



# YEA

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## YOUNG ENGG. & CALIBRATION SERVICES PVT. L

Admn. Office & Lab : 44, Shahid Khudiram Bose Sarani, (formerly Kamardanga Road), Ichapur, Howrah - 7

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)/ 220203A/D787/002

Dated : 07.02.2022

ULR No. : CC222122000006168F

Calibrated for : District TB Centre, ICTC  
Falkawn, Mizoram,  
Pin - 796001.

Calibrated on.	Next Calibration Due On.	Page No.	No. of Page
04.02.2022	04.02.2023	1	3

#### Description of Instrument

*Name* : Micro Pipette  
*Identification* : SRHF/TB-ICTC/MP-02  
*Range* : 20 - 200 µl  
*Least Count* : 0.2 µl  
*Make* : Accupipet (Sl. No. : V49751)

Service Request No. / Order Reference : 220203A/D787/001-003

Receipt of Instrument : 03.02.2022

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.* : (23±2)°C      *RH* : (50±10)%

Equipment used for Calibration : Standard Electronic Balance & Distilled Water

Traceability : To National Standard vide Certificate No:  
YEA(C)/210911/Y001/001 valid till 10.09.2022

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

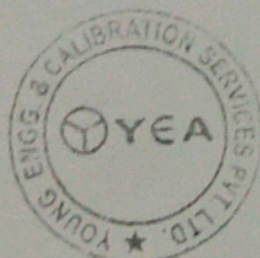
Laboratory Identification : Sticker is affixed for authentication of calibration

The above Instrument/Equipment/Machine has been calibrated up to its range.

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

CC-2221

YEA(C)/F-08





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Calibrated By : M. Gayan

### Calibration Results

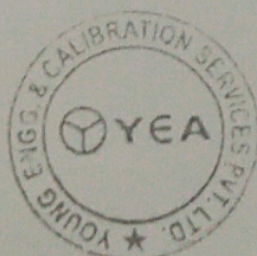
#### Mechanical Calibration

##### 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	20.0	20.130	20.115	-0.115	0.041	0.011
2		20.075				
3		20.107				
4		20.085				
5		20.127				
6		20.108				
7		20.189				
8		20.176				
9		20.078				
10		20.075				
				Standard Limit Value as Per ISO 8655 - 2 : 2002 ( $\pm \mu$ l)		
				0.200	0.100	

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	100.0	100.482	100.519	-0.519	0.046	0.012
2		100.513				
3		100.538				
4		100.483				
5		100.536				
6		100.575				
7		100.519				
8		100.475				
9		100.461				
10		100.602				
				Standard Limit Value as Per ISO 8655 - 2 : 2002 ( $\pm \mu$ l)		
				0.800	0.300	

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Date: 07.02.2022  
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Sl. No.	DUC Value	Standard Value	Mean Value	Systematic Error (es)	Random Error (ev)	Measurement Uncertainty
	( $\mu\text{l}$ )	( $\mu\text{l}$ )	( $\mu\text{l}$ )	( $\mu\text{l}$ )	( $\mu\text{l}$ )	( $\pm \mu\text{l}$ )
1	200.0	200.726	200.771	-0.771	0.052	0.013
2		200.735				
3		200.770				
4		200.796		Standard Limit Value as Per ISO 8655 - 2 : 2002 ( $\pm \mu\text{l}$ )		
5		200.752				
6		200.803		1.600	0.600	
7		200.718				
8		200.834				
9		200.710				
10		200.864				

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 \*\*\*

