

Testing & Calibration Services for Solar Power Systems

An independent reference for measuring solar system performance to international standards



Accurate field testing of solar power systems following a clear technical methodology and accredited standards

The efficiency and operational safety of solar power systems depend on the integrated performance of their electrical and mechanical components, and on how precisely they comply with technical specifications and accredited standards. Reliable field measurement is the most accurate way to confirm that a system performs exactly as it was designed to.

▪ Confirming system readiness

Reliable field measurement is essential for verifying:

- Actual performance matches design values
- Stable operation under varying load conditions
- Safety of electrical connections and protection systems
- Reduced electrical losses and improved conversion efficiency

▪ Early fault detection

Systematic technical measurement also enables early detection of:

- Declining solar panel efficiency
- Mismatch between connection strings
- Voltage and current irregularities
- Insulation and grounding faults

Systematic technical measurement reduces operational risk and lowers costs over the long term



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Scope of Services

Field measurements compliant with IEC 61724 and IEC 62446 form the basis for evaluating the performance and operational safety of solar PV systems.

- **Solar panel testing**
 - Measurement of voltage, current and power
 - Performance curve testing (IV Curve)
 - Verification of panel efficiency and operating condition
- **Solar system testing**
 - Grid-connected systems (On-Grid)
 - Off-grid systems (Off-Grid)
 - Inspection of batteries, inverters and protection systems
- **Electrical inspections**
 - Insulation and grounding testing
 - Verification of electrical connections
 - Assessment of the system's electrical safety



Performance verification relies on accurate field measurements to IEC 62446 and IEC 61724

Technical Reports to IEC & ISO Standards

In preparing technical reports for solar power systems, Mizan applies a documentation and analysis methodology aligned with the relevant international standards, ensuring accuracy, traceability and clarity of conclusions.

The technical reports issued by Mizan include the following:

- A detailed presentation of field measurement data, including voltage, current, power and voltage–current (I–V) curves
- Analysis of system performance against the performance indicators defined in IEC 61724, comparing actual output with reference and design values
- Documentation of inspection and acceptance test results for PV systems to IEC 62446, covering electrical safety, connections and protection systems
- Results of insulation, grounding and electrical continuity tests, in line with the technical requirements of the relevant IEC standards
- Identification of any deviations or non-conformities detected during measurement, with their locations and potential impact on performance and safety
- Clear, actionable technical recommendations aimed at improving operational efficiency, reducing losses and strengthening long-term system safety

Sound technical decisions begin with neutral, accurate measurement



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