



DPC: 25/30510871 DC

BSI Group Headquarters

389 Chiswick High Road London W4 4AL

Tel: +44 (0)20 8996 9000

Fax: +44 (0)20 8996 7400

www.bsigroup.com

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Interested committees:

Title: Draft BS EN 60904-8 Ed.4.0 BS EN IEC 60904-8 Ed.4.0 Photovoltaic devices. Part 8: Measurement of spectral responsivity of a photovoltaic (PV) device.

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- ii) affects other national standard(s)
- iii) requires additional national guidance or information

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



82/2407/CD

COMMITTEE DRAFT (CD)

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CLOSING DATE FOR COMMENTS:

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82/2159/RR

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):

ASPECTS CONCERNED:

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TITLE:

Photovoltaic devices - Part 8: Measurement of spectral responsivity of a photovoltaic (PV) device

NOTE FROM TC/SC OFFICERS:

This project was discussed and supported by WG2 during their meeting in 2025-04.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

PHOTOVOLTAIC DEVICES –

**Part 8: Measurement of spectral responsivity
of a photovoltaic (PV) device**

FOREWORD

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International Standard IEC 60904-8 has been prepared by IEC technical committee 82: Solar photovoltaic energy systems.

This fourth edition cancels and replaces the third edition published in 2014 and constitutes a technical revision.

The main technical changes with respect to the previous edition are listed below:

- New formula for the calculation of the spectral responsivity from the differential spectral responsivity
- Addition of a new clause Terms and Definitions
- Addition of a new clause to give an overview of possible measurement uncertainty components
- Addition of a sub clause for bifacial cells
- Addition of a sub clause for Temperature coefficient

- 121 • Addition of the requirements of ISO/IEC 17025
- 122 • Additional figures
- 123

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

FDIS	Report on voting
82/822/FDIS	82/843/RVD

125

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

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

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

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

- 134 • reconfirmed,
135 • withdrawn,
136 • replaced by a revised edition, or
137 • amended.

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PHOTOVOLTAIC DEVICES –

Part 8: Measurement of spectral responsivity of a photovoltaic (PV) device

1. Scope

This International Standard specifies the requirements for the measurement of the spectral responsivity of both linear and non-linear photovoltaic (PV) devices. It is applicable to single-junction devices; for multi-junction devices refer to IEC 60904-8-1. The spectral responsivity of a PV device is used in PV device development, analysis and calibration, as it provides a measure of recombination and other processes occurring inside the semiconductor or cell material system.

The spectral responsivity of a PV device is used for the correction of the spectral mismatch if a PV device is calibrated in a setup where the measurement spectral irradiance is different from the reference spectral irradiance data given in IEC 60904-3 and a reference device with a different spectral responsivity to the device under test is used. This procedure is given in IEC 60904-7.

The procedures described in this standard are intended for one sided measurements of mono- or bi-facial PV devices.

2. Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

IEC 60904-5, *Photovoltaic devices – Part 5: Part 5: Determination of the equivalent cell temperature (ECT) of photovoltaic (PV) devices by the open-circuit voltage method*

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

IEC 60904-8-1, *Photovoltaic devices - Part 8-1: Measurement of spectral responsivity of multi-junction photovoltaic (PV) devices*

IEC 60904-9, *Photovoltaic devices – Part 9: Classification of solar simulator characteristics*

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

3. Terms and Definitions

For the purposes of this document, the terms and definitions given in IEC TS 61836 and the following apply.