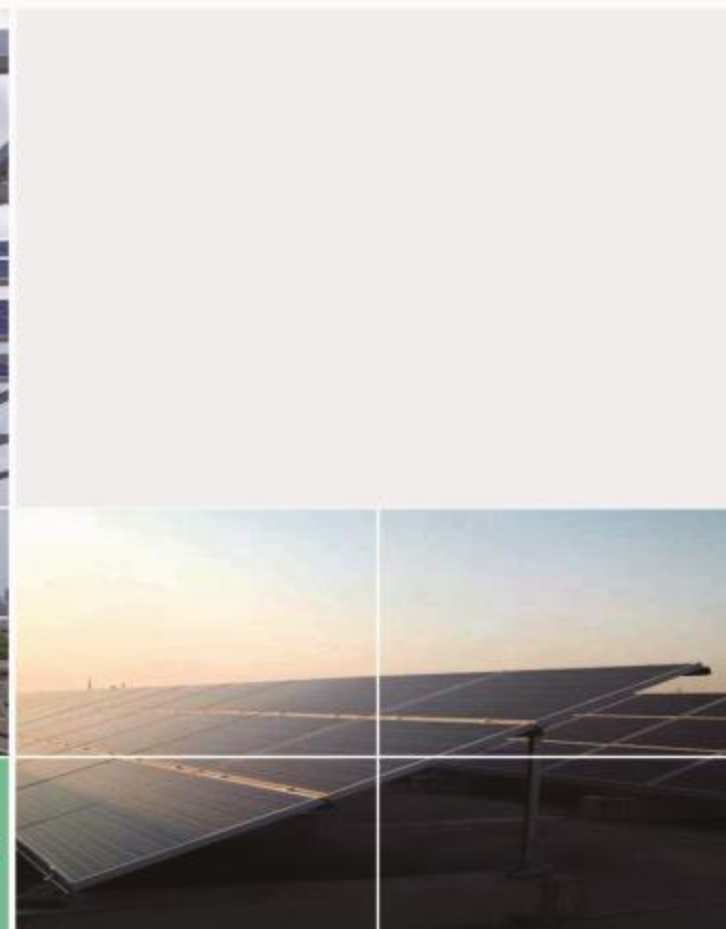


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**MRac Flat Roof Mounting Systems**

Mibet (Xiamen) New Energy Co., Ltd.

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Mibet (Xiamen) New Energy Co., Ltd.





## Company Profile

Mibet (Xiamen) New Energy Co., Ltd. was established in 2012 with the insight into future development of solar energy popularization around the world. Mibet Energy provides patented, high-quality and cost-effective solar energy products, especially solar photovoltaic (PV) mounting systems for commercial, residential and utility-scale solar PV projects.

Based on a professional and experienced R&D team, Mibet Energy has developed a series of solar mounting systems for various ground and roof conditions and has got a number of international certifications, e.g. SGS and AS/NZS 1170, for the leading structural design and performance of these mounting systems.

Mibet Energy has established an international sales network connecting to EPC contractors, integrators, installers and wholesalers around the world, and a standardized management system which has passed ISO 9001:2008 certification.

Mibet Energy's vision is to be a first-class renewable energy company that promotes the widespread use of solar energy.

## CONTENTS

- 01 MRac Roof Matrix I
- 09 MRac Roof Matrix II
- 15 MRac Roof Matrix III
- 21 Reference Projects

### Corporate Culture

**Accomplishment** is the basis of development  
**Innovation** is the motivation of development  
**Quality** is the key of development  
**Service** is the guarantee of development



ISO9001 认证



SGS



Southern African Alternative Energy Association



MRac Roof Matrix I

# MRac Roof Matrix I

**MRac Roof Matrix I (RM I)** is a ballasted solar mounting system for flat roofs with high wind and snow load resistance. The engineered design of the tilt angle and the wind deflectors on each row reduces the loads on RM I and the required weight of ballasts on the roofs.



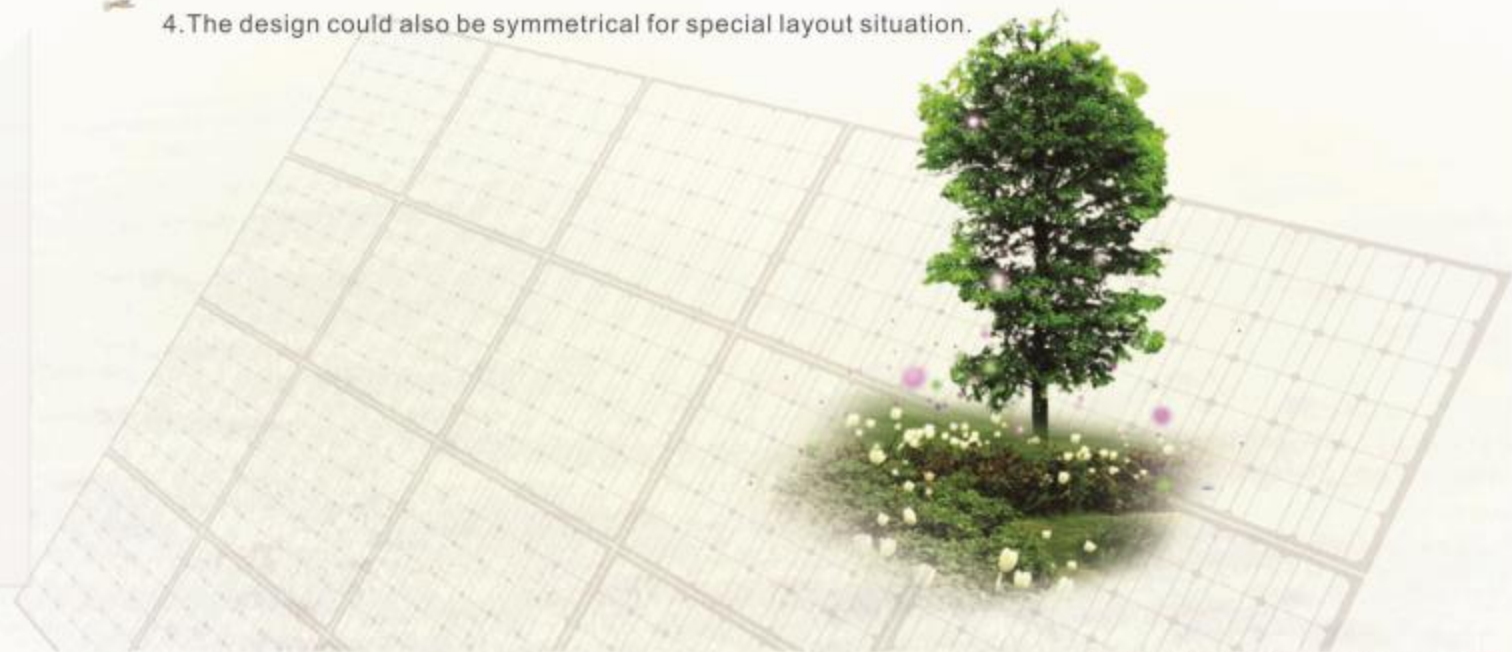
## > MRac Roof Matrix I

### Technical Parameters

Installation Site	Flat Roof	Wind Load	32m/s
Tilt Angle	10°	Snow Load	1.6KN/M <sup>2</sup>
Applicable Module	Framed or Frameless	Module Orientation	Landscape
Design Standard	AS/NZS 1170, DIN 1055, JIS C 8955: 2011		
	International Building Code: IBC 2009 California Building Code: CBC 2010		
Material	Aluminum Al6005-T5 (Anodized)	Color	Silver or Customized
Fastener	Stainless Steel (SUS304)	Warranty	10 Years
Small Components	Aluminum Al6005-T5 (Anodized)		

### Advantages

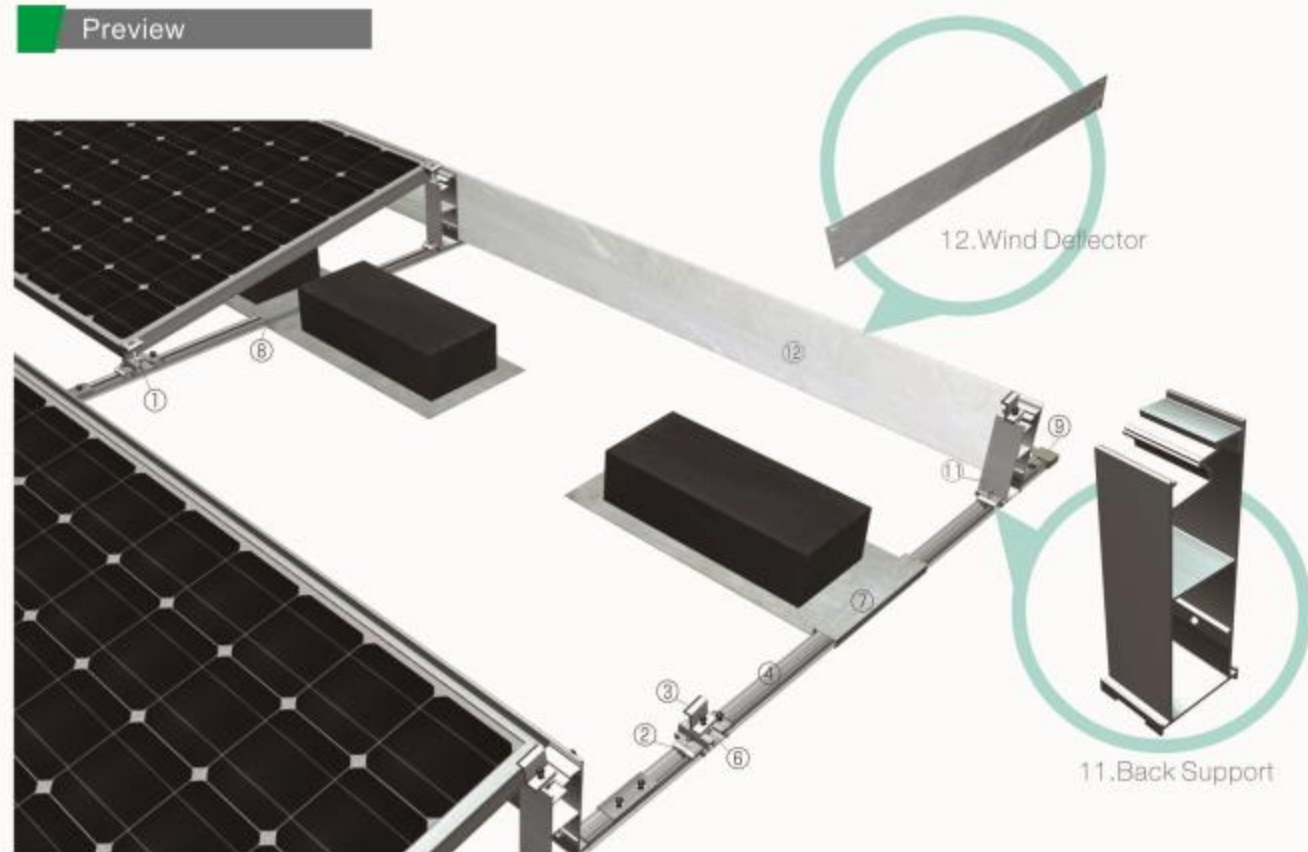
1. The RM I has fewer components, which makes the installation quicker and the price more competitive;
2. The characteristic design makes the structure more stable;
3. Compact structural design facilitates the reasonable utilization of the space of containers;
4. The design could also be symmetrical for special layout situation.





> MRac Roof Matrix I

Preview



1. Inter Clamp Kit



2. C Clamp Kit



3. End Clamp Kit



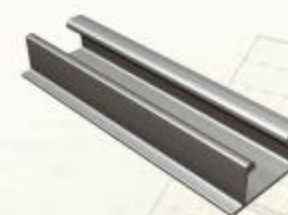
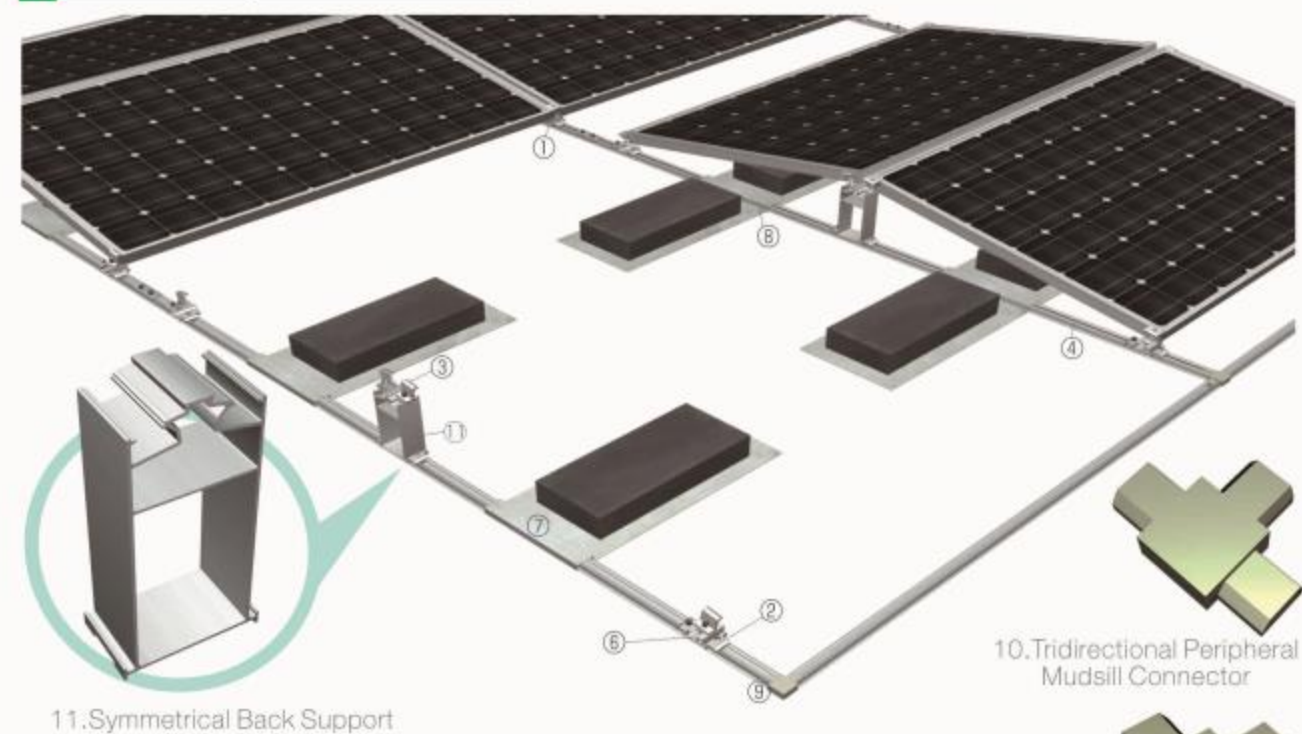
4. Mudsill

Component List

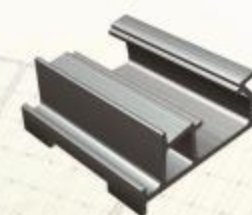
No.	Item	No.	Item	No.	Item
01	Inter Clamp Kit	05	Peripheral Mudsill	09	Bidirectional Peripheral Mudsill Connector
02	C Clamp Kit	06	Front Support	10	Tridirectional Peripheral Mudsill Connector
03	End Clamp Kit	07	One-Sided Ballast Tray	11	Back Support
04	Mudsill	08	Two-Sided Ballast Tray	12	Wind Deflector

> MRac Roof Matrix I

Preview of Symmetrical Solution



5. Peripheral Mudsill



6. Front Support



7. One-Sided Ballast Tray



8. Two-Sided Ballast Tray

Component List of Symmetrical Solution

No.	Item	No.	Item	No.	Item
01	Inter Clamp Kit	05	Peripheral Mudsill	09	Bidirectional Peripheral Mudsill Connector
02	C Clamp Kit	06	Front Support	10	Tridirectional Peripheral Mudsill Connector
03	End Clamp Kit	07	One-Sided Ballast Tray	11	Symmetrical Back Support
04	Mudsill	08	Two-Sided Ballast Tray		



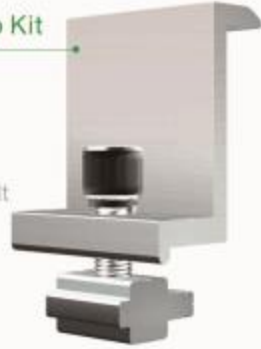


### > MRac Roof Matrix I

#### Component Details

##### MR-EC-ST End Clamp Kit

End Clamp  
Cross Module  
Spring Washer M8.4  
Hexagon Socket Head Bolt



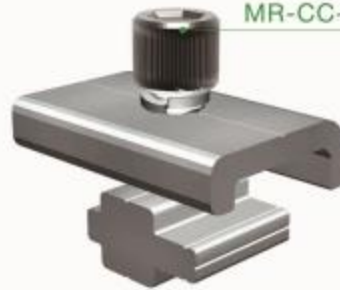
##### MR-IC-ST Inter Clamp Kit

Inter Clamp  
Cross Module  
Spring Washer M8.4  
Hexagon Socket Head Bolt



##### MR-CC-T C Clamp Kit

C Clamp  
Cross Module  
Spring Washer M8.4  
Hexagon Socket Head Bolt M8\*28



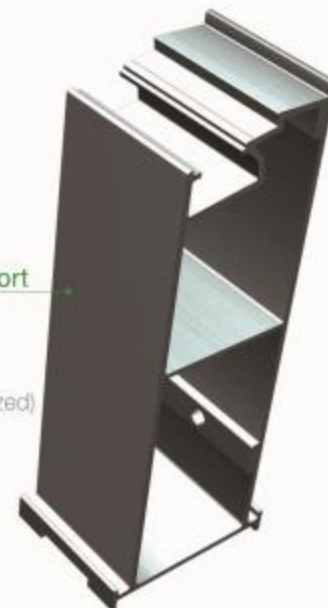
##### MR-RM1-SFS Front Support

Specification (mm): L60  
Material: Aluminum Al6005-T5 (Anodized)



##### MR-RM1-BS Back Support

Specification (mm): L60  
Material: Aluminum Al6005-T5 (Anodized)



##### MR-RM1-WD Wind Deflector

Wind Deflector  
Washer M8  
Spring Washer M8.4  
Hexagon Socket Head Bolt M8\*18



### > MRac Roof Matrix I

#### Component Details

##### MR-RM1-M Mudsill

Standard Length:  
L1350, L2700  
Material:  
Aluminum Al6005-T5 (Anodized)



##### MR-RM1-PM Peripheral Mudsill

Standard Length:  
L1628  
Material:  
Aluminum Al6005-T5 (Anodized)



##### MR-RM1-SBS Symmetrical Back Support

Standard Length: L60  
Material:  
Aluminum Al6005-T5 (Anodized)



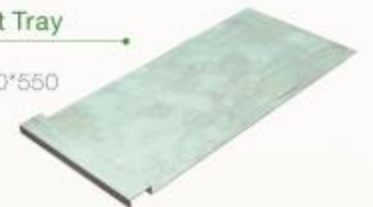
##### MR-RM1-BTB Two-Sided Ballast Tray

Specification (mm): 850\*550  
Material: Galvanized Sheet

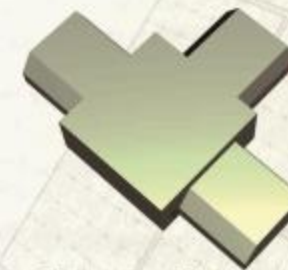


##### MR-RM1-BTA One-Sided Ballast Tray

Standard Length: 450\*550  
Material:  
Galvanized Sheet



##### MR-RM1-SPM Peripheral Mudsill Connector



Tridirectional Peripheral Mudsill Connector



Bidirectional Peripheral Mudsill Connector

##### MR-RM1-SM Mudsill Connector

Mudsill Connector: L100  
Hexagon Socket Head Bolt M8\*18  
Spring Washer M8.4



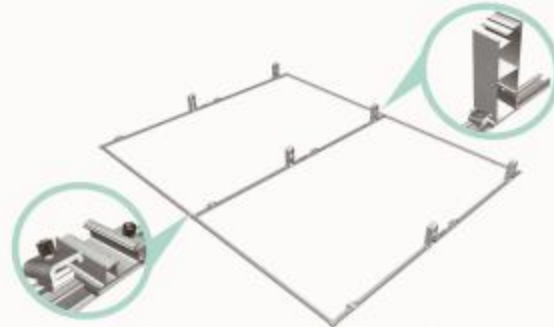


> MRac Roof Matrix I

Installation Guide



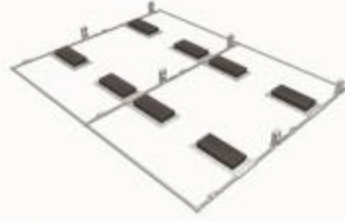
1. Place Mudsills as indicated in solution drawings



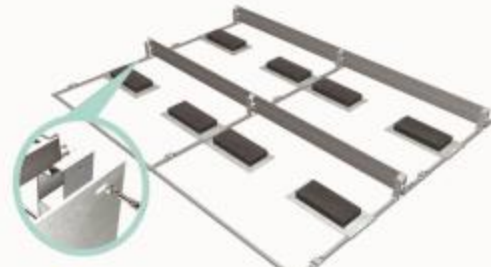
2. Fasten Front Supports and Back Supports on the Mudsills by C Clamp Kits



3. Put One-Sided Ballast Trays onto Peripheral Mudsill, while put Two-Sided Ballast Trays onto the Mudsills as per the solution drawings; then fix them by C Clamp Kits as well



4. Put the ballasts onto the Ballast Trays



5. Fasten Wind Deflectors to Back Supports by Hexagon Socket Head Bolts

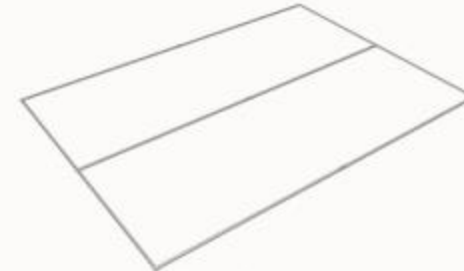


6. Fasten modules on the Front Supports and Back Supports with Inter Clamp Kits and End Clamp Kits

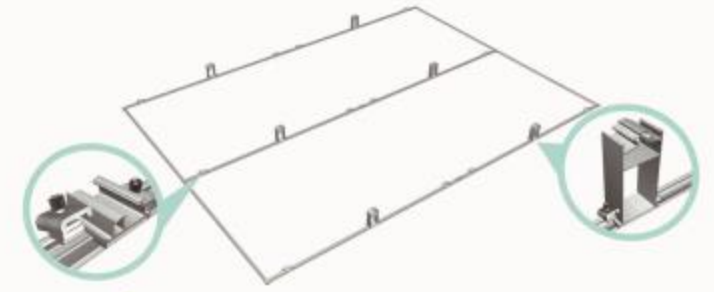
7. The installation is complete

> MRac Roof Matrix I

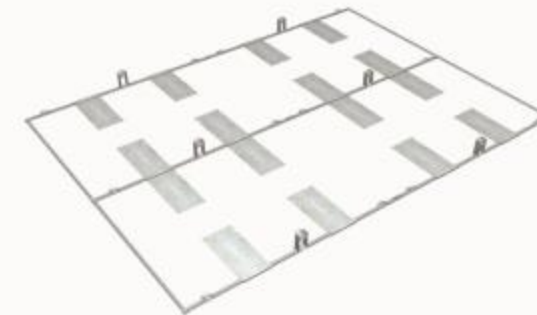
Installation Guide for Symmetrical Solution



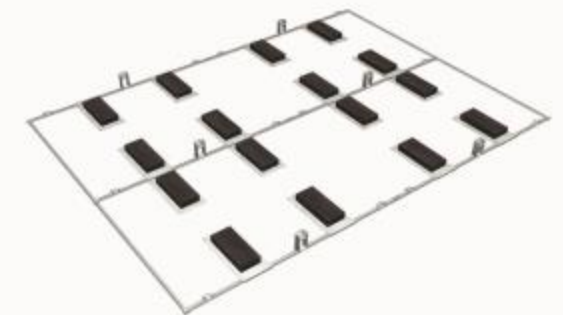
1. Place Mudsills as indicated in solution drawings



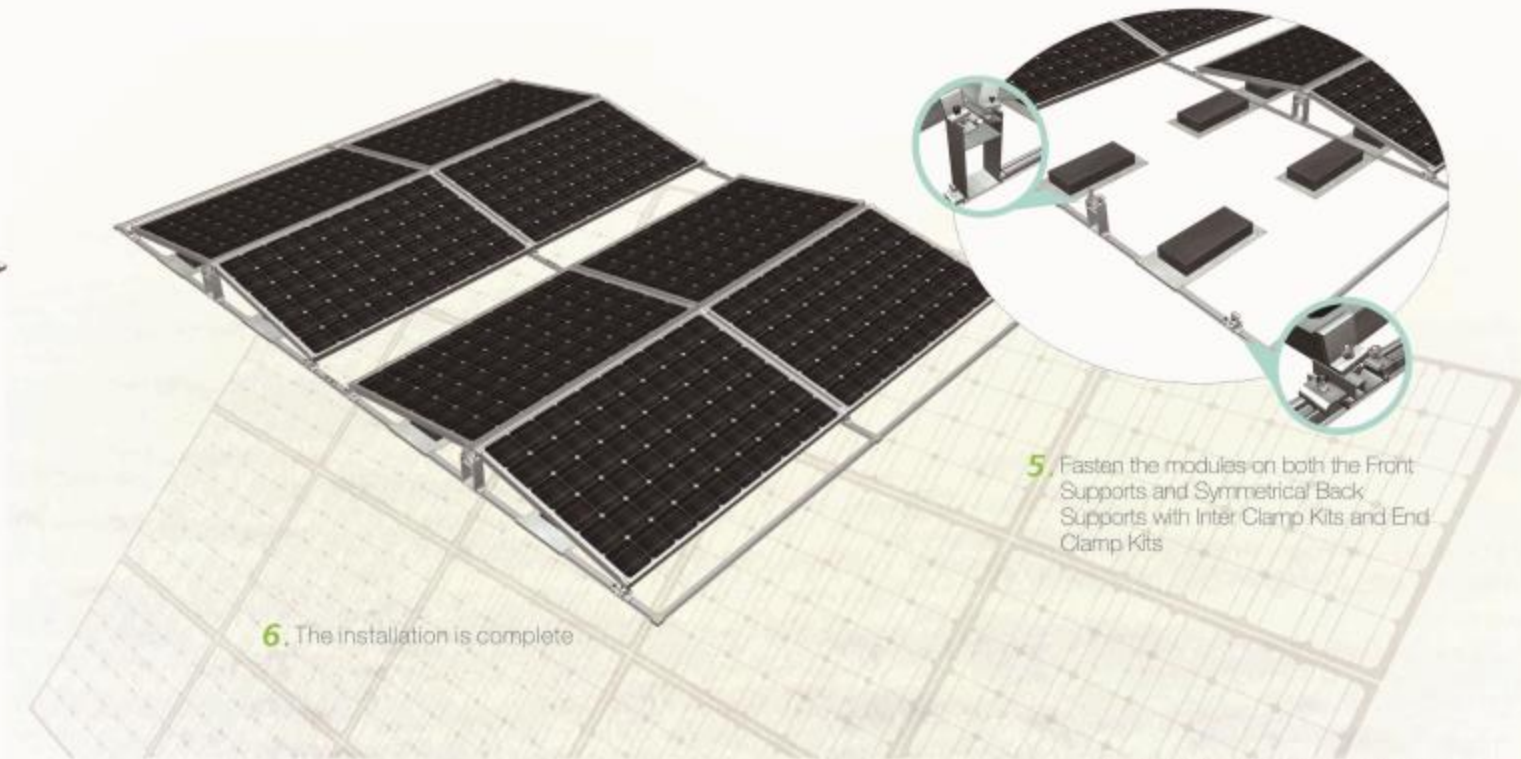
2. Fasten Front Supports and Symmetrical Back Supports on the Mudsills by C Clamp Kits



3. Put One-Sided Ballast Trays onto Peripheral Mudsill, while put Two-Sided Ballast Trays onto the Mudsills as per the solution drawings; then fix them by C Clamp Kits as well



4. Put the ballasts onto the Ballast Trays



5. Fasten the modules on both the Front Supports and Symmetrical Back Supports with Inter Clamp Kits and End Clamp Kits

6. The installation is complete



MRac Roof Matrix II

# MRac Roof Matrix II

**MRac Roof Matrix II (RM II)** is an aluminum flat roof solar mounting system. The triangle structural design guarantees the stability while ensuring fast and convenient installation of solar modules. The RM II could be designed to support one or two rows of solar modules on portrait or landscape orientation, which will adapt to various roof surfaces or specified requirements.



## > MRac Roof Matrix II

### Technical Parameters

Installation Site	Flat Roof	Wind Load	60m/s
Tilt Angle	5-60°	Snow Load	1.6KN/M <sup>2</sup>
Applicable Module	Framed or Frameless	Module Orientation	Portrait or Landscape
Design Standard	AS/NZS 1170, DIN 1055, JIS C 8955: 2011		
	International Building Code: IBC 2009 California Building Code: CBC 2010		
Material	Aluminum Al6005-T5 (Anodized)	Color	Silver or Customized
Fastener	Stainless Steel (SUS304)	Warranty	10 Years
Small Components	Aluminum Al6005-T5 (Anodized)		

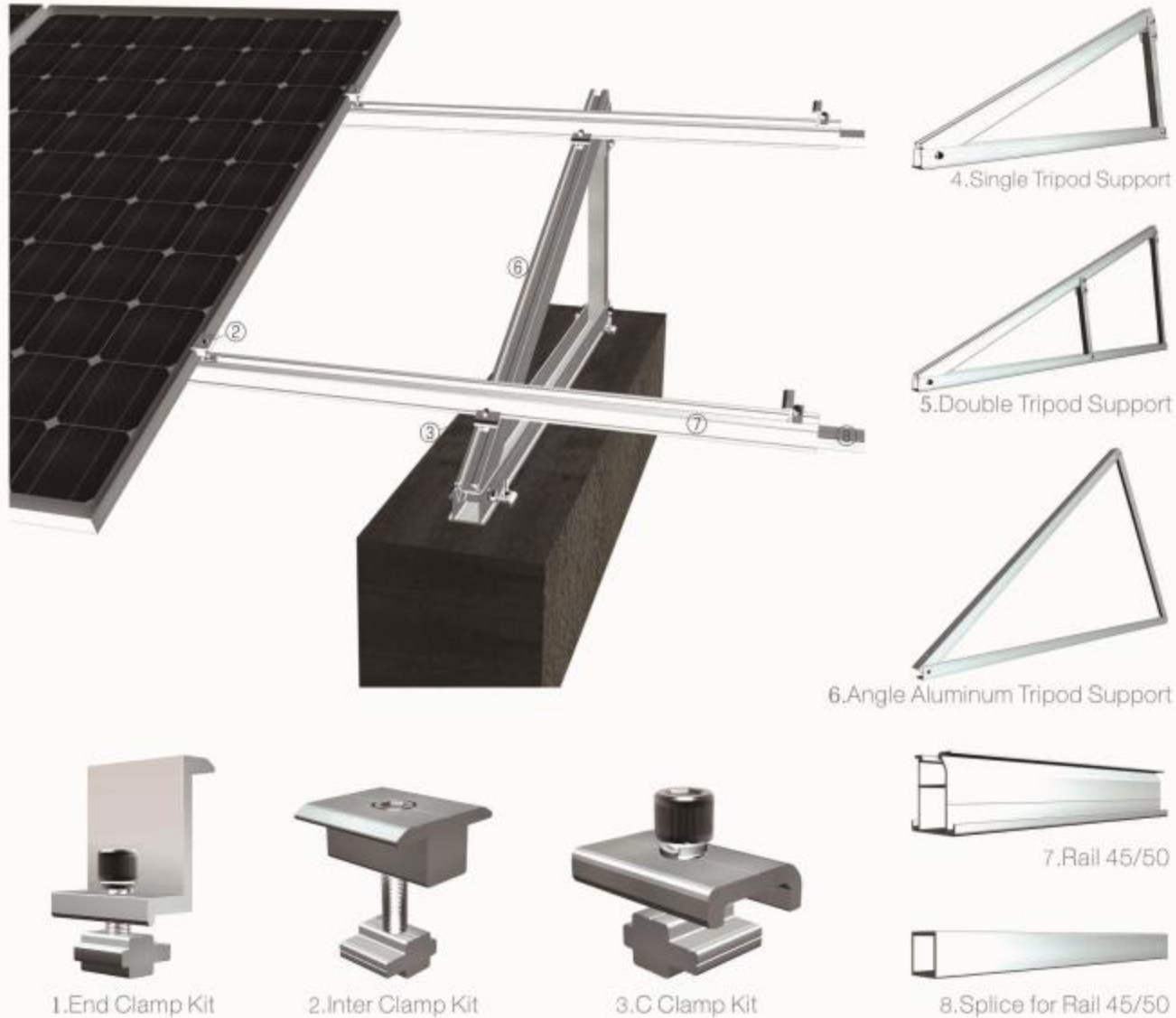
### Advantages

1. The optimized and simplified structure contributes to fast installation on site;
2. The innovative mudsills could be applied on flat roofs or pitched roofs by concrete bases or C steel channels;
3. Either single-row solution or double-row solution could be selected according specific layout requirements;
4. The compact structural design ensures the reasonable utilization of the space of containers.



> MRac Roof Matrix II

Preview



Component List					
No.	Item	No.	Item	No.	Item
01	End Clamp Kit	04	Single Tripod Support	07	Rail 45/50
02	Inter Clamp Kit	05	Double Tripod Support	08	Splice for Rail 45/50
03	C Clamp Kit	06	Angle Aluminum Tripod Support		

> MRac Roof Matrix II

Component Details

MR-EC-ST End Clamp Kit

End Clamp  
Cross Module  
Spring Washer 8.4  
Hexagon Socket Head Bolt



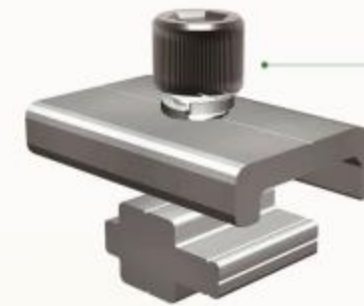
MR-IC-ST Inter Clamp Kit

Inter Clamp  
Cross Module  
Spring Washer M8.4  
Hexagon Socket Head Bolt



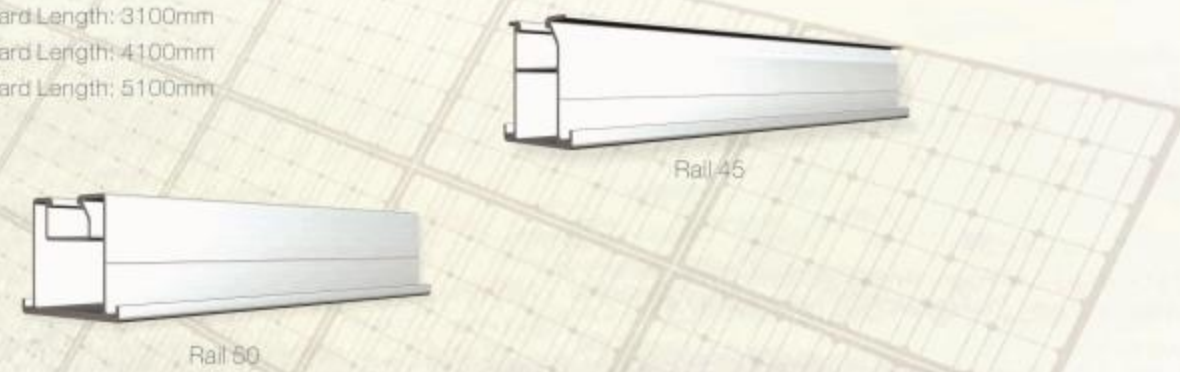
MR-CC-T C Clamp Kit

C Clamp  
Cross Module  
Spring Washer M8.4  
Hexagon Socket Head Bolt M8\*28



MR-R-45/50 Rail 45/50

Standard Length: 3100mm  
Standard Length: 4100mm  
Standard Length: 5100mm





## > MRac Roof Matrix II

### Component Details

#### MR-SP-45/50 Splice for Rail 45/50

Standard Length: 260mm  
Flange Head Self-Tapping Screw ST6. 3\*19



Splice for Rail 45



Splice for Rail 50

#### MR-RM2-SPT Tripod Support

##### Single Tripod Support

Tripod Support Beam  
Tripod Support Tube A  
H Jointer  
Tripod Support Mudsill  
Hexagon Bolt M10\*65  
Washer M10  
Spring Washer M10. 4



##### Double Tripod Support

Tripod Support Beam  
Tripod Support Tube A/B  
H Jointer  
Tripod Support Mudsill  
Hexagon Bolt M10\*65  
Washer M10  
Spring Washer M10. 4



##### Angle Aluminum Tripod Support

Angle Aluminum Beam  
Angle Aluminum Mudsill  
Angle Aluminum Side Beam  
Hexagon Bolt M8\*2. 5  
Washer M8  
Spring Washer M8. 4



## > MRac Roof Matrix II

### Installation Guide



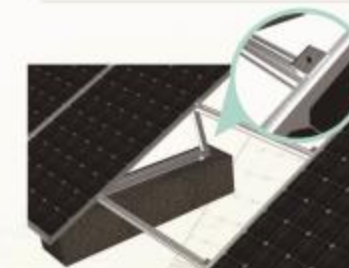
1. Drill on concrete bases to install Expansion Bolts or embed the Embedded Bolts when making concrete bases at the positions indicated on the solution drawings

2. Fasten the pre-assembled Tripod Supports on the Expansion Bolts (or Embedded Bolts) by C Clamp Kits



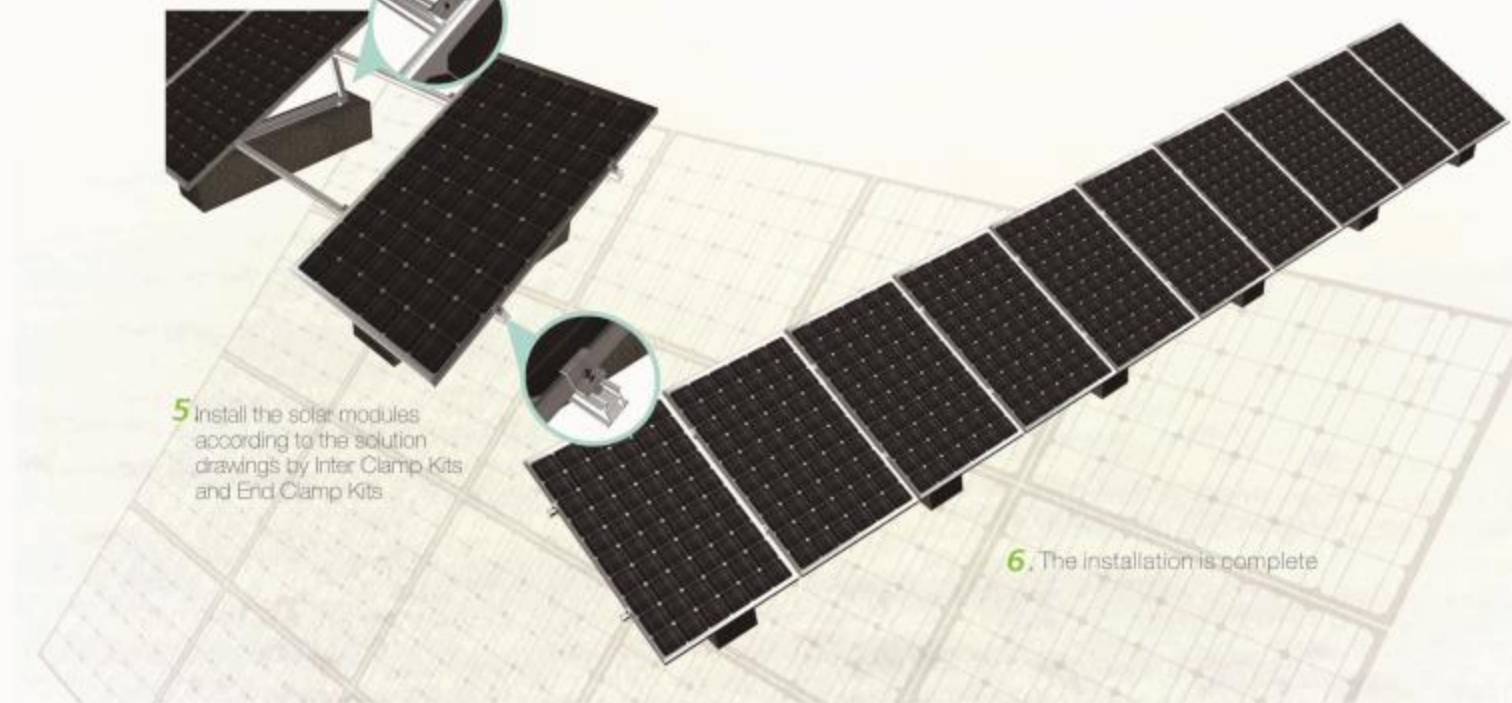
3. Put the Rails onto the Tripod Supports, and connect Rails by Splices if they need to be extended to the advised length

4. Fasten the Rails by C Clamp Kits



5. Install the solar modules according to the solution drawings by Inter Clamp Kits and End Clamp Kits

6. The installation is complete





MRac Roof Matrix III

# MRac Roof Matrix III

**MRac Roof Matrix III (RM III)** is a galvanized steel flat roof solar mounting system that will be applicable for various flat roofs by concrete bases. The utilization of galvanized steel material offers an economical solution that also keeps high structural strength.



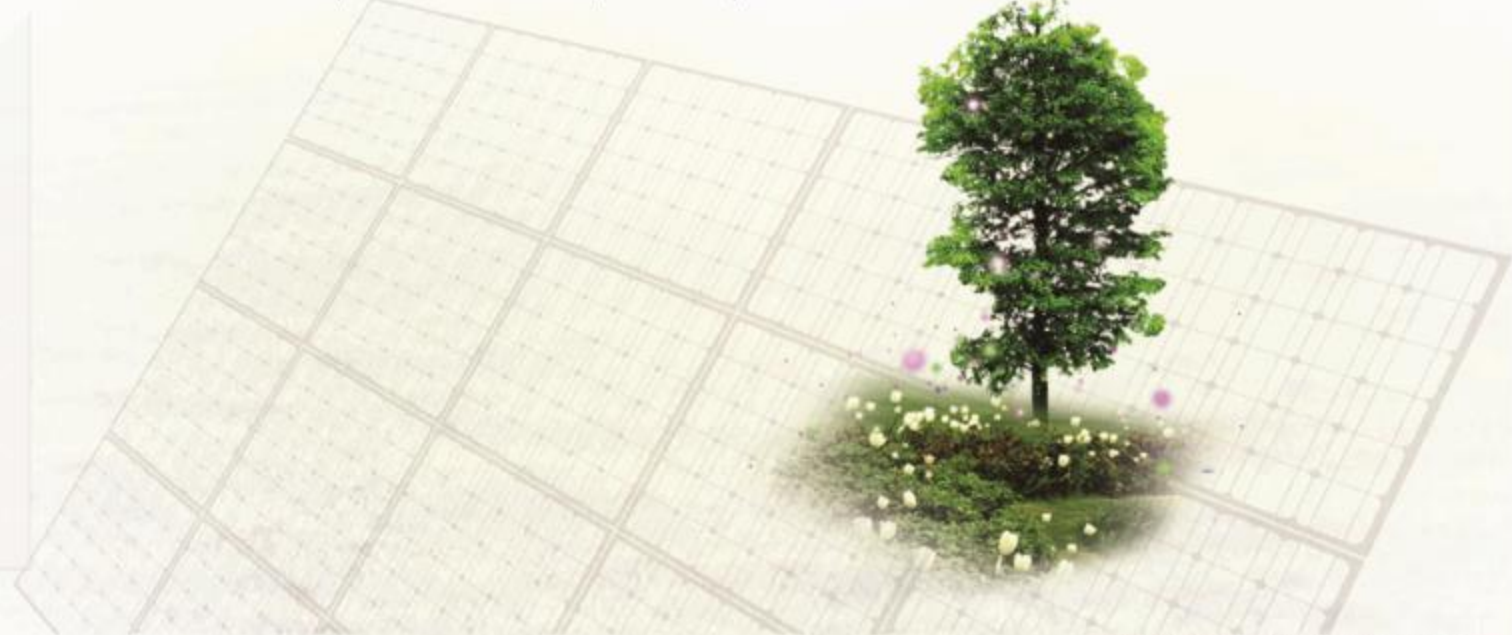
## > MRac Roof Matrix III

### Technical Parameters

Installation Site	Flat Roof	Wind Load	60m/s
Foundation	Concrete Base	Snow Load	1.6KN/M <sup>2</sup>
Tilt Angle	5-60°	Module Orientation	Landscape or Portrait
Applicable Module	Framed or Frameless	Material	Steel Q235B (Hot-Dip Galvanized)
Design Standard	AS/NZS 1170, DIN 1055, JIS C 8955: 2011		
	International Building Code: IBC 2009 California Building Code: CBC 2010		
Fastener	Steel (Dacromet Coated)	Color	Silver
Small Components	Aluminum Al6005-T5 (Anodized)	Warranty	10 Years

### Advantages

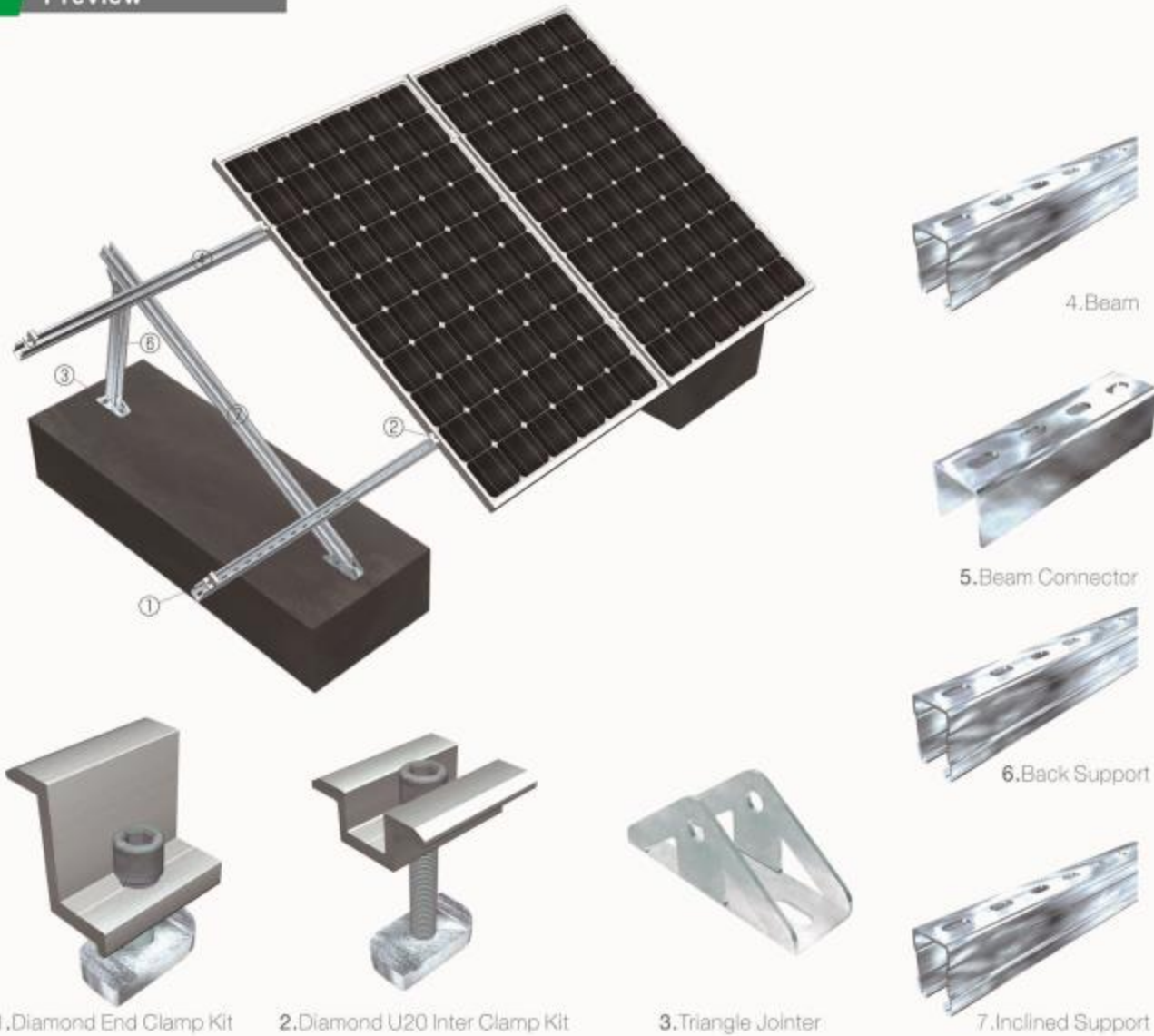
1. The triangle support design is simple but strong, which also makes the installation quicker;
2. The galvanized steel material makes RM III cost-effective;
3. RM III will not penetrate the flat roof, which will protect the flat roof and make the installation easier.





> MRac Roof Matrix III

Preview



Component List

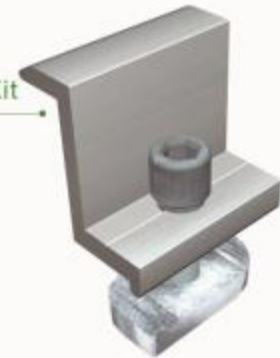
No.	Item	No.	Item	No.	Item
01	Diamond End Clamp Kit	04	Beam	07	Inclined Support
02	Diamond U20 Inter Clamp Kit	05	Beam Connector		
03	Triangle Jointer	06	Back Support		

> MRac Roof Matrix III

Component Details

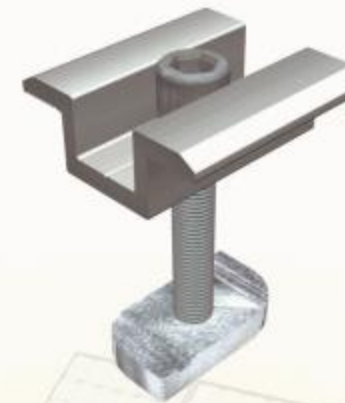
MR-EC-D Diamond End Clamp Kit

- End Clamp
- Rhombus Nut M8
- Spring Washer M8.4
- Hexagon Socket Head Bolt



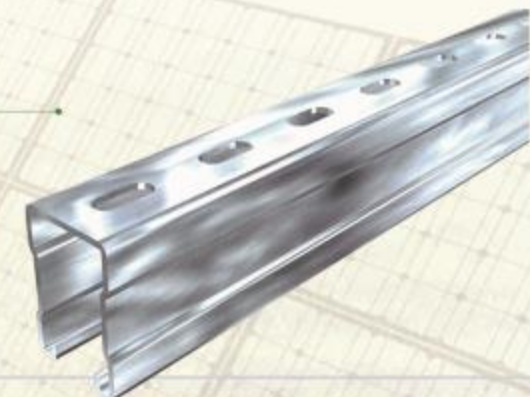
MR-IC-D Diamond U20 Inter Clamp Kit

- U20 Inter Clamp
- Rhombus Nut M8
- Spring Washer M8.4
- Hexagon Socket Head Bolt



MR-MB-ST Beam

- Specifications:
- C41\*41\*2\*L
  - C41\*41\*2.5\*L
  - C41\*52\*2\*L
  - C41\*52\*2.5\*L
  - C41\*62\*2\*L
  - C41\*62\*2.5\*L





> MRac Roof Matrix III

Component Details

MR-BC-ST Beam Connector

Specifications: L200  
Material:  
Steel Q235B (Hot-Dip Galvanized Steel)



MR-SB-ST Side Beam

Specifications:  
C41\*41\*2\*L  
C41\*41\*2.5\*L  
C41\*52\*2\*L  
C41\*52\*2.5\*L  
C41\*62\*2\*L  
C41\*62\*2.5\*L



MR-TJ-ST Triangle Joints

Specifications: L150



MR-BS-ST Back Support

Specifications: C41\*41\*2\*L  
C41\*41\*2.5\*L  
C41\*52\*2\*L  
C41\*52\*2.5\*L  
C41\*62\*2\*L  
C41\*62\*2.5\*L



> MRac Roof Matrix III

Installation Guide



1. Make concrete bases with embedded bolts according to the solution drawing

2. Fasten Triangle Joints to the embedded bolts on concrete bases

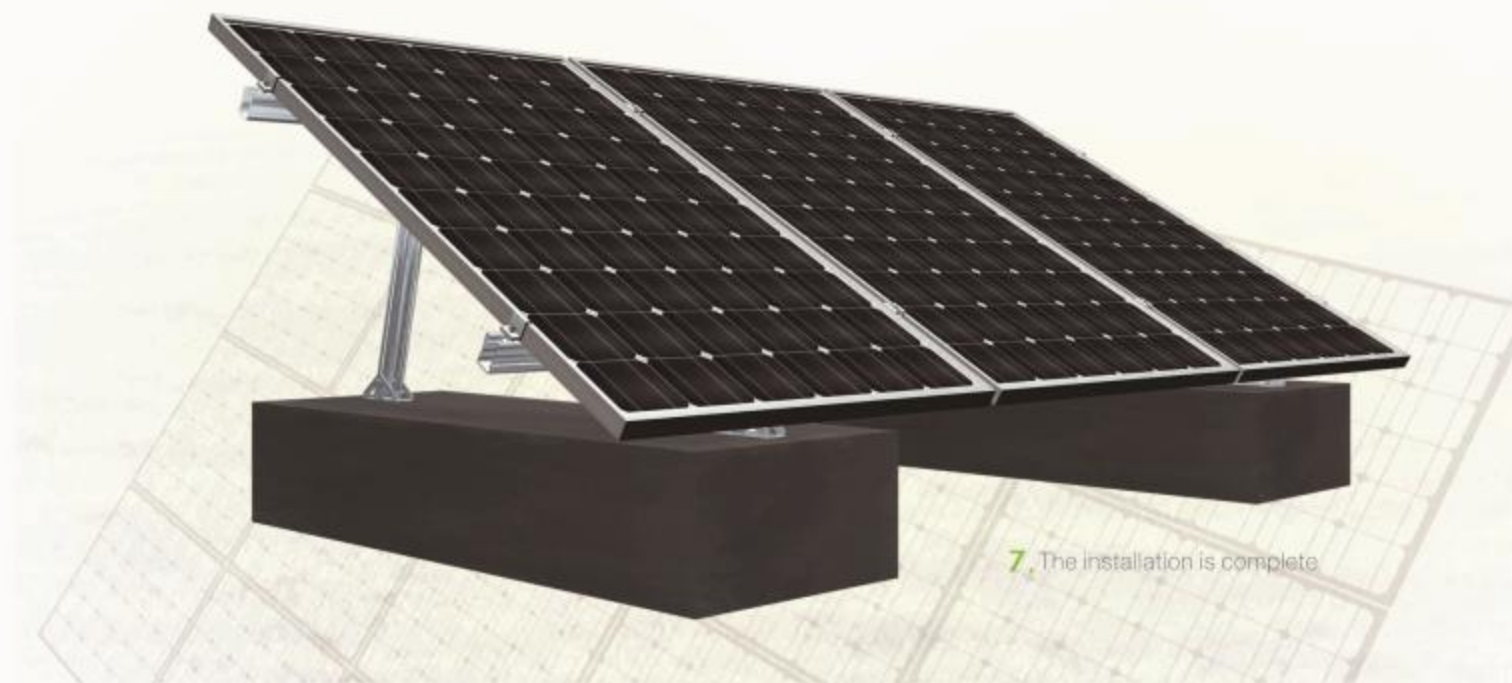
3. Connect Back Supports to Side Beams



4. Connect the assembled Back Supports and Side Beams to Triangle Joints

5. Install Beams

6. Install modules onto Beams with Diamond End Clamp Kits and Diamond U20 Inter Clamp Kits



7. The installation is complete



### Reference Projects







## Declaration of 10-Year Warranty and 5-Year After-Sales Service

Mibet (Xiamen) New Energy Co., Ltd. is committed that, for any solar mounting system purchased from Mibet Energy and local agents/general agents and wholesalers authorized by Mibet Energy, if conducted with oxidation, its coating will not exfoliate or crack within 5 years after the date of purchase; and for any other solar mounting system, Mibet Energy will offer a 10-year warranty.

The after-sales services will not cover any man-made damage or any damage caused by the environment which is corrosive to solar mounting. Please read through the Cleaning and Maintenance Guide for Architecturally Finished Aluminum AAMA 609 & 610-02 (please refer to [www.aamanet.org](http://www.aamanet.org)). Mibet Energy solemnly promises to offer after-sales services for damages, which is not made by men, during the transport, storage and installation.

Mibet Energy will not be responsible for any damage during the installation caused by non-compliance with the installation guide, by any alteration, rework and modification unauthorized by Mibet Energy, or by any design defect of drawings provided by the customer.

Please ask the relevant suppliers for warranty declarations for other devices in solar system, e.g. solar modules and flashings. Mibet Energy is only responsible for the solar mounting systems.

Mibet (Xiamen) New Energy Co., Ltd reserves the right of final interpretation of this declaration.

### August, 2014

Mibet (Xiamen) New Energy Co., Ltd. was awarded as "2014 CREC 'SolarStar Cup' Most Favorite PV Corporation - Top 10 PV Mounting System Corporation"

### April, 2014

Mibet (Xiamen) New Energy Co., Ltd. became a director member of China Renewable Energy Industry Association (CREIA)

### April, 2014

Mibet (Xiamen) New Energy Co., Ltd. was awarded as Top 14 PV Mounting System Manufacturer for Solar Park in China

### December, 2013

Mibet (Xiamen) New Energy Co., Ltd. became a member of Southern African Alternative Energy Association (SAAEA)

