

Laboratory Perfect Calibration Centre Pvt. Ltd., No. 417-B, 1st Floor, 6th Street
 Extension, 100 Feet Road, Gandhipuram, Coimbatore, Tamil Nadu
Accreditation Standard ISO/IEC 17025: 2005
Certificate Number CC-2447 **Page** 1 of 8
Validity 12.08.2018 to 11.08.2020 **Last Amended on** -

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
<u>MECHANICAL CALIBRATION</u>				
I. DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)				
1.	Calipers [§] (Vernier/Dial/Digital) L.C.: 0.01 mm	0 to 600 mm	10.0 μ m	Using Grade "0" Gauge Blocks/Caliper Checker / Gauge Block Accessories by Comparison Method
2.	Depth Micrometer [§] L.C.: 0.001 mm Φ	0 to 150 mm	8.3 μ m	Using Grade "0" Gauge Blocks/Caliper Checker / Gauge Block Accessories by Comparison Method
3.	External Micrometer [§] (Analog/Digital) L.C.: 0.001 mm Φ	0 to 150 mm >150 mm to 300 mm >300 mm to 600 mm	1.1 μ m 5.5 μ m 6.0 μ m	Using Grade "0" Gauge Blocks / Gauge Block Accessories/ Length Bar by Comparison Method
4.	Internal / Stick Micrometer [§] L.C.: 0.01 mm	Up to 300 mm	4.2 μ m	Using Grade "0" Gauge Blocks / Gauge Block Accessories by Comparison Method
5.	Dial/Digital Indicator - Plunger Type [§] L.C.: 0.001 mm Φ	0 to 25 mm	2.1 μ m	Using Dial Calibration Tester by Comparison Method
6.	Dial Indicator [§] (Lever Type) L.C.: 0.001 mm Φ	0 to 0.2 mm	2.0 μ m	Using Dial Calibration Tester by Comparison Method

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 Convenor

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 Program Manager

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7.	Plain Plug Gauge [§]	Φ : 1 mm to 120 mm	2.5 μ m	Using Grade "0" Gauge Blocks and Comparator by Comparison Method
8.	Snap Gauge [§] (Plain/Adjustable)	2 mm to 200 mm	3.5 μ m	Using Grade "0" Gauge Blocks by Comparison Method
9.	Dial Depth Gauge [§] L.C.: 0.01 mm	0 to 10 mm	3.2 μ m	Using Grade "0" Gauge Blocks by Comparison Method
10.	Feeler Gauge [§]	0.03 mm to 1 mm	1.6 μ m	Using Digital Micrometer by Comparison Method
11.	Bore Gauge [§] L.C.: 0.001 mm (Transmission Error)	Φ : 20 mm to 500 mm Up to 2 mm	2.0 μ m	Using Dial Calibration Tester by Comparison Method
12.	Thickness Gauge [§] (Digital/ Dial) L.C.: 0.001 mm ϕ	Up to 50 mm	1.0 μ m	Using Gauge Blocks by Comparison Method
13.	Height Gauge [§] (Digital/ Analog/Dial) L.C.: 0.01 mm	Up to 600 mm	12.1 μ m	Using Grade "0" Gauge Blocks / Caliper Checker by Comparison Method
14.	Pistol Caliper [§] L.C.: 0.01 mm ϕ	0 to 100 mm	10.5 μ m	Using Grade "0" Gauge Blocks by Comparison Method
15.	Depth Vernier Caliper (Analog/Digital) [§] L.C.: 0.01 mm ϕ	Up to 300 mm	11.0 μ m	Using Grade "0" Gauge Blocks/Caliper Checker / Gauge Block Accessories by Comparison Method

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16.	Dial Caliper [§] (Internal/External) L.C.: 0.01 mm	0 to 150 mm	3.9 μ m	Using Grade "0" Gauge Blocks /Gauge Block Accessories by Comparison Method
17.	Cylindrical Measuring Pins (Grade "1" And Coarser) [§]	0.1 mm to 20 mm	1.0 μ m	Using Grade "0" Gauge Blocks & Comparator by Comparison Method
18.	Cylindrical Setting Master [§]	3 mm to 200 mm	2.5 μ m	Using Grade "0" Gauge Blocks & Comparator by Comparison Method
19.	Coating Thickness Gauge [§]	10 μ m to 1014 μ m	1.7 μ m	Using Standard Foils by Comparison Method
20.	Coating Thickness Foils [§]	Up to 5 mm	1.6 μ m	Using Digital Micrometer by Comparison Method
21.	Micrometer Setting Rod [§]	Up to 600 mm	3.8 μ m	Using Grade "0" Gauge Blocks / Length Bars & Comparator by Comparison Method
22.	Dial Calibration Tester [§] L.C.: 0.0001 mm ^Φ	Up to 25 mm	1.2 μ m	Using Gauge Blocks / Dial Electronic Comparator by Comparison Method
23.	Three Point Micrometer/ Bore Micrometer [§] L.C.: 0.001 mm L.C.: 0.005 mm	8 mm to 100 mm 8 mm to 100 mm	3.7 μ m 4.6 μ m	Using Ring Gauges by Comparison Method
24.	Measuring Scale [§]	Upto 1000 mm	30.3 μ m	Using Tape & Scale Calibrator by Comparison Method

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25.	Measuring Tape [§]	Upto 50 m	$(29 + \frac{L}{500}) \mu\text{m}$ "L" in mm	Using Tape & Scale Calibrator by Comparison Method
26.	Pie Tape [§]	Upto 30 m	$(29 + \frac{L}{500}) \mu\text{m}$ "L" in mm	Using Tape & Scale Calibrator by Comparison Method
27.	Micrometer Head [§] L.C.: 0.0001 mm	0 to 25 mm	1.2 μm	Using Gauge Blocks/ Electronic Comparator by Comparison Method
28.	Displacement LVDT Probe [§] L.C.: 0.0001 mm	0 to 25 mm	3.2 μm	Using Grade "00" Gauge Blocks by Comparison Method
29.	Surface Plate * (Grade "1" & Coarser)	3000 mm x 2000 mm	$2.4 \sqrt{\frac{W+L}{100}} \mu\text{m}$ W=Width, L=Length	Using Spirit Level
30.	Height Measuring System * Resolution: 0.1 μm	Upto 600 mm	4.3 μm	Using Grade "0" Gauge Blocks & Length Bars by Comparison Method
II.	PRESSURE INDICATING DEVICES			
1.	Analogue/ Digital Pressure Gauge, Pressure Transducer With Indicator, Pressure Switch, Pressure Transmitter -Pneumatic -Hydraulic [#]	0 to 20 bar (g) 0 to 700 bar (g)	0.74 kPa 0.6 % rdg	Using Digital Pressure Calibrator/Pneumatic Hydraulic Comparator Pump by Comparison Method

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (±)	Remarks
2.	Analogue/ Digital Vacuum Gauge, Vacuum Transducer With Indicator, Vacuum Switch, Vacuum Transmitter#	(-) 0.86 to 0 bar (g)	0.58 kPa	Using Pneumatic Vacuum Comparator Pump by Comparison Method
III.	ACCELERATION AND SPEED			
1.	Rotational Speed/ Centrifuge/ RPM Indicator (Analog & Digital) *	10 rpm to 500 rpm 500 rpm to 10000 rpm	5.9 % of rdg. 1.0 % of rdg.	Using Digital Tachometer by Comparison Method

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<u>THERMAL CALIBRATION</u>				
I.	TEMPERATURE			
1.	RTD, Thermocouple With or Without Temperature Indicators/Controller/ Data Logger/ Recorder/ Transmitter/ Temperature Gauge/ Switch etc. \$	(-) 10 °C to 300 °C	0.35 °C	Using 6½ Digit Multimeter, RTD with Process Calibrator, Low Temperature Dry Block Calibrator by Comparison Method
2.	Thermocouple With or Without Temperature Indicators/Controller/ Data Logger / Recorder/Transmitter/ Switch etc. \$	300 °C to 600 °C 600 °C to 1200 °C	1.85 °C 2.20 °C	Using 6½ Digit Multimeter, RTD with Process Calibrator , S-Type Thermocouple with Process Calibrator, Temperature Dry Block Calibrator by Comparison Method
3.	RTD, Thermocouple With or Without Temperature Indicators/Controller/ Data Logger/ Recorder/ Transmitter/ Temperature Gauge/ Switch etc. *	(-) 10 °C to 300 °C	0.40 °C	Using 6½ Digit Multimeter, RTD with Process Calibrator, Low Temperature Dry Block Calibrator by Comparison Method

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4.	Thermocouple With or Without Temperature Indicators / Controller/ Data Logger / Recorder/Transmitter/ Switch etc. *	300 °C to 600 °C 600 °C to 1200 °C	1.85 °C 2.20 °C	Using 6½ Digit Multimeter, RTD with Process Calibrator, S-Type Thermocouple with Process Calibrator, Temperature Dry Block Calibrator by Comparison method
5.	Temperature Indicator with Sensor of Cold Chambers, Ovens, Incubators (for Non-Medical Applications), Freezer, Water Bath, Refrigerator, Autoclave (for Non-Medical Applications), Furnaces, Dry/ Liquid Baths etc. *	(-)70 °C to 300 °C 300 °C to 1000 °C 1000 °C to 1200 °C	0.65 °C 2.0 °C 3.84 °C	Using RTD Sensor/ S-Type Thermocouple with Process Calibrator (Single Position) Calibration By Comparison Method
6.	Calibration of Freezer, Ovens, Furnace, Environmental Chambers at Multi Positioning of Sensor*	(-) 70 °C to 200 °C	1.32 °C	Using Temperature Data Logger with RTD Sensors At Multi Position Calibration by Comparison Method
7.	Calibration of Oven/ Furnaces at Multi Positioning of Sensor *	200 °C to 300 °C 300 °C to 1200 °C	2.0 °C 3.2 °C	Using Temperature Data Logger with N Type Thermocouples at Multi Position Calibration by Comparison Method

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II.	SPECIFIC HEAT AND HUMIDITY			
1.	Humidity Indicator with Sensor of Environment Chambers / Humidity Chambers/ Humidity Generators Cum Calibrator*	15 % RH to 85 % RH @ 25 °C to 70 °C	1.71 % RH	Using Temperature and Humidity Sensor / Transmitter With Recorder by Comparison Single Position Calibration (At Measuring Locations in DUC)
85 % RH to 95 % RH @ 25 °C		1.71 % RH		
95 % RH @ 55 °C		1.71 % RH		
2.	Calibration of Environment Chambers / Humidity Chambers / Humidity Generators Cum Calibrator*	15 % RH to 85 % RH @ 25 °C to 70 °C	2.1 % RH	Using Temperature and Humidity Sensor / Transmitter (Minimum Nine) with Recorder by Comparison Method. Multi Position Calibration
85 % RH to 95 % RH @ 25 °C		2.1 % RH		
95 % RH @ 55 °C		2.1 % RH		

* 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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