



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

PFEIFFER VACUUM INC.
4037 Guion Lane
Indianapolis, IN 46268
Alex Ivanchenko Phone: 317 328 8492

CALIBRATION

Valid To: March 31, 2025

Certificate Number: 2197.01

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 (±) | Comments |
|---------------------|----------------|----------------------|------------|
| Optical Gauging | 9 µm to 1.5 mm | 1.0 µm | Microscope |

II. Fluid Quantities

| Parameter/Equipment | Range | CMC ^{2,3} (±) | Comments |
|---------------------|--|---|----------------------------|
| Gas Flow – Measure | (15 to 5000) g/min (0.03 to 120) g/min (10 to 50) mg/min (1 to 25) mg/min (0.1 to 3000) µg/min | 0.28 % of reading 0.24 % of reading 0.31 % of reading 0.39 % of reading 0.67 % of reading | Gas flow primary standards |

III. Mechanical

| Parameter/Equipment | Range | CMC ^{2,3} (±) | Comments |
|---------------------|--|---|--------------------|
| Pressure – Measure | Up to 5000 psia 4 in·H ₂ O to 10 psi | 0.013 % full scale 0.01 % full scale or 0.03 % of reading (whichever is greater) | Pressure standards |
| Vacuum – Measure | Up to 20 Torr | 0.25 % full scale or 0.6 % of reading (whichever is greater) | Vacuum standard |

IV. Thermodynamics

| Parameter/Equipment | Range | CMC ^{2,3} (±) | Comments |
|-----------------------|---------------|------------------------|-------------------------------------|
| Temperature – Measure | (0 to 100) °C | 0.2 °C | Comparison with thermistor probe |

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 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.

⁴ This scope meets A2LA's *P112 Flexible Scope Policy*.



Accredited Laboratory

A2LA has accredited

PFEIFFER VACUUM INC.

Indianapolis, IN

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 23rd day of February 2023.

A blue ink signature of Mr. Trace McInturff.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2197.01
Valid to March 31, 2025

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