PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc. has assessed the Laboratory of:

Pyro Service Company

25812 John R Road, Madison Heights, MI 48071

(Hereinafter called the Organization) and hereby declares that Organization is accredited in accordance with the recognized International Standard:

ISO/IEC 17025:2017

This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system
(as outlined by the joint ISO-ILAC-IAF Communiqué dated April 2017):

Calibration of Time, Humidity and Temperature Instrumentation including Chart Records, Thermocouples, Process Controllers and Portable Calibrations/Indicators; System Accuracy Tests and Temperature Uniformity Surveys (As detailed in the supplement)

Accreditation claims for such testing and/or calibration services shall only be made from addresses referenced within this certificate. This Accreditation is granted subject to the system rules governing the Accreditation referred to above, and the Organization hereby covenants with the Accreditation body's duty to observe and comply with the said rules.

For PJLA:

Tracy Szerszen
President

Perry Johnson Laboratory Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

Initial Accreditation Date:	*Issue Date:*	*Expiration Date:*
December 5, 2002	August 11, 2020	November 30, 2022

Accreditation No.:	*Certificate No.:*
59165	L20-468

The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: www.pjlabs.com

Certificate of Accreditation: Supplement

Pyro Service Company
25812 John R Road, Madison Heights, MI 48071
Contact Name: Gerry Hambright Jr. Phone: 248-547-2552

Accreditation is granted to the facility to perform the following calibrations:

Electrical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Temperature Calibration, Indication, and Control Equipment used with Thermocouple Type E^{FO}	-200 °C to 1 000 °C	0.3 °C	Electrical Simulation of Thermocouple Output Fluke 741B WI-5.4d
Temperature Calibration, Indication, and Control Equipment used with Thermocouple Type K^{FO}	-200 °C to 1 372 °C	0.4 °C	Electrical Simulation of Thermocouple Output Fluke 741B WI-5.4d
Temperature Calibration, Indication, and Control Equipment used with Thermocouple Type J^{FO}	-210 °C to 760 °C	0.2 °C	Electrical Simulation of Thermocouple Output Fluke 741B WI-5.4d
Temperature Calibration, Indication, and Control Equipment used with Thermocouple Type N^{FO}	-200 °C to 1 300 °C	0.3 °C	Electrical Simulation of Thermocouple Output Fluke 741B WI-5.4d
Temperature Calibration, Indication, and Control Equipment used with Thermocouple Type S^{FO}	-20 °C to 1 768 °C	0.3 °C	Electrical Simulation of Thermocouple Output Fluke 741B WI-5.4d
Temperature Calibration, Indication, and Control Equipment used with Thermocouple Type R^{FO}	-20 °C to 1 768 °C	0.3 °C	Electrical Simulation of Thermocouple Output Fluke 741B WI-5.4d

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Temperature Calibration, Indication, and Control Equipment used with Thermocouple Type T[FO]	-250 °C to 400 °C	0.9 °C	Electrical Simulation of Thermocouple Output Fluke 741B WI-5.4d
Temperature Calibration, Indication, and Control Equipment used with RTD Pt 385, 100 Ω[FO]	-200 °C to 800 °C	0.2 °C	Electrical Simulation of RTD Output Fluke 741B WI-5.4d
Temperature Calibration, Indication, and Control Equipment used with RTD Pt 3926, 100 Ω[FO]	-200 °C to 600 °C	0.2 °C	
Temperature Calibration, Indication, and Control Equipment used with RTD Ni 672, 120 Ω[FO]	-200 °C to 260 °C	0.2 °C	
Temperature Calibration, Indication, and Control Equipment used with RTD Pt 385, 200 Ω[FO]	-200 °C to 600 °C	0.3 °C	
Temperature Calibration, Indication, and Control Equipment used with RTD Pt 385, 500 Ω[FO]	-200 °C to 600 °C	0.3 °C	
Temperature Calibration, Indication, and Control Equipment used with RTD Pt 385, 1 000 Ω[FO]	-200 °C to 600 °C	0.3 °C	
Temperature Calibration, Indication, and Control Equipment used with RTD Cu 427, 10 Ω[FO]	-100 °C to 200 °C	0.2 °C	
Temperature Calibration, Indication, and Control Equipment used with RTD Pt 3926 100 Ω[FO]	-200 °C to 600 °C	0.3 °C	
Equipment Output Electrical Potential - DC[FO]	0 mV to 1 000 mV	0.021 mV	Electrical Simulation of Thermocouple Output Fluke 741B WI-5.4d

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Electrical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment Output Electrical Current - DC[FO]	0 mA to 2 000 mA	0.018 mA	Electrical Simulation of Thermocouple Output Fluke 741B WI-5.4d
Equipment to Measure Electrical Resistance[FO]	0 Ω to 1 000 Ω	0.16 Ω	

Thermodynamic

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Temperature Calibration, Indication, and Control Equipment used with Thermocouple Type K[FO]	-200 °C to 1 372 °C	0.4 °C	Electrical Measurement of Thermocouple Input Fluke 741B WI-5.4d
Temperature Calibration, Indication, and Control Equipment used with Thermocouple Type N[FO]	-200 °C to 1 300 °C	0.3 °C	
Temperature Calibration, Indication, and Control Equipment used with Thermocouple Type J[FO]	-210 °C to 760 °C	0.2 °C	
Temperature Calibration, Indication, and Control Equipment used with Thermocouple Type E[FO]	-200 °C to 1 000 °C	0.3 °C	
Temperature Calibration, Indication, and Control Equipment used with Thermocouple Type T[FO]	-200 °C to 400 °C	0.4 °C	
Temperature Calibration, Indication, and Control Equipment used with Thermocouple Type R[FO]	-20 °C to 1 768 °C	0.3 °C	
Temperature Calibration, Indication, and Control Equipment used with Thermocouple Type S[FO]	-20 °C to 1 768 °C	0.3 °C	
Temperature Calibration, Indication, and Control Equipment used with RTD Pt 385, 100 Ω[FO]	-200 °C to 800 °C	0.2 °C	

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Accreditation is granted to the facility to perform the following calibrations:

Thermodynamic

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Temperature Calibration, Indication, and Control Equipment used with RTD Pt 3926, 100 Ω^{FO}	-200 °C to 600 °C	0.2 °C	Electrical Measurement of Thermocouple Input Fluke 741B WI-5.4d
Temperature Calibration, Indication, and Control Equipment used with RTD Ni 672, 120 Ω^{FO}	0 °C to 200 °C	0.3 °C	
Temperature Calibration, Indication, and Control Equipment used with RTD Pt 385, 200 Ω^{FO}	-200 °C to 600 °C	0.3 °C	
Temperature Calibration, Indication, and Control Equipment used with RTD Pt 385, 500 Ω^{FO}	-200 °C to 600 °C	0.3 °C	
Temperature Calibration, Indication, and Control Equipment used with RTD Pt 385, 1 000 Ω^{FO}	-100 °C to 200 °C	0.3 °C	
Temperature Calibration, Indication, and Control Equipment used with RTD Cu 427, 10 Ω^{FO}	-200 °C to 600 °C	0.2 °C	
Temperature Calibration, Indication, and Control Equipment used with RTD Pt 3926 100 Ω^{FO}	-200 °C to 600 °C	0.3 °C	
Humidity Measurement ^{FO}	20 % RH to 100 % RH	3.3 % RH	TPI 597 WI-5.4x
Temperature Uniformity Survey used with Thermocouple type K^{FO}	-200 °C to 1 300 °C	1.2 °C	Electrical measurement of Thermocouple Omega DAQ-2416 WI-5.4g
Temperature Uniformity Survey used with Thermocouple type N^{FO}	-200 °C to 1 300 °C	1.2 °C	
System Accuracy Test Type K^{FO}	0 °C to 1 372 °C	0.6 °C	Cleveland MFG., Special limit, master 'S' calibration, thermocouple. Electrical measurement of Thermocouple Fluke 741B WI-5.4g
System Accuracy Test Type N^{FO}	0 °C to 1 300 °C	0.8 °C	

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Accreditation is granted to the facility to perform the following calibrations:

Time and Frequency

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Measurement of stopwatches and timers [F]	1 h to 99 h	0.9 s/h	Cole-Parmer 94461-27 Timer WI 5.4t

1. The CMC (Calibration and Measurement Capability) stated for calibrations included on this scope of accreditation represents the smallest measurement uncertainty attainable by the laboratory when performing a more or less routine calibration of a nearly ideal device under nearly ideal conditions. It is typically expressed at a confidence level of 95 % using a coverage factor *k* (usually equal to 2). The actual measurement uncertainty associated with a specific calibration performed by the laboratory will typically be larger than the CMC for the same calibration since capability and performance of the device being calibrated and the conditions related to the calibration may reasonably be expected to deviate from ideal to some degree.

2. The laboratories range of calibration capability for all disciplines for which they are accredited is the interval from the smallest calibrated standard to the largest calibrated standard used in performing the calibration. The low end of this range must be an attainable value for which the laboratory has or has access to the standard referenced. Verification of an indicated value of zero in the absence of a standard is common practice in the procedure for many calibrations but by its definition it does not constitute calibration of zero capacity.

3. The presence of a superscript F means that the laboratory performs calibration of the indicated parameter at its fixed location. Example: Outside Micrometer^{F} would mean that the laboratory performs this calibration at its fixed location.

4. The presence of a superscript FO means that the laboratory performs calibration of the indicated parameter both at its fixed location and onsite at customer locations. Example: Outside Micrometer^{FO} would mean that the laboratory performs this calibration at its fixed location and onsite at customer locations.

5. Measurement uncertainties obtained for calibrations performed at customer sites can be expected to be larger than the measurement uncertainties obtained at the laboratories fixed location for similar calibrations. This is due to the effects of transportation of the standards and equipment and upon environmental conditions at the customer site which are typically not controlled as closely as at the laboratories fixed location.