

Mounting systems for solar technology



ASSEMBLY INSTRUCTIONS
S-DOME SYSTEM

GB

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PARTNER WITH A SYSTEM

With sophisticated, fully developed product ideas and obvious customer-orientation, K2 Systems is your friendly partner in the field of mounting systems for solar technology. International customers appreciate the tried and tested designs for use on roofs and in outdoor and individual solutions.

Mounting systems from K2 Systems impress with their attractive design and many well thought-out details. High grade materials and quality workmanship guarantee outstanding functionality and durability.

Our products consist of few yet perfectly matching components - this reduces the amount of material used, simplifies assembly while saving time and money.

As an energetic, experienced company, and in keeping with the times, we benefit from cooperation as partners in order to ensure the dynamic development of our company. The experiences from the personal dialogue with our customers forms the basis for permanent optimisation of our range of products. The team of K2 Systems looks forward to a successful cooperation with you.

TESTED QUALITY - MULTIPLE CERTIFICATIONS

K2 Systems stands for secure connection, highest quality and precision. Our customers and business partners have known that for a long time. Independent institutes have tested, confirmed and certified our capabilities and components.



Please refer to
<http://www.k2-systems.uk.com/downloads/certificates.html>
to download our quality and product certificates.

GENERAL SAFETY INSTRUCTIONS

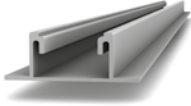


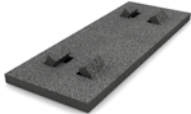

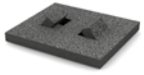
Please note that our general mounting instructions must be followed at all times and can be viewed online at www.k2-systems.com/en/downloads/product-information.html.

The following guidelines apply:

- ↪ The equipment may only be installed and operated by qualified and adequately trained installers.
- ↪ Prior to installation, ensure that the product complies with on-site static loading requirements. For roof-mounted systems, the roof load-bearing capacity must always be checked.
- ↪ National and local building regulations and environmental requirements must be adhered to.
- ↪ Compliance with health and safety regulations, accident prevention guidelines and applicable standards is required.
 - Protective equipment such as safety helmet, boots and gloves must be worn.
 - Roofing works must be in accordance with roofing regulations utilising fall protection safeguards-when eaves height exceeds 3 m.
 - At least two people must be present for the duration of the installation work in order to provide rapid assistance in the event of an emergency.
- ↪ K2 mounting systems are continuously developed and improved and the installation process may thereby change at any time. Prior to installation consult our website at www.k2-systems.com/en/downloads/product-information.html for up-to-date instructions. We can send you the latest version on request.
- ↪ The assembly instructions of the module manufacturer must be adhered to.
- ↪ Equipotential bonding / grounding / earthing between individual parts is to be performed according to country specific standards, as well as national laws and regulations.
- ↪ At least one copy of the assembly instructions should be available on site throughout the duration of the installation.
- ↪ Failure to adhere to our general safety and assembly instructions and not using all system components, K2 is not liable for any resulting defects or damages. We do not accept liability for any damage resulting in the use of competitor's parts. Warranty is excluded in such cases.
- ↪ If all safety instructions are adhered to and the system is correctly installed, there is a product warranty entitlement of 12 years.
- ↪ We strongly recommend reviewing our terms of guarantee, which can be viewed at www.k2-systems.com/en/downloads/product-information.html. We will also send this information on request.
- ↪ Dismantling of the system is performed in reverse order to the assembly.
- ↪ K2 stainless steel components are available in different corrosion resistance classes. Each structure or component must be carefully checked for possible corrosion exposure.

REQUIRED MATERIALS

In order to install the K2 Systems S-Dome installation system, the following listed system components are essential. The piece quantities are calculated on the basis of the respective requirements. The listed item numbers facilitate the comparison of items.

	Mounting Rail K2 SpeedRail 22; 6.10 m 1001163 Material: aluminium EN AW-6063 T66
	Alternatively: Mounting Rail K2 SpeedRail 4.15 m 2001906
	K2 FlatConnector Set 1006039 The set consists of: → 1 FlatConnector, aluminium → 2 Bolts with serrated under head M8x20 (2001729), WS 6 mm, stainless steel A2 → 2 M K2 Slot nut with clip (1001643), stainless steel and PA
	K2 Dome S1000 1005841 Width: 90 mm Material: aluminium EN AW-6063 T66
	K2 Building protection mat Dome Alu 2001695 470x180x18 mm Material: PUR-bound rubber granules with aluminium triplex foil, laminated
	Alternatively: K2 Building protection mat Dome 470x180x18 mm 2001696 Material: Unlaminated PUR-bonded rubber granulate
	The respective use of a laminated or unlaminated building protection mat depends on the type of roof membrane and must be checked on site.
	K2 Dome SD 1005842 Width: 90 mm Material: aluminium EN AW-6063 T66
	K2 Building protection mat Dome SD Alu 2001739 160x180x18 mm Material: PUR-bonded rubber granules with aluminium triplex foil, laminated
	Alternatively: K2 Building protection mat Dome SD 160x180x18 mm 2001740 Material: Unlaminated PUR-bonded rubber granulate
	The respective use of a laminated or unlaminated building protection mat depends on the type of roof membrane and must be checked on site.



K2 Washer 8,4x30x1,5 mm

| 1000273

Material: stainless steel A2

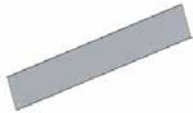


K2 Allen bolt

| 1000085

M8x16 DIN EN ISO 4762

Material: stainless steel A2, WS 6 mm



K2 Windbreaker Dome S1000

| 1005843

For module length between 1601 and 1700 mm

Length: 1700 mm

Material: aluminium

Alternatively: K2 Windbreaker Dome S1000 1600 mm

| 2001119

For module length between 1550 and 1600 mm

Length: 1600 mm

Material: aluminium

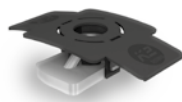


K2 Bolts with serrated under head

| item number
system-specific

according to M8 DIN 912/EN ISO 4762

Material: stainless steel A2, WS 6 mm



M K2 Slot nut with clip

| 1001643

Material: stainless steel, PA



K2 Module End Clamp Standard Set

| item number
system-specific

The set consists of:

- 1 Module End Clamp Standard, Aluminium plate finished/ black anodized
 - 1 bolt with serrated under head M8, WS 6 mm, stainless steel A2
 - 1 M K2 Slot nut with clip (1001643), stainless steel and PA
 - 1 spring, stainless steel
-



K2 Module Middle Clamp Standard Set

| item number
system-specific

The set consists of:

- 1 Module Middle Clamp, Aluminium plate finished/ black anodized
 - 1 bolt with serrated under head M8, WS 6 mm, stainless steel A2
 - 1 M K2 Slot nut with clip (1001643), stainless steel and PA
 - 1 spring, stainless steel
-

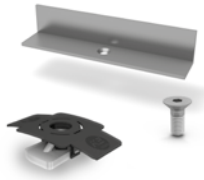
Alternatively: K2 Module Middle Clamp XS Set

OPTIONAL COMPONENTS FOR BALLASTING:



K2 Dome Scale
Ballast tray for bricks
Material: aluminium

| 1005838

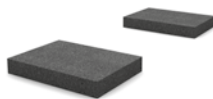


K2 Short Porter Set
Ballast support for slabs

| 2001946

The set consists of:

- 2 K2 Short Porter (2001934), aluminium EN AW-6063 T66
- 2 M K2 slot nut with clip (1001643), stainless steel, PA
- 2 DIN 7991 hexagon socket countersunk head screw M8x20, stainless steel



K2 Building protection mat Scale Alu
300x140x18 mm

| 2001726

Material: PUR-bonded rubber granules laminated with Alu-Triplex foil, under side self-adhesive, with 2 perforation cuts

Alternatively: K2 Building protection mat Scale
300x140x18 mm

| 2001727

Material: Unlaminated PUR-bonded rubber granulate, under side self-adhesive, with 2 perforation cuts

The respective use of a laminated or unlaminated building protection mat depends on the type of roof membrane and must thus be checked on site.



K2 Dome Porter 1750 mm
Ballast support for slabs

| 2000081

Pair of L-Profiles to carry required ballast as concrete slabs or similar
Material: aluminium

Alternatively: K2 Dome Porter 2050 mm

| 2001140



K2 Dome Porter Screw Set

| 2000155

(optional to the K2 Dome Porter) one set per Porter

The set consists of:

- 2 M K2 slot nut with clip (1001643), stainless steel, PA
- 2 Allen Bolt M8x20 (1000190), WS 6 mm, stainless steel A2

AT A GLANCE: OVERVIEW OF THE TOOLS

K2 Systems mounting systems are designed to ensure effortless assembly. The following recommended tools are not included in the scope of supply:



Torque wrench

WS 6 mm
(WS= wrench size)



Chalk line



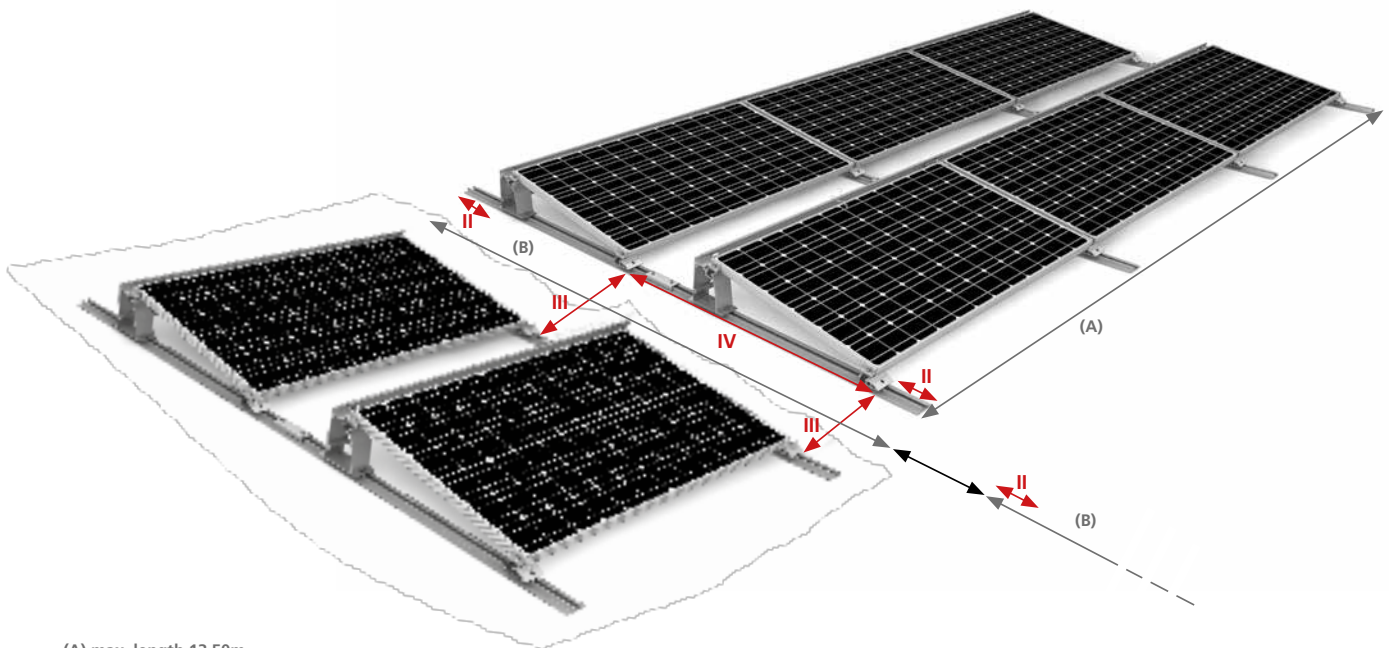
Tape measure

IN GENERAL:

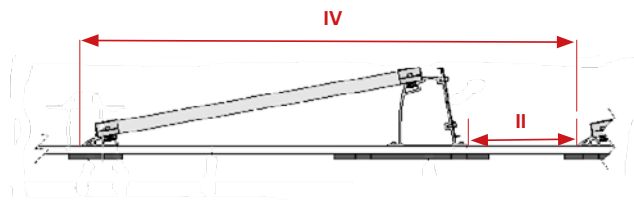
- ↪ K2 components made of stainless steels are available in different corrosion resistance classes. Each structure or component must be carefully checked for possible corrosion exposure.
- ↪ The General Installation Instructions must be adhered to.
These can be found at: <http://www.k2-systems.uk.com/downloads/product-information.html>
- ↪ This system can be used on all established flat roof constructions with a pressure resistant substrate and a roof pitch of up to 5°. With any roof pitch of more than 3° the system additionally has to be mechanically fastened. The inclination of the Dome systems is 10°.
- ↪ Any structural-physical aspects are to be observed. In case of any doubts an expert adviser (i.e. structural engineer) must be consulted.
- ↪ Prior to placing down the SpeedRail as a base rail, a protection layer shall be used between the roof covering and the rail to avoid any damages to the roof covering. Place the Speedrail onto the protection layer without penetrating the roof. The compatibility of the protection layer with the respective roof covering has to be checked by the installer. The protection layer is not part of a part of the mounting system, but is strongly recommended.
- ↪ The mounting rails and the protection mats/layer shall be clean and dry before installing.
- ↪ The roof covering shall be clean and level. If necessary any unevenness has to be levelled out or removed.
- ↪ The minimum distance to roof edges is 500 mm and 300 mm to all other obstructions (i.e. skylights, vents or similar).
- ↪ At least 1 row of 3 modules must be installed consecutively in order to use this system.
- ↪ The module distance according to the planning specifications of K2 Systems must be adhered to.
- ↪ The K2 S-Dome System is suitable for modules with a frame height of 30 - 50 mm.
This system is not suitable for thin-film modules.
- ↪ Modules with widths between 1550 - 1700 mm and a width between 950 - 1100 mm can be used.
- ↪ A thermal expansion gap of minimum 30mm and maximum of 150mm has to be provided for after max. 13.50m in module row direction, as well as in direction of the base rail(s). It is essential that the system and its components do not block the draining of rain water.

IN GENERAL:

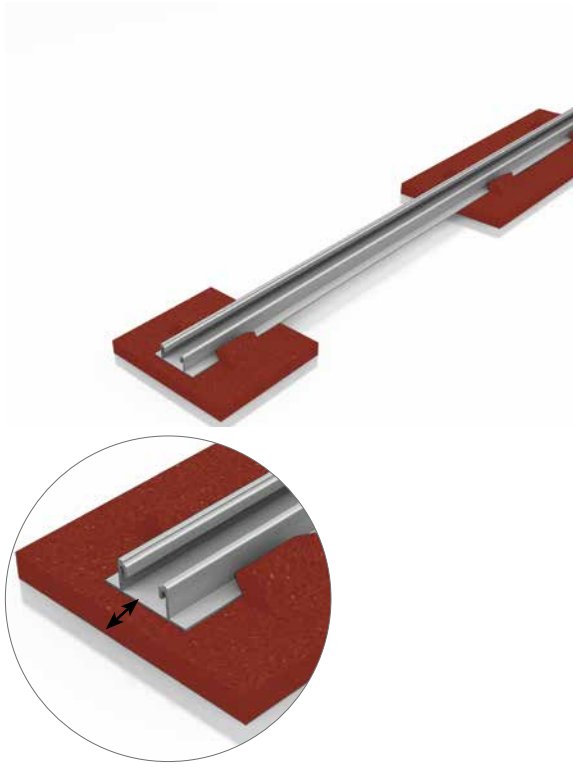
- It is essential to clarify, from the start, whether there is a module manufacturer's approval available for the clamping on the short side of the installation system S- Dome S1000. You can obtain the approval list from your customer consultant or at www.k2-systems.com.



- (A) max. length 13.50m
- (B) max. length 13.50m
- (C) Joint width along the base rails: min 100 mm
- II min. 20mm
- III Joint width between the module fields: min 180 mm
- IV calculated distance accord. K2Base



INSTALLATION OF S-DOME SYSTEM: STEP BY STEP



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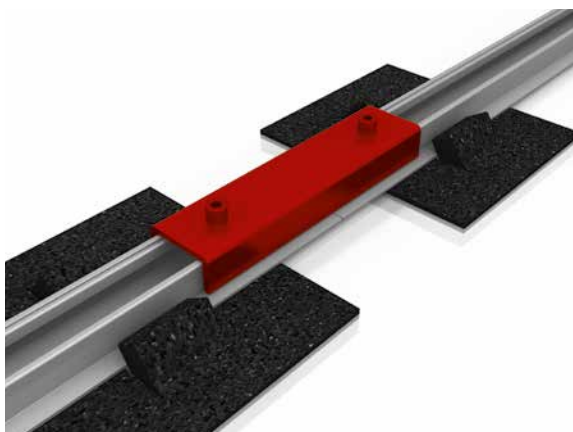
POSITION SPEEDRAIL

Prior to placing the SpeedRail as a base rail, insert a protection layer between the roof covering and the rail in order to avoid any damages to the roof covering. With membrane roofs the Aluminium-coated side shall face downwards. Place the Speedrail onto the protection layer without penetrating the roof. The protection must have to be placed under the load bearing components Dome S1000, Dome SD and Dome Scale.

Position the protection mats and base rail according the requirements of the array. The spacing between the mats/base rails is determined by the module dimensions (module length + 20mm). „Connect“ the K2SpeedRails to the protection mats via the pre-cut WINGS.

The rail ends of the K2SpeedRails must not protrude the protection mats.

Materials required: K2 SpeedRail, building protection mat Dome 470x180x18 mm



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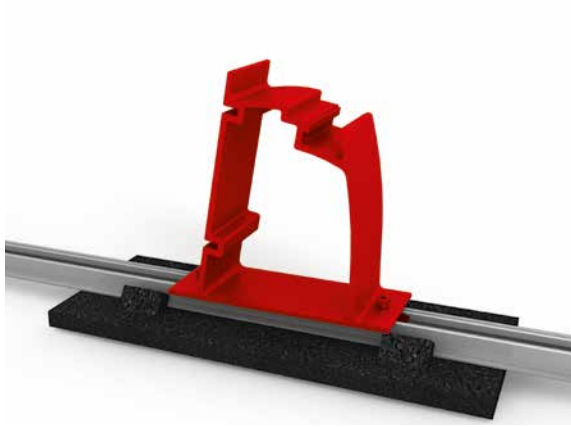
INSTALL RAIL CONNECTORS

Two SpeedRails are connected at the rail joint using a rail connector. This locks the SpeedRails in the longitudinal direction. Insert 2 M K2 slot nuts in the rail and turn 90° clockwise to lock. Fasten rail connectors with two Bolts with serrated under head M8. The connector should be between the Dome S1000 and Dome SD.

If the rail lengths permit, the rail joint can also be positioned directly below the Dome S1000 without a rail connector. However, it must be ensured that the joint is between the two fittings and under no circumstances directly at the screw position.

Torque 14 Nm

Materials required: FlatConnector Set



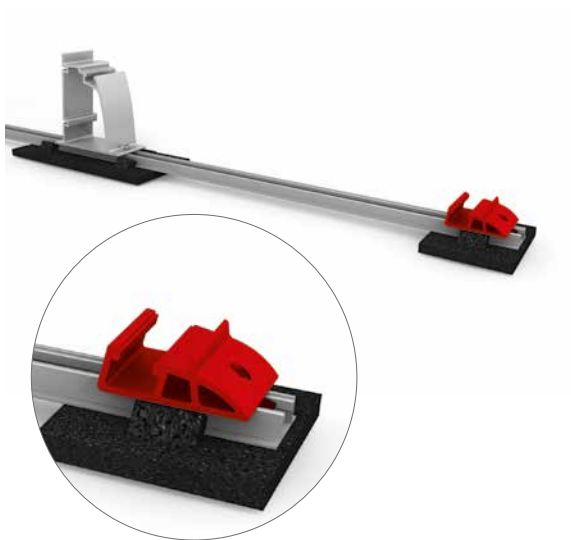
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FIT DOME S1000

Insert two M K2 slot nuts in the rail and turn 90° clockwise until they lock. Thereafter, position the Dome S1000 on the rail. Position the protection mat so that two WINGS are under the Dome S1000. Only then fasten the Dome S1000 with two bolts with serrated under head M8x20.

Torque: 16 Nm

Materials required: Dome S1000, M K2, bolt with serrated under head M8x20



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FIT DOME SD

Insert one M K2 slot nut in the rail and turn 90° clockwise until it locks. Place the Dome SD onto the rail and align as per the adjacent figure. The distance between Dome SD and Dome S1000 is approximately equal to the module width. Before fastening ensure care should be taken that the protection mat Scale 300x140x18 and its WINGS are under the Dome SD and the rails at the array edges do not protrude. Finally the Dome SD is loosely fastened with a bolt with serrated under head.

Materials required: Dome SD, M K2, bolt with serrated under head M8x20,, S8 locking washer, building protection mat Dome SD 160x180x18 mm

BALLASTING THE SYSTEM

Weighted down with ballast using bricks or slabs. Please follow the guidelines listed on the ballast weight table on page 14.

Ballasting without additional item(s):

If only light ballasting up to 5 kg is required, insert one brick directly into the hollow chamber of the Dome S1000.

Ballasting with K2 Scale:

Place the K2Scale into the hollow chamber of the Dome S1000. In the area of the K2 scale, the roof covering must be protected with a protection mat Scale 300x140x18 mm and the mat must be separated at its perforation with each half placed under the K2 Scale. Up to four bricks can be placed as needed according to the adjacent illustration.

Materials required: Dome Scale or Dome Scale XL, bricks for ballasting, building protection mat 300x140x18 mm

Ballasting with K2 Short Porter:

The L-Profiles are fastened to the rails with the screws and M K2 slot nut included in the set. Torque: 16 Nm. The spacing of the L-Profiles depends on the amount of bricks used

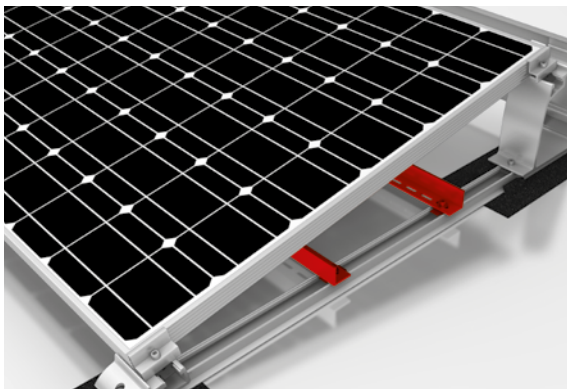
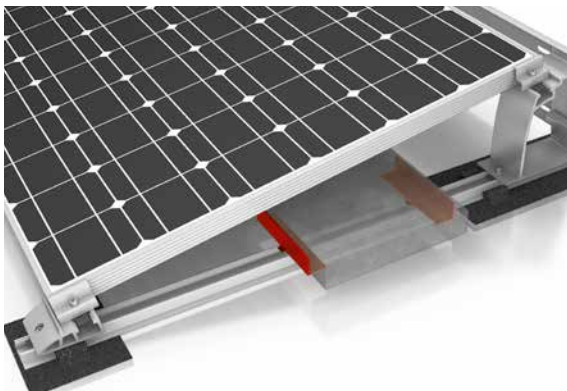
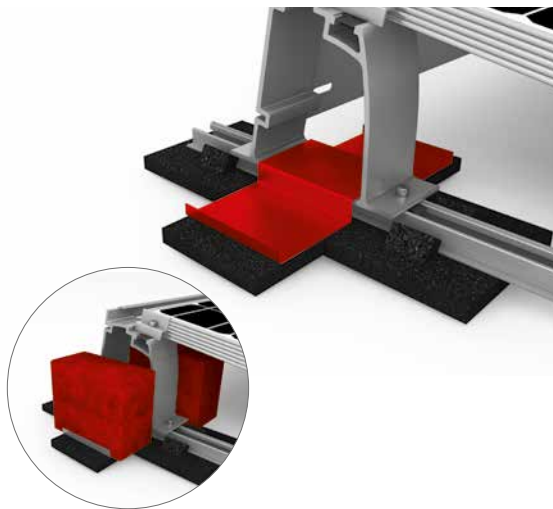
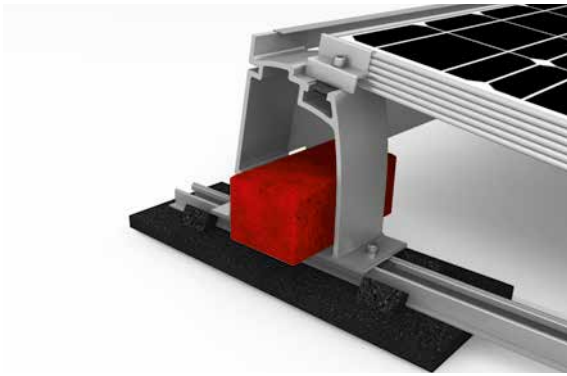
Materials required: K2 Short Porter, M K2, hexagon socket countersunk head screw M8x20

Ballasting with K2 Porter:

The L-Profiles are fastened to the rails with the screws and M K2 slot nut included in the set. Torque: 16 Nm. The spacing of the L-Profiles depends on the number of bricks used. The Porters can be positioned both centrally to the Dome 1000, or laterally to the middle Dome.

Warning: K2 Porters must be mounted so that all base profiles within a module block are connected.

Materials required: K2 Porter, M K2, bolts with serrated under head M8x20

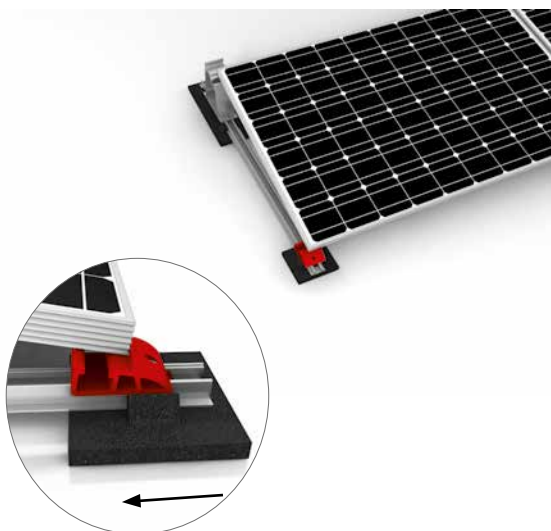


Ballast weight table				
Ballast weight in kg (Limit value in K2 Base)	Recommended additional items	Recommended brick dimensions in cm	Max. no. of bricks	Installation recommendations
Up to approx. 5 kg	No additional articles required	20x10x8 20x20x10 20x20x6	2 1 2	2 bricks in the cavity of the Dome S1000 1 bricks in the cavity of the Dome S1000 2 bricks in the cavity of the Dome S1000
Approx. 5 kg to approx. 17.5 kg	K2 Scale	20x10x8 20x10x10	4 4	2 bricks each in the K2 Scale mounts. Where necessary, an additional 2 bricks 20x10x8 in Dome S1000
Approx. 17.5 kg to approx. 40 kg	K2 Short Porter	40x40x4 30x30x5	2 2	Where necessary, an additional 2 bricks 20x10x8 in Dome S1000
From approx. 40 kg	K2 Porter	40x40x4 30x30x5	2 2	

Warning: Pay attention to module inclination when using Short Porter and Porter!
For ballast weights exceeding 100 kg, please consult a K2 technician.

Table for bricks and slabs *		
Type	Weight in kg	Dimensions (LxBxH) in cm
Paving bricks	2,2	10x10x10
	3,5	20x10x8
	4,5	20x10x10
	5,4	20x20x6
	7,2	20x20x10
Flagstones (slabs)	14	40x40x4
	19	40x40x5
	22	50x50x4

* recommended values

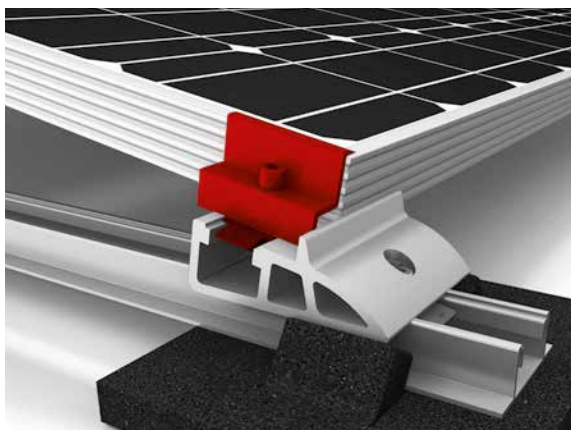


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POSITION MODULE AND FASTEN DOME SD

The modules are laid horizontally, in the centre of two Dome D1000s. The specially affixed bars serve as the stop. Thereafter, the module is positioned on two Dome SDs. The only loosely fastened Dome SD together with the protection mat SD 160x180x18 mm are pushed towards and against the module and then fastened. Before fastening ensure that the WINGS of the protection mat are under the Dome SD and the rails at the array edges do not protrude. Torque: 16 Nm.

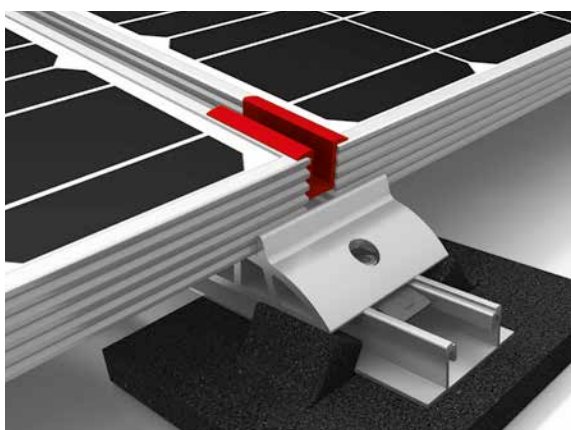
Attention: Only modules approved for corner clamping may be used, see point „GENERAL SAFETY INFORMATION“ on page 11. Please take care not to cover any drainage holes in modules, otherwise potential condensation cannot run off.



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FASTEN MODULE

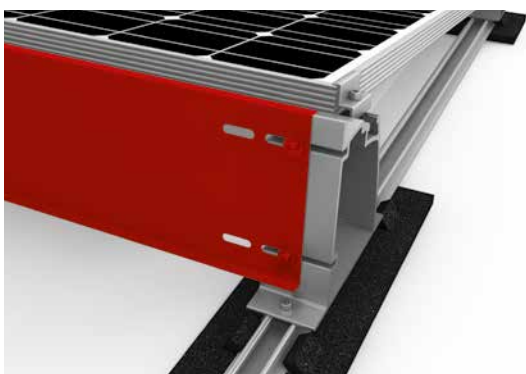
First, insert the M K2 slot nut into the nut of the Dome SD and the Dome S1000 and turn 90° clockwise. Screw the modules at the end of each row with module end clamps, bolt with serrated under head M8 into the slot nuts. If the module end and mid clamp set is supplied, fasten the entire set in the groove.



Use two standard module middle clamps each between two modules which are also fastened with bolts with serrated under head M8 screws in the M K2 slot nuts.

Alternatively, XS mid clamps can be used. However, longer screws must be used in this case. The length of the cylinder screw with serrated flange is defined as module frame thickness + 15 mm when using the XS middle clamp. Torque: 14 Nm.

Materials required: Module end/ mid clamp Set



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INSTALL THE WINDBREAKER

First position the upper fold of the symmetrical windbreaker on the bar of the Dome S1000. The foiled surface must face outwards. We recommend removing the foil once installation is completed.

Align the windbreaker against the module edge and fasten with the allen bolt M8x16 with the aid of the elongated holes and washers in the screw channel.

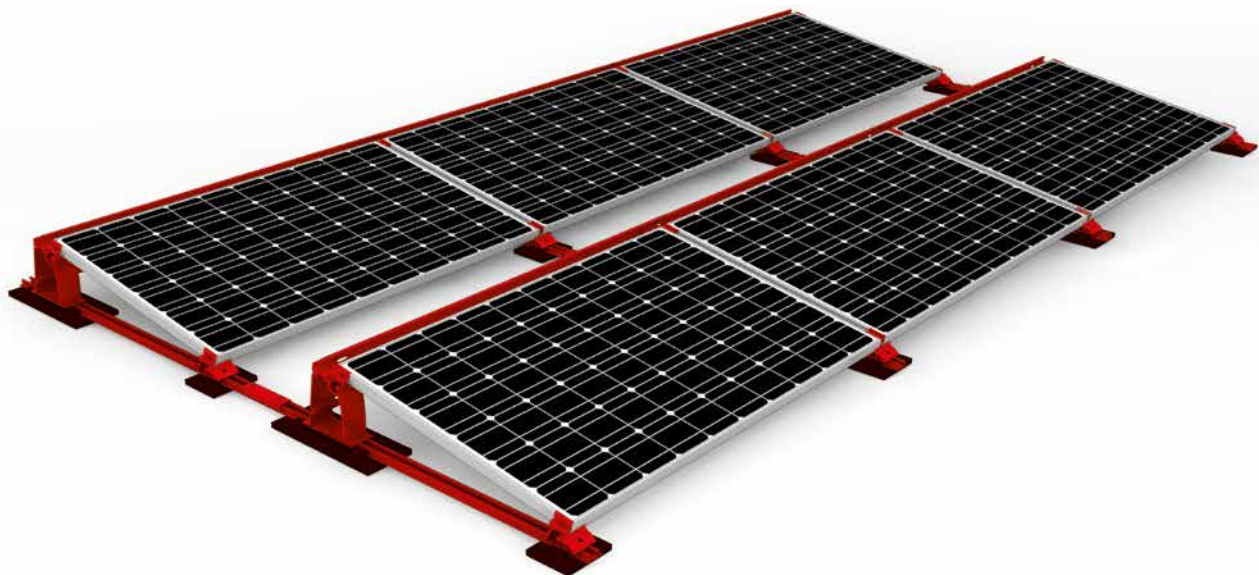
When two windbreakers overlap, position the plates in such a way that the screws can be screwed in the screw channel with the aid of the elongated holes. For this a washer must be used.

It must be ensured that the last windbreakers in a row do not project over the Dome S1000.

Torque 16 Nm

Materials required: Dome S1000 Windbreaker, allen bolt M8x16, 8.4 x 30 x 1.5 washer





Ready!

THANK YOU FOR CHOOSING A K2 MOUNTING SYSTEM.

Systems from K2 Systems are quick and easy to install. We hope these instructions have helped. Please contact us if you have any questions or suggestions for improvements.

<http://www.k2-systems.uk.com/contact.html>

Our General Terms of Business apply. Please refer to <http://www.k2-systems.com/en/gsc.html>.

Mounting systems for solar technology



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Installation of S-Dome | GB10 | 1115 | Subject to change.
Product illustrations are exemplary and may differ from the original.