



# 佰明集团 **BYMEA GROUP**

Bymea Investment Co., Ltd. Bymea LED Co., Ltd. Bymea E Business Co., Ltd. Xiamen Grace Solar Technology Co., Ltd.



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#### XIAMEN GRACE SOLAR TECHNOLOGY CO., LTD.

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rasol The Leader of PV Mounting System

# **GS SOLAR ROOF MOUNT SOLUTIONS**

XIAMEN GRACE SOLAR TECHNOLOGY CO., LTD.

# About Grace Solar

Xiamen Grace Solar Technology Co., Ltd. is a leading manufacturer of photovoltaic mounting system and a big supplier of PV products. High-tech and innovation help Grace Solar to always keep pace with the whole industry and the world market. We devote to manufacturing and marketing the steadiest, most trustable and cost-effective solar mounting system solutions to our customers and faith in the belief of "best service". As one of the largest PV solar products exporters in China, the industrial pioneer -Grace Solar has already installed its products in more than 100 countries and regions since its foundation.

#### **RESEARCH AND DEVELOPMENT**

Grace Solar emphasizes specialty and innovation on its products and offers good guarantee and professional support to customers.

Grace Solar values talent people a lot. A professional research and development team that is led by qualified and experienced elite is set up in the birth of the company. The application of the most advanced equipments turns the company to an industrial leader of the structural design and system performance. Grace Solar cherishes its intellectual property and software copyrights of high-tech products including Ground Mounting System, Roof Mounting System etc.









Group Company



Aluminum

#### MANAGEMENT CONCEPTS

Grace Solar brought forward the standardized and internationalized management concept at the very beginning of its establishment. It positively introduces the international management systems such as APQP, FMEA, ISO9001:2008, CP Control Plan, MSA, SPC and applies them strictly in R&D, manufacturing, marketing, service etc. phases. Furthermore, Grace Solar strives to acquire international authority certification for the products and actively studies with international and domestic certification institutions such as UL, TUV, CE, CQC, SAA, AS/NZS 1170 and Golden Sun.

#### SERVICE NETWORKS

Due to long term quick feedbacks for the reliable and qualified products and services, Grace Solar wins trust from system integration companies, installers and distributors worldwide. Cooperating with several strong facilitators in different areas, Grace Solar creates global service networks to offer superior and efficient services.





**Components Packing** 

01



**Overseas Marketing Department** 

Meeting Room

Oxidizing

Assembly

Adjustable Tilt System Packing

End Clamps Packing



If you are looking for PV mounting system, you can surely trust us. The mounting system from Grace Solar enjoys **6** advantages:



#### Competence

We serve more than 500 clients and our mounting system has already been installed around the world especially in Japan and Australia. 4GW projects implemented since 2009.



# 2、

#### Wide Applicability

Design of the mounting system is based on the international standards that can fit for all kinds of solar module types in the world.



# 3、

#### Manufacture

We apply the high strength aluminum alloy 6005–T5 to ensure the mounting system durable and in supreme quality. High capacity and fluent production line makes it possible to mass manufacture. Month capacity is up to 120MW–150MW; for project less than 5MW, the system can be shipped out within two weeks.



## Best Value for Money

We offer one stop business from design, manufacture to sell; this lowers the cost of our product and makes our price competitive compared with other brands in the same quality.



# 5、

6、

4、

#### Shipment

We are in a seaport city and can deliver the mounting system to almost any corner in the world upon request.



## Quality Warranty

We promise 10 years warranty. Duration more than 20 years.





PITCHED ROOF RACKING SYSTEM 05–16



FLAT ROOF RACKING SYSTEM



BALLASTED MOUNTING SYSTEM II 21-24

17-20

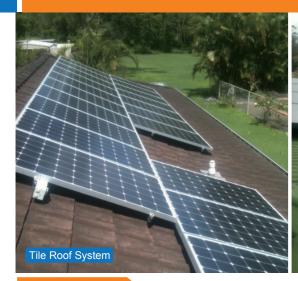
# Content

04



# PITCHED ROOF RACKING SYSTEM

Tin Roof System





GS Pitched Roof Racking System designs with great flexibility for commercial and residential pitched roof. It is applicable for both framed and frameless module. GS series products adopt the innovative design of GD rail and D module which make the installation easier and quicker. High pre-assembled parts and customized solution will save your installation time and cost. Equipped with the excellent engineer team and quality management system, Grace Solar is eligible to provide perfect service. Grace Solar, your best choice.

#### Benefits

#### **\*Easy Installation**

D-module can be inserted into the GD rail from any position; the parts can be pre-assembled in the factory to save your time and cost on site.

#### \*Flexibility and Compatible

GD Rail and its accessories are compatible with the most models of solar panels in different conditions.

#### **\***Safety and Reliability

Complied with the AS/NZS 1170 and other international structure load standards, the racking system, designed by the skillful engineers, can stand up to the extreme weather conditions. The main support components have also been tested to guarantee its structure performance and load-carrying capacity.



#### **Technical Information**

Install Site	Pitched Roof
Tilt Angle	Paralled to roof ≤60°
Building Height	≤20m
Max Wind Speed	≤60m/s
Snow Load	≤1.4KN/m²
Standards	AS/NZS 1170,DIN 1055 ,Other
Material	Al6005-T5,Sus304
Color	Natural
Anti-corrosive	Anodized
Warranty	Ten Years Warranty

Note: Contact us for the project exceeding standards.

# **APPLICATION**

Roman Tile Roof - (GD Rail)





Item No.	Description
GS-IK-01	Stainless Steel Hook 1# Kit
GS-IK-06	Stainless Steel Hook 6# Kit
GS-IK-14	Stainless Steel Hook 14# Kit





Adjust the Height

GS-IK-HP

them ble	Description	Dim	ension (m	m)	Deelvere
Item No.	Description	а	b	С	Package
GS-IK-12	Adjustable Stainless Steel Hook 12# Kit	156~176	38~50	5	10pcs/Box, 4 Boxes/CTN
GS-IK-HP	Height Adjust Plate for Roof Hook	150		5	50pcs/Box, 2Boxes/CTN II



Din	nension (m	m)	Deckere
а	b	С	Package
101	46	5	
101	46	5	10pcs/Box, 4 Boxes/CTN
101		5	



#### GS-IK-12





## **APPLICATION** Flat Tile Roof Hook

Feature ·Main Material: Stainless Steel 304









GS-IK-02

GS-IK-02-A

Itom No	Description	Din	nension (m	ım)	Deekees
Item No.	Description	а	b	Thickness	Package
GS-IK-02	Stainless Steel Hook 2#	190	30	5	30pcs/box2#, 2boxes 2#/CTN
GS-IK-02-A	Stainless Steel Hook 2# A type	190	30	5	10pcs/box2#, 2boxes 2#/CTN

#### Shingle Tile Roof Hook









GS-IK-04-A

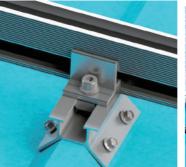
Itom No	Description	Dim	nension (m	nm)	Destroye
Item No.	Description	Length	Width	Thickness	Package
GS-IK-04	Stainless Steel Hook 4#	200	30	5	20pcs/Box, 4 Boxes/CTN
GS-IK-04-A	Stainless Steel Hook 4# A type	200	30	5	10pcs/Box, 4 Boxes/CTN



#### Technical Info

·Material: AL6005-T5, SUS304, EPDM ·Installation: Fixed from both sides of the trapezoid roof •This hook is applicable for most trapezoid metal roofs under A<80mm, H>25mm

Item	Description	н	А	W
GS-UTK-01	Trapezoid Metal Roof Hook 1#	>20	20~80	









GS-IK-A07

GS-RC-D

#### **Technical Info**

·Material: AL 6005-T5 ·Side Fixed

·Standard product is just fitted with the trapezoid roof as right figure shown

Item No.	Description	Н	А	W	Package
GS-IK-A07	AL trapezoid roof hook 7#	25	20	65	30PCS/box, 4boxes/CTN
GS-RC-D	t	100pcs/E	Box, 4 B	oxes/CTN	







#### Universal Trapezoid Metal Roof (Top Fixed)







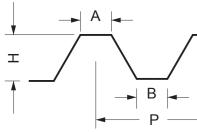


Hook Indicator Diagram

Landscape

Landscape

Portrait Placement





Item	Description	н	Р	А	В	Package
GS-TIK	-A01 88 Trapezoid Metal Roof Hook	88	200	35	35	16pcs/Box, 4 Boxes/CTN
GS-TIK	-A02 40 Trapezoid Metal Roof Hook	150	250	40	40	16pcs/Box, 4 Boxes/CTN
GS-TIK	-A03 25 Trapezoid Metal Roof Hook	30	300	25	250	12pcs/Box, 4 Boxes/CTN
GS-TIK	-W50 50 Trapezoid Metal Roof Hook	170	300	50	50	10pcs/Box, 4 Boxes/CTN

Portrait Placement





GS-TIK-A01

GS-TIK-A02



GS-TIK-A03

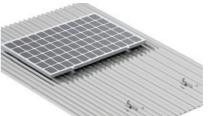


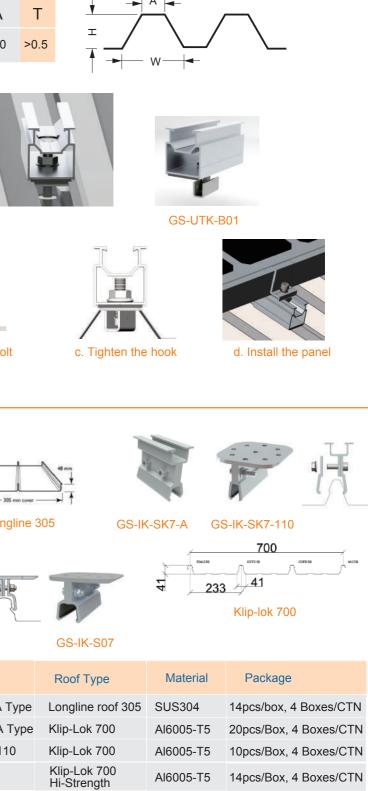
GS-TIK-W50

#### **Technical Info**

·Material: Stainless 304 & EPDM ·Installation: Fixed in top of the trapezoid roof •This hook is applicable for most trapezoid metal roofs under A>20mm, H>25mm, Thick>0.5mm

Item	Description	н	А	Т
GS-UTK-B01	Trapezoid Metal Roof Hook B1#	>25	>20	>0.5











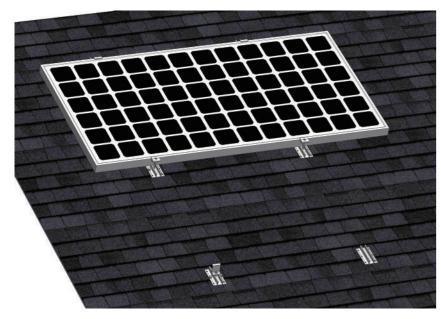


Item No.	Description	
GS-IK-S01-A	Standing Seam Roof Hook 1# A Type	
GS-IK-SK7-A	Standing Seam Roof Hook K7 A Type	
GS-IK-SK7-110	Standing Seam Roof Hook K7-110	
GS-IK-S07	Standing Seam Roof Hook 7#	



# **APPLICATION**

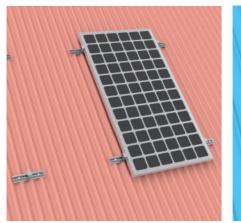
## Single Roof (Flat Rail Hook)

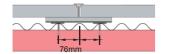




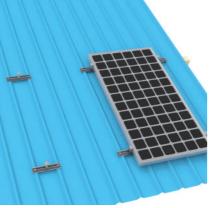
GS-IK-FR

## Tin Roof (Flat Rail Hook)



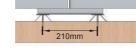


Corrugated Roof





GS-IK-FR-02

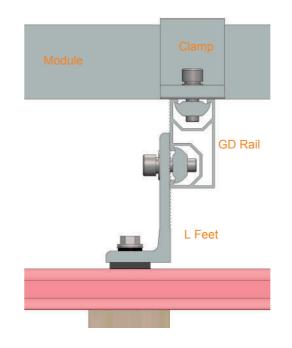


Trapezoid Roof

Item No.	Description	Material	Length(mm)	Accessories	Package
GS-IK-FR	FB Rail Hook 1#	Al6005-T5	120mm	Rubber Pad&	40pcs/Box, 4 Boxes/CTN
GS-IK-FR-02	FB Rail Hook 2#	AI6005-T5	250mm	Wood screw	25pcs/Box, 4 Boxes/CTN

# APPLICATION

Tin Roof Hook (L Feet)









#### Technical Info Hanger Bolt Material: Stainless Steel 304 Rail Material: Al6005-T5 Fit for various metal roofs with wooden structure

Item No.	Description	Accessories	Package
GS-IK-05	Aluminum Tin Interface Kit 5#	Wood Screw M6.3x80	50pcs/Box, 4 Boxes/CTN
GS-IK-H01	Hanger Bolt Hook 1#	Hanger bolt M10x200	20pcs/Box, 4 Boxes/CTN
GS-IK-H04	Hanger Bolt Hook 4#	Hanger bolt M10x200 & L Feet	20pcs/Box, 4 Boxes/CTN









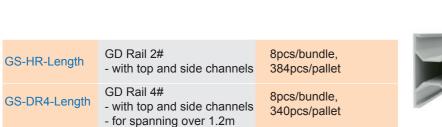
#### **Rail and Splice**

Feature: main material is anodized Al6005-T5; bolts are stainless steel A2-70.

Item	Description	Package
GS-DR-Length	GD Rail 1# - with top and side channels - for spanning over 1.2m	8pcs/bundle, 512pcs/pallet
GS-10R-Length	GD Rail 10# - with top and side channels - for spanning over 1.2m	8pcs/bundle, 512pcs/pallet

Note: the standard length is 2560mm, 3405mm, 4200mm. Other lengths need to be customized.







GS-HR-Length

GS-DR4-Length







Splice for GD #1



GS-DR-SP





100pcs/Box, 4 Boxes/CTN



GS-DR Rail 1# Cross Connection



GS-RC-D



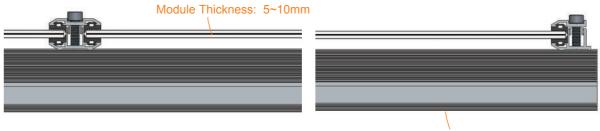
Feature: Material is Anodized Al6005-T5, Fasten is A2-70

Item No.	Description	
Inter Clamp Kit		
GS-IC-F30	GS Inter Clamp Kit 30-32mm	
GS-IC-F35	GS Inter Clamp Kit 35mm	
GS-IC-F40	GS Inter Clamp Kit 40mm	1( 4
GS-IC-F46	GS Inter Clamp Kit 46mm	7
GS-IC-F50	GS Inter Clamp Kit 50mm	
End Clamp Kit		
GS-EC-F32	GS End Clamp Kit 30-32mm	
GS-EC-F35	GS End Clamp Kit 35mm	
GS-EC-F40	GS End Clamp Kit 40mm	1(
GS-EC-F46	GS End Clamp Kit 46mm	4
GS-EC-F50	GS End Clamp Kit 50mm	

Adjustable End Clamp Kit			
GS-EC-A02	GS AD End Clamp Kit 2# -thickness:30~58mm	50pcs/Box, 4 Boxes/CTN	

#### Frameless Module Clamp

Item No.	Description	Package
GS-IC-L80	TF Module Inter Clamp	40pcs/Box, 4 Boxes/CTN
GS-EC-L80	TF Module End Clamp	50pcs/Box, 4 Boxes/CTN









GS-EC-A02

GS-IC-L80

GS-EC-L80

Approved by First Solar Inc. and Canadian Solar Inc.



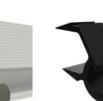
# COMPONENTS

#### Accessories

Item No.	Description	Material	Package	
GS-A-IC	Framed Module Inter Clamp			-
GS-A-EC32	Framed Module End Clamp 32			
GS-A-EC35	Framed Module End Clamp 35			
GS-A-EC40	Framed Module End Clamp 40	Anodized Al6005-T5	200pcs/Box 4 Boxes/CTN	100
GS-A-EC46	Framed Module End Clamp 46	A10000-10	4 DOXES/OTH	
GS-A-EC50	Framed Module End Clamp 50			
GS-A-DM	D-Module - width 20mm, M8 threaded hole			
GS-A-PC01	Plastic Cable Clip 1#	Nules	1000pcs/Box 4 Boxes/CTN	-



GS-A-DRC-SG





GD Rail Cap (Silver Gray)



Nylon



GS-SSCC-03	SS Cable Clip 3#	SUS304	500pcs/Box 4Boxes/CTN
GS-SSCC-05	SS Cable Clip 5#	SUS301	1000pcs/Box
GS-CT-01	Cable Tie1# 4.6x300	SUS304	2000pcs/Box 2# 2 Boxes 2#/CTN
GS-DC-01	DC Isolater Bracket	Al6005-T5 A2-70	14pcs/Box 2 Boxes/CTN









# COMPONENTS

<ul> <li>Socket Head Screw — Stainless Steel A2</li> <li>GS-F-S_ Socket Head Screw M8x20/25/28 30/35/40/45/65</li> <li>Anti-thief Screw — Stainless Steel A2-70</li> <li>GS-F-AS_ Anti-thief Screw M8x20/25/28 30/35/40/45/65</li> <li>Hexagon Nut — Stainless Steel A2-70</li> </ul>		
Socket Head Screw 30/35/40/45/65     Anti-thief Screw — Stainless Steel A2-70     GS-F-AS_ Anti-thief Screw M8x20/25/28     30/35/40/45/65		
GS-F-AS_         Anti-thief Screw         M8x20/25/28 30/35/40/45/65		
GS-F-AS_         Anti-thief Screw         M8x20/25/28 30/35/40/45/65		
Anti-thief Screw 30/35/40/45/65		
Hexagon Nut — Stainless Steel A2-70		
•		
GS-F-N108 Hexagon Nut M8		
GS-F-N208 Flange Nut with Locking M8		
GS-F-N210 Flange Nut with Locking M10		
S-F-N212 Flange Nut with Locking M12		
· · ····· · · · · · · · · · · · · · ·		
Spring Washer — Stainless Steel A2-70		
GS-F-W108 Spring Washer M8		
GS-F-W208 Lock Wahser M8, OD13		
GS-F-W308 Lock Wahser M8, OD18		
Self-tapping Screw — Stainless Steel 410		
GS-F-T625 Self-tapping Screw St.6.3*25		
Wood Screw — Stainless Steel 410		
GS-FS-W660 Wood Screw, St.6.3*60 with Washer		
GS-FS-W680 Wood Screw, St.6.3*80 with Washer		
Hanger Bolt — Stainless Steel A2-70		

#### GS-F-H020 Hanger Bolt M10\*200

## Accessories

GS-FA-H020	Hanger Bolt Assembly M10*200





# FLAT ROOF RACKING SYSTEM



#### Introduction

GS Flat Roof Racking System is developed to mount the module tilting a certain angle on a flat roof or ground. Solutions include fixed angle and adjustable angle from 10°-60°.

GS series products contain the innovated aluminum rail, D-module, clamps and legs which can be pre-assembled to make the installation easy and quick, so as to save your time and labor cost. The customized rail can exempt you from onsite weld and cut. It is in high strength, anti-corrosive and of aesthetics in appearance.

#### Benefits

#### \*Easy Installation

D-module can be inserted into the GD rail from any position; the parts can be pre-assembled in the factory to save your time and cost on site.

#### **\***Flexibility and Compatibility

GD Rail and its accessories are compatible with the most models of solar panels in different conditions.

#### **\***Safety and Reliability

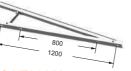
Complied with the AS/NZS 1170 and other international structure load standards, the racking system, designed by the skillful engineers, can withstand the extreme weather conditions. The main support components have also been tested to guarantee its structure performance and load-carrying capacity.

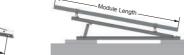


#### Technical Information

Install Site	Low profile roof or open field
Tilt Angle	10deg ~ 60deg
Building Height	up to 20m
Max Wind Speed	up to 60m/s
Snow Load	up to1.4KN/m <sup>2</sup>
Standards	AS/NZS 1170&DIN 1055&Other
Material	Aluminum alloy & StainlessSteel
Color	Natural
Anti-corrosive	Anodized
Warranty	Ten years warranty
Duration	More than 20 years

#### NT Triangle Bracket - Fixed Angle





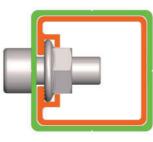
GS-NT01-XX -For module length less than 1700mm



GS-NT02-XX -For module length less than 1000mm

Feature Main Material: Anodized Al6005-T5 ·Fasten Material: SUS A2-40 ·Fixed Angle from 5~60deg

#### NT Triangle Bracket - Adjustable Angle





**Telescope Solution** 

Description	Spec.
NT Tri-angle Bracket 01, 10deg	10deg
NT Tri-angle Bracket 02, 10deg	10deg
AD NT Tri-angle Bracket 01, 10-20deg	10-20deg
AD NT Tri-angle Bracket 01, 20-40deg	20-40deg
	NT Tri-angle Bracket 01, 10deg NT Tri-angle Bracket 02, 10deg AD NT Tri-angle Bracket 01, 10-20deg

GS-RC-D GD Rail Clamp



#### Adjustable Tilt System



#### Feature

·Main Material: Anodized Al6005-T5 ·Fasten Material: SUS A2-40 ·Wood Screw: 2pcs M6x80 ·Patent Telescope solution can adjust the angle Anti-Slip and Anti-out design

Item No.	Description
GS-AD-FL	AD Front Leg
GS-AD-RL10/15	AD Rear Leg 10/15 deg
GS-AD-RL15/30	AD Rear Leg 15/30 deg
GS-AD-RL30/60	AD Rear Leg 30/60 deg

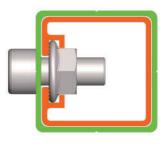
THE LEADER OF PV MOUNTING SYSTEM

-For module length less than 1700mm -Angle is adjustable from 10 to 20deg

-For module length less than 1700mm -Angle is adjustable from 20 to 40deg

#### **GS-RC-D**

-Clamp the GD Rail on the NT Tri-angle Bracket



**Telescope Solution** 





## KNT Triangle Bracket



## NT Triangle Bracket



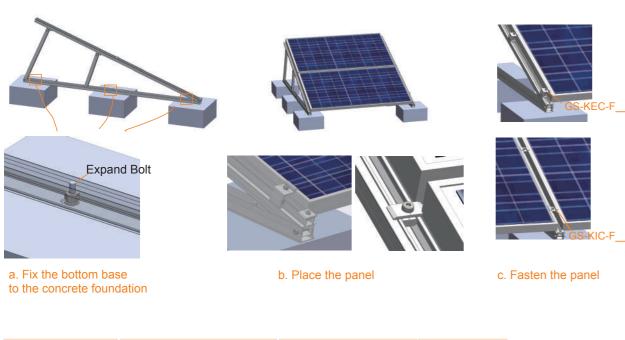
Solar Panel Size:	Rail	Bracket	Rail Clamp	Inter Clamp	End Clamp
1650x992x40mm	GS-DR-4200	GS-NT01-10	GS-RC-D	GS-IC-F40	GS-EC-F40
Angle:10deg Array: 1x4	2 pcs	3 pcs	6 pcs	6 pcs	4 pcs

#### KNT Triangle Bracket



Solar Panel Size:	Bracket	Inter Clamp	End Clamp
1650x992x40mm	GS-KNT2000-10	GS-KIC-F35/40	GS-KEC-F40
Angle:10deg Array: 2x2	3 pcs	4 pcs	8 pcs

Brief	Instal	lation	Steps



Item No.	Description	Placement	Angle	
GS-KNT2000-10	KNT Bracket 2000-10deg	2x2, landscape	Fixed 10deg	

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# BALLASTED MOUNTING SYSTEM II



Technical Information

Max Wind Speed up to 60m/s

Low profile roof or open field

AS/NZS 1170 & DIN 1055 & Other

Aluminum alloy & Stainless Steel

10deg, 15deg, 20deg

up to 20m

Natural

Anodized

up to1. 4KN/m<sup>2</sup>

Ten years warranty

Install Site

Snow Load

Standards

Anti-corrosive

Material

Warranty

Color

Building Height

Tilt Angle

#### Benefits

\*Easy Installation Non-rail design; pre-assemble in the factory.

#### \* Flexibility and Compatibility

Applicable for majority framed panels in various flat roofs.

#### \* Standard

JISC8955 2011 standard ISO9001 quality management certification

# Duration More than 20 years

# **COMPONENTS** System Overview





Project Example

Module Size	1650*992*46mm	Install Site	Flat Roof
Angle	10deg	Design Wind Speed	60m/s
Array	2*2 (4 pcs)		

Item No.	Description
GS-BM2-T10	BM2 Bracket, 10deg
GS-KIC-F35/40	Inter Clamp 35~40
GS-KEC-F40	End Clamp 40
GS-BM-CT-1638	Cross-Link tube, 1638
GS-BM2-V450	Vertical-Link tube, 450
GS-BM2-WA1750	Wind Plate, 1750mm
GS-BM2-A01	Accessories

Package: on request

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Qty	Material
12pcs	AI6005-T5
12pcs	AI6005-T5
12pcs	AI6005-T5
18pcs	AI6005-T5
8pcs	AI6005-T5
9pcs	Q235
12pcs	SUS A2-70

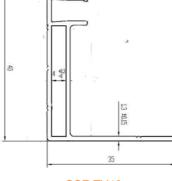
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# Grace Solar AL Frame

Material: AL6063-T5 Surface: Anodized (AA15 Grade)





GSF-TY40 AL Frame TY System – 40mm Height

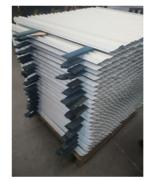
Introduction

Being devoted to Aluminum products for over seven years, Xiamen Grace Solar Technology Co., Ltd. has accepted widely recognition among clients, with capacity of superior processing and good guarantee. Grace Solar manufacturers and offers various kinds of Aluminum frames, and can customize basing on different demands. Grace Solar, your best choice!

#### Processing Overview



Cutting



Semi-products



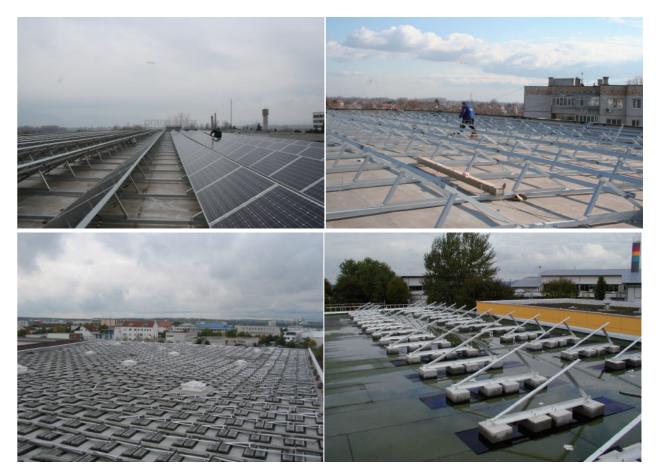
Punching



Packaging

# Roof Mounting Project Image





Adjustable Tilt System

Triangle Bracket



# Roof Mounting Project Image





Universal Trapezoid Metal Roof Hook (Top Fixed)





Tin Roof Hook (L Feet)





Tile Roof Hook







SGS Aluminum Alloy Quality Report





Japan Utility Model Registration Certificate







**TUV** Certificate

25

SGS Salt Spray Test Report

ISO9001:2008

UK MCS Certificate



#### Screw Product Inspection . Result Report



Quality Warranty



Australia AS1170.2 Certificate