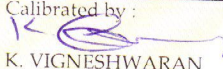
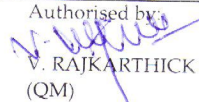


CALIBRATION CERTIFICATE

EQN/FT/7.8/01		Page 1 of 2	
CRF No.	: EQN/CRF/2112007	Date of Calibration	: 01-Dec-21
Certificate No	: 2021-22/EQN/2112007-14	Recom. Due Date	: 30-May-22
ULR No.	: CC276021000011437F		
Customer Details		Calibrated at	: Lab
M/s. BIOLINE LABORATORY		Date of Receipt	: 29-Nov-21
CKS Building 2nd Floor,		Cond. On Receipt	: Satisfactory
No. 21/829 Kallai Main Road,		Date of Issue	: 03-Dec-21
Calicut - 673 003, Kerala			
Details of Test Instrument:			
Description	: Micropipette	Model No.	: Finnpiquette F3
Range	: 100 - 1000µl	Serial No	: GJ29276
Least Count	: 1µl	Identification No.	: BL/KALLAI/BC/PIP-01
Make	: Thermoscientific	Accuracy	: As per Manual
Working range :	: --	Location	: Biochemistry
Details of Standard Used			
Name	Certificate No.	Valid upto	Traceability
Electronic Semi Micro Balance	2021-22/EQN/MASTER-256	07-May-22	EQN, Chennai.
CP No	EQN/CP/MS-03		
Environmental Details	Temperature : 25±2°C	Relative Humidity : 50±10 % RH	
MECHANICAL CALIBRATION			
(Volume)			
Calibration Results			
1. Lower Volume :	100 µl	No. of Measurements : 10	
<input type="text" value="99.87"/>	<input type="text" value="99.85"/>	<input type="text" value="100.49"/>	<input type="text" value="100.42"/>
<input type="text" value="100.37"/>	<input type="text" value="100.18"/>	<input type="text" value="100.00"/>	<input type="text" value="100.09"/>
<input type="text" value="99.84"/>	<input type="text" value="100.34"/>		
Mean Value :	<input type="text" value="100.15"/> µl		
Error Limits(±)			
Systematic Error :	0.15 µl	0.80 µl	
Systematic Error :	0.15 %	0.80 %	
Random Error :	0.25 µl	0.30 µl	
Random Error :	0.25 %	0.30 %	
Measurement Uncertainty :	±	0.36 µl	

 Calibrated by :

 K. VIGNESHWARAN
 (Calibration Engineer)

 Authorised by :

 V. RAJKARTHICK
 (QM)

CALIBRATION CERTIFICATE

 Certificate No : 2021-22/EQN/2112007-14
 ULR No. : CC276021000011437F

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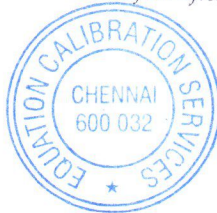
MECHANICAL CALIBRATION (Volume)					
Calibration Results					
2. Middle Volume :		500 μ l		No. of Measurements : 10	
502.34	502.95	501.32	501.10		
500.99	499.72	500.88	500.91		
500.84	501.70				
Mean Value :	501.27	μ l			
Error Limits(\pm)					
Systematic Error :	1.27	μ l	4.00	μ l	
Systematic Error :	0.25	%	0.80	%	
Random Error :	0.89	μ l	1.50	μ l	
Random Error :	0.18	%	0.30	%	
Measurement Uncertainty :	\pm		0.36 μ l		
3. Nominal Volume :		1000 μ l		No. of Measurements : 10	
1004.07	1002.54	1003.93	1003.70		
1004.13	1004.18	1003.61	1002.42		
1002.27	1005.09				
Mean Value :	1003.59	μ l			
Error Limits(\pm)					
Systematic Error :	3.59	μ l	8.00	μ l	
Systematic Error :	0.36	%	0.80	%	
Random Error :	0.91	μ l	3.00	μ l	
Random Error :	0.09	%	0.30	%	
Measurement Uncertainty :	\pm		0.36 μ l		

Remarks

- The reported Expanded Uncertainty is calculated at 95.45 % C.L. with coverage factor $k=2$
- The Above Results are within the maximum permissible Error

End of certificate

Calibrated by :


 K. VIGNESHWARAN
 (Calibration Engineer)


Authorised by:


 V. RAJKARTHICK
 (QM)