PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

A.V.C. Laboratory, Inc.

16542 NW 54th Avenue, Miami Gardens, FL 33014

(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 April 2017):

Dimensional, Electrical, Mass, Force, and Weighing Devices, 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/Operations Manager

Initial Accreditation Date:	*Issue Date:*	*Expiration Date:*
August 11, 2016	October 9, 2018	November 30, 2020
Revision Date:	*Accreditation No.:*	*Certificate No.:*
October 3, 2019	83028	L18-465-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.pjlabs.com

Certificate of Accreditation: Supplement

A.V.C. Laboratory, Inc.
16542 NW 54th Avenue, Miami Gardens, FL, 33014
Contact Name: Luis Hidalgo Phone: 786-542-8710

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
Calipers [FO]	0.05 in to 24 in (Resolution: 0.001 in)	(600 + 6L) µin	Gage Blocks, Long Blocks GIDEP & AVP-100
	0.05 in to 24 in (Resolution: 0.000 5 in)	(300 + 3L) µin	
Micrometers [FO]	0.05 in to 18 in (Resolution: 0.001 in)	(600 + 6L) µin	Gage Blocks, Long Blocks, Optical Flat GIDEP & AVP-100
	0.05 in to 12 in (Resolution: 0.000 1 in)	(60 + 3L) µin	
	0.05 in to 4 in (Resolution: 0.000 05 in)	(32 + 1.5L) µin	
Indicators [FO]	0.001 in to 2 in (Resolution: 0.001 in)	(600 + 6L) µin	Gage Blocks GIDEP & AVP-101
	0.001 in to 1 in (Resolution: 0.000 1 in)	(60 + 3L) µin	
	0.001 in to 2 in (Resolution: 0.000 5 in)	(300 + 3L) µin	
	0.001 in to 0.5 in (Resolution: 0.000 05 in)	(32 + 1.5L) µin	
Steel Ruler [FO]	0.001 in to 36 in (Resolution: 0.001 in)	(600 + 6L) µin	Gage Blocks, Long Blocks AVP-125
Bore Measurement Devices [FO]	0.125 in to 4 in (Resolution: 0.000 1 in)	(116 + 3L) µin	Gage Blocks Set Ring Gages Set GIDEP
	0.125 in to 4 in (Resolution: 0.000 5 in)	(306 + 3L) µin	

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
Equipment to Measure DC Voltage [F]	0.6 mV to 100 mV	21 µV/V + 2 µV	Fluke 8846A GIDEP
	100 mV to 1 V	14 µV /V + 4 µV	
	1 V to 10 V	14 µV /V + 29 µV	
	10 V to 100 V	22 µV /V + 0.3 mV	
	100 V to 1 000 V	24 µV/V + 5.8 mV	
Equipment to Output DC Voltage [F]	0.6 mV to 330 mV	20 µV/V + 1 µV	Fluke 5520A GIDEP
	330 mV to 3.3 V	11 µV/V + 2 µV	
	3.3 V to 33 V	12 µV/V + 20 µV	
	33 V to 330 V	18 µV/V + 150 µV	
	330 V to 1 000 V	18 µV/V + 1 500 µV	

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Equipment to Output DC Current [F]	0.1 mA to 3.29 mA	100 µA/A + 0.05 µA	Fluke 5520A GIDEP
	3.3 mA to 32.9 mA	100 µA/A + 0.25 µA	
	33 mA to 329.9 mA	100 µA/A + 2.5 µA	
	330 mA to 1.09 A	200 µA/A + 40 µA	
	1.1 A to 2.9 A	380 µA/A + 40 µA	
Equipment to Output DC Current [F]	3 A to 10.9 A	500 µA/A + 500 µA	
	11 A to 20.5 A	1 000 µA/A + 750 µA	
Equipment to Measure DC Current [F]	0.1 mA to 1 mA	0.03 % Reading + 0.03 µA	Fluke 8846A GIDEP
	1 mA to 10 mA	0.03 % Reading + 1.2 µA	
	10 mA to 100 mA	0.03 % Reading + 2.9 µA	
	100 mA to 400 mA	0.03 % Reading + 12 µA	
	400 mA to 1 A	0.03 % Reading + 0.1 mA	
	1 A to 3 A	0.06 % Reading + 0.3 mA	
	3 A to 10 A	0.09 % Reading + 0.5 mA	
Equipment to Output Resistance [F]	0.1 Ω to 10.9 Ω	40 µΩ/Ω + 0.005 Ω	Fluke 5520A GIDEP
	11 Ω to 32.9 Ω	30 µΩ/Ω + 0.005 Ω	
	33 Ω to 109.9 Ω	28 µΩ/Ω + 0.005 Ω	
	110 Ω to 329.9 Ω	28 µΩ/Ω + 0.005 Ω	
	330 Ω to 1.09 kΩ	28 µΩ/Ω + 0.005 Ω	
	1.1 kΩ to 3.29 kΩ	28 µΩ/Ω + 0.005 Ω	
	3.3 kΩ to 10.9 kΩ	28 µΩ/Ω + 0.005 Ω	
	11 kΩ to 32.9 kΩ	28 µΩ/Ω + 0.005 Ω	
	33 kΩ to 109.9 kΩ	28 µΩ/Ω + 0.005 Ω	
	110 kΩ to 329.9 kΩ	32 µΩ/Ω + 0.005 Ω	
	330 kΩ to 1.09 MΩ	32 µΩ/Ω + 0.005 Ω	
	1.1 MΩ to 3.29 MΩ	60 µΩ/Ω + 0.005 Ω	
	3.3 MΩ to 10.9 MΩ	130 µΩ/Ω + 0.005 Ω	
	11 MΩ to 32.9 MΩ	250 µΩ/Ω + 0.005 Ω	
	33 MΩ to 109.9 MΩ	500 µΩ/Ω + 0.005 Ω	
	110 MΩ to 329.9 MΩ	3 000 µΩ/Ω + 0.005 Ω	
	330 MΩ to 1 100 MΩ	15 000 µΩ/Ω + 0.005 Ω	

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Equipment to Measure Resistance [F]	0.1 Ω to 10 Ω	58 μΩ/Ω + 1.7 mΩ	Fluke 8846A GIDEP
	10 Ω to 100 Ω	58 μΩ/Ω + 2.3 mΩ	
	100 Ω to 1 kΩ	58 μΩ/Ω + 5.8 mΩ	
	1 kΩ to 10 kΩ	58 μΩ/Ω + 58 mΩ	
	10 kΩ to 100 kΩ	58 μΩ/Ω + 0.6 Ω	
	100 kΩ to 1 MΩ	58 μΩ/Ω + 5.8 Ω	
	1 MΩ to 10 MΩ	0.02 % Reading + 58 Ω	
	10 MΩ to 100 MΩ	0.5 % Reading + 5.8 kΩ	
	100 MΩ to 1 GΩ	1.2% Reading + 58 kΩ	
Equipment to Output Capacitance [F]	0.19 nF to 0.39 nF	5 mF/F + 0.01 nF	
	0.4 nF to 1.09 nF	5 mF/F + 0.01 nF	
	1.1 nF to 3.29 nF	5 mF/F + 0.01 nF	
	3.3 nF to 10.9 nF	2.5 mF/F + 0.01 nF	
	11 nF to 32.9 nF	2.5 mF/F + 0.1 nF	
	33 nF to 109.9 nF	2.5 mF/F + 0.1 nF	
	110 nF to 329.9 nF	2.5 mF/F + 0.3 nF	
	0.33 μF to 1.09 μF	2.5 mF/F + 1 nF	
	1.1 μF to 3.29 μF	2.5 mF/F + 3 nF	
	3.3 μF to 10.9 μF	2.5 mF/F + 10 nF	
	11 μF to 32.9 μF	4 mF/F + 30 nF	
	33 μF to 109.9 μF	4.5 mF/F + 100 nF	
	110 μF to 329.9 μF	4.5 mF/F + 300 nF	
	0.33 μF to 1.09 mF	4.5 mF/F + 1 μF	
	1.1 mF to 3.29 mF	4.5 mF/F + 3 μF	
	3.3 mF to 10.9 mF	4.5 nF/F + 10 μF	
	11 mF to 32.9 mF	7.5 mF/F + 30 μF	
	33 mF to 110 mF	11 mF/F + 100 μF	

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Equipment to Measure Capacitance	0.1 nF to 1 nF	1.2 % Reading + 14 pF	Flute 8846A GIDEP
	1 nF to 10 nF	0.6 % Reading + 29 pF	
	10 nF to 100 nF	0.1 % Reading + 289 pF	
	100 nF to 1 µF	0.6 % Reading + 2.9 nF	
	1 µF to 10 µF	0.6 % Reading + 29 nF	
	10 µF to 100 µF	0.6 % Reading + 289 nF	
	100 µF to 1 mF	0.6 % Reading + 2.9 µF	
	1 mF to 10 mF	0.6 % Reading + 29 µF	
	10 mF to 100 mF	2.3 % Reading + 115 µF	
Equipment to Measure AC Voltage At the listed Frequencies [F]			
3 Hz to 5 Hz	0.1 mV to 100 mV	0.6 % Reading + 0.02 mV	
5 Hz to 10 Hz	0.1 mV to 100 mV	0.2 % Reading + 0.02 mV	
10 Hz to 20 kHz	0.1 mV to 100 mV	0.1 % Reading + 0.02 mV	
20 kHz to 50 kHz	0.1 mV to 100 mV	0.1 % Reading + 0.03 mV	
50 kHz to 100 kHz	0.1 mV to 100 mV	0.3 % Reading + 0.05 mV	
100 kHz to 300 kHz	0.1 mV to 100 mV	2.3 % Reading + 0.3 mV	
Equipment to Output AC Voltage At the listed Frequencies [F]			Fluke 5520A GIDEP
10 Hz to 45 Hz	1 mV to 32.9 mV	800 µV/V + 6 µV	
45 Hz to 10 kHz	1 mV to 32.9 mV	150 µV/V + 6 µV	
10 kHz to 20 kHz	1 mV to 32.9 mV	200 µV/V + 6 µV	
20 kHz to 50 kHz	1 mV to 32.9 mV	100 µV/V + 6 µV	
50 kHz to 100 kHz	1 mV to 32.9 mV	3 500 µV/V + 12 µV	
100 kHz to 500 kHz	1 mV to 32.9 mV	8 000 µV/V + 50 µV	
Equipment to Measure AC Voltage At the listed Frequencies [F]			Fluke 8846A GIDEP
3 Hz to 5 Hz	100 mV to 1 V	0.6 % Reading + 0.2 mV	
5 Hz to 10 Hz	100 mV to 1 V	0.2 % Reading + 0.2 mV	
10 Hz to 20 kHz	100 mV to 1 V	0.1 % Reading + 0.2 mV	
20 kHz to 50 kHz	100 mV to 1 V	0.1 % Reading + 0.3 mV	
50 kHz to 100 kHz	100 mV to 1 V	0.3 % Reading + 0.5 mV	
100 kHz to 300 kHz	100 mV to 1 V	2.3 % Reading + 2.9 mV	

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Equipment to Output AC Voltage At the listed Frequencies [F]			Fluke 5520A GIDEP
10 Hz to 45 Hz	33 mV to 329.9 mV	300 µV/V + 8 µV	
45 Hz to 10 kHz	33 mV to 329.9 mV	145 µV/V + 8 µV	
10 kHz to 20 kHz	33 mV to 329.9 mV	160 µV/V + 8 µV	
20 kHz to 50 kHz	33 mV to 329.9 mV	350 µV/V + 8 µV	
50 kHz to 100 kHz	33 mV to 329.9 mV	800 µV/V + 32 µV	
100 kHz to 500 kHz	33 mV to 329.9 mV	2 000 µV/V + 70 µV	
Equipment to Output AC Voltage At the listed Frequencies [F]			Fluke 8846A GIDEP
3 Hz to 5 Hz	1 V to 10 V	0.6 % Reading + 1.7 mV	
5 Hz to 10 Hz	1 V to 10 V	0.2 % Reading + 1.7 mV	
10 Hz to 20 kHz	1 V to 10 V	0.1 % Reading + 1.7 mV	
20 kHz to 50 kHz	1 V to 10 V	0.1 % Reading + 2.9 mV	
50 kHz to 100 kHz	1 V to 10 V	0.3 % Reading + 4.6 mV	
100 kHz to 300 kHz	1 V to 10 V	2.3 % Reading + 29 mV	
Equipment to Output AC Voltage At the listed Frequencies [F]			Fluke 5520A GIDEP
10 Hz to 45 Hz	0.33 V to 3.29 V	300 µV/V + 50 µV	
45 Hz to 10 kHz	0.33 V to 3.29 V	150 µV/V + 60 µV	
10 kHz to 20 kHz	0.33 V to 3.29 V	190 µV/V + 60 µV	
20 kHz to 50 kHz	0.33 V to 3.29 V	300 µV/V + 50 µV	
50 kHz to 100 kHz	0.33 V to 3.29 V	700 µV/V + 125 µV	
100 kHz to 500 kHz	0.33 V to 3.29 V	2 400 µV/V + 600 µV	
Equipment to Output AC Voltage At the listed Frequencies [F]			
10 Hz to 45 Hz	3.3 V to 32.9 V	300 µV/V + 650 µV	
45 Hz to 10 kHz	3.3 V to 32.9 V	150 µV/V + 600 µV	
10 kHz to 20 kHz	3.3 V to 32.9 V	240 µV/V + 600 µV	
20 kHz to 50 kHz	3.3 V to 32.9 V	350 µV/V + 600 µV	
50 kHz to 100 kHz	3.3 V to 32.9 V	900 µV/V + 1 600 µV	

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Equipment to Output AC Voltage At the listed Frequencies [F]			Fluke 8846A GIDEP
3 Hz to 5 Hz	10 V to 100 V	0.6 % Reading + 0.02 mV	
5 Hz to 10 Hz	10 V to 100 V	0.2 % Reading + 0.02 mV	
10 Hz to 20 kHz	10 V to 100 V	0.1 % Reading + 0.02 mV	
20 kHz to 50 kHz	10 V to 100 V	0.1 % Reading + 0.03 mV	
50 kHz to 100 kHz	10 V to 100 V	0.3 % Reading + 0.05 mV	
100 kHz to 300 kHz	10 V to 100 V	2.3 % Reading + 0.29 mV	
Equipment to Output AC Voltage At the listed Frequencies [F]			Fluke 5520A GIDEP
45 Hz to 1 kHz	33 V to 329.9 V	190 µV/V + 2 000 µV	
1 kHz to 10 kHz	33 V to 329.9 V	200 µV/V + 6 000 µV	
10 kHz to 20 kHz	33 V to 329.9 V	250 µV/V + 6 000 µV	
20 kHz to 50 kHz	33 V to 329.9 V	300 µV/V + 6 000 µV	
50 kHz to 100 kHz	33 V to 329.9 V	2 000 µV/V + 50 000 µV	
Equipment to Output AC Voltage At the listed Frequencies [F]			Fluke 8846A GIDEP
3 Hz to 5 Hz	100 V to 1 000 V	0.6 % Reading + 0.13 mV	
5 Hz to 10 Hz	100 V to 1 000 V	0.2 % Reading + 0.13 mV	
10 Hz to 20 kHz	100 V to 1 000 V	0.1 % Reading + 0.13 mV	
20 kHz to 50 kHz	100 V to 1 000 V	0.1 % Reading + 0.22 mV	
50 kHz to 100 kHz	100 V to 1 000 V	0.3 % Reading + 0.35 mV	
100 kHz to 300 kHz	100 V to 1 000 V	2.3 % Reading + 2.17 mV	
Equipment to Output AC Voltage At the listed Frequencies [F]			Fluke 5520A GIDEP
45 Hz to 1 kHz	330 V to 1 020 V	300 µV/V + 10 000 µV	
1 kHz to 5 kHz	330 V to 1 020 V	250 µV/V + 10 000 µV	
5 kHz to 10 kHz	330 V to 1 020 V	300 µV/V + 10 000 µV	
Equipment to Output AC Current At the listed Frequencies [F]			Fluke 8846A GIDEP
3 Hz to 5 Hz	0.1 mA to 1 mA	0.6 % Reading + 0.2 µA	
5 Hz to 10 Hz	0.1 mA to 1 mA	0.2 % Reading + 0.2 µA	
10 Hz to 5 kHz	0.1 mA to 1 mA	0.1 % Reading + 0.2 µA	
5 kHz to 10 kHz	0.1 mA to 1 mA	0.1 % Reading + 1.4 µA	

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Equipment to Output AC Current At the listed Frequencies [F]			Fluke 5520A GIDEP
10 Hz to 20 Hz	0.029 mA to 0.329 mA	2 mA/A + 0.1 µA	
20 Hz to 45 Hz	0.029 mA to 0.329 mA	1.5 mA/A + 0.1 µA	
45 Hz to 1 kHz	0.029 mA to 0.329 mA	1.25 mA/A + 0.1 µA	
1 kHz to 5 kHz	0.029 mA to 0.329 mA	4 mA/A + 0.15 µA	
5 kHz to 10 kHz	0.029 mA to 0.329 mA	8 mA/A + 0.2 µA	
Equipment to Output AC Voltage At the listed Frequencies [F]			Fluke 8846A GIDEP
3 Hz to 5 Hz	1 mA to 10 mA	0.6 % Reading + 3.5 µA	
5 Hz to 10 Hz	1 mA to 10 mA	0.2 % Reading + 3.5 µA	
10 Hz to 5 kHz	1 mA to 10 mA	0.1 % Reading + 3.5 µA	
5 kHz to 10 kHz	1 mA to 10 mA	0.1 % Reading + 40 µA	
Equipment to Output AC Current At the listed Frequencies [F]			Fluke 5520A GIDEP
10 Hz to 20 Hz	0.33 mA to 3.29 mA	2 mA/A + 0.15 µA	
20 Hz to 45 Hz	0.33 mA to 3.29 mA	1.25 mA/A + 0.15 µA	
45 Hz to 1 kHz	0.33 mA to 3.29 mA	1 mA/A + 0.15 µA	
1 kHz to 5 kHz	0.33 mA to 3.29 mA	2 mA/A + 0.2 µA	
5 kHz to 10 kHz	0.33 mA to 3.29 mA	5 mA/A + 0.3 µA	
10 kHz to 30 kHz	0.33 mA to 3.29 mA	10 mA/A + 0.6 µA	
Equipment to Measure AC Current At the listed Frequencies [F]			Fluke 8846A GIDEP
3 Hz to 5 Hz	10 mA to 100 mA	0.6 % Reading + 23 µA	
5 Hz to 10 Hz	10 mA to 100 mA	0.2 % Reading + 23 µA	
10 Hz to 5 kHz	10 mA to 100 mA	0.1 % Reading + 23 µA	
5 kHz to 10 kHz	10 mA to 100 mA	0.1 % Reading + 144 µA	
Equipment to Output AC Current At the listed Frequencies [F]			Fluke 5520A GIDEP
10 Hz to 20 Hz	3.3 mA to 32.9 mA	1.8 mA/A + 3 µA	
20 Hz to 45 Hz	3.3 mA to 32.9 mA	0.9 mA/A + 2 µA	
45 Hz to 1 kHz	3.3 mA to 32.9 mA	0.4 mA/A + 2 µA	
1 kHz to 5 kHz	3.3 mA to 32.9 mA	0.8 mA/A + 2 µA	
5 kHz to 10 kHz	3.3 mA to 32.9 mA	2 mA/A + 3 µA	
10 kHz to 30 kHz	3.3 mA to 32.9 mA	4 mA/A + 4 µA	

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Equipment to Measure AC Current At the listed Frequencies [F]			Fluke 8846A GIDEP
3 Hz to 5 Hz	100 mA to 400 mA	0.6 % Reading + 0.2 mA	
5 Hz to 10 Hz	100 mA to 400 mA	0.2 % Reading + 0.2 mA	
10 Hz to 5 kHz	100 mA to 400 mA	0.1 % Reading + 0.2 mA	
5 kHz to 10 kHz	100 mA to 400 mA	0.1 % Reading + 1.6 mA	
Equipment to Output AC Current At the listed Frequencies [F]			Fluke 5520A GIDEP
10 Hz to 20 Hz	33 mA to 329.9 mA	1.8 mA/A + 20 µA	
20 Hz to 45 Hz	33 mA to 329.9 mA	0.9 mA/A + 20 µA	
45 Hz to 1 kHz	33 mA to 329.9 mA	0.4 mA/A + 20 µA	
1 kHz to 5 kHz	33 mA to 329.9 mA	1.0 mA/A + 50 µA	
5 kHz to 10 kHz	33 mA to 329.9 mA	2 mA/A + 100 µA	
10 kHz to 30 kHz	33 mA to 329.9 mA	4 mA/A + 200 µA	
Equipment to Measure AC Current At the listed Frequencies [F]			Fluke 8846A GIDEP
3 Hz to 5 Hz	400 mA to 1 A	0.6 % Reading + 0.2 mA	
5 Hz to 10 Hz	400 mA to 1 A	0.2 % Reading + 0.2 mA	
10 Hz to 5 kHz	400 mA to 1 A	0.1 % Reading + 0.2 mA	
5 kHz to 10 kHz	400 mA to 1 A	0.2 % Reading + 4.0 mA	
Equipment to Output AC Current At the listed Frequencies [F]			Fluke 5520A GIDEP
10 Hz to 45 Hz	0.33 A to 1.09 A	1.8 mA/A + 100 µA	
45 Hz to 1 kHz	0.33 A to 1.09 A	0.5 mA/A + 100 µA	
1 kHz to 5 kHz	0.33 A to 1.09 A	6 mA/A + 1 000 µA	
5 kHz to 10 kHz	0.33 A to 1.09 A	25 mA/A + 5 000 µA	
Equipment to Measure AC Current At the listed Frequencies [F]			Fluke 8846A GIDEP
3 Hz to 5 Hz	1 A to 3 A	0.6 % Reading + 1.0 mA	
5 Hz to 10 Hz	1 A to 3 A	0.2 % Reading + 1.0 mA	
10 Hz to 5 kHz	1 A to 3 A	0.1 % Reading + 1.0 mA	
5 kHz to 10 kHz	1 A to 3 A	0.2 % Reading + 12 mA	
Equipment to Output AC Current At the listed Frequencies [F]			Fluke 5520A GIDEP
10 Hz to 45 Hz	1.1 A to 2.99 A	1.8 mA/A + 100 µA	
45 Hz to 1 kHz	1.1 A to 2.99 A	0.6 mA/A + 100 µA	
1 kHz to 5 kHz	1.1 A to 2.99 A	6 mA/A + 1 000 µA	
5 kHz to 10 kHz	1.1 A to 2.99 A	25 mA/A + 5 000 µA	

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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
Equipment to Measure AC Current At the listed Frequencies [F]			Fluke 8846A GIDEP
3 Hz to 5 Hz	3 A to 10 A	0.6 % Reading + 3.5 mA	
5 Hz to 10 Hz	3 A to 10 A	0.2 % Reading + 3.5 mA	
10 Hz to 5 kHz	3 A to 10 A	0.1 % Reading + 3.5 mA	
5 kHz to 10 kHz	3 A to 10 A	0.2 % Reading + 40 mA	
Equipment to Output AC Current At the listed Frequencies [F]			Fluke 5520A GIDEP
45 Hz to 100 Hz	3 A to 10.99 A	0.6 mA/A + 2 000 µA	
100 Hz to 1 kHz	3 A to 10.99 A	1 mA/A + 2 000 µA	
1 kHz to 5kHz	3 A to 10.99 A	30 mA/A + 2 000 µA	
Equipment to Output AC Current At the listed Frequencies [F]			
45 Hz to 100 Hz	11 A to 20.5 A	1.2 mA/A + 5 000 µA	
100 Hz to 1 kHz	11 A to 20.5 A	1.5 mA/A + 5 000 µA	
1 kHz to 5 kHz	11 A to 20.5 A	30 mA/A + 5 000 µA	
Oscilloscope			Fluke 5520A/SC1.1G GIDEP
Level Sine Amp 50 kHz Ref. [F]	5 mV to 5 $V_{(p-p)}$	0.3 mV + 3 % of Reading	
Level Sine Flatness 5 mV to 5.5 V Relative to 50 kHz Reference[F]	50 kHz to 100 MHz	0.1 mV + 2 % of Reading	
	100 MHz to 300 MHz	0.1 mV + 2.5 % of Reading	
	300 MHz to 600 MHz	0.1 mV + 4.5 % of Reading	
	600 MHz to 1 100 MHz	0.1 mV + 5.5 % of Reading	
Square Wave [F] 1 MΩ, 100 Hz	1 mV to 150 $V_{(p-p)}$	40 µV + 0.2 % of Reading	
Square Wave [F] 50 Ω, 1 kHz	1 mV to 6.6 $V_{(p-p)}$	40 µV + 0.35 % of Reading	
Time Marker Output Into 50 Ω [F]	1 ns to 20 ms	5 µs/s	
Rise Time [F]	≤ 300 ps	(0/ps / - 100) ps	
Temperature Calibration Indication and Control Equipment used with Thermocouple Type E [F]	-250 °C to -100 °C	0.5 °C	Electrical Simulation of Thermocouple Output Fluke 5520A GIDEP
	-100 °C to -25 °C	0.16 °C	
	-25 °C to 350 °C	0.14 °C	
	350 °C to 650 °C	0.16 °C	
	650 °C to 1 000 °C	0.21 °C	

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A.V.C. Laboratory, Inc.
16542 NW 54th Avenue, Miami Gardens, FL, 33014
Contact Name: Luis Hidalgo Phone: 786-542-8710

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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
Temperature Calibration Indication and Control Equipment used with Thermocouple Type J[F]	-210 °C to -100 °C	0.27 °C	Fluke 5520A Electrical Simulation of RTD Output GIDEP
	-100 °C to -30 °C	0.16 °C	
	-30 °C to 150 °C	0.14 °C	
	150 °C to 760 °C	0.17 °C	
	760 °C to 1 200 °C	0.23 °C	
Temperature Calibration Indication and Control Equipment used with Thermocouple Type K[F]	-200 °C to -100 °C	0.33 °C	
	-100 °C to -25 °C	0.18 °C	
	-25 °C to 120 °C	0.16 °C	
	120 °C to 1 000 °C	0.26 °C	
	1 000 °C to 1 372 °C	0.40 ° C	
Temperature Calibration Indication and Control Equipment used with Thermocouple Type T[F]	-250 °C to -150 °C	0.63 °C	
	-150 °C to 0 °C	0.24 °C	
	0 °C to 120 °C	0.16 °C	
	120 °C to 400 °C	0.14 °C	
Temperature Calibration Indication and Control Equipment used with RTD Pt 385 100 Ω[F]	-200 °C to -80 °C	0.04 °C	
	-80 °C to 0 °C	0.04 °C	
	0 °C to 100 °C	0.04 °C	
	100 °C to 260 °C	0.05 °C	
	260 °C to 300 °C	0.12 °C	
	300 °C to 400 °C	0.13 °C	
	400 °C to 600 °C	0.14 °C	
	600 °C to 630 °C	0.16 °C	
Temperature Calibration Indication and Control Equipment used with RTD Pt 3926 100 Ω[F]	-200 °C to -80 °C	0.05 °C	
	-80 °C to 0 °C	0.05 °C	
	0 °C to 100 °C	0.07 °C	
	100 °C to 300 °C	0.09 °C	
	300 °C to 400 °C	0.10 °C	
	400 °C to 630 °C	0.12 °C	

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Temperature Calibration Indication and Control Equipment used with RTD Pt 3916 100 Ω [F]	-200 °C to -190 °C	0.25 °C	Fluke 5520A Electrical Simulation of RTD Output GIDEP
	-190 °C to -80 °C	0.04 °C	
	-80 °C to 0 °C	0.05 °C	
	0 °C to 100 °C	0.06 °C	
	100 °C to 260 °C	0.07 °C	
	260 °C to 300 °C	0.08 °C	
	300 °C to 400 °C	0.09 °C	
	400 °C to 600 °C	0.10 °C	
	600 °C to 630 °C	0.23 °C	
Temperature Calibration Indication and Control Equipment used with RTD Pt 385 200 Ω [F]	-200 °C to -80 °C	0.08 °C	
	-80 °C to 0 °C	0.08 °C	
	0 °C to 100 °C	0.08 °C	
	100 °C to 260 °C	0.1 °C	
	260 °C to 300 °C	0.24 °C	
	300 °C to 400 °C	0.26 °C	
	400 °C to 600 °C	0.28 °C	
	600 °C to 630 °C	0.32 °C	
Temperature Calibration Indication and Control Equipment used with RTD Pt 385 1 000 Ω [F]	-200 °C to -80 °C	0.03 °C	
	-80 °C to 0 °C	0.03 °C	
	0 °C to 100 °C	0.04 °C	
	100 °C to 260 °C	0.05 °C	
	260 °C to 300 °C	0.06 °C	
	300 °C to 400 °C	0.07 °C	
	400 °C to 600 °C	0.07 °C	
	600 °C to 630 °C	0.23 °C	
Temperature Calibration Indication and Control Equipment used with RTD Ni 385 120 Ω [F]	-80 °C to 0 °C	0.08 °C	
	0 °C to 100 °C	0.08 °C	
	100 °C to 260 °C	0.14 °C	
Temperature Calibration Indication and Control Equipment used with RTD Cu 427 120 Ω [F]	-100 °C to 260 °C	0.3 °C	

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Electrical

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Temperature Measure RTD – Pt100 (DIN IEC 751, type 385)	-200 °C	0.05 °C	Fluke 8846A GIDEP
	-100 °C	0.05 °C	
	0 °C	0.03 °C	
	100 °C	0.05 °C	
	300 °C	0.07 °C	
	600 °C	0.13 °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 (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Tension/Compression Force [F]	50 lbf to 500 lbf	0.29 % of Reading	Morehouse Load Cell PC-500-TC GIDEP & AVP-112
	200 lbf to 2 000 lbf	0.29 % of Reading	Morehouse Load Cell PC-2K-TC GIDEP & AVP-112
	1 000 lbf to 10 000 lbf	0.29 % of Reading	Morehouse Load Cell PC-10K-TC GIDEP & AVP-112
	5 000 lbf to 50 000 lbf	0.29 % of Reading	Morehouse Load Cell PC-50K-TC GIDEP & AVP-112
Analytical Balances [F]	1 mg to 120 g	0.06 mg	Stainless Steel Weight Set ASTM 0, Stainless Steel Weight ASTM 1 GIDEP, NIST HB44-2018 & AVP-105
Precision Balances [F]	1 mg to 620 g (d = 1 mg)	0.6 mg	
Precision Balances [F]	1 g to 5 000 g (d = 1g)	1.2 mg	
Volume Delivery Instruments (Pipettes) [F]	100 µL to 1 000 µL	0.12 % of Reading	Stainless Steel Weight Set ASTM 0 Analytical Scale d = 0.1 mg Capacity: 120 g Vaisala HM170 & HMP77 GIDEP, ISO 8655-6, ISO/TR 20461
	1 mL to 10 mL	0.025 % of Reading	
	10 mL to 100 mL	0.023 % of Reading	

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Mechanical

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Pressure Gauge and Transducer FO	1.5 psi to 5 psi	0.17 % of full scale	M101-GN0005 GIDEP & AVP-102
	-15 psi to 30 psi	0.047 % of full scale	DPI104-2-30PSI GIDEP & AVP-102
	25 psi to 100 psi	0.072 % of full scale	DPI104-2-100PSI GIDEP & AVP-102
	75 psi to 300 psi	0.052 % of full scale	DPI104-2-300PSI GIDEP & AVP-102
	250 psi to 1 000 psi	0.072 % of full scale	DPI104-2-1000PSI GIDEP & AVP-102
	1 250 psi to 5 000 psi	0.089 % of full scale	DPI104-2-5000PSI GIDEP & AVP-102
	2 000 psi to 10 000 psi	0.079 % of full scale	DPI104-2-10000PSI GIDEP & AVP-102
	4 000 psi to 20 000 psi	0.040 % of full scale	DPI104-2-20000PSI GIDEP
Torque Wrench FO	80 lbf•ft to 800 lbf•ft	0.39 % Reading	TDS821 / TDS1250 GIDEP & AVP-104

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 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.

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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.

6. The term L represents length in inches or millimeters as appropriate to the uncertainty statement.