National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

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CALIBRATION LABORATORIES **NVLAP LAB CODE 200494-0**

DIMENSIONAL

NVLAP Code: 20/D13
Surveying Rods and Tapes

Range in inches	*Best Uncertainty (±) in inches* [note 1]	*Remarks*
1	0.0023	Rigid Rules
2	0.0023	Rigid Rules
3	0.0023	Rigid Rules
4	0.0024	Rigid Rules
5	0.0024	Rigid Rules
6	0.0024	Rigid Rules
7	0.0024	Rigid Rules
8	0.0024	Rigid Rules
9	0.0024	Rigid Rules
10	0.0024	Rigid Rules
11	0.0024	Rigid Rules
12	0.0024	Rigid Rules
24	0.0036	Rigid Rules
36	0.0046	Rigid Rules
48	0.0055	Rigid Rules

Range in feet	*Best Uncertainty (±) in inches* [note 1]	*Remarks*
1	0.0031	Metal Tapes (Bench Method)
2	0.0031	Metal Tapes (Bench Method)

2008-07-01 through 2009-06-30

Effective dates

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3	0.0031	Metal Tapes (Bench Method)
4	0.0031	Metal Tapes (Bench Method)
5	0.0031	Metal Tapes (Bench Method)
6	0.0032	Metal Tapes (Bench Method)
7	0.0032	Metal Tapes (Bench Method)
8	0.0032	Metal Tapes (Bench Method)
9	0.0033	Metal Tapes (Bench Method)
10	0.0033	Metal Tapes (Bench Method)
20	0.0051	Metal Tapes (Bench Method)
30	0.0067	Metal Tapes (Bench Method)
40	0.0082	Metal Tapes (Bench Method)
50	0.0097	Metal Tapes (Bench Method)
60	0.011	Metal Tapes (Bench Method)
70	0.013	Metal Tapes (Bench Method)
80	0.014	Metal Tapes (Bench Method)
90	0.015	Metal Tapes (Bench Method)
100	0.017	Metal Tapes (Bench Method)

MECHANICAL

NVLAP Code: 20/M08
Mass - Metric

Range	***Best Uncertainty (±)*** [note 1]	***Remarks***
1000 g	63 µg	Echelon I
500 g	36 µg	Echelon I
300 g	27 µg	Echelon I
200 g	22 µg	Echelon I
100 g	24 µg	Echelon I
50 g	12 µg	Echelon I
30 g	7.9 µg	Echelon I
20 g	5.7 µg	Echelon I
10 g	4.5 µg	Echelon I
5 g	2.6 µg	Echelon I
3 g	1.8 µg	Echelon I

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2 g	1.5 µg	Echelon I
1 g	1.6 µg	Echelon I
500 mg	0.83 µg	Echelon I
300 mg	0.53 µg	Echelon I
200 mg	0.40 µg	Echelon I
100 mg	0.34 µg	Echelon I
50 mg	0.24 µg	Echelon I
30 mg	0.20 µg	Echelon I
20 mg	0.18 µg	Echelon I
10 mg	0.21 µg	Echelon I
5 mg	0.21 µg	Echelon I
3 mg	0.20 µg	Echelon I
2 mg	0.19 µg	Echelon I
1 mg	0.23 µg	Echelon I
30 kg	17 mg	Echelon II
20 kg	15 mg	Echelon II
10 kg	5.1 mg	Echelon II
5 kg	1.7 mg	Echelon II
3 kg	1.4 mg	Echelon II
2 kg	0.82 mg	Echelon II
1 kg	0.11 mg	Echelon II
500 g	65 µg	Echelon II
300 g	51 µg	Echelon II
200 g	58 µg	Echelon II
100 g	18 µg	Echelon II
50 g	11 µg	Echelon II
30 g	10 µg	Echelon II
20 g	6.1 µg	Echelon II
10 g	4.7 µg	Echelon II
5 g	2.5 µg	Echelon II
3 g	2.1 µg	Echelon II
2 g	3.1 µg	Echelon II
1 g	2.8 µg	Echelon II
500 mg	0.79 µg	Echelon II

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300 mg	1.1 µg	Echelon II
200 mg	1.0 µg	Echelon II
100 mg	0.90 µg	Echelon II
50 mg	0.73 µg	Echelon II
30 mg	0.83 µg	Echelon II
20 mg	0.78 µg	Echelon II
10 mg	0.68 µg	Echelon II
5 mg	0.98 µg	Echelon II
3 mg	0.46 µg	Echelon II
2 mg	0.68 µg	Echelon II
1 mg	0.46 µg	Echelon II
Mass - Avoirdupois		
1000 lb	0.0029 lb	Echelon II
500 lb	0.0020 lb	Echelon II
Mass - Metric		
1 kg	0.41 mg	Echelon III *note 2*
500 g	0.26 mg	Echelon III *note 2*
300 g	0.22 mg	Echelon III *note 2*
200 g	0.21 mg	Echelon III *note 2*
100 g	63 µg	Echelon III *note 2*
50 g	53 µg	Echelon III *note 2*
30 g	51 µg	Echelon III *note 2*
20 g	33 µg	Echelon III *note 2*
10 g	32 µg	Echelon III *note 2*
5 g	5.5 µg	Echelon III *note 2*
3 g	5.1 µg	Echelon III *note 2*
2 g	5.6 µg	Echelon III *note 2*
1 g	5.3 µg	Echelon III *note 2*
500 mg	5.6 µg	Echelon III *note 2*
300 mg	5.0 µg	Echelon III *note 2*
200 mg	4.8 µg	Echelon III *note 2*
100 mg	4.6 µg	Echelon III *note 2*
50 mg	4.7 µg	Echelon III *note 2*

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30 mg	4.6 µg	Echelon III *note 2*
20 mg	4.6 µg	Echelon III *note 2*
10 mg	4.6 µg	Echelon III *note 2*
5 mg	4.6 µg	Echelon III *note 2*
3 mg	4.5 µg	Echelon III *note 2*
2 mg	4.5 µg	Echelon III *note 2*
1 mg	4.5 µg	Echelon III *note 2*
30 kg	0.12 g	Echelon III *note 3*
20 kg	81 mg	Echelon III *note 3*
10 kg	58 mg	Echelon III *note 3*
5 kg	18 mg	Echelon III *note 3*
3 kg	14 mg	Echelon III *note 3*
2 kg	9.3 mg	Echelon III *note 3*
1 kg	9.0 mg	Echelon III *note 3*
500 g	6.9 mg	Echelon III *note 3*
300 g	6.7 mg	Echelon III *note 3*
200 g	0.27 mg	Echelon III *note 3*
100 g	0.20 mg	Echelon III *note 3*
50 g	0.19 mg	Echelon III *note 3*
30 g	0.19 mg	Echelon III *note 3*
20 g	0.18 mg	Echelon III *note 3*
10 g	0.18 mg	Echelon III *note 3*
5 g	96 µg	Echelon III *note 3*
3 g	95 µg	Echelon III *note 3*
2 g	95 µg	Echelon III *note 3*
1 g	66 µg	Echelon III *note 3*
500 mg	22 µg	Echelon III *note 3*
300 mg	17 µg	Echelon III *note 3*
200 mg	17 µg	Echelon III *note 3*
100 mg	15 µg	Echelon III *note 3*
50 mg	15 µg	Echelon III *note 3*
30 mg	14 µg	Echelon III *note 3*
20 mg	15 µg	Echelon III *note 3*
10 mg	15 µg	Echelon III *note 3*

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5 mg	14 µg	Echelon III *note 3*
3 mg	17 µg	Echelon III *note 3*
2 mg	12 µg	Echelon III *note 3*
1 mg	10 µg	Echelon III *note 3*
Mass – Avoirdupois		
10 000 lb	0.082 lb	Echelon III
9000 lb	0.081 lb	Echelon III
8000 lb	0.080 lb	Echelon III
7000 lb	0.078 lb	Echelon III
6000 lb	0.077 lb	Echelon III
5000 lb	0.077 lb	Echelon III
4000 lb	0.076 lb	Echelon III
3000 lb	0.075 lb	Echelon III
2500 lb	0.0091 lb	Echelon III
2000 lb	0.0082 lb	Echelon III
1000 lb	0.0061 lb	Echelon III
500 lb	0.0048 lb	Echelon III
50 lb	200.0 µlb	Echelon III
30 lb	130 µlb	Echelon III
25 lb	120 µlb	Echelon III
20 lb	120 µlb	Echelon III
10 lb	31.0 µlb	Echelon III
5 lb	21.0 µlb	Echelon III
3 lb	24.0 µlb	Echelon III
2 lb	20.0 µlb	Echelon III
1 lb	16.0 µlb	Echelon III
0.5 lb	15.0 µlb	Echelon III
0.3 lb	0.58 µlb	Echelon III
0.2 lb	0.54 µlb	Echelon III
0.1 lb	0.43 µlb	Echelon III
0.05 lb	0.41 µlb	Echelon III
0.03 lb	0.41 µlb	Echelon III
0.02 lb	0.40 µlb	Echelon III
0.01 lb	0.21 µlb	Echelon III

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0.005 lb	0.28 µlb	Echelon III
0.003 lb	0.27 µlb	Echelon III
0.002 lb	0.18 µlb	Echelon III
0.001 lb	0.15 µlb	Echelon III
4 oz	0.86 µlb	Echelon III
2 oz	0.64 µlb	Echelon III
1 oz	0.52 µlb	Echelon III
0.5 oz	0.45 µlb	Echelon III
0.25 oz	0.41 µlb	Echelon III
0.125 oz	0.22 µlb	Echelon III
0.0625	0.23 µlb	Echelon III
0.03125 oz	0.20 µlb	Echelon III

NVLAP Code: 20/M12
Volume

Range	***Best Uncertainty (±)*** [note 1]	***Remarks***
100 gal	1.9 in^3	Gravimetric
50 gal	1.3 in^3	Gravimetric
120 L	9.5 mL	Gravimetric
60 L	5.4 mL	Gravimetric
5 gal (U.S.)	0.12 in^3	Gravimetric
1 gal (U.S.)	5.2 minims (Apothecaries)	Gravimetric
1/2 gal (U.S.)	3.2 minims	Gravimetric
1 quart (U.S. liquid)	2.5 minims	Gravimetric
1 pint (U.S. liquid)	1.6 minims	Gravimetric
1/2 pint (U.S. liquid)	0.72 minim	Gravimetric
1 gill (U.S.)	0.71 minim	Gravimetric
2 ounces (U.S. fluid)	1.9 minims	Gravimetric
1800 gal (U.S.)	50 in^3	Volume Transfer
1500 gal (U.S.)	44 in^3	Volume Transfer
1480 gal (U.S.)	42 in^3	Volume Transfer
1000 gal (U.S.)	30 in^3	Volume Transfer

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800 gal (U.S.)	23 in^3	Volume Transfer
740 gal (U.S.)	23 in^3	Volume Transfer
500 gal (U.S.)	17.0 in^3	Volume Transfer
300 gal (U.S.)	11.0 in^3	Volume Transfer
200 gal (U.S.)	6.1 in^3	Volume Transfer
185 gal (U.S.)	8.0 in^3	Volume Transfer
105 gal (U.S.)	3.2 in^3	Volume Transfer
103 gal (U.S.)	3.3 in^3	Volume Transfer
100 gal (U.S)	2.7 in^3	Volume Transfer
53 gal (U.S.)	3.3 in^3	Volume Transfer
50 gal (U.S.)	2.7 in^3	Volume Transfer
25 gal (U.S.)	1.9 in^3	Volume Transfer
20 gal (U.S.)	1.4 in^3	Volume Transfer
5 gal (U.S.)	0.49 in^3	Volume Transfer
105 gal (U.S.)	10.0 in^3	Liquefied Petroleum Gas Prover (LPG)
103 gal (U.S.)	10.0 in^3	Liquefied Petroleum Gas Prover (LPG)
100 gal (U.S.)	10.0 in^3	Liquefied Petroleum Gas Prover (LPG)
53 gal (U.S.)	9.5 in^3	Liquefied Petroleum Gas Prover (LPG)
50 gal (U.S.)	9.3 in^3	Liquefied Petroleum Gas Prover (LPG)
25 gal (U.S.)	5.4 in^3	Liquefied Petroleum Gas Prover (LPG)
20 gal (U.S.)	5.2 in^3	Liquefied Petroleum Gas Prover (LPG)

1. Represents an expanded uncertainty using a coverage factor, k = 2, at an approximate level of confidence of 95 %.
2. High precision balances providing 0.7 ppm to 7 ppm accuracy within range from 1000 g to 1 g.
3. Precision balances providing 8 ppm to 70 ppm accuracy range from 1000 g to 1 g.

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