United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 200420-0

State of Ohio Metrology Laboratory

Reynoldsburg, OH

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Calibration Laboratories

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2016-06-30 through 2017-06-30

Effective Dates

DEPARTMENT OF COMMERCE * UNITED STATES OF AMERICA *

For the National Voluntary Laboratory Accreditation Program

National Voluntary Laboratory Accreditation Program

CALIBRATION LABORATORIES **NVLAP LAB CODE 200420-0**

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

State of Ohio Metrology Laboratory	**Field(s) of Accreditation**
8995 East Main Street Reynoldsburg, OH 43068-3399 Mr. Daniel Walker Phone: 614-728-6290 Fax: 614-728-6424 E-mail: Daniel.Walker@agri.ohio.gov URL: http:\\www.agri.ohio.gov/weights	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**	**Expanded Uncertainty** [Note 3]	**Remarks**
DIMENSIONAL			
SURVEYING RODS and TAPES (20/D13)			
Rigid Rules, 72 inch	6 in to 12 in	0.0041 in	
	6 in to 18 in	0.0058 in	
	6 in to 24 in	0.0058 in	
	6 in to 36 in	0.0079 in	
	6 in to 48 in	0.0092 in	
	6 in to 60 in	0.010 in	
	6 in to 72 in	0.011 in	
Rigid Rules, 18 inch	1 in to 2 in	0.0041 in	
	1 in to 3 in	0.0041 in	
	1 in to 4 in	0.0041 in	
	1 in to 5 in	0.0041 in	
	1 in to 6 in	0.0041 in	
	1 in to 7 in	0.0041 in	
	1 in to 8 in	0.0041 in	
	1 in to 9 in	0.0041 in	
	1 in to 10 in	0.0041 in	
	1 in to 11 in	0.0041 in	
	1 in to 12 in	0.0041 in	
	1 in to 13 in	0.0058 in	
	1 in to 14 in	0.0058 in	
	1 in to 15 in	0.0058 in	
	1 in to 16 in	0.0058 in	
	1 in to 17 in	0.0058 in	

2016-11-15 through 2017-06-30
Effective dates

For the National Voluntary Laboratory Accreditation Program

CALIBRATION LABORATORIES **NVLAP LAB CODE 200420-0**

CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) Notes 1,2

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty Note 3	Remarks
	1 in to 18 in	0.0058 in	
Tape to Bench	0 ft to 10 ft	0.0052 in	
	0 ft to 30 ft	0.0074 in	
	0 ft to 40 ft	0.0091 in	
	0 ft to 60 ft	0.010 in	
	0 ft to 70 ft	0.012 in	
	0 ft to 80 ft	0.013 in	
	0 ft to 100 ft	0.014 in	
TIME AND FREQUENCY			
STOPWATCHES AND TIMERS (20/F05)			
	0 h to 24 hr	0.30 s	WWV Comparison
MECHANICAL			
MASS DETERMINATION (20/M08)			
Metric	50 kg	47 mg	Echelon II
	30 kg	28 mg	
	25 kg	28 mg	
	20 kg	28 mg	
	10 kg	3.3 mg	
	5 kg	2.6 mg	
	3 kg	2.4 mg	
	2 kg	1.6 mg	
	1 kg	0.21 mg	
	500 g	0.62 mg	
	300 g	0.28 mg	
	200 g	0.28 mg	
	100 g	35 µg	
	50 g	42 µg	
	30 g	38 µg	
	20 g	13 µg	
	10 g	13 µg	
	5 g	6.7 µg	
	3 g	6.6 µg	
	2 g	5.8 µg	

2016-11-15 through 2017-06-30
Effective dates

For the National Voluntary Laboratory Accreditation Program

CALIBRATION LABORATORIES **NVLAP LAB CODE 200420-0**

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

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty [Note 3]	Remarks
	1 g	5.6 µg	
	500 mg	5.7 µg	
	300 mg	3.5 µg	
	200 mg	2.0 µg	
	100 mg	2.6 µg	
	50 mg	1.8 µg	
	30 mg	1.4 µg	
	20 mg	1.6 µg	
	10 mg	1.8 µg	
	5 mg	1.5 µg	
	3 mg	1.4 µg	
	2 mg	1.3 µg	
	1 mg	1.4 µg	
Avoirdupois	1000 lb	1.0 g	Echelon II
	500 lb	0.65 g	
	250 lb	0.19 g	
	50 lb	21 mg	
	30 lb	9.7 mg	
	25 lb	7.3 mg	
	20 lb	4.4 mg	
	10 lb	3.6 mg	
	5 lb	2.0 mg	
	3 lb	1.1 mg	
	2 lb	1.3 mg	
	1 lb	0.49 mg	
	0.5 lb	0.20 mg	
	0.3 lb	63 µg	
	0.2 lb	59 µg	
	0.1 lb	32 µg	
	0.05 lb	24 µg	
	0.03 lb	21 µg	
	0.02 lb	14 µg	
	0.01 lb	3.1 µg	
	0.005 lb	2.5 µg	
	0.003 lb	2.1 µg	

2016-11-15 through 2017-06-30
Effective dates

For the National Voluntary Laboratory Accreditation Program

CALIBRATION LABORATORIES **NVLAP LAB CODE 200420-0**

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

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty [Note 3]	Remarks
	0.002 lb	2.0 µg	
	0.001 lb	2.0 µg	
	8 oz	0.20 mg	
	4 oz	38 µg	
	2 oz	32 µg	
	1 oz	12 µg	
	½ oz	11 µg	
	¼ oz	4.8 µg	
	1/8 oz	2.0 µg	
	1/16 oz	1.9 µg	
	1/32 oz	1.7 µg	
	1/64 oz	2.0 ug	
			Echelon III – Double
Metric	500 kg	1.0 g	Substitution
	200 kg	0.68 g	
			Echelon III – Modified
	1000 kg	20 g	Substitution
	500 kg	8.9 g	
	300 kg	7.3 g	
	200 kg	3.3 g	
	100 kg	2.4 g	
	50 kg	0.66 g	
	25 kg	0.38 g	
	20 kg	0.31 g	
	10 kg	0.17 g	
	5 kg	61 mg	
	3 kg	36 mg	
	2 kg	24 mg	
	1 kg	12 mg	
	500 g	8.4 mg	
	300 g	7.2 mg	
	200 g	4.8 mg	
	100 g	2.4 mg	
	50 g	1.2 mg	

2016-11-15 through 2017-06-30
Effective dates

For the National Voluntary Laboratory Accreditation Program

CALIBRATION LABORATORIES **NVLAP LAB CODE 200420-0**

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

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty [Note 3]	Remarks
	30 g	0.75 mg	
	20 g	0.48 mg	
	10 g	0.24 mb	
	5 g	0.18 mg	
	3 g	0.16 mg	
	2 g	0.13 mg	
	1g	0.11 mg	
	500 mg	87 µg	
	300 mg	78 µg	
	200 mg	66 µg	
	100 mg	52 µg	
	50 mg	43 µg	
	30 mg	38 µg	
	20 mg	32 µg	
	10 mg	26 µg	
	5 mg	21 µg	
	3 mg	18 µg	
	2 mg	15 µg	
	1 mg	13 µg	
			Echelon III – Double
Avoirdupois	5000 lb	9.0 g	Substitution
	4000 lb	8.0 g	
	2500 lb	6.4 g	
	2000 lb	4.8 g	
			Echelon III – Modified
	5000 lb	35 g	Substituion
	4000 lb	29 g	
	3500 lb	26 g	
	3000 lb	25 g	
	2500 lb	19 g	
	2000 lb	17 g	
	1000 lb	6.0 g	
	500 lb	3.2 g	
	250 lb	2.0 g	

2016-11-15 through 2017-06-30
Effective dates

For the National Voluntary Laboratory Accreditation Program

CALIBRATION LABORATORIES **NVLAP LAB CODE 200420-0**

CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) Notes 1,2

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty Note 3	Remarks
	100 lb	0.54 g	
	50 lb	0.28 g	
	30 lb	0.26 g	
	25 lb	0.24 g	
	20 lb	0.22 g	
	10 lb	54 mg	
	5 lb	27 mg	
	3 lb	17 mg	
	2 lb	11 mg	
	1 lb	8.4 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	0.54 mg	
	0.03 lb	0.32 mg	
	0.02 lb	0.22 mg	
	0.01 lb	0.18 mg	
	0.005 lb	0.14 mg	
	0.003 lb	0.13 mg	
	0.002 lb	0.10 mg	
	0.001 lb	91 µg	
	8 oz	5.4 mg	
	4 oz	2.8 mg	
	2 oz	1.3 mg	
	1 oz	0.65 mg	
	½ oz	0.34 mg	
	¼ oz	0.21 mg	
	1/8 oz	0.16 mg	
	1/16 oz	0.13 mg	
	1/32 oz	0.11 mg	
	1/64 oz	84 µg	
Weight Carts	6000 lb	0.26 lb	NIST HB 105-8
	5500 lb	0.20 lb	

2016-11-15 through 2017-06-30
Effective dates

For the National Voluntary Laboratory Accreditation Program

CALIBRATION LABORATORIES **NVLAP LAB CODE 200420-0**

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

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty [Note 3]	Remarks
	5000 lb 4500 lb	0.20 lb 0.18 lb	
	4000 lb 3500 lb 3000 lb	0.18 lb 0.15 lb 0.15 lb	
VOLUME (20/M12)			
Volume Transfer	1000 gal 500 gal 100 gal 50 gal 25 gal 5 gal 5 gal 5 gal	32 in^3 27 in^3 2.5 in^3 2.5 in^3 1.9 in^3 0.26 in^3 0.49 in^3 0.22 in^3	 Test Measure; 3 in neck Test Measure; 4 in neck Prover Bottom; Drain "J"
Liquefied Petroleum Gas	100 gal	6.7 in^3	Volume Transfer Method
END			

2016-11-15 through 2017-06-30
Effective dates

For the National Voluntary Laboratory Accreditation Program

CALIBRATION LABORATORIES **NVLAP LAB CODE 200420-0**

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 with a level of confidence of approximately 95 %, typically using a coverage factor of $k = 2$. However, laboratories may report a coverage factor different than $k = 2$ to achieve the 95 % level of confidence. 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.

2016-11-15 through 2017-06-30
Effective dates

For the National Voluntary Laboratory Accreditation Program