

Level 3 Calibration Report

Pipette Calibration Services, Inc.  
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**ISO/IEC 17025:2005 Accredited**  
**Accreditation #63119**



Abc, Inc  
 555 Second ave  
 Suite  
 Cambridge, MA 02451

Calibrated at: PCSI Service Center  
 Recal. Due: Dec/02/2017  
 Make: Rainin  
 Model: L-200 XLS  
 Serial Number: C1204731T  
 Id Marks:  
 Tracking Number: 408105.0109

Calibrated By: As Left  
 Cal. Date: Shanjun Zhang  
 Standard: Jun/02/2017  
 Balance SN: METTLER XP205  
 Balance Recal Due: B140307707  
 Weight Set: Feb/28/2018  
 Wt.Recal Due: 29673  
 Environ. Logger ID: Jul/31/2017  
 Logger Recal Due: OM01  
 Air/Water Temp(C): Jan/31/2018  
 Humidity %RH: 21.5 / 21.6  
 Barometer mm. Hg: 58.9  
 Water Den. (g/ml): 760.17  
 Z factor (1/density): 0.99685  
 1.00316

Evap Trap in Use (> 50%)

As Left

Repetition (mg)	20 ul	100 ul	200 ul
1	19.9	99.9	199.9
2	19.8	99.7	199.9
3	19.9	99.7	200.3
4	19.8	99.4	199.9
5	19.8	99.6	199.7
Average(ul)	19.9	100.0	200.6
Inaccuracy(%)	0.46	0.01	0.28
Imprecision(%CV)	0.30	0.18	0.10
Accuracy	PASS	PASS	PASS
Precision	PASS	PASS	PASS
Uncertainty(k=2)ul	0.18	0.36	0.61

Manufacturer Specifications

Volume	20 ul	100 ul	200 ul
Accuracy (ul)	19.5 - 20.5	99.2 - 100.8	198.4 - 201.6
Precision%	1	0.25	0.15

Procedure:

This pipette was calibrated gravimetrically using Pipette Calibration Services, Inc Standard Operating Procedures. This is to certify that the above item was calibrated using standards whose measurement results are traceable to reference standards developed and maintained by (NMI) National Metrology Institutes, such as (NIST, USA) to International System of Units(SI) and/or based on fundamental physical constants. Pipette Calibration Services, Inc.'s quality management system is in compliance with ISO/IEC 17025:2005 standard. Test Uncertainty Ratio (TUR) is greater than 4:1, unless otherwise noted. This certificate and the data shall not be reproduced except in full without written approval of Pipette Calibration Services, Inc. management. Measurement results pertain only to the item calibrated and apply at the time of measurements. The measurement uncertainty(MU) is reported at a confidence level of at least 95%(k=2). MU associated with the measurement results reported in this certificate was not accounted for in making the decision of compliance or non-compliance with the relevant specifications identified above. The average(ul) and error % reported is calculated by multiplying the average weight as measured by the balance by the Z factor as shown in the standards and conditions.

Parts Replaced:

O-ring

Comments:

Remedial action:

Items replaced as indicated in "Parts Replaced".



Report reviewed by:

Patience Miller, Quality Assurance

Date of review:

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