



CERTIFICATE OF ACCREDITATION

ANSI National Accreditation Board
11617 Coldwater Road, Fort Wayne, IN 46845 USA

This is to certify that

Kanawha Scales and Systems, Inc.
243 West Alexander Road
Valley Grove, WV 26060

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

ISO/IEC 17025:2017

while demonstrating technical competence in the field of

CALIBRATION

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

L1166.08-1

Certificate Number



ANAB Approval

Certificate Valid Through: 03/27/2021
Version No. 002 Issued: 03/26/2019



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



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

Kanawha Scales and Systems, Inc.

243 West Alexander Road
 Valley Grove, WV 26060
 Alex Padon
 304-464-5312

CALIBRATION

Valid to: **March 27, 2021**

Certificate Number: **L1166.08-1**

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Current ¹ Source	(0 to 202) μ A (0.2 to 2.02) mA (2 to 20.2) mA (20 to 202) mA (0.2 to 2.02) A (2 to 30) A	0.013% of reading + 0.08 μ A 0.012% of reading + 0.000 27 mA 0.006 7% of reading + 0.002 5 mA 0.008 4% of reading + 0.025 mA 0.013% of reading + 0.000 26 A 0.05% of reading + 0.002 6 A	Transmille 3041A
AC Current ¹ Source	(0 to 202) μ A (10 to 44) Hz (45 to 999) Hz (1 to 10) kHz	0.29% of reading + 0.45 μ A 0.13% of reading + 0.45 μ A 1.8% of reading + 0.45 μ A	Transmille 3041A
	(0.2 to 2.02) mA (10 to 44) Hz (45 to 999) Hz (1 to 10) kHz	0.29% of reading + 0.000 9 mA 0.12% of reading + 0.000 69 mA 1% of reading + 0.001 2 mA	
	(2 to 20.2) mA (10 to 44) Hz (45 to 999) Hz (1 to 10) kHz	0.29% of reading + 0.01 mA 0.12% of reading + 0.008 7 mA 0.67% of reading + 0.015 mA	
	(20 to 202) mA (10 to 44) Hz (45 to 999) Hz (1 to 10) kHz	0.29% of reading + 0.1 mA 0.12% of reading + 0.087 mA 0.67% of reading + 0.15 mA	
	(0.2 to 2.02) A (10 to 44) Hz (45 to 999) Hz (1 to 10) kHz	0.29% of reading + 0.000 9 A 0.13% of reading + 0.000 69 A 0.84% of reading + 0.001 2 A	



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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Current ¹ Source	(2 to 30) A (30 to 44) Hz (45 to 99) Hz (100 to 1) kHz	0.25% of reading + 0.01 A 0.059% of reading + 0.006 2 A 0.42% of reading + 0.009 7 A	Transmille 3041A
DC Current ¹ Measure	300 μA 3 mA 30 mA 300 mA 1 A	240 nA 2 μA 20 μA 65 μA 2.1 mA	Hewlett Packard 3457A
AC Current ¹ Measure	(0 to 30) mA (10 to 44) Hz (45 to 999) Hz (1 to 10) kHz	31 μA 28 μA 21 μA	
	(30 to 300) mA (10 to 44) Hz (45 to 999) Hz (1 to 10) kHz	180 μA 270 μA 270 μA	
	(0.3 to 3) A (10 to 44) Hz (45 to 999) Hz (1 to 10) kHz	1.6 mA 20 mA 20 mA	
Resistance RTD Simulation 3 Wire Configuration ¹ Pt 50 Pt 100 Pt 200 Pt 500 Pt 1 000 D 100 D 100 Ni 100 Ni 120 Cu 10	(-200 to 850) °C (-200 to 850) °C (-200 to 850) °C (-200 to 850) °C (-200 to 400) °C (-200 to 510) °C (510 to 645) °C (-60 to 250) °C (-80 to 260) °C (-200 to 850) °C	1.1 °C 0.8 °C 1 °C 0.8 °C 0.7 °C 0.7 °C 0.7 °C 0.7 °C 0.8 °C 2.4 °C	Druck TRX-II; Electronic Calibration of Temperature Indicating Devices



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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Resistance RTD Simulation 4 Wire Configuration ¹ Pt 50 Pt 100 Pt 200 Pt 500 Pt 1 000 D 100 D 100 Ni 100 Ni 120 Cu 10	(-200 to 850) °C (-200 to 850) °C (-200 to 850) °C (-200 to 850) °C (-200 to 400) °C (-200 to 510) °C (510 to 645) °C (-60 to 250) °C (-80 to 260) °C (-200 to 850) °C	0.8 °C 0.7 °C 0.9 °C 0.8 °C 0.6 °C 0.7 °C 0.7 °C 0.6 °C 0.6 °C 2.4 °C	Druck TRX-II; Electronic Calibration of Temperature Indicating Devices
Resistance 2 Wire Configuration ¹ Source	0 Ω 0.1 Ω 1 Ω 10 Ω 100 Ω 1 kΩ 10 kΩ 100 kΩ 1 MΩ 10 MΩ 100 MΩ 1 000 MΩ	0.006 Ω 0.006 Ω 0.006 4 Ω 0.009 5 Ω 0.034 Ω 0.000 31 kΩ 0.003 1 kΩ 0.03 kΩ 0.000 4 MΩ 0.007 5 MΩ 0.71 MΩ 16 MΩ	Transmille 3041A
Resistance 4 Wire Configuration ¹ Measure	30 Ω 300 Ω 3 kΩ 30 kΩ 300 kΩ 3 MΩ 30 MΩ	640 uΩ 1.9 mΩ 10 mΩ 91 mΩ 1.2 Ω 30 Ω 610 Ω	Hewlett Packard 3457A
DC Voltage ¹ Source	(0 to 202) mV (0.2 to 2.02) V (2 to 20.2) V (20 to 202) V (200 to 1 025) V	0.003 6% of reading + 0.034 mV 0.003 6% of reading + 0.000 21 mV 0.003% of reading + 0.002 mV 0.003 6% of reading + 0.02 mV 0.003 6% of reading + 0.2 mV	Transmille 3041A



ANSI National Accreditation Board

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Voltage ¹ Measure	(0 to 30) mV	10 μ V	Hewlett Packard 3457A
	(0 to 300) mV	3.3 μ V	
	(0 to 3) V	52 μ V	
	(0 to 30) V	300 μ V	
	(0 to 300) V	21 mV	
Thermocouple Millivolt Simulation ¹	Type K (-270 to 1 370) °C	1.3 °C	Druck TRX-II; Electronic Calibration of Temperature Indicating Devices
	Type J (-210 to 1 200) °C	0.7 °C	
	Type T (-270 to 400) °C	0.8 °C	
	Type B (50 to 1 820) °C	2.5 °C	
	Type R (-50 to 1 769) °C	1.9 °C	
	Type S (-50 to 1 769) °C	1.6 °C	
	Type E (-270 to 1 500) °C	0.8 °C	
	Type C (-150 to 2 320) °C	1.3 °C	
	Type D (0 to 2 495) °C	2.2 °C	
AC Voltage Source ¹	(20.2 to 202) mV		Transmille 3041A
	(10 to 45) Hz	0.28 % of reading + 0.074 mV	
	(45 to 1 000) Hz	0.04 % of reading + 0.048 mV	
	(1 to 20) kHz	0.11 % of reading + 0.057 mV	
	(20 to 100) kHz	0.28 % of reading + 0.65 mV	
	(100 to 500) kHz	0.86 % of reading + 0.76 mV	
	(0.202 to 2.02) V		
	(10 to 45) Hz	0.28 % of reading + 0.59 mV	
	(45 to 1 000) Hz	0.046 % of reading + 0.18 mV	
	(1 to 20) kHz	0.089 % of reading + 0.35 mV	
	(20 to 100) kHz	0.27 % of reading + 5.1 mV	
	(100 to 500) kHz	0.6 % of reading + 6.3 mV	
	(2.02 to 20.2) V		
	(10 to 45) Hz	0.29 % of reading + 4.4 mV	
	(45 to 1 000) Hz	0.041 % of reading + 2.3 mV	
	(1 to 20) kHz	0.073 % of reading + 3.7 mV	
(20 to 100) kHz	0.25 % of reading + 55 mV		
(20.2 to 202) V			
(30 to 45) Hz	0.057 % of reading + 44 mV		
(45 to 1 000) Hz	0.043 % of reading + 21 mV		
(1 to 20) kHz	0.11 % of reading + 58 mV		



Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Voltage Source ¹	(202 to 1 020) V (30 to 45) Hz (45 to 1 000) Hz (1 to 10) kHz	0.06 % of reading + 310 mV 0.048 % of reading + 93 mV 0.19 % of reading + 480 mV	Transmille 3041A
AC Voltage Measure ¹	(0 to 30) mV (20 to 45) Hz (46 to 100) Hz (101 to 20) kHz	32 μV 97 μV 5.6 μV	Hewlett Packard 3457A
	(0 to 300) mV (20 to 45) Hz (46 to 100) Hz (101 to 20) kHz	130 μV 90 μV 130 μV	
	(0 to 3) V (20 to 45) Hz (46 to 100) Hz (101 to 20) kHz	11 mV 1.4 mV 1.6 mV	
	(0 to 30) V (20 to 45) Hz (46 to 100) Hz (101 to 20) kHz	14 mV 9.9 mV 14 mV	
	(0 to 300) V (20 to 45) Hz (46 to 100) Hz (101 to 20) kHz	120 mV 79 mV 120 mV	

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Tape Measure ¹	(0 to 100) ft	0.149 in	Comparison with Standard Gage Blocks / Rule Standard
Steel Rules ¹	(0 to 72) in	0.011 in	
Length Standards	(0 to 18) in	260 μin	Comparison with Length Standards & OD Micrometer
	(19 to 48) in	930 μin	
	(49 to 70) in	0.001 43 in	
	(71 to 90) in	0.001 74 in	



Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Dial / Digital Indicator ¹	(0 to 2) in	150 μin	Gage Blocks
Outside Micrometers ¹	(0 to 12) in (12 to 48) in	840 μin 0.003 4 in	Gage Blocks
Inside Micrometers ¹	(0 to 1) in (2 to 48) in	129 μin 740 μin	Ring Gages
Depth Micrometers ¹	(0 to 12) in	880 μin	Depth Master
Calipers ¹	(0 to 12) in (12 to 48) in	500 μin 0.001 7 in	Gage Blocks
Height Gages ¹	(0 to 24) in (24 to 48) in	240 μin 0.001 2 in	Gage Blocks and Surface Plate

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Air Speed ¹	(30 to 4 000) fpm	12.1 fpm + 5% of Reading	Hot Wire Anemometer
Airflow ¹	(0 to 200) ft ³ /min	1.2 ft ³ /min + 5% of Reading	
Oven Air Exchanges ¹	(0 to 1) m ³ /min	0.055 m ³ /min	ASTM E145
Pressure/Vacuum Gages ¹	(0 to 65) psia	0.002 5 % rdg + 0.000 78 psi	ASME B40.100 Mensor CPC 6000 Fluke P3114-PSI
	(0 to 1 000) psi	0.002 1 % rdg + 0.003 8 psi	
	(200 to 10 000) psi	0.008 % rdg + 0.061 psi	
Torque Wrench ¹	(4 to 50) lbf·in	0.75 % of reading	CDI Torque Calibration System
	(30 to 400) lbf·in	0.75 % of reading	
	(80 to 1000) lbf·in	0.75 % of reading	
	(20 to 250) lbf·ft	0.75 % of reading	
	(60 to 600) lbf·ft	0.75 % of reading	



Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Class F Mass Standards (Test Weights)	500 mg	13 µg	Mass Comparison using Modified Substitution
	1 g	16 µg	
	2 g	30 µg	
	3 g	42 µg	
	5 g	42 µg	
	10 g	65 µg	
Class F Mass Standards (Test Weights)	20 g	66 µg	Mass Comparison using Modified Substitution
	30 g	0.104 mg	
	50 g	0.145 mg	
	100 g	0.317 mg	
	200 g	0.432 mg	
	300 g	1.13 mg	
	500 g	1.11 mg	
	1 kg	10 mg	
	2 kg	14 mg	
	3 kg	16 mg	
	5 kg	91 mg	
	6 kg	92 mg	
	7 kg	94 mg	
	8 kg	95 mg	
	10 kg	96 mg	
	20 kg	121 mg	
30 kg	151 mg		



Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Class F Mass Standards (Test Weights)	0.5 lb	1.4 mg	Mass Comparison using Modified Substitution
	1 lb	1.7 mg	
	2 lb	9.4 mg	
	3 lb	9.6 mg	
	4 lb	9.8 mg	
	5 lb	10.5 mg	
	10 lb	15.3 mg	
	15 lb	95.4 mg	
	20 lb	118.7 mg	
	25 lb	105 mg	
	30 lb	112 mg	
	50 lb	147 mg	
	10 000 lb	0.26 lb	
Weight Cart NIST HB 105-8 Table 1. Tolerances	10 200 lb	0.91 lb	
Weighing Systems (0.000 001 g Resolution)	Up to 5 g	0.000 039 g	ASTM E617 Class 1 Weights and NIST Handbook 44 utilized for the calibration of the Weighing System
(0.000 001 g Resolution)	(5 to 6) g	0.000 078 g	
(0.000 001 g Resolution)	(6 to 25) g	0.000 125 g	
(0.000 001 g Resolution)	(25 to 50) g	0.000 138 g	
(0.000 001 g Resolution)	(50 to 100) g	0.000 289 g	
(0.000 002 g Resolution)	Up to 25 g	0.000 125 g	
(0.000 002 g Resolution)	(25 to 100) g	0.000 289 g	
(0.000 01 g Resolution)	Up to 5 g	0.000 041 g	



Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Weighing Systems (0.000 01 g Resolution)	(5 to 25) g	0.000 125 g	ASTM E617 Class 1 Weights and NIST Handbook 44 utilized for the calibration of the Weighing System
(0.000 01 g Resolution)	(25 to 50) g	0.000 139 g	
(0.000 01 g Resolution)	(50 to 100) g	0.000 289 g	
(0.000 01 g Resolution)	(100 to 200) g	0.000 577 g	
(0.000 02 g Resolution)	Up to 25 g	0.000 093 g	
(0.000 02 g Resolution)	(25 to 50) g	0.000 141 g	
(0.000 02 g Resolution)	(50 to 100) g	0.000 290 g	
(0.000 1 g Resolution)	Up to 25 g	0.000 18 g	
(0.000 1 g Resolution)	(25 to 50) g	0.000 19 g	
(0.000 1 g Resolution)	(50 to 100) g	0.000 32 g	
(0.000 1 g Resolution)	(100 to 200) g	0.000 59 g	
(0.000 2 g Resolution)	Up to 50 g	0.000 29 g	
(0.000 2 g Resolution)	(50 to 200) g	0.000 63 g	
(0.000 5 g Resolution)	Up to 200 g	0.000 87 g	
(0.001 g Resolution)	Up to 100 g	0.001 3 g	
(0.001 g Resolution)	(100 to 200) g	0.001 4 g	
(0.002 g Resolution)	(100 to 200) g	0.002 6 g	
(0.002 g Resolution)	(200 to 500) g	0.002 9 g	
(0.005 g Resolution)	Up to 500 g	0.006 6 g	
(0.005 g Resolution)	(500 to 1 000) g	0.007 1 g	
(0.01 g Resolution)	Up to 1 000 g	0.013 g	
(0.01 g Resolution)	(1 000 to 10 000) g	0.032 g	



Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Weighing Systems (0.02 g Resolution)	Up to 2 000 g	0.026 g	ASTM E617 Class 1 Weights and NIST Handbook 44 utilized for the calibration of the Weighing System
(0.02 g Resolution)	(2 000 to 5 000) g	0.029 g	
(0.1 g Resolution)	Up to 10 000 g	0.13 g	
(0.1 g Resolution)	(10 000 to 50 000) g	0.19 g	
(0.2 g Resolution)	Up to 20 000 g	0.26 g	
(0.2 g Resolution)	(20 000 to 50 000) g	0.30 g	
(0.5 g Resolution)	Up to 25 000 g	0.65 g	
(0.5 g Resolution)	(25 000 to 50 000) g	0.66 g	
(0.000 001 g Resolution)	Up to 5 g	0.000 062 g	ASTM E617 Class 2 Weights and NIST Handbook 44 utilized for the calibration of the Weighing System
(0.000 001 g Resolution)	(5 to 6) g	0.000 125 g	
(0.000 001 g Resolution)	(6 to 10) g	0.000 085 g	
(0.000 001 g Resolution)	(0.05 to 25) g	0.000 178 g	
(0.000 001 g Resolution)	(25 to 50) g	0.000 029 g	
(0.0000 01 g Resolution)	(50 to 100) g	0.000 577 g	
(0.000 002 g Resolution)	Up to 10 g	0.000 085 g	
(0.000 002 g Resolution)	(10 to 25) g	0.000 178 g	
(0.000 002 g Resolution)	(25 to 50) g	0.000 289 g	
(0.000 002 g Resolution)	(50 to 100) g	0.000 577 g	
(0.000 01 g Resolution)	Up to 5 g	0.000 064 g	
(0.000 01 g Resolution)	(5 to 25) g	0.000 178 g	
(0.000 01 g Resolution)	(25 to 50) g	0.000 289 g	
(0.000 01 g Resolution)	(50 to 100) g	0.000 577 g	



Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Weighing Systems (0.000 01 g Resolution)	(100 to 200) g	0.001 154 g	ASTM E617 Class 2 Weights and NIST Handbook 44 utilized for the calibration of the Weighing System
(0.000 02 g Resolution)	Up to 25) g	0.000 18 g	
(0.000 02 g Resolution)	(25 to 50) g	0.000 29 g	
(0.000 02 g Resolution)	(50 to 100) g	0.000 578 g	
(0.000 02 g Resolution)	(100 to 200) g	0.001 154 g	
(0.000 1 g Resolution)	Up to 25 g	0.000 22 g	
(0.000 1 g Resolution)	(25 to 50) g	0.000 32 g	
(0.000 1 g Resolution)	(50 to 100) g	0.000 59 g	
(0.000 1 g Resolution)	(100 to 200) g	0.001 16 g	
(0.000 2 g Resolution)	Up to 50 g	0.000 39 g	
(0.000 2 g Resolution)	(50 to 200) g	0.001 18 g	
(0.000 5 g Resolution)	(25 to 100) g	0.000 87 g	
(0.000 5 g Resolution)	(100 to 200) g	0.001 32 g	
(0.001 g Resolution)	Up to 50 g	0.001 32 g	
(0.001 g Resolution)	(50 to 100) g	0.001 4 g	
(0.005 g Resolution)	Up to 100) g	0.006 5 g	
(0.005 g Resolution)	(100 to 200) g	0.006 6 g	
(0.005 g Resolution)	(200 to 500) g	0.007 1 g	
(0.000 2 lb Resolution)	(.02 to 2) lb	0.000 35 lb	NIST Class F and/or ASTM E617 Class 6 Weights and NIST Handbook 44 utilized for the calibration of the Weighing System
(0.000 5 lb Resolution)	Up to 5 lb	0.000 87 lb	
(0.001 lb Resolution)	Up to 10 lb	0.001 7 lb	
(0.002lb Resolution)	Up to 20 lb	0.003 5 lb	



Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Weighing Systems (0.005 lb Resolution)	Up to 50 lb	0.008 7 lb	NIST Class F and/or ASTM E617 Class 6 Weights and NIST Handbook 44 utilized for the calibration of the Weighing System
(0.01 lb Resolution)	Up to 100 lb	0.017 lb	
(0.02 lb Resolution)	Up to 200 lb	0.035 lb	
(0.05 lb Resolution)	Up to 500 lb	0.078 lb	
(0.1 lb Resolution)	Up to 1 000 lb	0.16 lb	
(0.2 lb Resolution)	Up to 2 000 lb	0.31 lb	
(0.5 lb Resolution)	Up to 5 000 lb	0.71 lb	
(1 lb Resolution)	Up to 5 000 lb	1.3 lb	
(1 lb Resolution)	(5 000 to 10 000) lb	1.4 lb	
(2 lb Resolution)	Up to 10 000 lb	2.6 lb	
(2 lb Resolution)	(10 000 to 20 000) lb	2.8 lb	
(5 lb Resolution)	Up to 50 000 lb	6.6 lb	
(10 lb Resolution)	Up to 100 000 lb	13.2 lb	
(20 lb Resolution)	Up to 200 000 lb	26 lb	
(50 lb Resolution)	Up to 500 000 lb	65.2 lb	
(100 lb Resolution)	Up to 500 000 lb	129.4 lb	
(200 lb Resolution)	Up to 500 000 lb	258.5 lb	
(0.001 g Resolution)	Up to 10 g	0.001 7 g	
(0.002 g Resolution)	Up to 20 g	0.003 5 g	
(0.005 g Resolution)	Up to 50 g	0.008 7 g	
(0.01 g Resolution)	Up to 100 g	0.017 g	
(0.02 g Resolution)	Up to 200 g	0.035 g	



Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
(Weighing Systems 0.05 g Resolution)	Up to 500 g	0.087 g	NIST Class F and/or ASTM E617 Class 6 Weights and NIST Handbook 44 utilized for the calibration of the Weighing System
(0.1 g Resolution)	Up to 1 000 g	0.17 g	
(0.2 g Resolution)	Up to 2 000 g	0.35 g	
(0.5 g Resolution)	Up to 5 000 g	0.87 g	
(1 g Resolution)	Up to 1 000 g	1.7 g	
(2 g Resolution)	Up to 20 000 g	3.5 g	
(5 g Resolution)	Up to 50 000 g	8.7 g	
(10 g Resolution)	Up to 100 000 g	17.3 g	
(20 g Resolution)	Up to 200 kg	31.1 g	
(50 g Resolution)	Up to 500 kg	77.7 g	
(0.1 kg Resolution)	Up to 10 kg	0.16 kg	
(0.2 kg Resolution)	Up to 20 kg	0.28 kg	
(0.5 kg Resolution)	Up to 50 kg	0.71 kg	
(1 kg Resolution)	Up to 100 kg	1.4 kg	
(2 kg Resolution)	Up to 200 kg	2.8 kg	
(5 kg Resolution)	Up to 500 kg	6.6 kg	
(10 kg Resolution)	Up to 1 000 kg	13.2 kg	

Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Humidity Indicators ¹	(10 to 90) % RH	3% RH	Thermohygrometer



Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Temperature Measure ¹	(-77 to 550) °C	0.18 °C	SPRT Standards Venus Stirred Liquid Bath ASL Bath
Liquid in Glass Thermometers ¹	(0 to 140) °C	0.23 °C	Isotech TTI-7 Indicator SPRT Standards Venus Stirred Liquid Bath
Ovens, Furnaces, Freezers ¹	(0 to 250) °C	0.7 °C	ASTM E145

Time and Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Stopwatches	elapsed time up to 24 hours	0.07 sec	NIST WWVB signal
Oven Time Constant ¹	(0 to 1 200) sec	0.26 sec	ASTM E145
Frequency Sourcing	100 Hz 1 KHz 10 KHz 20 KHz 50 KHz 100 KHz	1 mHz 7 mHz 20 mHz 40 mHz 40 mHz 100 mHz	Transmille 3041A
Frequency Measure ¹	(10 to 400) Hz	5 mHz	Hewlett Packard 3457A
	400 Hz to 1.5 MHz	48 mHz	

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. On-site calibration service is available for this parameter, since on-site conditions are typically more variable than those in the laboratory, larger measurement uncertainties are expected on-site than what is reported on the accredited scope.
2. Industrial Scales include but not limited to lab balances, bench and floor scales, tank and hopper scales and vehicle scales
3. Laboratory offers custom (specific scale) uncertainty budget when requested by client
4. This scope is formatted as part of a single document including Certificate of Accreditation No. L1166.08-1.


 Vice President

