



# PERRY JOHNSON LABORATORY ACCREDITATION, INC.

## Certificate of Accreditation

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

### ***InstroTek, Inc.***

**5908 Triangle Drive, Raleigh, NC 27617**  
**6625 South Valley View Blvd, Suite 400, Las Vegas, NV 89118**  
**4495 44<sup>th</sup> Street SE, Suite A, Grand Rapids, MI 49512**  
**5052 Commercial Circle, Concord, CA 94520**  
**850 E 73<sup>rd</sup> Avenue, Unit 12, Denver, CO 80229**  
**3580 Progress Drive, Unit O, Bensalem, PA 19020**

*(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):

***Calibration of Nuclear Gauges and Related Standards; Dimensional Devices; Mass, Force, and Weighing Standards; Electrical Devices; Thermodynamic Devices; Time and Frequency Standards***  
***(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

<i>Initial Accreditation Date:</i>	<i>Issue Date:</i>	<i>Expiration Date:</i>
June 15, 2010	August 16, 2016	September 30, 2018
<i>Revision Date:</i>	<i>Accreditation No.:</i>	<i>Certificate No.:</i>
November 29, 2017	42939	L16-333-R1

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.pjilabs.com](http://www.pjilabs.com)*



# Certificate of Accreditation: Supplement

## InstroTek, Inc.

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 3580 Progress Drive, Unit O, Bensalem, PA 19020  
 Contact Name: Morgan Johnson Phone: 919-875-8371

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

### Dimensional

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
Master Density Blocks <sup>F</sup>	1 120 kg/m <sup>3</sup> to 2 723 kg/m <sup>3</sup>	0.1 %	Calipers, Load Cells, Scales, and Class 1 Weights Site(s): NC
Master Moisture Blocks <sup>F</sup>	16 kg/m <sup>3</sup> to 800 kg/m <sup>3</sup>	0.2 %	
In-House Master Gauges (Density System) <sup>F</sup>	Density: 1 120 kg/m <sup>3</sup> to 2 723 kg/m <sup>3</sup>	0.2 %	Calibrated on Master Density and Master Moisture Blocks Site(s): NC
In-House Master Gauges (Moisture System) <sup>F</sup>	Moisture: 16 kg/m <sup>3</sup> to 800 kg/m <sup>3</sup>	1 %	Calibrated on Master Density and Master Moisture Blocks Site(s): NC
Secondary Density Reference Blocks, Including ValiDator I and II Systems <sup>FO</sup>	1 120 kg/m <sup>3</sup> to 2 723 kg/m <sup>3</sup>	0.2 %	Master Gauge: InstroTek 3500 or Troxler 3430 Site(s): NC, MI, CA, NV, CO, PA
Secondary Moisture Reference Blocks, Including ValiDator I and II Systems <sup>FO</sup>	16 kg/m <sup>3</sup> to 800 kg/m <sup>3</sup>	1.5 %	
Client Nuclear Moisture/Density Gauges (Density System) (Blocks <sup>F</sup> ) (ValiDator System <sup>O</sup> )	Density: 1 120 kg/m <sup>3</sup> to 2 723 kg/m <sup>3</sup>	0.3 %	Secondary Density and Moisture Reference Blocks Site(s): NC, MI, CA, NV, CO, PA
Client Nuclear Moisture/Density Gauges (Moisture System) (Blocks <sup>F</sup> ) (ValiDator System <sup>O</sup> )	Moisture: 16 kg/m <sup>3</sup> to 800 kg/m <sup>3</sup>	2.2 %	Secondary Density and Moisture Reference Blocks Site(s): NC, MI, CA, NV, CO, PA
Client Nuclear Density Gauges (Blocks <sup>F</sup> ) (ValiDator System <sup>O</sup> )	1 120 kg/m <sup>3</sup> to 2 723 kg/m <sup>3</sup>	0.3 %	Master Density Blocks or Secondary Density Reference Blocks Site(s): NC, MI, CA, NV, CO, PA
Gyratory Internal Angle <sup>FO</sup>	0.4° to 2.5°	0.015°	Pine RAM Device Site(s): NC, CA, CO, MI
Gyratory Compaction Height <sup>FO</sup>	25 mm to 300 mm	0.001 5 mm	1-2-3 Blocks or IPC Gage Blocks Site(s): NC, CA, CO, MI



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### Dimensional

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
Extensometers <sup>FO</sup>	1 mm to 25 mm	2.8 $\mu$ m	Mitutoyo Model 350-351-10 Micrometer Head Site(s): NC, CA, CO
Calipers <sup>FO</sup>	1 mm to 300 mm	5.8 $\mu$ m	Gage Blocks Site(s): NC, CA, CO
Micrometers <sup>FO</sup>	1 mm to 50 mm	0.7 $\mu$ m	Gage Blocks Site(s): NC, CA, CO
Dial Indicators <sup>FO</sup>	1 mm to 100 mm	0.29 $\mu$ m	Gage Blocks Site(s): NC, CA, CO
LVDT <sup>FO</sup>	1 mm to 50 mm	0.28 $\mu$ m	Gage Blocks Site(s): NC, CA, CO
Steel Rulers <sup>FO</sup>	1 mm to 600 mm	0.6 mm	Gage Blocks and Sight Glass Site(s): NC, CA, CO
Gyratory and Proctor Molds <sup>FO</sup>	8 cm <sup>3</sup> to 5 000 cm <sup>3</sup>	60 $\mu$ m <sup>3</sup>	Mitutoyo Three-Point Bore Gauge, and Mitutoyo Absolute Caliper Site(s): NC, CA, CO, MI
1-2-3 Blocks <sup>FO</sup>	25 mm to 80 mm	1.4 $\mu$ m	Mitutoyo Digimatic Indicator Site(s): NC, CA, CO, MI
Sieves <sup>FO</sup>	0.074 mm to 4.75 mm	0.02 mm	Fowler Optical Comparator Site(s): NC, CA, CO
	9.5 mm to 50 mm	0.6 mm	Mitutoyo Caliper Site(s): NC, CA, CO

### Mass, Force and Weighing Devices

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
Scales and Balances <sup>FO</sup>	1 mg to 1000 g	(1.15 + 1.95 x 10 <sup>-6</sup> Wt) mg	Class 1 Weights Site(s): NC, CA, CO, MI
	1 001 g to 25 000 g	(9.38 + 2.53 x 10 <sup>-6</sup> Wt) mg	Class 1 Weights Site(s): NC, CA, CO, MI
	25 001g to 100 000 g	(0.25 + 1.14 x 10 <sup>-4</sup> Wt) g	NIST Class F Weights Site(s): NC, CA, CO, MI
Gyratory Compaction <sup>FO</sup>	1 500 N to 18 000 N	0.5 %	5 000 lbf Proving Ring or 3 000 lbf Load Cell Site(s): NC, CA, CO, MI



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### Mass, Force and Weighing Devices

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
Force – Compression Tension <sup>FO</sup>	50 lbf to 2 000 lbf	0.02 %	2-kip Load Cell Site(s): NC, CA, CO
	2 001 lbf to 5 000 lbf	0.02 %	5-kip Load Cell Site(s): NC, CA, CO
	5 001 lbf to 10 000 lbf	0.02 %	10-kip Load Cell Site(s): NC, CA, CO
	10 001 lbf to 50 000 lbf	0.04 %	50-kip Load Cell Site(s): NC, CA, CO
	50 001 lbf to 600 000 lbf	0.03 %	600-kip Load Cell Site(s): NC, CA, CO
Proving Ring <sup>FO</sup>	50 lbf to 2 000 lbf	0.03 % of Reading + 0.16 lbf	2 000 Load Cell Site(s): NC, CA, CO, MI
	2 001 lbf to 10 000 lbf	0.03 % of Reading + 0.16 lbf	10 000 Load Cell Site(s): NC, CA, CO, MI
Pressure <sup>FO</sup>	1 kPa to 689 kPa	0.06 % of Reading + 0.1 kPa	Fluke 700RG06 Reference Gauge Site(s): NC, CA, CO
	690 kPa to 3 447 kPa	0.06 % of Reading + 0.5 kPa	Fluke 700RG07 Reference Gauge Site(s): NC, CA, CO
Vacuum <sup>FO</sup>	101.3 kPa to 0.13 kPa	0.14 kPa	Fluke 700GA4 Vacuum Gauge Site(s): NC, CA, CO
Weights (Classes 5, 6, 7 & F) <sup>FO</sup>	50 g	1.5 mg	ASTM Class 1 Weights & Weight Comparator Site(s): NC, CA, CO
	100 g	1.6 mg	
	200 g	1.9 mg	
	300 g	2.1 mg	
	400 g	2.3 mg	
	500 g	2.7 mg	
	1 kg	4.7 mg	
	2 kg	5.8 mg	
	3 kg	6.6 mg	
	4 kg	6.8 mg	
	5 kg	7.6 mg	
6 kg	8.4 mg		



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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 ( $\pm$ )	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Ovens and Environmental Chamber <sup>FO</sup>	-80 °C to 100 °C	0.12 °C	Control Company 6412 Site(s): NC, CA, CO, MI
	100.1 °C to 600 °C	1.3 °C	Tegam Thermometer and K-Type Thermocouple Site(s): NC, CA, CO, MI
Liquid-in-glass Thermometers <sup>FO</sup>	-20 °C to 200 °C	0.09 °C	Control Company 6412 with 9009 Fluke Dry Block Site(s): NC, CA, CO
	200.1 °C to 400 °C	0.14 °C	
Digital Thermometers <sup>FO</sup>	-20 °C to 100 °C	0.07 °C	Control Company 6412 with 9009 Fluke Dry Block Site(s): NC, CA, CO
	100.01 °C to 400 °C	0.02 °C + 0.05 % of Reading	
IR Thermometers <sup>FO</sup>	25 °C to 400 °C	0.7 °C	Ametek Jofra ETC-400R IR Calibrator Site(s): NC, CA, CO

### 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
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type, K, J, T <sup>FO</sup>	-100 °C to 2 000 °C	0.4 °C	Tegam 840A Calibrator Site(s): NC, CA, CO

### Time and Frequency

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
Stopwatch <sup>FO</sup>	12 hr to 24 hr	0.6 s	1025 Traceable® Stopwatch Site(s): NC, CA, CO
Timers <sup>FO</sup>			
RPM <sup>FO</sup>	10 rpm to 24 000 rpm	2 rpm + 0.05 % of Reading	Extech Instruments 461920 Tachometer Site(s): NC, CA, CO





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

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<sup>F</sup> would mean that the laboratory performs this calibration at its fixed location.
4. The presence of a superscript O means that the laboratory performs calibration of the indicated parameter onsite at customer locations. Example: Outside Micrometer<sup>O</sup> would mean that the laboratory performs this calibration onsite at the customer's location.
5. 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<sup>FO</sup> would mean that the laboratory performs this calibration at its fixed location and onsite at customer locations.
6. 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.
7. The term Wt represents weight in pounds or grams (including SI multiple and submultiple units) appropriate to the uncertainty statement.