



# YEA

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

☎ : 033 2677 1412, 2667 1909, 82329 85881

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/1859/002

ULR No.: CC222123000012083F

Dated : 22.02.2023

Calibrated for : ICTC Khawzawl CHC

Khawzawl,

Pin - 796310.

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

: KZ/ICTC/MP-01

Range

: 20 - 200  $\mu$ l

Least Count

: 1  $\mu$ l

Make

: Sartorius (Sl. No. : 14599621)

Service Request No. / Order Reference

: 230209A/1859/001-002

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 $\pm$ 4) $^{\circ}$ C      **RH** : (50 $\pm$ 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.

.....2

YEA(C)/F-08





# YEA

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

☎ : 033 2677 1412, 2667 1909, 82329 85881

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

Certificate No.: YEA(C)/ 230209A/I859/002

ULR No.: CC222123000012083F

Calibrated By : S. Das

Date: 22.02.2023

Page 2 of 3 Pages

### 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	20	19.993	20.009	-0.009	0.022	0.016
2		19.985				
3		20.009				
4		20.027				
5		20.002		Standard Limit Value as Per ISO 8655 - 2 : 2002 ( $\pm \mu$ l)		
6		20.017				
7		19.998				
8		19.981		0.200	0.100	
9		20.038				
10		20.044				

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	100	100.076	100.002	-0.002	0.036	0.027
2		99.999				
3		99.989				
4		99.990				
5		100.034		Standard Limit Value as Per ISO 8655 - 2 : 2002 ( $\pm \mu$ l)		
6		99.967				
7		99.955				
8		100.030		0.800	0.300	
9		100.005				
10		99.976				

end...3





# YEA

☎ : 033 2677 1412, 2667 1909, 82329 85881

Tele Fax : 033 2677 1411

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

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

Certificate No.: YEA(C)/ 230209A/I859/002

Date: 22.02.2023

ULR No.: CC222123000012083F

Page 3 of 3 Pages

Calibrated By : S. Das

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	200	200.061	200.071	-0.071	0.032	0.023
2		200.083				
3		200.068				
4		200.080				
5		200.086		Standard Limit Value as Per ISO 8655 - 2 : 2002 ( $\pm \mu$ l)		
6		200.107				
7		200.115				
8		200.069		1.600	0.600	
9		200.032				
10		200.010				

**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 \*\*\*

