



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

MDQ Calibration Lab
879 Maple Street, Hopkinton, NH 03229

(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 Electrical & Thermodynamic Instruments
(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/Operations Manager

Initial Accreditation Date:

August 30, 2013

Issue Date:

October 17, 2019

Expiration Date:

November 30, 2021

Accreditation No.:

76289

Certificate No.:

L19-544

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

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.pjllabs.com



Certificate of Accreditation: Supplement

MDQ Calibration Lab

879 Maple Street, Hopkinton, NH 03229
 Contact Name: Philip Reeder Phone: 603-746-5524

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

Electrical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Measure DC Current ^F	0.006 mA to 3.3 mA	83 μ A/A + 26 nA	Fluke 5500A MDQ WI-006
	>3.3 mA to 33 mA	69 μ A/A + 0.3 μ A	
	>33 mA to 330 mA	62 μ A/A + 0.91 μ A	
	>330 mA to 2.2 A	160 μ A/A + 15 μ A	
	>2.2 A to 11 A	470 μ A/A + 0.14 mA	
Equipment to Measure DC Voltage ^F	0.8 mV to 330 mV	13 μ V/V + 8.8 μ V	
	>330 mV to 3.3 V	12 μ V/V + 3.4 μ V	
	>3.3 V to 33 V	12 μ V/V + 40 μ V	
	>33 V to 330 V	13 μ V/V + 66 μ V	
	>330 V to 1 020 V	18 μ V/V + 65 μ V	
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type K ^F	-200 °C to -100 °C	0.51 °C	Electrical Simulation of Thermocouple Output Fluke 5500A MDQ WI-004
	> -100 °C to -25 °C	0.39 °C	
	> -25 °C to 120 °C	0.38 °C	
	>120 °C to 1 000 °C	0.45 °C	
	>1 000 °C to 1372 °C	0.57 °C	
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type J ^F	-210 °C to -100 °C	0.46 °C	
	> -100 °C to -30 °C	0.38 °C	
	> -30 °C to 150 °C	0.37 °C	
	>150 °C to 760 °C	0.39 °C	
	>760 °C to 1200 °C	0.43 °C	
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type T ^F	-250 °C to -150 °C	0.8 °C	
	> -150 °C to 0 °C	0.43 °C	
	>0 °C to 120 °C	0.38 °C	
	>120 °C to 400 °C	0.37 °C	
Equipment to Measure DC Current ^F	0.001 mA to 100 mA	9.6 μ A	Fluke 7526A MDQ WI-006
Equipment to Measure DC Voltage ^F	0.001 V to 0.1 V	30 μ V	
	0.1 V to 1 V	0.3 mV	
	1 V to 10 V	3 mV	
	10 V to 100 V	8 mV	
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type K ^F	-250 °C to -200 °C	0.63 °C	
	-200 °C to -100 °C	0.39 °C	
	-100 °C to 500 °C	0.36 °C	
	500 °C to 800 °C	0.36 °C	
	800 °C to 1 372 °C	0.37 °C	



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Temperature Calibration, Indication and Control Equipment used with Thermocouple Type J ^F	-210 °C to -100 °C	0.37 °C	Fluke 7526A MDQ WI-004
	-100 °C to 800 °C	0.35 °C	
	800 °C to 1 200 °C	0.36 °C	
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type T ^F	-250 °C to -200 °C	0.53 °C	
	-200 °C to -100 °C	0.39 °C	
	-100 °C to 0 °C	0.36 °C	
	0 °C to 200 °C	0.35 °C	
	200 °C to 400 °C	0.35 °C	

Thermodynamic

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Equipment to Measure Temperature ^F	-70 °C to 170 °C	42 mK	Kaye Instrument IRTD-400 w/Software Test Equity Model 115 Test Equity Model 115A MDQ WI-005
	-70 °C to -39 °C	39 mK	Fluke 1502A w/ Hart Scientific 5615 PRT E-Instruments TCS-140
	>-39 °C to 0 °C	37 mK	
	> 0 °C to 170 °C	61 mK	Test Equity 115 Test Equity 115A Test Equity 123A MDQ WI-001 MDQ WI-005
	-25 °C to 0 °C	34 mK	Fluke 5609 PRT w/ Fluke 9144 MDQ WI-001
	> 0 °C to 210 °C	40 mK	
	> 210 °C to 420 °C	47 mK	
	> 420 °C to 660 °C	63 mK	
	-70 °C to -39 °C	46 mK	Accumac AM8040 Thermometer w/ AM1730-9 PRT E-Instruments TCS-140 Test Equity 115 Test Equity 115A Test Equity 123A MDQ WI-001 MDQ WI-005
	> -39 °C to 0 °C	46 mK	
	> 0 °C to 170 °C	47 mK	



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Thermodynamic

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Equipment to Measure Temperature (Vaccine Monitoring Calibrations) ^F	-15 °C to 5 °C	39 mK	Kaye Instrument IRTD-400 w/Software Test Equity Model 115 Test Equity Model 115A MDQ WI-005
		34 mK	Fluke 1502A w/ Hart Scientific 5615 PRT E-Instruments TCS-140 PolyScience PP15R-40-A11B Test Equity 115 Test Equity 115A Test Equity 123A MDQ WI-001 MDQ WI-002 MDQ WI-005
		40 mK	Accumac AM8040 Thermometer w/ AM1730-9 PRT E-Instruments TCS-140 PolyScience PP15R-40-A11B Test Equity 115 Test Equity 115A Test Equity 123A MDQ WI-001 MDQ WI-002 MDQ WI-005
Equipment to Measure Relative Humidity ^F	5 % RH to 50 % RH	0.75 % RH	Edgetech DS2 Dew Point
	>50.1 % RH to 75 % RH	1.5 % RH	Hygrometer
	>75.1 % RH to 95 % RH	2.1 % RH	MDQ WI-003

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.



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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.

