



# National Accreditation Board for Testing and Calibration Laboratories

(A Constituent Board of Quality Council of India)



## CERTIFICATE OF ACCREDITATION

### MEASUREMENTS INTERNATIONAL CALIBRATION HOUSE (A DIVISION OF MEASUREMENTS INTERNATIONAL LLP)

has been assessed and accredited in accordance with the standard

**ISO/IEC 17025:2005**

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

305, Plot No. 6, Chetan Complex, LSC, Shrestha Vihar , Delhi

in the field of

**CALIBRATION**

Certificate Number CC-2922

Issue Date 01/01/2019

Valid Until 31/12/2020

**"In view of the transition for ISO/IEC 17025:2017, the validity of this certificate will cease on 30.11.2020"**

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.

(To see the scope of accreditation of this laboratory, you may also visit NABL website [www.nabl-india.org](http://www.nabl-india.org))

Signed for and on behalf of NABL



89076970200020000695

*Anil Relia*

• Anil Relia  
Chief Executive Officer



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## SCOPE OF ACCREDITATION

**Laboratory** Measurements International Calibration House (A Division of Measurements International LLP), 305, Plot No. 6, Chetan Complex, LSC, Shrestha Vihar, Delhi

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

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**Validity** 01.01.2019 to 31.12.2020

**Last Amended on** 01.02.2019

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
<b><u>ELECTRO TECHNICAL CALIBRATION</u></b>				
<b>I.</b>	<b>MEASURE</b>			
1.	Capacitance <sup>#</sup>	50Hz 100kV 50 pF 100 pF	0.0063 % 0.0036 %	Using Automatic Capacitance Bridge MIL 5010C
	Dissipation Factor <sup>#</sup>	50Hz 600V 1000 pF 50 Hz 100 kV 0 to 10 %	0.0025 % 0.0034 %	Using Standard Reference*Capacitors IET Labs 1404A Using HV Standard Capacitors Samgor YL100-100
2.	High Voltage Electronic Dividers <sup>#</sup>	50Hz Primary: 1kV to 100 kV Secondary: 100 V	0.0040 %	Using Automatic Capacitance Bridge MIL 5010C, Standard Reference Capacitors IET Labs 1404A, HV Standard Capacitors Samgor YL100-100
3.	Phase Angle <sup>#</sup>	0 to 6°	0.0050 %	Using Automatic Capacitance Bridge MIL 5010C, Standard Reference Capacitors IET Labs 1404A, HV Standard Capacitors Samgor YL100-100

**Dheeraj Chawla**  
Convenor

**Avijit Das**  
Program Manager



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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
4.	Current Transformers <sup>#</sup> Ratio Error Phase Error	50Hz Primary: 10 to 2000A Secondary: 1A	0.017% 0.017 %	Using Automatic Capacitance Bridge MIL 5010C, Standard CT MIL 7200ACC & 7201ACT
II.	<b>SOURCE</b>			
1.	DC Voltage <sup>\$</sup>	1mV to 20mV 20mV to 200mV 0.2V to 1000V	0.35% to 0.02% 0.02% to 0.005% 0.005% to 0.008%	Using Multifunction Calibrator Time Electronics 5025C
2.	DC Current <sup>\$</sup>	20 $\mu$ A to 200 $\mu$ A 0.2mA to 2A 2A to 20A 50A to 1000A	0.1% to 0.02% 0.02% to 0.015% 0.015% to 0.03% 1.9%	Using Multifunction Calibrator Time Electronics 5025C Using Multifunction Calibrator 5025C Time Electronics with Current Coil Time Electronics 9780

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
3.	DC Resistance <sup>s</sup> (Fixed Vales) 4 wire	<b>200A</b> 50 $\mu\Omega$ 100 $\mu\Omega$ 150 $\mu\Omega$ 200 $\mu\Omega$  <b>100A</b> 0.5 m $\Omega$ 1 m $\Omega$ 1.5 m $\Omega$ 2 m $\Omega$  <b>30A</b> 5 m $\Omega$ 10 m $\Omega$ 15 m $\Omega$ 20 m $\Omega$  <b>10A</b> 50 m $\Omega$ 100 m $\Omega$ 150 m $\Omega$ 200 m $\Omega$  <b>2.5A</b> 0.5 $\Omega$ 1 $\Omega$ 1.5 $\Omega$ 2 $\Omega$	0.94% 0.9% 0.9% 0.94%  0.58% 0.58% 0.58% 0.58%  0.23% 0.23% 0.23% 0.23%  0.1% 0.1% 0.1% 0.1%	Using Decade Resistance Box Time Electronics 5070
	DC Resistance <sup>s</sup> (Decade Values) 2 wire	0.1 $\Omega$ to 1000 $\Omega$	5.78% to 0.025%	Using Decade Resistance Box Tinsley ZX74

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
	DC Resistance <sup>s</sup> (Fixed Value) 2 wire	10 $\Omega$ 100 $\Omega$ 1k $\Omega$ 10k $\Omega$ 100k $\Omega$ 1M $\Omega$ 10M $\Omega$ 100M $\Omega$	0.08% 0.004% 0.003% 0.003% 0.004% 0.01% 0.12% 1.1%	Using Multifunction Calibrator Time Electronics 5025C
4.	DC High Resistance <sup>s</sup> (Decade Values) 2 wire	1 k $\Omega$ to 10 k $\Omega$ 1 M $\Omega$ to 10 M $\Omega$ 1 G $\Omega$ to 10 G $\Omega$	0.12 % 0.12 % 2.64 %	Using Decade Resistance Box Tinsley 4720
5.	AC Voltage <sup>s</sup>	50Hz 1mV to 20mV 20mV to 200mV 200mV to 1000V	3% to 0.2% 0.2% to 0.05% 0.05% to 0.3%	Using Multifunction Calibrator Time Electronics 5025C
6.	AC Current <sup>s</sup>	50Hz 20 $\mu$ A to 200 $\mu$ A 200 $\mu$ A to 200 mA 200 mA to 2 A 2 A to 20 A  50 A to 800 A	1.2% to 0.2% 0.2% to 0.09% 0.09% to 1.4% 1.4% to 0.3%  2.2%	Using Multifunction Calibrator Time Electronics 5025C  Using Multifunction Calibrator Time Electronics 5025C with Current Coil Time Electronics 9780
7.	Digital Frequency <sup>s</sup>	1 Hz to 10 MHz	0.075 % to 0.007 %	Using Multifunction Calibrator Time Electronics 5025C

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
8.	Capacitance <sup>s</sup> (Fixed Values)	1kHz 1nF 10nF 20nF 50nF 100nF 200nF 500nF 1 $\mu$ F 10 $\mu$ F 20 $\mu$ F 50 $\mu$ F 100 $\mu$ F	0.24% 0.24% 0.24% 0.24% 0.24% 0.24% 0.24% 0.24% 0.24% 0.26% 0.26% 0.26% 0.80%	Using Multifunction Calibrator Time Electronics 5025C
9.	Inductance <sup>s</sup> (Fixed Values)	1kHz 1mH 1.9mH 5mH 10mH 19mH 50mH 100mH 190mH 500mH 1H 10H	0.35% 0.2% 0.2% 0.2% 0.2% 0.2% 0.2% 0.2% 0.2% 0.2% 0.2% 3.3%	Using Multifunction Calibrator Time Electronics 5025C

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Sl.	Quantity Measured / Instrument	Range/Frequency	*Calibration Measurement Capability ( $\pm$ )	Remarks
10.	Temperature Simulation <sup>§</sup>			
	RTD-Pt100	(-)180 to 200°C 200°C to 850°C	0.08°C 0.18°C	Using Multifunction Calibrator Time Electronics 5025C
	Thermocouple			
	B Type	600°C to 1800°C	1.2°C	
	E Type	(-)200°C to 1000°C	0.12°C	
	J Type	(-)200°C to 1200°C	0.2°C	
	K Type	(-)200°C to 1300°C	0.23°C	
	N Type	(-)200°C to 1300°C	0.4°C	
	R Type	0°C to 1750°C	1°C	
	S Type	0°C to 1750°C	0.8°C	
	T Type	(-)200°C to 400°C	0.2°C	

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

<sup>§</sup> Only in Permanent Laboratory

<sup>#</sup> 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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