



BSI Standards Publication

Photovoltaic devices

Part 1-2: Measurement of current-voltage characteristics
of bifacial photovoltaic (PV) devices

National foreword

This Published Document is the UK implementation of IEC TS 60904-1-2:2019.

The UK participation in its preparation was entrusted to Technical Committee GEL/82, Photovoltaic Energy Systems.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Published by BSI Standards Limited 2019

ISBN 978 0 580 97320 8

ICS 27.160

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This Published Document was published under the authority of the Standards Policy and Strategy Committee on 28 February 2019.

Amendments/corrigenda issued since publication

Date	Text affected
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IEC TS 60904-1-2

Edition 1.0 2019-01

TECHNICAL SPECIFICATION



Photovoltaic devices –

Part 1-2: Measurement of current-voltage characteristics of bifacial photovoltaic (PV) devices

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 27.160

ISBN 978-2-8322-6409-6

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CONTENTS

FOREWORD..... 4

1 Scope..... 6

2 Normative references 6

3 Terms and definitions 7

 3.1 Bifacial PV device 7

 3.2 Bifaciality 7

 3.3 Rear irradiance driven power gain yield 7

4 General considerations 7

5 Apparatus 8

 5.1 General 8

 5.2 Solar simulator with adjustable irradiance levels for single-side illumination 8

 5.3 Solar simulator with adjustable irradiance levels for double-side illumination 8

 5.4 Natural sunlight 8

 5.5 Non-irradiated background and background compensation 8

6 Additional *I-V* characterisations for bifacial devices 9

 6.1 General 9

 6.2 Determination of bifacialities 10

 6.3 Determination of the rear irradiance driven power gain yield 11

 6.3.1 General 11

 6.3.2 Outdoor rear irradiance driven power gain yield measurement 12

 6.3.3 Indoor rear irradiance driven power gain yield measurement with single-side illumination 13

 6.3.4 Indoor rear irradiance driven power gain yield measurement with double-side illumination 14

7 *I-V* characterisation of bifacial PV devices in practice 15

 7.1 General 15

 7.2 *I-V* measurement of reference bifacial PV devices 15

 7.3 *I-V* measurement of bifacial PV devices using a reference bifacial device 16

8 Report 17

Figure 1 – Scheme of a bifacial PV module and the required non-irradiated background and aperture 9

Figure 2 – Front and rear-side characterization for bifaciality 10

Figure 3 – Outdoor measurement 12

Figure 4 – Examples of P_{max} as a function of irradiance level on the rear side G_r (for outdoor or double-side illumination) or its 1-side equivalent irradiance G_f for a device of bifaciality $\varphi = 80\%$ 14

Figure 5 – Transmittances of the device (T_{DUT}) and its encapsulant (T_{ENC}) 15

Figure 6 – Example of $P_{max,BiFi100}$ and $P_{max,BiFi200}$ derived from the measurement of P_{max} at STC conditions, $P_{max,STC}$ and the BiFi coefficient of the reference used in formulae (8) and (9) 17

Table 1 – Maximum peak power, P_{max} , measured at different rear irradiances, G_r , (double-side with $G_f = 1\ 000$) or alternatively equivalent front irradiances, G_E , and the rear irradiance driven power gain yield, $BiFi$, derived from the slope of the linear fit on $P_{max}(G_r)$. Also calculated values $P_{max,BiFi100}$ and $P_{max,BiFi200}$	14
Table 2 – Example of $P_{max,BiFi100}$ and $P_{max,BiFi200}$ derived from the measurement at STC conditions ($G_r = 0$ and $G_f = 1\ 000$) and the rear irradiance driven power gain obtained from the bifacial reference device, $BiFi,ref$	17

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PHOTOVOLTAIC DEVICES –

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Technical Specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC TS 60904-1-2, which is a Technical Specification, has been prepared by IEC technical committee 82: Solar photovoltaic energy systems.

The text of this Technical Specification is based on the following documents:

Draft TS	Report on voting
82/1403/DTS	82/1508/RVDTS

Full information on the voting for the approval of this Technical Specification 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.

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

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
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PHOTOVOLTAIC DEVICES –

Part 1-2: Measurement of current-voltage characteristics of bifacial photovoltaic (PV) devices

1 Scope

This part of IEC 60904 describes procedures for the measurement of the current-voltage (I - V) characteristics of bifacial photovoltaic devices in natural or simulated sunlight. It is applicable to single PV cells, sub-assemblies of such cells or entire PV modules.

The requirements for measurement of I - V characteristics of standard (monofacial) PV devices are covered by IEC 60904-1, whereas this document describes the additional requirements for the measurement of I - V characteristics of bifacial PV devices.

This document may be applicable to PV devices designed for use under concentrated irradiation if they are measured without the optics for concentration and irradiated using direct normal irradiance and a mismatch correction with respect to direct normal reference spectrum is performed.

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*

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

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

IEC 60904-5, *Photovoltaic devices – Part 5: Determination of the equivalent cell temperature (T_{eq}) 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, *Photovoltaic devices – Part 8: Measurement of spectral responsivity of a photovoltaic (PV) device*

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