



# Perfect Calibration Centre Pvt. Ltd.

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CC - 2207

NABL LAB FOR : MECHANICAL • THERMAL • ET • AIR / FLUID FLOW • FORCE • MASS • OPTICAL

## CERTIFICATE OF CALIBRATION

ULR-CC220722000023611F

ISSUE DATE:26/04/2022

**CUSTOMER** : M/s.SRI SAMRAJ LABS.,  
**ADDRESS** : 1A/24,BHARATH TOWERS,BY PASS ROAD,  
THIRUVARUR-610 001.

**CUST REF** : SRF.NO : 1864 , DATE : 26/04/2022

**DEPT** : MECHANICAL LAB

**CERTIFICATE NO. :** PC - 04-22 / ATL / 1864-08

**CAL DATE :** 26/04/2022

**DUE DATE :** 25/04/2023

**PAGE NO. :** 1/1

**DISCIPLINE:** MECHANICAL

### MICRO PIPETTE

**DATE OF RECEIPT** : 26/04/2022  
**PHYSICAL CONDITION** : SATISFACTORY

**TEMPERATURE :** 20.4°C

**HUMIDITY :** 51% RH

**ATMOSPHERIC PRESSURE :** 1002.2

**Z FACTOR :** 1.0029  $\mu\text{L}/\text{mg}$

### PIPETTE DETAILS :

**MAKE** : THERMO SCIENTIFIC **MODEL** : FINNPIPETTE F2  
**TYPE** : VARIABLE **RANGE** : 100-1000 $\mu\text{L}$   
**ID. NO.** : SSLTVR / EQP / MT / 28 **L.C.** : 1  $\mu\text{L}$   
**SL NO.** : SW 20885

STANDARD USED	SL.NO/ID.NO	CERT. NO.	VALIDITY
ELECTRONIC BALANCE	37014 / PCCPL/EB - 01	PC-09-21 /ATL / 3518 - 01	12/09/2022
ELECTRONIC BALANCE	1125510540 / PCCPL/EB - 02	PC-09-21 /ATL / 3518 - 02	12/09/2022

**CALIBRATION PROCEDURE :** WI-M-MP-44(L)

**REFERENCE STANDARD :** ISO 8655-6 & ISO/ TR 20461

### CALIBRATION RESULTS

1. LOWER VOLUME				NO. OF MEASUREMENT : 10					
100.59	99.99	99.59	101.09	100.39	100.09	99.69	100.09	100.59	100.79

MEAN VOLUME: **100.29000** ERROR LIMIT ERROR LIMIT  
 SYSTEMATIC ERROR ( $e_s$ )  $\mu\text{L}$  : **0.70203** ( $\pm 0.8\mu\text{L}$ ) RANDOM ERROR (Sr)  $\mu\text{L}$  : 0.484447 ( $\pm 0.3\mu\text{L}$ )  
 SYSTEMATIC ERROR ( $e_s$ ) in % : 0.290000 ( $\pm 0.8\%$ ) RANDOM ERROR (Cv) % : 0.48305 ( $\pm 0.3\%$ )

2. MIDDLE VOLUME				NO. OF MEASUREMENT : 10					
502.35	502.75	502.75	503.05	502.75	502.55	502.25	502.75	503.15	503.26

MEAN VOLUME: **502.76380** ERROR LIMIT ERROR LIMIT  
 SYSTEMATIC ERROR ( $e_s$ )  $\mu\text{L}$  : **2.76380** ( $\pm 4.0\mu\text{L}$ ) RANDOM ERROR (Sr)  $\mu\text{L}$  : 0.32566 ( $\pm 1.5\mu\text{L}$ )  
 SYSTEMATIC ERROR ( $e_s$ ) in % : 0.552760 ( $\pm 0.8\%$ ) RANDOM ERROR (Cv) % : 0.06477 ( $\pm 0.3\%$ )

3. UPPER VOLUME				NO. OF MEASUREMENT : 10					
1006.31	1006.11	1006.31	1006.11	1006.61	1006.71	1006.61	1006.81	1007.01	1006.71

MEAN VOLUME: **1006.53050** ERROR LIMIT ERROR LIMIT  
 SYSTEMATIC ERROR ( $e_s$ )  $\mu\text{L}$  : **6.53050** ( $\pm 8.0\mu\text{L}$ ) RANDOM ERROR (Sr)  $\mu\text{L}$  : 0.30566 ( $\pm 3.0\mu\text{L}$ )  
 SYSTEMATIC ERROR ( $e_s$ ) in % : 0.653050 ( $\pm 0.8\%$ ) RANDOM ERROR (Cv) % : 0.03037 ( $\pm 0.3\%$ )

UNCERTAINTY OF MEASUREMENTS  $\pm 0.27\mu\text{L}$

UNCERTAINTY MULTIPLIED BY THE COVERAGE FACTOR K=2 SUCH THAT THE COVERAGE PROBABILITY CORRESPONDS TO APPROXIMATELY 95%.

NOTE : THIS CALIBRATION CERTIFICATE IS VALID FOR SCIENTIFIC & INDUSTRIAL PURPOSE ONLY AND NOT APPLICABLE FOR COMMERCIAL PURPOSE

\*\*\* END OF CERTIFICATE \*\*\*

SRINIVASAN.V



VIDHYA.P  
PREPARED BY



CHANDRA SEKAR.S  
TECHNICAL MANAGER  
Authorised Signatory

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