

TECHNICAL SPECIFICATION

Solar photovoltaic energy systems – Terms, definitions and symbols



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CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references	6
3 Terms, definitions and symbols for solar photovoltaic energy systems.....	6
3.1 Solar photovoltaic cells and modules	6
3.2 Solar photovoltaic systems components.....	19
3.3 Solar photovoltaic systems	26
3.4 Solar photovoltaic system and component performance parameters	38
3.5 Measurement devices	58
3.6 Environmental parameters	60
3.7 Quality and testing.....	69
3.8 Concentrator photovoltaics	74
3.9 Project management.....	76
3.10 Miscellaneous	77
4 Acronyms and abbreviations.....	78
Bibliography.....	80
Index of terms and symbols	82

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SOLAR PHOTOVOLTAIC ENERGY SYSTEMS –
TERMS, DEFINITIONS AND SYMBOLS**

FOREWORD

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- the subject is still under technical development or where, for any other reason, there is the future but no immediate possibility of an agreement on an International Standard.

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

IEC 61836, which is a technical specification, has been prepared by IEC technical committee 82: Solar photovoltaic energy systems.

This third edition cancels and replaces the second edition published in 2007. This edition constitutes a technical revision.

The main technical change with regard to the previous edition consists of adding / revising terms and definitions which have been discussed and agreed on during recent TC 82 WG 1 meetings, more particularly at the WG 1 meeting in Pretoria in 2015-11.

The changes made in this new edition were kept limited deliberately, in order to avoid a long development process and get the newest terms and definitions published as promptly as possible, so that they can be used in the market place.

The text of this technical specification is based on the following documents:

Enquiry draft	Report on voting
82/1117/DTS	82/1176/RVC

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.

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

- transformed into an International standard,
- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual edition of this document may be issued at a later date.

INTRODUCTION

Following the development of solar photovoltaic (PV) technology, specific Standards have been prepared by IEC Technical Committee 82 since 1987. The terms and symbols used in the PV industry necessitate a systematisation in order to have a consolidated glossary for experts' common understanding.

This Glossary lists the terms and symbols that the PV industry commonly uses. It is a living document that will change as new terms and symbols are added. These have been harmonized with IEC 60050 and other IEC documents as far as possible. All definitions not included in this Technical Specification may be found elsewhere in other IEC documents.

NOTE 1 The terms "PV", "photovoltaic" and "solar photovoltaic" can be read and used interchangeably and without the need for stating each term to show that each is applicable and commonly used by the solar photovoltaic industry.

NOTE 2 All terms beginning with "solar photovoltaic" and "PV" are listed under their respective "photovoltaic" names.

NOTE 3 The terms are listed alphabetically in ten categories. Under these categories, some of the terms have been grouped into families of related meaning in order for the reader to readily see the differences between the terms.

NOTE 4 This Glossary lists the precise usage of terms. Cross-references are provided to efficiently point the reader to the location of definitions. For example, a "solar photovoltaic array" may also be referred to as "photovoltaic array" or "array" when the reference to it is particularly clear. The definition for this term, for example, occurs under the family heading of "photovoltaic" in the "Solar photovoltaic systems" section.

NOTE 5 The colloquial use of "solar" as the sole adjective of a noun is discouraged. For example, though "solar array" may be commonly used in non-technical conversations, the precise terms are "solar photovoltaic array", "photovoltaic array", and "array".

NOTE 6 Unless specifically noted otherwise, the terms "device", "cell", "module", "array", "sub-array", "field", "component", "system", and "product" refer to items incorporating a photovoltaic device. As a result, each of these terms can be understood to read as "PV device", "PV cell", "PV module", etc., without having to re-state the term "PV" each time, though now and then it is useful to re-state "PV".

NOTE 7 The numeric quantities described by many of the terms can be expressed in any convenient unit of time that the user may wish, such as day, month or year.

NOTE 8 " W_p " is not a recommended unit for rated power. For example for a 50 W module, the correct terminology is "the rated power is 50 W", and not "the power is 50 W_p ".

NOTE 9 The documents from which these terms originated are shown in square brackets []. Some adaptations may have occurred.

NOTE 10 This Glossary document recognises the related IEC co-ordinating Technical Committees:

1 Terminology	77 Electromagnetic compatibility
21 Secondary cells and batteries	82 Solar photovoltaic energy systems
22 Power electronic systems and equipment	88 Wind energy generation systems
47 Semiconductor devices	105 Fuel cell technologies
64 Electrical installations and protection against electric shock	106 Methods for the assessment of electric, magnetic and electromagnetic fields associated with human exposure

SOLAR PHOTOVOLTAIC ENERGY SYSTEMS – TERMS, DEFINITIONS AND SYMBOLS

1 Scope

This Technical Specification deals with the terms, definitions and symbols from national and international solar photovoltaic standards and relevant documents used within the field of solar photovoltaic (PV) energy systems. It includes the terms, definitions and symbols compiled from the published IEC technical committee 82 standards.

The focus of this document is "what do the words mean" and not "under what conditions do the terms apply".

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 60904-3:2016, *Photovoltaic devices – Part 3: Measurement principles for terrestrial photovoltaic (PV) solar devices with reference spectral irradiance data*

3 Terms, definitions and symbols for solar photovoltaic energy systems

3.1 Solar photovoltaic cells and modules

This subclause addresses vocabulary pertaining to photovoltaic materials, photovoltaic cells and photovoltaic modules. Other photovoltaic components are described in 3.2. Photovoltaic systems are described in 3.3.

3.1.1

amorphous photovoltaic material

solid-state material in a semi-stable condition with no long-range order in the structural arrangement of the atoms

3.1.2

amorphous silicon

SEE: "silicon/amorphous", 3.1.67.1

3.1.3

anti-reflective coating

layer formed on the surface of a PV cell to reduce reflective loss

3.1.4 Area

3.1.4.1

active cell area

part of the total cell area designed to receive solar radiation for creating the photovoltaic effect

Note 1 to entry: Active cell area equals the total cell area minus the area contribution of the metallisation lines if any.