



NABL

National Accreditation Board for Testing and Calibration Laboratories

Department of Science & Technology, India

CERTIFICATE OF ACCREDITATION

CALIBRATION & STANDARDS LABORATORY, CONTROLLERATE OF QUALITY ASSURANCE (ELECTRONICS)

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

JC Nagar PO, Bangalore

in the discipline of

ELECTRO-TECHNICAL CALIBRATION

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

Certificate Number C-0838

Issue Date 19/07/2012

Valid Until 18/07/2014



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

Signed for and on behalf of NABL

Avijit Das

Convenor

Anil Relia

Director

Dr. T. Ramasami

Chairman



NABL

Department of Science & Technology, India

SCOPE OF ACCREDITATION

Laboratory	Calibration & Standards Laboratory, Electronics Division, Controllerate of Quality Assurance (Electronics), JC Nagar PO, Bangalore		
Accreditation Standard	ISO/IEC 17025:2005		
Discipline	Electro-Technical Calibration	Issue Date	19.07.2012
Certificate Number	C-0838	Valid Until	18.07.2014
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Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (\pm)	Remarks
<u>AT LABORATORY</u>			
<u>SOURCE</u>			
1. DC VOLTAGE	100 mV to 1 V 1 V to 10 V 10 V to 1000 V	0.0013% to 0.0007% 0.0007% to 0.0005% 0.0005% to 0.0008%	Using Fluke5720A By Direct Method
2. DC CURRENT	100 μ A to 1 mA 1 mA to 10 mA 10 mA to 100 mA 100 mA to 1 A 1 A to 2A	0.0114% to 0.005 % 0.005% to 0.0045 % 0.0045% to 0.006 % 0.006% to 0.0106 % 0.0106% to 0.0118 %	Using Fluke5720A By Direct Method
3. AC VOLTAGE	20 Hz to 40 Hz 20 mV to 20 V	0.053% to 0.030%	Using Fluke5720A By Direct Method
	40 Hz to 1 kHz 2 mV to 20 mV 20 mV to 200 mV 200 mV to 2 V 2 V to 200 V	0.26% to 0.048% 0.048% to 0.017% 0.017% to 0.056% 0.056% to 0.013%	
	50 Hz to 1 kHz 200 V to 750 V	0.008% to 0.037%	
	1 kHz to 50 kHz 2 mV to 20 mV	0.37% to 0.13%	
	50 kHz to 300 kHz 200 mV to 20 V	0.18% to 0.13%	
	300 kHz to 1 MHz 2 V to 20 V	0.26%	

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Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (±)	Remarks
4. AC CURRENT	40 Hz to 1 kHz		
	100 mA to 1 A	0.076% to 0.041%	Using Fluke5720A By Direct Method
	1 A to 2 A	0.041% to 0.028%	
5. RESISTANCE	1 Ω to 1.9 Ω	0.011%	
1.9 Ω to 10 Ω	0.011% to 0.0027%		
10 Ω to 19 kΩ	0.0027% to 0.0011%		
19 kΩ to 1 MΩ	0.0011% to 0.0026%		
MEASURE			
6. DC VOLTAGE	190 mV to 1.9 V	0.0035% to 0.0014%	Using DMM Keithley 2002 by Direct Method
	1.9 V to 19 V	0.0014% to 0.0013%	
	19 V to 1000 V	0.0013% to 0.0029%	
7. DC CURRENT	190 μA to 1.9 mA	0.045%	Using DMM Keithley 2002 by Direct Method
	1.9 mA to 190 mA	0.045%	
	190 mA to 1.9 A	0.045% to 0.09%	
8. AC VOLTAGE	50 Hz to 1 kHz		Using DMM Keithley 2002 by Direct Method
	190 mV to 19 V	0.087%	
	19 V to 190 V	0.09% to 0.075%	
	190 V to 750 V	0.075% to 0.301%	
	1 kHz to 50 kHz		
	190 mV to 19 V	0.36% to 0.098%	
9. AC CURRENT	5kHz to 50 kHz		
	19 V to 100 V	0.098% to 0.38%	
	40 Hz to 100 Hz		
190 μA to 1.9 mA	0.42% to 1.0%	Using DMM Keithley 2002 by Direct Method	
1.9 mA to 190 mA	0.99% to 0.36%		
190 mA to 1.9 A	0.36% to 0.42%		
	100 Hz to 1 kHz		
	1.9 mA to 190 mA	0.155% to 0.188%	


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Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (\pm)	Remarks
10. RESISTANCE	1 Ω to 10 Ω	0.04% to 0.006%	Using DMM Keithley 2002 by Direct Method
	10 Ω to 100 Ω	0.006% to 0.005%	
	100 Ω to 1k Ω	0.005% to 0.002%	
	1 k Ω to 10 k Ω	0.002%	
	10 k Ω to 100 k Ω	0.002% to 0.008%	
	100 k Ω to 1M Ω	0.009% to 0.01%	

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

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