

# 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. JEEVAN DIAGNOSTICS, 73, MARSINGPET ROAD, BEEMANAGAR,  TRICHY 620001. Phone No.: 9443422337, 8807080807, 0431-2463887.	
UNIQUE LAB REPORT NUMBER : ULR - CC231720000003483F	DISCIPLINE : MECHANICAL CALIBRATION
NAME OF EQUIPMENT : MICROPIPETTE	PARAMETER : VOLUME
CERTIFICATE NO : TPMCC201043990	DATE OF ISSUE : 16-10-2020
RECEIPT NO : 9448	TEMPERATURE : 23.5 °C
RECEIPT DATE : 16-10-2020	HUMIDITY : 53 %
JOB CARD NO : TPM858102042413	AIR PRESSURE : 958 hpa
JOB CARD DATE : 16-10-2020	MEDIUM OF WEIGHING : GRADE III WATER
BRAND : MICROPET	DENSITY OF MEDIUM : APPROXIMATELY 1
RANGE : 10 µl - Fixed Volume	DENSITY CORRECTION FACTOR [Z] : 1.0034 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 : TPMCCM20030243  
 CALIBRATION VALIDITY : 04-03-2021  
 TRACEABILITY : NATIONAL STANDARDS

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CERT. NO. CC - 2317

CERTIFICATE NO: TPMCC201043990

CALIBRATED PARAMETER : VOLUME  
NO.OF MEASUREMENTS : 10

I) NOMINAL VOLUME : 10  $\mu$ l

10 $\mu$ l	10.01 $\mu$ l	10 $\mu$ l	9.99 $\mu$ l	10 $\mu$ l	10 $\mu$ l	10.01 $\mu$ l	10 $\mu$ l	10.01 $\mu$ l	9.99 $\mu$ l
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MEAN VALUE : 10.00  $\mu$ l

Standard Limit Value

SYSTEMATIC ERROR(es) : 0  $\mu$ l

( $\pm 0.12 \mu$ l)

RANDOM ERROR (Sr) : 0.01  $\mu$ l

( $\pm 0.08 \mu$ l)

CALIBRATED ON : 16-10-2020

CALIBRATION DUE ON : 15-04-2021

## RESULTS :

RANGE	MEASUREMENT UNCERTAINTY	CMC (approved by NABL)
10 $\mu$ l	0.01 $\mu$ l	0.01 $\mu$ l

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

CALIBRATED BY :

APPROVED BY :

  
(M.DHARMARAJ)

  
(K.BALAMAYURPRIYAN)

CALIBRATION ENGINEER

TECHNICAL MANAGER.

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

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## CALIBRATION CERTIFICATE

CUSTOMER ADDRESS : M/s. JEEVAN DIAGNOSTICS, 73, MARSINGPET ROAD, BEEMANAGAR, TRICHY 620001. Phone No.: 9443422337, 8807080807, 0431-2463887.	
UNIQUE LAB REPORT NUMBER : ULR - CC231720000003484F	DISCIPLINE : MECHANICAL CALIBRATION
NAME OF EQUIPMENT : MICROPIPETTE	PARAMETER : VOLUME
CERTIFICATE NO : TPMCC201043991	DATE OF ISSUE : 16-10-2020
RECEIPT NO : 9448	TEMPERATURE : 23.9 °C
RECEIPT DATE : 16-10-2020	HUMIDITY : 55 %
JOB CARD NO : TPM858102042414	AIR PRESSURE : 960 hpa
JOB CARD DATE : 16-10-2020	MEDIUM OF WEIGHING : GRADE III WATER
BRAND : ERBAPETTE	DENSITY OF MEDIUM : APPROXIMATELY 1
RANGE : 5 - 50 µl	DENSITY CORRECTION FACTOR [Z] : 1.0036 µl/mg
SERIAL NO : 09130193	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 : TPMCCM20030243  
CALIBRATION VALIDITY : 04-03-2021  
TRACEABILITY : NATIONAL STANDARDS

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**NABL ACCREDITED CALIBRATION LABORATORY**  
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**MASS - VOLUME - THERMAL - SPEED - PRESSURE - TIMER - ELECTRO TECHNICAL**



CERT. NO. CC - 2317

CERTIFICATE NO : TPMCC201043991

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

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

50.14 $\mu$ l	50.15 $\mu$ l	50.15 $\mu$ l	50.15 $\mu$ l	50.15 $\mu$ l	50.17 $\mu$ l	50.18 $\mu$ l	50.14 $\mu$ l	50.15 $\mu$ l	50.15 $\mu$ l
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MEAN VALUE : 50.15  $\mu$ l  
 SYSTEMATIC ERROR(es) : 0.15  $\mu$ 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

25.06 $\mu$ l	25.09 $\mu$ l	25.05 $\mu$ l	25.09 $\mu$ l	25.06 $\mu$ l	25.07 $\mu$ l	25.06 $\mu$ l	25.06 $\mu$ l	25.06 $\mu$ l	25.08 $\mu$ l
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MEAN VALUE : 25.07  $\mu$ l  
 SYSTEMATIC ERROR(es) : 0.07  $\mu$ 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

4.94 $\mu$ l	4.96 $\mu$ l	4.96 $\mu$ l	4.95 $\mu$ l	4.93 $\mu$ l	4.93 $\mu$ l	4.95 $\mu$ l	4.94 $\mu$ l	4.95 $\mu$ l	4.95 $\mu$ l
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MEAN VALUE : 4.95  $\mu$ l  
 SYSTEMATIC ERROR(es) : -0.05  $\mu$ l  
 RANDOM ERROR (Sr) : 0.01  $\mu$ l

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

CALIBRATED ON : 16-10-2020

CALIBRATION DUE ON : 15-04-2021

**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 :

(R.JANARTHANAN)  
 DEPUTY TECHNICAL MANAGER

APPROVED BY :

(K.BALA MAYUR PRIYAN)  
 TECHNICAL MANAGER

- NOTE : 1.Master equipments used for calibration are traceable to National standards  
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CERT. NO. CC - 2317

## CALIBRATION CERTIFICATE

CUSTOMER ADDRESS : M/s. JEEVAN DIAGNOSTICS, 73, MARSINGPET ROAD, BEEMANAGAR, TRICHY 620001. Phone No.: 9443422337, 8807080807, 0431-2463887.	
UNIQUE LAB REPORT NUMBER : ULR-CC231720000003485F	DISCIPLINE : MECHANICAL CALIBRATION
NAME OF EQUIPMENT : MICROPIPETTE	PARAMETER : VOLUME
CERTIFICATE NO : TPMCC201043992	DATE OF ISSUE : 16-10-2020
RECEIPT NO : 9448	TEMPERATURE : 23.3 °C
RECEIPT DATE : 16-10-2020	HUMIDITY : 55 %
JOB CARD NO : TPM858102042415	AIR PRESSURE : 962 hpa
JOB CARD DATE : 16-10-2020	MEDIUM OF WEIGHING : GRADE III WATER
BRAND : DRAGON LAB	DENSITY OF MEDIUM : APPROXIMATELY 1
RANGE : 100 - 1000 µl	DENSITY CORRECTION FACTOR [Z] : 1.0035 µl/mg
SERIAL NO : YE173AB0042762	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	: TPMCCM20020237
CALIBRATION VALIDITY	: 07-02-2021
TRACEABILITY	: NATIONAL STANDARDS

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CERT. NO. CC - 2317

CERTIFICATE NO : TPMCC201043992

**CALIBRATED PARAMETER** : VOLUME

**NO.OF MEASUREMENTS** : 10

I) **SELECTED VOLUME** : 1000  $\mu$ l

998.64 $\mu$ l	998.57 $\mu$ l	998.64 $\mu$ l	998.67 $\mu$ l	998.7 $\mu$ l	998.77 $\mu$ l	998.79 $\mu$ l	998.84 $\mu$ l	998.79 $\mu$ l	998.77 $\mu$ l
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MEAN VALUE : 998.72  $\mu$ l

SYSTEMATIC ERROR(es) : -1.28  $\mu$ l

RANDOM ERROR (Sr) : 0.09  $\mu$ l

Standard Limit Value

( $\pm$ 8.0  $\mu$ l)

( $\pm$ 3.0  $\mu$ l)

II) **SELECTED VOLUME** : 500  $\mu$ l

497.86 $\mu$ l	497.93 $\mu$ l	497.96 $\mu$ l	498 $\mu$ l	498.03 $\mu$ l	497.96 $\mu$ l	497.93 $\mu$ l	497.9 $\mu$ l	497.9 $\mu$ l	497.93 $\mu$ l
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MEAN VALUE : 497.94  $\mu$ l

SYSTEMATIC ERROR(es) : -2.06  $\mu$ l

RANDOM ERROR (Sr) : 0.05  $\mu$ l

Standard Limit Value

( $\pm$ 4.0  $\mu$ l)

( $\pm$ 1.5  $\mu$ l)

III) **SELECTED VOLUME** : 100  $\mu$ l

99.64 $\mu$ l	99.65 $\mu$ l	99.71 $\mu$ l	99.74 $\mu$ l	99.76 $\mu$ l	99.74 $\mu$ l	99.71 $\mu$ l	99.74 $\mu$ l	99.77 $\mu$ l	99.81 $\mu$ l
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MEAN VALUE : 99.73  $\mu$ l

SYSTEMATIC ERROR(es) : -0.27  $\mu$ l

RANDOM ERROR (Sr) : 0.05  $\mu$ l

Standard Limit Value

( $\pm$ 0.8  $\mu$ l)

( $\pm$ 0.3  $\mu$ l)

CALIBRATED ON : 16-10-2020

CALIBRATION DUE ON : 15-04-2021

**RESULTS :**

RANGE	MEASUREMENT UNCERTAINTY	CMC (approved by NABL)
1000 $\mu$ l	0.07 $\mu$ 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 :

*S. Loganathan*  
(S.LOGANATHAN)

CALIBRATION ENGINEER

APPROVED BY :

*K. Bala Mayur Priyan*  
(K. BALA MAYUR PRIYAN)  
TECHNICAL MANAGER

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