



**National Voluntary
Laboratory Accreditation Program**



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

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CALIBRATION LABORATORIES

NVLAP LAB CODE 200512-0

NVLAP Code: 20/A01 ANSI/NCSL Z540-1-1994; Part 1 Compliant

DC/LOW FREQUENCY

NVLAP Code: 20/E05
DC Resistance – Fixed Values

<i>Range in Ω</i>	<i>Best Uncertainty (\pm)^{note 1} in $\mu\Omega$</i>	<i>Remarks</i>
1	53	Comparison to Fluke 742A-1
10 K	97	Comparison to Fluke 742A-10

DC Resistance – Generate

<i>Range in Ω</i>	<i>Best Uncertainty (\pm)^{note 1} in ppm</i>	<i>Remarks</i>
1	28	Comparison to Fluke 5700A
1.9	19	Comparison to Fluke 5700A
10	7	Comparison to Fluke 5700A
19	7	Comparison to Fluke 5700A
100	5	Comparison to Fluke 5700A
190	5	Comparison to Fluke 5700A
1 k	5	Comparison to Fluke 5700A
1.9 k	5	Comparison to Fluke 5700A
10 k	6	Comparison to Fluke 5700A
19 k	6	Comparison to Fluke 5700A
100 k	7	Comparison to Fluke 5700A

2010-01-01 through 2010-12-31

Effective dates

Sally S. Bruce

For the National Institute of Standards and Technology



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190 k	7	Comparison to Fluke 5700A
1 M	10	Comparison to Fluke 5700A
1.9 M	10	Comparison to Fluke 5700A
10 M	28	Comparison to Fluke 5700A
100 M	28	Comparison to Fluke 5700A

DC Resistance – Measure

<i>Range</i>	<i>Best Uncertainty (\pm)^{note 1}</i>	<i>Remarks</i>
(0 to 2) Ω	24 $\mu\Omega/\Omega$ + 5.2 $\mu\Omega$	Comparison to Fluke 8508A
(2 to 20) Ω	14 $\mu\Omega/\Omega$ + 20 $\mu\Omega$	Comparison to Fluke 8508A
(20 to 200) Ω	10 $\mu\Omega/\Omega$ + 80 $\mu\Omega$	Comparison to Fluke 8508A
200 to 2 k Ω	10 $\mu\Omega/\Omega$ + 800 $\mu\Omega$	Comparison to Fluke 8508A
(2 to 20) k Ω	10 $\mu\Omega/\Omega$ + 8 m Ω	Comparison to Fluke 8508A
(20 to 200) k Ω	10 $\mu\Omega/\Omega$ + 80 m Ω	Comparison to Fluke 8508A
200 k Ω to 2 M Ω	12 $\mu\Omega/\Omega$ + 1.4 Ω	Comparison to Fluke 8508A
(2 to 20) M Ω	32 $\mu\Omega/\Omega$ + 122 Ω	Comparison to Fluke 8508A
(20 to 200) M Ω	197 $\mu\Omega/\Omega$ + 12 k Ω	Comparison to Fluke 8508A
200 M Ω to 2 G Ω	1877 $\mu\Omega/\Omega$ + 120 k Ω	Comparison to Fluke 8507A

NVLAP Code: 20/E06

DC Voltage - Generate

<i>Range</i>	<i>Best Uncertainty (\pm)^{note 1}</i>	<i>Remarks</i>
(0 to 220) mV	1.4 $\mu\text{V}/\text{V}$ + 50 nV	Comparison to Fluke 5700A
(0.2 to 2.2) V	3.3 $\mu\text{V}/\text{V}$ + 0.1 μV	Comparison to Fluke 5700A
(2.2 to 11) V	3.3 $\mu\text{V}/\text{V}$ + 1 μV	Comparison to Fluke 5700A
(11 to 22) V	3.3 $\mu\text{V}/\text{V}$ + 1 μV	Comparison to Fluke 5700A
(22 to 220) V	4.2 $\mu\text{V}/\text{V}$ + 10 μV	Comparison to Fluke 5700A

DC Voltage – Fixed Points

<i>Range</i>	<i>Best Uncertainty (\pm)^{note 1}</i>	<i>Remarks</i>
10 V	34 μV	Comparison to Fluke 732A
1.018 V	34 μV	Comparison to Fluke 732A

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DC Voltage - Measure

<i>Range</i>	<i>Best Uncertainty (\pm) ^{note 1}</i>	<i>Remarks</i>
to 200 mV	7.4 $\mu\text{V/V} + 0.14 \mu\text{V}$	Comparison to Fluke 8508A
200 mV to 2 V	4.7 $\mu\text{V/V} + 0.7 \mu\text{V}$	Comparison to Fluke 8508A
(2 to 20) V	4.7 $\mu\text{V/V} + 7 \mu\text{V}$	Comparison to Fluke 8508A
(20 to 200) V	6.7 $\mu\text{V/V} + 70 \mu\text{V}$	Comparison to Fluke 8508A
(200 to 1000) V	6.8 $\mu\text{V/V} + 700 \mu\text{V}$	Comparison to Fluke 8508A

THERMODYNAMICS

NVLAP Code: 20/T08
Thermocouples – Type B

<i>Range in $^{\circ}\text{C}$</i>	<i>Best Uncertainty (\pm) $^{\circ}\text{C}$ ^{note 1}</i>	<i>Remarks</i>
800 to 1100	0.8	Comparison to Type B Platinum reference thermocouple
1100 to 1750	1.7	Comparison to Type B Platinum reference thermocouple
Thermocouples – Type E		
-100 to 300	0.4	Comparison to Type T reference thermocouple
0 to 900	0.8	Comparison to Type S reference thermocouple
Thermocouples – Type J		
-100 to 300	0.4	Comparison to Type T reference thermocouple
0 to 750	0.8	Comparison to Type S Platinum reference thermocouple
Thermocouples – Type K and Type N		
-100 to 300	0.4	Comparison to Type T reference thermocouple
0 to 800	0.8	Comparison to Type S Platinum reference thermocouple
800 to 1100	1.3	Comparison to Type S Platinum reference thermocouple

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1100 to 1250	1.6	Comparison to Type S Platinum reference thermocouple
Thermocouples – Type R and Type S 0 to 1100	0.5	Comparison to Type S Platinum reference thermocouple
1100 to 1450	1.6	Comparison to Type S Platinum reference thermocouple
Thermocouples – Type T -100 to 300	0.4	Comparison to Type T reference thermocouple

1. Represents an expanded uncertainty using a coverage factor, $k = 2$, at an approximate level of confidence of 95 %.

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