INTERNATIONAL STANDARD

IEC 60904-2

Second edition 2007-03

Photovoltaic devices -

Part 2:

Requirements for reference solar devices

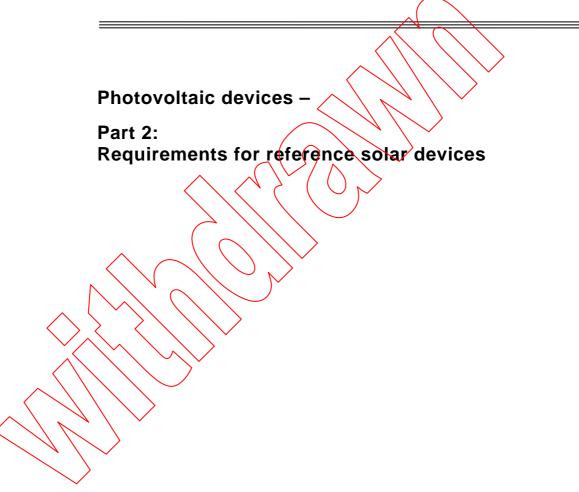
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

PHOTOVOLTAIC DEVICES -

Part 2: Requirements for reference solar devices

FOREWORD

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International Standard IEC 60904-2 has been prepared by IEC Technical Committee 82: Solar photovoltaic energy systems.

This second edition cancels and replaces IEC 60904-2 (1989), its Amendment 1 (1998) and IEC 60904-6 (1994) and its Amendment 1 (1998). It constitutes a technical revision.

The main technical changes with regard to the previous edition are as follows:

- Added subclause on "Calibration traceability".
- Added subclause on "Construction" to differentiate the various types of reference devices.
- Added guidance on use of a built-in shunt resistor.

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- Increased data sheet requirements. In particular added requirement for either a mismatch correction or an estimate of uncertainty due to the mismatch of the reference device.
- Added Clause on "Calibration of working solar reference devices".

The text of this standard is based on the following documents:

| CDV | Report on voting |
|------------|------------------|
| 82/425/CDV | 82/465/RVC |

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

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

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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- · withdrawn,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

PHOTOVOLTAIC DEVICES -

Part 2: Requirements for reference solar devices

1 Scope and object

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

This standard covers solar reference devices used to determine the electrical performance of solar cells, modules and arrays under natural and simulated sunlight. It does not cover solar reference devices for use under concentrated sunlight.

2 Normative references

The following referenced documents are indispensable for the application 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, Procedures for temperature and irradiance corrections to measured I-V characteristics of crystalline silicon photovoltaic devices

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

IEC 60904-5, Photovo taic devices — Part 5: Determination of the equivalent cell temperature (ECT) of photovoltaic (RV) devices by the open-circuit voltage method

IEC 60904-7, Photovoltaic devices — Part 7: Computation of spectral mismatch error introduced in the testing of a photovoltaic device

IEC 60904-8 Photovoltaic devices - Part 8: Measurement of spectral response of a photovoltaic (RV) device

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

IEC 60904-10, Photovoltaic devices – Part 10: Methods of linearity measurement

IEC 61215, Crystalline silicon terrestrial photovoltaic (PV) modules – Design qualification and type approval

IEC 61646, Thin-film terrestrial photovoltaic (PV) modules – Design qualification and type approval