



PROCESS PRODUCTS

# Calibration Certificate

## Pressure Transducer

Certificate Number: 12897M-3  
Page 1 of 2 Pages

Issue Date: 2023-05-02

Final Calibration Date: 2023-04-28

Customer: Canadian Light Source Inc.  
44 Innovation Blvd.  
Saskatoon, SK  
S7N 2V3

The Calibration Laboratory Assessment Service (CLAS) of the National Research Council of Canada (NRC) has assessed and certified specific calibration capabilities of this laboratory and traceability to the International System of Units (SI) or to standards acceptable to the CLAS program. This certificate of calibration is issued in accordance with the conditions of certification granted by CLAS and the conditions of accreditation granted by the Standards Council of Canada (SCC). Neither CLAS nor SCC guarantee the accuracy of individual calibrations by accredited laboratories.

The measurement uncertainties for this pressure range is the larger of +/- 0.05% of R or 5 Pa. The uncertainties are expanded using a coverage factor k=2 for a level of confidence of approximately 95%, assuming normal distribution.

CCR Calibration Procedure:	QA-118	Pressure Traceability:	DHI 1500329852/1500346021
CLAS certification number:	93-01	Voltage Traceability:	WO-00273376
SCC accreditation number:	103	Accreditation:	ISO 17025

### Standard Equipment Used for this Calibration

Voltmeter:	8845A	s/n:	2234017	Multimeter for voltage measurements
Vacuum:	KJL IG2200	s/n:	5949	Reference pressure measurement
Ref. Std.:	DHI RPM4	s/n:	665	Pressure monitor with 200kPa range
Working Std.:	DHI RPM4	s/n:	566	Pressure monitor with 200kPa range

### Customer Unit Identification

Customer Unit:	626B13TBE	s/n:	016526428	Pressure transducer with 1000 Torr range
Customer specified ID:	n/a			

### Initial Condition Summary

Equipment Appearance:	OK
Sensor Contamination:	No visual appearance

### Repair Action

Repair Done:	None
Calibration Adjustment:	Yes

Notes

Calibrated by

Authorized by

Joel Hiscocks, Service Manager

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Customer Unit Specifications	Calibration Conditions
Accuracy Specification: $\pm 0.25\%$ of Rdg Zero Temperature Coefficient: 50 ppm of FS/ $^{\circ}$ C Span Temperature Coefficient: 400 ppm of Rdg/ $^{\circ}$ C System Check: n/a Sensor Temperature: n/a Ref. Press. (Torr): internal absolute	Ambient Temperature: $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Calibration Gas: nitrogen Zero Pressure: $< 1\text{E-}6$ Torr Customer Unit Display: voltmeter Sensor Tube Orientation: port down

Initial As-Received Calibration Results					
Standard		Customer Unit		Customer Unit Error	
Pressure (Torr)		Pressure (Torr)	Voltage (Volts)	Error (Torr)	Error (% of Rdg)
0.000		0.0	0.000	0.000	-
100.068		100.0	1.000	-0.068	-0.068%
200.204		200.4	2.004	0.196	0.098%
300.033		300.5	3.005	0.467	0.156%
400.684		401.6	4.016	0.916	0.229%
503.141		504.5	5.045	1.359	0.270%
601.073		602.8	6.028	1.727	0.287%
699.971		701.9	7.019	1.929	0.276%
800.912		802.7	8.027	1.788	0.223%
899.801		901.2	9.012	1.399	0.155%
1001.006		1001.4	10.014	0.394	0.039%

Final As-Shipped Calibration Results					
Standard		Customer Unit		Customer Unit Error	
Pressure (Torr)		Pressure (Torr)	Voltage (Volts)	Error (Torr)	Error (% of Rdg)
0.000		0.0	0.000	0.000	-
100.044		99.9	0.999	-0.144	-0.144%
200.104		200.0	2.000	-0.104	-0.052%
300.734		300.9	3.009	0.166	0.055%
400.068		400.5	4.005	0.432	0.108%
499.818		500.6	5.006	0.782	0.156%
602.789		603.7	6.037	0.911	0.151%
700.460		701.2	7.012	0.740	0.106%
801.907		802.3	8.023	0.393	0.049%
900.871		900.5	9.005	-0.371	-0.041%
1000.702		999.2	9.992	-1.502	-0.150%

The results relate only to the customer unit that is identified in this certificate.