

Mounting systems for solar technology



ASSEMBLY INSTRUCTIONS
S-DOME SYSTEM

USA

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ENGINEERING STRENGTH IS AT OUR CORE

With sophisticated product innovations and a deep customer focus, Everest Solar is the engineering leader for all your mounting system needs. We are the US division of K2 Systems, one of Europe's market leaders with more than 3 GW installed.

We offer proven product solutions and innovative designs. Wind tunnel testing along with advanced structural and electrical validation that should facilitate permitting, design and installation. Our designs result in cost competitive racking systems with dedicated support that will position you to win more projects.

We partner with our customers and suppliers for the long-term. High quality materials and cutting edge designs provide a durable, yet functional system. Our product line is comprised of a few, coordinated components that lower the cost of materials, and simplify installation, saving you time and money. All backed by German engineering, a long track record of quality, and a company that is here to stay.

Thank you for choosing Everest Solar mountings systems for your Solar PV Project.

GENERAL SAFETY INSTRUCTIONS

Everest Solar Systems' General Assembly Instructions must be followed to maintain the exclusive, limited product warranty.

You can access these instructions at Everest Technical Info Page

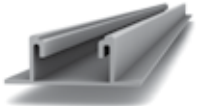
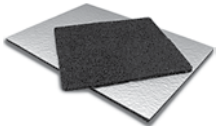
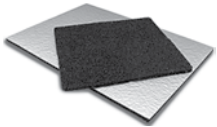





<http://www.everest-solarsystems.com/us/downloads/technical-information.html> or by contacting us directly.








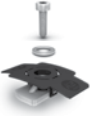
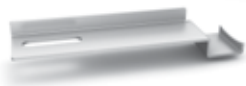

In general, the following applies:

- Systems should be installed by experienced contractors licensed and qualified to perform the work with professional workmanship and quality.
- Before installation, Contractor must verify that the system meets all applicable laws, regulations, ordinances, and codes. Contractor shall verify that the roof or other structures to which the system is being attached are capable of carrying the system loads. For information about the dead loads of the various system components, Contractor should review the Everest Technical information page at **<http://www.everest-solarsystems.com/us/downloads/technical-information.html>** or contact us directly
- Contractor is solely responsible for work safety and accident prevention regulations and corresponding standards and regulations of the applicable occupational safety and health agency are followed, including:
 - Safety clothing is worn such as safety helmets, work shoes, and gloves.
 - Where required, the contractor should use fall protection, scaffolding with arrestor equipment and other approved methods for worker safety
- Contractor shall verify that it is using the most current instructions by downloading the latest version from our website or contacting our office directly.
- Module manufacturer installation guides must be followed. Use approved electrical bonding and grounding components that are required by the local or national codes and AHJ.
- A copy of these instructions must be on site, and read and understood by all workers during installation
- In the event our general installation and assembly instructions are not followed, or that not all system components and assemblies are used according to these instructions, or that components are used which were not obtained from us, Everest Solar Systems is not liable for any resulting defects and damages, and the exclusive, limited warranty will be void.
- The exclusive, limited product warranty shall apply only if all instructions are strictly adhered to and the system is correctly installed. Everest Solar Systems disclaims any and all warranties, express or implied, including without limitation any warranties of merchantability and fitness for a particular purpose other than as set forth in the exclusive, limited warranty in the terms and conditions of sale, which can be viewed under on our website: **<http://www.everest-solarsystems.com/us/downloads/technical-information.html>**
- The dismantling of the system should be in reverse order of these assembly instructions.
- Everest components made of stainless steels are available in different corrosion resistance classes. In every case, the expected corrosion exposure of each structure or component must be checked.

REQUIRED MATERIALS

Below is a reference for the parts required to assemble the Everest XPressRail system. Exact quantities are based on your project requirements.

	XPressRail Material: Aluminum	1001163
	Building Protection Mat Material: PUR bound rubber granules with aluminum triplex foil, laminated and adhesive tape on top side.	2000230
	Building Protection Mat Material: PUR bound rubber granules, laminated with adhesive tape on top side, without aluminum triplex foil.	2000232
The particular use of a laminated or non-laminated building protection mat depends on the material of the roofing and must therefore be checked on site.		
	FlatConnector Set XPressRail Material: Aluminum	1006039
	Dome SD Width: 3.54 inch (90 mm) Material: Aluminum	1005842
	Dome S1000 Width: 3.54 inch (90 mm) Material: Aluminum	1005841
	Windbreaker Dome S1000 Length: 66.93 inch (1700 mm) Material: Aluminum	1005843
	Washer 8.4 x 30 x 1.5 mm Material: Stainless steel	1000273

	<p>Allen Bolt DIN 912 EN ISO 4762 M8</p> <p>Material: Stainless steel</p>	item number system-specific
	<p>Lock Washer DIN EN 10151</p> <p>Material: Stainless steel</p>	1000473
	<p>M K2 Slot Nut with clip</p> <p>Material: Stainless steel, Glass fibre reinforced polyamid</p>	1001643
	<p>Module End Clamp Set Standard</p> <p>Material: Aluminum</p>	item number system-specific
	<p>Module Middle Clamp Set Standard</p> <p>Material: Aluminum</p>	item number system-specific
	<p>Optional: Scale Ballast Tray S + D</p> <p>Material: Aluminum, Stainless Steel</p> <p>Scale ballast tray S + D (suits blocks 4x8x16)</p>	2000431
	<p>Optional: Porter for Ballasting</p> <p>L-Bracket for attachment of potentially required ballast</p> <p>Material: Aluminum</p>	2000081
	<p>Optional: Porter Attachment Hardware</p> <p>Material: Stainless Steel</p>	2000155
	<p>Optional: AnchorBracket for Anchoring</p> <p>Material: Stainless Steel</p>	2000437
	<p>Optional: OMG PowerGrip</p> <p>Fix with welding machine on the roof foil</p>	item number system-specific

AT A GLANCE: OVERVIEW OF THE TOOLS

Everest Solar Systems are designed to make installation easy and fast. The basic tools required to assemble the parts are listed below as a guide.



Torque Wrench

With attachment for HW 6



Measuring Tape



Cordless Screwdriver

With attachment for HW 6

Tools and materials for the installation of third party items such as roof attachment products, roof covering and sealing products or items used for bonding and grounding are not listed here. Please refer to the instructions of those third party products.

BONDING AND GROUNDING:

Appropriate means of bonding and grounding are required by regulation. Everest Solar Systems meets these requirements on the S-Dome system by incorporating the Everest Solar MK2 Slot Nut, Star Washer and the successfully tested Burndy WEEB KMC and WEEB Lug 6.7.

The Burndy WEEB KMC bonds the module to the S-Dome as displayed as “Y” on page 4 of the Burndy Manual for S-Dome. The windbreaker uses a Star Washer to bond to the S-Dome. All other Everest Solar components in the S-Dome system are bonded together using the MK2 Slot Nut including the S-Dome, SD-Dome and the Flat Connector to splice XPressRail. The MK2 is ETL listed to UL 467. As an alternative to the MK2, the WEEB KMC can be used to bond the Dome to the Rail as seen on page 3-4 of the Burndy Manual for S-Dome. The grounding of the rail is achieved using the Burndy WEEB Lug 6.7.

Please refer to the Burndy Installation Manual to review how the WEEB KMC and WEEB Lug 6.7 are to be used in conjunction with the Everest Solar S-Dome system. The installation instructions of all Everest Solar bonding components can be found in the Everest Solar S-Dome Installation Manual. The Burndy and Everest Solar S-Dome Installation Manuals are available on our website:

<http://www.everest-solarsystems.com/us/downloads/technical-information.html>

IN GENERAL:

- ↪ The General Installation Instructions must be adhered to.
These can be found at:
<http://www.everest-solarsystems.com/us/downloads/technical-information.html>
- ↪ If you need login details for our customer area, please contact us and we will send them to you.
- ↪ This system can be installed for all standard flat roofs with pressure-resistant substrates and a roof pitch of up to 5°. The elevation angle is 10°.
- ↪ It is recommended to place a separation layer between the roofing and the rail prior to laying the XPressRail to protect the roof. The rail is positioned directly on the separation layer without a roof penetration. The compatibility of the building protection mat with the particular roofing must be verified by the contractor or the design professional.
- ↪ Minimum distance to roof edge: 19.69 inch (500 mm).
- ↪ At least two rows of three consecutive modules must be mounted in order to use this system.
- ↪ The module distance according to the planning specifications of Everest Solar Systems must be adhered to.
- ↪ The Dome S1000 system is suitable for modules with a frame height of 1.18 - 1.97 inch (30 - 50 mm). This system is not suitable for thin-film modules.
- ↪ Modules with a length of 62.2 - 66.14 inch (1.58 to 1.68 m) and a width of 37.4 - 41.34 inch (950 - 1050 mm) can be used.
- ↪ After 52.5ft (16.0 m) and up to 60ft (18.3 m) rail length it is necessary to provide for a thermal separation of max. 6inch (15 cm) in both directions: north-south and east-west.
- ↪ For the installation of the S Dome S1000 systems, only standard end clamps may be mounted.
- ↪ Prior to the project, please verify that the module manufacturer has approved the use of the module with Everest Solar Systems S-Dome S100 Mounting system. The approved module list is available at <http://www.k2-systems.com/us/downloads/approved-module-list-dome-systems.html>.
- ↪ If required paving blocks can be inserted in the base plate of the Scale S and D-Dome Ballasting on the XPressRail. For higher ballast we recommend using the Porter.

INSTALLATION OF S-DOME SYSTEM: STEP BY STEP



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POSITION XPRESSRAIL

These assembly instructions only apply to flat roofs with a maximum roof pitch of 5°.

- In order to protect the roofing it is recommended to install a separation layer in the form of our Building Protection Mat between the roofing and the XpressRail prior to laying the rail on the roof membrane.

The Building Protection Mat is installed with the aluminum side facing downwards. For the use on asphalt roofs, use the Building Protection Mat without aluminum layer. The XpressRail is positioned directly on the separation layer without any roof penetrations. The parallel distance between the individual XpressRail's is defined by the dimensions of the modules. The recommended distance between two rails is equal to the module length plus 0.79 inch (20 mm).

When laying the Building Protection Mat, a separation between the mat sections of approx. 3.94 inch (10 cm), will allow water to pass and reduce accumulation.

Materials required: XpressRail, Building Protection Mat



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INSTALL RAIL CONNECTORS

Two XpressRail's are connected at the rail joint using a Flat Connector which joins the XpressRail together. To install the Flat Connector, insert 2 M K2 slot nuts in the rail and turn 90° clockwise to lock. Attach the FlatConnector with 2 M8 hexagon socket screws and one locking washer each. The connector should be between the Dome S and Dome SD.

The S-Dome can also be used to join 2 rails by positioning the S-Dome directly above the joint between the 2 Xpress-Rails.

Note: When joining the Rails with either the rail connector or S-Dome, the rails and connecting component are bonded as the MK2 has been listed as a UL467 bonding device in these configurations.

Torque 10.3 lbf-ft (14 Nm)

Materials required: FlatConnector Set



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FIT DOME S1000

Insert two MK 2 slot nuts in the rail and turn 90° clockwise until they lock. Thereafter, position the Dome S1000 on the rail and fasten with two M8 x 20 hexagon socket screws and S8 locking washers.

Torque: 11.8 lbf-ft (16 Nm)

Materials required: Dome S1000, M K2, hexagon socket screw M8 x 20, S8 locking washer



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FIT DOME SD

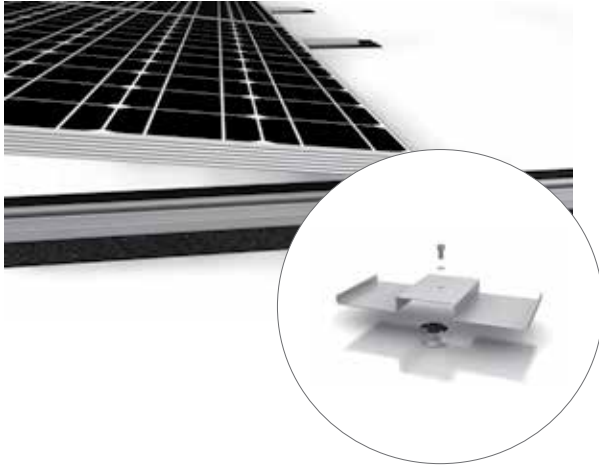
Insert one M K2 in the rail and turn 90° clockwise until it locks. Then position the Dome SD on to the rail and tighten lightly with an M8 x 20 hexagon socket screw and an S8 locking washer.

Align both SD Domes according to the adjacent figure. The distance between the components is approximately equal to the module width.

Torque: 11.8 lbf-ft (16 Nm)

Materials required: Dome SD, M K2, hexagon socket screw M8 x 20, S8 locking washer

BALLAST THE SYSTEM



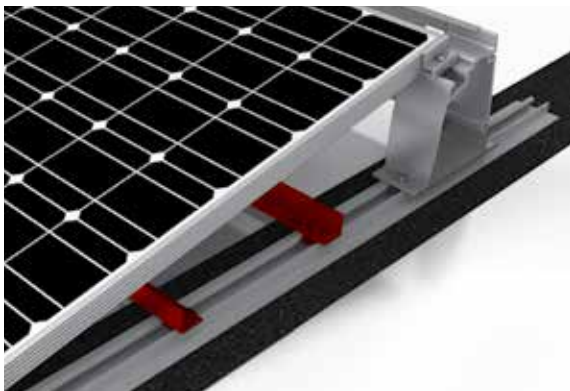
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OPTIONAL: SCALE

For some roof areas the system might need to be additionally ballasted against any wind suction that may occur. To do this, simply insert the Scale on to the XpressRail via the M K2, screws and locking washer. The Scale should be positioned between the S-Dome and the SD-Dome.

The Scale can fit on each side concrete blocks of 4 x 8 x 16 inch.

The substrate in the area of the Scale should be protected with additional building protection mats.
Torque: 10.3 lbf-ft (14 Nm)



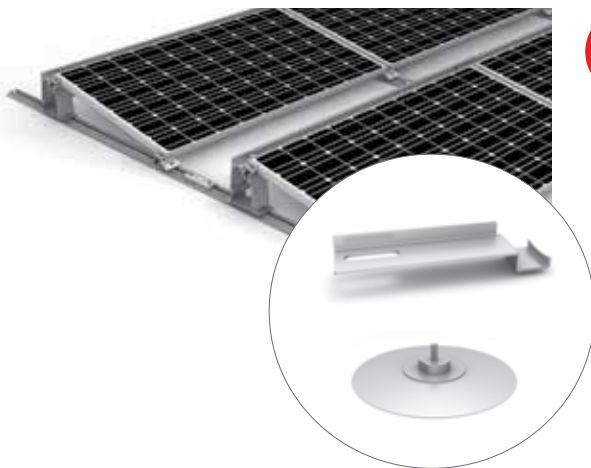
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OPTIONAL: PORTER

For higher ballast we recommend using the Porter. The L-Profiles are fastened to the rails with the enclosed screws, locking washers and M K2. The spacing of the L-Brackets depends on the size of the ballast stones. Torque 11.8 lbf-ft (16 Nm)

Each Porter set can be ballasted with up to 308.6 lb (140kg).

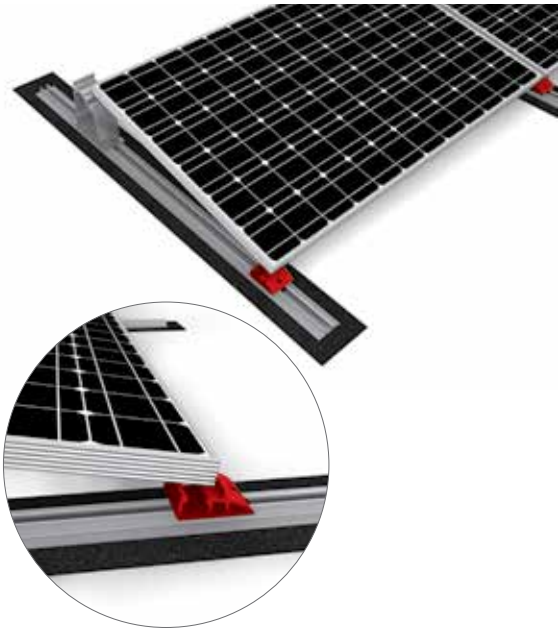
If only light ballasting is required, the Scale can be used (see Step 5a).



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OPTIONAL: ANCHORING

With the AnchorBracket the S-Dome System can be fixed onto third party brackets, e.g. OMG Power Grip. The AnchorBracket is geometrically connected into the channel of the XpressRail and screwed onto the thread bolt from the OMG with a nut. The position and the quantity of AnchorBrackets and fixations has to be calculated with our Software Everest Base.



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POSITION MODULES AND DOME SD SCREW IN

The module is laid horizontally, in the centre of two S1000 Domes. The specially affixed bars serve as a stop. Thereafter, the module is positioned on the Dome SD. The lightly fastened Dome SD can then also be pushed up to the stop in the direction of the module and screwed tight.

Torque 11.8 lbf-ft (16 Nm)

Attention:

Only modules approved for clamping may be used on the short side, see point "IN GENERAL" on page 8.

Materials required: Module



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FASTEN MODULE

First, insert the M K2 slot nut into the nut of the Dome SD and the Dome S1000 and turn 90° clockwise.

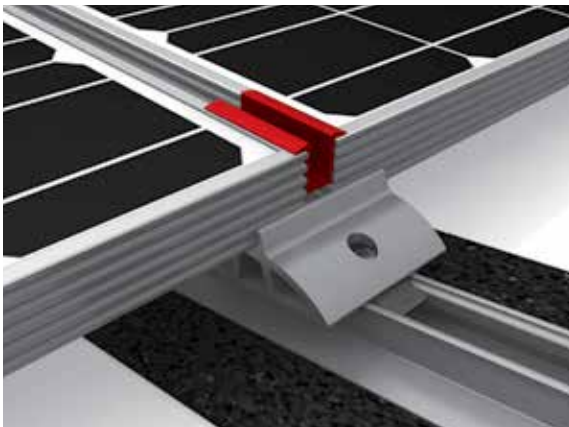
Screw down the modules into the slot nut at the end of each row with end clamps, M8 screws and S8 locking washers.

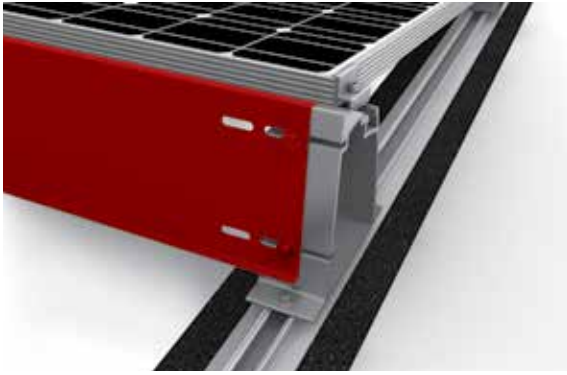
Use two standard middle clamps each between two modules which are also fastened with M8 screws and S8 locking washers in the slot nuts.

If the end and mid clamp is supplied, fasten the entire set in the groove.

Torque: 10.3 lbf-ft (14 Nm)

Materials required: End Clamp, Middle Clamp, M K2, M8 hexagon socket screw, S8 locking washer





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INSTALL THE WINDBREAKER

First position the upper fold of the Windbreaker on the flange on the back of the Dome S1000. The covered surface must face outwards and be removed after installation. Align the windbreaker edge with the module edge and screw in place. Screw the DIN 912 M8 hexagon socket screws into the threaded slots on the back of the S1000 Dome. When two Windbreakers overlap, position them such that the screws can be screwed in the threaded slots with shared DIN 912 M8 hexagon socket screws. The Last windbreakers in a row must NOT project over the end of the Dome S1000.

Torque 11.8 lbf-ft (16 Nm)

Materials required: Dome S1000 Windbreaker, hexagon M8 x 16 hexagon socket screw 8.4 x 30 x 1.5 washer



Ready!

THANK YOU FOR CHOOSING A EVEREST MOUNTING SYSTEM.

Systems from Everest Solar Systems are fast and simple to install. We hope these instructions have helped you in this. Please contact us if you have any questions or suggestions for improvements. We are looking forward to receive your call on our

Service-Hotline +1.760.301.5300

TERMS AND CONDITIONS

Product images are for illustrative purposes only. Specifications are subject to change without notice. All sales of our products shall be subject to Everest Solar Systems terms and conditions, including the exclusive limited warranty set forth therein. The terms and conditions can be found at

<http://www.everest-solarsystems.com/us/downloads/technical-information.html>

Mounting systems for solar technology



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