(cn) ALUMSOLAR PV ENGINEERING CO.,LTD



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## ALUMSOLAR Solar mounting system

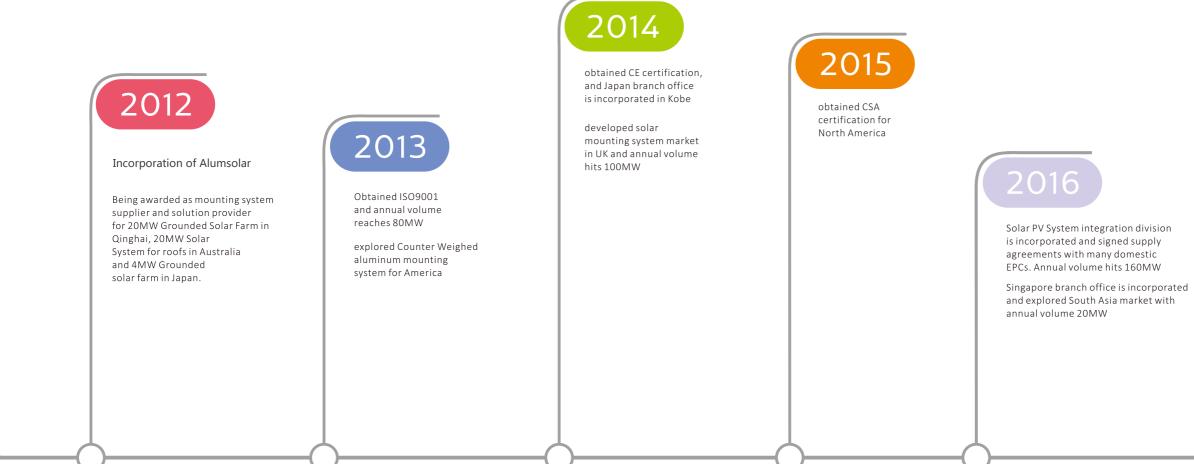


#### FROM 2012 ALUMSOLAR



### international shipments





#### company events



 $\Rightarrow$ 





"TOP WORKMANSHIP RELIABLE PERFORMANCE PROFESSIONAL ENGINEERING."



Company Profile Metal Roof Solution Tile Roof Solution RC Roof Solution Ground Mounted Solar Racking Solar Carport Solution Other Applications Professionalism Project References Product Datasheet

- (p07-08)
- (p09-14)
- (p15-18)
- (p19-24)
- (p25-30)
- (p31-32)
- (p33-34)
- (p35-36)
- (p37-40)
- (p41-42)



# Mounting System olution Provider

# Aumsolar

Alumsolar Pv Engineering Co., Ltd, was established in 2012, with a registered capital of RMB 2 million, focusing on the development and fabrication of solar mounting system with value added technical services



Alumsolar Pv Engineering Co., Ltd was established in 2015, with a registered capital of RMB 2 Million, focusing on the development and fabrication of solar PV mounting systems with value added technical services.

Provides all kinds of solar mounting bracket in Alumsolar. One of market leader for solar mounting structure Since 2000. With 2 factories 5000 workers and more that 10000 solutions, Professional produce and design, ensure that the best solutions suit to each clients` projects.

High-quality, innovative, strong and extremely flexible in terms of application – these are the features of the ALUMSOLAR' s PV mounting systems. Whether you need steel or high-strength aluminum, an individual mounting profile or a small fastening screw - everything we offer has to meet requirements that are not merely high, but the very highest.

Designed for a service life of at least 25 years of perfect functionality, even in extreme conditions. For flat roofs, pitched roofs, solar parks and carports. For large scale solar farms, we can also take care of designing, calculating and supervising complete solar and photovoltaic plants. From the soil investigation and calculation of all structural analyses to site design, logistics and a version which is ready to release and transfer to the customer. The company has built a strong manufacturing capacity and complete industrial chain system, after years of accumulation and precipitation, with research and innovation as a source of power, and constantly promotes product upgrading; we gather a wide range of customer resources at domestic and abroad.

In China, we work closely China State Power, Huaneng Energy, Zhonghang Power, CSIC, Trina Solar, Canadian Solar, etc. Overseas, our mounting systems are installed for IKEA, Pepsi, etc., we have customers worldwide, including Japan, Singapore, Philippine, Indonesia, India, Middle East, North and South America, etc. At present the company' s annual production of 500MW solar racking capacity, and provide design and development, as well as some customized technical services for domestic and oversea customers.



Quality is our culture in Alumsolar.







CE Certificate



CSA Certificate

#### **ISO9001**

As the international standard that specifies requirements for a quality management system (QMS). Organizations use the standard to demonstrate the ability to consistently provide solar mounting structure products and services that meet customer and regulatory requirements.

#### CE marking with European standard

CE marking is a certification mark that indicates conformity with health, safety, and environmental protection standards for solar mounts sold within the European Economic Area. The CE marking is also found on solar mounts sold outside the EEA that are manufactured solar mounts in, or designed to be sold in, the EEA.

#### **GSA**

CSA International (Canadian Standards Association), a member of the CSA Group, is a provider of solar mounts testing and certification services for electrical, a variety of other products. Recognized in the U.S., Canada and around the worldS., Canada and around the world



Patent for Fast Installation Mounting System

#### Patent for Wind Load Reducing Mounting System



Patent for Easy Connection Mounting System

#### Alumsolar is Certified and Honored!

#### cetificates



#### Patent for Leakage Free Mounting System

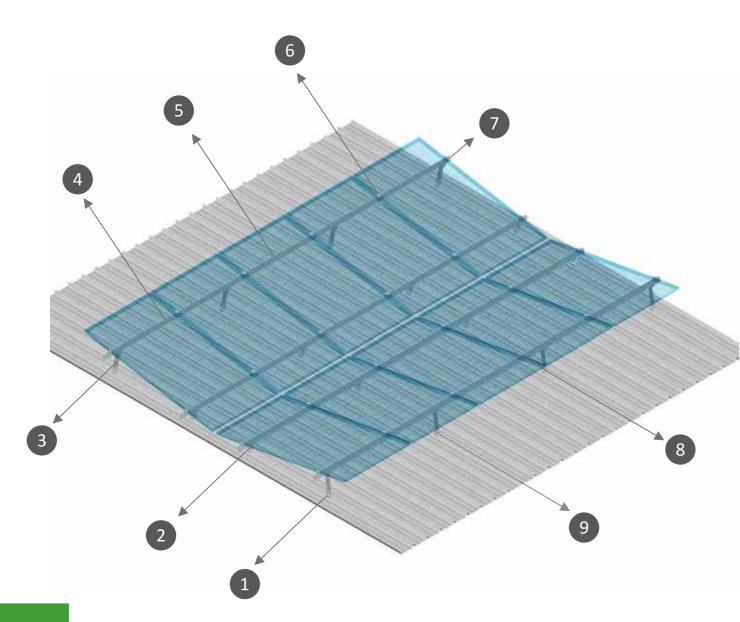


Patent for Quick Installation Mounting System



## Metal Roof Solution M2

Module has angles to the Roof Proifile  $5^{\circ}/10^{\circ}/15^{\circ}$ 







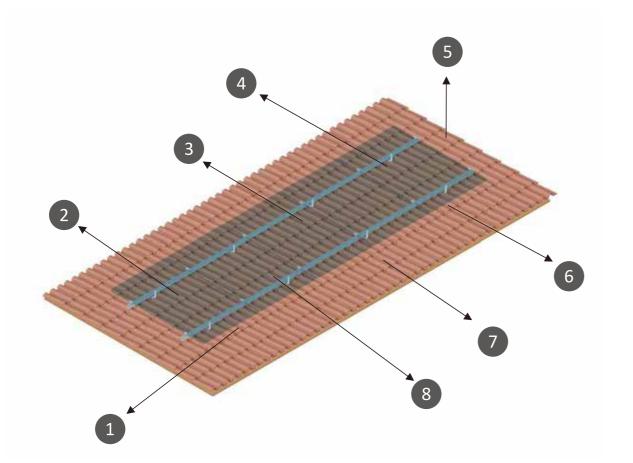
### metal roof solutions





## **Tile Roof Solution**

Module follow Roof Profile 0°











### tile roof solutions



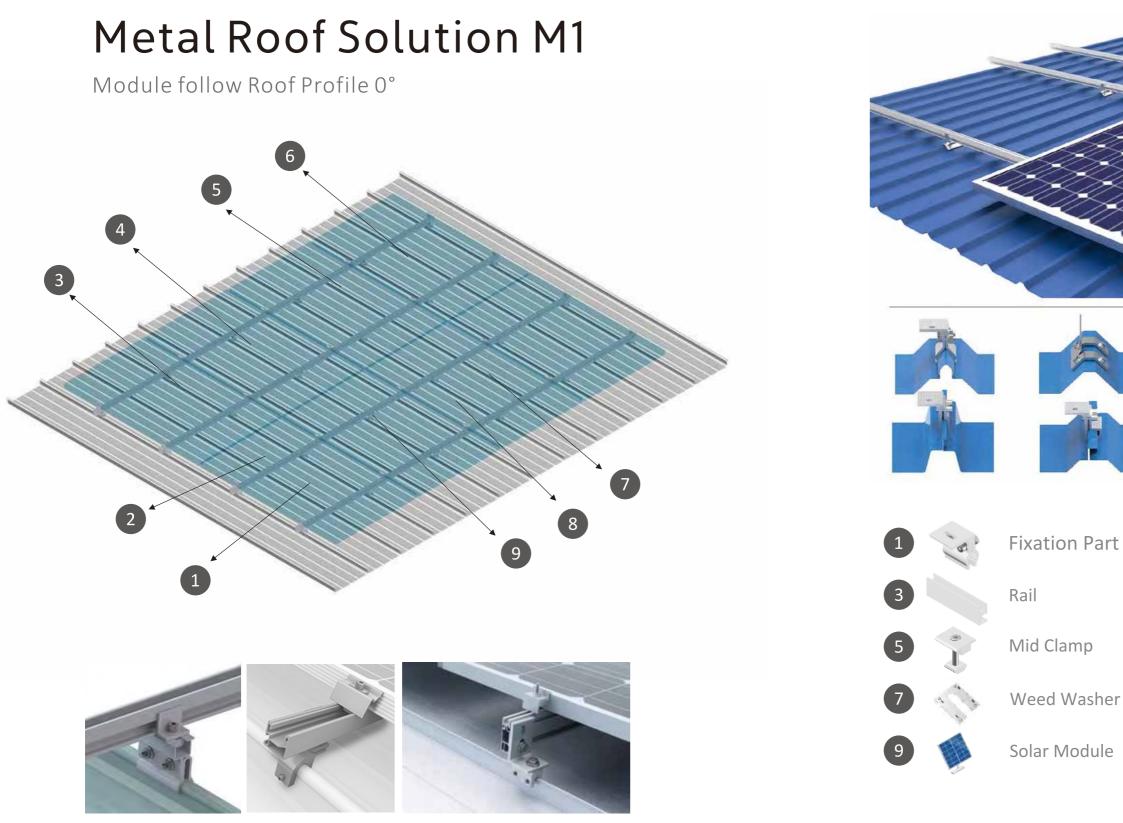
Rail

Mid Clamp

Weed Washer

Solar Module





Seam Clamp

Rail with Cable Tray

Standing Seam Type

### metal roof solutions









L Feet

Rail Joiner

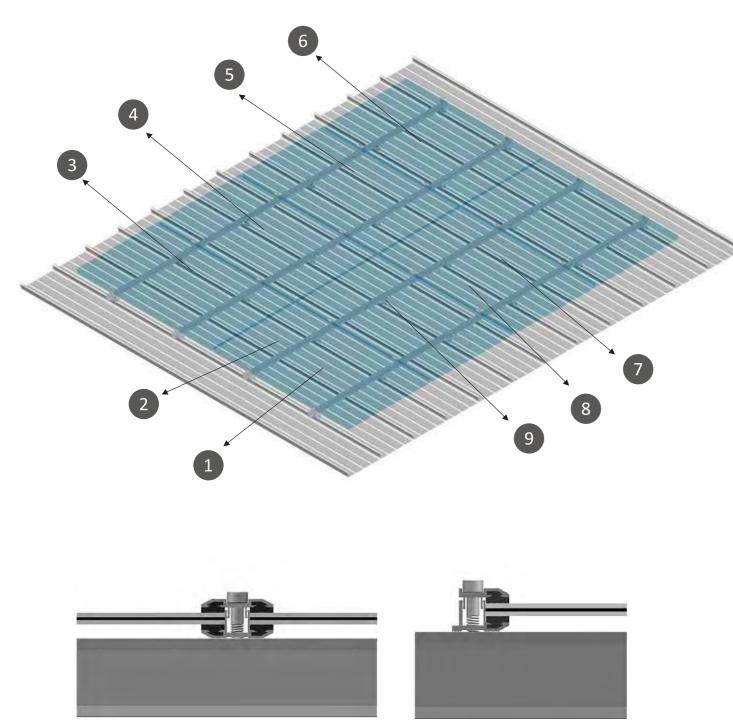
End Clamps

Grounding Lug



## $Metal\,Roof\,Solution\,M2$

Module follow Roof Profile 0° Thin solar panels installation

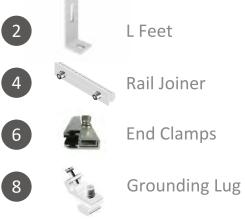


Mid/inter clamp fixed thin solar panels

End clamp fixed thin solar panels

#### metal roof solutions





**Fixation** Part

Mid Clamp

Weed Washer

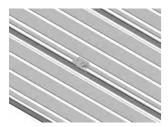
Solar Module

Rail

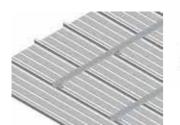


## Metal Roof Solution

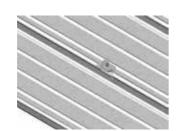
Simple Installation Process



Step 1: Identify the location for the 1st clamps as specified in the drawing and fix the clamp on the metal roof



Step 4: Secure the rails on the seam clamp and tighten the rail clip



Step 2: Mount the rail clip on the seam clamp (not tighten)



Step 5: connect the rails and repeat the process, lay all the rails on the roof

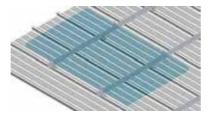


Step 7: Fix the 1st Mid clamp with weed washer as location specified in the drawing and do not tighten it



Step 8: Fix all the other mid and end lamps for the 1st module installation





<M1>

Step 9: Mount the 1st Module on the rail and tighten the mid and end clamps.

Fix the 1st end clamp as location

specified in the drawing and do not

Step 3:

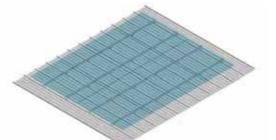
Step 6:

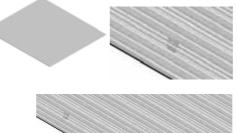
tighten it

Repeat the process and spread

the fixation parts all over the roof with

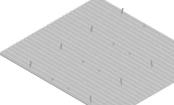
locations as specified in the drawing







Step 1: Identify the location for the front leg as specified in the drawing and fix the clamp on the metal roof Identify the location for the rear leg as specified in the drawing and fix the clamp on the metal roof



Step 4: Repeat the process and spread the fixation parts all over the roof with locations as specified in the drawing



Step 7: Repeat the process and spread it over for all the legs on the roof



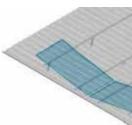
Step 2: Fix the front leg on the seam clamp



Step 5: Fix the rail clip on the front leg but not tighten it



Step 8: Fix the 1st end clamp as location specified in the drawing and do not tighten it



Step 10: Mount the 1st Module on the rail and tighten the mid and end clamps.

#### metal roof solutions











Step 3: Fix the rear leg on the seam clamp



#### Step 6:

Fix the rail clip on the rear leg but not tighten it



#### Step 9:

Fix the 1st Mid clamp with weed washer as location specified in the drawing and do not tighten it

Step 11: repeat the process and complete all installations.



## **Tile Roof Solution**

Simple Installation Process



Step 1: Identify the 1st hook location as specified in the drawing, remove a few pieces of tiles and mount 1st hook



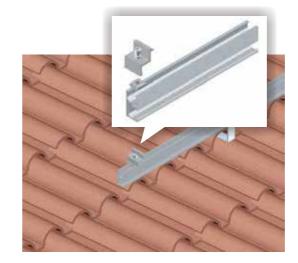
Step 2: Re-instate the Tiles



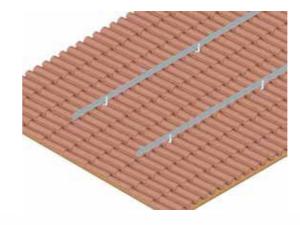
Step 3: Mount all the hooks with spacing as specified in the drawing with good alignment



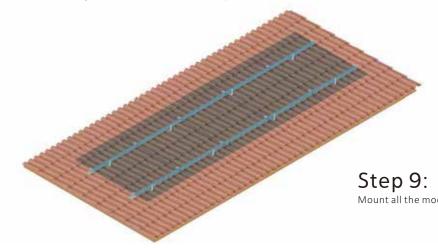
Secure the rail on the hooks



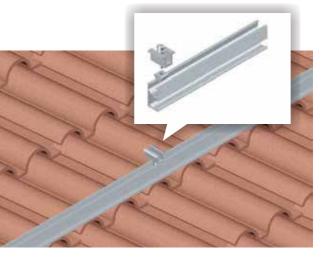
Step 5: Fix the 1st end clamp but not tighten at location as specified in the drawing



Step 7: Fix but not tighten all the end and mid clamps

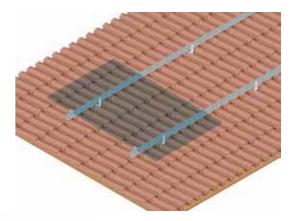


#### tile roof solutions



#### Step 6:

Fix the 1st mid clamp but not tighten at the location as specified in the drawing



#### Step 8:

Mount the 1st module and tighten the screws with specified torques

Mount all the modules

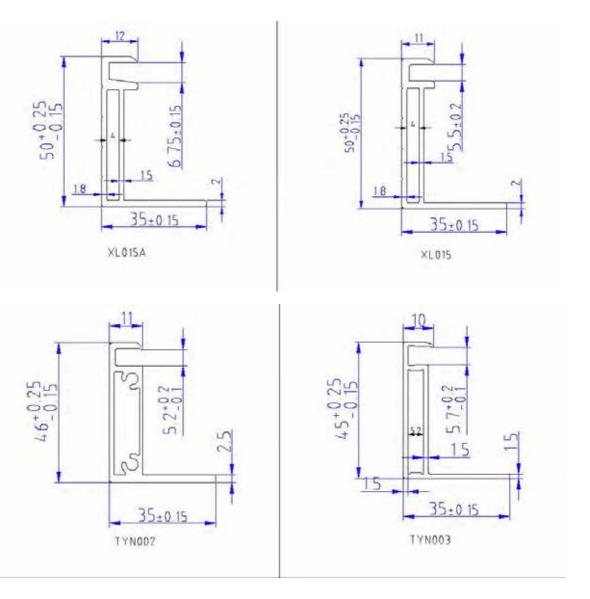


#### concrete roof solutions

### Aluminum Frame for Solar Module

Customed section and dimension





\* material: aluminun
\* Dimension: 1950, 2
\* CNC: 45 degree
\* accessories: L feet

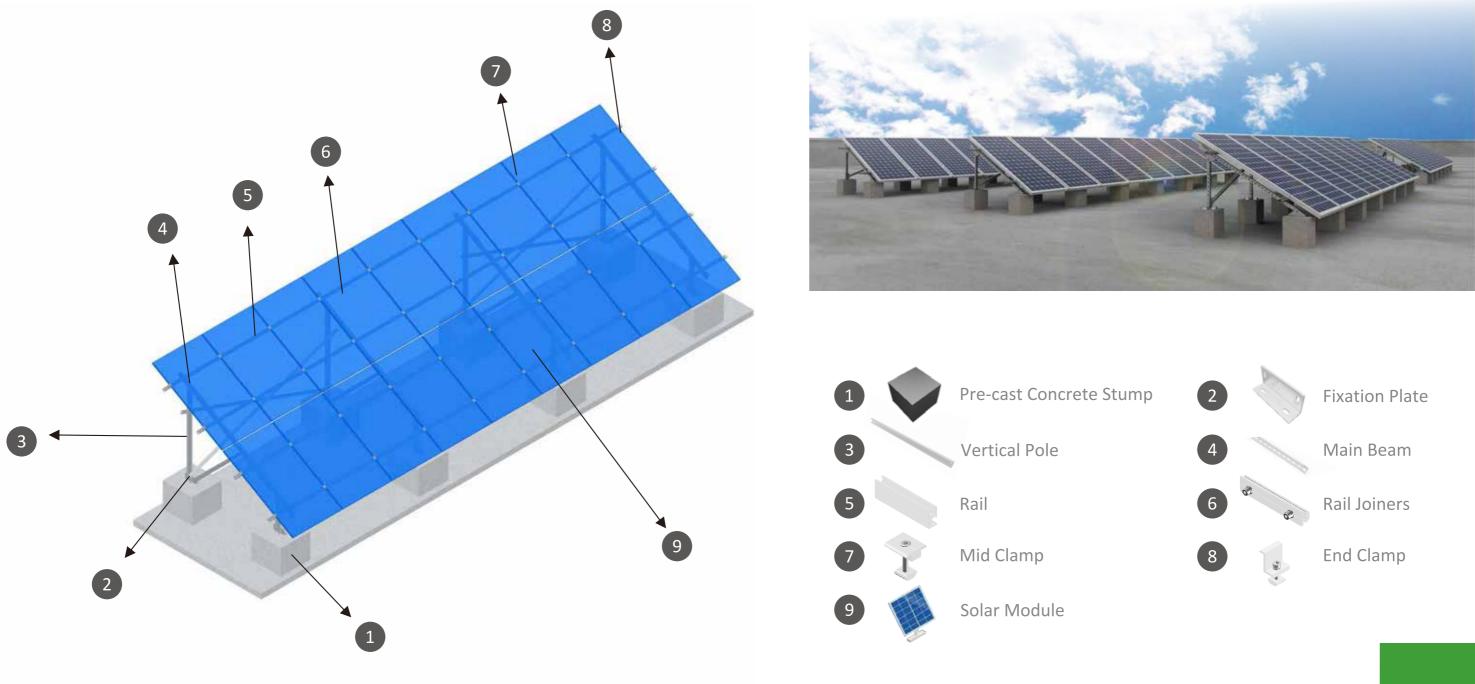
### \* material: aluminum 6063-T5 /6005-T5 \* Dimension: 1950, 1650, 992, custom





## **RC** Roof Solution

Traditional 10° / 20° / 30°+

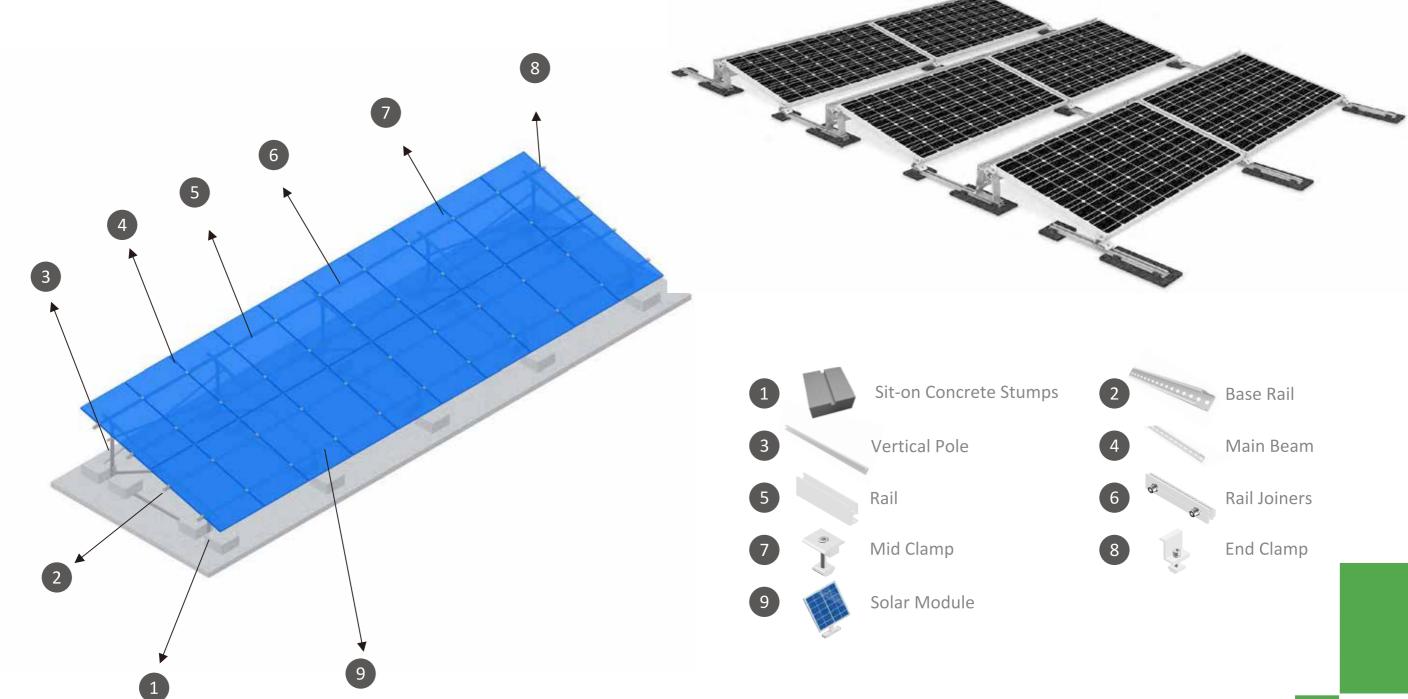


### concrete roof solutions



## **RC** Roof Solution

Counter Weighed 10° / 20° / 30°+

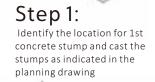


### concrete roof solutions



## **RC** Roof Solution

Simple Installation Process







Step 8: Repeat the process and mount all main beams and side braces

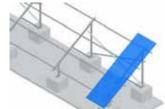
Step 11: Mount the solar modules on the rails



Step 2: Place fixation plate on the cast concrete stumps

Step 6: Secure the rear race to increase the strength

Step 9: Mount the normal rails on the main beam







Step 3: Mount the front pole on the concrete stump



Mount the rear pole on the concrete stump



Step 7: Mount the main beam and side brace

> Step 10: Mount the end and mid them

clamps but not tightening

Step 7:

Repeat the process and complete the whole structures





Step 9: Repeat the process and mount all the rails



on the base rails



Step 4: Fix the main beam with front and rear poles

Identify locations for base rails and

lay all the base rails according to the

space design of the drawing

Step 1:

Step 5:

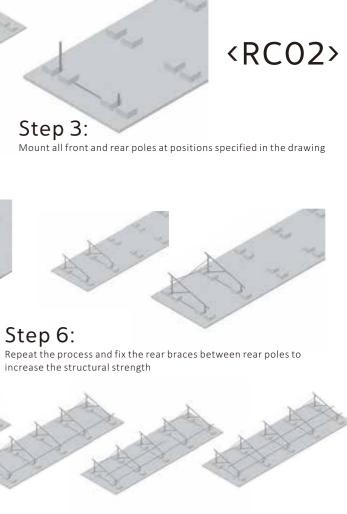
Secure the side brace



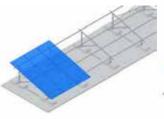


Step 10: Install the rails above the main beams and join the rails in diagonal direction

#### concrete roof solutions



Install the rails above the main beams and join the rails in diagonal direction



Step 11: Mount the solar modules on the rails

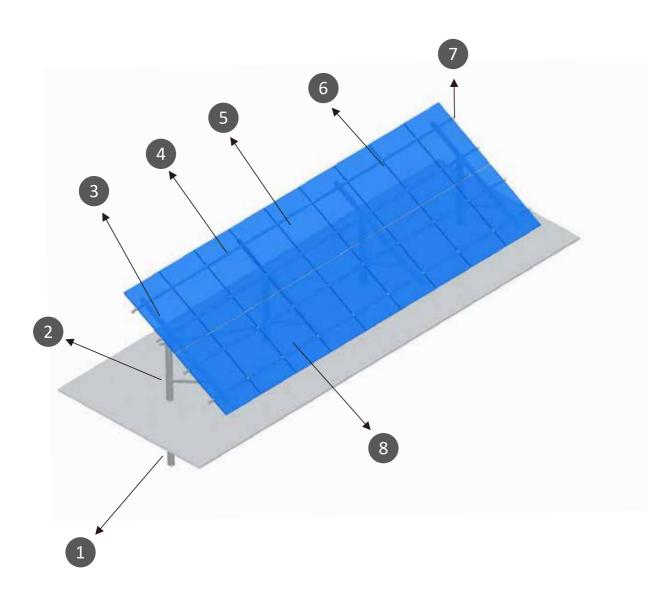


Step 12: Repeat the process and mount all solar modules

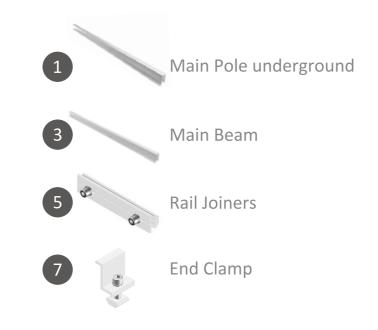


## Ground Mounted Solar Racking

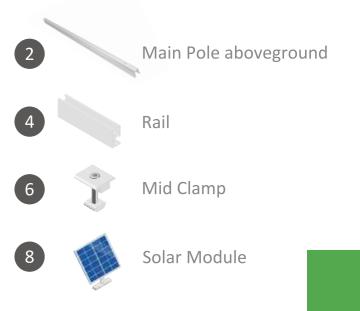
Type A: 10° / 20° /30°+



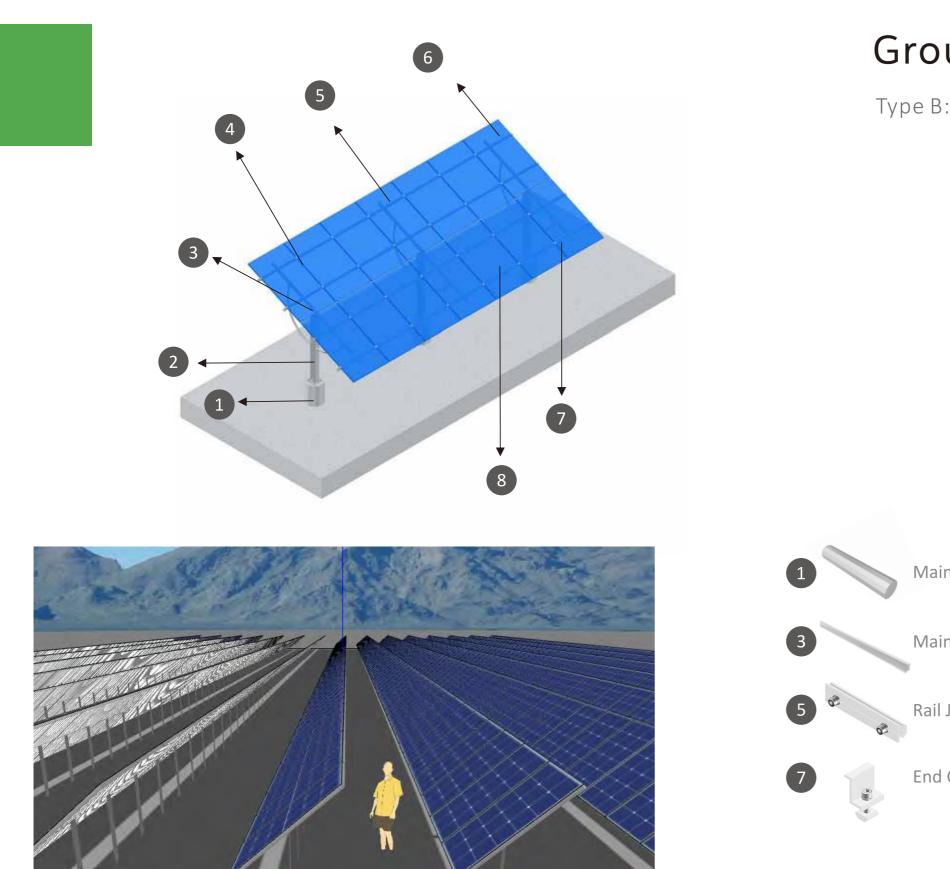




### grounded mounting solutions



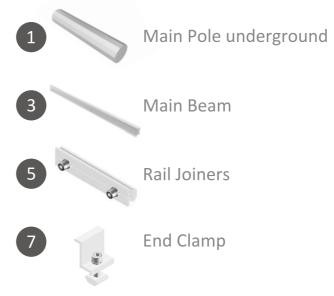




## Ground Mounted Solar Racking

Type B: 10° / 20° / 30°+





#### grounded mounting solutions



Main Pole aboveground

Rail

Mid Clamp

Solar Module



## **Ground Mounted Solar Racking**

Simple Installation Process

#### <G01>



Step 1: Identify the location for 1st main pole and install the pole according to the drawing



Step 2: Install all the poles at locations as specified in the planning drawing



Step 3: Mount the main beam with side support on the main pole



Step 4: Repeat the process and complete the 2nd pole structure

#### <G02>



Step 1: Identify the location for 1st . main pole and install the po according to the drawing



Step 2: Install all the poles at location as specified in the planning drawing



Step 5: Secure the rear brace and increase the structural strength



Step 9: Mount the end and mid clamps but not tightening them



Step 6: Repeat the process and mount all pole structures with layout designed in the drawing

Step 10:

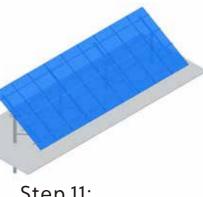
Mount the solar modules on the rails



Step 7: Secure the normal rail on the main beams



Step 8: Repeat the process and mount all the rails



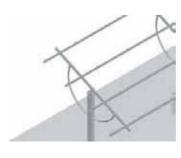
Step 11: Repeat the process and mount all solar modules



Step 5: Mount the adjustable structure with main beam on the main pole



Step 6: Repeat the process and complete the full adjustable structure installation



Step 9:

Mount the end and mid clamps

but not tightening them

Step 10: Mount the solar modules on the rails

### grounded mounting solutions



Mount the main beam with side support on the main pole



Step 4: t epeat the process and complete he main structure



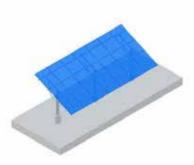
Secure the normal rail on the

Step 7:

main beams

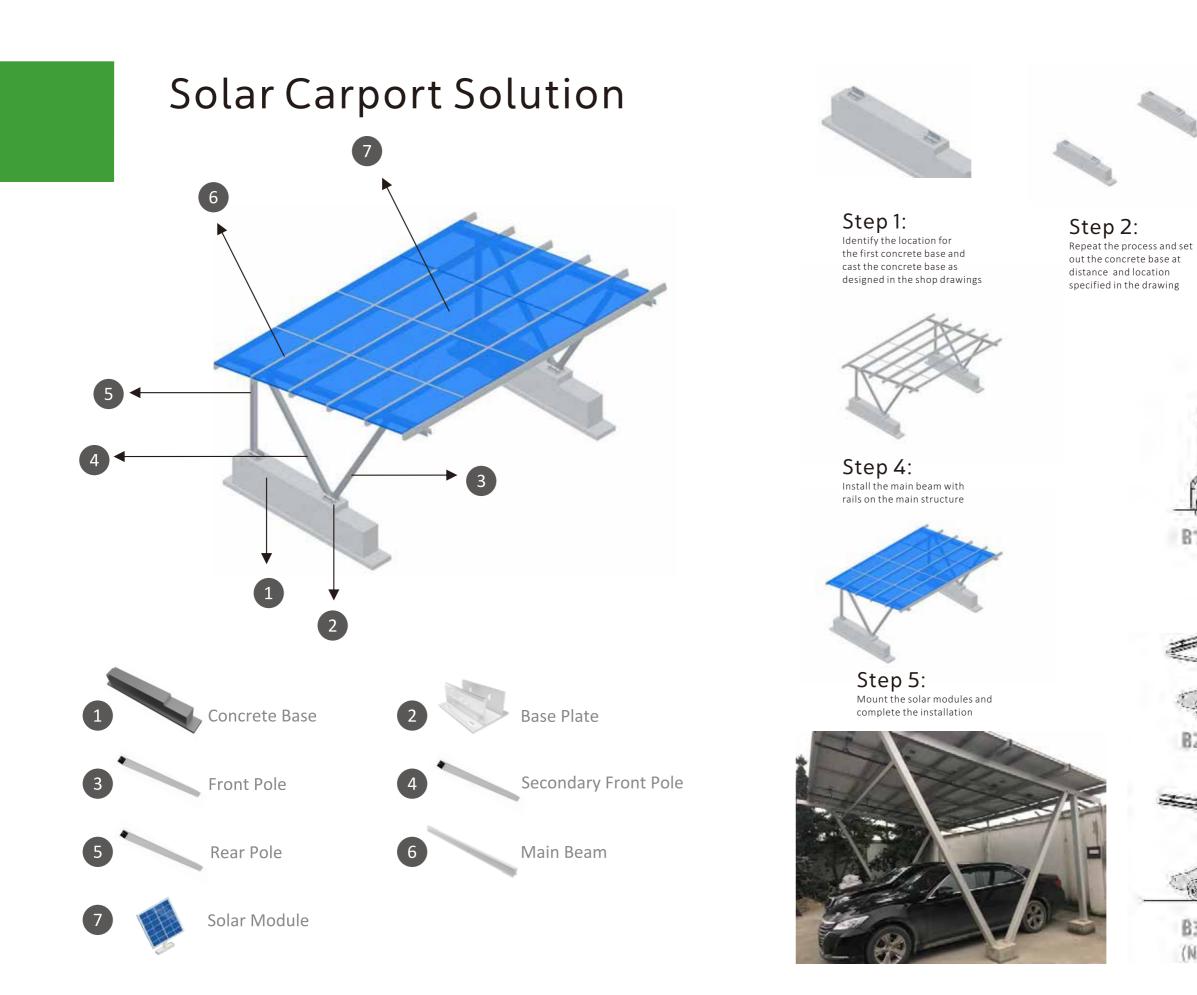


Step 8: Repeat the process and mount all the rails



Step 11: Repeat the process and mount all solar modules





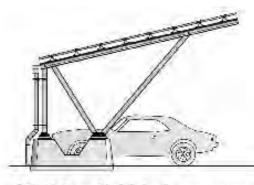
#### solar carport solution



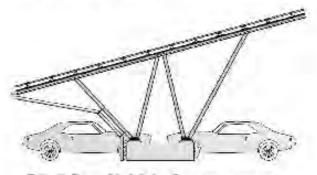




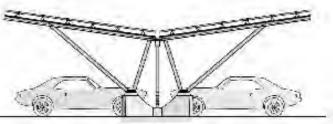
Step 3: Mount the main support structure with tightening rod on top



B1: 1 Row Vehicle Arrangement



B2: 2 Row Vehicle Arrangement



**B3: 2 Row Vehicle Arrangement** (North/South Facing)

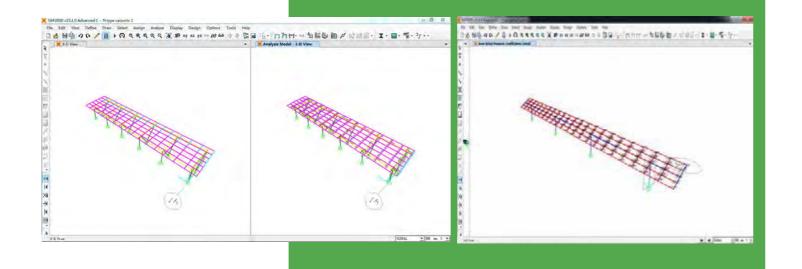


#### professional engineering



## Professionalism

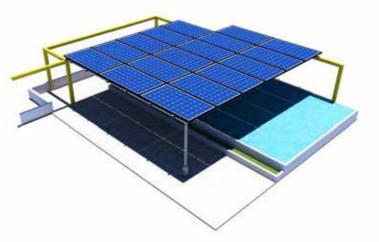
We have in-house engineers who are able to do structural designs to meet different standards of different countries by using the software SAP2000.





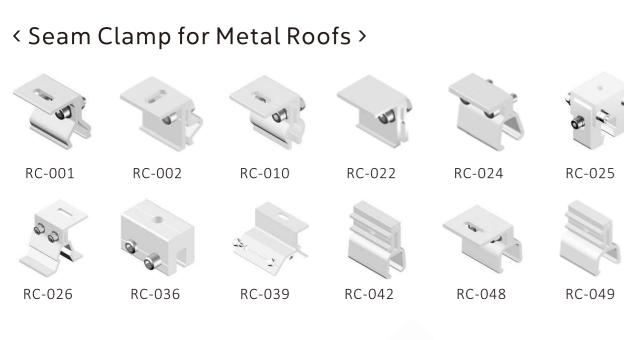
### The working procedures are as follows:

- Alumsolar will issue a standard questionnaire to the customer
- Customer shall complete the questionnaire and furnish PVSolver required documents, include but not limited to module datasheet, maximum wind speed, applied standards, roof profile details, soil report, etc
- Alumsolar will work out basic design with simple prelim calculations for customer review
- Detailed calculation book will be provided upon confirmation of the project





## Products



#### < Hooks for Tile Roofs >







SP-S-022









AL-003





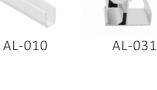


AL-052

AL-051

AL-055

AL-007





## MC-001

MC-005 MC-002

MC-006

#### < Parts and Accessories >

< Mid and End Clamps >



Assemble



#### product selections





MC-008



MC-040



MC-042



SP-A-007



SP-A-012



SP-A-039



SP-A-083



Grounding Clip



Cable Clip





SP-A-099



Cable Clip



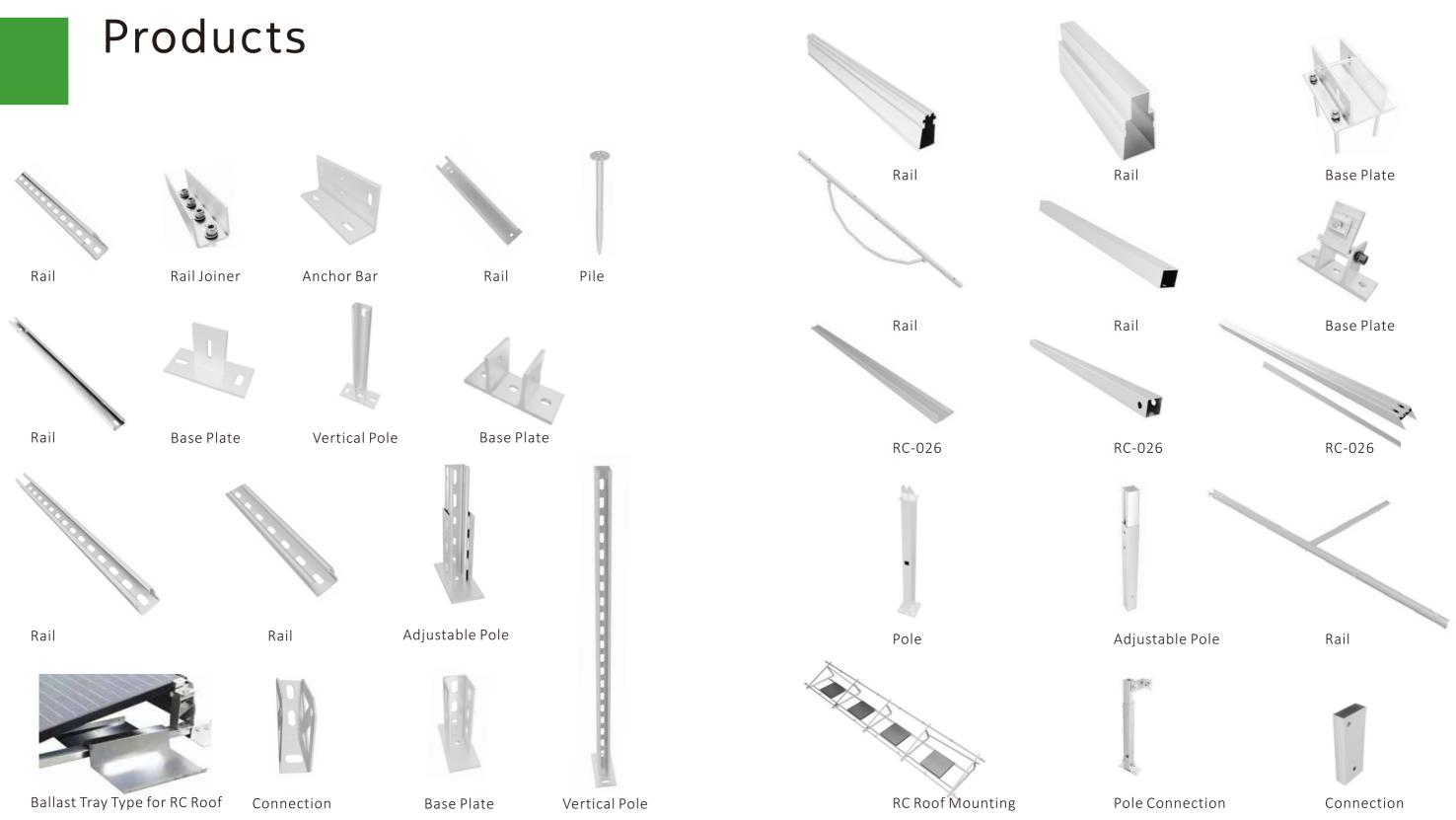
SP-A-109

**Rail Joiner** 



Rail Joiner Installation





#### product selections





Project Location: Shanghai, China Capacity: 60MWp Completion Year: 2018 Type: Concrete Roof Mounted



Project Location: Singapore Capacity: 1.6MWp Completion Year: 2017 Type: Metal roof Mounted



Project Location: Iloilo, Philippines Capacity: 1.9MWp Completion Year: 2016 Type: Metal roof Mounted



Project Location: Shanghai, China Capacity: 4.3MWp Completion Year: 2016 Type: Concrete Roof Mounted



Project Location: Shiga-ken, Japan Capacity: 2MWp Completion Year: 2015 Type: Metal Roof Mounted



Project Location: Cebu, Philippines Capacity: 2.5MWp Completion Year: 2017 Type: Metal roof Mounted



Project Location: Tuas, Singapore Capacity: 1MWp Completion Year: 2017 Type: RC Roof Mounted



Project Location: Iloilo, Philippines Capacity: 1.9MWp Completion Year: 2016 Type: Metal roof Mounted



Project Location: Africa Capacity: 1.6MWp Completion Year: 2015 Type: Metal Roof Mounted



Project Location: Singapore Capacity: 221Wp Completion Year: 2017 Type: Metal roof Mounted



Project Location: Cebu, Philippines Capacity: 2.5MWp Completion Year: 2017 Type: RC Roof Mounted



Project Location: USA Capacity: 2.5MWp Completion Year: 2015 Type: Ground Mounted





Project Location: Shanghai, China Capacity: 60MWp Completion Year: 2018 Type: Ground Mounted



Project Location: Klang, Malaysia Capacity: 426kWp Completion Year: 2016 Type: Metal roof Mounted



Project Location: Tuas, Singapore Capacity: 1MWp Completion Year: 2017 Type: Metal roof Mounted



Project Location: Singapore Capacity: 1.6MWp Completion Year: 2017 Type: Metal roof Mounted



Project Location: Shiga-ken, Japan Capacity: 2MWp Completion Year: 2015 Type: Ground Mounted



Project Location: Africa Capacity: 1.6MWp Completion Year: 2015 Type: Ground Mounted

#### project portfolio



Project Location: Singapore Capacity: 221Wp Completion Year: 2017 Type: Metal roof Mounted



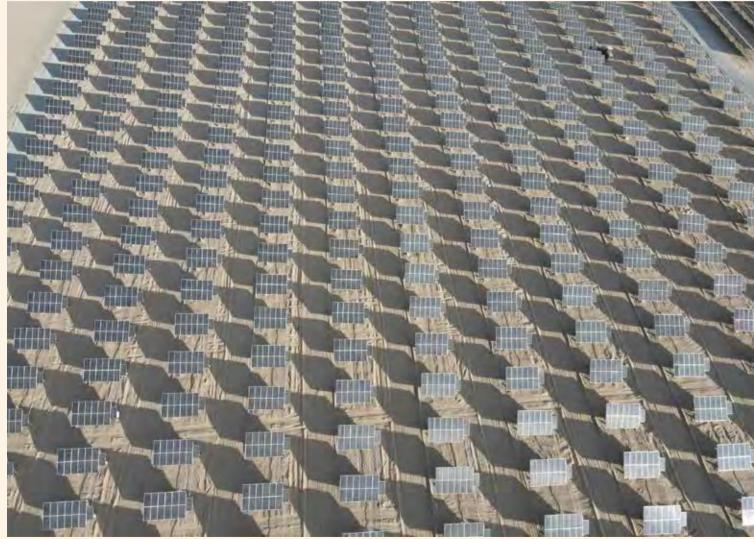
Project Location: USA Capacity: 2.5MWp Completion Year: 2015 Type: RC roof Mounted













### project portfolio















•国电投甘孜州正斗实验实证光伏基地项目:固定可调支架









●中广核新能源 2022 年第一批支架杭锦旗项目采购:固定可调支架

### project portfolio

●内蒙古达拉特旗100MW领跑者项目:斜单轴

# Nature, the gentlest mother

Emily dickinson







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