SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017
& ANSI/NCSL Z540-1-1994

EMPIRE SCALE CORPORATION
D.B.A. PRECISION SCALE & BALANCE
140 Rotech Drive
Lancaster, NY 14086
Margery DeMeis Phone: 716 759 4866

CALIBRATION

Valid To: June 30, 2025 Certificate Number: 2109.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory at the location listed above to perform the following calibrations[1, 5]:

I. Chemical

Parameter/Equipment	Range	CMC[2] (±)	Comments
pH Meter, Fixed Points[3]	(4, 7, 10) pH	0.027 pH	Buffer solutions
Conductivity Cell/Probe, Fixed Points[3]	10 µS/cm 100 µS/cm 1000 µS/cm 10 000 µS/cm 100 000 µS/cm	0.62 µS/cm 2.1 µS/cm 5.1 µS/cm 45 µS/cm 410 µS/cm	Conductivity reference solutions

II. Dimensional

Parameter/Equipment	Range	CMC[2] (±)	Comments
Calipers[3]	Up to 6 in (6 to 40) in	470 µin 540 µin	Gage blocks, long blocks, surface plate
Micrometers	Up to 2 in (2 to 20) in	43 µin 140 µin	Gage blocks

Parameter/Equipment	Range	CMC[2, 4] (±)	Comments
Indicators[3]	Up to 1 in	40 µin	Gage blocks
Feeler/Thickness Gages	Up to 0.05 in	12 µin	Gage blocks, ULM
Gage Blocks	(0.050 to 6) in	(2.1 + 1.1*L*) µin	Reference gage blocks with gage block comparator
Length Standards	Up to 20 in	(19 + 4.9*L*) µin	Gage blocks, ULM
Setting Standards	Up to 20 in	(19 + 4.9*L*) µin	Gage blocks, ULM
Plug/Pin Gages	Up to 1.25 in	14 µin	Gage blocks, ULM
Plain Rings	(0.5 to 5) in	48 µin	Reference rings, ULM
Height Gages	Up to 20 in	0.0013 in	Gage blocks, surface plate

III. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC[2, 7] (±)	Comments
DC Voltage – Generate[3]	(0 to 202) mV (0.2 to 2.02) V (2 to 20.2) V (20 to 202) V (200 to 1025) V	0.02 µV/mV + 2.4 µV 11 µV/V + 3.1 µV 9.7 µV/V + 27 µV 15 µV/V + 59 µV 14 µV/V + 2.8 mV	Multifunction calibrator

Parameter/Equipment	Range	CMC[2, 7] (±)	Comments
DC Voltage – Measure[3]	(0 to 100) mV (0.1 to 1) V (1 to 10) V (10 to 100) V (0.1 to 1) kV (0 to 10) kV (0 to 40) kV	4.4 µV 0.14 µ/mV + 1.6 µV 13 µV/V + 3.2 µV 12 µV/V + .71 mV 18 µV/V + 1 mV 3.7 V/kV + 5.8 V 8.3 V/kV + 11 V	8.5-digit precision multimeter Fluke 5320A + 10kV divider Fluke 5320A + 40kV divider

Parameter/Range	Frequency	CMC[2, 7] (±)	Comments
AC Voltage – Generate[3]			
(0 to 200) mV	(10 to 45) Hz (45 to 1000) Hz (1 to 20) kHz (20 to 100) kHz (100 to 500) kHz	0.94 µV/mV + 21 µV 0.18 µV/mV + 19 µV 0.23 µV/mV + 33 µV 0.99 µV/mV + 0.14 mV 4.7 µV/mV + 0.16 mV	Multifunction calibrator
(0.2 to 2) V	(10 to 45) Hz (45 to 1000) Hz (1 to 20) kHz (20 to 100) kHz (100 to 1000) kHz	0.59 mV/V + 0.22 mV 0.18 mV/V + 0.15 mV 95 µV/V + 0.17 mV 0.69 mV/V + 0.63 mV 3.4 mV/V + 0.8 mV	
(2 to 20) V	(10 to 45) Hz (45 to 1000) Hz (1 to 20) kHz (20 to 100) kHz	0.61 mV/V + 1.8mV 0.19 mV/V + 1.2 mV 0.24 mV/V + 1.9 mV 0.72 mV/V + 3.2 mV	
(20 to 200) V	(30 to 45) Hz (45 to 1000) Hz (1 to 10) kHz (10 to 40) kHz (40 to 100) kHz	0.58 mV/V + 24 mV 0.17 mV/V + 14 mV 0.23 mV/V + 19 mV 0.38 mV/V + 34 mV 2.3 mV/V + 62 mV	
(200 to 1000) V	(30 to 45) Hz (45 to 1000) Hz (1 to 10) kHz (10 to 20) kHz	0.63 mV/V + 0.25 V 0.23 mV/V + 85 mV 0.28 mV/V + 0.16 V 0.34 mV/V + 0.24 V	

Parameter/Range	Frequency	CMC[2, 7] (±)	Comments
AC Voltage – Measure[3]			
(0 to 100) mV	(10 to 40) Hz (40 to 200) Hz (200 to 2000) Hz (2 to 20) kHz (20 to 100) kHz	0.23 µV/mV + 0.12 mV 0.12 µV/mV + 43 µV 0.09 µV/mV + 43 µV 0.13 µV/mV + 60 µV 0.35 µV/mV + 0.18 mV	8.5-digit precision multimeter
(0.1 to 1) V	(10 to 40) Hz (40 to 200) Hz (200 to 2000) Hz (2 to 20) kHz (20 to 100) kHz (100 to 1000) kHz	0.22 mV/V + 0.8 mV 0.11 mV/V + 0.35 mV 85 µV/V + 0.48 mV 0.55 mV/V + 89 µV 0.46 mV/V + 1.2 mV 12 mV/V + 29 mV	
(1 to 10) V	(40 to 200) Hz (200 to 2000) Hz (2 to 20) kHz (20 to 100) kHz	0.12 mV/V + 3.2 mV 0.53 mV/V + 0.26 mV 0.15 mV/V + 4.7 mV 0.46 mV/V + 12 mV	
(10 to 100) V	(10 to 40) Hz (40 to 200) Hz (200 to 2000) Hz (2 to 200) kHz	0.31 mV/V + 81 mV 0.14 mV/V + 34 mV 0.11 mV/V + 33 mV 0.13 mV/V + 80 mV	
(0.1 to 1) kV	(40 to 200) Hz (200 to 2000) Hz (1 to 50) kHz	0.15 mV/V + 0.28 V 38 µV/V + 1.1 mV 0.26 mV/V + 1.1 mV	
(0 to 10) kV	(50 to 60) Hz	5.9 V/kV + 5.8 V	Fluke 5320A + 10kV divider
(0 to 40) kV	(50 to 60) Hz	8.3 V/kV + 11 V	Fluke 5320A + 40kV divider

Parameter/Equipment	Range	CMC[2, 7] (±)	Comments
DC Current – Generate[3]	(0 to 202) µA (0.2 to 2.02) mA (2 to 20.2) mA (20 to 202) mA (0.2 to 20) A (20 to 30) A	17 nA/µA + 12 nA 60 nA/mA + 35 nA 61 nA/mA + 0.23 µA 78 nA/mA + 2 µA 0.35 mA/A + 0.47 mA 0.57 mA/A + 1.1 mA	Multifunction calibrator

Parameter/Equipment	Range	CMC[2, 7] (±)	Comments
DC Current – Clamp-On Meters[3]	(30 to 60) A (60 to 300) A (300 to 1500) A	9.8 mA/A + 0.11 mA 9.8 mA/A + 0.12 A 5.2 mA/A + 1.4 A	Multifunction calibrator 2, 10, 50 turn coil
DC Current – Measure[3]	(0 to 100) µA (0.1 to 1) mA (1 to 10) mA (10 to 100) mA (0.1 to 1) A (1 to 10) A (10 to 30) A	0.11 nA/µA + 14 nA 95 pA/µA + 16 nA 1 µA/mA + 25 nA 0.15 µA/mA + 0.16 µA 0.45 mA/A + 13 µA 0.83 mA/A + 0.63 mA 1.2 mA/A + 7.3 mA	8.5-digit precision multimeter

Parameter/Range	Frequency	CMC[2, 7] (±)	Comments
AC Current – Generate[3]			
(20 to 202) µA	(10 to 45) Hz (45 to 1000) Hz (1 to 10) kHz (10 to 30) kHz	2.3 nA/µA + 0.3 µA 0.79 nA/µA + 0.18 µA 12 nA/µA + 0.23 µA 21 nA/µA + 0.42 µA	Multifunction calibrator
(0.2 to 2.02) mA	(10 to 45) Hz (45 to 1000) Hz (1 to 10) kHz (10 to 30) kHz	2.3 µA/mA + 0.27 µA 0.71 µA/mA + 0.24 µA 5.7 µA/mA + 0.49 µA 11 µA/mA + 0.85 µA	
(2 to 20.2) mA	(10 to 45) Hz (45 to 1000) Hz (1 to 10) kHz (10 to 30) kHz	2.3 µA/mA + 3.5 µA 2.9 µA/mA + 3.5 µA 3.0 µA/mA + 3.5 µA 5.9 µA/mA + 4.6 µA	
(20 to 202) mA	(10 to 45) Hz (45 to 1000) Hz (1 to 10) kHz (10 to 30) kHz	2.3 µA/mA + 35 µA 0.50 µA/mA + 23 µA 5.5 µA/mA + 53 µA 7.9 µA/mA + 0.27 mA	
(0.2 to 2.02) A	(10 to 45) Hz (45 to 1000) kHz (1 to 5) kHz (5 to 10) kHz	2.3 mA/A + 0.37 mA 0.74 mA/A + 0.23 mA 5.8 mA/A + 0.47 mA 6.9 mA/A + 1.3 mA	
(2 to 30) A	(30 to 45) Hz (45 to 100) Hz (100 to 1000) Hz (1 to 5) kHz (5 to 10) kHz	1.7 mA/A + 4.7 mA 1.1 mA/A + 2.1 mA 3.5 mA/A + 4.6 mA 7.0 mA/A + 4.5 mA 35 mA/A + 5.8 mA	

Parameter/Range	Frequency	CMC[2, 7] (±)	Comments
AC Current – Clamp-On Meters[3]			
(30 to 60) A (60 to 300) A (300 to 1500) A	(30 to 60) Hz	6 mA/A + 0.11 A 7.2 mA/A + 0.15 mA 5.7 mA/A + 0.5 A	Multifunction calibrator 2, 10, 50 turn coil
AC Current – Measure[3]			
(0 to 100) µA	(10 to 40) Hz (40 to 1000) Hz (1 to 10) kHz	0.54 µA 1.2 µA 1.2 µA	8.5-digit precision multimeter
(0.1 to 1) mA	(10 to 40) Hz (40 to 1000) Hz (1 to 10) kHz	2.7 µA 2.2 µA 6.3 µA	
(1 to 10) mA	(10 to 40) Hz (40 to 1000) Hz (1 to 10) kHz	28 µA 17 µA 36 µA	
(10 to 100) mA	(10 to 40) Hz (40 to 1000) Hz (1 to 10) kHz	0.28 mA 0.17 mA 0.65 mA	
(0.1 to 1) A	(10 to 40) Hz (40 to 1000) Hz (1 to 10) kHz	2.9 mA 1.6 mA 9.6 mA	
(1 to 10) A	(10 to 40) Hz (40 to 1000) Hz	0.38 mA/A + 27 mA 0.4 mA/A + 13 mA	
(10 to 30) A	(10 to 40) Hz (40 to 1000) Hz	0.37 mA/A + 73 mA 0.54 mA/A + 30 mA	

Parameter/Equipment	Range	CMC[2, 7] (±)	Comments
Resistance – Generate Fixed Points[3]	0 Ω 0.1 Ω 1 Ω 10 Ω 100 Ω 1k Ω 10 Ω 100 kΩ 1 MΩ 10 MΩ 100 MΩ 1 GΩ	5.8 mΩ 5.8 mΩ 5.8 mΩ 5.8 mΩ 7.5 mΩ 24 mΩ 0.13 Ω 2.2 Ω 32 Ω 1.1 kΩ 0.21 MΩ 12 MΩ	Multifunction calibrator
Resistance – Generate[3]	(0 to 100) Ω (100 to 330) Ω (330 to 1 000) Ω (1 to 3.3) kΩ (3.3 to 10) kΩ (10 to 33) kΩ (33 to 100) kΩ (100 to 330) kΩ (330 to 1 000) kΩ (1 to 3.3) MΩ (3.3 to 10) MΩ (10 to 33) MΩ (33 to 100) MΩ (100 to 330) MΩ (330 to 1000) MΩ (1 to 10) GΩ	69 mΩ 0.12 mΩ/Ω + 58 mΩ 0.2 mΩ/Ω + 0.1 Ω 0.12 mΩ/Ω + 59 mΩ 0.12 mΩ/Ω + 41 mΩ 0.12 mΩ/Ω + 33 mΩ 0.12 mΩ/Ω + 0.7 Ω 0.2 mΩ/Ω + 0.2 Ω 0.2 mΩ/Ω + 4.4 Ω 78 Ω/MΩ + 0.23 kΩ 0.13 kΩ/MΩ + 0.12 kΩ 1.3 kΩ/MΩ + 1.4 kΩ 0.26 kΩ/MΩ + 35 kΩ 0.58 kΩ/MΩ + 2.1 kΩ 4.5 kΩ/MΩ + 1.4 MΩ 16 MΩ/GΩ	Multifunction calibrator Fluke 5320A
Resistance – Measure[3]	(0 to 10) Ω (10 to 100) Ω (0.1 to 1) kΩ (1 to 10) kΩ (10 to 100) kΩ (0.1 to 1) MΩ (1 to 10) MΩ (10 to 100) MΩ	10 µΩ/Ω + 15 µΩ 11 µΩ/Ω + 39 µΩ 1.2 mΩ 9.9 mΩ/kΩ + 1.1 mΩ 9.9 mΩ/kΩ + 1.1 mΩ 9.4 mΩ/kΩ + 0.46 Ω 13 Ω/MΩ + 2.3 Ω 11 Ω/MΩ + 4.6 Ω	8.5-digit precision multimeter
Capacitance – Generate[3] @ 1 kHz	1nF 2 nF 5 nF 10 nF 100 nF 1 µF 10 µF	27 pF 32 pF 48 pF 63 pF 0.32 nF 4.8 nF 70 nF	Multifunction calibrator

Parameter/Equipment	Range	CMC[2, 7] (±)	Comments
Capacitance – Generate @ 1 kHz	(0.95 to 9.5) µF (9.5 to 95) µF (95 to 950) µF (0.95 to 9.5) mF (9.5 to 100) mF	82 nF 0.82 µF 11 µF 81 µF 0.87 mF	Multifunction calibrator
Inductance – Generate[3] @ 1 kHz	1 mH 10 mH 19 mH 30 mH 50 mH 100 mH 1 H 10 H	64 µH 0.12 mH 0.17 mH 0.23 mH 0.35 mH 0.64 mH 6 mH 58 mH	Multifunction calibrator
Electrical Simulation of Thermocouple[3]			
Type B	(600 to 800) °C (800 to 1000) °C (1000 to 1550) °C (1550 to 1820) °C	1.3 °C 1.1 °C 0.92 °C 0.93 °C	Multifunction calibrator
Type E	(-250 to -100) °C (-100 to -25) °C (-25 to 350) °C (350 to 650) °C (650 to 1000) °C	0.38 °C 0.13 °C 0.12 °C 0.12 °C 0.17 °C	
Type J	(-200 to -100) °C (-100 to -30) °C (-30 to 150) °C (150 to 760) °C (760 to 1200) °C	0.20 °C 0.13 °C 0.12 °C 0.13 °C 0.18 °C	
Type K	(-200 to -100) °C (-100 to -25) °C (-25 to 120) °C (120 to 1000) °C (1000 to 1370) °C	0.25 °C 0.15 °C 0.14 °C 0.15 °C 0.20 °C	

Parameter/Equipment	Range	CMC[2] (±)	Comments
Electrical Simulation of Thermocouple[3] (cont)			
Type L	(-200 to -100) °C (-100 to 800) °C (800 to 900) °C	0.61 °C 0.58 °C 0.61 °C	Multifunction calibrator
Type N	(-200 to -100) °C (-100 to -25) °C (-25 to 120) °C (120 to 410) °C (410 to 1300) °C	0.73 °C 0.40 °C 0.35 °C 0.34 °C 0.46 °C	
Type R	0 to 250) °C 250 to 1000) °C 1000 to 1760) °C	1.4 °C 0.76 °C 0.86 °C	
Type S	0 to 250) °C 250 to 1000) °C 1000 to 1760) °C	1.4 °C 0.76 °C 0.86 °C	
Type T	-250 to -150) °C -150 to 0) °C 0 to 120) °C 120 to 400) °C	0.56 °C 0.19 °C 0.14 °C 0.13 °C	
Type U	(-200 to 0) °C (0 to 600) °C	0.73 °C 0.54 °C	
Oscilloscopes			
Amplitude – DC Signal Into 1 MΩ	(0 to 300) V	0.21 mV/V + 20 uV	Transmille 4010
Amplitude – AC Sq Wave Into 1 MΩ	(0 to 300) V p-p	1.5 mV/V + 40 uV	
Bandwidth	50 kHz to 620 MHz	1.4 dB	
Time Markers	2ns/div to 5 s/div	1.4 µs/s	

VI. Mechanical

Parameter/Equipment	Range	CMC[2] (±)	Comments
Scales and Balances[3] –	(0 to 0.5) lb (0.5 to 2) lb (2 to 10) lb (10 to 50) lb (50 to 100) lb (100 to 1000) lb (1000 to 2500) lb (2500 to 5000) lb (5000 to 25 000) lb (25 000 to 50 000) lb (50 000 to 75 000) lb (75 000 to 100 000) lb	0.000 059 lb 0.000 26 lb 0.0012 lb 0.0072 lb 0.015 lb 0.17 lb 0.37 lb 0.77 lb 6.6 lb 26 lb 48 lb 71 lb	NIST Handbook 44
Laboratory Balances[3] – Fixed Points	(1 to 100) mg (0.1 to 2) g (2 to 5) g (5 to 10) g (10 to 20) g (20 to 50) g (50 to 200) g (200 to 500) g (0.5 to 1) kg (1 to 2) kg (2 to 5) kg (5 to 10) kg (10 to 20) kg (20 to 30) kg (30 to 60) kg (60 to 500) kg	0.0023 mg 0.0032 mg 0.0053 mg 0.0088 mg 0.0091 mg 0.033 mg 0.15 mg 0.46 mg 1.2 mg 1.6 mg 2.1 mg 5.2 mg 12 mg 15 mg 33 mg 15 g	NIST Handbook 44 Class 0 Class 1 Class 6
Weigh Pads/Load Cells (Compression)	(0 to 100 000) lbf	9.6 lbf + $4.0 \cdot 10^{-4}$ Rdg	Standard loadcell and hydraulic press

Parameter/Equipment	Range	CMC[2] (±)	Comments
Mass Measure– Weight Sets, Fixed Points	1 mg 2 mg 3 mg 5 mg 10 mg 20 mg 30 mg 50 mg 100 mg 200 mg 300 mg 500 mg 1 g 2 g 3 g 5 g 10 g 20 g 30 g 50 g 100 g 200 g 300 g 500 g 1 kg 2 kg 3 kg 5 kg 10 kg 20 kg 30 kg 50 kg 1 kg 2 kg 3 kg 5 kg 10 kg 20 kg 30 kg 100 kg 150 kg 250 kg 500 kg	0.000 87 mg 0.000 63 mg 0.0010 mg 0.000 62 mg 0.000 99 mg 0.0011 mg 0.0016 mg 0.000 83 mg 0.000 96 mg 0.0012 mg 0.0016 mg 0.0014 mg 0.0012 mg 0.0016 mg 0.0018 mg 0.0034 mg 0.0060 mg 0.0078 mg 0.0085 mg 0.011 mg 0.018 mg 0.032 mg 0.038 mg 0.055 mg 0.14 mg 0.49 mg 0.50 mg 0.72 mg 1.3 mg 6.5 mg 6.6 mg 17 mg 9.1 mg 9.1 mg 9.1 mg 9.0 mg 63 mg 63 mg 63 mg 3.3 g 3.8 g 4.9 g 9.0 g	Calibration of weights per NISTIR 6969 SOP 5 and ASTM E617 Calibration of block weights per ASTM E617 and OIML R111

Parameter/Equipment	Range	CMC[2] (±)	Comments
Mass Measure – Weight Sets, Fixed Points (cont)	1/32 oz 1/16 oz 1/8 oz 1/4 oz 1/2 oz 1 oz 2 oz 4 oz 8 oz 0.001 lb 0.002 lb 0.003 lb 0.005 lb 0.01lb 0.02 lb 0.03 lb 0.05 lb 0.1 lb 0.2 lb 0.3 lb 0.5 lb 1 lb 2 lb 3 lb 5 lb 10 lb 20 lb 25 lb 30 lb 50 lb 1 lb 2 lb 3 lb 5 lb 10 lb 20 lb 25 lb 30 lb 50 lb 100 lb 500 lb 1000 lb	0.0020 mg (0.071 µoz) 0.0032 mg (0.11 µoz) 0.0033 mg (0.12 µoz) 0.0064 mg (0.23 µoz) 0.012 mg (0.42 µoz) 0.022 mg (0.78 µoz) 0.021 mg (0.74 µoz) 0.040 mg (1.4 µoz) 0.041 mg (1.5 µoz) 0.0010 mg (0.0022 µlb) 0.0012 mg (0.0026 µlb) 0.0021 mg (0.0046 µlb) 0.0024 mg (0.0053 µlb) 0.0041 mg (0.0090 µlb) 0.0072 mg (0.016 µlb) 0.011 mg (0.024 µlb) 0.011 mg (0.024 µlb) 0.020 mg (0.044 µlb) 0.018 mg (0.040 µlb) 0.043 mg (0.095 µlb) 0.041 mg (0.090 µlb) 0.063 mg (0.14 µlb) 0.16 mg (0.35 µlb) 0.39 mg (0.86 µlb) 0.75 mg (1.7 µlb) 1.4 mg (3.1 µlb) 4.8 mg (11 µlb) 8.2 mg (18 µlb) 8.8 mg (19 µlb) 15 mg (33 µlb) 9.1 mg (20 µlb) 9.1 mg (20 µlb) 9.1 mg (20 µlb) 9.2 mg (20 µlb) 63 mg (0.14 mlb) 63 mg (0.14mlb) 63 mg (0.14 mlb) 64 mg (0.14 mlb) 64 mg (0.14 mlb) 130 mg (0.29 mlb) 3.6 g (7.9 mlb) 8.2 g (0.018 lb)	Calibration of avdp. weights per ASTM E617 and OIML R111 Calibration of avdp. block weights per ASTM E617 and OIML R111

Parameter/Equipment	Range	CMC[2, 6] (±)	Comments
Volumetric Apparatus –			
Pipettes, Burettes, Diluters, Dispensers, Repeaters, Syringes, Controllers/Fillers	(0.01 to 1) µl (1 to 10) µl (10 to 20) µl (20 to 100) µl (100 to 200) µl (200 to 1000) µl (1000 to 5000) µl (5000 to 10 000) µl (10 001 to 50 000) µl (50 001 to 100 000) µl	0.05 µl 0.11 µl 0.16 µl 0.21 µl 0.31 µl 1.6 µl 5.7 µl 30 µl 58 µl 120 µl	Gravimetric method using Class 1 analytical balance & ASTM Class 0 mass standards
Glassware	10 ml 100 ml 500 ml 1000 ml	0.079 ml 0.12 ml 0.47 ml 0.5 ml	
Hydraulic Gage Pressure Measure and Measuring Equipment [3]	(0 to 300) psig (300 to 1000) psig (1000 to 3000) psig (3000 to 10 000) psig (10 000 to 36 000) psig	0.61 psi 0.68 psi 1.3 psi 6.0 psi 42 psi	Comparator & pressure gages
Pneumatic Gage Pressure Measure and Measuring Equipment[3]	(-150 to 150) in H_2O (-13 to 0) psig (0 to 300) psig (300 to 1000) psig (1000 to 3000) psig	0.073 in H_2O 0.0041 psi 0.073 psi 0.32 psi 0.88 psi	Comparator & pressure gages
Torque Generate/Torque Analyzers	(40 to 400) ozf·in (25 to 120) lbf·in (120 to 400) lbf·in (25 to 250) lbf·ft (250 to 1000) lbf·ft	0.000 11 rdg + 0.17 ozf·in 0.000 66 rdg + 0.031 lbf·in 0.000 42 rdg + 0.11 lbf·in 0.000 71 rdg + 0.02 lbf·ft 0.000 44 rdg + 0.46 lbf·ft	2.5” wheel 5” wheel 20” arm 20” arm 48” arm weights
Torque Wrenches	(40 to 400) ozf·in (25 to 50) lbf·in (50 to 150) lbf·in (150 to 400) lbf·ft (400 to 1000) lbf·in (80 to 250) lbf·ft	2.6 ozf·in 0.39 lbf·in 0.70 lbf·in 1.2 lbf·in 6.0 lbf·in 1.7 lbf·ft	Torque analyzer/torque transducers

V. Thermodynamics

Parameter/Equipment	Range	CMC[2, 6] (±)	Comments
Humidity – Measuring Equipment	(10 to 95) % RH	0.59 % RH	Humidity generator
Humidity – Measure[3]	(10 to 95) % RH	1.3 % RH	Humidity probe
Temperature – Measure[3]	(-80 to 660) °C	20 mK	Precision thermometer
Temperature Measuring Equipment – Laboratory Thermometers[3] Fixed Point	(-80 to 10) °C (-20 to 40) °C (10 to 80) °C (60 to 300) °C (300 to 600) °C (600 to 1150) °C 0 °C	27 mK 13 mK 14 mK 44 mK 50 mK 2.6 °C 11 mK	Precision thermometer, dry block calibrator, temperature bath, furnace

VI. Time &Frequency

Parameter/Equipment	Range	CMC[2, 6] (±)	Comments
Frequency – Measuring Equipment[3]	1 Hz to 1 MHz (1 to 10) MHz	1.2 µHz/Hz + 0.24 mHz 1.2 Hz/MHz + 0.22 Hz	Multifunction calibrator
Frequency – Measure[3]	0.001 Hz to 100 MHz	0.57 µH/Hz + 1 mHz	8.5-digit precision multimeter

[1] This laboratory offers commercial calibration service and field calibration service.

[2] Calibration and Measurement Capability Uncertainty (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards or nearly ideal measuring equipment. CMCs represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

[3] Field calibration service is available for this calibration. Please note the actual measurement uncertainties achievable on a customer's site can normally be expected to be larger than the Calibration and Measurement Capability Uncertainty (CMC) found on the A2LA Scope. Allowance must be made for aspects such as the environment at the place of calibration and for other possible adverse effects such as those caused by transportation of the calibration equipment. The usual allowance for the uncertainty introduced by the item being calibrated, (e.g. resolution) must also be considered and this, on its own, could result in the actual measurement uncertainty achievable on a customer's site being larger than the CMC.

[4] In the statement of CMC, *L* is the numerical value of the nominal length of the device measured in inches.

[5] This scope meets A2LA's *P112 Flexible Scope Policy*.

[6] The type of instrument or material being calibrated is defined by the parameter. This indicates the laboratory is capable of calibrating instruments that measure or generate the values in the ranges indicated for the listed measurement parameter.

[7] The stated measured values are determined using the indicated instrument (see Comments). This capability is suitable for the calibration of the devices intended to measure or generate the measured value in the ranges indicated. CMC's are expressed as either a specific value that covers the full range or as a percent or fraction of the reading plus a fixed floor specification.

Accredited Laboratory

A2LA has accredited

EMPIRE SCALE CORPORATION
D.B.A PRECISION SCALE & BALANCE

Lancaster, NY

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets the requirements of ANSI/NCSL Z540-1-1994 and R205 – Specific Requirements: Calibration Laboratory Accreditation Program. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).

Presented this 7th day of May 2023.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2109.01
Valid to June 30, 2025
Revised May 29, 2025

For the calibrations to which this accreditation applies, please refer to the laboratory's Calibration Scope of Accreditation.