



National Voluntary Laboratory Accreditation Program



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

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CALIBRATION LABORATORIES

NVLAP LAB CODE 200717-0

DC/LF ELECTROMAGNETICS

NVLAP Code: 20/E02

AC Current Measure

<i>Current Range</i>	<i>Frequency Range</i>	<i>Best Uncertainty (\pm) ^{note 1}</i>	<i>Remarks</i>
(0 to 200) μ A	1 Hz to 10 Hz	500 μ A/A + 20 nA	8508A
(0 to 200) μ A	10 Hz to 10 kHz	500 μ A/A + 20 nA	8508A
(0 to 200) μ A	10 kHz to 30 kHz	720 μ A/A + 20 nA	8508A
(0 to 200) μ A	30 kHz to 100 kHz	4 ma/A + 20 nA	8508A
(0.2 to 2) mA	1 Hz to 10 Hz	310 μ A/A + 200 nA	8508A
(0.2 to 2) mA	10 Hz to 10 kHz	300 μ A/A + 200 nA	8508A
(0.2 to 2) mA	10 kHz to 30 kHz	710 μ A/A + 200 nA	8508A
(0.2 to 2) mA	30 kHz to 100 kHz	4 ma/A + 200 nA	8508A
(2 to 20) mA	1 Hz to 10 Hz	310 μ A/A + 2 μ A	8508A
(2 to 20) mA	10 Hz to 10 kHz	300 μ A/A + 2 μ A	8508A
(2 to 20) mA	10 kHz to 30 kHz	710 μ A/A + 2 μ A	8508A
(2 to 20) mA	30 kHz to 100 kHz	4 ma/A + 2 μ A	8508A
(20 to 200) mA	10 Hz to 10 kHz	500 μ A/A + 20 μ A	8508A
(20 to 200) mA	10 kHz to 30 kHz	710 μ A/A + 20 μ A	8508A
(20 to 200) mA	30 kHz to 100 kHz	4 ma/A + 20 μ A	8508A
(0.2 to 2) A	10 Hz to 2 kHz	620 μ A/A + 200 μ A	8508A
(0.2 to 2) A	2 kHz to 10 kHz	730 μ A/A + 200 μ A	8508A

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(0.2 to 2) A	10 kHz to 30 kHz	3 mA/A + 200 μ A	8508A
(2 to 20) A	10 Hz to 2 kHz	830 μ A/A + 2 mA	8508A
(2 to 20) A	2 kHz to 10 kHz	2.5 mA/A + 2 mA	8508A

AC Current Source

Current Range	Frequency Range	Best Uncertainty (\pm) ^{note 1}	Remarks
(29.00 to 329.99) μ A	10 Hz to 20 Hz	0.15 % + 0.08 μ A	5520A
(29.00 to 329.99) μ A	20 Hz to 45 Hz	0.12 % + 0.08 μ A	5520A
(29.00 to 329.99) μ A	45 Hz to 1 kHz	0.10 % + 0.08 μ A	5520A
(29.00 to 329.99) μ A	1 kHz to 5 kHz	0.23 % + 0.12 μ A	5520A
(29.00 to 329.99) μ A	5 kHz to 10 kHz	0.62 % + 0.16 μ A	5520A
(29.00 to 329.99) μ A	10 kHz to 30 kHz	1.2 % + 0.31 μ A	5520A
(0.33 to 3.2999) mA	10 Hz to 20 Hz	0.15 % + 0.12 μ A	5520A
(0.33 to 3.2999) mA	20 Hz to 45 Hz	0.10 % + 0.12 μ A	5520A
(0.33 to 3.2999) mA	45 Hz to 1 kHz	0.08 % + 0.12 μ A	5520A
(0.33 to 3.2999) mA	1 kHz to 5 kHz	0.15 % + 0.15 μ A	5520A
(0.33 to 3.2999) mA	5 kHz to 10 kHz	0.39 % + 0.23 μ A	5520A
(0.33 to 3.2999) mA	10 kHz to 30 kHz	0.77 % + 0.46 μ A	5520A
(3.3 to 32.999) mA	10 Hz to 20 Hz	0.14 % + 1.6 μ A	5520A
(3.3 to 32.999) mA	20 Hz to 45 Hz	0.07 % + 1.6 μ A	5520A
(3.3 to 32.999) mA	45 Hz to 1 kHz	0.03 % + 1.6 μ A	5520A
(3.3 to 32.999) mA	1 kHz to 5 kHz	0.06 % + 1.6 μ A	5520A
(3.3 to 32.999) mA	5 kHz to 10 kHz	0.15 % + 2.3 μ A	5520A
(3.3 to 32.999) mA	10 kHz to 30 kHz	0.31 % + 3.1 μ A	5520A
(33 to 329.99) mA	10 Hz to 20 Hz	0.14 % + 16 μ A	5520A
(33 to 329.99) mA	20 Hz to 45 Hz	0.07 % + 16 μ A	5520A
(33 to 329.99) mA	45 Hz to 1 kHz	0.03 % + 16 μ A	5520A
(33 to 329.99) mA	1 kHz to 5 kHz	0.08 % + 39 μ A	5520A
(33 to 329.99) mA	5 kHz to 10 kHz	0.15 % + 78 μ A	5520A
(33 to 329.99) mA	10 kHz to 30 kHz	0.31 % + 160 μ A	5520A
(0.33 to 1.09999) A	10 Hz to 45 Hz	0.14 % + 78 μ A	5520A
(0.33 to 1.09999) A	45 Hz to 1 kHz	0.04 % + 78 μ A	5520A
(0.33 to 1.09999) A	1 kHz to 5 kHz	0.46 % + 780 μ A	5520A

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<i>Current Range</i>	<i>Frequency Range</i>	<i>Best Uncertainty (\pm)^{note 1}</i>	<i>Remarks</i>
(0.33 to 1.09999) A	5 kHz to 10 kHz	1.9 % + 3.9 mA	5520A
(1.1 to 2.99999) A	10 Hz to 45 Hz	0.14 % + 78 μ A	5520A
(1.1 to 2.99999) A	45 Hz to 1 kHz	0.05 % + 78 μ A	5520A
(1.1 to 2.99999) A	1 kHz to 5 kHz	0.46 % + 780 μ A	5520A
(1.1 to 2.99999) A	5 kHz to 10 kHz	1.9 % + 3.9 mA	5520A
(3 to 10.9999) A	45 Hz to 100 Hz	0.05 % + 1.5 mA	5520A
(3 to 10.9999) A	100 Hz to 1 kHz	0.08 % + 1.5 mA	5520A
(3 to 10.9999) A	1 kHz to 5 kHz	2.3 % + 1.5 mA	5520A
(11 to 20.5) A	45 Hz to 100 Hz	0.09 % + 3.9 mA	5520A
(11 to 20.5) A	100 Hz to 1 kHz	0.12 % + 3.9 mA	5520A
(11 to 20.5) A	1 kHz to 5 kHz	2.3 % + 3.9 mA	5520A
(20 to 150) A	50 Hz to 400 Hz	0.5 % + 120 mA	5520A/5500A Coil
(150 to 1000) A	50 Hz to 400 Hz	0.4 % + 130 mA	5520A/5500A Coil

NVLAP Code: 20/E05

DC Current Measure

<i>Current Range</i>	<i>Best Uncertainty (\pm)^{note 1}</i>	<i>Remarks</i>
(0 to 200) μ A	12 μ A/A + 0.4 nA	8508A
(0.2 to 2) mA	12 μ A/A + 4.2 nA	8508A
(2 to 20) mA	14 μ A/A + 41 nA	8508A
(20 to 200) mA	49 μ A/A + 810 nA	8508A
(0.2 to 2) A	180 μ A/A + 16 μ A	8508A
(2 to 20) A	400 μ A/A + 0.4 mA	8508A

DC Current Source

(0 to 329.999) μ A	110 μ A/A + 0.02 μ A	5520A
(0.33 to 3.29999) mA	77 μ A/A + 0.04 μ A	5520A
(3.3 to 32.9999) mA	77 μ A/A + 0.2 μ A	5520A
(33 to 329.999) mA	77 μ A/A + 1.9 μ A	5520A
(0.33 to 1.09999) A	150 μ A/A + 31 μ A	5520A
(1.1 to 2.99999) A	290 μ A/A + 31 μ A	5520A

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(3 to 10.9999) A	380 μ A/A + 390 μ A	5520A
(11 to 20.5) A	770 μ A/A + 580 μ A	5520A

Resistance Measure

Resistance Range	Best Uncertainty (\pm) ^{note 1}	Remarks
(0 to 2) Ω	28 $\mu\Omega/\Omega$ + 4.0 $\mu\Omega$	8508A
(2 to 20) Ω	16 $\mu\Omega/\Omega$ + 14 $\mu\Omega$	8508A
(20 to 200) Ω	8 $\mu\Omega/\Omega$ + 51 $\mu\Omega$	8508A
(0.2 to 2) k Ω	8 $\mu\Omega/\Omega$ + 0.5 m Ω	8508A
(2 to 20) k Ω	8 $\mu\Omega/\Omega$ + 5.2 m Ω	8508A
(20 to 200) k Ω	9 $\mu\Omega/\Omega$ + 52 m Ω	8508A
(0.2 to 2) M Ω	7 $\mu\Omega/\Omega$ + 1 Ω	8508A
(2 to 20) M Ω	410 $\mu\Omega/\Omega$ + 100 Ω	8508A
(20 to 200) M Ω	0.21 % + 10 k Ω	8508A
(0.2 to 2) G Ω	0.5 % + 1 M Ω	8508A

Resistance Source

Resistance Range	Best Uncertainty (\pm) ^{note 1}	Remarks
0 to 10.9999 Ω	36 $\mu\Omega/\Omega$ + 0.7 m Ω	5520A
11 Ω to 32.9999 Ω	23 $\mu\Omega/\Omega$ + 1.2 m Ω	5520A
33 Ω to 109.9999 Ω	22 $\mu\Omega/\Omega$ + 1.1 m Ω	5520A
110 Ω to 329.9999 Ω	22 $\mu\Omega/\Omega$ + 1.6 m Ω	5520A
330 Ω to 1.099999 k Ω	22 $\mu\Omega/\Omega$ + 1.6 m Ω	5520A
1.1 k Ω to 3.299999 k Ω	22 $\mu\Omega/\Omega$ + 16 m Ω	5520A
3.3 k Ω to 10.99999 k Ω	22 $\mu\Omega/\Omega$ + 16 m Ω	5520A
11 k Ω to 32.99999 k Ω	22 $\mu\Omega/\Omega$ + 0.15 Ω	5520A
33 k Ω to 109.9999 k Ω	22 $\mu\Omega/\Omega$ + 0.15 Ω	5520A
110 k Ω to 329.9999 k Ω	26 $\mu\Omega/\Omega$ + 1.5 Ω	5520A
330 k Ω to 1.099999 M Ω	27 $\mu\Omega/\Omega$ + 1.5 Ω	5520A
1.1 M Ω to 3.299999 M Ω	80 $\mu\Omega/\Omega$ + 23 Ω	5520A
3.3 M Ω to 10.99999 M Ω	100 $\mu\Omega/\Omega$ + 39 Ω	5520A
11 M Ω to 32.99999 M Ω	400 $\mu\Omega/\Omega$ + 1.9 k Ω	5520A
33 M Ω to 109.9999 M Ω	510 $\mu\Omega/\Omega$ + 2.3 k Ω	5520A

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110 MΩ to 329.9999 MΩ	0.23 % + 78 kΩ	5520A
330 MΩ to 1100 MΩ	1.1 % + 390 kΩ	5520A

Electrical Substitution of RTDs
Source using 5520A

<i>Temperature Range in °C</i>	<i>Best Uncertainty (±) in °C ^{note 1}</i>	<i>RTD Type</i>
-200 to -80	0.04	PT 385 (100 Ω)
-80 to 0	0.04	PT 385 (100 Ω)
0 to 100	0.06	PT 385 (100 Ω)
100 to 300	0.07	PT 385 (100 Ω)
300 to 400	0.08	PT 385 (100 Ω)
400 to 630	0.09	PT 385 (100 Ω)
630 to 800	0.18	PT 385 (100 Ω)

NVLAP Code: 20/E06
DC Voltage Measure

<i>DC Voltage Range</i>	<i>Best Uncertainty (±) ^{note 1}</i>	<i>Remarks</i>
(0 to 200) mV	38 μV/V + 0.1 μV	8508A
(0.2 to 2) V	4.6 μV/V + 0.4 μV	8508A
(2 to 20) V	3.6 μV/V + 4 μV	8508A
(20 to 200) V	5.6 μV/V + 41 μV	8508A
(200 to 1000) V	5.6 μV/V + 510 μV	8508A

DC Voltage Source

(0 to 329.9999) mV	18 μV/V + 1 μV	5520A
(0.33 to 3.299999) V	10 μV/V + 2 μV	5520A
(3.3 to 32.99999) V	9 μV/V + 16 μV	5520A
(33 to 329.9999) V	14 μV/V + 120 μV	5520A
(330 to 1000.000) V	14 μV/V + 1.2 mV	5520A

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Electrical Simulation of Thermocouple Devices
Source and Measure using 5520A

<i>Temperature Range in °C</i>	<i>Best Uncertainty (±) in °C^{note 1}</i>	<i>Thermocouple Type</i>
-210 to -100	0.24	J
-100 to -30	0.15	J
-30 to 150	0.12	J
150 to 760	0.16	J
760 to 1200	0.32	J
-200 to -100	0.26	K
-100 to -25	0.20	K
-25 to 120	0.22	K
120 to 1000	0.21	K
1000 to 1372	0.34	K
-250 to -150	0.50	T
-150 to 0	0.20	T
0 to 120	0.44	T
120 to 400	0.14	T

NVLAP Code: 20/E09
AC Voltage Measure

<i>AC Voltage Range</i>	<i>Frequency Range</i>	<i>Best Uncertainty (±)^{note 1}</i>	<i>Remarks</i>
(0 to 200) mV	1 Hz to 10 Hz	160 μV/V + 14 μV	8508A
(0 to 200) mV	10 Hz to 40 Hz	140 μV/V + 4.0 μV	8508A
(0 to 200) mV	40 Hz to 100 Hz	110 μV/V + 4.0 μV	8508A
(0 to 200) mV	100 Hz to 2 kHz	110 μV/V + 2.0 μV	8508A
(0 to 200) mV	2 kHz to 10 kHz	130 μV/V + 4.0 μV	8508A
(0 to 200) mV	10 kHz to 30 kHz	340 μV/V + 8.0 μV	8508A
(0 to 200) mV	30 kHz to 100 kHz	770 μV/V + 20 μV	8508A
(0.2 to 2) V	1 Hz to 10 Hz	150 μV/V + 120 μV	8508A
(0.2 to 2) V	10 Hz to 40 Hz	120 μV/V + 20 μV	8508A
(0.2 to 2) V	40 Hz to 100 Hz	97 μV/V + 20 μV	8508A
(0.2 to 2) V	100 Hz to 2 kHz	84 μV/V + 20 μV	8508A

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(0.2 to 2) V	2 kHz to 10 kHz	110 $\mu\text{V}/\text{V} + 20 \mu\text{V}$	8508A
(0.2 to 2) V	10 kHz to 30 kHz	220 $\mu\text{V}/\text{V} + 41 \mu\text{V}$	8508A
(0.2 to 2) V	30 kHz to 100 kHz	570 $\mu\text{V}/\text{V} + 200 \mu\text{V}$	8508A
(0.2 to 2) V	100 kHz to 300 kHz	0.3 % + 2.0 mV	8508A
(2 to 20) V	1 Hz to 10 Hz	150 $\mu\text{V}/\text{V} + 1.2 \text{ mV}$	8508A
(2 to 20) V	10 Hz to 40 Hz	120 $\mu\text{V}/\text{V} + 0.2 \text{ mV}$	8508A
(2 to 20) V	40 Hz to 100 Hz	92 $\mu\text{V}/\text{V} + 0.2 \text{ mV}$	8508A
(2 to 20) V	100 Hz to 2 kHz	80 $\mu\text{V}/\text{V} + 0.2 \text{ mV}$	8508A
(2 to 20) V	2 kHz to 10 kHz	110 $\mu\text{V}/\text{V} + 0.2 \text{ mV}$	8508A
(2 to 20) V	10 kHz to 30 kHz	220 $\mu\text{V}/\text{V} + 0.4 \text{ mV}$	8508A
(2 to 20) V	30 kHz to 100 kHz	570 $\mu\text{V}/\text{V} + 2.0 \text{ mV}$	8508A
(2 to 20) V	100 kHz to 300 kHz	0.3 % + 20 mV	8508A
(20 to 200) V	40 Hz to 100 Hz	91 $\mu\text{V}/\text{V} + 2.0 \text{ mV}$	8508A
(20 to 200) V	100 Hz to 2 kHz	77 $\mu\text{V}/\text{V} + 2.0 \text{ mV}$	8508A
(20 to 200) V	2 kHz to 10 kHz	110 $\mu\text{V}/\text{V} + 2.0 \text{ mV}$	8508A
(20 to 200) V	10 kHz to 30 kHz	220 $\mu\text{V}/\text{V} + 4.0 \text{ mV}$	8508A
(20 to 200) V	30 kHz to 100 kHz	570 $\mu\text{V}/\text{V} + 20 \text{ mV}$	8508A
(20 to 200) V	100 kHz to 300 kHz	0.3 % + 0.2 V	8508A
(200 to 1000) V	40 Hz to 10 kHz	110 $\mu\text{V}/\text{V} + 20 \text{ mV}$	8508A
(200 to 1000) V	10 kHz to 30 kHz	220 $\mu\text{V}/\text{V} + 41 \text{ mV}$	8508A

AC Voltage Source

1.0 mV to 32.999 mV	10 Hz to 45 Hz	610 $\mu\text{V}/\text{V} + 5 \mu\text{V}$	5520A
1.0 mV to 32.999 mV	45 Hz to 10 kHz	130 $\mu\text{V}/\text{V} + 5 \mu\text{V}$	5520A
1.0 mV to 32.999 mV	10 kHz to 20 kHz	170 $\mu\text{V}/\text{V} + 5 \mu\text{V}$	5520A
1.0 mV to 32.999 mV	20 kHz to 50 kHz	770 $\mu\text{V}/\text{V} + 5 \mu\text{V}$	5520A
1.0 mV to 32.999 mV	50 kHz to 100 kHz	0.26 % + 9 μV	5520A
1.0 mV to 32.999 mV	100 kHz to 500 kHz	0.61 % + 39 μV	5520A
33 mV to 329.999 mV	10 Hz to 45 Hz	230 $\mu\text{V}/\text{V} + 6 \mu\text{V}$	5520A
33 mV to 329.999 mV	45 Hz to 10 kHz	110 $\mu\text{V}/\text{V} + 6 \mu\text{V}$	5520A
33 mV to 329.999 mV	10 kHz to 20 kHz	120 $\mu\text{V}/\text{V} + 6 \mu\text{V}$	5520A
33 mV to 329.999 mV	20 kHz to 50 kHz	270 $\mu\text{V}/\text{V} + 6 \mu\text{V}$	5520A
33 mV to 329.999 mV	50 kHz to 100 kHz	610 $\mu\text{V}/\text{V} + 25 \mu\text{V}$	5520A

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33 mV to 329.999 mV	100 kHz to 500 kHz	0.15 % + 54 μ V	5520A
0.33 mV to 3.29999 V	10 Hz to 45 Hz	230 μ V/V + 39 μ V	5520A
0.33 mV to 3.29999 V	45 Hz to 10 kHz	220 μ V/V + 47 μ V	5520A
0.33 mV to 3.29999 V	10 kHz to 20 kHz	140 μ V/V + 47 μ V	5520A
0.33 mV to 3.29999 V	20 kHz to 50 kHz	230 μ V/V + 39 μ V	5520A
0.33 mV to 3.29999 V	50 kHz to 100 kHz	530 μ V/V + 97 μ V	5520A
0.33 mV to 3.29999 V	100 kHz to 500 kHz	0.18 % + 460 μ V	5520A
3.3 V to 32.9999 V	10 Hz to 45 Hz	230 μ V/V + 500 μ V	5520A
3.3 V to 32.9999 V	45 Hz to 10 kHz	110 μ V/V + 460 μ V	5520A
3.3 V to 32.9999 V	10 kHz to 20 kHz	180 μ V/V + 460 μ V	5520A
3.3 V to 32.9999 V	20 kHz to 50 kHz	270 μ V/V + 460 μ V	5520A
3.3 V to 32.9999 V	50 kHz to 100 kHz	690 μ V/V + 1.2 mV	5520A
33 V to 329.999 V	10 Hz to 45 Hz	140 μ V/V + 1.6 mV	5520A
33 V to 329.999 V	45 Hz to 10 kHz	150 μ V/V + 4.7 mV	5520A
33 V to 329.999 V	10 kHz to 20 kHz	190 μ V/V + 4.7 mV	5520A
33 V to 329.999 V	20 kHz to 50 kHz	230 μ V/V + 4.7 mV	5520A
33 V to 329.999 V	50 kHz to 100 kHz	0.15 % + 39 mV	5520A
330 V to 1020 V	45 Hz to 1 kHz	230 μ V/V + 7.8 mV	5520A
330 V to 1020 V	1 kHz to 5 kHz	190 μ V/V + 7.8 mV	5520A
330 V to 1020 V	5 kHz to 10 kHz	230 μ V/V + 7.8 mV	5520A

NVLAP Code: 20/E10

Capacitance Source

Capacitance Range	Best Uncertainty (\pm) ^{note 1}	Remarks
3.3 nF to 10.9999 nF	0.21 % + 0.01 nF	5520A
11 nF to 32.9999 nF	0.39 % + 0.14 nF	5520A
33 nF to 109.999 nF	0.21 % + 0.14 nF	5520A
110 nF to 329.999 nF	0.19 % + 1.2 nF	5520A
0.33 μ F to 1.09999 μ F	0.21 % + 1.4 nF	5520A
1.1 μ F to 3.29999 μ F	0.19 % + 11 nF	5520A
3.3 μ F to 10.9999 μ F	0.22 % + 13 nF	5520A

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TIME & FREQUENCY

NVLAP Code: 20/F01
Tachometers

Range	Best Uncertainty (\pm)^{note 1}	Remarks
>0 to 20.00 RPM	0.02 % + 0.001 RPM	Ametek 1965 Strobe Standard
20.01 to 999.99 RPM	0.015 % + 0.01 RPM	Ametek 1965 Strobe Standard
Range	Best Uncertainty (\pm)^{note 1}	Remarks
1000.0 to 9999.9 RPM	0.015 % + 0.1 RPM	Ametek 1965 Strobe Standard
10000 to 20000 RPM	0.015 % + 1 RPM	Ametek 1965 Strobe Standard

Frequency Measure/ Source

5 Hz to 10 MHz	0.74 μ Hz/Hz	PM 6681
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NVLAP Code: 20/F05
Stopwatches & Timers

1.5, 3, 24 Hour Test	1 s	True Time XL-DC
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MECHANICAL

NVLAP Code: 20/M05
Flow Rate
Measure of Flow of Gases

5 sccm to 20 sccm	0.05 sccm	DHI molbloc/molbox
20 sccm to 250 slm	0.25 %	DHI molbloc/molbox

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NVLAP Code: 20/M08

Mass

Range	Best Uncertainty (\pm) ^{note 1}	Remarks
25 kg	9.0 mg	Echelon I
20 kg	7.0 mg	Echelon I
10 kg	1.5 mg	Echelon I
5 kg	0.69 mg	Echelon I
3 kg	0.45 mg	Echelon I
2 kg	0.34 mg	Echelon I
1 kg	0.049 mg	Echelon I
500 g	0.032 mg	Echelon I
300 g	0.030 mg	Echelon I
200 g	0.0250 mg	Echelon I
100 g	0.0320 mg	Echelon I
50 g	0.0160 mg	Echelon I
30 g	0.0105 mg	Echelon I
20 g	0.0080 mg	Echelon I
10 g	0.0070 mg	Echelon I
5 g	0.00350 mg	Echelon I
3 g	0.00300 mg	Echelon I
2 g	0.00250 mg	Echelon I
1 g	0.00220 mg	Echelon I
500 mg	0.00100 mg	Echelon I
300 mg	0.00070 mg	Echelon I
200 mg	0.00060 mg	Echelon I
100 mg	0.00070 mg	Echelon I
50 mg	0.00060 mg	Echelon I
30 mg	0.00063 mg	Echelon I
20 mg	0.00055 mg	Echelon I
10 mg	0.00062 mg	Echelon I
5 mg	0.00050 mg	Echelon I
3 mg	0.00046 mg	Echelon I
2 mg	0.00041 mg	Echelon I

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<i>Range</i>	<i>Best Uncertainty (±) ^{note 1}</i>	<i>Remarks</i>
1 mg	0.00057 mg	Echelon I
20 kg	7.0 mg	Echelon II
10 kg	3.2 mg	Echelon II
5 kg	2.9 mg	Echelon II
3 kg	2.8 mg	Echelon II
2 kg	2.8 mg	Echelon II
1 kg	0.14 mg	Echelon II
500 g	0.080 mg	Echelon II
300 g	0.096 mg	Echelon II
200 g	0.073 mg	Echelon II
100 g	0.062 mg	Echelon II
50 g	0.031 mg	Echelon II
30 g	0.019 mg	Echelon II
20 g	0.013 mg	Echelon II
10 g	0.0083 mg	Echelon II
5 g	0.0043 mg	Echelon II
3 g	0.0028 mg	Echelon II
2 g	0.0021 mg	Echelon II
1 g	0.0018 mg	Echelon II
500 mg	0.0012 mg	Echelon II
300 mg	0.00098 mg	Echelon II
200 mg	0.00091 mg	Echelon II
100 mg	0.00094 mg	Echelon II
50 mg	0.00085 mg	Echelon II
30 mg	0.00080 mg	Echelon II
20 mg	0.00079 mg	Echelon II
10 mg	0.00083 mg	Echelon II
5 mg	0.00076 mg	Echelon II
3 mg	0.00073 mg	Echelon II
2 mg	0.00073 mg	Echelon II
1 mg	0.00075 mg	Echelon II

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Range	Best Uncertainty (\pm) ^{note 1}	Remarks
500 kg	1.0 g	Echelon III
250 kg	1.0 g	Echelon III
200kg	0.70 g	Echelon III
100kg	0.70 g	Echelon III
50 kg	0.50 g	Echelon III
30kg	0.50 g	Echelon III
25 kg	0.016 g	Echelon III
20 kg	0.007 g	Echelon III
10 kg	0.003 g	Echelon III
5 kg	0.002 g	Echelon III
3 kg	0.0015 g	Echelon III
2 kg	0.0015 g	Echelon III
1000 lb	1.0 g	Echelon III
500 lb	1.0 g	Echelon III
250 lb	0.7 g	Echelon III
200 lb	0.6 g	Echelon III
100 lb	400 mg	Echelon III
50 lb	15 mg	Echelon III
25 lb	11 mg	Echelon III
20lb	9.0 mg	Echelon III
10 lb	5.0 mg	Echelon III
5 lb	4.0 mg	Echelon III
3 lb	2.0 mg	Echelon III
2 lb	0.10 mg	Echelon III
1 lb	0.084 mg	Echelon III

Balances ^{Note 4}

Range Class 1 ^{Note 6}	Readability	Minimum Tested Capacity ^{Note 7}	Best Uncertainty (\pm) ^{note 1,5}	Remarks
(0 to 50) g	1 μ g	100 %	40 μ g	ASTM Class 2
(0 to 100) g	10 μ g	100 %	87 μ g	ASTM Class 2

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Range Class 1 <small>Note 6</small>	Readability	Minimum Tested Capacity <small>Note 7</small>	Best Uncertainty (\pm) <small>note 1,5</small>	Remarks
(0 to 400) g	100 μ g	100 %	190 μ g	ASTM Class 2
(0 to 1200) g	1 mg	100 %	3 mg	ASTM Class 3
(0 to 8) kg	10 mg	100 %	64 mg	ASTM Class 3
(0 to 64) kg	100 mg	100 %	0.41 g	ASTM Class 4
(0 to 165) kg	1 g	100 %	15 g	ASTM Class 4
(0 to 250) kg	10 g	100 %	26 g	ASTM Class 4
(0 to 1000) kg	100 g	100 %	290 g	ASTM Class 6

OPTICAL RADIATION

NVLAP Code: 20/O04
Absorbance

Absorbance Range/Wavelength	Best Uncertainty in absorbance (\pm) <small>note 1</small>	Remarks
0.03 to 1.00 @ (250 to 440) nm	0.005	Spectrophotometer
0.5 to 1.00 @ (440 to 635) nm	0.004	Spectrophotometer

Wavelength

Wavelength Range	Best Uncertainty (\pm) <small>note 1</small>	Remarks
(201 to 241) nm	0.42 nm	Spectrophotometer
(241 to 640) nm	0.38 nm	Spectrophotometer

THERMODYNAMIC

NVLAP Code: 20/T02
Humidity
Humidity Calibration of Digital Thermo-Hygrometers

Range in % RH	Best Uncertainty in % RH (\pm) <small>note 1</small>	Remarks
0.05 to 95	1	3900 and 2500 Humidity Generators

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CALIBRATION LABORATORIES

NVLAP LAB CODE 200717-0

Range in Dew/Frost Point (-80 to 65) °C	Best Uncertainty (\pm)^{note 1} 0.5 °C	Remarks 3900 and 2500 Humidity Generators
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NVLAP Code: 20/T03
Temperature Calibration of Digital Thermo-Hygrometers

Range in °C 0 to 70	Best Uncertainty in °C (\pm)^{note 1} 0.25	Remarks 2500 Humidity Generator
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Laboratory Thermometers

Range in °C -196 to 180	Best Uncertainty in °C (\pm)^{note 1} 0.0125	Remarks SPRT/1590 Liq Nitrogen Dewar/Ice Bath/Stirred Bath/
180 to 420	0.020	SPRT/1590/ Stirred Bath

NVLAP Code: 20/T05
Pressure
Secondary Pressure Standards

Full Scale Range ±15 kPa	Best Uncertainty (\pm)^{note 1} 100 mPa/kPa of reading, 30 mPa/kPa of test span, or 2.7×10^{-1} Pa, whichever is greater	Remarks ^{notes 2,3} Gauge and Differential Modes
103.4 kPa	100 mPa/kPa of reading, 30 mPa/kPa of test span, or 9.3×10^{-1} Pa, whichever is greater	Gauge Mode
689.5 kPa	100 mPa/kPa of reading, 30 mPa/kPa of test span, or 6.2×10^0 Pa, whichever is greater	Absolute, Gauge, and Differential Gauge Modes
6 894.8 kPa	100 mPa/kPa of reading, 30 mPa/kPa of test span, or 6.2×10^1 Pa, whichever is greater	Absolute, Gauge, and Differential Gauge Modes

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CALIBRATION LABORATORIES

NVLAP LAB CODE 200717-0

Full Scale Range

103 421 kPa

Best Uncertainty (\pm) ^{note 1}

150 Pa/MPa of reading or 4.7×10^3 Pa, whichever is greater

Remarks ^{notes 2,3}

Absolute and Gauge Modes

Primary Pressure Standards

± 15 kPa

30 mPa/kPa of reading + 13 mPa

Absolute, Absolute Differential, and Gauge Modes

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1. Represents an expanded uncertainty using a coverage factor, $k = 2$, at an approximate level of confidence of 95 %.
 2. Unless otherwise noted, the pressure medium used in testing is nitrogen (99% pure).
 3. DHI, PPCH uses a hydraulic fluid (PF-5080) as its pressure medium.
 4. On-site calibrations available for this service.
 5. Uncertainty reported at the upper limit of the balance. Uncertainty reported on certificates at lower mass values may be less than the uncertainty reported on this table.
 6. Balance classification determined by NIST Handbook 44, Table 3.
 7. Minimum tested capacity meets or exceeds requirements of NIST Handbook 44, Table 4.

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