National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

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CALIBRATION LABORATORIES

NVLAP LAB CODE 105000-0
Scope Revised: 2007-04-10

DIMENSIONAL

NVLAP Code: 20/D03
Gage Blocks, Steel and Chrome Only

Range	*Best Uncertainty (±)* [note 1]	*Remarks*
0.010 in to 0.090 in	2.7 µin	Mechanical Comparison
0.01 in to 1.000 in	2.1 µin	Mechanical Comparison
2.0 in to 4.0 in	(3.1 + 2.0L) µin [note 3]	Mechanical Comparison
0.20 mm to 2.5 mm	0.069 µm	Mechanical Comparison
2.60 mm to 25 mm	0.055 µm	Mechanical Comparison
30 mm to 100 mm	(0.08 + 2.0L) µm [note 4]	Mechanical Comparison

NVLAP Code: 20/D05
Length

Range in m	*Best Uncertainty (±)* [notes 1, 4]	*Remarks*
0 to 1.2	(0.3 + 0.4L) µm	Step and End Gages using M-48 Coordinate Measuring Machine

NVLAP Code: 20/D06
Line Standards

Range in mm	*Best Uncertainty (±)* [notes 1, 4]	*Remarks*
0 to 800	(0.36 + 0.68L) µm	CMM (optical)

2007-04-01 through 2008-03-31
Effective dates

Sally S. Bruce
For the National Institute of Standards and Technology

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NVLAP Code: 20/D08
Optical Grid Plates/Reference Planes

Range	***Best Uncertainty (±)*** [notes 1, 4]	***Remarks***
Field of view [note 5]	0.2 µm	CMM (optical), Measurements taken within camera field of view

Range in mm	***Best Uncertainty (±)*** [notes 1, 4]	***Remarks***
0 to 848	(0.40 + 0.61L) µm	CMM (optical), maximum length and width (600 x 600) mm

NVLAP Code: 20/D09
Roundness

Range	***Best Uncertainty (±)*** [note 1]	***Remarks***
to 6 inches Diameter and 4 inches Height	0.1 µm	Roundness Instrument

NVLAP Code: 20/D12
Surface Texture

Range	***Best Uncertainty (±)*** [note 1]	***Remarks***
41 μin to 120 μin (1.04 μm to 3.05 μm)	5.03 µin (0.13 µm)	Ra (Roughness Average)
13 μin to 40 μin (0.33 μm to 1.02 μm)	1.74 µin (0.044 µm)	Ra (Roughness Average)
12 μin (0.31 µm)	0.85 µin (0.021 µm)	Ra (Roughness Average)

NVLAP Code: 20/D15
Two Dimensional Gages

Range in m	***Best Uncertainty (±)*** [notes 1, 4]	***Remarks***
0.8 x 1.2	(0.45 + 0.6L) µm	M-48 CMM

NVLAP Code: 20/D18
Gears

Range	***Best Uncertainty (±)*** [note 1]	***Remarks***
to 6 inches Diameter	0.9 µm	Involute Profile
to 6 inches Diameter and Infinite Lead	0.8 µm	Helix

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to 6 inches Diameter and 99 inches Lead	0.9 µm	Helix
to 6 inches Diameter and 32 inches Lead	1.1 µm	Helix
to 6 inches Diameter and 16 inches Lead	1.2 µm	Helix
to 6 inches Diameter and 11 inches Lead	1.4 µm	Helix
to 6 inches Diameter (pin offset)	0.7 µm	Pin Master
to 6 inches Diameter (pin diameter)	0.5 µm	Pin Master
to 6 inches Diameter (pin roundness)	0.3 µm	Pin Master
to 24 inches Diameter	1.6 arcseconds	Index and Runout

TIME AND FREQUENCY

NVLAP Code: 20/F01
Frequency Dissemination

Range	***Best Uncertainty (±)*** [note 1]	***Remarks***
1 MHz, 5 MHz, 10 MHz	8.75×10^{-12}	NIST FMAS

THERMODYNAMIC

NVLAP Code: 20/T05
Pressure

Range	***Best Uncertainty (±) ppm*** [note 1]	***Remarks***
Pneumatic Deadweight Piston Gauge (absolute Mode) - Direct Pressure Comparison		
1.2 psia to 23.6 psia (8.3 kPa to 162.7 kPa)	500	
5.7 psia to 95.6 psia (39.3 kPa to 659.1 kPa)	101	
41.9 psia to 1001.6 psia (288.9 kPa to 6905.8 kPa)	45	
Pneumatic Deadweight Piston Gauge (Gauge Mode) - Direct Pressure Comparison		
1.2 psia to 23.6 psia (8.3 kPa to 162.7 kPa)	26	Nitrogen
5.7 psia to 95.6 psia (39.3 kPa to 659.1 kPa)	22	Nitrogen
41.9 psia to 1001.6 psia (288.9 kPa to 6905.8 kPa)	43	Nitrogen

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Hydraulic Deadweight Piston Gauge (Gauge Mode) - Direct Comparison		
203 psig to 3771 psig (1.4 MPa to 26 MPa)	60	Oil
2031 psig to 19 870 psig (14 MPa to 137 MPa)	70	Oil
4061 psig to 39 595 psig (28 MPa to 273 MPa)	70	Oil

NVLAP Code: 20/T07
Resistance Temperature Devices

Range in °C	***Best Uncertainty (±)*** [note 1]	***Remarks***
0.01 to 29.7646	0.0017 °C	Comparison

1. Represents an expanded uncertainty using a coverage factor, k = 2, at an approximate level of confidence of 95 %.
2. Realizable uncertainty depends on frequency being measured, customer requirements, and suitability of customer's equipment.
3. L is length in inches.
4. L is length in meters.
5. Glass Reticles, Stage Micrometers, Glass Magnification Scales, Orthogonality Standards, and Calibration Charts.

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