

**Laboratory** Crystal Testing Service, House No. 08, Tilak Ram Colony, Loni  
 Border, Ghaziabad, Uttar Pradesh  
**Accreditation Standard** ISO/IEC 17025: 2005  
**Certificate Number** CC-2588 **Page** 1 of 4  
**Validity** 05.03.2018 to 04.03.2020 **Last Amended on** -

Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
<b><u>ELECTRO-TECHNICAL CALIBRATION</u></b>				
<b>1.</b>	<b>SOURCE</b>			
1.	Capacitance <sup>§</sup>	1 kHz 100 pF to 10 $\mu$ F	0.5 %	Using Decade Capacitance Box by Direct Method
2.	Inductance <sup>§</sup>	1 kHz 100 $\mu$ H to 10 H	0.5 %	Using Decade Inductance Box by Direct Method
3.	DC Voltage <sup>#</sup>	1 mV to 100 V 100 V to 1000 V	1.2 % to 0.02 % 0.02 % to 0.15 %	Using Multifunction Calibrator Fluke/5080A by Direct Method
4.	DC Current <sup>#</sup>	30 $\mu$ A to 300 mA 300 mA to 10 A 10 A to 1000 A	0.5 % to 0.02 % 0.02 % to 0.32 % 0.32 % to 0.63 %	Using Multifunction Calibrator Fluke/5080A with 100 Turn CT by Direct Method
5.	AC Voltage <sup>#</sup>	50 Hz 10 mV to 100 V 100 V to 1000V	1.1 % to 0.2 % 0.2 %	Using Multifunction Calibrator Fluke/5080A by Direct Method
6.	AC Current <sup>#</sup>	50 Hz 100 $\mu$ A to 10 A 10 A to 1000 A	1.2 % to 0.36 % 0.36 % to 0.77 %	Using Multifunction Calibrator Fluke/5080A with 100 Turn CT by Direct Method
7.	Frequency <sup>#</sup>	50 Hz to 1 kHz	0.016 %	Using Multifunction Calibrator Fluke/5080A by Direct Method

**Shally Sharma**  
 Convenor

**Avijit Das**  
 Program Director

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
8.	DC Resistance <sup>#</sup> (2 Wire & 4 Wire)	1m $\Omega$ 10m $\Omega$ 100m $\Omega$ 1 $\Omega$ 1 $\Omega$ to 100 k $\Omega$ 100 k $\Omega$ to 100 M $\Omega$ 200 M $\Omega$ 2 G $\Omega$	0.65 % 0.2 % 0.5 % 1.96 % 1.96 % to 0.04 % 0.04 % to 0.58 % 1.1 % 4.44 %	Using Std. Res. Box, Multifunction Calibrator Fluke/5080A , Megohm Box by Direct Method
9.	AC Power <sup>#</sup> 50 Hz	<b>15 V to 600 V</b> <b>0.2 A to 10 A</b> <b>PF-UPF, <math>\pm</math> 0.5</b> 3 W to 6 kW	0.8 %	Using Multifunction Calibrator Fluke/5080A by Direct Method
10.	Power Factor <sup>#</sup> (Lag/Lead to UPF)	<b>50Hz</b> $\pm$ 0.5 PF to 1PF	0.009 %	Using Multifunction Calibrator Fluke/5080A by Direct Method
11.	Temperature Simulation <sup>#</sup> (Temperature Calibrators/Temperature Controller/Indicator/ Recorder/ Process Meter & Temperature Data Logger)			
	RTD PT-100 Type	(-) 200 $^{\circ}$ C to 800 $^{\circ}$ C	0.6 $^{\circ}$ C	Using Universal Calibrator With RTD Simulator Masibus/3001 M by Direct Method
	J - Type	(-) 200 $^{\circ}$ C to 1050 $^{\circ}$ C	0.6 $^{\circ}$ C	
	K – Type	0 $^{\circ}$ C to 1300 $^{\circ}$ C	0.6 $^{\circ}$ C	
	T – Type	(-) 200 $^{\circ}$ C to 390 $^{\circ}$ C	0.6 $^{\circ}$ C	
	S – Type	0 $^{\circ}$ C to 1700 $^{\circ}$ C	1.35 $^{\circ}$ C	
	R – Type	0 $^{\circ}$ C to 1700 $^{\circ}$ C	1.2 $^{\circ}$ C	
	B – Type	600 $^{\circ}$ C to 1800 $^{\circ}$ C	2.4 $^{\circ}$ C	
	E – Type	(-) 200 $^{\circ}$ C to 1000 $^{\circ}$ C	0.6 $^{\circ}$ C	
II.	<b>MEASURE</b>			
1.	DC Voltage <sup>9</sup>	1 mV to 100 V 100 V to 1000 V	0.5 % to 0.01 % 0.01 % to 0.006 %	Using DMM Fluke/ 8845A By Direct/ Comparison Method

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
2.	DC Current <sup>s</sup>	10 $\mu$ A to 10 A	0.65 % to 0.21 %	Using DMM Fluke/ 8845A By Direct/ Comparison Method
3.	AC Voltage <sup>s</sup>	<b>50 Hz</b> 10 mV to 100 mV 100 mV to 750 V	0.54 % to 0.35 % 0.35 % to 0.11%	Using DMM Fluke/ 8845A By Direct/ Comparison Method
4.	AC Current <sup>s</sup>	<b>50 Hz</b> 10 mA to 400 mA 400 mA to 10 A	0.25 % to 0.35 % 0.35 % to 0.24 %	Using DMM Fluke/ 8845A By Direct/ Comparison Method
5.	Frequency <sup>s</sup>	50 Hz to 1 kHz	0.016 %	Using DMM Fluke/ 8845A By Direct/ Comparison Method
6.	DC Resistance <sup>s</sup>	1 $\Omega$ to 1 M $\Omega$ 1 M $\Omega$ to 100 M $\Omega$	0.5 % to 0.05 % 0.05 % to 0.25 %	Using DMM Fluke/ 8845A By Direct/ Comparison Method
7.	Inductance <sup>s</sup>	<b>1 kHz</b> 1 mH to 10 H	0.6 %	Using Digital LCR Meter By Direct/Comparison Method
8.	Capacitance <sup>s</sup>	<b>1 kHz</b> 1 nF to 100 $\mu$ F	0.6 %	Using Digital LCR Meter By Direct/Comparison Method
9.	Timer/ Hour Meter / Stop Watch <sup>#</sup>	1 s to 500 s 500 s to 3600 s	0.2 s to 1.5 s 1.5 s to 4.5 s	Using Digital Time Interval Meter By Direct/ Comparison Method

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10.	Temperature Simulation <sup>§</sup> (Temperature Calibrators/Temperature Controller/Indicator/Recorder/Process Meter & Temperature Data Logger)			
	RTD PT-100 Type	(-) 200 °C to 800 °C	0.58 °C	Using Universal Calibrator With RTD Simulator Masibus/3001 M by Direct/Comparison Method
	J - Type	(-) 200 °C to 1050 °C	0.6 °C	
	K – Type	0 °C to 1300 °C	0.65 °C	
	T – Type	(-) 200 °C to 390 °C	0.6 °C	
	S – Type	0 °C to 1700 °C	1.44 °C	
	R – Type	0 °C to 1700 °C	1.22 °C	
	B – Type	600 °C to 1800 °C	2.6 °C	
	E – Type	(-) 200 °C to 1000 °C	0.6 °C	
11.	DC High Voltage <sup>#</sup>	1 kV to 5 kV	11.0 % to 5.2 %	Using HV Probe Fluke/80K40 With Digital Multimeter Fluke/287 by Direct/Comparison Method
12.	AC High Voltage <sup>*</sup>	1 kV to 25 kV	8.72 % to 6.1 %	Using HV Probe Fluke/80K40 With Digital Multimeter Fluke/287 by Direct/Comparison 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.

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