



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

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CALIBRATION

Valid To: October 31, 2025

Certificate Number: 3864.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations<sup>1,9</sup>:

I. Dimensional

Parameter/Equipment	Range	CMC <sup>2,5</sup> ( $\pm$ )	Comments
Video Measuring Device <sup>3</sup> –			
X, Y Linearity	Up to 400 mm Longest Axis	$(1.1 + 0.002L) \mu\text{m}$ [(42 + 1.3L) $\mu\text{in}$ ]	Optical grid, optical scales
X, Y Linearity	(400 to 635) mm Longest Axis	$(1.6 + 0.002L) \mu\text{m}$ [(64 + 1.9L) $\mu\text{in}$ ]	
Z Linearity	Up to 300 mm	$(4.1 + 0.002L) \mu\text{m}$ [(160 + 2.4L) $\mu\text{in}$ ]	Gage blocks & dial indicator
Optical Comparator <sup>3</sup> –			
X, Y Linearity	Up to 12 in	$(140 + 0.9L) \mu\text{in}$	Optical scale
Angle	(0 to 90)°	0.38°	Angle blocks
Magnification	(10 to 100)°	$(280 + 0.5L) \mu\text{in}$	Glass scale, gage blocks
Height Gages <sup>3</sup>	Up to 36 in	$(89 + 2.6L) \mu\text{in}$	Gage blocks & surface plate

Parameter/Equipment	Range	CMC <sup>2, 5</sup> ( $\pm$ )	Comments
Micrometers <sup>3</sup> –	(0.05 to 6) in (6 to 36) in	(44 + 3.3L) $\mu$ in (68 + 6.3L) $\mu$ in	Gage blocks, grade 0
Calipers <sup>3</sup>	Up to 36 in	(200 + 11L) $\mu$ in	Gage blocks, grade 0
Length Indicators <sup>3</sup> – Dial, Digital, & Electronic	(0.05 to 6) in	(62 + 2.5L) $\mu$ in	Gage blocks, grade 0
Bore Gages	Up to 0.31 in (0.31 to 0.5) in (0.5 to 1.0) in (1.0 to 2.0) in (2.0 to 3.0) in (3.0 to 5.0) in	21 $\mu$ in 32 $\mu$ in 34 $\mu$ in 40 $\mu$ in 30 $\mu$ in 75 $\mu$ in	Ring gages
Surface Plates – Grades AA, A, & B <sup>3</sup>			
Repeatability	0.002 in	52 $\mu$ in	Repeat-o-meter
Flatness	Up to 144 in, diagonal length	(74 + 0.3L) $\mu$ in	Planekator
Rulers & Tape Measures	Up to 48 in	0.6R	Gage blocks, grade 0
Radius Gages	Up to 0.75 in	140 $\mu$ in	Video measuring device
Angle Gages	Up to 180°	0.01°	Video measuring device

## II. Dimensional Testing/Calibration<sup>8</sup>

Parameter/Equipment	Range	CMC <sup>2, 5</sup> ( $\pm$ )	Comments
Linear Accuracy – Measure			
X, Y Linearity	(0 to 200) mm	$(3.7 + 0.002L) \mu\text{m}$	Video measuring device
Z Linearity	(0 to 160) mm	$(5.4 + 0.0012L) \mu\text{m}$	
Angle	(0 to 90)°	0.16°	Video measuring device & angle blocks

## III. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC <sup>2, 7</sup> ( $\pm$ )	Comments
DC Voltage – Generate <sup>3</sup>	(0 to 330) mV 330 mV to 3.3 V (3.3 to 33) V (33 to 330) V (100 to 1000) V	72 $\mu\text{V/V} + 3 \mu\text{V}$ 61 $\mu\text{V/V} + 5 \mu\text{V}$ 60 $\mu\text{V/V} + 50 \mu\text{V}$ 67 $\mu\text{V/V} + 500 \mu\text{V}$ 68 $\mu\text{V/V} + 1.5 \text{ mV}$	Fluke 5500A
DC Voltage – Measure <sup>3</sup>	(0 to 100) mV 100 mV to 1 V (1 to 10) V (10 to 100) V (100 to 1000) V	8.8 $\mu\text{V}$ 39 $\mu\text{V}$ 350 $\mu\text{V}$ 5.6 mV 61 mV	Fluke 8846A
DC Current – Generate <sup>3</sup> –	(0 to 3.2) mA (3.2 to 32) mA (32 to 330) mA 330 mA to 2.1 A (2.1 to 11) A	0.016 % + 0.05 $\mu\text{A}$ 0.012 % + 0.25 $\mu\text{A}$ 0.012 % + 3.3 $\mu\text{A}$ 0.036 % + 44 $\mu\text{A}$ 0.08 % + 330 $\mu\text{A}$	Fluke 5500A
Clamp-On Meters			
Toroidal	(50 to 500) A	0.39 % + 0.5 A	Fluke 5500/coil
Non-Toroidal	(50 to 1000) A	0.65 % + 0.5 A	

Parameter/Equipment	Range	CMC <sup>2, 7</sup> ( $\pm$ )	Comments
DC Current – Measure <sup>3</sup>	(0 to 100) $\mu$ A 100 $\mu$ A to 1 mA (1 to 10) mA (10 to 100) mA (100 to 400) mA 400 mA to 1 A (1 to 3) A (3 to 10) A	0.092 $\mu$ A 0.68 $\mu$ A 9.5 $\mu$ A 67 $\mu$ A 270 $\mu$ A 870 $\mu$ A 3.0 mA 18 mA	Fluke 8846A
Resistance – Generate <sup>3</sup>	(0 to 11) $\Omega$ (11 to 33) $\Omega$ (33 to 330) $\Omega$  330 $\Omega$ to 3.2 k $\Omega$  (3.3 to 33) k $\Omega$ (33 to 110) k $\Omega$ (110 to 330) k $\Omega$ 330 k $\Omega$ to 3.3 M $\Omega$ (3.3 to 11) M $\Omega$ (11 to 33) M $\Omega$ (33 to 110) M $\Omega$ (110 to 330) M $\Omega$	76 $\mu\Omega/\Omega$ + 0.001 $\Omega$ 75 $\mu\Omega/\Omega$ + 0.0015 $\Omega$ 56 $\mu\Omega/\Omega$ + 0.0014 $\Omega$  61 $\mu\Omega/\Omega$ + 0.06 $\Omega$  55 $\mu\Omega/\Omega$ + 0.6 $\Omega$ 66 $\mu\Omega/\Omega$ + 6 $\Omega$ 73 $\mu\Omega/\Omega$ + 6 $\Omega$ 0.018 % + 55 $\Omega$ 0.072 % + 550 k $\Omega$ 0.12 % + 550 $\Omega$ 0.6 % + 5.5 k $\Omega$ 0.6 % + 17 k $\Omega$	Fluke 5500A
Resistance – Measure <sup>3</sup>	(0 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 $\Omega$ 100 M $\Omega$ to 1 G $\Omega$	4.7 m $\Omega$ 15 m $\Omega$ 130 m $\Omega$ 1.5 $\Omega$ 15 $\Omega$ 96 $\Omega$ 3.1 k $\Omega$ 0.97 M $\Omega$ 24 M $\Omega$	Fluke 8846A
Capacitance – Generate <sup>3</sup> (cont)	(0.33 to 0.4999) nF (0.5 to 1.0999) nF (1.1 to 3.2999) nF (3.3 to 10.999) nF (11 to 32.999) nF (33 to 109.99) nF (110 to 329.99) nF	1 % + 0.01 nF 0.69 % + 0.01 nF 0.62 % + 0.01 nF 0.62 % + 0.01 nF 0.32 % + 0.1 nF 0.32 % + 0.1 nF 0.32 % + 0.3 nF	Fluke 5500A

Parameter/Equipment	Range	CMC <sup>2, 7</sup> ( $\pm$ )	Comments
Capacitance – Generate <sup>3</sup>	(0.33 to 1.0999) $\mu$ F (1.1 to 3.2999) $\mu$ F (3.3 to 10.999) $\mu$ F (11 to 32.999) $\mu$ F (33 to 109.99) $\mu$ F (110 to 329.99) $\mu$ F (0.33 to 1.1) mF	0.32 % + 1 nF 0.43 % + 3 nF 0.44 % + 10 nF 0.5 % + 30 nF 0.63 % + 100 nF 0.86 % + 300 nF 1.3 % + 300 nF	Fluke 5500A
Electrical Calibration of Temperature Indicators - Thermocouple Simulation <sup>3</sup>			
Type B	(600 to 800) °C (800 to 1820) °C	0.58 °C 0.47 °C	Fluke 5500
Type C	(-25 to -100) °C (-100 to 650) °C (650 to 1000) °C	0.64 °C 0.38 °C 0.34 °C	
Type J	(-210 to -100) °C (-100 to 760) °C (760 to 1200) °C	0.40 °C 0.31 °C 0.36 °C	
Type K	(-200 to -100) °C (-100 to 1000) °C (1000 to 1372) °C	0.46 °C 0.39 °C 0.53 °C	
Type R	(0 to 250) °C (250 to 1000) °C (1000 to 1767) °C	0.72 °C 0.48 °C 0.53 °C	
Type S	(0 to 250) °C (250 to 1400) °C (1400 to 1767) °C	0.61 °C 0.50 °C 0.60 °C	
Type T	(-250 to -150) °C (-150 to 0) °C (0 to 400) °C	0.79 °C 0.37 °C 0.30 °C	

Parameter/Range	Frequency	CMC <sup>2, 7</sup> ( $\pm$ )	Comments
AC Voltage – Generate <sup>3</sup>			
(0 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	0.42 % + 20 $\mu$ V 0.18 % + 20 $\mu$ V 0.24 % + 20 $\mu$ V 0.30 % + 20 $\mu$ V 0.42 % + 33 $\mu$ V 1.2 % + 60 $\mu$ V	Fluke 5500A
(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	0.30 % + 50 $\mu$ V 0.060 % + 20 $\mu$ V 0.12 % + 20 $\mu$ V 0.20 % + 40 $\mu$ V 0.29 % + 170 $\mu$ V 0.84 % + 330 $\mu$ V	
33 mV to 3.3V	(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	0.20 % + 250 $\mu$ V 0.037 % + 60 $\mu$ V 0.096 % + 60 $\mu$ V 0.17 % + 300 $\mu$ V 0.29 % + 170 $\mu$ V 0.60 % + 330 $\mu$ V	
(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	0.20 % + 250 $\mu$ V 0.048 % + 600 $\mu$ V 0.096 % + 2.6 mV 0.23 % + 5 mV 0.29 % + 17 mV	
(33 to 330) V	45 Hz to 1 kHz (1 to 10) kHz (10 to 20) kHz	0.06 % + 6.6 mV 0.1 % + 15 mV 0.11 % + 33 mV	
(330 to 1020) V	45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.07 % + 80 mV 0.25 % + 100 mV 0.25 % + 500 mV	
AC Voltage <sup>3</sup> – Measure			
(0 to 100) mV	10 Hz to 20 kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz	120 $\mu$ V 120 $\mu$ V 210 $\mu$ V 5.4 mV	Fluke 8846A

Parameter/Range	Frequency	CMC <sup>2, 7</sup> ( $\pm$ )	Comments
AC Voltage <sup>3</sup> – Measure (cont)			
100 mV to 1 V	10 Hz to 20 kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz	1.1 mV 1.1 mV 2.0 mV 54 mV	Fluke8846A
(1 to 10) V	10 Hz to 20 kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz	11 mV 11 mV 2.2 mV 2000 mV	
(10 to 100) V	10 Hz to 20 kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz	110 mV 110 mV 200 mV 820 mV	
(100 to 1000) V	45 Hz to 1 kHz (1 to 10) kHz (10 to 20) kHz (50 to 100) kHz	990 mV 990 mV 1000 mV 3000 mV	
AC Current – Generate			
(29 to 329.99) $\mu$ A	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.3 % + 0.15 $\mu$ A 0.15 % + 0.15 $\mu$ A 0.15 % + 0.25 $\mu$ A 0.48 % + 0.15 $\mu$ A 1.5 % + 0.15 $\mu$ A	Fluke 5500A
(0.33 to 3.2999) mA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.24 % + 0.3 $\mu$ A 0.12 % + 0.3 $\mu$ A 0.12 % + 0.3 $\mu$ A 0.24 % + 0.3 $\mu$ A 0.72 % + 0.3 $\mu$ A	
(3.3 to 32.999) mA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.24 % + 3 $\mu$ A 0.12 % + 3 $\mu$ A 0.11 % + 3 $\mu$ A 0.24 % + 3 $\mu$ A 0.72 % + 3 $\mu$ A	

Parameter/Range	Frequency	CMC <sup>2, 7</sup> (±)	Comments
AC Current – Generate (cont)			
(33 to 329.99) mA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.24 % + 30 µA 0.12 % + 30 µA 0.11 % + 30 µA 0.24 % + 30 µA 0.72 % + 30 µA	Fluke 5500A
330 mA to 2.199 99 A	(10 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz	0.24 % + 300 µA 0.12 % + 300 µA 0.9 % + 300 µA	
(2.2 to 11) A	(45 to 65) Hz (65 to 500) Hz 500 Hz to 1 kHz	0.08 % + 2 mA 0.12 % + 2 mA 0.4 % + 2 mA	
AC Current – Measure <sup>3</sup>			
100 µA 1 mA 10 mA 100 mA 1.0 A 3 A 10 A	20 Hz to 10 kHz	0.25 µA 1.7 µA 2.9 µA 170 µA 1.7 mA 5.6 mA 25 mA	Fluke 8846A
(11 to 500) A	(50 to 400) Hz	0.43 % + 0.5 A	Fluke 5500A w/ Fluke 5500/coil



## IV. Mechanical

Parameter/Equipment	Range	CMC <sup>2, 5, 6, 10</sup> ( $\pm$ )	Comments
Scales & Balances <sup>3</sup>	(1 to 500) mg Up to 5 g Up to 10 g Up to 20 g Up to 50 g Up to 100 g Up to 200 g Up to 500 g Up to 1000 g (>1 to 9) kg  Up to 1 g Up to 2 g Up to 20 g Up to 50 g Up to 100 g Up to 200 g Up to 500 g Up to 1000 g (>1 to 10) kg  10 g to 35 kg  Up to 500 lb	0.013 mg + 0.6R 0.042 mg + 0.6R 0.061 mg + 0.6R 0.091 mg + 0.6R 0.15 mg + 0.6R 0.31 mg + 0.6R 0.61 mg + 0.6R 1.5 mg + 0.6R 3.1 mg + 0.6R 3.1 mg per 1000 g + 0.6R  0.25 mg + 0.6R 0.32 mg + 0.6R 0.83 mg + 0.6R 1.5 mg + 0.6R 2.5 mg + 0.6R 4.9 mg + 0.6R 12 mg + 0.6R 24 mg + 0.6R 24 mg per 1000 g + 0.6R  0.017 % + 0.6R  0.017 % + 0.6R	ASTM Class 1 weights (applied load)           Class 4 weights (applied load)          Class 6 weights (applied load)  Class 6 weights (applied load)
Force – Measure  Compression & Tension <sup>3</sup>	227 g to 100 kg	0.05 %	Class 6 weights
Pressure Gages <sup>3, 4</sup>	(-14 to 0) psi (0 to 15) psi (0 to 30) psi (0 to 100) psi (0 to 500) psi (0 to 1000) psi	0.13 psi 0.01 psi 0.078 psi 0.096 psi 0.30 psi 0.61 psi	Fluke 744 with pressure modules

Parameter/Equipment	Range	CMC <sup>2, 6</sup> (±)	Comments
Indirect Verification of Rockwell Hardness Testers <sup>3</sup>			
HRC	(20 to 30) HRC (35 to 55) HRC (60 to 65) HRC	1.3 HRC 1.3 HRC 0.68 HRC	Master blocks
HRBW	(40 to 59) HRBW (60 to 79) HRBW (80 to 100) HRBW	1.9 HRBW 1.2 HRBW 1.3 HRBW	
HR15TW	(60 to 79) HR15TW (80 to 89) HR15TW (90 to 99) HR15TW	1.8 HR15TW 1.3 HR15TW 1.2 HR15TW	
HR30N	(41 to 56) HR30N (57 to 72) HR30N (73 to 84) HR30N	1.3 HR30N 1.3 HR30N 0.96 HR30N	

#### V. Thermodynamics

Parameter/Equipment	Range	CMC <sup>2, 6</sup> (±)	Comments
Temperature <sup>3</sup> – Measure	(30 to 200) °C (200 to 375) °C	0.32 °C 0.59 °C	Dry block temperature calibrator
Freezers, Ovens, Incubators, Furnaces	(-50 to 275) °C (275 to 450) °C (450 to 600) °C (600 to 1000) °C	1.5 °C 2.2 °C 2.9 °C 4.7 °C	Fluke 744 w TC probe, PRT

#### VI. Time & Frequency

Parameter/Equipment	Range	CMC <sup>2, 7</sup> (±)	Comments
Frequency – Generate <sup>3</sup>	0.01 Hz to 2.0 MHz	30 x 10 <sup>-6</sup> + 15 mHz	Fluke 5500A

- <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 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.
- <sup>4</sup> Applicable to digital controllers only.
- <sup>5</sup> In the statement of CMC,  $L$  is the numerical value of the nominal length of the device measured in its respective units,  $R$  is the numerical value of the resolution of the device in its respective units.
- <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. CMCs 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.
- <sup>8</sup> This laboratory meets R205 – Specific Requirements: Calibration Laboratory Accreditation Program for the types of dimensional tests listed and is considered equivalent to that of a calibration certificate.
- <sup>9</sup> This scope meets A2LA's *P112 Flexible Scope Policy*.
- <sup>10</sup> In the statement of CMC, percentages are percentage of reading, unless otherwise indicated.



# Accredited Laboratory

A2LA has accredited

**FLORIDA METROLOGY, LLC**

*Port St. Lucie, FL*

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 17<sup>th</sup> day of November 2023.

A blue ink signature of Mr. Trace McInturff.

Mr. Trace McInturff, Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 3864.01  
Valid to October 31, 2025

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