CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

System Scale Corporation

10157 Williams Lane
Walker, LA 70785

Fulfills the requirements of

ISO/IEC 17025:2017

and national standard

ANSI/NCSL Z540-1-1994 (R2002)

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

Jason Stine, Vice President

Expiry Date: 01 February 2027
Certificate Number: AC-1756.09

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).

ANAB
ANSI National Accreditation Board

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

AND

ANSI/NCSL Z540-1-1994 (R2002)

System Scale Corporation

10157 Williams Lane
Walker, LA 70785
Sean Rainey 501-562-2900 srainey@system-scale.com

CALIBRATION

Valid to: **February 1, 2027** Certificate Number: **AC-1756.09**

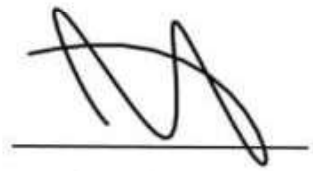
Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Scales and Balances [1,2] (SI)	Up to 100 g (100 to 200) g (200 to 500) g (500 to 1 000) g (1 to 5) kg (5 to 10) kg (10 to 325) kg	0.000 25 % of reading + 55 µg 0.000 27 % of reading + 45 µg 0.000 27 % of reading + 64 µg 0.000 32 % of reading - 0.23 mg 0.000 28 % of reading + 0.39 mg 0.000 3 % of reading - 1.1 mg 0.012 % of reading	ASTM E617 Class 1, 6, 7, and NIST Class F weights utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.
Scales and Balances [1,2] (Avoirdupois)	Up to 5 lb (5 to 30) lb (30 to 100) lb (100 to 500) lb (500 to 1 000) lb (1 000 to 5 000) lb (5 000 to 10 000) lb (10 000 to 20 000) lb (20 000 to 50 000) lb (50 000 to 200 000) lb	0.018 % of reading + 0.000 01 lb 0.013 % of reading - 0.000 13 lb 0.012 % of reading + 0.000 3 lb 0.012 % of reading + 0.001 7 lb 0.011 % of reading + 0.016 lb 0.012 % of reading + 0.016 lb 0.013 % of reading + 0.01 lb 0.012 % of reading + 0.23 lb 0.012 % of reading + 0.5 lb 0.03 % of reading - 8.8 lb	ASTM E617 Class 1, 6, 7, and NIST Class F weights utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.

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:

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2. The CMC for scales and balances is highly dependent upon the resolution of the unit under test. The CMC presented here does not include the resolution of the unit under test. The resolution will be included in the reported measurement uncertainty at the time of calibration.
3. This scope is formatted as part of a single document including Certificate of Accreditation No. AC-1756.09.



Jason Stine, Vice President

CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

System Scale Corporation

2212 N. Yellowood Avenue
Broken Arrow, OK 74012

Fulfills the requirements of

ISO/IEC 17025:2017

and national standard

ANSI/NCSL Z540-1-1994 (R2002)

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

Jason Stine, Vice President

Expiry Date: 01 February 2027
Certificate Number: AC-1756.02

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

AND

ANSI/NCSL Z540-1-1994 (R2002)

System Scale Corporation

2212 N. Yellowood Avenue
Broken Arrow, OK 74012
Sean Rainey 501-562-2900 srainey@system-scale.com

CALIBRATION

Valid to: **February 1, 2027** Certificate Number: **AC-1756.02**

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Scales and Balances [1,2] (SI)	Up to 100 g (100 to 200) g (200 to 500) g (500 to 1 000) g (1 to 5) kg (5 to 10) kg (10 to 325) kg	0.000 25 % of reading + 55 µg 0.000 27 % of reading + 45 µg 0.000 27 % of reading + 64 µg 0.000 32 % of reading - 0.23 mg 0.000 28 % of reading + 0.39 mg 0.000 3 % of reading - 1.1 mg 0.012 % of reading	ASTM E617 Class 1, 6, 7, and NIST Class F weights utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.
Scales and Balances [1,2] (Avoirdupois)	Up to 5 lb (5 to 30) lb (30 to 100) lb (100 to 500) lb (500 to 1 000) lb (1 000 to 5 000) lb (5 000 to 10 000) lb (10 000 to 20 000) lb (20 000 to 50 000) lb (50 000 to 200 000) lb	0.018 % of reading + 0.000 01 lb 0.013 % of reading - 0.000 13 lb 0.012 % of reading + 0.000 3 lb 0.012 % of reading + 0.001 7 lb 0.011 % of reading + 0.016 lb 0.012 % of reading + 0.016 lb 0.013 % of reading + 0.01 lb 0.012 % of reading + 0.23 lb 0.012 % of reading + 0.5 lb 0.03 % of reading - 8.8 lb	ASTM E617 Class 1, 6, 7, and NIST Class F weights utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.

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:

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2. The CMC for scales and balances is highly dependent upon the resolution of the unit under test. The CMC presented here does not include the resolution of the unit under test. The resolution will be included in the reported measurement uncertainty at the time of calibration.
3. This scope is formatted as part of a single document including Certificate of Accreditation No. AC-1756.02.

Jason Stine, Vice President

CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

System Scale Corporation

7645 Houston Rd
Byron, GA 31008

Fulfills the requirements of

ISO/IEC 17025:2017

and national standard

ANSI/NCSL Z540-1-1994 (R2002)

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

Jason Stine, Vice President

Expiry Date: 24 May 2028
Certificate Number: AC-1756.13

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

AND

ANSI/NCSL Z540-1-1994 (R2002)

System Scale Corporation
7645 Houston Rd
Byron, GA 31008
Sean Rainey 501-562-2900 srainey@system-scale.com

CALIBRATION

ISO/IEC 17025 Accreditation Granted: **24 February 2026**

Certificate Number: **AC-1756.13** Certificate Expiry Date: **24 May 2028**

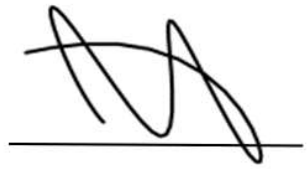
Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Scales and Balances [1,2]	(0 to 100) g (100 to 200) g (200 to 500) g (500 to 1 000) g (1 000 to 5 000) g (5 000 to 10 000) g (10 to 325) kg	0.000 25 % of reading + 55 µg 0.000 27 % of reading + 45 µg 0.000 27 % of reading + 64 µg 0.000 32 % of reading – 0.23 mg 0.000 28 % of reading + 0.39 mg 0.000 3 % of reading 0.012 % of reading	ASTM E617 Class 1, Class 6, Class 7 weights; NIST Class F weights; utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.
Scales [1,2]	(0 to 5) lb (5 to 30) lb (30 to 100) lb (100 to 500) lb (500 to 1 000) lb (1 000 to 5 000) lb (5 000 to 10 000) lb (10 000 to 20 000) lb (20 000 to 50 000) lb (50 000 to 200 000) lb	0.018 % of reading + 0.000 01 lb 0.013 % of reading -0.000 13 lb 0.012 % of reading + 0.000 3 lb 0.012 % of reading + 0.001 7 lb 0.011 % of reading + 0.016 lb 0.012 % of reading + 0.016 lb 0.013 % of reading + 0.009 6 lb 0.012 % of reading + 0.23 lb 0.012 % of reading + 0.5 lb 0.03 % of reading	ASTM E617 Class 1, Class 6, Class 7 weights; NIST Class F weights; utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.

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Jason Stine, Vice President

1899 L Street NW, Suite 1100-A, Washington, DC 20036
414-501-5494
www.anab.org

CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

System Scale Corporation
659 Henderson Dr. Suite H
Cartersville, GA 30120

Fulfills the requirements of

ISO/IEC 17025:2017

and national standard

ANSI/NCSL Z540-1-1994 (R2002)

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

Jason Stine, Vice President
Expiry Date: 24 May 2028
Certificate Number: AC-1756-11

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

AND

ANSI/NCSL Z540-1-1994 (R2002)

System Scale Corporation
659 Henderson Dr. Suite H
Cartersville, GA 30120
Sean Rainey 501-454-9498 srainey@system-scale.com

CALIBRATION

ISO/IEC 17025 Accreditation Granted: **22 April 2026**

Certificate Number: **AC-1756.11** Certificate Expiry Date: **24 May 2028**

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Scales and Balances [1,2] (SI)	Up to 100 g (100 to 200) g (200 to 500) g (500 to 1 000) g (1 to 5) kg (5 to 10) kg (10 to 325) kg	0.000 25 % of reading + 55 µg 0.000 27 % of reading + 45 µg 0.000 27 % of reading + 64 µg 0.000 32 % of reading - 0.23 mg 0.000 28 % of reading + 0.39 mg 0.000 3 % of reading - 1.1 mg 0.012 % of reading	ASTM E617 Class 1, 6, 7, and NIST Class F weights utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.
Scales and Balances [1,2] (Avoirdupois)	Up to 5 lb (5 to 30) lb (30 to 100) lb (100 to 500) lb (500 to 1 000) lb (1 000 to 5 000) lb (5 000 to 10 000) lb (10 000 to 20 000) lb (20 000 to 50 000) lb (50 000 to 200 000) lb	0.018 % of reading + 0.000 01 lb 0.013 % of reading - 0.000 13 lb 0.012 % of reading + 0.000 3 lb 0.012 % of reading + 0.001 7 lb 0.011 % of reading + 0.016 lb 0.012 % of reading + 0.016 lb 0.013 % of reading + 0.01 lb 0.012 % of reading + 0.23 lb 0.012 % of reading + 0.5 lb 0.03 % of reading - 8.8 lb	ASTM E617 Class 1, 6, 7, and NIST Class F weights utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.

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Jason Stine, Vice President

1899 L Street NW, Suite 1100-A, Washington, DC 20036
414-501-5494
www.anab.org

CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

System Scale Corporation

1429 5th Avenue
Columbus, GA 31901

Fulfills the requirements of

ISO/IEC 17025:2017

and national standard

ANSI/NCSL Z540-1-1994 (R2002)

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

Jason Stine, Vice President

Expiry Date: 24 May 2028
Certificate Number: AC-1756.14

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

AND

ANSI/NCSL Z540-1-1994 (R2002)

System Scale Corporation
1429 5th Avenue
Columbus, GA 31901
Sean Rainey 501-562-2900 srainey@system-scale.com

CALIBRATION

ISO/IEC 17025 Accreditation Granted: **24 February 2026**

Certificate Number: **AC-1756.14** Certificate Expiry Date: **24 May 2028**

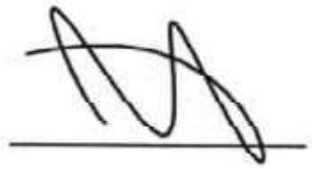
Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Scales and Balances [1,2]	(0 to 100) g (100 to 200) g (200 to 500) g (500 to 1 000) g (1 000 to 5 000) g (5 000 to 10 000) g (10 to 325) kg	0.000 25 % of reading + 55 µg 0.000 27 % of reading + 45 µg 0.000 27 % of reading + 64 µg 0.000 32 % of reading – 0.23 mg 0.000 28 % of reading + 0.39 mg 0.000 3 % of reading 0.012 % of reading	ASTM E617 Class 1, Class 6, Class 7 weights; NIST Class F weights; utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.
Scales [1,2]	(0 to 5) lb (5 to 30) lb (30 to 100) lb (100 to 500) lb (500 to 1 000) lb (1 000 to 5 000) lb (5 000 to 10 000) lb (10 000 to 20 000) lb (20 000 to 50 000) lb (50 000 to 200 000) lb	0.018 % of reading + 0.000 01 lb 0.013 % of reading -0.000 13 lb 0.012 % of reading + 0.000 3 lb 0.012 % of reading + 0.001 7 lb 0.011 % of reading + 0.016 lb 0.012 % of reading + 0.016 lb 0.013 % of reading + 0.009 6 lb 0.012 % of reading + 0.23 lb 0.012 % of reading + 0.5 lb 0.03 % of reading	ASTM E617 Class 1, Class 6, Class 7 weights; NIST Class F weights; utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.

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Jason Stine, Vice President

1899 L Street NW, Suite 1100-A, Washington, DC 20036
414-501-5494
www.anab.org

CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

System Scale Corporation
4901 N. St. Joseph Avenue
Evansville, IN 47720

Fulfills the requirements of

ISO/IEC 17025:2017

and national standard

ANSI/NCSL Z540-1-1994 (R2002)

In the fields of

CALIBRATION and DIMENSIONAL MEASUREMENT

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

Jason Stine, Vice President
Expiry Date: 17 May 2028
Certificate Number: AC-1756.15

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

AND

ANSI/NCSL Z540-1-1994 (R2002)

System Scale Corporation
4901 N. St. Joseph Avenue
Evansville, IN 47720
Sean Rainey 501-562-2900 srainey@system-scale.com

CALIBRATION AND DIMENSIONAL MEASUREMENT

ISO/IEC 17025 Accreditation Granted: **22 April 2026**

Certificate Number: **AC-1756.15** Certificate Expiry Date: **17 May 2028**

Acoustics and Vibration

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Sound Level Meters	1 kHz 94 dB 114 dB	 0.6 dB 0.6 dB	Comparison to Sound Level Calibrator

Chemical Quantities

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
pH Meters [4]	4 pH 7 pH 10 pH	0.032 pH 0.028 pH 0.02 pH	Comparison to Accredited pH Buffer Solutions
Conductivity Meters [4]	10 µs/cm 100 µS/cm 1 000 µS/cm 1 413 µS/cm 10 000 µS/cm 100 000 µS/cm	0.62 µs/cm 2.3 µS/cm 4.7 µS/cm 4.6 µS/cm 52 µS/cm 430 µS/cm	Comparison to Conductivity Solutions

Chemical Quantities

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Viscosity Measuring Equipment (Viscosity Cups, Viscometer, Rheometer)	Up to 60 000 cSt	2.9 % of reading	Comparison to Viscosity Standards, Stopwatch
Volumetric Dispensers	(1 to 100) mL (1 to 1 000) mL	0.063 mL 0.075 mL	ASTM E 542-01 and OEM validated procedures using Analytical Balance.

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Voltage – Source [1]	Up to 330 mV (0.33 to 3.3) V (3.3 to 33) V (33 to 330) V (100 to 1 000) V	16 µV/V + 1 µV 9 µV/V + 2 µV 10 µV/V + 16 µV 14 µV/V + 0.12 mV 15 µV/V + 1.2 mV	Comparison to Multiproduct Calibrator
DC Voltage – Measure [1]	Up to 100 mV (0.1 to 1) V (1 to 10) V (10 to 100) V (100 to 1 000) V	0.002 9 % of reading + 3.5 µV 0.002 % of reading + 7 µV 0.001 9 % of reading + 50 µV 0.003 % of reading + 0.6 mV 0.003 2 % of reading + 10 mV	Comparison to Precision Digital Multimeter
DC Current – Source [1]	Up to 330 µA (0.33 to 3.3) mA (3.3 to 33) mA (33 to 330) mA (0.33 to 1.1) A (1.1 to 3) A (3 to 11) A (11 to 20.5) A	0.12 mA/A + 20 nA 0.1 mA/A + 40 nA 79 µA/A + 0.2 µA 83 µA/A + 1.9 µA 0.16 mA/A + 31 µA 0.3 mA/A + 31 µA 0.39 mA/A + 0.4 mA 0.78 mA/A + 0.6 mA	Comparison to Multiproduct Calibrator
DC Current – Source for Clamp-on Current Meters [1]	(20 to 50) A (50 to 150) A (150 to 550) A (550 to 1 025) A	11 % of reading + 0.14 A 4.4 % of reading + 0.14 A 4.6 % of reading + 0.5 A 4.4 % of reading + 0.5 A	Comparison to Multiproduct Calibrator, 50-turn Coil

1899 L Street NW, Suite 1100-A, Washington, DC 20036
414-501-5494
www.anab.org

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Current – Measure [1]	Up to 100 µA (0.1 to 1) mA (1 to 10) mA (10 to 100) mA (100 to 400) mA (0.4 to 1) A (1 to 3) A (3 to 10) A	0.039 % of reading + 25 nA 0.039 % of reading + 50 nA 0.039 % of reading + 2 µA 0.039 % of reading + 5 µA 0.039 % of reading + 20 µA 0.039 % of reading + 0.2 mA 0.078 % of reading + 0.6 mA 0.12 % of reading + 0.8 mA	Comparison to Precision Digital Multimeter
Resistance – Source [1] (Simulation)	Up to 11 Ω (11 to 33) Ω (33 to 110) Ω (110 to 330) Ω (0.33 to 1.1) kΩ (1.1 to 3.3) kΩ (3.3 to 11) kΩ (11 to 33) kΩ (33 to 110) kΩ (110 to 330) kΩ (0.33 to 1.1) MΩ (1.1 to 3.3) MΩ (3.3 to 11) MΩ (11 to 33) MΩ (33 to 110) MΩ (110 to 330) MΩ (330 to 1 100) MΩ	58 µΩ/Ω + 7.8 mΩ 28 µΩ/Ω + 12 mΩ 24 µΩ/Ω + 12 mΩ 23 µΩ/Ω + 16 mΩ 22 µΩ/Ω + 16 mΩ 22 µΩ/Ω + 0.16 Ω 22 µΩ/Ω + 80 mΩ 23 µΩ/Ω + 0.78 Ω 22 µΩ/Ω + 0.78 Ω 25 µΩ/Ω + 7.8 Ω 25 µΩ/Ω + 7.8 Ω 48 µΩ/Ω + 0.12 kΩ 0.1 mΩ/Ω + 0.19 kΩ 0.19 mΩ/Ω + 1.9 kΩ 0.39 mΩ/Ω + 2.3 kΩ 2.3 mΩ/Ω + 78 kΩ 0.012 % of reading + 0.39 MΩ	Comparison to Multiproduct Calibrator
Resistance – Measure [1]	Up to 10 Ω (10 to 100) Ω (0.1 to 1) kΩ (1 to 10) kΩ (10 to 100) kΩ (0.1 to 1) MΩ (1 to 10) MΩ (10 to 100) MΩ (0.1 to 1) GΩ	0.009 1 % of reading + 3 mΩ 0.007 8 % of reading + 4 mΩ 0.007 8 % of reading + 10 mΩ 0.007 8 % of reading + 0.1 Ω 0.007 8 % of reading + 1 Ω 0.007 8 % of reading + 10 Ω 0.031 % of reading + 0.1 kΩ 0.62 % of reading + 10 kΩ 1.6 % of reading + 0.1 MΩ	Comparison to Precision Digital Multimeter

1899 L Street NW, Suite 1100-A, Washington, DC 20036
414-501-5494
www.anab.org

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Voltage – Source [1]	(1 to 33) mV		Comparison to Multiproduct Calibrator
	(10 to 45) Hz	0.62 mV/V + 5 µV	
	45 Hz to 10 kHz	0.12 mV/V + 5 µV	
	(10 to 20) kHz	0.16 mV/V + 5 µV	
	(20 to 50) kHz	0.78 mV/V + 5 µV	
	(50 to 100) kHz	2.7 mV/V + 9 µV	
	(100 to 500) kHz	6.2 mV/V + 39 µV	
	(33 to 330) mV		
	(10 to 45) Hz	0.23 mV/V + 6 µV	
	45 Hz to 10 kHz	0.11 mV/V + 6 µV	
	(10 to 20) kHz	0.13 mV/V + 6 µV	
	(20 to 50) kHz	0.27 mV/V + 6 µV	
	(50 to 100) kHz	0.62 mV/V + 25 µV	
	(100 to 500) kHz	1.6 mV/V + 54 µV	
	(0.33 to 3.3) V		
	(10 to 45) Hz	0.23 mV/V + 39 µV	
	45 Hz to 10 kHz	0.12 mV/V + 47 µV	
	(10 to 20) kHz	0.15 mV/V + 47 µV	
	(20 to 50) kHz	0.23 mV/V + 39 µV	
	(50 to 100) kHz	0.54 mV/V + 97 µV	
	(100 to 500) kHz	1.9 mV/V + 0.47 mV	
	(3.3 to 33) V		
	(10 to 45) Hz	0.23 mV/V + 0.5 mV	
	45 Hz to 10 kHz	0.11 mV/V + 0.5 mV	
	(10 to 20) kHz	0.13 mV/V + 0.5 mV	
	(20 to 50) kHz	0.27 mV/V + 0.5 mV	
	(50 to 100) kHz	0.62 mV/V + 1.2 mV	
	(33 to 330) V		
	45 Hz to 1 kHz	0.15 mV/V + 1.6 mV	
	1 kHz to 10 kHz	0.16 mV/V + 4.7 mV	
	(10 to 20) kHz	0.19 mV/V + 4.7 mV	
	(20 to 50) kHz	0.23 mV/V + 4.7 mV	
	(50 to 100) kHz	1.6 mV/V + 39 mV	
	(330 to 1 020) V		
	45 Hz to 1 kHz	0.62 mV/V + 7.8 mV	
	(1 to 5) kHz	0.62 mV/V + 7.8 mV	
	(5 to 10) kHz	0.62 mV/V + 7.8 mV	

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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Voltage – Measure [1]	Up to 100 mV		Comparison to Precision Digital Multimeter
	(3 to 5) Hz	0.78 % of reading + 40 µV	
	(5 to 10) Hz	0.27 % of reading + 40 µV	
	10 Hz to 20 kHz	0.047 % of reading + 40 µV	
	(20 to 50) kHz	0.093 % of reading + 50 µV	
	(50 to 100) kHz	0.47 % of reading + 80 µV	
	(100 to 300) kHz	3.1 % of reading + 0.5 mV	
	(0.1 to 1) V		
	(3 to 5) Hz	0.78 % of reading + 0.3 mV	
	(5 to 10) Hz	0.27 % of reading + 0.3 mV	
	10 Hz to 20 kHz	0.047 % of reading + 0.3 mV	
	(20 to 50) kHz	0.093 % of reading + 0.5 mV	
	(50 to 100) kHz	0.47 % of reading + 0.8 mV	
	(100 to 300) kHz	3.1 % of reading + 5 mV	
	(1 to 10) V		
	(3 to 5) Hz	0.78 % of reading + 3 mV	
	(5 to 10) Hz	0.27 % of reading + 3 mV	
	10 Hz to 20 kHz	0.047 % of reading + 3 mV	
	(20 to 50) kHz	0.093 % of reading + 5 mV	
	(50 to 100) kHz	0.47 % of reading + 8 mV	
	(100 to 300) kHz	3.1 % of reading + 50 mV	
	(10 to 100) V		
	(3 to 5) Hz	0.78 % of reading + 30 mV	
	(5 to 10) Hz	0.27 % of reading + 30 mV	
	10 Hz to 20 kHz	0.047 % of reading + 30 mV	
	(20 to 50) kHz	0.093 % of reading + 50 mV	
	(50 to 100) kHz	0.47 % of reading + 80 mV	
	(100 to 300) kHz	3.1 % of reading + 0.5 V	
	(100 to 1 000) V		
	(3 to 5) Hz	0.78 % of reading + 0.23 V	
	(5 to 10) Hz	0.27 % of reading + 0.23 V	
	10 Hz to 20 kHz	0.047 % of reading + 0.23 V	
	(20 to 50) kHz	0.093 % of reading + 0.38 V	
	(50 to 100) kHz	0.47 % of reading + 0.6 V	
	(100 to 300) kHz	3.1 % of reading + 3.8 V	

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Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Current – Source [1]	(29 to 330) µA		Comparison to Multiproduct Calibrator
	(10 to 20) Hz	0.23 % of reading + 80 nA	
	(20 to 45) Hz	0.21 % of reading + 80 nA	
	45 Hz to 1 kHz	0.2 % of reading + 80 nA	
	(1 to 5) kHz	0.29 % of reading + 0.12 µA	
	(5 to 10) kHz	0.64 % of reading + 0.16 µA	
	(10 to 30) kHz	1.3 % of reading +0.31 µA	
	(0.33 to 3.3) mA		
	(10 to 20) Hz	0.16 % of reading + 0.12 µA	
	(20 to 45) Hz	0.1 % of reading + 0.12 µA	
	45 Hz to 1 kHz	0.08 % of reading + 0.12 µA	
	(1 to 5) kHz	0.16 % of reading + 0.16 µA	
	(5 to 10) kHz	0.39 % of reading + 0.23 µA	
	(10 to 30) kHz	0.78 % of reading + 0.47 µA	
	(3.3 to 33) mA		
	(10 to 20) Hz	0.14 % of reading + 1.6 µA	
	(20 to 45) Hz	0.07 % of reading + 1.6 µA	
	45 Hz to 1 kHz	0.03 % of reading + 1.6 µA	
	(1 to 5) kHz	0.06 % of reading + 1.6 µA	
	(5 to 10) kHz	0.16 % of reading + 2.3 µA	
	(10 to 30) kHz	0.31 % of reading + 3.1 µA	
	(33 to 330) mA		
	(10 to 20) Hz	0.14 % of reading + 16 µA	
	(20 to 45) Hz	0.07 % of reading + 16 µA	
	45 Hz to 1 kHz	0.03 % of reading + 16 µA	
	(1 to 5) kHz	0.08 % of reading + 39 µA	
	(5 to 10) kHz	0.16 % of reading + 78 µA	
	(10 to 30) kHz	0.31 % of reading + 0.16 mA	
	(0.33 to 1.1) A		
	(10 to 45) Hz	0.14 % of reading + 78 µA	
	45 Hz to 1kHz	0.04 % of reading + 78 µA	
	(1 to 5) kHz	0.47 % of reading + 0.78 mA	
	(5 to 10) kHz	1.9 % of reading + 3.9 mA	
	(1.1 to 3) A		
	(10 to 45) Hz	0.14 % of reading + 78 µA	
	45 Hz to 1 kHz	0.05 % of reading + 78 µA	
	(1 to 5) kHz	0.48 % of reading + 0.78 mA	
	(5 to 10) kHz	1.9 % of reading + 3.9 mA	

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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Current – Source [1]	(3 to 11) A (45 to 100) Hz 100 Hz to 1 kHz (1 to 5) kHz (11 to 20.5) A (45 to 100) Hz (100 to 440) Hz (1 to 5) kHz	 0.05 % of reading + 1.6 mA 0.08 % of reading + 1.6 mA 2.3 % of reading + 1.6 mA 0.14 % of reading + 3.9 mA 0.16 % of reading + 3.9 mA 2.3 % of reading + 3.9 mA	Comparison to Multiproduct Calibrator
AC Current – Source for Clamp-on Current Meters [1]	(20 to 55) A (46 to 65) Hz (45 to 440) Hz (55 to 150) A (46 to 65) Hz (45 to 440) Hz (150 to 550) A (46 to 65) Hz (45 to 440) Hz (550 to 1 025) A (46 to 65) Hz (45 to 440) Hz	 3.2 % of reading + 0.25 A 9.2 % of reading + 0.25 A 9.6 % of reading + 0.25 A 8.5 % of reading + 0.25 A 4.2 % of reading + 0.9 A 4.3 % of reading + 0.9 A 7.7 % of reading + 0.9 A 7.8 % of reading + 0.9 A	Comparison to Multiproduct Calibrator, 50-turn Coil
AC Current – Measure [1]	Up to 100 µA (3 to 5) Hz (5 to 10) Hz 10 Hz to 5 kHz (5 to 10) kHz 100 µA to 1 mA (3 to 5) Hz (5 to 10) Hz 10 Hz to 5 kHz (5 to 10) kHz (1 to 10) mA (3 to 5) Hz (5 to 10) Hz 10 Hz to 5 kHz (5 to 10) kHz (10 to 100) mA (3 to 5) Hz (5 to 10) Hz 10 Hz to 5 kHz (5 to 10) kHz	 0.85 % of reading + 60 µA 0.27 % of reading + 60 µA 0.12 % of reading + 60 µA 0.27 % of reading + 0.7 mA 0.78 % of reading + 0.4 µA 0.23 % of reading + 0.4 µA 0.08 % of reading + 0.4 µA 0.16 % of reading + 2.5 µA 0.85 % of reading + 6 µA 0.27 % of reading + 6 µA 0.12 % of reading + 6 µA 0.28 % of reading + 7 µA 0.78 % of reading + 40 µA 0.23 % of reading + 40 µA 0.08 % of reading + 40 µA 0.16 % of reading + 0.25 mA	Comparison to Precision Digital Multimeter

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Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Current – Measure [1]	(100 to 400) mA		Comparison to Precision Digital Multimeter
	(3 to 5) Hz	0.78 % of reading + 0.4 mA	
	(5 to 10) Hz	0.23 % of reading + 0.4 mA	
	10 Hz to 1 kHz	0.08 % of reading + 0.4 mA	
	(1 to 10) kHz	0.16 % of reading + 2.8 mA	
	(0.4 to 1) A		
	(3 to 5) Hz	0.78 % of reading + 0.4 mA	
	(5 to 10) Hz	0.23 % of reading + 0.4 mA	
	10 Hz to 5 kHz	0.08 % of reading + 0.4 mA	
	(5 to 10) kHz	0.27 % of reading + 7 mA	
	(1 to 3) A		
	(3 to 5) Hz	0.85 % of reading + 1.8 mA	
	(5 to 10) Hz	0.27 % of reading + 1.8 mA	
	10 Hz to 5 kHz	0.20 % of reading + 1.8 mA	
	(5 to 10) kHz	0.32 % of reading + 21 mA	
	(3 to 10) A		
	(3 to 5) Hz	0.85 % of reading + 6 mA	
	(5 to 10) Hz	0.27 % of reading + 6 mA	
	10 Hz to 5 kHz	0.12 % of reading + 6 mA	
	(5 to 10) kHz	0.29 % of reading + 70 mA	
Capacitance – Source [1] (Simulation)			Comparison to Multiproduct Calibrator
10 Hz to 10 kHz	(0.19 to 0.4) nF	1.3 % of reading + 7.8 pF	
10 Hz to 10 kHz	(0.4 to 1.1) nF	0.47 % of reading + 7.8 pF	
10 Hz to 3 kHz	(1.1 to 3.3) nF	0.39 % of reading + 7.8 pF	
10 Hz to 1 kHz	(3.3 to 11) nF	0.21 % of reading + 7.8 pF	
10 Hz to 1 kHz	(11 to 33) nF	0.19 % of reading + 78 pF	
10 Hz to 1 kHz	(33 to 110) nF	0.19 % of reading + 78 pF	
10 Hz to 1 kHz	(110 to 330) nF	0.19 % of reading + 0.23 nF	
(10 to 600) Hz	(0.33 to 1.1) µF	0.19 % of reading + 0.78 nF	
(10 to 300) Hz	(1.1 to 3.3) µF	0.19 % of reading + 2.3 nF	
(10 to 150) Hz	(3.3 to 11) µF	0.19 % of reading + 7.8 nF	
(10 to 120) Hz	(11 to 33) µF	0.31 % of reading + 23 nF	
(10 to 80) Hz	(33 to 110) µF	0.35 % of reading + 78 nF	
DC to 50 Hz	(110 to 330) µF	0.35 % of reading + 0.23 µF	
DC to 20 Hz	(0.33 to 1.1) mF	0.35 % of reading + 0.78 µF	
DC to 6 Hz	(1.1 to 3.3) mF	0.35 % of reading + 2.3 µF	
DC to 2 Hz	(3.3 to 11) mF	0.35 % of reading + 7.8 µF	
DC to 0.6 Hz	(11 to 33) mF	0.58 % of reading + 23 µF	
DC to 0.2 Hz	(33 to 110) mF	0.86 % of reading + 78 µF	

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Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Capacitance – Measure [1]	Up to 1 nF (1 to 10) nF (10 to 100) nF (0.1 to 1) µF (1 to 10) µF (10 to 100) µF (0.1 to 1) mF (1 to 10) mF (10 to 100) mF	1.6 % of reading + 25 pF 0.78 % of reading + 50 pF 0.78 % of reading + 0.5 nF 0.78 % of reading + 5 nF 0.78 % of reading + 50 nF 0.78 % of reading + 0.5 µF 0.78 % of reading + 5 µF 0.78 % of reading + 50 µF 3.1 % of reading + 0.2 mF	Comparison to Precision Digital Multimeter
Electrical Simulation of RTD Indicating Devices – Source [1]	Pt 385, 100 Ω (-200 to -80) °C (-80 to 0) °C (0 to 100) °C (100 to 300) °C (300 to 400) °C (400 to 630) °C (630 to 800) °C Pt 3926, 100 Ω (-200 to -80) °C (-80 to 0) °C (0 to 100) °C (100 to 300) °C (300 to 400) °C (400 to 630) °C Pt 3916, 100 Ω (-200 to -190) °C (-190 to -80) °C (-80 to 0) °C (0 to 100) °C (100 to 260) °C (260 to 300) °C (300 to 400) °C (400 to 600) °C (600 to 630) °C	 0.25 °C 0.25 °C 0.28 °C 0.28 °C 0.29 °C 0.31 °C 0.37 °C 0.26 °C 0.26 °C 0.28 °C 0.3 °C 0.32 °C 0.33 °C 0.3 °C 0.24 °C 0.25 °C 0.27 °C 0.29 °C 0.28 °C 0.3 °C 0.3 °C 0.35°C	Comparison to Multiproduct Calibrator

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Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Electrical Simulation of RTD Indicating Devices – Source [1]	Pt 385, 200 Ω		Comparison to Multiproduct Calibrator
	(-200 to -80) °C	0.23 °C	
	(-80 to 0) °C	0.24 °C	
	(0 to 100) °C	0.27 °C	
	(100 to 260) °C	0.29 °C	
	(260 to 300) °C	0.29 °C	
	(300 to 400) °C	0.31 °C	
	(400 to 600) °C	0.31 °C	
	(600 to 630) °C	0.32 °C	
	Pt 385, 500 Ω		
	(-200 to -80) °C	0.23 °C	
	(-80 to 0) °C	0.25 °C	
	(0 to 100) °C	0.27 °C	
	(100 to 260) °C	0.29 °C	
	(260 to 300) °C	0.28 °C	
	(300 to 400) °C	0.3 °C	
	(400 to 600) °C	0.3 °C	
	(600 to 630) °C	0.31 °C	
	Pt 385, 1 000 Ω		
	(-200 to -80) °C	0.22 °C	
	(-80 to 0) °C	0.24 °C	
	(0 to 100) °C	0.27 °C	
	(100 to 260) °C	0.29 °C	
	(260 to 300) °C	0.28 °C	
	(300 to 400) °C	0.29 °C	
	(400 to 600) °C	0.3 °C	
	(600 to 630) °C	0.35 °C	
	PtNi 385, 120 Ω		
	(-80 to 0) °C	0.25 °C	
	(0 to 100) °C	0.27 °C	
	(100 to 260) °C	0.31 °C	
	Cu 427, 10 Ω		
	(-100 to 260) °C	0.34 °C	

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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Electrical Simulation of Thermocouple Indicating Devices – Source/Measure [1]	Type B		Comparison to Multiproduct Calibrator
	(600 to 800) °C	0.52 °C	
	(800 to 1 000) °C	0.36 °C	
	(1 000 to 1 550) °C	0.34 °C	
	(1 550 to 1 820) °C	0.39 °C	
	Type C		
	(0 to 150) °C	0.33 °C	
	(150 to 650) °C	0.33 °C	
	(650 to 1 000) °C	0.35 °C	
	(1 000 to 1 800) °C	0.49 °C	
	(1 800 to 2 316) °C	0.72 °C	
	Type E		
	(-250 to -100) °C	0.48 °C	
	(-100 to -25) °C	0.26 °C	
	(-25 to 350) °C	0.28 °C	
	(350 to 650) °C	0.3 °C	
	(650 to 1 000) °C	0.3 °C	
	Type J		
	(-210 to -100) °C	0.32 °C	
	(-100 to -30) °C	0.27 °C	
	(-30 to 150) °C	0.26 °C	
	(150 to 760) °C	0.3 °C	
	(760 to 1 200) °C	0.3 °C	
	Type K		
	(-200 to -100) °C	0.35 °C	
	(-100 to -25) °C	0.27 °C	
	(-25 to 120) °C	0.26 °C	
	(120 to 1 000) °C	0.32 °C	
	(1 000 to 1 372) °C	0.4 °C	
	Type L		
	(-200 to -100) °C	0.52 °C	
	(-100 to 800) °C	0.32 °C	
	(800 to 900) °C	0.3 °C	

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Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Electrical Simulation of Thermocouple Indicating Devices – Source/Measure [1]	Type K		Comparison to Multiproduct Calibrator
	(-200 to -100) °C	0.35 °C	
	(-100 to -25) °C	0.27 °C	
	(-25 to 120) °C	0.26 °C	
	(120 to 1 000) °C	0.32 °C	
	(1 000 to 1 372) °C	0.4 °C	
	Type L		
	(-200 to -100) °C	0.52 °C	
	(-100 to 800) °C	0.32 °C	
	(800 to 900) °C	0.3 °C	
	Type N		
	(-200 to -100) °C	0.53 °C	
	(-100 to -25) °C	0.29 °C	
	(-25 to 120) °C	0.27 °C	
	(120 to 410) °C	0.28 °C	
	(410 to 1 300) °C	0.32 °C	
	Type R		
	(0 to 250) °C	0.52 °C	
	(250 to 400) °C	0.38 °C	
	(400 to 1 000) °C	0.36 °C	
	(1 000 to 1 767) °C	0.43 °C	
	Type S		
	(0 to 250) °C	0.45 °C	
	(250 to 1000) °C	0.39 °C	
	(1 000 to 1 400) °C	0.39 °C	
	(1 400 to 1 767) °C	0.45 °C	
	Type T		
	(-250 to -150) °C	0.56 °C	
	(-150 to 0) °C	0.31 °C	
	(0 to 120) °C	0.27 °C	
	(120 to 400) °C	0.26 °C	
	Type U		
	(-200 to 0) °C	0.51 °C	
	(0 to 600) °C	0.33 °C	

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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Oscilloscopes [1,2]			
Amplitude – DC			
into 50 Ω load	(-6 to 6) V	0.2 % of reading + 40 µV	
into 1 MΩ load	(-130 to 130) V	0.06 % of reading + 40 µV	
Amplitude – Square Wave			
into 50 Ω load	10 Hz to 10 kHz 1 mVp-p to 6.6 Vp-p	0.19 % of reading + 40 µV	
into 1 MΩ load	10 Hz to 10 kHz 1 mVp-p to 130 Vp-p	0.08 % of reading + 40 µV	
Leveled Sine Wave			Comparison to Multiproduct Calibrator with 600 MHz Scope Option
into 50 Ω load	5 mVp-p to 5.5 Vp-p		
	50 kHz	1.6 % of reading + 0.3 mV	
	50 kHz to 100 MHz	2.7 % of reading + 0.3 mV	
	(100 to 300) MHz	3.1 % of reading + 0.3 mV	
	(300 to 600) MHz	4.7 % of reading + 0.3 mV	
Bandwidth/Flatness (50 kHz Reference)	50 kHz to 100 MHz	1.2 % of reading + 0.1 mV	
	(100 to 300) MHz	1.6 % of reading + 0.1 mV	
	(300 to 600) MHz	3.1 % of reading + 0.1 mV	
Time Markers	(2 to 5) ns	2 µs/s	
	10 ns	2 µs/s	
	(20 to 50) ns	2 µs/s	
	100 ns to 20 ms	2 µs/s	
	50 ms to 5 s	(19 + 1 000t) µs/s	

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Gage Balls	(0.039 to 0.5) in (0.5 to 2) in	67 µin 100 µin	Comparison to Universal Length Measuring Machine
Gage Blocks [2]	(0.005 to 1) in (1 to 4) in	6 µin (0.7 + 5.3L) µin	Comparison to Gage Block Comparator, Grade 00 Gage Blocks

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Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Plain Ring Gages	(0.4 to 4) in	63 µin	Comparison to Universal Length Measuring Machine, XXX Master Rings
Angle Indicators, Protractors	0.25°, 0.5°, 1°, 2° , 3°, 4°, 5°, 10°, 15°, 20°, 25°, 30°	0.21°	Comparison to Angle Blocks
Micrometers [1,2] (ID, OD, and Depth)	Up to 6 in (6 to 60) in	47 µin (34 + 6*L*) µin	Comparison to Gage Blocks (Federal Grade 2, ASME Grade 0)
Calipers [1,2] (ID, OD, and Depth)	Up to 6 in (6 to 84) in	38 µin (30 + 3.1*L*) µin	Comparison to Gage Blocks (Federal Grade 2, ASME Grade 0)
Indicators [1]	Up to 2 in	28 µin	Comparison to Gage Blocks, Universal Length Measuring Machine
Pin Gages, Plain Plug Gages	(0.01 to 0.2) in (0.2 to 2) in	42 µin 170 µin	Comparison to Gage Blocks, Universal Length Measuring Machine
Micrometer Standards (End Rods)	(0.005 to 4) in (4 to 12) in (12 to 24) in	34 µin 77 µin 150 µin	Comparison to Gage Blocks, Universal Length Measuring Machine
Rulers [1]	Up to 48 in	0.009 6 in	Comparison to Master Steel Ruler
Height Gauges [1,2]	Up to 24 in	(44 + 2.1*L*) µin	Comparison to Gage Blocks (Federal Grade 2, ASME Grade 0)

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Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Optical Comparators [1,2]			
Linearity	Up to 10 in	120 µin	Comparison to Glass Masters
X-Y Squareness	Up to 0.5 in	170 µin	
Angle	Up to 90°	40″	
Magnification	10X, 20X, 31.25X, 50X, 61.25X, and 100X	0.001 1 µin	
Profilometers [1]	Ra: (2 to 250) µin	0.19 µin	Comparison to Roughness Specimen
Surface Plates [1,2]			In accordance with ASME B89.3.7 using:
Overall Flatness	(16.9 to 161) inDL	(5.7 + 1.3DL) µin	Electronic Levels
Local Area Flatness (Repeat Readings)	Up to 0.002 in	24 µin	Repeat-O-Meter
Thread Plug Gages			Comparison to Universal Length Measuring Machine, Thread Wires
Major Diameter	Up to 4 in	190 µin	
Pitch Diameter	Up to 4 in	72 µin	
Coordinate Measuring Machines [1,2]			
Linear Accuracy	Up to 24 in	(120 + 4L) µin	Comparison to Step Bar
Volumetric Accuracy	Up to 24 in	(270 + 4L) µin	Ball Bar
Sphere Repeatability	1 in	170 µin	Sphere

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Micro Balances [1,2]			ASTM E617 Class 1 weights, NIST HB44, and WI-09 utilized in the calibration of the weighing system.
Resolution (0.01 to 0.05) mg	Up to 9 g (9 to 100) g	0.002 3 % of reading + 0.58d 0.000 36 % of reading + 0.58d	
Resolution (0.1 to 0.5) mg	Up to 9 g (9 to 200) g	0.000 61 % of reading + 0.58d 0.000 14 % of reading + 0.58d	

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Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Class I Balances and equivalent [1] Resolution: (1 to 10) mg	Up to 200 g	0.000 042 % of reading + 0.58*d*	ASTM E617 Class 1 weights, NIST HB44, and WI-09 utilized in the calibration of the weighing system.
Class II Balances and equivalent [1] Resolution: (1 to 10) mg	Up to 200 g	0.000 019 % of reading + 0.58*d*	ASTM E617 Class 1 or Class 2 weights, NIST HB44, and WI-09 utilized in the calibration of the weighing system.
Resolution: 10 mg to 5 g	Up to 50 kg	0.000 084 % of reading + 0.58*d*	
Class III Scales and equivalent [1] Resolution: (0.000 2 to 0.000 5) lb	Up to 5 lb	0.005 6 % of reading + 0.58*d*	NIST Class F weights, NIST HB 44, and WI-09 utilized in the calibration of the weighing system.
Resolution: (0.001 to 50) lb	Up to 50 000 lb	0.002 9 % of reading + 0.58*d*	
Using Substitution Loads Resolution: (0.1 to 50) lb	Up to 50 000 lb	0.005 8 % of reading + 0.58*d*	
Class IIIL, Class IV Scales and equivalent [1] Resolution: (10 to 50) lb	Up to 400 000 lb	0.009 4 % of reading + 0.58*d*	NIST Class F weights, Specific Customer Mass, NIST HB 44, and WI-09 utilized in the calibration of the weighing system.
Unclassified High-Resolution Scales [1] Resolution: (0.000 1 to 0.000 5) lb	Up to 50 lb	0.007 4 % of reading + 0.58*d*	NIST Class F weights, Specific Customer Mass, NIST HB 44, and WI-09 utilized in the calibration of the weighing system.
Resolution: (0.001 to 10) lb	Up to 50 000 lb	0.006 % of reading + 0.58*d*	
Mass – Determination [1,3] (Avoirdupois) Resolution: 0.5 lb	(5 000 to 150 000) lb	0.29 lb	Onsite calibration of customer supplied mass using WI-10 modified Single Substitution and Class III, IIIL, or Unclassified Scale.
1 lb	(5 000 to 150 000) lb	0.58 lb	
2 lb	(5 000 to 150 000) lb	1.2 lb	
5 lb	(5 000 to 150 000) lb	2.9 lb	
10 lb	(5 000 to 150 000) lb	5.8 lb	
20 lb	(5 000 to 150 000) lb	12 lb	
50 lb	(5 000 to 150 000) lb	29 lb	

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Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Mass – Determination (Avoirdupois)	1/32 oz	25 µg	ASTM E617 Class 4 weights, NIST IR 6969, and SOP 4, SOP 7, or SOP 8, Balances.
	1/16 oz	33 µg	
	1/8 oz	39 µg	
	1/4 oz	59 µg	
	1/2 oz	82 µg	
	1 oz	0.11 mg	
	2 oz	0.17 mg	
	4 oz	0.39 mg	
	8 oz	0.69 mg	
	1 lb	1.1 mg	
	2 lb	2.1 mg	
	3 lb	3.2 mg	
	5 lb	5.3 mg	
	10 lb	11 mg	
	20 lb	21 mg	
	25 lb	0.17 g	
	50 lb	0.42 g	
	250 lb	5 g	
	500 lb	4.1 g	
	1 000 lb	14 g	
	2 500 lb	86 g	
	3 000 lb	0.11 kg	
	5 000 lb	0.18 kg	
	6 000 lb	0.18 kg	

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Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Mass – Determination (SI)	1 mg 2 mg 3 mg 5 mg 10 mg 20 mg 30 mg 50 mg 100 mg 200 mg 300 mg 500 mg 1 g 2 g 3 g 5 g 10 g 20 g 30 g 50 g 100 g 200 g 300 g 500 g 1 kg 2 kg 3 kg 5 kg 10 kg	6.2 µg 3 µg 2.1 µg 4.6 µg 3.6 µg 3.3 µg 2.6 µg 3 µg 6.3 µg 6 µg 3.9 µg 5.6 µg 9.8 µg 9.2 µg 12 µg 11 µg 18 µg 27 µg 32 µg 40 µg 0.11 mg 0.25 mg 0.37 mg 0.47 mg 0.97 mg 1.7 mg 4.1 mg 4.3 mg 23 mg	ASTM E617 Class 0 weights, NIST IR 6969, and SOP 4, SOP 7, or SOP 8, Balances.
Mass – Determination (SI)	20 kg 25 kg 200 kg	60 mg 0.31 g 4.6 g	NIST Class F Weights, NIST IR 6969, and SOP 4, SOP 5, or SOP 8, Balances.
Weight Carts	3 000 lb 5 000 lb 6 000 lb	0.17 lb 0.31 lb 0.34 lb	NIST Class F Weights, SOP 33, Balance or Scale
Force Gages [1]	Up to 200 lbf (200 to 10 000) lbf (10 000 to 100 000) lbf	0.076 lbf 0.001 2 % of reading + 0.14 lbf 0.002 5 % of reading + 0.01 lbf	Comparison to Load Cells

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Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Pressure Gauges [1]	Up to 300 psig Up to 1 000 psig Up to 10 000 psig	0.11 psi 0.73 psi 4.7 psi	Comparison to Pressure Calibrator with
Pressure/Vacuum Gages [1]	(-15 to 15) psi	0.12 psi	Comparison to Pressure Calibrator with Pressure Module
Torque Tools [1]	Up to 50 lbf·in (50 to 250) lbf·in (250 to 400) lbf·in (400 to 1 000) lbf·in (1 000 to 2 500) lbf·in Up to 100 lbf·ft (100 to 250) lbf·ft (250 to 600) lbf·ft (600 to 2 000) lbf·ft	0.08 lbf·in 0.73 lbf·in 1.2 lbf·in 2.9 lbf·in 7.3 lbf·in 0.29 lbf·ft 1.8 lbf·ft 8.1 lbf·ft 11 lbf·ft	Comparison to Torque Transducers
Torque Transducers [1]	Up to 83 lbf·ft (83 to 250) lbf·ft (250 to 2 000) lbf·ft	0.012 % of reading 0.018 % of reading 0.032 % of reading	Comparison to Radius Arms, NIST Class F Weights
Rockwell and Superficial Hardness Testers [1]	43.6 HRA 73 HRA 80.9 HRA 53.3 HRBW 73.6 HRBW 94.1 HRBW 26.1 HRC 49.1 HRC 64.5 HRC	0.48 HRA 0.46 HRA 0.73 HRA 0.74 HRBW 0.65 HRBW 0.65 HRBW 0.64 HRC 0.51 HRC 0.86 HRC	ASTM E-18 Indirect Verification using Hardness Test Blocks.

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Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Durometers [2]			Direct verification per ASTM D2240 using
Spring Force			
Shore A, B, C	Up to 822 gf	0.25 gf	Durocalibrator
Shore D	Up to 4 535.9 gf	0.55 gf	
Indenter Geometry			
Angle	(30 to 35)°	0.066°	Optical Comparator
Radius	0.098 in	260 µin	
Indenter Extension Length	0.098 in	250 µin	Optical Comparator

Photometry and Radiometry

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Gloss Meters [2]	20° (40 to 100) GU	0.29 GU	Comparison to Standard Gloss Tiles
	60° (40 to 100) GU	0.74 GU	
	85° (40 to 100) GU	0.64 GU	

Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Relative Humidity Sensors [1]	(5 to 95) % RH	2.4 % RH	Comparison to Humidity Chamber, Reference Probe, Thermohygrometer
Infrared Thermometers [1] (non-contact)	35 °C	1.2 °C	Comparison to Blackbody Source (flat-plate) $\varepsilon = 0.95$, $\lambda = (8 \text{ to } 14)$ µm
	100 °C	1.7 °C	
	200 °C	2.4 °C	
	350 °C	3.7 °C	
	500 °C	5 °C	

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Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Temperature – Source [1] (Temperature Probes, Mechanical Indicators, etc.)	-200 °C (-200 to -40) °C (-40 to 100) °C (100 to 660) °C	0.12 °C 0.048 °C 0.028 °C 2.9 °C	Comparison to Drywell, Indicator with PRT
Temperature – Source [1] (Temperature Probes, Mechanical Indicators, etc.)	(660 to 1 200) °C	4.7 °C	Comparison to Drywell, Environmental Chamber, Indicator with Type S Thermocouple Probe
Temperature – Measure [1]	(-200 to 0) °C	0.12 °C	Comparison to Indicator with PRT
Temperature – Measure [1]	(0 to 660) °C (660 to 1 450) °C	2.9 °C 3.5 °C	Comparison to Indicator with Type S Thermocouple Probe

Time and Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Stopwatches/Timers [1]	Up to 1 d	3.5 s/d	US National Time, Stopwatch; NIST SP 960-12
Frequency – Source [1]	10 mHz to 120 Hz 120 Hz to 2 MHz	37 µHz/Hz + 3.9 µHz 2 µHz/Hz + 3.9 µHz	Comparison to Multiproduct Calibrator
Frequency – Measure [1]	100 mV to 1 000 V (3 to 5) Hz (5 to 10) Hz (10 to 40) Hz 40 Hz to 300 kHz 300 kHz to 1 MHz	0.078 % of reading 0.039 % of reading 0.028 % of reading 0.013 % of reading 0.013 % of reading	Comparison to Precision Digital Multimeter
Tachometer [1,2] (non-contact)	Up to 10 rpm (500 to 200 000) rpm	0.006 % of reading 0.005 % of reading	Comparison to Fluke 754 Documenting Process Calibrator, Light Emitting Diode

ANSI National Accreditation Board

DIMENSIONAL MEASUREMENT

2 Dimensional

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Angle [2]	Up to 360°	13″	Coordinate Measuring Machine utilized as the reference standard for Angle Measurements.

3 Dimensional

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Gages, Fixtures Diameter, Length	Up to 24 in x 12 in x 8 in	650 µin	Coordinate Measuring Machine utilized as the reference standard for Length Measurements on Gages and/or Fixtures.
Flatness		410 µin	
Parallelism		400 µin	
Perpendicularity		380 µin	

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. R = resolution of the device; L = length in inches; ″ = arc-second; DL = diagonal length in inches; GU = gloss unit; rpm = revolutions per minute; d = scale divisions; t = time setpoint in setpoint units of measure.
3. The uncertainties for mass calibration onsite using WI-10 do not account for local environmental contributors. These contributors will be included in the reported uncertainties at the time of calibration.
4. The values found in the Range column are nominal. The actual Accredited values will be utilized at the time of calibration, with the associated Uncertainty.
5. Unless otherwise specified in the far-right column above, the laboratory utilizes internally written calibration procedures in the process of calibrating the parameters listed in this document.

Jason Stine, Vice President

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CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

System Scale Corporation

4393 West 96th Street
Indianapolis, IN 46268

Fulfills the requirements of

ISO/IEC 17025:2017

and national standard

ANSI/NCSL Z540-1-1994 (R2002)

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

Jason Stine, Vice President

Expiry Date: 01 February 2027
Certificate Number: AC-1756.08

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

AND

ANSI/NCSL Z540-1-1994 (R2002)

System Scale Corporation

4393 West 96th Street
Indianapolis, IN 46268
Sean Rainey 501-562-2900 srainey@system-scale.com

CALIBRATION

Valid to: **February 1, 2027** Certificate Number: **AC-1756.08**

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Scales and Balances [1,2] (SI)	Up to 100 g (100 to 200) g (200 to 500) g (500 to 1 000) g (1 to 5) kg (5 to 10) kg (10 to 325) kg	0.000 25 % of reading + 55 µg 0.000 27 % of reading + 45 µg 0.000 27 % of reading + 64 µg 0.000 32 % of reading - 0.23 mg 0.000 28 % of reading + 0.39 mg 0.000 3 % of reading - 1.1 mg 0.012 % of reading	ASTM E617 Class 1, 6, 7, and NIST Class F weights utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.
Scales and Balances [1,2] (Avoirdupois)	Up to 5 lb (5 to 30) lb (30 to 100) lb (100 to 500) lb (500 to 1 000) lb (1 000 to 5 000) lb (5 000 to 10 000) lb (10 000 to 20 000) lb (20 000 to 50 000) lb (50 000 to 200 000) lb	0.018 % of reading + 0.000 01 lb 0.013 % of reading - 0.000 13 lb 0.012 % of reading + 0.000 3 lb 0.012 % of reading + 0.001 7 lb 0.011 % of reading + 0.016 lb 0.012 % of reading + 0.016 lb 0.013 % of reading + 0.01 lb 0.012 % of reading + 0.23 lb 0.012 % of reading + 0.5 lb 0.03 % of reading - 8.8 lb	ASTM E617 Class 1, 6, 7, and NIST Class F weights utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.

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. The CMC for scales and balances is highly dependent upon the resolution of the unit under test. The CMC presented here does not include the resolution of the unit under test. The resolution will be included in the reported measurement uncertainty at the time of calibration.
3. This scope is formatted as part of a single document including Certificate of Accreditation No. AC-1756.08.

Jason Stine, Vice President

CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

System Scale Corporation

595 Pearl Park Plaza
Jackson, MS 39208

Fulfills the requirements of

ISO/IEC 17025:2017

and national standard

ANSI/NCSL Z540-1-1994 (R2002)

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

Jason Stine, Vice President

Expiry Date: 01 February 2027
Certificate Number: AC-1756.06

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

AND

ANSI/NCSL Z540-1-1994 (R2002)

System Scale Corporation

595 Pearl Park Plaza
Jackson, MS 39208
Sean Rainey 501-562-2900 srainey@system-scale.com

CALIBRATION

Valid to: **February 1, 2027** Certificate Number: **AC-1756.06**

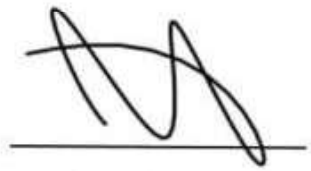
Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Scales and Balances [1,2] (SI)	Up to 100 g (100 to 200) g (200 to 500) g (500 to 1 000) g (1 to 5) kg (5 to 10) kg (10 to 325) kg	0.000 25 % of reading + 55 µg 0.000 27 % of reading + 45 µg 0.000 27 % of reading + 64 µg 0.000 32 % of reading - 0.23 mg 0.000 28 % of reading + 0.39 mg 0.000 3 % of reading - 1.1 mg 0.012 % of reading	ASTM E617 Class 1, 6, 7, and NIST Class F weights utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.
Scales and Balances [1,2] (Avoirdupois)	Up to 5 lb (5 to 30) lb (30 to 100) lb (100 to 500) lb (500 to 1 000) lb (1 000 to 5 000) lb (5 000 to 10 000) lb (10 000 to 20 000) lb (20 000 to 50 000) lb (50 000 to 200 000) lb	0.018 % of reading + 0.000 01 lb 0.013 % of reading - 0.000 13 lb 0.012 % of reading + 0.000 3 lb 0.012 % of reading + 0.001 7 lb 0.011 % of reading + 0.016 lb 0.012 % of reading + 0.016 lb 0.013 % of reading + 0.01 lb 0.012 % of reading + 0.23 lb 0.012 % of reading + 0.5 lb 0.03 % of reading - 8.8 lb	ASTM E617 Class 1, 6, 7, and NIST Class F weights utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.

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. The CMC for scales and balances is highly dependent upon the resolution of the unit under test. The CMC presented here does not include the resolution of the unit under test. The resolution will be included in the reported measurement uncertainty at the time of calibration.
3. This scope is formatted as part of a single document including Certificate of Accreditation No. AC-1756.06.



Jason Stine, Vice President

CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

System Scale Corporation
2010 Cobb International Blvd., NW Suite E
Kennesaw, GA 30152

Fulfills the requirements of

ISO/IEC 17025:2017

and national standard

ANSI/NCSL Z540-1-1994 (R2002)

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

Jason Stine, Vice President
Expiry Date: 24 May 2026
Certificate Number: AC-1756-11

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

AND

ANSI/NCSL Z540-1-1994 (R2002)

System Scale Corporation
2010 Cobb International Blvd., NW Suite E
Kennesaw, GA 30152
Sean Rainey 501-562-2900 srainey@system-scale.com

CALIBRATION

Valid to: **May 24, 2026** Certificate Number: **AC-1756.11**

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Balances [1]			
(0.000 01 g resolution)	Up to 210 g	0.69 mg	
(0.000 1 g resolution)	Up to 100 g	0.33 mg	
	Up to 210 g	0.69 mg	
	Up to 320 g	1.1 mg	
(0.001 g resolution)	Up to 100 g	1.1 mg	
	Up to 500 g	2 mg	
	Up to 1 kg	3.7 mg	ASTM E617 Class 1 weights and NIST Handbook 44 utilized for the calibration of the weighing system.
	Up to 5 kg	15 mg	
(0.01 g resolution)	Up to 100 g	9 mg	
	Up to 500 g	9.9 mg	
	Up to 2 kg	15 mg	
	Up to 6 kg	25 mg	
(0.1 g resolution)	Up to 1 kg	98 mg	
	Up to 5 kg	99 mg	
	Up to 10 kg	0.11 g	
(1 g resolution)	Up to 2 kg	1.2 g	
	Up to 6 kg	1.5 g	

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Balances [1]			NIST Class F weights and NIST Handbook 44 utilized for the calibration of the weighing system.
(0.1 g resolution)	Up to 24 kg	2.8 g	
(1 g resolution)	Up to 35 kg	2.8 g	
Scales [1]			ASTM E617 Class 6 weights, NIST Class F weights, and NIST Handbook 44 utilized for the calibration of the weighing system.
(0.001 lb resolution)	Up to 50 lb	0.007 4 lb	
	Up to 100 lb	0.016 lb	
(0.01 lb resolution)	Up to 50 lb	0.017 lb	
	Up to 100 lb	0.022 lb	
	Up to 300 lb	0.052 lb	
(0.1 lb resolution)	Up to 50 lb	0.08 lb	
	Up to 300 lb	0.11 lb	
	Up to 500 lb	0.12 lb	
	Up to 1 000 lb	0.2 lb	
	Up to 5 000 lb	0.7 lb	
(1 lb resolution)	Up to 500 lb	0.82 lb	
	Up to 1 000 lb	1.4 lb	
	Up to 5 000 lb	1.4 lb	
	Up to 10 000 lb	1.7 lb	
(10 lb resolution)	Up to 20 000 lb	8.3 lb	
	Up to 100 000 lb	8.7 lb	
(20 lb resolution)	Up to 200 000 lb	24 lb	

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. This scope is formatted as part of a single document including Certificate of Accreditation No. AC-1756-11.

Jason Stine, Vice President

CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

System Scale Corporation
7133 Global Drive
Louisville, KY 40528

Fulfills the requirements of

ISO/IEC 17025:2017

and national standard

ANSI/NCSL Z540-1-1994 (R2002)

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

Jason Stine, Vice President
Expiry Date: 17 May 2028
Certificate Number: AC-1756.16

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

AND

ANSI/NCSL Z540-1-1994 (R2002)

System Scale Corporation
7133 Global Drive
Louisville, KY 40528
Sean Rainey 501-562-2900 srainey@system-scale.com

CALIBRATION

ISO/IEC 17025 Accreditation Granted: **22 April 2026**

Certificate Number: **AC-1756.16** Certificate Expiry Date: **17 May 2028**

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Micro Balances [1,2]			ASTM E617 Class 1 weights, NIST HB44, and WI-09 utilized in the calibration of the weighing system.
Resolution (0.01 to 0.05) mg	Up to 9 g (9 to 100) g	0.002 3 % of reading + 0.58*d* 0.000 36 % of reading + 0.58*d*	
Resolution (0.1 to 0.5) mg	Up to 9 g (9 to 200) g	0.000 61 % of reading + 0.58*d* 0.000 14 % of reading + 0.58*d*	
Class I Balances and equivalent [1] Resolution: (1 to 10) mg	Up to 200 g	0.000 042 % of reading + 0.58*d*	ASTM E617 Class 1 weights, NIST HB44, and WI-09 utilized in the calibration of the weighing system.
Class II Balances and equivalent [1]			ASTM E617 Class 1 or Class 2 weights, NIST HB44, and WI-09 utilized in the calibration of the weighing system.
Resolution: (1 to 10) mg	Up to 200 g	0.000 019 % of reading + 0.58*d*	
Resolution: 10 mg to 5 g	Up to 50 kg	0.000 084 % of reading + 0.58*d*	

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Class III Scales and equivalent [1]			
Resolution: (0.000 2 to 0.000 5) lb	Up to 5 lb	0.005 6 % of reading + 0.58*d*	NIST Class F weights, NIST HB 44, and WI-09 utilized in the calibration of the weighing system.
Resolution: (0.001 to 50) lb	Up to 50 000 lb	0.002 9 % of reading + 0.58*d*	
Using Substitution Loads			
Resolution: (0.1 to 50) lb	Up to 50 000 lb	0.005 8 % of reading + 0.58*d*	
Class IIIL, Class IV Scales and equivalent [1]			
Resolution: (10 to 50) lb	Up to 400 000 lb	0.009 4 % of reading + 0.58*d*	NIST Class F weights, Specific Customer Mass, NIST HB 44, and WI-09 utilized in the calibration of the weighing system.
Unclassified High-Resolution Scales [1]			
Resolution: (0.000 1 to 0.000 5) lb	Up to 50 lb	0.007 4 % of reading + 0.58*d*	NIST Class F weights, Specific Customer Mass, NIST HB 44, and WI-09 utilized in the calibration of the weighing system.
Resolution: (0.001 to 10) lb	Up to 50 000 lb	0.006 % of reading + 0.58*d*	

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. d = scale divisions.

Jason Stine, Vice President

1899 L Street NW, Suite 1100-A, Washington, DC 20036
414-501-5494
www.anab.org

CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

System Scale Corporation

8101 Industry Drive
North Little Rock, AR 72117

Fulfills the requirements of

ISO/IEC 17025:2017

and national standard

ANSI/NCSL Z540-1-1994 (R2002)

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

Jason Stine, Vice President

Expiry Date: 01 February 2027
Certificate Number: AC-1756

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 T`O ISO/IEC 17025:2017

AND

ANSI/NCSL Z540-1-1994 (R2002)

System Scale Corporation

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CALIBRATION

Valid to: **February 1, 2027** Certificate Number: **AC-1756**

Acoustics and Vibration

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Sound Level Meter	1 kHz 94 dB 114 dB	0.43 dB 0.3 dB	Comparison to Sound Calibrator

Chemical Quantities

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
pH Meters [1]	4 pH 7 pH 10 pH	0.021 pH 0.021 pH 0.021 pH	Comparison to Accredited pH Solutions
Conductivity Meters [1]	10 µS 100 µS 1 000 µS 10 000 µS 100 000 µS	0.69 µS 2.2 µS 5.5 µS 50 µS 470 µS	Comparison to Accredited Conductivity Solutions

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Voltage – Measure [1]	(0 to 100) mV 100 mV to 1 V (1 to 10) V (10 to 100) V (100 to 1 000) V	16 µV/V + 0.4 µV 17 µV/V + 0.1 µV 17 µV/V + 4.4 µV 16 µV/V + 67 µV 17 µV/V + 1.2 mV	Comparison to HP 3458 opt 002 8.5 Digit Multimeter
DC Voltage – Source [1]	(0 to 329.9) mV (0 to 3.299) V (0 to 32.999) V (30 to 329.999) V (100 to 1 020) V	15.5 µV/V + 1.2 µV 10.2 µV/V + 2.5 µV 10.6 µV/V + 20 µV 14.8 µV/V + 0.11 mV 14 µV/V + 1.7 mV	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option (Ranges Locked)
DC Current – Measure [1]	(10 to 100) µA (0.1 to 1) mA (1 to 10) mA (10 to 100) mA (0.1 to 1) A	29 µA/A + 1.4 nA 26 µA/A + 12 nA 27 µA/A + 0.12 µA 47 µA/A + 1.1 µA 0.14 mA/A + 14 µA	Comparison to HP 3458 opt 002 8.5 Digit Multimeter
DC Current – Source [1]	(0 to 329.9) µA (0 to 3.299 9) mA (0 to 32.999) mA (0 to 329.99) mA (0 to 1.099 9) A (1.1 to 2.999) A (0 to 10.99) A (11 to 20.5) A	0.11 mA/A + 17 nA 93.3 µA/A + 43 nA 80 µA/A + 0.27 µA 88 µA/A + 2.2 µA 0.17 mA/A + 36 µA 0.39 mA/A + 0.2 mA 0.39 mA/A + 0.45 mA 7.1 mA/A + 23 mA	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option (Ranges Locked)
AC Voltage – Measure [1]	(10 to 100) mV (1 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz 100 kHz to 1 MHz (1 to 4) MHz (4 to 8) MHz	 0.33 mV/V + 3.8 µV 0.2 mV/V + 1.9 µV 0.31 mV/V + 1.9 µV 1.1 mV/V + 1.9 µV 5.7 mV/V + 1.7 µV 47 mV/V + 2.4 µV 14 mV/V + 5.9 µV 80 mV/V + 17 µV 0.24 V/V + 14 µV	Comparison to HP 3458 opt 002 8.5 Digit Multimeter

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Voltage – Measure [1]	(0.1 to 10) V		Comparison to HP 3458 opt 002 8.5 Digit Multimeter
	(1 to 40) Hz	0.13 mV/V + 5.1 µV	
	40 Hz to 1 kHz	0.11 mV/V + 5.1 µV	
	(1 to 20) kHz	0.19 mV/V + 3 µV	
	(20 to 50) kHz	0.37 mV/V + 1 µV	
	(50 to 100) kHz	0.95 mV/V + 1 µV	
	(100 to 300) kHz	3.6 mV/V	
	300 kHz to 1 MHz	11 mV/V + 7.1 mV	
	(0.1 to 10) V		
	(1 to 2) MHz	17 mV/V + 6.6 mV	
	(1 to 4) MHz	1.1 mV/V + 8 mV	
	(4 to 8) MHz	1.3 mV/V + 8 mV	
	(8 to 10) MHz	1.7 mV/V + 8 mV	
	(10 to 100) V		
	(1 to 40) Hz	0.22 mV/V + 6 mV	
	40 Hz to 1 kHz	0.22 mV/V + 4 mV	
	(1 to 20) kHz	0.22 mV/V + 4 mV	
	(20 to 50) kHz	0.4 mV/V + 3.7 mV	
	(50 to 100) kHz	1.5 mV/V + 2.2 mV	
	(100 to 300) kHz	4.7 mV/V + 11 mV	
	300 kHz to 1 MHz	18 mV/V + 11 mV	
	(100 to 1 000) V		
	(1 to 40) Hz	0.46 mV/V + 48 mV	
	40 Hz to 1 kHz	0.46 mV/V + 24 mV	
	(1 to 20) kHz	0.7 mV/V + 24 mV	
	(20 to 50) kHz	1.5 mV/V + 22 mV	
	(50 to 100) kHz	3.5 mV/V + 22 mV	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Voltage – Source [1]	(1 to 32.99) mV		Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option
	(10 to 40) Hz	0.94 mV/V + 7.1 µV	
	45 Hz to 10 kHz	0.18 mV/V + 7.1 µV	
	(10 to 20) kHz	0.23 mV/V + 7.6 µV	
	(20 to 50) kHz	1.1 mV/V + 9.3 µV	
	(50 to 100) kHz	4.1 mV/V + 16.6 µV	
	(100 to 500) kHz	9.4 mV/V + 62 µV	
	(33 to 329.99) mV		
	(10 to 45) Hz	0.37 mV/V + 8.9 µV	
	45 Hz to 10 kHz	0.17 mV/V + 10 µV	
	(10 to 20) kHz	0.18 mV/V + 12 µV	
	(20 to 50) kHz	0.41 mV/V + 14 µV	
	(50 to 100) kHz	0.95 mV/V + 37 µV	
	(100 to 500) kHz	2.3 mV/V + 83 µV	
	(0.33 to 3.299) V		
	(10 to 45) Hz	0.34 mV/V + 66 µV	
	45 Hz to 10 kHz	0.18 mV/V + 72 µV	
	(10 to 20) kHz	0.21 mV/V + 0.1 mV	
	(20 to 50) kHz	0.33 mV/V + 0.1 mV	
	(50 to 100) kHz	0.79 mV/V + 0.2 mV	
	(100 to 500) kHz	2.7 mV/V+ 1 mV	
AC Voltage – Source [1]	(3.3 to 32.99) V		Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option
	(10 to 45) Hz	0.38 mV/V + 0.66 mV	
	45 Hz to 10 kHz	0.18 mV/V + 0.72 mV	
	(10 to 20) kHz	0.27 mV/V + 1 mV	
	20 to 50 kHz	0.39 mV/V + 1.1 mV	
	50 to 100 kHz	1 mV/V + 2.4 mV	
	(33 to 329.99) V		
	45 Hz to 1 kHz	0.22 mV/V + 2.3 mV	
	(1 to 10) kHz	0.24 mV/V + 7.2 mV	
	(10 to 20) kHz	0.3 mV/V + 11 mV	
	(20 to 50) kHz	0.32 mV/V + 26 mV	
	(50 to 100) kHz	2.3 mV/V + 64 mV	
	(330 to 1 020) V		
	45 Hz to 1 kHz	0.34 mV/V + 17 mV	
	(1 to 5) kHz	0.28 mV/V + 26 mV	
	(5 to 10) kHz	0.34 mV/V + 17 mV	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Voltage – Source [1] (AUX Output)	(10 to 329.99) mV		Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option
	(10 to 20) Hz	0.53 mV	
	(20 to 45) Hz	0.43 mV	
	45 Hz to 1 kHz	0.43 mV	
	(1 to 5) kHz	0.52 mV	
	(5 to 10) kHz	0.52 mV	
	(10 to 30) kHz	1.1 mV	
	(0.33 to 3.299) V		
	(10 to 20) Hz	0.71 mV	
	(20 to 45) Hz	0.55 mV	
	45 Hz to 1 kHz	0.57 mV	
	(1 to 5) kHz	1.7 mV	
	(5 to 10) kHz	1.7 mV	
	(10 to 30) kHz	3.3 mV	
	(3.3 to 5) V		
	(10 to 20) Hz	8.1 mV	
	(20 to 45) Hz	0.61 mV	
	45 Hz to 1 kHz	0.64 mV	
	(1 to 5) kHz	1.7 mV	
	(5 to 10) kHz	1.8 mV	
AC Current – Measure [1]	(10 to 100) µA		Comparison to HP 3458 opt 002 8.5 Digit Multimeter
	(10 to 20) Hz	4.6 mA/A + 36 nA	
	(20 to 45) Hz	1.7 mA/A + 37 nA	
	(45 to 100) Hz	0.73 mA/A + 37 nA	
	100 Hz to 5 kHz	0.73 mA/A + 37 nA	
AC Current – Measure [1]	(1 to 100) mA		Comparison to HP 3458 opt 002 8.5 Digit Multimeter
	(10 to 20) Hz	4.7 mA/A + 23 µA	
	(20 to 45) Hz	1.8 mA/A + 23 µA	
	(45 to 100) Hz	0.7 mA/A + 23 µA	
	100 Hz to 5 kHz	0.35 mA/A + 24 µA	
	(5 to 20) kHz	0.7 mA/A + 23 µA	
	(20 to 50) kHz	4.7 mA/A + 46 µA	
	(50 to 100) kHz	6.4 mA/A + 0.17 mA	
	100 mA to 1 A		
	(10 to 20) Hz	4.7 mA/A + 0.23 mA	
	(20 to 45) Hz	1.9 mA/A + 0.23 mA	
	(45 to 100) Hz	1 mA/A + 0.23 mA	
	100 Hz to 5 kHz	1.2 mA/A + 0.23 mA	
	(5 to 20) kHz	3.5 mA/A + 0.23 mA	
	(20 to 50) kHz	11 mA/A + 0.56 mA	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Current – Source [1]	(29 to 329.99) µA		Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option
	(10 to 20) Hz	2.3 mA/A + 0.14 µA	
	(20 to 45) Hz	1.7 mA/A + 0.14 µA	
	45 Hz to 1 kHz	1.5 mA/A + 0.12 µA	
	(1 to 5) kHz	3.7 mA/A + 0.19 µA	
	(5 to 10) kHz	9.3 mA/A + 0.23 µA	
	(10 to 30) kHz	18 mA/A + 0.55 µA	
	(0.33 to 3.299) mA		
	(10 to 20) Hz	2.2 mA/A + 0.57 µA	
	(20 to 45) Hz	1.4 mA/A + 0.38 µA	
	45 Hz to 1 kHz	1.2 mA/A + 0.18 µA	
	(1 to 5) kHz	2.3 mA/A + 0.23 µA	
	(5 to 10) kHz	5.4 mA/A + 2.1 µA	
	(10 to 30) kHz	12 mA/A + 0.8 µA	
	(3.3 to 32.99) mA		
	(10 to 20) Hz	2 mA/A + 43 µA	
	(20 to 45) Hz	1 mA/A + 39 µA	
	45 Hz to 1 kHz	0.47 mA/A + 23 µA	
	(1 to 5) kHz	1.2 mA/A + 58 µA	
	(5 to 10) kHz	2.3 mA/A + 0.15 mA	
	(10 to 30) kHz	4.7 mA/A + 0.23 mA	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Current – Source [1]	(33 to 329.99) mA		Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option
	(10 to 20) Hz	2 mA/A + 43 µA	
	(20 to 45) Hz	1 mA/A + 39 µA	
	45 Hz to 1 kHz	0.47 mA/A + 23 µA	
	(1 to 5) kHz	1.2 mA/A + 58 µA	
	(5 to 10) kHz	2.3 mA/A + 0.15 mA	
	(10 to 30) kHz	4.7 mA/A + 0.23 mA	
	(0.33 to 1.099 9) A		
	(10 to 45) Hz	2.1 mA/A + 0.13 mA	
	45 Hz to 1 kHz	0.6 mA/A + 0.11 mA	
	(1 to 5) kHz	6.9 mA/A + 1.2 mA	
	(5 to 10) kHz	28 mA/A + 6.6 mA	
	(1.1 to 2.999) A		
	(10 to 45) Hz	2.1 mA/A + 0.34 mA	
	45 Hz to 1 kHz	0.8 mA/A + 16 µA	
	(1 to 5) kHz	6.9 mA/A + 1.2 mA	
	(5 to 10) kHz	29 mA/A + 6.2 mA	
	(3 to 10.99) A		
	(45 to 100) Hz	0.64 mA/A + 3.2 mA	
	100 Hz to 1 kHz	1.3 mA/A + 2 mA	
	(1 to 5) kHz	34 mA/A + 7.1 mA	
	(11 to 20.5) A		
	(45 to 100) Hz	1.3 mA/A + 7.3 mA	
	100 Hz to 1 kHz	1.8 mA/A + 5.4 mA	
	(1 to 5) kHz	34 mA/A + 11 mA	
Resistance – Measure [1]	(0 to 10) Ω	21 µΩ/Ω + 0.17 mΩ	Comparison to HP 3458 opt 002 8.5 Digit Multimeter
	(10 to 100) Ω	24 µΩ/Ω + 1.2 mΩ	
	(0.1 to 1) kΩ	19 µΩ/Ω + 1.3 mΩ	
	(1 to 10) kΩ	19 µΩ/Ω + 13 mΩ	
	(10 to 100) kΩ	19 µΩ/Ω + 0.13 Ω	
	(0.1 to 1) MΩ	24 µΩ/Ω + 4.7 Ω	
	(1 to 10) MΩ	99 µΩ/Ω + 0.11 kΩ	
	(10 to 100) MΩ	11 µΩ/Ω + 1.1 kΩ	
	(0.1 to 1) GΩ	17 kΩ	
Resistance – Source [1] (Simulation)	(0 to 10.9) Ω	37 µΩ/Ω + 0.8 mΩ	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option
	(11 to 32.9) Ω	13 µΩ/Ω + 22 µΩ	
	(33 to 109.99) Ω	59 µΩ/Ω + 1.8 mΩ	
	(110 to 329.99) Ω	23 µΩ/Ω + 1.6 mΩ	
	(0.33 to 1.09) kΩ	24 µΩ/Ω + 1.3 mΩ	
	(1.1 to 3.299) kΩ	28 µΩ/Ω + 10 mΩ	
	(3.3 to 10.99) kΩ	23 µΩ/Ω + 19 mΩ	
	(11 to 32.999) kΩ	23 µΩ/Ω + 0.16Ω	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Resistance – Source [1] (Simulation)	(33 to 109.99) kΩ (110 to 329.9) kΩ (0.33 to 1.09) MΩ (1.1 to 3.29) MΩ (3.3 to 10.9) MΩ (11 to 32.99) MΩ (33 to 109.99) MΩ (110 to 329.99) MΩ (330 to 1 100) MΩ	24 μΩ/Ω + 0.13 Ω 24 μΩ/Ω + 2.5 Ω 42 μΩ/Ω + 2.9 Ω 0.11 mΩ/Ω + 45 Ω 0.19 mΩ/Ω + 0.11 kΩ 0.52 mΩ/Ω + 2.1 kΩ 0.43 mΩ/Ω + 1.7 kΩ 2.3 mΩ/Ω + 82 kΩ 13 mΩ/Ω + 59 kΩ	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option
Electrical Simulation of Thermocouple Indicating Devices – Measure/Source [1]	Type E (-250 to -100) °C (-100 to -25) °C (-25 to 350) °C (350 to 650) °C (650 to 1 000) °C Type J (-210 to -100) °C (-100 to -30) °C (-30 to 150) °C (150 to 760) °C (760 to 1 200) °C Type K (-200 to -100) °C (-100 to -25) °C (-25 to 120) °C (120 to 1 000) °C (1 000 to 1 372) °C Type N (-200 to -100) °C (-100 to -25) °C (-25 to 120) °C (120 to 410) °C (410 to 1 300) °C Type R (0 to 250) °C (250 to 400) °C (400 to 1 000) °C (1 000 to 1 767) °C	 0.58 °C 0.19 °C 0.17 °C 0.19 °C 0.25 °C 0.32 °C 0.19 °C 0.17 °C 0.21 °C 0.27 °C 0.39 °C 0.22 °C 0.19 °C 0.31 °C 0.47 °C 0.47 °C 0.26 °C 0.23 °C 0.22 °C 0.32 °C 0.66 °C 0.41 °C 0.39 °C 0.47 °C	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Electrical Simulation of Thermocouple Indicating Devices – Measure/Source [1]	Type S (0 to 250) °C (250 to 1 000) °C (1 000 to 1 400) °C (1 400 to 1 767) °C Type T (-250 to -150) °C (-150 to 0) °C (0 to 120) °C (120 to 400) °C	 0.55 °C 0.42 °C 0.43 °C 0.54 °C 0.73 °C 0.29 °C 0.19 °C 0.17 °C	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option
Electrical Simulation of RTD Indicating Devices – Source [1]	Pt 385, 100 Ω (-200 to -80) °C (-80 to 0) °C (0 to 100) °C (100 to 300) °C (300 to 400) °C (400 to 630) °C (630 to 800) °C	 0.06 °C 0.06 °C 0.083 °C 0.11 °C 0.12 °C 0.14 °C 0.27 °C	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option
Capacitance – Source [1] (Simulation)	(220 to 399.9) pF (0.4 to 1.099) nF (1.1 to 3.299 9) nF (3.3 to 10.999) nF (11 to 32.999) nF (33 to 109.99) nF (110 to 329.99) nF (0.33 to 1.099 9) µF (1.1 to 3.299) µF (3.3 to 10.999) µF (11 to 32.999) µF (33 to 109.99) µF (110 to 329.99) µF (0.33 to 1.099 9) mF (1.1 to 3.299 9) mF (3.3 to 10.999) mF (11 to 32.999) mF (33 to 110) mF	5.6 pF/F + 12 pF 5 pF/F + 13 pF 5 pF/F + 17 pF 2.7 pF/F + 16 pF 2.3 pF/F + 0.17 nF 2.7 pF/F + 0.16 nF 1.8 pF/F + 1.2 nF 2.7 pF/F + 1.6 nF 1.8 pF/F + 12 nF 2.7 pF/F + 16 nF 3.6 pF/F + 0.11 µF 5.2 pF/F + 0.14 µF 4.1 pF/F + 1.1 µF 5.1 pF/F + 1.5 µF 4.1 pF/F + 11 µF 5.1 pF/F + 14 µF 7.3 pF/F + 0.1 mF 13 pF/F + 0.13 mF	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option
Oscilloscopes [1] Amplitude – DC into 50 Ω load into 1 MΩ load	 (0 to 6.6) V (0 to 130) V	 3 mV/V + 47 µV 0.59 mV/V + 47 µV	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Oscilloscopes [1]			Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option
Amplitude – Square Wave			
into 50 Ω load	10 Hz to 100 kHz ± 1 mVp-p to ± 6 Vp-p	3 mV/V + 47 µV	
into 1 MΩ load	± 1 mVp-p to 130 Vp-p	1.2 mV/V + 47 µV	
Amplitude – Edge	5 mV to 2.5 V	24 mV/V + 0.23 mV	
Leveled Sine Wave			
into 50 Ω load	5 mVp-p to 5.5 Vp-p		
	50 kHz	24 mV/V + 0.37 mV	
	50 kHz to 100 MHz	24 mV/V + 0.37 mV	
	(100 to 300) MHz	47 mV/V + 0.37 mV	
	(300 to 600) MHz	71 mV/V + 0.37 mV	
Time Markers	(2 to 5) ns	0.12 ns	
	10 ns	0.12 ns	
	(20 to 50) ns	0.12 ns	
	100 ns to 20 ms	11 ns	
	50 ms to 5 s	29 µs	

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Gage Blocks [3]	Up to 4 in	(3.3 + 1L) µin	Comparison to Master Gage Blocks, Mitutoyo Gage Block Comparator
	(5 to 6) in	(4.9 + 2.5L) µin	
Plain Ring Gages [3]	(0.04 to 12) in	(26 + 12L) µin	Comparison to LabMaster Laser Measuring System
Plug Gages [3]	Up to 14 in	(9.1 + 0.7L) µin	Comparison to LabMaster Laser Measuring System
Reference Spheres [3]	Up to 4 in	(4.8 + 8.7L) µin	Comparison to LabMaster Laser Measuring System

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Pin Gages	Up to 1 in	9 µin	Comparison to LabMaster Laser Measuring System
Indicators	Up to 1 in	120 µin	Comparison to Gage Blocks, Indicator Calibrator
Indicators [1]	Up to 1 in (1 to 5) in	60 µin 71 µin	Comparison to Gage Blocks
Micrometers, Depth Micrometers [1,3]	Up to 20 in	$(57 + 8.1L)$ µin	Comparison to Gage Blocks
Calipers [1,3]	Up to 80 in	$(287 + 2.8L)$ µin	Comparison to Gage Blocks
Height Gages [1,3]	Up to 40 in	$(13 + 8.7L)$ µin	Comparison to Gage Blocks
Shims	Up to 250 mils	11 µin	Comparison to LabMaster Laser Measuring System
Thickness Coating Gage [1,3]	Up to 206 mils	$(12 + 48L)$ µin	Comparison to Shims
Optical Comparators [1,3] Linearity Angularity Magnification	 Up to 12 in (0 to 90)° (10 to 100) X	 $(130 + 11L)$ µin $(39 + 0.32x)''$ 0.012 in	Comparison to Inspection Master, Angle Block
Microscopes [1]	Up to 1 in	0.001 2 in	Comparison to Stage Micrometer I1110, Ruler
Precision Rules	(6 to 72) in	0.014 in	Comparison to Precision Rule, Microscope
Measuring Tapes	(6 to 100) ft	0.073 in	Comparison to Precision Rule, Microscope
Roughness Gage	16.1 µin Ra 119.5 µin Ra	3.6 µin 3.8 µin	Comparison to Roughness Standard
Surface Plate [1,3] Overall Flatness Local Area Flatness	 Up to 161 *DL* Up to 0.001 in	 $(5.4 - 0.97DL)$ µin 26 µin	Internal Procedure SSC-20-2, Rev. 5/22/2022 Electronic Leveling System Repeat-O-Meter

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Thread Plugs [3]			
Pitch Diameter	Up to 8 in	150 µin	Comparison to Labmaster Laser Measuring System, Thread Wires, IAC MasterScanner
Major Diameter	(0.118 to 3.9) in	110 µin	
Pitch Diameter	(0.118 to 3.9) in	130 µin	
Pitch (Lead)	(0.118 to 3.9) in	54 µin	
Flank Angles	Up to 0.3 in	7′	
Taper	(0.118 to 3.9) in	39 µin	
Degree Thread Rings [3]			
Major Diameter	(0.118 to 3.9) in	110 µin	Comparison to IAC MasterScanner
Pitch Diameter	(0.118 to 3.9) in	130 µin	
Pitch (Lead)	(0.118 to 3.9) in	53 µin	
Flank Angles	Up to 0.3 in	6.3′	
Taper	(0.118 to 3.9) in	38 µin	
Thread Wires	Up to 0.15 in	29 µin	Comparison to LabMaster Laser Measuring System
Angle [3]	Up to 90°	1.9′	Comparison to Optical Comparator
Digital Protractors [3]	Up to 360°	0.37′	Comparison to Angle Blocks, Height Gage
Dial Protractors [1,3]	Up to 360°	10′	Comparison to Angle Blocks
Length Measurements [3]	Up to 100 in	$(113 + 7.2L)$ µin	Comparison to Gage Blocks

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Scales and Balances [1,2,4] (SI)	Up to 100 g (100 to 200) g (200 to 500) g (500 to 1 000) g (1 to 5) kg (5 to 10) kg (10 to 325) kg	0.000 25 % of reading + 55 µg 0.000 27 % of reading + 45 µg 0.000 27 % of reading + 64 µg 0.000 32 % of reading - 0.23 mg 0.000 28 % of reading + 0.39 mg 0.000 3 % of reading - 1.1 mg 0.012 % of reading	ASTM E617 Class 1, 6, 7, and NIST Class F weights utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.
Scales and Balances [1,2,4] (Avoirdupois)	Up to 5 lb (5 to 30) lb (30 to 100) lb (100 to 500) lb (500 to 1 000) lb (1 000 to 5 000) lb (5 000 to 10 000) lb (10 000 to 20 000) lb (20 000 to 50 000) lb (50 000 to 200 000) lb	0.018 % of reading + 0.000 01 lb 0.013 % of reading - 0.000 13 lb 0.012 % of reading + 0.000 3 lb 0.012 % of reading + 0.001 7 lb 0.011 % of reading + 0.016 lb 0.012 % of reading + 0.016 lb 0.013 % of reading + 0.01 lb 0.012 % of reading + 0.23 lb 0.012 % of reading + 0.5 lb 0.03 % of reading - 8.8 lb	ASTM E617 Class 1, 6, 7, and NIST Class F weights utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.
Mass Determination (ASTM E617 Classes 5, 6, 7, and NIST Class F Weights)	1 g 2 g 5 g 10 g 20 g 50 g 100 g 200 g 500 g 1 kg 2 kg 5 kg	0.6 mg 0.6 mg 0.6 mg 0.6 mg 0.6 mg 0.6 mg 0.6 mg 0.6 mg 3.4 mg 3.4 mg 3.5 mg 4.6 mg	Comparison to Balance, ASTM E617 Class 1 Weights
Vacuum [1]	Up to 29 inHg	0.007 6 inHg	Comparison to Master Vacuum Transducer
Pressure Gages [1] (Pneumatic)	Up to 50 inH_2O	0.035 inH_2O	Comparison to Master Pressure Transducer
Pressure Gages [1] (Pneumatic)	Up to 30 psig Up to 100 psig Up to 500 psig Up to 1 000 psig Up to 3 000 psig	0.003 7 psi 0.016 psi 0.064 psi 0.13 psi 0.39 psi	Comparison to Master Pressure Transducer
Pressure Gages [1] (Pneumatic)	(5.8 to 1 000) psig	0.015 % of reading + 0.02 psi	Comparison to Deadweight Tester

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Pressure Gages [1] (Hydraulic)	Up to 10 000 psig	3.2 psi	Comparison to Master Pressure Transducer
Air Velocity	492 ft/min 984 ft/min 1969 ft/min 2953 ft/min	25 ft/min 27 ft/min 30 ft/min 35 ft/min	Comparison to Master Anemometer, Open Jet Wind Tunnel
Force Gages [1] (Compression and Tension)	Up to 100 lbf (100 to 500) lbf (500 to 1 000) lbf (1 000 to 10 000) lbf (1 000 to 100 000) lbf	0.008 1 % of reading + 0.002 9 lbf 0.019 % of reading + 0.015 lbf 0.004 5 % of reading + 0.086 lbf 0.009 2 % of reading + 1.3 lbf 4.5 lbf	Comparison to Load Cells, Master Weights
Durometers Indenter Dimensions Extension Types A, C Types B, D Diameter Types A, C Types B, D Radius Angle Types A, C Types B, D Spring Force Types A, B, E, O Types D, C, DO	 Up to 2.5 mm Up to 2.5 mm Up to 1.27 mm Up to 1.27 mm Up to 0.05 in 35° 30° Up to 8.05 N Up to 44.45 N	 7.9 µm 7.1 µm 11 µm 10 µm 280 µin 0.28° 0.19° 0.61 N 0.53 N	Direct verification to ASTM D2240 Gage Blocks Optical Projection Master Weights
Brinell Hardness Testers [1]	(72 to 277) HBW	3.4 HBW	Indirect verification per ASTM E10 using Hardness Blocks.

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Rockwell Hardness Testers [1]	HRA		Indirect verification per ASTM E18 using Hardness Blocks.
	Low	1.3 HRA	
	Middle	1.3 HRA	
	High	1.2 HRA	
	HRBW		
	Low	1.9 HRBW	
	Middle	1.2 HRBW	
	High	1.2 HRBW	
	HRC		
	Low	1.3 HRC	
	Middle	1.3 HRC	
	High	0.66 HRC	
	HREW		
	Low	1.3 HREW	
	Middle	1.3 HREW	
	High	1.5 HREW	
Rockwell Superficial Hardness Testers [1]	HR15N		Indirect verification per ASTM E18 using Hardness Blocks.
	Low	1.3 HR15N	
	Middle	1.3 HR15N	
	High	0.92 HR15N	
	HR30N		
	Low	1.3 HR30N	
	Middle	1.3 HR30N	
	High	1.3 HR30N	
	HR45N		
	Low	1.3 HR45N	
	Middle	1.3 HR45N	
	High	0.89 HR45N	
	HR15TW		
	Low	1.8 HR15TW	
	Middle	1.3 HR15TW	
	High	1.3 HR15TW	
	HR30TW		
	Low	1.8 HR30TW	
	Middle	1.8 HR30TW	
	High	1.3 HR30TW	
Torque Tools [1]	(5 to 50) lbf·in	0.29 lbf·in	Comparison to Torque Transducers
	(10 to 100) lbf·in	0.29 lbf·in	
	(10 to 100) lbf·ft	0.3 lbf·ft	
	(25 to 250) lbf·ft	0.73 lbf·ft	
	(100 to 1 000) lbf·ft	3 lbf·ft	

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Torque Transducers	(1 to 10) lbf·in (5 to 50) lbf·in (10 to 100) lbf·in (10 to 100) lbf·ft (25 to 250) lbf·ft (80 to 800) lbf·ft (100 to 1 000) lbf·ft	0.033 % of reading + 0.002 4 lbf·in 0.03% of reading + 0.006 lbf·in 0.026% of reading + 0.017 lbf·in 0.047% of reading + 0.011 lbf·ft 0.048 lbf·ft 0.028% of reading + 0.2 lbf·ft 0.18 lbf·ft	Comparison to Torque Arm, Master Weights

Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Infrared Devices [1]	50 °C 125 °C 250 °C 375 °C 500 °C	0.52 °C 0.8 °C 1.4 °C 1.9 °C 2.5 °C	Comparison to Blackbody Source (Flat Plate) $\varepsilon = 0.95$, $\lambda = (8 \text{ to } 14)$ µm
Infrared Devices [1]	600 °C 800 °C 1 000 °C 1 200 °C	8.4 °C 9.6 °C 11 °C 12 °C	Comparison to Blackbody Source (Cavity) $\varepsilon = 0.99$, $\lambda = (0.9 \text{ to } 14)$ µm
Temperature – Measure [1]	(-200 to 1 372) °C	0.26 °C	Comparison to Thermocouple Calibrator, Datalogger, Temperature Probe
Temperature Probes (Source)	(-45 to 125) °C (50 to 660) °C (0 to 1 200) °C	0.14 °C 0.11 % of reading + 0.37 °C 0.054 % of reading + 0.32 °C	Comparison to Dry-well, PRT, Type S Thermocouple, Environmental Chamber
Chart Recorders Relative Humidity Temperature	(20 to 90) %RH (-17 to 177) °C	1.8 %RH 0.53 °C	Comparison to Environmental Chamber, Datalogger

Time and Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Frequency – Measure [1]	(1 to 40) Hz 40 Hz to 10 MHz	0.06 % of reading + 0.7 mHz 0.012 % of reading + 1.2 Hz	Comparison to HP 3458 opt 002 8.5 Digit Multimeter
Frequency – Source [1]	10 mHz to 119.99 Hz (120 to 1199.9) Hz (1.2 to 11.999) kHz (12 to 119.99) kHz (120 to 1199.9) kHz (1.2 to 2) MHz	1.3 mHz 12 mHz 0.12 Hz 1.2 Hz 12 Hz 0.12 kHz	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option
Stopwatches	5 ms to 24 h	0.87 s	Comparison to Stopwatch Calibrator
Optical Tachometers	(1 to 100 000) rpm	0.002 2 % of reading + 0.21 rpm	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option

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. Scale calibration performed on-site only.
3. L = length in inches; DL = diagonal length in inches; ' = arc-minute; " = arc-second; x = angle in arc-sec.
4. The CMC for scales and balances is highly dependent upon the resolution of the unit under test. The CMC presented here does not include the resolution of the unit under test. The resolution will be included in the reported measurement uncertainty at the time of calibration.
5. Unless otherwise specified in the far-right column, the calibration procedure/method was written internally.
6. This scope is formatted as part of a single document including Certificate of Accreditation No. AC-1756.

Jason Stine, Vice President

CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

System Scale Corporation

4004 Enterprise Ct.
Martinez, GA 30907

Fulfills the requirements of

ISO/IEC 17025:2017

and national standard

ANSI/NCSL Z540-1-1994 (R2002)

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

Jason Stine, Vice President

Expiry Date: 24 May 2028
Certificate Number: AC-1756.12

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

AND

ANSI/NCSL Z540-1-1994 (R2002)

System Scale Corporation
4004 Enterprise Ct.
Martinez, GA 30907
Sean Rainey 501-562-2900 srainey@system-scale.com

CALIBRATION

ISO/IEC 17025 Accreditation Granted: **24 February 2026**

Certificate Number: **AC-1756.12** Certificate Expiry Date: **24 May 2028**

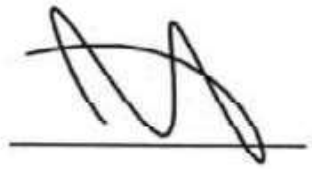
Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Scales and Balances [1,2]	(0 to 100) g (100 to 200) g (200 to 500) g (500 to 1 000) g (1 000 to 5 000) g (5 000 to 10 000) g (10 to 325) kg	0.000 25 % of reading + 55 µg 0.000 27 % of reading + 45 µg 0.000 27 % of reading + 64 µg 0.000 32 % of reading – 0.23 mg 0.000 28 % of reading + 0.39 mg 0.000 3 % of reading 0.012 % of reading	ASTM E617 Class 1, Class 6, Class 7 weights; NIST Class F weights; utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.
Scales [1,2]	(0 to 5) lb (5 to 30) lb (30 to 100) lb (100 to 500) lb (500 to 1 000) lb (1 000 to 5 000) lb (5 000 to 10 000) lb (10 000 to 20 000) lb (20 000 to 50 000) lb (50 000 to 200 000) lb	0.018 % of reading + 0.000 01 lb 0.013 % of reading -0.000 13 lb 0.012 % of reading + 0.000 3 lb 0.012 % of reading + 0.001 7 lb 0.011 % of reading + 0.016 lb 0.012 % of reading + 0.016 lb 0.013 % of reading + 0.009 6 lb 0.012 % of reading + 0.23 lb 0.012 % of reading + 0.5 lb 0.03 % of reading	ASTM E617 Class 1, Class 6, Class 7 weights; NIST Class F weights; utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.

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:

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2. The CMC for scales and balances is highly dependent upon the resolution of the unit under test. The CMC presented here does not include the resolution of the unit under test. The resolution will be included in the reported measurement uncertainty at the time of calibration.



Jason Stine, Vice President

1899 L Street NW, Suite 1100-A, Washington, DC 20036
414-501-5494
www.anab.org

CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

System Scale Corporation

6759 Reese Road
Memphis, TN 38133

Fulfills the requirements of

ISO/IEC 17025:2017

and national standard

ANSI/NCSL Z540-1-1994 (R2002)

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

Jason Stine, Vice President

Expiry Date: 01 February 2027
Certificate Number: AC-1756.04

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

AND

ANSI/NCSL Z540-1-1994 (R2002)

System Scale Corporation
6759 Reese Road
Memphis, TN 38133
Sean Rainey 501-562-2900 srainey@system-scale.com

CALIBRATION

Valid to: **February 1, 2027** Certificate Number: **AC-1756.04**

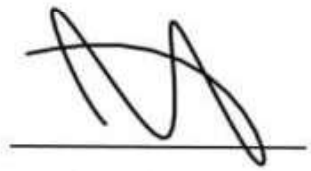
Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Scales and Balances [1,2] (SI)	Up to 100 g (100 to 200) g (200 to 500) g (500 to 1 000) g (1 to 5) kg (5 to 10) kg (10 to 325) kg	0.000 25 % of reading + 55 µg 0.000 27 % of reading + 45 µg 0.000 27 % of reading + 64 µg 0.000 32 % of reading - 0.23 mg 0.000 28 % of reading + 0.39 mg 0.000 3 % of reading - 1.1 mg 0.012 % of reading	ASTM E617 Class 1, 6, 7, and NIST Class F weights utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.
Scales and Balances [1,2] (Avoirdupois)	Up to 5 lb (5 to 30) lb (30 to 100) lb (100 to 500) lb (500 to 1 000) lb (1 000 to 5 000) lb (5 000 to 10 000) lb (10 000 to 20 000) lb (20 000 to 50 000) lb (50 000 to 200 000) lb	0.018 % of reading + 0.000 01 lb 0.013 % of reading - 0.000 13 lb 0.012 % of reading + 0.000 3 lb 0.012 % of reading + 0.001 7 lb 0.011 % of reading + 0.016 lb 0.012 % of reading + 0.016 lb 0.013 % of reading + 0.01 lb 0.012 % of reading + 0.23 lb 0.012 % of reading + 0.5 lb 0.03 % of reading - 8.8 lb	ASTM E617 Class 1, 6, 7, and NIST Class F weights utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.

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:

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2. The CMC for scales and balances is highly dependent upon the resolution of the unit under test. The CMC presented here does not include the resolution of the unit under test. The resolution will be included in the reported measurement uncertainty at the time of calibration.
3. This scope is formatted as part of a single document including Certificate of Accreditation No. AC-1756.04.



Jason Stine, Vice President

CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

System Scale Corporation

1420 Donelson Pike, Suite B7
Nashville, TN 37217

Fulfills the requirements of

ISO/IEC 17025:2017

and national standard

ANSI/NCSL Z540-1-1994 (R2002)

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

Jason Stine, Vice President

Expiry Date: 01 February 2027
Certificate Number: AC-1756.05

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

AND

ANSI/NCSL Z540-1-1994 (R2002)

System Scale Corporation
1420 Donelson Pike, Suite B7
Nashville, TN 37217
Sean Rainey 501-562-2900 srainey@system-scale.com

CALIBRATION

Valid to: **February 1, 2027** Certificate Number: **AC-1756.05**

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Scales and Balances [1,2] (SI)	Up to 100 g (100 to 200) g (200 to 500) g (500 to 1 000) g (1 to 5) kg (5 to 10) kg (10 to 325) kg	0.000 25 % of reading + 55 µg 0.000 27 % of reading + 45 µg 0.000 27 % of reading + 64 µg 0.000 32 % of reading - 0.23 mg 0.000 28 % of reading + 0.39 mg 0.000 3 % of reading - 1.1 mg 0.012 % of reading	ASTM E617 Class 1, 6, 7, and NIST Class F weights utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.
Scales and Balances [1,2] (Avoirdupois)	Up to 5 lb (5 to 30) lb (30 to 100) lb (100 to 500) lb (500 to 1 000) lb (1 000 to 5 000) lb (5 000 to 10 000) lb (10 000 to 20 000) lb (20 000 to 50 000) lb (50 000 to 200 000) lb	0.018 % of reading + 0.000 01 lb 0.013 % of reading - 0.000 13 lb 0.012 % of reading + 0.000 3 lb 0.012 % of reading + 0.001 7 lb 0.011 % of reading + 0.016 lb 0.012 % of reading + 0.016 lb 0.013 % of reading + 0.01 lb 0.012 % of reading + 0.23 lb 0.012 % of reading + 0.5 lb 0.03 % of reading - 8.8 lb	ASTM E617 Class 1, 6, 7, and NIST Class F weights utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.

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:

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2. The CMC for scales and balances is highly dependent upon the resolution of the unit under test. The CMC presented here does not include the resolution of the unit under test. The resolution will be included in the reported measurement uncertainty at the time of calibration.
3. This scope is formatted as part of a single document including Certificate of Accreditation No. AC-1756.05.

Jason Stine, Vice President

CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

System Scale Corporation

3211 Shawnee Industrial Way, Suite 106
Suwanee, GA 30024

Fulfills the requirements of

ISO/IEC 17025:2017

and national standard

ANSI/NCSL Z540-1-1994 (R2002)

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

Jason Stine, Vice President

Expiry Date: 24 May 2028
Certificate Number: AC-1756.10

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

AND

ANSI/NCSL Z540-1-1994 (R2002)

System Scale Corporation

3211 Shawnee Industrial Way, Suite 106
Suwanee, GA 30024
Sean Rainey 501-562-2900 srainey@system-scale.com

CALIBRATION

ISO/IEC 17025 Accreditation Granted: **22 April 2026**

Certificate Number: **AT-1756.10** Certificate Expiry Date: **24 May 2028**

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Scales and Balances [1,2] (SI)	Up to 100 g (100 to 200) g (200 to 500) g (500 to 1 000) g (1 to 5) kg (5 to 10) kg (10 to 325) kg	0.000 25 % of reading + 55 µg 0.000 27 % of reading + 45 µg 0.000 27 % of reading + 64 µg 0.000 32 % of reading - 0.23 mg 0.000 28 % of reading + 0.39 mg 0.000 3 % of reading - 1.1 mg 0.012 % of reading	ASTM E617 Class 1, 6, 7, and NIST Class F weights utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.
Scales and Balances [1,2] (Avoirdupois)	Up to 5 lb (5 to 30) lb (30 to 100) lb (100 to 500) lb (500 to 1 000) lb (1 000 to 5 000) lb (5 000 to 10 000) lb (10 000 to 20 000) lb (20 000 to 50 000) lb (50 000 to 200 000) lb	0.018 % of reading + 0.000 01 lb 0.013 % of reading - 0.000 13 lb 0.012 % of reading + 0.000 3 lb 0.012 % of reading + 0.001 7 lb 0.011 % of reading + 0.016 lb 0.012 % of reading + 0.016 lb 0.013 % of reading + 0.01 lb 0.012 % of reading + 0.23 lb 0.012 % of reading + 0.5 lb 0.03 % of reading - 8.8 lb	ASTM E617 Class 1, 6, 7, and NIST Class F weights utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.

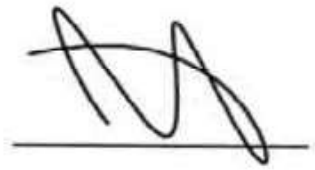
Calibration and Measurement Capability (CMC) is expressed in terms of the measurement parameter, measurement range, expanded uncertainty of measurement and reference standard, method, and/or equipment. The expanded uncertainty of measurement is expressed as the standard uncertainty of the measurement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

Notes:

This Scope of Accreditation, version 006, was last updated on: 01 May 2026 and is valid only when accompanied by the Certificate.

1899 L Street NW, Suite 1100-A, Washington, DC 20036
414-501-5494
www.anab.org

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. The CMC for scales and balances is highly dependent upon the resolution of the unit under test. The CMC presented here does not include the resolution of the unit under test. The resolution will be included in the reported measurement uncertainty at the time of calibration.



Jason Stine, Vice President

1899 L Street NW, Suite 1100-A, Washington, DC 20036
414-501-5494
www.anab.org

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

AND

ANSI/NCSL Z540-1-1994 (R2002)

System Scale Corporation

6215-120 Rangeline Road
Theodore, AL 36582
Sean Rainey 501-562-2900 srainey@system-scale.com

CALIBRATION

Valid to: **February 1, 2027** Certificate Number: **AC-1756.07**

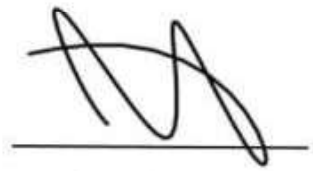
Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Scales and Balances [1,2] (SI)	Up to 100 g (100 to 200) g (200 to 500) g (500 to 1 000) g (1 to 5) kg (5 to 10) kg (10 to 325) kg	0.000 25 % of reading + 55 µg 0.000 27 % of reading + 45 µg 0.000 27 % of reading + 64 µg 0.000 32 % of reading - 0.23 mg 0.000 28 % of reading + 0.39 mg 0.000 3 % of reading - 1.1 mg 0.012 % of reading	ASTM E617 Class 1, 6, 7, and NIST Class F weights utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.
Scales and Balances [1,2] (Avoirdupois)	Up to 5 lb (5 to 30) lb (30 to 100) lb (100 to 500) lb (500 to 1 000) lb (1 000 to 5 000) lb (5 000 to 10 000) lb (10 000 to 20 000) lb (20 000 to 50 000) lb (50 000 to 200 000) lb	0.018 % of reading + 0.000 01 lb 0.013 % of reading - 0.000 13 lb 0.012 % of reading + 0.000 3 lb 0.012 % of reading + 0.001 7 lb 0.011 % of reading + 0.016 lb 0.012 % of reading + 0.016 lb 0.013 % of reading + 0.01 lb 0.012 % of reading + 0.23 lb 0.012 % of reading + 0.5 lb 0.03 % of reading - 8.8 lb	ASTM E617 Class 1, 6, 7, and NIST Class F weights utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.

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. The CMC for scales and balances is highly dependent upon the resolution of the unit under test. The CMC presented here does not include the resolution of the unit under test. The resolution will be included in the reported measurement uncertainty at the time of calibration.
3. This scope is formatted as part of a single document including Certificate of Accreditation No. AC-1756.07.



Jason Stine, Vice President

CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

System Scale Corporation

4808 Alma Highway
Van Buren, AR 72956

Fulfills the requirements of

ISO/IEC 17025:2017

and national standard

ANSI/NCSL Z540-1-1994 (R2002)

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

Jason Stine, Vice President

Expiry Date: 01 February 2027
Certificate Number: AC-1756.01

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

AND

ANSI/NCSL Z540-1-1994 (R2002)

System Scale Corporation

4808 Alma Highway
Van Buren, AR 72956
Sean Rainey 501-562-2900 srainey@system-scale.com

CALIBRATION

Valid to: **February 1, 2027** Certificate Number: **AC-1756.01**

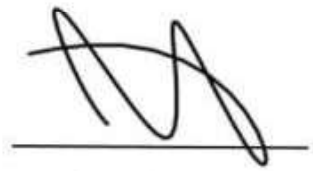
Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Scales and Balances [1,2] (SI)	Up to 100 g (100 to 200) g (200 to 500) g (500 to 1 000) g (1 to 5) kg (5 to 10) kg (10 to 325) kg	0.000 25 % of reading + 55 µg 0.000 27 % of reading + 45 µg 0.000 27 % of reading + 64 µg 0.000 32 % of reading - 0.23 mg 0.000 28 % of reading + 0.39 mg 0.000 3 % of reading - 1.1 mg 0.012 % of reading	ASTM E617 Class 1, 6, 7, and NIST Class F weights utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.
Scales and Balances [1,2] (Avoirdupois)	Up to 5 lb (5 to 30) lb (30 to 100) lb (100 to 500) lb (500 to 1 000) lb (1 000 to 5 000) lb (5 000 to 10 000) lb (10 000 to 20 000) lb (20 000 to 50 000) lb (50 000 to 200 000) lb	0.018 % of reading + 0.000 01 lb 0.013 % of reading - 0.000 13 lb 0.012 % of reading + 0.000 3 lb 0.012 % of reading + 0.001 7 lb 0.011 % of reading + 0.016 lb 0.012 % of reading + 0.016 lb 0.013 % of reading + 0.01 lb 0.012 % of reading + 0.23 lb 0.012 % of reading + 0.5 lb 0.03 % of reading - 8.8 lb	ASTM E617 Class 1, 6, 7, and NIST Class F weights utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.

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. The CMC for scales and balances is highly dependent upon the resolution of the unit under test. The CMC presented here does not include the resolution of the unit under test. The resolution will be included in the reported measurement uncertainty at the time of calibration.
3. This scope is formatted as part of a single document including Certificate of Accreditation No. AC-1756.01.



Jason Stine, Vice President

CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

System Scale Corporation
153 Challenger Ct
Columbus, GA 31904

Fulfills the requirements of

ISO/IEC 17025:2017

and national standard

ANSI/NCSL Z540-1-1994 (R2002)

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

Jason Stine, Vice President

Expiry Date: 24 May 2028
Certificate Number: AC-1756.14

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

AND

ANSI/NCSL Z540-1-1994 (R2002)

System Scale Corporation
153 Challenger Ct
Columbus, GA 31904
Sean Rainey 501-562-2900 srainey@system-scale.com

CALIBRATION

ISO/IEC 17025 Accreditation Granted: **24 February 2026**

Certificate Number: **AC-1756.14** Certificate Expiry Date: **24 May 2028**

Chemical Quantities

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
pH Meters [1]	4 pH 7 pH 10 pH	0.021 pH 0.021 pH 0.021 pH	Direct measure using Accredited pH Solutions
Conductivity Meters [1]	10 µS/cm 100 µS/cm 1 000 µS/cm 10 000 µS/cm 100 000 µS/cm	0.68 µS/cm 2.2 µS/cm 5.5 µS/cm 50 µS/cm 470 µS/cm	Direct Measure using Accredited Conductivity Solutions

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Voltage – Source [1] (locked ranges)	(0 to 329.9) mV (0 to 3.299) V (0 to 32.999) V (30 to 329.999) V (100 to 1 020) V	15.5 µV/V + 1.2 µV 10.2 µV/V + 2.5 µV 10.6 µV/V + 20 µV 14.8 µV/V + 0.11 mV 14 µV/V + 1.7 mV	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Current – Source [1] (locked ranges)	(0 to 329.9) µA (0 to 3.299 9) mA (0 to 32.999) mA (0 to 329.99) mA (0 to 1.099 9) A (1.1 to 2.999) A (0 to 10.99) A (11 to 20.5) A	0.11 mA/A + 17 nA 93.3 µA/A + 43 nA 80 µA/A + 0.27 µA 88 µA/A + 2.2 µA 0.17 mA/A + 36 µA 0.39 mA/A + 0.2 mA 0.39 mA/A + 0.45 mA 7.1 mA/A + 23 mA	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option
AC Voltage – Source [1]	(1 to 32.99) mV (10 to 40) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 500) kHz (33 to 329.99) mV (10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 500) kHz (0.33 to 3.299) V (10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 500) kHz (3.3 to 32.99) V (10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz 20 to 50 kHz 50 to 100 kHz	 0.94 mV/V + 7.1 µV 0.18 mV/V + 7.1 µV 0.23 mV/V + 7.6 µV 1.1 mV/V + 9.3 µV 4.1 mV/V + 16.6 µV 9.4 mV/V + 62 µV 0.37 mV/V + 8.9 µV 0.17 mV/V + 10 µV 0.18 mV/V + 12 µV 0.41 mV/V + 14 µV 0.95 mV/V + 37 µV 2.3 mV/V + 83 µV 0.34 mV/V + 66 µV 0.18 mV/V + 72 µV 0.21 mV/V + 0.1 mV 0.33 mV/V + 0.1 mV 0.79 mV/V + 0.2 mV 2.7 mV/V + 1 mV 0.38 mV/V + 0.66 mV 0.18 mV/V + 0.72 mV 0.27 mV/V + 1 mV 0.39 mV/V + 1.1 mV 1 mV/V + 2.4 mV	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option

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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Voltage – Source [1]	(33 to 329.99) V 45 Hz to 1 kHz (1 to 10) kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (330 to 1 020) V 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	 0.22 mV/V + 2.3 mV 0.24 mV/V + 7.2 mV 0.3 mV/V + 11 mV 0.32 mV/V + 26 mV 2.3 mV/V + 64 mV 0.34 mV/V + 17 mV 0.28 mV/V + 26 mV 0.34 mV/V + 17 mV	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option
AC Voltage – Source [1] (AUX Output)	(10 to 329.99) mV (10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz (0.33 to 3.299) V (10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz (3.3 to 5) V (10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	 0.53 mV 0.43 mV 0.43 mV 0.52 mV 0.52 mV 1.1 mV 0.71 mV 0.55 mV 0.57 mV 1.7 mV 1.7 mV 3.3 mV 8.1 mV 0.61 mV 0.64 mV 1.7 mV 1.8 mV	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option
AC Current – Source [1]	(29 to 329.99) µA (10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	 2.3 mA/A + 0.14 µA 1.7 mA/A + 0.14 µA 1.5 mA/A + 0.12 µA 3.7 mA/A + 0.19 µA 9.3 mA/A + 0.23 µA 18 mA/A + 0.55 µA	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option

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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Current – Source [1]	(0.33 to 3.299) mA		Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option
	(10 to 20) Hz	2.2 mA/A + 0.57 µA	
	(20 to 45) Hz	1.4 mA/A + 0.38 µA	
	45 Hz to 1 kHz	1.2 mA/A + 0.18 µA	
	(1 to 5) kHz	2.3 mA/A + 0.23 µA	
	(5 to 10) kHz	5.4 mA/A + 2.1 µA	
	(10 to 30) kHz	12 mA/A + 0.8 µA	
	(3.3 to 32.99) mA		
	(10 to 20) Hz	2 mA/A + 43 µA	
	(20 to 45) Hz	1 mA/A + 39 µA	
	45 Hz to 1 kHz	0.47 mA/A + 23 µA	
	(1 to 5) kHz	1.2 mA/A + 58 µA	
	(5 to 10) kHz	2.3 mA/A + 0.15 mA	
	(10 to 30) kHz	4.7 mA/A + 0.23 mA	
	(33 to 329.99) mA		
	(10 to 20) Hz	2 mA/A + 43 µA	
	(20 to 45) Hz	1 mA/A + 39 µA	
	45 Hz to 1 kHz	0.47 mA/A + 23 µA	
	(1 to 5) kHz	1.2 mA/A + 58 µA	
	(5 to 10) kHz	2.3 mA/A + 0.15 mA	
	(10 to 30) kHz	4.7 mA/A + 0.23 mA	
	(0.33 to 1.099 9) A		
	(10 to 45) Hz	2.1 mA/A + 0.13 mA	
	45 Hz to 1 kHz	0.6 mA/A + 0.11 mA	
	(1 to 5) kHz	6.9 mA/A + 1.2 mA	
	(5 to 10) kHz	28 mA/A + 6.6 mA	
	(1.1 to 2.999) A		
	(10 to 45) Hz	2.1 mA/A + 0.34 mA	
	45 Hz to 1 kHz	0.8 mA/A + 16 µA	
	(1 to 5) kHz	6.9 mA/A + 1.2 mA	
	(5 to 10) kHz	29 mA/A + 6.2 mA	
	(3 to 10.99) A		
	(45 to 100) Hz	0.64 mA/A + 3.2 mA	
	100 Hz to 1 kHz	1.3 mA/A + 2 mA	
	(1 to 5) kHz	34 mA/A + 7.1 mA	
	(11 to 20.5) A		
	(45 to 100) Hz	1.3 mA/A + 7.3 mA	
	100 Hz to 1 kHz	1.8 mA/A + 5.4 mA	
	(1 to 5) kHz	34 mA/A + 11 mA	

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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Resistance – Source [1] (Simulation)	(0 to 10.9) Ω (11 to 32.9) Ω (33 to 109.99) Ω (110 to 329.99) Ω (0.33 to 1.09) kΩ (1.1 to 3.299) kΩ (3.3 to 10.99) kΩ (11 to 32.999) kΩ (33 to 109.99) kΩ (110 to 329.9) kΩ (0.33 to 1.09) MΩ (1.1 to 3.29) MΩ (3.3 to 10.9) MΩ (11 to 32.99) MΩ (33 to 109.99) MΩ (110 to 329.99) MΩ (330 to 1 100) MΩ	37 μΩ/Ω + 0.8 mΩ 13 μΩ/Ω + 22 μΩ 59 μΩ/Ω + 1.8 mΩ 23 μΩ/Ω + 1.6 mΩ 24 μΩ/Ω + 1.3 mΩ 28 μΩ/Ω + 10 mΩ 23 μΩ/Ω + 19 mΩ 23 μΩ/Ω + 0.16 Ω 24 μΩ/Ω + 0.13 Ω 24 μΩ/Ω + 2.5 Ω 42 μΩ/Ω + 2.9 Ω 0.11 mΩ/Ω + 45 Ω 0.19 mΩ/Ω + 0.11 kΩ 0.52 mΩ/Ω + 2.1 kΩ 0.43 mΩ/Ω + 1.7 kΩ 2.3 mΩ/Ω + 82 kΩ 13 mΩ/Ω + 59 kΩ	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option
Electrical Simulation of Thermocouple Indicating Devices – Measure/Source [1]	Type E (-250 to -100) °C (-100 to -25) °C (-25 to 350) °C (350 to 650) °C (650 to 1 000) °C Type J (-210 to -100) °C (-100 to -30) °C (-30 to 150) °C (150 to 760) °C (760 to 1 200) °C Type K (-200 to -100) °C (-100 to -25) °C (-25 to 120) °C (120 to 1 000) °C (1 000 to 1 372) °C	 0.58 °C 0.19 °C 0.17 °C 0.19 °C 0.25 °C 0.32 °C 0.19 °C 0.17 °C 0.21 °C 0.27 °C 0.39 °C 0.22 °C 0.19 °C 0.31 °C 0.47 °C	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option

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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Electrical Simulation of Thermocouple Indicating Devices – Measure/Source [1]	Type N (-200 to -100) °C (-100 to -25) °C (-25 to 120) °C (120 to 410) °C (410 to 1 300) °C Type R (0 to 250) °C (250 to 400) °C (400 to 1 000) °C (1 000 to 1 767) °C Type S (0 to 250) °C (250 to 1 000) °C (1 000 to 1 400) °C (1 400 to 1 767) °C Type T (-250 to -150) °C (-150 to 0) °C (0 to 120) °C (120 to 400) °C	 0.47 °C 0.26 °C 0.23 °C 0.22 °C 0.32 °C 0.66 °C 0.41 °C 0.39 °C 0.47 °C 0.55 °C 0.42 °C 0.43 °C 0.54 °C 0.73 °C 0.29 °C 0.19 °C 0.17 °C	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option
Electrical Simulation of RTD Indicating Devices – Source[1]	Pt 385, 100 Ω (-200 to -80) °C (-80 to 0) °C (0 to 100) °C (100 to 300) °C (300 to 400) °C (400 to 630) °C (630 to 800) °C	 0.06 °C 0.06 °C 0.08 °C 0.11 °C 0.12 °C 0.14 °C 0.27 °C	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option
Capacitance – Source [1] (Simulation)	(220 to 399.9) pF (0.4 to 1.099) nF (1.1 to 3.299 9) nF (3.3 to 10.999) nF (11 to 32.999) nF (33 to 109.99) nF (110 to 329.99) nF (0.33 to 1.099 9) µF (1.1 to 3.299) µF (3.3 to 10.999) µF	5.6 pF/F + 12 pF 5 pF/F + 13 pF 5 pF/F + 17 pF 2.7 pF/F + 16 pF 2.3 pF/F + 0.17 nF 2.7 pF/F + 0.16 nF 1.8 pF/F + 1.2 nF 2.7 pF/F + 1.6 nF 1.8 pF/F + 12 nF 2.7 pF/F + 16 nF	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option

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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Capacitance – Source [1] (Simulation)	(11 to 32.999) µF (33 to 109.99) µF (110 to 329.99) µF (0.33 to 1.099 9) mF (1.1 to 3.299 9) mF (3.3 to 10.999) mF (11 to 32.999) mF (33 to 110) mF	3.6 pF/F + 0.11 µF 5.2 pF/F + 0.14 µF 4.1 pF/F + 1.1 µF 5.1 pF/F + 1.5 µF 4.1 pF/F + 11 µF 5.1 pF/F + 14 µF 7.3 pF/F + 0.1 mF 13 pF/F + 0.13 mF	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option
Oscilloscopes[1]			Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option
Amplitude – DC			
into 50 Ω load	(0 to 6.6) V	3 mV/V + 47 µV	
into 1 MΩ load	(0 to 130) V	0.59 mV/V + 47 µV	
Amplitude – Square Wave			
into 50 Ω load	10 Hz to 100 kHz ± 1 mVp-p to ± 6 Vp-p	3 mV/V + 47 µV	
into 1 MΩ load	± 1 mVp-p to ± 130 Vp-p	1.2 mV/V + 47 µV	
Amplitude – Edge	5 mV to 2.5 V	24 mV/V + 0.23 mV	
Leveled Sine Wave			
into 50 Ω load	5 mVp-p to 5.5 Vp-p 50 kHz 50 kHz to 100 MHz (100 to 300) MHz (300 to 600) MHz	 24 mV/V + 0.37 mV 24 mV/V + 0.37 mV 47 mV/V + 0.37 mV 71 mV/V + 0.37 mV	
Time Markers	(2 to 5) ns 10 ns (20 to 50) ns 100 ns to 20 ms 50 ms to 5 s	0.12 ns 0.12 ns 0.12 ns 11 ns 29 µs	

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Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Indicators [1]	Up to 1 in (1 to 5) in	60 µin 71 µin	Comparison to Gage Blocks
Outside Micrometers, Depth Micrometers [1,3]	Up to 20 in	(57 + 8.1*L*) µin	Comparison to Gage Blocks
Calipers [1,3]	Up to 80 in	(287 + 2.8*L*) µin	Comparison to Gage Blocks
Height Gages [1,3]	Up to 40 in	(13 + 8.7*L*) µin	Comparison to Gage Blocks, Surface Plate
Thickness Coating Gage [1]	Up to 206 mils	(12 + 48*L*) µin	Comparison to Shims
Optical Comparators [1,3] Linearity Angularity Magnification	 Up to 12 in (0 to 90)° (10 to 100) X	 (0.000 13 + 0.001 1*L*) µin (38 + 0.35*Θ*)″ 0.012 in	Comparisons to Inspection Master, Angle Block
Precision Rules 1	(6 to 72) in	0.037 in	Comparison to Master Precision Rule, Microscope
Measuring Tapes 1	(6 to 100) ft	0.079 in	Comparison to Master Precision Rule, Microscope
Roughness Gage [1]	Ra 16.1 µin Ra 119.5 µin Ra	 1.9 µin 4.5 µin	Comparison to Roughness Standard
Surface Plate [1,3] Overall Flatness Local Area Flatness	 Up to 161 in*DL* (0 to 250) µin Up to 0.001 in	 (5.4 – 0.97*DL*) µin 26 µin	In accordance with ASME B89.3.7 using Electronic Leveling System Repeat-o-Meter
Digital Protractors [1,3]	Up to 360°	0.37′	Comparison to Angle Blocks
Dial Protractors [1,3]	Up to 360°	10′	Comparison to Angle Blocks
Length Measurements [1,3]	Up to 100 in	(113 + 7.2*L*) µin	Comparison to Gage Blocks

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Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Scales and Balances [1,2] (SI)	Up to 100 g (100 to 200) g (200 to 500) g (500 to 1 000) g (1 000 to 5 000) g (5 000 to 10 000) g (10 to 325) kg	0.000 25 % of reading + 55 µg 0.000 27 % of reading + 45 µg 0.000 27 % of reading + 64 µg 0.000 32 % of reading – 0.23 mg 0.000 28 % of reading + 0.39 mg 0.000 3 % of reading 0.012 % of reading	ASTM E617 Class 1, Class 6, Class 7 weights; NIST Class F weights; utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.
Scales [1,2] (Avoirdupois)	Up to 5 lb (5 to 30) lb (30 to 100) lb (100 to 500) lb (500 to 1 000) lb (1 000 to 5 000) lb (5 000 to 10 000) lb (10 000 to 20 000) lb (20 000 to 50 000) lb (50 000 to 200 000) lb	0.018 % of reading + 0.000 01 lb 0.013 % of reading -0.000 13 lb 0.012 % of reading + 0.000 3 lb 0.012 % of reading + 0.001 7 lb 0.011 % of reading + 0.016 lb 0.012 % of reading + 0.016 lb 0.013 % of reading + 0.009 6 lb 0.012 % of reading + 0.23 lb 0.012 % of reading + 0.5 lb 0.03 % of reading	ASTM E617 Class 1, Class 6, Class 7 weights; NIST Class F weights; utilizing NIST Handbook 44, ASTM E898, and EURAMET Guide No. 18 for the calibration of the weighing system.
Vacuum [1]	(-12 to 0) psiv	0.3 psi	Comparison to Master Vacuum Transducer
Pressure Gages [1] (Pneumatic)	Up to 1 000 psig	0.18 psi	Comparison to Master Vacuum Transducer
Pressure Gages [1] (Hydraulic)	Up to 10 000 psig	1.5 psi	Comparison to Master Vacuum Transducer
Force Gages [1] (Compression and Tension)	Up to 100 lbf (100 to 500) lbf (500 to 1 000) lbf (1 000 to 10 000) lbf (1 000 to 100 000) lbf	0.17 lbf 0.26 lbf 0.84 lbf 2.1 lbf 4.5 lbf	Comparison to Load Cells, Master Weights
Brinell Hardness Testers [1]	(72 to 277) HBW	3.4 HBW	Indirect verification per ASTM E10 using Hardness Blocks.
Rockwell Hardness Testers [1]	HRA Low Middle High	 1.2 HRA 1.3 HRA 1.2 HRA	Indirect verification per ASTM E18 using Hardness Blocks.

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Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Rockwell Hardness Testers [1]	HRBW Low Middle High HRC Low Middle High HREW Low Middle High	 1.9 HRBW 1.2 HRBW 1.2 HRBW 1.3 HRC 1.3 HRC 0.66 HRC 1.3 HREW 1.3 HREW 1.5 HREW	Indirect verification per ASTM E18 using Hardness Blocks.
Rockwell Superficial Hardness Testers [1]	HR15N Low Middle High HR30N Low Middle High HR45N Low Middle High HR15TW Low Middle High HR30TW Low Middle High	 1.3 HR15N 1.3 HR15N 0.92 HR15N 1.3 HR30N 1.3 HR30N 1.3 HR30N 1.3 HR45N 1.3 HR45N 0.89 HR45N 1.8 HR15TW 1.3 HR15TW 1.3 HR15TW 1.8 HR30TW 1.8 HR30TW 1.3 HR30TW	Indirect verification per ASTM E18 using Hardness Blocks.
Torque Tools [1]	(5 to 50) lbf·in (10 to 100) lbf·in (10 to 100) lbf·ft (25 to 250) lbf·ft (100 to 1 000) lbf·ft	0.29 lbf·in 0.29 lbf·in 0.3 lbf·ft 0.73 lbf·ft 2.9 lbf·ft	Comparison to Torque Transducers

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Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Infrared Devices [1]	50 °C 125 °C 250 °C 375 °C 500 °C	0.52 °C 0.8 °C 1.4 °C 1.9 °C 2.5 °C	Comparison to Blackbody Source (Flat Plate) $\varepsilon = 0.95$, $\lambda = (8 \text{ to } 14)$ µm
Infrared Devices [1]	600 °C 800 °C 1 000 °C 1 200 °C	8.4 °C 9.6 °C 10.8 °C 12 °C	Comparison to Blackbody Source (Cavity) $\varepsilon = 0.99$, $\lambda = (0.9 \text{ to } 14)$ µm
Temperature – Measure [1]	(-200 to 1 372) °C	0.26 °C	Thermocouple Calibrator, Datalogger, Thermocouple Probe
Temperature Probes [1]	Ambient to 200 °C (200 to 375) °C	0.53 °C 0.81 °C	Comparison to Dry Well

Time and Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Timers [1]	5 ms to 24 h	1.9 s	Comparison to Stopwatch
Optical Tachometers [1,3]	(1 to 100 000) rpm	0.002 2 % of reading + 0.21 rpm	Comparison to Fluke 5522A/6 Multiproduct Calibrator with 600 MHz Scope Option

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. Scale calibration performed on-site only.
3. L = length in inches; DL = diagonal length in inches; $'$ = arc-minute; $''$ = arc-second; ° = arc-degree; Θ = angle in degrees; rpm = revolutions per minute.
4. Unless otherwise specified in the far-right column, the calibration method/procedure was developed and validated internally.

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