

# 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. AAROGYA DIAGNOSTICS CENTRE,  
#103, FIRST FLOOR, M.M. COMPLEX,  
P.R. SRINIVASA RAO STREET,  
DHARMAPURI 636701  
Phone No.:

UNIQUE LAB REPORT NUMBER : ULR-CC231722000001348F	DISCIPLINE : MECHANICAL CALIBRATION
NAME OF EQUIPMENT : MICROPIPETTE	PARAMETER : VOLUME
CERTIFICATE NO : TPMCC220451417	DATE OF ISSUE : 02-04-2022
RECEIPT NO : 10757	TEMPERATURE : 23.6 °C
RECEIPT DATE : 29-03-2022	HUMIDITY : 58 %
JOB CARD NO : TPM972032249840	AIR PRESSURE : 966 hpa
JOB CARD DATE : 29-03-2022	MEDIUM OF WEIGHING : GRADE III WATER
BRAND : ERIC BIO	DENSITY OF MEDIUM : APPROXIMATELY 1
RANGE : 5 - 50 µl	DENSITY CORRECTION FACTOR [Z] : 1.0035 µl/mg
SERIAL NO : NIL	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 PIPETEMANN(MASS), COIMBATORE  
CERTIFICATE NUMBER : TPMCCM22030365  
CALIBRATION VALIDITY : 28-02-2023  
TRACEABILITY : NATIONAL STANDARDS

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CERTIFICATE NO : TPMCC220451417

**CALIBRATED PARAMETER** : VOLUME  
**NO.OF MEASUREMENTS** : 10

I) **SELECTED VOLUME** : 50  $\mu$ l

49.94 $\mu$ l	49.94 $\mu$ l	49.94 $\mu$ l	49.95 $\mu$ l	49.94 $\mu$ l	49.92 $\mu$ l	49.94 $\mu$ l	49.93 $\mu$ l	49.94 $\mu$ l	49.95 $\mu$ l
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MEAN VALUE : 49.94  $\mu$ l  
 SYSTEMATIC ERROR(es) : -0.06  $\mu$ l  
 RANDOM ERROR (Sr) : 0.01  $\mu$ l

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

II) **SELECTED VOLUME** : 25  $\mu$ l

24.65 $\mu$ l	24.66 $\mu$ l	24.65 $\mu$ l	24.66 $\mu$ l	24.65 $\mu$ l	24.66 $\mu$ l	24.68 $\mu$ l	24.68 $\mu$ l	24.67 $\mu$ l	24.66 $\mu$ l
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MEAN VALUE : 24.66  $\mu$ l  
 SYSTEMATIC ERROR(es) : -0.34  $\mu$ l  
 RANDOM ERROR (Sr) : 0.01  $\mu$ l

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

III) **SELECTED VOLUME** : 5  $\mu$ l

4.95 $\mu$ l	4.97 $\mu$ l	4.97 $\mu$ l	4.98 $\mu$ l	4.98 $\mu$ l	4.99 $\mu$ l	4.98 $\mu$ l	4.99 $\mu$ l	4.98 $\mu$ l	4.98 $\mu$ l
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MEAN VALUE : 4.98  $\mu$ l  
 SYSTEMATIC ERROR(es) : -0.02  $\mu$ l  
 RANDOM ERROR (Sr) : 0.01  $\mu$ l

Standard Limit Value  
 ( $\pm 0.125 \mu$ l)  
 ( $\pm 0.075 \mu$ l)

CALIBRATED ON : 02-04-2022

CALIBRATION DUE ON : 01-10-2022

**RESULTS :**

RANGE	MEASUREMENT UNCERTAINTY	CMC (approved by NABL)
50 $\mu$ l	0.01 $\mu$ l	0.01 $\mu$ l
25 $\mu$ l	0.01 $\mu$ l	0.01 $\mu$ l
5 $\mu$ l	0.01 $\mu$ l	0.01 $\mu$ l

With coverage factor k is 2 for effective degrees of freedom is  $\infty$  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**



## CALIBRATION CERTIFICATE

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 P.R. SRINIVASA RAO STREET,  
 DHARMAPURI 636701  
 Phone No.:

UNIQUE LAB REPORT NUMBER : ULR-CC231722000001349F	DISCIPLINE : MECHANICAL CALIBRATION
NAME OF EQUIPMENT : MICROPIPETTE	PARAMETER : VOLUME
CERTIFICATE NO : TPMCC220451418	DATE OF ISSUE : 02-04-2022
RECEIPT NO : 10757	TEMPERATURE : 25.2 °C
RECEIPT DATE : 29-03-2022	HUMIDITY : 53 %
JOB CARD NO : TPM972032249841	AIR PRESSURE : 966 hpa
JOB CARD DATE : 29-03-2022	MEDIUM OF WEIGHING : GRADE III WATER
BRAND : ERIC BIO	DENSITY OF MEDIUM : APPROXIMATELY 1
RANGE : 100 - 1000 µl	DENSITY CORRECTION FACTOR [Z] : 1.0039 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 : SARTORIUS  
 SL.NO : 19402655  
 RESOLUTION : 0.00001 g upto 80 g & above is 0.0001 g  
 CALIBRATED BY : THE PIPETEMANN(MASS), COIMBATORE  
 CERTIFICATE NUMBER : TPMCCM21050303  
 CALIBRATION VALIDITY : 05-05-2022  
 TRACEABILITY : NATIONAL STANDARDS

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CERTIFICATE NO : TPMCC220451418

CALIBRATED PARAMETER : VOLUME  
NO.OF MEASUREMENTS : 10

I) SELECTED VOLUME : 1000  $\mu$ l

994.75 $\mu$ l	994.81 $\mu$ l	994.64 $\mu$ l	994.75 $\mu$ l	994.51 $\mu$ l	994.61 $\mu$ l	994.65 $\mu$ l	994.55 $\mu$ l	994.61 $\mu$ l	994.54 $\mu$ l
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MEAN VALUE : 994.64  $\mu$ l  
SYSTEMATIC ERROR(es) : -5.36  $\mu$ l  
RANDOM ERROR (Sr) : 0.1  $\mu$ l

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

II) SELECTED VOLUME : 500  $\mu$ l

497.47 $\mu$ l	497.62 $\mu$ l	497.52 $\mu$ l	497.56 $\mu$ l	497.54 $\mu$ l	497.63 $\mu$ l	497.68 $\mu$ l	497.61 $\mu$ l	497.67 $\mu$ l	497.78 $\mu$ l
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MEAN VALUE : 497.61  $\mu$ l  
SYSTEMATIC ERROR(es) : -2.39  $\mu$ l  
RANDOM ERROR (Sr) : 0.09  $\mu$ l

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

III) SELECTED VOLUME : 100  $\mu$ l

99.75 $\mu$ l	99.78 $\mu$ l	99.8 $\mu$ l	99.77 $\mu$ l	99.69 $\mu$ l	99.81 $\mu$ l	99.78 $\mu$ l	99.84 $\mu$ l	99.74 $\mu$ l	99.83 $\mu$ l
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MEAN VALUE : 99.78  $\mu$ l  
SYSTEMATIC ERROR(es) : -0.22  $\mu$ l  
RANDOM ERROR (Sr) : 0.04  $\mu$ l

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

CALIBRATED ON : 02-04-2022

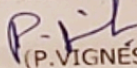
CALIBRATION DUE ON : 01-10-2022

### RESULTS :

RANGE	MEASUREMENT UNCERTAINTY	CMC (approved by NABL)
1000 $\mu$ l	0.09 $\mu$ l	0.07 $\mu$ l
500 $\mu$ l	0.10 $\mu$ l	0.10 $\mu$ l
100 $\mu$ l	0.04 $\mu$ l	0.04 $\mu$ l

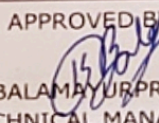
With coverage factor k is 2 for effective degrees of freedom is  $\infty$  and the confidence level is 95%

CALIBRATED BY :

  
(P.VIGNESH)

CALIBRATION ENGINEER

APPROVED BY :

  
(K.BALAMAYURPRIYAN)  
TECHNICAL MANAGER.

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