



**National Voluntary
Laboratory Accreditation Program**



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

Navy Calibration Laboratory Patuxent River (PRL)

AIR 4.12.9

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CALIBRATION LABORATORIES

NVLAP LAB CODE 200804-0

Scope Revised: 2009-09-28

NVLAP Code: 20/A01

ANSI/NCSL Z540-1-1994; Part 1

Compliant

DIMENSIONAL

NVLAP Code: 20/D03

Gage Blocks - Steel

<i>Range in inches</i>	<i>Best Uncertainty (\pm) in μin ^{note 1}</i>	<i>Remarks</i>
0.05 to 1.0	3.0	Mechanical Comparison
2.0	4.4	Mechanical Comparison
3.0	5.6	Mechanical Comparison
4.0	7.1	Mechanical Comparison

ELECTROMAGNETICS - DC/LOW FREQUENCY

NVLAP Code: 20/E05

DC Resistance

<i>Fixed Point Resistance in Ω</i>	<i>Best Uncertainty (\pm) in $\mu\Omega/\Omega$ ^{note 1}</i>	<i>Remarks</i>
0.01	10	Guildline 6625AF
0.1	1.4	Guildline 6625AF
1.0	0.59	Guildline 6625AF
10	0.59	Guildline 6625AF
100	0.60	Guildline 6625AF

2009-05-14 through 2010-03-31

Effective dates

Sally S. Bruce

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1 k	0.66	Guideline 6625AF
10 k	0.81	Guideline 6625AF
100 k	5.0	Guideline 6625AF
1 M	13	Guideline 6625AF
10 M	26	Guideline 6625AF

NVLAP Code: 20/E06

DC Voltage

<i>Range (±) in V</i>	<i>Best Uncertainty (±) in μV/V plus floor in μV^{note 1}</i>	<i>Remarks</i>
> 0 to 0.22	9.6 + 0.6	Fluke 5700ANV3
> 0.22 to 2.2	8.1 + 1.0	Fluke 5700ANV3
> 2.2 to 22	8.3 + 3.5	Fluke 5700ANV3
> 22 to 220	9.2 + 80	Fluke 5700ANV3
> 220 to 1000	9.8 + 500	Fluke 5700ANV3

MECHANICAL

NVLAP Code: 20/M11

Vibration

Calibration Factor in pC/g at indicated frequency range

<i>Frequency Range</i>	<i>Best Uncertainty (±) in %^{note 1}</i>	<i>Remarks</i>
5 Hz to 10 Hz	1.8	UD 680 System
10 Hz to 2 kHz	1.5	UD 680 System
2 kHz to 4 kHz	2.2	UD 680 System
4 kHz to 10 kHz	3.2	UD 680 System

Acceleration

<i>Range in g</i>	<i>Best Uncertainty (±) in %^{note 1}</i>	<i>Remarks</i>
> 0 to 0.1	2.8	Contraves 821 Rate Table
0.1 to 1.0	0.4	Contraves 821 Rate Table
1.0 to 10	0.27	Contraves 821 Rate Table

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10 to 100

0.26

Contraves 821 Rate Table

ELECTROMAGNETICS- RF/MICROWAVE

NVLAP Code: 20/R02

RF/Microwave Termination

Reflection Coefficient (Agilent E8363BOPT014 and N4690-6004)

Reflection Range	Best Uncertainty (\pm) ^{note 1} for Frequency range in GHz			
	0.45 to 2	2 to 8	8 to 12	12 to 18
> 0 to 0.09	0.0095	0.013	0.017	0.021
> 0.09 to 0.2	0.010	0.014	0.020	0.022
> 0.2 to 0.33	0.012	0.014	0.019	0.023
> 0.33 to 0.5	0.014	0.016	0.022	0.025

NVLAP Code: 20/R13

RF/Microwave Attenuators (8902AOPT04)

Range in dB	Best Uncertainty (\pm) ^{note 1,2} in dB for Frequency range in GHz		
	0.010 to 4	4 to 12.4	12.4 to 18
0 to 10	M + 0.07	M + 0.05	M + 0.06
> 10 to 20	M + 0.07	M + 0.07	M + 0.09
> 20 to 30	M + 0.11	M + 0.11	M + 0.11
> 30 to 40	M + 0.14	M + 0.14	M + 0.14
> 40 to 50	M + 0.18	M + 0.18	M + 0.19
> 50 to 60	M + 0.21	M + 0.21	M + 0.21

NVLAP Code: 20/R17

Power Meters

Determination of Sensor Calibration Factor (Nominal 1 mW)

Test Frequency in GHz	Best Uncertainty (\pm) ^{note 1,2} in %	Remarks
0.010	M + 3.0	NAVAIR PSCS
0.030	M + 2.1	NAVAIR PSCS
0.050	M + 1.6	NAVAIR PSCS

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0.100	M + 1.7	NAVAIR PSCS
0.400	M + 1.7	NAVAIR PSCS
1.0	M + 1.7	NAVAIR PSCS
2.0	M + 1.7	NAVAIR PSCS
3.0	M + 1.7	NAVAIR PSCS
4.0	M + 1.8	NAVAIR PSCS
5.0	M + 1.9	NAVAIR PSCS
6.0	M + 1.5	NAVAIR PSCS
7.0	M + 2.1	NAVAIR PSCS
8.0	M + 2.3	NAVAIR PSCS
9.0	M + 2.5	NAVAIR PSCS
10.0	M + 2.5	NAVAIR PSCS
11.0	M + 2.4	NAVAIR PSCS
12.0	M + 2.3	NAVAIR PSCS
13.0	M + 2.3	NAVAIR PSCS
14.0	M + 2.2	NAVAIR PSCS
15.0	M + 2.4	NAVAIR PSCS
16.0	M + 2.4	NAVAIR PSCS
17.0	M + 2.4	NAVAIR PSCS
18.0	M + 2.4	NAVAIR PSCS

1. Represents an expanded uncertainty using a coverage factor, $k = 2$, at an approximate level of confidence of 95 %.
2. Where M is the mismatch uncertainty component calculated at time of test.

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