National Voluntary Laboratory Accreditation Program

CALIBRATION LABORATORIES

NVLAP LAB CODE 200495-0
Revised 05-29-2012

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

North Carolina Standards Laboratory	**Parameter(s) of Accreditation**
4040 District Drive / 1051 Mail Service Center Raleigh, NC 27699-1051 Ms. Sharon Woodard Phone: 919-733-4411 x213 Fax: 919-733-8804 E-mail: sharon.woodard@ncagr.gov URL: http://www.ncagr.gov/standard	Dimensional Mechanical This laboratory is compliant to ANSI/NCSL Z540-1-1994; Part 1. (NVLAP Code: 20/A01)

CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) [Notes 1,2]

Measured Parameter or Device Calibrated	Range	Uncertainty (k=2) [Note 3]	Remarks
DIMENSIONAL			
NVLAP Code: 20/D05 **LENGTH and DIAMETER, STEP GAGES** Lottery Ball Pass Through Gauge	Lottery Ball	0.0069 in	
MECHANICAL			
NVLAP Code: 20/M08 **MASS** Metric	1000 kg	25 g	Echelon III
	500 kg	6.1 g	
	250 kg	3.1 g	
	200 kg	2.5 g	
	100 kg	1.5 g	
	50 kg	0.59 g	
	30 kg	0.36 g	
	25 kg	0.30 g	
	20 kg	0.24 g	
	10 kg	0.12 g	
	5 kg	59 mg	
	3 kg	35 mg	
	2 kg	24 mg	
	1 kg	12 mg	
	500 g	8.3 mg	
	300 g	7.2 mg	
	200 g	4.7 µg	

2012-04-01 through 2013-03-31
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CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) [Notes 1,2]

Measured Parameter or Device Calibrated	Range	Uncertainty (*k*=2) [Note 3]	Remarks
	100 g	2.4 µg	
	50 g	1.2 mg	
	30 g	0.71 mg	
	20 g	0.48 mg	
	10 g	0.25 mg	
	5 g	0.18 mg	
	3 g	0.15 mg	
	2 g	89 µg	
	1 g	60 µg	
	500 mg	46 µg	
	300 mg	37 µg	
	200 mg	32 µg	
	100 mg	25 µg	
	50 mg	21 µg	
	30 mg	19 µg	
	20 mg	17 µg	
	10 mg	15 µg	
	5 mg	13 µg	
	3 mg	13 µg	
	2 mg	12 µg	
	1 mg	11 µg	
Lottery Balls	Lottery Ball	41 mg	Echelon III
Avoirdupois	2500 lb	31 g	Echelon III
	2000 lb	24 g	
	1000 lb	5.6 g	
	500 lb	2.9 g	
	100 lb	0.53 g	
	50 lb	0.28 g	
	30 lb	0.17 g	
	25 lb	0.14 g	
	20 lb	0.11 g	
	10 lb	54 mg	
	5 lb	27 mg	
	4 lb	21 mg	

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CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) [Notes 1,2]

Measured Parameter or Device Calibrated	Range	Uncertainty (*k*=2) [Note 3]	Remarks
	3 lb	17 mg	
	2 lb	11 mg	
	1 lb	8.3 mg	
	0.5 lb	5.5 mg	
	0.3 lb	3.2 mg	
	0.2 lb	2.1 mg	
	0.1 lb	1.1 mg	
	0.05 lb	0.54 mg	
	0.03 lb	0.33 mg	
	0.02 lb	0.23 mg	
	0.01 lb	0.20 mg	
	0.005 lb	0.17 mg	
	0.003 lb	61 µg	
	0.002 lb	47 µg	
	0.001 lb	37 µg	
	4 oz	2.7 mg	
	2 oz	1.3 mg	
	1 oz	0.68 mg	
	1/2 oz	0.34 mg	
	1/4 oz	0.22 mg	
	1/8 oz	0.15 mg	
	1/16 oz	60 µg	
	1/32 oz	46 µg	
Weight Carts	6000 lb	110 g	Echelon III
	5500 lb	87 g	
	5000 lb	87 g	
	4000 lb	73 g	
	3000 lb	60 g	
NVLAP Code: 20/M12 VOLUME and DENSITY			
Volume	1500 gal	53 in^3	Transfer Method
	1000 gal	36 in^3	
	500 gal	19 in^3	
	100 gal	2.7 in^3	

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CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) [Notes 1,2]

Measured Parameter or Device Calibrated	Range	Uncertainty (k=2) [Note 3]	Remarks
	50 gal	1.8 in^3	
	25 gal	1.0 in^3	
	5 gal	0.41 in^3	
	1 gal	0.41 in^3	
	20 L	0.42 in^3	
	5 gal	0.84 in^3	Transfer Method (Field)
	1 gal	0.84 in^3	
	500 gal	20 in^3	LPG Transfer Method
	100 gal	4.3 in^3	
	50 gal	3.0 in^3	
	25 gal	2.5 in^3	
	100 gal	0.90 in^3	Gravimetric Method
	50 gal	0.71 in^3	
	25 gal	0.54 in^3	
	15 gal	0.30 in^3	
Test Measure	5 gal	0.15 in^3	
	1 gal	0.12 in^3	
	20 L	2.7 mL	
Flask	100 mL	0.034 mL	
	1 qt	0.27 mL	
	1 gill	0.059 mL	
Slicker Standard	100 gal	0.30 in^3	
	50 gal	0.21 in^3	
	25 gal	0.15 in^3	
	15 gal	0.077 in^3	
	5 gal	0.040 in^3	
	1 gal	0.019 in^3	
	20 L	0.66 mL	

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CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) [Notes 1,2]

Measured Parameter or Device Calibrated	Range	Uncertainty (*k*=2) [Note 3]	Remarks
Small Volume Prover	30 gal 20 gal 15 gal	1.2 in^3 0.77 in^3 0.45 in^3	Gravimetric Method
END			

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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.

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