

THE PIPETEMANN

NABL ACCREDITED CALIBRATION LABORATORY
ADDING ACCURACY TO YOUR EQUIPMENT
MASS - VOLUME - THERMAL - SPEED - PRESSURE - TIMER - ELECTRO TECHNICAL



CALIBRATION CERTIFICATE

CUSTOMER ADDRESS : M/s. ARASU DIAGNOSTIC CENTRE,
1/4, VENKATARAMAIYAR STREET, UMA COMPLEX,
(OPP.PRAVEEN THIRUMANA MANDABAM),
NAIDUMUTHU NAGAR,
PATTUKKOTTAI 641602
Phone No.: 04373 -257722

UNIQUE LAB REPORT NUMBER : ULR-CC231722000003902F	DISCIPLINE : MECHANICAL CALIBRATION
NAME OF EQUIPMENT : MICROPIPETTE	PARAMETER : VOLUME
CERTIFICATE NO : TPMCC220953971	DATE OF ISSUE : 09-09-2022
RECEIPT NO : 11162	TEMPERATURE : 23.5 °C
RECEIPT DATE : 07-09-2022	HUMIDITY : 54 %
JOB CARD NO : TPM100092252394	AIR PRESSURE : 962 hpa
JOB CARD DATE : 07-09-2022	MEDIUM OF WEIGHING : GRADE III WATER
BRAND : SARTORIUS	DENSITY OF MEDIUM : APPROXIMATELY 1
RANGE : 10 - 100 µl	DENSITY CORRECTION FACTOR [Z] : 1.0036 µl/mg
SERIAL NO : 14599352	CALIBRATION METHOD : ISO 8655:2002 PART - 6
TIPS USED : 200 µl	WEIGHING BALANCE : SEMI MICRO BALANCE
SCOPE OF ACCREDITATION : VOLUME - MICROPIPETTE (1 µl - 10000 µl)	

DETAILS OF MASTER EQUIPMENTS USED FOR CALIBRATION

MASTER EQUIPMENT : SHIMADZU
SL.NO : D450020184
RESOLUTION : 0.00001g upto 82g & above is 0.0001g
CALIBRATED BY : THE PIPETEMANN (MASS), COIMBATORE
CERTIFICATE NUMBER : TPMCCM22020355
CALIBRATION VALIDITY : 03-02-2023
TRACEABILITY : NATIONAL STANDARDS

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CERTIFICATE NO : TPMCC220953971

CALIBRATED PARAMETER : VOLUME
NO.OF MEASUREMENTS : 10

I) **SELECTED VOLUME** : 100 μ l

99.6 μ l	99.66 μ l	99.74 μ l	99.78 μ l	99.64 μ l	99.67 μ l	99.7 μ l	99.73 μ l	99.74 μ l	99.74 μ l
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MEAN VALUE : 99.7 μ l
SYSTEMATIC ERROR(es) : -0.3 μ l
RANDOM ERROR (Sr) : 0.06 μ l

Standard Limit Value
($\pm 0.8 \mu$ l)
($\pm 0.3 \mu$ l)

II) **SELECTED VOLUME** : 50 μ l

49.82 μ l	49.78 μ l	49.86 μ l	49.81 μ l	49.82 μ l	49.8 μ l	49.82 μ l	49.81 μ l	49.86 μ l	49.85 μ l
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MEAN VALUE : 49.82 μ l
SYSTEMATIC ERROR(es) : -0.18 μ l
RANDOM ERROR (Sr) : 0.03 μ l

Standard Limit Value
($\pm 0.5 \mu$ l)
($\pm 0.2 \mu$ l)

III) **SELECTED VOLUME** : 10 μ l

10.02 μ l	10.03 μ l	9.99 μ l	10.02 μ l	10.01 μ l	10 μ l	10.02 μ l	10 μ l	10.01 μ l	10.02 μ l
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MEAN VALUE : 10.01 μ l
SYSTEMATIC ERROR(es) : 0.01 μ l
RANDOM ERROR (Sr) : 0.01 μ l

Standard Limit Value
($\pm 0.12 \mu$ l)
($\pm 0.08 \mu$ l)

CALIBRATED ON : 09-09-2022

CALIBRATION DUE ON : 08-09-2023

RESULTS :

RANGE	MEASUREMENT UNCERTAINTY	CMC (approved by NABL)
100 μ l	0.04 μ l	0.04 μ l
50 μ l	0.03 μ l	0.03 μ l
10 μ l	0.03 μ l	0.03 μ l

With coverage factor k is 2 for effective degrees of freedom is ∞ and the confidence level is 95%

CALIBRATED BY :

(M.VINOTH KUMAR)
DEPUTY TECHNICAL MANAGER

APPROVED BY :

(K.BALAMAYURPRIYAN)
TECHNICAL MANAGER.

- NOTE :**
- 1.Master equipments used for calibration are traceable to National standards
 - 2.The calibration reported are valid at the time of and under the stated conditions of the measurement
 - 3.Results presented in this certificate relate only to the item mentioned & calibrated at **THE PIPETEMANN**
 - 4.This certificate shall not be reproduced except in full without written approval of **THE PIPETEMANN**