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Terrestrial photovoltaic (PV) modules - Quality system for PV module manufacturing

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 06/20

Obsahuje: EN IEC 62941:2020, IEC 62941:2019

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EUROPEAN STANDARD

EN IEC 62941

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2020

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English Version

**Terrestrial photovoltaic (PV) modules - Quality system for PV
module manufacturing
(IEC 62941:2019)**

Modules photovoltaïques (PV) pour applications terrestres -
Système de qualité pour la fabrication des modules
photovoltaïques
(IEC 62941:2019)

Terrestrische Photovoltaik(PV)-Module - Qualitätssystem
zur Fertigung von PV-Modulen
(IEC 62941:2019)

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Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN IEC 62941:2020 (E)**European foreword**

The text of document 82/1635/FDIS, future edition 1 of IEC 62941, prepared by IEC/TC 82 "Solar photovoltaic energy systems" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62941:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2020-10-16
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-01-16

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60812	-	Failure modes and effects analysis (FMEA and FMECA)	EN IEC 60812	-
IEC 60891	-	Photovoltaic devices - Procedures for temperature and irradiance corrections to measured I-V characteristics	EN 60891	-
IEC 60904-1	-	Photovoltaic devices - Part 1: Measurement of photovoltaic current-voltage characteristics	EN 60904-1	-
IEC 60904-2	-	Photovoltaic devices - Part 2: Requirements for photovoltaic reference devices	EN 60904-2	-
IEC 60904-3	-	Photovoltaic devices - Part 3: Measurement principles for terrestrial photovoltaic (PV) solar devices with reference spectral irradiance data	EN IEC 60904-3	-
IEC 60904-4	-	Photovoltaic devices - Part 4: Reference solar devices - Procedures for establishing calibration traceability	EN IEC 60904-4	-
IEC 60904-7	-	Photovoltaic devices - Part 7: Computation of the spectral mismatch correction for measurements of photovoltaic devices	EN IEC 60904-7	-
IEC 60904-9	-	Photovoltaic devices - Part 9: Solar simulator performance requirements	EN 60904-9	-
IEC 61215	-	Crystalline silicon terrestrial photovoltaic (PV) modules - Design qualification and type approval	-	-

EN IEC 62941:2020 (E)

IEC 61730-1	-	Photovoltaic (PV) module safety qualification - Part 1: Requirements for construction	EN IEC 61730-1	-
IEC 61730-2	-	Photovoltaic (PV) module safety qualification - Part 2: Requirements for testing	EN IEC 61730-2	-
IEC 61853-1	-	Photovoltaic (PV) module performance testing and energy rating - Part 1: Irradiance and temperature performance measurements and power rating	-	-
IEC 62108	-	Concentrator photovoltaic (CPV) modules and assemblies - Design qualification and type approval	EN 62108	-
IEC 62759-1	-	Photovoltaic (PV) modules - Transportation testing - Part 1: Transportation and shipping of module package units	EN 62759-1	-
ISO 9001	-	Quality management systems - Requirements	EN ISO 9001	2015
IEC/TS 61836	-	Solar photovoltaic energy systems - Terms, definitions and symbols	-	-
IEC/TS 62915	-	Photovoltaic (PV) modules - Type approval, design and safety qualification - Retesting	-	-
ISO/IEC Guide 98-3	2008	Uncertainty of measurement - Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)	-	-



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NORME INTERNATIONALE

Terrestrial photovoltaic (PV) modules – Quality system for PV module manufacturing

Modules photovoltaïques (PV) pour applications terrestres – Système de qualité pour la fabrication des modules photovoltaïques





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IEC 62941

Edition 1.0 2019-12

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Terrestrial photovoltaic (PV) modules – Quality system for PV module manufacturing

Modules photovoltaïques (PV) pour applications terrestres – Système de qualité pour la fabrication des modules photovoltaïques

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**TERRESTRIAL PHOTOVOLTAIC (PV) MODULES –
QUALITY SYSTEM FOR PV MODULE MANUFACTURING**
FOREWORD

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International Standard IEC 62941 has been prepared by IEC technical committee 82: Solar photovoltaic energy systems.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
82/1635/FDIS	82/1641/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

TERRESTRIAL PHOTOVOLTAIC (PV) MODULES – QUALITY SYSTEM FOR PV MODULE MANUFACTURING

1 Scope

This document is applicable to organizations manufacturing photovoltaic (PV) modules certified to IEC 61215 series and IEC 62108 for design qualification and type approval and IEC 61730 for safety qualification and type approval. The design qualification and type approval of PV modules depend on appropriate methods for product and process design, as well as appropriate control of materials and processes used to manufacture the product. This document lays out best practices for product design, manufacturing processes, and selection and control of materials used in the manufacture of PV modules that have met the requirements of IEC 61215 series, IEC 61730, or IEC 62108. These standards also form the basis for factory audit criteria of such sites by various certifying and auditory 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. The requirements of this document are defined with the assumption that the quality management system of the organization has already fulfilled the requirements of ISO 9001 or equivalent quality management system. This document is not intended to replace or remove any requirements of ISO9001 or equivalent quality management system. By maintaining a manufacturing system in accordance with this document, PV modules are expected to maintain their performance as determined from the test sequences in IEC 61215 series, IEC 62108, or IEC 61730.

This document is applicable to all PV modules independent of design and technology, i.e. flat panel, concentrator photovoltaic (CPV). Quality controls for CPV and nonconventional flat-plate manufacturing will differ somewhat from those of more conventional designs; this document has not considered these differences.

2 Normative references

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IEC 60904-1, *Photovoltaic devices – Part 1: Measurement of photovoltaic current-voltage characteristics*

IEC 60904-2, *Photovoltaic devices – Part 2: Requirements for photovoltaic reference devices*

IEC 60904-3, *Photovoltaic devices – Part 3: Measurement principles for terrestrial photovoltaic (PV) solar devices with reference spectral irradiance data*

IEC 60904-4, *Photovoltaic devices – Part 4: Reference solar devices – Procedures for establishing calibration traceability*

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IEC 60904-7, *Photovoltaic devices – Part 7: Computation of the spectral mismatch correction for measurements of photovoltaic devices*

IEC 60904-9, *Photovoltaic devices – Part 9: Solar simulator performance requirements*

IEC 61215 (all parts), *Terrestrial photovoltaic (PV) modules – Design qualification and type approval*

IEC 61730-1, *Photovoltaic (PV) module safety qualification – Part 1: Requirements for construction*

IEC 61730-2, *Photovoltaic (PV) module safety qualification – Part 2: Requirements for testing*

IEC TS 61836, *Solar photovoltaic energy systems – Terms, definitions and symbols*

IEC 61853-1, *Photovoltaic (PV) module performance testing and energy rating – Part 1: Irradiance and temperature performance measurements and power rating*

IEC 62108, *Concentrator photovoltaic (CPV) modules and assemblies – Design qualification and type approval*

IEC 62759-1, *Photovoltaic (PV) modules – Transportation testing – Part 1: Transportation and shipping of module package units*

IEC TS 62915, *Photovoltaic (PV) modules – Type approval, design and safety qualification – Retesting*

ISO/IEC Guide 98-3:2008, *Uncertainty of measurement – Part 3: Guide to the expression of uncertainty in measurement*

ISO 9001:2015, *Quality management systems – Requirements*

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