
Preskušanje zmogljivosti in energijske učinkovitosti fotonapetostnega (PV) modula - 3. del: Energijska učinkovitost fotonapetostnega (PV) modula

Photovoltaic (PV) module performance testing and energy rating - Part 3: Energy rating of PV modules

Prüfung des Leistungsverhaltens von photovoltaischen (PV)-Modulen und Energiebemessung - Teil 3: Energiebemessung von PV-Modulen

Essais de performance et caractéristiques assignées d'énergie des modules photovoltaïques (PV) - Partie 3: Caractéristiques assignées d'énergie des modules PV

Ta slovenski standard je istoveten z: prEN IEC 61853-3:2026

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82/2592/CDV

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IEC TC 82 : SOLAR PHOTOVOLTAIC ENERGY SYSTEMS	
SECRETARIAT: United States of America	SECRETARY: Mr George Kelly
OF INTEREST TO THE FOLLOWING COMMITTEES:	HORIZONTAL FUNCTION(S):
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☒ SUBMITTED FOR CENELEC PARALLEL VOTING Attention IEC-CENELEC parallel voting The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting. The CENELEC members are invited to vote through the CENELEC online voting system.	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

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TITLE:

Photovoltaic (PV) module performance testing and energy rating - Part 3: Energy rating of PV modules

PROPOSED STABILITY DATE: 2032

NOTE FROM TC/SC OFFICERS:

This project was discussed and supported by WG2 during their meeting in 2025-09. It was decided to change from and Amendment to an Edition 2.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**PHOTOVOLTAIC (PV) MODULE PERFORMANCE
TESTING AND ENERGY RATING –****Part 3: Energy rating of PV modules****FOREWORD**

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IEC 61853 has been prepared by WG2: Modules, non-concentrating, of IEC technical committee 82: Solar photovoltaic energy systems. It is an International Standard.

This second edition cancels and replaces the first edition published in 2018-08. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) The energy rating calculations have been modified to include bifacial PV modules;
- b) Settings defining different module orientations have been introduced to accommodate for typical installation situations of monofacial and bifacial modules;
- c) The spectral correction procedure has been improved and clarified according to [1];
- d) Interpolation and extrapolation procedures have been improved and clarified;
- e) A bibliography has been added;
- f) A list of all quantities and their units used throughout the document has been added as annex.

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

Draft	Report on voting

79

80 Full information on the voting for its approval can be found in the report on voting indicated in
81 the above table.

82 The language used for the development of this International Standard is English.

83 This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in
84 accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available
85 at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are
86 described in greater detail at www.iec.ch/publications.

87 A list of all parts in the IEC 61853, published under the general title *Photovoltaic (PV) module*
88 *performance testing and energy rating*, can be found on the IEC website.

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

- 92 • reconfirmed,
- 93 • withdrawn,
- 94 • replaced by a revised edition, or
- 95 • amended.

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INTRODUCTION

99 Photovoltaic (PV) modules are typically rated at standard test conditions (STC) of 25 °C cell
100 temperature, 1 000 W m⁻² total irradiance, normal incidence and air mass (AM) 1,5 spectrum.
101 However, PV modules in the field operate over a range of temperatures, total and spectral
102 irradiances, and incidence angles. Hence, PV modules can also be rated based on the
103 calculated energy production under a standardized set of environmental and climatic conditions.

104 This series proposes a standard method for energy rating and consists of four parts:

- 105 • IEC 61853-1: Irradiance and temperature performance measurements and power rating,
106 which describes requirements for evaluating PV module performance in terms of power
107 rating over a range of irradiances and temperatures;
- 108 • IEC 61853-2: Spectral responsivity, incidence angle, and nominal module operating
109 temperature measurements, which describes test procedures for measuring the effect of
110 varying angle of incidence and sunlight spectra as well as the estimation of module
111 temperature from irradiance, ambient temperature, and wind speed;
- 112 • IEC 61853-3: Energy rating of PV modules, which describes the calculations for PV module
113 energy ratings; and
- 114 • IEC 61853-4: Standard reference climatic profiles, which describes the standard time
115 periods and weather conditions that can be used for the energy rating calculations.

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