National Voluntary Laboratory Accreditation Program

CALIBRATION LABORATORIES **NVLAP LAB CODE 200638-0**

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

Rainin Instrument LLC Oakland, CA Pipette Service	**Parameter(s) of Accreditation**
7500 Edgewater Drive Oakland, CA 94621-0060 Mr. Bruce Loughridge Phone: 510-564-1608 Fax: 510-564-1757 E-mail: bruce.loughridge@rainin.com URL: http://www.rainin.com	Mechanical This laboratory is compliant to ANSI/NCSL Z540-1-1994; Part 1. (NVLAP Code: 20/A01)

CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) [Notes 1,2]

Measured Parameter or Device Calibrated	**% of Nominal Value**	**Uncertainty (*k*=2)** [Note 3]	**Remarks**
MECHANICAL			
NVLAP Code: 20/M12 **VOLUME and DENSITY** Volume Pipettes – Nominal Volume			Gravimetric Method
2 µL	10 %	0.014 µL	
2 µL	50 %	0.014 µL	
2 µL	100 %	0.016 µL	
10 µL	10 %	0.013 µL	
10 µL	50 %	0.016 µL	
10 µL	100 %	0.022 µL	
20 µL	10 %	0.038 µL	
20 µL	50 %	0.044 µL	
20 µL	100 %	0.044 µL	
100 µL	10 %	0.18 µL	
100 µL	50 %	0.21 µL	
100 µL	100 %	0.26 µL	
200 µL	10 %	0.17 µL	
200 µL	50 %	0.25 µL	
200 µL	100 %	0.38 µL	
1000 µL	10 %	0.94 µL	
1000 µL	50 %	1.6 µL	
1000 µL	100 %	2.2 µL	
2000 µL	10 %	1.4 µL	
2000 µL	50 %	2.8 µL	
2000 µL	100 %	3.5 µL	

2012-04-01 through 2013-03-31
Effective dates

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CALIBRATION AND MEASUREMENT CAPABILITIES (CMC) [Notes 1,2]

Measured Parameter or Device Calibrated	% of Nominal Value	Uncertainty (*k*=2) [Note 3]	Remarks
5000 µL	10 %	3.2 µL	
5000 µL	50 %	6.5 µL	
5000 µL	100 %	7.1 µL	
10 000 µL	10 %	5.9 µL	
10 000 µL	50 %	10.7 µL	
10 000 µL	100 %	13.2 µL	
20 000 µL	10 %	12.3 µL	
20 000 µL	50 %	17.5 µL	
20 000 µL	100 %	22.4 µL	
END			

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Notes

Note 1: A Calibration and Measurement Capability (CMC) is a description of the best result of a calibration or measurement (result with the smallest uncertainty of measurement) that is available to the laboratory's customers under normal conditions, when performing more or less routine calibrations of nearly ideal measurement standards or instruments. The CMC is described in the laboratory's scope of accreditation by: the measurement parameter/device being calibrated, the measurement range, the uncertainty associated with that range (see note 3), and remarks on additional parameters, if applicable.

Note 2: Calibration and Measurement Capabilities are traceable to the national measurement standards of the U.S. or to the national measurement standards of other countries and are thus traceable to the internationally accepted representation of the appropriate SI (Système International) unit.

Note 3: The uncertainty associated with a measurement in a CMC is an expanded uncertainty using a coverage factor, $k = 2$, with a level of confidence of approximately 95 %. Units for the measurand and its uncertainty are to match. Exceptions to this occur when marketplace practice employs mixed units, such as when the artifact to be measured is labeled in non-SI units and the uncertainty is given in SI units (Example: 5 lb weight with uncertainty given in mg).

Note 3a: The uncertainty of a specific calibration by the laboratory may be greater than the uncertainty in the CMC due to the condition and behavior of the customer's device and specific circumstances of the calibration. The uncertainties quoted do not include possible effects on the calibrated device of transportation, long term stability, or intended use.

Note 3b: As the CMC represents the best measurement results achievable under normal conditions, the accredited calibration laboratory shall not report smaller uncertainty of measurement than that given in a CMC for calibrations or measurements covered by that CMC.

Note 3c: As described in Note 1, CMCs cover calibrations and measurements that are available to the laboratory's customers under *normal conditions.* However, the laboratory may have the capability to offer special tests, employing special conditions, which yield calibration or measurement results with lower uncertainties. Such special tests are not covered by the CMCs and are outside the laboratory's scope of accreditation. In this case, NVLAP requirements for the labeling, on calibration reports, of results outside the laboratory's scope of accreditation apply. These requirements are set out in Annex A.1.h. of NIST Handbook 150, Procedures and General Requirements.

Note 4: Uncertainties associated with field service calibration may be greater as they incorporate on-site environmental contributions, transportation effects, or other factors that affect the measurements. (This note applies only if marked in the body of the scope.)

Note 5: Values listed with percent (%) are percent of reading or generated value unless otherwise noted.

Note 6: NVLAP accreditation is the formal recognition of specific calibration capabilities. Neither NVLAP nor NIST guarantee the accuracy of individual calibrations made by accredited laboratories.

Note 7: See NIST Handbook 150 for further explanation of these notes.

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