



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

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CALIBRATION LABORATORIES

NVLAP LAB CODE 200508-0

Scope Revised: 2011-10-27

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

MECHANICAL

NVLAP Code: 20/M08
 Mass

Range	Best Uncertainty (\pm) ^{note 1}	Remarks
50 kg	11 mg	Echelon I
30 kg	6.5 mg	Echelon I
25 kg	5.7 mg	Echelon I
20 kg	4.2 mg	Echelon I
10 kg	0.65 mg	Echelon I
5 kg	0.33 mg	Echelon I
3 kg	0.19 mg	Echelon I
2 kg	0.18 mg	Echelon I
1 kg	0.052 mg	Echelon I
500 g	0.03 mg	Echelon I
300 g	0.027 mg	Echelon I
200 g	0.022 mg	Echelon I
100 g	0.016 mg	Echelon I
50 g	0.0065 mg	Echelon I
30 g	0.0046 mg	Echelon I
20 g	0.0041 mg	Echelon I

2011-04-01 through 2012-03-31

Sally S. Bruce

Effective dates

For the National Institute of Standards and Technology



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10 g	0.0034 mg	Echelon I
5 g	0.0013 mg	Echelon I
3 g	0.0013 mg	Echelon I
2 g	0.00076 mg	Echelon I
1 g	0.00074 mg	Echelon I
0.500 g	0.0011 mg	Echelon I
0.300 g	0.0011 mg	Echelon I
0.200 g	0.00075 mg	Echelon I
0.100 g	0.00063 mg	Echelon I
0.050 g	0.00038 mg	Echelon I
0.030 g	0.00057 mg	Echelon I
0.020 g	0.00059 mg	Echelon I
0.010 g	0.00067 mg	Echelon I
0.005 g	0.00053 mg	Echelon I
0.003 g	0.00053 mg	Echelon I
0.002 g	0.00047 mg	Echelon I
0.001 g	0.00036 mg	Echelon I
50 kg	15 mg	Echelon II
30 kg	9 mg	Echelon II
25 kg	7.9 mg	Echelon II
20 kg	6.5 mg	Echelon II
10 kg	0.69 mg	Echelon II
5 kg	0.35 mg	Echelon II
3 kg	0.22 mg	Echelon II
2 kg	0.22 mg	Echelon II
1 kg	0.053 mg	Echelon II
500 g	0.032 mg	Echelon II
300 g	0.029 mg	Echelon II
200 g	0.024 mg	Echelon II
100 g	0.018 mg	Echelon II
50 g	0.01 mg	Echelon II
30 g	0.0087 mg	Echelon II
20 g	0.0083 mg	Echelon II

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10 g	0.0079 mg	Echelon II
5 g	0.0025 mg	Echelon II
3 g	0.0024 mg	Echelon II
2 g	0.002 mg	Echelon II
1 g	0.0013 mg	Echelon II
0.500 g	0.0018 mg	Echelon II
0.300 g	0.0013 mg	Echelon II
0.200 g	0.001 mg	Echelon II
0.100 g	0.00082 mg	Echelon II
0.050 g	0.00051 mg	Echelon II
0.030 g	0.00067 mg	Echelon II
0.020 g	0.00072 mg	Echelon II
0.010 g	0.00069 mg	Echelon II
0.005 g	0.00079 mg	Echelon II
0.003 g	0.00068 mg	Echelon II
0.002 g	0.00058 mg	Echelon II
0.001 g	0.00056 mg	Echelon II

THERMODYNAMICS

NVLAP Code: 20/ T03
Laboratory Thermometers

Digital/ Electronic Thermometers

<i>Range</i>	<i>Best Uncertainty (±) in mK</i> <small>notes 1,4</small>	<i>Remarks</i>
-196 °C	20	Direct Comparison to PRT
-40 °C	30	Direct Comparison to PRT
-20 °C	25	Direct Comparison to PRT
0 °C	3.8	Direct Comparison to PRT
50 °C	12	Direct Comparison to PRT
100 °C	17	Direct Comparison to PRT
150 °C	25	Direct Comparison to PRT
200 °C	34	Direct Comparison to PRT

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400 °C	30	Direct Comparison to PRT
600 °C	150	Direct Comparison to PRT

Liquid in Glass Thermometers

Range	Best Uncertainty (\pm) in °C ^{note 1}	Remarks
-40 °C	0.034	Direct Comparison to PRT
-20 °C	0.033	Direct Comparison to PRT
0 °C	0.013	Direct Comparison to PRT
50 °C	0.021	Direct Comparison to PRT
100 °C	0.024	Direct Comparison to PRT
150 °C	0.030	Direct Comparison to PRT
200 °C	0.025	Direct Comparison to PRT
400 °C	0.25	Direct Comparison to PRT
600 °C	0.52	Direct Comparison to PRT

NVLAP Code: 20/ T07
Resistance Thermometry- ITS-90

Range	Best Uncertainty (\pm) in mK ^{note 1}	Remarks
-196 °C	7.1	Direct Comparison (LN2) (TP Ar Substitution)
-38.8344 °C	1.3	Fixed Point (TP Hg) ^{Note 2}
0.01 °C	0.29	Fixed Point (TPW)
156.5985 °C	1.2	Fixed Point (FP In)
231.928 °C	1.2	Fixed Point (FP Sn)
419.527 °C	2.1	Fixed Point (FP Zn)

Resistance Thermometry

-196 °C	7.1	Direct Comparison to SPRT
-40 °C	26	Direct Comparison to SPRT
0.01 °C	0.29	Direct Comparison to SPRT
30 °C	11	Direct Comparison to SPRT
157 °C	21	Direct Comparison to SPRT

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232 °C	31	Direct Comparison to SPRT
420 °C	41	Direct Comparison to SPRT
660 °C	42	Direct Comparison to SPRT

NVLAP Code: 20/ T08
Thermocouples

Range	Best Uncertainty ^{notes 1,3}			Remarks
	(±) in μV	Type S (±) in °C	Type R (±) in °C	
0 °C	4.2	0.78	0.79	Nobel Metal
50 °C	6.5	1.00	1.00	Nobel Metal
100 °C	7.2	0.98	0.96	Nobel Metal
150 °C	8.0	1.00	0.97	Nobel Metal
200 °C	8.2	0.90	0.93	Nobel Metal
400 °C	9.3	0.97	0.90	Nobel Metal
600 °C	10	0.98	0.88	Nobel Metal

1. Represents an expanded uncertainty using a coverage factor, $k = 2$, at an approximate level of confidence of 95 %.
2. The temperature of this point is defined by the SPRT.
3. Calibration of used thermocouples may result in larger uncertainties due to increased homogeneity.
4. Digital Readout Thermometers consisting of a thermometer probe and a measurement readout device are calibrated as a unit. The uncertainty of the digital readout device is unknown and must be included by the user of the device.

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