
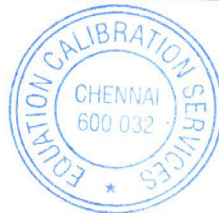


CALIBRATION CERTIFICATE

EQN/FT/7.8/01		Page 1 of 2	
CRF No. :	EQN/CRF/21120007.	Date of Calibration :	01-Dec-21
Certificate No :	2021-22/EQN/2112007-02	Recom. Due Date :	30-May-22
ULR No. :	CC276021000011425F		
Customer Details		Calibrated at	
M/s. BIOLINE LABORATORY		Lab	
CKS Building 2nd Floor,		Date of Receipt :	
No. 21/829 Kallai Main Road,		29-Nov-21	
Calicut - 673 003, Kerala		Cond. On Receipt :	
		Satisfactory	
		Date of Issue :	
		03-Dec-21	
Details of Test Instrument:			
Description :	Micropipette	Model No. :	Finnpipette F3
Range :	20 - 200µl	Serial No. :	PW01528
Least Count :	0.2µl	Identification No. :	BL/KALLAI/BC/PIP-04
Make :	Thermoscientific	Accuracy :	As Per Manual
Working range :	--	Location :	Biochemistry
Details of Standard Used			
Name	Certificate No.	Valid upto	Traceability
Electronic SemiMicro 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 :	20 µl	No. of Measurements :	10
<input type="text" value="19.92"/>	<input type="text" value="19.98"/>	<input type="text" value="20.15"/>	<input type="text" value="20.02"/>
<input type="text" value="19.99"/>	<input type="text" value="19.87"/>	<input type="text" value="20.05"/>	<input type="text" value="20.10"/>
<input type="text" value="19.90"/>	<input type="text" value="19.94"/>		
Mean Value :	19.99 µl		
Error Limits(±)			
Systematic Error :	-0.01 µl	0.20 µl	
Systematic Error :	-0.04 %	1.00 %	
Random Error :	0.09 µl	0.10 µl	
Random Error :	0.45 %	0.50 %	
Measurement Uncertainty :	±	0.36 µl	

Calibrated by :


K. VIGNESHWARAN
 (Calibration Engineer)


Authorised by:


V. RAJKARTHICK
 (QM)

CALIBRATION CERTIFICATE

 Certificate No : 2021-22/EQN/2112007-02
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MECHANICAL CALIBRATION				
(Volume)				
Calibration Results				
2. Middle Volume :	100	μl	No. of Measurements :	10
99.70	99.82		99.69	99.92
100.00	100.08		99.85	99.87
99.91	100.25			
Mean Value :	99.91	μl		
Error Limits(\pm)				
Systematic Error :	-0.09	μl	0.80	μl
Systematic Error :	-0.09	%	0.80	%
Random Error :	0.17	μl	0.30	μl
Random Error :	0.17	%	0.30	%
Measurement Uncertainty :	\pm	0.36 μl		
3. Nominal Volume :	200	μl	No. of Measurements :	10
200.05	199.61		200.20	200.05
200.16	200.28		200.15	200.33
200.24	200.07			
Mean Value :	200.11	μl		
Error Limits(\pm)				
Systematic Error :	0.11	μl	1.60	μl
Systematic Error :	0.06	%	0.80	%
Random Error :	0.20	μl	0.60	μl
Random Error :	0.10	%	0.30	%
Measurement Uncertainty :	\pm	0.36 μl		

Remarks


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

End of certificate

Calibrated by :


K. VIGNESHWARAN
 (Calibration Engineer)


Authorised by:


V. RAJKARTHICK
 (QM)