



# PERRY JOHNSON LABORATORY ACCREDITATION, INC.

## *Certificate of Accreditation*

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

***First Coast Calibration***  
1954 Parental Home Road, Jacksonville, FL 32216

*(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):

### ***Dimensional, Electrical and Mechanical 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

*Initial Accreditation Date:*

August 09, 2016

*Issue Date:*

October 14, 2022

*Expiration Date:*

November 30, 2024

*Accreditation No.:*

88548

*Certificate No.:*

L22-687

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

## First Coast Calibration

1954 Parental Home Road, Jacksonville, FL 32216  
 Contact Name: Mary Stubblefield Phone: 904-724-6711

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 Output DC Voltage <sup>F</sup>	10 mV to 100 mV	0.008 2 % of Reading + 3.5 $\mu$ V	Agilent 34401A DMM GIDEP, OEM
	0.1 V to 1 V	0.004 9 % of Reading + 20 $\mu$ V	
	1 V to 10 V	0.005 8 % of Reading + 0.2 mV	
	10 V to 100 V	0.004 6 % of Reading + 2 mV	
	100 V to 1 000 V	0.006 5 % of Reading + 20 mV	
Equipment to Measure DC Voltage <sup>F</sup>	2 mV to 19.999 9 mV	0.012 % of Reading + 10 $\mu$ V	Fluke 5101B Calibrator GIDEP, OEM
	20 mV to 199.999 mV	0.009 3 % of Reading + 14 $\mu$ V	
	0.2 V to 1.999 99 V	0.009 8 % of Reading + 50 $\mu$ V	
	2 V to 19.999 9 V	0.01 % of Reading + 0.41 mV	
	20 V to 199.999 V	0.009 5 % of Reading + 4 mV	
Equipment to Output DC Current <sup>F</sup>	1 mA to 1 A	0.058 % of Reading + 40 $\mu$ A	Agilent 34401A DMM GIDEP, OEM
	1 A to 2 A	0.12 % of Reading + 40 $\mu$ A	
Equipment to Measure DC Current <sup>F</sup>	10 $\mu$ A to 199.999 $\mu$ A	0.59 % of Reading + 48 nA	Fluke 5101B Calibrator GIDEP, OEM
	0.2 mA to 1.999 99 mA	0.069 % of Reading + 0.12 $\mu$ A	
	2 mA to 19.999 9 mA	0.035 % of Reading + 0.84 $\mu$ A	
	20 mA to 199.999 mA	0.035 % of Reading + 8 $\mu$ A	
	0.2 A to 1.999 99 A	0.035 % of Reading + 80 $\mu$ A	
10 $\mu$ A to 199.999 $\mu$ A	0.59 % of Reading + 48 nA		
Equipment to Output AC Voltage (at the listed frequencies) <sup>F</sup>			
50 Hz to 10 kHz	10 mV to 100 mV	0.46 % of Reading + 1 mV	Agilent 34401A DMM GIDEP, OEM
10 kHz to 50 kHz	10 mV to 100 mV	0.25 % of Reading + 0.2 mV	
50 kHz to 100 kHz	10 mV to 100 mV	0.58 % of Reading + 0.4 mV	
Equipment to Output AC Voltage (at the listed frequencies) <sup>F</sup>			
50 Hz to 10 kHz	0.1 V to 1 V	0.46 % of Reading + 10 mV	Agilent 34401A DMM GIDEP, OEM
10 kHz to 50 kHz	0.1 V to 1 V	0.24 % of Reading + 2 mV	
50 kHz to 100 kHz	0.1 V to 1 V	0.58 % of Reading + 4 mV	
Equipment to Output AC Voltage (at the listed frequencies) <sup>F</sup>			
50 Hz to 10 kHz	1 V to 10 V	0.46 % of Reading + 100 mV	Agilent 34401A DMM GIDEP, OEM
10 kHz to 50 kHz	1 V to 10 V	0.24 % of Reading + 20 mV	
50 kHz to 100 kHz	1 V to 10 V	0.58 % of Reading + 40 mV	





# Certificate of Accreditation: Supplement

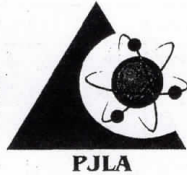
## First Coast Calibration

1954 Parental Home Road, Jacksonville, FL 32216  
 Contact Name: Mary Stubblefield Phone: 904-724-6711

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 Output AC Voltage (at the listed frequencies) <sup>F</sup>				
50 Hz to 10 kHz	10 V to 110 V	0.46 % of Reading + 1 V	Agilent 34401A DMM GIDEP, OEM	
10 kHz to 50 kHz	10 V to 110 V	0.24 % of Reading + 200 mV		
50 kHz to 100 kHz	10 V to 110 V	0.58 % of Reading + 400 mV		
Equipment to Output AC Voltage (at the listed frequencies) <sup>F</sup>				
50 Hz to 10 kHz	100 V to 1 000 V	0.12 % of Reading + 1 V		
10 kHz to 50 kHz	100 V to 1 000 V	0.46 % of Reading + 1 V		
50 kHz to 100 kHz	100 V to 1 000 V	0.12 % of Reading + 1 V		
Equipment to Measure AC Voltage (at the listed frequencies) <sup>F</sup>				
50 Hz to 100 Hz	1 mV to 19.999 9 mV	0.084 % of Reading + 0.1 mV	Fluke 5101B GIDEP, OEM	
0.1 kHz to 1 kHz	1 mV to 19.999 9 mV	0.084 % of Reading + 0.1 mV		
1 kHz to 10 kHz	1 mV to 19.999 9 mV	0.084 % of Reading + 0.1 mV		
10 kHz to 50 kHz	1 mV to 19.999 9 mV	0.14 % of Reading + 0.42 mV		
Equipment to Measure AC Voltage (at the listed frequencies) <sup>F</sup>				
50 Hz to 100 Hz	0.2 V to 1.999 99 V	0.083 % of Reading + 0.3 mV		
0.1 kHz to 1 kHz	0.2 V to 1.999 99 V	0.081 % of Reading + 0.12 mV		
1 kHz to 10 kHz	0.2 V to 1.999 99 V	0.081 % of Reading + 0.12 mV		
10 kHz to 50 kHz	0.2 V to 1.999 99 V	0.14 % of Reading + 3.3 mV		
Equipment to Measure AC Voltage (at the listed frequencies) <sup>F</sup>				
50 Hz to 100 Hz	2 V to 19.999 9 V	0.081 % of Reading + 2.1 mV		
0.1 kHz to 1 kHz	2 V to 19.999 9 V	0.083 % of Reading + 0.3 mV		
1 kHz to 10 kHz	2 V to 19.999 9 V	0.083 % of Reading + 0.3 mV		
10 kHz to 50 kHz	2 V to 19.999 9 V	0.14 % of Reading + 0.42 mV		
Equipment to Measure AC Voltage (at the listed frequencies) <sup>F</sup>				
50 Hz to 100 Hz	20 V to 110 V	0.081 % of Reading + 20 mV		
0.1 kHz to 1 kHz	20 V to 110 V	0.081 % of Reading + 20 mV		
1 kHz to 10 kHz	20 V to 110 V	0.081 % of Reading + 2.1 mV		
20 kHz	20 V to 110 V	0.14 % of Reading + 32 mV		



# Certificate of Accreditation: Supplement

## First Coast Calibration

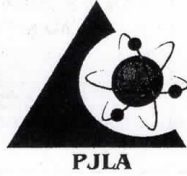
1954 Parental Home Road, Jacksonville, FL 32216  
 Contact Name: Mary Stubblefield Phone: 904-724-6711

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 AC Voltage (at the listed frequencies) <sup>F</sup>				
50 Hz to 100 Hz	110 V to 199.999 V	0.081 % of Reading + 20 mV	Fluke 5101B GIDEP, OEM	
0.1 kHz to 1 kHz	110 V to 199.999 V	0.081 % of Reading + 20 mV		
1 kHz to 10 kHz	110 V to 199.999 V	0.081 % of Reading + 20 mV		
Equipment to Measure AC Voltage (at the listed frequencies) <sup>F</sup>				
50 Hz to 100 Hz	200 V to 1 100 V	0.081 % of Reading + 0.11 V		
0.1 kHz to 1 kHz	200 V to 1 100 V	0.081 % of Reading + 0.11 V		
Equipment to Measure AC Current (at the listed frequencies) <sup>F</sup>				
50 Hz to 1 kHz	0.2 mA to 2 A	0.14 % of Reading + 0.04 $\mu$ A	Fluke 5100B GIDEP, OEM	
Equipment to AC Output Current (at the listed frequencies) <sup>F</sup>				
20 Hz to 45 Hz	2 mA to 2 000 mA	2.4 % of Reading + 2 mA	Agilent 34401A GIDEP, OEM	
45 Hz to 100 Hz	2 mA to 2 000 mA	0.58 % of Reading + 2 mA		
100 Hz to 5 kHz	2 mA to 2 000 mA	0.46 % of Reading + 2 mA		
Equipment to Output Resistance <sup>F</sup>				
	1 $\Omega$ to 10 $\Omega$	0.017 % of Reading + 4 m $\Omega$		
	10 $\Omega$ to 100 $\Omega$	0.013 % of Reading + 4 m $\Omega$		
	0.1 k $\Omega$ to 1 k $\Omega$	0.011 % of Reading + 30 m $\Omega$		
	1 k $\Omega$ to 10 k $\Omega$	0.011 % of Reading + 0.3 $\Omega$		
	10 k $\Omega$ to 100 k $\Omega$	0.013 % of Reading + 3 $\Omega$		
	0.1 M $\Omega$ to 1 M $\Omega$	0.032 % of Reading + 30 $\Omega$		
	1 M $\Omega$ to 10 M $\Omega$	0.049 % of Reading + 0.4 k $\Omega$		
Equipment to Measure <sup>F</sup> Resistance – Fixed Points				
	1 $\Omega$	0.039 % of indicated value	Fluke 5101B GIDEP, OEM	
	10 $\Omega$	0.024 % of indicated value		
	100 $\Omega$	0.009 2 % of indicated value		
	1 k $\Omega$	0.009 1 % of indicated value		
	10 k $\Omega$	0.009 1 % of indicated value		
	100 k $\Omega$	0.009 1 % of indicated value		
	1 M $\Omega$	0.024 % of indicated value		
	10 M $\Omega$	0.07 % of indicated value		





# Certificate of Accreditation: Supplement

## First Coast Calibration

1954 Parental Home Road, Jacksonville, FL 32216  
Contact Name: Mary Stubblefield Phone: 904-724-6711

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
Height Gages <sup>F</sup>	1 in to 94 in	(160 $\mu$ in + 12L) $\mu$ in	Gage Blocks GIDEP, OEM
Caliper <sup>F</sup>	0.05 in to 40 in	(290 + 0.25L) $\mu$ in	
Micrometer <sup>F</sup>	0.01 in to 1 in	(8.49 + 2.11L) $\mu$ in	
	1 in to 48 in	(33.92 + 1.58L) $\mu$ in	
Indicators <sup>F</sup>	0.05 in to 1 in	(102 + 0.21L) $\mu$ in	

### 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
Torque Wrenches <sup>F</sup>	10 lbf-ft to 1 000 lbf-ft	2 % of Reading	AKO TSD 1200 With transducer TSD 1011 GIDEP, OEM
Pressure Gauges/Switches <sup>F</sup>	5 psi to 10 000 psi	0.1 % of Reading	M & G TQ100 Deadweight Tester GIDEP, OEM

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.