National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

Pyromation Inc. Metrology Laboratory
5211 Industrial Road
Fort Wayne, IN 46825-5152
Mr. Chris Moritz
Phone: 260-484-2580 Fax: 260-482-6805
E-mail: chris@pyromation.com
URL: http://www.pyromation.com

CALIBRATION LABORATORIES **NVLAP LAB CODE 200502-0**

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

DC/LOW FREQUENCY

NVLAP Code: 20/E05
DC Resistance

Range in ohms	*Best Uncertainty (±) in ohms* [note 1]	*Remarks*
1	0.004	Simulated
10	0.004	Simulated
100	0.015	Simulated
1 k	0.12	Simulated
10 k	2.0	Simulated
100 k	138	Simulated
1 M	1.2 k	Simulated
10 M	12 k	Simulated
10	0.0008	Measured
100	0.0040	Measured
1 k	0.02	Measured
10 k	0.2	Measured
100 k	2.0	Measured
1 M	80	Measured
10 M	820	Measured

2009-10-01 through 2010-09-30

Effective dates

Sally S. Bruce

For the National Institute of Standards and Technology

CALIBRATION LABORATORIES **NVLAP LAB CODE 200502-0**

NVLAP Code: 20/E05
DC Current

Range	*Best Uncertainty (±)* [note 1]	*Remarks*
0 to 100 mA	0.015 mA	Simulated
0 to 25 mA	0.005 mA	Measured
100 mA	0.007 mA	Measured

NVLAP Code: 20/E06
DC Voltage

Range	*Best Uncertainty (±) in mV* [note 1]	*Remarks*
0 to 100 mV	0.01	Simulated
100 mV	0.003	Measured
1 V	0.005	Measured
10 V	0.10	Measured

THERMODYNAMICS

NVLAP Code: 20/T07
Resistance Thermometry

Range in °C	*Best Uncertainty (±)* [note 1]	*Min. Overall Length*	*Remarks*
-196	0.03 °C	12 in	Comparison Measurement against PRT
-75	0.03 °C	12 in	Comparison Measurement against PRT
-40 to 230	0.04 °C	6 in	Comparison Measurement against PRT
230 to 420	0.04 °C	18 in	Comparison Measurement against PRT
420 to 660	0.52 °C	18 in	Comparison Measurement against S Thermocouple
-196	0.013 °C	12 in	Comparison Measurement against SPRT
-75	0.014 °C	12 in	Comparison Measurement against SPRT
-40 to 230	0.026 °C	6 in	Comparison Measurement against SPRT
230 to 420	0.026 °C	18 in	Comparison Measurement against SPRT

2009-10-01 through 2010-09-30

Effective dates

Sally S. Bruce

For the National Institute of Standards and Technology

CALIBRATION LABORATORIES **NVLAP LAB CODE 200502-0**

0.01	2.8 mK	18 in	Fixed Point (TPW)
29.7646	3.5 mK	12 in	Fixed point (MPGa)

NVLAP Code: 20/T07
Resistance Thermometry/Digital/Analog Temperature Indicators

Range in °C	*Best Uncertainty (±) in °C* [note 1]	*Type*	*Remarks*
-200 to 660	0.02	PT100	Simulated
-270 to 1000	0.06	E	Simulated
-210 to 1200	0.07	J	Simulated
-270 to 1372	0.09	K	Simulated
-270 to 1300	0.14	N	Simulated
-270 to 400	0.09	T	Simulated
0 to 1820	0.28	B	Simulated
-50 to 1768	0.46	R	Simulated
-50 to 1768	0.46	S	Simulated
-200 to 660	0.02	PT100	Measured
-270 to 1000	0.05	E	Measured
-210 to 1200	0.06	J	Measured
-270 to 1372	0.08	K	Measured
-270 to 1300	0.11	N	Measured
-270 to 400	0.07	T	Measured
0 to 1820	0.20	B	Measured
-50 to 1768	0.36	R	Measured
-50 to 1768	0.36	S	Measured

NVLAP Code: 20/T08
Thermocouples - Type E

Range in °C	*Best Uncertainty (±) in °C* [note 1]	*Min. Overall Length*	*Remarks*
-196	0.57	12 in	Comparison Measurement against PRT
-75	0.56	12 in	Comparison Measurement against PRT
-40 to 230	0.56	6 in	Comparison Measurement against PRT

2009-10-01 through 2010-09-30

Effective dates

Sally S. Bruce

For the National Institute of Standards and Technology

CALIBRATION LABORATORIES **NVLAP LAB CODE 200502-0**

230 to 420	0.56	18 in	Comparison Measurement against PRT
420 to 1000	0.79	20 in	Comparison Measurement against S Thermocouple
Thermocouples - Type J			
-196	0.72	12 in	Comparison Measurement against PRT
-75	0.72	12 in	Comparison Measurement against PRT
-40 to 230	0.72	6 in	Comparison Measurement against PRT
230 to 420	0.72	18 in	Comparison Measurement against PRT
420 to 1100	0.89	20 in	Comparison Measurement against S Thermocouple
1100 to 1200	1.07	20 in	Comparison Measurement against S Thermocouple
Thermocouples - Type K			
-196	0.73	12 in	Comparison Measurement against PRT
-75	0.72	12 in	Comparison Measurement against PRT
-40 to 230	0.72	6 in	Comparison Measurement against PRT
230 to 420	0.72	18 in	Comparison Measurement against PRT
420 to 1100	0.89	20 in	Comparison Measurement against S Thermocouple
1100 to 1200	1.08	20 in	Comparison Measurement against S Thermocouple
1200 to 1372	1.64	30 in	Comparison Measurement against B Thermocouple
Thermocouples - Type N			
-196	0.74	12 in	Comparison Measurement against PRT
-75	0.73	12 in	Comparison Measurement against PRT
-40 to 230	0.73	6 in	Comparison Measurement against PRT
230 to 420	0.73	18 in	Comparison Measurement against PRT
420 to 1100	0.90	20 in	Comparison Measurement against S Thermocouple

2009-10-01 through 2010-09-30

Effective dates

Sally S. Bruce

For the National Institute of Standards and Technology

CALIBRATION LABORATORIES **NVLAP LAB CODE 200502-0**

1100 to 1200	1.08	20 in	Comparison Measurement against S Thermocouple
1200 to 1300	1.34	30 in	Comparison Measurement against B Thermocouple
Thermocouples - Type T			
-196	0.35	12 in	Comparison Measurement against PRT
-75	0.34	12 in	Comparison Measurement against PRT
-40 to 230	0.72	6 in	Comparison Measurement against PRT
230 to 420	0.72	18 in	Comparison Measurement against PRT
Thermocouples - Type B			
200 to 420	1.00	18 in	Comparison Measurement against PRT
420 to 1100	0.84	20 in	Comparison Measurement against S Thermocouple
1100 to 1200	0.92	20 in	Comparison Measurement against S Thermocouple
1200 to 1450	1.72	30 in	Comparison Measurement against B Thermocouple
Thermocouples - Type R			
-40 to 230	0.71	6 in	Comparison Measurement against PRT
230 to 420	0.71	18 in	Comparison Measurement against PRT
420 to 1100	0.81	20 in	Comparison Measurement against S Thermocouple
1100 to 1200	0.99	20 in	Comparison Measurement against S Thermocouple
1200 to 1450	1.76	30 in	Comparison Measurement against B Thermocouple
Thermocouples - Type S			
-40 to 230	0.69	6 in	Comparison Measurement against PRT

2009-10-01 through 2010-09-30

Effective dates

Sally S. Bruce

For the National Institute of Standards and Technology

CALIBRATION LABORATORIES **NVLAP LAB CODE 200502-0**

230 to 420	0.69	18 in	Comparison Measurement against PRT
420 to 1100	0.87	20 in	Comparison Measurement against S Thermocouple
1100 to 1200	1.14	20 in	Comparison Measurement against S Thermocouple
1200 to 1450	1.80	30 in	Comparison Measurement again B Thermocouple

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

2009-10-01 through 2010-09-30

Effective dates

Sally S. Bruce

For the National Institute of Standards and Technology