SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

Data Weighing Systems

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CALIBRATION

Valid to: **September 22, 2025** Certificate Number: **L1114-1**

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Force gauges and sensors used in force measurement applications, tension and compression [1]	(0.1 to 1 000) lbf	0.08% of reading	Method, tolerance according to DWS procedures utilizing NIST Class F Weights
Force gauges and sensors used in force measurement applications, tension and compression [1,2]	(0.5 to 300) lbf	0.016% of reading	ASTM E74 utilizing NIST Class F Weights, Class 4 Weights or Class 1 weights.
Force gauges and sensors used in force measurement applications, tension and compression [1]	(0 to 1.9) lbf (2 to 600 000) lbf	0.002 lbf 0.06% of Reading	Method, tolerance according to DWS procedures utilizing reference load cell
Testing Machines / Load Cells – Compression [1]	(0.01 to 600 000) lbf	0.08% of reading	ASTM E4
Testing Machines / Load Cells – Tension [1]	(0.01 to 200 000) lbf	0.08% of reading	ASTM E4
Testing Machine Displacement [1]	(0 to 25) in	0.011 in	ASTM E 2309
Testing Machine Speed [1]	(0.05 to 20) in/min	0.16 % of reading	ASTM E 2658
NIST Class F ASTM E617 Class 5 ASTM E617 Class 6 ASTM E617 Class 7	50 lb 25 lb 20 lb 10 lb 5 lb 2 lb	75 mg 40 mg 35 mg 20 mg 10 mg 5 mg	Comparison of Unknown Mass to Known Mass ASTM E617 Class 1, Class 4 Weights

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NIST Class F ASTM E617 Class 5 ASTM E617 Class 6 ASTM E617 Class 7	1 lb 0.5 lb 0.2 lb 0.1 lb 0.05 lb 0.02 lb 0.01 lb 0.005 lb 0.002 lb 0.001 lb	2.5 mg 2.5 mg 0.5 mg 0.25 mg 0.25 mg 0.1 mg 0.1 mg 0.1 mg 0.1 mg 0.1 mg	Comparison of Unknown Mass to Known Mass ASTM E617 Class 1, Class 4 Weights
NIST Class F ASTM E617 Class 5 ASTM E617 Class 6 ASTM E617 Class 7	25 000 g 10 000 g 5 000 g 2 000 g 1 000 g 500 g 200 g 100 g 50 g 30 g 20 g 10 g 5 g 3 g 2 g 1 g 0.5 g	75 mg 35 mg 20 mg 6.5 mg 5 mg 2.5 mg 2.5 mg 1 mg 1 mg 0.2 mg 0.2 mg 0.2 mg 0.1 mg 0.1 mg 0.1 mg 0.1 mg 0.1 mg	Comparison of Unknown Mass to Known Mass ASTM E617 Class 1, Class 4 Weights
Micro-Balances and Mass Comparators [1,2]	(0 to 1) g (1.1 to 5) g (5.1 to 500) g (501 to 10 000) g	0.000 9% of reading + 3 µg 0.000 6% of reading + 2 µg 0.000 04% of reading + 25 µg 0.000 1% of reading + 5 mg	Method, tolerance according to DWS procedures utilizing ASTM E617 Class 1/Ultra Weights
Analytical and Top Loading Balances [1,2]	(0 to 200) g (201 to 10 000) g (10 001 to 150 000) g (150 001 to 300 000) g	0.000 25% of reading + 10 µg 0.000 15% of reading + 2 mg 0.000 15% of reading + 9 mg 0.001% of reading + 2 g	

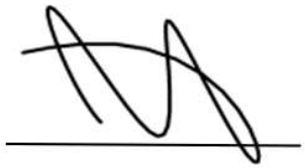
Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Bench Scales, Floor Scales, Tanks and Hoppers [1,2]	(0 to 100) lb (101 to 1 000) lb (1 001 to 10 000) lb (10 001 to 40 000) lb	0.005% of reading + 0.000 01 lb 0.009% of reading + 0.01 lb 0.009% of reading + 0.01 lb 0.002% of reading + 2.5 lb	Method, tolerance according to DWS procedures utilizing NIST Class F Weights
Crane and hanging scales [1,2]	(0.01 to 5 000) lb	0.02% of reading + 0.05 lb	
Crane and hanging scales [1]	0 lb to 100 lb 0 lb to 1 000 lb 0 lb to 10 000 lb 0 lb to 60 000 lb 0 lb to 250 000 lb	0.08% of reading + 0.02 lb 0.08% of reading + 0.2 lb 0.08% of reading + 2 lb 0.08% of reading + 10 lb 0.14% of reading + 5 lb	Method, tolerance according to DWS procedures utilizing reference load cell
Moisture Analyzers [1,2] Weighing Systems Analytical Balances and Top Load	(0 to 200) g (201 to 10 000) g	0.000 25% of reading + 10 µg 0.000 15% of reading + 2 mg	Method tolerances according to DWS procedures utilizing ASTM E617 Class 1 weights
Temperature	20 °C to 200 °C	2.9 °C	Reference Thermometer
Weigh Pads & Load Cells [1,2]	0 lb to 100 lb 0 lb to 1 000 lb 0 lb to 10 000 lb 0 lb to 60 000 lb	0.08% of reading + 0.02 lb 0.08% of reading + 0.2 lb 0.08% of reading + 2 lb 0.08% of reading + 10 lb	Method, tolerance according to DWS procedures utilizing reference load cell
Torque Transducers and Testers [1,2]	(0.01 to 1 000) lbf·ft	0.25% of reading	Method, tolerance according to DWS procedures utilizing NIST Class F Weights and reference wheel/arm standards
Torque Hand Tools	(0.008 to 1 000) lbf·ft	0.57% of reading	Method, tolerance according to DWS procedures utilizing reference transducer

Calibration and Measurement Capability (CMC) is expressed in terms of the measurement parameter, measurement range, expanded uncertainty of measurement and reference standard, method, and/or equipment. The expanded uncertainty of measurement is expressed as the standard uncertainty of the measurement multiplied by a coverage factor of 2 (k=2), corresponding to a confidence level of approximately 95%.

Notes:

1. On-site calibration service is available for this parameter, since on-site conditions are typically more variable than those in the laboratory, larger measurement uncertainties are expected on-site than what is reported on the accredited scope.
2. The CMC for scales and balances is highly dependent upon the resolution of the unit under test. The CMC here does not include the resolution of the unit under test. The resolution will be included in the reported measurement uncertainty at the time of calibration.
3. This scope is formatted as part of a single document including Certificate of Accreditation No. L1114-1.



Jason Stine, Vice President