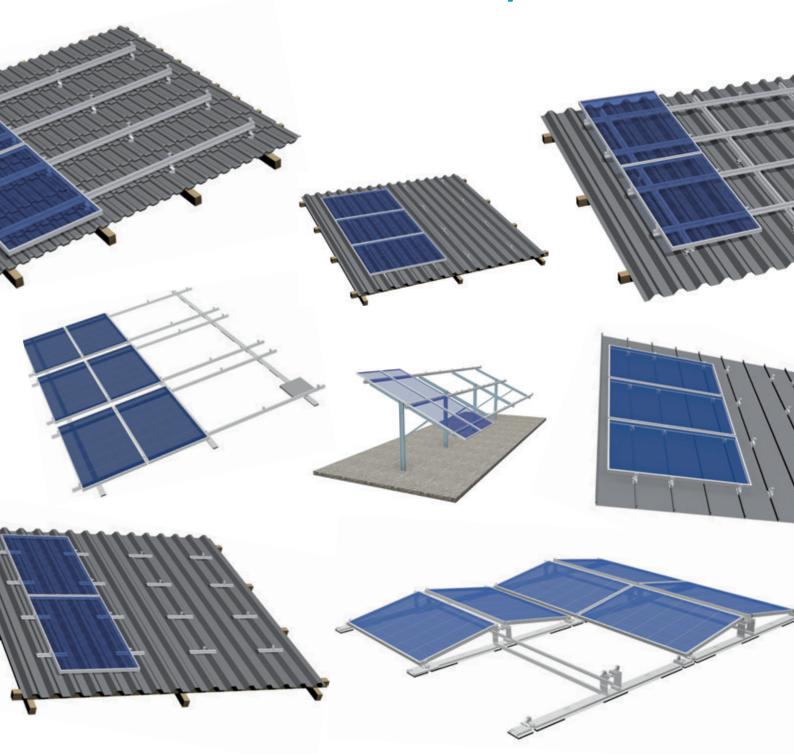


S:FLEX System Solutions



Flat roof, pitched roof and ground mount structures for flexible and fast installations



Pitched roof, flat roof, ground-mounted — system-based mounting solutions by S:FLEX

S:FLEX mounting systems stand for functionality based on simple assembly and largely preconfigured components. They provide flexible solutions for both flat and pitched roofs as well as for ground-mounted installations.

Fast installation, low freight and storage costs, optimal structural values and a long service life — these are the features that we pay attention to when manufacturing our proven components and developing new systems and parts.

Our mounting systems for sheet metal roofing are manufactured in a particularly material-saving manner and with optimal ergonomics. Using our suitably trimmed, pre-drilled trapezoidal sheet metal rail with sealing tape covered underside or the ST-AK 1/12 mounting rail, PV systems can be installed quickly and cleanly on all common types of trapezoidal sheeting.

For cost-efficient installation of modules without roof penetration on roofs with standing seam profiles, we offer the S:FLEX standing seam clamp. Ideal for direct module mounting with our clickable end and middle clamps, it can also be used in combination with our rails and cross adapter clamps.

The S:FLEX Flat Direct System for pitched roofs can be installed with minimal ballasting and without roof penetration on pitched roofs with foil or bitumen coverings and sandwich elements. This makes it especially suitable for commercial buildings with low load-bearing capacities. The structural properties of Flat Direct with air gaps between the modules produce a suction effect in the direction of the roof and achieve the best possible rear ventilation. If necessary, special ridge connectors, counterweights or mechanical couplings can be used to ensure additional safety when anchoring.

The S:FLEX Delta Triangle was designed for installing elevated systems on flat and slightly inclined roofs. Available with pitch angles from 5° to 45°, it is delivered pre-assembled, but folded up — thus significantly reducing transport costs.



Pitched Roof Systems

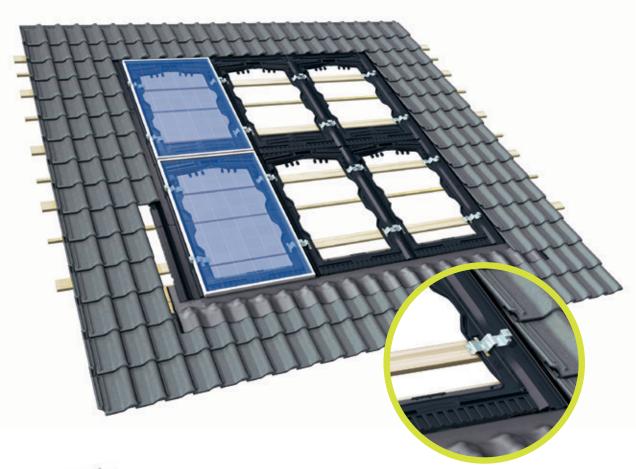
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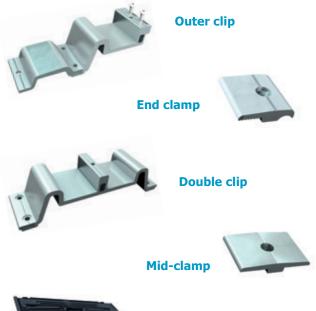




Roof hook Alu 93-7-45







Frame

Application:

Pitched roof with tiles

Fastening:

Module supports on new transverse beams

Roof pitch:

10 to 50 degrees

Module type:

Framed modules

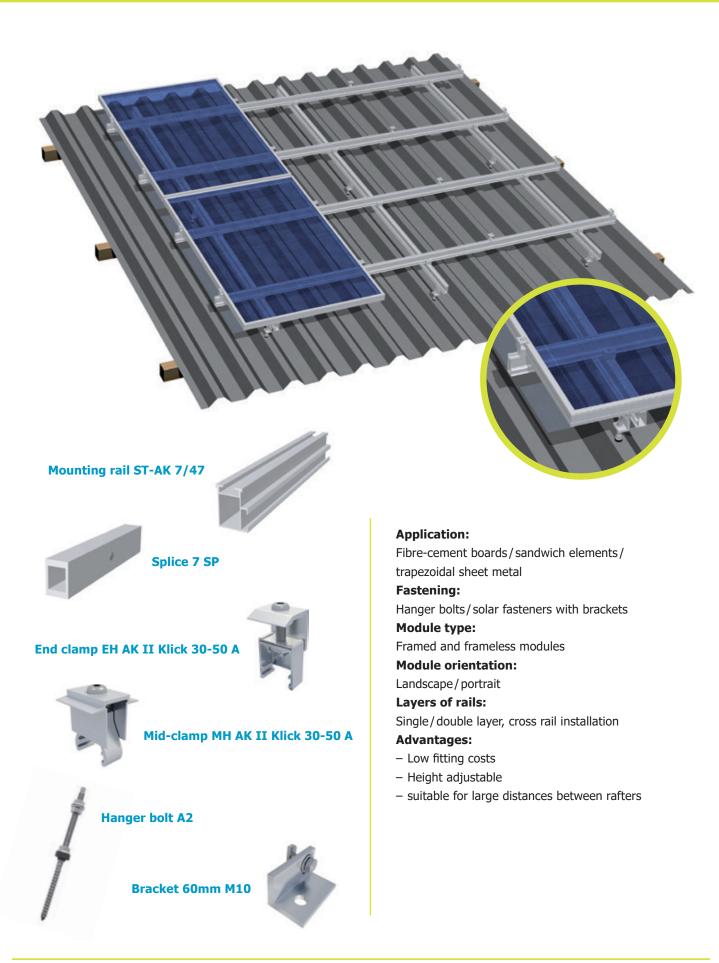
Module orientation:

Landscape/portrait

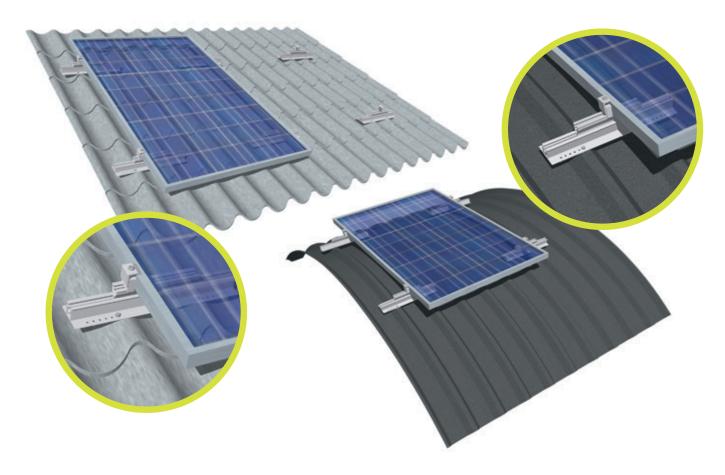
Advantages:

- Every size of module array possible
- Certified to provide a complete seal to the roof according to CSTB
- For all common rafter distances
- For all common module sizes
- Optionally include module earthing
- Roof edge connections via the system













Corrugated roof tile and curved trapezoidal sheet metal (barrel roofs with a radius larger than 3.5 m)

Fastening:

Riveted or screwed with sheet metal screws to the raised seams

Module type:

Framed modules

Module orientation:

Vertical/horizontal

Module / roof inclination:

Max. 20° towards horizon

Max. load:

5.4 kN/m² (wind and snow load combined)

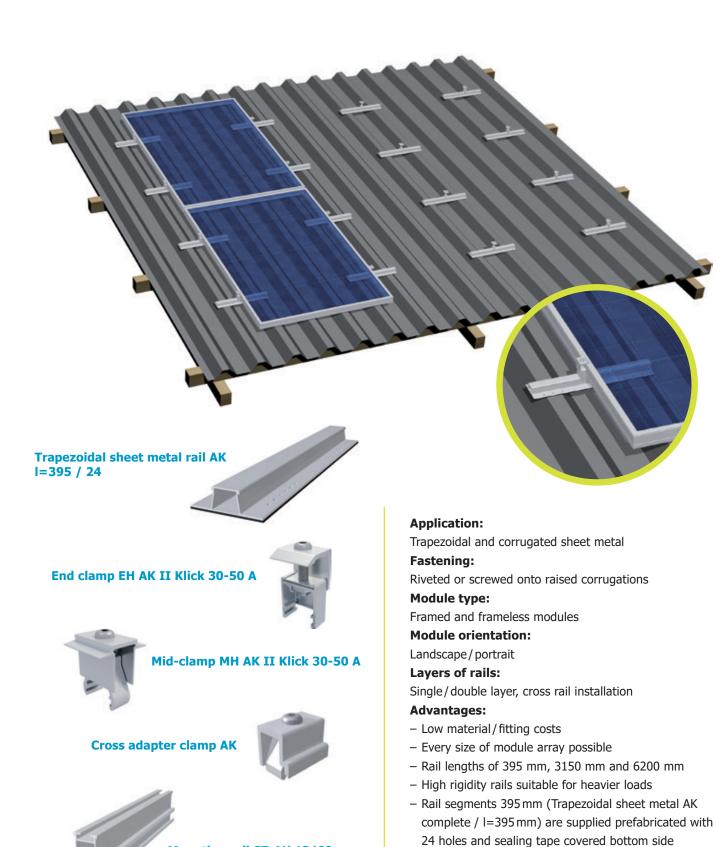
Seam spacings:

100 – 333 mm

Sheet metal thickness:

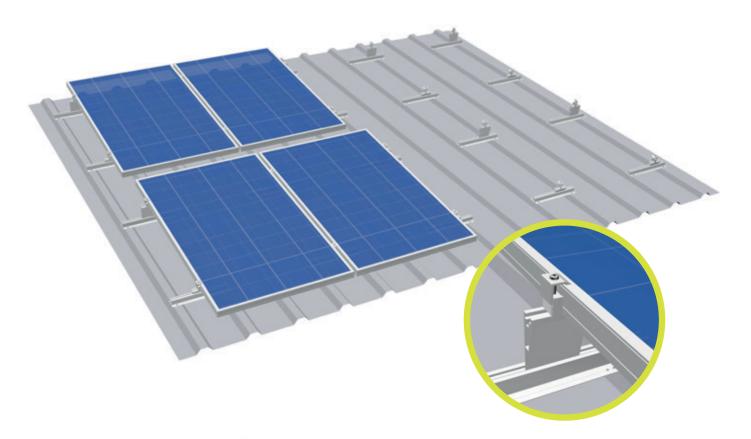
Sheet steel min. 0.5 mm/Aluminium min. 0.8 mm

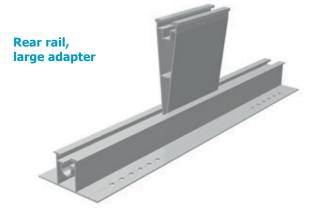


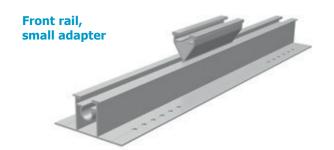


Mounting rail ST-AK 13/60









Trapezoidal sheet metal

Fastening:

Riveted or screwed with sheet metal screws to the raised seams

Module type:

Framed modules

Module orientation:

Vertical/horizontal

Module pitch:

5° with vertical installation/7° with horizontal installation

Module inclination:

Max. 20° towards horizon

Max. roof pitch:

 15° with vertical installation/ 13° with horizontal installation

Max. load:

5.4 kN/m² (wind and snow load combined)

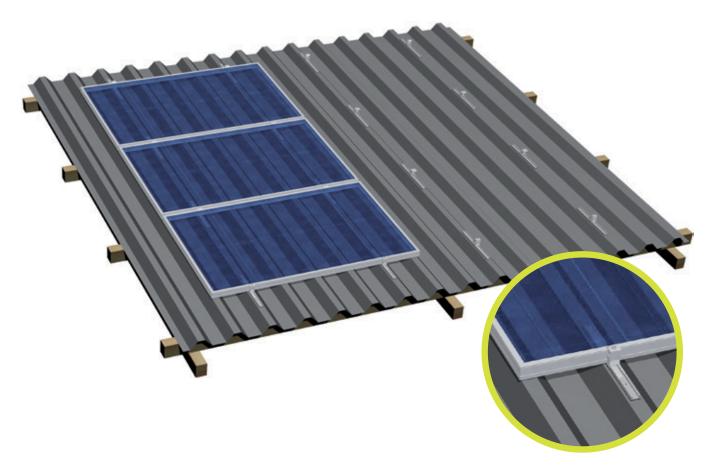
Seam spacings:

100 - 333 mm

Sheet metal thickness:

Sheet steel min. 0.5 mm/Aluminium min. 0.8 mm









Trapezoidal sheet metal

Fastening:

Riveted or screwed onto raised corrugations

Module type:

Framed modules

Module orientation:

Landscape

Layers of rails:

Single layer

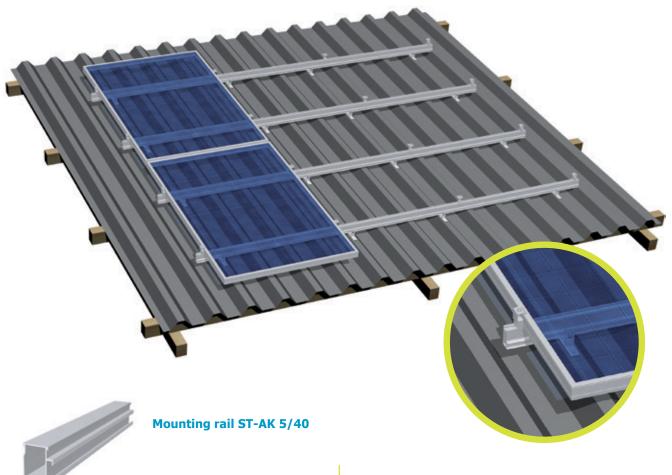
Advantages:

- Low material/fitting costs
- Every size of module array possible
- Rail lengths of 180 mm, 3150 mm and 6200 mm
- Rail segments 180 mm (ST-AK 1/12 complete / I=180 mm) are supplied prefabricated with 3 x 2 holes (5 mm / 6.5 mm / 8.5 mm) and sealing tape covered bottom side

Note:

Respective clearances between raised corrugations required for optimum module fastening must be adhered to









Cross adapter clamp AK







Mid-clamp MH AK II Klick 30-50 A

End clamp EH AK II Klick 30-50 A



Application:

Trapezoidal and corrugated sheet metal

Fastening:

Riveted or screwed onto raised corrugations

Module type:

Framed and frameless modules

Module orientation:

Landscape/portrait

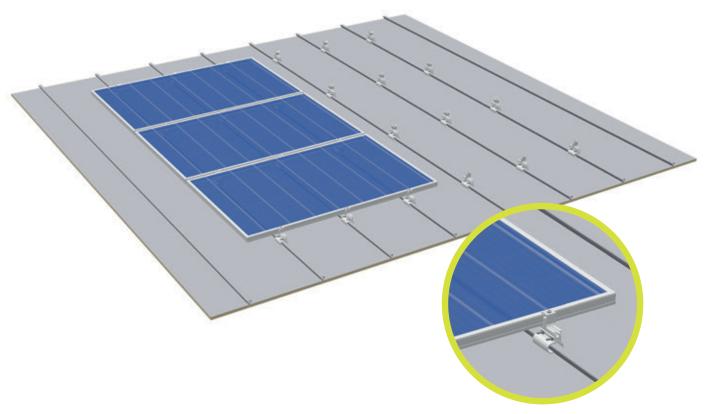
Layers of rails:

Single / double layer, cross rail installation

Advantages:

- Low fitting costs
- Every size of module array possible
- Height adjustable via elongated hole in the sheet metal bracket





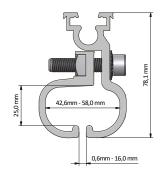


Standing Seam Clamp 2.1





Mid clamp AK II Klick 30-50 A



Application:

Seamed roofing

Fastening:

Non-penetrative

Module type:

Framed modules

Module orientation:

Horizontal/vertical (for clamping on the short side)

Layers of rails:

Single layer

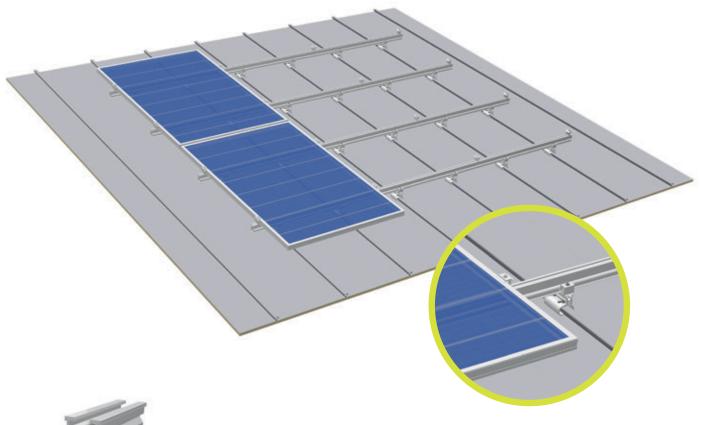
Advantages:

- No rails necessary
- Low material/logistics/installation costs
- Quick mounting
- No roof penetration

Note:

The respective clearances between the raised corrugations required for optimum fastening of the modules must be adhered to







Standing Seam Clamp 2.1







Mid clamp AK II Klick 30-50 A

Cross adapter clamp AK





Rail ST-AK 13/60

Seamed roofing

Fastening:

Non-penetrative

Module type:

Framed modules

Module orientation:

Vertical/horizontal (depending on approval from the module manufacturer)

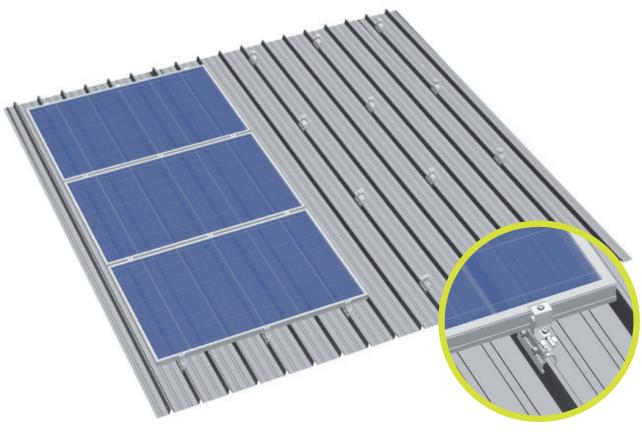
Layers of rails:

Single/double layer, cross rail installation

Advantages:

- Low material/installation costs
- Length of rails 3150 mm to 6200 mm
- High rigidity rails suitable for heavier loads





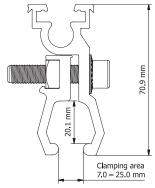


Standing Seam Clamp DCO





Mid clamp AK II Klick 30-50 A



Domitec/GBS profiles or identical in construction

Fastening:

Non-penetrative

Module type:

Framed modules

Module orientation:

Landscape/portrait (depending on approval from the module manufacturer)

Layers of rails:

Single layer

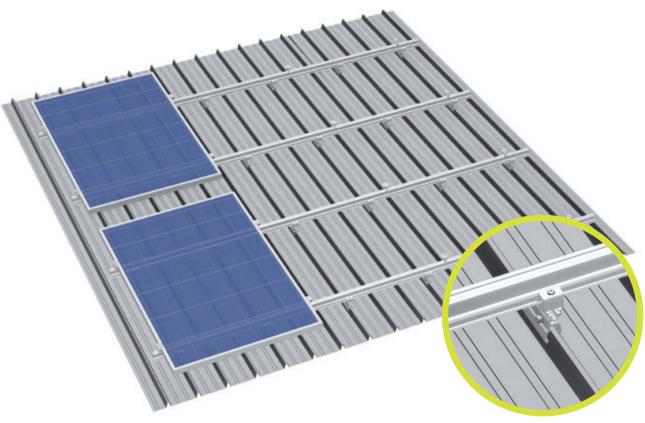
Advantages:

- No rails necessary
- Low material/logistics/installation costs
- Quick mounting
- No roof penetration

Note:

The respective clearances between the raised corrugations required for optimum fastening of the modules must be adhered to







Domitec/GBS profiles or identical in construction

Fastening:

Non-penetrative

Module type:

Framed modules

Module orientation:

Portrait/landscape (depending on approval from the module manufacturer)

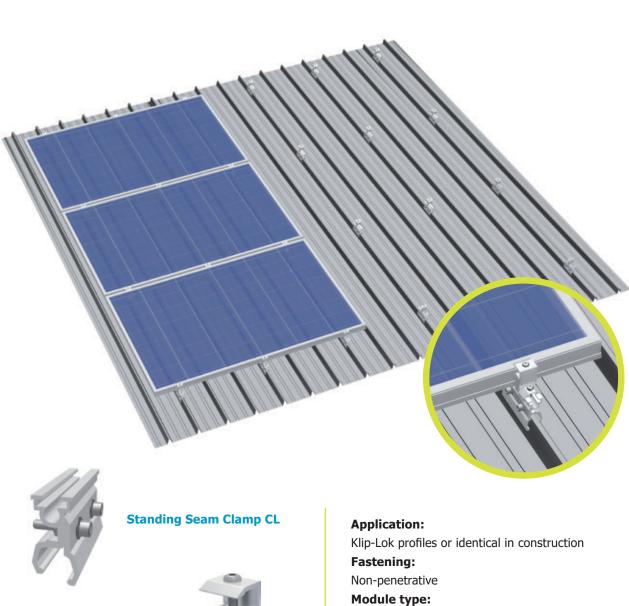
Layers of rails:

Single/double layer, cross rail installation

Advantages:

- Low material/installation costs
- Length of rails 3150 mm to 6200 mm
- High rigidity rails suitable for heavier loads





Framed modules

Module orientation:

Landscape/portrait (depending on approval from the module manufacturer)

Layers of rails:

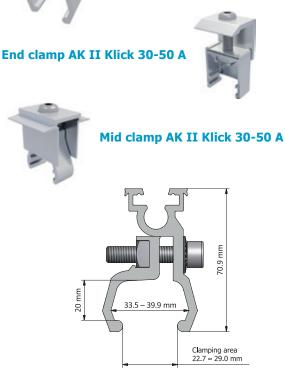
Single layer

Advantages:

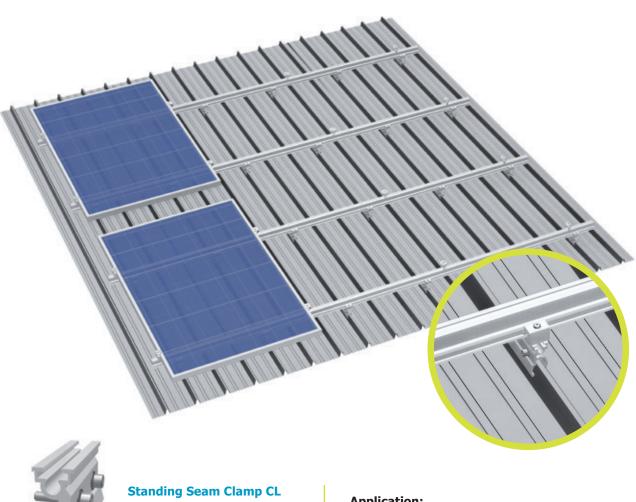
- No rails necessary
- Low material/logistics/installation costs
- Quick mounting
- No roof penetration

Note:

The respective clearances between the raised corrugations required for optimum fastening of the modules must be adhered to











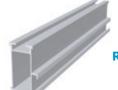




Mid clamp AK II Klick 30-50 A







Rail ST-AK 13/60

Klip-Lok profiles or identical in construction

Fastening:

Non-penetrative

Module type:

Framed modules

Module orientation:

Portrait/landscape (depending on approval from the module manufacturer)

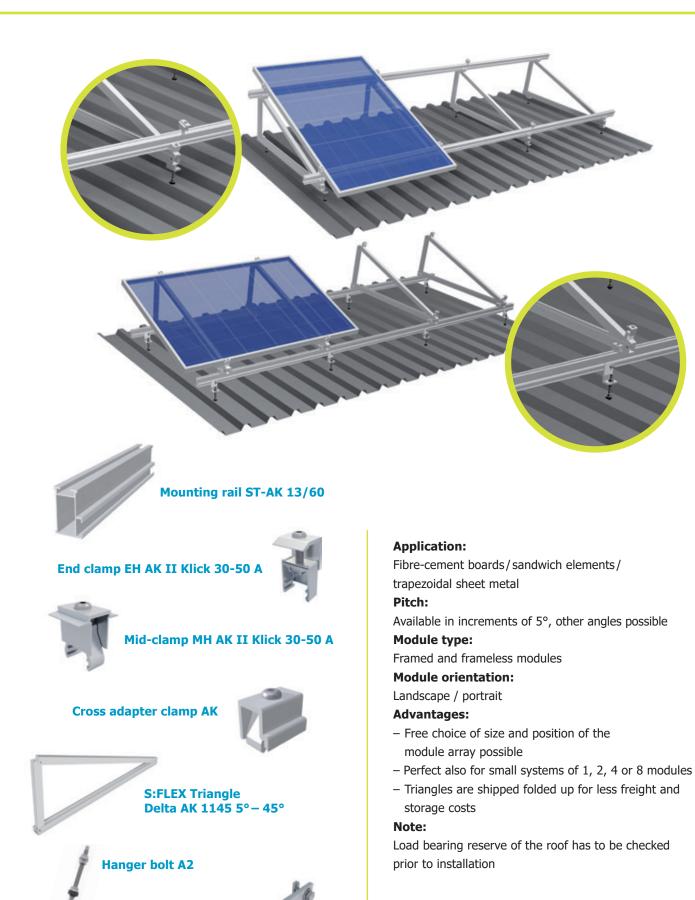
Layers of rails:

Single/double layer, cross rail installation

Advantages:

- Low material/installation costs
- Length of rails 3150 mm to 6200 mm
- High rigidity rails suitable for heavier loads

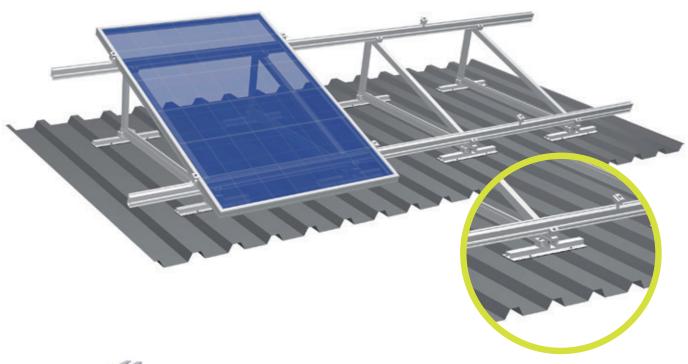




Other angles available upon request

Bracket 60mm M10







Mounting rail ST-AK 13/60







Mid-clamp MH AK II Klick 30-50 A

Cross adapter clamp AK





S:FLEX Triangle Delta AK 1145 5° – 45°

Trapezoidal sheet metal rail I=395



Application:

Trapezoidal and corrugated sheet metal

Pitch:

Available in increments of 5°, other angles possible

Module type:

Framed and frameless modules

Module orientation:

Landscape / portrait

Advantages:

- Free choice of size and position of the module array possible
- Perfect also for small systems of 1, 2, 4 or 8 modules
- Triangles are shipped folded up for less freight and storage costs

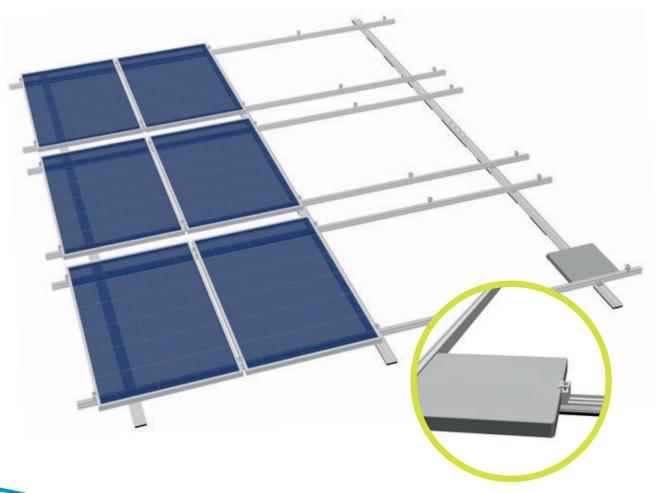
Note:

Load bearing reserve of the roof has to be checked prior to installation

Other angles available upon request

System for foil, bitumen and sandwich roofs







Mono-pitch roof



Butterfly roof, double-sided



Butterfly roof, single-sided



Saddle roof, double-sided



Saddle roof, single-sided

... and other roof types

Application:

Pitched roofs with foil/bitumen roofing and sandwich elements, other roof types upon request

Fastening:

Non-penetrative

Roof pitch:

Up to 30 degrees

Module type:

Framed modules (frameless modules upon request)

Module orientation:

Landscape

Orientation:

Parallel to the roof

Building height:

25 m max.

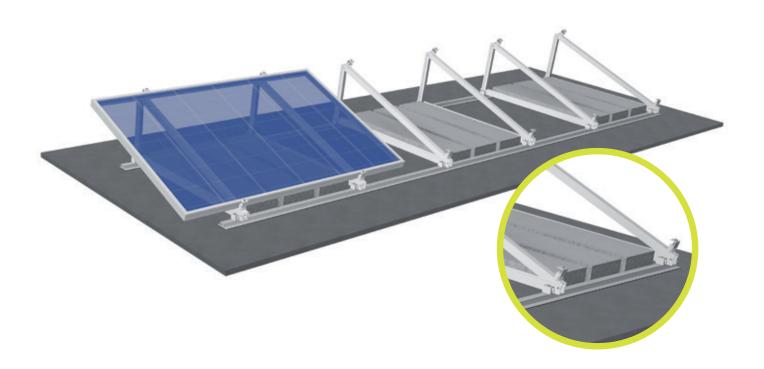
Wind load:

Up to wind load zone 4

Snow load:

Up to snow load zone 3







Flat roof

Pitch:

Available in increments of 5°, other angles possible

Module type:

Framed and frameless modules

Module orientation:

Landscape / portrait

Advantages:

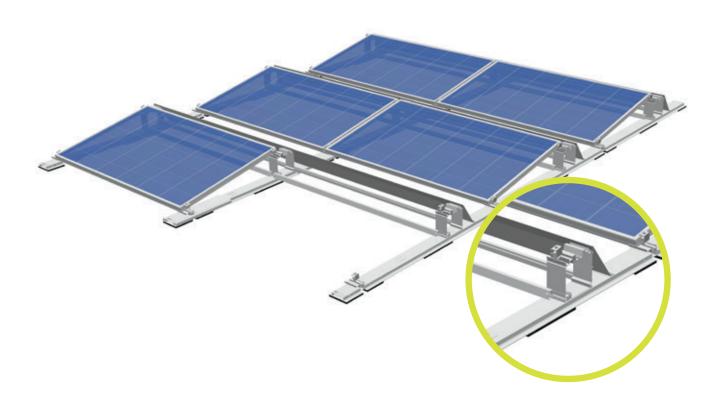
- Free choice of size and position of the module array possible
- Perfect also for small systems of 1, 2, 4 or 8 modules
- Triangles are shipped folded up for less freight and storage costs

Note:

Load bearing reserve of the roof has to be checked prior to installation

Other angles available upon request







LEICHTmount RAIL S
Base

End clamp EH AK II Klick 30-50 A





Mid-clamp MH AK II Klick 30-50 A



LEICHTmount RAIL S

Application: Flat roof with foil, bitumen, gravel,

green roof, metal, concrete, open spaces

Module orientation: South **Inclination:** 10°/15°

Module Size (LxW): 1630-1680 mm x 980-1020 mm ¹ **Area load:** 4,25 kg/m² (10°) / 4,50 kg/m² (15°)

Building Height: 25 m max. **Roof inclination:** 5° max.

Edge clearance: Fitting in the roof edge and

corner regions possible

Wind load: Up to wind load zone 4

Snow load: 2,4 KN/m² (higher values are possible

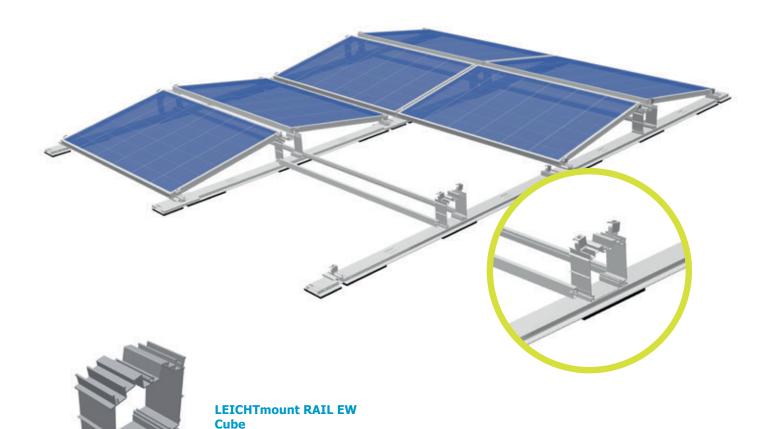
on a project-related basis)

Min. system size: 2 rows of 3 modules each /

3 rows of 2 modules each

¹ Other module sizes upon request.





End clamp EH AK II Klick 30-50 A

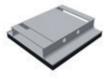




Mid-clamp MH AK II Klick 30-50 A



LEICHTmount RAIL EW Ground Rail 155



LEICHTmount RAIL EW

Application: Flat roof with foil, bitumen, gravel,

green roof, metal, concrete, open spaces

Module orientation: East—West **Inclination:** 10°/15°

Module Size (LxW): 1630-1680 mm x 980-1020 mm ¹ **Area load:** 2,50 kg/m² (10°) / 2,75 kg/m² (15°)

Building Height: 25 m max. **Roof inclination:** 5° max.

Edge clearance: Fitting in the roof edge and

corner regions possible

Wind load: Up to wind load zone 4

Snow load: 2,4 KN/m² (higher values are possible

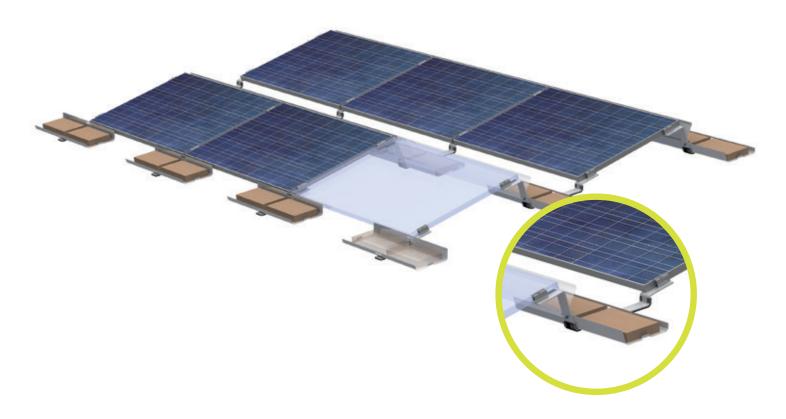
on a project-related basis)

Min. system size: 2 rows each with 3 double modules /

3 rows each with 2 double modules

¹ Other module sizes upon request.













LEICHTmount 2.1 S

Module orientation: South

Inclination: $5^{\circ}/10^{\circ}/15^{\circ}$

Shading Inclination 5°: 18°

calculation area: Inclination $10^{\circ}/15^{\circ}: 18^{\circ}$ or 25° Module size (LxW): 1559-1982 mm x 950-1050 mm ¹ Area load: ~ 10 kg/m² of installed roof area

Building height: 25 m max. **Roof inclination:** 4° max.

Edge clearance: Fitting in the roof edge and

corner regions possible

Wind load: Up to wind load zone 4

Snow load: Standard version up to 2.4 KN/m²

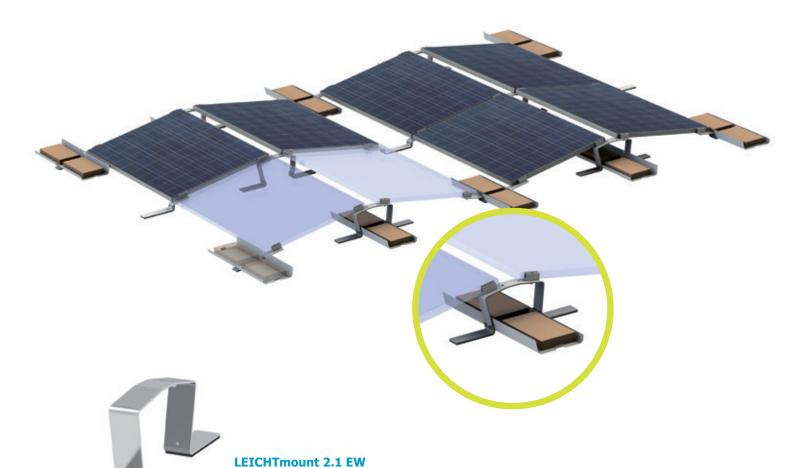
Alpine version up to 4.4 KN/m²

Min. system size: 2 rows of 3 modules each /

3 rows of 2 modules each

¹ Other module sizes upon request.





Mid-clamp 80mm with Grounding Pin



Top Part



LEICHTmount 2.1 Ballast Tray 880

Cable Clip



LEICHTmount 2.1 EW

Module orientation: East-West

Inclination: 10°

Shading

calculation area: 18°

Module size (LxW): 1559–1982 mm x 950–1050 mm 1 Area load : $\sim 15 \text{ kg/m}^2$ of installed roof area

Building height: 25 m max. **Roof inclination:** 4° max.

Edge clearance: Fitting in the roof edge and

corner regions possible

Wind load: up to wind load zone 4

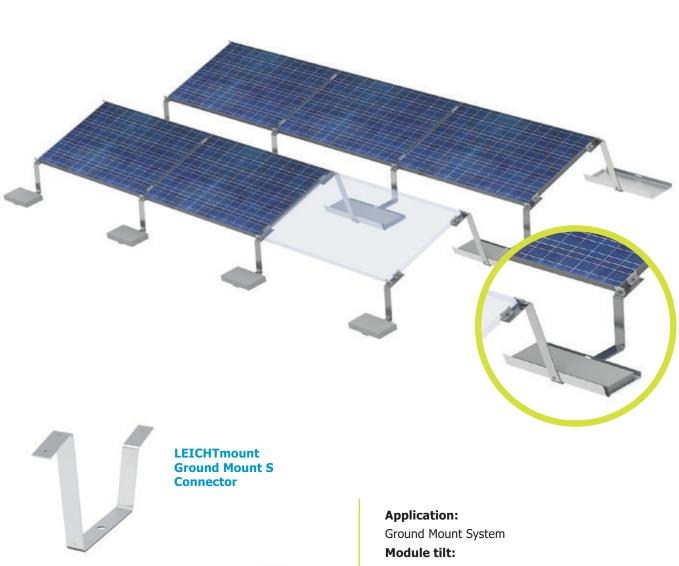
Snow load: Standard version up to 2.4 KN/m²

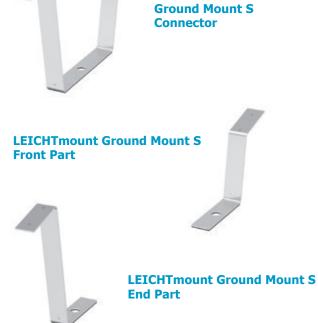
Alpine version up to 4.4 KN/m²

Min. system size: 2 rows of 2 module pairs each

¹ Other module sizes upon request.







LEICHTmount 2.1 Ballast Tray 880



15°/20°

Wind / Snow load:

Up to 2.4 kN/m²

Module size (LxW):

1552-2080 mm x 950-1050 mm

Max. ground slope:

20°

Max. array size:

12 x 20 rows, 240 modules

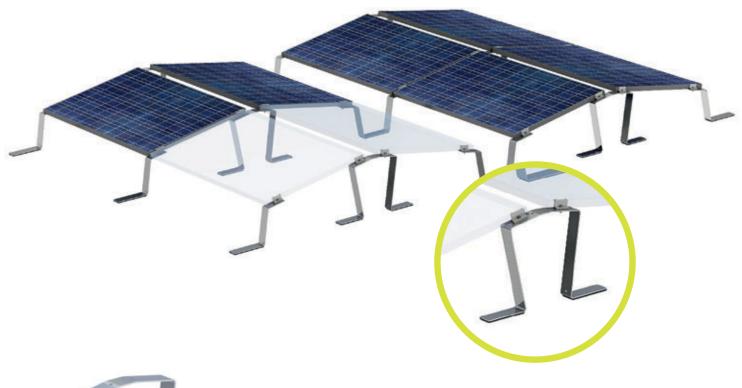
Materials:

Supporting materials made of aluminium EN AW 6060 T64, module clamps made of aluminium EN AW 6063 T66

Small parts:

Stainless steel X5CrNi18-10 A2-70A







LEICHTmount Ground Mount EWFront Part





Mid-clamp 80mm with Grounding Pins

Application:

Ground Mount System

Module tilt:

10°

Wind / Snow load:

Up to 2.4 kN/m²

Module size (LxW):

1552-2080 mm x 950-1050 mm

Max. ground slope:

20°

Max. array size:

12 x 20 rows, 240 modules

Materials:

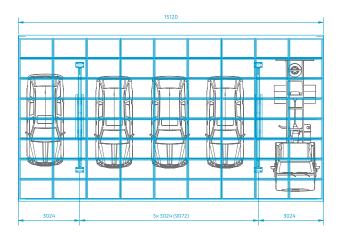
Supporting materials made of aluminium EN AW 6060 T64, module clamps made of aluminium EN AW 6063 T66

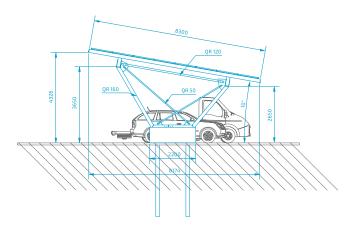
Small parts:

Stainless steel X5CrNi18-10 A2-70A









Parking spaces:

5 cars, customised parking space width

Roof measurements:

8.30 m x 15.12 m

Roof area:

125,5 m²

Roof pitch:

10°

Number and positioning of modules:

72 modules - 9 horizontal, 8 rows

Entrance height:

2,65 m / 3,35 m (1 base / 2 bases)

Collision protection:

10 kN for car weighing up to 3 tons

Material:

Galvanised steel

Roofing material:

Structural trapezoidal steel sheet

Cable routing:

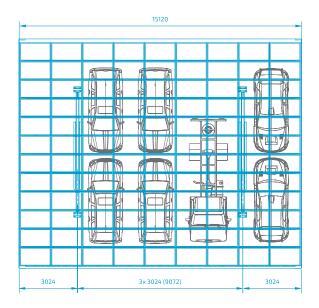
Integrated

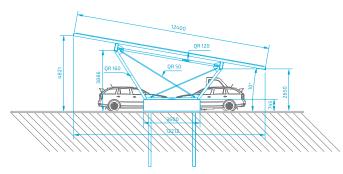
Verified static data:

DIN EN 1991 Eurocode 1, DIN EN 1992 Eurocode 2, DIN EN 1993 Eurocode 3, DIN EN 1995 Eurocode 5, DIN EN 1997 Eurocode 7









Parking spaces:

10 cars, customised parking space width

Roof measurements:

12.40 m x 15.12 m

Roof area:

187,5 m²

Roof pitch:

10°

Number and positioning of modules:

108 modules - 9 horizontal, 12 rows

Entrance height:

2,65 m / 3,35 m (1 base / 2 bases)

Collision protection:

10 kN for car weighing up to 3 tons

Material:

Galvanised steel

Roofing material:

Structural trapezoidal steel sheet

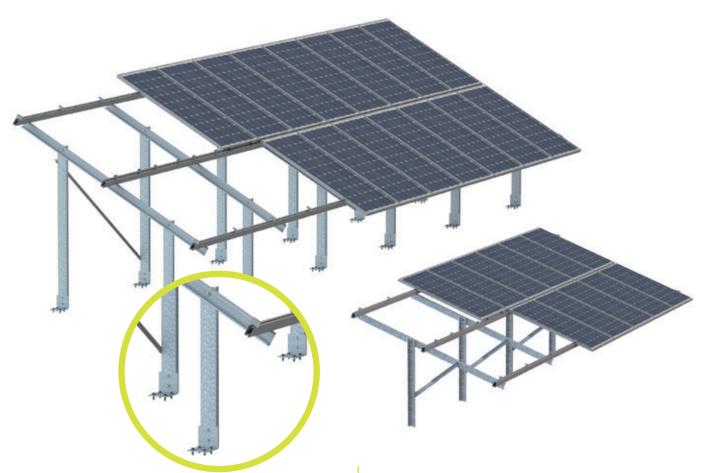
Cable routing:

Integrated

Verified static data:

DIN EN 1991 Eurocode 1, DIN EN 1992 Eurocode 2, DIN EN 1993 Eurocode 3, DIN EN 1995 Eurocode 5, DIN EN 1997 Eurocode 7







Middle profile





C-Profile post

Ground mount

Wind/snow load:

Up to snow load zone 3 / up to wind load zone 4

Module type:

Framed and frameless modules

Module orientation:

Vertical/horizontal

Pitch:

0°-60° in north-south direction

Pitches beyond 60° are possible on request

Terrain slope:

Max. 6° in east-west direction in standard construction / max. 50° with suitable constructive measures

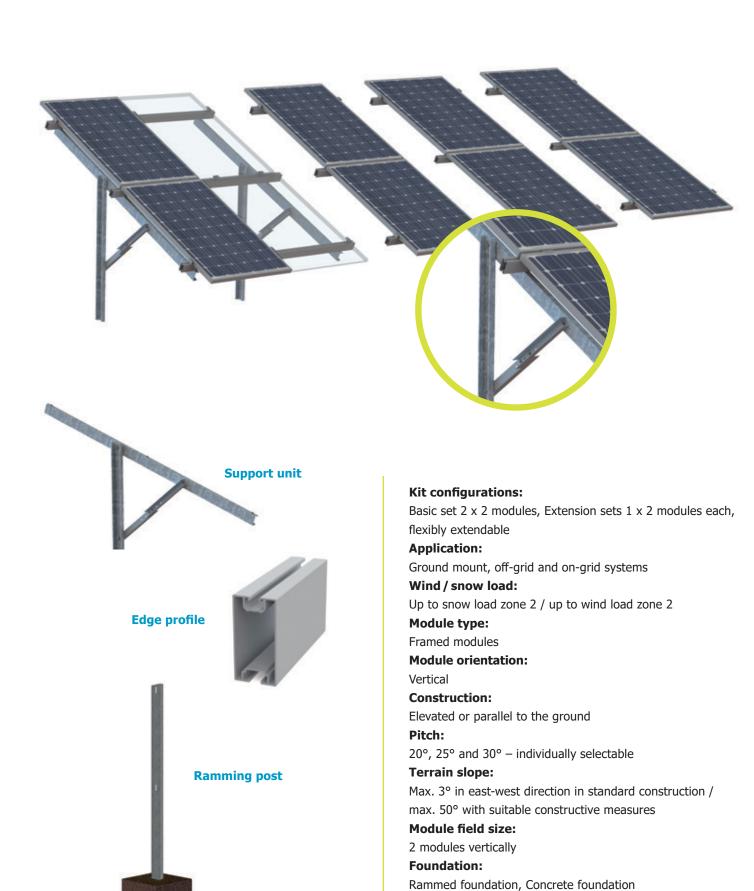
Module field size:

Variable: max. 3 rows of modules with vertical module assembly / max. 6 rows of modules with horizontal assembly

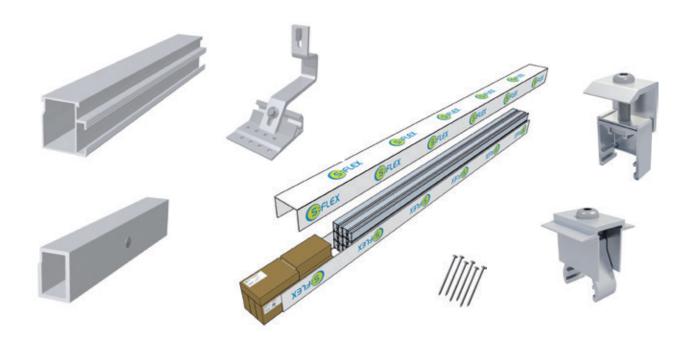
Foundation:

- Rammed foundation
- Bolted foundation
- Concrete foundation

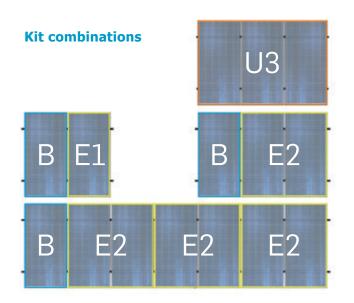








Set	Rail s	Covering caps	Splice	Roof hook	Mid clamp	End clamp	Wood screws
Basic 1 module	2	4		4		4	12
Extension 1 module	2		2	3	2		9
Extension 2 modules	4		4	6	4		18
Universal 3 modules	2	4	2	10	6	4	30



Roof mounted / pitched roofs

Roofing type:

Tiles, optionally also available for plain tile, slate tile and sheet metal roofing

Module type:

Framed modules

Module orientation:

Vertical, optionally also available for horizontal installation

Standards:

Eurocode, TÜV, CE, MCS, technical approval



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