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Laboratory **Dimensions, No. 128 & 129, 19th Cross, CHBS Layout, Vijayanagar, Bengaluru, Karnataka**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **CC-2420**

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ($\pm$)	Remarks
12.	Measuring Pins ^{\$}	0.1mm to 20mm	0.54	Using ULMS by Comparison Method IS:3455 /IS:11103
13.	Plain Plug Gauge ^{\$}	3mm to 100mm > 100mm to 200 mm	0.53 μ m 0.65 μ m	Using ULMS by Comparison Method IS:3455
14.	Plain Ring Gauges ^{\$}	4mm to 75 mm > 75mm to 200 mm	1.50 μ m 1.90 μ m	Using ULMS by Comparison method IS:3455
15.	Snap Gauge/Gap/Limit Gauge ^{\$}	3 mm to 100 mm >100mm to 200 mm	2.0 μ m 2.3 μ m	Using Gr '0' Gauge Block by Comparison method IS:7876
16.	Standard Foils ^{\$}	up to 1200 μ m	2.3 μ m	Using ULMS by Comparison method IS:3179
17.	Feeler Gauges ^{\$}	0.3 to 1 mm	1.8 μ m	Using ULMS by Comparison method IS:3179
18.	Thread Plug Gauge ^{\$} (Eff dia)	3mm to 50mm > 50mm to 200 mm	2.2 μ m 2.62 μ m	Using ULMS by Comparison Method IS:2334
19.	Thread Ring Gauge ^{\$}	4mm to 50mm > 50mm to 200 mm	1.7 μ m 5.6 μ m	Using ULMS by Comparison Method IS:4218

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ($\pm$)	Remarks
20.	External Micrometer ^{\$} (Mechanical, Digital, Dial) L.C. : 0.001 mm LC: 0.01 mm	Up to 150 mm > 150mm to 300 mm Up to 1000 mm > 1000mm to 1500 mm	3.84 μ m 4.21 μ m 12.1 μ m 12.4 μ m	Using Gr '0' Gauge Block / Long Gauge Block By Comparison Method IS:2967
21.	Depth Micrometer ^{\$} (Digital, Dial) L. C.: 0.001 mm L. C.: 0.01 mm	Up to 25 mm Up to 300mm	2.3 μ m 6.69 μ m	Using Gr '0' Gauge Block by Comparison Method IS:2967
22.	Two jaws Internal / Stick type Internal Micrometer ^{\$} L. C.: 0.01 mm	5mm to 30 mm 50mm to 500 mm	3.0 μ m 11.55 μ m	Using Gr '0' Gauge Block With Accessories by Comparison Method IS:2966
23.	Setting Rods ^{\$}	up to 975 mm	10.0 μ m	Using 2D Height Gauge Gr '0' Long Gauge Block by Comparison Method DMN-CP-MD-027

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ($\pm$)	Remarks
24.	Vernier Caliper ^{\$} L. C.: 0.01 mm L. C.: 0.02 mm	Up to 300 mm Up to 1000 mm Up to 600 mm Up to 2000 mm	8 μ m 14 μ m 15.0 μ m 26.0 μ m	Using Gr '0' Gauge Block/Long Gauge Block by Comparison Method IS:3651
25.	Depth Vernier ^{\$} L. C.: 0.01 mm Φ	Up to 300 mm	11.0 μ m	Using Gr '0' Gauge Block/Long gauge block by Comparison Method IS:4213
26.	Vernier Height Gauge ^{\$} L. C.: 0.01 mm	Up to 1000 mm	11.0 μ m	Using Gr '0' Gauge Block/Long Gauge Block By Comparison Method IS:2921
27.	Two Leg / Pistol Caliper ^{\$} (Inside & Outside) Groove L.C. 0.001mm	5 mm to 150 mm	7.30 μ m	Using Gr '0' Gauge Block by Comparison Method IS:2092
28.	Engineer's Square / Angle Plate ^{\$} (Squareness & Parallelism)	Up to 500mm	12.5 μ m 6.5 μ m	Using Granite Square Gr '0' Gauge Block With 2d Height Gauge By Comparison Method IS:2103

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ($\pm$)	Remarks
29.	Dial Gauge - Plunger Type ^{\$} L. C.: 0.001 mm Φ L. C.: 0.01 mm	up to 10 mm up to 100mm	2.1 μ m 13.0 μ m	Using EDCT Sylvac Probe /ULMS b Comparison Method IS:2092
30.	Dial Gauge - Lever Type ^{\$} L. C.: 0.001 mm L. C.: 0.002 mm	Up to 0.14 mm up to 1 mm	2.8 μ m 3.0 μ m	Using EDCT Sylvac Probe/ULMS by Comparison Method IS:11498
31.	Bore Gauge ^{\$} (Transmission)	up to 2 mm	3.4 μ m	Using Dial Calibration Tester by Comparison Method DMN-CP-MD-010
32.	3 Point Micrometer ^{\$} L.C.: 0.001 mm	6 mm to 100 mm	4.79 μ m	Using Master Ring gauge by Comparison Method DMN-CP-MD-21
33.	Coating Thickness Gauge ^{\$}	up to 2 mm	3.0 μ m	By Comparison Method DMN-CP-MD-19
34.	Parallel Blocks Parallelism ^{\$}	up to 250 mm	6.1 μ m	Using Granite Surface Plate 2D Height gauge by Comparison Method IS:4241
35.	Hardness Indenters ^{\$}	120°	15 min	Using Profile Projector by Comparison Method

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36.	Profile Projector / Tool Makers Microscope / Optical Device* L.C.: 0.001mm	Linear(up to 200mm) Magnification (up to 50X) Angular (90°)	8.5 μ m 0.68% 5.2 min	Using Glass reading Scale Angle scale by Comparison method DMN-CP-MD-018
37.	Electronic Height Gauge* L.C.: 0.0001mm	up to 990 mm	4.68 μ m	Using Gr '0' Gauge Block & Surface Plate by Comparison Method
II.	PRESSURE INDICATING DEVICES			
1.	Negative Gauge Pressure\$ (Digital / Analog Vacuum Gauge, Vacuum Transducer / Sensor / Transmitter / Switch / Indicators / Calibrators / Controllers)	30 mbar to 1000mbar	0.01% of rdg	Using Pneumatic Dead Weight Tester by Direct Method as per DKD R 6-2
2.	Gauge Pressure – Pneumatic \$ (Digital / Analog Pressure Gauge, Pressure Transducer/ Sensor / Transmitter / Switch / Indicators / Calibrators / Controllers)	0.2 bar to 35bar	0.01% of rdg	Using Pneumatic Dead Weight Tester by Direct Method as per DKD R 6-1

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ($\pm$)	Remarks
3.	Gauge Pressure - Hydraulic \$ (Digital / Analog Pressure Gauge, Pressure Transducer/ Sensor / Transmitter / Switch / Indicators / Calibrators / Controllers)	1bar to 35bar 20 bar to 1200bar	0.01% of rdg 0.01% of rdg	Using Hydraulic Dead Weight Tester by Direct Method as per DKD R 6-1
4.	Barometric Pressure\$ (Analog / Dial / Digital Barometer, Barometric Transmitter / Switch)	15 to 2000mbar	0.37mbar	Using Precision Absolute Pressure Gauge, Desiccators, Pneumatic Vacuum & Pressure Pump by Comparison Method as per DKD R 6-2, DKD R 6-1
5.	Absolute Pressure# (Analog / Dial / Digital Absolute Pressure Gauge / Transducer / Sensor / Transmitter / Switch / Indicators / Calibrators / Controllers)	0.015 to 70 bar abs	0.008 bar abs	Using Precision Absolute Pressure Gauge, by Comparison Method as per DKD R 6-1

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ($\pm$)	Remarks
6.	Gauge Pressure/Gauge Vacuum [#] (Digital / Analog Pressure Gauge, Pressure Transducer/ Sensor / Transmitter / Switch / Indicators / Calibrators / Controllers, Magnahelic Gauge, Differential Pressure Gauge / Transmitter)	(-)25 to 25 mbar	0.012 mbar	Using Precision Pressure Calibrator by Comparison Method as per DKD R 6-1
7.	Gauge Pressure/Gauge Vacuum [#] (Digital / Analog Pressure Gauge, Pressure Transducer / Sensor / Transmitter / Switch / Indicators / Calibrators / Controllers, Magnahelic Gauge, Differential Pressure Gauge / Transmitter)	(-)700 to 700 mbar	0.238 mbar	Using Precision Pressure Gauge, by Comparison Method as per DKD R 6-1

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8.	Negative Gauge Pressure / Gauge Vacuum # (Digital / Analog Pressure Gauge, Pressure Transducer / Sensor / Transmitter / Switch / Indicators / Calibrators / Controllers)	(-)1 to 0 bar	0.001 bar	Using Precision Pressure Calibrator By Comparison Method as per DKD R 6-2
9.	Gauge Pressure - Pneumatic# (Digital / Analog Pressure Gauge, Pressure Transducer / Sensor / Transmitter / Switch / Indicators / Calibrators / Controllers)	0 to 20 bar	0.007 bar	Using Precision Pressure Calibrator By Comparison Method as per DKD R 6-1
10.	Gauge Pressure - Hydraulic# (Digital / Analog Pressure Gauge, Pressure Transducer / Sensor / Transmitter / Switch / Indicators / Calibrators / Controllers)	0 to 700 bar	0.311 bar	Using Precision Pressure Calibrator By Comparison Method as per DKD R 6-1

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11.	Gauge Pressure - Hydraulic# (Digital / Analog Pressure Gauge, Pressure Transducer / Sensor / Transmitter / Switch / Indicators / Calibrators / Controllers)	0 to 2500 bar	1.373 bar	Using Precision Pressure Indicator with Transmitter By Comparison Method as per DKD R 6-1
III.	TORQUE GENERATING DEVICES			
1.	Torque Wrench / Torque Tools Type I: Class B,C,D,E Type II: Class A,B,D,E	1 Nm to 10 Nm 20 Nm to 200 Nm 200 Nm to 2000 Nm	0.13 Nm 0.41 Nm 4.2 Nm	Using Torque Sensors with Indicator and Torque Wrench Calibrator By Comparison Method As per AS/NZS ISO 6789
IV.	DUROMETERS			
1.	Rubber Hardness Tester	0-100 Shore A 0-100 Shore D	0.5 % 0.5 %	Using Load cell with Digital Indicator and fixture frame. As per ASTM D 2240-15

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ($\pm$)	Remarks
5.	Thermometers [^] (Digital / Analog / Glass)	30°C to 300°C	0.23°C	Using SSPRT , 6½ DMM & Suitable Liquid Baths by Comparison Method
6.	Validation / Thermal Survey [^] (LN2 containers, Deep Freezers, Freezers, Refrigerator, Cold Rooms, Oven, Walk In Chambers & Furnaces)	(-)196°C & 100°C 100°C to 260°C 50°C to 1200°C	0.36°C 0.38°C 2.41°C	Using 16Nos of 1/3 Class A PT-100 RTD Sensors, 16Nos of N Type Class 1 T/C with 16 Channel Portable Data Station by Direct Method
II.	SPECIFIC HEAT & HUMIDITY			
1.	Relative Humidity [#] (RH Indicator, Controller, Transmitter, Logger)	10 to 90 %RH @25 $\pm$ 1°C	1.3% RH	Using Precision Humidity Meter with probe by Comparison Method
2.	Relative Humidity [^] (Environmental / Walk In / Climatic Chambers)	10%RH to 90% RH @ 5 to 50°C	1.3% RH	Using Precision Humidity Meter with probe by Direct Method

* 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.

[®] Laboratory can also calibrate instruments/devices of coarser resolution / least count within the accredited range using same reference standard/ master equipment under the scope of accreditation.

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