SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

State of Alaska Metrology Laboratory	Field(s) of Accreditation
12050 Industry Way Bldg O, Suite 6 Anchorage, AK 99515-3593 Mr. Garret L. Brown Phone: 907-365-1233 E-mail: garret.brown@alaska.gov	Mechanical Time & Frequency Thermodynamic

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

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty [Note 3]	Remarks
MECHANICAL			
MASS (20/M08)			
Metric	30 kg	19 mg	Echelon II
	25 kg	19 mg	
	20 kg	12 mg	
	10 kg	12 mg	
	5 kg	7.6 mg	
	3 kg	2.9 mg	
	2 kg	0.79 mg	
	1 kg	0.27 mg	
	500 g	0.26 mg	
	300 g	0.18 mg	
	200 g	92 µg	
	100 g	68 µg	
	50 g	59 µg	
	30 g	57 µg	
	20 g	24 µg	
	10 g	18 µg	
	5 g	8.4 µg	
	3 g	17 µg	
	2 g	3.2 µg	
	1 g	4.7 µg	
	500 mg	8.3 µg	
	300 mg	4.7 µg	
	200 mg	11 µg	

2020-04-03 through 2021-03-31
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
	100 mg	4.5 µg	
	50 mg	5.0 µg	
	30 mg	3.8 µg	
	20 mg	3.5 µg	
	10 mg	2.1 µg	
	5 mg	2.5 µg	
	3 mg	3.4 µg	
	2 mg	1.2 µg	
	1 mg	2.2 µg	
Avoirdupois	50 lb	20 mg	Echelon II
	25 lb	7.2 mg	
	10 lb	5.8 mg	
	5 lb	1.6 mg	
	3 lb	1.5 mg	
	2 lb	0.18 mg	
	1 lb	0.15 mg	
	0.5 lb	0.19 mg	
	0.3 lb	71 µg	
	0.2 lb	48 µg	
	0.1 lb	36 µg	
	0.05 lb	24 µg	
	0.03 lb	17 µg	
	0.02 lb	12 µg	
	0.01 lb	16 µg	
	0.005 lb	8.2 µg	
	0.003 lb	2.6 µg	
	0.002 lb	5.3 µg	
	0.001 lb	2.3 µg	
	8 oz	0.19 mg	
	4 oz	93 µg	
	2 oz	62 µg	
	1 oz	49 µg	
	½ oz	31 µg	
	¼ oz	20 µg	
	1/8 oz	21 µg	

2020-04-03 through 2021-03-31
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	6.5 µg	
	1/32 oz	6.7 µg	
	0.5 oz	31 µg	
	0.2 oz	13 µg	
	0.1 oz	13 µg	
	0.05 oz	8.6 µg	
Metric	30 kg	0.43 g	Echelon III
	25 kg	0.36 g	
	20 kg	0.31 g	
	10 kg	0.15 g	
	5 kg	32 mg	
	3 kg	21 mg	
	2 kg	12 mg	
	1 kg	6.1 mg	
	500 g	3.7 mg	
	300 g	2.6 mg	
	200 g	1.8 mg	
	100 g	1.1 mg	
	50 g	0.69 mg	
	30 g	0.56 mg	
	20 g	0.37 mg	
	10 g	0.24 mg	
	5 g	0.16 mg	
	3 g	0.15 mg	
	2 g	98 µg	
	1 g	67 µg	
	500 mg	48 µg	
	300 mg	43 µg	
	200 mg	34 µg	
	100 mg	25 µg	
	50 mg	21 µg	
	30 mg	20 µg	
	20 mg	16 µg	
	10 mg	13 µg	
	5 mg	11 µg	
	3 mg	15 µg	

2020-04-03 through 2021-03-31
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	8.9 µg	
	1 mg	7.4 µg	
Avoirdupois	1000 lb	4.2 g	Echelon III
	500 lb	2.7 g	
	50 lb	0.24 g	
	25 lb	0.12 g	
	20 lb	48 mg	
	15 lb	45 mg	
	10 lb	20 mg	
	7.5 lb	17 mg	
	5 lb	12 mg	
	3 lb	9.2 mg	
	2 lb	3.8 mg	
	1 lb	2.4 mg	
	0.5 lb	2.0 mg	
	0.3 lb	1.4 mg	
	0.2 lb	0.67 mg	
	0.1 lb	0.48 mg	
	0.05 lb	0.36 mg	
	0.03 lb	0.34 mg	
	0.02 lb	0.17 mg	
	0.01 lb	0.12 mg	
	0.005 lb	96 µg	
	0.003 lb	69 µg	
	0.002 lb	83 µg	
	0.001 lb	43 µg	
	8 oz	1.8 mg	
	4 oz	1.1 mg	
	2 oz	0.68 mg	
	1 oz	0.39 mg	
	½ oz	0.24 mg	
	¼ oz	0.17 mg	
	1/8 oz	0.12 mg	
	1/16 oz	71 µg	
	1/32 oz	52 µg	

2020-04-03 through 2021-03-31
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
	0.5 oz	0.31 mg	
	0.2 oz	0.20 mg	
	0.1 oz	0.13 mg	
	0.05 oz	0.10 mg	
Weight Carts	5000 lb	133 g	
	4000 lb	133 g	
	3000 lb	132 g	
Wheel Load Weighers	40 000 lb	64 lb	
	30 000 lb	57 lb	
	20 000 lb	54 lb	
	10 000 lb	39 lb	
VOLUME and Density (20/M12)			
Volume	1000 gal	54 in^3	Volume Transfer
	500 gal	28 in^3	
	300 gal	17 in^3	
	100 gal	5.4 in^3	
	50 gal	1.5 in^3	
	25 gal	0.85 in^3	
	15 gal	0.50 in^3	
	5 gal	0.18 in^3	
	25 gal	0.58 in^3	Gravimetric
	5 gal	0.13 in^3	
	100 gal	11 in^3	LPG
	25 gal	1.7 in^3	
	750 gal	45 in^3	Field Calibrations
	500 gal	26 in^3	
	400 gal	21 in^3	
	100 gal	5.1 in^3	
	50 gal	2.7 in^3	
	15 gal	0.68 in^3	
	5 gal	0.28 in^3	

2020-04-03 through 2021-03-31
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
TIME & FREQUENCY			
FREQUENCY DISSEMINATION (20/F01)			
Tuning Forks 7000 Hz to 1000 Hz			
	2544.2 Hz	0.69 Hz	K band
	3649.4 Hz	0.66 Hz	
	4738.0 Hz	0.56 Hz	
	3211.5 Hz	0.77 Hz	Ka Band
	5901.0 Hz	0.92 Hz	
	6966.0Hz	1.1 Hz	
	1093.1 Hz	0.33 Hz	X band
	1730.9 Hz	0.58 Hz	
	2514.3 Hz	0.37 Hz	
THERMODYNAMIC			
LABORATORY THERMOMETERS, DIGITAL AND ANALOG (20/T03)			
Digital Thermometers	-20 ºF	0.093 ºF	Comparison to PRT
	-10 ºF	0.13 ºF	
	0 ºF	0.10 ºF	
	10 ºF	0.12 ºF	
	20 ºF	0.098 ºF	
	40 ºF	0.077 ºF	
	60 ºF	0.079 ºF	
	80 ºF	0.082 ºF	
	100 ºF	0.11 ºF	
	120 ºF	0.12 ºF	
	-20 ºC	0.042 ºC	Comparison to PRT
	0 ºC	0.035 ºC	
	20 ºC	0.045 ºC	
	29.76 ºC	0.052 ºC	
	50 ºC	0.056 ºC	
	100 ºC	0.069 ºC	
END			

2020-04-03 through 2021-03-31
Effective dates

For the National Voluntary Laboratory Accreditation Program

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.

2020-04-03 through 2021-03-31
Effective dates

For the National Voluntary Laboratory Accreditation Program