



# National Accreditation Board for Testing and Calibration Laboratories

## SCOPE OF ACCREDITATION

**Laboratory Name :**

PRECISION ENGINEERING METROLOGY LABORATORY, INSTITUTE FOR MACHINE  
TOOLS TECHNOLOGY, A-4 FOCAL POINT, BATALA, GURDASPUR, PUNJAB, INDIA

**Accreditation Standard**

ISO/IEC 17025:2017

**Certificate Number**

CC-4229

**Page No**

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**Validity**

17/01/2025 to 16/01/2029

**Last Amended on**

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S.No	Discipline / Group	Measurand or Reference Material/Type of instrument or material to be calibrated or measured / Quantity Measured /Instrument	Calibration or Measurement Method or procedure	Measurement range and additional parameters where applicable(Range and Frequency)	* Calibration and Measurement Capability(CMC)(±)
Permanent Facility					
1	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Caliper ( Vernier/ Dial/ Digital ) L.C.:0.01 mm	Using Caliper Checker by Comparison Method	0 to 600 mm	19.0 µm
2	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Dial Bore Gauge (Transmission Error) L.C.:0.001 mm	Using ULM by Comparison Method	0 to 1 mm	2.5 µm
3	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Dial Gauge (Plunger Type) L.C.:0.001 mm	Using ULM by Comparison Method	0 to 50 mm	2.0 µm
4	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	External Micrometer L.C.:0.001 mm	Using Slip Gauges Set by Comparison Method	0 to 200 mm	4.2 µm



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5	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	External Micrometer L.C.:0.001 mm	Using Gauge Blocks Set & Long gauge block by Comparison Method	200 mm to 400 mm	8.0 µm
6	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	External Micrometer L.C.:0.001 mm	Using Gauge Blocks Set & Long gauge block by Comparison Method	400 mm to 600 mm	13.0 µm
7	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Feller Gauge	Using ULM by Comparison Method	0.01 mm to 5 mm	2.0 µm
8	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Height Gauge ( Vernier/ Dial/ Digital) L.C.:0.001 mm	Using Caliper Checker, Surface Plate, Lever Dial Gauge by Comparison Method	0 to 600 mm	11.6 µm
9	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plain / Magnetic V Block (Flatness)	Using Dial Indicator, Test Mandrel & Master Cylinder by Comparison Method	40 mm to 300 mm	7.0 µm



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10	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plain / Magnetic V Block (Parallelism)	Using Dial Indicator, Test Mandrel & Master Cylinder by Comparison Method	40 mm to 300 mm	6.0 µm
11	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plain / Magnetic V Block (Squareness)	Using Dial Indicator, Test Mandrel & Master Cylinder by Comparison Method	40 mm to 300 mm	6.2 µm
12	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plain Plug Gauge	Using ULM by Comparison Method	1 mm to 200 mm	2.0 µm
13	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Radius Gauge	Using Tool Maker Microscope by Comparison Method	1 mm to 50 mm	198 µm
14	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Ring Gauge (Plain / Setting)	Using ULM & Master Setting Ring Gauges by Comparison Method	3 mm to 200 mm	3.5 µm



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15	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Steel Scale L.C.:0.5 mm	Using Tool Maker Microscope by Comparison Method	0 to 200 mm	288.7 μm
16	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Surface Plate	Using Electronic Level by Direct Method	2500 mm x 1600 mm	(3.7*sqrt(L+W/150))μm, Where L & W are in mm
17	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Surface Roughness Specimen(Ra)	Using Surface Roughness Tester by Comparison Method	0 to 3 μm	13 %
18	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Surface Roughness Tester (Ra)	Using Surface Roughness Master by Comparison Method	0 to 3 μm	11.1 %
19	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Thickness Foil Set	Using ULM by Comparison Method	0.01 mm to 5 mm	2.0 μm



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20	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Thread Plug Gauge (Effective Diameter)	Using ULM by Comparison Method	3 mm to 200 mm	4.2 µm
21	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Thread Ring Gauge (Effective Diameter)	Using ULM by Comparison Method	3 mm to 200 mm	3.0 µm
22	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Tool Maker Microscope (Angularity) L.C.:1"	Using Angle gauges by Comparison Method	0° to 45°	100.4 "
23	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Tool Maker Microscope (Linearity) L.C.:0.001 mm	Using Gauge Blocks set, Comparison Method	0 to 50 mm	1.9 µm



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Site Facility					
1	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Surface Plate	Using Electronic Level by Direct Method	2500 mm x 1600 mm	$(3.7 \cdot \sqrt{L+W/150}) \mu\text{m}$ , Where L & W are in mm
2	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Surface Roughness Tester (Ra)	Using Surface Roughness Master by Comparison Method	0 to 3 $\mu\text{m}$	11.1 %
3	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Tool Maker Microscope (Angularity) L.C.:1"	Using Angle gauges by Comparison Method	0° to 45°	100.4 "
4	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Tool Maker Microscope (Linearity) L.C.:0.001 mm	Using Gauge Blocks set, Comparison Method	0 to 50 mm	1.9 $\mu\text{m}$

\* CMCs represent expanded uncertainties expressed at approximately the 95% level of confidence, using a coverage factor of k = 2.