TESTING AND CALIBRATION LABORATORY ACCREDITATION PROGRAM (LAP)

Scope of Accreditation

La présente portée d'accréditation existe également en français et est publiée séparément.

Legal Name of Accredited Laboratory:	**Instruments Canada Company Ltd.**
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SCC File Number:	15569
Accreditation Standards:	ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories
Clients Served:	All interested parties. On-site calibration services are available for the capabilities for which it is indicated in the remarks column.
Field of Calibration:	Electrical Pressure Thermometry Time and frequency
Program Specialty Area:	Calibration
Initial Accreditation:	2002-08-15
Most Recent Accreditation:	2026-04-29
Accreditation Valid to:	2030-08-15

CALIBRATION OF MEASURING AND TEST EQUIPMENT

See: Supplementary notes

Canada

Electrical

Current, AC

For the calibration of current generating devices and equipment using a digital multimeter. On-site calibration services available.

Measured Quantity & Range or Instrument	Frequency	Expanded Measurement Uncertainty
1 mA to 1 A	3 Hz to 5 Hz	1 % + 0.4 mA
1 mA to 1 A	5 Hz to 10 Hz	0.3 % + 0.4 mA
1 mA to 1 A	10 Hz to 5 kHz	0.1 % + 0.4 mA
1 A to 3 A	3 Hz to 5 Hz	1.1 % + 1.8 mA
1 A to 3 A	5 Hz to 10 Hz	0.35 % +1.8 mA
1 A to 3 A	10 Hz to 5 kHz	0.15 % + 1.8 mA

Voltage, AC

For the calibration of voltage sources using digital multimeters. On site calibration services available.

Measured Quantity & Range or Instrument	Frequency	Expanded Measurement Uncertainty
1 mV to 100 mV	3 Hz to 5 Hz	1 % + 40 µV
1 mV to 100 mV	5 Hz to 10 Hz	0.35 % + 40 µV
1 mV to 100 mV	10 Hz to 20 kHz	0.06 % + 40 µV
1 mV to 100 mV	20 kHz to 50 kHz	0.12 % + 50 µV
1 mV to 100 mV	50 kHz to 100 kHz	0.6 % + 80 µV
1 mV to 100 mV	100 kHz to 300 kHz	4 % + 0.5 mV
1 V to 750 V	3 Hz to 5 Hz	1 % + 0.23 V
1 V to 750 V	5 Hz to 10 Hz	0.35 % + 0.23 V
1 V to 750 V	10 Hz to 20 kHz	0.06 % + 0.23 V
1 V to 750 V	20 kHz to 50 kHz	0.12 % + 0.38 V

Measured Quantity & Range or Instrument	Frequency	Expanded Measurement Uncertainty
1 V to 750 V	50 kHz to 100 kHz	0.6 % + 0.6 V
1 V to 750 V	100 kHz to 300 kHz	4 % + 3.8 V

High voltage AC

Measure using a high voltage divider. On site calibration services available.

Measured Quantity & Range or Instrument	Frequency	Expanded Measurement Uncertainty
0.1 kV to 6 kV	60 Hz	1.2 %

Current, DC

For the calibration of current generating devices and equipment using a digital multimeter. On-site calibration services available.

Measured Quantity & Range or Instrument	Expanded Measurement Uncertainty
10 mA to 100 mA	0.05 % + 5 µA
100 mA to 1 A	0.1 % + 0.1 mA
1 A to 3 A	0.12 % + 0.6 mA

Voltage, DC

For the calibration of voltage sources using digital multimeters. On site calibration services available.

Measured Quantity & Range or Instrument	Expanded Measurement Uncertainty
1 mV to 100 mV	0.005 % + 3.5 µV
100 mV to 1 V	0.004 % + 7 µV
1 V to 10 V	0.0035 % + 50 µV
10 V to 100 V	0.0045 % + 0.6 mV
100 V to 1000 V	0.0045 % + 10 mV

High voltage DC

Measure using a high voltage divider. On site calibration services available.

Measured Quantity & Range or Instrument	Expanded Measurement Uncertainty
0.1 kV to 6 kV	1 %

Resistance

For the calibration of resistors and resistance devices over a wide range of resistance and conditions using a digital multimeter. On site calibration services available.

Measured Quantity & Range or Instrument	Expanded Measurement Uncertainty
1 Ω to 100 Ω	0.01 % + 4 mΩ
100 Ω to 1 kΩ	0.01 % + 10 mΩ
1 kΩ to 10 kΩ	0.01 % + 0.1 Ω
10 kΩ to 100 kΩ	0.01 % + 1 Ω
100 kΩ to 1 MΩ	0.01 % + 10 Ω
1 MΩ to 10 MΩ	0.04 % + 0.1 kΩ
10 MΩ to 100 MΩ	0.8 % + 10 kΩ

Electrical calibration of temperature indicators

Thermocouple temperature indicators

Source and measure simulated temperature for types J, K, N, T, R, and S thermocouples using multifunction calibrator. Suitable for the calibration of temperature simulators and indicators by electrical simulation.

The calibration measurement capability does not include the uncertainty of the device under test or the thermocouple error. ITS-90 or IPTS-68 temperature scales available. On site calibration services available.

Measured Quantity & Range or Instrument	Expanded Measurement Uncertainty
-200 °C to 200 °C	0.3 °C
200 °C to 400 °C	0.6 °C
400 °C to 1370 °C	0.8 °C to 1.3 °C

Resistance thermometer temperature indicators

Source and measure simulated temperature for RTDs. Suitable for the calibration of temperature simulators and indicators by electrical simulation.
The calibration measurement capability does not include the uncertainty of the device under test or the sensor error. ITS-90 or IPTS-68 temperature scales available. On-site calibration services available.

Measured Quantity & Range or Instrument	Expanded Measurement Uncertainty
-195 °C to 815 °C	0.4 °C

Frequency and Time

Timers

For the calibration of manually-activated time interval measurement devices, including stopwatches and timers, by direct comparison with a reference timer. On-site calibration services available.

Measured Quantity & Range or Instrument	Expanded Measurement Uncertainty
0 h to 24 h	0.25 s

Pressure

Pressure indicators and gauges (pneumatic gauge pressure)

For the calibration of pressure indicators and gauges using a reference pressure transducer or dead weight tester. On-site calibration services available.

Measured Quantity & Range or Instrument	Expanded Measurement Uncertainty
0 inch H_20 to 5 inch H_20	0.06 inch H_20
0 inch H_20 to 20 inch H_20	0.21 inch H_20
0 inch H_20 to 2000 inch H_20	1.0 inch H_20
10 psi to 1000 psi	0.5 %

Pressure indicators and gauges (hydraulic gauge pressure)

For the calibration of pressure indicators and gauges using a reference pressure transducer or dead weight tester. On-site calibration services available.

Measured Quantity & Range or Instrument	Expanded Measurement Uncertainty
10 psi to 10000 psi	0.1 %

Vacuum gauges

For the calibration of vacuum gauges using a reference pressure transducer.

Measured Quantity & Range or Instrument	Expanded Measurement Uncertainty
-28 inch Hg to 0 inch Hg	0.07 inch Hg

Thermometry

Liquid in glass thermometers

Dry ice and liquid bath. Calibrations are made in accordance with a laboratory developed calibration procedure, which is based in part on ASTM E77, 'Standard Test Method for Inspection and Verification of Thermometers'.

Measured Quantity & Range or Instrument	Expanded Measurement Uncertainty
-77 °C	0.24 °C
-35 °C to 0 °C	0.20 °C
0 °C to 200 °C	0.15 °C
200 °C to 400 °C	0.43 °C

Thermocouples/thermocouple thermometers (type J, K, T, N)

Dry ice and liquid bath. Individual thermocouples are calibrated using the laboratory's measuring devices. It is the client's responsibility to evaluate any additional uncertainties introduced by the client's measurement system.
Thermocouple thermometers consisting of a temperature indicator and thermocouple(s) are calibrated as a system. On site calibration services available.

Measured Quantity & Range or Instrument	Expanded Measurement Uncertainty
-77 °C	0.3 °C

Measured Quantity & Range or Instrument	Expanded Measurement Uncertainty
-50 °C to 0 °C	0.3 °C
0 °C to 200 °C	0.3 °C
200 °C to 400 °C	0.8 °C
400 °C to 1100 °C	1.0 °C to 1.8 °C

Thermocouples/thermocouple thermometers (type R & S)

Individual thermocouples are calibrated using the laboratory's measuring devices. It is the client's responsibility to evaluate any additional uncertainties introduced by the client's measurement system.
Thermocouple thermometers consisting of a temperature indicator and thermocouple(s) are calibrated as a system. On site calibration services available.

Measured Quantity & Range or Instrument	Expanded Measurement Uncertainty
0 °C to 200 °C	0.8 °C
200 °C to 400 °C	1.0 °C
400 °C to 1100 °C	1.3 °C to 1.7 °C

Thermistor thermometers

Liquid bath. For the calibration of thermistor thermometers.

Measured Quantity & Range or Instrument	Expanded Measurement Uncertainty
-40 °C to 140 °C	0.2 °C

Resistance temperature devices

Dry ice and liquid bath. Individual RTDs are calibrated using the laboratory's measuring devices. It is the client's responsibility to evaluate any additional uncertainties introduced by the client's measurement system.
RTD thermometers consisting of a temperature indicator and RTD(s) are calibrated as a system. On site calibration services available.

Measured Quantity & Range or Instrument	Expanded Measurement Uncertainty
-77 °C	0.26 °C

Measured Quantity & Range or Instrument	Expanded Measurement Uncertainty
-50 °C to 0 °C	0.20 °C
0 °C to 200 °C	0.19 °C
200 to 400 °C	0.60 °C

Temperature uniformity surveys

Using a thermocouple based temperature measurement system. On site calibration services available.

Measured Quantity & Range or Instrument	Expanded Measurement Uncertainty
-80 °C to 1100 °C	0.4 °C to 1.3 °C

Radiation Thermometry

For the calibration of infrared thermometers at emissivity 0.9 to 1.0 with spectral band of 8 to 14 µm. Using a blackbody source. On site calibration services available.

Measured Quantity & Range or Instrument	Expanded Measurement Uncertainty
0 °C	0.65 °C
50 °C to 550 °C	3.1 °C

Radiation Thermometry

For the calibration of infrared thermometers at emissivity 0.9 to 1.0 with spectral band of 0.9 to 5 µm or 8 to 14 µm. Using a blackbody source. On site calibration services available.

Measured Quantity & Range or Instrument	Expanded Measurement Uncertainty
550 °C to 1000 °C	4.3 °C

This document forms part of the Certificate of Accreditation issued by the Standards Council of Canada (SCC). The original version is available in the Directory of Accredited Laboratories on the SCC website at www.scc-ccn.ca.

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Publication on: 2026-04-29

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