



April 10, 2018

VIA EMAIL

Gore Laboratories, Inc.
Jeff Buechler
10 Northern Blvd., Suite 5
Amherst, NH 03031

Re: Extension for ISO/IEC 17025: 2005 accreditation

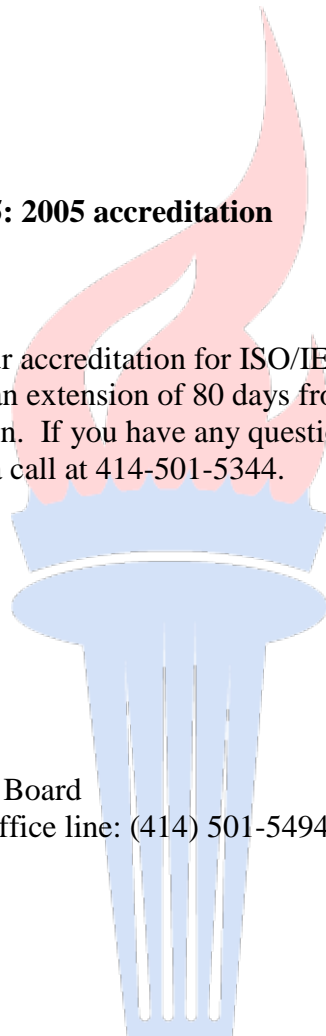
Dear Jeff:

This letter is to inform you that your accreditation for ISO/IEC 17025:2005 will expire on 04/14/2018. We have granted you an extension of 80 days from the expiration date on your certificate and scope of accreditation. If you have any questions or concerns regarding this matter, please feel free to give me a call at 414-501-5344.

Regards,

A handwritten signature in black ink, appearing to read 'Hausch', is placed below the 'Regards,' text.

Dominique Hausch
Senior Client Coordinator
ANSI-ASQ National Accreditation Board
Direct line: (414) 501-5346 Main office line: (414) 501-5494
dhausch@anab.org



ANAB is Now the Home of



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CERTIFICATE OF ACCREDITATION

ANSI-ASQ National Accreditation Board

500 Montgomery Street, Suite 625, Alexandria, VA 22314, 877-344-3044

This is to certify that

Gore Laboratories, Inc.
10 Northern Blvd., Suite 5
Amherst, NH 03031

has been assessed by ANAB
and meets the requirements of international standard

ISO/IEC 17025:2005

and national standard

ANSI/NCSL Z540-1-1994 (R2002)

while demonstrating technical competence in the field of

CALIBRATION

Refer to the accompanying Scope of Accreditation for information regarding the types of calibrations to which this accreditation applies.

AC-1322

Certificate Number


ANAB Approval

Certificate Valid: 04/10/2018-04/14/2018
Version No. 004 Issued: 04/10/2018



This laboratory 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 (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



**SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005
AND ANSI/NCSL Z540-1-1994 (R2002)**

Gore Laboratories, Inc.

10 Northern Blvd., Suite 5

Amherst, NH 03031

Rose Gavin 603-889-4800

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CALIBRATION

Valid to: **April 14, 2018**

Certificate Number: **AC-1322**

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Voltage - Source	Up to 220 mV 220 mV to 2.2 V (2.2 to 11) V (11 to 22) V (22 to 220) V 220 V to 1.1 kV	7 μ V/V + 0.75 μ V 6 μ V/V + 1.2 μ V 5 μ V/V + 4 μ V 5 μ V/V + 8 μ V 6 μ V/V + 0.1 mV 8 μ V/V + 0.6 mV	Direct Comparison using a characterized Fluke5700A
	10 V	2 μ V/V	Direct transfer techniques performed utilizing a Fluke 732B
DC Voltage - Measure	(0 to 100) mV 100 mV to 1 V (1 to 10) V (10 to 100) V 100 V to 1 kV	5.5 μ V/V + 1 μ V 5.1 μ V/V + 1 μ V 4.6 μ V/V + 2 μ V 6.5 μ V/V + 30 μ V 19 μ V/V + 0.1 mV	HP 3458A characterized DMM
DC Current - Source	Up to 220 μ A 220 μ A to 2.2 mA (2.2 to 22) mA (22 to 220) mA	50 μ A/A + 10 nA 50 μ A/A + 10 nA 50 μ A/A + 100 nA 60 μ A/A + 1 μ A	Direct Comparison using a characterized Fluke5700A
	220 mA to 2.2 A (2.2 to 11) A	80 μ A/A + 30 μ A 0.34 mA/A + 0.48 mA	Fluke 5700A and Fluke 5725A



Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Current - Measure	(10 to 100) μ A 100 μ A to 1 mA (1 to 10) mA (10 to 100) mA 100 mA to 1 A	20 μ A/A + 0.8 nA 20 μ A/A + 5 nA 20 μ A/A + 50 nA 35 μ A/A + 0.5 μ A 0.11 mA/A + 10 μ A	HP 3458A Opt 002 characterized DMM
Resistance - Source	0 Ω 1 Ω 1.9 Ω 10 Ω 19 Ω 100 Ω 190 Ω 1 k Ω 1.9 k Ω 10 k Ω 19 k Ω 100 k Ω 190 k Ω 1 M Ω 1.9 M Ω 10 M Ω 19 M Ω 100 M Ω	50 $\mu\Omega$ 95 $\mu\Omega/\Omega$ 95 $\mu\Omega/\Omega$ 28 $\mu\Omega/\Omega$ 26 $\mu\Omega/\Omega$ 17 $\mu\Omega/\Omega$ 17 $\mu\Omega/\Omega$ 12 $\mu\Omega/\Omega$ 12 $\mu\Omega/\Omega$ 11 $\mu\Omega/\Omega$ 11 $\mu\Omega/\Omega$ 13 $\mu\Omega/\Omega$ 13 $\mu\Omega/\Omega$ 18 $\mu\Omega/\Omega$ 19 $\mu\Omega/\Omega$ 37 $\mu\Omega/\Omega$ 47 $\mu\Omega/\Omega$ 0.12 m Ω/Ω	Direct Comparison using a characterized Fluke5700A
Resistance - Source Individual Values	1 Ω 10 k Ω	8 $\mu\Omega/\Omega$ 4.8 $\mu\Omega/\Omega$	Direct Comparison to the Primary Resistors Fluke 742A-1 Fluke 742A-10k
Resistance – Source (In 100 m Ω Steps) (In 1 Ω Steps) (In 10 Ω Steps) (In 100 Ω Steps) (In 1 k Ω Steps) (In 10 k Ω Steps) (In 100 k Ω Steps) (In 1 M Ω Steps)	100 m Ω to 1 Ω (1 to 10) Ω (10 to 100) Ω 100 Ω to 1 k Ω (1 to 10) k Ω (10 to 100) k Ω 100 k Ω to 1 M Ω (1 to 11) M Ω	10 m Ω/Ω + 40 m Ω 1.2 m Ω/Ω + 40 m Ω 0.3 m Ω/Ω + 40 m Ω 0.3 m Ω/Ω + 40 m Ω 0.3 m Ω/Ω + 40 m Ω 0.3 m Ω/Ω + 40 m Ω 0.3 m Ω/Ω + 40 m Ω 0.3 m Ω/Ω + 40 m Ω	Direct Comparison using a ESI DB-877 incremental decade resistor.



Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Resistance - Measure	Up to 10 Ω (10 to 100) Ω 100 Ω to 1 kΩ (1 to 10) kΩ (10 to 100) kΩ 100 kΩ to 1 MΩ (1 to 10) MΩ (10 to 100) MΩ 100 MΩ to 1 GΩ	18 μΩ/Ω + 50 μΩ 13 μΩ/Ω + 0.5 mΩ 11 μΩ/Ω + 0.5 mΩ 11 μΩ/Ω + 5 mΩ 11 μΩ/Ω + 50 mΩ 15 μΩ/Ω + 2 Ω 53 μΩ/Ω + 0.1 kΩ 0.5 mΩ/Ω + 1 kΩ 5 mΩ/Ω + 10 kΩ	HP 3458A Opt 002 characterized DMM
AC Voltage - Source	Up to 2.2 mV (10 to 20) Hz (20 to 40) Hz 40 Hz to 20 kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz (300 to 500) kHz 500 kHz to 1 MHz (2.2 to 22) mV (10 to 20) Hz (20 to 40) Hz 40 Hz to 20 kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz (300 to 500) kHz 500 kHz to 1 MHz (22 to 220) mV (10 to 20) Hz (20 to 40) Hz 40 Hz to 20 kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz (300 to 500) kHz 500 kHz to 1 MHz	0.5 mV/V + 5 μV 0.22 mV/V + 5 μV 0.11 mV/V + 5 μV 0.37 mV/V + 5 μV 0.9 mV/V + 8 μV 1.2 mV/V + 15 μV 1.7 mV/V + 30 μV 3.3 mV/V + 30 μV 0.55 mV/V + 6 μV 0.22 mV/V + 6 μV 0.11 mV/V + 6 μV 0.37 mV/V + 6 μV 0.9 mV/V + 8 μV 1.2 mV/V + 15 μV 1.7 mV/V + 30 μV 3.3 mV/V + 30 μV 0.55 mV/V + 16 μV 0.22 mV/V + 10 μV 0.1 mV/V + 10 μV 0.33 mV/V + 10 μV 0.8 mV/V + 30 μV 1 mV/V + 30 μV 1.7 mV/V + 40 μV 3.3 mV/V + 0.1 mV	Direct Comparison using a characterized Fluke5700A

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Voltage - Source	220 mV to 2.2 V		Direct Comparison using a characterized Fluke5700A
	(10 to 20) Hz	0.55 mV/V + 0.1 mV	
	(20 to 40) Hz	0.17 mV/V + 30µV	
	40 Hz to 20 kHz	75 µV/V + 7 µV	
	(20 to 50) kHz	0.13 mV/V + 20 µV	
	(50 to 100) kHz	0.25 mV/V + 80 µV	
	(100 to 300) kHz	0.44 mV/V + 0.15 mV	
	(300 to 500) kHz	1.1 mV/V + 0.4 mV	
	500 kHz to 1 MHz	2.2 mV/V + 1 mV	
	(2.2 to 22) V		
	(10 to 20) Hz	0.55 mV/V + 1 mV	
	(20 to 40) Hz	0.17 mV/V + 0.3 mV	
	40 Hz to 20 kHz	75 µV/V + 70 µV	
	(20 to 50) kHz	0.13 mV/V + 0.2 mV	
	(50 to 100) kHz	0.25 mV/V + 0.4 mV	
	(100 to 300) kHz	0.55 mV/V + 1.7 mV	
	(300 to 500) kHz	1.3 mV/V + 5 mV	
	500 kHz to 1 MHz	2.8 mV/V + 9 mV	
	(22 to 220) V		
	(10 to 20) Hz	0.55 mV/V + 10 mV	
	(20 to 40) Hz	0.17 mV/V + 3 mV	
	40 Hz to 20 kHz	80 µV/V + 1 mV	
	(20 to 50) kHz	0.22 mV/V + 4 mV	
	(50 to 100) kHz	0.55 mV/V + 10 mV	
220 V to 1.1 kV			
50 Hz to 1 kHz	80 µV/V + 4 mV		
(1 to 20) kHz	0.13 mV/V + 6 mV		
(20-30) kHz	0.36 mV/V + 11 mV		
(220 to 750) V			
(30 to 50) kHz	0.36 mV/V + 11 mV		
(50 to 100) kHz	1.3 mV/V + 45 mV		



Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Voltage - Measure	(1 to 10) mV		HP 3458A Opt 002 characterized DMM
	(1 to 40) Hz	302 $\mu\text{V/V} + 3 \mu\text{V}$	
	40 Hz to 1 kHz	202 $\mu\text{V/V} + 1.1 \mu\text{V}$	
	(1 to 20) kHz	302 $\mu\text{V/V} + 1.1 \mu\text{V}$	
	(20 to 50) kHz	1 mV/V + 1.1 μV	
	(50 to 100) kHz	5 mV/V + 1.1 μV	
	(100 to 300) kHz	40 mV/V + 2 μV	
	300 kHz to 1MHz	12 mV/V + 5 μV	
	(1 to 4) MHz	70 mV/V + 7 μV	
	(4 to 8) MHz	200 mV/V + 8 μV	
	(10 to 100) mV		
	(1 to 40) Hz	72 $\mu\text{V/V} + 4 \mu\text{V}$	
	40 Hz to 1 kHz	72 $\mu\text{V/V} + 2 \mu\text{V}$	
	(1 to 20) kHz	142 $\mu\text{V/V} + 2 \mu\text{V}$	
	(20 to 50) kHz	302 $\mu\text{V/V} + 2 \mu\text{V}$	
	(50 to 100) kHz	802 $\mu\text{V/V} + 2 \mu\text{V}$	
	(100 to 300) kHz	3 mV/V + 10 μV	
	300 kHz to 1 MHz	10 mV/V + 10 μV	
	(1 to 2) MHz	15 mV/V + 10 μV	
	(2 to 4) MHz	40 mV/V + 70 μV	
	(4 to 8) MHz	40 mV/V + 80 μV	
	(8 to 10) MHz	150 mV/V + 100 μV	
	100 mV to 1 V		
	(1 to 40) Hz	72 $\mu\text{V/V} + 40 \mu\text{V}$	
	40 Hz to 1 kHz	72 $\mu\text{V/V} + 20 \mu\text{V}$	
	(1 to 20) kHz	0.14 mV/V + 20 μV	
	(20 to 50) kHz	0.3 mV/V + 20 μV	
	(50 to 100) kHz	0.8 mV/V + 20 μV	
	(100 to 300) kHz	3 mV/V + 0.1 mV	
	300 kHz to 1 MHz	10 mV/V + 0.1 mV	
(1 to 2) MHz	15 mV/V + 0.1 mV		
(2 to 4) MHz	40 mV/V + 0.7 mV		
(4 to 8) MHz	40 mV/V + 0.8 mV		
(8 to 10) MHz	150 mV/V + 1 mV		



Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Voltage - Measure	(1 to 10) V		HP 3458A Opt 002 characterized DMM
	(1 to 40) Hz	72 μ V/V + 0.4 mV	
	40 Hz to 1 kHz	72 μ V/V + 0.2 mV	
	(1 to 20) kHz	0.14 mV/V + 0.2 mV	
	(20 to 50) kHz	0.3 mV/V + 0.2 mV	
	(50 to 100) kHz	0.8 mV/V + 0.2 mV	
	(100 to 300) kHz	3 mV/V + 1 mV	
	300 kHz to 1 MHz	10 mV/V + 1 mV	
	(1 to 2) MHz	15 mV/V + 1 mV	
	(2 to 4) MHz	40 mV/V + 7 mV	
	(4 to 8) MHz	40 mV/V + 8 mV	
	(8 to 10) MHz	0.15 V/V + 10 mV	
	(10 to 100) V		
	(1 to 40) Hz	0.2 mV/V + 4 mV	
	40 Hz to 1 kHz	0.2 mV/V + 2 mV	
	(1 to 20) kHz	0.2 mV/V + 2 mV	
	(20 to 50) kHz	0.35 mV/V + 2 mV	
	(50 to 100) kHz	1.2 mV/V + 2 mV	
	(100 to 300) kHz	4 mV/V + 10 mV	
	300 kHz to 1 MHz	15 mV/V + 10 mV	
	(100 to 700) V		
(1 to 40) Hz	0.4 mV/V + 40 mV		
40 Hz to 1 kHz	0.4 mV/V + 20 mV		
(1 to 20) kHz	0.6 mV/V + 20 mV		
(20 to 50) kHz	1.2 mV/V + 20 mV		
(50 to 100) kHz	3 mV/V + 20 mV		
AC Current - Source	Up to 220 μ A		Direct Comparison using a characterized Fluke5700A
	(10 to 20) Hz	0.7 mA/A + 30 nA	
	(20 to 40) Hz	0.38 mA/A + 25 nA	
	40 Hz to 1 kHz	0.14 mA/A + 20 nA	
	(1 to 5) kHz	0.6 mA/A + 50 nA	
	(5 to 10) kHz	1.6 mA/A + 1 μ A	
	220 μ A to 2.2 mA		
	(10 to 20) Hz	0.7 mA/A + 50 nA	
	(20 to 40) Hz	0.38 mA/A + 40 nA	
	40 Hz to 1 kHz	0.14 mA/A + 40 nA	
	(1 to 5) kHz	0.6 mA/A + 0.5 μ A	
	(5 to 10) kHz	1.6 mA/A + 1 μ A	



Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Current - Source	(2.2 to 22) mA (10 to 20) Hz (20 to 40) Hz 40 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.7 mA/A + 0.5 μ A 0.38 mA/A + 0.4 μ A 0.14 mA/A + 0.4 μ A 0.6 mA/A + 5 μ A 1.6 mA/A + 10 μ A	Direct Comparison using a characterized Fluke5700A
	(22 to 220) mA (10 to 20) Hz (20 to 40) Hz 40 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz 220 mA to 2.2 A 20 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.7 mA/A + 5 μ A 0.38 mA/A + 4 μ A 0.15 mA/A + 4 μ A 0.6 mA/A + 50 μ A 1.6 mA/A + 0.1 mA 0.65 mA/A + 40 μ A 0.75 mA/A + 0.1 mA 9 mA/A + 0.2 mA	
	(2.2 to 11) A 40 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.4 mA/A + 0.17 mA 0.85 mA/A + 0.38 mA 3.3 mA/A + 0.75 mA	Fluke 5700A with 5725A
AC Current - Measure	(5 to 100) μ A (10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 1 kHz 100 μ A to 1 mA (10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 5 kHz (1 to 10) mA (10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 5 kHz	4 mA/A + 30 nA 1.5 mA/A + 30 nA 0.61 mA/A + 30 nA 0.61 mA/A + 30 nA 4 mA/A + 0.2 μ A 1.5 mA/A + 0.2 μ A 0.61 mA/A + 0.2 μ A 0.31 mA/A + 0.2 μ A 4 mA/A + 2 μ A 1.5 mA/A + 2 μ A 0.61 mA/A + 2 μ A 0.31 mA/A + 2 μ A	HP 3458A Opt 002 characterized DMM



Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Current - Measure	(10 to 100) mA (10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 5 kHz	4 mA/A + 20 μ A 1.5 mA/A + 20 μ A 0.61 mA/A + 20 μ A 0.31 mA/A + 20 μ A	HP 3458A Opt 002 characterized DMM
	100 mA to 1 A (10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 5 kHz	4 mA/A + 0.2 mA 1.6 mA/A + 0.2 mA 0.81 mA/A + 0.2 mA 1 mA/A + 0.2 mA	
Capacitance - Source 1 kHz	50 pF to 1.111 15 μ F	5.2 mF/F + 5 pF	General Radio 1412-BC Decade Capacitance Standard
	10 nF	0.55 mF/F	General Radio 1409-L Fixed Capacitance Standard
Capacitance - Source 1 kHz	100 nF	0.55 mF/F	General Radio 1409-T Fixed Capacitance Standard
	500 nF	0.55 mF/F	General Radio 1409-X Fixed Capacitance Standard
	1 μ F	0.55 mF/F	General Radio 1409-Y Fixed Capacitance Standard
Capacitance – Source 1 kHz (1 μ F Steps)	(1 to 10) μ F	2.5 mF/F	General Radio 1424-A Stepped (RSS) Capacitance Standard
Capacitance - Measure (20 to 200) Hz 200 Hz to 2 kHz (1.1 to 150) kHz	(1 to 10) pF @ 1 kHz 10 nF to 10 μ F @ 1 kHz (1 to 10) F @ 1 kHz	3 mF/F + 0.02 pF 5.1 μ F/F 10 mF/F	Direct comparison using a Electro Scientific Industries 2160 Video Bridge
Inductance - Source 1 kHz	1 mH	1.2 mH/H	General Radio 1482-E
	10 mH	1.2 mH/H	General Radio 1482-H
	100 mH	1.3 mH/H	General Radio 1482-L



Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Inductance - Measure (20 to 500) Hz 500 Hz to 10 kHz (10 to 150) kHz	(10 to 100) kH @ 1 kHz 10 mH to 10 H @ 1 kHz (10 to 100) nH @ 1 kHz	3 mH/H 0.58 mH/H 0.3 H/H + 0.02 μH	Direct comparison using a Electro Scientific Industries 2160 Video Bridge
Electrical Simulation of RTDs	(-200 to 0) °C (0 to 850) °C	0.005 % of reading + 0.1 °C 0.025 % of reading + 0.1 °C	Beamex MC5 Direct source of 2, 3 & 4-wire RTD type
Measurement of PRT Simulators	(-200 to 0) °C (0 to 850) °C	0.007 % of reading + 0.06 °C 0.025 % of reading + 0.06 °C	
Oscilloscopes Voltage Amplitude 1M Ω Load - DC or 1 kHz 50 Ω Load - DC or 1 kHz Deflection Error Readout High Amplitude Output Unterminated Risetime 50 Ω Load Risetime Fast Rise Output, 50 Ω Load 100 mVp-p to 1 Vp-p	200 μVp-p to 100 Vp-p 100 μV/Vp-p to 5 Vp-p ± 7.5 % 100 Hz to 1 MHz 100 Hz to 1 MHz 1 Hz to 1 MHz	3 mV/V + 1 μV 2.7 mV/V + 1 μV 1.2 mV/V 0.29 ms/s 2.9 ms/s 36 ms/s	Direct comparison using a PG506A calibration generator
Oscilloscopes Time Markers Marker Spacing: Error Readout	1 ns to 5 s ± 7.5 % (0% at 1 ms)	2.9 ms/s 1.2 ms/s	Direct comparison using a TG501A Time Mark Generator
Oscilloscopes Leveled Sign Wave 250 kHz to 100 MHz (100 to 250) MHz 250 kHz to 50 MHz (50 to 100) MHz (100 to 250) MHz	500 mV to 5.5 Vp-p 5 mV to 550 mVp-p	16 mV/V 43 mV/V 11 mV/V 11 mV/V 31 mV/V	Direct comparison using a SG 503 Sine-Wave Generator
500 mV to 5.5 Vp-p	(100 to 250) MHz	31 mV/V	
Waveform Characteristics Measure Amplitude Parameters Time Parameters Rise Time	Up to 500 MHz	10 mV/V 1.2 ms/s 1.2 ms/s	Direct comparison using a Digitizing Oscilloscope



Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Electrical Simulation of Thermocouples	Type B (200° to 500) °C	2 °C	Direct comparison using a Beamex MC5 Multifunction Calibrator
	(500 to 800) °C	0.8 °C	
	(800 to 1 820) °C	0.9 °C	
	Type R (-50 to 0) °C	1.1 °C	
	(0 to 150) °C	0.8 °C	
	(150 to 1 400) °C	0.5 °C	
	(1 400 to 1 768) °C	0.6 °C	
	Type S (-50 to 0) °C	1.1 °C	
	(0 to 50) °C	0.8 °C	
	(50 to 1 500) °C	0.7 °C	
	(1 500 to 1 768) °C	0.8 °C	
	Type E (-200 to 0) °C	0.08 % of reading + 0.17 °C	
	(0 to 600) °C	0.015 % of reading + 0.17 °C	
	(600 to 990) °C	0.026 % of reading + 0.1 °C	
	Type J (-200 to 0) °C	0.7 % of reading + 0.18 °C	
	(0 to 1 200) °C	0.02 % of reading + 0.18 °C	
	Type K (-200 to 0) °C	0.1 % of reading + 0.2 °C	
	(0 to 1 000) °C	0.02 % of reading + 0.2 °C	
	(1 000 to 1 372) °C	0.03 % of reading + 0.1 °C	
	Type N (-200 to -100) °C	0.2 % of reading + 0.1 °C	
	(-100 to 0) °C	0.05 % of reading + 0.25 °C	
(0 to 750) °C	0.01 % of reading + 0.25 °C		
(750 to 1 300) °C	0.03 % of reading + 0.1 °C		
Type T (-250 to -200) °C	0.8 °C		
(-200 to 0) °C	0.1 % of reading + 0.2 °C		
(0 to 390) °C	0.01 % of reading + 0.2 °C		



Length – Dimensional metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Outside Micrometers ²	(0.01 to 1) in. (>1 to 24) in.	(28 + 2.5L) μin (133 + 6.1L) μin	Direct comparison using steel gage blocks
Calipers ²	(0.05 to 4) in. (>4 to 8) in. (>8 to 24) in. (>24 to 30) in.	(21 + 2.5L) μin (45 + 2.1L) μin (133 + 6.1L) μin (160 + 8.1L) μin	Direct comparison using steel gage blocks
Height Gages ²	(0.05 to 4) in. (>4 to 8) in. (>8 to 24) in.	(21 + 2.5L) μin (45 + 2.1L) μin (133 + 6.1L) μin	

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Torque	(15 to 200) ozf in (4 to 1 000) lbf in (20 to 250) lbf ft	0.25 % of reading 0.25 % of reading 0.25 % of reading	Direct comparison on a torque CDI 5000-ST with 5000-ST / 2000-5-02 cell (CW & CCW)
Scales and Balances	200 mg 500 mg 200 g 500 g	0.03 mg 0.03 mg 1 mg 2.5 mg	Direct application of Class 2 Mass
	10 kg	100 mg	Direct application of Class 3 Mass

Calibration and Measurement Capability (CMC) is expressed in terms of the measurement parameter, measurement range, expanded uncertainty of measurement and reference standard, method, and/or equipment. The expanded uncertainty of measurement is expressed as the standard uncertainty of the measurement multiplied by a coverage factor of 2 ($k=2$), corresponding to a confidence level of approximately 95%.

Notes:

1. Scope uncertainties do not include contributors from a best existing device.
2. L = length in inches.
3. This scope is formatted as part of a single document including Certificate of Accreditation No. AC-1322.


 Vice President

