



YEA

☎ : 033 2677 1411/1412, 2667 1909

YOUNG ENGG. & CALIBRATION SERVICES PVT. LTD.

Admn. Office & Lab : Kamardanga Road (Opp. Tarama Ashram), Ichapur, Howrah - 711 104

E-mail : calibration@yeagroup.org ★ Visit us at : www.yeagroup.org

CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1 800 345 9001

Calibration Certificate

Certificate No.: YEA(C)/ 230209A/I861/002
ULR No.: CC222123000012088F

Dated : 22.02.2023

Calibrated for : ICTC Saitual CHC
Saitual, Pin - 796261.

Calibrated on.	Next Calibration Due On.	Page No.	No. of Pages
10.02.2023	10.02.2024	1	3

Description of Instrument

Name : Micro Pipette
Identification : STL / ICTC / MP - 01
Range : 20 - 200 µl
Least Count : 1 µl
Make : Micholux

Service Request No. / Order Reference

: 230209A/I861/001-002

Receipt of Instrument

: 09.02.2023

Location where calibration performed

: At permanent laboratory

Applicable Specification of Instrument to be Calibrated

: Not Specified

Condition of Instrument to be Calibrated

: Satisfactory

Basis of Calibration

: Comparison method with reference to YEA/WI/M-47

Environmental Condition during Calibration

: **Temp.** : (25±4)°C **RH** : (50±10)%

Equipment used for Calibration

: Standard Electronic Balance & Distilled Water

Traceability

: To National Standard vide Certificate No:
YEA(C)/220910/Y001/001 valid till 09.09.2023

Measurement Uncertainty

: The figures are stated in the result at coverage factor
 $k = 2$ corresponding to confidence probability of
95% for normal distribution.

Laboratory Identification

: Sticker is affixed for authentication of calibration.

The above Instrument/Equipment/Machine has been calibrated

The results are given in the page 2 to 3 ...of the certificate.



CC-2221

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YEA(C)/F-08





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Calibration Results

Mechanical Calibration

A) Calibration Result of Micro Pipette :

Sl. No.	DUC Value	Standard Value	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	(μ l)	(μ l)	(μ l)	(μ l)	(μ l)	($\pm \mu$ l)
1	20	19.847	19.806	0.194	0.036	0.027
2		19.822				
3		19.738				
4		19.814				
5		19.866		Standard Limit Value as Per ISO 8655 - 2 : 2002 ($\pm \mu$ l)		
6		19.803				
7		19.780				
8		19.795				
9		19.778		0.200	0.100	
10		19.815				

Sl. No.	DUC Value	Standard Value	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	(μ l)	(μ l)	(μ l)	(μ l)	(μ l)	($\pm \mu$ l)
1	100	99.876	99.890	0.110	0.038	0.028
2		99.940				
3		99.948				
4		99.929				
5		99.868		Standard Limit Value as Per ISO 8655 - 2 : 2002 ($\pm \mu$ l)		
6		99.847				
7		99.908				
8		99.879				
9		99.846		0.800	0.300	
10		99.862				

cont....3





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Sl. No.	DUC Value	Standard Value	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	(μ l)	(μ l)	(μ l)	(μ l)	(μ l)	($\pm \mu$ l)
1	200	199.915	199.897	0.103	0.033	0.024
2		199.955				
3		199.891				
4		199.878		Standard Limit Value as Per ISO 8655 - 2 : 2002 ($\pm \mu$ l)		
5		199.826				
6		199.888		1.600	0.600	
7		199.908				
8		199.915				
9		199.902				
10		199.888				

DUC : Device Under Calibration

REMARKS : The above Micro Pipette has been calibrated and the readings are tabulated above.

NOTES : This certificate refers to the results tabulated at the time of calibration only for the above mentioned item submitted for calibration and this should not be reproduced, other than in full except with prior written approval from the head of calibration laboratory.

Authorised By

A. Das

Manager Calibration

*** End of the Calibration Certificate ***

