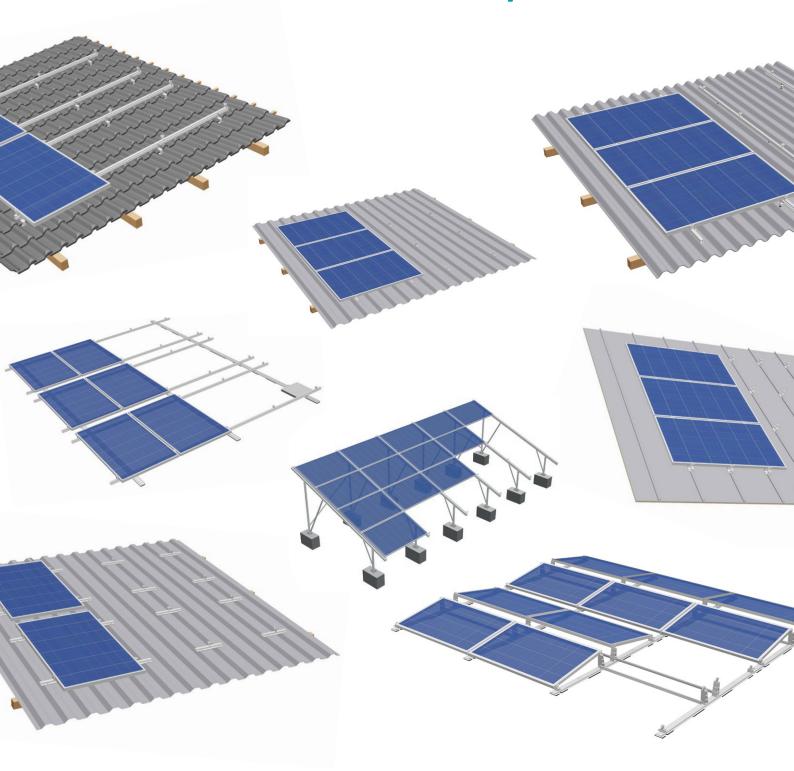


# **S:FLEX System Solutions**



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



Balcony system	
System for balcony power plants	03
Façade and Pitched Roof System	
Insertion system ELS	04
Pitched Roof Systems	
Roof hooks Roof hooks Hybrid/XL Roof hook plain tile Standing seam clamps Standing seam clamps with rails High-bead rail HK 125/172 High-bead rail HK 125 XL 50/100 Bracket for sheet metal High-bead rail Lift Trapezoidal sheet metal rail Lift Trapezoidal sheet metal rail Vario Trapezoidal sheet metal rail Hanger bolts and solar fasteners Flat Direct for foil/bitumen roofs and sandwich elements Flat Direct with assembly posts Delta triangles with trapezoidal sheet metal rails	05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21
Flat Roof Systems	
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PV frame technology by professionals for practitioners — from pre-assembled components to fully customised solutions!







Metal balcony railings with vertical bars

## Fastening:

Mechanical attachment to railing and bars

## **Module type:**

Framed modules with up to 2 m² module surface

## Module pitch:

Up to 8° against the parapet

## Wind load:

Up to 2.4 kN/m<sup>2</sup>

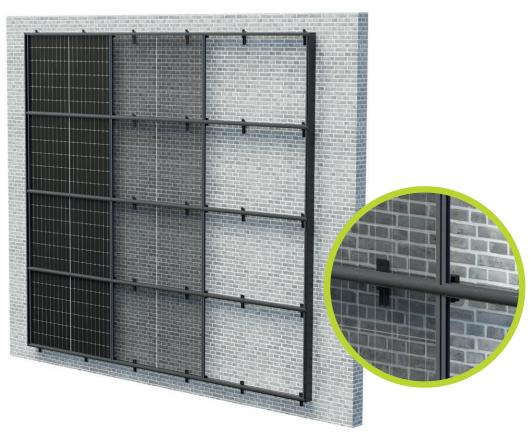
## **Building height:**

25 m max.

- Constructive consideration of the low design loads of balconies
- Particularly easy and risk-free attachment with rails attached to the modules that slide securely into the balcony mounting
- Standard-compliant linear bearing of the PV modules









**ELS** rail







**ELS** eaves cladding







**ELS cross adapter clamp** 

## **Application:**

Façades, noise protection walls and massive balustrades or pitched roofs with roof tiles, sheet metal roofs

## Fastening:

Façade: on-site

Pitched roof: compatible with all S:FLEX fastening solutions for tiled roofs and metal sheet roofing

## **Roof pitch:**

10 to 75 degrees

## Module type:

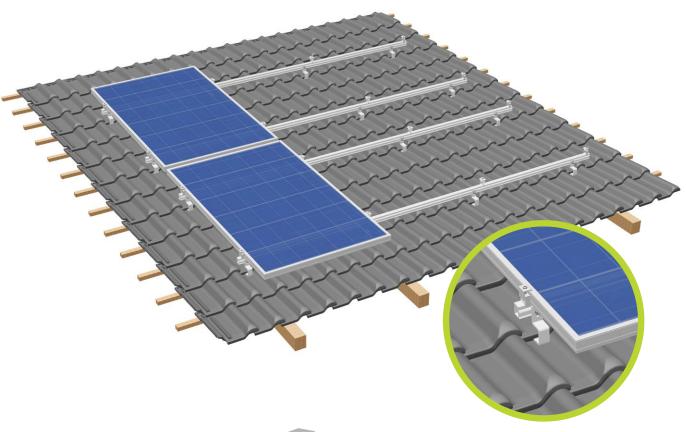
Framed modules, all common sizes

## Module orientation:

Portrait/landscape

- Aesthetically pleasing modular surfaces with clean finishes
- All components for a special look available in black
- Suitable for module frame heights of 25 to 45 mm using just one type of insertion rail
- Newly developed module clamps that prevent rattling of the modules and thermally induced glass breakage/cracks
- Simple grounding, optimized service-friendliness







Pitched roof with tiles

## Fastening:

Roof hook on rafters (min. rafter width 36 mm)

## Roof pitch:

Up to 75 degrees

## Module type:

Framed and frameless modules

## **Module orientation:**

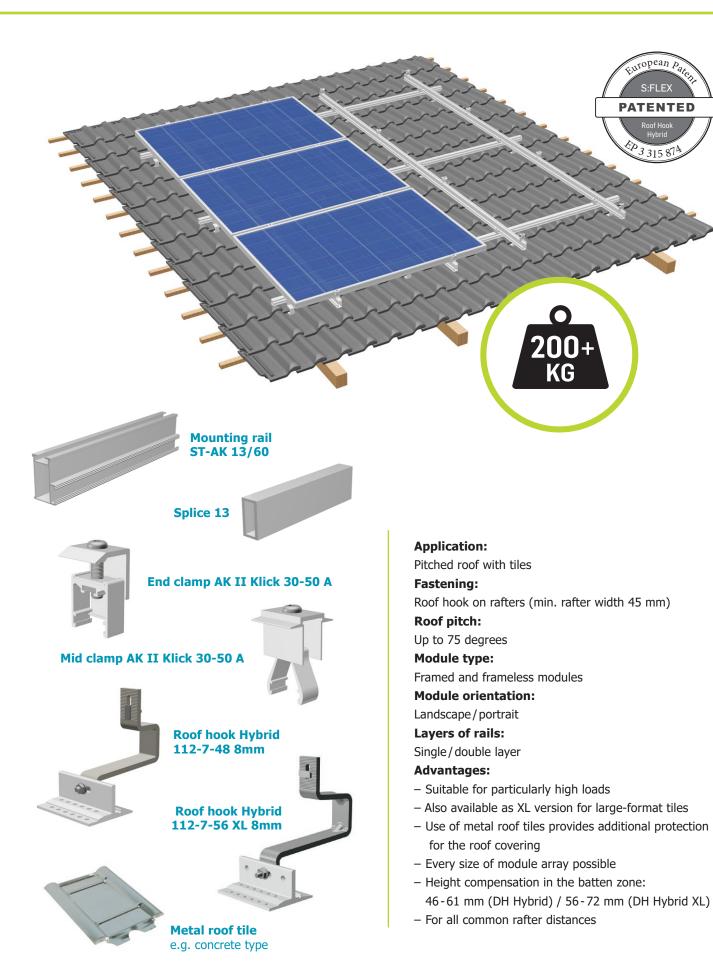
Landscape / portrait

## Layers of rails:

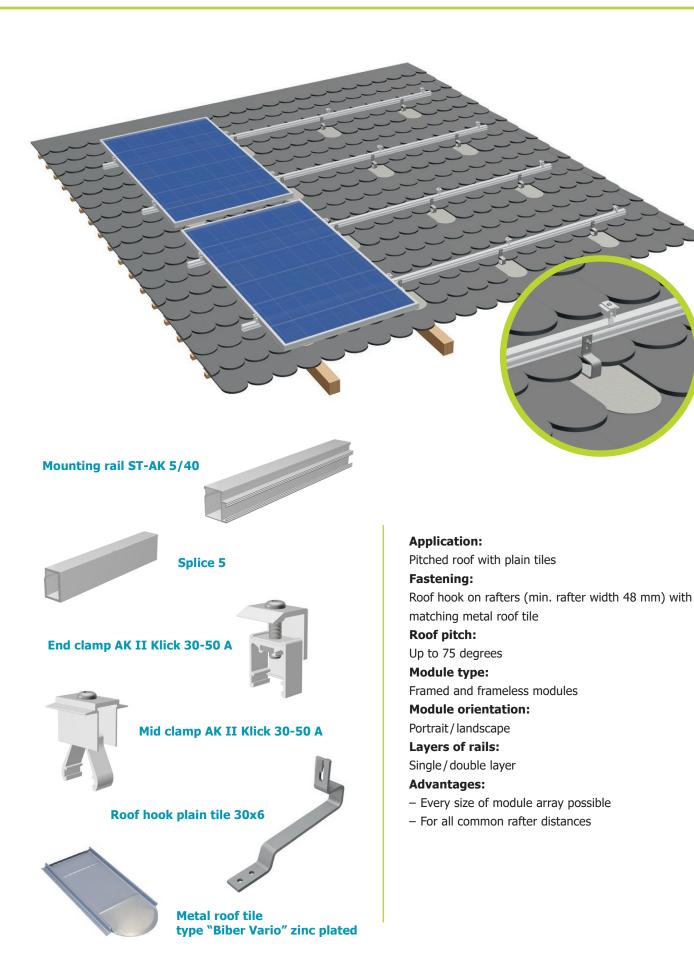
Single / double layer

- Every size of module array possible
- Height compensation: 40-58 mm in the batten zone /
   21 mm in the rail zone
- For all common rafter distances

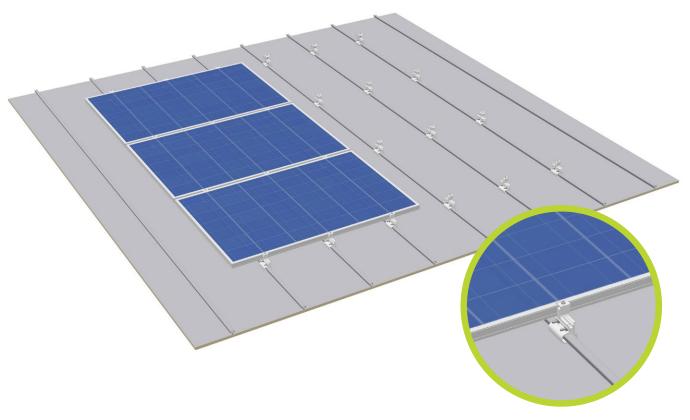














Standing seam clamp 2.1

Standing seam clamp DCO





Standing seam clamp CL

End clamp AK II Klick 30-50 A





Mid clamp AK II Klick 30-50 A

## **Application:**

Standing seam clamp 2.1: Seamed roofing, e.g. standing seam, round seam, angle seam

Standing seam clamp DCO and CL: Industrial metal roof systems, e.g. Domitec/GBS, Klip-Lok 700, RibRoof 465

## Fastening:

Non-penetrative

## **Module type:**

Framed modules

## Module orientation:

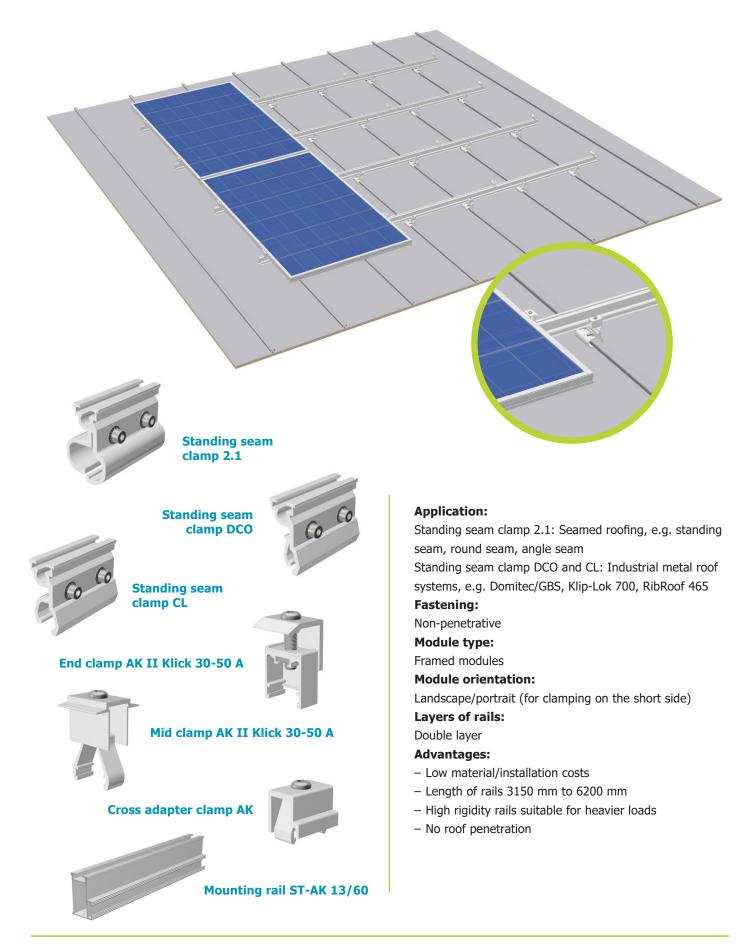
Landscape/portrait (for clamping on the short side)

## **Layers of rails:**

Single layer

- Modules mounted directly to the standing seam clamps
- No rails necessary
- Low material/logistics/installation costs
- Quick mounting
- No roof penetration









Trapezoidal sheet metal

#### Fastening:

Screwed onto raised corrugations

## **Module type:**

Framed modules

## **Module orientation:**

Landscape

## Layers of rails:

Single layer

- Low material/fitting costs
- 24 mm height provide better rear ventilation, simplify cable routing, enable installation even on slightly corrugated roof coverings and offer more space for power optimizers or micro-inverters
- Rail lengths of 125 mm, 172 mm, 295 mm and 3300 mm
- High-bead rails HS HK I=125 mm and I=172 mm are supplied pre-fabricated with EPDM sealing tape.
   The 125 mm rail comes with 2x2 holes (5/6 mm), the 172 mm version has 2x4 pre-drilled holes (5/6 mm).











Mid clamp AK II Klick 30-50 A

Trapezoidal sheet metal

## Fastening:

Screwed or riveted onto raised corrugations

## Module type:

Framed modules

## **Module orientation:**

Landscape

## Layers of rails:

Single layer

- Low material/fitting costs
- Rail heights of 50 or 100 mm guarantee a sufficient distance from the roof covering for optimal rear ventilation and use at high temperatures
- Floating mounting with brackets reduces the number of expansion joints and enables optimal use of the roof area
- High-bead rails covered with protective fleece
- Brackets come pre-drilled and with EPDM sealing tape covered bottom side

## System for trapezoidal sheet and corrugated sheet roofs





## **Application:**

Trapezoidal and corrugated sheet metal

Screwed or riveted onto raised corrugations

## Module type:

Framed and frameless modules

## **Module orientation:**

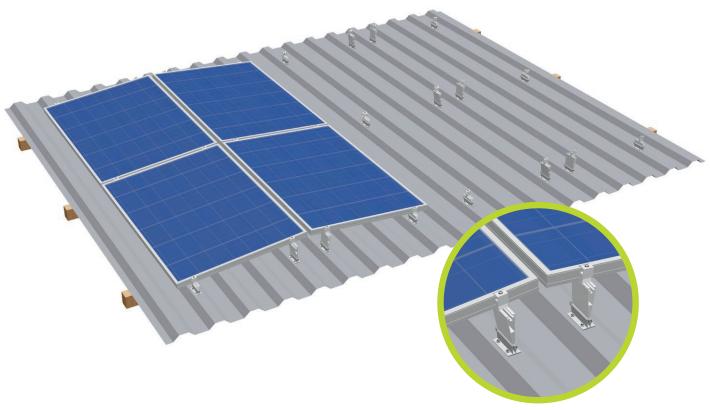
Portrait/landscape

## Layers of rails:

Single/double layer

- Low fitting costs
- Every size of module array possible
- Height adjustable via elongated hole in the sheet metal bracket
- Sheet metal brackets are supplied prefabricated with 2 holes (5 mm) and EPDM sealing tape covered bottom side







Front rail with small adapter



Rear rail with large adapter



End clamp AK II Klick 30-50 A



Trapezoidal sheet metal

## Fastening:

Screwed with sheet metal screws to the raised seams

## **Options:**

South and East-West orientation

## Module type:

Framed and frameless modules, all common sizes

## **Module orientation:**

Portrait/landscape

## **Module pitch Lift:**

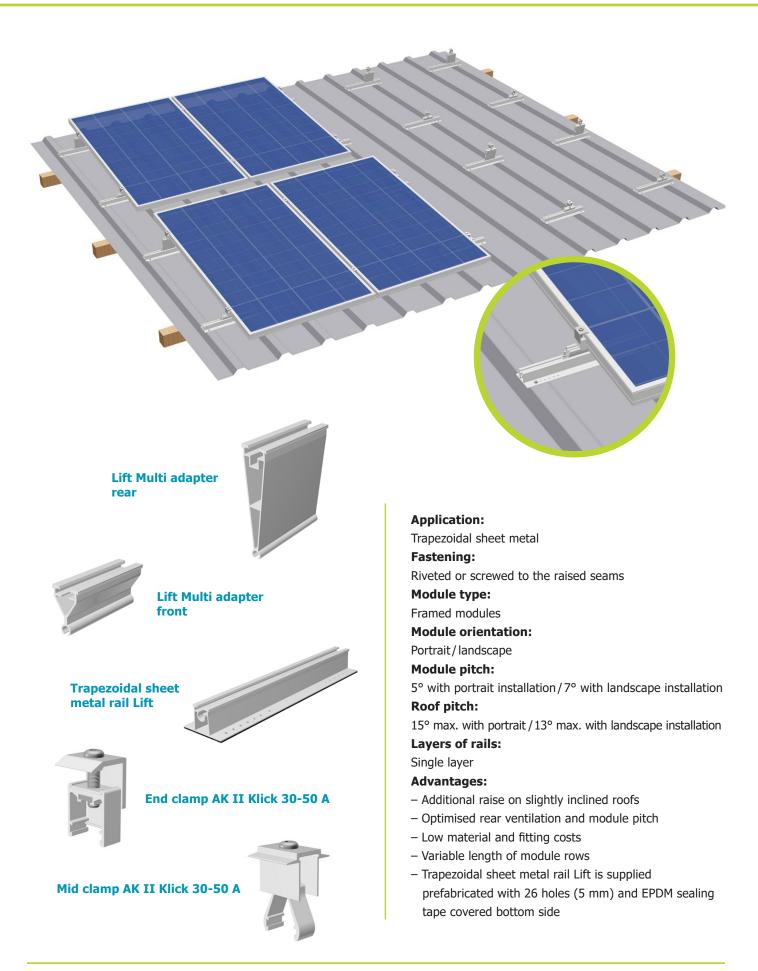
5° with portrait installation/7° with landscape installation

## Roof pitch:

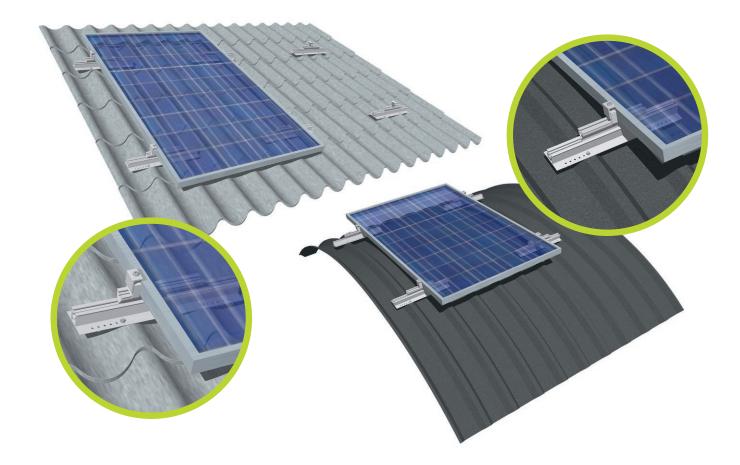
20° max.

- Low material and fitting costs
- Optimised irradiation angles for higher yields
- Better self-cleaning
- Maximum use of space through optional East-West orientation
- prefabricated with holes and EPDM sealing tape

















Mid clamp MH AK II Klick 30-50 A

## **Application:**

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:**

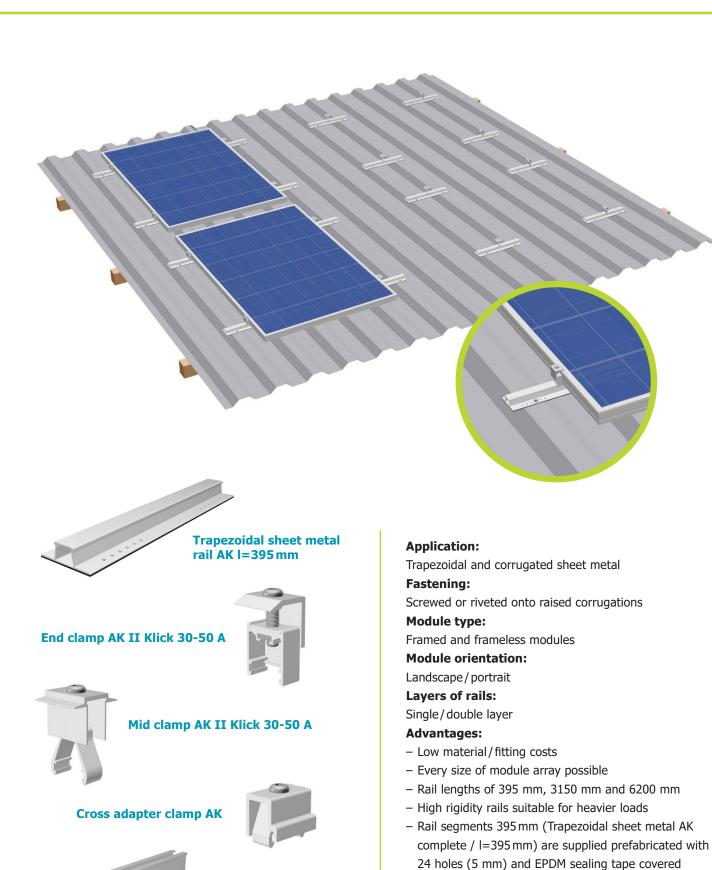
Portrait/landscape

## Layers of rails:

Single layer

- Tension-free installation on curved roofs
- Tension-free installation on corrugated roof tiles
- Perfectly adapted to the roof shape
- Trapezoidal sheet metal rail Vario is supplied prefabricated with 26 holes (5 mm) and EPDM sealing tape covered bottom side





Mounting rail ST-AK 13/60

bottom side







Fibre-cement boards/sandwich elements/ trapezoidal sheet metal

## Fastening:

Hanger bolts/solar fasteners with brackets

## **Module type:**

Framed and frameless modules

## **Module orientation:**

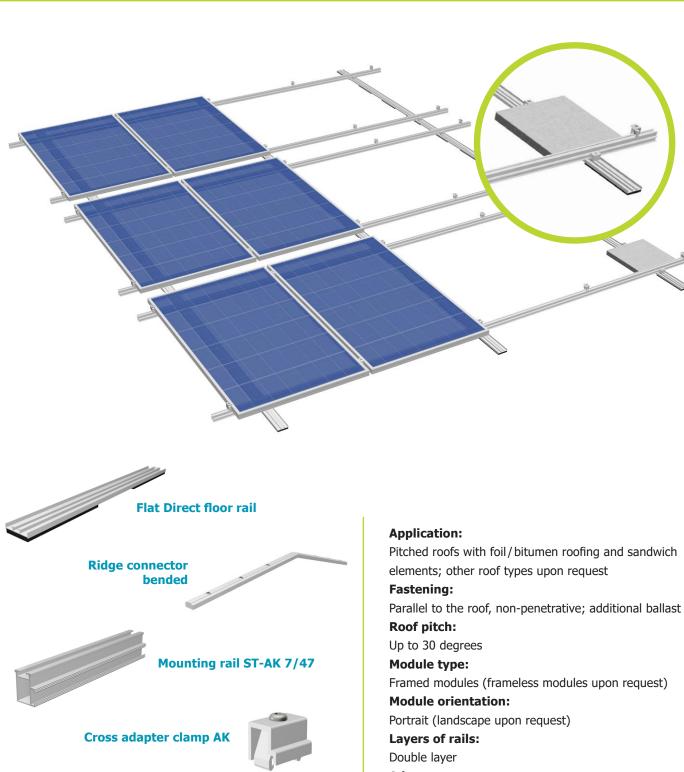
Landscape/portrait

## Layers of rails:

Single/double layer

- Low fitting costs
- Height adjustable
- Suitable for large distances between rafters
- Solar fastener type A or hanger bolts for wood rafters / solar fastener type BZ for metal rafters







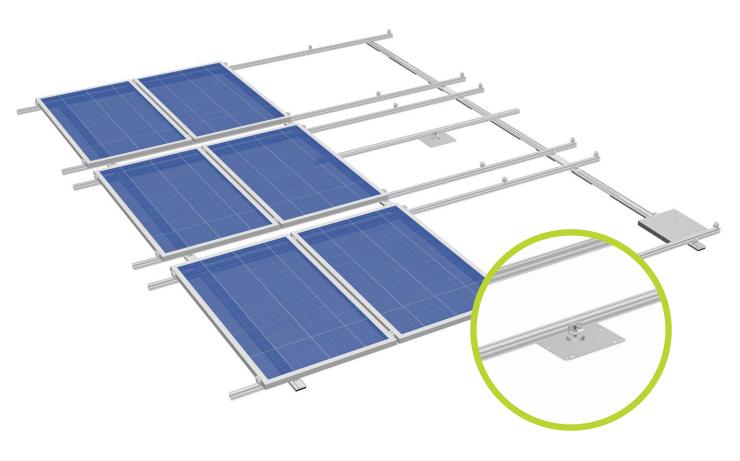
End clamp AK II Klick 30-50 A

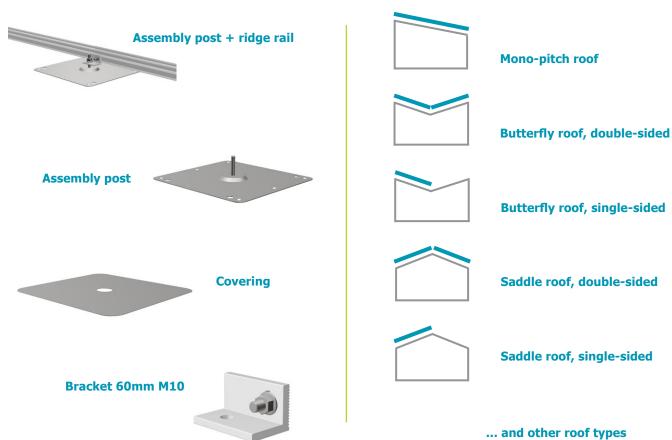
Mid clamp AK II Klick 30-50 A



- No roof penetration
- Minimised additional ballast thanks to aerodynamic optimisation
- Perfect for east-west orientation like saddle roof, double-sided
- Has lightning-current-carrying capacity
- Optional roof connection points extend potential uses



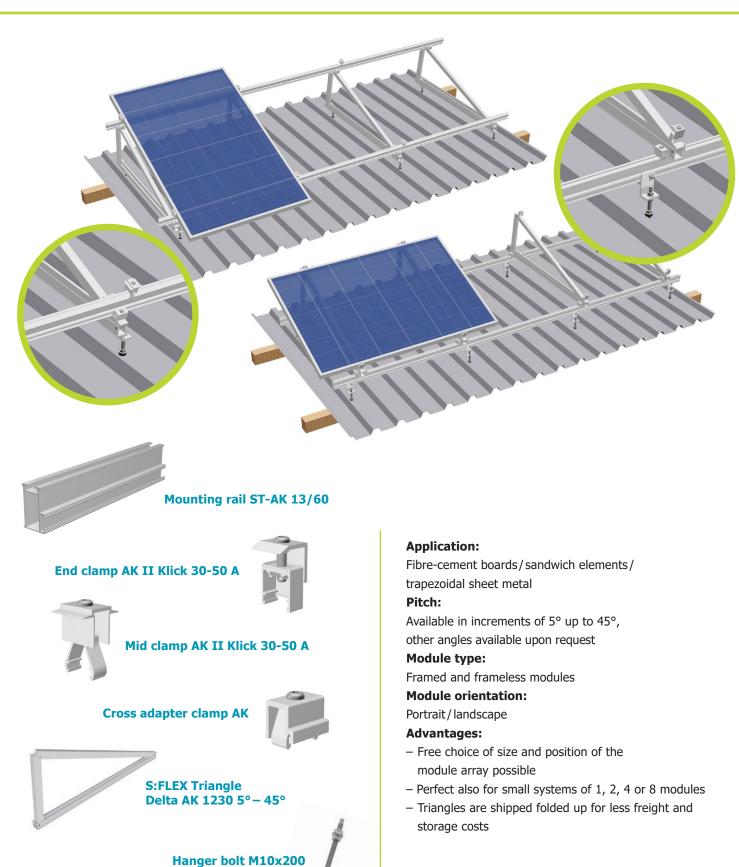




## System for fibre-cement, trapezoidal sheet and sandwich roofs

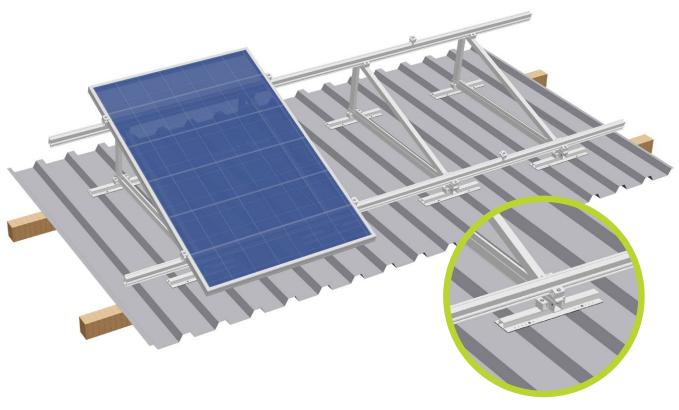
Mounting with hanger bolts and Delta triangle





**Bracket 60mm M10** 









Mid clamp AK II Klick 30-50 A







## **Application:**

Trapezoidal and corrugated sheet metal

## Pitch:

Available in increments of 5° up to 45°, other angles available upon request

## **Module type:**

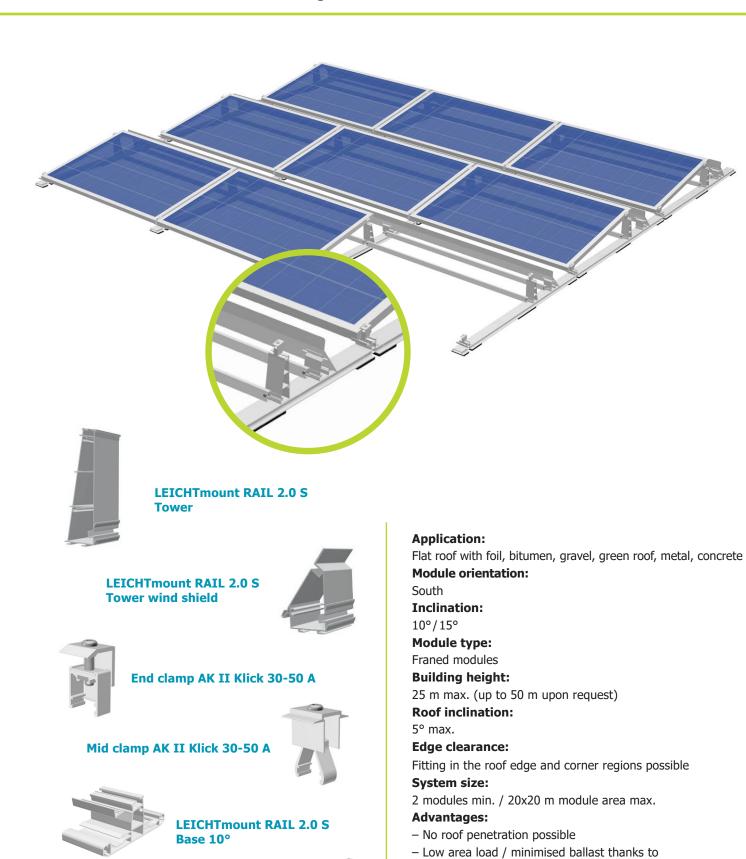
Framed and frameless modules

## **Module orientation:**

Portrait/landscape

- 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





aerodynamic design

- Optimised load distribution through ground rails

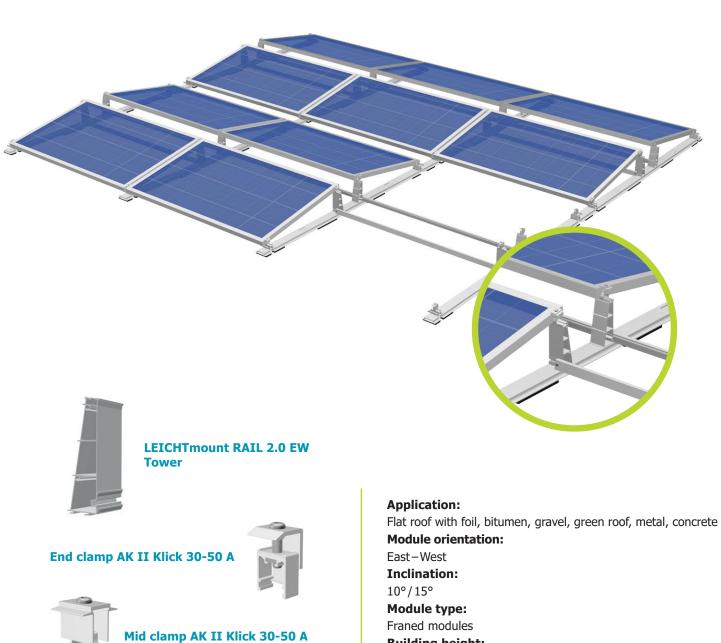
- Suitable for all common module sizes

Has lightning-current-carrying capacity

**LEICHTmount RAIL 2.0 S** 

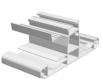
Floor rail type 1618-2







## **LEICHTmount RAIL 2.0 EW** Base 10°





## **LEICHTmount RAIL 2.0 EW Connecting rail**



## **Building height:**

25 m max. (up to 50 m upon request)

## **Roof inclination:**

5° max.

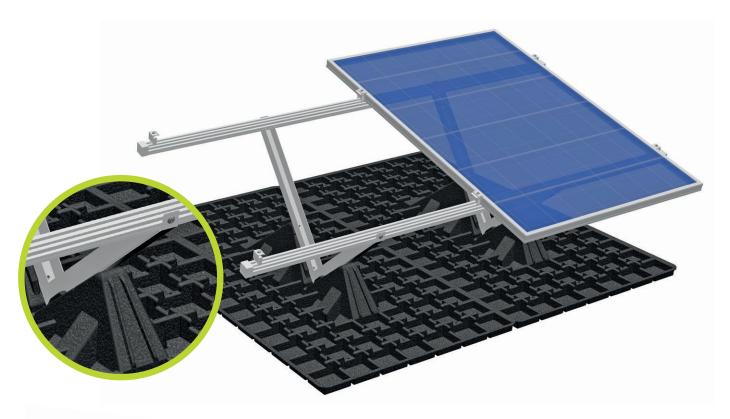
## **Edge clearance:**

Fitting in the roof edge and corner regions possible System size:

2 module pairs min. / 20x20 m module area max.

- No roof penetration
- Low area load / minimised ballast thanks to aerodynamic design
- Optimised load distribution through ground rails
- Suitable for all common module sizes
- Has lightning-current-carrying capacity







Green roof (extensive)

## Fastening:

Without roof penetration, ballasted

## **Options:**

South and East-West orientation

## Module pitch:

10°, 15°, 20°

## Module type:

Framed modules

## **Module orientation:**

Landscape/portrait

## **Roof pitch:**

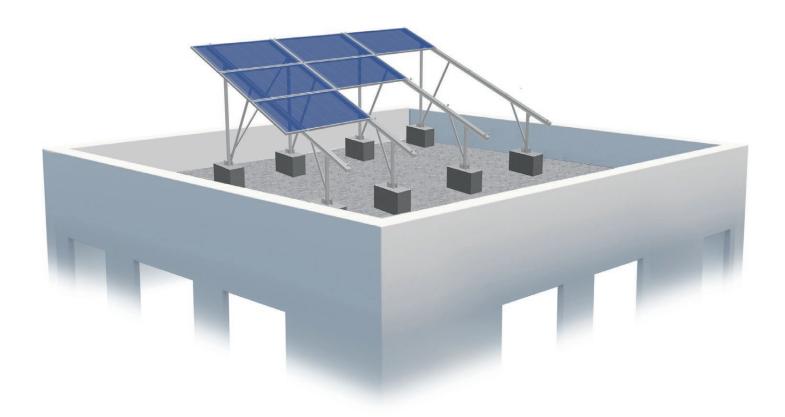
5° max.

## System size:

2 modules min.

- No roof penetration
- High water storage volume
- Extremely fast installation
- Suitable for all common module sizes
- Integrated fall protection (optional)







**Base Delta Concrete** 





End clamp Hawk HK 25-45 I=40 Grounding kit

Mid clamp Hawk HK 25-45 I=40 Grounding kit



## **Application:**

Flat roof

## Fastening:

Concrete, screw fastening

## **Options:**

South and East-West orientation

## **Module type:**

Framed, frameless (additional horizontal rail), bifacial

## Module orientation:

Landscape/portrait

## Module pitch:

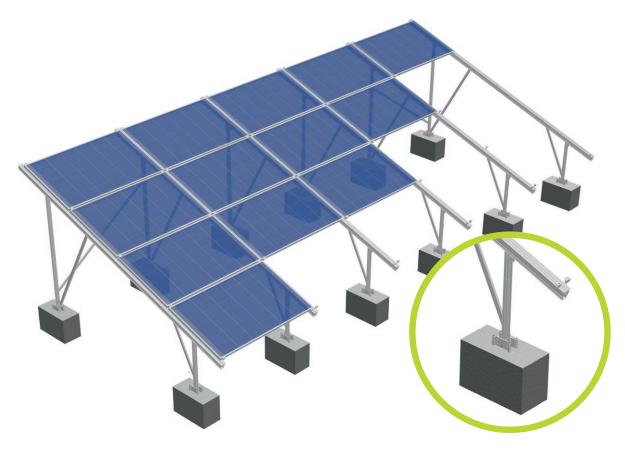
up to 20°

## **Maximum module field size:**

12x4 modules (landscape) / 12x3 modules (portrait)

- Designed to be used on flat concrete roofs
- Excellent rear ventilation ensuring high yields, making it particularly suitable for hot regions
- Light-weight, material-saving design
- Offers the possibility to build over obstacles
- No drilling of aluminium on site









**Base Delta Concrete** 

End clamp Hawk HK 25-45 I=40 Grounding kit





Mid clamp Hawk HK 25-45 I=40 Grounding kit

## **Application:**

Ground mount system

## Fastening:

Concrete, screw fastening

## **Options:**

South and East-West orientation

## Module type:

Framed, frameless (additional horizontal rail), bifacial

## **Module orientation:**

Landscape/portrait

## Module pitch:

up to 20°

## Pitch:

N-S: any; E-W: module area 1°/ terrain 10°

#### Maximum module field size:

12x4 modules (landscape) / 12x3 modules (portrait)

- Designed for ground-mount on concrete foundations
- Light-weight, material-saving design
- Offers the possibility to build over obstacles
- No drilling of aluminium on site

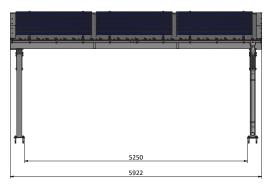




Dimensions – side view



Carport Single dimensions – front view



Carport Double dimensions – front view

## Parking lots:

1 or 2 parking spaces, expendable up to 12 freely combinable single/double segments for a maximum of 24 parking spaces

## Foundation:

Anchored in the ground/concrete

## Height:

Headroom: 2.09 m / Max. height: 2.95 m

## Roof area / Module field size:

Single: 22 m<sup>2</sup>/10 modules; Double: 35 m<sup>2</sup>/15 modules

## Roof pitch:

6°

## **Module orientation:**

Landscape/portrait

## Module size:

All common sizes

## **Materials:**

Carport: hot-dip galvanized steel, powder coated

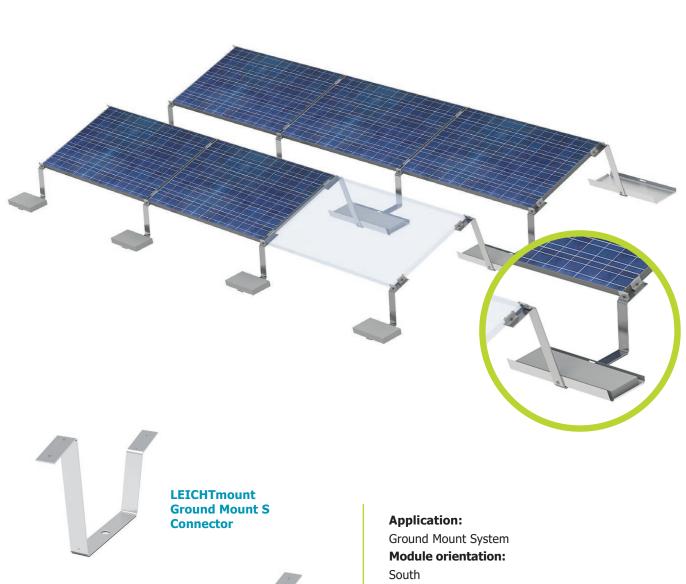
Sheet metal: continuous, 0.75 mm thick

Solar fastening: aluminium

#### **Colour:**

Matt black (RAL 9005), anthracite trapezoidal sheet





## Module tilt:

15°/20°

#### Module type:

Framed modules

## Max. ground slope:

20°

#### System size:

2 x 3 modules min.

## **Advantages:**

- No pile driving or major excavation work needed
- Suitable for a wide range of surfaces such as earth, gravel, concrete
- Reduced transport and storage costs thanks to low volume packaging



**LEICHTmount G S** 

**End Part** 

**LEICHTmount G S** 

**Front Part** 







**LEICHTmount G EW Front Part** 





Mid clamp 80mm with grounding pins

## **Application:**

Ground Mount System

## **Module orientation:**

East-West

## Module tilt:

10°

## Module type:

Framed modules

## Max. ground slope:

20°

#### System size:

2 x 4 modules min.

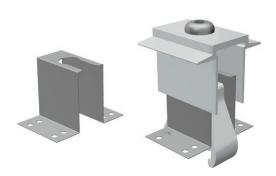
- No pile driving or major excavation work needed
- Suitable for a wide range of surfaces such as earth, gravel, concrete
- Reduced transport and storage costs thanks to low volume packaging













#### **Grounding clamp DEHN Uni**

- To integrate the mounting system into the building's equipotential bonding system and to connect it to earth
- Stainless steel to prevent contact corrosion
- Connection by means of hammerhead bolt and locking nut (positive and frictional locking)
- Diameter of clamping area for aluminium round wire:
   8-10 mm / Connection cross-section of equipotential bonding conductor:
   4-50 mm²

## **OBO** equipotential bonding clamp

- For equipotential bonding of the mounting rails by means of aluminium round wire
- Connection by means of hammerhead bolt and locking nut (positive and frictional locking)
- Diameter of clamping area for aluminium round wire: 8-10 mm

## Splice 5/7/13 Grounding

 Equipotential bonding between the rails by means of a corresponding connector with stainless steel earthing blades

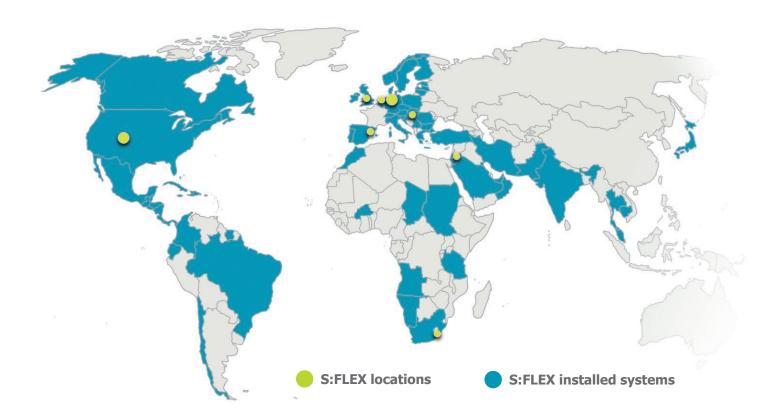
#### MH AK Klick 30-50 Earthing plate / Earthing plate 4x2

- For integration of the module frames into the equipotential bonding system
- Equipotential bonding between the module frame and substructure
- Breaks through the anodised layer
- Stainless steel
- For pre-assembly and installation on site

#### Earthing cable clip

- For connection of two metallic components to each other (e.g. rail and module frame or 2 module frames to each other) by means of cables
- For material thickness from 1.5 to 2.5 mm
- For electrical cables with a cross-section of 6 mm<sup>2</sup>





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