

National Institute
of Standards and Technology



National Voluntary
Laboratory Accreditation Program

ISO/IEC 17025:1999
ISO 9002:1994

Scope of Accreditation



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CALIBRATION LABORATORIES

NVLAP LAB CODE 105007-0

STATE OF VIRGINIA METROLOGY LAB

600 North 5th Street
Richmond, VA 23219
Mr. Michael J. Kramer
Phone: 804-786-0479 Fax: 804-371-7790
E-Mail: mkramer@vdacs.state.va.us

DIMENSIONAL

NVLAP Code: 20/D13
Survey Rods and Tapes

Range	Best Uncertainty (\pm) ^{note 1}	Remarks
2 ft to 10 ft	0.0057 inches	Metal Tapes (Bench Method)
11 ft to 25 ft	0.0085 inches	Metal Tapes (Bench Method)
26 ft to 50 ft	0.0098 inches	Metal Tapes (Bench Method)
51 ft to 75 ft	0.0134 inches	Metal Tapes (Bench Method)
76 ft to 100 ft	0.017 inches	Metal Tapes (Bench Method)
1 inch to 18 inches	0.0054 inches	Rigid Rules

September 30, 2005

A handwritten signature in black ink, appearing to read "Michael J. Kramer".

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TIME AND FREQUENCY

NVLAP Code: 20/F01

Frequency

Range in Hz	Best Uncertainty (\pm) ^{note 1}	Remarks
1000 to 10,000	0.02%	Tuning forks at frequencies used in law enforcement

MECHANICAL

NVLAP Code: 20/M08

Mass

Range	Best Uncertainty (\pm) ^{note 1}	Remarks
30 kg	63.89 mg	Echelon II
20 kg	62.92 mg	Echelon II
10 kg	9.23 mg	Echelon II
5 kg	2.94 mg	Echelon II
3 kg	2.62 mg	Echelon II
2 kg	1.14 mg	Echelon II
1 kg	0.138 mg	Echelon II
500 g	0.324 mg	Echelon II

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300 g	0.323 mg	Echelon II
200 g	0.323 mg	Echelon II
100 g	0.036 mg	Echelon II
50 g	0.035 mg	Echelon II
30 g	0.025 mg	Echelon II
20 g	0.024 mg	Echelon II
10 g	0.012 mg	Echelon II
5 g	0.009 mg	Echelon II
3 g	0.008 mg	Echelon II
2 g	0.007 mg	Echelon II
1 g	0.013 mg	Echelon II
500 mg	0.013 mg	Echelon II
300 mg	0.013 mg	Echelon II
200 mg	0.013 mg	Echelon II
100 mg	0.006 mg	Echelon II
50 mg	0.006 mg	Echelon II
30 mg	0.006 mg	Echelon II

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20 mg	0.006 mg	Echelon II
10 mg	0.005 mg	Echelon II
5 mg	0.004 mg	Echelon II
3 mg	0.004 mg	Echelon II
2 mg	0.004 mg	Echelon II
1 mg	0.004 mg	Echelon II
6000 lb	0.063 lbs	Echelon III
5000 lb	0.056 lbs	Echelon III
4000 lb	0.049 lbs	Echelon III
3000 lb	0.043 lbs	Echelon III
2000 lb	0.036 lbs	Echelon III
1000 lb	0.009 lbs	Echelon III
500 lb	0.005 lbs	Echelon III
50 lb	154.63 mg	Echelon III
25 lb	121.09 mg	Echelon III
20 lb	108.18 mg	Echelon III

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10 lb	24.36 mg	Echelon III
5 lb	10.15 mg	Echelon III
3 lb	9.76 mg	Echelon III
2 lb	2.77 mg	Echelon III
1 lb	0.80 mg	Echelon III
0.5 lb	0.39 mg	Echelon III
0.3 lb	0.32 mg	Echelon III
0.2 lb	0.28 mg	Echelon III
0.1 lb	0.17 mg	Echelon III
0.05 lb	0.17 mg	Echelon III
0.03 lb	0.16 mg	Echelon III
0.02 lb	0.16 mg	Echelon III
0.01 lb	0.15 mg	Echelon III
0.005 lb	0.07 mg	Echelon III
0.003 lb	0.07 mg	Echelon III
0.002 lb	0.07 mg	Echelon III
0.001 lb	0.07 mg	Echelon III

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STATE OF VIRGINIA METROLOGY LAB

NVLAP Code: 20/M12

Volume and Density

Range	Best Uncertainty (\pm) ^{note 1}	Remarks
1.0 fluid ounce	1.15 minim	Volume Transfer
1.0 gill	1.16 minim	Volume Transfer
0.5 pint	4.06 minim	Volume Transfer
1.0 pint	4.02 minim	Volume Transfer
1.0 quart	6.22 minim	Volume Transfer
0.5 gallon	11.70 minim	Volume Transfer
1.0 gallon	11.76 minim	Volume Transfer
10 mL	0.070 mL	Volume Transfer
50 mL	0.072 mL	Volume Transfer
100 mL	0.089 mL	Volume Transfer
200 mL	0.106 mL	Volume Transfer
500 mL	0.190 mL	Volume Transfer
1 Liter	0.36 mL	Volume Transfer
2 Liter	0.28 mL	Volume Transfer
5 Liter	0.56 mL	Volume Transfer

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5 gallons	0.421 in ³	Volume Transfer
50 gallons	9.57 in ³	Volume Transfer
100 gallons	12.78 in ³	Volume Transfer
200 gallons	26.07 in ³	Volume Transfer
500 gallons	55.19 in ³	Volume Transfer
1000 gallons	93.06 in ³	Volume Transfer
1500 gallons	131.74 in ³	Volume Transfer
2000 gallons	170.68 in ³	Volume Transfer

THERMODYNAMICS

NVLAP Code: 20/T03
Laboratory Thermometers

Range in °C	Best Uncertainty (\pm) ^{note 1}	Remarks
-8 to 32	0.146 °C	Liquid in Glass
33 to 55	0.144 °C	Liquid in Glass
56 to 80	0.193 °C	Liquid in Glass
81 to 105	0.081 °C	Liquid in Glass

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

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