

Finding Module Defect Standards

Overview

Visual Inspection (VI), classified as MQT 01 under IEC 61215-2:2021, is a standardized quality test designed to detect visible defects in solar modules before further testing. This guide translates complex IEC requirements into a clear, actionable framework, empowering your team to identify, classify, and resolve the most common. The increased deployment of solar photovoltaic (PV) power plants globally has led to a growing need to address the challenges associated with the end-of-life (EOL) management of these systems. As PV capacity increases, it is crucial to establish sustainable practices for the characterization. Operational solar can help identify faults and underperformance in the wider plant, but which ones to choose?

Authors from Mahindra Teqo describe a new methodology they have developed to Satish Pandey, Preetha Pillai, Sandeep Jadhav, Shyam Kumar, Gaurav Mishra, Rajesh Kumar. These systems are expected. Before a solar module undergoes rigorous electrical and environmental testing, it must first pass a fundamental checkpoint: visual inspection. Defined under IEC 61215-2:2021 as MQT 01, this test is the earliest opportunity to identify manufacturing defects that could compromise performance, safety. KLA's defect inspection and review systems cover the full range of yield applications within the chip manufacturing environment, including incoming process tool qualification, wafer qualification, research and development, and tool, process and line monitoring. This article explores the positive and negative aspects of these methods. Failures & Defects in PV Systems: Typical Methods for Detecting Defects and Failures Generally, any effect on the PV module or device which decreases the.



Article Content

Mar 22, 2026

Best practice guide module field inspection

When a defect is identified, operators must decide on the appropriate course of action for the module. If a defect is minor, it may be best to leave the module in place.

May 28, 2026

Defect Inspection & Review | Chip Manufacturing | KLA

Patterned and unpatterned wafer defect inspection and review systems leverage unique photon and e-beam optical and sensor technologies and AI-driven algorithms to find, identify and classify particles ...

Aug 09, 2025

VDE SPEC 90038-2 V1.1 (en) "Solar Module Quality Standard ...

The starting point for this standard is to first define how many of the modules must be completely free of anomalies. Modules that show anomalies are evaluated in the second step using the error cata-logue.

Jul 30, 2025

IEC 61215 Visual Inspection (MQT 01): Ensuring Solar Module Quality ...

Learn how IEC 61215 Visual Inspection (MQT 01) detects solar panel defects, testing procedures, and why it's critical for PV reliability.

Jan 21, 2026

Sampling guideline for inspection and testing of PV modules in ...

essential information which can be used effectively to troubleshoot any problems arising within the system. Sampling for testing of PV modules comprises the procedures involved to select a part...

Nov 16, 2025

The 2025 PV Module Manufacturing Quality Report

PV module supply for buyers and manufacturers. The U.S. saw increased domestic manufacturing capacity, driven by the IRA (Inflation Reduction Act)

Aug 03, 2025

A Practical Guide to PV Module Visual Inspection: From ...

Our framework is built on a three-tiered classification system that evaluates the potential impact of a defect on module performance, safety, and long-term reliability.

May 03, 2026

Failures & Defects in PV Systems: Typical Methods for Detecting Defects ...

There are various methods to detect failures and defects in a PV system. This article explores the positive and negative aspects of these methods.

Feb 26, 2026

Module defect detection and diagnosis for intelligent maintenance of ...

In particular, given the complicated operation condition, we first review the environmental factor causing the defects and the corresponding possible degradation for PV modules. Then, the ...

Nov 23, 2025

SILICON SOLAR MODULE VISUAL INSPECTION GUIDE

The Catalogue of Defects is subdivided into two sections: the first referring to defects that might be found on new modules, and the second describing defects that might appear over time. This document is ...

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For more information, pricing, or custom solutions, please contact us:

Website: <https://www.iiss.co.za>

Email: sales@iiss.co.za

Phone: +27 63 174 2895

Address: Unit 8, Innovation Park, 15 Rivonia Road, Sandton, Johannesburg, 2196, South Africa

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