



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

EMPIRE SCALE CORPORATION  
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CALIBRATION

Valid To: December 31, 2022

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<sup>1, 5</sup>:

I. Chemical

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
pH Meter, Fixed Points <sup>3</sup>	(4, 7, 10) pH	0.029 pH	Buffer solutions
Conductivity Cell/Probe, Fixed Points <sup>3</sup>	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 <sup>2</sup> (±)	Comments
Calipers <sup>3</sup>	Up to 6 in (6 to 40) in	470 µin 500 µin	Gage blocks, long blocks, surface plate
Micrometers <sup>3</sup>	Up to 2 in (2 to 20) in	41 µin 85 µin	Gage blocks

Parameter/Equipment	Range	CMC <sup>2, 4</sup> (±)	Comments
Indicators <sup>3</sup>	Up to 0.015 in (0.015 to 0.5) in (0.5 to 1) in	14 µin 29 µin 33 µin	Gage blocks
Feeler/Taper Gages <sup>3</sup>	Up to 1 in	14 µin	Gage blocks, bench micrometer
Gage Blocks	Up to 4 in	2.1 + 0.71L µin	Reference gage blocks with gage block comparator

### III. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC <sup>2, 7</sup> (±)	Comments
DC Voltage – Generate <sup>3</sup>	(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
DC Voltage – Measure <sup>3</sup>	(0 to 100) mV (0.1 to 1) V (1 to 10) V (10 to 100) V (0.1 to 1) 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	8.5-digit precision multimeter

Parameter/Range	Frequency	CMC <sup>2,7</sup> ( $\pm$ )	Comments
AC Voltage – Generate <sup>3</sup>			
(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 $\mu$ V/mV + 21 $\mu$ V 0.18 $\mu$ V/mV + 19 $\mu$ V 0.23 $\mu$ V/mV + 33 $\mu$ V 0.99 $\mu$ V/mV + 0.14 mV 4.7 $\mu$ V/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 $\mu$ V/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	
AC Voltage – Measure <sup>3</sup>			
(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 $\mu$ V/mV + 0.12 mV 0.12 $\mu$ V/mV + 43 $\mu$ V 0.09 $\mu$ V/mV + 43 $\mu$ V 0.13 $\mu$ V/mV + 60 $\mu$ V 0.35 $\mu$ V/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 $\mu$ V/V + 0.48 mV 0.55 mV/V + 89 $\mu$ V 0.46 mV/V + 1.2 mV 12 mV/V + 29 mV	

Parameter/Range	Frequency	CMC <sup>2,7</sup> (±)	Comments
AC Voltage – Measure <sup>3</sup> (cont)			
(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	8.5-digit precision multimeter
(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 (2 to 50) kHz	0.15 mV/V + 0.28 V 38 μV/V + 1.1 mV 0.26 mV/V + 1.1 mV	

Parameter/Equipment	Range	CMC <sup>2,7</sup> (±)	Comments
DC Current – Generate <sup>3</sup>	(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
DC Current – Simulate <sup>3</sup>	(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 3, 10, 50 turn coil
DC Current – Measure <sup>3</sup>	(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/Equipment	Range	CMC <sup>2,7</sup> (±)	Comments
AC Current – Generate <sup>3</sup>			
(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	
AC Current – Simulate <sup>3</sup>			
(30 to 60) Hz	(30 to 60) A (60 to 300) A (300 to 1500) A	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

Parameter/Range	Frequency	CMC <sup>2,7</sup> (±)	Comments
AC Current – Measure <sup>3</sup>			
(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 <sup>2,7</sup> (±)	Comments
Resistance – Generate Fixed Points <sup>3</sup>	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

Parameter/Equipment	Range	CMC <sup>2, 7</sup> (±)	Comments
Resistance – Generate <sup>3</sup>	(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	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	Multifunction calibrator
Resistance – Measure <sup>3</sup>	(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 <sup>3</sup> @ 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
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

Parameter/Equipment	Range	CMC <sup>2, 6</sup> (±)	Comments
Inductance – Generate <sup>3</sup> @ 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 <sup>3</sup>			
Type J	(-200 to 1200) °C	0.51 °C	Multifunction calibrator, 8.5-digit precision multimeter
Type K	(-140 to 500) °C (500 to 1340) °C	0.41 °C 0.61 °C	
Type T	(-200 to 0) °C (0 to 400) °C	0.41 °C 0.14 °C	
Type R	(-50 to 600) °C	1.2 °C	

## VI. Mechanical

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
Scales and Balances <sup>3</sup> –			NIST Handbook 44
Industrial Scales			Class F weights
0.0001 lb Resolution	(0 to 1) lb	0.024 lb	
0.001 lb Resolution	(0 to 10) lb	0.04 lb	
0.01 lb Resolution	(0 to 50) lb (0 to 100) lb	0.18 lb 0.18 lb	
0.1 lb Resolution	(0 to 1000) lb	0.53 lb	
0.5 lb Resolution	(0 to 5000) lb	1.3 lb	
1 lb Resolution	(0 to 10 000) lb (0 to 20 000) lb	1.8 lb 2.5 lb	



Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
Scales and Balances <sup>3</sup> (cont) – Industrial Scales with Buildup 1 lb Resolution 10 lb Resolution 20 lb Resolution	(0 to 5000) lb (0 to 20 000) lb (0 to 100 000) lb	1.3 lb 3.1 lb 10 lb	NIST Handbook 44 Class F weights
Laboratory Balances <sup>3</sup> – 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 1000 g 2000 g 5000 g 10 000 g 20 000 g 32 000 g	0.0020 mg 0.0025 mg 0.0015 mg 0.0017 mg 0.0019 mg 0.0017 mg 0.0018 mg 0.0016 mg 0.0017 mg 0.0026 mg 0.0014 mg 0.0025 mg 0.0032 mg 0.0034 mg 0.0035 mg 0.0054 mg 0.0087 mg 0.0096 mg 0.012 mg 0.021 mg 0.040 mg 0.060 mg 0.060 mg 0.15 mg 0.24 mg 0.59 mg 1.2 mg 3.5 mg 16 mg 19 mg	NIST Handbook 44 with OIML Class E2 & ASTM Class 0 and 1 weights
Laboratory Balances <sup>3</sup>	(1 to 500) mg (1 to 30) g (50 to 500) g (500 to 5000) g (5 to 10) kg (10 to 32) kg	0.05 µg/mg + 2 µg 0.2 µg/mg + 2.9 µg 0.29 µg/mg + 6.7 µg 0.24 µg/g + 33 µg 0.3 µg/g + 0.5 mg 0.6 mg/g + 45 µg	NIST Handbook 44 with OIML Class E2 & ASTM Class 0 and 1 weights

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
Mass Measure– Weight Sets, Fixed Points	1 mg	0.000 34 mg	Calibration of weights Using NISTIR 6969 SOP 5, SOP 7 and ASTM E617
	2 mg	0.000 27 mg	
	3 mg	0.000 58 mg	
	5 mg	0.000 37 mg	
	10 mg	0.000 48 mg	
	20 mg	0.000 43 mg	
	30 mg	0.0091 mg	
	50 mg	0.000 48 mg	
	100 mg	0.000 56 mg	
	200 mg	0.000 58 mg	
	300 mg	0.0011 mg	
	500 mg	0.000 73 mg	
	1 g	0.0011 mg	
	2 g	0.0015 mg	
	3 g	0.0026 mg	
	5 g	0.0023 mg	
	10 g	0.0058 mg	
	20 g	0.0060 mg	
	30 g	0.012 mg	
	50 g	0.012 mg	
	100 g	0.021 mg	
	200 g	0.035 mg	
	300 g	0.044 mg	
	500 g	0.050 mg	
	1 kg	0.093 mg	
	2 kg	0.55 mg	
	3 kg	0.61 mg	
	5 kg	0.70 mg	
	10 kg	1.1 mg	
	20 kg	2.7 mg	
	30 kg	4.5 mg	
	50 kg	8.6 mg	
	1 kg	9.1 mg	Calibration of block weights using NISTIR 6969 SOP 7 & SOP 8
	2 kg	9.1 mg	
	3 kg	9.1 mg	
5 kg	9.0 mg		
10 kg	63 mg		
20 kg	63 mg		
30 kg	63 mg		
100 kg	3.3 g		
150 kg	3.8 g		
250 kg	4.9 g		
500 kg	9.0 g		

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments	
Mass Measure – Weight Sets, Fixed Points (cont)	1/32 oz	0.0020 mg (0.071 μoz)	Calibration of avdp. weights per ASTM E617 and NIST SOP 7	
	1/16 oz	0.0032 mg (0.11 μoz)		
	1/8 oz	0.0033 mg (0.12 μoz)		
	1/4 oz	0.0064 mg (0.23 μoz)		
	1/2 oz	0.012 mg (0.42 μoz)		
	1 oz	0.022 mg (0.78 μoz)		
	2 oz	0.021 mg (0.74 μoz)		
	4 oz	0.040 mg (1.4 μoz)		
	8 oz	0.041 mg (1.5 μoz)		
	0.001 lb	0.0010 mg (0.0022 μlb)		Calibration of avdp. block weights per NIST SOP 7 and SOP 8
	0.002 lb	0.0012 mg (0.0026 μlb)		
	0.003 lb	0.0021 mg (0.0046 μlb)		
	0.005 lb	0.0024 mg (0.0053 μlb)		
	0.01lb	0.0041 mg (0.0090 μlb)		
	0.02 lb	0.0072 mg (0.016 μlb)		
	0.03 lb	0.011 mg (0.024 μlb)		
	0.05 lb	0.011 mg (0.024 μlb)		
	0.1 lb	0.020 mg (0.044 μlb)		
	0.2 lb	0.018 mg (0.040 μlb)		
	0.3 lb	0.043 mg (0.095 μlb)		
	0.5 lb	0.041 mg (0.090 μlb)		
	1 lb	0.063 mg (0.14 μlb)		
	2 lb	0.16 mg (0.35 μlb)		
	3 lb	0.39 mg (0.86 μlb)		
	5 lb	0.75 mg (1.7 μlb)		
	10 lb	1.4 mg (3.1 μlb)		
	20 lb	4.8 mg (11 μlb)		
	25 lb	8.2 mg (18 μlb)		
	30 lb	8.8 mg (19 μlb)		
	50 lb	15 mg (33 μlb)		
	1 lb	9.1 mg (20 μlb)	Calibration of avdp. block weights per NIST SOP 7 and SOP 8	
	2 lb	9.1 mg (20 μlb)		
	3 lb	9.1 mg (20 μlb)		
5 lb	9.2 mg (20 μlb)			
10 lb	63 mg (0.14 mlb)			
20 lb	63 mg (0.14mlb)			
25 lb	63 mg (0.14 mlb)			
30 lb	64 mg (0.14 mlb)			
50 lb	64 mg (0.14 mlb)			
100 lb	130 mg (0.29 mlb)			
500 lb	3.6 g (7.9 mlb)			
1000 lb	8.2 g (0.018 lb)			

Parameter/Equipment	Range	CMC <sup>2,6</sup> (±)	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 and 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 <sup>3</sup>	(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 0.66 psi 1.2 psi 5.3 psi 37 psi	Comparator & pressure gages
Pneumatic Gage Pressure Measure and Measuring Equipment <sup>3</sup>	(-150 to 150) in H <sub>2</sub> O (-13 to 0) psig (0 to 300) psig (300 to 1000) psig (1000 to 3000) psig	0.065 in H <sub>2</sub> O 0.0037 psi 0.065 psi 0.28 psi 0.77 psi	Comparator & pressure gages

#### V. Thermodynamics

Parameter/Equipment	Range	CMC <sup>2,6</sup> (±)	Comments
Humidity – Measuring Equipment	(10 to 95) %	0.54 %	Humidity generator
Humidity – Measure <sup>3</sup>	(10 to 95) %	1.3 %	Humidity probe
Temperature – Measure <sup>3</sup>	(-80 to 660) °C	20 mK	Precision thermometer

Temperature Measuring Equipment– Laboratory Thermometers <sup>3</sup>	(-80 to 10) °C (-20 to 40) °C (10 to 80) °C (60 to 300) °C (300 to 600) °C (600 to 1150) °C	27 mK 13 mK 14 mK 44 mK 50 mK 2.3 °C	Precision thermometer, dry block calibrator, temperature bath, furnace
Fixed Point	0 °C	11 mK	

## VI. Time & Frequency

Parameter/Equipment	Range	CMC <sup>2, 6</sup> (±)	Comments
Frequency – Measuring Equipment <sup>3</sup>	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 <sup>3</sup>	1 Hz to 1 MHz	4.2 µHz/Hz + 0.63 Hz	8.5-digit precision multimeter

<sup>1</sup> This laboratory offers commercial calibration service and field calibration service.

<sup>2</sup> 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.

<sup>3</sup> 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.

<sup>4</sup> In the statement of CMC,  $L$  is the numerical value of the nominal length of the device measured in inches.

<sup>5</sup> This scope meets A2LA's *P112 Flexible Scope Policy*.

<sup>6</sup> 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.

<sup>7</sup> 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/NCCL 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 26<sup>th</sup> day of April 2021.

A blue ink signature of the Vice President of Accreditation Services.

Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 2109.01  
Valid to December 31, 2022  
Revised October 19, 2022

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