



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

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CALIBRATION

Valid To: May 31, 2025

Certificate Number: 1995.04

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations<sup>1,8</sup>:

I. Dimensional

Parameter/Equipment	Range	CMC <sup>2,7</sup> ( $\pm$ )	Comments
Micrometers <sup>3</sup>	Up to 48 in.	$(5 + 35L) \mu\text{in}$	Gage blocks
Length Standards	Up to 48 in	$(9 + 1L) \mu\text{in}$ $(20 + 2L) \text{uin}$	Gage blocks and ULM, height master
Calipers <sup>3</sup>	Up to 24 in	$(300 + 6L) \mu\text{in}$	Gage blocks
Digital, Dial, and Test Indicators <sup>3</sup>	Up to 1 in	91 $\mu\text{in}$	Indicator calibrator
Height Gages	Up to 24 in	$(15 + 0.9L) \mu\text{in}$	Gage bocks and surface plate

II. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC <sup>2,4</sup> (±)	Comments
DC Voltage <sup>3</sup> – Generate	(0 to 330) mV (0.33 to 3.3) V (3.3 to 33) V (33 to 330) V (330 to 1020) V	24 μV/V + 1 μV 13 μV/V + 2 μV 15 μV/V + 20 μV 21 μV/V + 0.15 mV 21 μV/V + 1.5 mV	Fluke 5522A
DC Current <sup>3</sup> – Generate	up to 330 μA (0.33 to 3.3) mA (3.3 to 33) mA (33 to 330) mA (0.33 to 1.1) A (1.1 to 3) A (3 to 11) A (11 to 20.5) A  (10 to 16.5) A (16.5 to 150) A (150 to 1025) A	0.017 % + 0.02 μA 0.012 % + 0.05 μA 0.012 % + 0.25 μA 0.012 % + 2.5 μA 0.023 % + 40 μA 0.044 % + 40 μA 0.059 % + 0.5 mA 0.12 % + 0.75 mA  0.25 % + 0.002 A 0.26 % + 0.015 A 0.28 % + 0.05 A	Fluke 5522A  Fluke 5522A, 50 turn coil
Resistance <sup>3</sup> – Generate	up to 11 Ω (11 to 33) Ω (33 to 110) Ω (110 to 330) Ω (0.33 to 1.1) kΩ (1.1 to 3.3) kΩ (3.3 to 11) kΩ (11 to 33) kΩ (33 to 110) kΩ (110 to 330) kΩ (0.33 to 1.1) MΩ (1.1 to 33) MΩ (3.3 to 11) MΩ (11 to 33) MΩ (33 to 110) MΩ (110 to 330) MΩ (330 to 1100) MΩ	51 μΩ/Ω + 0.001 Ω 35 μΩ/Ω + 0.0015 Ω 33 μΩ/Ω + 0.0014 Ω 33 μΩ/Ω + 0.002 Ω 33 μΩ/Ω + 0.002 Ω 33 μΩ/Ω + 0.02 Ω 33 μΩ/Ω + 0.02 Ω 33 μΩ/Ω + 0.2 Ω 33 μΩ/Ω + 0.2 Ω 37 μΩ/Ω + 2 Ω 38 μΩ/Ω + 2 Ω 70 μΩ/Ω + 30 Ω 0.015 % + 50 Ω 0.029 % + 2.5 kΩ 0.06 % + 3 kΩ 0.35 % + 0.1 MΩ 1.7 % + 0.5 MΩ	Fluke 5522A

Parameter/Equipment	Range	CMC <sup>2, 4, 6</sup> (±)	Comments
DC Power <sup>3</sup> – Generate	Up to 109 μW (0.109 to 1.09) mW (1.09 to 10.9) mW (10.9 to 109) mW (0.109 to 1.09) W (1.09 to 10.9) W (10.9 to 109) W (109 to 337) W (337 to 990) W (0.99 to 3.06) kW (3.06 to 11.2) kW (11.2 to 20.9) kW	0.023 % 0.014 % 0.013 % 0.013 % 0.013 % 0.013 % 0.013 % 0.013 % 0.013 % 0.027 % 0.045 % 0.064 % 0.12 %	Fluke 5522A

Parameter/Range	Frequency	CMC <sup>2, 4, 6</sup> (±)	Comments
AC Voltage <sup>3</sup> – Generate			
Up to 33 mV	(10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 500) kHz	0.095 % + 6 μV 0.019 % + 6 μV 0.024 % + 6 μV 0.12 % + 6 μV 0.4 % + 12 μV 0.93 % + 50 μV	Fluke 5522A
(33 to 330) mV	(10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 500) kHz	0.035 % + 8 μV 0.017 % + 8 μV 0.019 % + 8 μV 0.041 % + 8 μV 0.093 % + 32 μV 0.23 % + 70 μV	
(0.33 to 3.3) V	(10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 500) kHz	0.035 % + 50 μV 0.017 % + 60 μV 0.022 % + 60 μV 0.035 % + 50 μV 0.081 % + 0.13 mV 0.28 % + 0.6 mV	
(3.3 to 33) V	(10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz	0.035 % + 0.65 mV 0.017 % + 0.6 mV 0.028 % + 0.6 mV 0.04 % + 0.6 mV 0.1 % + 1.6 mV	

Parameter/Range	Frequency	CMC <sup>2,4</sup> (±)	Comments
AC Voltage <sup>3</sup> – Generate (cont)			
(33 to 330) V	45 Hz to 1 kHz (1 to 10) kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz	0.022 % + 2 mV 0.023 % + 6 mV 0.029 % + 6 mV 0.035 % + 6 mV 0.23 % + 50 mV	Fluke 5522A
(330 to 1020) V	45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.035 % + 10 mV 0.029 % + 10 mV 0.035 % + 10 mV	
AC Current <sup>3</sup> – Generate			
Up to 330 µA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	0.23 % + 0.1 µA 0.17 % + 0.1 µA 0.14 % + 0.1 µA 0.35 % + 0.15 µA 0.92 % + 0.2 µA 1.8 % + 0.4 µA	Fluke 5522A
(0.33 to 3.3) mA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	0.23 % + 0.15 µA 0.14 % + 0.15 µA 0.12 % + 0.15 µA 0.23 % + 0.2 µA 0.58 % + 0.3 µA 1.2 % + 0.6 µA	
(3.3 to 33) mA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	0.21 % + 2 µA 0.1 % + 2 µA 0.046 % + 2 µA 0.092 % + 2 µA 0.23 % + 3 µA 0.46 % + 4 µA	
(33 to 330) mA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	0.21 % + 20 µA 0.1 % + 20 µA 0.046 % + 20 µA 0.12 % + 50 µA 0.23 % + 0.1 mA 0.46 % + 0.2 mA	
(0.33 to 1.1) A	(10 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.21 % + 0.1 mA 0.058 % + 0.1 mA 0.069 % + 1 mA 2.9 % + 5 mA	

Parameter/Range	Frequency	CMC <sup>2,4</sup> (±)	Comments
AC Current <sup>3</sup> – Generate (cont)			
(1.1 to 3) A	(10 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.21 % + 0.1 mA 0.069 % + 0.1 mA 0.69 % + 1 mA 2.9 % + 5 mA	Fluke 5522A
(3 to 11) A	(45 to 100) Hz 100 Hz to 1 kHz (1 to 5) kHz	0.069 % + 2 mA 0.12 % + 2 mA 3.5 % + 2 mA	
(11 to 20.5) A	(45 to 100) Hz 100 Hz to 1 kHz (1 to 5) kHz	0.14 % + 5 mA 0.17 % + 5 mA 3.5 % + 5 mA	
AC Current <sup>3</sup> – Generate			
Up to 330 µA	(10 to 100) Hz 100 Hz to 1 kHz	0.29 % + 0.2 µA 0.69 % + 0.5 µA	Fluke 5522A, with LCOMP On
(0.33 to 3.3) mA	(10 to 100) Hz 100 Hz to 1 kHz	0.29 % + 0.3 µA 0.69 % + 0.8 µA	
(3.3 to 33) mA	(10 to 100) Hz 100 Hz to 1 kHz	0.092 % + 4 µA 0.23 % + 10 µA	
(33 to 330) mA	(10 to 100) Hz 100 Hz to 1 kHz	0.092 % + 40 µA 0.23 % + 0.1 mA	
(0.33 to 3) A	(10 to 100) Hz (100 to 400) Hz	0.14 % + 0.2 mA 0.35 % + 1 mA	
(3 to 20.5) A	(10 to 100) Hz (100 to 400) Hz	0.14 % + 2 mA 1.2 % + 5 mA	
(10 to 16.5) A	(45 to 65) Hz (65 to 440) Hz	0.029 % + 0.003 A 0.83 % + 0.003 A	Fluke 5522A, 50 turn coil
(16.5 to 150) A	(45 to 65) Hz (65 to 440) Hz	0.32 % + 0.025 A 0.87 % + 0.027 A	
(150 to 1025) A	(45 to 65) Hz (65 to 440) Hz	0.32 % + 0.09 A 1.5 % + 0.1 A	

Parameter/Equipment	Range	CMC <sup>2, 4, 6</sup> (±)	Comments
AC Power <sup>3</sup> – Generate (45 to 65 Hz, PF=1)	Up to 10.9 μW (10.9 to 109 μW (0.109 to 1.09) mW (1.09 to 10.9) mW (10.9 to 109) mW (0.109 to 1.09) W (1.09 to 10.9) W (10.9 to 37) W (37 to 337) W (0.337 to 1.12) kW (1.12 to 3.06) kW (3.06 to 11.2) kW (11.2 to 20.9) kW	0.17 % 0.13 % 0.06 % 0.056 % 0.055 % 0.055 % 0.055 % 0.058 % 0.063 % 0.076 % 0.081 % 0.09 % 0.17 %	Fluke 5522A
Capacitance <sup>3</sup> – Generate	(220 to 400) pF (0.4 to 1.1) nF (1.1 to 3.3) nF (3.3 to 11) nF (11 to 33) nF (33 to 110) nF (110 to 330) nF (0.33 to 1.1) μF (1.1 to 3.3) μF (3.3 to 11) μF (11 to 33) μF (33 to 110) μF (110 to 330) μF (0.33 to 1.1) mF (1.1 to 3.3) mF (3.3 to 11) mF (11 to 33) mF (33 to 110) mF	0.58 % + 0.01 nF 0.58 % + 0.01 nF 0.58 % + 0.01 nF 0.29 % + 0.01 nF 0.29 % + 0.1 nF 0.29 % + 0.1 nF 0.29 % + 0.3 nF 0.29 % + 1 nF 0.29 % + 3 nF 0.29 % + 10 nF 0.46 % + 30 nF 0.52 % + 0.1 μF 0.52 % + 0.3 μF 0.52 % + 1 μF 0.52 % + 3 μF 0.52 % + 10 μF 0.87 % + 30 μF 1.2 % + 100 μF	Fluke 5522A
Electrical Calibration of RTD Indicators <sup>3</sup> – Generate  Pt 385, 100 Ω	(-200 to -80) °C (-80 to 0) °C (0 to 100) °C (100 to 300) °C (300 to 400) °C (400 to 630) °C (630 to 800) °C	0.06 °C 0.06 °C 0.08 °C 0.11 °C 0.12 °C 0.14 °C 0.27 °C	Fluke 5522A

Parameter/Equipment	Range	CMC <sup>2, 4, 9</sup> (±)	Comments
Electrical Calibration of Thermocouple Indicators <sup>3</sup> – Generate & Measure			
Type E	(-250 to -100) °C (-100 to -25) °C (-25 to 350) °C (350 to 650) °C (650 to 1000) °C	0.39 °C 0.13 °C 0.12 °C 0.13 °C 0.17 °C	Fluke 5522A
Type J	(-210 to -100) °C (-100 to -30) °C (-30 to 150) °C (150 to 760) °C (760 to 1200) °C	0.21 °C 0.13 °C 0.12 °C 0.14 °C 0.19 °C	
Type K	(-200 to -100) °C (-100 to -25) °C (-25 to 120) °C (120 to 1000) °C (1000 to 1372) °C	0.26 °C 0.15 °C 0.13 °C 0.2 °C 0.31 °C	
Type N	(-200 to -100) °C (-100 to -25) °C (-25 to 120) °C (120 to 410) °C (410 to 1300) °C	0.31 °C 0.18 °C 0.16 °C 0.15 °C 0.21 °C	
Type R	(0 to 250) °C (250 to 400) °C (400 to 1000) °C (1000 to 1767) °C	0.44 °C 0.27 °C 0.26 °C 0.31 °C	
Type S	(0 to 250) °C (250 to 400) °C (400 to 1000) °C (1000 to 1767) °C	0.36 °C 0.28 °C 0.29 °C 0.36 °C	
Type T	(-250 to -150) °C (-150 to 0) °C (0 to 120) °C (120 to 400) °C	0.49 °C 0.2 °C 0.13 °C 0.12 °C	

Parameter/Equipment	Range	CMC <sup>2, 4, 6, 9</sup> ( $\pm$ )	Comments
DC Voltage <sup>3</sup> – Measure	(0 to 100) mV (0.10 to 1.0) V (1.0 to 10) V (10 to 100) V (100 to 1000) V	16 $\mu$ V/V + 0.3 $\mu$ V 12 $\mu$ V/V + 0.3 $\mu$ V 11 $\mu$ V/V + 0.5 $\mu$ V 14 $\mu$ V/V + 30 $\mu$ V 15 $\mu$ V/V + 100 $\mu$ V	Agilent 3458A
Resistance <sup>3</sup> – Measure	Up to 10 $\Omega$ (10 to 100) $\Omega$ (0.1 to 1) k $\Omega$ (1 to 10) k $\Omega$ (10 to 100) k $\Omega$ (0.1 to 1) M $\Omega$ (1 to 10) M $\Omega$ (10 to 100) M $\Omega$	28 $\mu\Omega/\Omega$ + 50 $\mu\Omega$ 18 $\mu\Omega/\Omega$ + 0.5 m $\Omega$ 16 $\mu\Omega/\Omega$ + 0.5 m $\Omega$ 16 $\mu\Omega/\Omega$ + 5 m $\Omega$ 18 $\mu\Omega/\Omega$ + 50 m $\Omega$ 27 $\mu\Omega/\Omega$ + 2 $\Omega$ 77 $\mu\Omega/\Omega$ + 100 $\Omega$ 0.06 % + 1 k $\Omega$	Agilent 3458A
DC Current <sup>3</sup> – Measure	Up to 100 $\mu$ A (0.1 to 1) mA (1 to 10) mA (10 to 100) mA (0.1 to 1) A  (1 to 1000) A	33 $\mu$ A/A + 0.8 nA 29 $\mu$ A/A + 5 nA 35 $\mu$ A/A + 50 nA 49 $\mu$ A/A + 0.5 $\mu$ A 0.015 % + 10 $\mu$ A  0.30 %	Agilent 3458A  Agilent 3458A, Empro shunts



Parameter/Range	Frequency	CMC <sup>2, 5, 9</sup> (±)	Comments
AC Voltage <sup>3</sup> – Measure			
(1 to 10) mV	(10 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz	0.035 % + 3 μV 0.046 % + 1.1 μV 0.076 % + 1.1 μV 0.46 % + 1.1 μV 0.77 % + 1.1 μV 4.7 % + 2 μV	Agilent 3458A
(10 to 100) mV	(10 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz 300 kHz to 1 MHz	0.011 % + 4 μV 0.014 % + 2 μV 0.026 % + 2 μV 0.12 % + 2 μV 0.23 % + 2 μV 0.41 % + 10 μV 1.2 % + 10 μV	
(0.1 to 1) V	(10 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz 300 kHz to 1 MHz	0.011 % + 40 μV 0.015 % + 20 μV 0.023 % + 20 μV 0.042 % + 20 μV 0.11 % + 20 μV 0.36 % + 100 μV 1.2 % + 100 μV	
(1 to 10) V	(10 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz 300 kHz to 1 MHz	95 μV/V + 0.4 mV 0.011 % + 0.2 mV 0.02 % + 0.2 mV 0.037 % + 0.2 mV 0.095 % + 0.2 mV 0.36 % + 1 mV 1.2 % + 1 mV	
(10 to 100) V	(10 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz 300 kHz to 1 MHz	0.025 % + 4 mV 0.025 % + 2 mV 0.027 % + 2 mV 0.048 % + 2 mV 0.15 % + 2 mV 0.47 % + 10 mV 1.7 % + 10 mV	
(100 to 700) V	(10 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz	0.048 % + 40 mV 0.048 % + 20 mV 0.07 % + 20 mV 0.14 % + 20 mV 0.35 % + 20 mV	

Parameter/Range	Frequency	CMC <sup>2, 5, 6, 9</sup> ( $\pm$ )	Comments
AC Current <sup>3</sup> – Measure			Agilent 3458A
Up to 100 $\mu$ A	(10 to 20) Hz (20 to 45) Hz (45 to 100) Hz (0.1 to 5) kHz	0.46 % + 0.03 $\mu$ A 0.17 % + 0.03 $\mu$ A 0.072 % + 0.03 $\mu$ A 0.072 % + 0.03 $\mu$ A	
(0.1 to 1) mA	(10 to 20) Hz (20 to 45) Hz (45 to 100) Hz (0.1 to 5) kHz (5 to 10) kHz	0.46 % + 0.2 $\mu$ A 0.17 % + 0.2 $\mu$ A 0.073 % + 0.2 $\mu$ A 0.041 % + 0.2 $\mu$ A 0.069 % + 0.2 $\mu$ A	
(1 to 10) mA	(10 to 20) Hz (20 to 45) Hz (45 to 100) Hz (0.1 to 5) kHz (5 to 10) kHz	0.46 % + 2 $\mu$ A 0.17 % + 2 $\mu$ A 0.072 % + 2 $\mu$ A 0.041 % + 2 $\mu$ A 0.069 % + 2 $\mu$ A	
(10 to 100) mA	(10 to 20) Hz (20 to 45) Hz (45 to 100) Hz (0.1 to 5) kHz (5 to 10) kHz	0.46 % + 20 $\mu$ A 0.17 % + 20 $\mu$ A 0.073 % + 20 $\mu$ A 0.041 % + 20 $\mu$ A 0.069 % + 20 $\mu$ A	
(0.1 to 1) A	(10 to 20) Hz (20 to 45) Hz (45 to 100) Hz (0.1 to 5) kHz (5 to 10) kHz	0.47 % + 200 $\mu$ A 0.2 % + 200 $\mu$ A 0.11 % + 200 $\mu$ A 0.13 % + 200 $\mu$ A 0.35 % + 200 $\mu$ A	
(1 to 1000) A	(45 to 65) Hz	0.30 %	Agilent 3458A, Empro shunts

III. Mechanical

Parameter/Equipment	Range	CMC <sup>2,6</sup> (±)	Comments
Mass	Up to 12 kg	0.0005 g or 0.001%, whichever is greater	Double substitution weighing
Pressure – Hydraulic			Cross float method per NCSLI RISP 4
Effective Area Determination of High Accuracy Piston-Cylinder Unit (PCU)	(40 to 4000) psi (4000 to 40 000) psi	0.0031 % 0.0035 %	Ruska 2455 Ruska 2450
Calibration of Transfer Standards and Pressure Devices	(40 to 4000) psi (4000 to 40 000) psi	0.0048 % 0.0044 %	Ruska 2455 Ruska 2450
Pressure – Pneumatic			Cross float method per NCSLI RISP 4
Effective Area Determination of High Accuracy Piston-Cylinder Unit (PCU) or Ball-Nozzle Units (BNU)	(0.2 to 25) psi (25 to 100) psi (100 to 1000) psi	0.0014 % 0.0013 % 0.0017 %	Ruska 2465
Calibration of Transfer Standards and Pressure Devices	(0.2 to 25) psi (25 to 100) psi (100 to 1000) psi  (0 to 3000) psi	0.0014 % 0.0013 % 0.0016 %  0.0031 %	Ruska 2465 Ruska 2465 Ruska 2465  Ruska 2470
Torque Wrenches	5 lbf-in to 2000 lbf-ft	0.60 %	Torque Tester

#### IV. Thermodynamics

Parameter/Equipment	Range	CMC <sup>2,9</sup> (±)	Comments
Temperature – Measure	(-38 to -10) °C (-10 to 0) °C (0 to 156) °C (156 to 420) °C (420 to 660) °C	0.015 °C 0.015 °C 0.022 °C 0.037 °C 0.045 °C	PRT, readout
Temperature – Measuring Equipment	(0 to 200) °C	0.054 °C	PRT, readout, bath

#### V. Time & Frequency

Parameter/Equipment	Range	CMC <sup>2,9</sup> (±)	Comments
Frequency – Measuring Equipment <sup>3</sup>	0.1 Hz to 20 MHz	2.4 parts in 10 <sup>7</sup>	Agilent 33220A ref. to Fluke PM6680
	0.01 Hz to 2 MHz	29 µHz/Hz	Fluke 5522A
Frequency – Measure <sup>3</sup>	0.1 Hz to 225 MHz	2.4 parts in 10 <sup>7</sup>	Fluke PM 6680
Time Interval – Timers & Stop Watches <sup>3</sup>			NIST SP 960-12
Time Base	(0 to 24) hour	0.020 s/day	Fluke PM6680
Totalize method	(0 to 24) hour	0.12 s	Fluke PM6680, function generator

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

<sup>2</sup> Calibration and Measurement Capability (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 Generate. Calibration and Measurement Capabilities 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 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 actual 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. Field environmental conditions are limited to 15 °C to 30 °C and <80% relative humidity to 30 °C.
- <sup>4</sup> Fluke 5502A CMCs are based upon the temperature the standard was calibrated ( $t_{cal} \pm 5$  °C) and assuming the instrument is zeroed at least every seven days or when the ambient temperature changes more than 5 °C. For Resistance, a zero calibration is performed at least every 12 hours within  $\pm 1$  °C of use. For AC Current, CMCs are determined with the LCOMP off and ON. CMCs are also based upon 1-year floor specifications. CMCs are expressed as either a specific value that covers the full range or as a fraction of the reading plus a fixed floor specification.
- <sup>5</sup> Agilent 3458A CMCs are based upon the temperature the standard was calibrated ( $t_{cal} \pm 5$  °C) and an auto calibration (ACAL) was performed within the previous 24 hours ( $\pm 1$  °C of ambient temperature.) CMCs are also based upon 1-year floor specifications. CMCs are expressed as either a specific value that covers the full range or as a combination of a percent or the fraction of the reading/output plus a range specification.
- <sup>6</sup> In the statement of CMC, percentages are percentages of reading, unless otherwise indicated.
- <sup>7</sup> In the statement of CMC,  $L$  is the numerical value of the nominal length in inches.
- <sup>8</sup> This scope meets A2LA's *P112 Flexible Scope Policy*.
- <sup>9</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.



# Accredited Laboratory

A2LA has accredited

**JM TEST SYSTEMS, LLC.**

*Odessa, TX*

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/NC SL 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 6<sup>th</sup> day of June 2023.

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

Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 1995.04  
Valid to May 31, 2025

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