
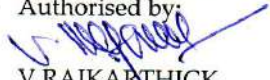


CALIBRATION CERTIFICATE

EQN/FT-7.8-01		Page 1 of 2	
ULR	: CC276021000002341F	Date of Issue	: 10-Apr-21
Certificate No.	: 2021-22/EQN/210419-03	Recom. Due Date	: 08-Apr-22
Date of Calibration	: 09-Apr-21	Customer Details	:
M/s. Rainbow Laboratories, No. 106-B, Gilgal Complex, Opp. VOC Ground, Arasan Bakery 1st Floor, Palayamkottai - 2.		CRF No.	: 210419
		Calibrated at	: Lab
		Date of Receipt	: 09-Apr-21
		Cond. On Receipt	: Satisfactory
Details of Test Instrument:			
Description	: Micropipette	Model No.	: --
Range	: 100µl to 1000µl	Serial No.	: --
Least Count	: 5µl	Id. No.	: RL/0003
Make	: Astra	Accuracy	: As per Manual
Location	: --		
Details of Standard Used			
Name	: Certificate No.	Valid upto	Traceability
Electronic Semi-Micro balance	: 2020-21/EQN/MASTER-02	13-May-21	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="99.74"/>	<input type="text" value="99.69"/>	<input type="text" value="99.74"/>	<input type="text" value="99.68"/>
<input type="text" value="99.79"/>	<input type="text" value="99.76"/>	<input type="text" value="99.84"/>	<input type="text" value="99.89"/>
<input type="text" value="99.99"/>	<input type="text" value="99.74"/>		
Mean Value :	99.79 µl		
Error Limits(±)			
Systematic Error :	-0.21 µl	0.80	µl
Systematic Error :	-0.21 %	0.80	%
Random Error :	0.10 µl	0.30	µl
Random Error :	0.10 %	0.30	%
Measurement Uncertainty :	± 0.36	µl	

Calibrated by :

K. VIGNESHWARAN
 (CALIBRATION ENGINEER)



Authorised by:

V. RAJKARTHICK
 QUALITY MANAGER

CALIBRATION CERTIFICATE

ULR : CC276021000002341F
 Certificate No. : 2021-22/EQN/210419-03

MECHANICAL CALIBRATION

(Volume)

Calibration Results

2. Middle Volume : 500 μ l No. of Measurements : 10

500.92	500.65	500.56	500.45
500.66	500.56	500.60	500.56
500.45	500.48		

Mean Value : 500.59 μ l

Error Limits(\pm)

Systematic Error :	0.59	μ l	4.00	μ l
Systematic Error :	0.12	%	0.80	%

Random Error :	0.14	μ l	1.50	μ l
Random Error :	0.03	%	0.30	%

Measurement Uncertainty : \pm 0.36 μ l

3. Nominal Volume : 1000 μ l No. of Measurements : 10

1001.04	1001.03	1000.93	1001.33
1000.99	1001.34	1000.90	1001.30
1000.99	1001.33		

Mean Value : 1001.12 μ l

Error Limits(\pm)

Systematic Error :	1.12	μ l	8.00	μ l
Systematic Error :	0.11	%	0.80	%

Random Error :	0.18	μ l	3.00	μ l
Random Error :	0.02	%	0.30	%

Measurement Uncertainty : \pm 0.36 μ l

Remarks

1. The reported Expanded Uncertainty is calculated at 95.45 % C.L with coverage factor $k=2$
2. The above Micropipette was within the error limits

* End of Certificate *

Calibrated by :

K. VIGNESHWARAN
 (CALIBRATION ENGINEER)



Authorised by:

V. RAJKARTHICK
 QUALITY MANAGER