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

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CALIBRATION

Valid To: October 31, 2026 Certificate Number: 2481.01

In recognition of the successful completion of the A2LA evaluation process (including an assessment of the organization's compliance with A2LA's Calibration Program Requirements), accreditation is granted to this laboratory to perform the following calibrations[1, 4]:

I. Electrical – DC/Low Frequency

Parameter/Equipment	Range[3]	CMC[2, 6] (±)	Comments
DC High Voltage Ratio, Applied Voltage – Measure			
(100 to 1 000 000):1	(0.1 to 150) kV	0.0060 % of ratio	High voltage bridge & Ohm-Labs HVS
DC Voltage – Measure	(0 to 100) V (>100 to 1000) V	15 µV/V + 0.050 mV 20 µV/V + 0.10 mV	Agilent 3458A DMM
	(>1 to 150) kV	50 µV/V + 0.050 V	Agilent 3458A DMM & Ohm-Labs HVS
Resistance – Measure	0 Ω	10 nΩ	VI method with null detector
.	(1 to <10) µΩ (>10 to <100) µΩ	0.01 % of rdg 30 µΩ/Ω	Guildline 9975 bridge with 9923 & 3000 A extenders
	(0.1 to <1) mΩ	4.0 µΩ/Ω	Guildline 9920A 1000 A bridge
	(1 to <10) mΩ (10 to <100) mΩ (0.1 to <1) Ω	1.5 µΩ/Ω 1.0 µΩ/Ω 0.50 µΩ/Ω	MI 6242B with 6011D-300 300 A extender

Parameter/Equipment	Range[3]	CMC[2, 6] (±)	Comments
Resistance – Measure (cont)	(1 to <10) Ω (10 to <100) Ω (100 to <1000) Ω (1 to 10) kΩ (>10 to 100) kΩ (>0.1 to 1) MΩ (>1 to 10) MΩ	0.12 µΩ/Ω 0.15 µΩ/Ω 0.15 µΩ/Ω 0.12 µΩ/Ω 0.30 µΩ/Ω 1.8 µΩ/Ω 3.5 µΩ/Ω	MI 6242D bridge
	(>10 to 100) MΩ (>100 to 1000) MΩ (>1 to 10) GΩ (>10 to 100) GΩ (>100 to 1000) GΩ (>1 to 10) TΩ	6.0 µΩ/Ω 11 µΩ/Ω 20 µΩ/Ω 50 µΩ/Ω 0.010 % of rdg 0.020 % of rdg	Comparison with guarded dual source bridge
	(0 to 10) Ω (>10 to 100) Ω (>100 to 1000) Ω (>1 to 10) kΩ (>10 to 100) kΩ (>100 to 1000) kΩ (>1 to 10) MΩ (>10 to 100) MΩ	35 µΩ/Ω + 0.06 mΩ 20 µΩ/Ω + 0.6 mΩ 15 µΩ/Ω + 0.6 mΩ 15 µΩ/Ω + 6 mΩ 20 µΩ/Ω + 60 mΩ 25 µΩ/Ω + 3 Ω 70 µΩ/Ω + 120 Ω 600 µΩ/Ω + 1200 Ω	Measurement with Agilent 3458A DMM
AC Voltage – Measure, (50 & 60) Hz	(0 to 10) V (>10 to 100) V (>100 to 500) V	0.020 % of rdg + 0.20 mV 0.030 % of rdg + 2.0 mV 0.050 % of rdg + 22 mV	Agilent 3458A DMM
AC Voltage – Measure, (50 & 60) Hz	(0.5 to 1.0) kV (>1.0 to 10) kV (>10 to 80) kV	0.030 % of rdg + 0.050 V 0.030 % of rdg + 0.50 V 0.030 % of rdg + 5.0 V	Agilent 3458A DMM & MI 2500A divider
	(>80 to 100) kV	0.040 % of rdg + 4.0 V	Agilent 3458A DMM & Ohm-Lab's HVT divider
AC High Voltage Ratio – Applied Voltage – Measure (100 to 100 000):1	(0.1 to 100) kV @ (50 or 60) Hz	0.050 % of ratio	Agilent 3458A DMMs, MI 2500A divider, Ohm-Labs HVT divider

Parameter/Range	Frequency	CMC[2, 6] (±)	Comments
AC – DC Difference – Measure			
(2 to 10) mA	10 Hz to 50 kHz >50 kHz to 1 MHz	11 µA/A 16 µA/A	Comparison with thermal voltage converter
(>10 to 100) mA	10 Hz to 100 kHz	11 µA/A	Comparison with coaxial AC current shunts using thermal voltage converters
(>0.1 to 1.0) A	10 Hz to 100 kHz	15 µA/A	
(>1.0 to 2) A	(10 to 20) Hz >20 Hz to 100 kHz	18 µA/A 15 µA/A	
(>2 to 20) A	(10 to 20) Hz >20 Hz to 50 kHz (>50 to 100) kHz	22 µA/A 28 µA/A 34 µA/A	
(>20 to 50) A	10 Hz to 30 kHz (>30 to 50) kHz (>50 to 70) kHz (>70 to 100) kHz	28 µA/A 33 µA/A 37 µA/A 42 µA/A	
(>50 to 100) A	10 Hz to 50 kHz (>50 to 70) kHz (>70 to 100) kHz	45 µA/A 65 µA/A 85 µA/A	
(0.2 to 1.0) V	10 Hz to 50 kHz >50 kHz to 1 MHz	11 µV/V 16 µV/V	Comparison with thermal voltage converter
(>1 to 10) V	10 Hz to 100 kHz >100 kHz to 1 MHz	12 µV/V 22 µV/V	Comparison with coaxial AC resistors using thermal voltage converters
(>10 to 50) V	10 Hz to 100 kHz >100 kHz to 1 MHz	15 µV/V 30 µV/V	
(>50 to 200) V	(10 to 100) Hz (>0.01 to 100) kHz	18 µV/V 15 µV/V	
(>200 to 500) V	(10 to 100) Hz (>0.01 to 100) kHz	28 µV/V 22 µV/V	

II. Thermodynamics

Parameter/Equipment	Range	CMC[2, 5] (±)	Comments
Temperature – Measure	(18 to 30) °C	0.020 °C	Measurement with Fluke 1504 thermometer
	(0 to 200) °C	0.20 °C	Measurement with Isotech MilliK thermometer

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[1] This laboratory offers commercial 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] Where ranges are not specified, the CMC stated is for the cardinal points only.

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

[5] 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.

[6] 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.

Accredited Laboratory

A2LA has accredited

OHM-LABS, INC.

Pittsburgh, PA

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 6th day of November 2024.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2481.01
Valid to October 31, 2026
Revised December 16, 2024

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