



**National Voluntary
Laboratory Accreditation Program**



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

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CALIBRATION LABORATORIES

NVLAP LAB CODE 200521-0
Scope Revised: 2008-12-5

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

DIMENSIONAL

NVLAP Code: 20/D05
Length
Extensometer Linear Measurements: Laboratory Capability - ASTM E83

<i>Range in inches</i>	<i>Best Uncertainty (±) ^{note 1}</i>	<i>Remarks</i>
0 to 1.0	0.00001 in ^{note 2}	Heidenhain MT 2501
0 to 0.5	0.000002 in	Gage Blocks
0 to 2.0	0.000003 in	Gage Blocks

Extensometer Linear Measurements: Field Calibration Capability - ASTM E83

0 to 1.0	0.00001 in	Heidenhain MT 2501
0 to 6.0	0.001 in	Caliper
0 to 24	0.002 in	Height Gage

Extensometer Gage Length: Laboratory Field Capability - ASTM E83

0.5 to 2.0	0.0005 in	Gage Length Setting Bars
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2008-07-01 through 2009-06-30

Effective dates

Sally S. Bruce

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Dial Indicators

<i>Range in inches</i>	<i>Best Uncertainty (±) in inches</i> ^{note 1}	<i>Remarks</i>
0 to 2.0	0.0001	

Micrometers

<i>Range in inches</i>	<i>Best Uncertainty (±) in inches</i> ^{note 1}	<i>Remarks</i>
0 to 6.0	0.00005	

Calipers

<i>Range in inches</i>	<i>Best Uncertainty (±) in inches</i> ^{note 1}	<i>Remarks</i>
0 to 12	0.0001	

Linear Encoders

<i>Range in inches</i>	<i>Best Uncertainty (±) in inches</i> ^{note 1}	<i>Remarks</i>
0 to 2.0	0.00001	

DC/LOW FREQUENCY

NVLAP Code: 20/E06

DC Voltage

<i>Range in volts</i>	<i>Best Uncertainty (±) in %</i> ^{note 1}	<i>Remarks</i>
0 to 100	0.01	

MECHANICAL

NVLAP Code: 20/M06

Force

Laboratory Measurements – ASTM E74

<i>Range</i>	<i>Best Uncertainty (±)</i> ^{note 1}	<i>Remarks</i>
0 to 5115	0.01 %	Deadweight
1g to 175 kg	0.05 %	Loadcells

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Field Service Measurements - ASTM E4

0 to 500 000	0.25 %	Loadcells
0 to 1 000 000	0.25 %	Loadcells/Compression Only

NVLAP Code: 20/M08

Industrial Scales

Range	Best Uncertainty (\pm) in %^{note 1}	Remarks
0.05 lb to 500 lb	1.00%	
1g to 175 kg	0.01%	

NVLAP Code: 20/M13

Rockwell Hardness Testers: Indirect - Field Service and Laboratory Calibration

	Range in Rockwell Units	Best Uncertainty (\pm) in Rockwell Units^{note 1}	Remarks
HRA	80 to 87	0.13	
	60 to 80	0.23	
	20 to 60	0.23	
HRC	50 to 70	0.30	
	35 to 50	0.33	
	20 to 35	0.38	
HRD	60 to 80	0.09	
	40 to 60	0.13	
HRBW	80 to 100	0.55	
	60 to 80	0.56	
	40 to 60	0.70	
HREW	90 to 100	0.57	
	80 to 90	0.43	
	50 to 80	0.33	

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HRFW	50 to 90	0.21
	25 to 50	0.67
HRHW	90 to 100	0.42
	80 to 90	0.57
HRKW	80 to 100	0.58
HRPW	100 to 110	0.36
	60 to 100	0.56
HRRW	100 to 125	0.20
HRSW	120 to 126	0.07
	100 to 120	0.07
HRVW	110 to 122	0.25
	100 to 120	0.07
HR15N	90 to 100	0.24
	80 to 90	0.24
	70 to 80	0.36
HR15TW	80 to 92	0.22
	75 to 80	0.28
	68 to 75	0.37
HR15WW	85 to 100	0.37
	70 to 85	0.27
HR15XW	90 to 100	0.25
	80 to 90	0.51
HR30YW	95 to 100	0.24
	77 to 95	0.80

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HR30N	75 to 85	0.21
	55 to 75	0.22
	40 to 55	0.30
HR30TW	70 to 80	0.27
	50 to 70	0.20
	30 to 50	0.46
HR30WW	80 to 95	0.42
	65 to 80	0.56
HR30XW	80 to 100	0.12
	70 to 80	0.71
HR30YW	90 to 100	0.22
	70 to 90	0.60
HR45N	65 to 78	0.12
	45 to 65	0.38
	30 to 45	0.50
HR45TW	50 to 71	0.40
	30 to 50	0.55
	15 to 30	0.58
HR45WW	60 to 80	0.71
	25 to 60	0.60
HR45XW	70 to 95	0.23
	50 to 70	0.60

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NVLAP Code: 20/M13

Rockwell Hardness Testers - ASTM E4, Direct Laboratory and Field Calibration

Force	Best Uncertainty (\pm)^{note 1}	Remarks
3.0 kgf	10 g	Standard Loadcell
10 kgf	10 g	Standard Loadcell
15 kgf	10 g	Standard Loadcell
30 kgf	10 g	Standard Loadcell
45 kgf	10 g	Standard Loadcell
60 kgf	30 g	Standard Loadcell
100 kgf	30 g	Standard Loadcell
150 kgf	30 g	Standard Loadcell

Depth	Best Uncertainty (\pm)^{note 1}	Remarks
0 mm to 3 mm	0.2 μ m	Direct Verification of Depth is valid only for United Model UHT and Tru-Blue II testers with a Heidenhain Metro Gage.

THERMODYNAMICS

NVLAP Code: 20/T03
Laboratory Thermometers

Range in °C	Best Uncertainty (\pm) in °C^{note 1}	Remarks
10 to 50	0.1	

NVLAP Code: 20/T07
Resistance Thermometry

Range in °F	Best Uncertainty (\pm) in °F^{note 1 in °F}	Remarks
-328 to 1112	0.2	

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NVLAP Code: 20/T08
Thermocouples : Simulation
(Types K, J & T)

<i>Range in °F</i>	<i>Best Uncertainty (±)^{note 1}</i>	<i>Remarks</i>
-328 to 2500	2.75 °F or 0.375 % of reading	

Temperature Surveys
Ovens, Autoclaves and Presses

<i>Range</i>	<i>Best Uncertainty (±)^{note 1}</i>
-65 °F to 1000 °F	0.375% of reading

NVLAP Code: 20/T05
Pressure

<i>Range</i>	<i>Best Uncertainty (±)^{note 1}</i>	<i>Remarks</i>
0 psig to 5000 psig	0.025 % FS	

1. Represents an expanded uncertainty using a coverage factor, k = 2, at an approximate level of confidence of 95 %.
2. The Heidenhain specification indicates that this accuracy is maintained over a temperature range of 10 to 40 °C.

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