

Ultra Cal

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info@ultra-cal.com



CALIBRATION CERTIFICATE

Customer Name & Address : Sumukh Prayogalaya.,
Shrinath Complex, 2nd Floor, Hubli

Customer's Reference: **SRF No.:** 1114 **Dated :** 01 Mar 2023

Calibration Certificate Number	Calibrated On	Recommended Calibration Due	Page Number
UC/23/1114-10	01 Mar 2023	28 Feb 2024	1 of 2

ULR No CC299623000001066F

Date of issue: 10 Mar 2023

Details of device under calibration (DUC):

DUC : Micro Pipette	Calibration Procedure No. : UC/CAL/205
Make : Vertex	No. of Pages : 2
Range : 100-1000 μ l	DUC Received : 01 Mar 2023
SI No. : 221020767	DUC Condition on receipt : Satisfactory
ID No. : μ p-02	Cal At : Mass Lab.Ultracal


Environmental Conditions: Temp. :(23 \pm 2) $^{\circ}$ C ,Relative Hum.:(40 to 60)%, Atm.Pressure:911.1mbar

Standards used:

Sl. No.	Nomenclature	Make	Sl. No/ID No	Traceable to/ Cert. No.	Validity
1	Electronic Balance	Radwag	573977	LCGC / TC/8946/2022	04 July 2023

- Note:**
- 1.The Calibration Certificate relates only to the above DUC
 - 2.Publication or reproduction of this certificate in any form other than by complete set of the whole certificate & in the language, written, is not permitted without the written consent of Ultracal.
 - 3.Corrections/erasing, invalidate the Calibration certificate
 - 4.Calibration of the DUC are traceable to National standards/International Standards
 - 5.Any error in this certificate should be brought to our knowledge within 45 days from the date of this certificate.
 - 6.Results Reported are valid at the time of and under the stated conditions of measurements.
 - 7.The usage of NABL Symbol is as per NABL guidelines NABL 133

Calibrated By


Srinath N M



Authorised By


Shreyas B V



Calibration Certificate Number

UC/23/1114-10

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ULR No: CC299623000001066F

Range : 100 - 1000 μ l

Increment : 1 μ l

Sl. No.	Micropipette Set Volume in μ l	Standard Balance Reading in g	Actual Calculated Volume @ 27°C in μ l	Average Volume in μ l	Systematic Error, \pm in μ l	Random Error, in \pm in μ l
1	100	0.09906	99.41	99.77	-0.23	0.26
2		0.09958	99.93			
3		0.09967	100.02			
4		0.09952	99.87			
5		0.09946	99.81			
6		0.09968	100.03			
7		0.09909	99.44			
8		0.09977	100.12			
9		0.09923	99.58			
10		0.09917	99.52			
11	500	0.49994	501.70	502.60	2.60	0.61
12		0.50135	503.11			
13		0.50160	503.36			
14		0.50126	503.02			
15		0.50134	503.10			
16		0.50058	502.34			
17		0.50103	502.79			
18		0.50024	502.00			
19		0.50104	502.80			
20		0.49997	501.73			
21	1000	1.00132	1004.84	1005.61	5.61	0.75
22		1.00306	1006.59			
23		1.00184	1005.36			
24		1.00245	1005.97			
25		1.00279	1006.32			
26		1.00178	1005.30			
27		1.00203	1005.55			
28		1.00106	1004.58			
29		1.00314	1006.67			
30		1.00137	1004.89			

Measurement Uncertainty : \pm 0.30 μ l upto 100 μ l

Conclusion / Remarks: 1.27 μ l above 100 μ l

- 1 Measurement uncertainty is at confidence level 95% which corresponds to a coverage factor of k= 2.26
- 2 Calibration is performed as per ISO 8655 - 6 : 2002 (E)
- 3 Gravimetric Method is adopted for calibration

Calibrated By



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