

Thermo Fisher Scientific India Pvt. Ltd.  
Calibration Laboratory  
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ISO/IEC 17025:2017 calibration laboratory accredited by NABL, India.



## Calibration Certificate

Calibration certificate number: 3290 A ULR (Unique Lab Report) number: CC26902000003290F Page 01 of 02

**Customer:** The Medical Officer  
Government Hospital / Primary Health Centre  
Tamilnadu

**Through:** Thermo Fisher Scientific India Pvt. Ltd., Pipette Division, Nashik.

**Calibration details:**

Calibration and Certificate issue date: 21/10/20 Lab work order number: 20/10-01  
Calibration location: Thermo Fisher Scientific India Pvt. Ltd. – Calibration Laboratory, D-96, MIDC Satpur, Nashik – 422 007.

Next calibration date (as per Customer's request): 21/10/21

Calibrated by: Sagar\_Gosavi

**Device information:**

Description: FinnpiPETTE F3 10-100µl Number of channels: 1  
Catalogue number: 4640040 Serial number: RW10648  
Manufacturer: Thermo Fisher Scientific Tip used: Finntip 250 Universal  
Customer's asset ID: -

**Environmental condition:**

Air Temperature: 26.17 °C Air Pressure: 937.4 hPa  
Water Temperature: 26.19 °C Relative Humidity (%RH): 72.6 %  
Z correction factor (µl/mg): 1.0042 Y correction factor ((1/K)xK): 1.00037

**Master equipment details (Traceable to National and International standards):**

Equipment	Lab ID	Serial number	Model number	Calibration date	Calibration due date	Calibrated by with NABL certificate number
Micro Balance (Mettler Toledo)	QP-01	B115129039	XP26PC	13/11/19	12/11/20	Mettler Toledo, Mumbai (CC-2523)
Universal measuring instrument with sensors for environmental parameters (Almemo)	QP-10	H19070544	2590-4AS	07/10/20	06/10/21	Autocal, Nashik (CC-2052)

**Measurement procedure:**

The pipette calibration work instruction (LD-03/WI-01) of Thermo Fisher calibration laboratory follows the guidelines of the ISO 8655-6 standard. The device is calibrated for delivery (Ex) of the test liquid. The used test liquid is distilled water fulfilling ISO 3696 requirements. Calculations are done using the following formula:  $V(\mu l) = m(mg) \times Z(\mu l/mg) \times Y((1/K) \times K)$ . The mass / volume conversion is done using the Z factor (Annex A in EN ISO 8655-6). The obtained results are converted to correspond the reference temperature of 27°C using the Y factor. With variable volume devices nominal volume, 50 % of the nominal volume and 10% of the nominal volume or the minimum volume of the range (the higher value is used) are calibrated. With fixed volume devices, the nominal volume is calibrated. Ten measurements are performed at each calibrate volume. The test device is held at the calibration laboratory for minimum of two hours to reach the temperature equilibrium. The environmental conditions of the laboratory are monitored and recorded during the calibration procedure. The stated uncertainty is the expanded uncertainty obtained by multiplying the standard uncertainty by the coverage factor  $k = 2$ .

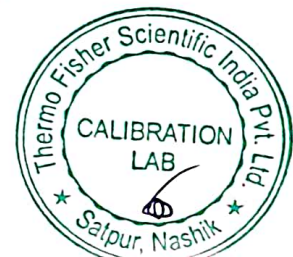
This corresponds the confidence level of 95%. The uncertainty budget is defined by lab internal procedure following the guidelines of ISO/TR 20461.

**Device conformity status (considering applied Decision rule): PASSED**

Calibration Laboratory Manager:  
(Signature and Date)

Pramod Jadhav

21/10/20  
Date



# Calibration Certificate

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**Result summary and verification:**

The systematic error (A) and the random error (s) of the volumetric device are compared to ISO 8655-2:2002 (E) acceptance specifications. The expanded measurement uncertainty (U) is accounted, when assessing the status (PASSED or FAILED).

Applied Decision rule: **PASSED** means Systematic error (A) + Expanded measurement uncertainty (U) < ISO 8655-2 specification (A)  
**FAILED** means Systematic error (A) + Expanded measurement uncertainty (U) > ISO 8655-2 specification (A)

**Channel 1**

Volume (µl)	Mean volume (µl)	A (µl)	ISO 8655-2 Specification A (±µl)	Status	s (µl)	ISO 8655-2 Specification s (±µl)	Status	U (±µl)
10 µl	10.00	0.00	0.8 µl	PASSED	0.02	0.3 µl	PASSED	0.04
50 µl	50.03	0.03	0.8 µl	PASSED	0.04	0.3 µl	PASSED	0.08
100 µl	100.09	0.09	0.8 µl	PASSED	0.04	0.3 µl	PASSED	0.12

**Measurement results:**

Number of measurements	Channel 1 (Volume)		
	10 µl	50 µl	100 µl
1	10.00	49.97	100.10
2	10.04	50.06	100.12
3	9.97	50.07	100.08
4	10.00	50.08	100.15
5	9.96	50.04	100.05
6	9.98	50.03	100.09
7	10.01	49.98	100.13
8	10.00	50.04	100.06
9	10.03	49.98	100.05
10	9.98	50.06	100.05

Comments: -

**Device conformity status (considering applied Decision rule): PASSED**

Calibration Laboratory Manager:  
(Signature and Date)

  
Pramod Jadhav

21/10/20  
Date

