



# MEASURE TECHNO LAB

2, B.T. ROAD (JAYANTI CINEMA COMPLEX), BARRACKPORE,  
KOLKATA - 700120, W.B.



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## CALIBRATION CERTIFICATE OF MICRO PIPETTE

CALIBRATION CERTIFICATE NO.: MTL / MCL / R06 / 12 - 23

ULR - CC254523000042522F

CC - 2545

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1.0 Service Request No.: MTL / 12B / 12 / 23 - 24

1.1 Issued to: M/s. Mukherjee Clinical Laboratory,  
43/C/5, Jatindra Sarani, Champadali,  
North 24 Parganas, Kolkata - 700124.

1.2 Description & Identification of item to be Calibrated:	a) Name:	Micro Pipette	b) Code No.:	MCL / MP / 05
	c) Sl. No.:	YE3K042416	d) Make:	Erba
	e) Model / Type:	N.S.	f) Range:	100 µl to 1000 µl
	g) Sensor:	N.A.	h) Resolution:	5 µl
	i) End User:	Lab	j) Accuracy:	N.S.
	k) Calibration done at:	On Site / √ In House		

1.3 Date of receipt of item : 12-12-23

1.4 Physical Condition of DUC : OK

1.5 Date of calibration : 12-12-23

1.6 Recommended date of next calibration : 12-12-24

1.7 Date of Issue : 14-12-23

1.8 Environmental Conditions During Calibration:

Temperature:	20 °C ± 2 °C
Humidity:	30 % RH to 75 % RH
Pressure:	1010 mbar

1.9 Method of Calibration: SOP / MASS / 02 (As Per ISO : 8655 - 6 : 2022)

### 2.0 Traceability :

- a) Standards used for calibration are traceable to National standards through NABL Accredited Laboratory.
- b) The following standards / Equipment have been used.

- i) Weights Cal. Certificate No. NC-210 (NSTAR, Ahmedabad) (Cal. Date: 16/05/22, Due Date: 15/05/25)
- ii) Digital Thermometer With Sensor Cal. Certificate No. MTL / TH / DTM / R01 / 09 - 23 (MTL, Barrackpore) (Cal. Date: 15/09/23, Due Date: 15/09/24)

### 2.1 Result :

#### Mechanical Calibration: (Mass & Volume)

Sl. No.	Parameter/ Range	Nominal Value µl	Mass of Water mg	Volume of Water at 20 °C µl	Error µl	Measurement Expanded Uncertainty ± µl
1.	Volume	100	100.5357	100.9378	0.9378	0.35
2.	100 µl to 1000 µl	500	500.2101	502.2109	2.2109	0.35
3.	µl	1000	1001.7255	1005.7324	5.7324	0.37

- Remarks: i) Cubical Expansion co-efficient of pipette material taken as  $10^{-5} \mu\text{l} / ^\circ\text{K}$ .
- ii) This result has an expanded uncertainty with a coverage factor  $k=2$  at approximately 95% confidence level.
  - iii) The calibration certificate issued for this instrument is to be used for scientific or industrial purposes only.
  - iv) Calibrations are carried out without any adjustment or repair.

DUC - Device Under Calibration

N.S. - Not Specified

N.A. - Not Applicable

#### Opinions and Interpretations

Calibrated	√	Accepted / Valid for use
Limited Use		Rejected / Out of use

Calibration Engineer  
Measure Techno Lab  
Kolkata  
S. Mahapatra  
Calibration Engineer

Checked / Approved  
Quality / Technical Manager  
S. Pandey

Form No. - MTL/22/2006

Issue No. : 2 Issue Date : 10.11.06

Rev. No. : 04 Rev. Date : 01.04.22