



# PERRY JOHNSON LABORATORY ACCREDITATION, INC.

## Certificate of Accreditation

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

### ***Accurate Calibration, LLC***

***565 Washington Ave. Suite 6, North Haven, CT 06473***

*(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 Dimensional, Electrical,  
Mechanical, Mass and Time & Frequency Devices***  
*(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

*Initial Accreditation Date:*

March 2, 2016

*Issue Date:*

February 6, 2020

*Expiration Date:*

May 31, 2022

*Accreditation No:*

75000

*Certificate No:*

L20-85

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



# Certificate of Accreditation: Supplement

## Accurate Calibration, LLC

565 Washington Ave. Suite 6, North Haven, CT 06473  
 Contact Name: Salvatore La Monaca III Phone: 203-787-6682

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 ( $\pm$ )	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Calipers <sup>FO</sup>	0.05 in to 6 in	(290 + 4.5L) $\mu$ m	Grade 0 Gage Blocks T.O.33-K6-4-15-1 micrometers and calipers method Pingage ACL-CP-Pingage
Outside Micrometer <sup>FO</sup>	0.05 in to 1 in	(58 $\mu$ m + 0.6L) $\mu$ m	Grade 0 Gage Blocks
Cylindrical Outside <sup>FO</sup>	0.01 in to 1 in	54 $\mu$ m	Laser Micrometer, Class Y, Z, ZZ

### 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 Output DC Current <sup>FO</sup>	0 $\mu$ A to 329.999 $\mu$ A	0.015 % of reading + 20 nA	Fluke 5502A Calibrator OEM and Euramet CG-15
	0 mA to 3,299.99 mA	0.01 % of reading + 50 nA	
	0 mA to 32.999 mA	0.01 % of reading + 250 nA	
	0 mA to 329.999 mA	0.01 % of reading + 2.5 $\mu$ A	
	0 A to 1.099 99 A	0.038 % of reading + 44 $\mu$ A	
	1.1 A to 2.999 99 A	0.038 % of reading + 44 $\mu$ A	
	0 A to 10.999 9 A	0.06 % of reading + 500 $\mu$ A	
	11 A to 20.5 A	0.1 % of reading + 750 $\mu$ A	
Equipment to Output AC Voltage At the listed frequencies <sup>FO</sup>			
10 Hz to 45 Hz	0.33 mV to 33 mV	0.15 % of reading + 20 $\mu$ V	
45 Hz to 10 kHz	0.33 mV to 33 mV	0.1 % of reading + 20 $\mu$ V	
10 kHz to 20 kHz	0.33 mV to 33 mV	0.1 % of reading + 20 $\mu$ V	
20 kHz to 50 kHz	0.33 mV to 33 mV	0.2 % of reading + 20 $\mu$ V	
50 kHz to 100 kHz	0.33 mV to 33 mV	0.35 % of reading + 33 $\mu$ V	
100 kHz to 500 kHz	0.33 mV to 33 mV	1 % of reading + 60 $\mu$ V	
Equipment to Output AC Voltage At the listed frequencies <sup>FO</sup>			
10 Hz to 45 Hz	3.3 mV to 330 mV	0.05 % of reading + 20 $\mu$ V	
45 Hz to 10 kHz	3.3 mV to 330 mV	0.03 % of reading + 20 $\mu$ V	
10 kHz to 20 kHz	3.3 mV to 330 mV	0.07 % of reading + 20 $\mu$ V	
20 kHz to 50 kHz	3.3 mV to 330 mV	0.1 % of reading + 40 $\mu$ V	
50 kHz to 100 kHz	3.3 mV to 330 mV	0.23 % of reading + 170 $\mu$ V	
100 kHz to 500 kHz	3.3 mV to 330 mV	0.5 % of reading + 330 $\mu$ V	



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Equipment to Output AC Voltage at the listed frequencies <sup>FO</sup>			Fluke 5502A Calibrator
10 Hz to 45 Hz	3.3 V to 33 V	0.05 % of reading + 60 $\mu$ V	
45 Hz to 10 kHz	3.3 V to 33 V	0.03 % of reading + 60 $\mu$ V	
10 kHz to 20 kHz	3.3 V to 33 V	0.07 % of reading + 60 $\mu$ V	
20 kHz to 50 kHz	3.3 V to 33 V	0.1 % of reading + 60 $\mu$ V	
50 kHz to 100 kHz	3.3 V to 33 V	0.23 % of reading + 200 $\mu$ V	
Equipment to Output AC Voltage at the listed frequencies <sup>FO</sup>			
45 kHz to 1 kHz	33 V to 330 V	0.05 % of reading + 3 mV	
1 kHz to 10 kHz	33 V to 330 V	0.08 % of reading + 9 mV	
10 kHz to 20 kHz	33 V to 330 V	0.09 % of reading + 9 mV	
20 kHz to 50 kHz	33 V to 330 V	0.12 % of reading + 9 mV	
50 kHz to 100 kHz	33 V to 330 V	0.24 % of reading + 80 mV	
Equipment to Output AC Voltage at the listed frequencies <sup>FO</sup>			
45 kHz to 1 kHz	330 V to 1 020 V	0.05 % of reading + 20 mV	
1 kHz to 5 kHz	330 V to 1 020 V	0.08 % of reading + 20 mV	
5 kHz to 10 kHz	330 V to 1 020 V	0.09 % of reading + 20 mV	
Equipment to Output AC Current at the listed frequencies <sup>FO</sup>			
10 Hz to 20 Hz	29 $\mu$ A to 330 $\mu$ A	0.2 % of reading + 0.1 $\mu$ A	
20 Hz to 45 Hz	29 $\mu$ A to 330 $\mu$ A	0.15 % of reading + 0.1 $\mu$ A	
45 Hz to 1 kHz	29 $\mu$ A to 330 $\mu$ A	0.125 % of reading + 0.1 $\mu$ A	
1 kHz to 5 kHz	29 $\mu$ A to 330 $\mu$ A	0.3 % of reading + 0.15 $\mu$ A	
5 kHz to 10 kHz	29 $\mu$ A to 330 $\mu$ A	0.8 % of reading + 0.2 $\mu$ A	
10 kHz to 30 kHz	29 $\mu$ A to 330 $\mu$ A	1.6 % of reading + 0.4 $\mu$ A	
Equipment to Output AC Current at the listed frequencies <sup>FO</sup>			
10 Hz to 20 Hz	0.33 mA to 3.3 mA	0.2 % of reading + 0.15 $\mu$ A	
20 Hz to 45 Hz	0.33 mA to 3.3 mA	0.125 % of reading + 0.15 $\mu$ A	
45 Hz to 1 kHz	0.33 mA to 3.3 mA	0.1 % of reading + 0.15 $\mu$ A	
1 kHz to 5 kHz	0.33 mA to 3.3 mA	0.2 % of reading + 0.2 $\mu$ A	
5 kHz to 10 kHz	0.33 mA to 3.3 mA	0.5 % of reading + 0.3 $\mu$ A	
10 kHz to 30 kHz	0.33 mA to 3.3 mA	1 % of reading + 0.6 $\mu$ A	



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Equipment to Output AC Current at the listed frequencies <sup>FO</sup>			Fluke 5502A Calibrator
10 Hz to 20 Hz	3.3 mA to 33 mA	0.18 % of reading + 2 $\mu$ A	
20 Hz to 45 Hz	3.3 mA to 33 mA	0.09 % of reading + 2 $\mu$ A	
45 Hz to 1 kHz	3.3 mA to 33 mA	0.04 % of reading + 2 $\mu$ A	
1 kHz to 5 kHz	3.3 mA to 33 mA	0.08 % of reading + 2 $\mu$ A	
5 kHz to 10 kHz	3.3 mA to 33 mA	0.2 % of reading + 3 $\mu$ A	
10 kHz to 30 kHz	3.3 mA to 33 mA	0.4 % of reading + 4 $\mu$ A	
Equipment to Output AC Current at the listed frequencies <sup>FO</sup>			
10 Hz to 20 Hz	33 mA to 330 mA	0.18 % of reading + 20 $\mu$ A	
20 Hz to 45 Hz	33 mA to 330 mA	0.09 % of reading + 20 $\mu$ A	
45 Hz to 1 kHz	33 mA to 330 mA	0.04 % of reading + 20 $\mu$ A	
1 kHz to 5 kHz	33 mA to 330 mA	0.1 % of reading + 50 $\mu$ A	
5 kHz to 10 kHz	33 mA to 330 mA	0.2 % of reading + 100 $\mu$ A	
10 kHz to 30 kHz	33 mA to 330 mA	0.4 % of reading + 200 $\mu$ A	
Equipment to Output AC Current at the listed frequencies <sup>FO</sup>			
10 Hz to 45 Hz	0.33 A to 1.1 A	0.18 % of reading + 100 $\mu$ A	
45 Hz to 1 kHz	0.33 A to 1.1 A	0.05 % of reading + 100 $\mu$ A	
1 kHz to 5 kHz	0.33 A to 1.1 A	0.6 % of reading + 1 mA	
5 kHz to 10 kHz	0.33 A to 1.1 A	2.5 % of reading + 5 mA	
Equipment to Output AC Current at the listed frequencies <sup>FO</sup>			
10 Hz to 45 Hz	1.1 A to 3 A	0.18 % of reading + 100 $\mu$ A	
45 Hz to 1 kHz	1.1 A to 3 A	0.06 % of reading + 100 $\mu$ A	
1 kHz to 5 kHz	1.1 A to 3 A	0.6 % of reading + 1 mA	
5 kHz to 10 kHz	1.1 A to 3 A	2.5 % of reading + 5 mA	
Equipment to Output AC Current at the listed frequencies <sup>FO</sup>			
10 Hz to 45 Hz	3 A to 11 A	0.06 % of reading + 2 mA	
45 Hz to 1 kHz	3 A to 11 A	0.1 % of reading + 2 mA	
1 kHz to 5 kHz	3 A to 11 A	3 % of reading + 2 mA	
Equipment to Output AC Current at the listed frequencies <sup>FO</sup>			
10 Hz to 45 Hz	11 A to 20.5 A	0.12 % of reading + 5 mA	
45 Hz to 1 kHz	11 A to 20.5 A	0.15 % of reading + 5 mA	
1 kHz to 5 kHz	11 A to 20.5 A	3 % of reading + 5 mA	



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Equipment to Output DC Voltage <sup>FO</sup>	0.01 mV to 330 mV	0.006 % of reading + 3 $\mu$ V	Fluke 5502A Calibrator
	330 mV to 3.3 V	0.005 % of reading + 5 $\mu$ V	
	3.3 V to 33 V	0.005 % of reading + 50 $\mu$ V	
	30 V to 330 V	0.005 5 % of reading + 500 $\mu$ V	
	100 V to 1 020 V	0.005 5 % of reading + 1.5 mV	
Equipment to Output Capacitance <sup>FO</sup>	Up to 399.9 pF	0.5 % of reading + 0.01 nF	
	0.4 nF to 1.099 9 nF	0.5 % of reading + 0.01 nF	
	1.1 nF to 3.299 9 nF	0.5 % of reading + 0.01 nF	
	3.3 nF to 10.999 nF	0.25 % of reading + 0.01 nF	
	11 nF to 32.999 nF	0.25 % of reading + 0.1 nF	
	33 nF to 109.99 nF	0.25 % of reading + 0.1 nF	
	110 nF to 329.99 nF	0.25 % of reading + 0.3 nF	
	0.33 $\mu$ F to 1.099 9 $\mu$ F	0.25 % of reading + 1 nF	
	1.1 $\mu$ F to 3.299 9 $\mu$ F	0.25 % of reading + 3 nF	
	3.3 $\mu$ F to 10.999 $\mu$ F	0.25 % of reading + 10 nF	
	11 $\mu$ F to 32.999 $\mu$ F	0.4 % of reading + 30 nF	
	33 $\mu$ F to 109.99 $\mu$ F	0.45 % of reading + 100 nF	
	110 $\mu$ F to 329.99 $\mu$ F	0.45 % of reading + 300 nF	
	0.33 to 1.099 9 mF	0.45 % of reading + 1 $\mu$ F	
	1.1 mF to 3.299 9 mF	0.45 % of reading + 3 $\mu$ F	
	3.3 mF to 10.999 mF	0.45 % of reading + 10 $\mu$ F	
11 mF to 32.999 mF	0.75 % of reading + 30 $\mu$ F		
33 mF to 110 mF	1.1 % of reading + 100 $\mu$ F		



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Equipment to Output Resistance <sup>FO</sup>	0.01 $\Omega$ to 11 $\Omega$	0.012 % of reading + 1 m $\Omega$	Fluke 5502A Calibrator
	11 $\Omega$ to 33 $\Omega$	0.012 % of reading + 1.5 m $\Omega$	
	33 $\Omega$ to 110 $\Omega$	0.009 % of reading + 1.5 m $\Omega$	
	110 $\Omega$ to 330 $\Omega$	0.009 % of reading + 2.0 m $\Omega$	
	330 $\Omega$ to 1.1 k $\Omega$	0.009 % of reading + 2.0 m $\Omega$	
	1.1 k $\Omega$ to 3.3 k $\Omega$	0.009 % of reading + 20 m $\Omega$	
	3.3 k $\Omega$ to 11 k $\Omega$	0.009 % of reading + 20 m $\Omega$	
	11 k $\Omega$ to 33 k $\Omega$	0.009 % of reading + 200 m $\Omega$	
	33 k $\Omega$ to 110 k $\Omega$	0.011 % of reading + 200 m $\Omega$	
	110 k $\Omega$ to 330 k $\Omega$	0.012 % of reading + 2 $\Omega$	
	330 k $\Omega$ to 1.1 M $\Omega$	0.015 % of reading + 2 $\Omega$	
	1.1 M $\Omega$ to 3.3 M $\Omega$	0.015 % of reading + 30 $\Omega$	
	3.3 M $\Omega$ to 11 M $\Omega$	0.06 % of reading + 50 $\Omega$	
	11 M $\Omega$ to 33 M $\Omega$	0.1 % of reading + 2 500 $\Omega$	
	33 M $\Omega$ to 110 M $\Omega$	0.5 % of reading + 3 k $\Omega$	
110 M $\Omega$ to 330 M $\Omega$	0.5 % of reading + 100 k $\Omega$		
330 M $\Omega$ to 1 100 M $\Omega$	1.5 % of reading + 500 k $\Omega$		
Equipment to Measure AC Current at the listed Frequencies <sup>FO</sup>			Fluke 8846A OEM
10 Hz to 5 kHz	0.1 $\mu$ A to 100 $\mu$ A	0.1 % of reading + 0.4 $\mu$ A	
5 kHz to 10 kHz	0.1 $\mu$ A to 100 $\mu$ A	0.2 % of reading + 2.5 $\mu$ A	
Equipment to Measure AC Current at the listed Frequencies <sup>FO</sup>			
10 Hz to 5 kHz	100 $\mu$ A to 1 mA	0.15 % of reading + 6 $\mu$ A	
5 kHz to 10 kHz	100 $\mu$ A to 1 mA	0.35 % of reading + 70 $\mu$ A	
Equipment to Measure AC Current at the listed Frequencies <sup>FO</sup>			
10 Hz to 5 kHz	1 mA to 10 mA	0.1 % of reading + 40 $\mu$ A	
5 kHz to 10 kHz	1 mA to 10 mA	0.2 % of reading + 250 $\mu$ A	
Equipment to Measure AC Current at the listed Frequencies <sup>FO</sup>			
10 Hz to 5 kHz	10 mA to 100 mA	0.1 % of reading + 0.4 mA	
5 kHz to 10 kHz	10 mA to 100 mA	0.2 % of reading + 2.8 mA	
Equipment to Measure AC Current at the listed Frequencies <sup>FO</sup>			
10 Hz to 1 kHz	100 mA to 400 mA	0.1 % of reading + 0.4 $\mu$ A	
1 kHz to 10 kHz	100 mA to 400 mA	0.2 % of reading + 2.5 $\mu$ A	
Equipment to Measure AC Current at the listed Frequencies <sup>FO</sup>			
10 Hz to 5 kHz	0.4 A to 1 A	0.1 % of reading + 0.4 $\mu$ A	
5 kHz to 10 kHz	0.4 A to 1 A	0.35 % of reading + 7 $\mu$ A	



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Equipment to Measure AC Current at the listed Frequencies <sup>FO</sup>			Fluke 8846A
10 Hz to 5 kHz	1 A to 3 A	0.15 % of reading + 6 mA	
5 kHz to 10 kHz	1 A to 3 A	0.35 % of reading + 70 mA	
Equipment to Measure AC Current at the listed Frequencies <sup>FO</sup>			
10 Hz to 5 kHz	3 A to 10 A	0.15 % of reading + 6 mA	
5 kHz to 10 kHz	3 A to 10 A	0.35 % of reading + 70 mA	
Equipment to Measure DC Voltage <sup>FO</sup>	1 $\mu$ V to 100 mV	0.003 7 % of reading + 3.5 $\mu$ V	
	100 mV to 1 V	0.002 5 % of reading + 7 $\mu$ V	
	1 V to 10 V	0.002 4 % of reading + 0.05 mV	
	10 V to 100 V	0.003 8 % of reading + 0.6 mV	
	100 V to 1 000 V	0.004 1 % of reading + 10 mV	
Equipment to Measure AC Voltage <sup>FO</sup> 10 Hz to 20 kHz	0.1 mV to 100 mV	0.06 % of reading + 0.04 mV	
	100 mV to 1 V	0.06 % of reading + 0.3 mV	
	1 V to 10 V	0.06 % of reading + 3 mV	
	10 V to 100 V	0.06 % of reading + 30 mV	
	100 V to 1 000 V	0.06 % of reading + 225 mV	
Equipment to Measure Capacitance <sup>FO</sup>	0.1 nF to 1 nF	2 % of reading + 0.025 nF	
	1 nF to 10 nF	1 % of reading + 0.05 nF	
	10 nF to 100 nF	1 % of reading + 0.5 nF	
	0.1 $\mu$ F to 1 $\mu$ F	1 % of reading + 5 nF	
	1 $\mu$ F to 10 $\mu$ F	1 % of reading + 50 nF	
	10 $\mu$ F to 100 $\mu$ F	1 % of reading + 0.5 $\mu$ F	
	0.01 mF to 1 mF	1 % of reading + 0.005 mF	
	1 mF to 10 mF	1 % of reading + 0.05 mF	
Equipment to Measure Resistance <sup>FO</sup>	0.1 $\Omega$ to 10 $\Omega$	0.01 % of reading + 3 m $\Omega$	
	10 $\Omega$ to 100 $\Omega$	0.01 % of reading + 4 m $\Omega$	
	100 $\Omega$ to 1 k $\Omega$	0.01 % of reading + 10 m $\Omega$	
	1 k $\Omega$ to 10 k $\Omega$	0.01 % of reading + 100 m $\Omega$	
	10 k $\Omega$ to 100 k $\Omega$	0.01 % of reading + 1 $\Omega$	
	100 k $\Omega$ to 1 M $\Omega$	0.01 % of reading + 10 $\Omega$	
	1 M $\Omega$ to 10 M $\Omega$	0.04 % of reading + 100 $\Omega$	
	10 M $\Omega$ to 100 M $\Omega$	0.8 % of reading + 10 k $\Omega$	



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Equipment to Measure DC Current <sup>FO</sup>	0.01 $\mu$ A to 100 $\mu$ A	0.05 % of reading + 0.025 $\mu$ A	Fluke 8846A
	100 $\mu$ A to 1 mA	0.05 % of reading + 0.05 $\mu$ A	
	1 mA to 10 mA	0.05 % of reading + 2 $\mu$ A	
	10 mA to 100 mA	0.05 % of reading + 5 $\mu$ A	
	100 mA to 400 mA	0.05 % of reading + 20 $\mu$ A	
	0.4 A to 1 A	0.05 % of reading + 0.2 mA	
	1 A to 3 A	0.1 % of reading + 2 mA	
	3 A to 10 A	0.15 % of reading + 0.8 mA	
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type B <sup>FO</sup>	600 °C to 800 °C	0.51 °C	Electrical Simulation of Thermocouple Output Fluke 5502A OEM and Euramet CG-11
	800 °C to 1 000 °C	0.39 °C	
	1 000 °C to 1 550 °C	0.35 °C	
	1 550 °C to 1 820 °C	0.38 °C	
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type C <sup>FO</sup>	0 °C to 150 °C	0.35 °C	
	150 °C to 650 °C	0.3 °C	
	650 °C to 1 000 °C	0.36 °C	
	1 000 °C to 1 800 °C	0.58 °C	
	1 800 °C to 2 316 °C	0.97 °C	
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type E <sup>FO</sup>	-250 °C to -100 °C	0.58 °C	
	-100 °C to -25 °C	0.2 °C	
	-25 °C to 350 °C	0.18 °C	
	350 °C to 650 °C	0.20 °C	
	650 °C to 1 000 °C	0.25 °C	
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type J <sup>FO</sup>	-210 °C to -100 °C	0.32 °C	
	-100 °C to -30 °C	0.2 °C	
	-30 °C to 150 °C	0.18 °C	
	150 °C to 760 °C	0.21 °C	
	760 °C to 1 200 °C	0.27 °C	
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type K <sup>FO</sup>	-200 °C to -100 °C	0.39 °C	
	-100 °C to -25 °C	0.22 °C	
	-25 °C to 120 °C	0.2 °C	
	120 °C to 1 000 °C	0.31 °C	
	1 000 °C to 1 372 °C	0.47 °C	





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Temperature Calibration, Indication and Control Equipment used with Thermocouple Type L <sup>FO</sup>	-200 to -100 C	0.43 °C	Electrical Simulation of Thermocouple Output Fluke 5502A
	-100 C to 800 °C	0.31 °C	
	800 °C to 900 °C	0.21 °C	
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type N <sup>FO</sup>	-200 to -100 °C	0.47 °C	
	-100 °C to -25 °C	0.26 °C	
	-25 °C to 120 °C	0.23 °C	
	120 °C to 410 °C	0.22 °C	
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type R <sup>FO</sup>	410 °C to 1 300 °C	0.32 °C	
	0 °C to 250 °C	0.66 °C	
	250 °C to 400 °C	0.41 °C	
	400 °C to 1 000 °C	0.39 °C	
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type S <sup>FO</sup>	1 000 °C to 1 767 °C	0.47 °C	
	0 °C to 250 °C	0.55 °C	
	250 °C to 1 000 °C	0.42 °C	
	1 000 °C to 1 400 °C	0.43 °C	
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type T <sup>FO</sup>	1 400 °C to 1 767 °C	0.54 °C	
	-250 to -150 °C	0.73 °C	
	-150 °C to 0 °C	0.29 °C	
	0 °C to 120 °C	0.2 °C	
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type U <sup>FO</sup>	120 °C to 400 °C	0.18 °C	
	-200 °C to 0 °C	0.65 °C	

### 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
Laboratory Balances <sup>FO</sup>	20 mg to 200 g (Resolution: 0.1 mg)	0.63 mg	Class 1 Weights Euramet CG-18



# Certificate of Accreditation: Supplement

## Accurate Calibration, LLC

565 Washington Ave. Suite 6, North Haven, CT 06473  
 Contact Name: Salvatore La Monaca III Phone: 203-787-6682

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

### Mechanical

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
Pressure Gages <sup>FO</sup>	-12 psi to 20 psi	0.145 % of indicated value + 0.03 psig	Crystal – M1-100PSI ASME B40.100
	20 psi to 100 psi	0.223 % of indicated value + 0.011 psig	
	100 psi to 500 psi	0.112 % of indicated value + 0.021 psig	Crystal – 500PSIXP2I
	200 psi to 1 000 psi	0.103 % of indicated value + 0.17 psig	Crystal – 1KPSIXP2I
	1 000 psi to 5 000 psi	0.113 % of indicated value + 0.31 psig	Crystal – 5KPSIXP2I
	-12 psi to 20 psi	0.145% of indicated value + 0.03 psig	Crystal – M1-100PSI
	20 psi to 100 psi	0.223 % of indicated value + 0.011 psig	
	100 psi to 500 psi	0.112 % of indicated value + 0.021 psig	
Torque Wrenches <sup>FO</sup>	25 lbf·in to 250 lbf·in	0.51 % of indicated value + 0.17 lbf·in	Mountz – LTT-2501
	25 lbf·ft to 250 lbf·ft	0.582 % of indicated value + 0.16 lbf·ft	Mountz – BMX250F Euramet CG-14

### Time & 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/ Timer <sup>FO</sup>	1 minute to 24 hr	0.61 s	Agilent 53131A NIST Totalize Method/SP960-12 ACL-CP- Stopwatch/timers

- 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.



## *Certificate of Accreditation: Supplement*

### **Accurate Calibration, LLC**

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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 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.
4. 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.
5. The term L represents length in inches or millimeters as appropriate to the uncertainty statement.
6. The term R represents the numerical value of the resolution of the device in micro inches.

