National Voluntary Laboratory Accreditation Program

CALIBRATION LABORATORIES **NVLAP LAB CODE 200468-0**

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

Oregon Dept. of Agriculture Meas. Standards Div. Metrology Laboratory 635 Capitol Street, NE Salem, OR 97301-2532 Mr. Clark Cooney Phone: 503-986-4677 Fax: 503-986-4784 E-mail: ccooney@oda.state.or.us URL: www.oregon.gov/ODA/MSD/metrology_intro.shtml	**Parameter(s) of Accreditation** 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
MECHANICAL			
NVLAP Code: 20/M08 **MASS**			
Metric	30 kg	8.0 mg	Echelon I
	20 kg	6.3 mg	
	10 kg	1.4 mg	
	5 kg	0.59 mg	
	3 kg	0.37 mg	
	2 kg	0.26 mg	
	1 kg	80 µg	
	500 g	48 µg	
	300 g	30 µg	
	200 g	21 µg	
	100 g	17 µg	
	92.8 g	17 µg	
	50 g	8.6 µg	
	30 g	5.4 µg	
	20 g	3.8 µg	
	10 g	2.8 µg	
	5 g	1.4 µg	
	3 g	0.92 µg	
	2 g	0.66 µg	
	1 g	0.52 µg	
	500 mg	0.29 µg	
	300 mg	0.20 µg	

2011-10-01 through 2012-09-30
Effective dates

Sally S. Bruce
For the National Institute of Standards and Technology

CALIBRATION LABORATORIES **NVLAP LAB CODE 200468-0**

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

Measured Parameter or Device Calibrated	Range	Uncertainty (k=2) [Note 3]	Remarks
	200 mg	0.17 µg	
	100 mg	0.17 µg	
	50 mg	0.12 µg	
	30 mg	0.12 µg	
	20 mg	0.12 µg	
	10 mg	0.12 µg	
	5 mg	0.12 µg	
	3 mg	0.12 µg	
	2 mg	0.12 µg	
	1 mg	0.12 µg	
Avoirdupois			
	50 lb	8.4 mg	Echelon I
	30 lb	6.1 mg	
	25 lb	6.0 mg	
	20 lb	1.9 mg	
	10 lb	1.0 mg	
	5 lb	0.45 mg	
	3 lb	0.27 mg	
	2 lb	76 µg	
	1 lb	62 µg	
	0.5 lb	40 µg	
	0.3 lb	25 µg	
	0.2 lb	18 µg	
	0.1 lb	13 µg	
	0.05 lb	6.8 µg	
	0.03 lb	4.3 µg	
	0.02 lb	3.0 µg	
	0.01 lb	2.3 µg	
	0.005 lb	1.2 µg	
	0.003 lb	0.79 µg	
	0.002 lb	0.60 µg	
	1000 µlb	0.52 µg	
	500 µlb	0.43 µg	
	300 µlb	0.37 µg	
	200 µlb	0.36 µg	

2011-10-01 through 2012-09-30
Effective dates

Sally S. Bruce
For the National Institute of Standards and Technology

CALIBRATION LABORATORIES **NVLAP LAB CODE 200468-0**

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

Measured Parameter or Device Calibrated	Range	Uncertainty (k=2) [Note 3]	Remarks
	100 µlb	0.41 µg	
	50 µlb	0.35 µg	
	30 µlb	0.30 µg	
	20 µlb	0.29 µg	
	10 µlb	0.34 µg	
	5 µlb	0.20 µg	
	3 µlb	0.15 µg	
	2 µlb	0.13 µg	
	1 µlb	0.15 µg	
Mass – Metric			
	1 kg	88 µg	Echelon II
	500 g	59 µg	
	300 g	42 µg	
	200 g	33 µg	
	100 g	18 µg	
	50 g	10 µg	
	40 g	9.1 µg	
	30 g	7.2 µg	
	20 g	4.8 µg	
	10 g	3.8 µg	
	5 g	1.9 µg	
	3 g	1.2 µg	
	2 g	1.1 µg	
	1 g	0.77 µg	
	500 mg	0.62 µg	
	300 mg	0.35 µg	
	200 mg	0.25 µg	
	100 mg	0.24 µg	
	50 mg	0.26 µg	
	30 mg	0.17 µg	
	20 mg	0.18 µg	
	10 mg	0.17 µg	
	5 mg	0.17 µg	

2011-10-01 through 2012-09-30
Effective dates

Sally S. Bruce
For the National Institute of Standards and Technology

CALIBRATION LABORATORIES **NVLAP LAB CODE 200468-0**

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

Measured Parameter or Device Calibrated	Range	Uncertainty (k=2) [Note 3]	Remarks
	3 mg	0.19 µg	
	2 mg	0.21 µg	
	1 mg	0.18 µg	
Mass – Avoirdupois			
	4 oz	34 µg	Echelon II
	2 oz	12 µg	
	1 oz	7.7 µg	
	1/2 oz	6.9 µg	
	1/4 oz	2.5 µg	
	1/8 oz	1.7 µg	
	1/16 oz	1.0 µg	
	1/32 oz	0.70 µg	
Mass – Metric			
	500 kg	6.7 g	Echelon III
	300 kg	4.0 g	
	250 kg	3.4 g	
	200 kg	2.8 g	
	150 kg	2.0 g	
	100 kg	1.5 g	
	50 kg	0.59 g	
	30 kg	0.35g	
	25 kg	0.30 g	
	20 kg	0.24 g	
	10 kg	0.12 g	
	5 kg	59 mg	
	4.5 kg	53 mg	
	4 kg	47 mg	
	3 kg	35 mg	
	2 kg	24 mg	
	1 kg	12 mg	
	500 g	8.7 mg	
	300 g	7.1 mg	
	200 g	4.8 mg	
	100 g	2.4 mg	

2011-10-01 through 2012-09-30
Effective dates

Sally S. Bruce
For the National Institute of Standards and Technology

CALIBRATION LABORATORIES **NVLAP LAB CODE 200468-0**

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

Measured Parameter or Device Calibrated	Range	Uncertainty (k=2) [Note 3]	Remarks
	50 g	1.2 mg	
	30 g	0.72 mg	
	20 g	0.50 mg	
	10 g	0.27 mg	
	5 g	0.24 mg	
	3 g	0.24 mg	
	2 g	0.24 mg	
	1 g	0.24 mg	
	500 mg	0.12 mg	
	300 mg	0.12 mg	
	200 mg	0.12 mg	
	100 mg	0.12 mg	
	50 mg	60 µg	
	30 mg	59 µg	
	20 mg	60 µg	
	10 mg	59 µg	
	5 mg	24 µg	
	3 mg	24 µg	
	2 mg	24 µg	
	1 mg	13 µg	
Mass – Avoirdupois			
	2000 lb	14 g	Echelon III – SOP 5
	1000 lb	3.0 g	
	500 lb	1.5 g	
	200 lb	0.67 g	Echelon III – SOP 4
	100 lb	0.098 g	
	5000 lb	43 g	Echelon III
	4000 lb	37 g	
	3500 lb	29 g	
	3000 lb	26 g	
	2500 lb	23 g	
	2000 lb	21 g	
	1000 lb	6.1 g	

2011-10-01 through 2012-09-30
Effective dates

Sally S. Bruce
For the National Institute of Standards and Technology

CALIBRATION LABORATORIES **NVLAP LAB CODE 200468-0**

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

Measured Parameter or Device Calibrated	Range	Uncertainty (k=2) [Note 3]	Remarks
	500 lb	3.2 g	
	300 lb	1.9 g	
	250 lb	1.6 g	
	200 lb	1.4 g	
	150 lb	1.0 g	
	100 lb	0.54 g	
	80 lb	0.44 g	
	50 lb	0.27 g	
	40 lb	0.21 g	
	30 lb	0.17 g	
	25 lb	0.13 g	
	20 lb	0.11 g	
	10 lb	54 mg	
	5 lb	28 mg	
	4 lb	22 mg	
	3 lb	17 mg	
	2 lb	11 mg	
	1 lb	8.6 mg	
	0.5 lb	5.4 mg	
	0.3 lb	3.2 mg	
	0.2 lb	2.2 mg	
	0.1 lb	1.1 mg	
	0.05 lb	0.55 mg	
	0.03 lb	0.34 mg	
	0.02 lb	0.27 mg	
	0.01 lb	0.24 mg	
	0.005 lb	0.24 mg	
	0.003 lb	0.24 mg	
	0.002 lb	0.12 mg	
	0.001 lb	0.12 mg	
	8 oz	5.4 mg	
	4 oz	2.8 mg	
	2 oz	1.3 mg	
	1 oz	0.66 mg	
	1/2 oz	0.36 mg	
	1/4 oz	0.24 mg	

2011-10-01 through 2012-09-30
Effective dates

Sally S. Bruce
For the National Institute of Standards and Technology

CALIBRATION LABORATORIES **NVLAP LAB CODE 200468-0**

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

Measured Parameter or Device Calibrated	Range	Uncertainty (k=2) [Note 3]	Remarks
	1/8 oz	0.24 mg	
	1/16 oz	0.24 mg	
	1/32 oz	0.12 mg	
NVLAP Code: 20/M12 VOLUME			
	1000 gal	47 in^3	Volume Transfer
	500 gal	20 in^3	
	300 gal	12 in^3	
	100 gal	3.9 in^3	
	25 gal	0.94 in^3	
	5 gal	0.21 in^3	
END			

2011-10-01 through 2012-09-30
Effective dates

Sally S. Bruce
For the National Institute of Standards and Technology

CALIBRATION LABORATORIES **NVLAP LAB CODE 200468-0**

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

Measured Parameter or Device Calibrated	Range	Uncertainty (k=2) [Note 3]	Remarks

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.

2011-10-01 through 2012-09-30
Effective dates

Sally S. Bruce
For the National Institute of Standards and Technology