



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 : 1800 345 9001

Calibration Certificate

Certificate No.: YEA(C)/ 231223A/1969/002 (A)

ULR No. : CC222123000082858F

Amendment Date : 06.02.2024

Calibrated for : ICTC, Vairengte CHC

Dist.: Kolasib, Mizoram,

Pin - 796101.

Calibrated on.	Next Calibration Due On.	Page No.	No. of Pages
26.12.2023	26.12.2024	1	3

Description of Instrument

Name : Micro Pipette
Identification : ICTC/VRT/MP-01
Range : 20 - 200 µl
Least Count : 0.2 µl
Make : Accupipet (Sl. No. : U50135)

Service Request No. / Order Reference

: 231223A/1969/001-003

Receipt of Instrument

: 23.12.2023

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.* : (23±4)°C *RH* : (50±10)%

Equipment used for Calibration

: Standard Electronic Balance & Distilled Water

Traceability

: To National Standard vide Certificate No:
YEA(C)/230925/Y001/001 valid till 24.09.2024

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.

Cont.....2

YEA(C)/F-08





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Certificate No.: YEA(C)/ 231223A/I969/002 (A)

ULR No. : CC222123000082858F

Calibrated By : M. Gayan

Amendment Date: 06.02.2024

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
	(μ l)	(μ l)	(μ l)	(μ l)	(μ l)	($\pm \mu$ l)
1	20.0	20.036	20.054	-0.054	0.042	0.031
2						
3						
4						
5						
6						
7						
8						
9						
10						
		19.996		0.200	0.100	

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	100.0	100.093	100.038	-0.038	0.040	0.029
2						
3						
4						
5						
6						
7						
8						
9						
10						
		99.988		0.800	0.300	

cont. 0.3





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Amendment Date: 06.02.2024
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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	200.0	200.046	200.050	-0.050	0.031	0.023
2		200.064				
3		200.053				
4		200.004		Standard Limit Value as Per ISO 8655 - 2 : 2002 ($\pm \mu$ l)		
5		200.079				
6		200.065		1.600	0.600	
7		200.004				
8		200.086				
9		200.079				
10		200.023				

DUC : Device Under Calibration

REMARKS : The above Micro Pipette has been calibrated and the readings are tabulated above.
This Certificate is a Supplementary Certificate against previous issued
Certificate No.: YEA(C)/231223A/I969/002 dated 30.12.2023

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 ***





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ULR No. : CC222123000082859F

Amendment Date : 06.02.2024

Calibrated for : ICTC, Vairengte CHC
Dist.: Kolasib, Mizoram,
Pin - 796101.

Calibrated on.	Next Calibration Due On.	Page No.	No. of Pages
26.12.2023	26.12.2024	1	3

Description of Instrument

Name : Micro Pipette
Identification : ICTC/VRT/MP-02
Range : 20 - 200 µl
Least Count : 0.2 µl
Make : Accupipet (SI. No. : U50145)

Service Request No. / Order Reference

: 231223A/1969/001-003

Receipt of Instrument

: 23.12.2023

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.* : (23±4)°C *RH* : (50±10)%

Equipment used for Calibration

: Standard Electronic Balance & Distilled Water

Traceability

: To National Standard vide Certificate No:
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Measurement Uncertainty

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Cont A...2

YEA(C)/F-08



CC-2221



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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
	(μl)	(μl)	(μl)	(μl)	(μl)	($\pm \mu\text{l}$)
1	20.0	20.033	19.996	0.004	0.037	0.027
2		20.003				
3		20.025				
4		19.996		Standard Limit Value as Per ISO 8655 - 2 : 2002 ($\pm \mu\text{l}$)		
5		20.019				
6		19.934				
7		20.025		0.200	0.100	
8		19.948				
9		19.955				
10		20.025				

Sl. No.	DUC Value	Standard Value	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	(μl)	(μl)	(μl)	(μl)	(μl)	($\pm \mu\text{l}$)
1	100.0	99.982	99.893	0.107	0.038	0.028
2		99.866				
3		99.878				
4		99.887		Standard Limit Value as Per ISO 8655 - 2 : 2002 ($\pm \mu\text{l}$)		
5		99.863				
6		99.855				
7		99.928		0.800	0.300	
8		99.906				
9		99.878				
10		99.887				

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Sl. No.	DUC Value	Standard Value	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	(μl)	(μl)	(μl)	(μl)	(μl)	($\pm \mu\text{l}$)
1	200.0	199.837	199.922	0.078	0.038	0.028
2		199.914				
3		199.905				
4		199.913		Standard Limit Value as Per ISO 8655 - 2 : 2002 ($\pm \mu\text{l}$)		
5		199.958				
6		199.965		1.600	0.600	
7		199.903				
8		199.918				
9		199.958				
10		199.946				

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