SVENSK STANDARD

SS-EN IEC 62108, utg 3:2022

2022-10-19

REDLINE VERSION

Solceller – Konstruktions- och typgodkännande av solcellsmoduler och enheter med koncentrator (CPV)

Concentrator photovoltaic (CPV) modules and assemblies – Design qualification and type approval

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IEC 62108

Edition 3.0 2022-06
REDLINE VERSION

INTERNATIONAL STANDARD

colour inside

Concentrator photovoltaic (CPV) modules and assemblies – Design qualification and type approval

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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CONCENTRATOR PHOTOVOLTAIC (CPV) MODULES AND ASSEMBLIES – DESIGN QUALIFICATION AND TYPE APPROVAL

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 62108:2016. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

IEC 62108 has been prepared by IEC technical committee 82: Solar photovoltaic energy systems. It is an International Standard.

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This edition includes the following significant technical changes with respect to the previous edition:

a) Changes in the procedure of the thermal cycling test for the active cooling module.

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82/2024/FDIS	82/2046/RVD

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CONCENTRATOR PHOTOVOLTAIC (CPV) MODULES AND ASSEMBLIES – DESIGN QUALIFICATION AND TYPE APPROVAL

1 Scope ~~and object~~

This document specifies the minimum requirements for the design qualification and type approval of concentrator photovoltaic (CPV) modules and assemblies suitable for long-term operation in general open-air climates as defined in IEC 60721-2-1. The test sequence is partially based on that specified in IEC 61215-1 for the design qualification and type approval of flat-plate terrestrial crystalline silicon PV modules. However, some changes have been made to account for the special features of CPV receivers and modules, particularly with regard to the separation of on-site and in-lab tests, effects of tracking alignment, high current density, and rapid temperature changes, which have resulted in the formulation of some new test procedures or new requirements.

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This document ~~shall be~~ is used in conjunction with the retest guidelines described in Annex B.

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~~IEC 60068-2-21:2006, *Environmental testing – Part 2-21: Tests – Test U: Robustness of terminations and integral mounting devices*~~

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

IEC 60664-1:2020, *Insulation coordination for equipment within low-voltage supply systems – Part 1: Principles, requirements and tests*

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IEC 61215-2:~~2016~~2021, *Terrestrial photovoltaic (PV) modules – Design qualification and type approval – Part 2: Test procedures*

IEC TS 61836:2016, *Solar photovoltaic energy systems – Terms, definitions and symbols*

IEC 61853-1:2011, *Photovoltaic (PV) module performance testing and energy rating – Part 1: Irradiance and temperature performance measurements and power rating*

IEC 61853-2:2016, *Photovoltaic (PV) module performance testing and energy rating – Part 2: Spectral responsivity, incidence angle and module operating temperature measurements*

IEC 61853-3:2018, *Photovoltaic (PV) module performance testing and energy rating – Part 3: Energy rating of PV modules*

IEC 62670-1, *Photovoltaic concentrators (CPV) – Performance testing – Part 1: Standard conditions*

IEC 62670-3:2017, *Photovoltaic concentrators (CPV) – Performance testing – Part 3: Performance measurements and power rating*

IEC 62790:2020, *Junction boxes for photovoltaic modules – Safety requirements and tests*

IEC 62852:2014, *Connectors for DC-application in photovoltaic systems – Safety requirements and tests*
IEC 62852:2014/AMD1:2020

~~ANSI/UL 1703:2002, *Standard for Safety: Flat-Plate Photovoltaic Modules and Panels*~~

SVENSK STANDARD

SS-EN IEC 62108, utg 3:2022

Fastställd	Sida	Ansvarig kommitté
2022-10-19	1 (1+53)	SEK TK 82

Solceller – Konstruktions- och typgodkännande av solcellsmoduler och enheter med koncentrator (CPV)

Concentrator photovoltaic (CPV) modules and assemblies – Design qualification and type approval

Som svensk standard gäller europastandarden EN IEC 62108:2022. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 62108:2022.

Nationellt förord

Europastandarden EN IEC 62108:2022

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 62108, Third edition, 2022 - Concentrator photovoltaic (CPV) modules and assemblies - Design qualification and type approval**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 62108, utg 2:2017, gäller ej fr o m 2025-07-07.

ICS 27.160.00

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EUROPEAN STANDARD

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EUROPÄISCHE NORM

EN IEC 62108

July 2022

ICS 27.160

Supersedes EN 62108:2016

English Version

Concentrator photovoltaic (CPV) modules and assemblies - Design qualification and type approval (IEC 62108:2022)

Modules et ensembles photovoltaïques à concentration - Qualification de la conception et homologation (IEC 62108:2022)

Konzentrator-Photovoltaik(CPV)-Module und -Anordnungen - Bauarteignung und Bauartzulassung (IEC 62108:2022)

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Comité Européen de Normalisation Electrotechnique
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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN IEC 62108:2022 E

SEK Svensk Elstandard

SS-EN IEC 62108, utg 3:2022

European foreword

The text of document 82/2024/FDIS, future edition 3 of IEC 62108, prepared by IEC/TC 82 "Solar photovoltaic energy systems" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62108:2022.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2023-04-07
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2025-07-07

This document supersedes EN 62108:2016 and all of its amendments and corrigenda (if any).

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The text of the International Standard IEC 62108:2022 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60529	-	Degrees of protection provided by enclosures (IP Code)	-	-
IEC 60664-1	2020	Insulation coordination for equipment within low-voltage supply systems - Part 1: Principles, requirements and tests	EN IEC 60664-1	2020
IEC 60721-2-1	-	Classification of environmental conditions - Part 2-1: Environmental conditions appearing in nature - Temperature and humidity	EN 60721-2-1	-
IEC 60904-1	2020	Photovoltaic devices - Part 1: Measurement of photovoltaic current-voltage characteristics	EN IEC 60904-1	2020
IEC 60904-1-1	2017	Photovoltaic devices - Part 1-1: Measurement of current-voltage characteristics of multi-junction photovoltaic (PV) devices	EN 60904-1-1	2017
IEC/TS 60904-1-2	2019	Photovoltaic devices - Part 1-2: Measurement of current-voltage characteristics of bifacial photovoltaic (PV) devices	-	-
IEC 60904-2	2015	Photovoltaic devices - Part 2: Requirements for photovoltaic reference devices	EN 60904-2	2015
IEC 60904-3	2019	Photovoltaic devices - Part 3: Measurement principles for terrestrial photovoltaic (PV) solar devices with reference spectral irradiance data	EN IEC 60904-3	2019
IEC 60904-4	2019	Photovoltaic devices - Part 4: Reference solar devices - Procedures for establishing calibration traceability	EN IEC 60904-4	2019
IEC 60904-5	2011	Photovoltaic devices - Part 5: Determination of the equivalent cell temperature (ECT) of photovoltaic (PV) devices by the open-circuit voltage method	EN 60904-5	2011

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IEC 61210 (mod)	2010	Connecting devices - Flat quick-connect terminations for electrical copper conductors - Safety requirements	EN 61210	2010
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IEC 62670-3	2017	Photovoltaic concentrators (CPV) - Performance testing – Part 3: Performance measurements and power rating	EN 62670-3	2017
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+ A1	2020		+ A1	2020
-	-		+ AC	2019-02

IEC 62108

Edition 3.0 2022-06

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Concentrator photovoltaic (CPV) modules and assemblies – Design qualification and type approval

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IEC 61215-1:2021, *Terrestrial photovoltaic (PV) modules – Design qualification and type approval – Part 1: Test requirements*

IEC 61215-2:2021, *Terrestrial photovoltaic (PV) modules – Design qualification and type approval – Part 2: Test procedures*

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