ML® SYSTEM

PHOTOVOLTAIC STRUCTURES

NAGRODA KONSUMENTA 2022

NAGRODA KONSUMENTA 2023

POLISH PRODUCER

WE ARE CHANGING THE WORLD FOR FUTURE GENERATIONS

PHOTOVOLTAIC STRUCTURES

: At ML System, we know that a well-chosen and made structure is a guarantee of long-term and trouble-free use of a photovoltaic installation. For the production of our structures, we use high-quality materials that serve our customers for many years.

Our constructions are characterized by stability, high quality, high durability and long life. Individual components are made of weather-resistant materials. The whole structure looks extremely aesthetic and impressive. The most popular system of photovoltaic constructions are fixings on a sloping roof. This type of construction uses the natural angle of the roof.

In our offer you will find structures for sloping roofs of the following types: seam sheet, trapezoidal sheet, metal roofing tiles, ceramic tiles, both flat and plain, and constructions intended for installation on a flat roof. We also sell free--standing universal ground constructions.

WE ARE CHANGING THE WORLD FOR FUTURE GENERATIONS

FLAT ROOF STRUCTURES

The ML System photovoltaic module mounting system is compatible with most solutions available on the market. This applies to frame modules as well as glass-glass modules of various sizes, thicknesses and electrical parameters.

PRODUCT INFORMATION:

Material
- stainless steel
- aluminum

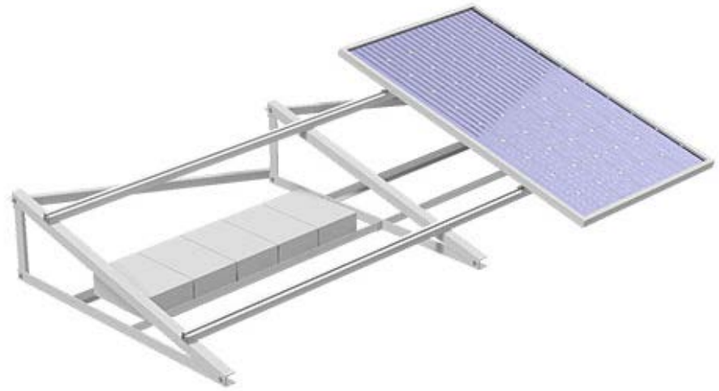
System with adjustable handles

Adapted to modules
- frame
- glass-glass

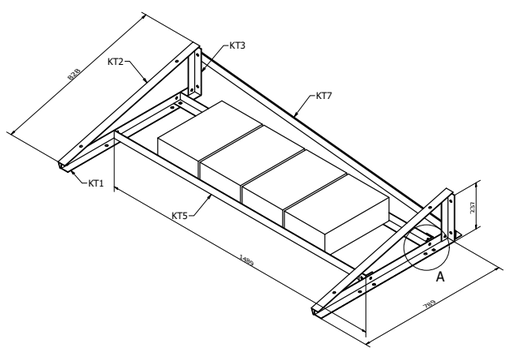
MOUNTING SYSTEM

ML SYSTEM EK-01B

South ballast construction on a flat roof



Installation of photovoltaic modules on a flat roof requires the use of structures that raise the angle of inclination of the module. These are special mounting profiles, the arrangement of which must be planned in such a way as to eliminate the risk of shadow on the modules.



Mounting system ML System EK-01B
Horizontal modules arrangement

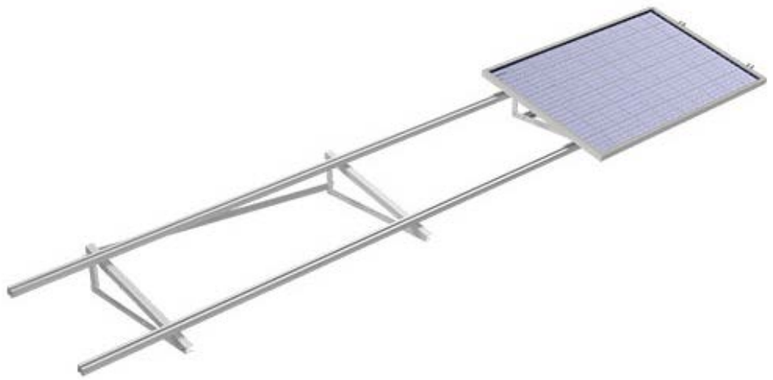
Mounting system ML System EK-01B
Vertical module arrangement

EK-01B components
- Support frames + ballast profiles
- Mounting rails
- Mounting rail connectors
- Clamps
- Screws
- Nuts

MOUNTING SYSTEM

ML SYSTEM EK-01K

South-anchored construction on a flat roof



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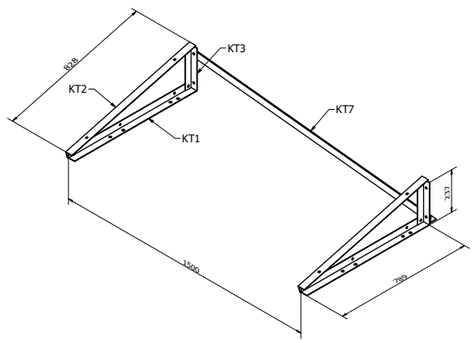


ML System EK-01K mounting system
Horizontal module arrangement

ML System EK-01K mounting system
Vertical module arrangement

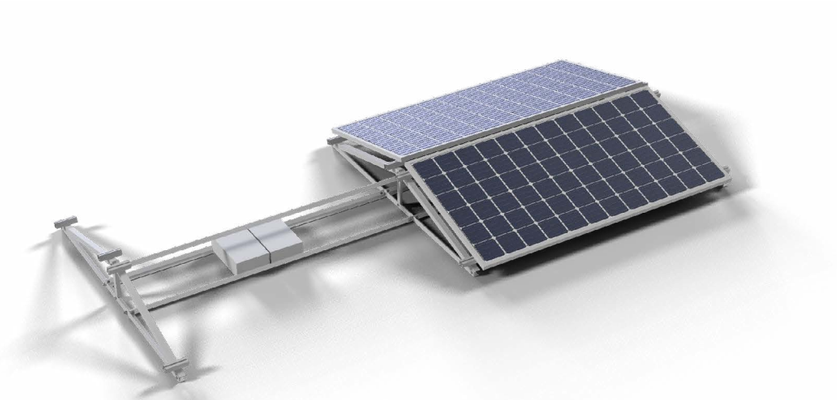
EK-01K components

- Support frames
- Mounting rails
- Mounting rail connectors
- Clamps
- Screws
- Nuts

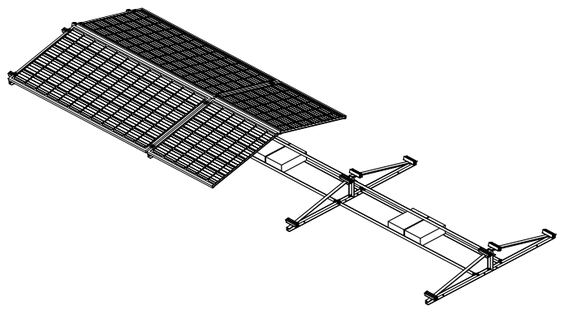
MOUNTING SYSTEM

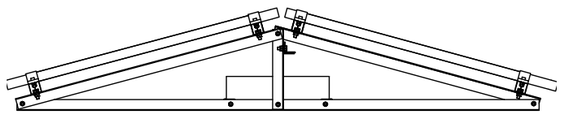
ML SYSTEM EK-WZB

East-west ballast structure for a flat roof



The east-west ballast structure is the optimal solution for flat roofs with a slope of 15 degrees. Installation is carried out using the own weight and additional ballast.





ML assembly system EK-WZB system
Horizontal module arrangement

Components of the ML System EK-WZB

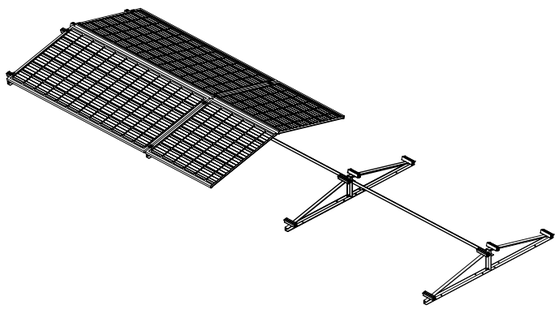
- Support frames
- Mounting rails
- Clamps
- Screws
- Nuts

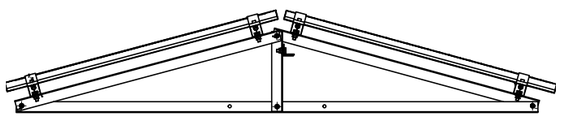
MOUNTING SYSTEM

ML SYSTEM EK-WZK

An east-west anchored structure on a flat roof

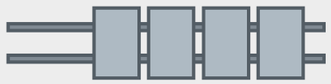
The east-west anchored structure is the optimal solution for flat roofs with a slope of 15 degrees. The design has been weight optimized for minimum load.





ML System EK-WZK mounting system
Horizontal module arrangement

ML System EK-WZK mounting system
Vertical module arrangement



Components of the ML System EK-WZK

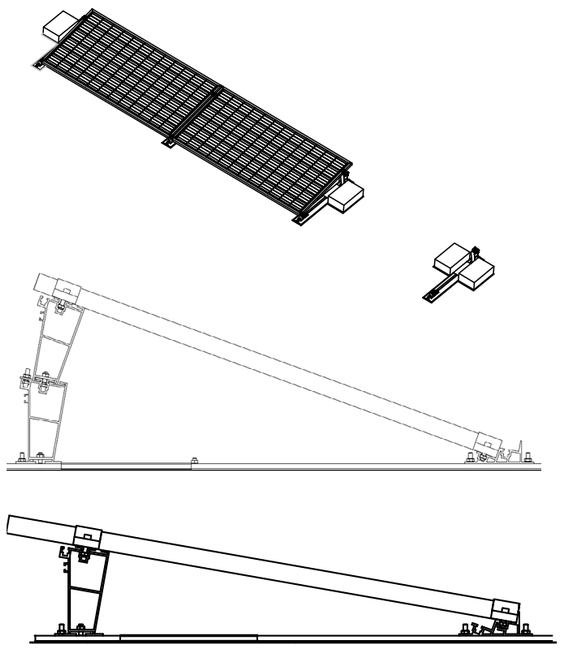
- Support frames
- Mounting rails
- Clamps
- Screws
- Nuts

MOUNTING SYSTEM

ML SYSTEM EKO

EKO south construction for a flat roof

The EKO south mounting system is a ballast structure intended for a flat roof. The construction elements are made of aluminum and stainless steel. The modules are mounted in a horizontal orientation, and the set square angle is 10 or 20 degrees. The advantage of the EKO system is a permanent connection of rows that minimize the impact of wind on the structure.



ML EKO System mounting system
Horizontal module arrangement

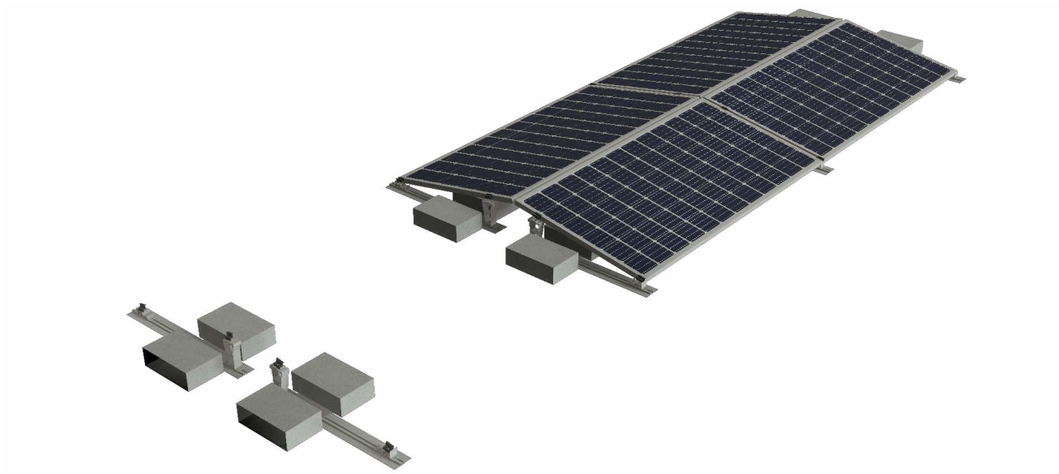
Components of the ML EKO System

- Supports
- Board
- Ballast plate
- Clamps
- Screws
- Nuts

MOUNTING SYSTEM

ML SYSTEM EKO

EKO East-West construction for a flat roof



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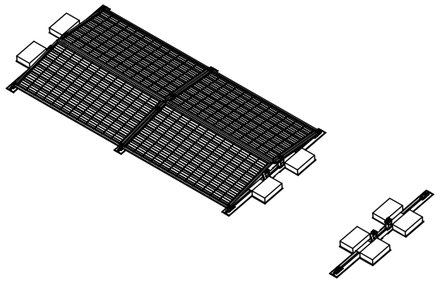
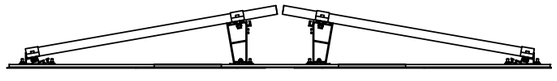




ML System EKO mounting system

Horizontal module arrangement

Components of the ML EKO System

- Supports
- Board
- Ballast plate
- Clamps
- Screws
- Nuts.

STRUCTURES FOR SLOPED ROOFS

The ML System photovoltaic module mounting system is compatible with most solutions available on the market. This applies to frame modules as well as glass-glass modules of various sizes, thicknesses and electrical parameters.

Depending on the type of roofing, we offer dedicated mounting elements that enable permanent and stable mounting of modules on the roof.

The assembly of the entire installation is simple, and thanks to our production knowledge, we are able to fully respond to market demand and customer expectations.

Our knowledge is based on many years of production and implementation experience.

PRODUCT INFORMATION:

Material
- stainless steel
- aluminum

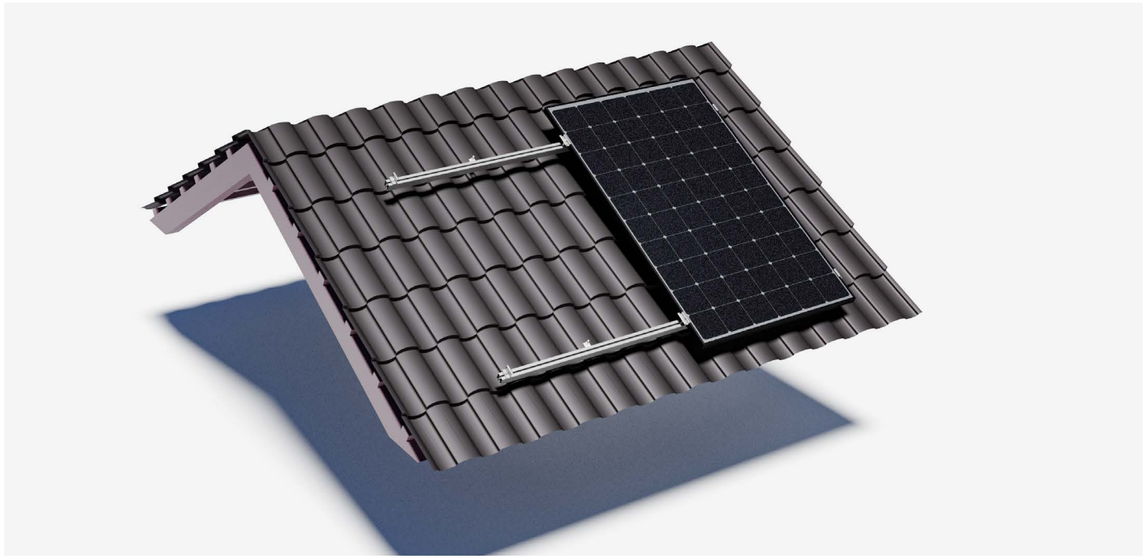
System with adjustable handles

Adapted to modules:
- frame
- glass-glass

MOUNTING SYSTEM

ML SYSTEM B-01

Construction for a sloping roof - STEEL TILE



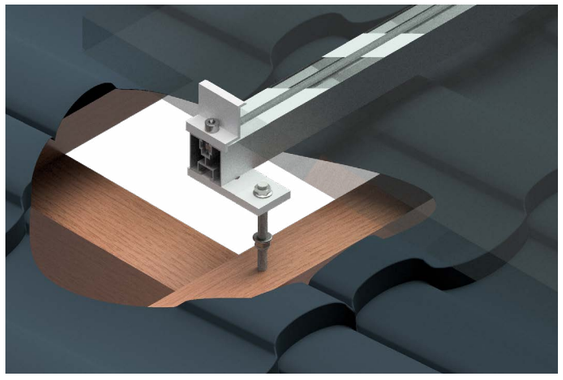
The mounting system for photovoltaic modules adapted to a sloping roof covered with metal tiles is based on an aluminum mounting rail. The structure is fastened to the rafters with a double-threaded bolt. The use of screws allows for easy and quick adjustment of the height of the structure and precise leveling.

PRODUCT INFORMATION

Material:
• stainless steel
• aluminum

System with adjustable handles

Adapted to modules:
• frame
• glass-glass



ML System B-01 mounting system
Horizontal module arrangement

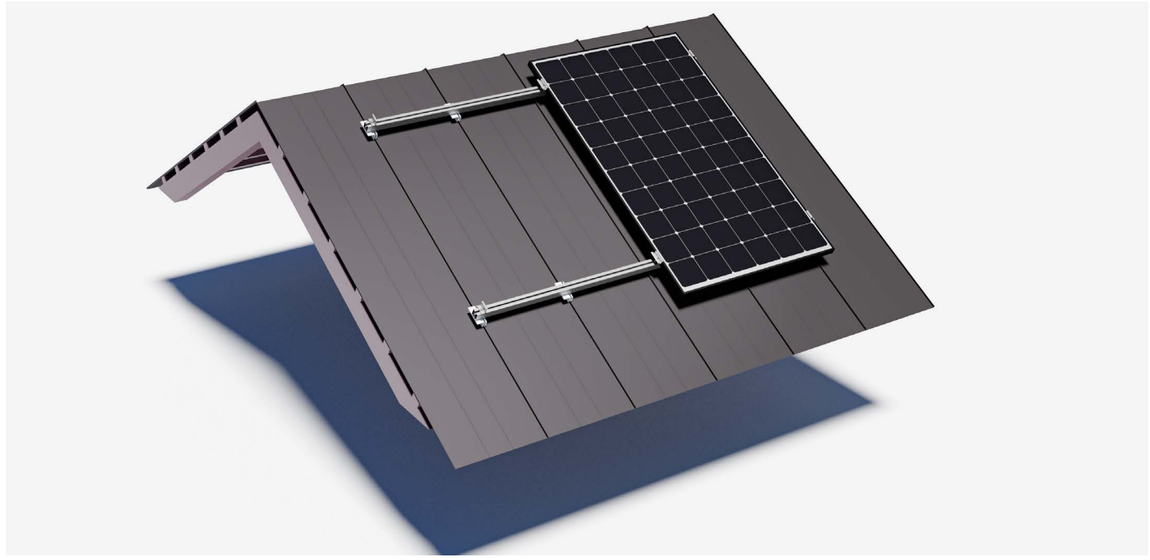
ML System B-01 mounting system
Vertical module arrangement

Components of the ML System B-01
- Mounting rails
- Mounting rail connectors
- Clamps
- Screws
- Double threads
- Nuts
- Mounting flat bars

MOUNTING SYSTEM

ML SYSTEM BR-01

Structure for a sloping roof - SHEET ON A SEAM



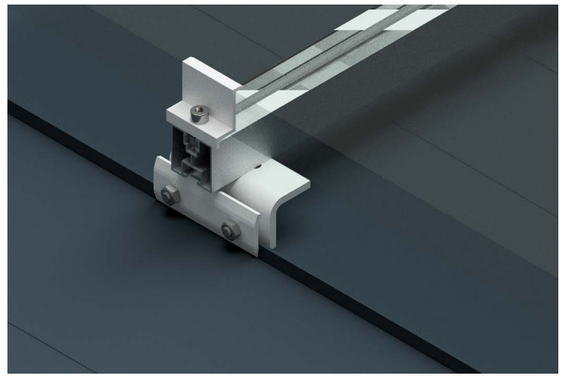
The mounting system for seam sheet metal roofing is a non-invasive system, i.e. we do not mount the holders directly to the roof structure, but screw them to the seam of the sheet. Due to this, the installation is extremely efficient, without making holes in the roofing.

PRODUCT INFORMATION

Material:
• stainless steel
• aluminum

System with adjustable handles

Adapted to modules:
• frame
• glass-glass



ML System BR-01 mounting system
Horizontal module arrangement

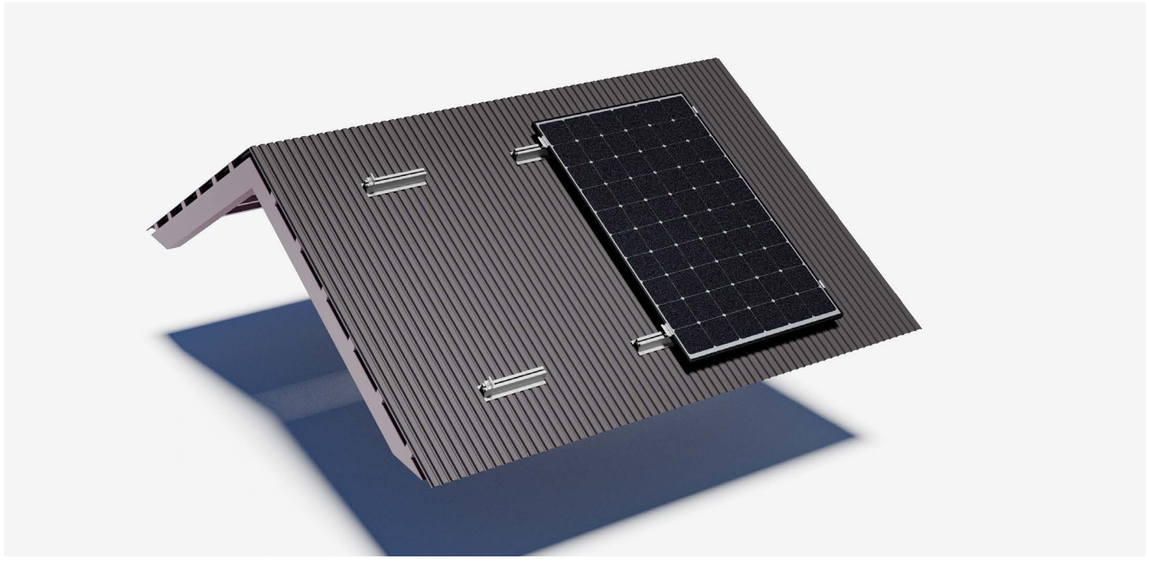
ML System BR-01 mounting system
Vertical module arrangement

Components of the ML System BR-01
- Mounting rails
- Mounting rail connectors
- Clamps
- Screws
- Nuts
- Hem handles

MOUNTING SYSTEM

ML SYSTEM BT-01

Construction for a sloping roof - TRAPEZOIDAL SHEET

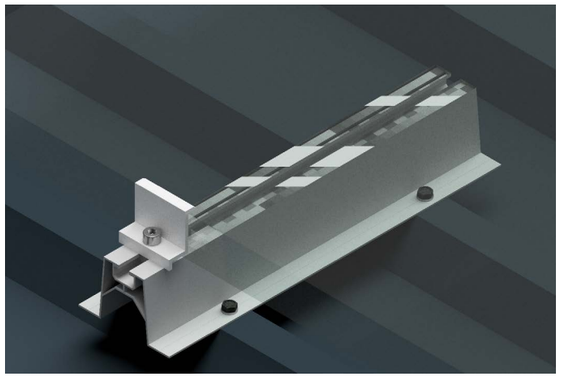


The system for trapezoidal sheet uses a special trapezoidal rail, which is placed on the humps of the sheet. Using sheet metal screws, the rail is attached to which the modules are mounted with clamps.

PRODUCT INFORMATION

Material:
• stainless steel
• aluminum

Adapted to modules:
• frame
• glass-glass



ML System BT-01 mounting system
Horizontal module arrangement

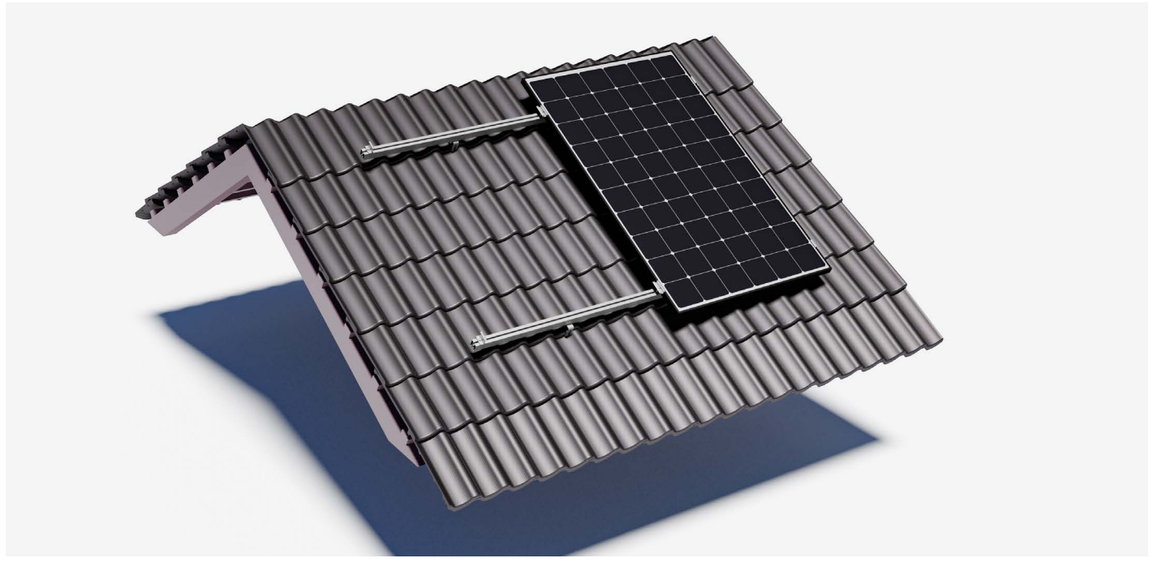
ML System BT-01 mounting system
Vertical module arrangement

Components of the ML System BT-01
- Trapezoidal rails
- Sliding grooves
- Clamps
- Screws
- Screw

MOUNTING SYSTEN

ML SYSTEM DC-01

Structure for a sloping roof - CERAMIC TILE



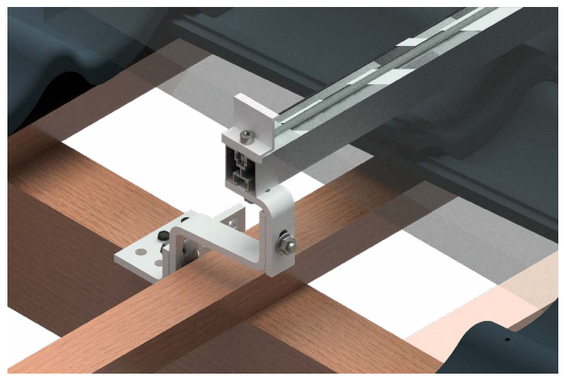
In our systems for slope roofs covered with ceramic tiles, the structure is attached to the rafters using special, adjustable brackets. The handles allow you to adjust the height of the structure and level it.

PRODUCT INFORMATION

Material:
• stainless steel
• aluminum

System with adjustable handles

Adapted to modules:
• frame
• glass-glass



ML System DC-01 mounting system
Horizontal module arrangement

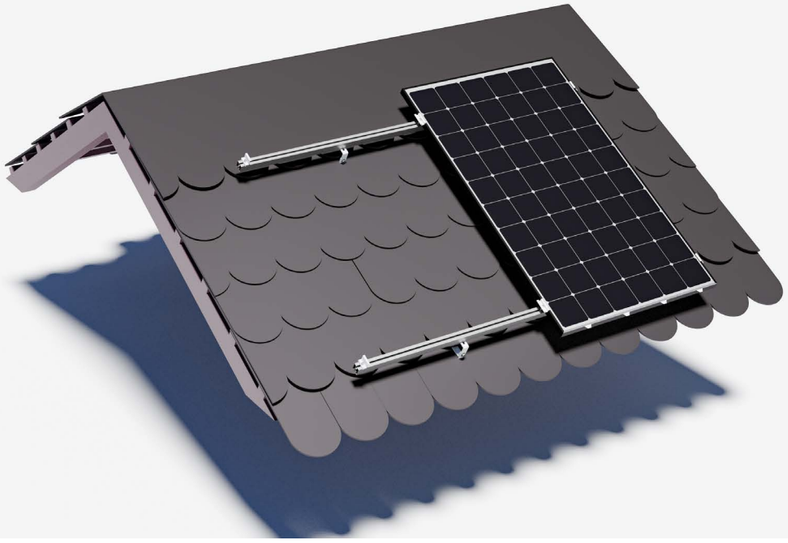
ML System DC-01 mounting system
Vertical module arrangement

Components of theML System DC-01
- Mounting rails
- Mounting rail connectors
- Clamps
- Screws
- Screws
- Nuts
- Adjustable hooks for ceramic tiles

MOUNTING SYSTEM

ML SYSTEM DK-01

Construction for a sloping roof - CARP TILE



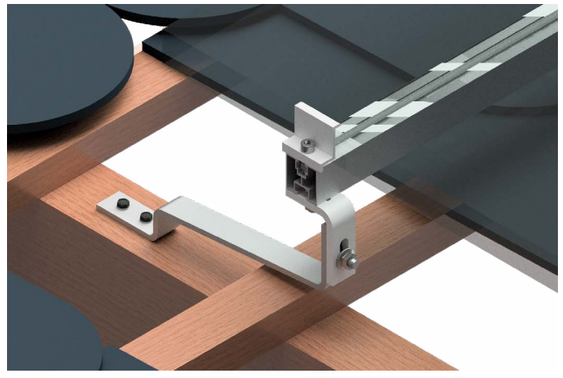
The basis of the plain tile mounting system is the tile hook for the mounting rails of photovoltaic modules. It guarantees the proper stability of the entire structure and enables connection of the profiles with the roofing.

PRODUCT INFORMATION

Material:
- stainless steel
- aluminum

System with adjustable handles

Adapted to modules:
- frame
- glass-glass



ML System DK-01 mounting system
Horizontal module arrangement

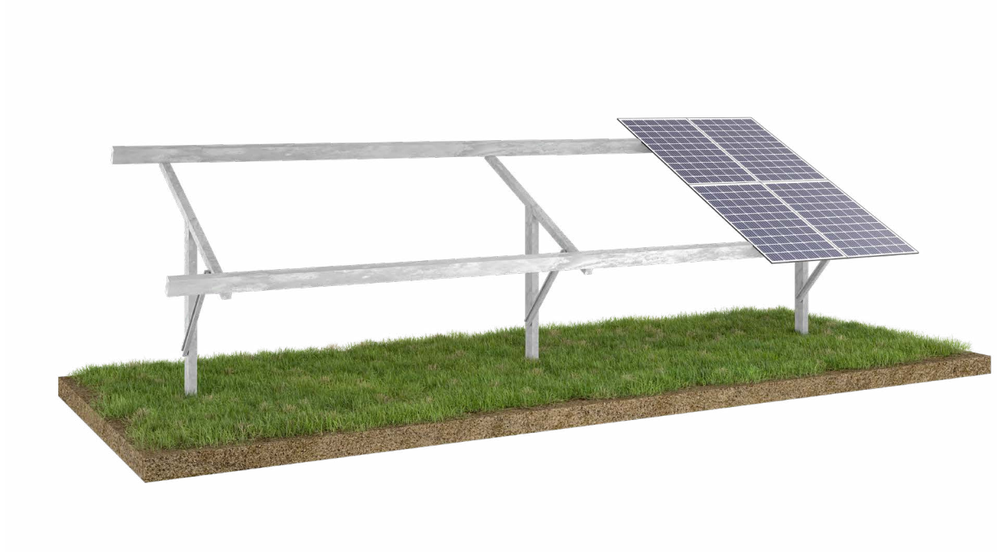
ML System DK-01 mounting system
Vertical module arrangement

ML System DK-01 components
- Mounting rails
- Mounting rail connectors
- Clamps
- Screws
- Screws
- Nuts
- Adjustable hooks for plain tiles

GROUND STRUCTURES

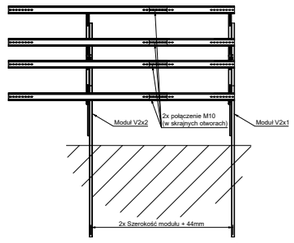
Mounting photovoltaic modules on the ground brings many benefits. Thanks to this solution, you can optimize the positioning of the modules, provide them with adequate ventilation and have free access to the installation in the event of a need for service. Our offer includes ground constructions made of high-quality materials, selected for a specific project.

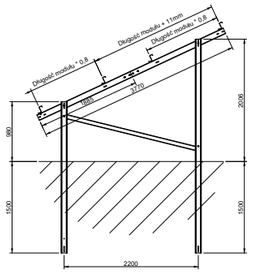
The biggest advantage of ground-based photovoltaic systems is that they can be installed in virtually any conditions. Ground photovoltaic structures can be located on all types of ground, both on soft ground and on solid rock. Importantly, the mounting of modules on the ground is much faster and more efficient than in the case of roofing. Of course, this is reflected in the price of the service. Ground constructions also enable multi-variant mounting of modules recessed, horizontal, vertical and combined clamp) and the selection of the right direction in relation to the sun and even the perfect angle of inclination. All these factors contribute to the high efficiency of the modules. The larger ground surface allows for better sunlight exposure of the modules. Another advantage of modules located on the ground is their easier maintenance, and thus lower service costs.



The universal free-standing structure consists of repeating segments, which allows any configuration of the length of the row and the size of the panel. The structure is double-supported, with a constant inclination of the panels of 25°. It is based on poles that need to be driven into the ground to a depth of 1.5 m.

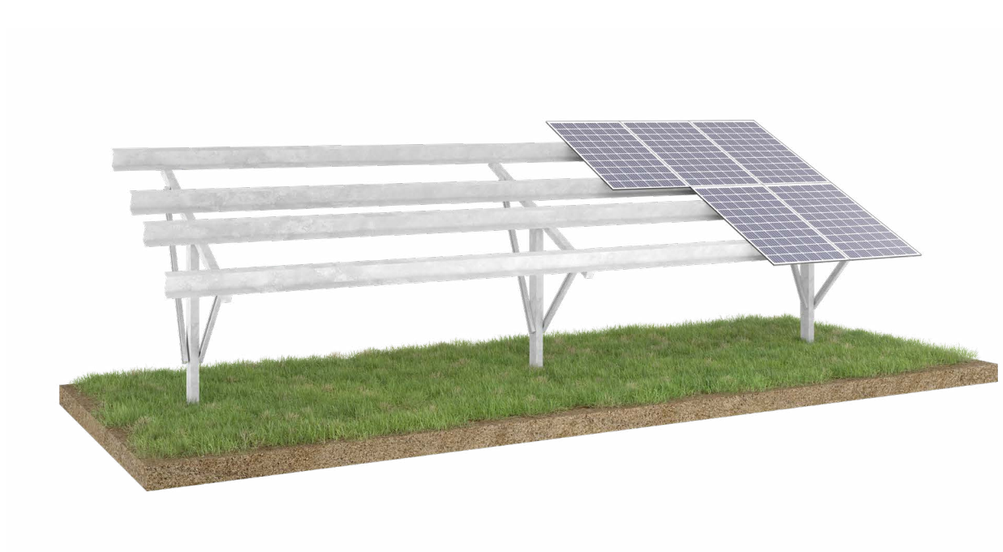
The minimum table size is two V2x2 segments (8 modules). Bolts and purlins are screwed from several elements, which ensures easier transport while increasing strength. The longest element is 3.6 m long.





Segment V2.1:

- Basic design for 1 module
- Free row length configuration
- Optimized for weight and durability



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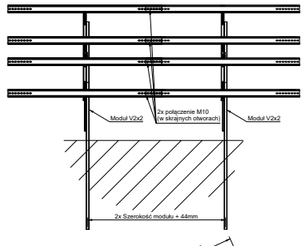
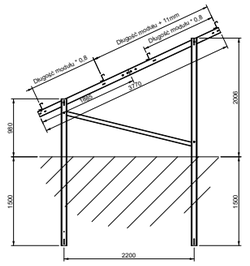
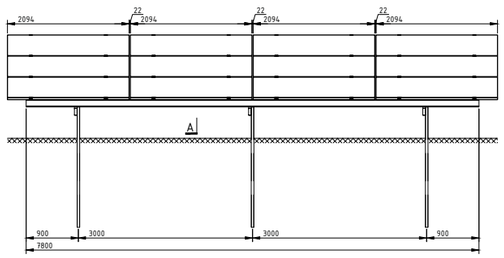


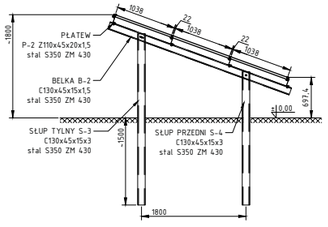


Segment V2.2:

- Basic design for 2 modules
- Free row length configuration
- Optimized for weight and durability

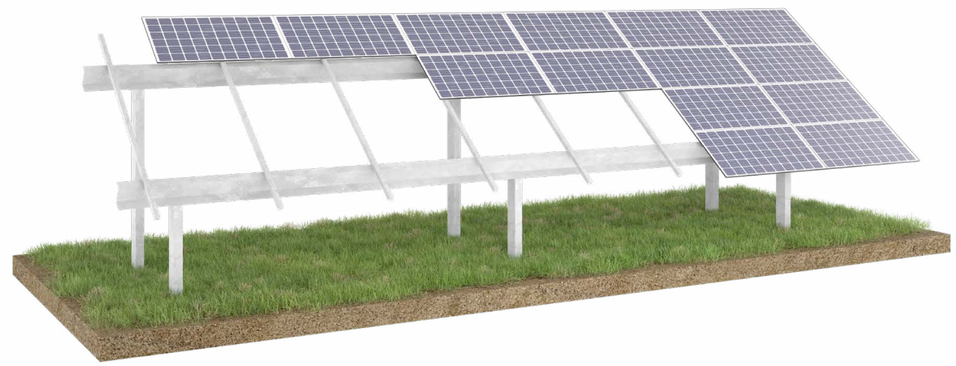
The structure is designed from cold-formed steel profiles. A sheet of 1.5mm and 3mm thickness made of S350 steel with a ZM 350 or ZM 410 coating was used to make it. The construction set consists of columns, beams, purlins and struts - all bolted with stainless steel screws. The protective coating on the components provides long-term protection against corrosion.





Segment V4.3:

- The entire structure is designed according to applicable standards, taking into account climatic loads
- The structure is made according to the requirements of the 22 PN-EN1090 standard in the EXC2 class



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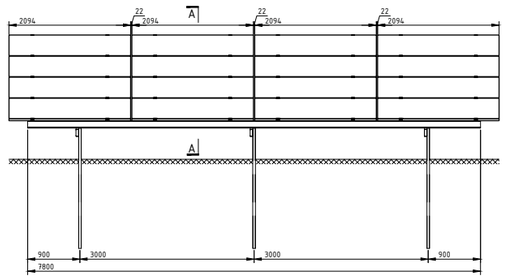

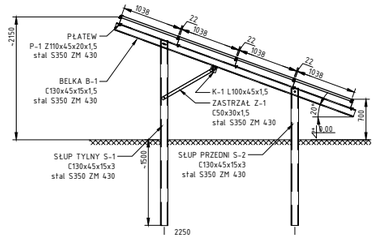

Segment V4.4:

- The entire structure is designed according to applicable standards, taking into account climatic loads
- The construction is made according to the requirements of the PN-EN1090 standard in the EXC2 class

CERTYFIKAT

zgodności Zakładowej Kontroli Produkcji

2627-CPR-1090-1.PL0065.TÜVRh.21.00

zgodnie z Rozporządzeniem (UE) Nr 305/2011 Parlamentu Europejskiego i Rady z dnia 9 marca 2011
(Rozporządzenie w sprawie wyrobów budowlanych - CPR)
Niniejszy certyfikat obowiązuje dla wyrobu budowlanego:

Wyrób budowlany	Elementy nośne oraz ich zestawy wykonane ze stali do klasy EXC2 według EN 1090-2:2018
Zastosowanie	dla konstrukcji nośnych we wszystkich typach budowli
Oznakowanie CE	ZA.3.2-ZA.3.5 według EN 1090-1:2009+A1:2011
Producent	**ML SYSTEM Spółka Akcyjna** Zaczernie 190G 36-062 Zaczernie Polska
Zakład produkcyjny Miejsce produkcji	Zaczernie 190G, 36-062 Zaczernie
Potwierdzenie	Niniejszy certyfikat potwierdza, że zastosowano wszystkie postanowienia dotyczące oceny i weryfikacji stałości procesów opisane w załączniku ZA normy zharmonizowanej EN 1090-1:2009+A1:2011 zgodnie z systemem 2+ oraz, że Zakładowa Kontrola Produkcji spełnia wszystkie wymagania określone w powyższej normie
Data pierwszego wydania	28.04.2020
Następna inspekcja w nadzorze	27.04.2023
Okres ważności	Niniejszy certyfikat zachowuje swoją ważność, do czasu aż nie zmienią się określone w normie zharmonizowanej metody badań i/lub wymagania zakładowej kontroli produkcji do oceny deklarowanych właściwości użytkowych oraz nie ulegną istotnej zmianie warunki produkcyjne w zakładzie.
Miejsce i data wystawienia	Zabrze, 13.04.2021

Leszek Zadroga
Jednostka Notyfikowana

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CERTIFICATE

conformity of the Factory Production Control

2627-CPR-1090-1.PL0065.TÜVRh.21.00

In compliance with Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulations - CPR)
This certificate applies to the following construction product:

Construction product	Structural components and kits for steel structures to EXC2 according to EN 1090-2:2018
Intended use	for load-bearing structures in all types of buildings
CE-marking method	ZA.3.2-ZA.3.5 according to EN 1090-1:2009+A1:2011
Manufacturer	**ML SYSTEM Spółka Akcyjna** Zaczernie 190G 36-062 Zaczernie Poland
Manufacturing plant Production facility of the manufacturer	Zaczernie 190G, 36-062 Zaczernie
Confirmation	This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the harmonised standard EN 1090-1:2009+A1:2011 under system 2+ are applied, and that the factory production control fulfills all the prescribed requirements stated therein.
Date of first issue	28.04.2020
Next Surveillance inspection	27.04.2023
Period of validity	This certificate will remain valid as long as the test methods and/or the factory production control requirements included in the harmonised standard used to assess the performance of the declared characteristics do not change, and the product and the manufacturing conditions in the plant are not modified sienificantly.
Place and date of issue	Zabrze, 13.04.2021

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CERTYFIKAT

zgodności Zakładowej Kontroli Produkcji

2627-CPR-1090-1.PL0066.TÜVRh.21.00

zgodnie z Rozporządzeniem (UE) Nr 305/2011 Parlamentu Europejskiego i Rady z dnia 9 marca 2011
(Rozporządzenie w sprawie wyrobów budowlanych - CPR)
Niniejszy certyfikat obowiązuje dla wyrobu budowlanego:

Wyrób budowlany	Elementy nośne oraz ich zestawy wykonane z aluminium do klasy EXC2 według EN 1090-3:2008
Zastosowanie	dla konstrukcji nośnych we wszystkich typach budowli
Oznakowanie CE	ZA.3.2-ZA.3.5 według EN 1090-1:2009+A1:2011
Producent	**ML SYSTEM Spółka Akcyjna** Zaczernie 190G 36-062 Zaczernie Polska
Zakład produkcyjny Miejsce produkcji	Zaczernie 190G, 36-062 Zaczernie
Potwierdzenie	Niniejszy certyfikat potwierdza, że zastosowano wszystkie postanowienia dotyczące oceny i weryfikacji stałości procesów opisane w załączniku ZA normy zharmonizowanej EN 1090-1:2009+A1:2011 zgodnie z systemem 2+ oraz, że Zakładowa Kontrola Produkcji spełnia wszystkie wymagania określone w powyższej normie
Data pierwszego wydania	28.04.2020
Następna inspekcja w nadzorze	27.04.2023
Okres ważności	Niniejszy certyfikat zachowuje swoją ważność, do czasu aż nie zmienią się określone w normie zharmonizowanej metody badań i/lub wymagania zakładowej kontroli produkcji do oceny deklarowanych właściwości użytkowych oraz nie ulegną istotnej zmianie warunki produkcyjne w zakładzie.
Miejsce i data wystawienia	Zabrze, 13.04.2021

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2627-CPR-1090-1.PL0066.TÜVRh.21.00

In compliance with Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulations - CPR)
This certificate applies to the following construction product:

Construction product	Structural components and kits for aluminium structures to EXC2 according to EN 1090-3:2008
Intended use	for load-bearing structures in all types of buildings
CE-marking method	ZA.3.2-ZA.3.5 according to EN 1090-1:2009+A1:2011
Manufacturer	**ML SYSTEM Spółka Akcyjna** Zaczernie 190G 36-062 Zaczernie Poland
Manufacturing plant Production facility of the manufacturer	Zaczernie 190G, 36-062 Zaczernie
Confirmation	This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the harmonised standard EN 1090-1:2009+A1:2011 under system 2+ are applied, and that the factory production control fulfills all the prescribed requirements stated therein.
Date of first issue	28.04.2020
Next Surveillance inspection	27.04.2023
Period of validity	This certificate will remain valid as long as the test methods and/or the factory production control requirements included in the harmonised standard used to assess the performance of the declared characteristics do not change, and the product and the manufacturing conditions in the plant are not modified sienificantly.
Place and date of issue	Zabrze, 13.04.2021

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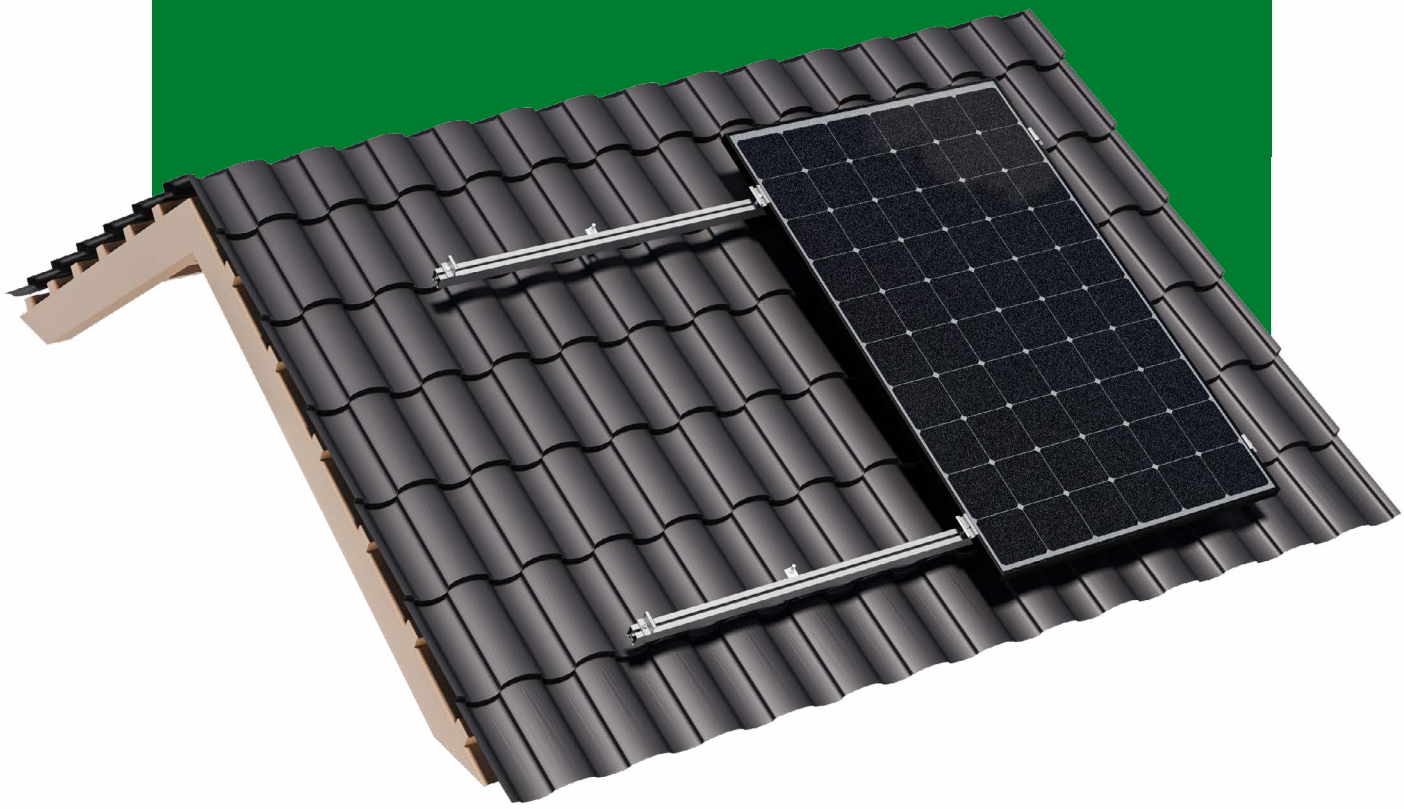

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