



भारतीय मानक ब्यूरो

(उपभोक्ता मामले, खाद्य एवं सार्वजनिक वितरण मंत्रालय, भारत सरकार)

**BUREAU OF INDIAN STANDARDS**

(Ministry of Consumer Affairs, Food & Public Distribution, Govt. of India)

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## DRAFT INDIAN STANDARD IN WIDE CIRCULATION

Reference : T-51

Date : 27 September 2021

**TECHNICAL COMMITTEE : Solar Photovoltaic Energy Systems, ETD 28**

To,

All concerned

Dear Madam/Sir,

The following document has been prepared by the Solar Photovoltaic Energy Systems Sectional Committee, ETD 28. Please [click here](#) to view the document.

**Document Number : ETD 28 (18121) WC**

**Title of the document : Terrestrial Photovoltaic PV Modules - Quality System for PV Module Manufacturing (First Revision)**

**Document Type : Revision of Indian Standard (IS/IEC 62941 : 2016)**

*This document has following salient features which may require specific attention for your valuable comments:*

- 1) This document lays out best practices for product design, manufacturing processes, and selection and control of materials used in the manufacture of PV modules*
- 2) These standards also form the basis for factory audit criteria of such sites by various certifying and auditing bodies. The object of this document is to provide a framework for the improved confidence in the ongoing consistency of performance and reliability of certified PV modules.*

Please examine the document and share your comments regarding further improvement in the document.

**Last date for sharing the comments is : 26 November 2021**

The comments should be shared in the prescribed template through this portal only; and the comments so received shall be taken up by the Sectional Committee for necessary action. For any other query, please write an email at [eetd@bis.gov.in](mailto:eetd@bis.gov.in) to the undersigned at Bureau of Indian Standard, Manak Bhawan, 9, Bahadur Shah Zafar Marg, New Delhi.

In case no comments are received, we would presume your approval of the documents. However, in case we receive any comments on the document, the same shall be put up to the Sectional Committee for necessary action.

Thanking You,

**Yours faithfully,**  
**(PRITI BHATNAGAR)**  
**Head (Electrotechnical Department)**  
**Email: eetd@bis.gov.in**



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## व्यापक परिचालन में मसौदा(दे)

हमारा सन्दर्भ : T-51

दिनांक : 27-09-2021

**तकनीकी समिति : Solar Photovoltaic Energy Systems Sectional Committee, ETD 28**

**प्राप्तकर्ता : रूचि रखने वाले सभी निकाय**

महोदय/या,

निम्नलिखित मसौदा तैयार किया गया है :

**प्रलेख संख्या : ETD 28 (18121) WC**

**शीर्षक : Terrestrial Photovoltaic PV Modules - Quality System for PV Module Manufacturing (First Revision)**

कृपया इस/इन मानक(को)/संशोधन(नो) के मसौदे(दो) का अवलोकन करें और अपनी सम्मतियाँ यह बताते हुए भेजें कि यदि ये मानक(को) के संशोधन(नो) के रूप में प्रकाशित हो तो इन पर अमल करने में आपके व्यवसाय अथवा कारोबार में क्या कठिनाइयां आ सकती हैं।

**सम्मतियाँ भेजने की अंतिम तिथि : 26 November 2021**

सम्मतियाँ, यदि कोई हों तो, कृपया यहाँ क्लिक करके ऑनलाइन पोर्टल के माध्यम से ऊपर दी गयी अंतिम तिथि तक दर्ज कराएं।

यह/ये प्रलेख भारतीय मानक ब्यूरो की वेबसाइट [www.bis.gov.in](http://www.bis.gov.in) पर भी उपलब्ध है/हैं।

धन्यवाद।

भवदीय/भवदिया,  
विभाग प्रमुख का नाम : PRITI BHATNAGAR  
(Electrotechnical Department)  
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**BUREAU OF INDIAN STANDARDS**  
**DRAFT FOR COMMENTS ONLY**

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**Terrestrial Photovoltaic (PV) Modules – Quality System for PV Module Manufacturing  
(First Revision)**

Last date of receipt of comments: **26 November 2021**

Solar Photovoltaic Energy Systems Sectional Committee, ETD 28

## NATIONAL FOREWORD

This draft Indian Standard which is identical with IEC 62941:2019 “Terrestrial Photovoltaic (PV) Modules – Quality System for PV Module Manufacturing” issued by the International Electrotechnical Commission (IEC) will be adopted by the Bureau of Indian Standards on the recommendation of the Solar Photovoltaic Energy Systems Sectional Committee and approval of the Electrotechnical Division Council.

This standard was first published in 2016. This first revision has been undertaken to take into consideration the developments that have taken place subsequently and also to align with the latest version of IEC 62941: 2019.

The text of IEC Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain terminologies and conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- a) Wherever the words ‘International Standard’ appear referring to this standard, they should be read as ‘Indian Standard’.
- b) Comma (,) has been used as a decimal marker, while in Indian Standards the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards, which are to be substituted in their respective places, are listed below along with their degree of equivalence for the editions indicated:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
IEC 60812: Failure modes and effects analysis (FMEA and FMECA)	IS/IEC 60812 : 2018 - Failure Modes and Effects Analysis (FMEA and FMECA)	Identical
IEC 60891 - Photovoltaic Devices – Procedure for Temperature and Irradiance Corrections To Measured I-V Characteristics	IS 12763 : 2013 - Photovoltaic Devices — Procedures For Temperature and Irradiance Corrections To Measured I-V Characteristics ( <i>First Revision</i> )	Identical with IEC 60891 : 2009

IEC 60904-1, Photovoltaic devices – Part 1: Measurements of photovoltaic current-voltage characteristics	IS 12762 (Part 1) : 2010 - Photovoltaic Devices Part 1 Measurement Of Photovoltaic Current-Voltage Characteristics	Identical with IEC 60904-1 : 2006
IEC 60904-2, Photovoltaic devices – Part 2: Requirements for photovoltaic reference devices	IS 12762 (Part 2) : 2013 - Photovoltaic Devices Part 2 Requirements For Reference Solar Devices ( <i>First Revision</i> )	Identical with IEC 60904-2 : 2015
IEC 60904-3, Photovoltaic devices – Part 3: Measurement principles for terrestrial photovoltaic (PV) solar devices with reference spectral irradiance data	IS 12762 (Part 3) : 2020 Photovoltaic Devices Part 3 Measurement Principles for Terrestrial Photovoltaic PV Solar Devices with Reference Spectral Irradiance Data	Identical with IEC 60904-3 : 2019
IEC 60904-4, Photovoltaic devices – Part 4: Reference solar devices – Procedures for establishing calibration traceability	IS 12762 (Part 4) : 2014 Photovoltaic Devices Part 4 Reference Solar Devices — Procedures for Establishing Calibration Traceability	Identical with IEC 60904-4 : 2009
IEC 60904-7, Photovoltaic devices – Part 7: Computation of the spectral mismatch correction for measurements of photovoltaic devices	IS 12762 (Part 7) : 2013 - Photovoltaic Devices Part 7 Computation Of The Spectral Mismatch Correction For Measurements Of Photovoltaic Devices	Identical with IEC 60904-7 : 2008
IEC 60904-9, Photovoltaic devices – Part 9: Solar simulator performance requirements	IS 12762 (Part 9): 2010 - Photovoltaic Devices Part 9 Solar Simulator Performance Requirements	Identical with IEC 60904-9:2007
IEC 61730-1, Photovoltaic (PV) module safety qualification – Part 1: Requirements for construction	IS/IEC 61730-1 : 2016 - Photovoltaic (PV) Module Safety Qualification Part 1 Requirements for Construction ( <i>First Revision</i> )	Identical
IEC 61730-2, Photovoltaic (PV) module safety qualification – Part 2: Requirements for testing	IS/IEC 61730-2 : 2016 - Photovoltaic (PV) Module Safety Qualification Part 2 Requirements for Testing ( <i>First Revision</i> )	Identical
IEC TS 61836, Solar photovoltaic energy systems – Terms, definitions and symbols	IS 12834 : 2013 - Solar Photovoltaic Energy Systems — Terms, Definitions and Symbols ( <i>First Revision</i> )	Identical with IEC/TS 61836 : 2007
IEC 61853-1, Photovoltaic (PV) module performance testing and energy rating – Part 1: Irradiance and temperature performance measurements and power rating	IS 16170 (Part 1) : 2014-Photovoltaic (PV) Module Performance Testing and Energy Rating Part 1 Irradiance and Temperature Performance Measurements and Power Rating	Identical with IEC 61853-1 : 2011
IEC 62108, Concentrator photovoltaic (CPV) modules and assemblies – Design qualification and type approval	IS 16228 : 2019 - Concentrator Photovoltaic (CPV) Modules and Assemblies — Design Qualification and Type Approval ( <i>First Revision</i> )	Identical with IEC 62108 : 2016

IEC TS 62915, Photovoltaic (PV) modules – Type approval, design and safety qualification – Retesting	IS/IEC TS 62915 : 2018 - Photovoltaic (PV) Modules — Type Approval, Design and Safety Qualification — Retesting	Identical
ISO 9001:2015, Quality management systems – Requirements	IS/ISO 9001 : 2015- Quality Management Systems — Requirements (Fourth Revision)	Identical

The technical committee has reviewed the provisions of the following international standards referred in this adopted standard and decided that they are acceptable for use in conjunction with this standard:

<i>International Standard</i>	<i>Title</i>
IEC 61215 (all parts)	Terrestrial photovoltaic (PV) modules – Design qualification and type approval
IEC 62759-1	Photovoltaic (PV) modules – Transportation testing – Part 1: Transportation and shipping of module package units
ISO/IEC Guide 98-3:2008	Uncertainty of measurement – Part 3: Guide to the expression of uncertainty in measurement

Only the English language text has been retained while adopting it in this Indian Standard, and as such, the page numbers given here are not the same as in the IEC Publication.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 1960 ‘Rules for rounding of numerical values (*revised*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Note: The technical content of the document is not available on website. For details, please refer the corresponding IEC 62941: 2019 or kindly contact:

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