



Scope of Accreditation for Calibration

As per ISO/IEC 17025:2017

CAB Name: Bharat Test House Pvt. Ltd.

Page No. 1 of 4

Address: 1474, HSIIDC Industrial Estate, Rai, District Sonapat- 131029,
Haryana

Certificate No.: C-0017

Issue date : 26.05.2026

Validity : 25.05.2030

Amendment date: 03.06.2026

| Sr. No. | Parameter/Measurand quantity, Instrument or gauge | Range | Remarks/Method used | CMC | Facility |
|--|---|-------------------|--|--------------------|-----------|
| Discipline - Optical, Group - Optical | | | | | |
| 1 | Measurement of photovoltaic current-voltage characteristics, (Short-circuit current) of Solar cells / Solar PV Module (Golden & Silver etc.) / Photovoltaic Devices | 0.16 mA to 35.4 A | Using by Sun Simulator and reference cell by comparison method | 0.17 mA to 0.89 A | Permanent |
| 2 | Measurement of photovoltaic current-voltage characteristics, (Open-circuit voltage) of Solar cells / Solar PV Module (Golden & Silver etc.) / Photovoltaic Devices | 0.56 V to 200 V | Using by Sun Simulator and reference cell by comparison method | 0.0045 V to 4.97 V | Permanent |
| 3 | Measurement of photovoltaic current-voltage characteristics, (Maximum power) of Solar cells / Solar PV Module (Golden & Silver etc.) / Photovoltaic Devices | 6.4 mW to 1000 W | Using by Sun Simulator and reference cell by comparison method | 0.12 mW to 24.22 W | Permanent |
| 4 | Measurement of photovoltaic current-voltage characteristics, (Fill factor) of Solar cells / Solar PV Module (Golden & Silver etc.) / Photovoltaic Devices | 0% to 100% | Using by Sun Simulator and reference cell by comparison method | 0.77 % to 0.70 % | Permanent |



Certificate

This is annexure to 'Certificate of Accreditation' and does not require any signature

Reg Office: 307/20, 2nd Lane No. 5A, Ranjit Nagar, New Delhi 110008, India



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| 5 | Measurement of photovoltaic current-voltage characteristics, (Efficiency) of Solar cells / Solar PV Module (Golden & Silver etc.) / Photovoltaic Devices | 0.01% to 100% | Using by Sun Simulator and reference cell by comparison method | 0.0002 % to 0.47 % | Permanent |
| 6 | Measurement of photovoltaic current-voltage characteristics, (Shunt voltage) of Solar cells / Solar PV Module (Golden & Silver etc.) / Photovoltaic Devices | Up to 100 V | Using by Sun Simulator and reference cell and data collector by comparison method | 0.81 V | Permanent |
| 7 | Measurement of photovoltaic current-voltage characteristics, (Spectral irradiance responsivity @Wavelength) of Solar cells / Solar PV Module (Golden & Silver etc.) / Photovoltaic Devices | 200 nm to 1200 nm | Using by Sun Simulator and reference cell and data collector by comparison method | 49.21 nm | Permanent |
| 8 | Measurement of photovoltaic current-voltage characteristics, (Spectral irradiance) of Solar cells / Solar PV Module (Golden & Silver etc.) / Photovoltaic | 280 nm to 1600 nm | Using by Standard lamp & Spectro radiometer by Direct method | 4.23 $\mu\text{W}/\text{m}^2$ to 48.48 $\mu\text{W}/\text{m}^2$ | Permanent/Site |



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| | Devices/Pyranometer/ Irradiance Meter etc. | | | | |
| 9 | Measurement of Wavelength of Photovoltaic Devices/Pyranometer/ Irradiance Meter etc. | 280 nm to 1600 nm | Using by Spectroradiometer and Standard lamp by comparison method | 4.23 nm to 48.48 nm | Permanent/Site |
| 10 | Illuminance Meter/Lux Meter | 1 lux to 128000 lux | Using by Digital Lux Meter by comparison method | 0.12 lux to 7716 lux | Permanent |
| 11 | Measurement of Solar Irradiance of Photovoltaic Devices/Pyranometer/ Irradiance Meter etc | 1 W/m ² to 1000 W/m ² | Using by Sun simulator and Pyranometer by comparison method | 0.015 W/m ² to W/m ² to 15.2 W/m ² | Permanent |
| 12 | Measurement of photovoltaic current-voltage characteristics, (Bifaciality coefficient current) of Solar cells / Solar PV Module (Golden & Silver etc.) / Photovoltaic Devices | 0% to 100 % | Using by Sun Simulator and reference cell by comparison method | 0.9 % | Permanent |
| 13 | Measurement of photovoltaic current-voltage characteristics, (Bifaciality coefficient Voltage) of Solar cells / Solar PV Module (Golden & Silver etc.) / Photovoltaic Devices | 0% to 100 % | Using by Sun Simulator and reference cell by comparison method | 0.9 % | Permanent |



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| 14 | Measurement of photovoltaic current-voltage characteristics, (Bifaciality coefficient Power) of Solar cells / Solar PV Module (Golden & Silver etc.) / Photovoltaic Devices | 0 % to 100 % | Using by Sun Simulator and reference cell by comparison method | 1.0 % | Permanent |
| 15 | Measurement of photovoltaic current-voltage characteristics, (Performance gains through backside radiation (BiFi)) of Solar cells / Solar PV Module (Golden & Silver etc.) / Photovoltaic Devices | 0 W/m ² to 10 W/m ² | Using by Sun Simulator and reference cell by comparison method | 8.1 % | Permanent |



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