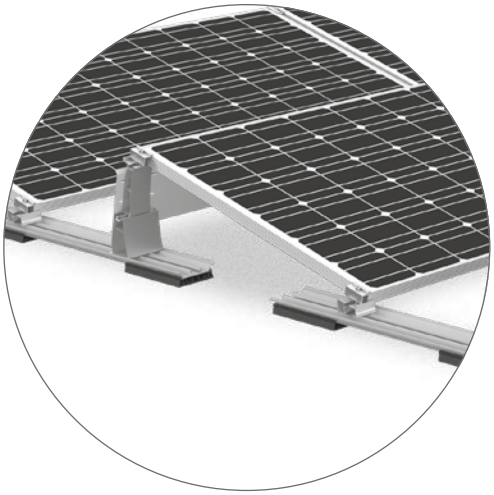
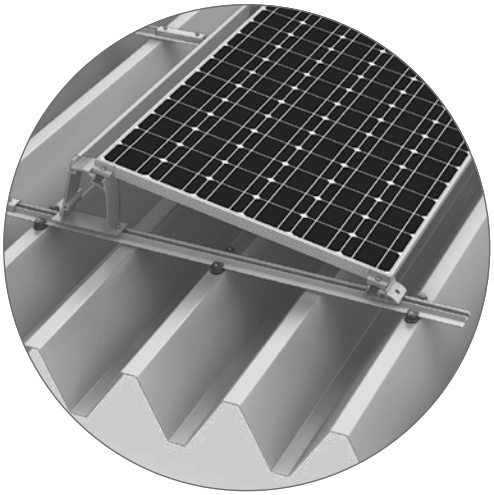
Mounting systems for solar technology

Flat roof systems





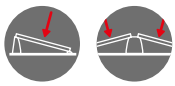
Contents

- Comparison of flat roof systems 4
- D-Dome V 10° System 6
- S-Dome V 10° System 8
- S-Dome V 15° System 10
- D-Dome 10° System 12
- S-Dome 10° System 14
- S-Dome Small System 16
- Triangle/MultiAngle System 10-45° 18
- Accessories 20

Warranty

We offer a 12-year warranty on all K2 system components.
k2-systems.com/en/guarantee

Module orientation



We offer flat roof systems with one-sided or two-sided elevations.

Statics and design loads

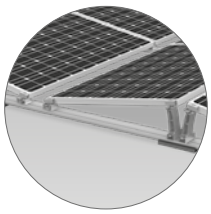
K2 mounting systems fulfil the calculation principles in accordance with Eurocode 1 and 9.

Pallet delivery

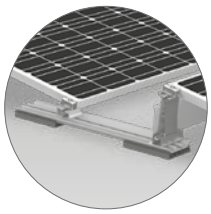
Many K2 mounting systems are shipped completely as palletised goods.

Comparison of flat roof systems

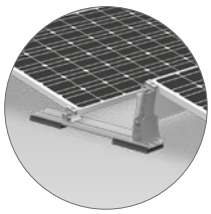
D-Dome V 10°:
The double-sided elevation – generation V



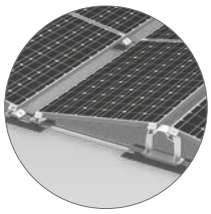
S-Dome V 10°:
The single-sided elevation – generation V



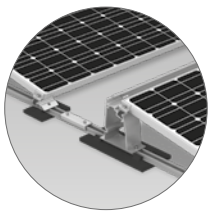
S-Dome V 15°:
S-Rock successor with Dome V components



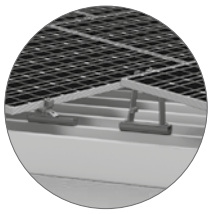
D-Dome 10°:
The double-sided elevation



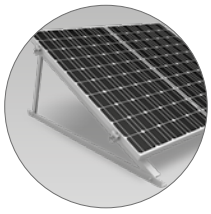
S-Dome 10°:
The single-sided elevation

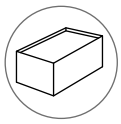
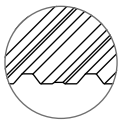
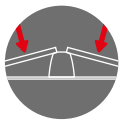


S-Dome Small 10°:
Single-sided elevation for trapezoidal sheet metal



Triangle / MultiAngle 10 - 45°:
Flexible single-sided elevation

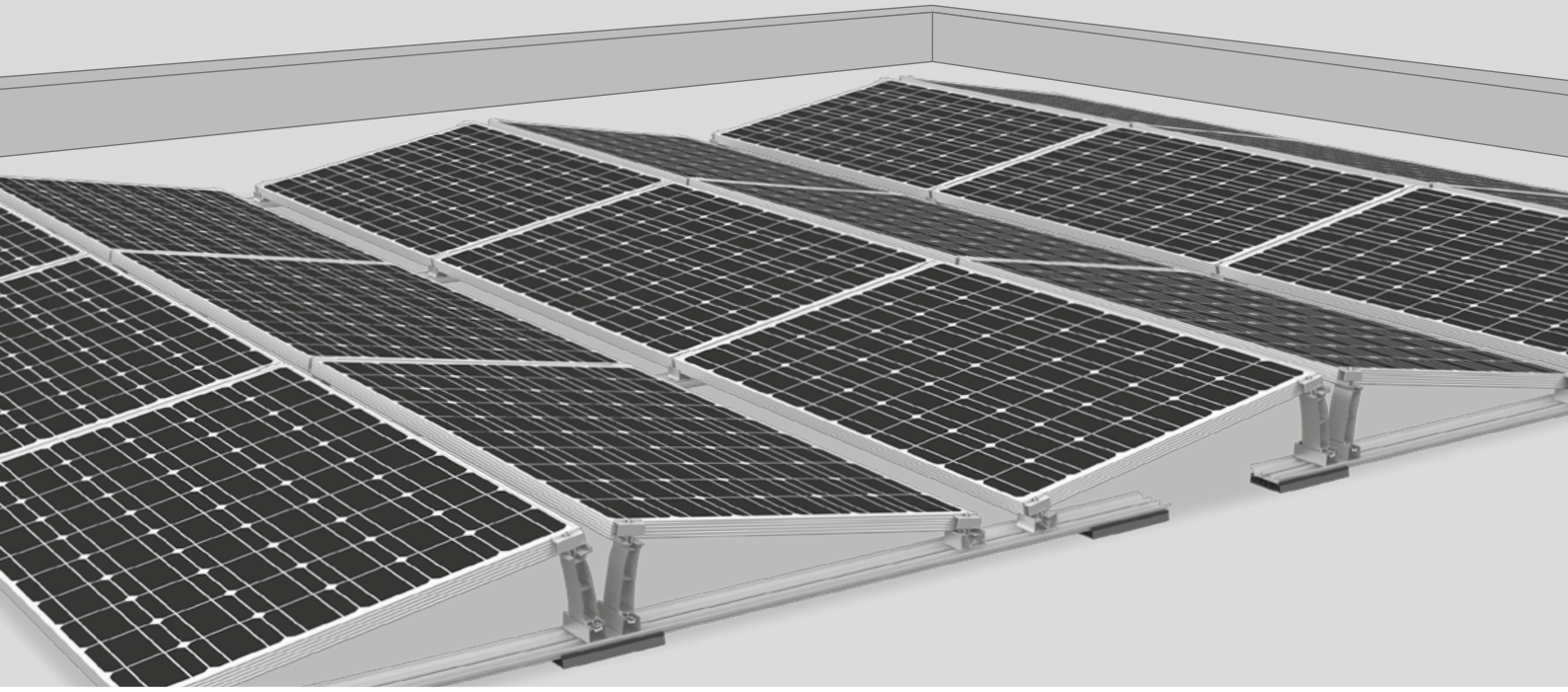


Flat roofs	Trapezoidal sheet metal	One-sided	Two-sided	Mat V	Integrated ballast tray
					
●	○	○	●	●	●
●	○	●	○	●	●
●	○	●	○	●	●
●	●	○	●	○	○
●	●	●	○	○	○
●	●	●	○	○	○
●	●	●	○	○	○

● Suitable/integrated ○ Unsuitable/not integrated

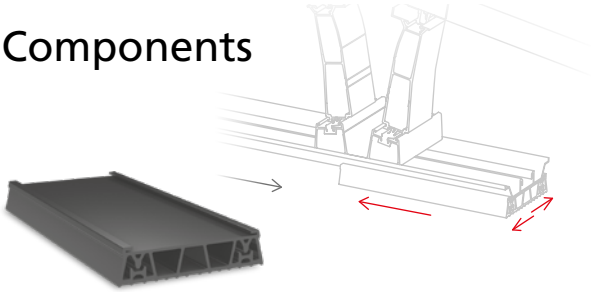
D-Dome V 10° System

The double-sided elevation



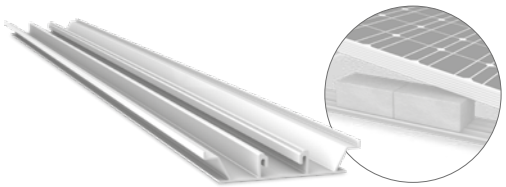
- Clearly ballast- and component-optimized system due to better friction coefficient of the flexible support pad
- Simultaneous assembly of modules and mounting system as well as reduced screw connections ensure faster installation
- Lower logistics costs due to lower transport volume

Components

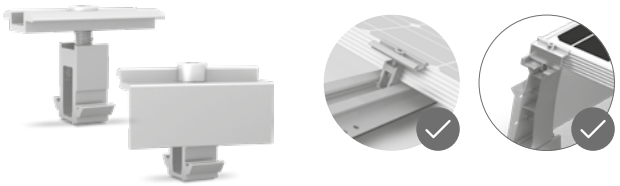


Mat V
- Flexible Mat V made of EPDM – only 1 size and 1 variant (no aluminium lamination required)
- Absorbs and compensates for tolerances
- Friction coefficients reduce ballast

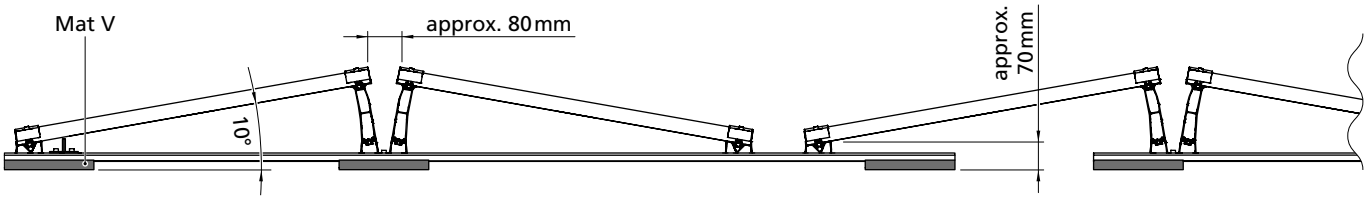
Dome V elevation
- Innovative geometry and connections to accommodate tolerances
- Single screw connection and fast screw-in assembly of the SD with fixation via module clamp
- Low transport volume



Rail mounting rail
- Integrated ballast tray almost eliminates the need for additional components
- Short rails help compensate for roof tolerance



Universal module clamps: MiniClamp MC/EC
- Clamping range 30 - 50 mm
- Compatible with MiniRail and all Dome V Systems
- Optional: Equipotential bonding with TerraGrif possible

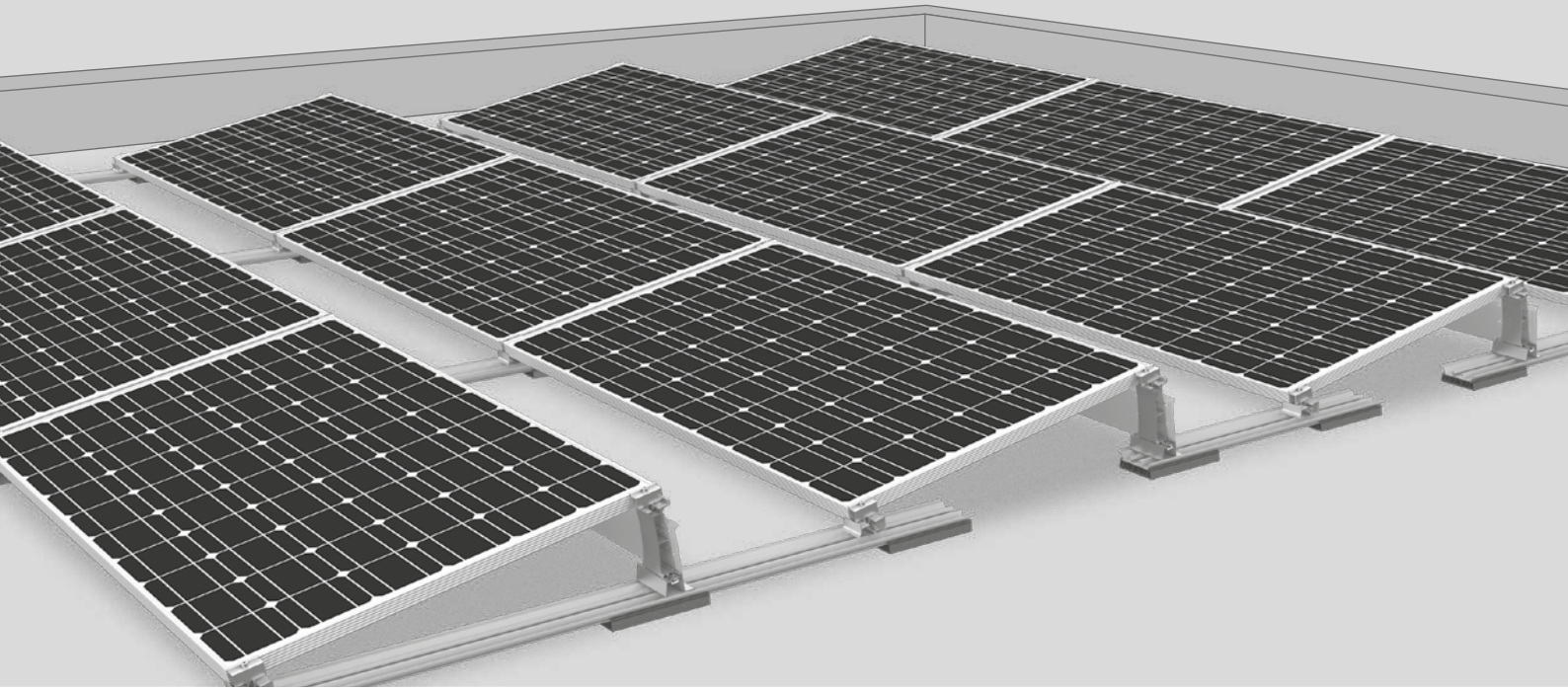


Technical data

	D-Dome V
Scope of application	Flat roofs ≤ 5° with single ply membrane or bituminous roof covering, also on concrete, gravelled or green roofs
Fastening type/roof fixture	Ballasted; no roof penetration for inclination ≤ 3°
Requirements	‣ Permissible module dimensions (L × W × H): 1386 - 2080 × 985 - 1053 × 30 - 50 mm ‣ Minimum system size: 2 supports (4 modules) ‣ Module approved for corner clamping (see k2-systems.com/en/approved-modules)
Technical specifications	‣ Thermal separation after a maximum of 15.5 m ‣ Minimum distance to the edge of the roof 600 mm
Inclination angle	10°
Material	‣ Mounting rails, Peak, Basis, SD and MiniClamps: Aluminium EN AW-6063 T66 and AW-6082 T6 ‣ Mat V protective mat: EPDM ‣ Small parts: stainless steel (1.4301) A2-70

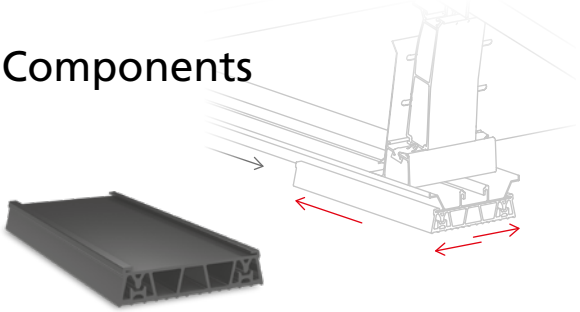
S-Dome V 10° System

The single-sided elevation



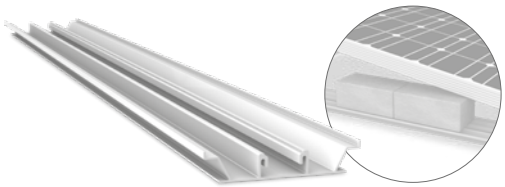
- Clearly ballast- and component-optimized system due to better friction coefficient of the flexible support pad
- Simultaneous assembly of modules and mounting system as well as reduced screw connections ensure faster installation
- Lower logistics costs due to lower transport volume

Components

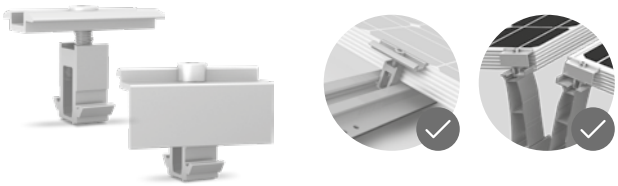


Mat V
- Flexible Mat V made of EPDM – only 1 size and 1 variant (no aluminium lamination required)
- Absorbs and compensates for tolerances
- Friction coefficients reduce ballast

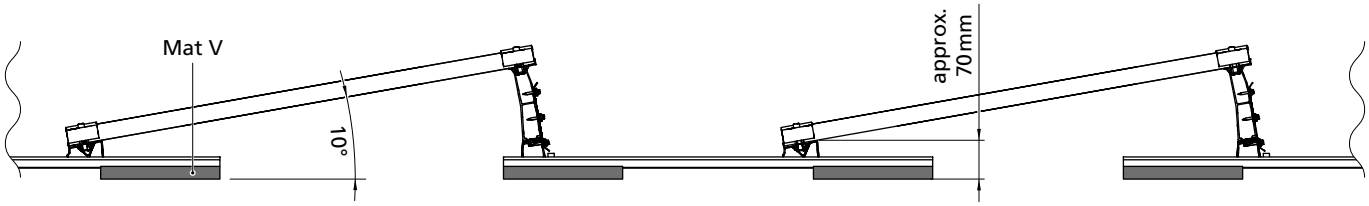
Dome V elevation
- Changed geometry and connections to accommodate tolerances
- Single screw connection and fast screw-in assembly of the SD with fixation via module clamp
- Low transport volume



Rail mounting rail
- Integrated ballast support almost eliminates the need for additional components
- Short rails to accommodate the tolerances



Universal module clamps: MiniClamp MC/EC
- Clamping range 30 - 50 mm
- Compatible with MiniRail and all Dome V Systems
- Optional: Equipotential bonding with TerraGrif possible

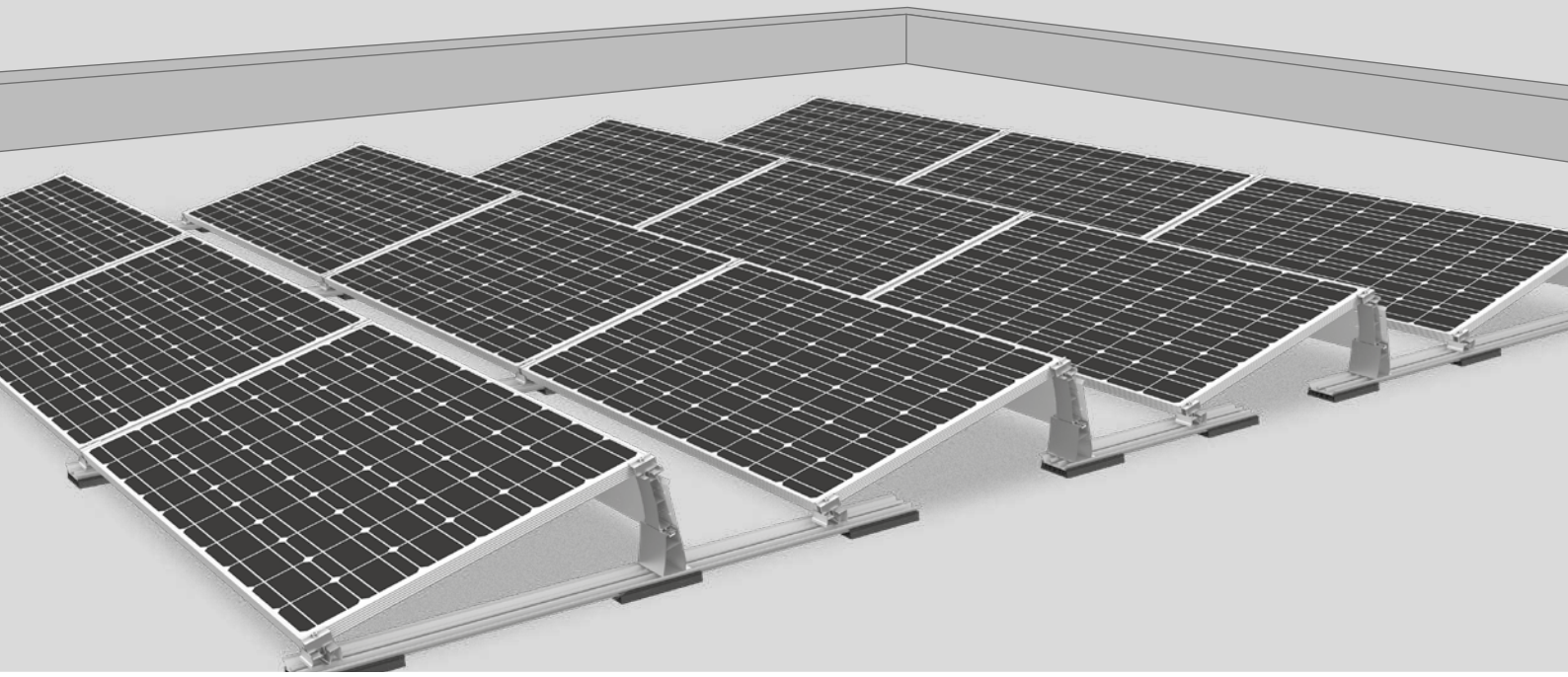


Technical data

	S-Dome V 10°
Scope of application	Flat roofs ≤ 5° with single ply membrane or bituminous roof covering, also on concrete, gravelled or green roofs
Fastening type/roof fixture	Ballasted; no roof penetration for inclination ≤ 3°
Requirements	‣ Permissible module dimensions (L × W × H): 1550 - 1760 / 1880 - 2100 × 950 - 1053 × 30 - 50 mm ‣ Minimum system size: 2 modules ‣ Clamping in corner areas permitted (see k2-systems.com/en/approved-modules)
Technical specifications	‣ Thermal separation after a maximum of 15.5 m ‣ Minimum distance to the edge of the roof 600 mm
Inclination angle	10°
Material	‣ Mounting rails, Peak, Basic, SD and MiniClamps: Aluminium EN AW-6063 T66 and AW-6082 T6 ‣ Windbreaker: Magnelis ‣ Mat V protective mat: EPDM ‣ Small parts: stainless steel (1.4301) A2-70

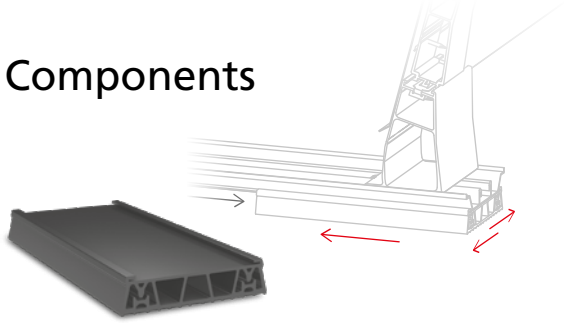
S-Dome V 15° System

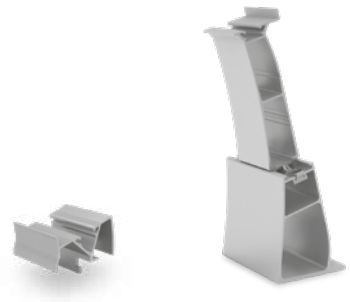
S-Rock successor:
The single-sided 15° elevation with Dome V components



- Clearly ballast- and component-optimized system due to better friction coefficient of the flexible support pad
- Simultaneous assembly of modules and mounting system as well as reduced screw connections ensure faster installation
- Lower logistics costs due to lower transport volume

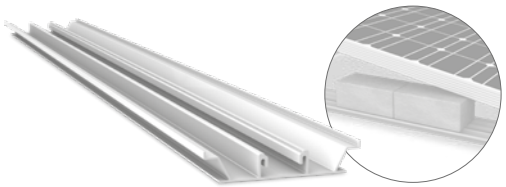
Components

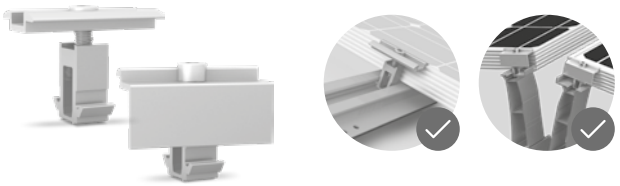




Mat V
- Flexible Mat V made of EPDM – only 1 size and 1 variant (no aluminium lamination required)
- Absorbs and compensates for tolerances
- Friction coefficients reduce ballast

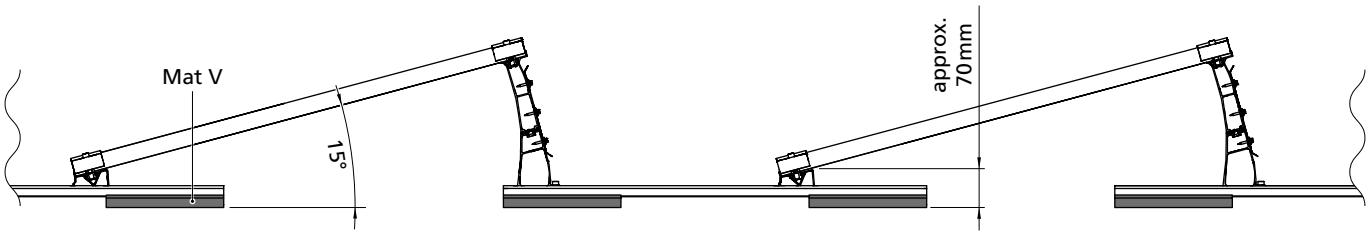
Dome V elevation
- Changed geometry and connections to accommodate tolerances
- Single screw connection and fast screw-in assembly of the SD with fixation via module clamp
- Low transport volume





Rail mounting rail
- Integrated ballast support almost eliminates the need for additional components
- Short rails to accommodate the tolerances on the roof

Universal module clamps: MiniClamp MC/EC
- Clamping range 30 - 50 mm
- Compatible with MiniRail and all Dome V Systems
- Optional: Equipotential bonding with TerraGrif possible

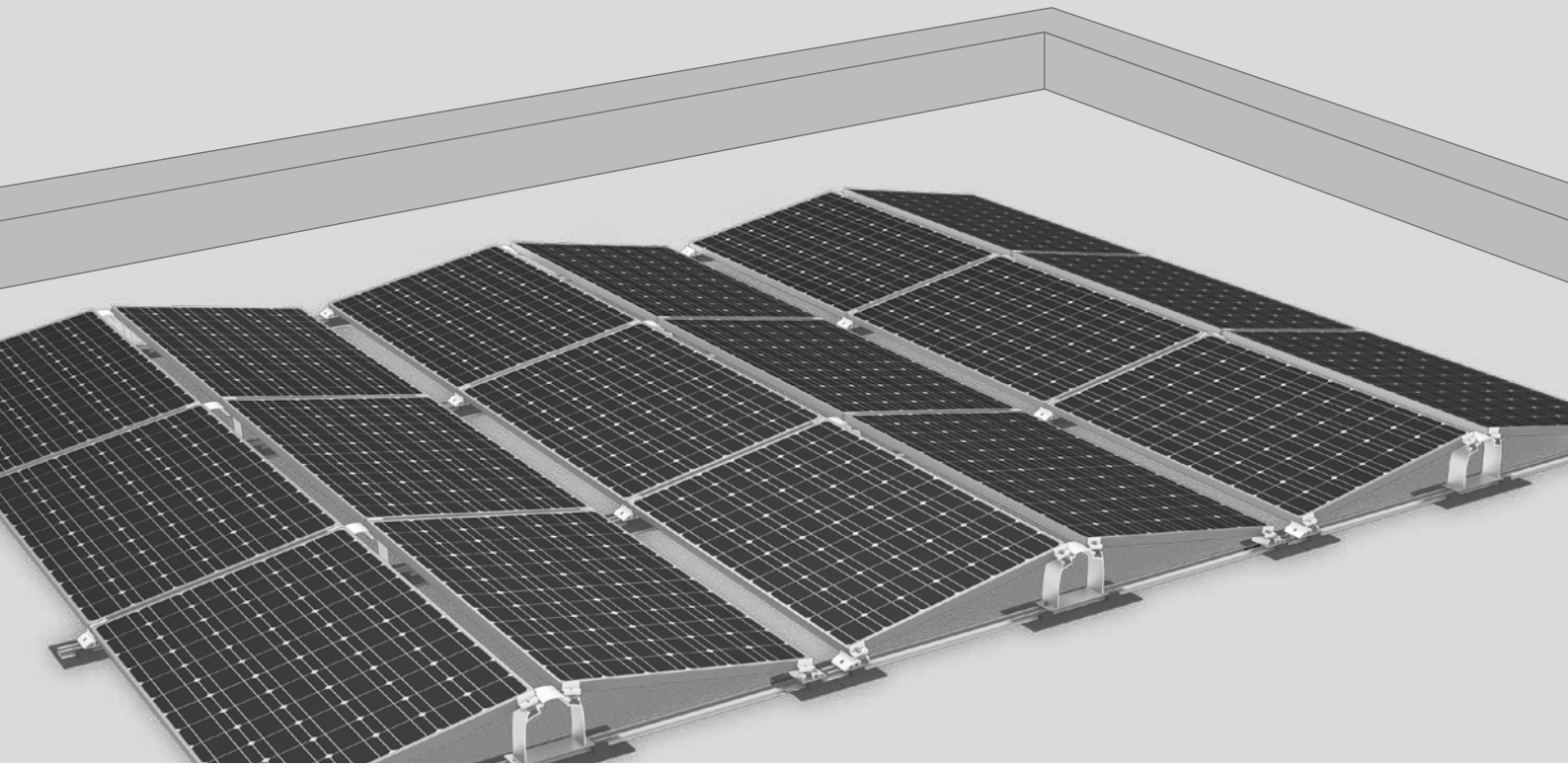


Technical data

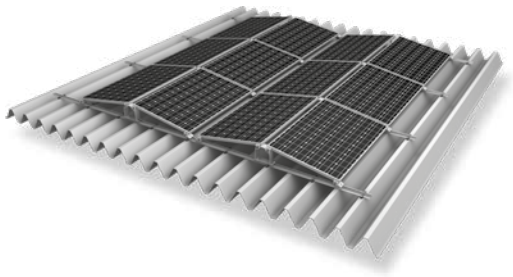
	S-Dome V 15°
Scope of application	Flat roofs ≤ 5° with single ply membrane or bituminous roof covering, also on concrete, gravelled or green roofs
Fastening type/roof fixture	Ballasted; no roof penetration for inclination ≤ 3°
Requirements	‣ Permissible module dimensions (L × W × H): 1550 - 1760 / 1880 - 2100 × 950 - 1053 × 30 - 50 mm ‣ Minimum system size: 2 modules ‣ Clamping in corner areas permitted (see k2-systems.com/en/approved-modules)
Technical specifications	‣ Thermal separation after a maximum of 15.5 m ‣ Minimum distance to the edge of the roof 600 mm
Inclination angle	15°
Material	‣ Mounting rails, Peak, Basic, SD and MiniClamps: Aluminium EN AW-6063 T66 and AW-6082 T6 ‣ Windbreaker: Magnelis ‣ Mat V protective mat: EPDM ‣ Small parts: stainless steel (1.4301) A2-70

D-Dome 10° System

The solution for double-sided elevation



- A system which provides optimal surface utilisation and yields for roofs with limited ballasting options
- Aerodynamically optimised as a result of wind tunnel testing
- Quick and easy handling
- Also available as a short rail system

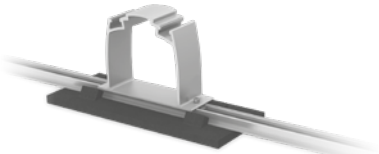


D-Dome can also be mounted on trapezoidal sheet metal roofs.

Components

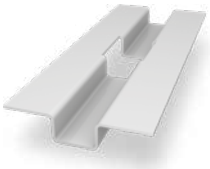
Dome D1000 and Dome SD

Narrow elevation module support element for two-sided elevations



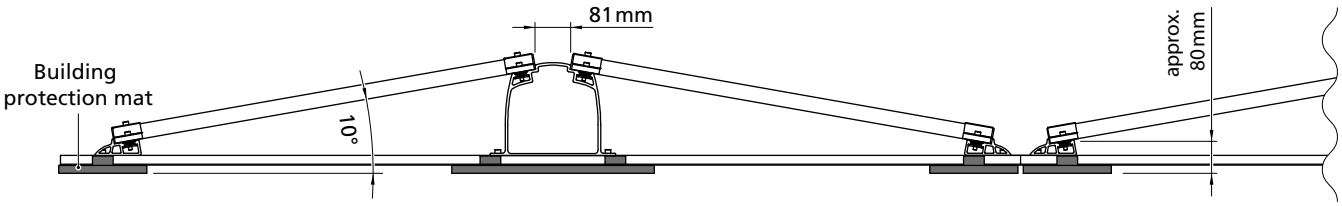
SpeedRail with building protection mats

- SpeedRail available as short or long rails
- Building protection mats also laminated with aluminium



Ballast Management

SpeedPorter: For quick and easy ballasting

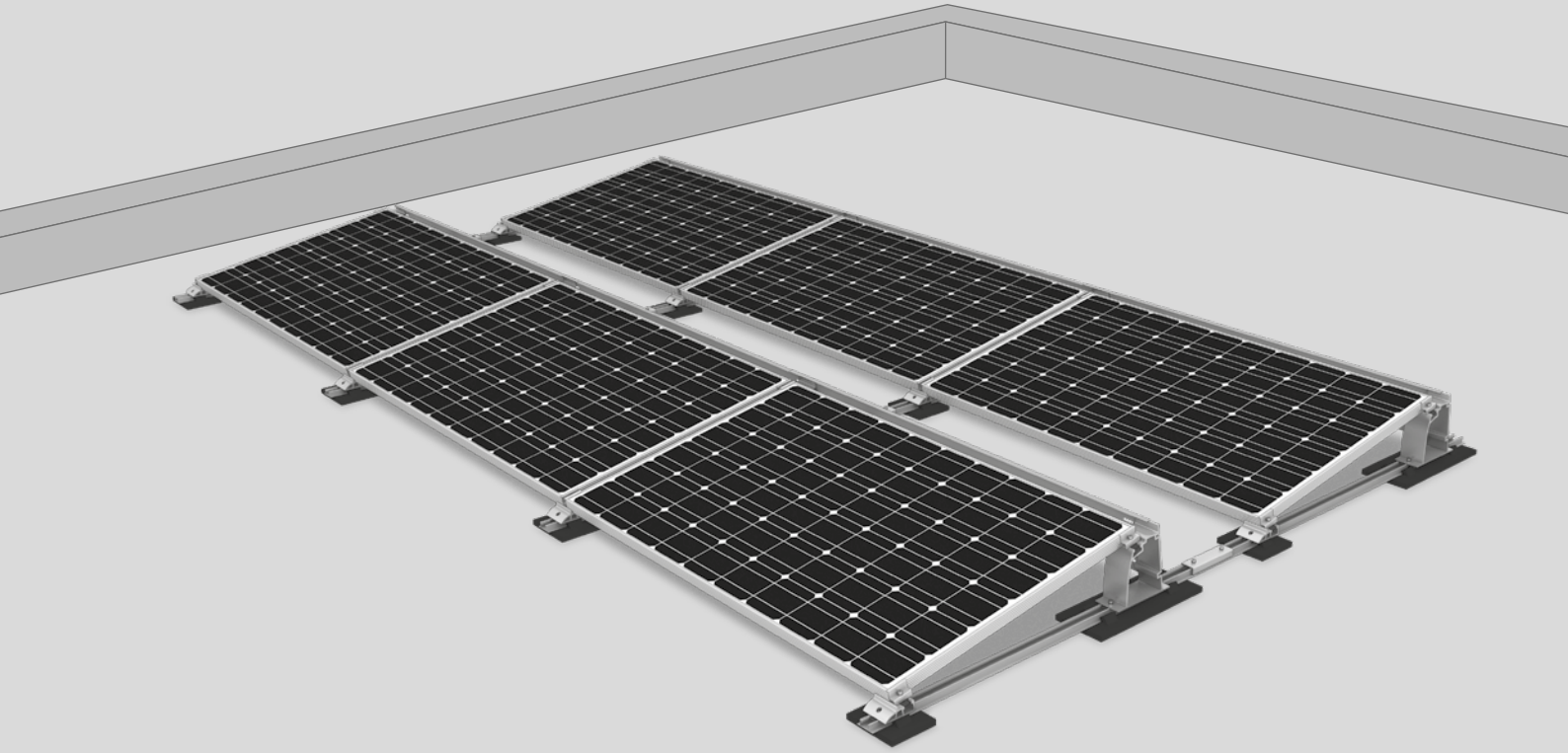


Technical data

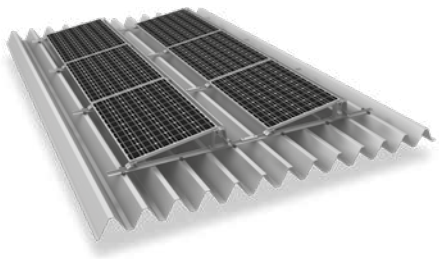
	D-Dome
Scope of application	Flat roofs ≤ 5° with single ply membrane or bituminous roof covering, also on concrete, gravelled or green roofs; also trapezoidal sheet metal roofs with continuous mounting rails
Fastening type/roof fixture	Ballasted; no roof penetration for inclination ≤ 3°
Requirements	‣ Permissible module dimensions (L × W × H): 1386-2080 × 950-1100 × 30-50 mm ‣ Minimum system size: 2 supports (4 modules) ‣ Module approved for corner clamping (see k2-systems.com/en/approved-modules)
Technical specifications	‣ Thermal separation after max. 11 m (trapezoidal sheet metal 8.4 m) ‣ Minimum clearance to roof edge 600 mm
Inclination angle	10°
Material	‣ Mounting rails, D-Dome, Dome SD, Module Clamps, Rail Connectors: Aluminium EN AW-6063 T66 ‣ Building protection mat with or without aluminium lining (PUR-bound rubber granules) ‣ Small parts: Stainless steel (1.4301) A2-70

S-Dome 10° System

The solution for single-sided elevation

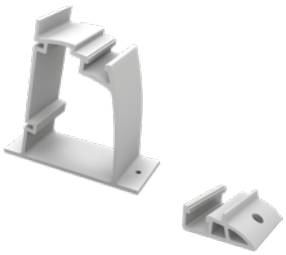


- A system for structurally challenging roofs with limited ballast options
- Aerodynamically optimised as a result of wind tunnel testing
- Quick and easy handling
- Also available as a short rail system



S-Dome can also be mounted on trapezoidal sheet metal roofs.

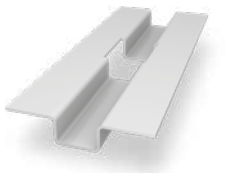
Components



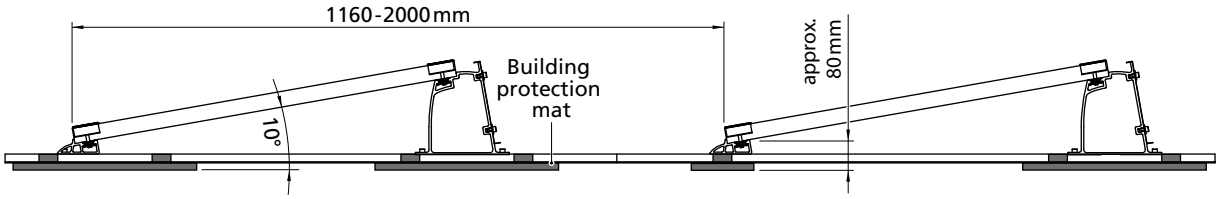
Dome S1000 and Dome SD
- Module support elements for one-sided elevations
- Suitable for module widths of up to approx. 1 100 mm

SpeedRail with building protection mats
- SpeedRail available as short or long rails
- Laminated or unlaminated building protection mats, depending on roof covering material

Windbreaker
- Wind deflection on the rear of Dome systems
- Various lengths available



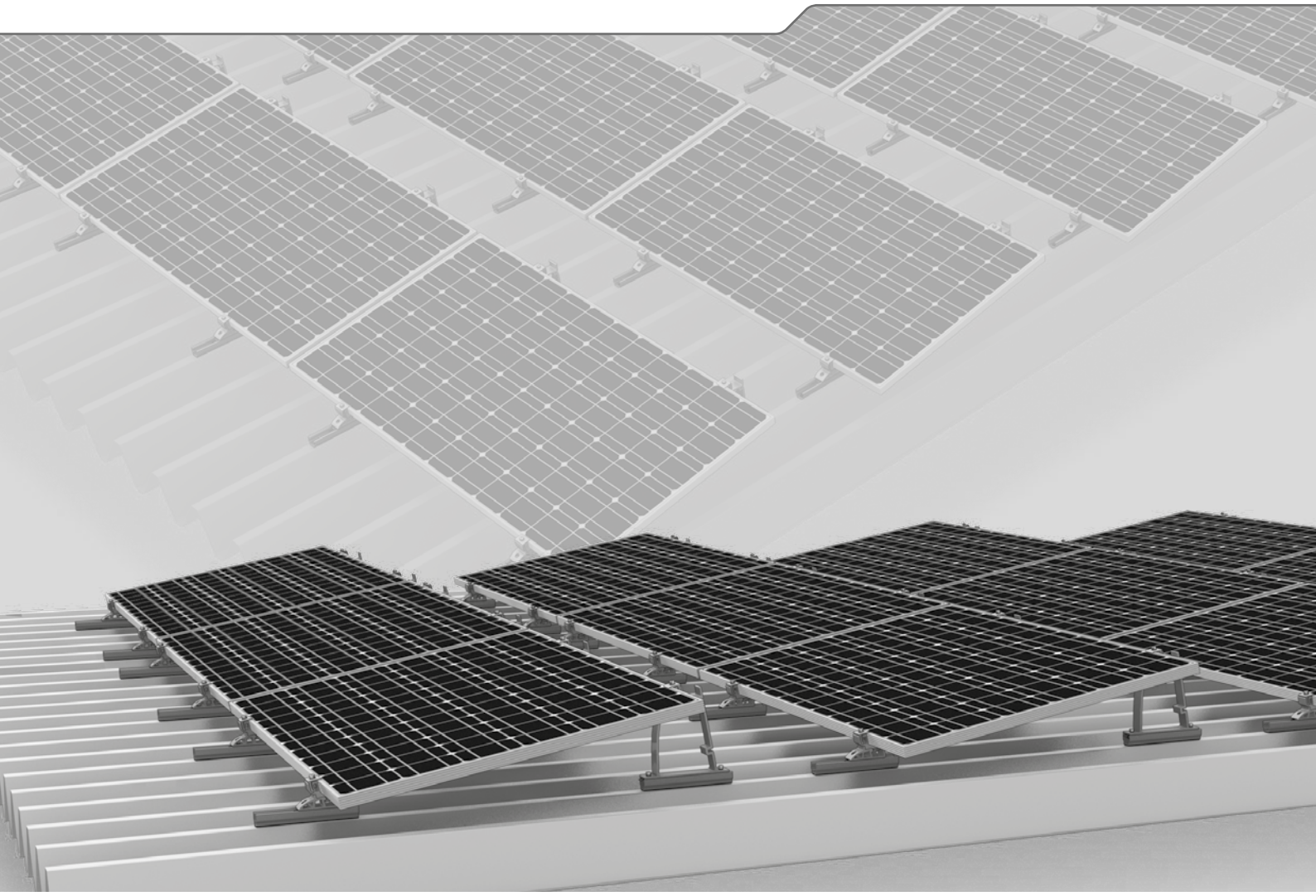
Ballast Management
SpeedPorter: For quick and easy ballasting



Technical data

	S-Dome
Scope of application	Flat roofs ≤ 5° with single ply membrane or bituminous roof covering, also on concrete, gravelled or green roofs; also trapezoidal sheet metal roofs with continuous mounting rails
Fastening type/roof fixture	Ballasted; no roof penetration for inclination ≤ 3°
Requirements	‣ Permissible module dimensions (L × W × H): 1386 - 2067 × 950 - 1100 × 30 - 50 mm ‣ Minimum system size: 2 modules ‣ Module approved for corner clamping (see k2-systems.com/en/approved-modules)
Technical specifications	‣ Thermal separation after max. 11 m (trapezoidal sheet metal 8.4 m) ‣ Minimum clearance to roof edge 600 mm
Inclination angle	10°
Material	‣ Mounting rails, S-Dome, Dome SD, Windbreaker, module clamps, rail connectors: Aluminium EN AW-6063 T66 ‣ Building protection mat with or without aluminium lining (PUR-bound rubber granules) ‣ Small parts: Stainless steel (1.4301) A2-70

S-Dome Small System

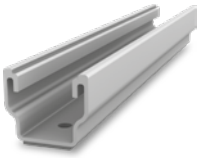


- For a roof inclination of up to 15° on trapezoidal sheet metal
- Economical in terms of materials and transportation; clever connections and strong holding power
- The perfect combination of the all-round MultiRail component and load-optimised, slim elevations

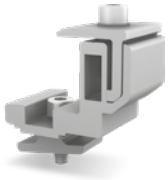
Components

Dome S1000 Small
Narrow elevation module support element

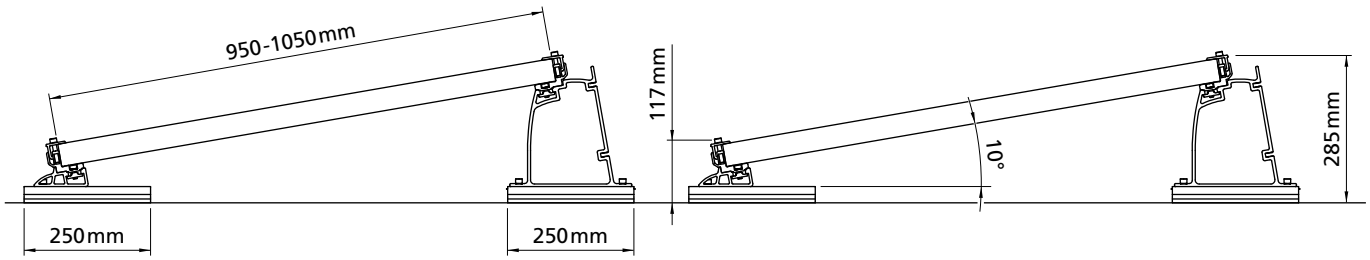
Dome SD Small
Narrow module support element



MultiRail 25/4
- Length 250 mm
- With four boreholes for roofs with up to 15° inclination



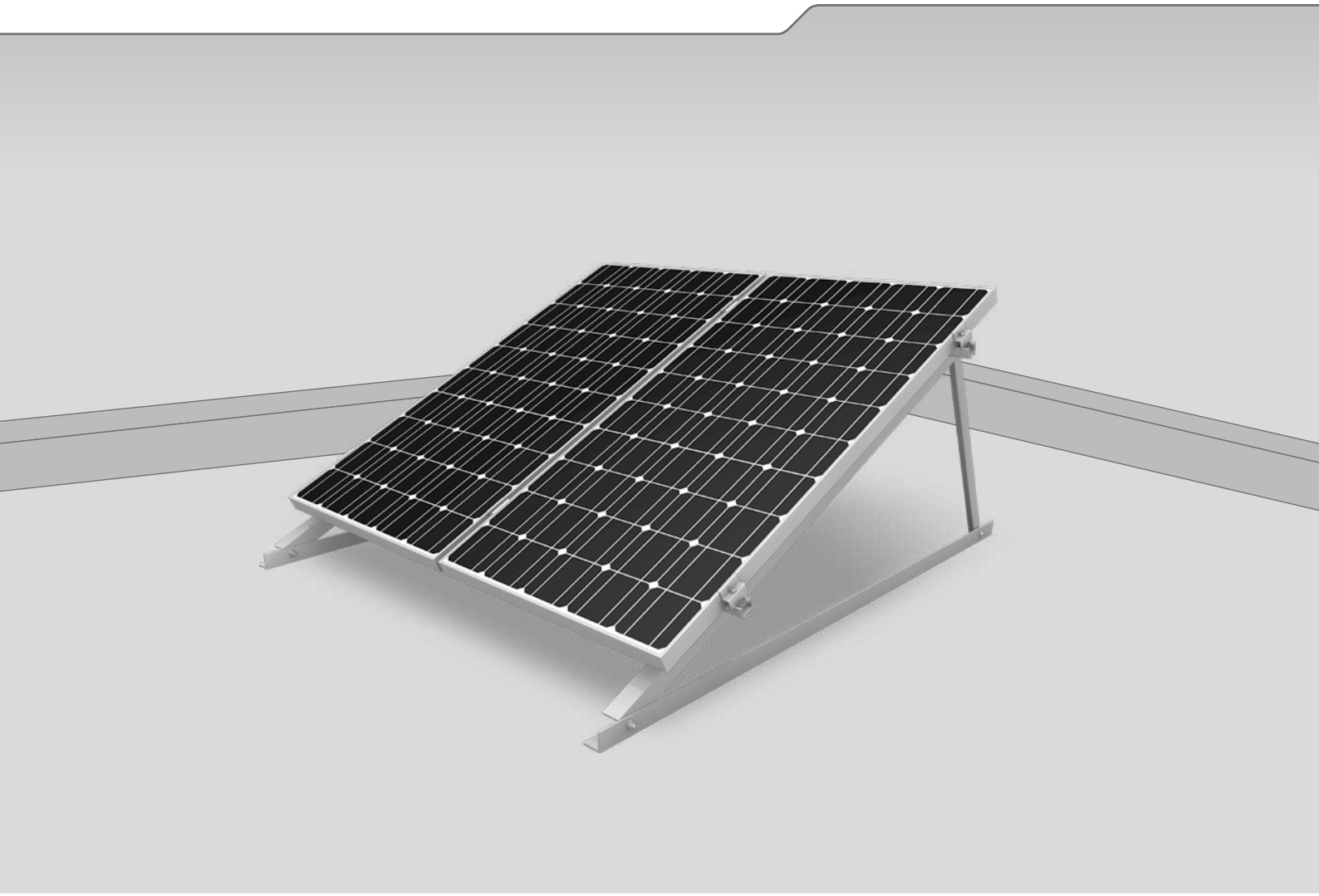
FlexClamp Small
- For clamping on the long side of module
- Height adjustable



Technical data

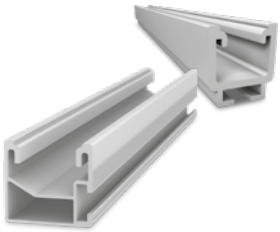
	S-Dome Small
Scope of application	Flat or pitched roofs ≤ 15° with trapezoidal sheet metal roofing
Fastening type / roof fixture	Attached with drilling screws in trapezoidal sheets, parallel to raised crests
Requirements	‣ Sheet thickness: ≥ 0.4 mm steel and ≥ 0.5 mm aluminium ‣ Tensile strength for aluminium: 165 N/mm² ‣ Tensile strength for steel: acc. to approval min. S235 in acc. with DIN EN 10025-1 ‣ Crest width: min. 22 mm ‣ Crest spacing: independent of crest distance
Inclination angle	10°
Material	‣ Mounting rails, Dome SD Small, Dome S1000 Small, FlexClamp Small: Aluminium (EN AW-6063 T66/ EN AW-6082 T6); EPDM ‣ Small parts: Stainless steel (1.4301) A2

Triangle/MultiAngle System 10-45°

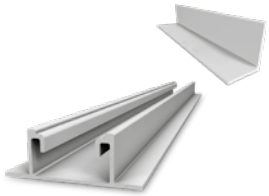


- Individually customisable elevation angle
- Universal module orientation
- High flexibility and customised solutions

Components



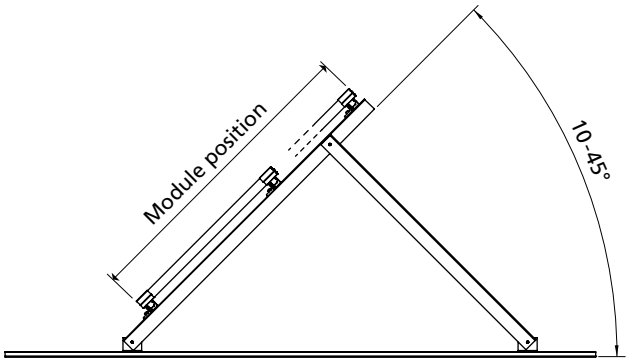
Mounting rails
- Triangle: SolidRail
- MultiAngle: SingleRail



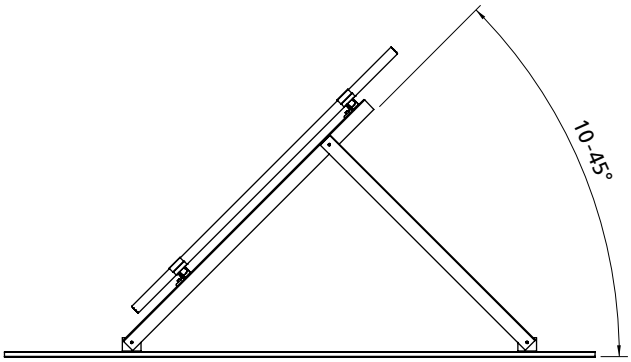
Base assembly
- Triangle: L-Profile
- MultiAngle: SpeedRail or L-Profile

Module orientation
- Triangle: Landscape mounting with AddOn
- MultiAngle: Portrait mounting, 2 heights for landscape mounting (clamps at corners or with AddOn)

Elevation
- Triangle: Available with 10-45°
- MultiAngle: Individually customisable, 10-45°



Module landscape



Module portrait

Technical data

	Triangle / MultiAngle
Scope of application	Flat roofs, fields, or ground
Fastening type/roof fixture	Fastening or ballasting
Technical specifications	Thermal separation after max. 13.6 m
Inclination angle	10-45°, factory-default, or individually adjustable with MultiAngle
Material	‣ Mounting rails, module clamps: Aluminium (EN AW-6063 T66/EN AW-6082 T6) ‣ Also suitable for PE plates ‣ Small parts: Stainless steel (1.4301) A2

Accessories

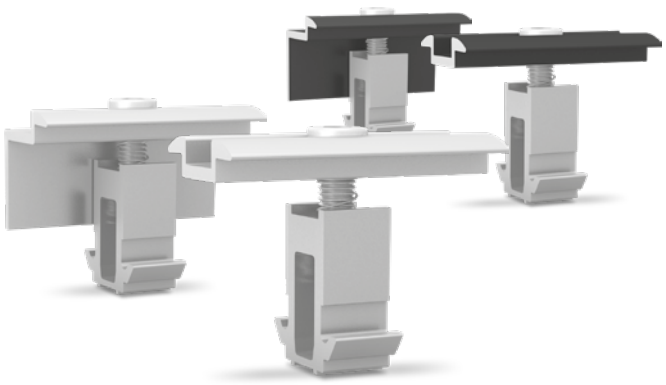
- Module clamps 20
- Self-tapping screw with sealing washer 22
- T-bolt and flange nuts with serration 22
- MK2 slot nuts with assembly clip 22
- Screw anchor, Multi Monti 22
- Washer 22
- Lightning protection clamp Multi Sets 23
- PVX Multimount 23
- TerraGrif equipontential bonding 23
- Cable clips 23

Module clamps

MiniClamp MC and EC

For the D-Dome V and S-Dome V System we use the universal and rotatable MiniClamps MC/EC. MiniClamp MC and EC are universal clamps with a clamping range of 30 - 50 mm.

Description	Item number
MiniClamp MC, middle clamp, aluminium mill finish	2002558
MiniClamp MC, middle clamp, black anodised	2002609
MiniClamp EC, end clamp, aluminium mill finish	2002559
MiniClamp EC, end clamp, black anodised	2002610

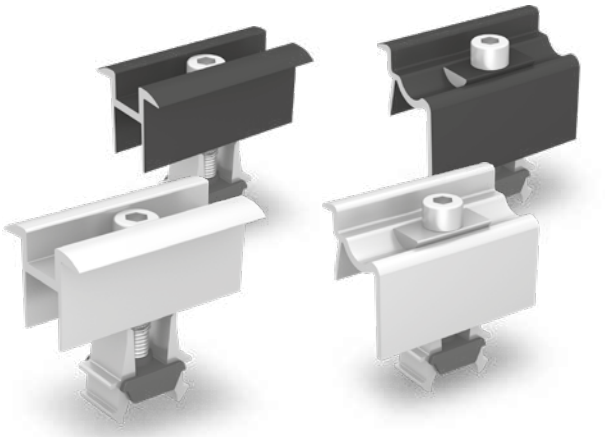


MiniClamp EC MiniClamp MC

Universal module clamps OneMid and OneEnd

These module clamps are suitable for the most common module frame heights of 30 - 42 mm. Compatible with SingleRail, CrossRail, SpeedRail, MultiRail, SolidRail plus S- and D-Dome.

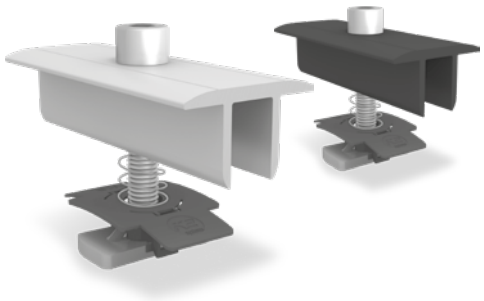
Description	Item number
OneMid, mid clamp, aluminium mill finish	2003071
OneMid, mid clamp, black anodised	2003072
OneEnd, end clamp, aluminium mill finish	2002514
OneEnd, end clamp, black anodised	2002589



OneMid OneEnd

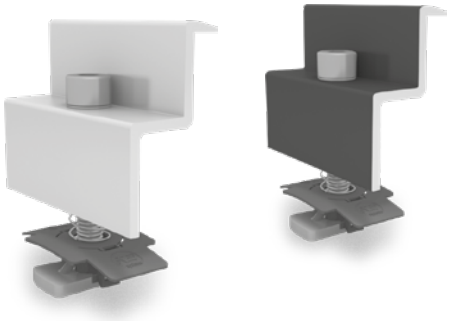
Module middle clamps XS

Module frame height / description	Item number
30 - 33 mm / M8×50, aluminium mill finish	1005156
30 - 33 mm / M8×50, black anodised	1005157
34 - 38 mm / M8×50, aluminium mill finish	1003586
34 - 38 mm / M8×50, schwarz eloxiert	1005158
39 - 44 mm / M8×60, aluminium mill finish	1004908
39 - 44 mm / M8×60, black anodised	1005159
45 - 48 mm / M8×65, aluminium mill finish	1005143
45 - 48 mm / M8×65, black anodised	1005160
49 - 50 mm / M8×70, aluminium mill finish	1004407
49 - 50 mm / M8×70, black anodised	1005161



Module end clamps

Module frame height / description	Item number
30 - 31 mm / M8×30, aluminium mill finish	1005345
30 - 31 mm / M8×30, black anodised	1005347
32 - 33 mm / M8×30, aluminium mill finish	1005344
32 - 33 mm / M8×30, black anodised	1005346
34 - 36 mm / M8×30, aluminium mill finish	1005169
34 - 36 mm / M8×30, black anodised	1005268
37 - 38 mm / M8×30, aluminium mill finish	1005290
37 - 38 mm / M8×30, black anodised	1005293
39 - 41 mm / M8×35, aluminium mill finish	1005170
39 - 41 mm / M8×35, black anodised	1005269
42 - 44 mm / M8×35, aluminium mill finish	1005291
42 - 44 mm / M8×35,black anodised	1005295
45 - 47 mm / M8×40, aluminium mill finish	1005171
45 - 47 mm / M8×40, black anodised	1005270
48 mm / M8×40, aluminium mill finish	1005292
48 mm / M8×40, black anodised	1005296
49 - 50 mm / M8×45, aluminium mill finish	1005172
49 - 50 mm / M8×45, black anodised	1005271



Accessories

Self-tapping screw with sealing washer

Thin sheet screw, chip-free; approved for steel/ aluminium sheets with a minimum thickness of 0.4/0.5 mm.
Material: Stainless steel A2, EPDM

Type	Item number
6 × 25 mm, SW 8, sealing washer Ø 16 mm	1005207
6 × 38 mm, SW 8, sealing washer Ø 16 mm	1005193

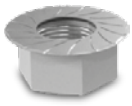
T-bolt and flange nuts with serration

T-bolt for use in the lower chamber of K2 SolidRail rails.
Head form: 28/15
Head dimensions: 22.5 × 10.5 × 4 mm
Material: Stainless steel A2 1.4301

Type	Item number
M10×20	1000637
M10×30	1000041
M8×20	1000614
M8×30	1000368

The serrated nut (similar to ISO 4161) prevents it from loosening.
Material: Stainless steel A2

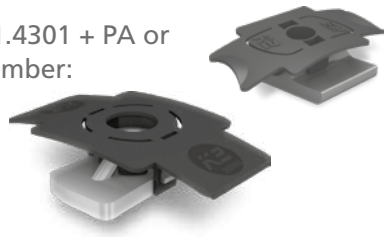
Type	Item number
M8	1000043
M10	1000042



MK2 slot nuts with assembly clip

The MK2 slot nuts can be used at any point on the K2 rails. They automatically lock in place. Subsequently, they can easily be moved about in the rail by pressing them lightly.

Material: Stainless steel 1.4301 + PA or aluminium + PA; Item number:
1001643 (stainl. steel)
2000034 (aluminium)

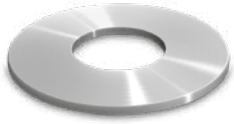


Screw anchor, Multi Monti

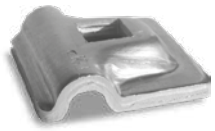
Multi Monti screw anchor (Heco) for fastening to concrete; min. borehole depth 40 mm. Steel surface: galvanised and blue passivated, head diameter 17 mm, nominal bore diameter 6 mm
Material: galvanised steel
Drive: TX 30

Washer

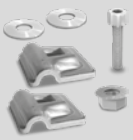
Safety mechanism for installing S-Dome Windbreakers.
Material: Stainless steel A2
Item number: 1000273



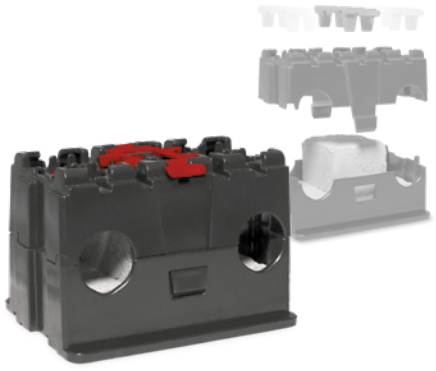
Lightning protection clamp Multi Sets



Lightning protection clamp for clamping lightning protection cables with Ø 8 mm.
For universal use as a T cross, parallel and impact clamps. Material: aluminium

Image	Type	Components	Item number
	Lightning protection clamp Multi Alu 8 mm Set	‣ Lightning protection clamp Multi (1003151), aluminium ‣ Slot nut (1001643), stainless steel, PA ‣ Washer (8,4 × 20 × 1.2 mm), stainless steel A2 ‣ Allen Bolt (M8×30), stainless steel A2	2002473
	**Lightning protection clamp 8 mm Double Set**	‣ 2× lightning protection clamps Multi (1003151), Aluminium ‣ Hexagon flange nut with serration M8 (100043); stainless steel A2 ‣ 2× washers (8.4 × 20 × 1.2 mm), stainl. steel A2 ‣ Allen Bolt (M8×40), stainless steel A2	2002474

PVX Multimount



Multifunctionale cable management
The UV-resistant PVX Multimount provides a multifunctional cable management system for mesh tray and/or pipes on flat roofs and is made from 80 % recycled plastic. Mesh tray and/or pipes are not included.
Material: PE and ASA

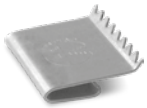
TerraGrif equipontential bonding

Potential equalisation between module and rail.
Material: Stainless steel

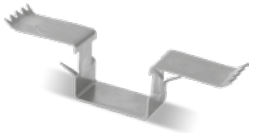
Type	Item number
TerraGrif K2MI Landscape/Portrait	2002649
TerraGrif K2PA 32 Landscape	2000055
TerraGrif U17 Portrait	2000056
TerraGrif K2SZ Landscape/Portrait	2001881

K2MI

K2PA



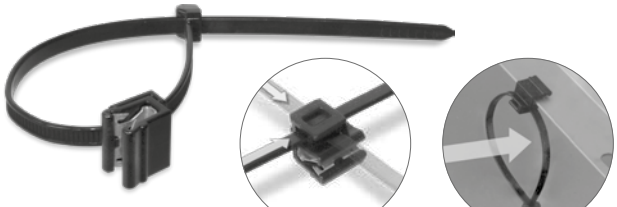
U17



K2SZ

Cable clips

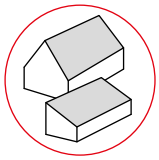
Type	Item number
Cable Manager Solar Cable Manager with connecting possibility for outdoor-installation L × W: 200 × 4.6 mm	2002870
Omega Cable Clip Suitable for CrossRail, SingleRail, SolidRail; 4 cables with Ø 6 mm Material: Polypropylene with UV stabiliser	1005394



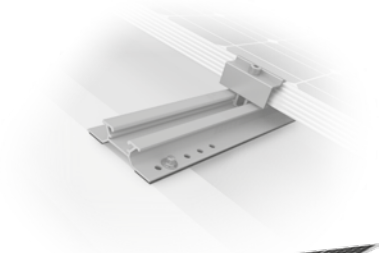
Cable Manager

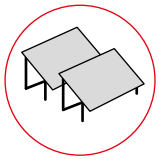
Omega
Kabel-Clip

Other K2 systems

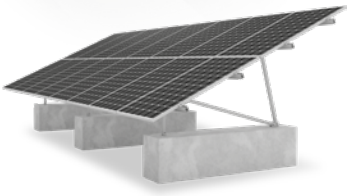


- Pitched roof systems





- Ground mounted systems



K2 Systems GmbH
Industriestraße 18
71272 Renningen
Germany
+49 (0) 7159 - 42059 - 0
info@k2-systems.com
www.k2-systems.com