



PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

Calibración Especializada Industrial / Saul Felipe Rodríguez Guzmán

***M.M De Llano #915-A, Col. Centro
Monterrey, Nuevo León, México. C.P. 64000***

*(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):

***Electrical, Mass, Force and Weighing Devices, Time and Frequency,
Thermodynamic and Dimensional 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:

June 02, 2018

Issue Date:

August 02, 2024

Expiration Date:

October 31, 2026

Accreditation No.:

91241

Certificate No.:

L24-582

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*



Certificate of Accreditation: Supplement

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M.M De Llano #915-A, Col. Centro

Monterrey, Nuevo León, México. C.P. 64000

Contact Name: Saúl F. Rodríguez Phone: 818-647-0493

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

Electrical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED	CALIBRATION MEASUREMENT METHOD OR PROCEDURES USED
Equipment to Measure DC Voltage ^{FO}	1 mV to 329.999 9 mV	0.005 7 % of reading	Fluke 5502A Fluke 725	Procedure I-02
	330 mV to 3.299 999 V	0.004 4 % of reading		
	3.3 V to 32.999 99 V	0.004 % of reading		
	33 V to 329.999 9 V	0.004 7 % of reading		
	330 V to 1 020 V	0.005 % of reading		
Equipment to Output DC Voltage ^{FO}	1 mV to 200 mV	0.000 66 % of reading	Fluke 8508A	Procedure I-10
	200 mV to 2 V	0.000 34 % of reading		
	2 V to 20 V	0.000 34 % of reading		
	20 V to 200 V	0.000 49 % of reading		
	200 V to 1000 V	0.000 53 % of reading		
Equipment to Output and Measure AC/DC High Voltage ^{FO}	1 kV to 40 kV	1.2 % of reading	Fluke 80K-40 & Fluke 8060A Phenix KVM 200	Procedure I-01
	20 kV to 200 kV	1.2 % of reading		
Equipment to Measure DC Current ^{FO}	1 μ A to 329.999 μ A	0.017 % of reading	Fluke 5502A Fluke 725	Procedure I-02
	330 μ A to 3.299 99 mA	0.015 % of reading		
	3.3 mA to 32.999 9 mA	0.009 % of reading		
	33 mA to 329.999 mA	0.008 9 % of reading		
	330 mA to 1.099 99 A	0.033 % of reading		
	1.1 A to 2.999 99 A	0.031 % of reading		
	3 A to 10.999 9 A	0.052 % of reading		
	11 A to 20.5 A	0.092 % of reading		
Clamp-On Meters ^{FO}	Up A to 1 025 A	0.44 % of reading	Fluke 5502A/50 Turn Coil	Procedure I-06, I-07
Equipment to Output DC Current ^{FO}	1 μ A to 200 μ A	0.001 5 % of reading	Fluke 8508A	Procedure I-10
	200 μ A to 2 mA	0.001 5 % of reading		
	2 mA to 20 mA	0.001 5 % of reading		
	20 mA to 200 mA	0.003 8 % of reading		
	200 mA to 2 A	0.017 % of reading		
	2 A to 20 A	0.037 % of reading		
Equipment to Measure Resistance ^{FO}	1 Ω to 10.999 Ω	0.08 % of reading	Fluke 5502A	Procedure I-02
	11 Ω to 32.999 Ω	0.042 % of reading		



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Equipment to Measure Resistance ^{FO}	33 Ω to 109.999 Ω	0.018 % of reading	Fluke 5502A	Procedure I-02
	110 Ω to 329.999 Ω	0.012 % of reading		
	330 Ω to 1.099 99 k Ω	0.009 9 % of reading		
	1.1 k Ω to 3.299 99 k Ω	0.012 % of reading		
	3.3 k Ω to 10.999 9 k Ω	0.009 3 % of reading		
	11 k Ω to 32.999 9 k Ω	0.009 5 % of reading		
	33 k Ω to 109.999 k Ω	0.011 % of reading		
	110 k Ω to 329.999 k Ω	0.012 % of reading		
	330 k Ω to 1.099 99 M Ω	0.013 % of reading		
	1.1 M Ω to 3.299 99 M Ω	0.015 % of reading		
	3.3 M Ω to 10.999 9 M Ω	0.049 % of reading		
	11 M Ω to 32.999 9 M Ω	0.084 % of reading		
	33 M Ω to 109.999 M Ω	0.39 % of reading		
	110 M Ω to 329.999 M Ω	0.41 % of reading		
	330 M Ω to 1 100 M Ω	1.2 % of reading		
Equipment to Measure Resistance (Fixed Points) ^{FO}	1 m Ω	0.014 % of reading	Electromera P310 0.001M, P310 .01M P321 0.1M, P321 1M P321 10M	Procedure I-08
	10 m Ω	0.013 % of reading		
	100 m Ω	0.012 % of reading		
	1 Ω	0.011 % of reading		
	10 Ω	0.01 % of reading		
	10 Ω to 10 k Ω	0.059 % of reading	Decade Box GenRad 1433-12 Resistor, Katywka P4030-MI Decade Box Katywka 4077 Decade Box Katywka 4078	Procedure DE-10, Procedure I-02
	1 G Ω	0.072 % of reading		
	10 M Ω to 100 M Ω	0.031 % of reading		
	100 M Ω to 1 000 M Ω	0.031 % of reading		
Equipment to Output Resistance ^{FO}	0.001 Ω to 2 Ω	0.001 7 % of reading	Fluke 8508A	Procedure I-10
	2 Ω to 20 Ω	0.001 % of reading		
	20 Ω to 200 Ω	0.000 79 % of reading		
	200 Ω to 2 k Ω	0.000 8 % of reading		



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Equipment to Output Resistance ^{FO}	2 kΩ to 20 kΩ	0.000 81 % of reading	Fluke 8508A	Procedure I-10
	20 kΩ to 200 kΩ	0.000 81 % of reading		
	200 kΩ to 2 MΩ	0.001 % of reading		
	2 MΩ to 20 MΩ	0.002 8 % of reading		
	20 MΩ to 200 MΩ	0.007 8 % of reading		
	200 MΩ to 2 GΩ	0.1 % of reading		
	2 GΩ to 20 GΩ	0.1 % of reading		
Equipment to Measure AC Voltage At the listed Frequencies ^{FO}			Fluke 5502A	Procedure I-02
10 Hz to 45 Hz	1 mV to 32.999 mV	0.16 % of reading		
45 Hz to 10 kHz	1 mV to 32.999 mV	0.13 % of reading		
10 kHz to 20 kHz	1 mV to 32.999 mV	0.16 % of reading		
20 kHz to 50 kHz	1 mV to 32.999 mV	0.2 % of reading		
50 kHz to 100 kHz	1 mV to 32.999 mV	0.35 % of reading		
100 kHz to 500 kHz	1 mV to 32.999 mV	0.92 % of reading		
Equipment to Measure AC Voltage At the listed Frequencies ^{FO}				
10 Hz to 45 Hz	33 mV to 329.999 mV	0.045 % of reading		
45 Hz to 10 kHz	33 mV to 329.999 mV	0.029 % of reading		
10 kHz to 20 kHz	33 mV to 329.999 mV	0.059 % of reading		
20 kHz to 50 kHz	33 mV to 329.999 mV	0.087 % of reading		
50 kHz to 100 kHz	33 mV to 329.999 mV	0.22 % of reading		
100 kHz to 500 kHz	33 mV to 329.999 mV	0.49 % of reading		
Equipment to Measure AC Voltage At the listed Frequencies ^{FO}				
10 Hz to 45 Hz	0.33 V to 3.299 99 V	0.042 % of reading		
45 Hz to 10 kHz	0.33 V to 3.299 99 V	0.027 % of reading		
10 kHz to 20 kHz	0.33 V to 3.299 99 V	0.056 % of reading		
20 kHz to 50 kHz	0.33 V to 3.299 99 V	0.079 % of reading		
50 kHz to 100 kHz	0.33 V to 3.299 99 V	0.18 % of reading		
100 kHz to 500 kHz	0.33 V to 3.299 99 V	0.41 % of reading		



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Equipment to Measure AC Voltage At the listed Frequencies ^{FO}			Fluke 5502A	Procedure I-02
10 Hz to 45 Hz	3.3 V to 32.999 9 V	0.042 % of reading		
45 Hz to 10 kHz	3.3 V to 32.999 9 V	0.029 % of reading		
10 kHz to 20 kHz	3.3 V to 32.999 9 V	0.056 % of reading		
20 kHz to 50 kHz	3.3 V to 32.999 9 V	0.079 % of reading		
50 kHz to 100 kHz	3.3 V to 32.999 9 V	0.18 % of reading		
Equipment to Measure AC Voltage At the listed Frequencies ^{FO}				
45 Hz to 1 kHz	33 V to 329.999 V	0.04 % of reading		
1 kHz to 10 kHz	33 V to 329.999 V	0.064 % of reading		
10 kHz to 20 kHz	33 V to 329.999 V	0.072 % of reading		
20 kHz to 50 kHz	33 V to 329.999 V	0.096 % of reading		
50 kHz to 100 kHz	33 V to 329.999 V	0.21 % of reading		
Equipment to Measure AC Voltage At the listed Frequencies ^{FO}				
45 Hz to 1 kHz	330 V to 1 020 V	0.041 % of reading		
1 kHz to 5 kHz	330 V to 1 020 V	0.064 % of reading		
5 kHz to 10 kHz	330 V to 1 020 V	0.072 % of reading		
Equipment to Output AC Voltage At the listed Frequencies 10 Hz to 100 kHz ^{FO}	1 mV to 200 mV	0.011 % of reading	Fluke 8508A	Procedure I-10
	200 mV to 2 V	0.006 9 % of reading		
	2 V to 20 V	0.007 1 % of reading		
	20 V to 200 V	0.007 2 % of reading		
	200 V to 1000 V	0.011 % of reading		
Equipment to Output and Measure AC Voltage ^{FO} At the listed Frequencies Up to 1 000 Hz	0.75 kV to 20 kV	1.2 % of reading	Phoenix KVM 200	Procedure I-01
	20 kV to 200 kV	1.2 % of reading		
Equipment to Output and Measure AC Voltage ^{FO} At the listed Frequencies Up to 3 kHz	2 kV to 8.5 kV	2.1 % of reading	Tektronix P6013A / Fluke 87V	Procedure I-09



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Equipment to Measure AC Current At the listed Frequencies ^{FO}			Fluke 5502A	Procedure I-02
10 Hz to 20 Hz	29 μ A to 329.99 μ A	0.18 % of reading		
20 Hz to 45 Hz	29 μ A to 329.99 μ A	0.14 % of reading		
45 Hz to 1 kHz	29 μ A to 329.99 μ A	0.12 % of reading		
1 kHz to 5 kHz	29 μ A to 329.99 μ A	0.27 % of reading		
5 kHz to 10 kHz	29 μ A to 329.99 μ A	0.67 % of reading		
10 kHz to 30 kHz	29 μ A to 329.99 μ A	1.3 % of reading		
Equipment to Measure AC Current At the listed Frequencies ^{FO}				
10 Hz to 20 Hz	0.33 mA to 3.299 99 mA	0.16 % of reading		
20 Hz to 45 Hz	0.33 mA to 3.299 99 mA	0.1 % of reading		
45 Hz to 1 kHz	0.33 mA to 3.299 99 mA	0.081 % of reading		
1 kHz to 5 kHz	0.33 mA to 3.299 99 mA	0.16 % of reading		
5 kHz to 10 kHz	0.33 mA to 3.299 99 mA	0.39 % of reading		
10 kHz to 30 kHz	0.33 mA to 3.299 99 mA	0.79 % of reading		
Equipment to Measure AC Current At the listed Frequencies ^{FO}				
10 Hz to 20 Hz	3.3 mA to 32.999 9 mA	0.15 % of reading		
20 Hz to 45 Hz	3.3 mA to 32.999 9 mA	0.075 % of reading		
45 Hz to 1 kHz	3.3 mA to 32.999 9 mA	0.04 % of reading		
1 kHz to 5 kHz	3.3 mA to 32.999 9 mA	0.073 % of reading		
5 kHz to 10 kHz	3.3 mA to 32.999 9 mA	0.16 % of reading		
10 kHz to 30 kHz	3.3 mA to 32.999 9 mA	0.32 % of reading		
Equipment to Measure AC Current At the listed Frequencies ^{FO}				
10 Hz to 20 Hz	33 mA to 329.999 mA	0.14 % of reading		
20 Hz to 45 Hz	33 mA to 329.999 mA	0.075 % of reading		
45 Hz to 1 kHz	33 mA to 329.999 mA	0.037 % of reading		



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Equipment to Measure AC Current At the listed Frequencies ^{FO}			Fluke 5502A	Procedure I-02
1 kHz to 5 kHz	33 mA to 329.999 mA	0.09 % of reading		
5 kHz to 10 kHz	33 mA to 329.999 mA	0.18 % of reading		
10 kHz to 30 kHz	33 mA to 329.999 mA	0.36 % of reading		
Equipment to Measure AC Current At the listed Frequencies ^{FO}				
10 Hz to 45 Hz	0.33 A to 1.099 99 A	0.15 % of reading		
45 Hz to 1 kHz	0.33 A to 1.099 99 A	0.048 % of reading		
1 kHz to 5 kHz	0.33 A to 1.099 99 A	0.54 % of reading		
5 kHz to 10 kHz	0.33 A to 1.099 99 A	2.3 % of reading		
Equipment to Measure AC Current At the listed Frequencies ^{FO}				
10 Hz to 45 Hz	1.1 A to 2.999 99 A	0.14 % of reading		
45 Hz to 1 kHz	1.1 A to 2.999 99 A	0.05 % of reading		
1 kHz to 5 kHz	1.1 A to 2.999 99 A	0.49 % of reading		
5 kHz to 10 kHz	1.1 A to 2.999 99 A	2.1 % of reading		
Equipment to Measure AC Current At the listed Frequencies ^{FO}				
10 Hz to 100 Hz	3 A to 10.999 9 A	0.063 % of reading		
1 kHz to 5 kHz	3 A to 10.999 9 A	2.4 % of reading		
100 Hz to 1 kHz	3 A to 10.999 9 A	0.093 % of reading		
Equipment to Measure AC Current At the listed Frequencies ^{FO}				
10 Hz to 100 Hz	11 A to 20.5 A	0.11 % of reading		
100 Hz to 1 kHz	11 A to 20.5 A	0.14 % of reading		
1 kHz to 5 kHz	11 A to 20.5 A	2.4 % of reading		



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Equipment to Measure AC Current At the listed Frequencies ^{FO} Clamps-On Meter			Fluke 5502A/50 Turn Coil	Procedure I-06
45 Hz to 65 Hz	Up to 1 025 A	0.52 % of reading		
Equipment to Output AC Current 10 Hz to 10 kHz ^{FO}	1 μ A to 200 μ A	0.068 % of reading	Fluke 8508A	Procedure I-10
	200 μ A to 2 mA	0.037 % of reading		
	2 mA to 20 mA	0.036 % of reading		
	20 mA to 200 mA	0.033 % of reading		
	200 mA to 2 A	0.064 % of reading		
	2 A to 20 A	0.08 % of reading		
Equipment to Measure Capacitance @ 1 kHz ^{FO}	220 pF to 399.9 pF	2.3 % of reading	Fluke 5502A	Procedure I-03
	0.4 nF to 1.099 9 nF	1.2 % of reading		
	1.1 nF to 3.299 9 nF	0.66 % of reading		
	3.3 nF to 10.999 nF	0.28 % of reading		
	11 nF to 32.999 nF	0.47 % of reading		
	33 nF to 109.99 nF	0.21 % of reading		
	110 nF to 329.99 nF	0.33 % of reading		
	0.33 μ F to 1.099 9 μ F	0.28 % of reading		
	1.1 μ F to 3.299 9 μ F	0.33 % of reading		
	3.3 μ F to 10.999 μ F	0.28 % of reading		
	11 μ F to 32.999 μ F	0.43 % of reading		
	33 μ F to 109.99 μ F	0.45 % of reading		
	110 μ F to 329.99 μ F	0.46 % of reading		
	0.33 mF to 1.099 9 mF	0.35 % of reading		
	1.1 mF to 3.299 9 mF	0.46 % of reading		
Equipment to Measure Capacitance ^{FO} At the listed Frequency @ 1 kHz	3.3 mF to 10.999 mF	0.42 % of reading	Agilent E4980A	Procedure EL-026
	11 mF to 32.999 mF	0.68 % of reading		
	33 mF to 110 mF	0.93 % of reading		
Equipment to Output Capacitance ^{FO} At the listed Frequency 20 Hz to 300 kHz	300 pF to 110 mF	0.05 % of reading		



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Equipment to Measure AC Power ($f = 45 \text{ Hz to } 60 \text{ Hz}$; P.F.= 1) 3.3 V to 1 020 V At the listed Ampere ^{FO}			Fluke 5502A	Procedure I-07
330 mA to 1.099 9 A	1.089 W to 1.12 kW	0.12 % of reading		
1.1 A to 2.999 A	3.63 W to 3.06 kW	0.11 % of reading		
3 A to 10.999 A	9.9 W to 11.22 kW	0.12 % of reading		
11 A to 20.5 A	36.3 W to 20.91 kW	0.15 % of reading		
20.5 A to 1 025 A	67.7 W to 1 MW (No Toroidal)	0.54 % of reading	Fluke 5502A/50 Turn Coil	
Equipment to Measure Phase or Power Factor ($f = 10 \text{ Hz to } 65 \text{ Hz}$) 120 V to 240 V At the listed Ampere ^{FO}			Fluke 5502A	Procedure I-02
2 A to 20 A	-180° to 180°	0.12°		
Equipment to Output At the listed frequencies at the listed Voltage 10 mV to 1000 V ^{FO}	10 Hz to 1 MHz	0.005 9 % of reading	Fluke 8508A	Procedure I-10
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type E ^{FO}	250 °C to -100 °C	0.39 °C	Fluke 5502A, Fluke 725 Electrical Simulation of Thermocouple Output	Procedure I-04
	-100 °C to -25 °C	0.14 °C		
	-25 °C to 350 °C	0.13 °C		
	350 °C to 650 °C	0.14 °C		
	650 °C to 1 000 °C	0.18 °C		
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type J ^{FO}	-210 °C to -100 °C	0.22 °C		
	-100 °C to -30 °C	0.14 °C		
	-30 °C to 150 °C	0.13 °C		
	150 °C to 760 °C	0.15 °C		
	760 °C to 1 200 °C	0.19 °C		
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type K ^{FO}	-200 °C to -100 °C	0.27 °C		
	-100 °C to -25 °C	0.16 °C		
	-25 °C to 120 °C	0.14 °C		
	120 °C to 1 000 °C	0.21 °C		



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Temperature Calibration, Indication and Control Equipment used with Thermocouple Type K ^{FO}	1 000 °C to 1 372 °C	0.32 °C	Fluke 5502A, Fluke 725 Electrical Simulation of Thermocouple Output	Procedure I-04
Temperature Calibration, Indication and Control Equipment used with Thermocouple Type T ^{FO}	250 °C to -150 °C	0.49 °C	Fluke 5502A, Fluke 725 Electrical Simulation of Thermocouple Output	
	-150 °C to 0 °C	0.2 °C		
	0 °C to 120 °C	0.14 °C		
	120 °C to 400 °C	0.13 °C		
Temperature Calibration, Indication and Control Equipment used with RTD ^{FO}	-200 °C to 800 °C	0.079 °C	Fluke 8508A Electrical Simulation of RTD Output	
Temperature Calibration, Indication and Control Equipment used with RTD Pt 385, 100 Ω ^{FO}	-200 °C to -80 °C	0.07 °C	Fluke 5502A, Fluke 725 Electrical Simulation of RTD Output	
	-80 °C to 0 °C	0.07 °C		
	0 °C to 100 °C	0.079 °C		
	100 °C to 300 °C	0.09 °C		
	300 °C to 400 °C	0.097 °C		
	400 °C to 630 °C	0.11 °C		
Temperature Calibration, Indication and Control Equipment used with RTD Pt 3926, 100 Ω ^{FO}	630 °C to 800 °C	0.19 °C	Fluke 5502A, Fluke 725 Electrical Simulation of RTD Output	
	-200 °C to -80 °C	0.07 °C		
Temperature Calibration, Indication and Control Equipment used with RTD Pt 3926, 100 Ω ^{FO}	-80 °C to 0 °C	0.07 °C	Fluke 5502A, Fluke 725 Electrical Simulation of RTD Output	
	0 °C to 100 °C	0.08 °C		
Temperature Calibration, Indication and Control Equipment used with RTD Pt 3926, 100 Ω ^{FO}	100 °C to 300 °C	0.091 °C		
	300 °C to 400 °C	0.097 °C		
	400 °C to 630 °C	0.11 °C		
	Temperature Calibration, Indication and Control Equipment used with RTD Pt 3916, 100 Ω ^{FO}	-200 °C to -190 °C	0.066 °C	
-190 °C to -80 °C		0.066 °C		
-80 °C to 0 °C		0.07 °C		
0 °C to 100 °C		0.074 °C		
100 °C to 260 °C		0.079 °C		
260 °C to 300 °C		0.085 °C		



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Calibración Especializada Industrial / Saul Felipe Rodríguez Guzmán

M.M De Llano #915-A, Col. Centro
Monterrey, Nuevo León, México. C.P. 64000
Contact Name: Saúl F. Rodríguez Phone: 818-647-0493

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

Electrical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED	CALIBRATION MEASUREMENT METHOD OR PROCEDURES USED
Temperature Calibration, Indication and Control Equipment used with RTD Pt 3916, 100 Ω^{FO}	300 °C to 400 °C	0.091 °C	Fluke 5502A, Fluke 725 Electrical Simulation of RTD Output	Procedure I-04
	400 °C to 600 °C	0.097 °C		
	600 °C to 630 °C	0.19 °C		
Equipment to Output AC Current ^{FO} At the listed Frequencies 15 Hz to 1 kHz	20 A to 1 400 A	1.9 % of reading	Fluke 345	Procedure EL-027
Equipment to Output DC Current ^{FO}	20 A to 2 000 A	1.9 % of reading		
Equipment to Output or Measure ^{FO} AC High Voltage At the listed Frequencies (Up to 3 kHz)	2 kV to 15 kV	2.8 % of reading	HyPot Multimeter Brand: CEI Model: ML-HF-1	Procedure I-09

Mass, Force and Weighting Devices

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED	CALIBRATION MEASUREMENT METHOD OR PROCEDURES USED
Balance and Scale ^O	1 mg to 1 000 g (Res.= 0.1 mg)	0.45 mg	Class F1 Test Weights	Procedure DE-13 Euramet CG-18
	1 kg to 10 kg (Res.= 0.1 g)	0.083 g		

Time and Frequency

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED	CALIBRATION MEASUREMENT METHOD OR PROCEDURES USED
Stopwatch Timer ^{FO}	Up to 10 800 s	0.001 1 % of reading	Fluke 5502A and Digital Counter, Stopwatch and Timer Calibrations	Procedure DE-08 NIST 960-12 Practice Guide
Equipment to Measure Frequency at the listed Voltage 100 mV to 750 V ^{FO}	0.01 Hz to 119.99 Hz	0.002 9 % of reading	Fluke 5502A Fluke 725	Procedure I-02
	120 Hz to 1 199.9 Hz	0.005 2 % of reading		
	12 kHz to 119.99 kHz	0.005 2 % of reading		



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

Thermodynamic

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED	CALIBRATION MEASUREMENT METHOD OR PROCEDURES USED
Digital Infrared Thermometer ^{FO}	-15 °C to 120 °C	0.61 °C	Fluke 4180 & Fluke 4181 Precision Infrared Calibrator (Black Body Source)	Procedure DE-09
	50 °C to 500 °C	0.66 °C	Fluke 4181 Precision Infrared Calibrator (Black Body Source)	
Thermo-Hygrometer Only Humidity ^F	20 % RH to 90 % RH	1.3 % RH	Hygro-Thermometer Brand Vaisala CEM DE-11	CENAM Technical Guide
Thermo-Hygrometer Only Temperature ^F	20 °C to 70 °C	0.2 °C		
Direct Reading Thermometer ^{FO}	0 °C (Cold Joint Point)	0.031 °C	RTD KAYE Model M2801	Procedure DE-14 CEM TH001
	35 °C to 375 °C	0.11 °C	Dry Well Fluke 9100S	

Dimensional

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (\pm)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED	CALIBRATION MEASUREMENT METHOD OR PROCEDURES USED
Outside Micrometers ^{FO}	0.105 in to 12 in	29 μ m	Grade 0 Gage Blocks	Procedure DE-07 CENAM Technical Guide
Caliper ^{FO}	0.105 in to 12 in	290 μ m		

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.



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

3. The presence of a superscript F means that the laboratory performs calibration of the indicated parameter 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.
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.

