SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005
& ANSI/NCSL Z540-1-1994

TSI INC.
1060 Corporate Center Drive
Oconomowoc, WI 53066
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CALIBRATION

Valid To: February 29, 2020 Certificate Number: 1326.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations[1]:

I. Acoustics & Vibration

Parameter/Equipment	Range	CMC[2, 3] (±)	Comments
Sound Level Calibrators – 125 Hz to 2 kHz	(70 to 120) dB	1.1 % (0.1 dB)	B&K 5935 microphone power supply, B&K 2673 microphone preamplifier, B&K 4144 microphone, B&K 4160 reference microphone, National Instruments PXI-4071 DMM/counter
Acoustical Levels – Sound Level Meters, Noise Dosimeters	(70 to 120) dB (dB re: 20 mPa)	2.2 % (0.19 dB)	Quest-Cal calibrator, B&K 5935 microphone power supply, B&K 2673 microphone preamplifier, B&K 4144 microphone, B&K 4160 reference, microphone, National Instruments PXI-4071 DMM/counter

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Parameter/Equipment	Range	CMC[2, 3] (±)	Comments
Vibration Meters	(15 to 25) m/s^2 (50 to 500) Hz	1.9 %	Fluke 45 w/HP 8904A, Kistler 8076K w/ 5020, or Kistler 8076K w/ 5022

II. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC[2, 3] (±)	Comments
DC Voltage – Measure	10 mV to 200 V	0.1 %	Fluke 45
Resistance – Measure	20 Ω to 2 kΩ	0.11 Ω	Fluke 8842A
AC Voltage – Measure 10 mV to 750 V	50 Hz to 10 kHz	1.4 %	Fluke 45

III. Thermodynamic

Parameter/Equipment	Range	CMC[2] (±)	Comments
Temperature – Heat Stress Monitors	(35 to 40) °C	0.06 °C	Fluke 1524 w/ probe
Relative Humidity	(15 to 95) % RH	1.5 % RH	Thunder Scientific 2500
Temperature – Indoor Air Quality Monitors	(10 to 50) °C	0.14 °C	Thunder Scientific 2500

IV. Time & Frequency

Parameter/Equipment	Range	CMC[2, 3] (±)	Comments
Frequency – Measure	1 Hz to 500 kHz	0.012 %	National Instruments PXI-4071 DMM/counter

[1] This laboratory offers commercial calibration services.

[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] In the statement of CMC, % represents % of reading unless otherwise noted.

Accredited Laboratory

A2LA has accredited

TSI INC.

Oconomowoc, WI

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 ANSI/NCSLI 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 March 2018.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1326.01
Valid to February 29, 2020
Revised January 24, 2020

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