willone ™

Roof Attachments|PV Accessories|Tools

Company Profile

Hunan willone new energy co., Ltd is located in the industrial town zhuzhou, the company since its inception, has focused on solar power systems and related product sales, product covers the entire photovoltaic systems and photovoltaic system components, etc., the company with the advantages in the factory and experienced team , as well as the manager's good brand awareness, product is unanimously recognized in the industry, and are exported to overseas. Company's products have TUV, CE etc certifications, and several large solar EPC enterprises established long-term relations of cooperation.

One adhering to the quality first, service first, the idea of gratitude first, in the future we will continue to work hard, for the new energy enterprise.
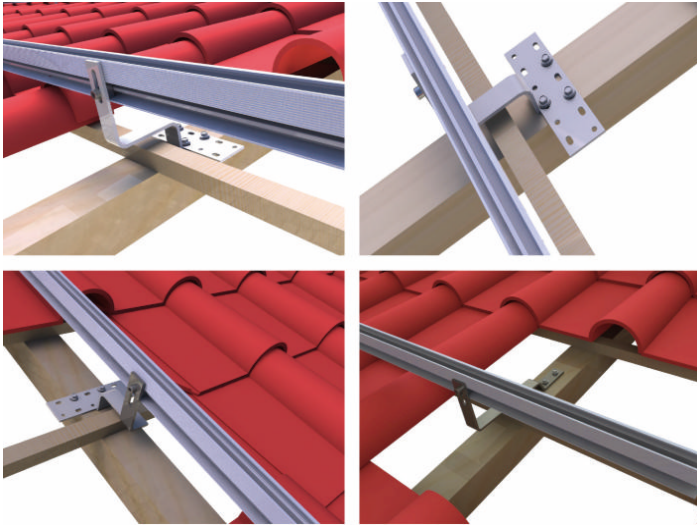
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Product Contents

Tile Roof Hook

Tile Roof Hook are suitable for almost any tile roofs. Solever's complete product range of tile interface bracket provide for fast and sample fixing to purlins or rafters, without affecting the integrity or function of the tiles themselves. Tile Roof Brackets are available for traditional profile tiles and flat tiles.

Technical Features
Standard: AS/NZS1170,Euro Code 8,DIN 1055,IBC 2006
Material: Stainless Steel SUS304
Snow Load:1.4 KN/m
Max Wide Speed:55 m/s

WL-TRH-R01	WL-TRH-R02	WL-TRH-R03	WL-TRH-R04	WL-TRH-RB4
WL-TRH-RAA	WL-TRH-S01	WL-TRH-S02	WL-TRH-F01	WL-TRH-F02

PART NO.	DESCRIPTION	WEATHER CONDITION	DIMENSION(mm)		
			a	b	c
WL-TRH-R01	Roman Tile Roof Hook R01	Normal	166	180	50
WL-TRH-R02	Roman Tile Roof Hook R02	Normal	156-168	180	50
WL-TRH-R03	Roman Tile Roof Hook R03	Normal	166	115	180
WL-TRH-R04	Roman Tile Roof Hook R04	Normal	128	180	50
WL-TRH-RB4	Roman Tile Roof Hook RB4	Normal	130-160	180	50
WL-TRH-RAA	Roman Tile Roof Hook RAA	Normal	156-168	140	54
WL-TRH-S01	Slate Tile Roof Hook S01	Normal	30	120	200
WL-TRH-S02	Slate Tile Roof Hook S02	Normal	84	74	200
WL-TRH-F01	Flat Roof Hook F01	Normal	120	195	80
WL-TRH-F02	Flat Roof Hook F02	Normal	126	250	30

Asphalt Shingle Flashing Hook-Standoff
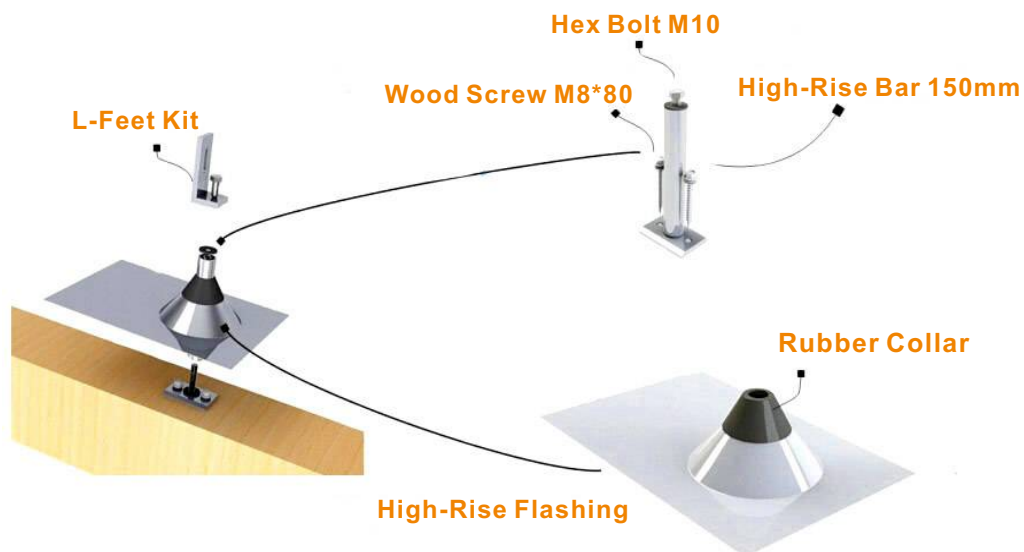
Features & Benefit

- All-in-one waterproof flashing and mount to anchor PV racking
- Fit with in most composition and wood shingle roof systems
- Non-fading sealing collar
- Not for hot-mopped or built-up roofs
- Do not use paint or petroleum based products on rubber collars.

Part No.	Description	Flashing Size
WL-TRH--FF1	Asphalt Shingle Flashing Hook #1	305 x 305 x1mm
WL-TRH--FF2	Asphalt Shingle Flashing Hook #2	305 x 205 x1 mm

Wood Screw M8*80   **L-Feet Kit**

Round Rubber Pad   **Flashing Plate**

WL-TRH-150	High-rise Bar, Height 150mm - Height can be customized
WL-TRH	High-rise Flashing, 305 x 205 x 1mm
WL-TRH--L11	L-Feet Kit OD 11mm

Hex Bolt M10

Wood Screw M8*80   **High-Rise Bar 150mm**

L-Feet Kit

Rubber Collar

High-Rise Flashing

Metal Roof Bracket

Metal Roof Bracket are suitable for almost any flat roofs. They provide a simple and cost-effective solution for mounting PV panels. Solever's wide range of metal roof brackets provide for fast and secure fixing to metal sheet, purlins or rafters and for different roofing types at angles from 10 to 60 deg.
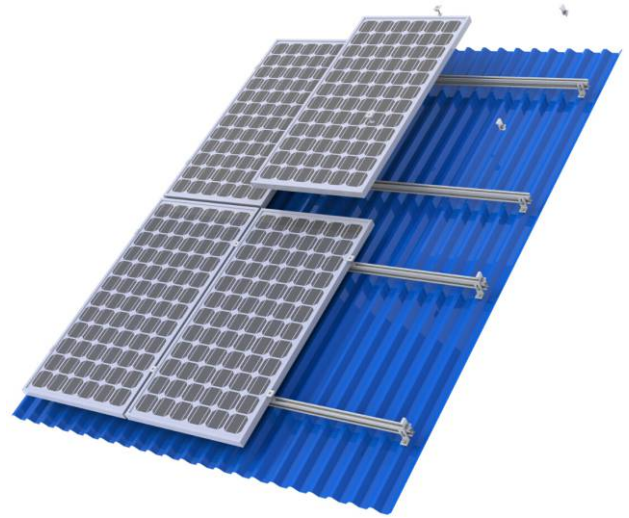
Technical Features
Standard: AS/NZS1170,Euro Code 8,DIN 1055,IBC 2006
Material: AL6005-T5 and SUS304
Snow Load:1.4 KN/m
Max Wide Speed:55 m/s

WL-MRB-T01	WL-MRB-T02	WL-MRB-T03	WL-MRB-T04	WL-MRB-T05

WL-MRB-V03	WL-MRB-V04	EZ-MRB-V07	EZ-MRB-V406	EZ-MRB-V700

PART.NO	DESCRIPTION	ROOF TYPE
EZ-MRB-T01	Tin Interface L-Feet	Trapezoid or Wavy Metal Roof
EZ-MRB-T02	Hanger Bolt with L-Feet T02	Wavy Roof
EZ-MRB-T03	Trapezoid Metal Roof Bracket T03	Trapezoid Metal Roof
EZ-MRB--T04	Trapezoid Metal Roof Bracket T04	Trapezoid Metal Roof
EZ-MRB--T05	Trapezoid Metal Roof Bracket T05	Trapezoid Metal Roof
EZ-MRB--V03	Standing Seam Roof Bracket V03	Standing Seam Roof
EZ-MRB--V04	KalZip-Bemo Roof Bracket V04	KalZip-Bemo Roof
EZ-MRB--V07	Klip-Lok Interface	Klip-Lok Roof
EZ-MRB--V406	Klip-Lok 406 Interface	Klip-Lok Roof 406
EZ-MRB--V700	Klip-Lok 700 Interface	Klip-Lok Roof 700

Solar Panel Aluminum Z Bracket

Features & Benefits

- Made of aluminum with stainless steel screws.
- Commonly used for mounting solar modules on boats, caravan, Motorhome and RV.
- Maintenance Free & Easy Installation.
- Compatible with solar modules.
- 4 pcs(1 kit) of Z feet mounts for small square modules up to 85 watts; 6 pcs (2 sets) of Z feet mounts for large rectangular shaped solar panels.
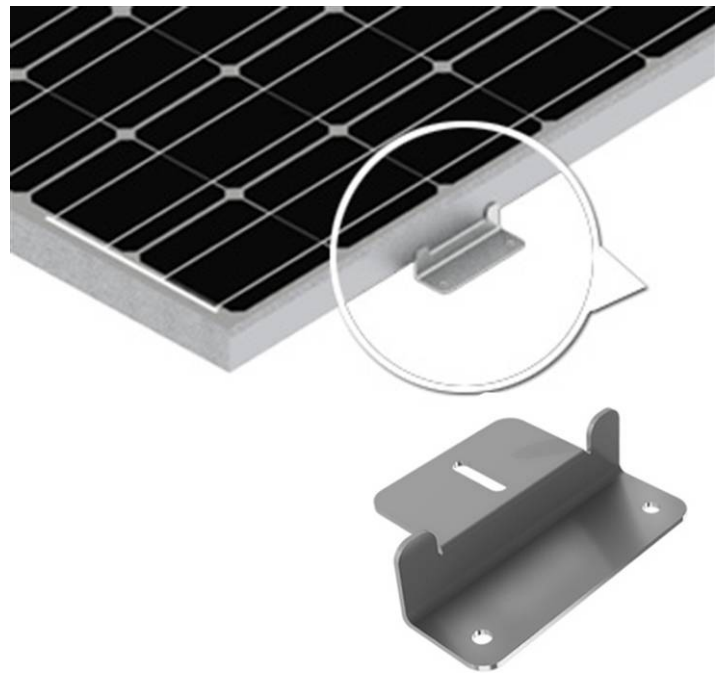
Solar Panel Aluminum Z Bracket is a ideal choice for flat mounted off grid PV systems on flat or curved roofs. The Z Bracket can be commonly used for mounting solar modules on flat or curved roofs, RV, caravan, yacht, motorhome etc.

1 Kit includes:

- 4 pcs Aluminum Z mounts
- 4 pcs hexagon head bolt M6x20
- 4 pcs SS304 A2-70 nuts M6
- 4 pcs SS304 lock washer D6
- 4 pcs SS304 washer D6
- 8 pcs SS304 self-tapping screw ST5.5x38

WL-AZB-01

WL-AZB-02

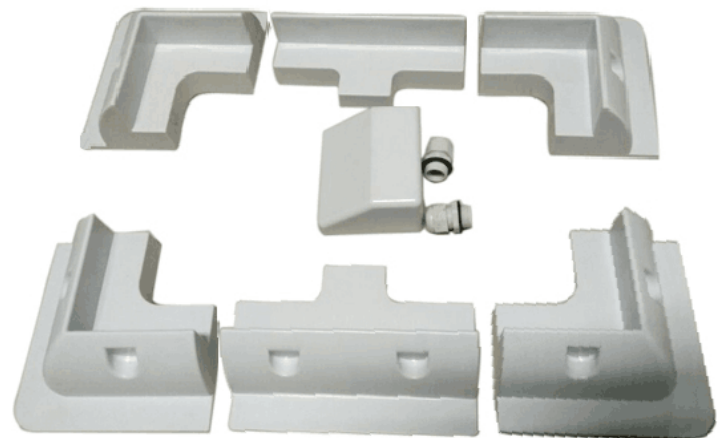| PART.NO	DESCRIPTION	DIMENSION	GROSS WIGHT	PACKAGE	CARTON SIZE
WL-AZB-01	Aluminum Z Bracket #01	65mm*100mm*42mm	0.25KGS/KIT	100KITS/CTN	54mm*20mm*20mm
WL-AZB-02	Aluminium Z Bracket #02	64mm*50mm*31mm	0.12KGS/KIT	200KITS/CTN	54mm*20mm*20mm

Solar Panel ABS Corner Mount

Solar Panel ABS Corner Mount support the solar panel at the optimum height above the surface to enable aeration from underneath removing the need to drill holes, ensuring the solar panel functions as efficiently as possible. The mounts also act as a wind deflector and maintain the correct air gap between the solar panel and the roof top / deck.

Application: Caravan,Motorhome,RV,Boat etc.

Features & Benefits

- Multi-use. Made of ABS plastic, UV resistant and environment friendly.
- Safely bonded to the surface regardless to drill holes using Sikaflex-252.
- Protect corners of solar panel from damage.
- Mounts also act as a wind deflector and maintain the correct air gap between the solar panel and the roof top / deck.
- A variety of options on color and cost.

PART.NO	DESCRIPTION	DIMENSION	G.W KGS/KIT	PACKAGE KITS/CTN	CARTON SIZE
WL-ABS-CM-B	Solar Panel Corner Mount,4PCS/KIT,Black	L150mm*W150mm*H62mm	1.00	10	58cm*38cm*39cm
WL-ABS-CM-W	Solar Panel Corner Mount,4PCS/KIT,White	L150mm*W150mm*H62mm	1.00	10	58cm*38cm*39cm
WL-ABS-SM-B	Solar Panel Side Mount,2PCS/KIT,Black	L180mm*W118mm*H60mm	0.50	20	41cm*41cm*45cm
WL-ABS-SM-W	Solar Panel Side Mount,2PCS/KIT,White	L180mm*W118mm*H60mm	0.50	20	41cm*41cm*45cm
WL-ABS-CB-B	Cable Entry Box,1PCS/KIT,Black	L100mm*W90mm*H50mm	0.22	84	41cm*41cm*45cm
WL-ABS-CB-W	Cable Entry Box,1PCS/KIT,White	L100mm*W90mm*H50mm	0.22	84	41cm*41cm*45cm
WL-ABS-5PK	Solar Panel 5PCS KIT - 4CM + 1CB	N/A	1.22	N/A	58cm*38cm*39cm
WL-ABS-7PK	Solar Panel 7PCS KIT - 4CM + 2SM + 1CB	N/A	1.72	N/A	58cm*38cm*39cm

Steps of Installation

1.Praparing vehicle surface for solar panel.

2.Attaching ABS corner mounts to solar panel.

3.Using sika for solar panels.

4.Place solar panels to the roof of caravan.
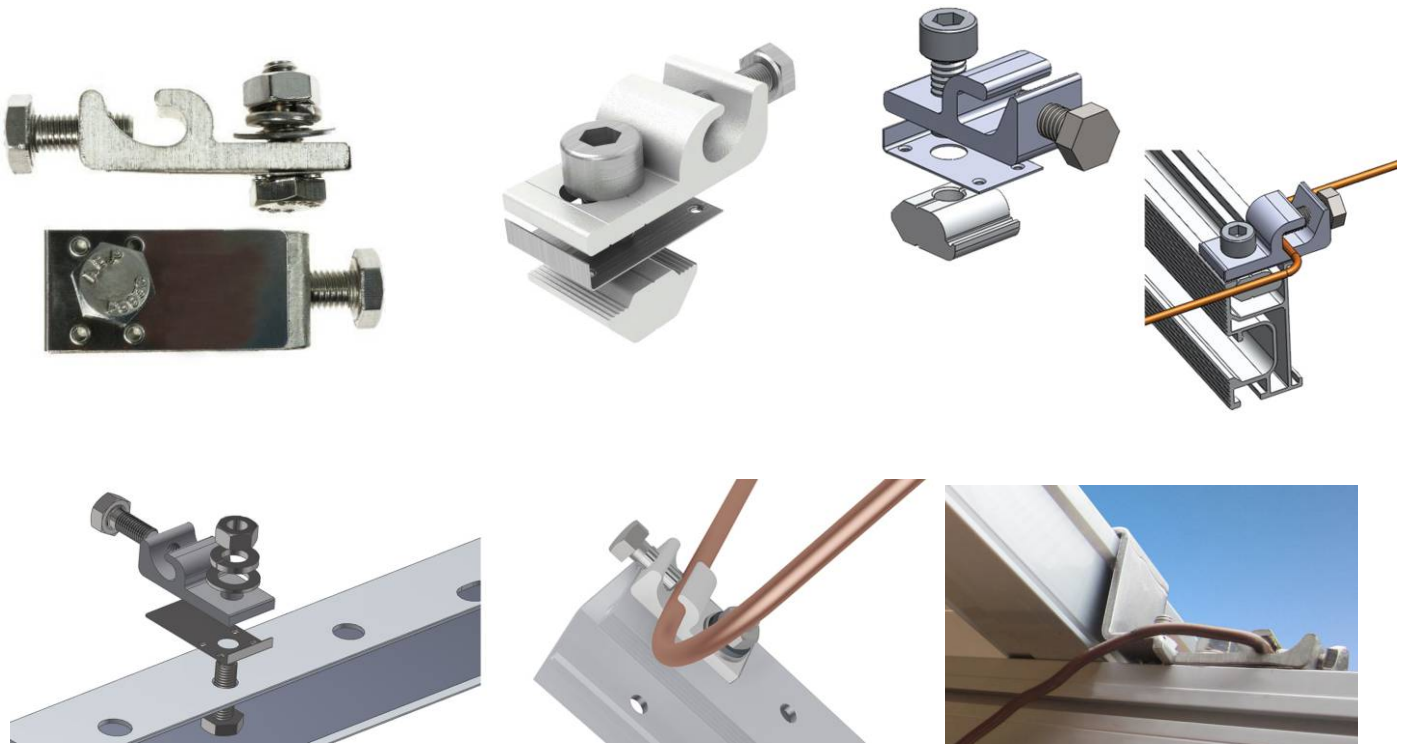
5. Front of view.

6.Side of view.

Grounding Lug

Features & Benefits

- Made of corrosion-resistant tin-plated copper or nickel- plated aluminum.
- Design ensures a quick and easy installation.
- Multiple equipment ground conductor allowance.
- Available:
  - With or without conductive plate.
  - Assembled and unassembled.
  - With or without installation hardware.
- Meet standard of ANSI/UL 467 and CSA certification.
- Custom designs available upon request.

Grounding Lug is a grounding component for solar modules and solar racking systems allowing easy termination to the ground wire. The low profile of the grounding lug allows it to be installed in a variety of positions with one solid or stranded copper wire (14AWG to 6 AWG), or two copper wires (12 AWG to 10 AWG).
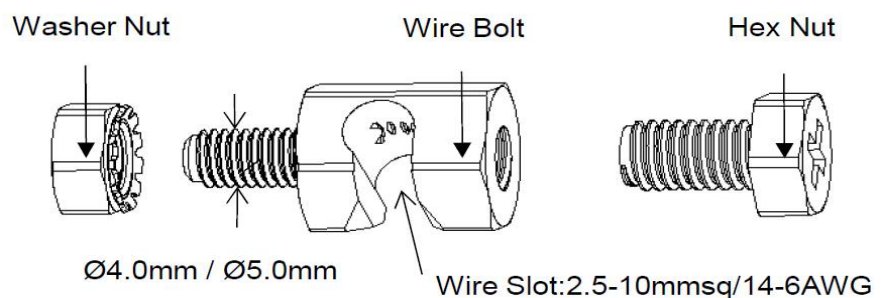
It is installed using stainless steel mounting hardware. When the hardware is tightened, the conductive plate specialized teeth embed into anodized aluminum or any electrically conductive metal to establish a gas tight electrical connection.

PART. NO	LENGTH mm[In.]	WIDTH mm[In.]	HEIGHT mm[In.]	HOLE SIZE mm[In.]	MOUNTING HARDWARE
WL-LUG-01	40.00[1.575]	18.00[0.709]	6.76[0.266]	M8+M6	M8x25+M6x20
WL-LUG-02	40.00[1.575]	18.00[0.709]	6.76[0.266]	M8+M6	M8x25+M6x20
WL-LUG-03	40.00[1.575]	20.00[0.787]	8.20[0.323]	M8+M8	M8x25+M8x20

Grounding Connector

Grounding Connector shortens the installation time of a ground wire to a solar panel frame. The threaded connector inserts through a hole in the frame and uses two hex nuts to help provide a reliable connection. The connector handles 6 and 8AWG (13.3 and 8.4mm^2) solid, uninsulated copper wire. In connecting to the frame, the connector body and the one-piece lock washer nut penetrates the surface of the aluminum frame helping to create a reliable ground path.Spring loaded grounding connector feature copper braid between brass jaw pads for optimum conductivity. Strong spring pressure, available in different amperages.

Washer Nut   Wire Bolt   Hex Nut

Ø4.0mm / Ø5.0mm
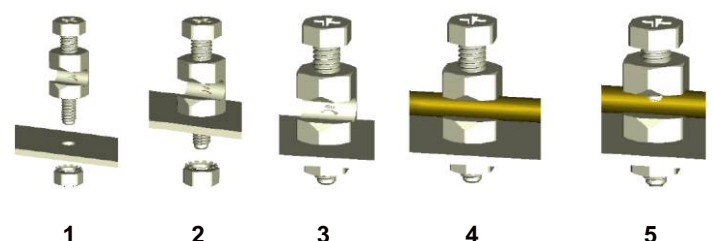
Wire Slot:2.5-10mmsq/14-6AWG

Technical Parameters

- Material: Tin-plated Copper
- Color: Silver
- Frame Thickness Range:0.8-4.5mm
- Mounting hole diameter: Ø4.0mm / Ø5.0mm
- Ambient temperature: -40°C …+90°C
- Cable size(mmsq/AWG):2.5/4/6/10 & 14/12/10/8/6
- Used voltage:600-1500V

Features & Benefits

- Quick and easy mounting procedures.
- Rugged and compact hex bolt design made from stainless steel.
- Bottom edge feature cuts through the anodized aluminum surface when securing the hex bolt to the module frame.
- Standard tooling can be used with the hex nuts.
- Product appearance concise.
- Small, flexible and fitted various place assemble.
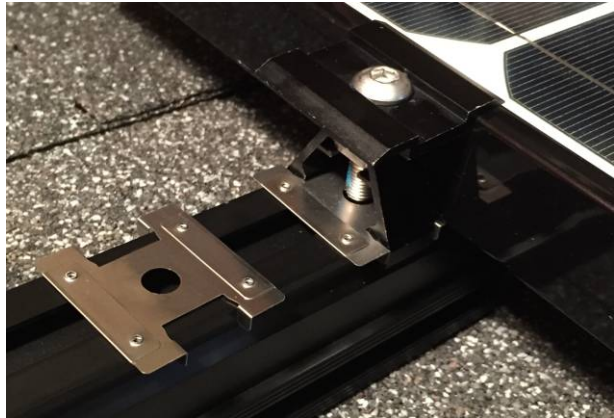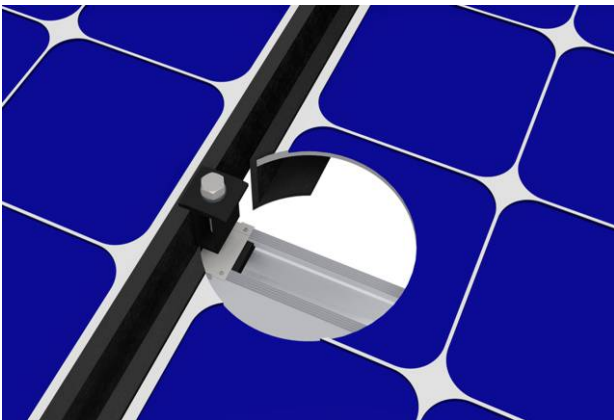- Twenty-five years warranty.

Installation Instruction

1   2   3   4   5

Grounding Clip

Grounding Clip has its smart and a variety of designs who is inserted between module frame and mounting rail, the teeth of ground clip pierce the anodized coating well. The result is excellent conductivity without oxidation, which makes the module and rail become one singular piece of metal, creating an electrical path the ground.

Features & Benefits

- Made of corrosion-resistant 304 stainless steel construction.
- Various solutions for rail and clamp of roof, ground and carport applications etc.
- Meet standard of ANSI/UL467, UL 2703 and CSA certification.
- Detailed instruction manual specifying proper hardware, torque and mounting details.
- Customized sizes and configurations are available upon request.

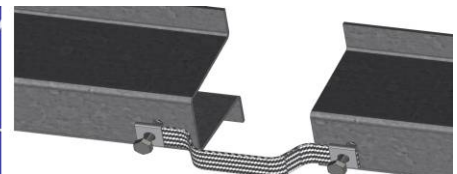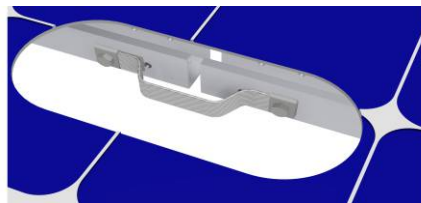| PART. NO	LENGTH mm[In.]	WIDTH mm[In.]	HEIGHT INCLUDES TABS IF ANY	HOLE SIZE mm[In.]	TYPE
WL-CLP-01	32.00[1.260]	30.12[1.186]	6.50[0.256]	N/A	CLIP ON
WL-CLP-02	32.00[1.260]	30.12[1.186]	6.50[0.256]	8.50[0.335]	CLIP ON
WL-CLP-03	50.00[1.969]	40.00[1.575]	3.30[0.130]	N/A	RIGID
WL-CLP-04	50.00[1.969]	28.00[1.102]	3.30[0.130]	N/A	RIGID
WL-CLP-05	30.00[1.181]	51.80[2.039]	10.80[0.425]	N/A	RIGID
WL-CLP-06	30.00[1.181]	51.80[2.039]	10.80[0.425]	N/A	RIGID

Bonding Jumper

Features & Benefits

- Corrosion resistant, tin plated, braided copper braid.
- Meet standard of ANSI/UL 467 and CSA certification.
- Available:
  - With or without conductive and back-up plate.
  - Assembled and unassembled
  - With or without installation hardware
- In-stock standard lengths from 150mm to 200mm (custom lengths available upon request).
- Custom designs available upon request.

Constructed of corrosion resistant, tin-plated, braid copper,**bonding jumpers** are high quality solutions for your solar PV system.

Bonding Jumper is used to create an electrical connection between two pieces of anodized aluminum or galvanized steel. This maintains electrical continuity over long spans or air gaps between metal structures. Bonding Jumpers are available with conductive and back-up plate, which provide a reliable, gas tight electrical connection, and the braided copper wire allows for thermal expansion.

CROSS-SECTION mm²[In²]	DIMENSIONS	
	W mm[In.]	L mm[In.]
6[0.009]	10.00[0.394]	
8[0.012]	12.00[0.472]	
10[0.015]	14.00[0.551]	Customized Length Upon Request
14[0.022]	18.00[0.709]	
16[0.025]	20.00[0.787]	

Wire Management

Solar Cable Clips are smart designs for fixing cables on solar panels shall not lay on roofs or floors with clips, which simplify wire management and create a cleaner aesthetic to solar PV arrays. cable clips are made of stainless steel SUS304, which makes them durable, long lasting and reliable solution for all environments. The design is easy to install and can be reused. cable clips can be used in wide variety of mounting configurations for module and rail applications. Customs designs and package available upon request for OEM.
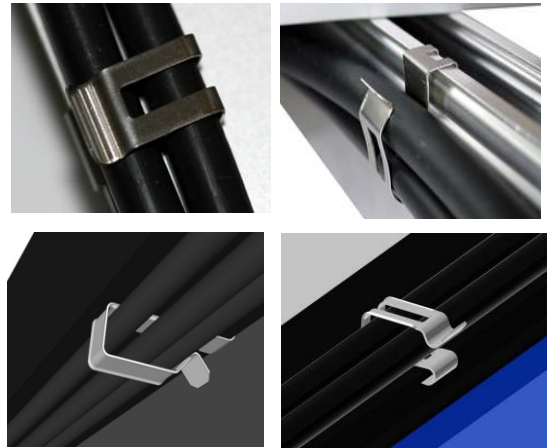
| WL-SCC-01/2 | WL-SCC-01/4 | WL-SCC-02/2 | WL-SCC-02/4 | WL-SCC-03/2 | WL-SCC-04/2 |

- Made with corrosion resistant 304 stainless steel or spring grade stainless steel.
- Dual or four wire compartments.
- Wide variety of mounting configurations.
- Accommodation for a broad range of cable combinations and sizes (e.g., PV, AC module and micro inverter cables).
- Special tab for easy installation & removal without any tool.
- Coined edges to prevent damage to cable insulation.

PART NO.	LENGTH mm[In.]	WIDTH mm[In.]	HEIGHT mm[In.]	QTY OF WIRES HELD	WIRE DIAMETER mm[In.]
WL-SCC-01/2	22.50[0.886]	10.00[0.394]	17.00[0.699]	1 to 2 PV Wires	Max7.50[0.295]
WL-SCC-01/4	31.63[1.245]	10.00[0.394]	7.20[0.283]	1 to 4 PV Wires	Max7.50[0.295]
WL-SCC-02/2	21.50[0.846]	18.00[0.709]	8.38[0.330]	1to 2 PV Wires	Max7.50[0.295]
WL-SCC-02/4	31.60[1.244]	18.00[0.709]	7.90[0.311]	1 to 4 PV Wires	Max7.50[0.295]
WL-SCC-03/2	18.40[0.724]	10.00[0.394]	11.70[0.461]	1 to 2 PV Wires	Max7.50[0.295]
WL-SCC-04/2	18.80[0.740]	12.50[0.492]	9.88[0.389]	1 to 2 PV Wires	Max7.50[0.295]

Package Option-OEM Package Available

100PCS/Bag

500PCS/Bag

1000PCS/Box

Cable Tie

Features & Benefits
- Available in 304 grade or non-magnetic 316 grade stainless steel.
- Self Ball-Lock or ladder type optional.
- High tensile strength.
- Smooth, rounded edges do not damage wires.
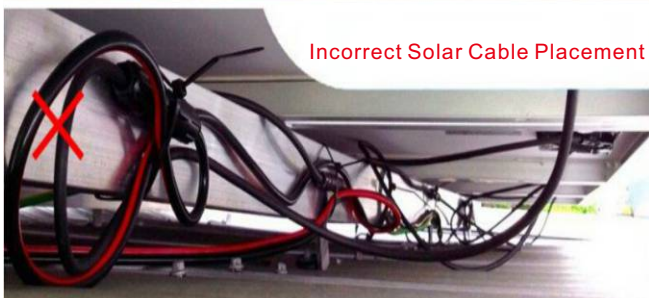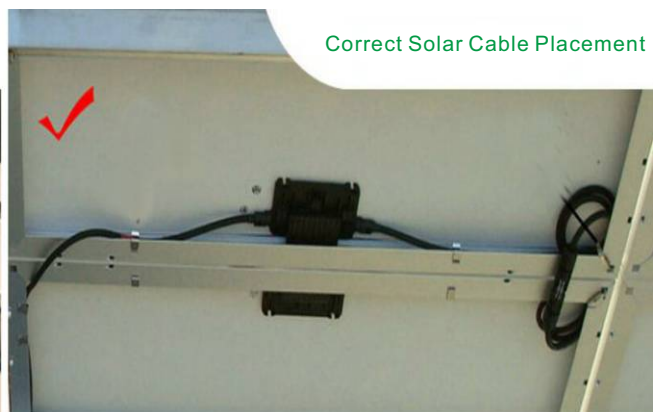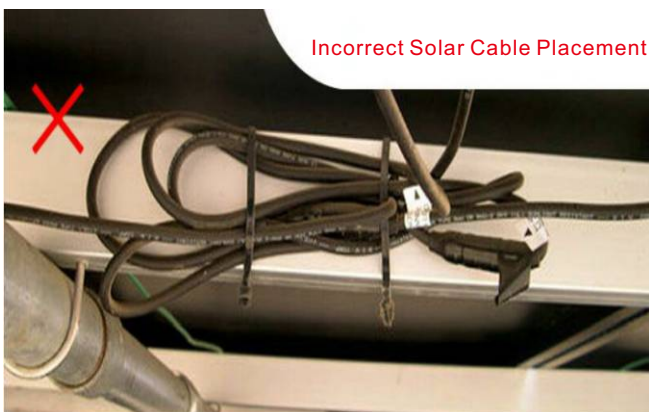- Fire proof, corrosion resistant and UV resistant.

Cable Tie are designed to secure several electronic cables or wires together cables onto PV system. The cable ties are available in corrosion resistant stainless steel suitable for rigorous corrosive conditions, which provides a strong durable method of cable bundling.

Cable Tie have unique self-locking mechanism allows easy and quick operation. Full or partial PVC coated tie provides superior insulation and protection of cable.

Customized length and package are available upon request for OEM.
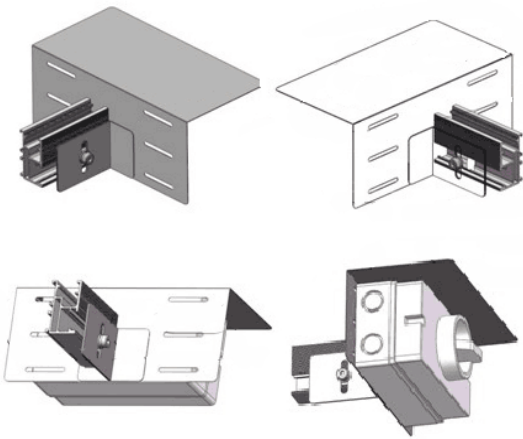
PART NO.	WIDTH mm[In.]	LENGTH mm[In.]	MAX. BUNDLE DIA mm[In.]	MIN LOOP TENSILE [N]
WL-CT-4.6x250	4.60[0.181]	250.00[9.843]	63.00[2.480]	800
WL-CT-4.6X300	4.60[0.181]	300.00[11.811]	76.00[2.992]	800
WL-CT-4.6X350	4.60[0.181]	350.00[13.780]	89.00[3.504]	800
WL-CT-4.6x400	4.60[0.181]	400.00[15.748]	102.00[4.016]	800
WL-CT-7.9x300	7.90[0.311]	300.00[11.811]	76.00[2.992]	1200
WL-CT-7.9x350	7.90[0.311]	350.00[13.780]	89.00[3.504]	1200

Incorrect Solar Cable Placement

Correct Solar Cable Placement

Incorrect Solar Cable Placement

Correct Solar Cable Placement

Isolator Mounting Bracket

Isolator Mounting Bracket provide sheltering for rooftop DC isolators, which can be fixed onto mounting rail using hardware. The mounting holes are compatible with most isolator cases. It is able to withstand high wind loads up to 88m/s, comes with a 10 year warranty and manufactured using stainless steel SUS304.

- Made with SUS304.
- Accommodated up to DC isolator switch and fixed to PV mounting rails.
- Weatherproof.
- Recommended bolt torque: 15-20Nm

Circuit Breaker Lockdog

Circuit Breaker Lockdog is recommended to use in combination with a padlock for added safety, it is easily installed and can take padlocks with a shackle diameter up to 7 mm.Lockdog are available for single and multi-pole breakers and fit most existing types of European and Asia circuit breaker.

- Material: Aluminum
- Color: Grey
- Installation: Screw
- Application: MCB
- Key: Hex screw
- Package: 100 PCS/Bag

We work with our partners

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