

Laboratory Adna Technology Services, Plot No.-68, Shakti Vihar, Rudrapur, Uttarakhand

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number CC-2560 (In lieu of C-1296, C-1297) Page 1 of 10

Validity 17.11.2017 to 16.11.2020 Last Amended on 11.09.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
<u>ELECTRO TECHNICAL CALIBRATION</u>				
I.	SOURCE			
1.	Temperature Simulation [#] (Temp. Indicator/ Temp. Controller/ PID/ Temp. Recorder & Thermocouple Indicator)			Using Multifunction Calibrator by Direct Method
	RTD (PT-100)	(-) 200 °C to 600 °C	1 °C	
	R Type Thermocouple	200 °C to 1700 °C	1.6 °C	
	S Type Thermocouple	200 °C to 1700 °C	1.6 °C	
	K Type Thermocouple	50 °C to 1300 °C	1 °C	
	J Type Thermocouple	50 °C to 750 °C	1 °C	
	T Type Thermocouple	(-) 150 °C to 400 °C	1 °C	
	N Type Thermocouple	(-) 260 °C to 1300 °C	1 °C	
	B Type Thermocouple	0 °C to 1200 °C	1 °C	
	E Type Thermocouple	(-) 260 °C to 1000 °C	1 °C	
2.	Inductance [#]	100 μ H to 1 H	1.5 % to 2.5 %	Using Decade Inductance Box By Direct Method
3.	DC Current [#]	10 A to 900 A	1 % to 0.2 %	Using Multifunction Calibrator with Current Coil (1*100) By Direct Method
4.	AC Current [#]	50 Hz 10 A to 900 A	0.99 % to 0.26 %	Using Multifunction Calibrator with Current Coil (1*100) By Direct Method

Vishal Shukla
Convenor

Avijit Das
Program Manager

Laboratory Adna Technology Services, Plot No.-68, Shakti Vihar, Rudrapur, Uttarakhand

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number CC-2560 (In lieu of C-1296, C-1297) **Page** 2 of 10

Validity 17.11.2017 to 16.11.2020 **Last Amended on** 11.09.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
5.	Resistance [#] (Discrete Value)	1 Ω to 1 k Ω 1 k Ω to 1 M Ω 2 M Ω 20 M Ω 100 M Ω 200 M Ω	1 % to 1.5 % 1.50 % 1.50 % 1.50 % 1.50 %	Using Standard Resistance Box, Decade Resistance Box & Megohm Box By Direct Method
6.	Capacitance [#]	1 kHz 1 nF to 3 μ F	1.5 % to 2.5 %	Using Decade Capacitance Box By Direct Method
II.	MEASURE			
1.	DC Voltage [#]	1 mV to 100 mV 100 mV to 1000 V	1.1 % to 0.084 % 0.084 % to 0.071 %	Using 6.5 Dig. Multimeter 8846A By Direct/Comparison Method
2.	AC Voltage [#]	50 Hz 10 mV to 750 V	0.18%	Using 6.5 Dig. Multimeter 8846A By Direct/Comparison Method
3.	DC Current [#]	1 mA to 10 mA 10 mA to 100 mA 100 mA to 1 A 1 A to 10 A	0.2 % to 0.1 % 0.1 % to 0.08 % 0.08 % to 0.1 % 0.1 % to 0.22 %	Using 6.5 Dig. Multimeter 8846A By Direct/Comparison Method
4.	AC Current [#]	50 Hz 1 mA to 100 mA 100 mA to 1 A 1 A to 10 A	0.2 % to 0.1 % 0.1 % to 0.08 % 0.1 % to 0.22 %	Using 6.5 Dig. Multimeter By Direct/Comparison Method
5.	Stop Watch [#]	5 sec to 3600 sec	4 % to 0.084 %	Using Stop Watch By Comparison Method

Vishal Shukla
Convenor

Avijit Das
Program Manager

Laboratory Adna Technology Services, Plot No.-68, Shakti Vihar, Rudrapur, Uttarakhand

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number CC-2560 (In lieu of C-1296, C-1297) Page 3 of 10

Validity 17.11.2017 to 16.11.2020 Last Amended on 11.09.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
6.	Frequency [#]	10Hz to 1000kHz	0.58%	Using 6.5 Dig. Multimeter 8846A / 4.5 Dig. Multimeter 87V By Direct/Comparison Method
7.	Resistance [#]	1 Ω to 100 Ω 100 Ω to 1k Ω 1k Ω to 10k Ω 10k Ω to 100k Ω 100k Ω to 1M Ω 1M Ω to 2M Ω 2 M Ω , 20 M Ω , 100 M Ω , 200M Ω	0.05% to 0.06% 0.06% 0.06%	Using 6.5 Dig. Multimeter 8846A / 4.5 Dig. Multimeter 87V By Direct/Comparison Method
8.	Capacitance [#]	1 kHz 1nF to 10 μ F	5.6 %	Using LCR-Q Meter 4910A By Direct/ Comparison Method
9.	Time [#]	1 sec to 9990 sec	10 % to 5.6 %	Using Time Calibrator By Direct/Comparison Method
10.	Inductance [#]	100 μ H to 1H	1.5 % to 4.2 %	Using LCR-Q Meter 4910A By Direct/ Comparison Method

Vishal Shukla
Convenor

Avijit Das
Program Manager

Laboratory Adna Technology Services, Plot No.-68, Shakti Vihar, Rudrapur, Uttarakhand

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number CC-2560 (In lieu of C-1296, C-1297) Page 4 of 10

Validity 17.11.2017 to 16.11.2020 Last Amended on 11.09.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
<u>MECHANICAL CALIBRATION</u>				
I. DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)				
1.	Lever Type Dial Gauge ^s L.C. 0.001mm	Upto 1mm	0.80 μ m	Using Universal Length Measuring Machine (ULM) by Comparison Method as per IS 11498
2.	Plunger Type Dial Gauge ^s L.C. 0.001mm	0 to 25mm	0.84 μ m	Using Universal Length Measuring Machine (ULM) by Comparison Method as per IS 2092
3.	Dial Bore Gauge ^s L.C. 0.001mm	Travel Length 2mm	0.80 μ m	Using Universal Length Measuring Machine (ULM) by Comparison Method
4.	Measuring Pin ^s	0.1mm to 20mm	0.70 μ m	Using Universal Length Measuring Machine (ULM) by Comparison Method as per IS 11103
5.	Three Wire Set ^s	0.17mm to 6.35mm	0.70 μ m	Using Universal Length Measuring Machine (ULM) by Comparison Method as per IS 6311

Vishal Shukla
Convenor

Avijit Das
Program Manager

Laboratory Adna Technology Services, Plot No.-68, Shakti Vihar, Rudrapur, Uttarakhand

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number CC-2560 (In lieu of C-1296, C-1297) **Page** 5 of 10

Validity 17.11.2017 to 16.11.2020 **Last Amended on** 11.09.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
6.	Pistol Caliper ^s L.C. 0.1 mm	0 to 100mm	53.0 μ m	Using Slip Gauge Set '0' Garde By Comparison Method
7.	Setting Rod/ Length Bar ^s	25mm to 325 mm	3.80 μ m	Using Universal Length Measuring Machine (ULM) with Reference Standard by Comparison Method as per IS-7014
8.	Air Plug Gauge ^s	3 mm to 100 mm	3.0 μ m	Using Universal Length Measuring Machine (ULM) with Reference Standard by Comparison Method as per IS-3455, IS-6137, IS- 6244, IS-6246
9.	Plain Plug Gauge/ Cylindrical Setting Master ^s	2 mm to 300 mm	3.0 μ m	Using Universal Length Measuring Machine (ULM) with Reference Standard by Comparison Method as per IS-3455, IS-6137, IS- 6244, IS-6246
10.	Width Gauge ^s	10 mm to 100 mm	1.0 μ m	Using Universal Length Measuring Machine (ULM) with Reference Standard by Comparison Method

Vishal Shukla
Convenor

Avijit Das
Program Manager

Laboratory Adna Technology Services, Plot No.-68, Shakti Vihar, Rudrapur, Uttarakhand

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number CC-2560 (In lieu of C-1296, C-1297) **Page** 6 of 10

Validity 17.11.2017 to 16.11.2020 **Last Amended on** 11.09.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
11.	Taper Plain Plug Gauge ^s	5 mm to 100 mm Up to 7 ⁰	5.0 μ m 6.9 min of arc	Using Universal Length Measuring Machine (ULM) with Reference Standard by Comparison Method as per IS-9529
12.	Thread Plug Gauge ^s	2mm to 150mm	4.0 μ m	Using Universal Length Measuring Machine (ULM) with three Measuring Wire and Reference Standard by Comparison Method as per IS-2334, IS-2643, IS-4218, IS-6311
13.	Plain Ring Gauge/ Air Ring Gauge ^s	3 mm to 300 mm	5.0 μ m	Using Universal Length Measuring Machine (ULM) with Reference Standard by Comparison Method as per IS-3455
14.	Thread Ring Gauge ^s	3 mm to 100 mm	3.50 μ m	Using Universal Length Measuring Machine (ULM) with T Stylus and Reference Standard by Comparison Method as per IS-2334
15.	Air Gauge Unit [#]	+0.022 to -0.022 mm	2.90 μ m	Using Standard Ring & Plug 20mm Dia. By Comparison Method

Vishal Shukla
Convenor

Avijit Das
Program Manager

Laboratory Adna Technology Services, Plot No.-68, Shakti Vihar, Rudrapur, Uttarakhand

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number CC-2560 (In lieu of C-1296, C-1297) **Page** 7 of 10

Validity 17.11.2017 to 16.11.2020 **Last Amended on** 11.09.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
16.	Caliper ^s (Vernier / Dial / Digital) L.C. 0.01mm	0 to 600 mm	12 μ m	Using Caliper Checker By Comparison Method as per IS 3651
17.	External Micrometer/Point Micrometer/Ball Micrometer ^s L.C. 0.001 mm	0 to 25 mm 0 to 150 mm	1.57 μ m	Using Slip Gauge Set By Comparison Method as per IS 2967
18.	Height Gauge ^s L.C. 0.01 mm	0 to 600 mm	11.5 μ m	Using Caliper Checker & Surface Plate By Comparison Method as per IS 2921
19.	Snap Gauge ^s	3 mm to 150 mm	3.0 μ m	Using Slip Gauge Set By Comparison Method as per IS 8023, IS 3455
20.	Feeler Gauge ^s	Upto 2 mm	2.0 μ m	Using Digital Micrometer By Comparison Method as per IS 3179
21.	Dial Thickness Gauge ^s L.C. 0.001 mm	0 to 25 mm	6.0 μ m	Using Slip Gauge Set By Comparison Method
22.	Depth Vernier Caliper ^s L.C. 0.01 mm	0 to 300 mm	9.0 μ m	Using Slip Gauge Set & Caliper Checker By Comparison Method as per IS 4213

Vishal Shukla
Convenor

Avijit Das
Program Manager

Laboratory Adna Technology Services, Plot No.-68, Shakti Vihar, Rudrapur, Uttarakhand

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number CC-2560 (In lieu of C-1296, C-1297) **Page** 8 of 10

Validity 17.11.2017 to 16.11.2020 **Last Amended on** 11.09.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
23.	Depth Micrometer [§] L.C. 0.001mm	0 to 300 mm	5.85 μ m	Using Slip Gauge Set By Comparison Method
24.	Bevel Angle Protractor/ Combination Set [§] L.C. 5min./1min.	0 ^o -90 ^o -0 ^o	3.1min	Using Angle Gauge Set By Comparison Method as per IS 4239, IS 5812
25.	Coating Thickness Gauge [§] L.C. 0.1 μ m & 1 μ m	10 μ m to 1000 μ m	3.2 μ m	Using Standard Foil By Comparison Method
26.	V Block [§] Flatness, Parallelism, Symmetricity	Upto 150 mm	4.0 μ m 4.0 μ m 4.0 μ m	Using Dial Gauge & Cylindrical Mandrel, Slip Gauge Set By Comparison Method as per IS 2949
27.	Standard Foils [§]	Upto 2 mm	2.0 μ m	Using Digital Micrometer By Comparison Method
28.	Comparator Stand [§] (Base Flatness Only)	150*150 mm	3.6 μ m	Using Dial Gauge & Surface Plate & Precision Level Screw By Comparison Method as per IS 7599, IS 7591
29.	Surface Plate [#] Step Length-125	3000*2000 mm	3.0 Sqrt. of (L+W)/125 L, W in mm	Using Sprit Level By Comparison Method as per IS 2285, IS 7327

Vishal Shukla
Convenor

Avijit Das
Program Manager

Laboratory Adna Technology Services, Plot No.-68, Shakti Vihar, Rudrapur, Uttarakhand

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number CC-2560 (In lieu of C-1296, C-1297) Page 9 of 10

Validity 17.11.2017 to 16.11.2020 Last Amended on 11.09.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
30.	Internal Micrometer ^{\$} L.C. 0.001 mm	0 to 150 mm	2.0 μ m	Using Gauge Block & Gauge Block Accessories By Comparison Method as per IS 2966
II.	DIMENSION (PRECISION INSTRUMENTS)			
1.	Universal Length Measuring Machine ^{\$} L.C. 0.0001 mm	0 to 100 mm	1.80 μ m	Using Slip Gauge Set '0' Grade By Comparison Method
III.	PRESSURE INDICATING DEVICES			
1.	Pressure-Hydraulic [#] (Digital /Analogue Pressure Gauge)	0 to 700 bar	1.05 bar	Using Digital Pressure Gauge & Hydraulic Pump based on DKD-R 6-1
2.	Pressure-Pneumatic [#] (Digital /Analogue Pressure Gauge)	0 to 30 bar	0.044 bar	Using Digital Pressure Gauge & Pneumatic Pump based on DKD-R 6-1
3.	Pressure-Pneumatic [#] (Digital /Analogue Low Pressure Gauge/Manometer/Magnehelic Gauge)	10 mmH ₂ O to 200 mmH ₂ O (100 Pa to 2000 Pa)	0.62 mmH ₂ O (6.2 Pa)	Using Digital Pressure Calibrator based on DKD-R 6-1

Vishal Shukla
Convenor

Avijit Das
Program Manager

Laboratory Adna Technology Services, Plot No.-68, Shakti Vihar, Rudrapur, Uttarakhand

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number CC-2560 (In lieu of C-1296, C-1297) **Page** 10 of 10

Validity 17.11.2017 to 16.11.2020 **Last Amended on** 11.09.2018

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability (\pm)	Remarks
4.	Pressure-Pneumatic [#] (Digital /Analogue Vacuum Gauge)	0 to (-) 0.85 bar	0.04 bar	Using Digital Vacuum Gauge & Vacuum Pump based on DKD-R 6-2

* Measurement Capability is expressed as an uncertainty (\pm) at a confidence probability of 95%

\$ Only in Permanent Laboratory

The laboratory is also capable for site calibration however, the uncertainty at site depends on the prevailing actual environmental conditions and master equipment used.

Vishal Shukla
Convenor

Avijit Das
Program Manager