

Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-PL-11140-33-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 20.06.2022

Date of issue: 20.06.2022

Holder of accreditation certificate:

Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V.

With its testing laboratory:

**Fraunhofer-Institut für Solare Energiesysteme (ISE)
TestLab PV Modules (TLPV), CaLab PV Modules
Heidenhofstraße 2, 79110 Freiburg**

The testing laboratory meets the minimal requirements of DIN EN ISO/IEC 17025:2018 and, if applicable, additional legal and normative requirements, including those in relevant sectoral schemes, in order to carry out the conformity assessment activities listed below.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and confirm generally with the principles of DIN EN ISO 9001.

Tests in the fields:

Performance test of photovoltaic modules

Within the scope of accreditation marked with *, the testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, to use standards or equivalent testing methods listed here with different issue dates.

The testing laboratory maintains a current list of all testing procedures within the flexible scope of accreditation.

This certificate annex is only valid together with the written accreditation certificate and reflects the status as indicated by the date of issue. The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH at <https://www.dakks.de>.

Abbreviations used: see last page

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This document is a translation. The definitive version is the original German annex to the accreditation certificate.

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IEC 60891 2021-10	Photovoltaic devices - Procedures for temperature and irradiance corrections to measured I-V characteristics
IEC 60904-1 2020-09	Photovoltaic devices - Part 1: Measurement of photovoltaic current-voltage characteristics
IEC TS 60904-1-2 2019-01	Photovoltaic devices - Part 1-2: Measurement of current-voltage characteristics of bifacial photovoltaic (PV) devices
IEC 60904-8 2014-05	Photovoltaic devices - Part 8: Measurement of spectral responsivity of a photovoltaic (PV) device
IEC 61215 2005-04	Crystalline silicon terrestrial photovoltaic (PV) modules - Design qualification and type approval <i>(standard withdrawn)</i>
IEC 61215-1 2021-02 + Corrigendum 1 2021-05	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1: Test requirements
IEC 61215-1-1 2021-02	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1-1: Special requirements for testing of crystalline silicon photovoltaic (PV) modules
IEC 61215-1-2 2021-02	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1-2: Special requirements for testing of thin-film Cadmium Telluride (CdTe) based photovoltaic (PV) modules
IEC 61215-1-3 2021-02	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1-3: Special requirements for testing of thin-film amorphous silicon based photovoltaic (PV) modules
IEC 61215-1-4 2021-02	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1-4: Special requirements for testing of thin-film Cu(In, Ga)(S, Se) ₂ based (PV) modules
IEC 61215-2 2021-02	Terrestrial photovoltaic modules - Design qualification and type approval - Part 2: Test procedures

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IEC 61646 2008-05	Thin-film terrestrial photovoltaic (PV) modules - Design qualification and type approval <i>(standard withdrawn)</i>
IEC 61730-1 2016-08	Photovoltaic (PV) module safety qualification - Part 1: Requirements for construction
IEC 61730-2 2016-08	Photovoltaic (PV) module safety qualification - Part 2: Requirements for testing <i>(without MST 23, MST 24)</i>
IEC 61853-1 2011-01	Photovoltaic (PV) module performance testing and energy rating - Part 1: Irradiance and temperature performance measurements and power rating
IEC TS 62782 2016-03	Photovoltaic (PV) modules - Cyclic (dynamic) mechanical load testing
IEC TS 62804-1 2015-08	Photovoltaic (PV) modules - Test methods for the detection of potential-induced degradation - Part 1: Crystalline silicon
UL 61215-1 2021-07	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1: Test requirements
UL 61215-1-1 2021-07	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1-1: Special requirements for testing of crystalline silicon photovoltaic (PV) modules
UL 61215-1-2 2021-07	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1-2: Special requirements for testing of thin-film Cadmium Telluride (CdTe) based photovoltaic (PV) modules
UL 61215-1-3 2021-07	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1-3: Special requirements for testing of thin-film amorphous silicon based photovoltaic (PV) modules
UL 61215-1-4 2021-07	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1-4: Special requirements for testing of thin-film Cu(In, Ga)(S, Se) ₂ based (PV) modules

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UL 61215-2 2021-07	Terrestrial photovoltaic modules - Design qualification and type approval - Part 2: Test procedures
UL 61730-1 2017-12	Photovoltaic (PV) module safety qualification - Part 1: Requirements for construction
UL 61730-2 2017-12	Photovoltaic (PV) module safety qualification - Part 2: Requirements for testing <i>(without MST 23, MST 24)</i>

Abbreviations used:

DIN	Deutsches Institut für Normung e.V. – German institute for standardization
NDS	In house method of the CAB