National Voluntary Laboratory Accreditation Program

CALIBRATION LABORATORIES **NVLAP LAB CODE 200408-0**

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) Notes 1,2

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty Note 3	Remarks
MECHANICAL			
FORCE (20/M06)			
	20 000 lbf 15 000 lbf 10 000 lbf 5 000 lbf	46 lbf 35 lbf 33 lbf 30 lbf	Wheel Load Weighers
MASS (20/M08)			
Metric	20 kg 10 kg 5 kg 3 kg 2 kg 1 kg 500 g 300 g 200 g 100 g 50 g 30 g 20 g 10 g 5 g 3 g 2 g	5.3 mg 1.7 mg 0.59 mg 0.38 mg 0.25 mg 86 µg 85 µg 63 µg 37 µg 35 µg 20 µg 13 µg 11 µg 11 µg 5.6 µg 3.5 µg 2.5 µg	Echelon I

2024-09-30 through 2025-09-30
Effective dates

For the National Voluntary Laboratory Accreditation Program

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

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty [Note 3]	Remarks
	1 g	1.9 µg	
	500 mg	1.1 µg	
	300 mg	0.72 µg	
	200 mg	0.57 µg	
	100 mg	0.52 µg	
	50 mg	0.34 µg	
	30 mg	0.28 µg	
	20 mg	0.25 µg	
	10 mg	0.28 µg	
	5 mg	0.22 µg	
	3 mg	0.21 µg	
	2 mg	0.21 µg	
	1 mg	0.24 µg	
	20 kg	7.3 mg	Echelon II
	10 kg	3.1 mg	
	5 kg	1.4 mg	
	3 kg	1.0 mg	
	2 kg	0.35 mg	
	1 kg	0.15 mg	
	500 g	0.14 mg	
	300 g	0.10 mg	
	200 g	58 µg	
	100 g	39 µg	
	50 g	25 µg	
	30 g	20 µg	
	20 g	16 µg	
	10 g	13 µg	
	5 g	6.5 µg	
	3 g	4.6 µg	
	2 g	2.9 µg	
	1 g	2.5 µg	
	500 mg	3.1 µg	
	300 mg	1.5 µg	
	200 mg	1.3 µg	
	100 mg	1.0 µg	

2024-09-30 through 2025-09-30
Effective dates

For the National Voluntary Laboratory Accreditation Program

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

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty [Note 3]	Remarks
	50 mg	0.76 µg	
	30 mg	0.91 µg	
	20 mg	0.71 µg	
	10 mg	0.57 µg	
	5 mg	0.58 µg	
	3 mg	0.57 µg	
	2 mg	0.59 µg	
	1 mg	0.51 µg	
Avoirdupois	50 lb	7.7 mg	Echelon II
	25 lb	5.4 mg	
	20 lb	3.1 mg	
	10 lb	1.4 mg	
	5 lb	1.0 mg	
	3 lb	0.32 mg	
	2 lb	0.18 mg	
	1 lb	0.16 mg	
	0.5 lb	70 µg	
	0.3 lb	71 µg	
	0.2 lb	50 µg	
	0.1 lb	30 µg	
	0.05 lb	19 µg	
	0.03 lb	17 µg	
	0.02 lb	15 µg	
	0.01 lb	7.7 µg	
	0.005 lb	3.8 µg	
	0.003 lb	3.3 µg	
	0.002 lb	2.9 µg	
	0.001 lb	3.2 µg	
	8 oz	70 µg	
	4 oz	67 µg	
	2 oz	32 µg	
	1 oz	22 µg	
	1/2 oz	17 µg	
	1/4 oz	16 µg	
	1/8 oz	5.7 µg	

2024-09-30 through 2025-09-30
Effective dates

For the National Voluntary Laboratory Accreditation Program

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

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty [Note 3]	Remarks
	1/16 oz	3.6 µg	
	1/32 oz	2.9 µg	
Metric	500 kg	2.2 g	Echelon III
	250 kg	1.9 g	
	100 kg	1.4 g	
	50 kg	0.27 g	
	25 kg	35 mg	
	20 kg	33 mg	
	10 kg	16 mg	
	5 kg	2.9 mg	
	3 kg	2.4 mg	
	2 kg	2.0 mg	
	1 kg	1.7 mg	
	500 g	1.3 mg	
	300 g	1.3 mg	
	200 g	0.11 mg	
	100 g	63 µg	
	50 g	40 µg	
	30 g	33 µg	
	20 g	27 µg	
	10 g	24 µg	
	5 g	23 µg	
	3 g	23 µg	
	2 g	24 µg	
	1 g	22 µg	
	500 mg	3.8 µg	
	300 mg	3.2 µg	
	200 mg	3.5 µg	
	100 mg	2.2 µg	
	50 mg	1.6 µg	
	30 mg	1.7 µg	
	20 mg	1.6 µg	
	10 mg	1.9 µg	
	5 mg	1.1 µg	
	3 mg	2.2 µg	

2024-09-30 through 2025-09-30
Effective dates

For the National Voluntary Laboratory Accreditation Program

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

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty [Note 3]	Remarks
	2 mg	3.1 µg	
	1 mg	0.90 µg	
Weight Carts	6000 lb	0.19 lb	
	5000 lb	0.19 lb	
	4000 lb	0.19 lb	
	3000 lb	0.19 lb	
Avoirdupois			Echelon III
	1000 lb	0.0047 lb	
	500 lb	0.0041 lb	
	100 lb	0.35 g	
	50 lb	22 mg	
	25 lb	16 mg	
	20 lb	16 mg	
	10 lb	3.0 mg	
	5 lb	2.2 mg	
	3 lb	2.2 mg	
	2 lb	1.6 mg	
	1 lb	1.8 mg	
	0.5 lb	1.3 mg	
	0.3 lb	0.11 mg	
	0.2 lb	73 µg	
	0.1 lb	43 µg	
	0.05 lb	34 µg	
	0.03 lb	31 µg	
	0.02 lb	25 µg	
	0.01 lb	22 µg	
	0.005 lb	38 µg	
	0.003 lb	33 µg	
	0.002 lb	25 µg	
	0.001 lb	26 µg	
	8 oz	1.3 mg	
	4 oz	0.10 mg	
	2 oz	49 µg	
	1 oz	34 µg	

2024-09-30 through 2025-09-30
Effective dates

For the National Voluntary Laboratory Accreditation Program

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

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty [Note 3]	Remarks
	1/2 oz	26 µg	
	1/4 oz	26 µg	
	1/8 oz	21 µg	
	1/16 oz	34 µg	
	1/32 oz	26 µg	
VOLUME AND DENSITY (20/M12)			
	2000 gal	71 in^3	Volume Transfer
	1500 gal	53 in^3	
	1000 gal	36 in^3	
	750 gal	26 in^3	
	500 gal	16 in^3	
	100 gal	2.4 in^3	
	50 gal	1.2 in^3	
	5 gal	0.33 in^3	
	25 gal	0.48 in^3	Volume Gravimetric
	15 gal	0.48 in^3	
	5 gal	0.091 in^3	
	1 gal	0.039 in^3	
	1/2 gal	0.024 in^3	
	1 qt	0.022 in^3	
	1 pt	0.010 in^3	
	1/2 pt	0.0058 in^3	
	30 gal	3.1 in^3	Small Volume Prover
	20 gal	0.91 in^3	
	15 gal	1.6 in^3	
	5 gal	0.19 in^3	
	2 liter	0.73 mL	Volume Gravimetric
	1 liter	0.49 mL	
	100 mL	0.075 mL	
END			

2024-09-30 through 2025-09-30
Effective dates

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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 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.5 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.

2024-09-30 through 2025-09-30
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