



# Calibration Certificate

## Pressure Transducer

Certificate Number: 12897M-4  
Page 1 of 2 Pages  
Issue Date: 2023-05-03  
Final Calibration Date: 2023-05-03

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 larger of +/- 0.5% of Rdg or 0.05 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-155  
CLAS certification number: 93-01  
SCC accreditation number: 103  
Pressure Traceability: DHI 1500329852/1500346021  
Voltage Traceability: WO-00273376  
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 33 kPa range
Working Std.:	DHI RPM4	s/n:	566	Pressure monitor with 33 kPa range

### Customer Unit Identification

Customer Unit: 627F01TAC1B  
Customer specified ID: n/a  
s/n: 110747881  
Pressure transducer with 1 Torr range

### 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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PROCESS PRODUCTS

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Customer Unit Specifications	
Accuracy Specification:	±0.12% of Rdg
Zero Temperature Coefficient:	20 ppm of FS/°C
Span Temperature Coefficient:	200 ppm of Rdg/°C
System Check:	n/a
Sensor Temperature:	45°C
Ref. Press. (torr):	internal absolute

Calibration Conditions	
Ambient Temperature:	23°C ± 5°C
Calibration Gas:	nitrogen
Zero Pressure:	< 1E-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)
0.00000		0.00000	0.0000	0.00000	-
0.10019		0.09922	0.9922	-0.00097	-0.968%
0.20011		0.19801	1.9801	-0.00210	-1.049%
0.30008		0.29707	2.9707	-0.00301	-1.003%
0.40006		0.39643	3.9643	-0.00363	-0.907%
0.50005		0.49584	4.9584	-0.00421	-0.842%
0.60004		0.59498	5.9498	-0.00506	-0.843%
0.70004		0.69399	6.9399	-0.00605	-0.864%
0.80003		0.79300	7.9300	-0.00703	-0.879%
0.90003		0.89194	8.9194	-0.00809	-0.899%
1.00003		0.99091	9.9091	-0.00912	-0.912%

### Final As-Shipped Calibration Results

Standard		Customer Unit		Customer Unit Error	
Pressure (Torr)		Pressure (Torr)	Voltage (Volts)	Error (Torr)	Error (% of Rdg)
0.00000		0.00000	0.0000	0.00000	-
0.10019		0.10007	1.0007	-0.00012	-0.120%
0.20011		0.19997	1.9997	-0.00014	-0.070%
0.30008		0.29998	2.9998	-0.00010	-0.033%
0.40006		0.40010	4.0010	0.00004	0.010%
0.50005		0.50017	5.0017	0.00012	0.024%
0.60004		0.60025	6.0025	0.00021	0.035%
0.70004		0.70027	7.0027	0.00023	0.033%
0.80003		0.80030	8.0030	0.00027	0.034%
0.90003		0.90029	9.0029	0.00026	0.029%
1.00003		1.00002	10.0002	-0.00001	-0.001%

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