



THE AMERICAN ASSOCIATION FOR
LABORATORY ACCREDITATION

ACCREDITED LABORATORY

A2LA has accredited

LACO TECHNOLOGIES, INC.

Salt Lake City, UT

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/NCSL Z540-1-1994 and any additional program requirements in the field of calibration. 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 18 June 2005*).

Presented this 9th day of October 2008.

A handwritten signature in cursive script, reading "Peter Abney", positioned above a horizontal line.

President
For the Accreditation Council
Certificate Number 1530.01
Valid to November 30, 2010



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

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

LACO TECHNOLOGIES, INC.
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 Salt Lake City, UT 84115
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CALIBRATION

Valid To: November 30, 2010

Certificate Number: 1530.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations¹:

I. Fluid Quantities (Leak Standards and Vacuum Gages)

Parameter	Range (atm • cc/s)	Best Uncertainty ² (±)	Comments
Gas Flow Rate Into Vacuum (Calibrated Leak Standard)	1 × 10 ⁻² to 5 × 10 ⁻⁶ 5 × 10 ⁻⁶ to 1 × 10 ⁻⁸ 1 × 10 ⁻⁸ to 1 × 10 ⁻⁹ 2 × 10 ⁻¹⁰ to 1 × 10 ⁻⁹	5.0 % of leak rate 6.6 % of leak rate 14 % of leak rate 21 % of leak rate	Comparison method using mass spectrometer and master leak standard; helium gas only Constant pressure, volume change method, total pressure technique; all gases
	0.1 to 1 × 10 ⁻⁶ 3 × 10 ⁻⁹ to 1 × 10 ⁻⁶	2.2 % of leak rate 4.6 % of leak rate	
Gas Flow Rate Into Atmosphere (Calibrated Leak Standard)	10 to 1 × 10 ⁻⁵ 5 × 10 ⁻⁶ to 1 × 10 ⁻⁵	3.4 % of leak rate 11 % of leak rate	Constant pressure, volume change method, all gases Dry piston flow-meter method, all gases
	0.08 to 8.3	1.5 % of leak rate	

II. Mechanical

Parameter	Range (Torr)	Best Uncertainty ² (±)	Comments
Pressure (Calibration of Vacuum Gauges)	1000 to 3×10^{-2} 3×10^{-2} to 2×10^{-3} 1×10^{-4} to 3×10^{-2} 1×10^{-7} to 3×10^{-4}	1.3 % of reading 3.9 % of reading 5.1 % of reading 7.1 % of reading	Comparison method using spinning rotor gauge, high-accuracy ion gauge, or capacitance manometer

¹ This laboratory offers commercial calibration service.

² “Best Uncertainty” 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 of nearly ideal measuring equipment. Best uncertainties represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The best uncertainty of a specific calibration performed by the laboratory may be greater than the best uncertainty due to the behavior of the customer’s device, to the environment and to influences from the circumstances of the specific calibration.