PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

Mesa Laboratories, Inc.

12100 West 6th Avenue, Lakewood, CO 80225

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

ISO/IEC 17025:2005

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 January 2009):

Chemical, Temperature, Humidity, Pressure and Torque Calibration

(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:	*Issue Date:*	*Expiration Date:*
January 7, 2010	December 11, 2017	April 30, 2020

Accreditation No.:	*Certificate No.:*
66239	L17-534

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.pjlabs.com

Certificate of Accreditation: Supplement

Mesa Laboratories, Inc.
12100 West 6th Avenue, Lakewood, CO 80228
Contact Name: Jamie Louie Phone: 303-987-8000

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

Chemical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
pH 90XL Meter pH Module [F] (At fixed points)	4 pH	0.048 pH	pH Solutions 4.0, 7.0, 10.0
	7 pH		
	10 pH		
Conductivity 90XL Meter and 90GL Meter Conductivity/Temperature Module [F]	0.15 mS/cm	0.002 2 mS/cm	Master Conductivity Modules Conductivity Solution
	1 mS/cm	0.002 5 mS/cm	
	14 mS/cm	0.02 mS/cm	
	100 mS/cm	0.3 mS/cm	

Mechanical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Pressure MPIII Pressure Data Logger & MPRF Pressure Data Logger [F]	0.3 psi to 150 psi	0.084 psi	Fluke Ruska 7250i Druck DPI-520
90XL Meter and 90 GL Meter Pressure Module [F]	-600 mmHg to 1 600 mmHg	0.46 mmHg	
Torque Gold Bottle [FO]	0.5 lbf·in to 30 lbf·in	0.12 lbf·in	Torqo Model 1502/1590/1600
Torque [FO] Models 1502, 1590, and 1600			
5 in-lb. Model	0.75 lbf·in to 5 lbf·in	0.015 lbf·in	Class 6 Weights Calibration Disk
10 in-lb. Model	0.75 lbf·in to 10 lbf·in	0.032 lbf·in	
20 in-lb. Model	0.75 lbf·in to 20 lbf·in	0.064 lbf·in	
30 in-lb. Model	0.75 lbf·in to 30 lbf·in	0.095 lbf·in	
40 in-lb. Model	0.75 lbf·in to 40 lbf·in	0.12 lbf·in	
50 in-lb. Model	0.75 lbf·in to 50 lbf·in	0.15 lbf·in	
70 in-lb. Model	0.75 lbf·in to 70 lbf·in	0.23 lbf·in	
100 in-lb. Model	1 lbf·in to 100 lbf·in	0.32 lbf·in	
200 in-lb. Model	2 lbf·in to 200 lbf·in	0.67 lbf·in	
Torque Sure Torque Models ST-Inline, ST120S and S3 20 in-lb. Model [FO]	1.3 lbf·in to 20 lbf·in	0.42 lbf·in	
Torque Sure Torque Model ST-HO1-25 25 in-lb. Model [FO]	2.1 lbf·in to 25 lbf·in	0.69 lbf·in	

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

Thermodynamic

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Temperature MPRF Temp Logger [F]	-80 °C to -40 °C	0.16 °C	Hart Scientific 1502 Hart Scientific 5628 PRT Hart 7037 Thermo Bath
	-40 °C to 140 °C	0.025 °C	
MPIII Temp Logger [F]	-20 °C to 140 °C	0.016 °C	
MPIII HiTemp EXT Logger [F]	-20 °C to 140 °C	0.043 °C	
MPIII RH Logger [F]	0 °C to 85 °C	0.016 °C	
MPIII Pressure Logger [F]	25 °C to 140 °C	0.016 °C	
MPRF RH Logger [F]	-0 °C to 85 °C	0.016 °C	
MPRF Pressure Logger [F]	25 °C to 140 °C	0.016 °C	
Temperature MPIII HiTemp Logger [F]	100 °C to 360 °C	0.087 °C	Hart Scientific 1502 Hart Scientific 5628 PRT Hart 9172 Metrology Well
MPIII HiTemp EXT Logger [F]	140 °C to 400 °C	0.087 °C	
MPRF Temp Logger [F]	140 °C to 225 °C	0.086 °C	
	225 °C to 400 °C	0.087 °C	
Temperature 90XL Meter and 90 GL Meter Conductivity/Temperature Modules [F]	10 °C to 90 °C	0.056 °C	Master Temperature Modules Hart 1502A w/PRT Reference Chamber
T Type Thermocouple Probes [F]	-74 °C to 125 °C	0.80 °C	HART Scientific PRT 5627A Fluke 7102 Micro-Bath Fluke 9190 Metrology Well
500 Ω ULT Thermistor [F]	-82 °C to -40 °C	0.30 °C	
10 K Ω STD Thermistor [F]	2 °C to 8 °C	0.10 °C	
	2 °C to 40 °C	0.11 °C	
	-40 °C to 50 °C	0.25 °C	
T Type Thermocouple Probe [O]	-74 °C to 125 °C	0.29 °C	Hart 1523 Hart 5606 PRT Fluke 9102S Dry-Well
500 Ω ULT Thermistor [O]	-82 °C to -40 °C	0.25 °C	
10K Ω STD Thermistor [O]	-40 °C to 50 °C	0.29 °C	
Equipment to Measure Relative Humidity [F]	15 % RH to 95 % RH	0.64 % RH	Thunder Scientific 2500
	2 % RH single point	0.65 % RH	-100 °F Dew point Desiccant
Equipment to Measure Relative Humidity: Probe [F]	>10 % RH to < 70 % RH	3.0 % RH	Thunder Scientific Model 2500 Humidity Generator, Vaisala HMP75B Probe

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Thermodynamic

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Temperature- VPx Probe [F]	-196 °C	0.11 °C	Hart 1502A w/PRT Liquid Nitrogen
	130 °C to 140 °C	0.088 °C	Hart 1502A w/ Model # PRT Fluke 9172 Metrology Well
	-90 °C to -30 °C -30 °C to 140 °C	0.088 °C	Hart 1502A w/ Model # PRT Fluke 9190 Metrology Well
	-30 °C to 80 °C 80% DI water and 20% Ethylene Glycol	0.085 °C	Hart 1502A w/ Model # PRT Fluke 7340 Thermal Bath Well
Temperature- VPx Probe [O]	-197 °C	0.16 °C	Hart 1523 Hart 5606 PRT Liquid Nitrogen
	-90 °C to 120 °C	0.15 °C	Hart 1523 Hart 5606 PRT Fluke 9102S Dry-Well

Electrical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Voltage Source Measure VPx Sensor Source/Measure VDC [F]	0 VDC to 5 VDC	0.000 44 VDC	Fluke 7526A Precision Process Calibrator
Current Source: VPx Sensor Source/Measure VDC [F]	4 mA to 20 mA	0.002 4 mA	Fluke 7526A Precision Process Calibrator
RTD: VPx Sensor RTD Source/Measure Resistance [F]	-196 °C to 140 °C	0.088 °C	Fluke 7526A Precision Process Calibrator Electrical Simulation of RTD Output

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.

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

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.