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

HUSTON-DEPUE CALIBRATION LABORATORIES, INC.
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CALIBRATION

Valid To: June 30, 2025 Certificate Number: 4167.01

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] (±)	Comments
Calipers	(0.05 to 6) in (0.05 to 12) in	(600 + 6.1*L*) µin (600 + 4.7*L*) µin	Gage blocks
Dial Indicators	(0.05 to 1) in	(65 + 0.3*L*) µin	Gage blocks
Rulers	Up to 12 in (32nds) Up to 12 in (64ths) Up to 12 in (50ths) Up to 12 in (100ths)	0.013 in 0.010 in 0.011 in 0.007 in	Gage blocks

II. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC[2, 3] (±)	Comments
DC Voltage – Generate	(0 to 329.9999) mV (0 to 3.299 999) V (0 to 32.999 99) V (33 to 329.9999) V (100 to 1020) V	0.0054 % + 3 µV 0.0040 % + 5 µV 0.0040 % + 50 µV 0.0044 % + 0.5 mV 0.0044 % + 1.5 mV	Fluke 5500A/ SC600

Parameter/Equipment	Range	CMC[2, 3] (±)	Comments
DC Voltage – Measure	100 mV 1 V 10 V 100 V 1000 V	0.0036 % + 1 µV 0.0015 % + 1 µV 0.0016 % + 15 µV 0.0036 % + 1.5 mV 0.0023 % + 1.5 mV	Agilent 34401A
DC Current – Measure	10 mA 100 mA 1 A 3 A	0.014 % + 0.2 µA 0.013 % + 1 µA 0.028 % + 40 µA 0.044 % + 40 µA	Agilent 34401A
DC Current – Generate	(0 to 3.299 99) mA (0 to 32.9999) mA (0 to 329.999) mA (0 to 2.199 99) A (0 to 11) A	0.011 % + 0.05 µA 0.0083 % + 0.25 µA 0.0086 % + 3.3 µA 0.025 % + 44 µA 0.049 % + 330 µA	Fluke 5500A/ SC600
Resistance – Generate	(0 to 10.99) Ω (11 to 32.999) Ω (33 to 109.999) Ω (110 to 329.999) Ω 330 Ω to 1.0999 kΩ (1.1 to 3.299 99) kΩ (3.3 to 10.9999) kΩ (11 to 32.9999) kΩ (33 to 109.99) kΩ (110 to 329.999) kΩ 330 kΩ to 1.099 99 MΩ (1.1 to 3.299 99) MΩ (3.3 to 10.9999) MΩ (11 to 32.9999) MΩ (33 to 109.999) MΩ (110 to 330) MΩ	0.053 % + 0.006 Ω 0.034 % + 0.01 Ω 0.014 % + 0.01 Ω 0.0094 % + 0.01 Ω 0.011 % + 0.06 Ω 0.0085 % + 0.06 Ω 0.011 % + 0.6 Ω 0.0085 % + 0.6 Ω 0.013 % + 6 Ω 0.011 % + 6 Ω 0.016 % + 55 Ω 0.013 % + 55 Ω 0.050 % + 0.55 kΩ 0.079 % + 0.55 kΩ 0.39 % + 5.5 kΩ 0.39 % + 17 kΩ	Fluke 5500A/ SC600
Resistance – Measure	100 Ω 1 kΩ 10 kΩ 100 kΩ 1 MΩ 10 MΩ 100 MΩ	0.0052 % + 0.0014 Ω 0.0035 % + 0.002 Ω 0.0035 % + 0.02 Ω 0.0036 % + 0.2 Ω 0.0039 % + 2 Ω 0.016 % + 50 Ω 0.067 % + 3 kΩ	Agilent 34401A

Parameter/Range	Frequency	CMC[2, 3] (±)	Comments
AC Voltage – Generate			
(1 to 32.999) mV	45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz	0.17 % + 20 µV 0.20 % + 20 µV 0.24 % + 20 µV	Fluke 5500A/SC600
(33 to 329.999) mV	45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz	0.045 % + 20 µV 0.085 % + 20 µV 0.13 % + 40 µV	
(0.33 to 3.299 99) V	45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz	0.029 % + 60 µV 0.064 % + 60 µV 0.12 % + 0.3 mV	
(3.3 to 32.9999) V	45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz	0.035 % + 0.6 mV 0.068 % + 2.6 mV 0.16 % + 5.0 mV	
(33 to 329.999) V	45 Hz to 1 kHz (1 to 10) kHz	0.045 % + 6.6 mV 0.063 % + 15 µV	
(330 to 1020) V	45 Hz to 1 kHz	0.046 % + 80 mV	
AC Voltage – Measure			
100.000 mV 1.000 00 V 10.0000 V 100.000 V 750.00 V	10 Hz to 20 kHz 10 Hz to 20 kHz 10 Hz to 20 kHz 10 Hz to 20 kHz 10 Hz to 20 kHz	0.043 % + 8 µV 0.041 % + 50 µV 0.020 % + 0.2 mV 0.025 % + 2 mV 0.042 % + 10 mV	Agilent 34401A
AC Current – Generate			
(0.029 to 0.329 99) mA (0.33 to 3.2999) mA (3.3 to 32.999) mA (33 to 329.99) mA (0.33 to 2.199 99) A (2.2 to 11) A	45 Hz to 1 kHz 45 Hz to 1 kHz 45 Hz to 1 kHz 45 Hz to 1 kHz 45 Hz to 1 kHz (45 to 65) Hz	0.16 % + 0.25 µA 0.087 % + 0.30 µA 0.078 % + 3 µA 0.081 % + 30 µA 0.090 % + 0.3 mA 0.061 % + 2 mA	Fluke 5500A/SC600
AC Current – Measure			
1.000 000 A 3.000 00 A	10 Hz to 5 kHz 10 Hz to 5 kHz	0.092 % + 0.2 mA 0.080 % + 0.2 mA	Agilent 34401A

Parameter/Range	Frequency	CMC[2, 3] (±)	Comments
Capacitance – Generate			
(0.000 33 to 0.0005) µF	(50 to 1000) Hz	2.0 % + 0.000 01 µF	Fluke 5500A/SC600
(0.0006 to 0.0011) µF	(50 to 1000) Hz	1.1 % + 0.000 01 µF	
(0.0012 to 0.0033) µF	(50 to 1000) Hz	0.63 % + 0.000 01 µF	
(0.0034 to 0.011) µF	(50 to 1000) Hz	0.46 % + 0.000 01 µF	
(0.012 to 0.033) µF	(50 to 1000) Hz	0.43 % + 0.0001 µF	
(0.034 to 0.11) µF	(50 to 1000) Hz	0.26 % + 0.0001 µF	
(0.12 to 0.33) µF	(50 to 1000) Hz	0.26 % + 0.0003 µF	
(0.34 to 1.1) µF	(50 to 1000) Hz	0.26 % + 0.001 µF	
(1.2 to 3.3) µF	(50 to 1000) Hz	0.34 % + 0.003 µF	
(3.3 to 11) µF	(50 to 400) Hz	0.45 % + 0.01 µF	
(12 to 33) µF	(50 to 400) Hz	0.51 % + 0.03 µF	
(34 to 110) µF	(50 to 200) Hz	0.46 % + 0.1 µF	
(111 to 1100) µF	(50 to 100) Hz	0.61 % + 0.3 µF	
	(50 to 100) Hz	0.80 % + 0.3 µF	

Parameter/Equipment	Range	CMC[2, 3] (±)	Comments
Electrical Simulation of Thermocouples – Generate and Measure			
Type B	(600 to 800) °C	0.51 °C	Fluke 5500A/SC600
	(800 to 1000) °C	0.39 °C	
	(1000 to 1550) °C	0.35 °C	
	(1550 to 1820) °C	0.40 °C	
Type E	(-250 to -100) °C	0.58 °C	
	(-100 to -25) °C	0.19 °C	
	(-25 to 350) °C	0.16 °C	
	(350 to 650) °C	0.19 °C	
	(650 to 1000) °C	0.24 °C	
Type K	(-200 to -100) °C	0.41 °C	
	(-100 to -25) °C	0.22 °C	
	(-25 to 120) °C	0.2 °C	
	(120 to 1000) °C	0.3 °C	
	(1000 to 1372) °C	0.46 °C	

[1] This laboratory offers commercial calibration.

[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. All calibrations will take place within 23 plus or minus 5 ° C.

[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. CMCs are expressed as either a specific value that covers the full range or as a fraction/percentage 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*.

Accredited Laboratory

A2LA has accredited

HUSTON-DEPUE CALIBRATION LABORATORIES INC.

Oklahoma City, OK

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 31st day of May 2023.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 4167.01
Valid to June 30, 2025
Revised November 17, 2023

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