

CERTIFICATE OF CALIBRATION

ISSUED BY

OM ENGINEERS

"Madhu Smruti", First Floor, S. No. 37/2, Plot No 2 Next to Sai services,
Sinhagad Road, Vadgaon Kh, Pune - 411041.
Tel. No. +91 7219710106, Cell No. +91 9822910106
E - Mail ID : pune_omengineers@rediffmail.com



CC2751

Issued On **03/03/2023** ULR No **CC27512300002766F**

Certificate No	Date of Receipt	Date of Calibration	Next Date of Calibration	Page	No. of Pages
OM / 46 / 220048	02/03/2023	02/03/2023	02/03/2025	1	4

Name of Customer & Address : **M/s. National Centre for Quality Calibration**
4, Abhishree Corporate Park,, Near Swagat Bungalow BRTS,, ISKCON-Ambli Road, Ambli, Ahmedabad, Gujarat 380058
(Through - M/s. Octagon Precision (India) Pvt. Ltd., Pune)

Purchase Order No.	Date	Challan No.	Date	Work Order No	Condition of Item
Nil	Nil	Letter	25/02/2023	OM/CAL/2223/2747	OK

GAUGE FOR CALIBRATION : **Length Measuring Machine**
 Make : Octagon Model No : LMM300T
 Range / L.C. : Horizontal Axis : 0-100mm / 0.0001, Vertical Axis : 0-80mm / 0.0001mm
 Identification No. : NCQC/M-24
 Sr. No. : 050
 Calibration Procedure No. : CM 46
 Reference Document No. : Comparison Method

CALIBRATION PROCEDURE : To obtain the linear accuracy of Length Measuring Machine at various points of total range by comparison with Laser Interferometer.

Equipment & Master Used for Calibration : Used Standards are traceable to National / International Standards (Direct / through NABL Accredited Lab.)

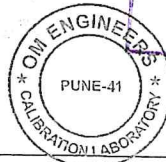
Equipment & Master Used for Calibration	Identification No.	Sr.No.	Calibration Certificate No	Calibration Date	Valid up to	Traceability With
Laser Interferometer	OM - E 22 - 01	1VQP30	111-19541	27.04.2020	27.04.2023	Federal Institute of Metrology METAS, Switzerland

UNCERTAINTY OF MEASUREMENT : $\pm 0.08 + 0.3 L \mu m$ (L in meter)

The uncertainty stated is the expanded uncertainty of measurement obtained by multiplying the standard uncertainty by the coverage factor k=2 corresponds to confidence level of 95.45%.

NOTE :1) Calibration Results are given on Page No. 2 onwards.

Jaywant Hode
Deputy Technical Manager
Calibrated By



NCQC
Valid up to 02-03-2025
Reviewed

Ajay Gajare
Technical Manager
Authorized Signatory

NCQC System Certificate No. 336

- This certificate refers only to the particular item(s) submitted for calibration .
- This certificate shall not be reproduced, except in full, unless written permission of M/s. Om Engineers, Pune.
- The Calibration results reported in this certificate are valid at the time of an under the stated conditions of measurement.



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Length Measuring Machine

Make Octagon Identification No. NCQC/M-24 Sr.No. 05 O
 Range / L.C. Horizontal Axis : 0-100mm / 0.0001, Vertical Axis : 0-80mm / 0.0001mm

Parameter Maintained during Calibration ;

1	Air temperature at start	20.13 °C
2	Air temperature at end	20.14 °C
3	Material temperature at start	20.40 °C
4	Material temperature at end	20.41 °C
5	Co-efficient of Expansion	Horizontal & Vertical Axis : $11.5 \times 10^{-6} \mu\text{m} / ^\circ\text{C}$
6	Environmental Condition	$20 \pm 2 ^\circ\text{C}$
7	Compensation	Automatic
8	Condition Equipment	Ok
9	Accuracy of Laser Interferometer	0.5 ppm
10	Capacity of LMM	0 - 300 mm
11	Calibration site address	M/s. National Centre for Quality Calibration 4, Abhishree Corporate Park,, Near Swagat Bungalow BRTS,, ISKCON- Ambli Road, Ambli, Ahmedabad, Gujarat 380058
12	Location / Department	Mechanical (Dimension)
13	Calibration Point	As per customer requirement
14	Dwell time at each target position	Manual
15	Soaking Time	Three Hours.
16	Feed rate during calibration	Manual
17	D.R.O	Software
18	Sr. No. of D.R.O.	--
19	Compensation Factor	--

Jaywant Hode
Deputy Technical Manager

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CONTD. PAGE 3
Ajay Gajare
Technical Manager

Authorized Signatory

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OM / 46 / 220048	02/03/2023	OM/CAL/2223/274711	3	4

Length Measuring Machine

Make Octagon Identification No. NCQC/M-24 Sr.No. 050
Range Horizontal Axis : 0-100mm / 0.0001, Vertical Axis : 0-80mm / 0.0001mm

NABL 120 2.3.4 Mechanical Discipline : Dimensions (Precision - Precision Instruments)

Calibration Results

Horizontal Axis ;

Reading on Length Measuring Machine (mm)	Observed Reading on Laser Interferometer (mm)	Observed Error (μm)
0.00	0.00000 Set	0.00
0.50	0.50003	-0.03
1.00	1.00008	-0.08
5.00	5.00012	-0.12
10.00	10.00007	-0.07
20.00	20.00024	-0.24
30.00	30.00006	-0.06
40.00	40.00013	-0.13
50.00	50.00020	-0.20
60.00	60.00011	-0.11
70.00	70.00025	-0.25
80.00	80.00032	-0.32
90.00	90.00040	-0.40
100.00	100.00018	-0.18

CONTD. PAGE 4

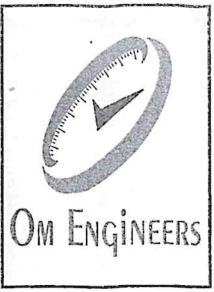
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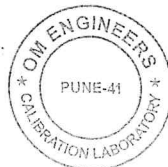
Calibration Results

Vertical Axis ;

Reading on Length Measuring Machine (mm)	Observed Reading on Laser Interferometer (mm)	Observed Error (μ m)
0.00	0.00000 Set	0.00
0.50	0.49995	+0.05
1.00	0.99979	+0.21
5.00	4.99997	+0.03
10.00	9.99981	+0.19
20.00	19.99975	+0.25
30.00	29.99977	+0.23
40.00	39.99983	+0.17
50.00	49.99986	+0.14
60.00	59.99989	+0.11
70.00	70.00017	-0.17
80.00	80.00011	-0.11

** End of Certificate **

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