



# YEA

## YOUNG ENGG. & CALIBRATION SERVICES PVT. LTD.

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Tele Fax : 033 2677 1411

Admn. Office & Lab : 44, Shahid Khudiram Bose Sarani, (formerly Kamardanga Road), Ichapur, Howrah - 711 104

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

CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

### Calibration Certificate

Certificate No.: YEA(C)/ 230209A/1855/003

Dated : 22.02.2023

ULR No. : CC222123000012071F

Calibrated for : ICTC Christian Hospital, Serkawn  
Lunglei, Pin - 796691.

Calibrated on.	Next Calibration Due On.	Page No.	No. of Pages
11.02.2023	11.02.2024	1	3

#### Description of Instrument

*Name* : Micro Pipette  
*Identification* : CHS/ICTC/MP-01  
*Range* : 10 - 100 µl  
*Least Count* : 0.5 µl  
*Make* : N/F

Service Request No. / Order Reference

: 230209A/1855/001-003

Receipt of Instrument

: 09.02.2022

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.

Comp.....2

YEA(C)/F-08





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Calibrated By : S. Das

Date: 22.02.2023

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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
	( $\mu$ l)	( $\mu$ l)	( $\mu$ l)	( $\mu$ l)	( $\mu$ l)	( $\pm \mu$ l)
1	10.0	9.936	9.926	0.074	0.021	0.016
2		9.952				
3		9.927				
4		9.938		Standard Limit Value as Per ISO 8655 - 2 : 2002 ( $\pm \mu$ l)		
5		9.904				
6		9.926		0.120	0.080	
7		9.904				
8		9.932				
9		9.886				
10		9.949				

Sl. No.	DUC Value	Standard Value	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	( $\mu$ l)	( $\mu$ l)	( $\mu$ l)	( $\mu$ l)	( $\mu$ l)	( $\pm \mu$ l)
1	50.0	49.891	49.909	0.091	0.023	0.017
2		49.904				
3		49.941				
4		49.904		Standard Limit Value as Per ISO 8655 - 2 : 2002 ( $\pm \mu$ l)		
5		49.879				
6		49.887		0.500	0.200	
7		49.898				
8		49.913				
9		49.934				
10		49.945				

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Sl. No.	DUC Value	Standard Value	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	( $\mu\text{l}$ )	( $\mu\text{l}$ )	( $\mu\text{l}$ )	( $\mu\text{l}$ )	( $\mu\text{l}$ )	( $\pm \mu\text{l}$ )
1	100.0	99.923	99.902	0.098	0.028	0.020
2		99.936				
3		99.874				
4		99.870		Standard Limit Value as Per ISO 8655 - 2 : 2002 ( $\pm \mu\text{l}$ )		
5		99.877				
6		99.889				
7		99.937		0.800	0.300	
8		99.916				
9		99.874				
10		99.928				

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 \*\*\*

