		907
	160	170.982	363.0609 – 947.9174	$3s^23p^53d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		907
	5	174.070	382.7374 – 957.2051	$3s^23p^53d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		907
	160	174.286	382.6823 – 956.454	$3s^23p^53d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^1D^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		907
	220	175.315	386.6166 – 957.0046	$3s^23p^53d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^3D^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		907
	70	175.812	385.8283 – 954.623	$3s^23p^53d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	1 – 2		907
	110	176.053	386.6166 – 954.623	$3s^23p^53d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 2		907
	5	176.295	389.2262 – 956.454	$3s^23p^53d - 3s^23p^5(^2P^\circ_{1/2})4f$	$^1F^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 3		907
	285	176.613	382.7374 – 948.9439	$3s^23p^53d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		907
	40	176.916	382.6823 – 947.9174	$3s^23p^53d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1D^\circ - \frac{3}{2}[\frac{7}{2}]$	2 – 3		907
	70	177.694	382.7374 – 945.4757	$3s^23p^53d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		907
	70	177.895	382.7374 – 944.8667	$3s^23p^53d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{5}{2}]$	3 – 3		907
	1	178.851	382.6823 – 941.811	$3s^23p^53d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1D^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 1		907
	5	179.682	386.6166 – 943.1491	$3s^23p^53d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		907

CR VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	40	179.776	389.2262 – 945.4757	$3s^23p^53d - 3s^23p^5(^2P^\circ_{3/2})4f$	$^1F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		907
	870	202.828	0. – 493.0354	$3s^23p^6 - 3s^23p^53d$	$g^1S - {}^1P^\circ$	0 – 1		907
	20	241.393	342.7735 – 757.0358	$3s^23p^53d - 3s^23p^54p$	$^3P^\circ - {}^3P$	1 – 0		907
	5	242.461	346.1371 – 758.5721	$3s^23p^53d - 3s^23p^54p$	$^3P^\circ - {}^3P$	2 – 1		907
	70	242.579	346.1371 – 758.3744	$3s^23p^53d - 3s^23p^54p$	$^3P^\circ - {}^1D$	2 – 2		907
	20	242.953	342.7735 – 754.3789	$3s^23p^53d - 3s^23p^54p$	$^3P^\circ - {}^1P$	1 – 1		907
	5	244.565	342.7735 – 751.6493	$3s^23p^53d - 3s^23p^54p$	$^3P^\circ - {}^3P$	1 – 2		907
	20	245.431	341.1793 – 748.6293	$3s^23p^53d - 3s^23p^54p$	$^3P^\circ - {}^3D$	0 – 1		907
	70	246.599	346.1371 – 751.6493	$3s^23p^53d - 3s^23p^54p$	$^3P^\circ - {}^3P$	2 – 2		907
	40	250.311	346.1371 – 745.6311	$3s^23p^53d - 3s^23p^54p$	$^3P^\circ - {}^3D$	2 – 3		907
	20	251.124	360.1719 – 758.3744	$3s^23p^53d - 3s^23p^54p$	$^3F^\circ - {}^1D$	3 – 2		907
	1	252.837	363.0609 – 758.5721	$3s^23p^53d - 3s^23p^54p$	$^3F^\circ - {}^3P$	2 – 1		907
	20	254.177	341.1793 – 734.6053	$3s^23p^53d - 3s^23p^54p$	$^3P^\circ - {}^3S$	0 – 1		907
	70	255.210	342.7735 – 734.6053	$3s^23p^53d - 3s^23p^54p$	$^3P^\circ - {}^3S$	1 – 1		907
	1	255.447	360.1719 – 751.6493	$3s^23p^53d - 3s^23p^54p$	$^3F^\circ - {}^3P$	3 – 2		907
	40	255.545	363.0609 – 754.3789	$3s^23p^53d - 3s^23p^54p$	$^3F^\circ - {}^1P$	2 – 1		907
	70	257.422	346.1371 – 734.6053	$3s^23p^53d - 3s^23p^54p$	$^3P^\circ - {}^3S$	2 – 1		907
	450	257.676	357.5437 – 745.6311	$3s^23p^53d - 3s^23p^54p$	$^3F^\circ - {}^3D$	4 – 3		907
	285	259.181	0. – 385.8283	$3s^23p^6 - 3s^23p^53d$	$g^1S - {}^3D^\circ$	0 – 1		907
	110	259.360	363.0609 – 748.6293	$3s^23p^53d - 3s^23p^54p$	$^3F^\circ - {}^3D$	2 – 1		907
	40	259.432	360.1719 – 745.6311	$3s^23p^53d - 3s^23p^54p$	$^3F^\circ - {}^3D$	3 – 3		907
	360	259.636	360.1719 – 745.3289	$3s^23p^53d - 3s^23p^54p$	$^3F^\circ - {}^3D$	3 – 2		907
	20	261.598	363.0609 – 745.3289	$3s^23p^53d - 3s^23p^54p$	$^3F^\circ - {}^3D$	2 – 2		907
	1	266.172	382.6823 – 758.3744	$3s^23p^53d - 3s^23p^54p$	$^1D^\circ - {}^1D$	2 – 2		907
	70	268.852	386.6166 – 758.5721	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^3P$	2 – 1		907
	70	269.038	382.6823 – 754.3789	$3s^23p^53d - 3s^23p^54p$	$^1D^\circ - {}^1P$	2 – 1		907
	20	269.397	385.8283 – 757.0358	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^3P$	1 – 0		907
	160	270.897	389.2262 – 758.3744	$3s^23p^53d - 3s^23p^54p$	$^1F^\circ - {}^1D$	3 – 2		907
	160	271.070	382.7374 – 751.6493	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^3P$	3 – 2		907
	5	273.269	382.6823 – 748.6293	$3s^23p^53d - 3s^23p^54p$	$^1D^\circ - {}^3D$	2 – 1		907
	1	273.952	386.6166 – 751.6493	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^3P$	2 – 2		907
	1	275.563	382.7374 – 745.6311	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^3D$	3 – 3		907
	5	275.635	385.8283 – 748.6293	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^3D$	1 – 1		907
	1	275.756	382.6823 – 745.3289	$3s^23p^53d - 3s^23p^54p$	$^1D^\circ - {}^3D$	2 – 2		907
	1	275.792	382.7374 – 745.3289	$3s^23p^53d - 3s^23p^54p$	$^3D^\circ - {}^3D$	3 – 2		907
	5	275.926	389.2262 – 751.6493	$3s^23p^53d - 3s^23p^54p$	$^1F^\circ - {}^3P$	3 – 2		907
	1	280.571	389.2262 – 745.6311	$3s^23p^53d - 3s^23p^54p$	$^1F^\circ - {}^3D$	3 – 3		907
	20	280.823	389.2262 – 745.3289	$3s^23p^53d - 3s^23p^54p$	$^1F^\circ - {}^3D$	3 – 2		907
	20	291.738	0. – 342.7735	$3s^23p^6 - 3s^23p^53d$	$g^1S - {}^3P^\circ$	0 – 1		907
	1	355.012	346.1371 – 627.8267	$3s^23p^53d - 3s3p^63d$	$^3P^\circ - {}^1D$	2 – 2		907
	220	375.425	342.7735 – 609.1427	$3s^23p^53d - 3s3p^63d$	$^3P^\circ - {}^3D$	1 – 2		907
	70	376.073	342.7735 – 608.6796	$3s^23p^53d - 3s3p^63d$	$^3P^\circ - {}^3D$	1 – 1		907
	5	377.687	363.0609 – 627.8267	$3s^23p^53d - 3s3p^63d$	$^3F^\circ - {}^1D$	2 – 2		907
	360	379.153	346.1371 – 609.8878	$3s^23p^53d - 3s3p^63d$	$^3P^\circ - {}^3D$	2 – 3		907
	110	380.219	346.1371 – 609.1427	$3s^23p^53d - 3s3p^63d$	$^3P^\circ - {}^3D$	2 – 2		907
	1	380.897	346.1371 – 608.6796	$3s^23p^53d - 3s3p^63d$	$^3P^\circ - {}^3D$	2 – 1		907
	450	396.288	357.5437 – 609.8878	$3s^23p^53d - 3s3p^63d$	$^3F^\circ - {}^3D$	4 – 3		907
	40	400.452	360.1719 – 609.8878	$3s^23p^53d - 3s3p^63d$	$^3F^\circ - {}^3D$	3 – 3		907
	360	401.658	360.1719 – 609.1427	$3s^23p^53d - 3s3p^63d$	$^3F^\circ - {}^3D$	3 – 2		907
	70	406.369	363.0609 – 609.1427	$3s^23p^53d - 3s3p^63d$	$^3F^\circ - {}^3D$	2 – 2		907
	285	407.138	363.0609 – 608.6796	$3s^23p^53d - 3s3p^63d$	$^3F^\circ - {}^3D$	2 – 1		907
	220	407.918	382.6823 – 627.8267	$3s^23p^53d - 3s3p^63d$	$^1D^\circ - {}^1D$	2 – 2		907
	160	408.019	382.7374 – 627.8267	$3s^23p^53d - 3s3p^63d$	$^3D^\circ - {}^1D$	3 – 2		907
	160	414.582	386.6166 – 627.8267	$3s^23p^53d - 3s3p^63d$	$^3D^\circ - {}^1D$	2 – 2		907

CR VII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	110	419.104	389.2262 – 627.8267	$3s^23p^53d - 3s3p^63d$	$^1F^\circ - {}^1D$	3 – 2		907
	1	440.121	382.6823 – 609.8878	$3s^23p^53d - 3s3p^63d$	$^1D^\circ - {}^3D$	2 – 3		907
	285	440.244	382.7374 – 609.8878	$3s^23p^53d - 3s3p^63d$	$^3D^\circ - {}^3D$	3 – 3		907
	70	441.584	382.6823 – 609.1427	$3s^23p^53d - 3s3p^63d$	$^1D^\circ - {}^3D$	2 – 2		907
	20	441.680	382.7374 – 609.1427	$3s^23p^53d - 3s3p^63d$	$^3D^\circ - {}^3D$	3 – 2		907
	40	447.792	385.8283 – 609.1427	$3s^23p^53d - 3s3p^63d$	$^3D^\circ - {}^3D$	1 – 2		907
	40	447.882	386.6166 – 609.8878	$3s^23p^53d - 3s3p^63d$	$^3D^\circ - {}^3D$	2 – 3		907
	110	448.729	385.8283 – 608.6796	$3s^23p^53d - 3s3p^63d$	$^3D^\circ - {}^3D$	1 – 1		907
	110	449.386	386.6166 – 609.1427	$3s^23p^53d - 3s3p^63d$	$^3D^\circ - {}^3D$	2 – 2		907
	20	450.314	386.6166 – 608.6796	$3s^23p^53d - 3s3p^63d$	$^3D^\circ - {}^3D$	2 – 1		907
	110	453.183	389.2262 – 609.8878	$3s^23p^53d - 3s3p^63d$	$^1F^\circ - {}^3D$	3 – 3		907
	20	741.889	493.0354 – 627.8267	$3s^23p^53d - 3s3p^63d$	$^1P^\circ - {}^1D$	1 – 2		907
	40	801.277	734.6053 – 859.4071	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3S - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 2		907
	20	815.474	734.6053 – 857.2345	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3S - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 1		907
	5	820.239	751.6493 – 873.5655	$3s^23p^54p - 3s^23p^5(^2P^\circ_{1/2})4d$	$^3P - \frac{1}{2}[\frac{3}{2}]^\circ$	2 – 2		907
	5	821.788	734.6053 – 856.2922	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3S - \frac{3}{2}[\frac{1}{2}]^\circ$	1 – 0		907
	20	836.644	745.6311 – 865.1558	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{5}{2}]^\circ$	3 – 3		907
	20	841.747	745.3289 – 864.1295	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 2		907
	5	844.989	757.0358 – 875.3805	$3s^23p^54p - 3s^23p^5(^2P^\circ_{1/2})4d$	$^3P - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		907
	40	848.517	754.3789 – 872.2316	$3s^23p^54p - 3s^23p^5(^2P^\circ_{1/2})4d$	$^1P - \frac{1}{2}[\frac{5}{2}]^\circ$	1 – 2		907
	160	863.043	745.3289 – 861.1984	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{7}{2}]^\circ$	2 – 3		907
	70	865.800	748.6293 – 864.1295	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{5}{2}]^\circ$	1 – 2		907
	20	869.615	758.5721 – 873.5655	$3s^23p^54p - 3s^23p^5(^2P^\circ_{1/2})4d$	$^3P - \frac{1}{2}[\frac{3}{2}]^\circ$	1 – 2		907
	220	870.980	745.6311 – 860.4443	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3D - \frac{3}{2}[\frac{7}{2}]^\circ$	3 – 4		907
	110	871.296	758.3744 – 873.1461	$3s^23p^54p - 3s^23p^5(^2P^\circ_{1/2})4d$	$^1D - \frac{1}{2}[\frac{5}{2}]^\circ$	2 – 3		907
	70	881.012	751.6493 – 865.1558	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3P - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 3		907
	20	926.520	758.5721 – 866.5028	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^3P - \frac{3}{2}[\frac{3}{2}]^\circ$	1 – 1		907
	1	936.492	758.3744 – 865.1558	$3s^23p^54p - 3s^23p^5(^2P^\circ_{3/2})4d$	$^1D - \frac{3}{2}[\frac{5}{2}]^\circ$	2 – 3		907
	5	1163.516	672.4277 – 758.3744	$3s^23p^5(^2P^\circ_{3/2})4s - 3s^23p^54p$	$\frac{3}{2}[\frac{3}{2}]^\circ - {}^1D$	1 – 2		907
	1	1163.947	857.2345 – 943.1491	$3s^23p^5(^2P^\circ_{3/2})4d - 3s^23p^5(^2P^\circ_{3/2})4f$	$\frac{3}{2}[\frac{1}{2}]^\circ - \frac{3}{2}[\frac{3}{2}]$	1 – 2		907
	5	1170.143	859.4071 – 944.8667	$3s^23p^5(^2P^\circ_{3/2})4d - 3s^23p^5(^2P^\circ_{3/2})4f$	$\frac{3}{2}[\frac{3}{2}]^\circ - \frac{3}{2}[\frac{5}{2}]$	2 – 3		907
	40	1181.920	672.4277 – 757.0358	$3s^23p^5(^2P^\circ_{3/2})4s - 3s^23p^54p$	$\frac{3}{2}[\frac{3}{2}]^\circ - {}^3P$	1 – 0		907
	5	1186.561	861.1984 – 945.4757	$3s^23p^5(^2P^\circ_{3/2})4d - 3s^23p^5(^2P^\circ_{3/2})4f$	$\frac{3}{2}[\frac{7}{2}]^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		907
	5	1189.640	873.1461 – 957.2051	$3s^23p^5(^2P^\circ_{1/2})4d - 3s^23p^5(^2P^\circ_{1/2})4f$	$\frac{1}{2}[\frac{5}{2}]^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		907
	20	1190.867	860.4443 – 944.4168	$3s^23p^5(^2P^\circ_{3/2})4d - 3s^23p^5(^2P^\circ_{3/2})4f$	$\frac{3}{2}[\frac{7}{2}]^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 5		907
	70	1193.492	865.1558 – 948.9439	$3s^23p^5(^2P^\circ_{3/2})4d - 3s^23p^5(^2P^\circ_{3/2})4f$	$\frac{3}{2}[\frac{5}{2}]^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		907
	20	1198.481	873.5655 – 957.0046	$3s^23p^5(^2P^\circ_{1/2})4d - 3s^23p^5(^2P^\circ_{1/2})4f$	$\frac{1}{2}[\frac{3}{2}]^\circ - \frac{1}{2}[\frac{5}{2}]$	2 – 3		907
	220	1207.866	668.8586 – 751.6493	$3s^23p^5(^2P^\circ_{3/2})4s - 3s^23p^54p$	$\frac{3}{2}[\frac{3}{2}]^\circ - {}^3P$	2 – 2		907
	360	1302.551	668.8586 – 745.6311	$3s^23p^5(^2P^\circ_{3/2})4s - 3s^23p^54p$	$\frac{3}{2}[\frac{3}{2}]^\circ - {}^3D$	2 – 3		907
	160	1307.696	668.8586 – 745.3289	$3s^23p^5(^2P^\circ_{3/2})4s - 3s^23p^54p$	$\frac{3}{2}[\frac{3}{2}]^\circ - {}^3D$	2 – 2		907
	220	1312.307	672.4277 – 748.6293	$3s^23p^5(^2P^\circ_{3/2})4s - 3s^23p^54p$	$\frac{3}{2}[\frac{3}{2}]^\circ - {}^3D$	1 – 1		907
	220	1319.885	682.6102 – 758.3744	$3s^23p^5(^2P^\circ_{1/2})4s - 3s^23p^54p$	$\frac{1}{2}[\frac{1}{2}]^\circ - {}^1D$	1 – 2		907
	110	1393.366	682.6102 – 754.3789	$3s^23p^5(^2P^\circ_{1/2})4s - 3s^23p^54p$	$\frac{1}{2}[\frac{1}{2}]^\circ - {}^1P$	1 – 1		907
	220	1426.644	678.5347 – 748.6293	$3s^23p^5(^2P^\circ_{1/2})4s - 3s^23p^54p$	$\frac{1}{2}[\frac{1}{2}]^\circ - {}^3D$	0 – 1		907
	40	1448.457	682.6102 – 751.6493	$3s^23p^5(^2P^\circ_{1/2})4s - 3s^23p^54p$	$\frac{1}{2}[\frac{1}{2}]^\circ - {}^3P$	1 – 2		907

CHROMIUM VIII (Cr^{7+}), Z = 24
Ground State $1s^22s^22p^63s^23p^5(^2P^\circ_{3/2})$ (17 electrons)
Ionization Potential [1 490 000] cm^{-1}; [184.7] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		102.45	0.0 - 976.08	$3s^23p^5 - 3s^23p^4(^1D)4d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		854
		103.03	0.0 - 970.59	$3s^23p^5 - 3s^23p^4(^1D)4d$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		854
		103.36	9.8919 - 977.38	$3s^23p^5 - 3s^23p^4(^1D)4d$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		854
		103.48	0.0 - 966.37	$3s^23p^5 - 3s^23p^4(^1P)4d$	$g^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		854
		103.92	9.8919 - 972.17	$3s^23p^5 - 3s^23p^4(^1D)4d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		854
		105.69	0.0 - 946.16	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		854
		106.68	9.8919 - 947.27	$3s^23p^5 - 3s^23p^4(^3P)4d$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		854
	200	124.184	0.0 - 805.26	$3s^23p^5 - 3s^23p^4(^1S)4s$	$g^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		182
	100	125.728	9.8919 - 805.26	$3s^23p^5 - 3s^23p^4(^1S)4s$	$g^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		182
	700	129.998	0.0 - 769.24	$3s^23p^5 - 3s^23p^4(^1D)4s$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		182
	600	131.638	9.8919 - 769.55	$3s^23p^5 - 3s^23p^4(^1D)4s$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		182
	200	132.321	0.0 - 755.74	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		182
	600	133.395	0.0 - 749.64	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		182
	300	134.076	9.8919 - 755.74	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		182
	400	134.942	0.0 - 741.06	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		182
	100	135.185	9.8919 - 749.64	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		182
	50	135.892	0.0 - 735.88	$3s^23p^5 - 3s^23p^4(^3P)4s$	$g^2P^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		182
		143.17	135.+D - 833.47+D	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4D - ^4F^\circ$	$\frac{7}{2} - \frac{9}{2}$		854
		146.37	146.335+S - 829.535+S	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - ^2G^\circ$	$\frac{7}{2} - \frac{9}{2}$		854
		146.63	142.359+S - 824.347+S	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - ^4G^\circ$	$\frac{5}{2} - \frac{7}{2}$		854
		147.20	145.+S - 824.347+S	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - ^4G^\circ$	$\frac{9}{2} - \frac{11}{2}$		854
		147.30	164.+L - 842.886+L	$3s^23p^4(^1D)3d - 3s^23p^4(^1D)4f$	$^2G - ^2H^\circ$	$\frac{9}{2} - \frac{11}{2}$		854
		147.49	146.335+S - 824.347+S	$3s^23p^4(^3P)3d - 3s^23p^4(^3P)4f$	$^4F - ^4G^\circ$	$\frac{7}{2} - \frac{9}{2}$		854
		201.54	0.0 - 496.17	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		260
	700	205.01	0.0 - 487.78	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		260,256
	400	205.65	9.8919 - 496.17	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		260,256
	300	207.07	0.0 - 482.91	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		260,256
	200	208.63	0.0 - 479.31	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		260,256
	200	211.42	9.8919 - 482.91	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		260,256
	200	213.03	9.8919 - 479.31	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		260,256
	400	216.67	0.0 - 461.54	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		260,256
	200	221.41	9.8919 - 461.54	$3s^23p^5 - 3s^23p^4(^1D)3d$	$g^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		260,256
	650	413.112	0.0 - 242.065	$3s^23p^5 - 3s3p^6$	$g^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		726
	450	430.713	9.8919 - 242.065	$3s^23p^5 - 3s3p^6$	$g^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		726

CHROMIUM IX (Cr^{8+}), Z = 24
Ground State $1s^22s^22p^63s^23p^4(^3P_2)$ (16 electrons)
Ionization Potential [1 688 000] cm^{-1}; [209.3] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		94.33	7.821 - 1067.9	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$g^3P - ^3D^\circ$	1 - 2		851
		96.17	30.284 - 1070.112	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$^1D - ^1F^\circ$	2 - 3		854
		96.48	30.284 - 1066.771	$3s^23p^4 - 3s^23p^3(^2D^\circ)4d$	$^1D - ^1D^\circ$	2 - 2		854
		96.55	66.855 - 1102.576	$3s^23p^4 - 3s^23p^34d$	$^1S - ^1P^\circ$	0 - 1		854
		97.19	0. - 1028.91	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - ^3D^\circ$	2 - 3		854
		97.97	7.821 - 1028.54	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g^3P - ^3D^\circ$	1 - 2		854

CR IX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		98.08	9.549 – 1029.14	$3s^23p^4 - 3s^23p^3(^4S^\circ)4d$	$g\,^3P - ^3D^\circ$	0 – 1		854
	200	117.435	30.284 – 881.72	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$^1D - ^1P^\circ$	2 – 1		181
	600	117.942	0. – 847.87	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g\,^3P - ^3D^\circ$	2 – 3		181
	200	118.165	0. – 846.26	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g\,^3P - ^3D^\circ$	2 – 2		181
	400	119.269	7.821 – 846.26	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g\,^3P - ^3D^\circ$	1 – 2		181
	200	119.320	7.821 – 845.90	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g\,^3P - ^3D^\circ$	1 – 1		181
	100	119.569	9.549 – 845.90	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$g\,^3P - ^3D^\circ$	0 – 1		181
	600	121.293	30.284 – 854.73	$3s^23p^4 - 3s^23p^3(^2D^\circ)4s$	$^1D - ^1D^\circ$	2 – 2		181
	400	121.781	0. – 821.07	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g\,^3P - ^3S^\circ$	2 – 1		181
	200	122.720	66.855 – 881.72	$3s^23p^4 - 3s^23p^3(^2P^\circ)4s$	$^1S - ^1P^\circ$	0 – 1		181
	200	122.964	7.821 – 821.07	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g\,^3P - ^3S^\circ$	1 – 1		181
	50	123.226	9.549 – 821.07	$3s^23p^4 - 3s^23p^3(^4S^\circ)4s$	$g\,^3P - ^3S^\circ$	0 – 1		181
		127.31	1028.645+S – 1814.129+S	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3F^\circ - ^3G$	2 – 3		854
		127.42	1029.323+S – 1814.129+S	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3F^\circ - ^3G$	3 – 4		854
		127.53	1030.+S – 1814.129+S	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3F^\circ - ^3G$	4 – 5		854
		127.88	879.572+D – 1661.555+D	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4f$	$^5D^\circ - ^5F$	3 – 4		854
		127.95	880.+D – 1661.555+D	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4f$	$^5D^\circ - ^5F$	4 – 5		854
		129.77	1030.+L – 1800.594+L	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^3G^\circ - ^3H$	5 – 6		854
		129.99	1170.+R – 1939.289+R	$3s^23p^3(^2P^\circ)3d - 3s^23p^3(^2P^\circ)4f$	$^3F^\circ - ^3G$	4 – 5		854
		131.08	500.00+K – 1262.89+K	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4f$	$^1G^\circ - ^1H$	4 – 5		851
		176.86	400.00+X – 965.42+X	$3s^23p^3(^4S^\circ)3d - 3s^23p^3(^4S^\circ)4p$	$^5D^\circ - ^5P$	4 – 3		851
		180.57	460.00+Y – 1013.80+Y	$3s^23p^3(^2D^\circ)3d - 3s^23p^3(^2D^\circ)4p$	$^3G^\circ - ^3F$	5 – 4		851
		208.53	0. – 479.57	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g\,^3P - ^3D^\circ$	2 – 2		239
	200	209.44	30.284 – 507.75	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - ^1F^\circ$	2 – 3		239,256
		210.62	0. – 474.79	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g\,^3P - ^3D^\circ$	2 – 3		239
		211.32	9.549 – 482.76	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g\,^3P - ^3D^\circ$	0 – 1		239
		211.97	7.821 – 479.57	$3s^23p^4 - 3s^23p^3(^4S^\circ)3d$	$g\,^3P - ^3D^\circ$	1 – 2		239
		215.04	66.855 – 531.88	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1S - ^1P^\circ$	0 – 1		239
		215.97	30.284 – 493.31	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$^1D - ^1D^\circ$	2 – 2		239
		220.02	0. – 454.51	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g\,^3P - ^3P^\circ$	2 – 2		239
		223.87	7.821 – 454.51	$3s^23p^4 - 3s^23p^3(^2D^\circ)3d$	$g\,^3P - ^3P^\circ$	1 – 2		239
	1	327.267	0. – 305.561	$3s^23p^4 - 3s3p^5$	$g\,^3P - ^1P^\circ$	2 – 1		726
	110	363.271	30.284 – 305.561	$3s^23p^4 - 3s3p^5$	$^1D - ^1P^\circ$	2 – 1		726
	110	407.637	0. – 245.317	$3s^23p^4 - 3s3p^5$	$g\,^3P - ^3P^\circ$	2 – 1		726
	110	414.602	7.821 – 249.016	$3s^23p^4 - 3s3p^5$	$g\,^3P - ^3P^\circ$	1 – 0		726
	160	418.290	0. – 239.068	$3s^23p^4 - 3s3p^5$	$g\,^3P - ^3P^\circ$	2 – 2		726
	70	418.925	66.855 – 305.561	$3s^23p^4 - 3s3p^5$	$^1S - ^1P^\circ$	0 – 1		726
	110	421.057	7.821 – 245.317	$3s^23p^4 - 3s3p^5$	$g\,^3P - ^3P^\circ$	1 – 1		726
	70	424.146	9.549 – 245.317	$3s^23p^4 - 3s3p^5$	$g\,^3P - ^3P^\circ$	0 – 1		726
	70	432.440	7.821 – 239.068	$3s^23p^4 - 3s3p^5$	$g\,^3P - ^3P^\circ$	1 – 2		726
		1496.	0. – 66.849	$3s^23p^4 - 3s^23p^4$	$g\,^3P - ^1S$	2 – 0	F,P	375,726
	185	1694.11	7.821 – 66.849	$3s^23p^4 - 3s^23p^4$	$g\,^3P - ^1S$	1 – 0	F	726

CHROMIUM X (Cr^{9+}), Z = 24
Ground State $1s^22s^22p^63s^23p^3(^4S^\circ_{3/2})$ (15 electrons)
Ionization Potential [1 971 000] cm^{-1}; [244.4] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		106.49	0. – 939.055	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		854
		107.14	0. – 933.358	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		854
		107.45	37.106 – 967.84	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		854
		107.70	0. – 928.505	$3s^23p^3 - 3s^23p^2(^3P)4s$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		854
		107.80	39.454 – 966.93	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		854
		109.84	39.454 – 949.78	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		854
		110.37	37.106 – 943.30	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		854
		111.02	67.163 – 967.84	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		854
		111.16	67.163 – 966.93	$3s^23p^3 - 3s^23p^2(^1D)4s$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		854
		113.31	67.163 – 949.78	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		854
		113.70	63.936 – 943.30	$3s^23p^3 - 3s^23p^2(^3P)4s$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		854
		115.29	750.+D – 1617.377+D	$3s^23p^2(^3P)3d - 3s^23p^2(^3P)4f$	$^4F - ^4G^\circ$	$\frac{9}{2}-\frac{11}{2}$		854
		116.75	950.+S – 1806.531+S	$3s^23p^2(^1D)3d - 3s^23p^2(^1D)4f$	$^2G - ^2H^\circ$	$\frac{7}{2}-\frac{9}{2}$		854
		117.09	950.+S – 1804.043+S	$3s^23p^2(^1D)3d - 3s^23p^2(^1D)4f$	$^2G - ^2H^\circ$	$\frac{9}{2}-\frac{11}{2}$		854
		216.72	39.454 – 500.88	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2F$	$\frac{5}{2}-\frac{7}{2}$		239
		218.88	63.936 – 520.82	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		239
		220.42	67.163 – 520.82	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		239
		221.18	67.163 – 519.28	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		239
		223.86	0. – 446.71	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		239
		224.74	0. – 444.96	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		239
		226.24	0. – 442.01	$3s^23p^3 - 3s^23p^2(^3P)3d$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		239
		227.42	37.106 – 476.82	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		239
		228.71	39.454 – 476.68	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		239
		231.21	63.936 – 496.43	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		239
		232.96	67.163 – 496.43	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		239
		233.80	63.936 – 491.65	$3s^23p^3 - 3s^23p^2(^1D)3d$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		239
		247.67	37.106 – 440.87	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		239
		252.64	37.106 – 432.92	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$	P	239
		254.15	39.454 – 432.92	$3s^23p^3 - 3s^23p^2(^3P)3d$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		239
	70	333.035	37.106 – 337.373	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{1}{2}$		726
	5	337.490	37.106 – 333.414	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		726
	220	340.181	39.454 – 333.414	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2P$	$\frac{5}{2}-\frac{3}{2}$		726
	1	351.092	63.936 – 348.763	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2S$	$\frac{1}{2}-\frac{1}{2}$		726
	40	355.112	67.163 – 348.763	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2S$	$\frac{3}{2}-\frac{1}{2}$		726
	20	365.718	63.936 – 337.373	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{1}{2}$		726
	1	371.086	63.936 – 333.414	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2P$	$\frac{1}{2}-\frac{3}{2}$		726
	1	375.584	67.163 – 333.414	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2P$	$\frac{3}{2}-\frac{3}{2}$		726
	360	395.984	37.106 – 289.639	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2D$	$\frac{3}{2}-\frac{3}{2}$		726
	450	398.150	39.454 – 290.614	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{5}{2}$		726
	40	399.707	39.454 – 289.639	$3s^23p^3 - 3s3p^4$	$^2D^\circ - ^2D$	$\frac{5}{2}-\frac{3}{2}$		726
	70	411.655	0. – 242.922	$3s^23p^3 - 3s3p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{1}{2}$		726
	110	416.690	0. – 239.987	$3s^23p^3 - 3s3p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{3}{2}$		726
	220	427.551	0. – 233.890	$3s^23p^3 - 3s3p^4$	$g^4S^\circ - ^4P$	$\frac{3}{2}-\frac{5}{2}$		726
	1	443.062	63.936 – 289.639	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2D$	$\frac{1}{2}-\frac{3}{2}$		726
	20	447.529	67.163 – 290.614	$3s^23p^3 - 3s3p^4$	$^2P^\circ - ^2D$	$\frac{3}{2}-\frac{5}{2}$		726
	0	1489.04	0. – 67.1574	$3s^23p^3 - 3s^23p^3$	$g^4S^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	F	940
		1564.10	0. – 63.9345	$3s^23p^3 - 3s^23p^3$	$g^4S^\circ - ^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	F	940

CHROMIUM XI (Cr^{10+}), Z = 24
Ground State $1s^22s^22p^63s^23p^2(^3P_0)$ (14 electrons)
Ionization Potential [2 184 000] cm^{-1}; [270.8] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		81.02	0. – 1234.3	$3s^23p^2 - 3s^23p4d$	$g^3P - ^3D°$	0 – 1		970
		81.18	11.980 – 1243.8	$3s^23p^2 - 3s^23p4d$	$g^3P - ^3F°$	2 – 3		970
		81.23	5.536 – 1236.6	$3s^23p^2 - 3s^23p4d$	$g^3P - ^3D°$	1 – 2		970
		81.39	5.536 – 1234.3	$3s^23p^2 - 3s^23p4d$	$g^3P - ^3D°$	1 – 1		970
		81.55	11.980 – 1238.2	$3s^23p^2 - 3s^23p4d$	$g^3P - ^3D°$	2 – 3		970
		82.05	36.994 – 1255.8	$3s^23p^2 - 3s^23p4d$	$^1D - ^1F°$	2 – 3		970
		83.31	74.9863 – 1275.3	$3s^23p^2 - 3s^23p4d$	$^1S - ^1P°$	0 – 1		970
		98.47	5.536 – 1021.058	$3s^23p^2 - 3s^23p4s$	$g^3P - ^3P°$	1 – 2		854
		98.94	0. – 1010.713	$3s^23p^2 - 3s^23p4s$	$g^3P - ^3P°$	0 – 1		854
		99.10	11.980 – 1021.058	$3s^23p^2 - 3s^23p4s$	$g^3P - ^3P°$	2 – 2		854
		99.13	306.570 – 1315.4	$3s3p^3 - 3s^23p4f$	$^1D° - ^1F$	2 – 3		970
		99.48	5.536 – 1010.713	$3s^23p^2 - 3s^23p4s$	$g^3P - ^3P°$	1 – 1		854
		99.67	5.536 – 1008.796	$3s^23p^2 - 3s^23p4s$	$g^3P - ^3P°$	1 – 0		854
		100.09	306.570 – 1305.7	$3s3p^3 - 3s^23p4f$	$^1D° - ^3G$	2 – 3		970
		100.13	11.980 – 1010.713	$3s^23p^2 - 3s^23p4s$	$g^3P - ^3P°$	2 – 1		854
		100.90	36.994 – 1028.067	$3s^23p^2 - 3s^23p4s$	$^1D - ^1P°$	2 – 1		854
		105.26	384.0+D – 1334.03+D	$3s^23p3d - 3s^23p4f$	$^3F° - ^3G$	4 – 5		970
		105.65	378.5+D – 1325.02+D	$3s^23p3d - 3s^23p4f$	$^3F° - ^3G$	3 – 4		970
		115.13	478.59 – 1347.2	$3s^23p3d - 3s^23p4f$	$^1F° - ^1G$	3 – 4		970
		117.13	490.35 – 1344.1	$3s^23p3d - 3s^23p4f$	$^1P° - ^1D$	1 – 2		970
		226.45	36.994 – 478.59	$3s^23p^2 - 3s^23p3d$	$^1D - ^1F°$	2 – 3		239
		230.29	0. – 434.24	$3s^23p^2 - 3s^23p3d$	$g^3P - ^3D°$	0 – 1		239
		232.18	5.536 – 436.21	$3s^23p^2 - 3s^23p3d$	$g^3P - ^3D°$	1 – 2		239
		233.26	5.536 – 434.24	$3s^23p^2 - 3s^23p3d$	$g^3P - ^3D°$	1 – 1		239
		235.03	0. – 425.48	$3s^23p^2 - 3s^23p3d$	$g^3P - ^3P°$	0 – 1		239
		235.53	11.980 – 436.55	$3s^23p^2 - 3s^23p3d$	$g^3P - ^3D°$	2 – 3		239
		235.74	11.980 – 436.21	$3s^23p^2 - 3s^23p3d$	$g^3P - ^3D°$	2 – 2		239
		237.24	5.536 – 427.09	$3s^23p^2 - 3s^23p3d$	$g^3P - ^1D°$	1 – 2		239
		240.76	74.9863 – 490.35	$3s^23p^2 - 3s^23p3d$	$^1S - ^1P°$	0 – 1		239
		241.87	5.536 – 418.98	$3s^23p^2 - 3s^23p3d$	$g^3P - ^3P°$	1 – 2		239
		245.70	11.980 – 418.98	$3s^23p^2 - 3s^23p3d$	$g^3P - ^3P°$	2 – 2		239
		256.32	36.994 – 427.09	$3s^23p^2 - 3s^23p3d$	$^1D - ^1D°$	2 – 2		239
	1	280.572	0. – 356.424	$3s^23p^2 - 3s3p^3$	$g^3P - ^3S°$	0 – 1		726
	20	284.988	5.536 – 356.424	$3s^23p^2 - 3s3p^3$	$g^3P - ^3S°$	1 – 1		726
	40	290.323	11.980 – 356.424	$3s^23p^2 - 3s3p^3$	$g^3P - ^3S°$	2 – 1		726
	40	298.059	36.994 – 372.498	$3s^23p^2 - 3s3p^3$	$^1D - ^1P°$	2 – 1		726
		336.121	74.9863 – 372.498	$3s^23p^2 - 3s3p^3$	$^1S - ^1P°$	0 – 1		726
	5	339.446	11.980 – 306.570	$3s^23p^2 - 3s3p^3$	$g^3P - ^1D°$	2 – 2		726
		359.203	0. – 278.394	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P°$	0 – 1		726
	40	366.085	5.536 – 278.698	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P°$	1 – 2		726
	5	366.491	5.536 – 278.394	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P°$	1 – 1		726
	5	366.942	5.536 – 278.059	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P°$	1 – 0		726
	40	370.959	36.994 – 306.570	$3s^23p^2 - 3s3p^3$	$^1D - ^1D°$	2 – 2		726
	70	374.927	11.980 – 278.698	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P°$	2 – 2		726
		375.362	11.980 – 278.394	$3s^23p^2 - 3s3p^3$	$g^3P - ^3P°$	2 – 1		726
	5	412.629	0. – 242.346	$3s^23p^2 - 3s3p^3$	$g^3P - ^3D°$	0 – 1		726
	20	422.083	5.536 – 242.456	$3s^23p^2 - 3s3p^3$	$g^3P - ^3D°$	1 – 2		726
	5	422.282	5.536 – 242.346	$3s^23p^2 - 3s3p^3$	$g^3P - ^3D°$	1 – 1		726
	20	431.154	11.980 – 243.916	$3s^23p^2 - 3s3p^3$	$g^3P - ^3D°$	2 – 3		726
	0	1439.85	5.536 – 74.9863	$3s^23p^2 - 3s^23p^2$	$g^3P - ^1S$	1 – 0	F	726,442
		1587.1	11.980 – 74.9863	$3s^23p^2 - 3s^23p^2$	$g^3P - ^1S$	2 – 0	F,P	375,726

CHROMIUM XII (Cr^{11+}), Z = 24
Ground State $1s^22s^22p^63s^23p(^2P^\circ_{1/2})$ (13 electrons)
Ionization Potential [2 404 000] cm^{-1}; [298.0] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	75.815	0. – 1319.00	$3s^23p - 3s^24d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		180
	300	76.488	12.261 – 1319.65	$3s^23p - 3s^24d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		180
		90.86	200.00+W – 1300.6+W	$3s3p^2 - 3s3p4s$	${}^4P - {}^4P^\circ$	$\frac{5}{2} - \frac{5}{2}$		241
		96.11	1200.0+X – 2240.5+X	$3s3p3d - 3s3p4f$	${}^4F^\circ - {}^4G$	$\frac{9}{2} - \frac{11}{2}$		241
		96.35	1170.0+Z – 2207.9+Z	$3s3p3d - 3s3p4f$	${}^4F^\circ - {}^4G$	$\frac{5}{2} - \frac{7}{2}$		241
		96.50	1180.0+Y – 2216.3+Y	$3s3p3d - 3s3p4f$	${}^4F^\circ - {}^4G$	$\frac{7}{2} - \frac{9}{2}$		241
		101.39	408.66 – 1394.95	$3s^23d - 3s^24f$	${}^2D - {}^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		241
		101.46	409.84 – 1395.45	$3s^23d - 3s^24f$	${}^2D - {}^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		241
		244.70	0. – 408.66	$3s^23p - 3s^23d$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		239
		251.52	12.261 – 409.84	$3s^23p - 3s^23d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		239
		252.27	12.261 – 408.66	$3s^23p - 3s^23d$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$	P	267
		294.77	0. – 339.25	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{3}{2}$		239
		300.08	0. – 333.24	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2} - \frac{1}{2}$	P	251
		305.81	12.261 – 339.25	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{3}{2}$		239
		311.55	12.261 – 333.24	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2} - \frac{1}{2}$		239
		318.89	0. – 313.58	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$	P	239
		320.20	188.84+W – 501.15+W	$3s3p^2 - 3p^3$	${}^4P - {}^4S^\circ$	$\frac{1}{2} - \frac{3}{2}$		239
		325.13	193.58+W – 501.15+W	$3s3p^2 - 3p^3$	${}^4P - {}^4S^\circ$	$\frac{3}{2} - \frac{3}{2}$		239
		331.87	12.261 – 313.58	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$	P	239
		332.06	200.00+W – 501.15+W	$3s3p^2 - 3p^3$	${}^4P - {}^4S^\circ$	$\frac{5}{2} - \frac{3}{2}$		239
		393.00	0. – 254.45	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$		239
		410.91	12.261 – 255.62	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$		239
		412.90	12.261 – 254.45	$3s^23p - 3s3p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$	P	239

CHROMIUM XIII (Cr^{12+}), Z = 24
Ground State $1s^22s^22p^63s^2(^1S_0)$ (12 electrons)
Ionization Potential [2 862 000] cm^{-1}; [354.8] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		40.92	0.0 – 2443.80	$3s^2 - 3s7p$	$g^1S - {}^1P^\circ$	0 – 1		851
		43.75	0.0 – 2285.70	$3s^2 - 3s6p$	$g^1S - {}^1P^\circ$	0 – 1		851
		47.26	203.45 – 2319.45	$3s3p - 3s6d$	${}^3P^\circ - {}^3D$	0 – 1		851
		47.34	207.38 – 2319.78	$3s3p - 3s6d$	${}^3P^\circ - {}^3D$	1 – 2		851
		47.55	216.57 – 2319.57	$3s3p - 3s6d$	${}^3P^\circ - {}^3D$	2 – 3		851
		49.03	216.57 – 2256.17	$3s3p - 3s6s$	${}^3P^\circ - {}^3S$	2 – 1		851
		49.59	0.0 – 2016.50	$3s^2 - 3s5p$	$g^1S - {}^1P^\circ$	0 – 1		851
		53.02	590.08 – 2476.18	$3s3d - 3s7f$	${}^3D - {}^3F^\circ$	3 – 4		851
		53.39	203.45 – 2076.45	$3s3p - 3s5d$	${}^3P^\circ - {}^3D$	0 – 1		851
	50	53.506	207.38 – 2076.33	$3s3p - 3s5d$	${}^3P^\circ - {}^3D$	1 – 2		180
	100	53.765	216.57 – 2076.52	$3s3p - 3s5d$	${}^3P^\circ - {}^3D$	2 – 3		180
		56.37	304.61 – 2078.61	$3s3p - 3s5d$	${}^1P^\circ - {}^1D$	1 – 2		851
		56.96	207.38 – 1963.00	$3s3p - 3s5s$	${}^3P^\circ - {}^3S$	1 – 1		851
		57.24	590.08 – 2337.08	$3s3d - 3s6f$	${}^3D - {}^3F^\circ$	3 – 4		851
		65.04	216.57 – 1754.07	$3s3p - 3p4p$	${}^3P^\circ - {}^3S$	2 – 1		851
		65.13	216.57 – 1751.97	$3s3p - 3p4p$	${}^3P^\circ - {}^3P$	2 – 2		851
		65.39	216.57 – 1745.87	$3s3p - 3p4p$	${}^3P^\circ - {}^3D$	2 – 3		851
	50	65.968	590.08 – 2105.97	$3s3d - 3s5f$	${}^3D - {}^3F^\circ$	3 – 4		180

Cr XIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	66.983	0.0 – 1492.92	$3s^2$ – 3s4p	g^1S – $^1P°$	0 – 1		180
	100	70.792	203.45 – 1616.04	3s3p – 3s4d	$^3P°$ – ^3D	0 – 1		180
	300	70.973	207.38 – 1616.37	3s3p – 3s4d	$^3P°$ – ^3D	1 – 2		180
	300	71.398	216.57 – 1617.17	3s3p – 3s4d	$^3P°$ – ^3D	2 – 3		180
	50	71.435	216.57 – 1616.37	3s3p – 3s4d	$^3P°$ – ^3D	2 – 2		180
		71.86	499.21 – 1890.81	$3p^2$ – 3p4d	^3P – $^3P°$	2 – 2		851
		72.13	483.15 – 1869.55	$3p^2$ – 3p4d	^1D – $^1F°$	2 – 3		851
		72.27	482.14 – 1865.84	$3p^2$ – 3p4d	^3P – $^3D°$	0 – 1		851
		72.57	488.22 – 1866.22	$3p^2$ – 3p4d	^3P – $^3D°$	1 – 2		851
		72.88	499.21 – 1871.31	$3p^2$ – 3p4d	^3P – $^3D°$	2 – 3		851
		73.31	483.15 – 1847.25	$3p^2$ – 3p4d	^1D – $^3F°$	2 – 3		851
		76.17	304.61 – 1617.46	3s3p – 3s4d	$^1P°$ – ^1D	1 – 2		854
		82.79	483.15 – 1690.71	$3p^2$ – 3s4f	^1D – $^1F°$	2 – 3		854
	50	84.616	203.45 – 1385.26	3s3p – 3s4s	$^3P°$ – ^3S	0 – 1		180
	200	84.898	207.38 – 1385.26	3s3p – 3s4s	$^3P°$ – ^3S	1 – 1		180
	300	85.566	216.57 – 1385.26	3s3p – 3s4s	$^3P°$ – ^3S	2 – 1		180
		86.78	499.21 – 1651.51	$3p^2$ – 3p4s	^3P – $^3P°$	2 – 2		851
		89.99	818.89 – 1930.09	3p3d – 3p4f	$^3F°$ – ^3G	4 – 5		241
		90.02	805.20 – 1916.06	3p3d – 3p4f	$^3F°$ – ^3G	2 – 3		241
		90.17	811.53 – 1920.53	3p3d – 3p4f	$^3F°$ – ^3G	3 – 4		241
		90.85	824.54+K – 1925.24+K	3p3d – 3p4f	$^1D°$ – ^3F	2 – 3		241
		91.30	304.61 – 1399.91	3s3p – 3s4s	$^1P°$ – ^1S	1 – 0		851
	200	91.749	588.56 – 1678.49	3s3d – 3s4f	^3D – $^3F°$	1 – 2		180
	300	91.792	589.19 – 1678.61	3s3d – 3s4f	^3D – $^3F°$	2 – 3		180
	400	91.855	590.08 – 1678.75	3s3d – 3s4f	^3D – $^3F°$	3 – 4		180
		92.01	852.11+R – 1938.91+R	3p3d – 3p4f	$^3P°$ – ^3D	0 – 1		241
		92.16	853.81+R – 1938.91+R	3p3d – 3p4f	$^3P°$ – ^3D	1 – 1		241
		92.37	857.34+R – 1939.94+R	3p3d – 3p4f	$^3D°$ – ^3D	2 – 2		241
		92.61	860.99 – 1940.79	3p3d – 3p4f	$^3D°$ – ^3D	3 – 3		241
		93.42	860.99 – 1931.42	3p3d – 3p4f	$^3D°$ – ^3F	3 – 4		241
		96.86	820.00+L – 1852.40+L	3p3d – 3p4f	$^1F°$ – ^1G	3 – 4		241
		97.25	662.24 – 1690.71	3s3d – 3s4f	^1D – $^1F°$	2 – 3		854
		248.66	483.15 – 885.30	$3p^2$ – 3p3d	^1D – $^1P°$	2 – 1	P	375
		259.68	203.45 – 588.56	3s3p – 3s3d	$^3P°$ – ^3D	0 – 1		854
		261.91	207.38 – 589.19	3s3p – 3s3d	$^3P°$ – ^3D	1 – 2		854
		262.33	207.38 – 588.56	3s3p – 3s3d	$^3P°$ – ^3D	1 – 1		854
		267.73	216.57 – 590.08	3s3p – 3s3d	$^3P°$ – ^3D	2 – 3		854
		276.41	499.21 – 860.99	$3p^2$ – 3p3d	^3P – $^3D°$	2 – 3	P	251
		279.32	499.21 – 857.21	$3p^2$ – 3p3d	^3P – $^3P°$	2 – 2		854
		279.62	304.61 – 662.24	3s3p – 3s3d	$^1P°$ – ^1D	1 – 2	P	854
		316.60	569.44 – 885.30	$3p^2$ – 3p3d	^1S – $^1P°$	0 – 1	P	251
	150	328.29	0.0 – 304.61	$3s^2$ – 3s3p	g^1S – $^1P°$	0 – 1		270,437
		342.69	207.38 – 499.21	3s3p – $3p^2$	$^3P°$ – ^3P	1 – 2		270
		351.16	203.45 – 488.22	3s3p – $3p^2$	$^3P°$ – ^3P	0 – 1	P	270
		353.81	216.57 – 499.21	3s3p – $3p^2$	$^3P°$ – ^3P	2 – 2		270
		356.07	207.38 – 488.22	3s3p – $3p^2$	$^3P°$ – ^3P	1 – 1	P	270
		363.96	207.38 – 482.14	3s3p – $3p^2$	$^3P°$ – ^3P	1 – 0		270
		368.12	216.57 – 488.22	3s3p – $3p^2$	$^3P°$ – ^3P	2 – 1	P	270
		369.13	590.08 – 860.99	3s3d – 3p3d	^3D – $^3D°$	3 – 3		251
		377.60	304.61 – 569.44	3s3p – $3p^2$	$^1P°$ – ^1S	1 – 0		242
		437.05	590.08 – 818.89	3s3d – 3p3d	^3D – $^3F°$	3 – 4		251
		448.31	662.24 – 885.30	3s3d – 3p3d	^1D – $^1P°$	2 – 1	P	375
		449.76	589.19 – 811.53	3s3d – 3p3d	^3D – $^3F°$	2 – 3		242
		461.60	588.56 – 805.20	3s3d – 3p3d	^3D – $^3F°$	1 – 2		251

CR XIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		482.2	0.0 – 207.38	$3s^2 - 3s3p$	$g^1S - {}^3P^\circ$	0 – 1		1131
		560.11	304.61 – 483.15	$3s3p - 3p^2$	${}^1P^\circ - {}^1D$	1 – 2	P	854

CHROMIUM XIV (Cr^{13+}), Z = 24
Ground State $1s^22s^22p^63s(^2S_{1/2})$ (11 electrons)
Ionization Potential 3 098 500 cm^{-1}; 384.17 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		21.467	0. – 4658.3	$2p^63s - 2p^53s^2$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		265
		21.770	0. – 4593.5	$2p^63s - 2p^53s^2$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		265
	0	35.450	0. – 2820.87	$2p^63s - 2p^69p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		118
	2	36.466	0. – 2742.280	$2p^63s - 2p^68p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		118
	8	38.036	0. – 2629.088	$2p^63s - 2p^67p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		118
	0	38.679	242.724 – 2828.106	$2p^63p - 2p^69d$	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		118
	0	38.899	256.535 – 2827.295	$2p^63p - 2p^69d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		118
	1	39.796	242.724 – 2755.539	$2p^63p - 2p^68d$	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		118
	2	40.018	256.535 – 2755.410	$2p^63p - 2p^68d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		118
	7	40.782	0. – 2452.062	$2p^63s - 2p^66p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		118
	10	40.800	0. – 2450.980	$2p^63s - 2p^66p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		118
	2	41.556	242.724 – 2649.115	$2p^63p - 2p^67d$	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		118
	2	41.788	256.535 – 2649.566	$2p^63p - 2p^67d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		118
		42.453	256.535 – 2612.081	$2p^63p - 2p^67s$	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		118
	3	44.597	242.724 – 2485.027	$2p^63p - 2p^66d$	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		118
	4	44.869	256.535 – 2485.245	$2p^63p - 2p^66d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		118
	15	45.835	242.724 – 2424.510	$2p^63p - 2p^66s$	${}^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		118
	1	46.039	589.568 – 2761.639	$2p^63d - 2p^68f$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		118
	5	46.125	256.535 – 2424.510	$2p^63p - 2p^66s$	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		118
	55	46.468	0. – 2152.018	$2p^63s - 2p^65p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		118
	12	46.527	0. – 2149.289	$2p^63s - 2p^65p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		118
	2	48.300	587.867 – 2658.260	$2p^63d - 2p^67f$	${}^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		118
	3	48.338	589.568 – 2658.333	$2p^63d - 2p^67f$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		118
	3	50.821	242.724 – 2210.414	$2p^63p - 2p^65d$	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		118
	4	51.172	256.535 – 2210.728	$2p^63p - 2p^65d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		118
	2	52.321	587.867 – 2499.145	$2p^63d - 2p^66f$	${}^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		118
	3	52.363	589.568 – 2499.313	$2p^63d - 2p^66f$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		118
	25	53.760	242.724 – 2102.811	$2p^63p - 2p^65s$	${}^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		118
	20	54.164	256.535 – 2102.811	$2p^63p - 2p^65s$	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		118
	8	60.699	587.867 – 2235.25	$2p^63d - 2p^65f$	${}^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		118
	10	60.756	589.568 – 2235.28	$2p^63d - 2p^65f$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		118
	70	63.324	0. – 1579.180	$2p^63s - 2p^64p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		118
	60	63.539	0. – 1573.836	$2p^63s - 2p^64p$	$g^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		118
	4	64.005	589.568 – 2152.018	$2p^63d - 2p^65p$	${}^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		118
	10	68.594	242.724 – 1700.577	$2p^63p - 2p^64d$	${}^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		118
	20	69.213	256.535 – 1701.350	$2p^63p - 2p^64d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		118
	10	69.247	256.535 – 1700.577	$2p^63p - 2p^64d$	${}^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		118
	25	80.916	242.724 – 1478.517	$2p^63p - 2p^64s$	${}^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		118
	30	81.838	256.535 – 1478.517	$2p^63p - 2p^64s$	${}^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		118
	27	86.057	587.867 – 1749.887	$2p^63d - 2p^64f$	${}^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$		118
	28	86.164	589.568 – 1750.145	$2p^63d - 2p^64f$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		118
	10	101.05	589.568 – 1579.180	$2p^63d - 2p^64p$	${}^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		118

CR XIV — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	12	101.42	587.867 – 1573.836	$2p^63d - 2p^64p$	$^2D - ^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$		118
	10	187.02	1700.577 – 2235.25	$2p^64d - 2p^65f$	$^2D - ^2F^\circ$	$\frac{3}{2} - \frac{5}{2}$		1091
	10	187.30	1701.350 – 2235.28	$2p^64d - 2p^65f$	$^2D - ^2F^\circ$	$\frac{5}{2} - \frac{7}{2}$		1091
	30	204.91	1749.887 – 2237.91	$2p^64f - 2p^65g$	$^2F^\circ - ^2G$	$\frac{5}{2} - \frac{7}{2}$		1091
	30	205.01	1750.145 – 2237.92	$2p^64f - 2p^65g$	$^2F^\circ - ^2G$	$\frac{7}{2} - \frac{9}{2}$		1091
	50	289.735	242.724 – 587.867	$2p^63p - 2p^63d$	$^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		118,437
		300.271	256.535 – 589.568	$2p^63p - 2p^63d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		118
		301.814	256.535 – 587.867	$2p^63p - 2p^63d$	$^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		118
	250	389.81	0. – 256.535	$2p^63s - 2p^63p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		270,437
	200	411.99	0. – 242.724	$2p^63s - 2p^63p$	$g^2S - ^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$		270,437

CHROMIUM XV (Cr^{14+}), Z = 24
Ground State $1s^22s^22p^6(^1S_0)$ (10 electrons)
Ionization Potential 8 151 000 cm^{-1}; 1010.6 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	13.294	0.0 – 7522.2	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})6d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		716
	10	13.416	0.0 – 7453.8	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})6d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		716
	20	13.862	0.0 – 7214.0	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})5d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		716
	20	13.991	0.0 – 7147.4	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})5d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		716
	10	15.509	0.0 – 6447.9	$2s^22p^6 - 2s^22p^5(^2P^\circ)4s$	$g^1S - ^1P^\circ$	0 – 1		716
	20	15.788	0.0 – 6333.9	$2s^22p^6 - 2s^22p^5(^2P^\circ)4s$	$g^1S - ^3P^\circ$	0 – 1		716
	100	16.889	0.0 – 5921.0	$2s^22p^6 - 2s2p^6(^2S)3p$	$g^1S - ^1P^\circ$	0 – 1		716
	50	16.971	0.0 – 5894.5	$2s^22p^6 - 2s2p^6(^2S)3p$	$g^1S - ^3P^\circ$	0 – 1		716
	400	18.497	0.0 – 5406.3	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})3d$	$g^1S - \frac{1}{2}[\frac{3}{2}]^\circ$	0 – 1		766
	200	18.782	0.0 – 5324.2	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3d$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 1		766
	50	19.015	0.0 – 5259.0	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3d$	$g^1S - \frac{3}{2}[\frac{1}{2}]^\circ$	0 – 1		766
	400	20.863	0.0 – 4793.2	$2s^22p^6 - 2s^22p^5(^2P^\circ_{1/2})3s$	$g^1S - (\frac{1}{2},\frac{1}{2})^\circ$	0 – 1		766
	300	21.153	0.0 – 4727.5	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3s$	$g^1S - (\frac{3}{2},\frac{1}{2})^\circ$	0 – 1		766
		21.213	0.0 – 4714.1	$2s^22p^6 - 2s^22p^5(^2P^\circ_{3/2})3s$	$g^1S - \frac{3}{2}[\frac{3}{2}]^\circ$	0 – 2	F	1112
		52.88	5269.0+C – 7160.1+F	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})5f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]^\circ$	4 – 5	P	1055
		58.02	4714.1 – 6437.6	$2s^22p^5(^2P^\circ_{3/2})3s - 2s^22p^5(^2P^\circ)4p$	$\frac{3}{2}[\frac{3}{2}]^\circ - ^3D$	2 – 3		1055
		58.20	4793.2 – 6511.4	$2s^22p^5(^2P^\circ_{1/2})3s - 2s^22p^5(^2P^\circ)4p$	$(\frac{1}{2},\frac{1}{2})^\circ - ^3P$	1 – 1		1055
		62.375	4963.0+C – 6566.2+C	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ)4d$	$^1P - ^1D^\circ$	1 – 2		395
		62.481	4946.1+C – 6546.6+C	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ)4d$	$^3D - ^3D^\circ$	2 – 3		395
		62.837	4954.1+C – 6545.5+C	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ)4d$	$^3D - ^3F^\circ$	3 – 4		395
		62.951	5040.9+C – 6629.4+C	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ)4d$	$^3P - ^3F^\circ$	1 – 2		395
		63.055	5042.9+C – 6628.8+C	$2s^22p^5(^2P^\circ_{3/2})3p - 2s^22p^5(^2P^\circ)4d$	$^1D - ^1F^\circ$	2 – 3		395
		63.31	4974.6+C – 6554.1+C	$2s^22p^5(^2P^\circ_{1/2})3p - 2s^22p^5(^2P^\circ)4d$	$^3P - ^3F^\circ$	2 – 3	P	395
		74.70	5255.0+C – 6593.7+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3P^\circ - \frac{3}{2}[\frac{3}{2}]$	2 – 2		1055
		74.97	5269.0+C – 6602.9+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	4 – 5		1055
		75.25	5312.1+C – 6641.0+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^3F^\circ - \frac{1}{2}[\frac{7}{2}]$	2 – 3		1055
		75.29	5274.3+C – 6602.5+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3F^\circ - \frac{3}{2}[\frac{9}{2}]$	3 – 4		1055
		75.44	5360.5+C – 6686.1+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^1F^\circ - \frac{1}{2}[\frac{5}{2}]$	3 – 3		1055
		75.73	5360.5+C – 6681.0+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{1/2})4f$	$^1F^\circ - \frac{1}{2}[\frac{7}{2}]$	3 – 4		1055
		76.14	5292.4+C – 6605.8+C	$2s^22p^5(^2P^\circ)3d - 2s^22p^5(^2P^\circ_{3/2})4f$	$^3D^\circ - \frac{3}{2}[\frac{7}{2}]$	3 – 4		1055

CHROMIUM XVI (Cr^{15+}), Z = 24
Ground State $1s^22s^22p^5(^2P^\circ_{3/2})$ (9 electrons)
Ionization Potential [8 850 000] cm^{-1}; [1097] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	3	13.528	0.0 – 7392.1	$2s^22p^5 - 2s^22p^4(^1D)4d$	$g^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		1089
	10	13.556	0.0 – 7376.8	$2s^22p^5 - 2s^22p^4(^1S)4d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		716
	10	13.953	0.0 – 7166.9	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		716
	10	14.039	0.0 – 7123.0	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$	Q	716
		14.29	0.0 – 6997.9	$2s^22p^5 - 2s^22p^4(^3P)4d$	$g^2P^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$	P	716
		14.47	0.0 – 6910.8	$2s^22p^5 - 2s^22p^4(^1S)4s$	$g^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		716
	30	17.073	0.0 – 5857.2	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		850
	50	17.242	70.890 – 5870.7	$2s^22p^5 - 2s^22p^4(^1S)3d$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		850
	80	17.370	0.0 – 5757.1	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		850
	60	17.438	0.0 – 5734.6	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		850
	30	17.514	70.890 – 5780.6	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		850
	20	17.589	70.890 – 5756.2	$2s^22p^5 - 2s^22p^4(^1D)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		850
	50	17.603	0.0 – 5680.8	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		850
	20	17.633	0.0 – 5671.2	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		850
	40	17.671	0.0 – 5659.0	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2F$	$\frac{3}{2} - \frac{5}{2}$		850
	20	17.704	0.0 – 5648.5	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{3}{2}$		850
	30	17.730	0.0 – 5640.2	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		850
	50	17.785	0.0 – 5622.7	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4F$	$\frac{3}{2} - \frac{5}{2}$		850
	20	17.793	0.0 – 5620.3	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4P$	$\frac{3}{2} - \frac{3}{2}$		850
	20	17.833	0.0 – 5607.7	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4P$	$\frac{3}{2} - \frac{1}{2}$		850
	20	17.856	70.890 – 5671.2	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{3}{2}$		850
	20	17.931	70.890 – 5648.5	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		850
	30	17.993	70.890 – 5628.6	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		850
	20	18.017	70.890 – 5620.3	$2s^22p^5 - 2s^22p^4(^3P)3d$	$g^2P^\circ - ^4P$	$\frac{1}{2} - \frac{3}{2}$		850
	300	18.775	0.0 – 5325.3	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$		850
	80	19.038	70.890 – 5325.3	$2s^22p^5 - 2s^22p^4(^1S)3s$	$g^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$		850
	150	19.255	0.0 – 5193.5	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - ^2D$	$\frac{3}{2} - \frac{5}{2}$		850
	60	19.442	0.0 – 5143.5	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{1}{2}$		850
	100	19.511	70.890 – 5196.2	$2s^22p^5 - 2s^22p^4(^1D)3s$	$g^2P^\circ - ^2D$	$\frac{1}{2} - \frac{3}{2}$		850
	100	19.538	0.0 – 5118.2	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^2P$	$\frac{3}{2} - \frac{3}{2}$		850
	200	19.714	70.890 – 5143.5	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^2P$	$\frac{1}{2} - \frac{1}{2}$		850
	100	19.807	0.0 – 5048.7	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^4P$	$\frac{3}{2} - \frac{5}{2}$		850
	10	19.847	70.890 – 5109.4	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^4P$	$\frac{1}{2} - \frac{1}{2}$		850
	60	19.951	937.829 – 5950.3	$2s2p^6 - 2s2p^5(^3P^\circ)3s$	$^2S - ^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$		850
	20	19.995	70.890 – 5072.4	$2s^22p^5 - 2s^22p^4(^3P)3s$	$g^2P^\circ - ^4P$	$\frac{1}{2} - \frac{3}{2}$		850
	300	106.629	0.0 – 937.829	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - ^2S$	$\frac{3}{2} - \frac{1}{2}$	P	1104,1091
	250	115.348	70.890 – 937.829	$2s^22p^5 - 2s2p^6$	$g^2P^\circ - ^2S$	$\frac{1}{2} - \frac{1}{2}$	P	1104,1091
		1410.6	0.0 – 70.890	$2s^22p^5 - 2s^22p^5$	$g^2P^\circ - g^2P^\circ$	$\frac{3}{2} - \frac{1}{2}$	F,P	1137

CHROMIUM XVII (Cr^{16+}), Z = 24
Ground State $1s^22s^22p^4(^3P_2)$ (8 electrons)
Ionization Potential [9 560 000] cm^{-1}; [1185] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	30	16.221	0.0 – 6164.8	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		877
	30	16.249	60.378 – 6214.6	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		877
	30	16.31	58.146 – 6189.4	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$g^3P - ^3D^\circ$	0 – 1		877
	90	16.455	0.0 – 6075.3	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3D^\circ$	2 – 3		716
	10	16.64	60.378 – 6070.0	$2s^22p^4 - 2s^22p^3(^2D^\circ)3d$	$g^3P - ^3D^\circ$	1 – 2		877
	40	16.675	263.00 – 6260.3	$2s^22p^4 - 2s^22p^3(^2P^\circ)3d$	$^1S - ^1P^\circ$	0 – 1	P	947

CR XVII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	16.696	135.10 - 6124.6	$2s^22p^4 - 2s^22p^3(^2D^o)3d$	$^1D - ^1F^o$	2 - 3		877
		16.773	135.10 - 6096.0	$2s^22p^4 - 2s^22p^3(^2D^o)3d$	$^1D - ^1D^o$	2 - 2	P	877
	10	16.811	0.0 - 5948.5	$2s^22p^4 - 2s^22p^3(^4S^o)3d$	$g^3P - ^3D^o$	2 - 3		877
	150	17.957	0.0 - 5568.9	$2s^22p^4 - 2s^22p^3(^2D^o)3s$	$g^3P - ^3D^o$	2 - 3		865
	50	17.968	135.10 - 5701.0	$2s^22p^4 - 2s^22p^3(^2P^o)3s$	$^1D - ^1P^o$	2 - 1		865
	150	18.020	0.0 - 5549.3	$2s^22p^4 - 2s^22p^3(^2D^o)3s$	$g^3P - ^3D^o$	2 - 2		865
	50	18.219	60.378 - 5549.3	$2s^22p^4 - 2s^22p^3(^2D^o)3s$	$g^3P - ^3D^o$	1 - 2		865
	200	18.336	0.0 - 5453.9	$2s^22p^4 - 2s^22p^3(^4S^o)3s$	$g^3P - ^3S^o$	2 - 1		865
	50	18.389	263.00 - 5701.0	$2s^22p^4 - 2s^22p^3(^2P^o)3s$	$^1S - ^1P^o$	0 - 1		865
		18.52	0.0 - 5399.4+K	$2s^22p^4 - 2s^22p^3(^4S^o)3s$	$g^3P - ^5S^o$	2 - 2	P	680
	150	18.531	60.378 - 5453.9	$2s^22p^4 - 2s^22p^3(^4S^o)3s$	$g^3P - ^3S^o$	1 - 1		865
		18.73	60.378 - 5399.4+K	$2s^22p^4 - 2s^22p^3(^4S^o)3s$	$g^3P - ^5S^o$	1 - 2	P	680
	150	89.57	0.0 - 1116.42	$2s^22p^4 - 2s2p^5$	$g^3P - ^1P^o$	2 - 1		1091
	10	94.49	58.146 - 1116.42	$2s^22p^4 - 2s2p^5$	$g^3P - ^1P^o$	0 - 1		1091
	4	94.69	60.378 - 1116.42	$2s^22p^4 - 2s2p^5$	$g^3P - ^1P^o$	1 - 1		1091
	30	97.20	858.15 - 1886.95	$2s2p^5 - 2p^6$	$^3P^o - ^1S$	1 - 0		1091
	250	101.91	135.10 - 1116.42	$2s^22p^4 - 2s2p^5$	$^1D - ^1P^o$	2 - 1		1091
	250	116.53	0.0 - 858.15	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^o$	2 - 1		1091
	110	117.20	263.00 - 1116.42	$2s^22p^4 - 2s2p^5$	$^1S - ^1P^o$	0 - 1		1091
	200	120.84	60.378 - 887.92	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^o$	1 - 0		1091
	375	122.91	0.0 - 813.60	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^o$	2 - 2		1091
	150	125.00	58.146 - 858.15	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^o$	0 - 1		1091
	200	125.35	60.378 - 858.15	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^o$	1 - 1		1091
	200	129.78	1116.42 - 1886.95	$2s2p^5 - 2p^6$	$^1P^o - ^1S$	1 - 0		1091
	250	132.76	60.378 - 813.60	$2s^22p^4 - 2s2p^5$	$g^3P - ^3P^o$	1 - 2		1091
	10	147.40	135.10 - 813.60	$2s^22p^4 - 2s2p^5$	$^1D - ^3P^o$	2 - 2		1091
		380.2	0.0 - 263.00	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1S$	2 - 0	F,P	375,1091
		493.8	60.378 - 263.00	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1S$	1 - 0	F	1120
		740.8	0.0 - 135.10	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1D$	2 - 2	F	1120
		781.9	135.10 - 263.00	$2s^22p^4 - 2s^22p^4$	$^1D - ^1S$	2 - 0	F,P	375,1091
		1299.	58.146 - 135.10	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1D$	0 - 2	F,P	375,1091
		1338.	60.378 - 135.10	$2s^22p^4 - 2s^22p^4$	$g^3P - ^1D$	1 - 2	F,P	375,1091
		1656.3	0.0 - 60.378	$2s^22p^4 - 2s^22p^4$	$g^3P - g^3P$	2 - 1	F	1120
		1720.	0.0 - 58.146	$2s^22p^4 - 2s^22p^4$	$g^3P - g^3P$	2 - 0	F,P	375,1091

CHROMIUM XVIII (Cr^{17+}), Z = 24
Ground State $1s^22s^22p^3(^4S^o_{3/2})$ (7 electrons)
Ionization Potential [10 480 000] cm^{-1}; [1299] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		15.501	126.040 - 6577.2+F	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^o - ^2F$	$\frac{3}{2} - \frac{5}{2}$	P	877
		15.512	0.0 - 6446.6+F	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^o - ^4P$	$\frac{3}{2} - \frac{3}{2}$	P	877
	10	15.52	0.0 - 6443.3	$2s^22p^3 - 2s^22p^2(^3P)3d$	$g^4S^o - ^4P$	$\frac{3}{2} - \frac{5}{2}$		877
		15.550	150.776 - 6581.7+F	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^o - ^2P$	$\frac{5}{2} - \frac{3}{2}$	P	877
	20	15.587	150.776 - 6564.7	$2s^22p^3 - 2s^22p^2(^1D)3d$	$^2D^o - ^2F$	$\frac{5}{2} - \frac{7}{2}$	Q	716,877
		15.835	150.776 - 6466.0+F	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2D^o - ^2F$	$\frac{5}{2} - \frac{7}{2}$	P	877
		16.292	264.482 - 6402.5+F	$2s^22p^3 - 2s^22p^2(^3P)3d$	$^2P^o - ^2P$	$\frac{3}{2} - \frac{3}{2}$	P	877
	50	90.63	0.0 - 1103.35	$2s^22p^3 - 2s2p^4$	$g^4S^o - ^2P$	$\frac{3}{2} - \frac{3}{2}$		1091
	10	93.36	667.56 - 1738.69	$2s2p^4 - 2p^5$	$^4P - ^2P^o$	$\frac{5}{2} - \frac{3}{2}$		1091
	4	94.16	0.0 - 1062.04	$2s^22p^3 - 2s2p^4$	$g^4S^o - ^2S$	$\frac{3}{2} - \frac{1}{2}$		1091
	150	95.77	126.040 - 1170.20	$2s^22p^3 - 2s2p^4$	$^2D^o - ^2P$	$\frac{3}{2} - \frac{1}{2}$		1091
	150	102.32	126.040 - 1103.35	$2s^22p^3 - 2s2p^4$	$^2D^o - ^2P$	$\frac{3}{2} - \frac{3}{2}$		1091

CR XVIII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	300	104.98	150.776 – 1103.35	$2s^22p^3 - 2s2p^4$	$^2D^\circ - {}^2P$	$\frac{5}{2}-\frac{3}{2}$		1091
	10	105.92	226.068 – 1170.20	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		1091
	150	106.84	126.040 – 1062.04	$2s^22p^3 - 2s2p^4$	$^2D^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		1091
	10	108.37	0.0 – 922.77	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		1091
	375	110.41	264.482 – 1170.20	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		1091
	110	112.27	922.77 – 1813.47	$2s2p^4 - 2p^5$	$^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		1091
	300	113.99	226.068 – 1103.35	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		1091
	110	119.21	264.482 – 1103.35	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		1091
	200	119.62	226.068 – 1062.04	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		1091
	80	122.56	922.77 – 1738.69	$2s2p^4 - 2p^5$	$^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		1091
	250	123.87	931.41 – 1738.69	$2s2p^4 - 2p^5$	$^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		1091
	200	125.38	264.482 – 1062.04	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		1091
	300	125.51	126.040 – 922.77	$2s^22p^3 - 2s2p^4$	$^2D^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		1091
	375	128.10	150.776 – 931.41	$2s^22p^3 - 2s2p^4$	$^2D^\circ - {}^2D$	$\frac{5}{2}-\frac{5}{2}$		1091
	150	136.52	0.0 – 732.49	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$		1091
	375	139.87	0.0 – 714.95	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		1091
	110	140.82	1103.35 – 1813.47	$2s2p^4 - 2p^5$	$^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		1091
	50	143.53	226.068 – 922.77	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		1091
	30	147.79	1062.04 – 1738.69	$2s2p^4 - 2p^5$	$^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		1091
	300	149.80	0.0 – 667.56	$2s^22p^3 - 2s2p^4$	$g^4S^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		1091
	200	149.94	264.482 – 931.41	$2s^22p^3 - 2s2p^4$	$^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		1091
	80	155.46	1170.20 – 1813.47	$2s2p^4 - 2p^5$	$^2P - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		1091
	200	157.40	1103.35 – 1738.69	$2s2p^4 - 2p^5$	$^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		1091
		378.10	0.0 – 264.482	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,1091
		442.34	0.0 – 226.068	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	F,P	375,1091
		663.24	0.0 – 150.776	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$	F,P	375,1091
		722.32	126.040 – 264.482	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$	F,P	375,1091
		793.3	0.0 – 126.040	$2s^22p^3 - 2s^22p^3$	$g^4S^\circ - {}^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$	F	1120
		879.46	150.776 – 264.482	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$	F,P	375,1091
		999.72	126.040 – 226.068	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$	F,P	375,1091
		1328.	150.776 – 226.068	$2s^22p^3 - 2s^22p^3$	$^2D^\circ - {}^2P^\circ$	$\frac{5}{2}-\frac{1}{2}$	F,P	375,1091

CHROMIUM XIX (Cr^{18+}), Z = 24
Ground State $1s^22s^22p^2(^3P_0)$ (6 electrons)
Ionization Potential [11 260 000] cm^{-1}; [1396] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		14.802	47.806 – 6803.5+B	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3D^\circ$	1 – 2	P	949
		14.809	82.453 – 6835.0+B	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3P^\circ$	2 – 2	P	949
	10	14.836	82.453 – 6822.5+B	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3D^\circ$	2 – 3	P	949,716
	0	14.925	184.596 – 6885.7+B	$2s^22p^2 - 2s^22p3d$	$^1D - {}^1P^\circ$	2 – 1	Q	716,949
		15.027	82.453 – 6737.1+B	$2s^22p^2 - 2s^22p3d$	$g^3P - {}^3F^\circ$	2 – 3	P	949
		15.180	298.87 – 6885.7+B	$2s^22p^2 - 2s^22p3d$	$^1S - {}^1P^\circ$	0 – 1	P	949
		15.251	184.596 – 6742.2+B	$2s^22p^2 - 2s^22p3d$	$^1D - {}^1D^\circ$	2 – 2	P	949
		15.301	686.83 – 7222.3+F	$2s2p^3 - 2s2p^2(^4P)3d$	$^3D^\circ - {}^3F$	3 – 4	P	877
		15.91	82.453 – 6367.6	$2s^22p^2 - 2s^22p3s$	$g^3P - {}^3P^\circ$	2 – 2	P	375
	10	95.62	404.41 – 1450.23	$2s2p^3 - 2p^4$	$^5S^\circ - {}^3P$	2 – 2		1091
	30	95.88	47.806 – 1090.68	$2s^22p^2 - 2s2p^3$	$g^3P - {}^1P^\circ$	1 – 1		1091
	110	104.18	0.0 – 959.88	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3S^\circ$	0 – 1		1091

CR XIX — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	200	109.64	47.806 – 959.88	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3S°$	1 – 1		1091
	250	110.37	184.596 – 1090.68	$2s^22p^2 - 2s2p^3$	${}^1D - {}^1P°$	2 – 1		1091
	50	111.18	686.83 – 1586.24	$2s2p^3 - 2p^4$	${}^3D° - {}^1D$	3 – 2		1091
	80	111.88	82.453 – 976.22	$2s^22p^2 - 2s2p^3$	$g^3P - {}^1D°$	2 – 2		1091
	300	113.97	82.453 – 959.88	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3S°$	2 – 1		1091
	110	118.31	672.77 – 1517.98	$2s2p^3 - 2p^4$	${}^3D° - {}^3P$	1 – 0		1091
	150	118.67	671.63 – 1514.32	$2s2p^3 - 2p^4$	${}^3D° - {}^3P$	2 – 1		1091
	110	118.83	672.77 – 1514.32	$2s2p^3 - 2p^4$	${}^3D° - {}^3P$	1 – 1		1091
	50	125.93	0.0 – 794.12	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P°$	0 – 1		1091
	175	126.30	298.87 – 1090.68	$2s^22p^2 - 2s2p^3$	${}^1S - {}^1P°$	0 – 1		1091
	200	126.33	184.596 – 976.22	$2s^22p^2 - 2s2p^3$	${}^1D - {}^1D°$	2 – 2		1091
	4	127.95	804.74 – 1586.24	$2s2p^3 - 2p^4$	${}^3P° - {}^1D$	2 – 2		1091
	375	128.43	671.63 – 1450.23	$2s2p^3 - 2p^4$	${}^3D° - {}^3P$	2 – 2		1091
	30	128.63	672.77 – 1450.23	$2s2p^3 - 2p^4$	${}^3D° - {}^3P$	1 – 2		1091
	250	130.99	686.83 – 1450.23	$2s2p^3 - 2p^4$	${}^3D° - {}^3P$	3 – 2		1091
	10	132.11	47.806 – 804.74	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P°$	1 – 2		1091
	250	133.99	47.806 – 794.12	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P°$	1 – 1		1091
	80	134.89	47.806 – 789.15	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P°$	1 – 0		1091
	10	137.89	789.15 – 1514.32	$2s2p^3 - 2p^4$	${}^3P° - {}^3P$	0 – 1		1091
	50	138.15	794.12 – 1517.98	$2s2p^3 - 2p^4$	${}^3P° - {}^3P$	1 – 0		1091
	300	138.45	82.453 – 804.74	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P°$	2 – 2		1091
	4	138.86	794.12 – 1514.32	$2s2p^3 - 2p^4$	${}^3P° - {}^3P$	1 – 1		1091
	30	140.51	82.453 – 794.12	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3P°$	2 – 1		1091
	110	140.92	804.74 – 1514.32	$2s2p^3 - 2p^4$	${}^3P° - {}^3P$	2 – 1		1091
	110	143.57	1090.68 – 1787.21	$2s2p^3 - 2p^4$	${}^1P° - {}^1S$	1 – 0		1091
	110	148.64	0.0 – 672.77	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D°$	0 – 1		1091
	30	152.42	794.12 – 1450.23	$2s2p^3 - 2p^4$	${}^3P° - {}^3P$	1 – 2		1091
	30	154.92	804.74 – 1450.23	$2s2p^3 - 2p^4$	${}^3P° - {}^3P$	2 – 2		1091
	10	160.01	47.806 – 672.77	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D°$	1 – 1		1091
	150	160.30	47.806 – 671.63	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D°$	1 – 2		1091
	250	163.94	976.22 – 1586.24	$2s2p^3 - 2p^4$	${}^1D° - {}^1D$	2 – 2		1091
	150	165.46	82.453 – 686.83	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D°$	2 – 3		1091
	4	169.73	82.453 – 671.63	$2s^22p^2 - 2s2p^3$	$g^3P - {}^3D°$	2 – 2		1091
	50	179.18	959.88 – 1517.98	$2s2p^3 - 2p^4$	${}^3S° - {}^3P$	1 – 0		1091
	30	180.37	959.88 – 1514.32	$2s2p^3 - 2p^4$	${}^3S° - {}^3P$	1 – 1		1091
	10	201.82	1090.68 – 1586.24	$2s2p^3 - 2p^4$	${}^1P° - {}^1D$	1 – 2		1091
	300	203.94	959.88 – 1450.23	$2s2p^3 - 2p^4$	${}^3S° - {}^3P$	1 – 2		1091
		310.6	82.453 – 404.41	$2s^22p^2 - 2s2p^3$	$g^3P - {}^5S°$	2 – 2	P	375,1091
		398.4	47.806 – 298.87	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1S$	1 – 0	F	1120
		462.07	82.453 – 298.87	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1S$	2 – 0	F,P	375,1120
		541.72	0.0 – 184.596	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1D$	0 – 2	F,P	375,1120
		731.1	47.806 – 184.596	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1D$	1 – 2	F	1120
		875.09	184.596 – 298.87	$2s^22p^2 - 2s^22p^2$	${}^1D - {}^1S$	2 – 0	F,P	375,1120
		979.0	82.453 – 184.596	$2s^22p^2 - 2s^22p^2$	$g^3P - {}^1D$	2 – 2	F	1120
		1213.	0.0 – 82.453	$2s^22p^2 - 2s^22p^2$	$g^3P - g^3P$	0 – 2	F,P	375,1120

CHROMIUM XX (Cr^{19+}), Z = 24
Ground State $1s^22s^22p(^2P^\circ_{1/2})$ (5 electrons)
Ionization Potential [12 070 000] cm^{-1}; [1496] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	3	10.712	0.0 – 9335.3	$2s^22p - 2s^24d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		1089
	2	10.840	82.950 – 9308.1	$2s^22p - 2s^24d$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		1089
	3	10.940	0.0 – 9145.0	$2s^22p - 2s^24s$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		1089
	5	11.030	82.950 – 9145.0	$2s^22p - 2s^24s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		1089
		13.631	0.0 – 7336.2+F	$2s^22p - 2s2p(^3P)3p$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	P	877
		13.683	82.950 – 7391.2+F	$2s^22p - 2s2p(^3P)3p$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$	P	877
		13.910	0.0 – 7189.1+F	$2s^22p - 2s2p(^3P)3p$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$	P	877
		13.946	82.950 – 7253.4+F	$2s^22p - 2s2p(^3P)3p$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$	P	877
	2	14.065	861.671 – 7971.6	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2P - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		1089
	1	14.093	653.010 – 7748.8	$2s2p^2 - 2s2p(^1P^\circ)3d$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$		1089
		14.129	0.0 – 7077.6+F	$2s^22p - 2s^23d$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$	P	877
	10	14.205	428.13 – 7466.4+F	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4P^\circ$	$\frac{5}{2}-\frac{5}{2}$	Q	716,877
		14.214	428.13 – 7463.4+F	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4D^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	877
	2	14.261	428.13 – 7440.3	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^4P - {}^4F^\circ$	$\frac{5}{2}-\frac{7}{2}$		1089
		14.447	653.010 – 7574.9+F	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^2D - {}^2F^\circ$	$\frac{5}{2}-\frac{7}{2}$	P	877
		14.524	640.990 – 7526.2+F	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^2D - {}^2F^\circ$	$\frac{3}{2}-\frac{5}{2}$	P	877
	0	14.641	640.990 – 7470.1+F	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^2D - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$	Q	716,877
		14.669	653.010 – 7470.1+F	$2s2p^2 - 2s2p(^3P^\circ)3d$	${}^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$	P	877
	30	15.061	82.950 – 6724.5	$2s^22p - 2s^23s$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$	Q	716,375
	80	116.05	0.0 – 861.671	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{3}{2}$		1091
	30	117.95	0.0 – 847.763	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{1}{2}-\frac{1}{2}$		1091
	10	122.29						1091
	375	128.42	82.950 – 861.671	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{3}{2}$		1091
	50	129.26	640.990 – 1414.60	$2s2p^2 - 2p^3$	${}^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		1091
	250	130.76	82.950 – 847.763	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2P$	$\frac{3}{2}-\frac{1}{2}$		1091
	150	131.31	653.010 – 1414.60	$2s2p^2 - 2p^3$	${}^2D - {}^2P^\circ$	$\frac{5}{2}-\frac{3}{2}$		1091
	250	131.50	0.0 – 760.410	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2S$	$\frac{1}{2}-\frac{1}{2}$		1091
	150	133.82	352.33 – 1099.51	$2s2p^2 - 2p^3$	${}^4P - {}^4S^\circ$	$\frac{1}{2}-\frac{3}{2}$		1091
	110	135.26	640.990 – 1380.28	$2s2p^2 - 2p^3$	${}^2D - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		1091
	250	140.75	389.12 – 1099.51	$2s2p^2 - 2p^3$	${}^4P - {}^4S^\circ$	$\frac{3}{2}-\frac{3}{2}$		1091
	4	147.62	82.950 – 760.410	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2S$	$\frac{3}{2}-\frac{1}{2}$		1091
	250	148.99	428.13 – 1099.51	$2s2p^2 - 2p^3$	${}^4P - {}^4S^\circ$	$\frac{5}{2}-\frac{3}{2}$		1091
	30	152.86	760.410 – 1414.60	$2s2p^2 - 2p^3$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		1091
	200	156.00	0.0 – 640.990	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2D$	$\frac{1}{2}-\frac{3}{2}$		1091
	10	161.33	760.410 – 1380.28	$2s2p^2 - 2p^3$	${}^2S - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		1091
	50	164.63	640.990 – 1248.39	$2s2p^2 - 2p^3$	${}^2D - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		1091
	200	167.97	653.010 – 1248.39	$2s2p^2 - 2p^3$	${}^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{5}{2}$		1091
	80	169.87	640.990 – 1229.67	$2s2p^2 - 2p^3$	${}^2D - {}^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		1091
	50	173.42	653.010 – 1229.67	$2s2p^2 - 2p^3$	${}^2D - {}^2D^\circ$	$\frac{5}{2}-\frac{3}{2}$		1091
	150	175.42	82.950 – 653.010	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{5}{2}$		1091
	4	176.42	847.763 – 1414.60	$2s2p^2 - 2p^3$	${}^2P - {}^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$		1091
	50	179.21	82.950 – 640.990	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^2D$	$\frac{3}{2}-\frac{3}{2}$		1091
	80	180.85	861.671 – 1414.60	$2s2p^2 - 2p^3$	${}^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{3}{2}$		1091
	30	187.79	847.763 – 1380.28	$2s2p^2 - 2p^3$	${}^2P - {}^2P^\circ$	$\frac{1}{2}-\frac{1}{2}$		1091
	4	192.82	861.671 – 1380.28	$2s2p^2 - 2p^3$	${}^2P - {}^2P^\circ$	$\frac{3}{2}-\frac{1}{2}$		1091
	50	213.10	760.410 – 1229.67	$2s2p^2 - 2p^3$	${}^2S - {}^2D^\circ$	$\frac{1}{2}-\frac{3}{2}$		1091
		257.0	0.0 – 389.12	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{3}{2}$		1058
	50	258.57	861.671 – 1248.39	$2s2p^2 - 2p^3$	${}^2P - {}^2D^\circ$	$\frac{3}{2}-\frac{5}{2}$		1091
	10	271.72	861.671 – 1229.67	$2s2p^2 - 2p^3$	${}^2P - {}^2D^\circ$	$\frac{3}{2}-\frac{3}{2}$		1091
		283.8	0.0 – 352.33	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^4P$	$\frac{1}{2}-\frac{1}{2}$	P	1058
		289.7	82.950 – 428.13	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{5}{2}$		1058
		326.6	82.950 – 389.12	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{3}{2}$		1058
		371.2	82.950 – 352.33	$2s^22p - 2s2p^2$	$g^2P^\circ - {}^4P$	$\frac{3}{2}-\frac{1}{2}$	P	1058
		1205.9	0.0 – 82.950	$2s^22p - 2s^22p$	$g^2P^\circ - g^2P^\circ$	$\frac{1}{2}-\frac{3}{2}$	F	1120

CHROMIUM XXI (Cr^{20+}), Z = 24
Ground State $1s^22s^2(^1S_0)$ (4 electrons)
Ionization Potential [13 180 000] cm^{-1}; [1634] eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
	10	12.909	341.12 – 8087.1+B	$1s^22s2p - 1s^22p3p$	$^3P° - ^3P$	1 – 1	Q	716,619
	10	12.981	405.03 – 8108.7	$1s^22s2p - 1s^22p3p$	$^3P° - ^3S$	2 – 1		643
	0	13.018	405.03 – 8086.8	$1s^22s2p - 1s^22p3p$	$^3P° - ^3D$	2 – 3		643
	0	13.060	318.04 – 7975.1	$1s^22s2p - 1s^22p3p$	$^3P° - ^3D$	0 – 1		643
		13.081	0.0 – 7644.7+B	$1s^22s^2 - 1s^22s3p$	$g^1S - ^3P°$	0 – 1	P	619
	0	13.123	0.0 – 7620.2	$1s^22s^2 - 1s^22s3p$	$g^1S - ^1P°$	0 – 1		643
	0	13.203	667.23 – 8241.3	$1s^22s2p - 1s^22s3s$	$^1P° - ^1S$	1 – 0		643
		13.316	667.23 – 8177.0+B	$1s^22s2p - 1s^22p3p$	$^1P° - ^1D$	1 – 2	P	619
		13.514	318.04 – 7718.0+B	$1s^22s2p - 1s^22s3d$	$^3P° - ^3D$	0 – 1	P	619
	10	13.55	341.12 – 7721.2	$1s^22s2p - 1s^22s3d$	$^3P° - ^3D$	1 – 2		877
	0	13.647	405.03 – 7732.7	$1s^22s2p - 1s^22s3d$	$^3P° - ^3D$	2 – 3		643
	0	13.684	911.09 – 8218.8	$1s^22p^2 - 1s^22p3d$	$^3P - ^3P°$	1 – 1		643
	0	13.752	947.08 – 8218.8	$1s^22p^2 - 1s^22p3d$	$^3P - ^3P°$	2 – 1		643
	10	13.760	864.74 – 8134.4	$1s^22p^2 - 1s^22s2p$	$^3P - ^3D°$	0 – 1	Q	877
	10	13.779	947.08 – 8204.5	$1s^22p^2 - 1s^22p3d$	$^3P - ^3D°$	2 – 3		643
	10	13.844	1051.89 – 8275.4	$1s^22p^2 - 1s^22p3d$	$^1D - ^1P°$	2 – 1		643
	0	13.870	911.09 – 8121.0	$1s^22p^2 - 1s^22p3d$	$^3P - ^3D°$	1 – 2		643
	0	13.950	1051.89 – 8220.4	$1s^22p^2 - 1s^22p3d$	$^1D - ^3P°$	2 – 2		643
	10	14.029	667.23 – 7795.3	$1s^22s2p - 1s^22s3d$	$^1P° - ^1D$	1 – 2	P	619,716
	0	14.041	341.12 – 7463.2	$1s^22s2p - 1s^22s3s$	$^3P° - ^3S$	1 – 1		643
	2	14.172	405.03 – 7463.2	$1s^22s2p - 1s^22s3s$	$^3P° - ^3S$	2 – 1	Q	1089
	2	14.217	911.09 – 7946.8	$1s^22p^2 - 1s^22p3s$	$^3P - ^3P°$	1 – 2	Q	1089
		14.244	1254.91 – 8275.4	$1s^22p^2 - 1s^22p3d$	$^1S - ^1P°$	0 – 1	P	619
		14.457	1051.89 – 7969.0	$1s^22p^2 - 1s^22p3s$	$^1D - ^1P°$	2 – 1	P	619
		14.896	1254.91 – 7969.0	$1s^22p^2 - 1s^22p3s$	$^1S - ^1P°$	0 – 1	P	619
	300	149.87	0.0 – 667.23	$1s^22s^2 - 1s^22s2p$	$g^1S - ^1P°$	0 – 1		1091
	50	154.61	405.03 – 1051.89	$1s^22s2p - 1s^22p^2$	$^3P° - ^1D$	2 – 2		1091
	80	165.03	341.12 – 947.08	$1s^22s2p - 1s^22p^2$	$^3P° - ^3P$	1 – 2		1091
	50	168.62	318.04 – 911.09	$1s^22s2p - 1s^22p^2$	$^3P° - ^3P$	0 – 1		1091
	50	170.16	667.23 – 1254.91	$1s^22s2p - 1s^22p^2$	$^1P° - ^1S$	1 – 0		1091
	150	175.45	341.12 – 911.09	$1s^22s2p - 1s^22p^2$	$^3P° - ^3P$	1 – 1		1091
	110	184.48	405.03 – 947.08	$1s^22s2p - 1s^22p^2$	$^3P° - ^3P$	2 – 2		1091
	50	190.98	341.12 – 864.74	$1s^22s2p - 1s^22p^2$	$^3P° - ^3P$	1 – 0		1091
	10	197.61	405.03 – 911.09	$1s^22s2p - 1s^22p^2$	$^3P° - ^3P$	2 – 1		1091
	10	259.97	667.23 – 1051.89	$1s^22s2p - 1s^22p^2$	$^1P° - ^1D$	1 – 2		1091
	50	293.15	0.0 – 341.12	$1s^22s^2 - 1s^22s2p$	$g^1S - ^3P°$	0 – 1		437,730

CHROMIUM XXII (Cr^{21+}), Z = 24
Ground State $1s^22s(^2S_{1/2})$ (3 electrons)
Ionization Potential 13 882 000 cm^{-1}; 1721.6 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		2.190	0.0 – 45662.	$1s^22s - 1s2s2p$	$g^2S - ^2P°$	$\frac{1}{2} - \frac{3}{2}$	P	631
		7.562	0.0 – 13224.1	$1s^22s - 1s^29p$	$g^2S - ^2P°$	$\frac{1}{2} - \frac{3}{2}$	P	643
		7.664	0.0 – 13048.4	$1s^22s - 1s^28p$	$g^2S - ^2P°$	$\frac{1}{2} - \frac{3}{2}$	P	643
		7.774	357.49 – 13220.9	$1s^22p - 1s^29d$	$^2P° - ^2D$	$\frac{1}{2} - \frac{3}{2}$	P	643
		7.817	0.0 – 12793.6	$1s^22s - 1s^27p$	$g^2S - ^2P°$	$\frac{1}{2} - \frac{3}{2}$	P	643
		7.828	448.40 – 13223.0	$1s^22p - 1s^29d$	$^2P° - ^2D$	$\frac{3}{2} - \frac{5}{2}$	P	643

CR XXII — Continued

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		7.881	357.49 – 13046.2	$1s^22p - 1s^28d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$	P	643
		7.936	448.40 – 13049.2	$1s^22p - 1s^28d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{3}{2}$	P	643
		8.042	357.49 – 12792.2	$1s^22p - 1s^27d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$	P	643
		8.066	0.0 – 12398.0	$1s^22s - 1s^26p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	643
		8.100	448.40 – 12794.1	$1s^22p - 1s^27d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	643
		8.304	357.49 – 12400.0	$1s^22p - 1s^26d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$	P	643
		8.365	448.40 – 12403.0	$1s^22p - 1s^26d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	643
		8.516	0.0 – 11743.0	$1s^22s - 1s^25p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	643
		8.778	357.49 – 11749.6	$1s^22p - 1s^25d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$	P	643
		8.847	448.40 – 11751.7	$1s^22p - 1s^25d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	643
		9.488	0.0 – 10539.7	$1s^22s - 1s^24p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	977
		9.498	0.0 – 10528.3	$1s^22s - 1s^24p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	P	977
		9.806	357.49 – 10555.3	$1s^22p - 1s^24d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$	P	977
		9.870	357.49 – 10489.0	$1s^22p - 1s^24s$	$^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$	P	977
		9.891	448.40 – 10558.6	$1s^22p - 1s^24d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	977
		9.960	448.40 – 10489.0	$1s^22p - 1s^24s$	$^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$	P	977
	100	12.613	0.0 – 7928.32	$1s^22s - 1s^23p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	977,273
	200	12.656	0.0 – 7901.26	$1s^22s - 1s^23p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	P	977,273
	200	13.142	357.49 – 7966.68	$1s^22p - 1s^23d$	$^2P^\circ - {}^2D$	$\frac{1}{2} - \frac{3}{2}$	P	977,273
	200	13.286	448.40 – 7975.12	$1s^22p - 1s^23d$	$^2P^\circ - {}^2D$	$\frac{3}{2} - \frac{5}{2}$	P	977,273
	20	13.428	357.49 – 7804.86	$1s^22p - 1s^23s$	$^2P^\circ - {}^2S$	$\frac{1}{2} - \frac{1}{2}$	P	977,273
	200	13.594	448.40 – 7804.86	$1s^22p - 1s^23s$	$^2P^\circ - {}^2S$	$\frac{3}{2} - \frac{1}{2}$	P	977,273
	150	223.015	0.0 – 448.40	$1s^22s - 1s^22p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{3}{2}$	P	977,730
	120	279.731	0.0 – 357.49	$1s^22s - 1s^22p$	$g^2S - {}^2P^\circ$	$\frac{1}{2} - \frac{1}{2}$	P	977,730

CHROMIUM XXIII (Cr^{22+}), Z = 24
Ground State $1s^2(^1S_0)$ (2 electrons)
Ionization Potential 60 349 000 cm^{-1}; 7482.4 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		1.724	0.0 – 58023.1	$1s^2 - 1s5p$	$g^1S - {}^1P^\circ$	0 – 1	P	728
		1.763	0.0 – 56714.4	$1s^2 - 1s4p$	$g^1S - {}^1P^\circ$	0 – 1	P	728
		1.856	0.0 – 53888.2	$1s^2 - 1s3p$	$g^1S - {}^1P^\circ$	0 – 1	P	728
		2.182	0.0 – 45832.0	$1s^2 - 1s2p$	$g^1S - {}^1P^\circ$	0 – 1	P	956
	1	2.192	0.0 – 45614.9	$1s^2 - 1s2p$	$g^1S - {}^3P^\circ$	0 – 1	P	856
		2.203	0.0 – 45389.1	$1s^2 - 1s2s$	$g^1S - {}^3S$	0 – 1	F,P	375,918
		11.82	45389.1 – 53850.9	$1s2s - 1s3p$	$^3S - {}^3P^\circ$	1 – 2	P	375
		12.09	45619.0 – 53888.2	$1s2s - 1s3p$	$^1S - {}^1P^\circ$	0 – 1	P	375
		326.26	45389.1 – 45695.6	$1s2s - 1s2p$	$^3S - {}^3P^\circ$	1 – 2	P	375
		469.48	45619.0 – 45832.0	$1s2s - 1s2p$	$^1S - {}^1P^\circ$	0 – 1	P	375
		1154.73	53764.3 – 53850.9	$1s3s - 1s3p$	$^3S - {}^3P^\circ$	1 – 2	P	375
		1582.28	53825.0 – 53888.2	$1s3s - 1s3p$	$^1S - {}^1P^\circ$	0 – 1	P	375

CHROMIUM XXIV (Cr^{23+}), Z = 24
Ground State $1s(^2S_{1/2})$ (1 electron)
Ionization Potential 63 675 300 cm^{-1}; 7894.79 eV

Multiplet	Rel. Int.	λ_{vac} (in Å)	Levels (in 10^3 cm^{-1})	Configurations	Terms	J - J	Notes	References
		1.603	0.0 – 62385.1385	1s – 7p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		1.615	0.0 – 61919.1477	1s – 6p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		1.636	0.0 – 61141.5413	1s – 5p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		1.675	0.0 – 59715.3160	1s – 4p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		1.766	0.0 – 56634.2120	1s – 3p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		1.767	0.0 – 56597.5100	1s – 3p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{1}{2}$	P	1042
		2.090	0.0 – 47843.0420	1s – 2p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		2.096	0.0 – 47719.2500	1s – 2p	g^2S – $^2P°$	$\frac{1}{2}$ – $\frac{1}{2}$	P	1042
		6.820	47722.8200 – 62385.1385	2s – 7p	^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		6.877	47843.0420 – 62385.1385	2p – 7d	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		7.044	47722.8200 – 61919.1477	2s – 6p	^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		7.104	47843.0420 – 61919.1477	2p – 6d	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		7.452	47722.8200 – 61141.5413	2s – 5p	^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		7.518	47843.0420 – 61144.1334	2p – 5d	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		8.339	47722.8200 – 59715.3160	2s – 4p	^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		8.419	47843.0420 – 59720.3786	2p – 4d	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		11.222	47722.8200 – 56634.2120	2s – 3p	^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		11.360	47843.0420 – 56646.2052	2p – 3d	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		17.281	56598.5810 – 62385.1385	3s – 7p	^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		17.388	56634.2120 – 62385.1385	3p – 7d	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		17.425	56646.2052 – 62385.1385	3d – 7f	^2D – $^2F°$	$\frac{5}{2}$ – $\frac{7}{2}$	P	1042
		18.795	56598.5810 – 61919.1477	3s – 6p	^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		18.922	56634.2120 – 61919.1477	3p – 6d	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		18.965	56646.2052 – 61919.1477	3d – 6f	^2D – $^2F°$	$\frac{5}{2}$ – $\frac{7}{2}$	P	1042
		22.012	56598.5810 – 61141.5413	3s – 5p	^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		22.173	56634.2120 – 61144.1334	3p – 5d	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		22.226	56646.2052 – 61145.4279	3d – 5f	^2D – $^2F°$	$\frac{5}{2}$ – $\frac{7}{2}$	P	1042
		32.085	56598.5810 – 59715.3160	3s – 4p	^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042
		32.403	56634.2120 – 59720.3786	3p – 4d	$^2P°$ – ^2D	$\frac{3}{2}$ – $\frac{5}{2}$	P	1042
		32.502	56646.2052 – 59722.9060	3d – 4f	^2D – $^2F°$	$\frac{5}{2}$ – $\frac{7}{2}$	P	1042
		831.794	47722.8200 – 47843.0420	2s – 2p	^2S – $^2P°$	$\frac{1}{2}$ – $\frac{3}{2}$	P	1042

Part I contains tables for hydrogen through chromium (pp. 1–649).

Part II contains tables for manganese through krypton (pp. 651–1369).

Part III contains the Finding List (pp. 1371–1678).