



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

MDI CALIBRATION
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CALIBRATION

Valid To: October 31, 2021

Certificate Number: 5672.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations^{1, 5}:

I. Dimensional

| Parameter/Equipment | Range | CMC ^{2, 4} (\pm) | Comments |
|---------------------|-------------|-------------------------------|--------------------------------|
| Micrometers | Up to 6 in | $(60 + 15L) \mu\text{in}$ | Gage blocks |
| Calipers | Up to 12 in | $(700 + 0.4L) \mu\text{in}$ | Gage blocks and surface plates |
| Indicators | Up to 2 in | $(120 + 3L) \mu\text{in}$ | Gage blocks and transfer stand |
| Height Gages | Up to 12 in | $(700 + 0.4L) \mu\text{in}$ | Gage blocks and surface plates |

II. Electrical – DC/Low Frequency

| Parameter/Equipment | Range | CMC ^{2, 3} (±) | Comments |
|-----------------------|---|--|-------------------|
| DC Voltage – Generate | Up to 320 mV 320 mV to 3.2 V (3.2 to 32) V (32 to 320) V 320 V to 1050 V | 10 μV + 60 nV/mV 70 μV + 70 μV/V 700 μV + 70 μV/V 7 mV + 70 μV/V 55 mV + 60 μV/V | Wavetek 9100W/600 |
| DC Voltage – Measure | Up to 100 mV 100 mV to 1 V (1 to 10) V (10 to 100) V 100 V to 1 kV | 4 μV + 60 vV/mV 10 μV + 50 μV/V 100 μV + 40 μV/V 1 mV + 50 μV/V 15 mV + 50 μV/V | Agilent 34401A |
| DC Current – Generate | Up to 320 μA 320 μA to 3.2 mA (3.2 to 32) mA (32 to 320) mA 320 mA to 3.2 A (3.2 to 10.5) A (10.5 to 20) A | 70 nA + 160 pA/μA 120 nA + 160 nA/mA 710 nA + 170 nA/mA 12 μA + 180 nA/mA 140 μA + 680 μA/A 1 mA + 670 μA/A 5.2 mA + 630 μA/A | Wavetek 9100W/600 |
| DC Current – Measure | Up to 10 mA (10 to 100) mA (0.1 to 1) A (1 to 3) A | 2 μA + 700 nA/mA 6 μA + 6 μA/mA 120 μA + 1.2 mA/A 700 μA + 1.4 mA/A | Agilent 34401A |
| Resistance – Generate | (0 to 40) Ω (40 to 400) Ω 400 Ω to 4 kΩ (4 to 40) kΩ (40 to 400) kΩ 400 kΩ to 4 MΩ (4 to 40) MΩ (40 to 400) MΩ | 70 mΩ + 1 mΩ/Ω 120 mΩ + 400 μΩ/Ω 230 mΩ + 400 μΩ/Ω 2.3 Ω + 300 μΩ/Ω 23 Ω + 300 μΩ/Ω 230 Ω + 500 μΩ/Ω 2.3 kΩ + 2 mΩ/Ω 46 kΩ + 3 mΩ/Ω | Wavetek 9100W/600 |
| Resistance – Measure | (10 to 100) Ω 100 Ω to 1 kΩ (1 to 10) kΩ (10 to 100) kΩ 100 kΩ to 1 MΩ (1 to 10) MΩ (10 to 100) MΩ | 5 mΩ + 120 μΩ/Ω 16 mΩ + 120 μΩ/Ω 150 mΩ + 120 mΩ/KΩ 2 Ω + 120 mΩ/KΩ 20 Ω + 110 Ω/MΩ 260 Ω + 450 Ω/MΩ 8.4 kΩ + 400 Ω/MΩ | Agilent 34401A |

| Parameter/Range | Frequency | CMC ^{2, 3} (±) | Comments |
|---|--|---|-------------------|
| AC Voltage – Generate (30 to 320) mV 320 mV to 3.2 V (3.2 to 32) V (32 to 320) V (320 to 1050) V | 10 Hz to 10 kHz 10 Hz to 10 kHz 10 Hz to 10 kHz 10 Hz to 10 kHz 10 Hz to 10 kHz | 110 µV + 0.31 µV/mV 310 µV + 460 µV/V 3 mV + 690 µV/V 40 mV + 920 µV/V 240 mV + 910 µV/V | Wavetek 9100W/600 |
| AC Voltage – Measure Up to 100 mV 100 mV to 1 V (1 to 10) V (10 to 100) V 100 V to 1 kV | 10 Hz to 20 kHz 10 Hz to 20 kHz 10 Hz to 20 kHz 10 Hz to 20 kHz 50 Hz to 1 kHz | 50 µV + 860 nV/V 340 µV + 850 µV/V 3.5 mV + 850 µV/V 35 mV + 850 µV/V 260 mV + 700 µV/V | Agilent 34401A |
| AC Current – Generate (32 to 320) µA 320 µA to 3.2 mA (3.2 to 32) mA (32 to 320) mA 320 mA to 3.2 A (3.2 to 10.5) A | 10 Hz to 3 kHz 10 Hz to 3 kHz 10 Hz to 3 kHz 10 Hz to 3 kHz 10 Hz to 3 kHz 10 Hz to 3 kHz | 430 nA + 0.70 nA/µA 400 nA + 80 nA/mA 4 µA + 800 nA/mA 40 µA + 920 nA/mA 550 µA + 1.2 mA/A 4 mA + 2.3 mA/A | Wavetek 9100W/600 |
| AC Current – Measure (0.1 to 1) A (1 to 3) A | 20 Hz to 1 kHz 40 Hz to 1 kHz | 450 µA + 1.3 mA/A 3.5 mA + 4 mA/A | |

III. Time & Frequency

| Parameter/Equipment | Range | CMC ^{2, 6} (±) | Comments |
|---------------------------------|------------------|-------------------------|-------------------|
| Frequency – Measuring Equipment | 10 Hz to 1 MHz | 0.57 ppm | Wavetek 9100W/600 |
| Frequency – Measure | 40 Hz to 300 kHz | 6 mHz + 120 µHz/Hz | Agilent 34401A |

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. CMC's 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 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.
- 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.



Accredited Laboratory

A2LA has accredited

MDI CALIBRATION

Hialeah, FL

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets the requirements of 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 12th day of December 2019.

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

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 5672.01
Valid to October 31, 2021

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