UNIQUE CALIBRATION SOLUTIONS LLP

An ISO/IEC-17025:2017 / ACCREDITED BY NABL

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CC-3102

CALIBRATION CERTIFICATE

ULR NO :	CC310224000001042F	CERTIFICATE No. :	UCSL/04-24/088_04
Customer Name & Address:		Instrument receipt Date	15.04.2024
M/s. MICRO HEALTH LABOROTORIES -ENDO BIOLAB THANNEER PANDAL BUS STOP,PATHAIKKARA PERINTHALMANNA,679322		SRF No.	088
		Calibration Date	17.04.2024
		Next calibration date (As per customer request)	17.04.2025
		Certificate Issue date	19.04.2024

Identification on DUC (Device Under Calibration)

Instrument Name	MICROPIPETTE	Make	DRAGON LAB
Range	5-50 µl	Model	DRAGON LAB
Least count	0.5 µl	Instrument Condition	OK
Serial No.	YE19AAL0575568	Calibration Performed at	Mass & Volume Lab
ID No.	MHL/E/C/2	Location	---

Environmental Condition	Avg.Temperature (°C)	Avg.RH (%)	Avg.Atmospheric Pressure (hpa)
	23.4	56	1010

Equipment & Master Used For calibration

Instrument Used	Calibrated	ID No:	Certificate No	Valid Upto	Sr No.	Accreditation No
Digital Weighing Balance	EIE	_	EIE/M/231046	30-07-2024	T1004465	CC-2222

Method Used : Gravimetric method	Discipline & Category : Mechanical - Volume
Calibration Reference Standard	Calibration Procedure
ISO-8655-6 & ISO /TR 20461	UCSL/SOP/01-MPT

CALIBRATION RESULTS @ 27 °C :-

1. Lower Volume 5 µl

1	2	3	4	5	6	7	8	9	10	Mean Volume V̄
5.06	5.04	5.04	5.05	5.03	5.04	5.06	5.04	5.04	5.03	5.04

		Error Limits			Error Limits
Systamatic Error es µl :	-0.04	(± 0.50 µl)	Random Error in sr µl :	0.01	(± 0.2µl)
Systamatic Error es in % :	-0.86	(±10.0%)	Random Error in Cv in % :	0.20	(± 4.0 %)

2. Middle Volume 25 µl

1	2	3	4	5	6	7	8	9	10	Mean Volume V̄
25.24	25.24	25.32	25.26	25.15	25.20	25.58	25.09	25.48	25.30	25.29

		Error Limits			Error Limits
Systamatic Error es µl :	-0.29	(± 0.50µl)	Random Error in sr µl :	0.15	(± 0.20µl)
Systamatic Error es in % :	-1.15	(± 2.0 %)	Random Error in Cv in % :	0.59	(± 0.8%)

3. Nominal Volume 50 µl

1	2	3	4	5	6	7	8	9	10	Mean Volume V̄
50.46	50.53	50.52	50.41	50.29	50.50	50.52	50.34	50.59	50.60	50.47

		Error Limits			Error Limits
Systamatic Error es µl :	-0.47	(± 0.50 µl)	Random Error in sr µl :	0.10	(± 0.2µl)
Systamatic Error es in % :	-0.94	(± 1.0 %)	Random Error in Cv in % :	0.20	(± 0.4 %)

Decision Rule is Applied or Not :	Yes	No
		✓

Conclusion /Remarks:

*The Reported Uncertainity **from 0.5 to 10 µl is 0.06 µl and at 10 to 50 µl is 0.12 µl** at ,Coverage Factor K=2,which corresponds to a confidence level at approximately 95 %*

1. The calibration results reported in this certificate are valid at the time of and the stated condition of measurement.
2. **This report is valid for Scientific & Industrial Purpose Only**
3. This report should not be reproduced except in full without our prior permission in writing.
4. Calibration certificate without signature are not valid.
5. This Calibration Certificate relates only to the above DUC
6. All the measurements are traceable to SI units through unbroken chain of calibration from the competent laboratories as per ISO/IEC/17025 standard requirements.
7. DUC : Device under calibration

Calibrated by **Checked By** **Issued / Approved By**
(APPU K MANI)
(Technical Director)

--- End of Certificate ---

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