

THE PIPETTEMANN

NABL ACCREDITED CALIBRATION LABORATORY
ADDING ACCURACY TO YOUR EQUIPMENT

MASS - VOLUME - THERMAL - SPEED - PRESSURE - TIMER - ELECTRO TECHNICAL



CALIBRATION CERTIFICATE

CUSTOMER ADDRESS : M/s. THE MEDICAL OFFICER (TPM 364/99) GOVT PRIMARY HEALTH CENTRE, PANDARAKONAM, KANNANNOOR, VERKILAMPI(PO) KANYAKUMARI Phone No. : 9442077460	
UNIQUE LAB REPORT NUMBER : ULR-CC231723000001354F	DISCIPLINE : MECHANICAL CALIBRATION
NAME OF EQUIPMENT : MICROPIPETTE	PARAMETER : VOLUME
CERTIFICATE NO : TPMCC230357065	DATE OF ISSUE : 21-03-2023
RECEIPT NO : 11686	TEMPERATURE : 24.3 °C
RECEIPT DATE : 16-03-2023	HUMIDITY : 51 %
JOB CARD NO : TPM364032355488	AIR PRESSURE : 963 hpa
JOB CARD DATE : 16-03-2023	MEDIUM OF WEIGHING : GRADE III WATER
BRAND : DRAGON LAB	DENSITY OF MEDIUM : APPROXIMATELY 1
RANGE : 5 - 50 µl	DENSITY CORRECTION FACTOR [Z] : 1.0037 µl/mg
SERIAL NO : YE181AG0181314	CALIBRATION METHOD : ISO 8655:2002 PART - 6
TIPS USED : 200 µl	WEIGHING BALANCE : MICRO BALANCE
SCOPE OF ACCREDITATION : VOLUME - MICROPIPETTE (1 µl - 10000 µl)	

DETAILS OF MASTER EQUIPMENTS USED FOR CALIBRATION

MASTER EQUIPMENT	: SARTORIUS MICRO BALANCE
SL.NO	: 28001417
RESOLUTION	: 0.000001g upto 6.1g
CALIBRATED BY	: THE PIPETTEMANN(MASS),COIMBATORE
CERTIFICATE NUMBER	: TPMCCM23020421
CALIBRATION VALIDITY	: 26-02-2024
TRACEABILITY	: NATIONAL STANDARDS

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CERTIFICATE NO : TPMCC230357065

CALIBRATED PARAMETER : VOLUME
 NO.OF MEASUREMENTS : 10

I) SELECTED VOLUME : 50 µl

50.15 µl	50.12 µl	50.15 µl	50.12 µl	50.11 µl	50.14 µl	50.12 µl	50.14 µl	50.15 µl	50.12 µl
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Standard Limit Value
 (±0.5 µl)
 (±0.2 µl)

MEAN VALUE : 50.13 µl
 SYSTEMATIC ERROR(es) : 0.13 µl
 RANDOM ERROR (Sr) : 0.02 µl

II) SELECTED VOLUME : 25 µl

24.95 µl	24.93 µl	24.95 µl	24.93 µl	24.96 µl	24.95 µl	24.95 µl	24.93 µl	24.91 µl	24.95 µl
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Standard Limit Value
 (±0.5 µl)
 (±0.2 µl)

MEAN VALUE : 24.94 µl
 SYSTEMATIC ERROR(es) : -0.06 µl
 RANDOM ERROR (Sr) : 0.02 µl

III) SELECTED VOLUME : 5 µl

4.93 µl	4.99 µl	4.96 µl	4.98 µl	4.98 µl	4.97 µl	4.95 µl	4.99 µl	4.94 µl	4.95 µl
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Standard Limit Value
 (±0.125 µl)
 (±0.075 µl)

MEAN VALUE : 4.96 µl
 SYSTEMATIC ERROR(es) : -0.04 µl
 RANDOM ERROR (Sr) : 0.02 µl

CALIBRATED ON : 21-03-2023

CALIBRATION DUE ON : 20-03-2024

RESULTS :

RANGE	MEASUREMENT UNCERTAINTY	CMC (approved by NABL)
50 µl	0.03 µl	0.03 µl
25 µl	0.03 µl	0.03 µl
5 µl	0.03 µl	0.03 µl

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

CALIBRATED BY :

P. Vignesh
 (P.VIGNESH)

CALIBRATION ENGINEER

APPROVED BY :

K. Balamayurpriyan
 (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**



CALIBRATION CERTIFICATE

CUSTOMER ADDRESS : M/s. THE MEDICAL OFFICER (TPM 364/99) GOVT PRIMARY HEALTH CENTRE, PANDARAKONAM, KANNANNOOR, VERKILAMPI(PO) KANYAKUMARI Phone No.: 9442077460	
UNIQUE LAB REPORT NUMBER : ULR-CC231723000001355F	DISCIPLINE : MECHANICAL CALIBRATION
NAME OF EQUIPMENT : MICROPIPETTE	PARAMETER : VOLUME
CERTIFICATE NO : TPMCC230357066	DATE OF ISSUE : 21-03-2023
RECEIPT NO : 11686	TEMPERATURE : 24.6 °C
RECEIPT DATE : 16-03-2023	HUMIDITY : 58 %
JOB CARD NO : TPM364032355489	AIR PRESSURE : 964 hpa
JOB CARD DATE : 16-03-2023	MEDIUM OF WEIGHING : GRADE III WATER
BRAND : LABOPETTE	DENSITY OF MEDIUM : APPROXIMATELY 1
RANGE : 100 - 1000 µl	DENSITY CORRECTION FACTOR [Z] : 1.0036 µl/mg
SERIAL NO : NIL	CALIBRATION METHOD : ISO 8655:2002 PART - 6
TIPS USED : 1000 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 : TPMCCM23020418
 CALIBRATION VALIDITY : 03-02-2024
 TRACEABILITY : NATIONAL STANDARDS

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MASS - VOLUME - THERMAL - SPEED - PRESSURE - TIMER - ELECTRO TECHNICAL



CERTIFICATE NO : TPMCC230357066

CALIBRATED PARAMETER : VOLUME
NO.OF MEASUREMENTS : 10

I) **SELECTED VOLUME** : 1000 μ l

1000.6 μ l	1000.79 μ l	1000.99 μ l	1001.15 μ l	1001.11 μ l	1001 μ l	1001.09 μ l	1001.2 μ l	1001.08 μ l	1001.15 μ l
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MEAN VALUE : 1001.02 μ l
 SYSTEMATIC ERROR(es) : 1.02 μ l
 RANDOM ERROR (Sr) : 0.19 μ l

Standard Limit Value
 ($\pm 8.0 \mu$ l)
 ($\pm 3.0 \mu$ l)

II) **SELECTED VOLUME** : 500 μ l

499.4 μ l	499.68 μ l	499.49 μ l	499.4 μ l	499.29 μ l	499.4 μ l	499.29 μ l	499.4 μ l	499.49 μ l	499.4 μ l
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MEAN VALUE : 499.42 μ l
 SYSTEMATIC ERROR(es) : -0.58 μ l
 RANDOM ERROR (Sr) : 0.11 μ l

Standard Limit Value
 ($\pm 4.0 \mu$ l)
 ($\pm 1.5 \mu$ l)

III) **SELECTED VOLUME** : 100 μ l

100.11 μ l	99.97 μ l	100.11 μ l	100.01 μ l	100.22 μ l	100.11 μ l	99.82 μ l	99.88 μ l	100 μ l	99.77 μ l
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MEAN VALUE : 100 μ l
 SYSTEMATIC ERROR(es) : -
 RANDOM ERROR (Sr) : 0.14 μ l

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

CALIBRATED ON : 21-03-2023

CALIBRATION DUE ON : 20-03-2024

RESULTS :

RANGE	MEASUREMENT UNCERTAINTY	CMC (approved by NABL)
1000 μ l	0.50 μ l	0.50 μ l
500 μ l	0.50 μ l	0.50 μ l
100 μ l	0.04 μ l	0.04 μ l

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

CALIBRATED BY :

APPROVED BY :

(M.VINOTH KUMAR)
 DEPUTY TECHNICAL MANAGER

(K.BALAMAYURPRIYAN)
 TECHNICAL MANAGER.

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