

STN	Fotovoltické súčiastky Časť 2: Požiadavky na referenčné fotovoltické súčiastky	STN EN IEC 60904-2 36 4604
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Photovoltaic devices - Part 2: Requirements for photovoltaic reference devices

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. 10/23

Obsahuje: EN IEC 60904-2:2023, IEC 60904-2:2023

Oznámením tejto normy sa od 24.07.2026 ruší
STN EN 60904-2 (36 4604) zo septembra 2015

137581



EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN IEC 60904-2

August 2023

ICS 27.160

Supersedes EN 60904-2:2015

English Version

Photovoltaic devices - Part 2: Requirements for photovoltaic reference devices (IEC 60904-2:2023)

Dispositifs photovoltaïques - Partie 2: Exigences
applicables aux dispositifs photovoltaïques de référence
(IEC 60904-2:2023)

Photovoltaische Einrichtungen - Teil 2: Anforderungen an
Referenz-Solarelemente
(IEC 60904-2:2023)

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Europäisches Komitee für Elektrotechnische Normung

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EN IEC 60904-2:2023 (E)**European foreword**

The text of document 82/2127/FDIS, future edition 4 of IEC 60904-2, prepared by IEC/TC 82 "Solar photovoltaic energy systems" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60904-2:2023.

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) 2024-04-24
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2026-07-24

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In the official version, for Bibliography, the following notes have to be added for the standard indicated:

IEC 61215 (series) NOTE Approved as EN IEC 61215 (series)

IEC 61853-1 NOTE Approved as EN 61853-1

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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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.cencenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60891	-	Photovoltaic devices - Procedures for temperature and irradiance corrections to measured I-V characteristics	EN IEC 60891	-
IEC 60904-1	-	Photovoltaic devices - Part 1: Measurement of photovoltaic current-voltage characteristics	EN IEC 60904-1	-
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: Photovoltaic reference devices - Procedures for establishing calibration traceability	EN IEC 60904-4	-
IEC 60904-5	-	Photovoltaic devices - Part 5: Determination of the equivalent cell temperature (ECT) of photovoltaic (PV) devices by the open-circuit voltage method	EN 60904-5	-
IEC 60904-7	-	Photovoltaic devices - Part 7: Computation of the spectral mismatch correction for measurements of photovoltaic devices	EN IEC 60904-7	-
IEC 60904-8	-	Photovoltaic devices - Part 8: Measurement of spectral responsivity of a photovoltaic (PV) device	EN 60904-8	-
IEC 60904-9	-	Photovoltaic devices - Part 9: Classification of solar simulator characteristics	EN IEC 60904-9	-
IEC 60904-10	-	Photovoltaic devices - Part 10: Methods of linear dependence and linearity measurements	EN IEC 60904-10	-
IEC/TS 61836	-	Solar photovoltaic energy systems - Terms, definitions and symbols	CLC/TS 61836	-



IEC 60904-2

Edition 4.0 2023-06

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Photovoltaic devices –
Part 2: Requirements for photovoltaic reference devices**

**Dispositifs photovoltaïques –
Partie 2: Exigences applicables aux dispositifs photovoltaïques de référence**





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IEC 60904-2

Edition 4.0 2023-06

INTERNATIONAL STANDARD

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**Photovoltaic devices –
Part 2: Requirements for photovoltaic reference devices**

**Dispositifs photovoltaïques –
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INTERNATIONALE

ICS 27.160

ISBN 978-2-8322-6948-0

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

PHOTOVOLTAIC DEVICES –

Part 2: Requirements for photovoltaic reference devices

FOREWORD

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IEC 60904-2 has been prepared by IEC technical committee 82: Solar photovoltaic energy systems. It is an International Standard.

This fourth edition cancels and replaces the third edition published in 2015. This edition constitutes a technical revision.

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

- a) added calibration procedures for calibrating PV devices at maximum power by extending the respective Clauses 12 and 13;
- b) revised requirements for mandatory measurement of spectral responsivity, temperature coefficients and linearity, depending on usage and allowing some measurements on equivalent devices;
- c) revised requirements for built-in shunt resistor;
- d) added requirements for traceability of calibration explicitly.

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

Draft	Report on voting
82/2127/FDIS	82/2151/RVD

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

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

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

A list of all parts in the IEC 60904 series, published under the general title *Photovoltaic devices*, can be found on the IEC website.

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PHOTOVOLTAIC DEVICES –

Part 2: Requirements for photovoltaic reference devices

1 Scope

This part of IEC 60904 gives requirements for the classification, selection, packaging, marking, calibration and care of photovoltaic reference devices.

This document applies to photovoltaic (PV) reference devices that are used to measure the irradiance of natural or simulated sunlight for the purpose of quantifying the electrical performance of photovoltaic devices (cells, modules and arrays). It does not cover photovoltaic reference devices for use under concentrated sunlight.

2 Normative references

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.

IEC 60891, *Photovoltaic devices – Procedures for temperature and irradiance corrections to measured I - V characteristics*

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