



Installation and User Manual

SUNTELLITE Solar Photovoltaic Modules

Manufacturer: Hangzhou Zhejiang University Sunny Energy Science and Technology Co., Ltd

Headquarter:

Address: Room 411, A building, West area, No. 525 Xixi Road, Hangzhou City, 310013, China

Tel: +86 (0)571 89719569 Fax: +86 (0)571 87985981

Production Plant:

Address1: No. 288, North Gonghe Road, Industrial Park, Xindeng Town, Fuyang City, Zhejiang Province, China

Address 2: Shizhu Road, Economic Development Area, Tonglu City, Zhejiang Province, 311404, China

Tel: +86(0)571 63218980 Fax: +86(0)571 63256337

PLEASE READ THIS MANUAL CAREFULLY

BEFORE INSTALLING OR USING THE MODULES.

Introduction

Thank you for choosing a SUNTELLITE solar photovoltaic (PV) module. SUNTELLITE is the brand of “Hangzhou Zhejiang University Sunny Energy Science and Technology Co., Ltd”.

Please familiarize yourselves with this manual before beginning to install the PV modules. This manual also contains safety information you need to be familiar with. Failure to follow these instructions may cause bodily injury or damage to property. Working on a photovoltaic system requires specialized knowledge and should only be operated by qualified professionals.

This manual does not constitute a warranty, expressed or implied. SUNTELLITE does not assume responsibility and expressly disclaims liability for loss, damage, or expense arising out of or in any way connected with installation, operation, use of maintenance of PV modules.

No responsibility is assumed by SUNTELLITE for any infringement of patents or other rights of third parties that may result from use of PV modules.

SUNTELLITE reserves the right to make changes to the product, specifications or installation manual without prior notice.

1.1 General Safety

- SUNTELLITE modules are designed to meet the requirements for IEC 61730-2, application class A. Description of application class A: modules rated for use in this application class may be used in systems operating at greater than 50 VDC or 240W, where general contact access is anticipated. Modules qualified for safety under IEC 61730-2 and within this application class are considered to meet the requirements for Safety Class II.
- SUNTELLITE modules shall be mounted on appropriate mounting structures. These can be situated on the ground but also on building roofs.
- Artificially concentrated light must not be directed on SUNTELLITE modules.
- SUNTELLITE modules must not become submerged in water.
- Please note that the bypass diodes in the junction boxes do not help avoid any over current that might damage the modules. Therefore, please use appropriately sized over current protection devices for the series connection.
- Should a problem occur, turn off inverters and circuit breakers immediately.
- Only use equipment, connectors, wiring and support frames suitable for solar electric systems.
- Installing solar photovoltaic systems requires specialized skills and knowledge. Installation should only be performed by qualified persons.

1.2 Handling safety

- Do not stand or step on the PV module.
- Do not lift the module by grasping the module’s junction box or electrical wires.
- Do not drop the module or place any heavy objects on the glass or back sheet. PV cells may

break.

- Do not drill holes in the frame. Do not scratch the anodized coating of the frame (except for grounding connection). These may compromise the frame strength and cause corrosion of the frame.
- Do not disassemble or modify SUNTELLITE modules in order to remain safe. Doing so will void the warranty.
- Use personal protection. Work only under dry conditions.

1.3 Installation safety

- Do not perform any work if the terminals of the PV modules are wet.
- Do not install PV modules in the rain, snow or windy conditions.
- Do not wear metallic objects during installation.
- Check the PV modules before installation. Defect modules must not be installed.
- Do not unplug a connector if the system circuit is connected to an operating load.
- Do not touch the PV module unnecessarily during installation. The glass surface may be hot; there's a risk of burns and electric shock.
- Avoid exposing cables to direct sunlight.
- Keep unauthorized people away from the installation site.
- Avoid exposing cables to direct sunlight in order to prevent their degradation.
- Completely cover the module with an opaque material during installation to prevent electricity from being generated.
- Follow the safety regulations for all other system components including wires, cables, connectors, charging regulators, inverters and storage batteries etc.

1.4 Climate Condition

- Install the SUNTELLITE modules in the following conditions:
 - Ambient temperature: -20°C to +40°C
 - Operating temperature: -40°C to +85°C
 - Storage temperature: -40°C to +40°C
 - Humidity: below 85RH%
 - Wind pressure: below 2400Pa
 - Snow Load Pressure: below 5400Pa (Be suitable for SUNTELLITE modules with 45mm or more than 45mm thick frame)

1.5 Site selection

- Select a suitable location for installing the PV modules.
- Install the PV facing south in northern hemisphere and north in southern hemisphere.
- Install the PV modules as free as possible from shading.
- Do not install the SUNTELLITE module near naked flame or flammable materials.
- Do not install the SUNTELLITE module in a location where it would be immersed in water or continually exposed to water from a sprinkler or fountain etc.

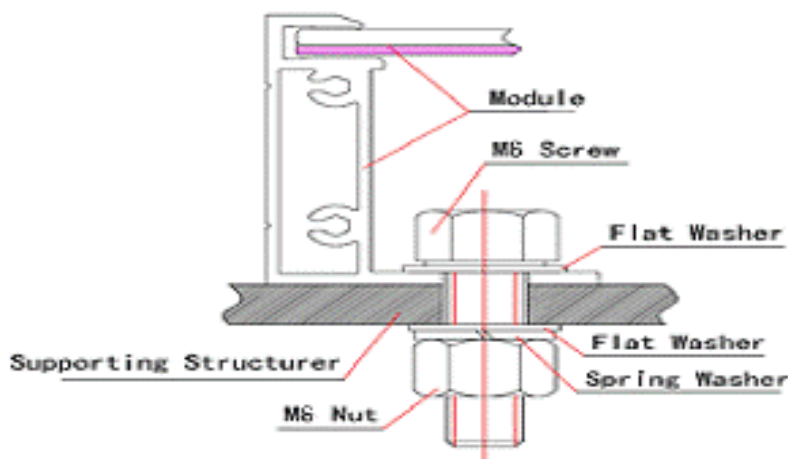
1.6 Tilt Angle Selection

- SUNTELLITE modules produce the most power when the sunlight strikes the module perpendicular to the module surface. To avoid performance losses in series circuits, ensure that all modules have the same tilt and orientation. For detailed information of the best installation angle, refer to standard solar photovoltaic installation guides or consult your solar professional.

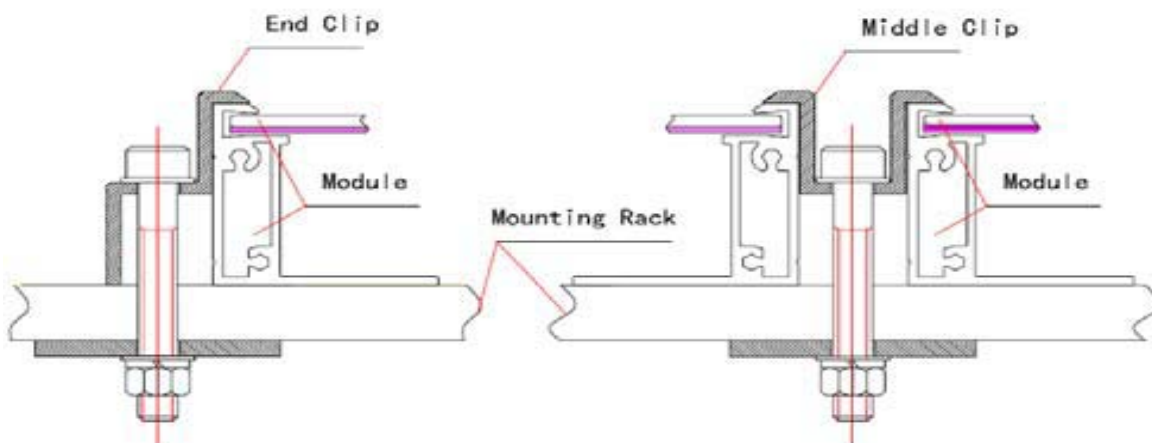
1.7 Mechanical Installation

- Mounting structures and other mechanical parts must be designed and approved for the maximum applicable loads from snow and wind. Make sure the PV system is not subjected to mechanical loads beyond the specified load.
- Use appropriate methods to mount PV modules. Modules falling down from high places will cause injury, damage or even death.
- SUNTELLITE modules can be installed in both landscape and portrait orientation.
- SUNTELLITE modules shall not be subjected to forces from the substructure. Keep in mind thermal expansions.
- SUNTELLITE modules can be installed using either mounting holes, clamps or an insertion system.

a) Installed with mounting holes



b) Installed with mounting holes



NOTES:

- (1) The module clamps must not come into contact with the front glass and must not deform the frame. Avoid shadowing effects from the module clamps.

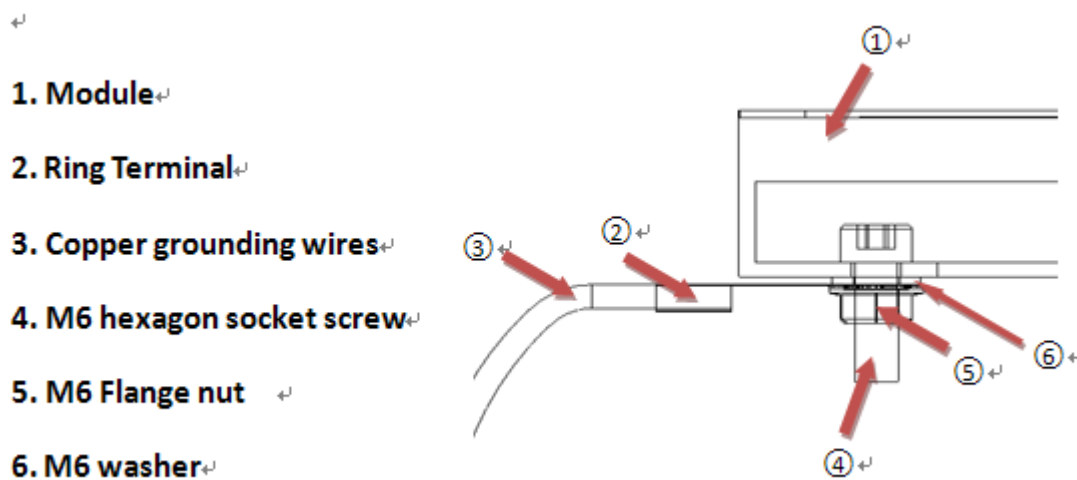
1.8 Electrical Installation

- Do not connect PV modules of different configurations and electrical characteristics in series.
- SUNTELLITE module junction boxes must not be opened. Doing so will void the warranty.
- SUNTELLITE modules come pre-wired and terminated ready for most installations. Each module has two stranded sunlight resistant output cables each terminated with connectors.

1.9 GROUNDING

- All module frames and mounting structures must be properly grounded in accordance with the National Electrical Code (NEC).
- Proper grounding is achieved by connecting the module frame and structural members continuously one to another using a suitable copper grounding conductor. The grounding conductor must make a connection to earth using a suitable earth ground electrode.

Attach a separate conductor to one of the grounding holes with a M6 hexagon socket screw and nut that incorporates an external M6 washer. This is to ensure positive electrical contact with the frame.



The rack must also be grounded unless they are mechanically connected by nuts and bolts to the grounded SPV Modules. The array frame shall be grounded in accordance with NEC

2.0 Maintenance

- SUNTELLITE PV modules are designed for long life use and require very little maintenance. Under most weather conditions, normal rainfall is sufficient to keep the module glass surface clean. If dirt build-up becomes excessive, clean the glass only with a soft cloth using mild detergent and water. Do not use high pressure spray or chemicals to clean the modules. If

cleaning the back of the module is required, take utmost care not to damage the back side materials.

- SUNTELLITE module that are flat mounted (0° tilt angle) should be cleaned more often, as they will not “self clean” as effectively as modules mounted as a 15° tilt or greater.
- Check the tightness of terminal screws and the general condition of the wiring every six months. Check to be sure that mounting hardware is tight also. Loose connections will result in damage for array.
- Changed SUNTELLITE module must be the same kind and type.
- Do not touch live parts of cables and connectors. Use appropriate safety equipment (insulated tools, gloves etc.) when touching them.
- Cover the front surface of the SUNTELLITE module by an opaque or other material when repairing. The modules can generate high voltage and are dangerous when exposed to sunlight.