Laboratory	**Axes Metrology, 135, Electronics Complex Industrial Area, Pardeshipura, Indore, Madhya Pradesh**			
Accreditation Standard	**ISO/IEC 17025: 2005**			
Certificate Number	**CC-2613** ***(In lieu of C-1046)***	**Page**	**1 of 8**	
Validity	**03.03.2018 to 02.03.2020**	**Last Amended on**	**28.05.2018**	

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
	MECHANICAL CALIBRATION			
I.	**DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)**			
1.	Vernier Caliper[$] (Analog/Digital/Dial)			
	L.C.: 10 µm	Upto 300 mm Upto 600 mm	10.9 µm 12.3 µm	Using Gauge Block Set & Caliper Checker
	L.C.: 20 µm	Upto 300 mm Upto 600 mm Upto 1000 mm	14.1 µm 14.7 µm 17.3 µm	Using Gauge Block Set, Long Slip Gauge Set & Caliper Checker
2.	External Micrometer / Micrometer Head[$] (Analog/Digital)			
	L.C.: 1 µm	0 to 25 mm 0 to150 mm	0.9 µm 1.4 µm	Using Mic Check Set by Comparison Method
	L.C.: 10 µm	0 to100 mm 100 mm to 300 mm 300mm to 600 mm 0 to 100 mm 100 mm to 300 mm 300 mm to 600 mm	5.4 µm 6.0 µm 6.8 µm 7.1 µm 7.6 µm 8.2 µm	Using Mic Check Set & Gauge Block Set & Long Slip Gauge Set
3.	Depth Micrometers / Micrometer Head[$] (Analog/Digital)			
	L.C.: 10 µm	Upto 300 mm	7.0 µm	Using Mic Check Set, Gauge Block Set & Long Slip Gauge Set

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
4.	Height Gauges[$] (Digital) L.C.: 10 µm	0 to 300 mm 0 to 600 mm Upto 1000 mm	12.5 µm 14.5 µm 16.3 µm	Using Caliper Checker, Gauge Block, Long Slip Gauge Set & Surface Plate
	Height Gauges (Analog) L.C.: 20 µm	0 to 300 mm 0 to 600 mm Upto 1000 mm	16.0 µm 16.7 µm 18.3 µm	
5.	Depth Vernier [$] (Analog/Digital/Dial) L.C.: 20 µm	Upto 300 mm	15.0 µm	Using Caliper Checker & Gauge Block Set
6.	Plunger Dial Gauge[$] (Analog /Dial/Digital) L.C.: 1 µm L.C.: 10 µm	0 to1 mm 0 to 5 mm 0 to 25 mm	1.0 µm 1.2 µm 6.0 µm	Using Dial Calibration Tester
7.	Lever Dial Gauge[$] (Analog/Dial) L.C.: 1 µm L.C.: 10 µm	0 to 1 mm Upto 2 mm	1.1 µm 3.7 µm	Using Dial Calibration Tester
8.	Bore Gauge[$] With Dial For Transmission L.C.: 1 µm	0 to 2 mm	3.8 µm	Using Dial Calibration Tester & Plunger Dial Gauge

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
9.	Thread Plug Gauge[$] (For Effective Diameter)	Ø3 mm to Ø40 mm Ø40 mm to Ø150 mm Ø150 mm to Ø300 mm	1.1 µm 2.6 µm 6.2 µm	Using ULM & TMW
10.	Thread Ring Gauge[$] (For Effective Diameter)	Ø3 mm to Ø100 mm Ø100 mm to Ø175 mm Ø175 mm to Ø300 mm	2.9 µm 3.1 µm 3.8 µm	Using ULM & Master Setting Ring
11.	Cylindrical Measuring [$] Pin/TMW	Upto Ø20 mm	0.9 µm	Using ULM
12.	OD Master / Setting Disc[$]	Ø1 mm to Ø100 mm Ø100 mm to Ø200 mm Ø200 mm to Ø300 mm	1.1 µm 3.2 µm 6.5 µm	Using ULM & Setting Disc
13.	Snap Gauge / Gap Gauge/ Template[$]	Upto 100 mm 100 mm to 300 mm 300 mm to 600 mm	0.9 µm 3.7 µm 5.9 µm	Using Gauge Block Set Using Gauge Block & Long Slip Gauge Set
14.	Length Gauge / Setting Rod / Setting Piece/ Flush Pin[$]	Upto 100 mm 100 mm to 300 mm 300 mm to 600 mm	2.0 µm 3.6 µm 6.2 µm	Using Comparator with Stand, Gauge Block
15.	Dial Thickness Gauge[$] L.C.: 10 µm	Upto 10 mm	5.3 µm	Using Gauge Block Set
16.	Feeler Gauge/Shims[$]	Upto 3 mm	0.9 µm	Using ULM

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
17.	Electronic Probe / Comparator (LVDT) / Linear Probe Digital[$] L.C.: 0.1 µm	0 to 25 mm	0.5 µm	Using Gauge Block Set
18.	Plain Plug Gauge / Width Gauge[$]	Upto Ø40 mm Ø40 mm to Ø120 mm Ø120mm to Ø300mm	2.2 µm 2.4 µm 4.7 µm	Using Comparator with Stand, Gauge Block
19.	Plain Ring Gauge / Setting Ring[$]	Ø3 mm to Ø100 mm Ø100 to Ø200 mm Ø200mm to Ø300mm	3.0 µm 3.2 µm 3.4 µm	Using ULM & Master Setting Ring
20.	Bevel Protractor / Angle Protractor / Degree Protractor / Combination Set[$] (Angular) L.C.: 5’	0º-180º-0º / 360º	0º7'10"	Using Angle Gauge Block Set
21.	Angle Plate / Box Angle Plate / Square Master / Square Frame[$]	Upto 600 mm Upto 600 mm	11.0 µm 8.4 µm	Using Master Cylindrical / Gauge Block & Surface Plate Using Surface Plate, Dial Gauge
22.	Engineering Square / Tri-Square[$]	Upto 600 mm	11.0 µm	Using Master Cylindrical / Gauge Block & Surface Plate

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
		Upto 600 mm	8.4 µm	Using Surface Plate, Dial Gauge
23.	Radius Gauge[$]	1.0 mm to 25 mm	10.0 µm	Using CMM
24.	DCT / Dial Gauge Calibrator[$] L.C.: 0.2 µm	Upto 25 mm	0.70 µm	Using Electronic Probe
25.	Straight Edge[$]	Upto 1000 mm	17.6 µm 10.8 µm	Using Surface Plate, Gauge Block Set Using Surface Plate, Dial-Gauge
26.	Coating thickness Gauge[$] (DFT Meter)	Upto 3 mm	4.0 µm	Using PVC Foils
27.	Thickness (PVC) Foil[$]	Upto 3 mm	1.0 µm	Using ULM
28.	Dial Snap Gauge[$] (Parallelism) L.C.: 1 µm	Upto 100mm 100 mm to 300 mm	2.8 µm 4.1 µm	Using Gauge Block & Dial Gauge
29.	Height Block / Riser Block[$]	Upto 175 mm 175 mm to 600 mm	3.50 µm 6.50 µm	Using Comparator, Gauge Block & Length Bar

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
30.	Measuring Tape[$] L.C.: 1 mm	Upto 1 m > 1 m to 50 m, (in Step of 1 m)	117 µm / meter	Using Measuring Scale & Tape Calibrator
31.	Measuring Scale[$]	1000 mm 2000 mm	117 µm / meter	Using Measuring Scale & Tape Calibrator
32.	V-Block[$]	Upto 300 mm	10.2 µm 7.3 µm 6.3 µm	Using Granite Surface Plate, Master Cylinder, Test Mandrel, Gauge Block Set, Dial Gauge
33.	Parallel Mandrel[$] (Variation in Diameter, Run-out, Concentricity Straightness	Upto Dia. 50 mm x 300 mm	7.8 µm	Using Surface-Plate, V-Block, Dial Gauge
	Concentricity Mandrel (Variation in Diameter, Run-out & Concentricity	Upto Dia. 50 mm x 300 mm	7.8 µm	
	Taper Mandrel (Variation in Diameter, Run-out & Concentricity	300 mm Long	7.8 µm	
34.	Inside/Internal/Stick / Tubular Micrometer[$] L.C.:10 µm	25 mm to 31 mm & 50 mm to 63 mm,	10.0 µm	Using Caliper Checker, Gauge Block Set

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	Extension Rod of Inside/Internal/Stick/ Tubular Micrometer	Upto 2100 mm (with interchangeable Setting Rod upto 500 mm)	11.0 µm @500 mm Extension	
35.	Spirit Level[$] (Flat/Vee/Frame)	0.010 mm/m 0.020 mm/m 0.050 mm/m	17.3 µm 18.5 µm 27.8 µm	Using Electronic Level & Setting/Tilting Plate
36.	Comparator Stand[$]	Upto 100 mm From 100x100mm to 200x200 mm	2.2 µm 4x√((L+W)/10) µm	Using Electronic probe & Surface Plate Using Electronic Level
37.	Cast Iron Surface Plate[♣] (Flatness)	Upto 2 m x 2 m (With 100 mm Base Upto 3 m x 3 m (With 150 mm Base Upto 6 m x 3 m (With 200 mm Base	6.2 x √(L+W)/100 7.5 x √(L+W)/150 9.0 x √(L+W)/200	Using Electronic Level
38.	Granite Surface Plate[♣] (Flatness)	Upto 2 m x 2 m (With 100 mm Base Upto 3 m x 3 m (With 150 mm Base Upto 6 m x 3 m (With 200 mm Base	6.2 x √(L+W)/100 7.5 x √(L+W)/150 9.0 x √(L+W)/200	Using Electronic Level

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
39.	Height Measuring Instruments/ Electronic Height Gauge / Height Master[♣] L.C.: 0.5 µm	Upto 600 mm	6.50 µm	Using Length Bar Set & Slip Gauge Set
40.	Bench Centre[♣]	500 mm x 300 mm 1000 mm x 300 mm 500 mm x 300 mm 1000 mm x 300 mm	9.0 µm 11.4 µm 6.0 µm 9.1 µm	Using Plain Mandrel, Taper Mandrel & Dial Gauge
41.	Straight Edge[♣] (Straightness)	Upto 6000 mm	4.3 √(L/150) µm	Using Electronic Level
42.	Universal Length Measuring Machine[♣] (ULM)	Upto 100 mm	0.71 µm	Using Gauge Blocks
43.	Glass Scale[$]	Upto 300 mm, 0.1 mm	16.7 µm	Using MSTC
44.	Coordinate Measuring Machine (CMM) [♣]	Upto 1000 mm	U1= 3+(L/250) µm U3= 4.5+(L/200) µm L in mm	Using Long Gauge Block & Reference Sphere by Comparison Method
		Upto 7000 mm	U1= 19.2+(L/300) µm L in mm	

*** Measurement Capability is expressed as an uncertainty (±) at a confidence probability of 95%**
[$]Only in Permanent Laboratory
[♣]Only for Site Calibration

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