



CALIBRATION LABORATORIES

NVLAP LAB CODE 200791-0

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

<p>State of California Metrology Laboratory 6790 Florin Perkins Road, Suite 100 Sacramento, CA 95828-1814 Mr. Greg Boers Phone: 916-229-3022 Fax: 916-229-3064 E-mail: gboers@cdfa.ca.gov URL: http://www.cdfa.ca.gov/dms</p>	<p>Parameter(s) of Accreditation Dimensional Time and Frequency Mechanical Thermodynamic</p>
---	---

CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) Notes 1,2

Measured Parameter or Device Calibrated	Range	Uncertainty ($k=2$) <small>Note 3</small>	Remarks
DIMENSIONAL			
<p>NVLAP Code: 20/D13 SURVEYING RODS and TAPES Surveying Rods and Tapes</p>	1 ft	0.00077 ft	Tape to Tape
	2 ft	0.00076 ft	
	3 ft	0.00077 ft	
	4 ft	0.00081 ft	
	5 ft	0.00086 ft	
	6 ft	0.00078 ft	
	7 ft	0.00082 ft	
	8 ft	0.00087 ft	
	9 ft	0.00082 ft	
	10 ft	0.00088 ft	
	20 ft	0.00085 ft	
	30 ft	0.00093 ft	
	40 ft	0.00093 ft	
	50 ft	0.00093 ft	
	60 ft	0.0012 ft	
	70 ft	0.0012 ft	
80 ft	0.0012 ft		
90 ft	0.0013 ft		
100 ft	0.0013 ft		

2012-01-01 through 2012-12-31
Effective dates

David E. Alderson

For the National Institute of Standards and Technology



**National Voluntary
Laboratory Accreditation Program**



CALIBRATION LABORATORIES

NVLAP LAB CODE 200791-0

CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) Notes 1,2

Measured Parameter or Device Calibrated	Range	Uncertainty ($k=2$) <small>Note 3</small>	Remarks
TIME and FREQUENCY			
NVLAP Code: 20/F02 TIME DISSEMINATION Time Dissemination	3 h	0.10 s	GPS Time Receiver
MECHANICAL			
NVLAP Code: 20/M08 MASS Metric	2 kg	2.9 mg	Echelon II
	1 kg	1.0 mg	
	500 g	0.48 mg	
	200g	0.20 mg	
	100 g	0.10 mg	
	50 g	53 µg	
	20 g	25 µg	
	10 g	15 µg	
	5 g	11 µg	
	2 g	4.0 µg	
	1 g	3.2 µg	
	500 mg	4.1 µg	
	200 mg	4.6 µg	
	100 mg	1.4 µg	
	50 mg	2.5 µg	
	20 mg	0.83 µg	
	10 mg	0.92 µg	
	5 mg	0.77 µg	
	2 mg	0.61 µg	
	1 mg	0.58 µg	
	30 kg	0.21 g	Echelon III
	25 kg	0.20 g	
	20 kg	0.19 g	
	10 kg	80 mg	
	5 kg	48 mg	
	3 kg	32 mg	
	2 kg	13 mg	
	1 kg	4.2 mg	

2012-01-01 through 2012-12-31
Effective dates

David E. Alderman
For the National Institute of Standards and Technology



**National Voluntary
Laboratory Accreditation Program**



CALIBRATION LABORATORIES

NVLAP LAB CODE 200791-0

CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) ^{Notes 1,2}

Measured Parameter or Device Calibrated	Range	Uncertainty ($k=2$) ^{Note 3}	Remarks
Avoirdupois	500 g	2.2 mg	Echelon III
	300 g	0.92 mg	
	200 g	0.92 mg	
	100 g	0.13 mg	
	50 g	81 µg	
	30 g	67 µg	
	20 g	62 µg	
	10 g	59 µg	
	5 g	120 µg	
	3 g	120 µg	
	2 g	120 µg	
	1 g	120 µg	
	500 mg	38 µg	
	300 mg	38 µg	
	200 mg	19 µg	
	100 mg	8.8 µg	
	50 mg	6.0 µg	
	30 mg	5.7 µg	
	20 mg	5.6 µg	
	10 mg	5.5 µg	
	5 mg	5.3 µg	
	3 mg	5.3 µg	
	2 mg	5.3 µg	
	1 mg	5.3 µg	
	30 lb	66 mg	
	20 lb	64 mg	
	10 lb	43 mg	
	5 lb	29 mg	
	4 lb	8.7 mg	
	3 lb	4.4 mg	
	2 lb	4.3 mg	
	1 lb	2.2 mg	
	0.5 lb	0.91 mg	
0.3 lb	0.13 mg		
0.2 lb	74 µg		

2012-01-01 through 2012-12-31
Effective dates

David F. Alderman
For the National Institute of Standards and Technology



**National Voluntary
Laboratory Accreditation Program**



CALIBRATION LABORATORIES

NVLAP LAB CODE 200791-0

CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) ^{Notes 1,2}

Measured Parameter or Device Calibrated	Range	Uncertainty ($k=2$) ^{Note 3}	Remarks
	0.1 lb	59 μ g	
	0.05 lb	57 μ g	
	0.03 lb	56 μ g	
	0.02 lb	56 μ g	
	0.01 lb	120 μ g	
	0.005 lb	120 μ g	
	0.003 lb	120 μ g	
	0.002 lb	120 μ g	
	0.001 lb	39 μ g	
	8 oz	0.91 mg	
	4 oz	0.19 mg	
	2 oz	0.10 mg	
	1 oz	68 μ g	
	1/2 oz	60 μ g	
	1/4 oz	57 μ g	
	1/8 oz	120 μ g	
	1/16 oz	120 μ g	
	1/32 oz	120 μ g	
	0.5 oz	60 μ g	
	0.3 oz	57 μ g	
	0.2 oz	57 μ g	
	0.1 oz	59 μ g	
	0.05 oz	120 μ g	
	0.03 oz	120 μ g	
	0.02 oz	37 μ g	
	0.01 oz	43 μ g	
	1000 lb	7.4 g	Echelon III Frasier Balance
	500 lb	3.5 g	
	50 lb	0.26 g	Echelon III Lab
	25 lb	0.11 g	

2012-01-01 through 2012-12-31

Effective dates

David E. Alderman

For the National Institute of Standards and Technology



**National Voluntary
Laboratory Accreditation Program**



CALIBRATION LABORATORIES

NVLAP LAB CODE 200791-0

CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) ^{Notes 1,2}

Measured Parameter or Device Calibrated	Range	Uncertainty ($k=2$) ^{Note 3}	Remarks
Field calibrations Available ^{Note 4}	50 lb 25 lb	0.30 g 0.21 g	Echelon III
NVLAP Code: 20/M12 VOLUME and DENSITY Volume			
	1000 gal	34 in ³	Volume Transfer, 100 gal Standard 100 gal Standard 100 gal Standard 100 gal Standard 100 gal Standard 50 gal Standard 5 gal Slicker 5 gal Slicker 1 gal Conical Slicker
	500 gal	18 in ³	
	300 gal	11 in ³	
	200 gal	6.6 in ³	
	100 gal	4.6 in ³	
	50 gal	2.3 in ³	
	50 gal	2.0 in ³	
	5 gal	0.22 in ³	
	1 gal	0.075 in ³	
Field calibrations Available ^{Note 4}	500 gal 300 gal 200 gal 100 gal 50 gal 5 gal	20 in ³ 13 in ³ 9.5 in ³ 4.6 in ³ 2.2 in ³ 0.31 in ³	
	20 L 2 L 1 L 500 mL 200 mL 100 mL 5 gal 1 gal 1/2 gal 1 quart 1 pint 1/2 pint 1 gill	3.0 mL 0.32 mL 0.36 mL 0.078 mL 0.063 mL 0.031 mL 2.8 mL 0.38 mL 0.31 mL 0.15 mL 0.12 mL 0.066 mL 0.065 mL	Gravimetric

2012-01-01 through 2012-12-31
Effective dates

David F. Alderman
For the National Institute of Standards and Technology



**National Voluntary
Laboratory Accreditation Program**



CALIBRATION LABORATORIES

NVLAP LAB CODE 200791-0

CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) ^{Notes 1,2}

Measured Parameter or Device Calibrated	Range	Uncertainty ($k=2$) ^{Note 3}	Remarks
THERMODYNAMIC			
NVLAP Code: 20/T03 LABORATORY THERMOMETERS, DIGITAL and ANALOG Laboratory Thermometers	32 °F to 59 °F	0.14 °F	Liquid Bath with RTD
	60 °F to 89 °F	0.13 °F	
	90 °F to 119 °F	0.13 °F	
	120 °F	0.12 °F	
	0 °C to 15 °C	0.078 °C	Liquid Bath with RTD
	15.56 °C to 31.67 °C	0.071 °C	
	32.22 °C to 48.33 °C	0.071 °C	
	48.89 °C	0.068 °C	
END			

2012-01-01 through 2012-12-31
Effective dates

David E. Alderman

For the National Institute of Standards and Technology



CALIBRATION LABORATORIES

NVLAP LAB CODE 200791-0

Notes

Note 1: A Calibration and Measurement Capability (CMC) is a description of the best result of a calibration or measurement (result with the smallest uncertainty of measurement) that is available to the laboratory's customers under normal conditions, when performing more or less routine calibrations of nearly ideal measurement standards or instruments. The CMC is described in the laboratory's scope of accreditation by: the measurement parameter/device being calibrated, the measurement range, the uncertainty associated with that range (see note 3), and remarks on additional parameters, if applicable.

Note 2: Calibration and Measurement Capabilities are traceable to the national measurement standards of the U.S. or to the national measurement standards of other countries and are thus traceable to the internationally accepted representation of the appropriate SI (Système International) unit.

Note 3: The uncertainty associated with a measurement in a CMC is an expanded uncertainty using a coverage factor, $k = 2$, with a level of confidence of approximately 95 %. Units for the measurand and its uncertainty are to match. Exceptions to this occur when marketplace practice employs mixed units, such as when the artifact to be measured is labeled in non-SI units and the uncertainty is given in SI units (Example: 5 lb weight with uncertainty given in mg).

Note 3a: The uncertainty of a specific calibration by the laboratory may be greater than the uncertainty in the CMC due to the condition and behavior of the customer's device and specific circumstances of the calibration. The uncertainties quoted do not include possible effects on the calibrated device of transportation, long term stability, or intended use.

Note 3b: As the CMC represents the best measurement results achievable under normal conditions, the accredited calibration laboratory shall not report smaller uncertainty of measurement than that given in a CMC for calibrations or measurements covered by that CMC.

Note 3c: As described in Note 1, CMCs cover calibrations and measurements that are available to the laboratory's customers under *normal conditions*. However, the laboratory may have the capability to offer special tests, employing special conditions, which yield calibration or measurement results with lower uncertainties. Such special tests are not covered by the CMCs and are outside the laboratory's scope of accreditation. In this case, NVLAP requirements for the labeling, on calibration reports, of results outside the laboratory's scope of accreditation apply. These requirements are set out in Annex A.1.h. of NIST Handbook 150, Procedures and General Requirements.

Note 4: Uncertainties associated with field service calibration may be greater as they incorporate on-site environmental contributions, transportation effects, or other factors that affect the measurements. (This note applies only if marked in the body of the scope.)

Note 5: Values listed with percent (%) are percent of reading or generated value unless otherwise noted.

Note 6: NVLAP accreditation is the formal recognition of specific calibration capabilities. Neither NVLAP nor NIST guarantee the accuracy of individual calibrations made by accredited laboratories.

Note 7: See [NIST Handbook 150](#) for further explanation of these notes.

2012-01-01 through 2012-12-31

Effective dates

For the National Institute of Standards and Technology