National Voluntary Laboratory Accreditation Program

CALIBRATION LABORATORIES **NVLAP LAB CODE 600169-0**

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

Rice Lake Weighing Systems **Dba Heusser Neweigh** 1400 Willow Pass Court Concord, CA 94520 Mr. Mark Ruefenacht Phone: 925-798-8900 Fax: 925-798-8905 E-mail: mruefenacht@ricelake.com URL: http://www.ricelake.com	**Fields of Calibration** 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
MECHANICAL			
MASS DETERMINATION (20/M08)			
Metric	600 kg	0.77 g	Echelon I
	575 kg	0.76 g	
	550 kg	0.76 g	
	525 kg	0.76 g	
	500 kg	0.76 g	
	475 kg	0.76 g	
	450 kg	0.76 g	
	425 kg	0.76 g	
	400 kg	0.76 g	
	375 kg	0.76 g	
	350 kg	0.76 g	
	325 kg	0.76 g	
	300 kg	0.76 g	
	275 kg	0.76 g	
	250 kg	0.76 g	
	225 kg	0.76 g	
	200 kg	0.75 g	
	175 kg	0.75 g	
	150 kg	0.75 g	
	125 kg	0.75 g	
	100 kg	0.75 g	
	60 kg	14 mg	

2024-09-04 through 2025-03-31
Effective dates

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

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty [Note 3]	Remarks
	50 kg	13 mg	
	45 kg	12 mg	
	30 kg	6.7 mg	
	25 kg	5.7 mg	
	20 kg	5.2 mg	
	10 kg	1.6 mg	
	5 kg	0.78 mg	
	4 kg	0.55 mg	
	3 kg	0.33 mg	
	2 kg	0.28 mg	
	1 kg	85 µg	
	500 g	35 µg	
	400 g	48 µg	
	300 g	38 µg	
	200 g	26 µg	
	150 g	21 µg	
	100 g	14 µg	
	50 g	8.0 µg	
	40 g	10 µg	
	30 g	11 µg	
	20 g	5.5 µg	
	10 g	5.9 µg	
	5 g	3.0 µg	
	3 g	2.5 µg	
	2 g	1.4 µg	
	1 g	1.2 µg	
	500 mg	0.89 µg	
	400 mg	1.3 µg	
	300 mg	0.74 µg	
	200 mg	0.64 µg	
	150 mg	1.4 µg	
	100 mg	0.72 µg	
	50 mg	0.75 µg	
	30 mg	0.66 µg	
	20 mg	0.68 µg	
	10 mg	0.79 µg	
	5 mg	0.50 µg	

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Measured Parameter or Device Calibrated	Range	Expanded Uncertainty Note 3	Remarks
	3 mg	0.43 µg	
	2 mg	0.39 µg	
	1 mg	0.45 µg	
	0.5 mg	0.64 µg	
Avoirdupois	1000 lb	1.2 g	Echelon I
	500 lb	0.76 g	
	250 lb	0.75 g	
	200 lb	0.75 g	
	100 lb	25 mg	
	50 lb	12 mg	
	30 lb	3.1 mg	
	25 lb	2.6 mg	
	20 lb	2.2 mg	
	10 lb	0.98 mg	
	5 lb	0.50 mg	
	4 lb	0.41 mg	
	3 lb	0.36 mg	
	2 lb	0.12 mg	
	1 lb	54 µg	
	0.5 lb	31 µg	
	0.3 lb	23 µg	
	0.2 lb	21 µg	
	0.1 lb	24 µg	
	0.05 lb	13 µg	
	0.03 lb	8.2 µg	
	0.02 lb	6.3 µg	
	0.01 lb	7.0 µg	
	0.005 lb	3.5 µg	
	0.003 lb	2.1 µg	
	0.002 lb	1.4 µg	
	0.001 lb	1.1 µg	
	0.0005 lb	1.1 µg	
	0.0003 lb	1.0 µg	
	0.0002 lb	1.0 µg	
	0.0001 lb	1.0 µg	
	0.00005 lb	1.0 µg	

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CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) Notes 1,2

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty Note 3	Remarks
	0.00003 lb	1.0 µg	
	0.00002 lb	1.0 µg	
	0.00001 lb	1.0 µg	
	0.000005 lb	1.0 µg	
	0.000003 lb	1.0 µg	
	0.000002 lb	1.0 µg	
	0.000001 lb	1.0 µg	
	4 oz	36 µg	
	2 oz	22 µg	
	1 oz	16 µg	
	0.5 oz	12 µg	
	0.25 oz	7.8 µg	
	0.2 oz	9.2 µg	
	0.125 oz	4.9 µg	
	0.1 oz	4.5 µg	
	0.0625 oz	4.4 µg	
	0.05 oz	2.4 µg	
	0.03125 oz	3.9 µg	
	0.015625 oz	1.9 µg	
Metric	600 kg	0.77 g	Echelon II
	575 kg	0.76 g	
	550 kg	0.76 g	
	525 kg	0.76 g	
	500 kg	0.76 g	
	475 kg	0.76 g	
	450 kg	0.76 g	
	425 kg	0.76 g	
	400 kg	0.76 g	
	375 kg	0.76 g	
	350 kg	0.76 g	
	325 kg	0.76 g	
	300 kg	0.76 g	
	275 kg	0.76 g	
	250 kg	0.76 g	
	225 kg	0.76 g	
	200 kg	0.75 g	

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CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) Notes 1,2

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty Note 3	Remarks
	175 kg	0.75 g	
	150 kg	0.75 g	
	125 kg	0.75 g	
	100 kg	0.75 g	
	60 kg	14 mg	
	50 kg	13 mg	
	45 kg	12 mg	
	30 kg	6.7 mg	
	25 kg	5.7 mg	
	20 kg	5.2 mg	
	10 kg	1.6 mg	
	5 kg	0.78 mg	
	4 kg	0.55 mg	
	3 kg	0.33 mg	
	2 kg	0.28 mg	
	1 kg	0.11 mg	
	500 g	36 µg	
	400 g	48 µg	
	300 g	38 µg	
	200 g	36 µg	
	150 g	29 µg	
	100 g	19 µg	
	50 g	10 µg	
	40 g	26 µg	
	30 g	19 µg	
	20 g	6.2 µg	
	10 g	6.8 µg	
	5 g	5.3 µg	
	3 g	8.5 µg	
	2 g	4.9 µg	
	1 g	3.6 µg	
	500 mg	1.6 µg	
	400 mg	1.9 µg	
	300 mg	0.96 µg	
	200 mg	0.85 µg	
	150 mg	2.0 µg	
	100 mg	0.97 µg	

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CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) Notes 1,2

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty Note 3	Remarks
	50 mg	1.0 µg	
	30 mg	1.0 µg	
	20 mg	0.99 µg	
	10 mg	1.1 µg	
	5 mg	0.87 µg	
	3 mg	0.80 µg	
	2 mg	0.71 µg	
	1 mg	0.82 µg	
Avoirdupois	1000 lb	1.2 g	Echelon II
	500 lb	0.76 g	
	250 lb	0.75 g	
	200 lb	0.75 g	
	100 lb	25 mg	
	50 lb	12 mg	
	30 lb	3.1 mg	
	25 lb	2.6 mg	
	20 lb	2.2 mg	
	10 lb	0.98 mg	
	5 lb	0.50 mg	
	4 lb	0.41 mg	
	3 lb	0.36 mg	
	2 lb	0.12 mg	
	1 lb	54 µg	
	0.5 lb	31 µg	
	0.3 lb	23 µg	
	0.2 lb	21 µg	
	0.1 lb	24 µg	
	0.05 lb	13 µg	
	0.03 lb	8.2 µg	
	0.02 lb	6.3 µg	
	0.01 lb	7.0 µg	
	0.005 lb	3.5 µg	
	0.003 lb	2.1 µg	
	0.002 lb	1.4 µg	
	0.001 lb	1.1 µg	
	0.0005 lb	1.1 µg	

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CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) Notes 1,2

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty Note 3	Remarks
	0.0003 lb	1.0 µg	
	0.0002 lb	1.0 µg	
	0.0001 lb	1.0 µg	
	0.00005 lb	1.0 µg	
	0.00003 lb	1.0 µg	
	0.00002 lb	1.0 µg	
	0.00001 lb	1.0 µg	
	0.000005 lb	1.0 µg	
	0.000003 lb	1.0 µg	
	0.000002 lb	1.0 µg	
	0.000001 lb	1.0 µg	
	4 oz	36 µg	
	2 oz	22 µg	
	1 oz	16 µg	
	0.5 oz	12 µg	
	0.25 oz	7.8 µg	
	0.2 oz	9.2 µg	
	0.125 oz	4.9 µg	
	0.1 oz	4.5 µg	
	0.0625 oz	4.4 µg	
	0.05 oz	2.4 µg	
	0.03125 oz	3.9 µg	
	0.015625 oz	1.9 µg	
Metric	1500 kg	7.6 g	Echelon III
	1200 kg	6.4 g	
	1000 kg	6.1 g	
	600 kg	0.77 g	
	575 kg	0.77 g	
	550 kg	0.76 g	
	525 kg	0.76 g	
	500 kg	0.76 g	
	475 kg	0.76 g	
	450 kg	0.76 g	
	425 kg	0.76 g	
	400 kg	0.76 g	
	375 kg	0.76 g	

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CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) Notes 1,2

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty Note 3	Remarks
	350 kg	0.76 g	
	325 kg	0.76 g	
	300 kg	0.76 g	
	275 kg	0.76 g	
	250 kg	0.76 g	
	225 kg	0.76 g	
	200 kg	0.75 g	
	175 kg	0.75 g	
	150 kg	0.75 g	
	125 kg	0.75 g	
	100 kg	0.75 g	
	60 kg	14 mg	
	50 kg	13 mg	
	45 kg	12 mg	
	30 kg	8.5 mg	
	25 kg	8.2 mg	
	20 kg	7.8 mg	
	10 kg	2.1 mg	
	5 kg	2.0 mg	
	4 kg	1.9 mg	
	3 kg	1.9 mg	
	2 kg	1.9 mg	
	1 kg	1.0 mg	
	500 g	0.99 mg	
	400 g	1.0 mg	
	300 g	1.0 mg	
	200 g	0.12 mg	
	150 g	0.12 mg	
	100 g	0.12 mg	
	50 g	0.12 mg	
	40 g	0.12 mg	
	30 g	0.12 mg	
	20 g	10 µg	
	10 g	10 µg	
	5 g	9.1 µg	
	3 g	8.9 µg	
	2 g	8.7 µg	

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CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) Notes 1,2

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty Note 3	Remarks
	1 g	8.7 µg	
	500 mg	8.7 µg	
	400 mg	8.8 µg	
	300 mg	8.7 µg	
	200 mg	8.7 µg	
	150 mg	8.8 µg	
	100 mg	8.7 µg	
	50 mg	8.7 µg	
	30 mg	8.7 µg	
	20 mg	8.7 µg	
	10 mg	8.7 µg	
	5 mg	8.7 µg	
	3 mg	8.7 µg	
	2 mg	8.7 µg	
	1 mg	8.7 µg	
Avoirdupois	3200 lb	7.7 g	Echelon III
	3000 lb	7.3 g	
	2000 lb	6.7 g	
	1800 lb	6.6 g	
	1500 lb	6.4 g	
	1300 lb	1.7 g	
	1200 lb	1.7 g	
	1000 lb	1.2 g	
	500 lb	0.76 g	
	250 lb	0.75 g	
	200 lb	0.75 g	
	100 lb	25 mg	
	50 lb	13 mg	
	30 lb	6.8 mg	
	25 lb	6.6 mg	
	20 lb	2.7 mg	
	10 lb	2.0 mg	
	5 lb	1.8 mg	
	4 lb	1.9 mg	
	3 lb	1.8 mg	
	2 lb	0.92 mg	

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CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) Notes 1,2

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty Note 3	Remarks
	1 lb	0.91 mg	
	0.5 lb	0.91 mg	
	0.3 lb	0.12 mg	
	0.2 lb	0.12 mg	
	0.1 lb	0.12 mg	
	0.05 lb	0.12 mg	
	0.03 lb	16 µg	
	0.02 lb	11 µg	
	0.01 lb	11 µg	
	0.005 lb	9.2 µg	
	0.003 lb	8.9 µg	
	0.002 lb	8.7 µg	
	0.001 lb	8.6 µg	
	0.0005 lb	8.6 µg	
	0.0003 lb	8.6 µg	
	0.0002 lb	8.6 µg	
	0.0001 lb	8.6 µg	
	0.00005 lb	8.6 µg	
	0.00003 lb	8.6 µg	
	0.00002 lb	8.6 µg	
	0.00001 lb	8.6 µg	
	0.000005 lb	8.6 µg	
	0.000003 lb	8.6 µg	
	0.000002 lb	8.6 µg	
	0.000001 lb	8.6 µg	
	4 oz	0.12 mg	
	2 oz	0.12 mg	
	1 oz	0.12 mg	
	0.5 oz	15 µg	
	0.25 oz	11 µg	
	0.2 oz	12 µg	
	0.125 oz	9.8 µg	
	0.1 oz	9.6 µg	
	0.0625 oz	9.6 µg	
	0.05 oz	8.9 µg	

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

Measured Parameter or Device Calibrated	Range	Expanded Uncertainty [Note 3]	Remarks
	0.03125 oz 0.015625 oz	9.4 µg 8.7 µg	
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 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.

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