

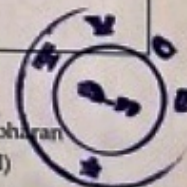


CERTIFICATE OF CALIBRATION

FT-Q-23		Page 1 of 2	
ULR No.	: CC21442300000782F	Date of Issue	: 10-02-2023
Certificate No.	: TVCSPL 23/02/235-01	Recom. Due Date	: 08-02-2024
Date of Calibration	: 09-02-2023	Customer Details	: M/s.FEROKE NEETHI MEDICAL LAB FEROKE KOZHIKODE.
Customer Details	: M/s.FEROKE NEETHI MEDICAL LAB FEROKE KOZHIKODE.	SRF No.	: 235
		Calibrated at	: Lab
		Date of Receipt	: 09-02-2023
		Cond. On Receipt	: Satisfactory
Description	: Micropipette	Model No.	: Mannheim
Range	: 10-100µl	Serial No.	: YE182AGO203343
Least Count	: 1µl	Id. No.	: --
Make	: ERBA	Accuracy	: --
Location	: --		
Details of Standard Used			
Name	: Weighing Machine	Certificate No.	: TVCSPL 22/03/334-02
		Valid upto	: 28/Feb/23
		Traceability	: TVCSPL, Chennai.
Work Instruction	: WI-M-03		
Environmental Details : Temperature : 25±2°C Relative Humidity : 50±10 % RH			
MECHANICAL CALIBRATION			
(Volume)			
Calibration Results			
1. Lower Volume :	10 µl	No. of Measurements :	10
10.00	10.13	9.95	10.03
9.98	9.93	10.04	9.99
10.01	9.94		
Mean Value :	10.00 µl		
Error Limits(±)			
Systematic Error :	0.00 µl	0.12 µl	
Systematic Error :	-0.01 %	1.20 %	
Random Error :	0.06 µl	0.08 µl	
Random Error :	0.59 %	0.80 %	
Measurement Uncertainty :	± 0.15 µl		

Calibrated by :
Vishnu Priyai
Ms.K.Vishnu Priyai
(Calibration Engineer)

Authorised by:
Anand Manoharan
Mr.Anand Manoharan
(QM & TM)





S/LR No.	CC/2144/20000000782F	Page 2 of 2	
Certificate No.	TVC/SPL/2302/235-01		
MECHANICAL CALIBRATION			
(Volume)			
Calibration Results			
1. Middle Volume :	50 μ l	No. of Measurements : 10	
<input type="text" value="49.75"/>	<input type="text" value="50.18"/>	<input type="text" value="49.93"/>	<input type="text" value="50.13"/>
<input type="text" value="50.17"/>	<input type="text" value="50.05"/>	<input type="text" value="49.93"/>	<input type="text" value="50.23"/>
<input type="text" value="50.08"/>	<input type="text" value="50.15"/>		
Mean Value :	50.06 μ l		
Error Limits(\pm)			
Systematic Error :	0.06 μ l	0.50	μ l
Systematic Error :	0.12 %	1.00	%
Random Error :	0.15 μ l	0.20	μ l
Random Error :	0.31 %	0.40	%
Measurement Uncertainty :	\pm 0.15		μ l
2. Nominal Volume :	100 μ l	No. of Measurements : 10	
<input type="text" value="99.97"/>	<input type="text" value="99.88"/>	<input type="text" value="99.45"/>	<input type="text" value="99.48"/>
<input type="text" value="99.41"/>	<input type="text" value="99.89"/>	<input type="text" value="100.08"/>	<input type="text" value="99.77"/>
<input type="text" value="99.82"/>	<input type="text" value="99.58"/>		
Mean Value :	99.73 μ l		
Error Limits(\pm)			
Systematic Error :	-0.27 μ l	0.80	μ l
Systematic Error :	-0.27 %	0.80	%
Random Error :	0.23 μ l	0.30	μ l
Random Error :	0.23 %	0.30	%
Measurement Uncertainty :	\pm 0.15		μ l

Remarks

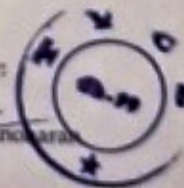
1. The reported Expanded Uncertainty is calculated at 95.45 % C.L. with coverage factor $k=2$
2. The above Micropipette was within the error limits

* End of Certificate *

Calibrated by :
Vidhva Priya
 Ms.K.Vidhva Priya
 (Calibration Engineer)

Authorized by:

Anand Minojara
 Mr. Anand Minojara
 (QM & TM)



...redefining the true value

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Quality is Assured