

Laboratory

Seeco Laboratories, No. 12/5, 4th Cross, Agrahara Dasarahalli,
Bangalore, Karnataka

Accreditation Standard

ISO/IEC 17025: 2005

Certificate Number

CC-2616

Page

1 of 6

Validity

22.03.2018 to 21.03.2020

Last Amended on -

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
<u>MECHANICAL CALIBRATION</u>				
1. DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)				
1.	Calipers [§] (Vernier/Dial/Digital) L.C.: 0.01 mm ^φ	0 to 300 mm 0 to 1000 mm	9.4 μ m 11.7 μ m	Using Caliper Checker, Gauge Blocks and Accessories By Comparison Method as per IS: 3651 (Part 1, 2, 3)
2.	Depth Micrometer [§] L.C.: 0.01 mm ^φ	0 to 100 mm	6.3 μ m	Using Gauge Blocks By Comparison Method as per BS: 6468
3.	External Micrometer [§] (Mechanical/ Digital) L.C.: 0.001 mm ^φ L.C.: 0.01 mm	0 to 100 mm Above 100 mm to 300 mm	2.1 μ m 8.5 μ m	Using Gauge Blocks and Long Gauge Blocks By Comparison Method as per IS: 2967
4.	Depth Gauge [§] (Digital / Vernier) L.C.: 0.01 mm ^φ	0 to 300 mm	8.4 μ m	Using Caliper Checker, Gauge Blocks and Long Gauge Blocks By Comparison Method as per IS : 4213
5.	Height Gauge [§] (Digital / Dial) L.C.: 0.01 mm ^φ	0 to 1000 mm	10.3 μ m	Using Caliper Checker By Comparison Method as per IS : 2921
6.	Dial Gauge – Plunger Type [§] L.C.: 0.001 mm ^φ L.C.: 0.01 mm	0 to 10 mm 0 to 25 mm	3.5 μ m 6.1 μ m	Using Electronic Dial Calibration Tester By Comparison Method as per IS : 2092

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Page 2 of 6

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7.	Dial Gauge – Lever Type [§] L.C.: 0.001 mm ^Φ L.C.: 0.01 mm	0 to 0.2 mm 0 to 2 mm	2.1 μ m 6.1 μ m	Using Electronic Dial Calibration Tester By Comparison Method as per IS : 11498
8.	Dial Bore Gauge [§] L.C.: 0.001 mm ^Φ	Ø20 mm to 500 mm Upto 1.0 mm travel	2.1 μ m	Using Electronic Dial Calibration Tester By Comparison Method as per JIS : B 7515
9.	Dial Thickness Gauge [§] L.C.: 0.01 mm ^Φ	0 to 10 mm	5.79 μ m	Using Gauge Blocks By Comparison Method as per IS : 2092
10.	Snap Gauge [§] ^Φ (Plain/Adjustable)	2 mm to 100 mm	4.5 μ m	Using Gauge Blocks and Long Gauge Blocks By Comparison Method as per IS : 3477
11.	Pistol Caliper [§] L.C.: 0.01 mm ^Φ	0 to 100 mm	6.7 μ m	Using Gauge Blocks By Comparison Method
12.	Groove Dial Gauge [§] (Internal) L.C.: 0.01 mm ^Φ	5 mm to 100 mm	6.6 μ m	Using Gauge Blocks and Accessories By Comparison Method
13.	Coating Thickness Gauge [§] L.C.: 0.1 μ m ^Φ	10 μ m to 865 μ m	3.3 μ m	Using Standard Thickness Foils By Comparison Method
14.	Stick Micrometer / Internal Micrometer [§] L.C.: 0.01 mm ^Φ	25 mm to 500 mm	7.2 μ m	Using Gauge Blocks and Accessories By Comparison Method as per IS : 2966

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15.	Measuring Scale [§] L. C.: 0.5 mm ^φ	0 to 1000 mm	($24 + \sqrt{(2.2L)}$) μ m "L" in mm	Using Profile Projector by Direct Method as per IS : 1481
16.	Thread Pitch Gauge [§]	Pitch : 0.25 mm to 7.0 mm	7.9 μ m	Using Profile Projector By Direct Method as per IS : 4211
17.	Feeler Gauge [§]	0.03 mm to 2.0 mm	2.6 μ m	Using Micrometer By Direct Method as per IS : 3179
18.	Bevel Protractor [§] L.C.: 5 Arc Min ^φ	0 to 360°	3.0 Arc Min	Using Profile Projector By Direct Method as per IS : 4239
19.	Test Sieves [§]	0.03 mm to 125 mm	8.7 μ m	Using Profile Projector By Direct Method as per IS : 460 (part 1,2,3)
20.	Radius Gauge [§]	0.5 mm to 25 mm	8.7 μ m	Using Profile Projector By Direct Method as per IS : 5273
21.	Height Measuring System [#] L.C.: 0.1 μ m ^φ	0 to 600 mm	11.7 μ m	Using Gauge Blocks and Long Gauge Blocks By Comparison Method as per IS : 2921
II.	PRESSURE INDICATING DEVICES			
1.	Hydraulic Pressure Dial / Digital Pressure Gauge/ Transmitters / Switch / Transducer With Indicator [#]	0 to 1000 bar	0.68 bar	Using Digital Pressure Gauge By Comparison Method (DKD R6-1 Standard)

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Certificate Number CC-2616 **Page** 4 of 6

Validity 22.03.2018 to 21.03.2020 **Last Amended on** -

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2.	Pneumatic Pressure Dial / Digital Pressure Gauge/Transmitters / Switch / Transducer with Indicator [#]	0 to 35 bar	0.06 bar	Using Digital Pressure Gauge By Comparison Method (DKD R6-1 Standard)
3.	Vacuum Gauge, Vacuum Transmitter With Indicator [#]	(-) 0.8 bar to 0 bar	0.008 bar	Using Digital Pressure Gauge By Comparison Method (DKD R6-2 Standard)
III.	ACOUSTIC			
1.	Acoustic / Sound Level Meter ^{\$}	94 dB 114 dB	0.53 dB 0.53 dB	Using Sound Level Calibrator By Direct Method

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Certificate Number CC-2616 **Page** 5 of 6

Validity 22.03.2018 to 21.03.2020 **Last Amended on** -

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<u>THERMAL CALIBRATION</u>				
I.	TEMPERATURE			
1.	RTD's with Indicators, Thermocouple With Indicator, Digital Thermometer, Temperature Gauges, Switches, Temp. Transmitter #	(-) 30 °C to 100 °C 100 °C to 400 °C	0.3 °C 0.5 °C	Using RTD with Indicator and Dry Block Baths By Comparison Method
		400 °C to 1000 °C 1000 °C to 1200 °C	1.3 °C 1.5 °C	Using S-Type Thermocouple with Indicator and Dry Block Bath By Comparison Method
2.	Dry, Low & High Temperature Bath #	(-) 30°C to 100° C 100 °C to 400 °C	0.3 °C 0.5 °C	Using RTD with Indicator By Comparison Method
3.	Oven , Incubator, Chamber, Baths, Freezer Autoclave (Single Position)*	(-) 80 °C to 300° C	0.7 °C	Using RTD with Indicator By Direct Method
4.	Temperature Indicator Of Furnace (Single Position)*	200 °C to 600 °C 600 °C to 1200°C	1.8 °C 1.9 °C	Using S Type Thermocouple with Indicator By Direct Method
5.	Freezer ,Oven, Thermal Chambers, Autoclave Climatic Chamber (Mapping) *	(-) 80 °C to 300 °C	0.9 °C	Using RTD's & N Type Thermocouple With Paperless Recorder By Direct Method

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Certificate Number CC-2616 **Page** 6 of 6

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II.	SPECIFIC HEAT & HUMIDITY			
1.	Thermo Hygrometer, Temperature Humidity Graph, Temperature & Humidity Meter, Humidity Indicator Humidity Transmitter [§]	15 °C to 45 °C @ 50 % RH 30 % to 90 % RH @ 25 °C	0.5 °C 1.7 % RH	Using RTD with Indicator & Humidity Meter By Direct Method
2.	Temperature & Humidity Chambers, Climatic Chambers Temperature-Mapping Humidity-Centre of the Chamber [*]	15 °C to 50 °C @ 50 % RH 20 % to 90 % RH @ 25°C	0.8 °C 1.4 % RH	Using RTD Sensors (With Paperless) & Humidity Meter 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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