



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

THERMO-KINETICS COMPANY LIMITED
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CALIBRATION

Valid To: February 28, 2021

Certificate Number: 2775.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations¹:

I. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC ² (±)	Comments
Electrical Simulation of RTD Temperature Indicating Devices – Pt 385, 100 Ω	(-200 to 0) °C (0 to 400) °C (400 to 800) °C	0.18 °C 0.27 °C 0.48 °C	In-house procedure using multifunction calibrator
Electrical Simulation of Thermocouple Temperature Indicating Devices– Type J	(-210 to -100) °C (-100 to 800) °C	0.3 °C 0.2 °C	In-house procedure using multifunction calibrator
Type K	(-200 to -100) °C (-100 to 1372) °C	0.4 °C 0.3 °C	
Type N	(-200 to -100) °C (-100 to 900) °C (900 to 1300) °C	0.6 °C 0.5 °C 0.3 °C	
Type E	(-200 to 600) °C (600 to 1000) °C	0.3 °C 0.2 °C	
Type T	(-200 to 0) °C (0 to 400) °C	0.4 °C 0.3 °C	

Parameter/Equipment	Range	CMC ² (±)	Comments
Electrical Calibration of Thermocouple Indicating Devices (cont) –			
Type R	(-20 to 0) °C (0 to 100) °C (100 to 1767) °C	1.2 °C 1.1 °C 0.9 °C	In-house procedure using multifunction calibrator
Type S	(-20 to 0) °C (0 to 200) °C (200 to 1400) °C (1400 to 1767) °C	1.2 °C 1.1 °C 0.9 °C 1.0 °C	

II. Thermodynamic Quantities

Parameter/Equipment	Range	CMC ² (±)	Comments
Temperature Measuring Equipment – Thermocouple Devices			
Type E	(-196 to 150) °C (150 to 400) °C (400 to 500) °C (500 to 1000) °C	0.7 °C 0.81 °C 0.87 °C 1.4 °C	ASTM E220 using reference SPRT, Pt thermocouple, and DMM
Type J	(-196 to 150) °C (150 to 400) °C (400 to 500) °C (500 to 760) °C	0.62 °C 0.69 °C 0.94 °C 1.1 °C	
Type K	(-196 to 150) °C (150 to 400) °C (400 to 500) °C (500 to 1100) °C (1100 to 1300) °C	0.71 °C 0.75 °C 0.98 °C 1.3 °C 1.8 °C	
Type N	(-196 to 150) °C (150 to 400) °C (400 to 500) °C (500 to 1100) °C (1100 to 1300) °C	0.62 °C 0.69 °C 1.1 °C 1.3 °C 1.8 °C	



Parameter/Equipment	Range	CMC ^{2,3} (±)	Comments
Temperature Measuring Equipment – Thermocouple Devices (cont)			
Type R	(0 to 150) °C (150 to 400) °C (400 to 1100) °C (1100 to 1300) °C	0.61 °C 0.64 °C 0.87 °C 1.4 °C	ASTM E220 using reference SPRT, Pt thermocouple and DMM
Type S	(0 to 150) °C (150 to 400) °C (400 to 1100) °C (1100 to 1300) °C	0.61 °C 0.64 °C 0.87 °C 1.4 °C	
Type B	(500 to 1100) °C (1100 to 1300) °C	0.93 °C 1.4 °C	
Type T	(-196 to 150) °C (150 to 400) °C	0.51 °C 0.65 °C	
Temperature Measuring Equipment – RTD Devices			
Pt 385, 100 Ω	(-196 to 150) °C (150 to 400) °C (400 to 600) °C	0.023 °C (23 mK) 0.042 °C 0.068 °C	ASTM E644 using SPRT and DMM
Temperature Measuring Equipment – Transmitters	(-196 to 150) °C (150 to 400) °C	0.037 °C (37 mK) 0.042 °C	ASTM E644 using SPRT and DMM
Temperature Measuring Equipment – Infrared Thermometers	(0 to 400) °C (400 to 1500) °C (1500 to 2500) °C	1.3 °C 2.6 °C (2.9 + A ³) °C	In-house procedure using black body furnace, PRT, and IR thermometers

¹ This laboratory offers commercial calibration service.

² 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.



³ In the statement of CMC, $A = (\text{temperature} - 1500) \times 0.003$





Accredited Laboratory

A2LA has accredited

THERMO-KINETICS COMPANY LIMITED

Mississauga ON L5T 2B6, CANADA

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets *R205 – Specific Requirements: Calibration Laboratory Accreditation Program*. 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 April 2017*).



Presented this 25th day of March 2019.

A blue ink signature of the Vice President of Accreditation Services.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2775.01
Valid to February 28, 2021

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