



# Ultra Cal

# 42, 1st Floor, 60 Feet Main Road, Srinivasanagar,  
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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/23/1114-11	01 Mar 2023	28 Feb 2024	1 of 2

ULR No.: CC299623000001067F

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 : 5-50 $\mu$ l	DUC Received : 01 Mar 2023
SI No. : 021830452	DUC Condition on receipt : Satisfactory
ID No. : $\mu$ p-03	Cal At : Mass Lab.Ultracal

**Environmental Conditions:** Temp. : (23  $\pm$  2) $^{\circ}$ C ,Relative Hum.:(40 to 60)%, Atm.Pressure:912.1mbar

### 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



Authorised By



Calibration Certificate Number

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ULR No.: CC299623000001067F

Range : 5-50  $\mu$ l

Increment : 0.5  $\mu$ l

Sl. No.	Micropipette Set Volume in $\mu$ l	Standard Balance Reading in g	Actual Calculated Volume @ 27°C in $\mu$ l	Average Volume in $\mu$ l	Systematic Error, $\pm$ in $\mu$ l	Random Error, in $\pm$ in $\mu$ l
1	10	0.00981	9.84	9.91	-0.09	0.07
2		0.00979	9.82			
3		0.00997	10.01			
4		0.00982	9.85			
5		0.00995	9.99			
6		0.00982	9.85			
7		0.00996	10.00			
8		0.00989	9.92			
9		0.00991	9.94			
10		0.00983	9.86			
11	25	0.02513	25.22	25.12	0.12	0.11
12		0.02487	24.96			
13		0.02513	25.22			
14		0.02517	25.26			
15		0.02497	25.06			
16		0.02511	25.20			
17		0.02495	25.04			
18		0.02503	25.12			
19		0.02489	24.98			
20		0.02507	25.16			
21	50	0.04977	49.95	50.17	0.17	0.17
22		0.05002	50.20			
23		0.05011	50.29			
24		0.05009	50.27			
25		0.04997	50.15			
26		0.04974	49.92			
27		0.05013	50.31			
28		0.05021	50.39			
29		0.05011	50.29			
30		0.04979	49.97			

Measurement Uncertainty :  $\pm$  0.30  $\mu$ l

**Conclusion / Remarks:**

- 1 Measurement uncertainty is at confidence level 95% which corresponds to a coverage factor of k= 2.23
- 2 Calibration is performed as per ISO 8655 - 6 : 2002 ( E )
- 3 Gravimetric Method is adopted for calibration
- 4 Calibration points selected as per customer request

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