भारतीय मानक
Indian Standard

IS 16662 (Part 1) : 2017
IEC 62670-1 : 2013

प्रकाशवोल्टीय कंसन्ट्रेटर्स (सी पी वी) — कार्यकारिता परीक्षण

भाग 1 मानक अवस्थाएँ

Photovoltaic Concentrators (CPV) — Performance Testing

Part 1 Standard Conditions

ICS 27.160

भारतीय मानक ब्यूरो
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Solar Photovoltaic Energy Systems Sectional Committee, ETD 28

NATIONAL FOREWORD

This Indian Standard (Part 1) which is identical with IEC 62670-1 : 2013 'Photovoltaic concentrators (CPV) — Performance testing — Part 1: Standard conditions' issued by the International Electrotechnical Commission (IEC) was adopted by the Bureau of Indian Standards, on the recommendation of the Solar Photovoltaic Energy Systems Sectional Committee and approval of the Electrotechnical Division Council.

The text of IEC Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.

b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, references appear to certain International Standards for which Indian Standards also exist. The corresponding Indian Standard which is to be substituted in its respective place is listed below along with its degree of equivalence for the edition indicated:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
IEC 60904-3 Photovoltaic devices — Part 3: Measurement principles for terrestrial photovoltaic (PV) solar devices with reference spectral irradiance data	IS 12762 (Part 3) : 2013 Photovoltaic devices: Part 3 Measurement principles for terrestrial photovoltaic (PV) solar devices with reference spectral irradiance data (first revision)	Identical with IEC 60904-3 : 2008

Only the English language text of the International Standard has been retained while adopting it as an Indian Standard, and as such the page numbers given here are not the same as in IEC Standard.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

PHOTOVOLTAIC CONCENTRATORS (CPV) — PERFORMANCE TESTING

PART 1 STANDARD CONDITIONS

1 Scope

This part of IEC 62670 defines standard conditions for assessing the power produced by CPV systems and their photovoltaic subcomponents. The object of this part of IEC 62670 is to define a consistent set of conditions so that power ratings noted on data sheets and nameplates will have a standard basis. Two sets of conditions are included to characterize:

a) operating conditions that represent on-sun performance relative to commonly measured meteorological conditions, and

b) test conditions that represent performance when the module is in a readily reproducible environment.

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*

3 Standard conditions

Any power rating shall indicate the standard conditions used.

a) CSOC (concentrator standard operating conditions)
   - Irradiance: 900 $W \cdot m^{-2}$ direct normal irradiance.
   - Temperature: 20 °C ambient temperature.
   - Wind speed: 2 $m \cdot s^{-1}$.
   - Spectrum: Direct normal AM1.5 spectral irradiance distribution consistent with conditions described in IEC 60904-3.

b) CSTC (concentrator standard test conditions)
   - Irradiance: 1 000 $W \cdot m^{-2}$ direct normal irradiance.
   - Temperature: 25 °C cell temperature.
   - Spectrum: Direct normal AM1.5 spectral irradiance distribution consistent with conditions described in IEC 60904-3.

DNI (direct normal irradiance) is to be corrected for angle of incidence for devices using single-axis tracking.

Bureau of Indian Standards

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Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards: Monthly Additions'.

This Indian Standard has been developed from Doc No.: ETD 28 (6757).

Amendments Issued Since Publication

Amendment No.	Date of Issue	Text Affected

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