



Calibration Certificate

Pressure Transducer

Certificate Number: 12897M-1
Page 1 of 2 Pages
Issue Date: 2023-05-02
Final Calibration Date: 2023-05-02

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 +/- 0.7% 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 200 kPa range
Working Std.:	DHI RPM4	s/n:	566	Pressure monitor with 200 kPa range

Customer Unit Identification

Customer Unit: 627B11TEC1B
Customer specified ID: TCM1601.1-R10-01
s/n: 001229383
Pressure transducer with 10 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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Customer Unit Specifications	Calibration Conditions
Accuracy Specification: $\pm 0.12\%$ of Rdg Zero Temperature Coefficient: 20 ppm of FS/ $^{\circ}$ C Span Temperature Coefficient: 200 ppm of Rdg/ $^{\circ}$ C System Check: n/a Sensor Temperature: 45 $^{\circ}$ C Ref. Press. (torr): internal absolute	Ambient Temperature: 23 $^{\circ}$ C \pm 5 $^{\circ}$ 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)	
0.0000	0.0000	0.0000	0.0000	-	
1.0000	0.9978	0.9978	-0.0022	-0.220%	
2.0000	1.9976	1.9976	-0.0024	-0.120%	
3.0000	2.9979	2.9979	-0.0021	-0.070%	
4.0000	3.9985	3.9985	-0.0015	-0.038%	
5.0000	4.9989	4.9989	-0.0011	-0.022%	
6.0000	5.9987	5.9987	-0.0013	-0.022%	
7.0000	6.9988	6.9988	-0.0012	-0.017%	
8.0000	7.9973	7.9973	-0.0027	-0.034%	
9.0000	8.9959	8.9959	-0.0041	-0.046%	
10.0000	9.9929	9.9929	-0.0071	-0.071%	

Final As-Shipped Calibration Results					
Standard	Customer Unit		Customer Unit Error		
Pressure (Torr)	Pressure (Torr)	Voltage (Volts)	Error (Torr)	Error (% of Rdg)	
0.0000	0.0000	0.0000	0.0000	-	
1.0000	0.9999	0.9999	-0.0001	-0.010%	
2.0000	2.0003	2.0003	0.0003	0.015%	
3.0000	3.0009	3.0009	0.0009	0.030%	
4.0000	4.0017	4.0017	0.0017	0.042%	
5.0000	5.0029	5.0029	0.0029	0.058%	
6.0000	6.0042	6.0042	0.0042	0.070%	
7.0000	7.0050	7.0050	0.0050	0.071%	
8.0000	8.0038	8.0038	0.0038	0.048%	
9.0000	9.0013	9.0013	0.0013	0.014%	
10.0000	9.9970	9.9970	-0.0030	-0.030%	

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