



SCOPE OF ACCREDITATION TO ISO/IEC 17025-2005

A.R. SERVICES  
 104-155 Main Street East, Suite 215  
 Grimsby, Ontario, CANADA L3M 1P2  
 John de Jager Phone: 905 309 5990

CALIBRATION

Valid To: August 31, 2017

Certificate Number: 2823.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations<sup>1</sup>:

I. Mechanical

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
Pressure <sup>3</sup>	(0 to 15) psig	0.58 psi	Druck DPI 705
	(0 to 500) psig	0.98 psi	Beta PI-500
	(0 to 6000) psig	7.0 psi	Beta PI-10K
	(6000 to 10 000) psig	8.4 psi	
Vacuum	(0 to 28) in·Hg	0.28 in·Hg	Beta PI-500

## II. Thermodynamics

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
Temperature Sensors <sup>3,4</sup> –  Types RTD & T/C Types J, K, T  T/C Types J, K, R, S, T	(-80 to 232) °C  (232 to 1052) °C (1052 to 1300) °C	0.07 °C  2.4 °C 3.1 °C	Hart 1502A/Pt100 (385)  Precision calibrator & 'S' T/C
Temperature – Instruments <sup>3</sup> (Electrical Simulation)	(-180 to 1760) °C	2.0 °C	Precision calibrator
Relative Humidity <sup>3</sup> –  Measuring Equipment  Measure	(10 to 90) % RH  (10 to 70) % RH (70 to 90) % RH	2.5 % RH  1.9 % RH 3.4 % RH	Kaymont 2000  Vaisala HMP 233

<sup>1</sup> This laboratory offers commercial calibration service.

<sup>2</sup> 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.

<sup>3</sup> Field calibration service is available for this calibration and this laboratory meets A2LA R104 – *General Requirements: Accreditation of Field Testing and Field Calibration Laboratories* for these calibrations. Please note the actual measurement uncertainties achievable on a customer's site can normally be expected to be larger than the 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 actual 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.

<sup>4</sup> The CMC stated is for one or more of the thermocouple types that the calibrator is capable of performing. See measurement uncertainty budgets for the "CMC" for a specific thermocouple type. It is also important to note that the "CMC" stated on each calibration certificate, reflects the applicable uncertainty for the customer's thermocouple type.



# Accredited Laboratory

A2LA has accredited

**A.R. SERVICES**

*Grimsby, Ontario, CANADA*

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 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 8 January 2009).



Presented this 8<sup>th</sup> day of January, 2016.

A handwritten signature in blue ink, appearing to read "Jim C. Bennett".

Senior Director of Quality and Communications  
For the Accreditation Council  
Certificate Number 2823.01  
Valid to August 31, 2017  
Revised July 25, 2017

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