



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

DIVERSIFIED TECHNICAL SYSTEMS, INC.
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CALIBRATION

Valid To: July 31, 2024

Certificate Number: 4021.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations^{1, 6}:

I. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC ^{2, 5} (±)	Comments
DC Voltage ³ – Measure	Up to 1.2 mV (1.2 to 12) mV (12 to 120) mV (0.12 to 1.2) V (1.2 to 12) V (12 to 120) V	0.018 % + 0.023 μV 0.0085 % + 0.034 μV 0.0052 % + 0.46 μV 0.0045 % + 4.6 μV 0.0035 % + 46 μV 0.0041 % + 0.57 mV	Agilent 34420A
DC Voltage ³ – Generate	(1 to 10) V	0.20 mV	Agilent 33120A
DC Current ³ – Measure	Up to 1.2 mA (1.2 to 12) mA (12 to 120) mA 0 to 1 A 1 to 3 A	0.23 % + 0.068 μA 0.070 % + 2.3 μA 0.057 % + 5.7 μA 4.0 mA 5.1 mA	Agilent 34410A Cal Station 2
Resistance ³ – Measure	Up to 1.2 Ω (1.2 to 12) Ω (12 to 120) Ω (0.12 to 1.2) kΩ (1.2 to 12) kΩ (12 to 120) kΩ (0.12 to 1.2) MΩ	0.0080 % + 2.3 μΩ 0.0068 % + 23 μΩ 0.0069 % + 0.23 mΩ 0.0069 % + 2.3 mΩ 0.0069 % + 23 mΩ 0.0069 % + 0.46 Ω 0.0081 % + 4.6 Ω	Agilent 34420A



Parameter/Range	Frequency	CMC ^{2,5} (±)	Comments
AC Voltage ³ – Measure			Agilent 34401A
Up to 120 mV	10 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz	0.070 % + 68 μV 0.069 % + 34 μV 0.12 % + 57 μV 0.46 % + 91 μV 1.4 % + 0.57 mV	
(0.12 to 1.2) V	10 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz	0.068 % + 0.37 mV 0.069 % + 0.34 mV 0.11 % + 0.57 mV 0.46 % + 0.91 mV 1.4 % + 57 mV	
(1.2 to 12) V	10 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz	0.068 % + 3.4 mV 0.069 % + 3.4 mV 0.11 % + 5.7 mV 0.46 % + 9.1 mV 1.4 % + 57 mV	

II. Mechanical

Parameter/Equipment	Range	CMC ^{2,4} (±)	Comments
Angular Rate ³ – Measuring Equipment	(0 to 300) °/s (300 to 1500) °/s (1500 to 8000) °/s (8000 to 12 000) °/s	0.25 °/s 0.35 °/s 0.29 °/s 0.58 °/s	Agilent 34401A DTS rate table
Angular Rate Sensitivity ³ Up to 5 V Up to 18 000 °/s	(0.010 to 5.3) mV/(°/s)	0.013 %	DTS rate table Agilent 34410A
Acceleration Sensitivity – Shock Up to 5 V (100 to 1000) g	(0.0025 to 4.0) mV/g	1.6 %	The Modal Shop K9525C with PCB 301A12
Acceleration Sensitivity ³ – 2g Roll, Measure	(0.02 to 66) mV/g	0.16 %	NIST standard acceleration due to gravity & NOAA surface gravity prediction
Tilt (Angle) ³ – Generate	(0, 10 & 15)°	0.16°	Angle gage blocks

III. Thermodynamics

Parameter/Equipment	Range	CMC ^{2,7} (±)	Comments
Temperature ³ – Measure	(18 to 28) °C	0.06 °C	ThermoWorks reference thermometer

IV. Time & Frequency

Parameter/Equipment	Range	CMC ^{2,7} (±)	Comments
Frequency ³ – Measuring Equipment, Fixed Points	20 Hz 1.0 kHz 20 kHz 50 kHz 100 kHz	0.009 Hz 0.1 Hz 2.0 Hz 5.0 Hz 11 Hz	Cal Station 2
Frequency ³ – Measure	(0 to 10) Hz (10 to 100) Hz (100 to 500) Hz 500 Hz to 1 kHz (1 to 10) kHz (10 to 100) kHz (100 to 300) kHz	0.0073 Hz 0.014 Hz 0.07 Hz 2.4 Hz 4.2 Hz 14 Hz 43 Hz	Agilent 34410A
Frequency ³ – Measuring Equipment	(1 to 1000) Hz	0.023 Hz	Agilent 33220A

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 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 Calibration and Measurement Capabilities (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 In the statement of CMC, percentage refers to percent of reading.

⁵ 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 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.

⁶ This scope meets A2LA's *P112 Flexible Scope Policy*.

⁷ 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

DIVERSIFIED TECHNICAL SYSTEMS, INC.

Seal Beach, CA

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/NCCL 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 5th day of December 2020.

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

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 4021.01
Valid to July 31, 2024

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