| MEASURE TECHNO LAB<br>2, B.T. ROAD (JAYANTI CINEMA COMPLEX)<br>BARRACKPORE, KOLKATA - 700120, W.B.<br>Phone : 033 - 2215 - 0032, 2215 - 9687, 8100875519,<br>Mobile: 9831190974 , LAB:- 8100143376,<br>E-mail: measuretechno@yahoo.co.in | Form No. - MTL/22/2006<br>CALIBRATION CERTIFICATE OF AUTO PIPETTE | NABL ACCREDITED LABORATORY<br>Certificate No. CC - 3545 |
|---|---|---|
| CALIBRATION CERTIFICATE NO.:MTL / HOP(LN-II) / R02 / 09 - 21 | ULR - CC254521000018554F | Page: 1 of 1 |

**1.0 Service Request No.:** MTL / 14E / 09 / 21 - 22

**1.1 Issued to:** House of Pathology Labs Pvt. Ltd.
L - 113, Lajpat Nagar - 2,
New Delhi - 24.

| | | | | |
|---|---|---|---|---|
| **1.2 Description & Identification of item to be Calibrated:** | **a) Name:** | Auto Pipette | **b) Code No.:** | N.A. |
| | **c) Sl. No.:** | YE20AAS0047231 | **d) Make:** | Dragon Lab |
| | **e) Model / Type:** | N.A. | **f) Range:** | 5 µl to 50 µl |
| | **g) Sensor:** | N.A. | **h) Resolution:** | 0.5 µl |
| | **i) End User:** | Lab | **j) Accuracy:** | ± 0.50 µl |
| | **k) Calibration done at:** | On Site / √ In House | | |

**1.3 Date of receipt of item :** 09-09-21 **1.4 Physical Condition of DUC :** OK
**1.5 Date of calibration :** 14-09-21 **1.6 Recommended date of next calibration :** 14-09-22
**1.7 Date of Issue :** 16-09-21
**1.8 Environmental Conditions During Calibration:** **Temperature:** 23 °C ± 2 °C
**Humidity:** 50 % RH ± 10 % RH
**Pressure:** 1005.6 mbar
**1.9 Method of Calibration:** **SOP / MASS / 02 ( As Per ISO : 8655 – 6 : 2002)**

**2.0 Traceability :**

**a)Standards used for calibration are traceable to National standards through NABL Accredited Laboratory.**

**b)The following standards / Equipment have been used.**

i) Weight Box (E1) Cal. Certificate No. WI / May / 19 / 010 (WEIGH INDIA, New Delhi) (Cal. Date: 17/05/19, Due Date: 17/05/22)
ii) Data Acquisition Switch Unit Cal. Certificate No. JRPM - CCTR - ET - 2021 - 1227 (JRPM, Chennai) (Cal. Date: 26/08/21, Due Date: 25/08/22)
iii) RTD (PT - 100) Cal. Certificate No. TL / 020 / 891.2.1 (TEMPSENS, Udaipur) (Cal. Date: 27/10/20, Due Date: 26/10/21)

**2.1 Result :**
**Mechanical Calibration**

| Sl. No. | Parameter/ Range | Nominal Value µl | Mass of Water mg | Volume of Water at 20 °C µl | Error µl | Measurement Expanded Uncertainty ± µl |
|---|---|---|---|---|---|---|
| 1. | Volume | 5 | 4.8817 | 4.9017 | -0.0983 | 0.039 |
| 2. | 5 µl to 50 µl | 20 | 19.7520 | 19.8328 | -0.1672 | 0.39 |
| 3. | | 50 | 49.5560 | 49.7587 | -0.2413 | 0.39 |

**Remarks: i) Cubical Expansion co - efficient of pipette material taken as $10^{-5}$ µl / °k.**
**ii) This result has an expanded uncertainty with a coverage factor k=2 at approximately 95% confidence level.**
**iii) The calibration certificate issued for this instrument is to be used for scientific or industrial purposes only.**

**DUC - Device Under Calibration** **N.S. - Not Specified** **N.A. - Not Applicable**

| Opinions and Interpretations | | | |
|---|---|---|---|
| Calibrated | √ | Accepted / Valid for use | √ |
| Limited Use | | Rejected / Out of use | |

**Calibrated by:**
K. Barat
**K. Barat**
**Testing Engineer**
Testing Engineer
Measure Techno Lab
Kolkata

**Checked / Approved by:**
Measure Techno Lab KOLKATA SKP
**Quality & Technical Manager**
S. Pandey