



CALIBRATION CERTIFICATE											
ULR NO :	CC310224000001043F					CERTIFICATE No. :	UCSL/04-24/088_05				
Customer Name & Address:						Instrument receipt Date			15.04.2024		
M/s. MICRO HEALTH LABORATORIES -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		20-200 µl				Model		DRAGON LAB			
Least count		1 µl				Instrument Condition		OK			
Serial No.		YE199AMOO43034				Calibration Performed at		Mass & Volume Lab			
Instrument ID		MHL-E/C/3				Location		--			
Environmental Condition			Avg. Temperature (°C)			Avg. RH (%)			Avg. Atmospheric Pressure (hpa)		
			23.7			55			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		
Weighing Balance		UCSL	UCSL-WB-01	UCSL/10-23/311_01		14.10.2024	0037905909		CC-3102		
Method Used :						Gravimetric method					
Calibration Reference Standard						Discipline & Category : Mechanical - Volume					
ISO-8655-6 & ISO/TR 20461						Calibration Procedure					
						UCSL/SOP/01-MPT					
CALIBRATION RESULTS :-											
1. Lower Volume 20 µl											
1	2	3	4	5	6	7	8	9	10	Mean Volume \bar{V}	
19.81	19.91	19.78	20.00	19.93	19.98	20.05	20.01	20.02	20.07	19.95	
Systematic Error e_s µl :				0.05		Random Error in s_r µl :		0.10		Error Limits	
Systematic Error e_s in % :				0.24		Random Error in C_v in % :		0.49		Error Limits	
				(± 1.6 µl)				(± 0.6 µl)			
				(± 8.0 %)				(± 3.0 %)			
2. Middle Volume 100 µl											
1	2	3	4	5	6	7	8	9	10	Mean Volume \bar{V}	
100.23	100.33	100.43	100.38	100.40	100.46	100.35	100.28	100.30	100.32	100.35	
Systematic Error e_s µl :				-0.35		Random Error in s_r µl :		0.07		Error Limits	
Systematic Error e_s in % :				-0.35		Random Error in C_v in % :		0.07		Error Limits	
				(± 1.6 µl)				(± 0.6 µl)			
				(± 1.6 %)				(± 0.6 %)			
3. Nominal Volume 200 µl											
1	2	3	4	5	6	7	8	9	10	Mean Volume \bar{V}	
201.17	201.20	201.04	200.92	201.05	200.91	201.26	201.05	201.19	201.23	201.10	
Systematic Error e_s µl :				-1.10		Random Error in s_r µl :		0.13		Error Limits	
Systematic Error e_s in % :				-0.55		Random Error in C_v in % :		0.06		Error Limits	
				(± 1.6 µl)				(± 0.6 µl)			
				(± 0.8 %)				(± 0.3 %)			
Decision Rule is Applied or Not								Yes		No	
										✓	
Conclusion /Remarks:											
The Reported Uncertainty from 20 µl to 100 µl is 0.12µl and at 200 µl is 0.60 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. DUC : Device under calibration											
7.All the measurements are traceable to SI units through unbroken chain of calibration from the competent laboratories as per ISO/IEC/17025 standard requirements.											
Calibrated by				Checked By				Issued / Approved By			
								(APPU K MANI)			
								Technical Director			

--- End of Certificate ---

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