

รายละเอียดสเปคอุปกรณ์



บริษัท โกรว์ โซลาร์ เอ็นเนอร์จี จำกัด

COMET

2U Mono-Glass Module

645W-670W

Technical Features:

-  Partial Shading Optimisation
-  Better Temperature Coefficient
-  High Temperature Restriction
-  Micro-crack Resistance
-  Higher Power
-  Lower BOS
-  More Aesthetic Values



reddot winner 2023



Product Warranty
(Extendable to 25years*)



Performance
Warranty



Munich RE 

670W

Output

24.8%

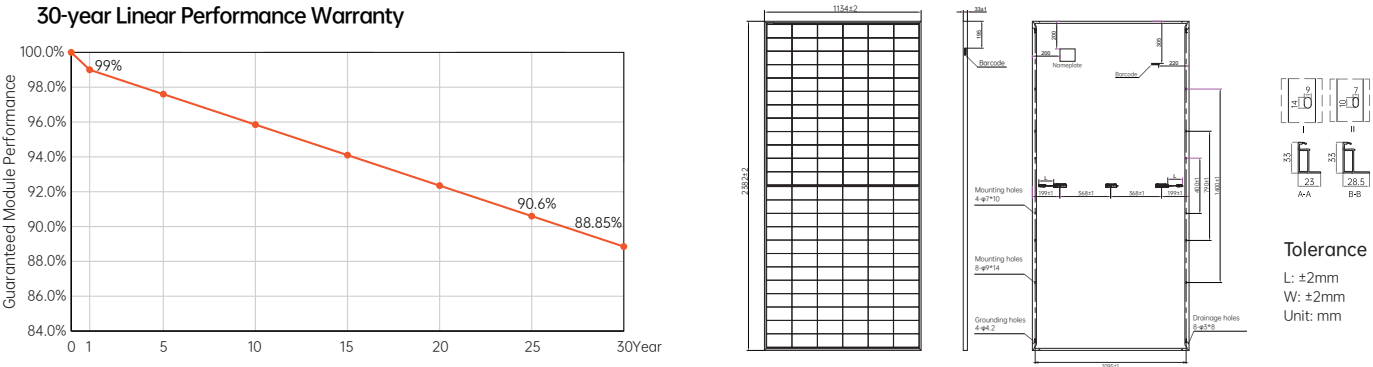
Efficiency

≤1%

First-year Degradation

≤0.35%

Annual Degradation from Year 2-30



Electrical Characteristics (STC: AM1.5 1000W/m² 25°C NOCT: AM1.5 800W/m² 20°C 1m/s)												Power Tolerance:0~ + 3%	
Module Type	AIKO-G645-MCH72Mw		AIKO-G650-MCH72Mw		AIKO-G655-MCH72Mw		AIKO-G660-MCH72Mw		AIKO-G665-MCH72Mw		AIKO-G670-MCH72Mw		
Test Conditions	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	
P _{max} [W]	645	486	650	490	655	493	660	497	665	501	670	505	
V _{oc} [V]	54.30	51.28	54.40	51.37	54.50	51.47	54.60	51.56	54.70	51.66	54.80	51.75	
V _{mp} [V]	45.00	42.50	45.10	42.59	45.20	42.69	45.30	42.78	45.40	42.87	45.50	42.97	
I _{sc} [A]	15.06	12.18	15.12	12.23	15.18	12.28	15.24	12.32	15.30	12.37	15.36	12.42	
I _{mp} [A]	14.34	11.44	14.42	11.51	14.50	11.57	14.57	11.63	14.65	11.69	14.73	11.76	
Module Efficiency	23.9%		24.0%		24.2%		24.4%		24.6%		24.8%		

Mechanical Specification	
Cell Type	N-Type ABC
Glass	3.2 mm tempered glass
Frame	Anodized aluminum
Cable	4mm²(IEC) 12AWG(UL) +350mm, -280mm/±1400mm or Customized Length
No. of Cells	144(6*24)
Junction Box	IP68, 3 bypass diodes
Connector	MC4 Compatible/MC4-Evo2
Weight	28.2kg±3%
Dimension	2382*1134*33mm
Package Detail	33pcs per pallet / 132pcs per 20'GP / 660pcs per 40'HC

Temperature Ratings (STC)	
Temperature Coefficient of I _{sc}	+ 0.05%/ °C
Temperature Coefficient of V _{oc}	- 0.22%/ °C
Temperature Coefficient of P _{max}	- 0.26%/ °C

Installation Guide	
Operation Temperature	-40°C - +85°C
Maximum Series Fuse Rating	30A
Protection Class	Class II
V _{oc} and I _{sc} Tolerance	±3%
Maximum System Voltage	DC1500V
Maximum Static Loading	Front 5400Pa Back 2400Pa
Hail Test	35 mm diameter hail at 27.2 m/s
Fire Rating	IEC Class C



ATMOCE

Data Sheet

MI-series Microinverter

MI-1250-2M/ MI-1000-2M



Key Features

Reliability

- 25-year Warranty
- 350m Stable PLC Communication
- SPoF Protection
- Non-commercial-grade Chips and Antennas

Efficiency

- World-Record Peak Efficiency of 98.2%
- World's First 2-in-1 1250W Microinverter
- World's Highest Power Density Microinverter
- Install in Any Orientation to Increase Annual Yield by 25-50%
- Individual MPPT prevents power loss from shading

Safety

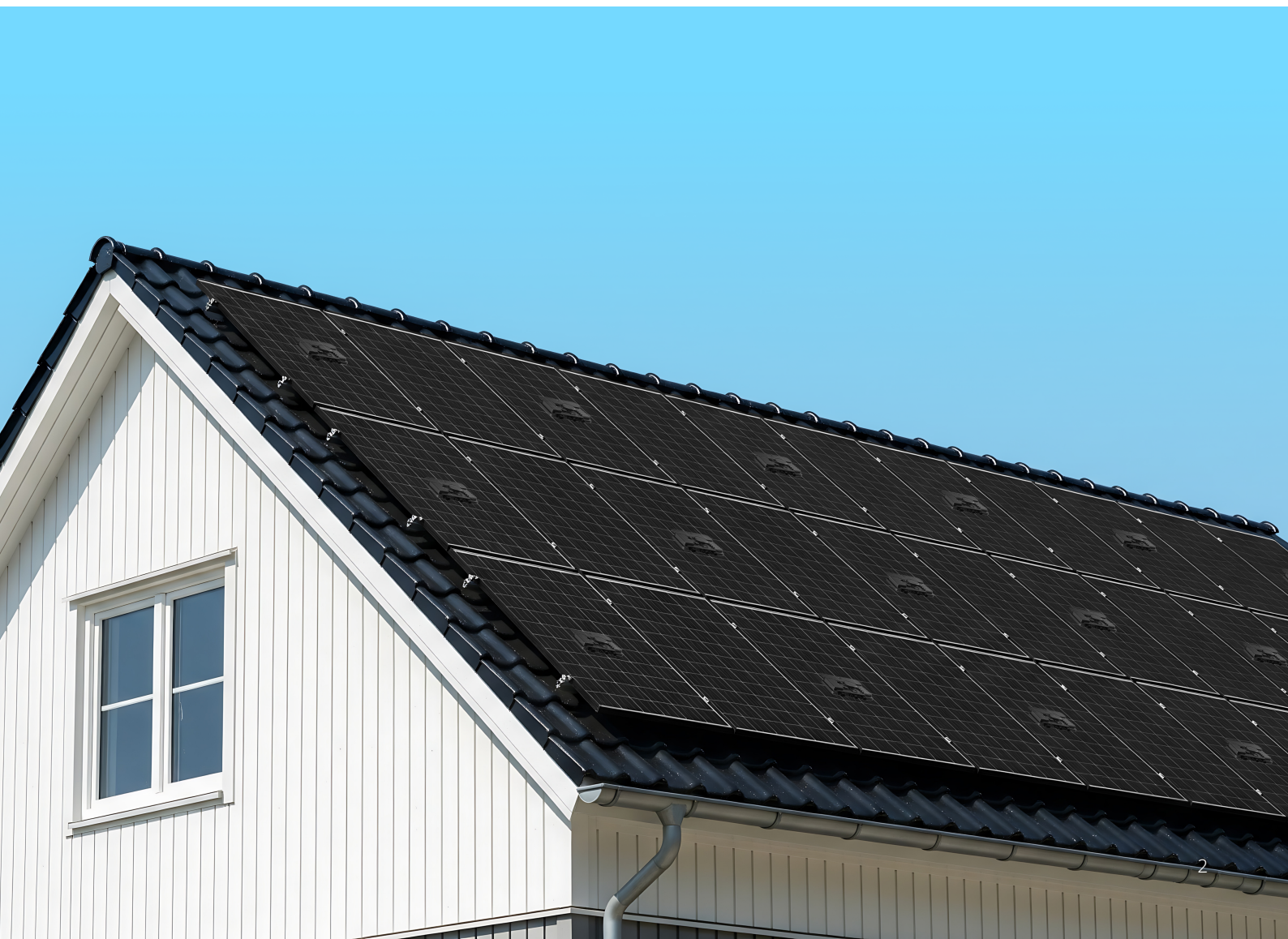
- Extra Low Voltage < 60Vdc
- Polymer Shell for Inherent Safety, No Additional PE
- Easy Maintenance with MLPE Tech

Scalability

- Flexible Expansion for Systems up to 300kW
- One SKU for Single-phase and Three-phase
- One SKU Supports All PV Modules
- Seamless Plug-and-play System Integration

Smart

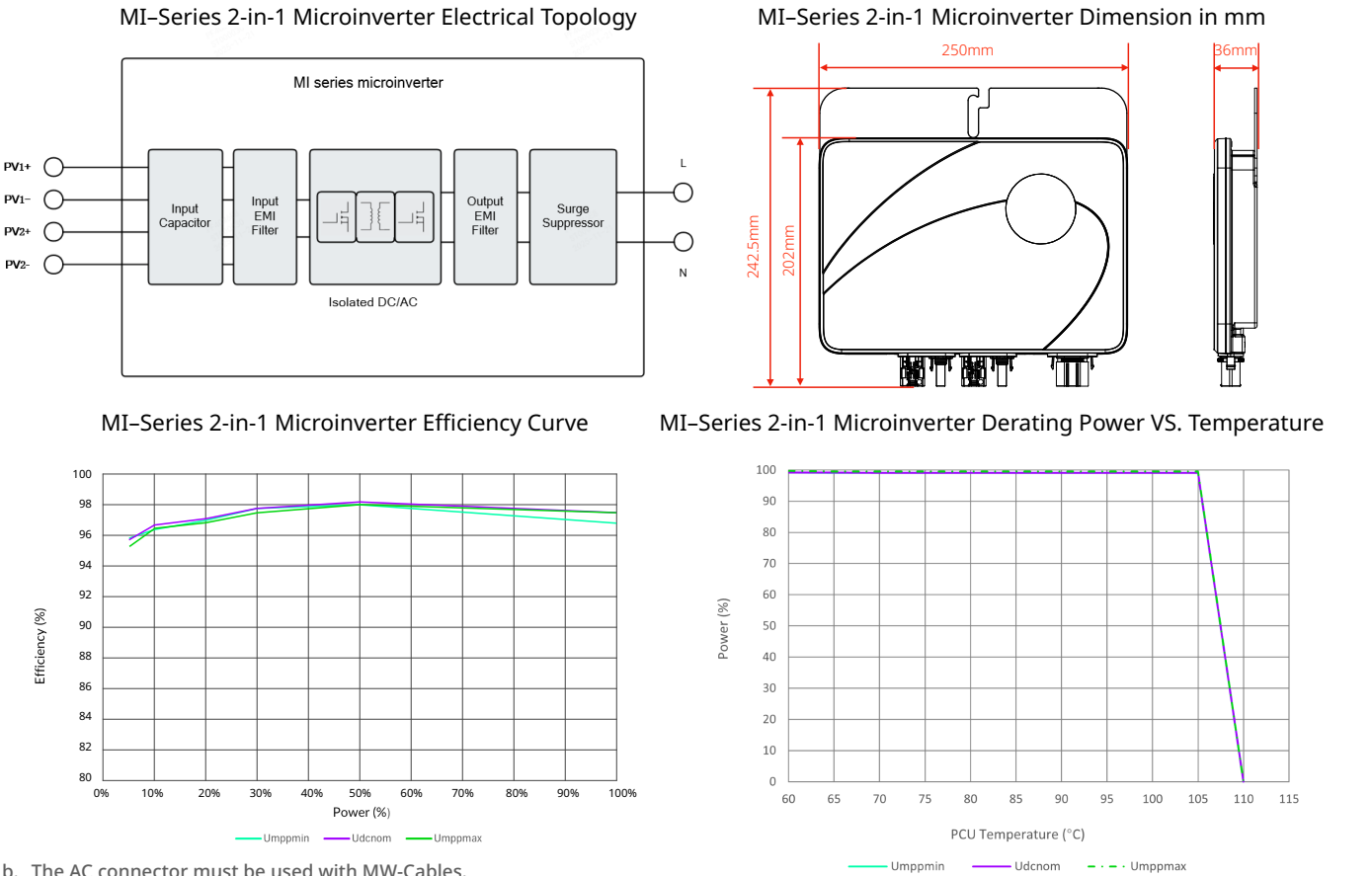
- 1-minute Activation with Photo Scan
- AI-Powered PV Detection for Smarter, Faster, and More Accurate O&M



Model	Unit	MI-1250-2M	MI-1000-2M
Input parameters			
PV module compatibility		54-cell/108 half-cell, 60-cell/120 half-cell, 66-cell/132 half-cell and 72-cell/144 half-cell	
Min./Max. input voltage	U_{dcmin}/U_{dcmax} , V	16 to 60	
Peak power tracking voltage range	U_{mppmin}/U_{mppmax} , V	41 to 55	33 to 55
MPPT voltage range	U_{mppt} , V	16 to 60	
Nominal input voltage	U_{dcnom} , V	42	
Start-up input voltage	$U_{dcstart}$, V	22	
Max. continuous input current	I_{dcmax} , A	20	
Max. input short-circuit current	I_{scmax} , A	25	
DC port overvoltage class		II	
DC port backfeed current	A	0	
PV array configuration		1 x 1 ungrounded array	
Output parameters			
Nominal voltage	U_{acnom} , V	220/230/240	
Voltage range	U_{acmin}/U_{acmax} , V	176 to 276	
Nominal output power	P_{acnom} , W	1250	1000
Max. apparent power	S_{acmax} , VA	1250	1000
Nominal output current @220Va.c.	I_{acnom} , A	5.68	4.55
Nominal output current @230Va.c.	I_{acnom} , A	5.43	4.35
Nominal output current @240Va.c.	I_{acnom} , A	5.21	4.17
Max. output current @220Va.c.	I_{acmax} , A	5.97	4.77
Max. output current @230Va.c.	I_{acmax} , A	5.71	4.57
Max. output current @240Va.c.	I_{acmax} , A	5.47	4.38
Max. microinverters / 20A branch circuit		2	3
Max. microinverters / 25A branch circuit		3	4
Max. microinverters / 32A branch circuit		4	5
Nominal frequency	f_{nom} , Hz	50/60	
Extended frequency range	f_{min}/f_{max} , Hz	45 to 65	
Power consumption at night	mW	0 ^a	
AC port overvoltage class		III	
Power factor setting	cosphi	>0.99	
Power factor (adjustable)		0.8 leading ... 0.8 lagging	
Total harmonic distortion	THDi	<1.5%	
AC surge protection		TYPE II	
Efficiency parameters			
Peak efficiency	η_{max} , %	98.2	
EU efficiency	η_{EU} , %	97.7	
MPPT efficiency	η_{MPPT} , %	99.9	

a. The value is tested with M-Relay or M-Combiner.

Model	Unit	MI-1250-2M	MI-1000-2M
Mechanical parameters			
Ambient temperature range	°C	-40 to 65	
Storage temperature range	°C	-40 to 85	
Relative humidity range	%	4 to 100, condensing	
DC connector type		MT-02502-D	
Number of DC connectors		2 pair	
AC connector type		MT-02502-A ^b	
Number of AC connectors		1 pair	
Dimensions (without bracket)	mm	250 × 202 × 36 (W x H x D)	
Weight (without bracket)	kg	2.1	
Cooling		Natural convection	
Approved for wet locations		Yes	
Pollution degree		III	
Topology		Isolated	
Enclosure protection class		Class II double-insulated	
Environmental category		Outdoor - IP67	
Altitude	m	3000	
Noise	dB	<25	
Feartures			
Communication		PLC	
Indicator		1 × LED	
Compliance			
Safety		IEC 62109-1/-2	
EMC		IEC 61000-6-1/-2/-3/-4, EN 62920	
Grid compliance		VDE 0124, VDE 4105, UTE 0126, EN 50549, EN 50530	



ATMOCE

Three-phase M-Combiner

MC100-T



Data Sheet

Key Features

Safety & Reliability

- IP65 design for indoor and outdoor installations
- Reliability verification in extreme scenarios
- Reinforced insulation for improved safety

High Power Capability

- Max. PV power of 30 kW
- Max. battery capacity of 42 kWh

Flexibility & Intelligence

- Remote management of home electricity
- Bi-directional communication between devices and ATMOCE-Cloud
- All-in-one app to guide the installation and configuration

Easy Installation

- Pre-installed and pre-connected
- Easy system activation by using the ATMOZEN app
- Lightweight design



Items	Unit	MC100-T
What's in the combiner		
M-Gateway MG100		1 × MG100
SPD		1 × unit, In: 20 kA, 4-pole
SPD breaker		1 × unit, 25 A, 4-pole
Gateway breaker		1 × unit, 10 A, 4-pole
PV-side breaker ^a		2 × unit, 20 A, 4-pole
Grid-side breaker		1 × unit, 63 A, 4-pole, RCD 100 mA
Battery-side breaker		1 × unit, 63 A, 4-pole
Microinverter CT		3 × CTs, accurate up to 0.1%
Battery CT		3 × CTs, accurate up to 0.1%
Consumption CT interface		1 × CT signal interface, accurate up to 0.1%
Electrical parameters		
Grid setup		Three-phase
Nominal voltage	V	220/380 Va.c., 230/400 Va.c., 3/N~
Operating voltage range (L to N)	V	176 to 276
Nominal frequency	Hz	50/60
Extended frequency range	Hz	45 to 65
Max. PV branch		2
Max. PV current/branch	A	20
Max. battery current	A	63
Max. battery capacity	kWh	42
Overvoltage category		III
Mechanical parameters		
Dimensions (W x H x D)	mm	389 × 616 × 127
Weight	kg	8.6
Ambient temperature range	°C	-30 to 50
Cooling		Natural convection
Enclosure environmental rating		Outdoor, IP65
Wire sizes ^b	mm ²	PV side: 2.5 to 6 Grid side: 6 to 16 Battery side: 4 to 10
Communication cable sizes	mm ²	0.25 to 0.75
Communication		PLC, Wi-Fi, BLE, ETH, CAN, RS485
Noise	dB	<25
Altitude	m	3000
Protection class		II
Pollution degree		III
Communication interfaces		
PV side	PLC	Support
Grid side		1 × interface for consumption CT
Battery side	CAN	Support

Items	Unit	MC100-T
Load side	ETH	1 × interface, 100 Mb/10 Mb auto-adaptability
	Digital I/O	4 × 12 V DO, 3 × DI
	RS485	Support
Atmoce-Cloud	Wi-Fi	2.4 GHz
	ETH	1 × interface, 100 Mb/10 Mb auto-adaptability
Atmozen app	BLE	2.4 GHz
Indicators		3 × LEDs
Compliance		
Safety		IEC 61439-1/-2
Health		IEC 62311
EMC		EN 301 489-1/-17, IEC 61000-6-1/-2/-3/-4
Radio spectrum		EN 300 328
PLC		EN 50065-1/-2

a. The standard configuration of the PV-side breaker is 20A, which can be replaced with a 25A / 32A rated circuit breaker, supporting a maximum of 30kW.

b. Refer to the local electrical regulations to select the cable size.

ATMOCE

Data Sheet

M-Backup



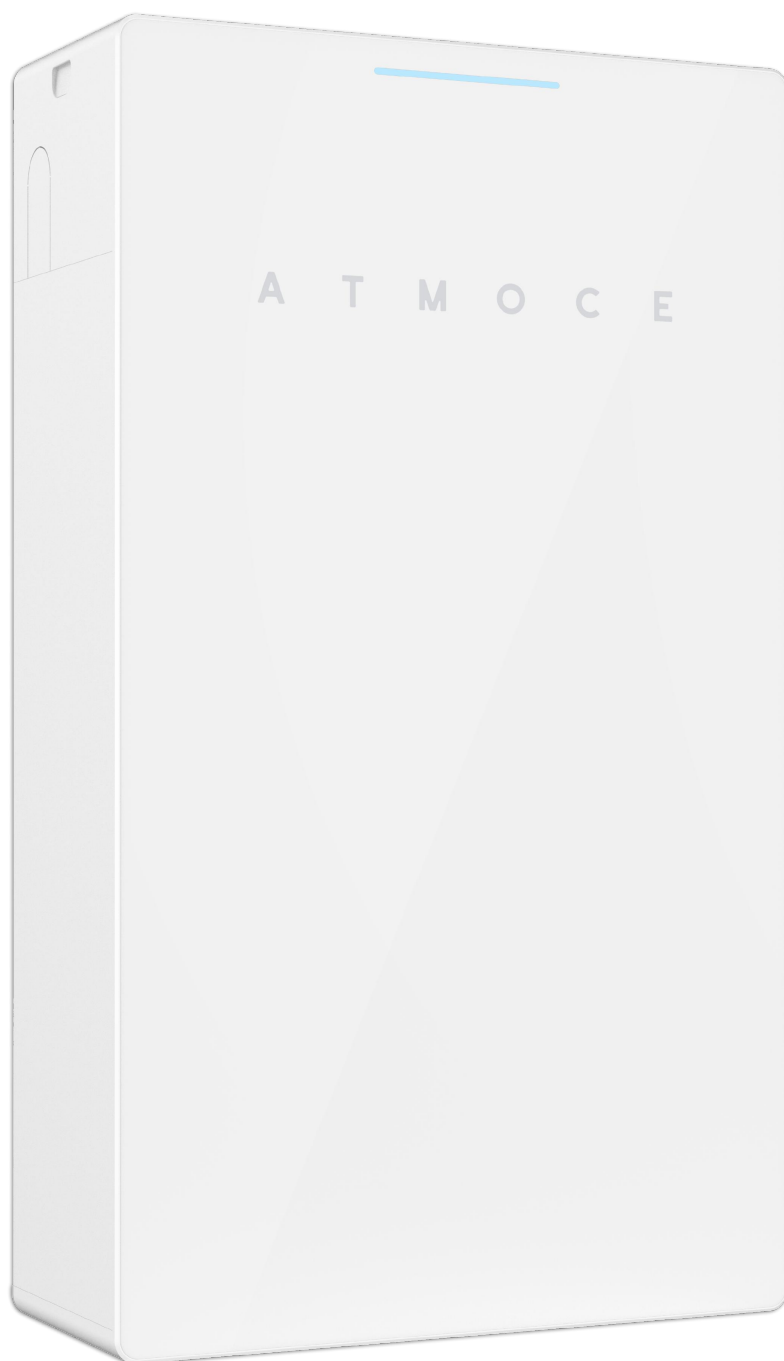
Items	Unit	MU100-S	MU100-T
What's in the M-Backup			
Combiner/Load Breaker		1 × unit, 63 A, 2-pole	1 × unit, 63 A, 4-pole
Grid Breaker		1 × unit, 80 A, 2-pole	1 × unit, 80 A, 4-pole
Bypass Breaker		1 × unit, 80 A, 2-pole	1 × unit, 80 A, 4-pole
Electrical Parameters			
Grid Setup		Single-phase	Three-phase
Nominal Voltage	V	220/230/240 Va.c.	220/380 Va.c., 230/400 Va.c., 3/N~
Operating Voltage Range (L to N)	V		176 to 276
Nominal Frequency	Hz		50/60
Extended Frequency Range	Hz		45 to 65
Max. Combiner/Load Current	A		63
Max. Grid Current	A		80
Max. Distribution Panel Current	A		80
Overvoltage Category			III
Noise	dB		<25
Altitude	m		3000
Protection Class			II
Pollution Degree			III
Mechanical Parameters			
Dimensions (W x H x D)	mm		390 × 460 × 125
Weight	kg	3.6	6
Ambient Temperature Range	°C		-30 to 50
Cooling			Natural convection
Enclosure Environmental Rating			Outdoor, IP65
Wire Sizes ^a	mm ²	Combiner/Load side: 16 to 25 Grid side: 16 to 25 Distribution panel side:16 to 25	
Communication Cable Sizes	mm ²		0.25 to 0.75
Communication			CAN, RS485, DI, DO
Compliance			
Safety			IEC 61439-1/-2
EMC			IEC 61000-6-1/-2/-3/-4

a. Refer to the local electrical regulations to select the cable size.

ATMOCE

M-ELV Battery

MS-7K-U



Data Sheet

Key Features

Ultimate Safety

- <30 Vdc extra low voltage
- Lithium iron phosphate (LFP) chemistry
- Cell level management and optimization
- Galvanic isolation between battery and grid

Higher Power

- 90% AC round trip efficiency
- 3.75 kVA Max. continuous input power, 5 kVA Max. output power
- 126 kWh scalability^a

Flexibility & Adaptability

- One SKU for all 1-phase, 3-phase & stand alone installations
- AC coupling, compatible with 3rd-party PV and EMS systems
- Supports self-consumption, TOU and grid ancillary services modes

More Reliability

- 10-year warranty
- 10,000 cycles
- Electrolytic capacitors free



a. This value defines the maximum scalable capacity achievable with one M-Gateway.

Items	Unit	MS-7K-U
Electrical Parameters		
Max. continuous output power	kVA	4.5
Max. output power	kVA	5
Max. continuous input power	kVA	3.75
Nominal voltage	V _{a.c.}	1/N/PE ~ 220, 1/N/PE ~ 230 3/N/PE ~ 220/380, 3/N/PE ~ 230/400
Operating voltage range (L to N)	V _{a.c.}	176 - 276
Nominal frequency	Hz	50 / 60
Frequency range	Hz	45-55 @50 Hz, 55-65 @60 Hz
Max. input current	A	17.05 @ 220 V _{a.c.} , 5.70 @ 380 V _{a.c.} 16.30 @ 230 V _{a.c.} , 5.41 @ 400 V _{a.c.}
Max. output current	A	22.73 @ 220 V _{a.c.} , 7.58 @ 380 V _{a.c.} 21.74 @ 230 V _{a.c.} , 7.25 @ 400 V _{a.c.}
Power factor (adjustable)		0.8 leading~0.8 lagging
AC round-trip efficiency	%	90
THDi	%	<3
Battery		
Rated battery energy	kWh	7
Nominal battery capacity	Ah	280
Nominal DC voltage	V	25.6
Max. DC voltage	V	28.8
Chemistry		Lithium iron phosphate (LFP)
Number of cycles		10,000
DC round-trip efficiency	%	96
Mechanical data		
Dimensions (without bracket)	mm	830 × 480 × 195 (H x W x D)
Lifting weight (without bracket)	kg	73.5
Mounting		Floor or wall mount
Ambient operating temperature range	°C	-20 to 55
Optimum operating temperature range	°C	0 to 30
Storage temperature	°C	-20 to 55
Protection class		I
Ingress Rating		IP66
Cooling		Intelligent air cooling
Operating Humidity (RH)	%	4 to 100, condensing
Altitude	m	Up to 3,000
Pollution Rating		PD3
Operation Noise	dB	< 35
Protection		
AC port overvoltage class		III
AC surge protection		TYPE II
Galvanic Isolation		YES
Insulation resistance monitor		YES

Items	Unit	MS-7K-U
Features and compliance		
Indicator	LEDs for SOC & Status	
Communication	CAN	
Services ^b	Self-consumption, TOU, Grid ancillary services	
Cloud Service	ATMOCE Cloud & ATMOZEN APP	
Compliance	IEC 62619, ISO 13849, IEC 61000-6-1, IEC 61000-6-3, IEC 63056, IEC 62477-1, VDE- AR-E 2510-50	

b. Work together with ATMOCE Gateway.

COMPANY FILE

Xiamen Sunforson Power Co.,Ltd

About Sunforson

Sunforson with headquarter in China, branch companies in Thailand and Vietnam, is a leading solar mounting product supplier, specialized in developing and manufacturing SunRack brand solar mounting system Including roof solar mount, ground solar mount, carport solar mount and BIPV etc. In order to ensure fast and secure solar installation, Sunforson has released a series of top level pv mounting systems to the market. Sunforson not only provides top quality and innovative products but also provides timely delivery, top grade services and comprehensive solutions for our valued customers.



Production Process



Catalogue

	ABOUT SUNRACK	01
	FOREMOST COMPONENTS	03
	SUNRACK CABLE CLIP	07
	PITCHED ROOF MOUNTING SYSTEM	08
	WALL MOUNTING SYSTEM	15
	FLAT ROOF MOUNTING SYSTEM	17
	SUNRACK GROUND MOUNTING SYSTEM	23
	SUNRACK SOLAR CARPORT MOUNT SYSTEM	33
	SUNRACK FLOATING SOLAR MOUNTING SYSTEM	37
	SUNRACK SOLAR WALKWAY SYSTEM	38
	SUNRACK WATERPROOF MOUNTING SPECIFICATION	39
	SUNRACK PACKAGING DETAILS	40
	SUNRACK PROJECTS	41

Sunrack

Fast and secure

ABOUT SUNRACK

Choose SunRack, Enjoy Sunshine

Why choose SunRack?

Easy installation: By innovative SunRack rail, the installation process of photovoltaic modules is easy and fast with only a few tools required.

Great Flexibility: With the SunRack Solar Mounting System, framed and frameless photovoltaic modules can be easily mounted on roofs and ground.

Excellent Compatibility: Designed as versatile racking system, SunRack Solar Mounting System can be widely applied on any module type.

High Accuracy: Without the need of on-site cutting, extending our unique rail allows solar mounting installation accurate to millimeter.

Excellent Adaptability: The adjustable height of the SunRack rail, allows the entire panel array to be installed in a level, no matter how uneven the roof and ground surface is.

Maximum Lifespan: choosing high quality extruded aluminum and stainless steel materials.

Guaranteed Durability: Sunforson mounting provides a guarantee of 10 years on the durability of components.

PATENTS & CERTIFICATES



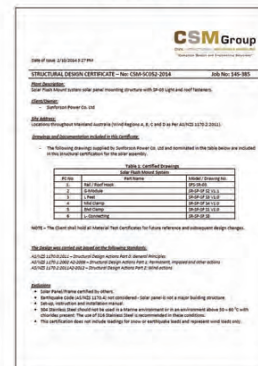
Trademark



Patent



AS/NZS1170



AS/NZS 1170



RoHS of Flat Roof Mount



CE of Carport Mount



CE of Flat Roof Mount



CE of Pitched Roof Mount



CE of Ground Mount

SunRack Rails

Sunforson provides Silver and Black anodized rails with innovative design.

Material: Anodized Extruded Aluminum 6005-T5

Color: Natural Silver or Black Anodized

Products	Part Number	Description
SunRack Rail 3	SFS-SR3-X	2100mm/2560mm/3100mm/4200mm/Customized Length
SunRack Rail 5	SFS-SR5-X	2100mm/2560mm/3100mm/4200mm/Customized Length
SunRack Rail 7	SFS-SR7-X	2100mm/2560mm/3100mm/4200mm/Customized Length
SunRack Rail 8	SFS-SR8-X	2100mm/2560mm/3100mm/4200mm/Customized Length
Splice Connector	SFS-SC-X	For Rail 3/5/7/8



SFS-SR3



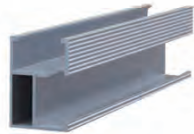
SFS-SR5



SFS-SR7



SFS-SR8



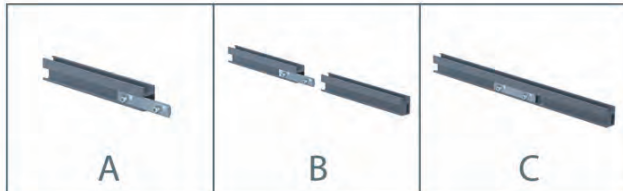
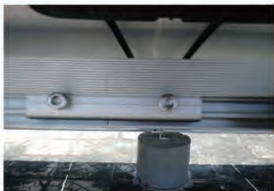
SFS-SR12



SFS-SCG2-01



SFS-SCN2-01



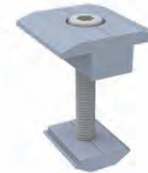
SunRack Solar Module Clamps

Color: Natural Silver or Black Anodized

Compatibility Range: 30mm~50mm Framed Solar Panel

Material: Anodized Extruded Aluminum 6005-T5, A2-70 Hexagon Socket Head Cap Bolt

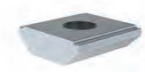
Products	Part Number	Description
Mid Clamp Group	SFS-MCG2/MCN2	For framed panel with thickness 30mm/35mm/40mm/45mm/50mm
End Clamp Group	SFS-ECG2/ECN2	For framed panel with thickness 30mm/35mm/40mm/45mm/50mm
G/Flat Nut	SFS-G /SFS-NM	For aluminum rail



SFS-MCN2



SFS-ECN2



SFS-NM2-22



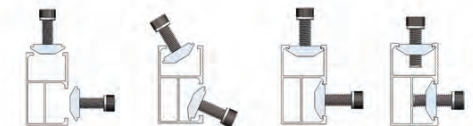
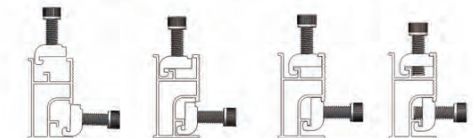
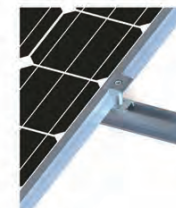
SFS-MCG2



SFS-ECG2



SFS-G2-22



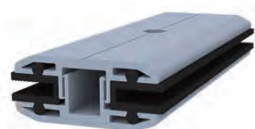
SunRack Thin Film Module Clamps

Color: Natural or Black Color or Any Customized

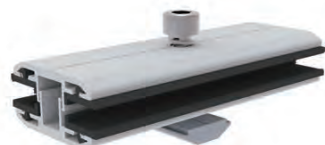
Compatibility Range: 4mm-10.5mm Thin Film Module

Material: Anodized Extruded Aluminum6005-T5, A2-70 Bolt, EPDM Rubber and Stainless Steel Fastener

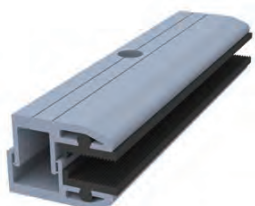
Part Number	Description
SFS-UTMC	SFS Universal Thin-Film Mid clamp 80mm/120mm/200mm/customized length
SFS-UTEC	SFS Universal Thin-Film End clamp 80mm/120mm/200mm/customized length
SFS-UTMCN2	SFS Universal Thin-Film Mid clamp group 80mm/120mm/200mm/customized length
SFS-UTECN2	SFS Universal Thin-Film End clamp group 80mm/120mm/200mm/customized length



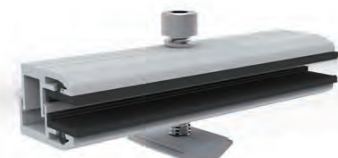
SFS-UTMC



SFS-UTMCN2



SFS-UTEC



SFS-UTECN2



Grounding System

Sunforson grounding system is including grounding clip,earth lug group,bonding jumper.It is used as ground conductor to connect solar modules to aluminum rail,to realize excellent electric conductivity.

Part Number :

SFS-GC-01

Description :

SFS Grounding Clip

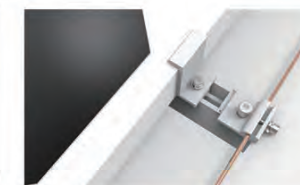


Part Number :

SFS-ELN2-01

Description :

SFS Earth Lug Group



Part Number :

SFS-SCN2-02

Description :

Splice connector&Bonding jumper



SunRack Solar Cable Clip

SunRack solar cable clip is widely used in solar panel array cable positioning, to prevent the cable insulation from any damage. It is made of high quality stainless steel SUS304 material, and it is very easy to install, no special tools needed.

Part Number:
SFS-CC-01

2×4/6mm SUS304 Solar Clip



Part Number:
SFS-CC-02

4×4/6mm & 2×10mm
SUS304 90° Solar Clip



Part Number:
SFS-CC-03

2×4/6mm
SUS304 Solar Clip



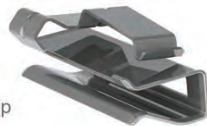
Part Number:
SFS-CC-04

4×4/6mm & 2×10mm
SUS304 Solar Clip



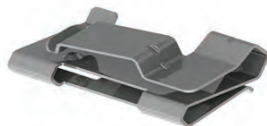
Part Number:
SFS-CC-08

2×4/6mm
SUS304 Thin Film Panels Solar Clip



Part Number:
SFS-CC-09

2×4/6mm
SUS304 90° Solar Clip



PITCHED ROOF MOUNTING SYSTEM

SFS-PR-01 SunRack Pitched Roof Solar Mounting

Sunforson provides various of pitched roof mounting solutions for residential and commercial applications. Our mounting structures are widely used on tile roof, metal roof, asbestos roof and asphalt roof, etc.

Sunforson provides suitable roof brackets according to different roof types, such as SS304 tile roof hooks for tile roof, aluminum L brackets/SS 304 hook for tin roof (trapezoid), stud bolt hanger for asbestos roof (corrugated), roof flashing plate for asphalt shingle roof and so on.

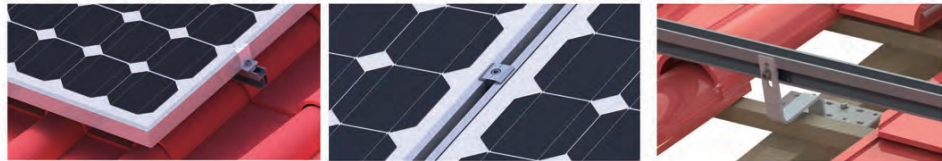
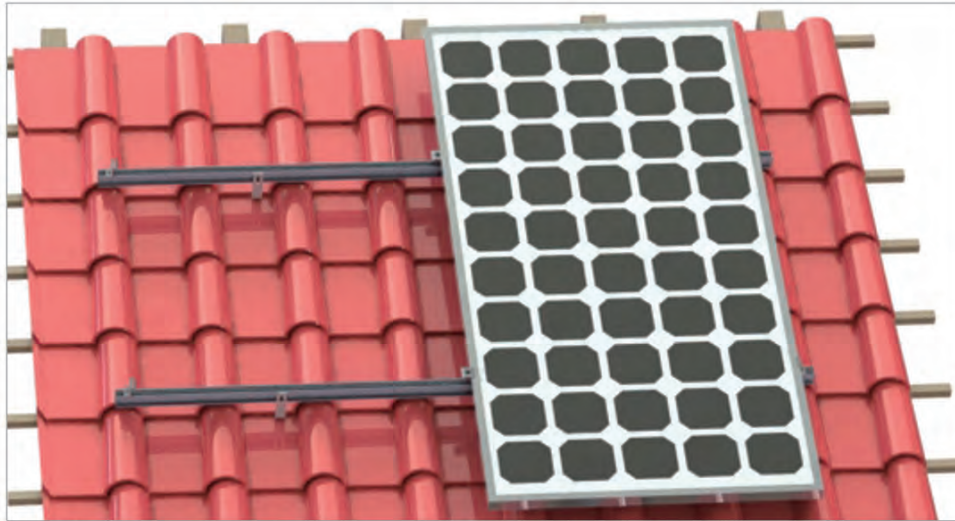
Besides our standard roof mounting racks, our experienced engineering team can design the suitable and economical solution for each of your projects. With our versatile mounting solutions, you could get higher power efficiency from your solar system.

TILE ROOF MOUNTING SYSTEM

SunRack tile roof mount system, accommodating a wide range of framed and frameless solar models, is suitable for most types of roof with different roof hooks. With innovative Sunrack rail and G/Flat Nut, Sunrack tile roof mount enables significantly fast and easy installation.

Tile Roof Mount Specification

Installation Site	Tile roof	Applicable Module	Framed or frameless panel
Applicable Roof Cladding	Suitable for most types of cladding	Module Orientation	Landscape or portrait
Roof Slope	Up to 60°	Design Standards	BS 6399-2-1997
Wind Load	Up to 130mph(60m/s)	Material	Aluminum, stainless steel
Snow Load	Up to 30psf(1.4kN/m2)	Warranty	10 years on material



Features

1. Versatile roof hooks for different tile roofs
2. Easy and fast installation with unique SunRack rail and G module/Flat nut.
3. Pre-assembled components save the installation time and cost.

Tile Roof Hook

SunRack has developed many kinds of universal tile roof hooks for solar racking system. Because of saving installation time and cost, they are popular in the market.



SFS-RH-01



SFS-RH-02



SFS-RH-04



SFS-RH-13



SFS-RH-14



SFS-RH-15



SFS-RH-17

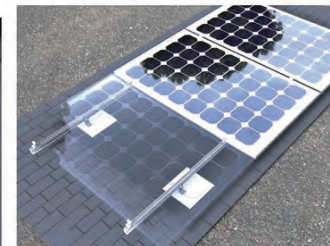
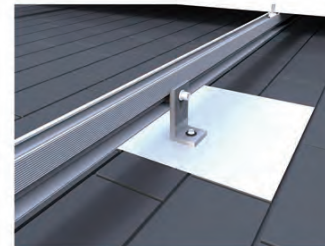


SFS-RH-18

SunRack Shingle Roof Solar Mounting Racks

SunRack shingle plate group is widely applied for asphalt shingle roof; it highlights waterproof and durable, also compatible for most of other roof racking system.

Part Number	Description
SFS-FP-280	SFS flashing plate group

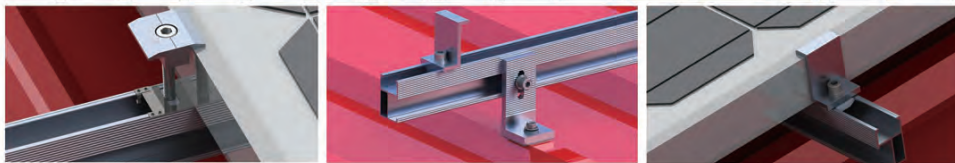
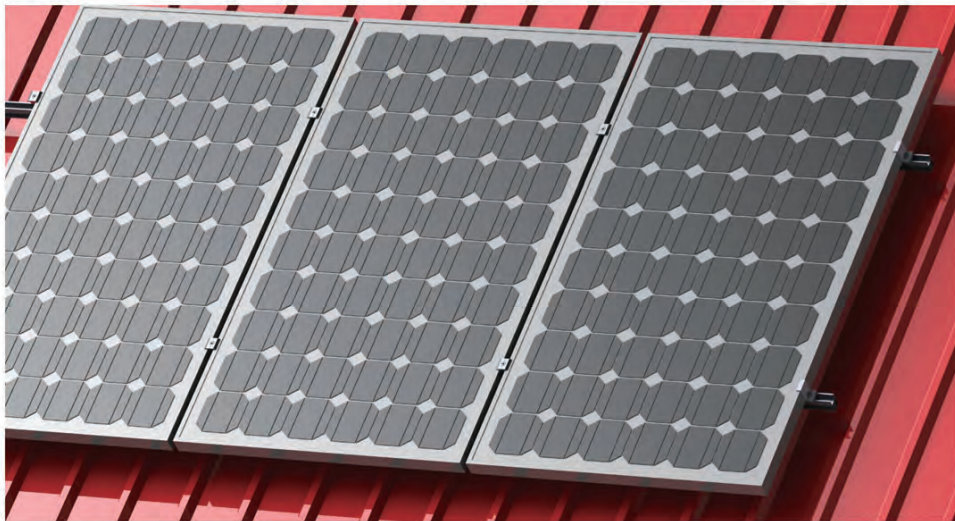


TIN ROOF MOUNTING SYSTEM

With a variety of tin roof hooks, SunRack Tin roof mounting system can be installed on trapezoid/corrugated metal roof and standing seam roof with or without penetrating the roof. Sunforson has the excellent engineering team and quality management system to provide the perfect service.

Tile Roof Mount Specification

Installation Site	Tin roof	Applicable Module	Framed or frameless panel
Applicable Roof Cladding	Suitable for most types of cladding	Module Orientation	Landscape or portrait
Roof Slope	Up to 60°	Design Standards	BS 6399-2-1997
Wind Load	Up to 130mph(60m/s)	Material	Aluminum, stainless steel
Snow Load	Up to 30psf(1.4kN/m2)	Warranty	10 years on material



Features

1. Universal roof brackets for different tin roofs
2. Flexible to meet any PV panels
3. Fast installation with partially pre-assembly components

TIN ROOF MOUNTING SYSTEM

SunRack tin roof mounting series have developed the easiest, fastest,most universal and cost-effective roof brackets for PV panel metal roof mounting installation.

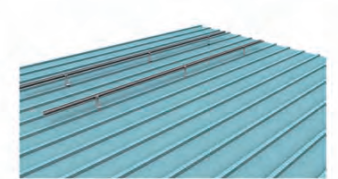
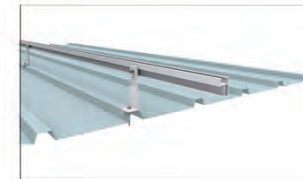
Part Number: SFS-LFN2-01

Description: SFS L-foot Group



Part Number: SFS-LFHN2-01

Description: High L feet Group



Part Number: SFS-SBN2-01

Description: Stud Bolts Group



Standing Seam Roof Mounting

SunRack provides various solar clamps for different standing seam roof mounting. It is easy and fast to install with our SunRack unique racking system.

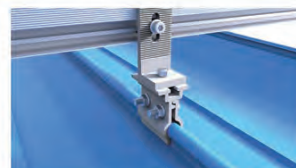
Part Number :
SFS-TRG-04
Description :
4# Tin Roof Clamp Group



Part Number :
SFS-TRG-05
Description :
5# Tin Roof Clamp Group



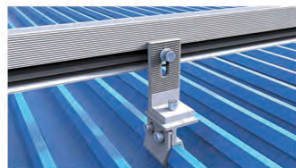
Part Number :
SFS-TRG-06
Description :
6# Tin Roof Clamp Group



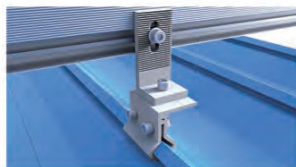
Part Number :
SFS-TRG-07
Description :
7# Tin Roof Clamp Group



Part Number :
SFS-TRG-09
Description :
9# Tin Roof Clamp Group



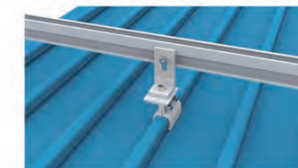
Part Number :
SFS-TRG-10
Description :
10# Tin Roof Clamp Group



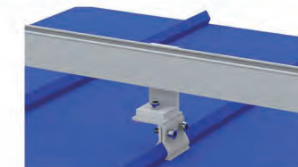
Part Number :
SFS-TRG-14
Description :
14# Tin Roof Clamp Group



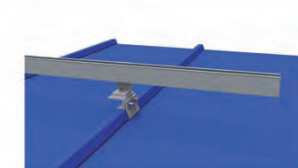
Part Number :
SFS-TRG-15
Description :
15# Tin Roof Clamp Group



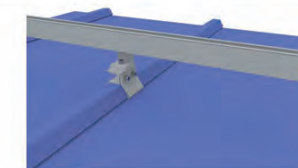
Part Number :
SFS-TRG-16
Description :
16# Tin Roof Clamp Group



Part Number :
SFS-TRG-22
Description :
22# Tin Roof Clamp Group



Part Number :
SFS-TRG-25
Description :
25# Tin Roof Clamp Group



A selection of accessories



LFHN2



LFN2



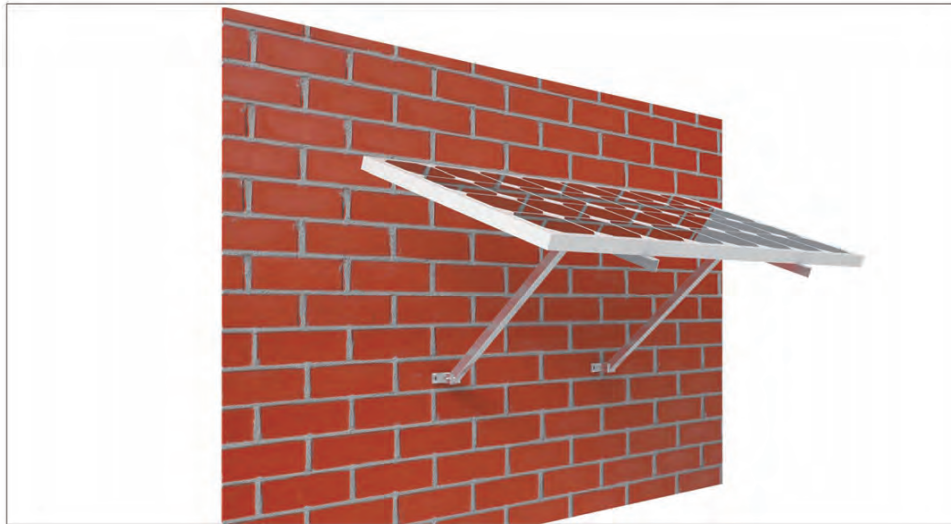
SLFN2

WALL MOUNTING SYSTEM

SunRack wall mount is an economical mounting type for panel installation without rail support.It can be easily installed on the wall with any customized angle.

Wall Mounting Specification

Installation Site	Wall	Applicable module	Framed
Applicable cladding wall	Suitable for most types of cladding	Module Orientation	Landscape
Roof Slope	Up to 60°	Design Standards	BS 6399-2-1997
Wind Load	Up to 130mph(60m/s)	Material	Aluminum, stainless steel
Snow Load	Up to 30psf(1.4kN/m2)	Warranty	10 years



Features

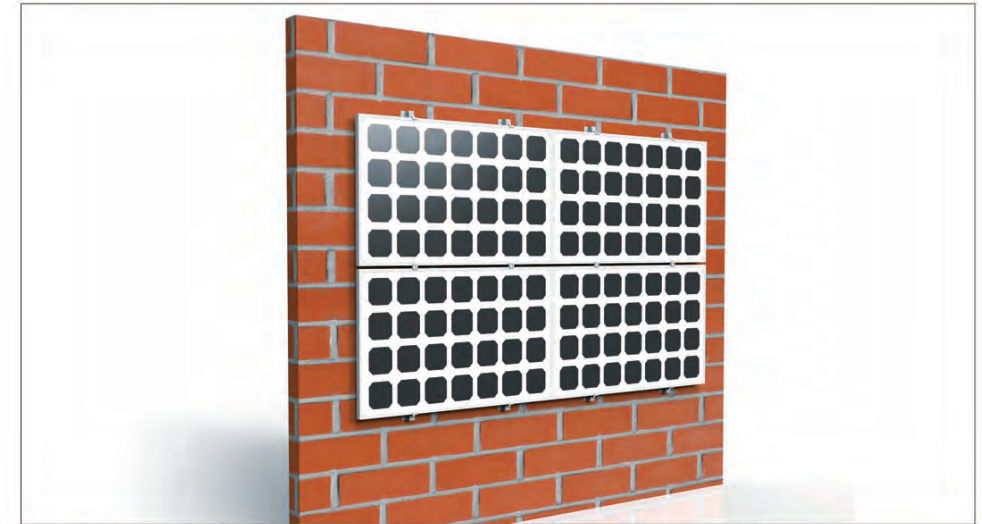
- 1.Benefit with no rail design
- 2.Any tilted angle as project demand
- 3.Solar panel can be extended for maximum space utilization

SFS-FA-01 SunRack Facade Mounting System

Sunforson develops different mounting series to meet demands of the panel facade installation. The panel will be fixed on wall tightly,which can withstand high wind speed.With the mountings installed back of panels, it looks very concise and pretty.

Facade Mounting Specification

Installation Site	Wall	Panel Type	Framed
Material	Aluminum Alloy	Design Standards	BS 6399-2-1997
Wind Load	Up to 130mph(60m/s)	Component direction	Vertical/Horizontal
Snow Load	Up to 30psf(1.4kN/m2)	Warranty	10 years



Features

- 1.Beautiful appearance
- 2.Quick installation with concise design
- 3.10 years warranty, 25 years lifetime



FLAT ROOF MOUNTING SYSTEM

Sunforson Flat Roof Mounting Structures

SunRack flat roof mounting series are widely applied in residential,commercial and utility solar systems. With unique design and pre-assembly accessories,SunRack flat roof mountings will save a lot of time on installation and save a lot of space on transportation.

Sunforson members develop many different kinds of flat roof mounting system to meet the demand of different solar projects, of course it is not only used on flat roof, but also apply to ground solar system installation. There are flat roof mounting systems with fixed angle type, adjustable angle, ballast type and triangular kinds.

Sunforson members always devote to providing the most suitable and competitive mounting solution for each project. Choose SunRack,choose the best mounting expert for your solar project.

SFS-AM-01 SunRack Adjustable Mounting System

SunRack SFS-AM-01 is an adjustable mounting system for flat roof(no matter concrete flat roof or tin flat roof)and ground. The tilted angle can be adjusted by the adjustable leg according to different seasons for maximum solar power generation. You will benefit a lot from the adjustable solar mounting system.

Adjustable angle PV bracket specification

Installation Site	Flat roof	Applicable Module	Framed or frameless panel
Applicable roof type	Suitable for most types of roof sheet	Module Orientation	Landscape or Vertical
Roof Slope	Up to 60°	Design Standards	BS 6399-2-1997
Wind Load	Up to 130mph(60m/s)	Material	Aluminum, stainless steel
Snow Load	Up to 30psf(1.4kN/m2)	Warranty	10 years



Features

- 1.Reference options for adjustable angle range: 10~15(225mm adjustable leg), 20~35(455mm adjustable leg), 30~45(600mm adjustable leg).
- 2.100% lightweight and corrosion resistant aluminum rails
- 3.Adjustable tilt angle for power maximum generation in different seasons



SFS-LCN2



SFS-FFN2-02



SFS-MCN2



SFS-ECN2



SFS-ALN2



SFS-ES-8X70



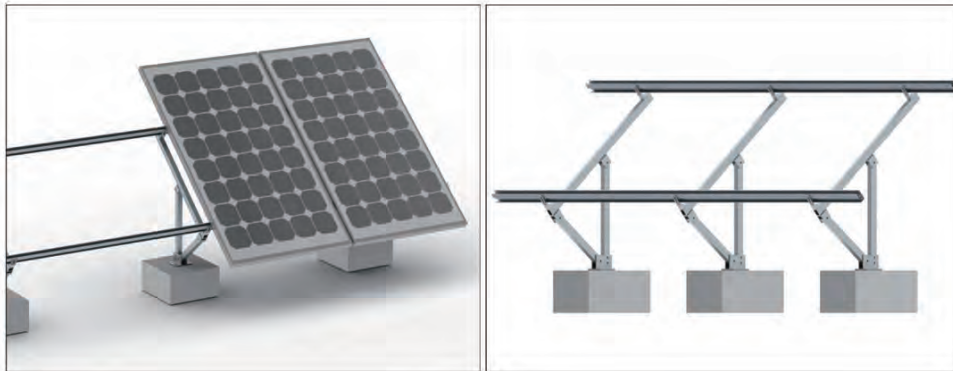
SFS-TS-63X80

SFS-AM-02 SunRack Adjustable Mounting System

SunRack SFS-AM-02 is an adjustable mounting system for flat roof (concrete flat roof, flat tin roof) and ground. It can maximize solar power generation by adjusting the tilt angle degree for different seasons with high quality and elegant appearance.

Adjustable angle PV bracket Specification

Installation Site	Open ground and flat roof	Roof clearance	Customized
Panels	Solar panel for any size	Inclination	5°~45° or customized
Structural materials	Aluminum, stainless steel	Panel direction	Vertical or Landscape
Survival wind speed	Up to 130mph(60m / s)	Design Standards	BS 6399-2-1997
Design snow pressure	Up to 30psf(1.4kN/m2)	Warranty	10 years



Features

- 1.Adjustable tilted angle degree: 5°~45°
- 2.Fast and Easy installation on flat roof and cement blocks
- 3.Superior quality and elegant appearance



SFS-AS-01



SFS-MCN2



SFS-ECN2



SFS-LFN2-03



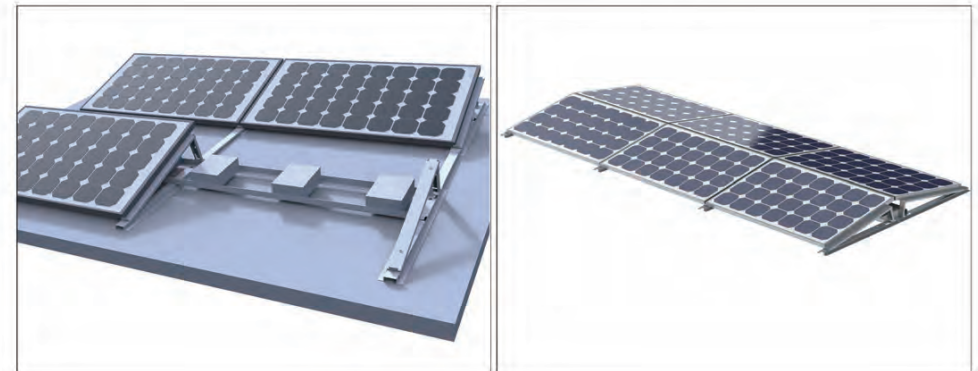
SFS-ES-8X70

SFS-FR-02 SunRack Flat Roof Ballast Mounting System

SunRack SFS-FR-02 ballast mounting system adopts foldable triangular to save cost both on installation and transportation. It is a type of solar panel mounting structure that can be expanded from one panel to any scale to maximize the use of rooftop. Sunforson experienced engineer will give you a technical suggestion for the size and weight of the ballasts for your solar project.

Ballast Roof Bracket Specification

Installation Site	Open ground and flat roof	Roof clearance	Around 50mm
Panels	Solar panel for any size	Inclination	Customizable
Structural materials	Aluminum, stainless steel	Component direction	Horizontal
Survival wind speed	Up to 112mph(50m/s)	Design Standards	BS 6399-2-1997
Design snow pressure	Up to 30psf(1.4kN/m2)	Warranty	10 years on material



Features

- 1.Simple and fast installation with no rails construction design, zero damage on the roof
- 2.Cost competitive with modules in landscape and tilt angle from 5~15 degree
- 3.Modular extension for maximum usage of roof



SFS-BTMG-15



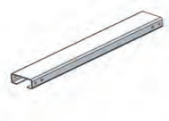
SFS-MCG



SFS-ECG



SFS-AP



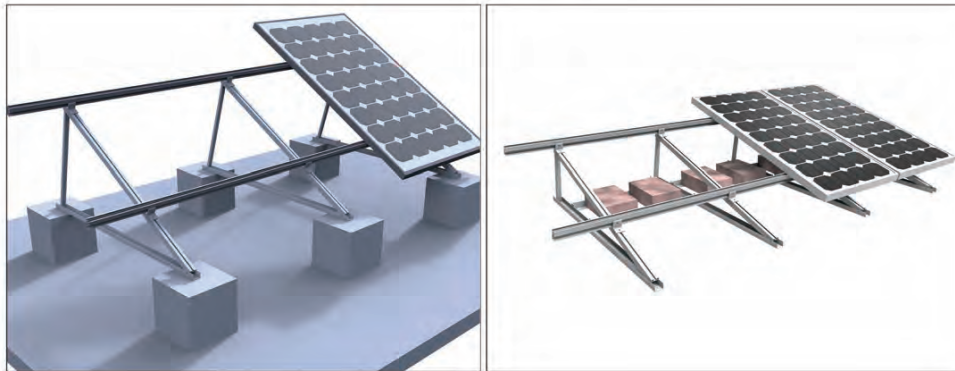
SFS-JP1

SFS-FR-03 SunRack Flat Roof Triangular Mounting System

SunRack SFS-FR-03 triangular mounting system with a foldable design saves a lot on installation and transportation. It can be installed directly on rooftop or ground or pre-made cement blocks as your option. All panels can be installed easily which will save much time for your project.

Triangular Roof Bracket Specification

Installation Site	Open ground and roof	Roof clearance	Customized
Panels	Solar panel for any size	Inclination	Customized
Structural materials	aluminum, stainless steel	Panel direction	Portrait or Landscape
Survival wind speed	Up to 130mph(60m/s)	Design Standards	BS 6399-2-1997
Design snow pressure	Up to 30psf(1.4kN/m2)	Warranty	10 years on material



Features

- 1.Multifunctional installation method: ballast mount or fixed on casting concrete ballast
- 2.Optimized for material and cost efficiency
- 3.Full aluminum alloy with high quality



SFS-RTMG-15



SFS-MCN2



SFS-ECN2



SFS-SLCN2



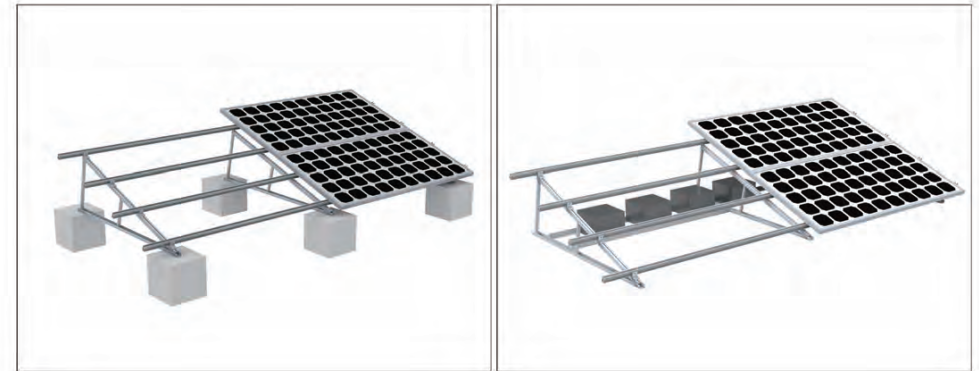
SFS-ES-8x70

SFS-FR-03B

SunRack SFS-FR-03B triangular mounting system with a foldable design saves a lot on installation and transportation. It can be installed directly on rooftop or ground or pre-made cement blocks as your option. All panels can be installed easily which will save much time for your project.

Triangular Roof Bracket Specification

Installation Site	Open ground and roof	Roof clearance	Customized
Panels	Solar panel for any size	Inclination	Customized
Structural materials	aluminum, stainless steel	Panel direction	Portrait or Landscape
Survival wind speed	Up to 130mph(60m/s)	Design Standards	BS 6399-2-1997
Design snow pressure	Up to 30psf(1.4kN/m2)	Warranty	10 years on material



Features

- 1.Multifunctional installation method: ballast mount or fixed on casting concrete ballast
- 2.Optimized for material and cost efficiency
- 3.Full aluminum alloy with high quality



SFS-RTMGB



SFS-MCN2



SFS-ECN2



SFS-SLCN2



SUNRACK GROUND MOUNTING SYSTEM

SUNRACK SOLAR GROUND MOUNTING SYSTEM

SunRack solar ground mounting system currently offers four different types: concrete based, ground screw,pile, single pole solar mounting brackets, which can be installed on almost any kind of ground and soil.

SunRack solar ground mounting designs allow big spans between two structure leg group, so that it will maximum the use of the aluminum ground structure and make a most cost-effective solution for each project.

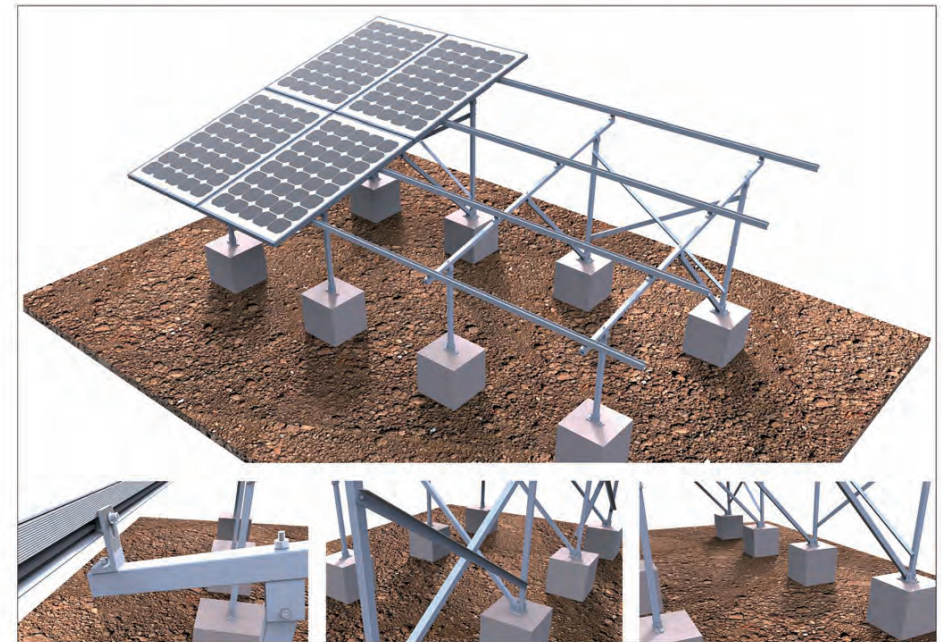
We design each ground mounting system according to the project demand. All mounting systems are optimized to meet wind, snow load and other conditions at the location as well as the geological composition of the ground. Our SunRack ground mount systems are just as flexible as your requirements.

SFS-GM-01 SunRack Concrete Based Ground Mounting

SunRack concrete based ground mounts are a highly versatile ground mounted solutions that can be widely used in commercial and utility solar panel installation. With more than 40% preassembly and patented components, SunRack solar ground mounts save installer considerable amount of time and present you with great marketing edge.

Ground Mounting Specification

Installation Site	Open ground	Ground clearance	Customized
Panels	Solar panel for any size	Inclination	Customized
Structural materials	aluminum, stainless steel	Panel direction	Portrait or Landscape
Survival wind speed	Up to 130mph(60m/s)	Design Standards	BS 6399-2-1997
Design snow pressure	Up to 30psf(1.4kN/m2)	Warranty	10 years on material



Features

- 1.Fast and secure installation
- 2.Professional customized design
3. Most cost competitive with 2 rows of panel in portrait.

SFS-GM-01B SunRack Ground Mounting System

SFS-GM-01B is also a type of concrete based ground mounting structure, it is suitable for 3 lines, 4 lines, and more lines of panels, in most conditions it is designed in horizontal orientation, but sometimes it can be also in vertical orientation. It can make most use out of the ground area and increase the distance of two Leg group to decrease the posts to make it cost-effective.

Ground Mounting Specification

Installation Site	Open ground	Ground clearance	Customized
Panels	Solar panel for any size	Inclination	Customized
Structural materials	Aluminum, stainless steel	Panel direction	Horizontal and Vertical
Survival wind speed	Up to 130mph(60m/s)	Design Standards	BS 6399-2-1997
Design snow pressure	Up to 30psf(1.4kN/m2)	Warranty	10 years on material



Features

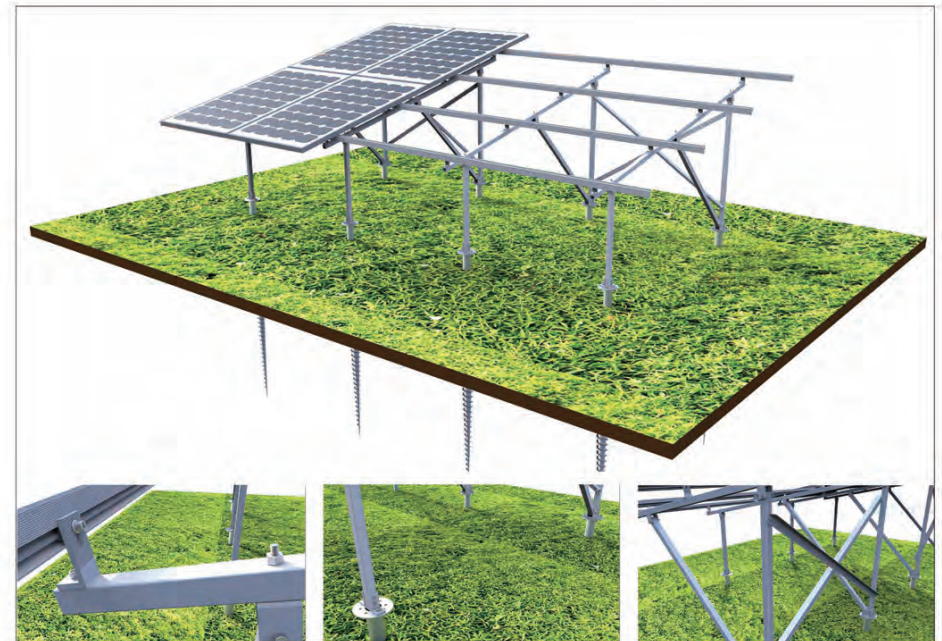
- 1.Suitable for various kinds of ground conditions
- 2.Reduced number of posts compared to traditional racking
- 3.High quality and super appearance with full aluminum alloy structure

SFS-GM-02 SunRack Ground Screw Mounting System

Sunforson has developed different series ground mounts to meet varied application. This screw-in foundation system is suitable for most kinds of soil conditions. With unique design on the flange plate of ground screw and mounting feet, the mounting structures can be adjusted in a certain range if there is a little misplace for ground screw, no matter left or right, front and back and even up and down.

Ground Mounting Specification

Installation Site	Open ground	Ground clearance	Customized
Panels	Solar panel for any size	Inclination	Customized
Structural materials	Aluminum, Q235	Panel direction	Portrait or Landscape
Survival wind speed	Up to 130mph(60m/s)	Design Standards	BS 6399-2-1997
Design snow pressure	Up to 30psf(1.4kN/m2)	Warranty	10 years on aluminum material



Features

- 1.Fast and quick installation with ground screws
- 2.No pollution on the soil and the ground
- 3.Customized solution according to specific site conditions

SFS-GM-02B SunRack Ground Screw Mounting System

SFS-GM-02B B type of SunRack solar ground screw mounting system is widely apply to 3 lines, 4lines and more lines solar panel installation, and the ground screws make it installed in an easier and more economic way.

Ground Mounting Specification

Installation Site	Open ground	Ground clearance	Customized
Panels	Solar panel for any size	Inclination	Customized
Structural materials	aluminum and Q235	Panel direction	Horizontal
Survival wind speed	Up to 130mph(60m/ s)	Design Standards	BS 6399-2-1997
Design snow pressure	Up to 30psf(1.4kN/m2)	Warranty	10 years on aluminum material



Features

- 1.Increased distance between foundation supports to reduce material cost
- 2.Partially pre-assembled of the components to facilitate quick installation to the structure.
- 3.100% high grade aluminum alloy racking with galvanized steel ground screw foundation

Ground Screw

SunRack ground screws with flange plate and ground screws without flange plate are widely used in ground solar mounting system. Ground screw system is a modern foundation system,using the drilling machine to install which makes it as the most efficient and cost-saving footing solution.It can be widely applied to different soil conditions

Material: Hot dip galvanized steel Q235

Part Number	Description(with flange plate)	Diameter	Material	Thickness
SFS-GS1-X	1200mm/1600mm/1800mm/2000mm length ground screw	76mm	Q235 steel	3.0~4.0mm
SFS-GS2-X	1200mm/1600mm/1800mm/2000mm length ground screw	76mm	Q235 steel	3.0~4.0mm



SFS-GS1



SFS-GS2

Part Number	Description(with flange plate)	Diameter	Material	Thickness
SFS-GS3-X	1200mm/1600mm/1800mm/2000mm length ground screw	76mm	Q235 steel	3.0~4.0mm
SFS-GS4-X	1200mm/1600mm/1800mm/2000mm length ground screw	76mm	Q235 steel	3.0~4.0mm



SFS-GS3



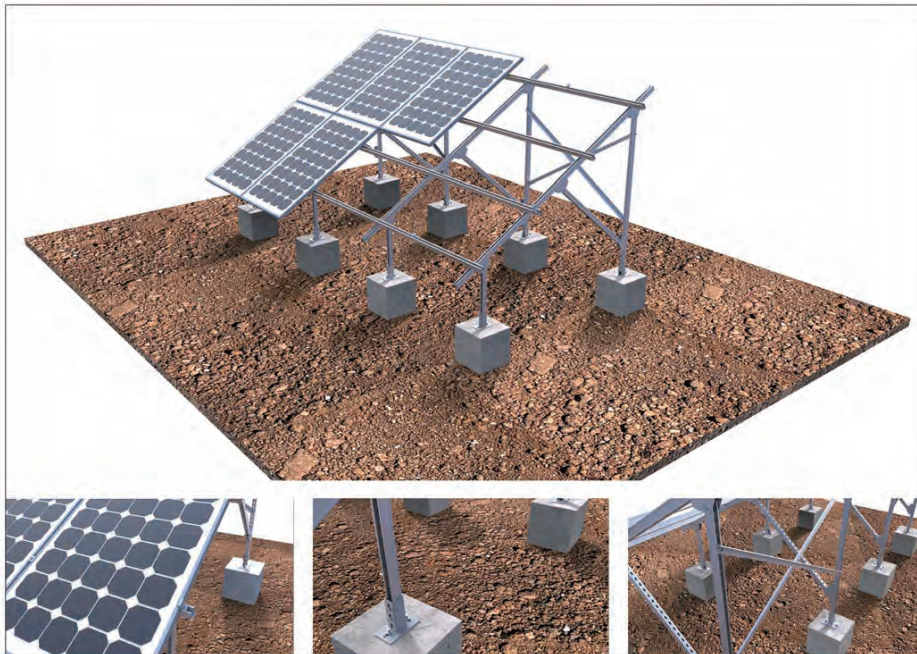
SFS-GS4

SFS-GM-03 SunRack Carbon Steel Ground Mounting System

SunRack solar ground mounting system type SFS-GM-03 is made of galvanized steel, which can be used with both concrete foundation and ground screw in different panel array in a variety of conditions. With galvanized steel structure, this ground type has huge market edge.

Ground Mounting Specification

Installation Site	Open ground	Ground clearance	Customized
Panels	Solar panel for any size	Inclination	Customized
Structural materials	Carbon Steel, stainless steel	Panel direction	Portrait or Landscape
Survival wind speed	Up to 130mph(60m/ s)	Design Standards	BS 6399-2-1997
Design snow pressure	Up to 30psf(1.4kN/m2)	Zinc Thickness	average zinc thickness no less than 85um



Features

1. 100% high strength galvanized steel with good corrosion protection
2. High competitiveness on material cost
3. Easy and fast installation with unique design

SFS-GM-04 SunRack Pile Ground Mounting System

SunRack Pile Ground Mounting System is applied for large scale solar projects installation on a non-sandy ground. For SunRack Pile Ground Mounting System, the C post can be easily rammed into the ground 1~2 meters by Pile Machine, then you can mount the pre-assembled beam structure and other mounts easily.

Ground Mounting Specification

Installation Site	Open ground	Module Orientation	Vertical or Horizontal
Installation Angle	0° to 60°	Material	Aluminum and Q235
Wind Load	Up to 130mph(60m/s)	Design Standard	BS 6399-2-1997
Snow Load	Up to 30psf(1.4kN/m2)	Ground clearance	Customized
PV Modules	Framed or Frameless	Warranty	10 years on aluminum material



Features

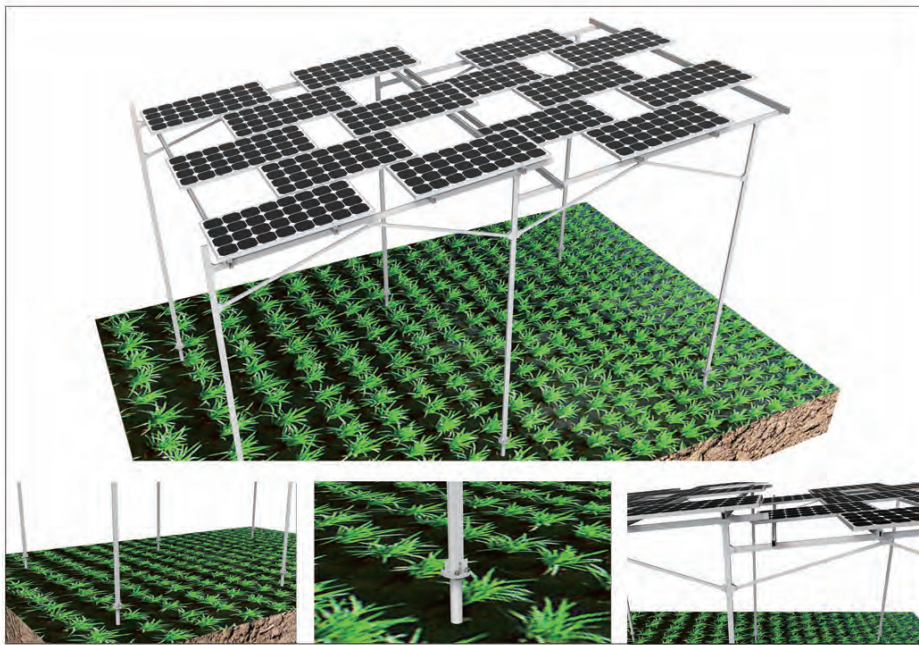
1. Most cost effective for 2-row-vertical panels with low tilt angle
2. Quick installation with pile drilling machine
3. Made of high quality aluminum and steel

SFS-NT-01 SunRack Agricultural Ground Mounting System

SFS-NT-01 SunRack agricultural ground PV mounting system is widely used in farm land with ground screw foundation.The solar panels could be tilted at a certain angle,leaving some gap from each side of solar panels to meet the sunshine demand of crops.

Ground Mounting Specification

Installation Site	Open ground	Height	Customized
Panels	Solar panel for any size	Inclination	Customized
Structural materials	aluminum and Q235	Panel direction	Horizontal or Vertical
Survival wind speed	Up to 130mph(60m/ s)	Design Standards	BS 6399-2-1997
Design snow pressure	Up to 30psf(1.4kN/m2)	Warranty	10 years on aluminum material



Features

- 1.Design to minimize field and installation labor cost
- 2.Easy installation and no drilling, cutting or other operation on site
- 3.Strictly QC on all components and finished products

SFS-PM-X SunRack Pole Mounting System

Sunforson specializes in SunRack pole mount system manufacturing and designing to meet the needs of various pole mount installation.SunRack single post mount enables you to install 1-16 solar panels in different panel layout.

Single Pole Mount Specification

Installation Site	open ground	Module Orientation	Horizontal or vertical
Installation Angle	0° to 60°	Design Standards	BS 6399-2-1997
Wind Load	Up to 130mph(60m/s)	Material	extruded aluminum and Q235
Snow Load	Up to 30psf(1.4kN/m2)	Ground clearance	Customized
PV Modules	Framed or Frameless panel	Zinc Thickness	average zinc thickness no less than 85um



SFS-PM-02



SFS-PM-01



SFS-PM-06

Features

- 1,Post Cap adjustable according to the geographical location demand
- 2,1~16 panels can be supported by the pole in a strong and secure way
- 3.Best used in solar pump, home solar system and other open ground solar project



SUNRACK SOLAR CARPORT MOUNT SYSTEM

Sunforson Carport Mounting Structures

Sunforson customizable solar carport mounting system is the most versatile solar carport solution in the market offering several different designed structure options for both single and double rows of parking.They are suitable for both framed and thin film modules in any size.

Whether you want carport mounting for home use,commercial use or utility,Sunforson can design suitable carport mounting structures according to site situation.

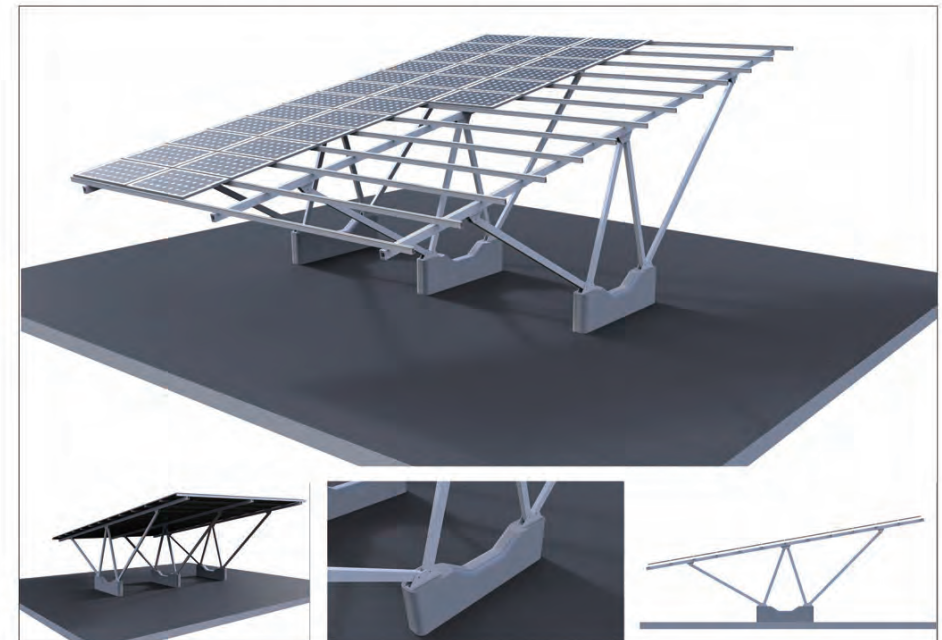
To accommodate any installation site situation,customized foundation options are available with the use of concrete foundation,which can be placed above the ground or buried into the ground by your option.

SFS-CP-03 SunRack Carport Mounting System

Sunforson's SFS-CP-03 double row carport mounting adopts triangle supporting structure technology, which is very strong and secure. With full aluminum alloy and SS 304 bolts&nuts material,it is with concise and elegant appearance.It is quite easy and fast installation without any welding in the site.

Carport Specification

Installation Site	Open ground	Module Orientation	Horizontal or vertical
Installation Angle	5° or 10° or 15°	PV Modules	Framed or Thin Film
Height	2.0~3.5m	Design Standards	BS 6399-2-1997
Wind Load	Up to 130mph(60m/s)	Material	Extruded aluminum
Snow Load	Up to 30psf(1.4kN/m2)	Warranty	10 years on material



Features

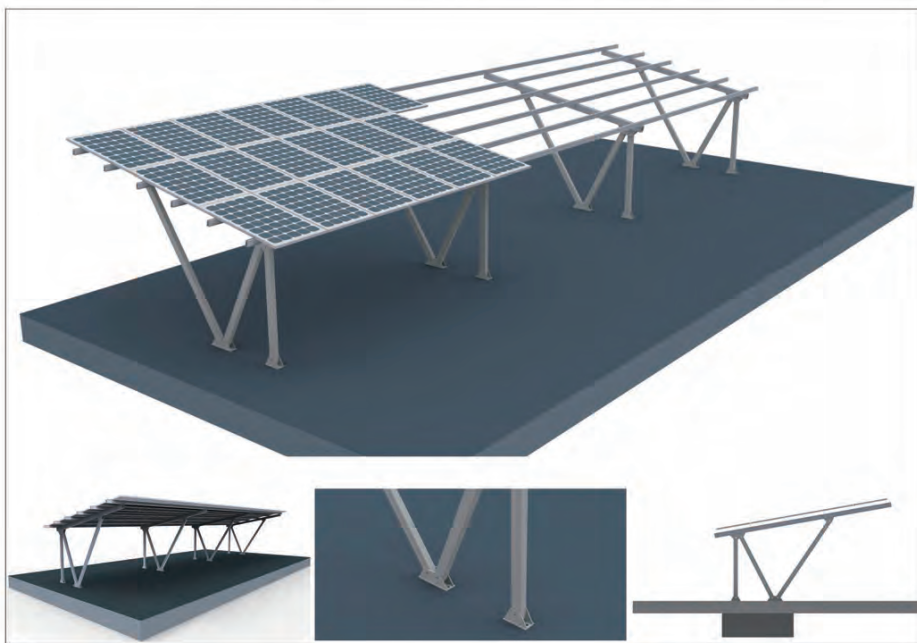
- 1.Fixed tilt angle:5 degree,10degree,15degree
- 2.Standard 10 years warranty
- 3.Suitable for various car parking area

SFS-CP-05 SunRack Carport Mounting System

Sunforson's SFS-CP-05 single row carport mounting adopts "N" shape structure which is very strong and secure. With full aluminum alloy and SS 304 bolts&nuts material,it is with concise and beautiful appearance. It is quite easy and fast installation without any welding in the site.

Carport Specification

Installation Site	Open ground	Module Orientation	Horizontal or vertical
Installation Angle	5° or 10° or 15°	PV Modules	Framed or Thin Film
Height	2.0~3.5m	Design Standards	BS 6399-2-1997
Wind Load	Up to 130mph(60m/s)	Support Rail	Extruded aluminum
Snow Load	Up to 30psf(1.4kN/m2)	Warranty	10 years on material



Features

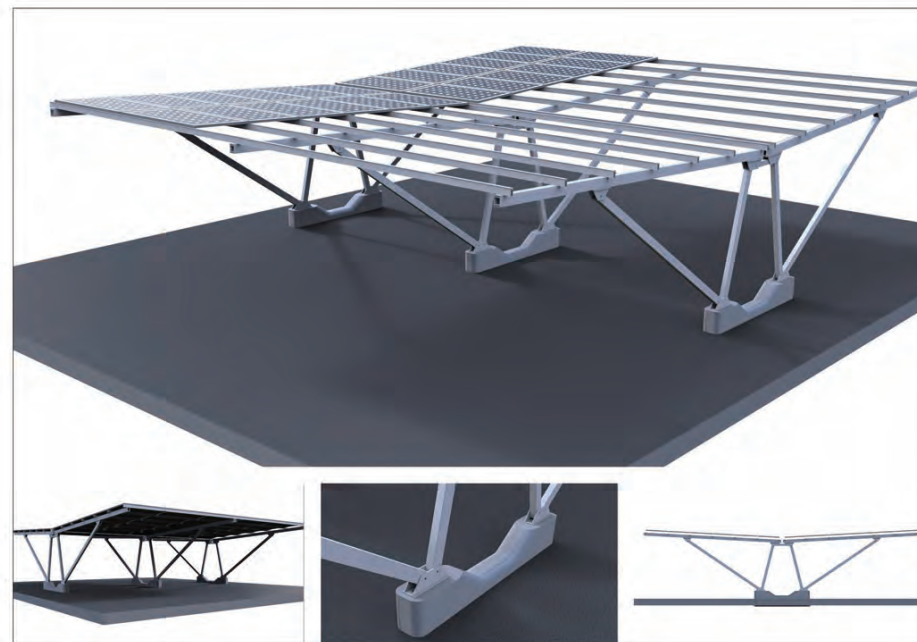
1. Widely used for residential or commercial projects
2. Superior quality with competitive price
3. Compatible with standard framed and frameless module types

SFS-CP-06 SunRack Carport Mounting System

Sunforson's CP-06 double bays carport mounting adopts "birds flying" structure which is very strong and secure. With full aluminum alloy and SS 304 bolts&nuts material,it is with concise and beautiful appearance. It is quite easy and fast installation without any welding in the site.

Carport Specification

Installation Site	Open ground	Module Orientation	Horizontal or vertical
Installation Angle	5° or 10° or 15°	PV Modules	Framed or Frameless panel
Height	2.0~3.5m	Design Standards	BS 6399-2-1997
Wind Load	Up tp 130mph(60m/s)	Material	Extruded aluminum
Snow Load	Up to 30psf(1.4kN/m2)	Warranty	10 years on material



Features

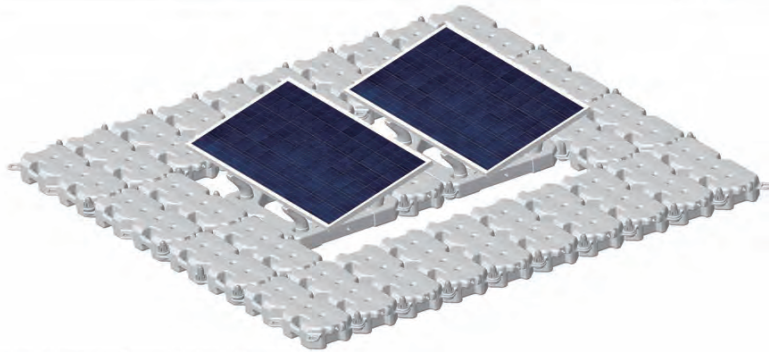
1. Elegant Modern "Bird Flying" Design
2. Large parking space with four cars packing each bay
3. Corrosion-resistant aluminum construction

SFS-G4S Floating Solar Mounting System

Sunforson floating solar mounting system is designed for water photovoltaic power plants, applied for ponds, lakes, reservoirs, etc. It uses bolts, clevis pins and link mounting without any heavy tools to make the installation with high efficiency. Moreover, it is medium in size and can be installed on the shore loading platform or on water.

Floating System Specification

Installation Site	On Water	Applicable module	Framed or Frameless Panel
Material	HDPE	Module orientation	Horizontal
Tilt angle	15	Min water depth	0.5m
Wind load	<60m/s	Average buoyancy	127km/m
Lifespan	>25 years	Warranty	5 Year



The system is made from below items:



Item:main floating body
Size:1133*1133*130
Weight:5.7kg



Item:aisle floating body
Size:1133*521*185
Weight:4.75kg



Item:supporting leg
Size:L1=587,L2=341
Weight:M1=550g,M2=300g



Item: fastener
Size:-
Weight:-

Features

1. Maximize space utilization design;
2. Unique bracket design, easy to install without any heavy equipment;
3. Rigid and peripheral double-row walkway design,which make walking stable and safe on water.

SFS-WW Walkway System

Sunforson walkway system is a good solution in case of sediment, ice, snow,grease, oil and detergent in wet or other risks under the conditions of channels and operational areas for walking. Checkered plate channels are usually used to homework, industrial workshop floor, narrow channel, terrace, warehouses,sidewalks and stair tread, etc.

Walkway Specification

Installation site	Special channels and operational areas for walking
Material	Galvanized carbon steel
Size	1 * 0.5 m, 2*0.5m, customize
Hole shape	Round hole, square etc



Features

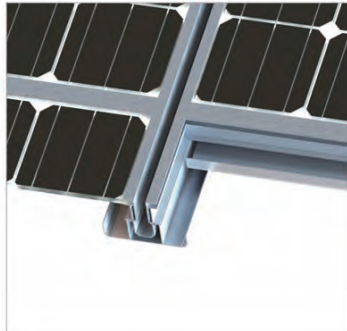
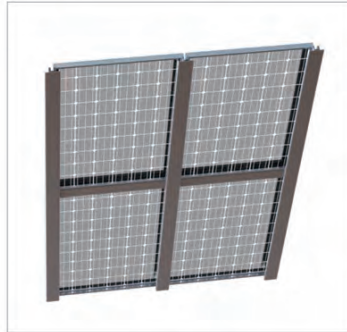
1. Light structure with high bearing capacity, and easy installation.
2. Beautiful appearance, galvanized processing ensures the strong corrosion resistance.
3. Good function of anti-skid, ventilation, avoid accumulation of dirt.

SFS-BIPV-01 Waterproof Mounting Specification

SFS-BIPV-01 is a waterproof bracket with frame photovoltaic panels, which can be used for the waterproof of roof, car shed, sunshine shed and other supports. Excellent waterproofing property

Waterproof Mounting Specification

Installation Site	waterproof of roof,car shed	Ground clearance	Customized
Panels	Solar panel for any size	Inclination	Customized
Structural materials	aluminum,stainless steel	Panel direction	Portrait or Landscape
Survival wind speed	UP to 120MPH(50m/s)	Design Standards	BS 6399-2-1997
Design snow pressure	Up to 30psf(1.4kN/m2)	Warranty	10 years on material



Features

- 1.Bidirectional drainage structure, drainage velocity fast, good waterproof performance.
- 2.High quality and super appearance with full aluminum alloy structure.

Packaging Details

Packaging Details: Wooden Case, Wooden Pallet, Carton for Solar Mounting

Delivery Time:Normally it takes 15~20 days for production



Projects of SunRack Solar Mounting System



1.4MW SFS-GM-01
Concrete Base Mount System(Kazakhstan)



50KW SFS-GM-01B
Ground Cement Mount System(USA)



800KW SFS-FR-02
Ballast Roof Racking(USA)



3.5MW SFS-GM-04
Pile Ground Mount Structure(Japan)



200KW SFS-AM-01
Adjustable Mount Brackets(Mexico)



100KW SFS-FR-01
Fixed Angle Mounting(Xiamen)

Projects of SunRack Solar Mounting System



300KW SFS-PM-06
Pole Mount(South Africa)



500KW SFS-PR-01
Asbestos Roof Mount(Thailand)



500KW SFS-PR-01
Tile Roof Mount(Australia)



300KW SFS-PR-01
Tin Roof Mount(Philippine)



12KW SFS-CP-03 Residential
Carport Mount(USA)



300KW SFS-CP-03 Commercial
Carport Mount(Japan)

Projects of SunRack Solar Mounting System



1MW SFS-PR-01
Tin Roof clamp mount (Thailand)



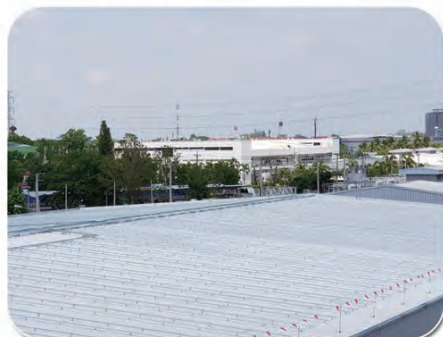
1MW SFS-WW
Walkway mount System (Thailand)



2.5MW SFS-PR-01
Tin roof clamp mount(Thailand)



10MW SFS-UTC-200
Thin Film Clamp Project (USA)



500KW SFS-PR-01
Trapezoid roof mount (Thailand)



600 KW SFS-WW
Walkway mount system (Thailand)

Projects of SunRack Solar Mounting System



2MW SFS-PR-01
Tin roof solar mount (Vietnam)



4 MW SFS-PR-01
Tin Roof Clamp Racking (Vietnam)



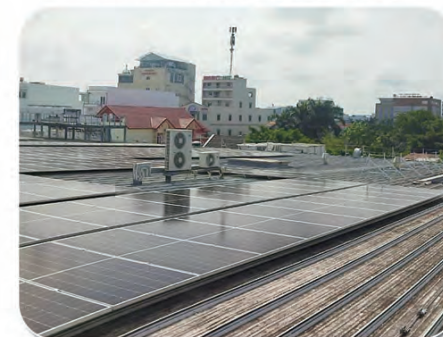
250kw SFS-GM-02B
Ground Screw Mount System (Australia)



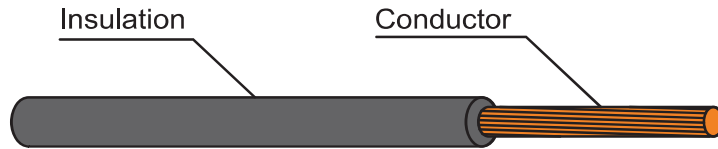
500KW SFS-CP-03
Commercial Carport mount (Chile)



900KW SFS-PR-01
Tin roof solar mount (Vietnam)



900KW SFS-PR-01
Tin roof solar mount (Vietnam)

**CABLE STRUCTURE**

Conductor : Solid and stranded annealed copper wire
: Sizes 1.5 mm² up to 400 mm²

Insulation : Polyvinyl chloride (PVC/C)

Core identification : Single-cores : Any color

TECHNICAL DATA

Classification : Maximum conductor temperature 70 °C
: Circuit voltage not exceeding 450/750 Volts

Rated voltage : 450 Volts between Line to Earth
: 750 Volts between Line to Line

Testing voltage : 2,500 Volts

Reference standard : TIS 11 Part 3-2553, Table 1

APPLICATION

Building wiring for installation on insulator or in raceway dry location.

Nominal cross sectional area (mm ²)	Conductor type	Insulation thickness nominal (mm)	Overall diameter		Conductor resistance at 20°C maximum (Ω/km)	Insulation resistance at 70°C minimum (MΩ-km)	Continuous current rating in free air maximum (40 °C) (A)	Cable weight approx. (kg/km)	Standard Length (m)
			Minimum (mm)	Maximum (mm)					
1.5	Solid	0.7	2.6	3.2	12.1	0.011	21	21	100/C
1.5	Stranded	0.7	2.7	3.3	12.1	0.010	21	22	100/C
2.5	Solid	0.8	3.2	3.9	7.41	0.010	28	32	100/C
2.5	Stranded	0.8	3.3	4.0	7.41	0.009	28	35	100/C
4	Solid	0.8	3.6	4.4	4.61	0.0085	37	47	100/C
4	Stranded	0.8	3.8	4.6	4.61	0.0077	37	50	100/C
6	Solid	0.8	4.1	5.0	3.08	0.0070	49	65	100/C
10	Solid	1.0	5.3	6.4	1.83	0.0070	68	110	100/C
300	Stranded	2.4	24.5	29.6	0.0601	0.0030	628	3,100	500/D
400	Stranded	2.6	27.5	33.2	0.0470	0.0028	736	3,900	500/D

C : Packing in Coil

D : Packing in Drum

**CABLE STRUCTURE**

Conductor : Solid and stranded annealed copper wire
: Sizes 1.5 mm² up to 400 mm²

Insulation : Polyvinyl chloride (PVC/C)

Core identification : Single-cores : Any color

TECHNICAL DATA

Classification : Maximum conductor temperature 70 °C
: Circuit voltage not exceeding 450/750 Volts

Rated voltage : 450 Volts between Line to Earth
: 750 Volts between Line to Line

Testing voltage : 2,500 Volts

Reference standard : TIS 11 Part 3-2553, Table 1

APPLICATION

Building wiring for installation on insulator or in raceway dry location.

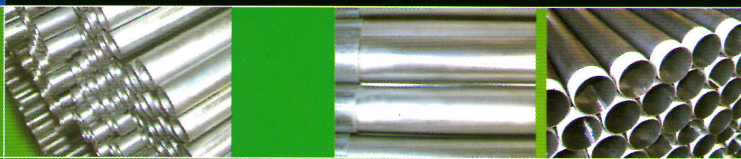
B

Nominal cross sectional area (mm ²)	Conductor type	A.C.Resistance	Inductance	Reactance	Impedance
		R (Ω/km)	L (mH/km)	XL (Ω/km)	Z (Ω/km)
1.5	Solid	14.4777	0.5259	0.1652	14.4786
1.5	Stranded	14.4777	0.5276	0.1657	14.4786
2.5	Solid	8.8661	0.5121	0.1609	8.8675
2.5	Stranded	8.8661	0.5202	0.1634	8.8676
4	Solid	5.5159	0.4917	0.1545	5.5180
4	Stranded	5.5159	0.4929	0.1548	5.5181
6	Solid	3.6852	0.4742	0.1490	3.6883
10	Solid	2.1896	0.4694	0.1475	2.1946
300	Stranded	0.0734	0.4177	0.1312	0.1503
400	Stranded	0.0581	0.4160	0.1307	0.1430

ท่อร้อยสายไฟ

S.K.P.[®]

ZINC-COATED STEEL CONDUITS FOR ELECTRICAL WIRING



THE BEST OF QUALITY
WHITE CONDUIT



ท่อเหล็กร้อยสายไฟฟ้า **S.K.P.** ผนังท่อนาง ปลาย
ทั้ง 2 ข้างเรียบ มีชื่อย่อว่า **EMT (Electrical Metallic
Tubing)** ตามมาตรฐานอเมริกา ANSI C80.3 และ UL 797
มีรายละเอียดดังนี้

เกณฑ์ความคลาดเคลื่อน (TOLERANCE)

เส้นผ่านศูนย์กลางภายนอก (Outside Diameter)

± 0.2 mm. (0.008 inch)

ความยาวท่อ (Length)

± 6.0 mm. (0.24 inch)

ความหนาผนังท่อ (Wall Thickness)

± 12%

ขนาด (นิ้ว) Trade Size (inch)	เส้นผ่านศูนย์กลาง				ความหนาผนังท่อ Wall Thickness		มวลต่ำสุดที่ยอมรับได้ Min Acceptable Weight		ความยาว Length	
	ภายนอก Outside Diameter		ภายใน Inside Diameter		นิ้ว (inch)	มม. (mm.)	ปอนด์ / ฟุต (lbs. / ft.)	กก. / ม. (kg. / m.)	ฟุต (ft.)	มม. (mm.)
	นิ้ว / inch	มม. / mm.	นิ้ว / inch	มม. / mm.						
1/2	0.706	17.9	0.664	16.86	0.042	1.07	0.284	0.423	10	3,050
3/4	0.922	23.4	0.873	22.17	0.049	1.24	0.434	0.646	10	3,050
1	1.163	29.5	1.106	28.92	0.057	1.45	0.639	0.951	10	3,050
1 1/4	1.510	38.4	1.445	36.70	0.065	1.65	0.950	1.413	10	3,050
1 1/2	1.740	44.2	1.675	42.55	0.065	1.65	1.10	1.636	10	3,050
2	2.197	55.8	2.132	54.15	0.065	1.65	1.40	2.082	10	3,050

*หมายเหตุ : 1) เกณฑ์ความคลาดเคลื่อนของเส้นผ่านศูนย์กลางภายนอกข้อต่อเกลียวเมื่อคิดเป็นมิลลิเมตร ให้ใช้ทศนิยม 1 ตำแหน่ง
2) เกณฑ์ความคลาดเคลื่อนของความหนาผนังท่อเมื่อคิดเป็นมิลลิเมตร ให้ใช้ทศนิยม 2 ตำแหน่ง



ท่อเหล็กร้อยสายไฟฟ้า **S.K.P.** ผนังท่อนาง
ปานกลาง ปลายทั้ง 2 ข้างมีเกลียว มีชื่อย่อว่า **IMC
(Intermediate Metal Conduit)** ตามมาตรฐาน
อเมริกา UL 1242 มีรายละเอียดดังนี้

เกณฑ์ความคลาดเคลื่อน (TOLERANCE)

เส้นผ่านศูนย์กลางภายนอก (Outside Diameter)

± 0.2 mm. ท่อขนาด 1/2 นิ้ว ถึง 1 นิ้ว

(For Dia 1/2" - 1")

± 0.2 mm. ท่อขนาด 1 1/4 นิ้ว ถึง 2 นิ้ว

(For Dia 1 1/4" - 2")

± 0.3 mm. ท่อขนาด 2 1/2 นิ้ว ถึง 4 นิ้ว

(For Dia 2 1/2" - 4")

ความยาวท่อไม่รวมข้อต่อ (Length Without Coupling)

± 6.0 mm.

ความหนาผนังท่อ (Wall Thickness)

± 0.4 mm. ท่อขนาด 1/2 นิ้ว ถึง 1 นิ้ว

(For Dia 1/2" - 1")

± 0.5 mm. ท่อขนาด 1 1/4 นิ้ว ถึง 4 นิ้ว

(For Dia 1 1/4" - 4")

ขนาด (นิ้ว) Trade Size (inch)	เส้นผ่านศูนย์กลาง ภายนอก Outside Diameter มม. / mm.	ความหนาผนังท่อ Wall Thickness มม. / mm.	ความยาวท่อไม่รวมข้อต่อ Length Without Coupling มม. / mm.	มวลต่ำสุดของท่อ รวมข้อต่อ 10 ท่อน Minimum Weight of Ten Unit Lengths With Coupling กก. / kg.
1/2	20.7	1.79	3,030	25.4
3/4	26.1	1.90	3,030	34.6
1	32.8	2.16	3,025	49.9
1 1/4	41.6	2.16	3,025	64.3
1 1/2	47.8	2.29	3,025	79.1
2	59.9	2.41	3,025	105.2
2 1/2	72.6	3.56	3,010	186.2
3	88.3	3.56	3,010	229.0
3 1/2	100.9	3.56	3,005	263.0
4	113.4	3.56	3,005	296.1

CONDUIT "THE BEST OF QUALITY"



ท่อเหล็กร้อยสายไฟฟ้า **S.K.P.** ผนังท่อหนา ปลายทั้ง 2 ข้างมีเกลียว มีชื่อย่อว่า **RSC (Regid Steel Conduit)** ตามมาตรฐานอเมริกา ANSI C80.1 มีรายละเอียดดังนี้

เกณฑ์ความคลาดเคลื่อน (TOLERANCE)

เส้นผ่านศูนย์กลางภายนอก (Outside Diameter)

± 0.4 mm. สำหรับท่อขนาด 1/2 นิ้ว ถึง 2 นิ้ว
(For Dia 1/2" - 2")

± 0.6 mm. สำหรับท่อขนาด 2 1/2 นิ้ว ถึง 4 นิ้ว
(For Dia 2 1/2" - 4")

± 1.5 mm. สำหรับท่อขนาด 5 นิ้ว ถึง 6 นิ้ว
(For Dia 5" - 6")

ความยาวท่อไม่รวมข้อต่อ (Length Without Coupling)

± 6.0 mm.

ความหนาผนังท่อ (Wall Thickness)

± 12.5 %

ขนาด (นิ้ว) Trade Size (inch)	เส้นผ่านศูนย์กลาง		ความหนาผนังท่อ Wall Thickness มม. / mm.	ความยาวท่อไม่รวมข้อต่อ Length without Coupling มม. / mm.	มวลต่ำสุดของท่อ รวมข้อต่อ 10 ท่อน Minimum Weight of Ten Unit Lengths with Coupling กก. / kg.
	ภายใน Inside Diameter มม. / mm.	ภายนอก Outside Diameter มม. / mm.			
1/2	16.1	21.3	2.64	3,030	35.8
3/4	21.2	26.7	2.72	3,030	47.6
1	27.0	33.4	3.20	3,025	69.4
1 1/4	35.4	42.2	3.38	3,025	91.1
1 1/2	41.2	48.3	3.51	3,025	113.0
2	52.9	60.3	3.71	3,025	151.0
2 1/2	63.2	73.0	4.90	3,010	239.0
3	78.5	88.9	5.21	3,010	310.0
3 1/2	90.7	101.6	5.46	3,005	373.0
4	102.9	114.3	5.72	3,005	441.0
5	128.9	141.3	6.22	3,000	596.0
6	154.8	168.0	6.76	3,000	792.0

*หมายเหตุ : 1) เกณฑ์ความคลาดเคลื่อนของเส้นผ่านศูนย์กลางภายนอกข้อต่อเกลียวเมื่อคิดเป็นมิลลิเมตร ให้ใช้ทศนิยม 1 ตำแหน่ง
2) เกณฑ์ความคลาดเคลื่อนของความหนาผนังท่อเมื่อคิดเป็นมิลลิเมตร ให้ใช้ทศนิยม 2 ตำแหน่ง

มิติของเกลียว Dimension

มิติของเกลียวท่อร้อยสายไฟฟ้า **S.K.P.** ประเภทที่ 2 และประเภทที่ 3 (Dimension of Conduit Thread TYPE 2, 3)

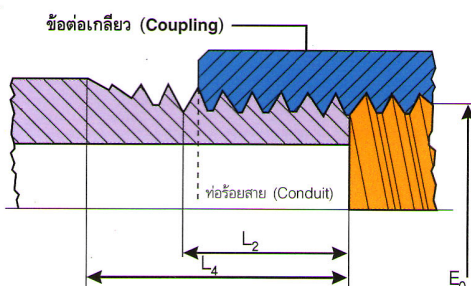
เกณฑ์ความคลาดเคลื่อน (TOLERANCE)

เส้นผ่านศูนย์กลางเกลียว Eo (Pitch Diameter)

± 1 รอบ ของเกลียวที่ใช้ตรวจสอบ

ความยาวเกลียว L4

± 1 เกลียว



ขนาด (นิ้ว) Trade Size (inch)	จำนวนเกลียวต่อนิ้ว Thread Per inches รอบ / cycle	เส้นผ่านศูนย์กลางเกลียวของเกลียว ที่ปลายเกลียวท่อ Eo Pitch Diameter Eo, at End of Thread มม. / mm.	ความยาวของเกลียว Length of thread	
			ประสิทธิภาพ (ใช้งาน) L2 Effective L2 มม. / mm.	ทั้งหมด L4 Overall L4 มม. / mm.
1/2	14	19.3	13.5	19.8
3/4	14	24.6	14.0	20.1
1	11 1/2	30.8	17.3	24.9
1 1/4	11 1/2	39.5	18.0	25.7
1 1/2	11 1/2	45.6	18.3	26.2
2	11 1/2	57.6	19.3	26.9
2 1/2	8	69.1	29.0	39.9
3	8	84.9	30.5	41.4
3 1/2	8	97.5	31.8	42.7
4	8	110.1	33.0	43.9
5	8	136.9	35.8	46.7
6	8	163.7	38.4	49.5



S.K.P.[®] WHITE CONDUIT

ตารางการติดตั้งสายและท่อ (Wire & Conduit Tables)

ขนาดสายไฟ (มม. ²) Cable Type SIZE (mm. ²)	ประเภทสายไฟ THW				จำนวนสายไฟสูงสุดที่บรรจุในท่อร้อยสาย MAXIMUM NUMBER OF THW WIRE IN TRADE SIZE OF CONDUIT OR TUBING											
	ขนาดกระแสในสายไฟ Ambient temp 40°C Max conductor temp 75°C (Amps)				1/2	3/4	1	1¼	1½	2	2½	3	3½	4	5	6
	ใน อากาศ in free air	ร้อยในท่อและราง Inconduit or raceway														
		จำนวนสาย 1-3 (เส้น) Conductor	จำนวนสาย 4-6 (เส้น) Conductor	จำนวนสาย 7-24 (เส้น) Conductor												
					นิ้ว (inch)	นิ้ว (inch)	นิ้ว (inch)	นิ้ว (inch)	นิ้ว (inch)	นิ้ว (inch)	นิ้ว (inch)	นิ้ว (inch)	นิ้ว (inch)	นิ้ว (inch)	นิ้ว (inch)	นิ้ว (inch)
0.5	7	4	3	2	7	13	22	38	52	87						
1	10	6	4	4	6	11	18	31	43	71						
1.5	13	8	6	5	5	9	15	26	35	59						
2.5	19	15	12	10	4	7	12	21	28	47						
4	27	21	16	14	3	5	9	15	21	35	50					
6	41	30	24	21	2	3	6	10	14	24	34	53				
10	66	45	36	31	1	2	3	6	9	14	21	32	43	56		
16	94	63	50	44	1	1	2	5	6	11	16	24	33	42	67	
25	122	84	67	58	-	1	2	3	4	7	10	16	22	28	45	65
35	152	104	83	72	-	-	1	2	3	5	8	13	17	22	35	50
50	194	129	103	90			1	1	2	4	6	9	12	15	24	36
70	241	159	127	111				1	2	3	4	7	9	12	19	28
95	295	190	152	133				1	1	2	3	5	7	9	14	20
120	304	220	176	154					1	2	2	4	6	7	12	17
150	356	228	182	159					1	1	2	3	4	6	9	14
185	421	256	204	179						1	1	3	4	5	8	11
240	486	296	236	207						1	1	2	3	4	6	9
300	552	336	268	235							1	1	2	3	5	7
400	652	392	313	274							1	1	2	2	4	5
500	748	436	348	305								1	1	2	3	4

Based on 30 % conductor filled

ใบราคา / PRICE LIST

ท่อร้อยสายไฟฟ้า S.K.P.[®] (WHITE CONDUIT ELECTRICAL STEEL CONDUITS)

SIZE	EMT	IMC	RSC	SIZE	EMT	IMC	RSC
1/2"	101	214	342	2 1/2"	-	1,294	3,187
3/4"	145	283	436	3"	-	1,603	4,100
1"	206	382	641	3 1/2"	-	1,842	5,630
1 1/4"	360	493	828	4"	-	2,115	6,035
1 1/2"	419	606	985	5"	-	-	8,682
2"	520	828	1,317	6"	-	-	10,391

DISTRIBUTOR :

