



CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

Calibration Services, Inc.
300 Buttertown Road
Emlenton, PA 16373

Fulfills the requirements of

ISO/IEC 17025:2017

and national standards

ANSI/NCSL Z540-1-1994 (R2002) and
ANSI/NCSL Z540.3-2006 (R2013)

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

A handwritten signature in black ink, appearing to read 'R. Douglas Leonard Jr.', is positioned above a horizontal line.

R. Douglas Leonard Jr., VP, PILR SBU

Expiry Date: 27 August 2023

Certificate Number: L1174-1



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
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).



**SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017,
ANSI/NCSL Z540-1-1994 (R2002) AND ANSI/NCSL Z540.3-2006 (R2013)**

Calibration Services, Inc.

300 Buttertown Road
Emlenton, PA 16373
William W. Stump III
800-793-1870 / 724-867-6664

CALIBRATION

Valid to: **August 27, 2023**

Certificate Number: **L1174-1**

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Dimensional Extensometers and Deflectometers	(0.000 1 to 2) in	120 μin	In accordance with ASTM E-83/ISO 9513 Using length comparator
Dimensional LVDT and LDT Devices, Dial Indicators	(0.000 1 to 3) in	120 μin	In accordance with ASTM D6027 Using length comparator and gage blocks
Dimensional Crosshead Displacement	(0.001 to 31) in	(50 + 190L) μin	In accordance with ASTM E2309 Using Gauge Blocks and Dial Indicators
Dimensional Speed Controls	(0.001 to 20) in/min	(300 + 190L) μin	In accordance with ASTM E2658

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Force in Compression ¹ Mechanical Testing Machines and Force Measurement Devices	(60 to 800 000) lbf	0.18 lbf + 0.15 % of reading	In accordance with ASTM E4 and ISO 7500-1 using Loading Cells

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Force in Tension Mechanical Testing Machines and Force Measurement Devices	(45 to 60 000) lbf (45 to 250 000) lbf ³	0.18 lbf + 0.15 % of reading	In accordance with ASTM E4 and ISO 7500-1 using Loading Cells
Force in Compression and Tension ¹ Mechanical Testing Machines and Force Measurement Devices	(0.01 to 45 359) g	0.003 g + 0.015 % of reading	In accordance with ASTM E4 and ISO 7500-1 using Dead Weights
Laboratory Balance / Scales	(0.01 to 45 359) g	0.003 g + 0.015 % of reading	ASTM E-898 and CSI Procedure CAL 10.02A
Pressure Transducers and Analog Gauges	(1 to 10 000) psi	0.005 psi + 0.15 % of reading	In accordance with ANSI Specifications and ASTM D5720
Low Pressure and Vacuum Devices	(0 to 29.5) inHg	0.04 inHg – 0.15 % of reading	In accordance with ANSI Specifications

Calibration and Measurement Capability (CMC) is expressed in terms of the measurement parameter, measurement range, expanded uncertainty of measurement and reference standard, method, and/or equipment. The expanded uncertainty of measurement is expressed as the standard uncertainty of the measurement multiplied by a coverage factor of 2 ($k=2$), corresponding to a confidence level of approximately 95%.

Notes:

1. On-site calibration service is available for this parameter, since on-site conditions are typically more variable than those in the laboratory, larger measurement uncertainties are expected on-site than what is reported on the accredited scope.
2. L = length in inches.
3. Tension by transfer.
4. This scope is formatted as part of a single document including Certificate of Accreditation No. L1174-1.



R. Douglas Leonard Jr., VP, PILR SBU