

Laboratory Micro Measures, "Gruhalaxmi" Bungalow No. 49, Serene Meadows,
Gangapur Road, Nashik, Maharashtra

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number CC-2655 (In lieu of C-0623)

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Validity 23.04.2018 to 22.04.2020

Last Amended on 26.04.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
<u>MECHANICAL CALIBRATION</u>				
I. DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)				
1.	Caliper ^s (Vernier, Dial & Digital) L.C. 0.010 mm	Upto 600 mm Upto 1000 mm	12.1 μ m 17.3 μ m	Using Caliper Checker , Slip Gauge Block & Length Bar
2.	Inside Dial Caliper ^s L.C. 0.001 mm	Upto 150 mm	5.9 μ m	Using Slip Gauge Set, Slip Gauge Accessories Set
3.	Height Gauge ^s (Vernier, Dial, Digital, Electronic) L.C. 0.0001/0.001 mm	Upto 600 mm Upto 1000 mm	3.7 μ m 5.2 μ m	Using Caliper Checker , Slip Gauge Block, Length Bar & Surface Plate
4.	Depth Gauge ^s (Vernier, Dial, Digital) L.C. 0.010 mm	Upto 300 mm	8.2 μ m	Using Slip Gauge Set, Long Slip Gauge & Surface Plate

Ram Ashray
Convenor

Avijit Das
Program Manager

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5.	External Micrometer ^b (All Type) L.C.0.001 mm L.C.0.010 mm	0 to150 mm 150 mm to 300 mm 300 mm to 500 mm 500 mm to 1000 mm	1.8 μ m 2.6 μ m 6.7 μ m 6.7 μ m	Using Slip Gauge Set, Gauge Set, Long Slip Gauge & Length Bar
6.	V-Anvil Micrometer ^b L.C.0.010 mm	Up to 100 mm	2.3 μ m	Using Thread Measuring Wire, Cylindrical Setting Master
7.	Micrometer Setting Standard ^b	25mm to 150 mm 150mm to 300 mm 300mm to 500 mm 500mm to 700 mm 700mm to 975 mm	1.9 μ m 3.6 μ m 5.3 μ m 9.9 μ m 10.7 μ m	Using Slip Gauge Set, Long Slip Gauge, Length Bar , Elec. Comparator, Elec. Height Gauge(2D) & Surface Plate
8.	Inside Micrometer- 2Points ^b (All Type) L.C. 0.010mm (Extension not more than 400 mm) Ext. pieces separately checked	2100 mm	5.7 μ m	Using Slip Gauge Set, Long Slip Gauge with Accessories
9.	Depth Micrometer ^b L.C. 0.001 mm	Upto 300 mm	5.0 μ m	Using Slip Gauge Set , Long Slip Gauge & Surface Plate

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10.	Dial Gauge - Plunger Type ^s (Analogue / Digimatic) L.C. 0.001/0.002/ 0.0005 mm L.C. 0.010 & Coarser	0 to 25 mm 0 to 100 mm	1.5 μ m 4.2 μ m	Using Dial Calibration Tester & Elec. Comparator
11.	Comparator / Electronic Probe / Comparator with Stand ^s L.C.0.00001mm L.C. 0.0001 mm Flatness	Upto 25 mm \pm 0.050 mm Upto300 mm x 300mm	0.6 μ m 0.6 μ m 2.4 μ m	Using Slip Gauge Set, Micrometer Check Set, Electronic Comparator with DRO
12.	Lever Dial Gauge ^s (Analog & Electronic) L.C. 0.001/0.002 mm	0 to 2.00 mm	1.0 μ m	Using Electronic Comparator, Dial Cal. Tester
13.	Bore Gauge ^s (For Transmission only)	Upto 2.0 mm	3.7 μ m	Using Electronic Comparator & Dial Cal. Tester
14.	Dial Thickness Gauge ^s L.C. 0.001 mm L.C. 0.010 mm	0 to 2 mm Upto 25 mm	1.1 μ m 3.3 μ m	Using Slip Gauge Set
15.	Dial Snap Gauge ^s	Upto 200 mm	4.1 μ m	Using Slip Gauge Set

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16.	Plain Plug Gauge / Paddle Plug Gauge / Width Plug Gauge / O.D. Master / Air Setting Plug Gauge ^s	Upto 150 mm 150 mm to 300 mm	1.8 μ 2.7 μ m	Using Slip Gauge Set, Long Slip Gauge & Electronic Comparator
17.	Cylindrical Pins / Thread Measuring Wires ^s	Upto 20 mm	1.0 μ m	Using Slip Gauge Set, Elec. Comp.
18.	Cylindrical Setting Master ^s	Upto 100 mm	1.4 μ m	Elec. Comparator, Slip Gauge Set
19.	Feeler Gauge / Shims (Foil) of Coating Thickness Gauge ^s	Upto 2.0 mm	3.9 μ m	Digimatic Micrometer
20.	'V' Block ^s Parallelism /Symmetry Squareness	Upto 150mm Upto 150mm	5.2 μ m 5.6 μ m	Using Lever Dial Gauge, Plunger Dial Gauge, Mandrel, Master Square Cylinder
21.	Engineer's Square / Engineers Parallel ^s Parallelism Squareness	Upto 300 mm Upto 300 mm	4.0 μ m 5.7 μ m	Using Lever Dial Gauge, Plunger Dial Gauge, Master Square Cylinder
22.	Snap Gauge ^s (C& I Type, Adjustable)	Upto 100 mm 100 mm to 350 mm	1.3 μ m 3.8 μ m	Using Slip Gauge Set & Long Slip Gauge Set

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23.	Thread Plug Gauge / W.C.P. /C.P. ^{\$} (For Effective Dia. only)	Upto 100 mm	4.3 μ m	Using FCDM, Thread Measuring Wire, Cylindrical Setting Master
		100 mm to 200 mm	3.0 μ m	Using Universal Length measuring Machine
24.	Dial Calibration Tester ^{\$} L.C. 0.0001mm	Upto 25 mm	1.1 μ m	Using Electronic Probe with DRO
25.	Sine Bar / Sine Centre / Sine Table ^{\$} Linear Angular	Upto 300 mm	3.2 μ m 16.5 sec	Using Slip Gauge Set, Angle Gauge Block, Electronic Comparator with DRO, Electronic Height Gauge(2D)
26.	Bevel Protractor ^{\$} L.C. 5 min	0 - 90° - 0	3.7 min	Using Angle Gauge Set
27.	Combination Set / Degree Protractor ^{\$} L. C. 1 Deg	0 - 90° - 0	36 min	Using Angle Gauge Set
28.	Taper Plug Gauge ^{\$} Linear Angular	Upto 100 mm 120 Deg	5.7 μ m 9.8 sec	Using Universal Length Measuring Machine
29.	Taper Ring Gauge ^{\$} Linear Angular	Upto 100 mm 120°	7.8 μ m 9.8 sec	Using Universal Length Measuring Machine

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30.	Pistol Caliper ^s L.C. 0.01mm	0 to 100 mm	14.0 μ m	Using Slip Gauge Set
31.	Micrometer Head ^s L.C. 0.001/0.0002 mm	0 to 25 mm	1.4 μ m	Using Electronic Comparator with DRO
32.	Measuring Scale ^s L.C. 0.5mm/1.0 mm	0 to 2000mm	$229 \sqrt{\frac{L}{1000}}$ μ m L in mm	Using Tape Scale Calibrator
33.	Measuring Tape ^s L.C. 1.0 mm	50 Mtr. (In step of 1 Mtr.)	$229 \sqrt{\frac{L}{1000}}$ μ m L in mm	Using Tape Scale Calibrator
34.	Angle Plate/Box Plate ^s Parallelism / Flatness Squareness	300 mm 300 mm	4.0 μ m 7.4 μ m	Using Lever Dial, Plunger Dial Gauge, Master Square Cylinder, Surface Plate
35.	Thread Measuring Prisms ^s	A/B/C/D	1.1 μ m	Using Slip Gauge Set, Electronic Comparator Stand with DRO
36.	Setting / Plain Ring Gauge ^s	3 mm to 100 mm 100 mm to 225 mm	1.6 μ m 2.0 μ m	Using Universal Length Measuring Machine
37.	Coating Thickness Gauge ^s	2000 μ m	7.3 μ m	Using Master Shims (Foil)

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38.	Surface Plate ^s (Granite / Cast Iron)	400 mm x 400 mm to 3000 mmx 3000mm	$5.4 \sqrt{\frac{L+W}{150}} \mu\text{m}$ L & W in mm	Using Spirit Level
39.	Straight Edge ^s	Any Length	$5.4 \sqrt{\frac{L+W}{150}} \mu\text{m}$ L & W in mm	Using Spirit Level
40.	Height Micrometer ^s L.C. 0.001 mm	0 to 300 mm	4.2 μm	Using Slip Gauge Set, Long Slip Gauge, Elec. Height Gauge (2D) & Surface Plate
41.	Caliper Checker/Step Gauge/Internal Micro Checker/ Depth Micro Checker/Check Master ^s	0 to 670 mm	5.4 μm	Using Slip Gauge Set, Length Bar, Linear Height Gauge (2D)
42.	Riser Block ^s	300 mm	4.3 μm	Using Electronic Height Gauge (2D), Slip Gauge Set
43.	FCDM ^s	0 to 100 mm	2.6 μm	Using Cylindrical Master, Mandrel, Elec. Comparator, Slip Gauge Set & Thread Measuring Wire
44.	Thread Ring Gauge / WCR / CR ^s	0 to 100 mm	1.6 μm	Using Universal Length Measuring Machine

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45.	Taper Thread Ring Gauge [§]	0 to 100 mm	5.7 μ m	Using Universal Length Measuring Machine
46.	Taper Thread Plug Gauge [§] (For Effective Dia only)	Upto 100 mm	5.3 μ m	Using FCDM, Slip Gauge, Thread Measuring Wire, Cylindrical Sett. Master
44.	Radius Gauge [§]	Upto 50 mm	6.4 μ m	Using Video Measuring Machine
48.	Pitch Gauge [§]	Upto 8 mm 55°, 60° Flank Angle	6.4 μ m 1.8 min	Using Video Measuring Machine
49.	Spline Plug Gauge [§]	Upto 100 mm	2.6 μ m	Using Universal Length Measuring Machine
50.	Spline Ring Gauge [§]	Upto 100 mm	1.9 μ m	Using Slip Gauge Set & Universal Length Measuring Machine
51.	Taper Scale [§]	Upto 15 mm	6.4 μ m	Using Video Measuring Machine
52.	Glass Scale [§] L.C. 0.001 / 0.01 / 0.1 / 0.5 mm	Upto 200 mm	5.6 μ m	Using Video Measuring Machine
53.	Sieves [§]	0 to 10 mm 10 mm to 150 mm	6.4 μ m 40.0 μ m	Using Video Measuring Machine Using Digital Vernier Caliper

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54.	Standard Wire Gauge ^s	Upto 100 mm	6.4 μ m	Using Video Measuring Machine
55.	Video Measuring ^s Machine Linear Angular	Upto 200 mm	4.3 μ m 1.7 min.	Using Glass Scale
56.	Universal Length Measuring Machine ^s	0 to 100 mm	1.0 μ m	Using Slip Gauge Set
57.	Tape & Scale Calibrator ^s L.C. 0.001 mm	1000 mm	9.7 μ m	Using Slip Gauge Set & Length Bar
58.	Circometer / Pie Tape ^s L.C. 0.010 & coarser	Upto 2000 mm	$229 \sqrt{\frac{L}{1000}} \mu\text{m}$ L in mm	Using Tape Scale Calibrator
59.	Surface Roughness Specimen ^s	Ra, Ry, Rmax (Upto 13 μ m)	7.2% of rdg	Using Surface Roughness Master
60.	Three Point Micrometer ^s	Upto 50 mm	2.0 μ m	Using Master Setting Ring
61.	Weld Gauge ^s	Up to 50mm 90°	6.4 μ m 2.6 min	Using Video Measuring Machine

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62.	Electronic Height Gauge * L.C. 0.0001 / 0.0005 / 0.001 mm L.C. 0.0001 / 0.0005 / 0.001 mm	Upto 600 mm Upto 1000 mm	3.7 μ m 5.2 μ m	Using Caliper Checker , Slip Gauge Block, Length Bar & Surface Plate
63.	Profile Projector / Optical Microscope / Tool Maker Microscope / Brinell Microscope * Linear X,Y Axis L.C. 0.0001 / 0.001 mm Angular L.C. 1min of Arc Magnification	0 to200 mm 0°-360 ° 10X to 1000X	4.3 μ m 1.7 min 0.7%	Using Glass Scale, Slip Gauge Set & Long Slip Gauge Using Angle Gauge Set, Using Glass Scale
64.	Video Measuring Machine*	Upto 200 mm	4.3 μ m 1.7 min.	Using Glass Scale
65.	Universal Length Measuring Machine *	0 to100 mm	1.0 μ m	Using Slip Gauge Set
66.	Bench Centre*	Upto 1500 mm	6.5 μ m	Using Mandrel, Dial Gauge

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67.	Surface Plate * (Granite / Cast Iron)	400x400 mm to 3000x3000mm	$5.4 \sqrt{\frac{L+W}{150}} \mu\text{m}$ L & W in mm	Using Spirit Level
68.	Tape & Scale Calibrator * L.C. 0.001 mm	1000 mm	9.7 μm	Using Slip Gauge Set & Length Bar
II.	PRESSURE INDIATING DEVICES			
1.	Pressure - Hydraulic Dial Pressure Gauges, Digital Pressure Gauges [#]	0 to 2 Bar 0 to 30 Bar 0 to 300 Bar 0 to 700 Bar	0.04 % rdg 0.46 % rdg 0.74 % rdg 0.79 % rdg	Using Digital Pressure Indicators
2.	Vacuum Gauge [#]	0 to (-)1bar	0.3% rdg	Using Digital Pressure Indicators

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III.	WEIGHING SCALE AND BALANCE			
1.	Weighing Balance / Scale ^{\$} Class I Readability : 0.1 mg	0 to 200 g	0.70 mg	Using E2 Accuracy Class (1mg – 200g) Weights Set
	Class II Readability : 10 mg	to 500g	20.0 mg	
	Class III Readability : 100 mg Readability : 500 mg Readability : 1 g Readability : 5g	0 to2 kg 0 to15 kg 0 to15 kg 0 to 50 kg	220 mg 2000 mg 2000 mg 9000 mg	Using F1 Accuracy Class (1mg – 20kg) Weights Set
	Class IV Readability : 10g	0 to 120 kg	24000 mg	

* Measurement Capability is expressed as an uncertainty (\pm) at a confidence probability of 95%

^{\$} Only in Permanent Laboratory

* Only for Site Calibration

The laboratory is also capable for site calibration however, the uncertainty at site depends on the prevailing actual environmental conditions and master equipment used.

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