



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

THERMETRICS
4220 24th Avenue W
Seattle WA 98199
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CALIBRATION

Valid To: June 30, 2022

Certificate Number: 3984.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations^{1, 4}:

I. Dimensional

Parameter/Equipment	Range	CMC ^{2, 5} (±)	Comments
Length – 1D	Up to 25.4 mm (25.4 to 50.8) mm (50.8 to 76.2) mm	0.0050 mm 0.0050 mm 0.0060 mm	Micrometer

II. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC ^{2, 5} (±)	Comments
DC Resistance – Measure	(0 to 9.999) Ω (10 to 99.999) Ω (100 to 1000) Ω	0.0065 Ω 0.019 Ω 0.015 Ω	Agilent 34401A
DC Resistance – Measure ³	(0 to 9.999) Ω (10 to 99.999) Ω (100 to 1000) Ω	0.015 Ω 0.054 Ω 0.51 Ω	Keysight U2741A

Parameter/Equipment	Range	CMC ^{2,5} (±)	Comments
DC Voltage – Measure	(0 to 0.1) V (0.1 to 0.9999) V (1 to 9.9999) V (10 to 60) V	0.000 012 V 0.000 30 V 0.000 69 V 0.0061 V	Agilent 34401A
DC Voltage – Measure ³	(10 to 60) V	0.019 V	Keysight U2741A
DC Voltage – Generate	(0 to 11) V	0.000 50 V	Ectron 1140A

III. Mechanical

Parameter/Equipment	Range	CMC ^{2,5} (±)	Comments
Mass – Measure	Up to 100 g (100 to 2000) g	0.010 g 0.37 g	Cole-Parmer 20000-32 AND EJ-2000
Mass – Measure ³	Up to 400 g	0.37 g	Ohaus SP 401

IV. Thermodynamics

Parameter/Equipment	Range	CMC ^{2,5} (±)	Comments
Temperature – Measure	(0 to 60) °C	0.012 °C	Fluke 1504 and Fluke 5641
Temperature – Measure ³	(15 to 40) °C	0.021 °C	Thermetrics temperature calibrator 516- XX

Parameter/Equipment	Range	CMC ² (±)	Comments
Thermocouples – Measuring Equipment			
Type J	(0 to 200) °C	0.10 °C	Ectron 1140A
Type K	(0 to 200) °C	0.11 °C	
Type T	(0 to 200) °C	0.10 °C	

¹ This laboratory offers commercial and field 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 of 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 Field calibration service is available for this calibration and this laboratory meets A2LA R104 – General Requirements: Accreditation of Field Testing and Field Calibration Laboratories for these calibrations. 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 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.

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.



Accredited Laboratory

A2LA has accredited

THERMETRICS

Seattle, WA

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 26th day of August 2020.

A handwritten signature in blue ink, positioned above a horizontal line.

Vice President Accreditation Services
For the Accreditation Council
Certificate Number 3984.01
Valid to June 30, 2022

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