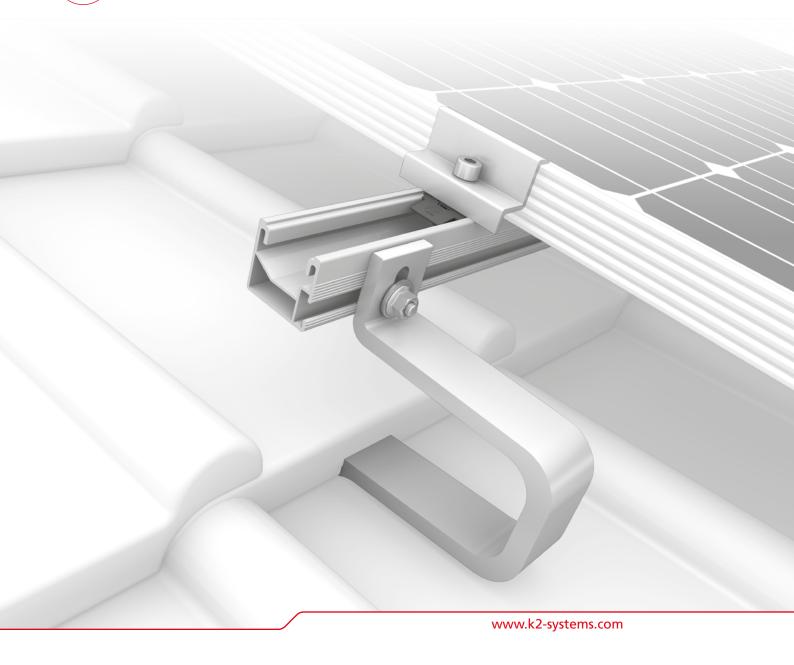
## Mounting systems for solar technology



# PITCHED ROOF SYSTEMS









## Content



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		TIPS		Ale The The The The The The The The The Th					
► SingleRail System	4	•	·	•					0
► CrossRail System	6	•	0	0	0	0	•	•	0
► SolidRail System	8	•	•	•	•	0	•	•	•
► MiniRail System	10	0	0	0	•	•	0	0	0
► SpeedRail System	12	0	0	0	•	•	0	0	0
► MultiRail System	14	0	0	0	•	•	0	0	0
► S-Dome Small System	16	0	0	0	•	0	0	0	0
► ClampRail System	18	0	0	0	0	0	0	0	•
• Overview of roof fastenings	20								
► Accessories	24								
▶ Notes	30								

## **WARRANTY**

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



Suitable

Unsuitable

## STATICS AND DESIGN LOADS

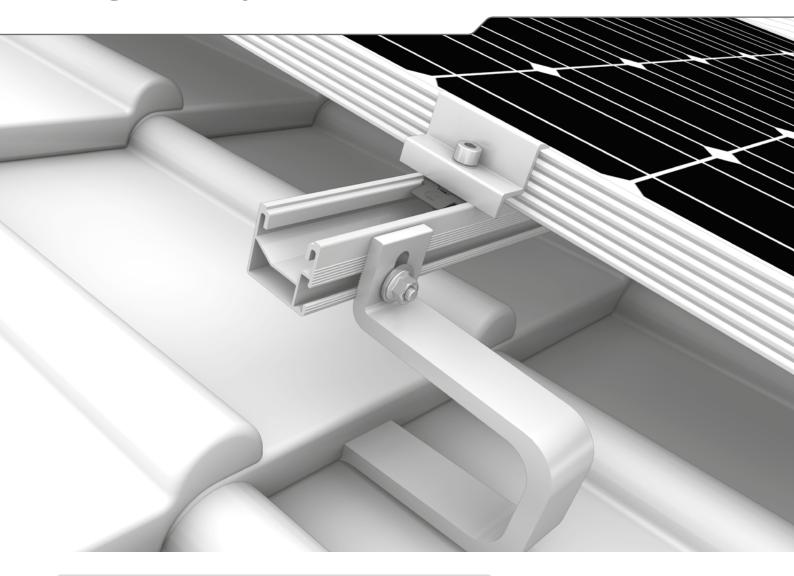
K2 mounting systems fulfil the calculation principles in accordance with Eurocode 1 and 9.

## PALLET DELIVERY

Many mounting systems are delivered in pallets to save space and costs.



# SingleRail System



- Quick and low-cost with direct lateral connections to the rail without additional components including customised height adjustment
- ► Secure snap-in assembly without needing to be screwed into the base plate
- ► The SingleRail in combination with CrossHook roof hooks, forms a powerful and multi-talented team











## **ROOF FASTENINGS: HANGER BOLTS AND ROOF HOOKS**



#### Hanger bolts, CR

- For corrugated fibre cement roofing with wooden substructures
- With building approval



#### SingleHook 1.1

- ► Easy height adjustment with slotted bore hole
- Also suitable for narrow rafters
- ► Connects directly to SingleRail



#### CrossHook 3S

- ▶ 3 height adjustments in the base plate
- Also suitable for narrow rafters



#### CrossHook 4S

- ▶ 3 height adjustments in the base plate
- Further height adjustment at the bracket itself.
- ► Also suitable for narrow rafters



#### CrossBoard

- ► The easy solution for nogging, skylights etc.
- ► Complements CrossHook 3S and 4S



#### CrossHook 2

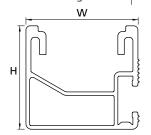
- For concrete flat tiles/slate
- With round-slotted bore holes

## **TECHNICAL DATA**

	SingleRail 36	SingleRail 50	SingleRail 63	
Figure				
Material	Aluminium (EN AW-6063 T66)			
W = width [mm]	39.4	39	47	
H = height [mm]	36	50	63	
Lengths [m]	2.10/3.15/4.15/ 6.10	6.10	6.10	
Weight [kg/m]	0.76	1.0	1.51	
Cross-bracing with	CrossRail, SingleRail, SolidRail, SpeedRail and MultiRail			

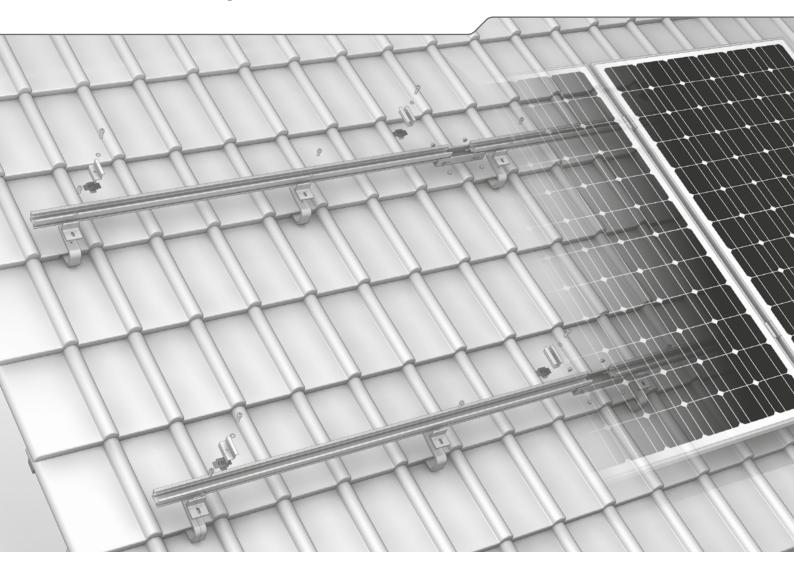
Roof fastenings

You will find detailed technical data on our roof fastenings starting on page 20.



For heavy loads and large spans!

# CrossRail System



- ► Sophisticated geometric design and optimal use of materials for large rail widths
- ► Highest corrosion resistance thanks to roof hooks and rails made of aluminium
- Clever and strong: 3 height adjustments in the 3S model and further bracket adjustment in the 4S models











## **ROOF FASTENINGS: HANGER BOLTS AND ROOF HOOKS**



#### Hanger bolts, CR

- For corrugated fibre cement roofing with wooden substructures
- With building approval



#### CrossHook 3S

- ▶ 3 height adjustments in the base plate
- Also suitable for narrow rafters



#### CrossHook 4S

- ▶ 3 height adjustments in the base plate
- ► Further height adjustment at the bracket itself
- Also suitable for narrow rafters



#### CrossBoard

- ► The easy solution for nogging, skylights etc.
- Complements CrossHook 3S and 4S



#### CrossHook 2

- ▶ For concrete flat tiles/slate
- With round-slotted bore holes

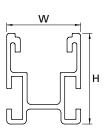


#### CrossHook 2G

- ► For steel roof tiles, type Gerard
- ▶ 3 height adjustments in the base plate
- ► Further height adjustment at the bracket itself

	CrossRail 36	CrossRail 48		
Figure				
Material	Aluminium (EN	I AW-6063 T66)		
W = width [mm]	40	40		
H = height [mm]	36	48		
Lengths [m]	2.10/3.15/4.15/6.10	6.10		
Weight [kg/m]	0.96	1.24		
Cross-bracing with	CrossRail, SingleRail, SolidRail, SpeedRail and MultiRail			







# SolidRail System



- ▶ Comprehensive range of mounting rails for varying load profiles
- ▶ Robust and structurally proven
- ▶ High flexibility for a diverse range of widths

















## **ROOF FASTENINGS**



#### **Roof hook for pantiles**

- Various sizes
- Solid stainless steel design



Vario 1 and 2 roof hooks

- ▶ For pantiles
- Height-adjustable under bracket and at battens



Roof hook for plain tile roofing

Also for double roofing



Roof hook for slate roofing

Three boreholes for a secure fit



## Roof hook for Coppo roofing

- ▶ Height-adjustable under bracket
- ► Flexible placement on rafters



### **Hanger bolts**

- ► For corrugated fibre cement or corrugated sheet roofing with wooden substructure
- Custom height adjustment



#### Solar fastener

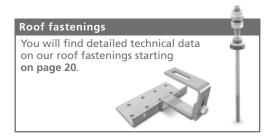
- ► For trapezoidal sheet metal, corrugated sheet metal, or corrugated fibre cement roofing
- ► For steel, timber or concrete

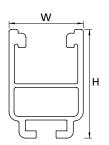


#### **Standing seam clamps**

Seam metal clamps for popular standing seam roofs such as Kalzip or Rib-Roof

	UltraLight 32	Light 37	Medium 42	Alpine 60
Figure				
Material		Aluminium (EN	AW-6063 T66)	
W = width [mm]	39	39	41	41
H = height [mm]	32	37	42	60
Lengths [m]	2.10/3.15/4.15/6.10			
Weight [kg/m]	0.7	0.85	1.3	1.7
Cross-bracing with	CrossRail and SingleRail			







# MiniRail System



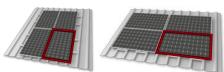
- ▶ Innovative and statically optimised short rail system that is quick and easy to mount
- Universal module clamps and suitable for portrait and landscape orientation
- Optimised for storage and transport







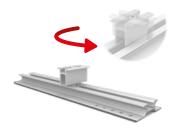




The MiniRail System allows portrait and landscape mounting in the form of grid mounting thanks to the universal module clamps which are rotatable by 90°.



## MINIRAIL SYSTEM COMPONENTS



#### MiniRail

- Landscape and portrait mounting with MiniClamp MC/EC
- Suitable for almost all crest spacings



## MiniClamp MC/EC 27 - 35 mm

- ▶ Universal module clamp
- ▶ Clamp is rotatable



## MiniClamp MC/EC 36-50 mm

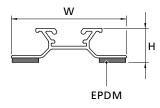
- ▶ Universal module clamp
- ▶ Clamp is rotatable

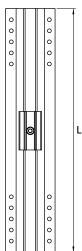


### **Self-tapping screws**

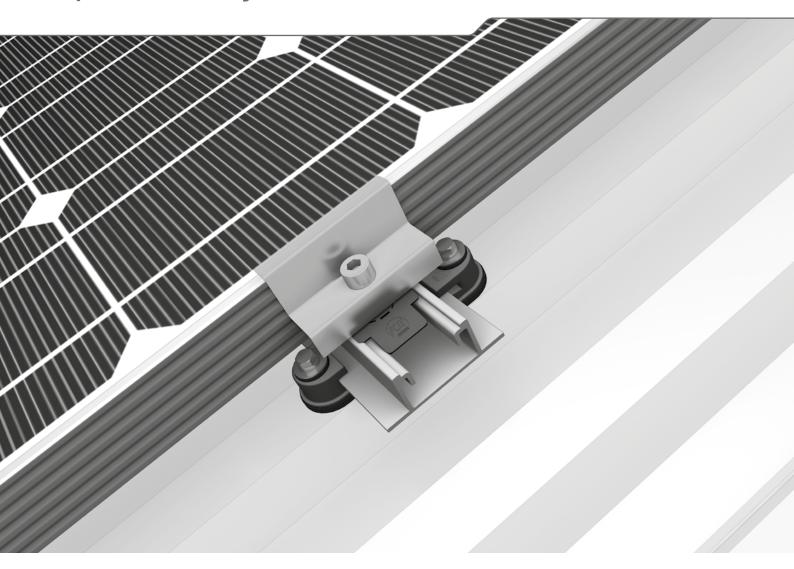
- ► Included in MiniRail MC/ EC set
- With sealing washers

	MiniRail System
Scope of application	Pitched roofs, 5-75°, with trapezoidal sheet metal or sandwich panels
Fastening type / roof fixture	Screws in roofing with self-tapping sheet metal screws
Requirements	<ul> <li>Sheet thickness: &gt;0.5 mm (steel and aluminium)</li> <li>Sandwich panel: Approval from manufacturer required</li> <li>Crest width: At least 25 mm</li> <li>Maximum crest width: 101-175/202-350 mm</li> <li>Distance from boreholes to crest edge: &gt; 8.5 mm</li> <li>Module frame height: 27-35/36-50 mm</li> </ul>
Module orientation	Vertical or horizontal
Material	Aluminium (EN AW-6063 T66/ EN AW-6082 T6); EPDM
W = width [mm]	86.8
H = height [mm]	20
L = rail length [mm]	385





# SpeedRail System



- ▶ The proven long rail system for trapezoidal sheet applications as well as floating suspension with controlled thermal linear expansion
- ▶ Our most popular system over 1 GW installed worldwide
- ► All-rounder with only 4 installation steps also suitable for high loads









## SPEEDRAIL SYSTEM COMPONENTS



#### **SpeedRail**

- ► Mounting rail with easy insertion mounting into SpeedClips
- Various lengths available



#### SpeedClip

- Mounting brackets for SpeedRail
- ▶ Simple insertion feature
- ► Glass fibre reinforced polyamide with EPDM seals
- Fastened with self-drilling screws for trapezoidal sheet metal



#### SpeedLock

- ► Mounting lock for SpeedRail in case of thermal expansion
- ▶ In a set with MK2 slot nut and stainless steel screw



#### SpeedConnector

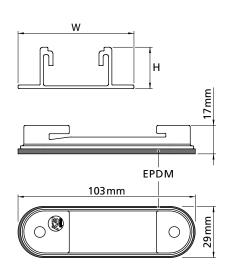
- Rail connector for SpeedRail
- ► Three boreholes for flexible mounting
- In a set with countersunk screws



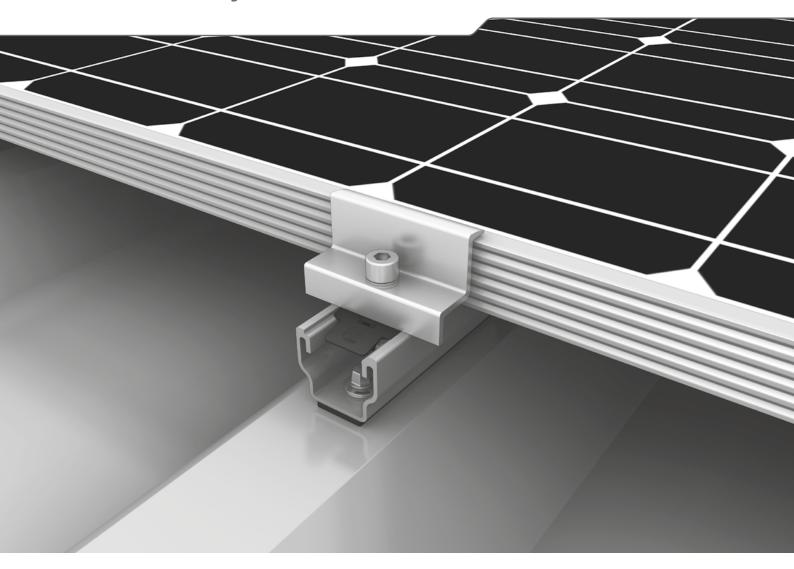
#### AddOn

- Allows the module orientation to be changed
- Simple shared-rail installation
- Glass fibre reinforced polyamide

	SpeedRail / SpeedClip
Scope of application	Trapezoidal sheet roof
Fastening type / roof fixture	Insertion mounting into SpeedClips and screws in the roofing
Material	► SpeedRail: Aluminium (EN AW-6063 T66; 0.64kg/m) ► SpeedClip: Glass fibre reinforced polyamide with EPDM
SpeedRail dimensions W = width [mm] H = height [mm] L = lengths [m]	63 22.5, 2.1 / 3.15 / 4.15 / 6.1
SpeedClip dimensions	See drawing
Cross-bracing with	SingleRail, CrossRail, SolidRail and MultiRail



# MultiRail System



- ▶ Easy and proven as a short rail or a flexible component in various lengths
- Quick planning with less material and greater effectiveness
- ▶ Solid base rail for S-Dome Small trapezoidal elevation











## **MULTIRAIL VERSIONS**





- Length 100 mm
- Landscape mounting



#### MultiRail 25

- Length 250 mmRoof connector for S-Dome Small elevation



#### MultiRail 25/3

- Length 250 mmRoof connector for S-Dome Small
- With three boreholes for roofs with 15° inclination



#### MultiRail 40

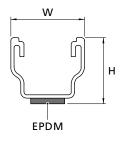
- Length 385 mm
- For mounting at right angles to raised crest

#### MultiRail 4.20

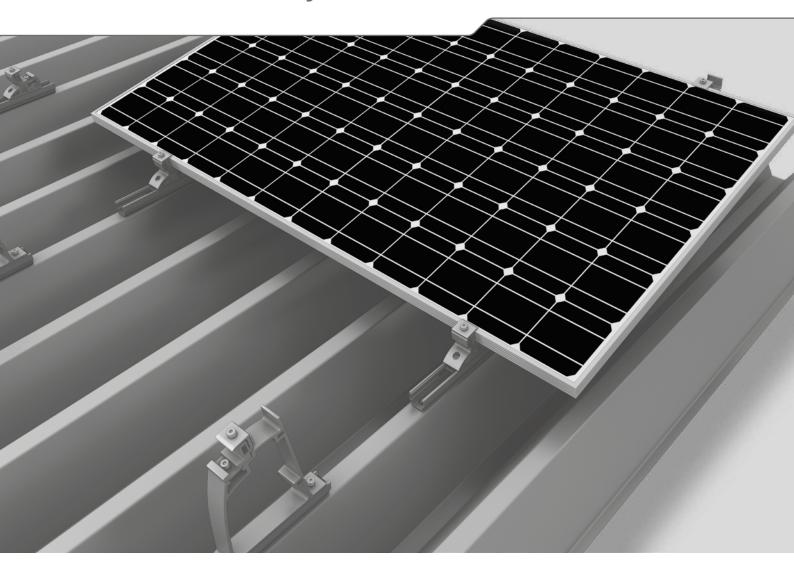
- Length 4200 mm
- Long rail for cutting to customised sizes
   Without EPDM seal; to be fastened manually with adhesive



	MultiRail 10, 25, 25/3, 40, 4.20
Scope of application	Pitched roofs, 5-75°, with trapezoidal sheet metal or sandwich panel
Fastening type / roof fixture	Fastened with self-tapping sheet screws
Requirements	<ul> <li>Sheet thickness:         <ul> <li>&gt; 0.5 mm (steel and aluminium)</li> </ul> </li> <li>Sandwich panel: approval from manufacturer required</li> <li>Crest width: at least 22 mm</li> <li>Maximum crest width: independent of crest distance</li> </ul>
Material	Aluminium (EN AW-6063 T66); EPDM
W = width [mm]	39
H = height [mm]	35
L=rail length [mm]	<ul> <li>MultiRail 10: 100</li> <li>MultiRail 25: 250</li> <li>MultiRail 40: 385</li> <li>MultiRail 4.20: 4200</li> </ul>
Cross-bracing with	CrossRail and SingleRail



# 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













## S-DOME SMALL COMPONENTS



**Dome S1000 Small**Narrow elevation module support element



**Dome SD Small**Narrow module support element



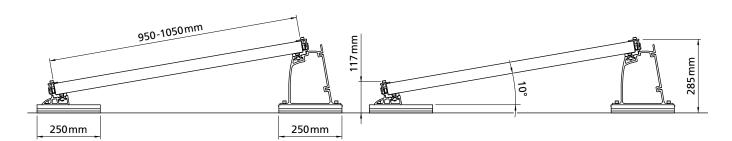
MultiRail 25 or 25/3

- ▶ Length 250 mm
- ➤ 25: For roofs with an inclination < 15°
- ▶ 25/3: With three boreholes for roofs with 15° inclination



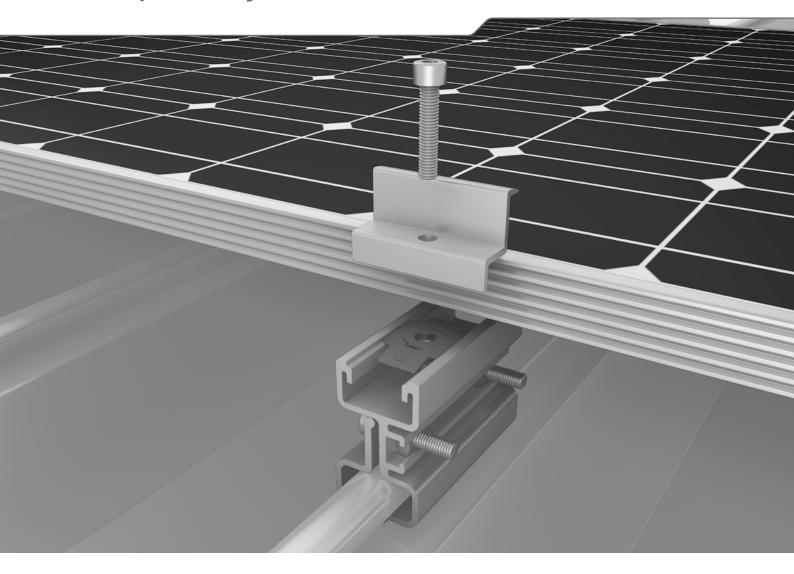
#### FlexClamp Small

- Module clamp specifically for S-Dome Small
- Height adjustable
- ► For clamping on the long side of module



	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	<ul> <li>Sheet thickness for aluminium/steel: min. 0.5 mm</li> <li>Tensile strength for aluminium: 165 N/mm²</li> <li>Tensile strength for steel: according to approval min. S235 in acc. w/ DIN EN 10025-1</li> <li>Crest width: min. 22 mm</li> <li>Crest spacing: independent of crest distance</li> </ul>
Technical specifications	Thermal separation after a max. of 13.5 m: min. 30 mm to max. 150 mm
Inclination angle	10°
Material	<ul> <li>Mounting rails, Dome SD Small, Dome S1000 Small, FlexClamp Small: Aluminium (EN AW-6063 T66/ EN AW-6082 T6); EPDM</li> <li>Small parts: Stainless steel (1.4301) A2</li> </ul>

# ClampRail System



- All-in-one solution for roof fastening and module mounting
- ▶ One component with low material usage
- ▶ No roof penetration









## **DETAILS**



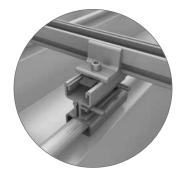
ClampRail is a roof fastener and module support in one single component



ClampRail is fastened to standing seam metal roofs via clamps without roof penetration.

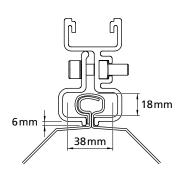


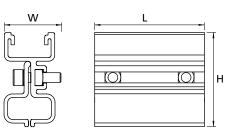
The placement depends on module dimensions and roof geometry.



Cross-bracing possible with CrossRail or SingleRail

	ClampRail Roof Fastening
Scope of application	Standing seam roofs
Fastening type / roof fixture	Screw connection, clamping under the standing seam
Requirements	Maximum seam dimensions under seam:  → Width 38 mm  → Height 18 mm  → Height under seam: 6 mm
Technical characteristics	Cross-bracing required if clamping area is not viable due to seam spacing
Module orientation	Landscape or portrait cross-bracing
Material	Aluminium (EN AW-6063 T66/EN AW-6082 T6)
W = width [mm]	42
H = height [mm]	77.5
L = rail length [mm]	100
Cross-bracing with	CrossRail and SingleRail





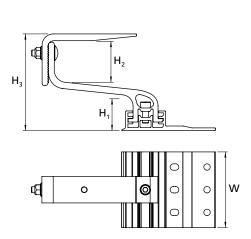
# Overview of roof fastenings

# CROSSHOOKS AND SINGLEHOOKS FOR CROSSRAIL AND SINGLERAIL

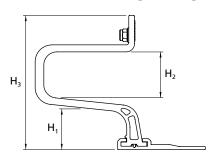
Type / image		Base plate width [W]	Batten height [H <sub>1</sub> ] Bracket height [H <sub>2</sub> ] Total height [H <sub>3</sub> ]	Item number
CrossHook 3S		100 mm	→ 40/47/54 mm → 56 mm → approx. 123/130/137 mm	2000133
CrossHook 4S		100 mm	→ 40/47/54 mm → 55 - 85 mm → 120.5 - 165 mm	2000466
SingleHook 1.1*		100 mm	→ 47.1 mm → 56 mm → 162.9 mm	2001928
CrossBoard for CrossHo	ook 35/45	2 100 mm	→ 40/47/54 mm → 56/55-85 mm → approx. 123/130/137/ 120.5-165mm	20001972
CrossHook 2G		100 mm	<ul> <li>→ 40/47/54 mm</li> <li>→ No spacing</li> <li>→ 89.2 mm</li> </ul>	2000636
CrossHook 2 (BS EN 49	0)	150 mm	→ Fixed → 46 mm → 100 mm	1004900

<sup>\*</sup> Suitable exclusively for SingleRail

### **Dimension drawing for CrossHook**



### **Dimension drawing for SingleHook**

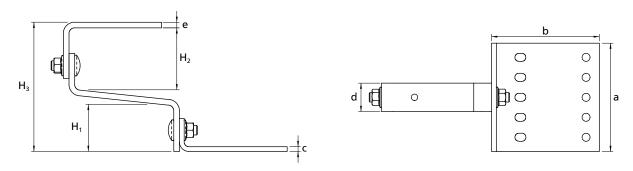




# STAINLESS STEEL ROOF HOOKS FOR SOLIDRAIL

Type /Figure	Base plate [a x b x c]	Bracket [d x e]	Bracket [H₁]/[H₂]	Total height approx. $[H_3]$	Item number
Pantiles	150 x 60 x 5 mm	30 x 6 mm	47/30 mm	133 mm	1000001
	180 x 80 x 4 mm	35 x 6 mm	38/24 mm	124 mm	1000096
	180 x 80 x 4 mm	35 x 6 mm	47/30 mm	150 mm	1000653
	180 x 80 x 5 mm	40 x 8 mm	47/30 mm	121 mm	1000764
Vario 1	150 x 60 x 5 mm	30 x 6 mm	43 / 55-90 mm	112-145 mm	1000125
Vario 2	140 x 55 x 5 mm	30 x 6 mm	47 - 59 / 47 - 59 mm	105-155 mm	1000107
Plain tile	40 x 50 mm	40 x 6 mm	62/33 mm	122 mm	1000214
Plain tile, double roofing	150 x 45 mm	150 x 60 mm	66/33 mm	103 mm	1000074
Slate roofing	40 x 250 mm	40 x 65 mm	-/60 mm	72 mm	1000373
Coppo	150x60x5mm	30 x 5 mm	100-130/ 18 mm	137 -167 mm	1001068

## **Dimension drawing**



## Overview of roof fastenings

## HANGER BOLTS

#### For timber substructures

For fastening the K2 SolidRail and CrossRail mounting rails on roofs with corrugated fibre cement or sheet metal on timber substructures. The K2 hanger bolts are equipped with an extra-long metric thread for installation height adjustment.

Hanger bolts are outfitted with a pre-mounted adapter plate.







#### CrossRail/SingleRail Hanger Bolts

Туре	Item number
M10x180, hexagonal SW 7 mm	1006166
M10x200, hexagonal SW 7 mm	1006167
M10x250, hexagonal SW 7 mm	1006168
M12x200, hexagonal SW 9 mm	1006169
M12x250, hexagonal SW 9 mm	1006170
M12x300, hexagonal SW 9 mm	1006171
M12x350, hexagonal SW 9 mm	1006172
M12x400, hexagonal SW 9 mm	1006173

### SolidRail Hanger Bolt

Туре	Item number
M10x180, hexagonal SW 7 mm	2000120
M10x200, hexagonal SW 7 mm	2000121
M10x250, hexagonal SW 7 mm	2000122
M12x200, hexagonal SW 9 mm	2000123
M12x250, hexagonal SW 9 mm	2000124
M12x300, hexagonal SW 9 mm	2000125
M12x350, hexagonal SW 9 mm	2000126
M12x400, hexagonal SW 9 mm	2000127

### **SOLAR FASTENER**

#### For steel, timber and concrete substructures

Solar fasteners (stainless steel) for attaching the K2 mounting rails on roofs with trapezoidal sheet metal, corrugated fibre cement or corrugated sheet metal. Matching M10/M12 adapter plates are available separately (1000058/1000069).



**Steel:** Solar fastener Ø 8.0 with M10x50 screw thread, E16 dome

Туре	Item number
8x64 / 50, length 114mm	1001491
8x80 / 50, length 130 mm	1002586
8x100 / 50, length 150 mm	1001636
8x125 / 50, length 175 mm	1001412
8x150 / 50, length 200 mm	1001134
8x160 / 50, length 210 mm	1000666
8x200 / 50, length 250 mm	1001751



Туре	Item number
8x64 / 50, length 114mm	1002218
8x80 / 50, length 130 mm	1001435
8x100 / 50, length 150 mm	1001400
8x125 / 50, length 175 mm	1001459
8x150 / 50, length 200 mm	1000985
8x160 / 50, length 210 mm	1004095
8x200 / 50, length 250 mm	1001838





Timber: Solar fastener Ø 8,0 mm M10x50/70 mm, metric thread E14 calotte or FZD sealing made of EPDM On request



Concrete / aerated concrete:
Solar fastener Ø 8,0 mm
M10x50/70 mm, metric thread
E14 calotte or FZD sealing made
of EPDM
On request



### STANDING SEAM CLAMPS



Our seam clamps are used to fasten the K2 mounting rails onto standing seam roofs or rounded seams. We offer seam clamps for steel or aluminium roofs.

### **K2 Round Seam Clamp**

For Kalzip roofs with rounded seam ends

Screw: M10 Clamping screw: M8 Sheet thickness: 3 mm Material: Stainless steel



### Rib-Roof Evolution Round Seam

For Rib-Roof Evolution seam metal roofs with rounded seams

Screw: M10 Clamping screw: M8 Material: Aluminium Item no. 2002226



#### S-5! Z-Mini-FL Round Seam

For Kalzip roofs with rounded seam ends

Slot: 11x22

Clamp: Grub screw Material: Aluminium Item no. 1000888



#### Rib-Roof Speed 500 Standing Seam

For Rib-Roof Speed 500 standing seam metal roofs

Screw: M10

Clamping screw: M8 Material: Aluminium Item no. 2002225



### **K2 Standing Seam Clamp**

For standing seam metal

roofs

Screw: M10 Clamping screw: M8 Sheet thickness: 2.5 mm Material: Stainless steel Item no. 2001712



## Rib-Roof 465 Standing Seam

For Rib-Roof 465 standing seam metal roofs

Screw: M10

Clamping screw: M8 Material: Aluminium Item no. 2002118



#### S-5! E-Mini-FL Standing Seam

For Kalzip standing seam metal roofs

Slot: 11x22 Clamp: Set screw Material: Aluminium Item no. 1001052



## Accessories

Module clamps	24
Self-drilling wood screw, flange head	26
Self-tapping hexagon screw with sealing washer	26
T-bolt and flange nuts with serration	26
MK2 slot nuts with assembly clip	26
Self-drilling wood screw, flange head, underhead secondary thread	27
Self-drilling wood screw, countersunk head	27
Screw anchor, Multi Monti	27
CrossRail/SingleRail End Caps	28
SolidRail End Caps	28
Lightning protection clamp, Multi half-piece	28
▶ TerraGrif equipotential bonding	28
▶ Pad spacer	29
Compensation plate for aluminium roof hooks	29
Cable clips	29

## **MODULE CLAMPS**

Our module clamps can be easily mounted to any K2 rail. The MK2 slot nut automatically locks in place and can be moved in the rail by pressing lightly on the Allen bolt.

### Module middle clamps

Module frame height / description	Item number
30-33 mm/M8x30, aluminium mill finish	1005154
34-38 mm/M8x30, aluminium mill finish	1005148
34-38 mm/M8x30, black anodised	1005150
39-44 mm/M8x35, aluminium mill finish	1004197
39-44 mm/M8x35, black anodised	1005151
45-48 mm/M8x40, aluminium mill finish	1005146
45-48 mm/M8x40, black anodised	1005152
49-50 mm/M8x45, aluminium mill finish	1005149
49-50 mm/M8x45, black anodised	1005153





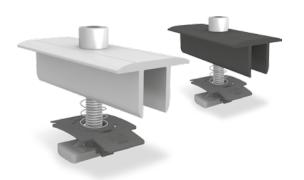
### Module end clamps

Module frame height / description         Item number           30-31 mm/M8x30, aluminium mill finish         1005345           32-33 mm/M8x30, aluminium mill finish         1005344           34-36 mm/M8x30, aluminium mill finish         1005169           34-36 mm/M8x30, black anodised         1005268           37-38 mm/M8x30, aluminium mill finish         1005290           37-38 mm/M8x35, aluminium mill finish         1005170           39-41 mm/M8x35, black anodised         1005269           42-44 mm/M8x35, black anodised         1005291           42-44 mm/M8x35, black anodised         1005295           45-47 mm/M8x40, aluminium mill finish         1005171           45-47 mm/M8x40, black anodised         1005270           48 mm/M8x40, black anodised         1005292           48 mm/M8x40, black anodised         1005296		
32-33 mm/M8x30, aluminium mill finish       1005344         34-36 mm/M8x30, aluminium mill finish       1005169         34-36 mm/M8x30, black anodised       1005268         37-38 mm/M8x30, aluminium mill finish       1005290         37-38 mm/M8x30, black anodised       1005293         39-41 mm/M8x35, aluminium mill finish       1005170         39-41 mm/M8x35, black anodised       1005269         42-44 mm/M8x35, aluminium mill finish       1005291         42-44 mm/M8x35, black anodised       1005295         45-47 mm/M8x40, aluminium mill finish       1005171         45-47 mm/M8x40, black anodised       1005270         48 mm/M8x40, aluminium mill finish       1005292	Module frame height / description	Item number
34-36 mm/M8x30, aluminium mill finish       1005169         34-36 mm/M8x30, black anodised       1005268         37-38 mm/M8x30, aluminium mill finish       1005290         37-38 mm/M8x30, black anodised       1005293         39-41 mm/M8x35, aluminium mill finish       1005170         39-41 mm/M8x35, black anodised       1005269         42-44 mm/M8x35, aluminium mill finish       1005291         42-44 mm/M8x35, black anodised       1005295         45-47 mm/M8x40, aluminium mill finish       1005171         45-47 mm/M8x40, black anodised       1005270         48 mm/M8x40, aluminium mill finish       1005292	30-31 mm/M8x30, aluminium mill finish	1005345
34-36 mm/M8x30, black anodised       1005268         37-38 mm/M8x30, aluminium mill finish       1005290         37-38 mm/M8x30, black anodised       1005293         39-41 mm/M8x35, aluminium mill finish       1005170         39-41 mm/M8x35, black anodised       1005269         42-44 mm/M8x35, aluminium mill finish       1005291         42-44 mm/M8x35, black anodised       1005295         45-47 mm/M8x40, aluminium mill finish       1005171         45-47 mm/M8x40, black anodised       1005270         48 mm/M8x40, aluminium mill finish       1005292	32-33 mm/M8x30, aluminium mill finish	1005344
37-38 mm/M8x30, aluminium mill finish       1005290         37-38 mm/M8x30, black anodised       1005293         39-41 mm/M8x35, aluminium mill finish       1005170         39-41 mm/M8x35, black anodised       1005269         42-44 mm/M8x35, aluminium mill finish       1005291         42-44 mm/M8x35, black anodised       1005295         45-47 mm/M8x40, aluminium mill finish       1005171         45-47 mm/M8x40, black anodised       1005270         48 mm/M8x40, aluminium mill finish       1005292	34-36 mm/M8x30, aluminium mill finish	1005169
37-38 mm/M8x30, black anodised       1005293         39-41 mm/M8x35, aluminium mill finish       1005170         39-41 mm/M8x35, black anodised       1005269         42-44 mm/M8x35, aluminium mill finish       1005291         42-44 mm/M8x35, black anodised       1005295         45-47 mm/M8x40, aluminium mill finish       1005171         45-47 mm/M8x40, black anodised       1005270         48 mm/M8x40, aluminium mill finish       1005292	34-36 mm/M8x30, black anodised	1005268
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48 mm/M8x40, aluminium mill finish 1005292	45-47 mm/M8x40, aluminium mill finish	1005171
	45-47 mm/M8x40, black anodised	1005270
48 mm/M8x40, black anodised 1005296	48 mm/M8x40, aluminium mill finish	1005292
	48 mm/M8x40, black anodised	1005296
49-50 mm/M8x45, aluminium mill finish 1005172	49-50 mm/M8x45, aluminium mill finish	1005172
49-50 mm/M8x45, black anodised 1005271	49-50 mm/M8x45, black anodised	1005271



### Module middle clamps XS

Module frame height / description	Item number
30-33 mm/M8x50, aluminium mill finish	1005156
34-38 mm/M8x55, aluminium mill finish	1003586
34-38 mm/M8x55, black anodised	1005158
39-44 mm/M8x60, aluminium mill finish	1004908
39-44 mm/M8x60, black anodised	1005159
45-48 mm/M8x65, aluminium mill finish	1005143
45-48 mm/M8x65, black anodised	1005160
49-50 mm/M8x70, aluminium mill finish	1004407
49-50 mm/M8x70, black anodised	1005161



### Module clamps for laminate modules

Module middle clamps for fastening laminate modules; approved for First Solar and Calyxo thin-film modules; small module spacing.

Material: Aluminium mill finish, EPDM

Please note: For additional anti-slip protection the K2 Slideguard is suitable for vertical mounting of laminate modules with a glass thickness of 6-9 mm.

Material: Stainless steel 1.4016, EPDM

Type / accessory	Item number
Module middle clamp	1003157
Module end clamp	1003158
Slideguard	1005828



## SELF-DRILLING WOOD SCREW, FLANGE HEAD

Self-drilling wood screw with flange head (Topix) and star socket (Torx) from Heco. With European Technical Assessment (ETA) approval. Material: Stainless steel A2, matches TX 25/40 screwdrivers

Туре	Item number
6x80	1005837
6x100	1004978
8x80	1000642
8x100	1000656
8x120	1001525
8x160	1002366
8x180	1002367



## SELF-TAPPING HEXAGON SCREW WITH SEALING WASHER

Approved for steel sheets with a minimum thickness of 0.5 mm and aluminium sheets with a minimum thickness of 0.7 mm (MiniRail 0.5 mm).

Material: Stainless steel A2, EPDM

Туре	Item number
Drilling screw, SW 8, sealing washer Ø 16 mm 6 x 25 mm 6 x 36 mm	1000212 1001622
Thin sheet screw, virtually chip-free, SW 8, sealing washer Ø 16 mm 6 x 25 mm 6 x 38 mm	1005207 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 x 10.5 x 4 mm Material: Stainless steel A2 1.4301

Туре	Item number
M10x20	1000637
M10x30	1000041
M8x20/30	1000614/1000368



The flanged nut with serration (similar to ISO 4161) prevents it from loosening.

Material: Stainless steel A2

Туре	Item number
M8	1000043
M10	1000042



## MK2 SLOT NUTS WITH ASSEMBLY CLIP

The MK2 slot nuts lock into place and can be readjusted at any point on the K2 rails by pressing lightly.

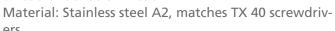
Material: Stainless steel 1.4301, PA Item number: 1001643





# SELF-DRILLING WOOD SCREW, FLANGE HEAD, UNDERHEAD SECONDARY THREAD

Self-drilling wood screw (Heco) with flange head (Topix) and star socket (Torx). With building approval. For mounting with over-rafter insulation. Fixes the counterbattens in place using a second screw thread under screw head.



Туре	Item number
8x240	1003437
8x300	1003438
8 x 360	1003439



## SELF-DRILLING WOOD SCREW, COUNTERSUNK HEAD

Self-drilling wood screw with countersunk head (Heco). With building approval. Material: Stainless steel A2, matches TX 25 screwdrivers

Туре	Item number
6 x 120	1004443
6 x 160	1001607



## SCREW ANCHOR, MULTI MONTI

Multi Monti screw anchor (Heco) for fastening into concrete; min. drilling depth 55 mm. Steel surface: galvanised and blue passivated, head diameter 17 mm, drilling measurement 6 mm

Material: Stainless steel A4 or galvanised steel,

matches TX 30 screwdrivers

Type: 7.5 x 50 mm Item number: 1000802



## Accessories

## CROSSRAIL/SINGLERAIL END CAPS

End caps for K2 CrossRail and SingleRail. Material: Glass fibre reinforced polyamide

Туре	Item number
CrossRail/SingleRail 36	1004767
CrossRail 48	1004768



## SOLIDRAIL END CAPS

End caps for K2 SolidRail.

Material: Glass fibre reinforced polyamide

Туре	Item number
Light	1004765
Medium	1004766
Alpine	1005053





## LIGHTNING PROTECTION CLAMP, MULTI HALF-PIECE

Lightning protection clamp for clamping lightning protection cables with Ø 8 mm. For universal use as Tee, cross, parallel and impact clamps.

Material: Aluminium Item number 1003151



#### Additional supplies for T-bolt groove;

- ▶ 1 T-bolt M10x30 (1000041), stainless steel A2
- ▶ 1 serrated nut M10 (1000042), stainless steel A2

#### Additional supplies for rail head chamber:

- ▶ 1 MK2 slot nut with assembly clip (1001643), stainless steel, PA
- ▶ 1 Allen bolt M8x30 (1000086), stainless steel A2
- ▶ 1 K2 washer 8.4x20x1.2 mm (1000122), stainless steel

## TERRAGRIF EQUIPOTENTIAL BONDING

Equipotential bonding between module and rail. Material: Stainless steel

Туре	Item number
TerraGrif K2PA 32 Landscape	2000055
TerraGrif U17 Portrait	2000056
TerraGrif K2SZ Landscape/Portrait	2001881







U17

K2SZ



## PAD SPACER

PA spacer shim to compensate for height differences when mounting K2 roof hooks with screw threads and K2 rails (except SolidRail).

Any number of spacer shims can be stacked to provide customised height.

Material: Glass fibre reinforced PA

Material thickness: 2 mm

Item no.: 1002361



# HEIGHT COMPENSATOR FOR ALUMINIUM ROOF HOOKS

To compensate batten differences so that the bracket height of each roof hook can be individually adjusted.

Material: Aluminium Material thickness: 4mm Item no.: 2002332



## **CABLE CLIPS**

Туре	Item number
Omega Cable Clip Suitable for CrossRail, SingleRail, SolidRail, S-Rock 4 cables with Ø 6 mm Material: Polypropylene with UV stabiliser	1005394
Cable Routing Clip Suitable for clamping in module frames with a thickness of 1.5-2.5 mm and S-Rock 4 cables with ∅ 6 mm Material: Spring steel	2002322
Dome Wire Hanger Suitable for S-Dome and D-Dome 1 cable with Ø 6 mm Material: Stainless steel (1.4310)	2002324



Omega Cable Clip

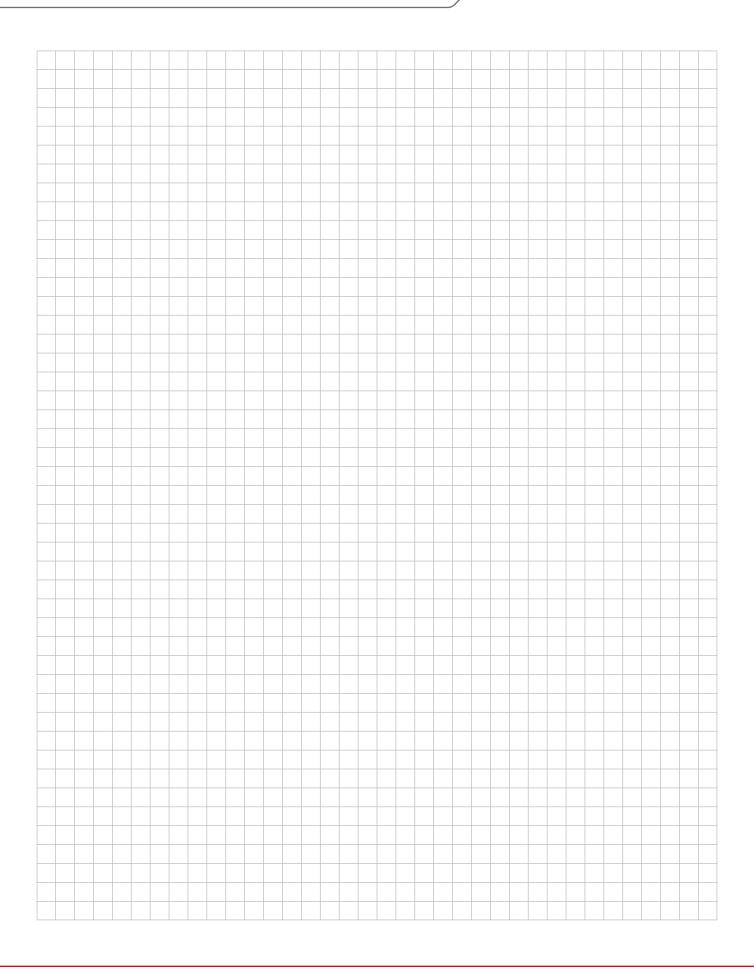


Cable Routing Clip

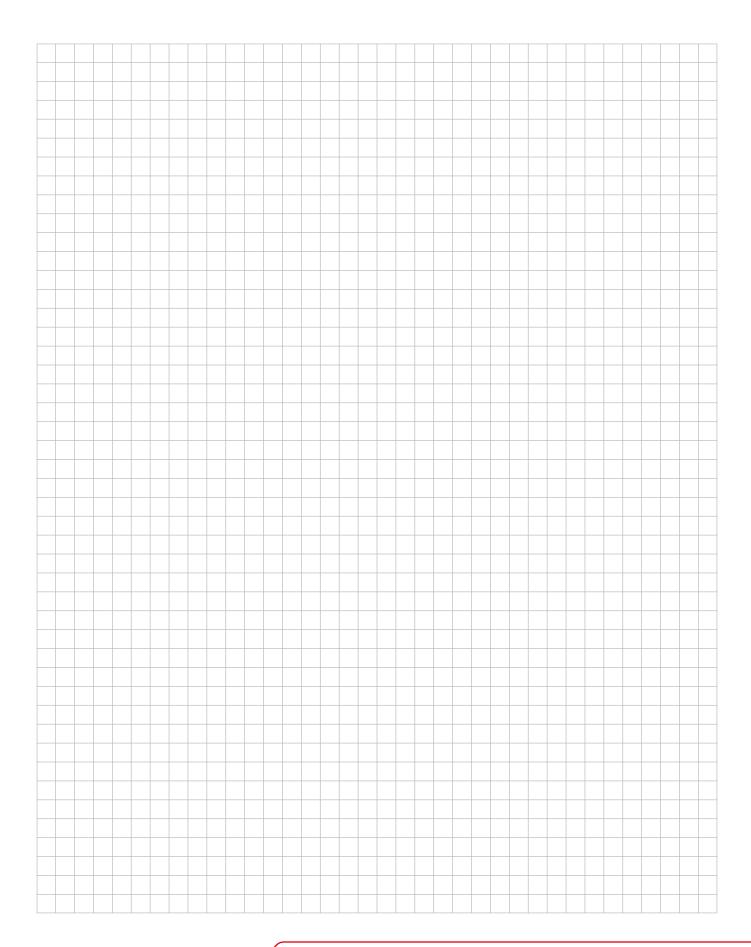


Dome Wire Hanger

## Notes







## Mounting systems for solar technology



## OTHER K2 SYSTEMS



▶ Flat roof systems





Ground mounted systems



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