

# SoliTek Standard Photovoltaic module (PV) Documentation and Installation Manual

## SoliTek Standard Photovoltaic Modules

**Please read carefully the following product documentation and safety instructions.**

**Non-compliance with these instructions may void the module warranty.**

### 1. Purpose of this documentation

This guide contains basic information regarding JSC “Soli Tek Cells” standard photovoltaic modules, their installation and safe handling. All instructions should be read and understood before attempting installation. If there are any questions, please contact your dealer or JSC “Soli Tek Cells” for further information.

This documentation refers to the PV-modules themselves and is not meant to be a complete installation manual for personnel not specifically trained to PV-modules. It serves as a general but strictly mandatory to the Installer reference. Infringement or inaccurate observance of any clause of this documentation voids the warranty.

Generally, the installer must conform to all safety precautions in this documentation, as well as the applicable national codes and standards when installing PV-modules. Before installing a solar photovoltaic system, the installer should become familiar with the mechanical and electrical requirements for photovoltaic systems. Keep this documentation in a safe place for future reference.

### 2. System components (modules and mounting system; standard scope of delivery)

- SoliTek Standard photovoltaic modules (type designation Standard xxxW P(M).60, where xxx stands for nominal power values up to 300 Wp), IEC 61215ed. 2 and IEC61730 certified framed glass/foil laminates with crystalline solar cells, permanently attached junction box, and double insulated 4mm<sup>2</sup> wires terminated in touch safe specific PV DC-connectors.
- The mounting system does not form part of JSC “Soli Tek Cells” supply.

### 3. General safety relevant aspects

**Do not attempt to disassemble the module, and do not remove any attached nameplates or components. Doing so will void the warranty.**

- The modules are qualified for application class A: Hazardous voltage (IEC 61730: higher than 50V DC; EN 61730: higher than 120V), hazardous power applications (higher than 240W) where general contact access is anticipated.











## 6. Lightning protection

- For safe operation of PV modules proper lightning protection equipment has to be installed.
- Lightning protection has to be achieved by passive Franklin grounding rods installed in a location of solar power plant.
- Please make sure that lightning sphere will not reach PV modules, mounting system, inverters or other parts. Radius of sphere has to be selected according to local regulations, Eurocodes or other legal normative references.
- Lightning protection equipment has to be directly connected to grounding structure. Grounding resistance of grounding structure shall be reached according to local regulations, Eurocodes or other legal normative references.

## 7. Maintenance

JSC “Soli Tek Cells” recommends the following maintenance items to ensure optimum performance of the module:

- Clean the glass surface of the modules as necessary. Use water and a soft sponge or cloth for cleaning. A mild, non-abrasive cleaning agent can be used if necessary. Do not use dishwasher detergent.
- Electrical and mechanical connections and the general condition of an installed PV-system should be checked periodically by qualified personnel to verify that they are clean, secure and undamaged.
- Eventually occurring problems must only be investigated by qualified personnel.
- Observe also the maintenance instructions for all other components used in the system.

## 8. Shutting down the system

- Disconnect system from all power sources in accordance with instructions for all other components used in the system.
- The PV-DC-connectors must never be disconnected under load! Use switches designed for being disconnected under the prevailing DC-load or stick to the first rule of chapter 3.2.
- The system should now be out of operation and can be dismantled. In doing so, observe all safety instructions as applicable to installation.

## 9. Typical electrical ratings of the concerned modules:

Parameters	Standard 285W P.60	Standard 300W M.60
Maximum Power at STC ( $P_{MPP}$ )	285 W <sub>p</sub>	300 W <sub>p</sub>
Maximum power at NMOT ( $P_{MPP}$ )	213.65 W	-
Maximum power point voltage at STC ( $V_{MPP}$ )	32.94 V	32.15 V
Maximum power point voltage at NMOT ( $V_{MPP}$ )	30.39 V	-
Maximum power point current at STC ( $I_{MPP}$ )	8.73 A	9.35 A
Maximum power point current at NMOT ( $I_{MPP}$ )	7.03 A	-
Open Circuit voltage at STC ( $V_{OC}$ )	39.24 V	39.45 V

Open Circuit voltage at NMOT ( $V_{oc}$ )	36.99 V	-
Short Circuit current at STC ( $I_{sc}$ )	9.26 A	9.9 A
Short Circuit current at NMOT( $I_{sc}$ )	7,6 A	-
Maximum System Voltage	1'000 V	1'000 V
Fire Class (IEC 61730)	C	C
NMOT, °C	41,19	-
Maximum reverse current	12 A	12 A
Current temperature coefficient $\alpha$ [%/°C]	0,03	-
Voltage temperature coefficient $\beta$ [%/°C]	-0,22	-
Power temperature coefficient $\delta$ [%/°C]	-0,32	-
Low irradiance (200 w/m <sup>2</sup> ) power, W	53,11	-

The electrical characteristics are within  $\pm 5\%$  of the indicated values of ISC, VOC, and PMPP under Standard Test Conditions (irradiance of 1000 W/m<sup>2</sup>, AM 1.5 spectrum, and a cell temperature of 25°C / 77°F).

## 10. Disclaimer of liability

Because the use of this documentation and the conditions or methods of installation, operation, use and maintenance of photovoltaic products are beyond JSC "Soli Tek Cells" control, JSC "Soli Tek Cells" does not accept responsibility and expressly disclaims liability for loss, damage, or expense arising out of or in any way connected with such installation, operation, use or maintenance. No responsibility is assumed by JSC "Soli Tek Cells" for any infringement of patents or other rights of third parties, which may result from use of the PV product. No license is granted by implication or otherwise under any patent or patent rights.

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Please consult your dealer or the manufacturer concerning the warranty of your modules. If you have any further questions, your dealer will gladly assist you.