

# sunMAX™

DATASHEET







## sunMAX™ Residential Solar Solution

The sunMAX Residential Solar Solution provides a complete product solution including hardware and software. The sunMAX hardware offers advantages such as simplified installations, optimal performance using microinverters, railless mounting, and integrated equipment kits. The sunMAX software makes it easier to sell and design systems, includes mobile tools to assist with installation, and provides remote monitoring (and shutoff) capabilities.

### sunMAX Hardware

- Designed to Use Microinverters on Each Solar Panel
  - Maximizes the power output of each panel individually
  - Increased safety
- AC Cabling with Built-In Connectors
  - No wiring; simply plug one panel into the next
  - Increased safety
- Railless Mounting System
  - Integrated mounting system clamps directly onto roof mounts
  - No need to install rails or racks on top of the mounts
- Wireless Monitoring Gateway
  - Wirelessly communicates status and performance of each panel to the sunMAX cloud-based monitoring software
- Integrated Equipment Kit
  - Pre-assembled into 8 sub-assemblies, compared to more than 20 part numbers for the typical residential solar project

### sunMAX Software

- Design installations with sunLink
  - Design a system for the customer's roof
  - Create a customer proposal
  - Generate a complete bill of materials for ordering equipment
- Use the sunMAX Install mobile app for installation
  - Set up and configure equipment
  - Scan QR codes on each panel for faster integration
- Monitor sunMAX site performance via Ubiquiti-hosted cloud platform
  - Desktop apps to monitor the status and performance of the system, panel by panel
  - sunMAX software reports hourly/daily/monthly/yearly energy production levels using clear, easy-to-read graphs

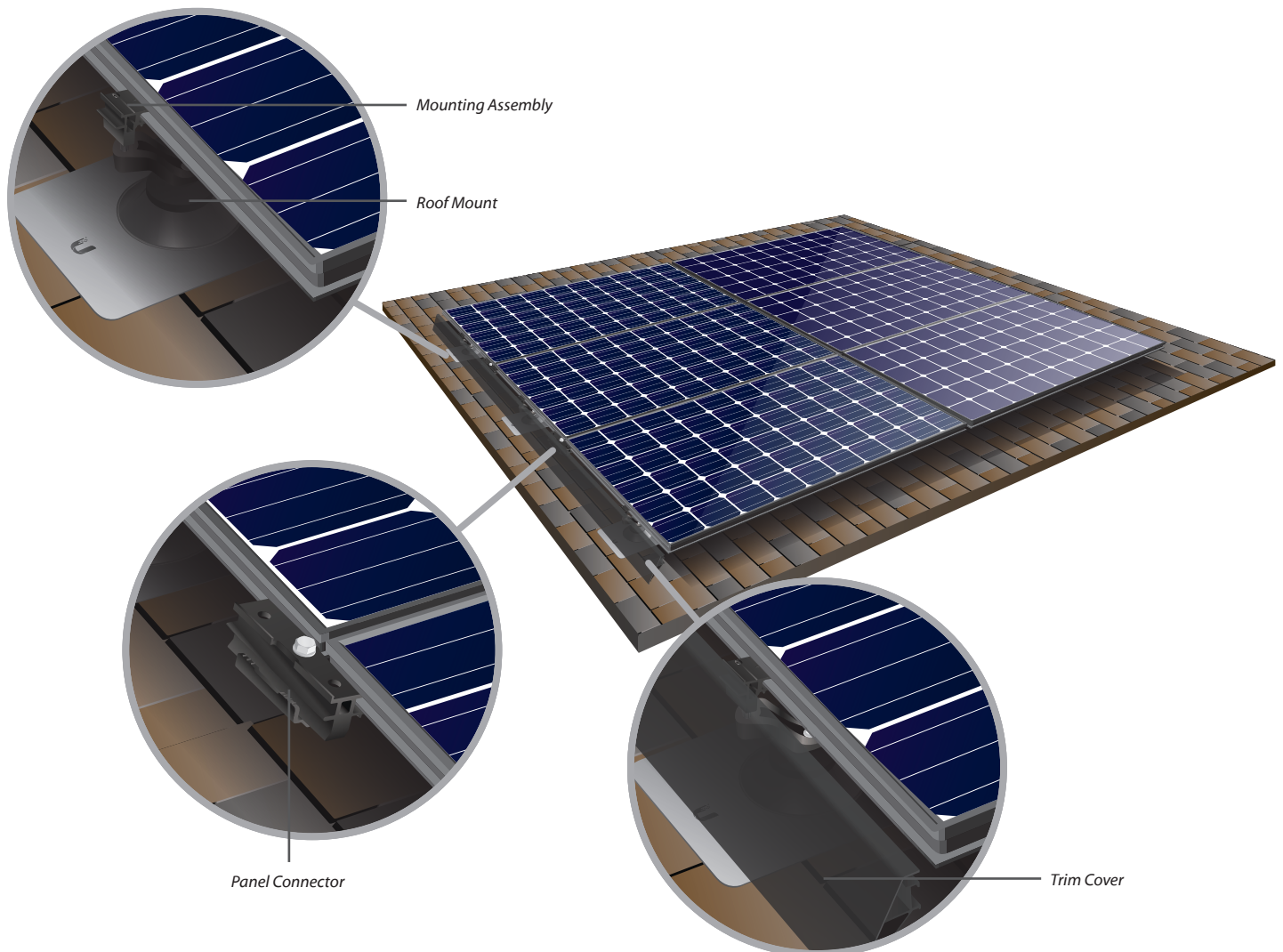
## Mounting and Trim Components

Part Number	Description
SM-SP-260W-DC-US	Solar Panel
SM-RM-C	Roof Mount Kit
SM-RM-T	Tile Roof Accessory Kit
SM-MA	Mounting Assembly
SM-PC	Panel Connector
SM-CM	Connector Mount
SM-TC-2P	Trim Cover Kit, 2-Panel Portrait
SM-TC-1P	Trim Cover Kit, 1-Panel Portrait
SM-TC-L	Trim Cover Kit, Landscape



*Landscape 3x3 Install*

## 6-Panel Array Example - Portrait Mode (Top View)





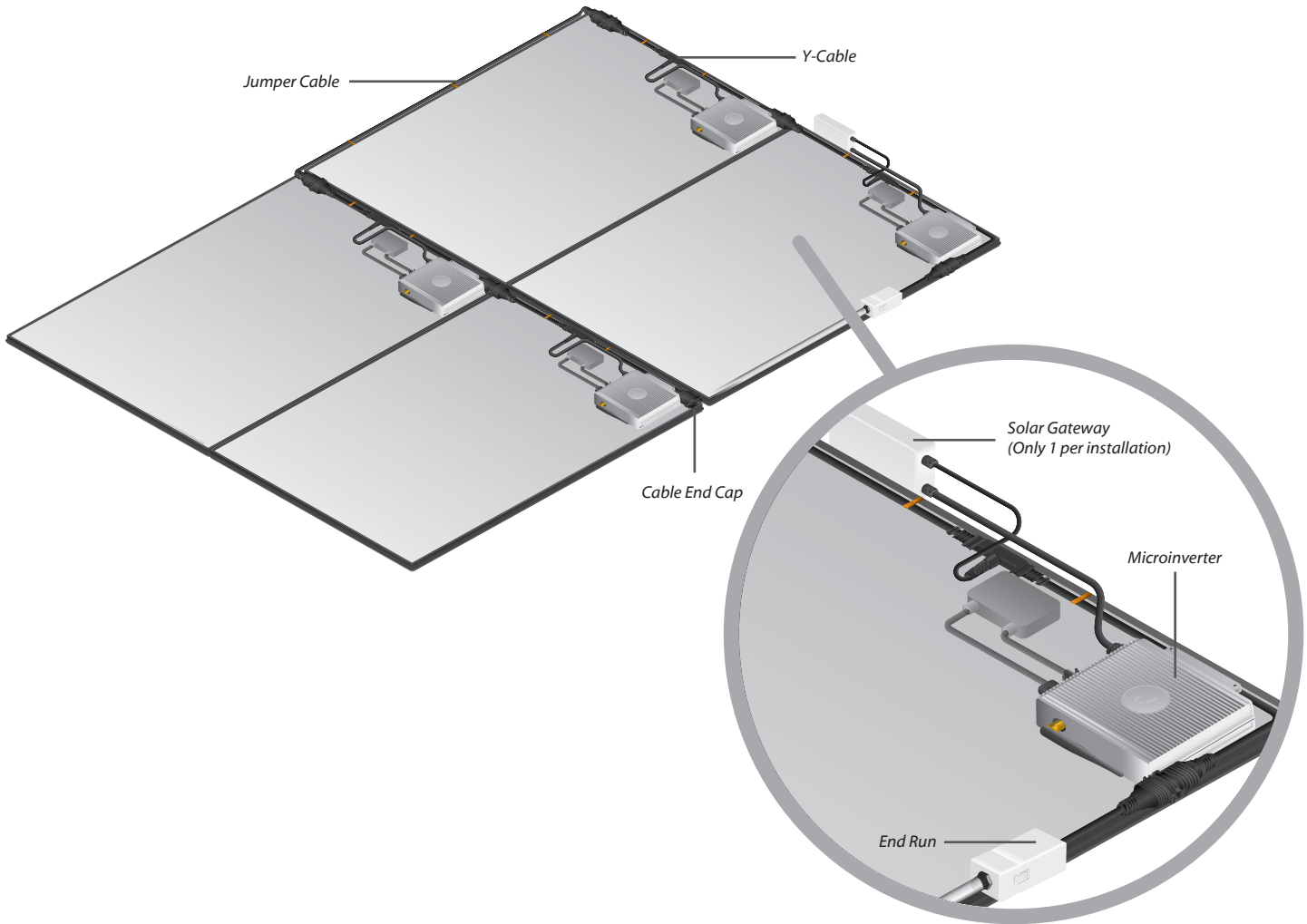


Bottom View of Panel Assembled with Microinverter

### Wiring and Mechanical Components

Part Number	Description
SM-SP-260W-DC-US	Solar Panel
SM-MI-250-NA	Microinverter
SM-JC-4C	Jumper Cables
SM-EC-NA	End Run Kit
SM-SG	Solar Gateway
SM-YC-P4	Y-Cable, Portrait
SM-YC-L4	Y-Cable, Landscape
SM-CC	Cable Support Clip Kit

### 4-Panel Array Example - Portrait Mode (Bottom View)



## Software

### Design

The sunMAX solution includes access to the sunLink™ online software portal. sunLink allows service providers to input a customer's address and obtain a satellite image of the customer's roof to design a solar power system specific to its location. A bill of materials with pricing is generated based on the defined layout. sunLink also features a Permitting Package Application to quickly gather and present information about the customer's install. The information is submitted to Ubiquiti's design team to create a permit package for delivery to the local authorities prior to the sunMAX system installation.

[sunlink.ubnt.com](http://sunlink.ubnt.com)

### Install

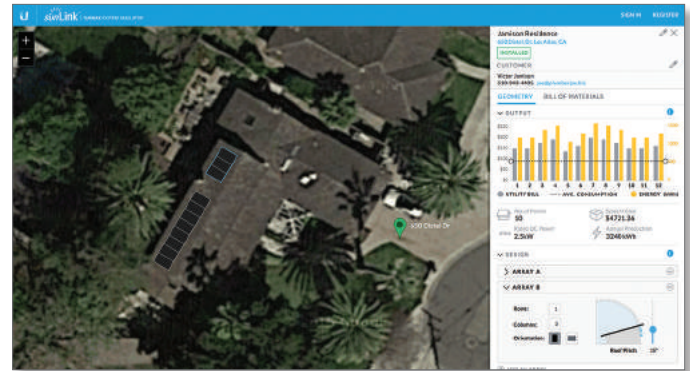
The sunMAX Install mobile app for Android is designed specifically for solar installers to enable them to provision devices and set up service for a new customer. Provisioning can be done using a mobile device to scan product QR codes.



### Monitor

The sunMAX solution includes monitoring functionality at [sunmax.ubnt.com](http://sunmax.ubnt.com). Service providers can see a list of all customer sites and get details on any specific location. The software reports hourly, daily, monthly, and yearly energy production levels using clear, easy-to-read graphs.

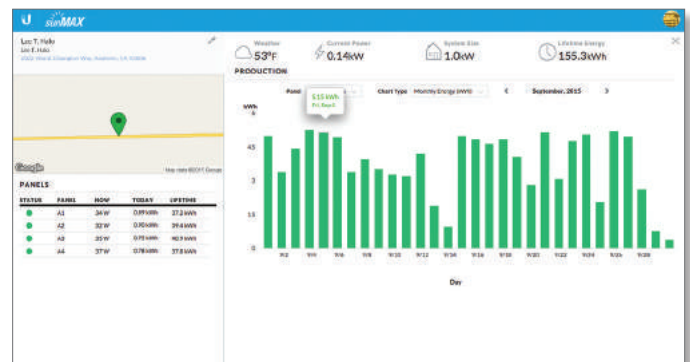
[sunmax.ubnt.com](http://sunmax.ubnt.com)



Use the sunLink browser-based software to determine the materials required for your solar installation.



Use the sunMAX mobile app to scan product QR codes and provision devices.

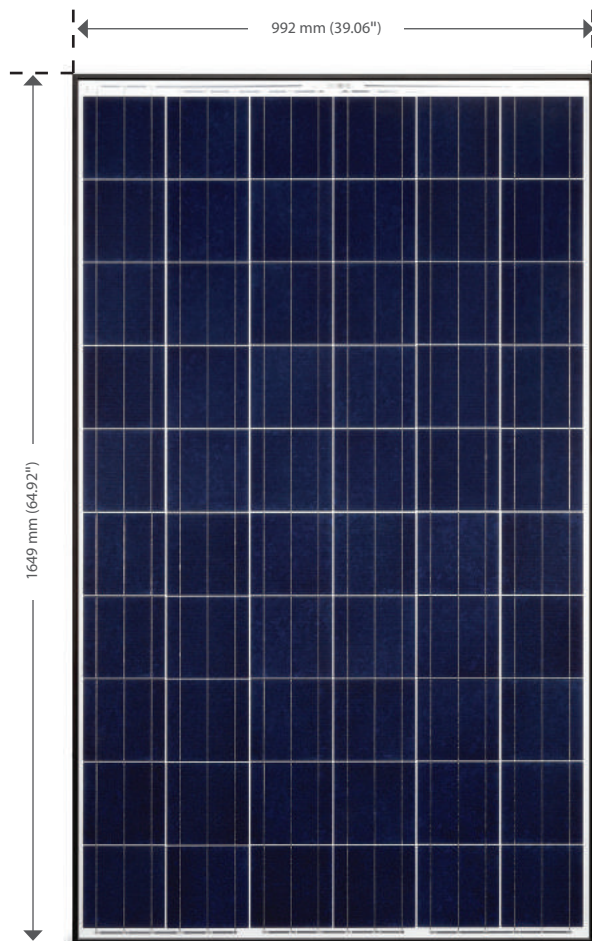
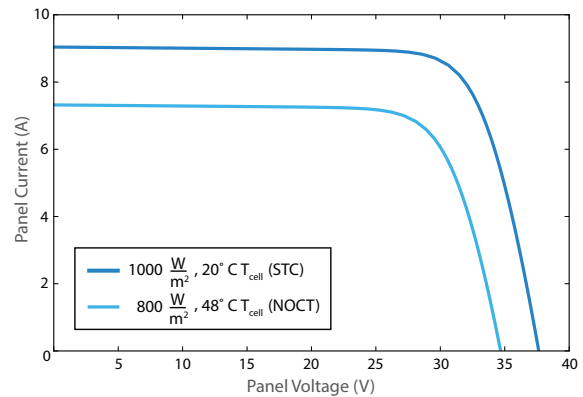


Service providers can review customers' energy production and power at [sunmax.ubnt.com](http://sunmax.ubnt.com).

## Solar Panel

### Model: SM-SP-260W-DC-US

Ubiquiti Networks sunMAX Solar Panels can be installed in landscape, portrait, or a combination of both. The Solar Panel includes holes to mount the Microinverter (SM-MI-250-NA) and cabling to connect it. The panels are also ready to receive sunMAX Jumper Cables (SM-JC) to connect power from adjacent columns or rows. Panels are mounted using sunMAX Mounting Assemblies (SM-MA) and interlocked using the sunMAX Panel Connectors (SM-PC).



## Solar Panel Specifications

SM-SP-260W-DC-US		
Dimensions	1649 x 992 x 40 mm (65 x 39 x 1.57")	
Weight	19.8 kg (43.65 lb)	
Number of Cells	60 pcs, 6x10 Connected In Series	
Cell Type and Size	3 Busbar Multi-Crystalline (156 x 156 mm)	
Temperature Coefficient of Voltage ( $\beta$ )	$-0.34 \pm 0.01 \% / ^\circ\text{C}$	
Temperature Coefficient of Current ( $\alpha$ )	$+0.07 \pm 0.02 \% / ^\circ\text{C}$	
Temperature Coefficient of Power ( $\gamma$ )	$-0.46 \pm 0.02 \% / ^\circ\text{C}$	
Normal Operating Cell Temperature (NOCT)	$47^\circ\text{C} \pm 2^\circ$	
Efficiency Reduction at 200 W/m <sup>2</sup> , 25° C	<5%	
Mechanical Load <sup>1</sup>	$\pm 2400 \text{ Pa}$ , $+5400 \text{ Pa}$	
Hailstone Impact Resistance	25 mm @ 80 km/h	
Junction Box / Cable	IP65 Rated; 4.0 mm <sup>2</sup> Universal PV Wire, MC4+ Style Connectors	
Basic Structure	Front	3.2 mm Tempered Solar Glass; With AR Coating
	Back	Composite Film
	Frame	Anodized Aluminum Alloy
Certifications and Standards	IEC 61215, IEC 61730, UL1703, ULC/ORD-C1703-01 CAN/CSA-C61215-08 CAN /CSA-C22.2 No. 61730 Application Class A, Safety Class II	

Characteristics <sup>2</sup>		
Nominal Power	260W	
Voltage Voc	37.6V	
Current Isc	9.0 A	
Voltage Vmp	30.6V	
Current Imp	8.5 A	

<sup>1</sup> Refer to panel installation instructions for maximum loading conditions

<sup>2</sup> Under Standard Test Condition (STC) Irradiance of 1000 W/m<sup>2</sup>, Temperature of 25° C, and AM=1.5

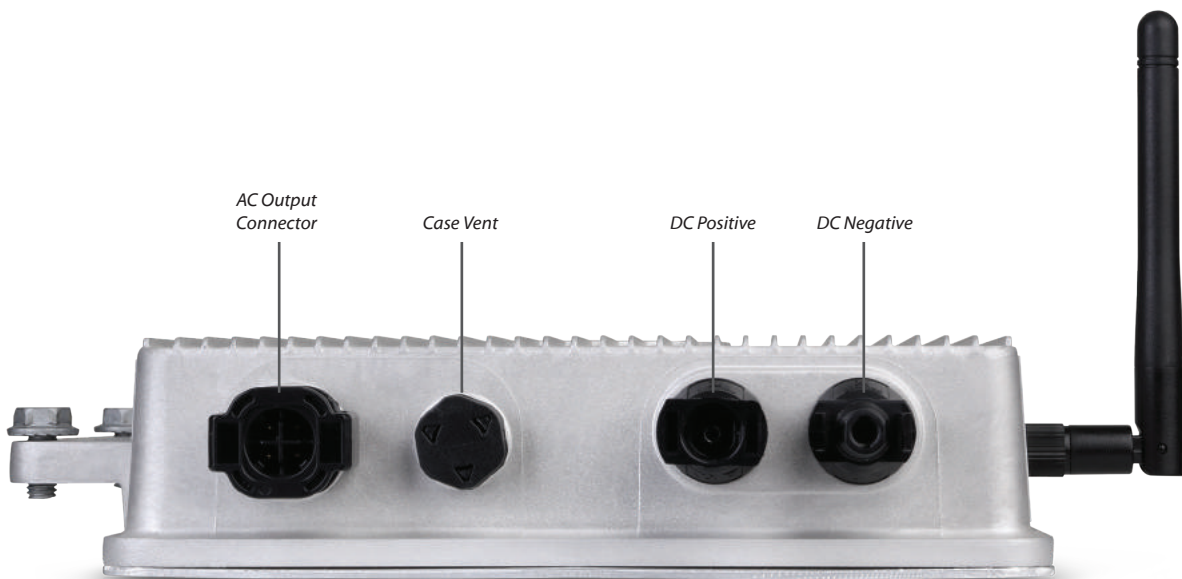
## Microinverter

### Model: SM-MI-250-NA

Ubiquiti Networks sunMAX Microinverter integrates into the sunMAX Solar Panel as an independent power generation unit. The Microinverter converts the DC power from the solar panel into AC power that can be connected directly to your home. Ubiquiti's cloud-based sunMAX software provides monitoring capability for desktops and mobile devices.

The Microinverter provides multiple benefits including:

- Maximizes power for individual solar panels
- Eliminates high-voltage DC wiring for a safer solar installation
- Lower installation cost
- Higher overall system reliability





## Microinverter Specifications

SM-MI-250-NA	
Dimensions	198 x 231 x 43.1 mm (7.80 x 9.09 x 1.70")
Weight	1.5 kg (3.31 lb)
Cooling	Natural Convection
Enclosure Environmental Rating	NEMA 3R
Communication	Bluetooth Low Energy (BLE)
Grounding	PV Positive is bonded to earth ground
Certifications and Standards	IUL1741/IEEE1547, FCC Part 15 Class B, CAN/CSA-C22.2 NO. 0-M91, 0.4-04, and 107.1-01

DC Input Data	
Max. Input Power	260W
Max. Input DC Voltage	45V
Peak Power Tracking Voltage	23-32V
Min./Max. Start Voltage	24-45V
Max. DC Input Current	9A

Efficiency	
CEC Weighted Efficiency	95.5%
Peak Inverter Efficiency	95.8%
Nighttime Power Consumption	120mW

AC Output Data	
Peak Output Power	250W
Rated (Continuous) Output Power	250W
Rated (Continuous) Output Current	1.05A
Nominal Voltage/Range	240V (211-264V)
Nominal Frequency/Range	60 Hz (59.3-60.5 Hz)
Power Factor	> 0.95
Maximum Units Per 20A Branch Circuit	15

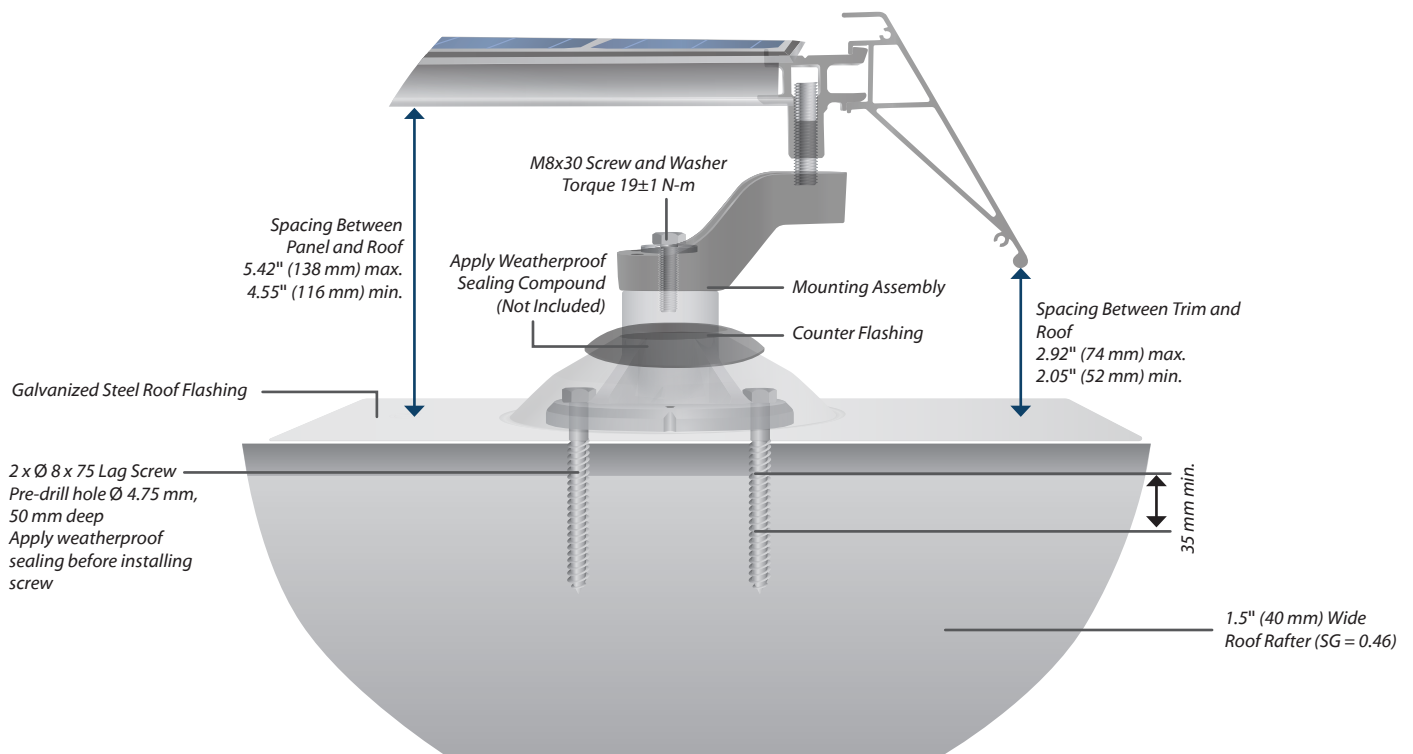
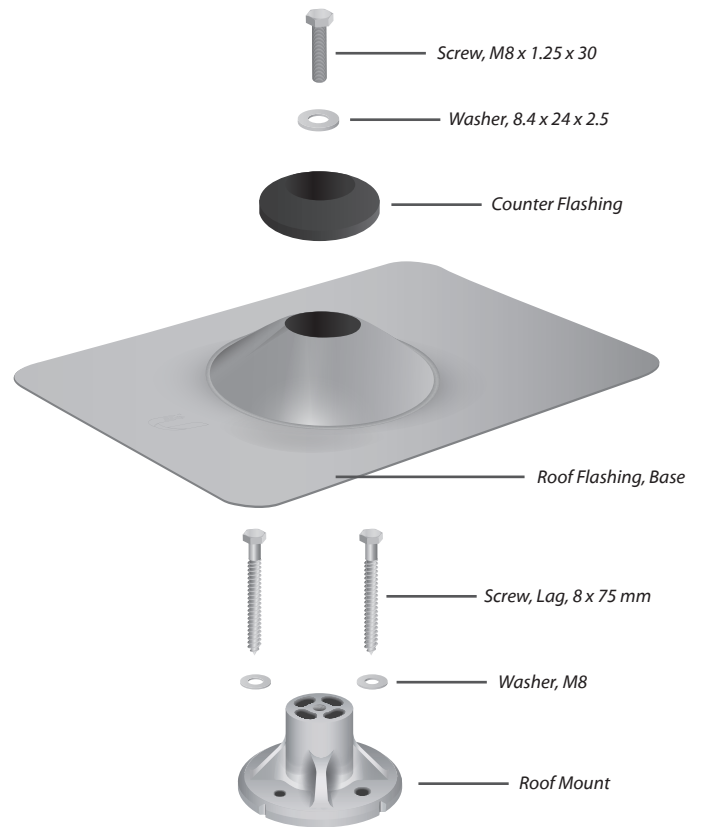
## Roof Mount Kit

### Model: SM-RM-C

The Roof Mount Kit is the structural mount between the roof structure and the solar panel. The mount uses roof flashing to ensure a watertight roof connection. The Roof Mount Kit is intended for use on asphalt composite shingle roofs and as a base mount for tile roofs when used in conjunction with the Tile Roof Accessory Kit, model SM-RM-T.

The Roof Mount Kit is sold in bulk with a quantity of 10 mounting kits. Below are the components of each kit:

Part	Qty.
Roof Mount	10
Washer, M8	20
Screw, Lag, 8 x 75 mm	20
Roof Flashing, Base	10
Screw, M8 x 1.25 x 30	10
Washer, 8.4 x 24 x 2.5	10
Counter Flashing	10



## Mounting System Specifications

SM-RM-C	
Allowable Roof Slope	9.5 to 45° (2:12 to 12:12)
Maximum Mount Span	Up to 1220 mm (48")
Maximum Cantilever	400 mm (15 ¾") Portrait, 500 mm (19 ½") Landscape
Building Height	< 18.3 m (< 60')
Maximum Windspeed	240 km/h (150 mph) <sup>1</sup>
Panel Orientation	Landscape and Portrait
Wind Exposure	Category B, C, D
Maximum Ground Snow Load	3590 Pa (75 psf)
System Dead Load	11.6 kg (25 lbs) Per Mount <sup>2</sup>
Height Adjustability	0-21 mm (0 - 0.83")
Panel Connectors	2 or 4-Way Integrated Grounding Couplers
Cables Support Clips	Black UV-Resistant Polycarbonate
Trim Skirt	Available in 3 Different Lengths
Cabling	IP67 Rated UL and NEC Compliant Connectors
Component Materials	Aluminum and Steel
Component Finishes	Black Coatings
Hardware	Geomet-Plated Steel
Certifications	UL2703 (Pending)
Fire Certification	Class A Rating for Steep Slope Roofs per UL2703
Withdrawal Force within Dry Douglas Fir (SG=0.46) with 35 mm Rafter Penetration	11,800 N (2650 lbs)
Maximum Side Load	1000 N (224 lbs)
Flashings	IBC Compliant Flashings, Galvanized Steel
Lag Screws	(2) Steel 8 x 75 mm

<sup>1</sup> See installation instructions for restrictions

<sup>2</sup> Based on two mounts per panel



## Tile Roof Accessory Kit

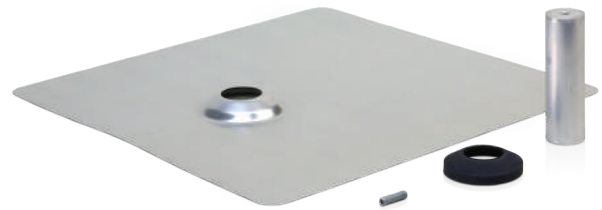
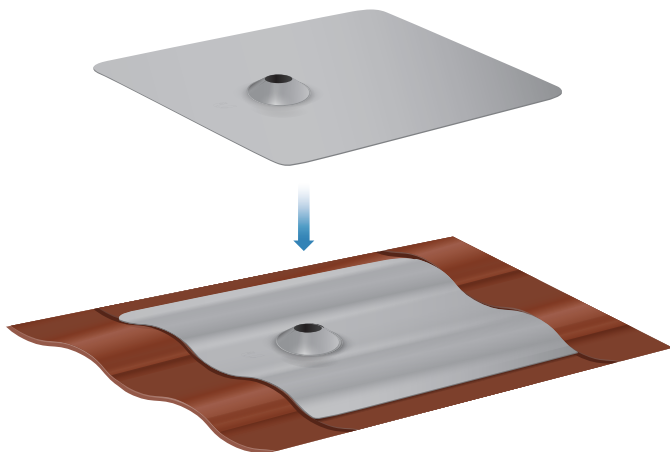
### Model: SM-RM-T

The Tile Roof Accessory Kit includes the extra components needed when mounting the panel hardware on a tile roof. The kit can accommodate either flat or shaped tile by forming the upper flashing. Two roof flashings should be used (one above and one below the tile) to assure a watertight connection. This kit is used in conjunction with the SM-RM-C Roof Mount Kit.

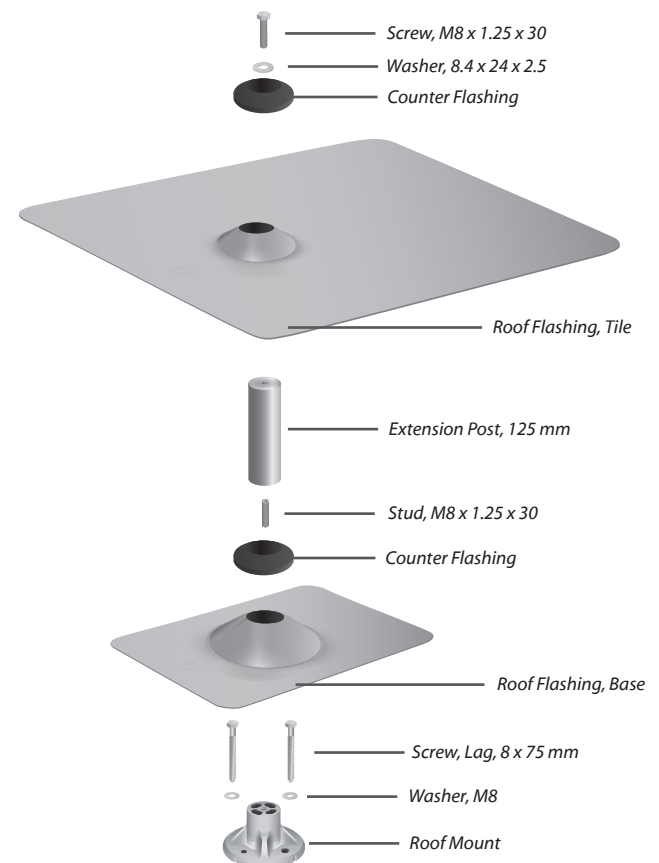
The Tile Roof Accessory Kit is sold in bulk with a quantity of 10 kits. Below are the components of each kit:

Part	Qty.
Extension Post, 125 mm	10
Stud, M8 x 1.25 x 30	10
Roof Flashing, Tile	10
Counter Flashing	20

Shape the Roof Flashing to Tile



### Roof Mount Kit and Tile Roof Accessory Kit Combined



SM-RM-T	
Allowable Roof Slope	9.5 to 45° (2:12 to 12:12)
Maximum Mount Span	Up to 1220 mm (48")
Maximum Cantilever	400 mm (15 ¾") Portrait, 500 mm (19 ½") Landscape
Building Height	< 18.3 m (< 60')
Maximum Windspeed	240 km/h (150 mph) <sup>1</sup>
Panel Orientation	Landscape and Portrait
Wind Exposure	Category B, C, D
Maximum Ground Snow Load	3590 Pa (75 psf)
System Dead Load	11.6 kg (25 lbs) Per Mount <sup>2</sup>
Height Adjustability	0 - 21 mm (0 - 0.83")
Panel Connectors	2 or 4-Way Integrated Grounding Couplers
Cables Support Clips	Black UV-Resistant Polycarbonate
Trim Skirt	Available in 3 Different Lengths
Cabling	IP67 Rated UL and NEC Compliant Connectors
Component Materials	Aluminum and Steel
Component Finishes	Black Coatings
Hardware	Geomet-Plated Steel
Certifications	UL2703 (Pending)
Fire Certification	Class A Rating for Steep Slope Roofs per UL2703
Withdrawal Force within Dry Douglas Fir (SG=0.46) with 35 mm Rafter Penetration	11,800 N (2650 lbs)
Maximum Side Load	1000 N (224 lbs)

<sup>1</sup> See Installation instructions for restrictions

<sup>2</sup> Based on two mounts per panel

## Solar Gateway

### Model: SM-SG

The Ubiquiti Networks sunMAX Solar Gateway communicates with all Microinverters in an array using Bluetooth and then broadcasts data via Ethernet.



*Solar Gateway Installed*



### Solar Gateway Specifications

SM-SG	
Dimensions	206 x 87 x 54 mm (8.11 x 3.43 x 2.13") Excludes Approx. 550 mm (21.65") Cable Length
Weight	0.37 kg (0.82 lb)
Enclosure Characteristics	Polycarbonate, UV-Resistant, IP65
Shock and Vibration	IEC 68-2-6
Processor	MediaTek SoC
Memory	256 MB
Storage	1 GB Flash
Networking Interface	(1) 10/100/1000 Mbps RJ45 Ethernet Port
LEDs	3 LEDs: Power, Web Connectivity, and Microinverter Connectivity
Button	Factory Reset Button
Max. Power Consumption (HW)	7W
Power Source	AC
Power Supply	100-240 VAC, 47-63 Hz
ESD/EMP Protection	Rating for ESD ( $\pm$ 24KV )
Operating Temperature	-20 to 50° C (-4 to 122° F)
Operating Humidity	5 to 95% Noncondensing
Certifications	FCC/CE/IC/UL



## Mounting Assemblies

### Model: SM-MA

The Mounting Assembly is used to support panels off roof mounts. Mounting assemblies are always located along the horizontal edges of panels. Typically there is at least one mounting assembly at the top and bottom of each panel. Sold in quantities of 10.

SM-MA	
Dimensions	53.6 x 104.9* x 104.4 mm (2.11 x 4.13 x 4.11")
Weight	0.23 kg (0.52 lb)



## Panel Connectors

### Model: SM-PC

The Panel Connector is used to connect adjacent panels structurally and electrically bond them together. There is always one at the top and the bottom between every panel that is side by side. Sold in quantities of 10.

SM-PC	
Dimensions	125 x 50.3 x 43.3 mm (4.92 x 1.98 x 1.70")
Weight	0.35 kg (0.78 lb)



## Connector Mounts

### Model: SM-CM

The Connector Mount is used to connect panels side by side (one on bottom and one on top) structurally in locations where the Mounting Assembly would coincide with a Panel Connector location. The Connector Mount is used in place of a Mounting Assembly and Panel Connector in that location. Sold in quantities of 10.

SM-CM	
Dimensions	125 x 96* x 104.4 mm (4.92 x 3.78 x 4.11")
Weight	0.39 kg (0.86 lb)



<sup>1</sup> Adjustable height dimension  $\pm 12$  mm

# Jumper Cables (4-Conductor)

## Model: SM-JC-4C

The Ubiquiti Networks sunMAX Jumper Cable connects power cables on panels from adjacent rows (portrait) or columns (landscape). Sold in quantities of 5.

SM-JC-4C	
Dimensions	1275 mm (50.20")
Weight	0.36 kg (0.79 lb)
Cable	12 AWG, 4-Conductor



# Y-Cable Kit, Portrait (4 Conductor)

## Model: SM-YC-P4

The Ubiquiti Networks sunMAX Y-Cable (Portrait) connects panels and devices such as the Solar Gateway and Microinverter in a portrait-panel configuration. Sold in quantities of 5.

SM-YC-P4	
Dimensions	1030 mm with 500 mm drop (40.55" with 19.69" drop)
Weight	0.37 kg (0.82 lb)
Cable	12 AWG, 4 Conductor



# Y-Cable Kit, Landscape (4 Conductor)

## Model: SM-YC-L4

The Ubiquiti Networks sunMAX Y-Cable (Landscape) connects panels and devices such as the Solar Gateway and Microinverter in a landscape-panel configuration. Sold in quantities of 5.

SM-YC-L4	
Dimensions	1688 mm with 920 mm drop (66.46" with 36.22" drop)
Weight	0.68 kg (1.50 lb)
Cable	12 AWG, 4 Conductor



## End Run Kit

### Model: SM-EC-NA

The End Run provides easy adaptation of cabling from the array to the electrical panel feeding the grid. It connects the open-ended Y-cable in your solar array to the house-side wiring that feeds into the electrical panel on the outside of your home. The End Run Kit includes the End Run, a Cabling End Cap, and a Grounding Kit (stud and nut).

SM-EC-NA	
Dimensions	320 x 50 x 37 mm (12.60 x 1.97 x 1.46")
Weight	200 g (7 oz)
Thread Size	½ NPT



## Cable Support Clips Kit

### Model: SM-CC

The Cable Support Clips hook and snap onto the solar panel's edge from underneath to support and secure Jumper Cables and Y-Cables. Sold in quantities of 50.

SM-CC	
Dimensions	68 x 25 x 14 mm (2.68 x 0.98 x 0.55")
Weight	5 g (0.18 oz)





## Trim Cover Kits

The Trim Cover Kit is used to enhance the visual appearance along the entire front edge of an array and also helps to ease installation of the panels.



2-Panel Portrait Trim Cover Installed

## Trim Cover Kit, Landscape

### Model: SM-TC-L

The SM-TC-L Trim Cover Kit is used for installations using the landscape orientation. One cover kit is used per column in a landscape installation. Sold in quantities of 5.

SM-TC-L	
Dimensions	128.2 x 33.3 x 1659 mm (5.05 x 1.31 x 65.31")
Weight	2.61 kg (5.75 lb)



## Trim Cover Kit, 2-Panel Portrait

### Model: SM-TC-2P

The SM-TC-2P Trim Cover Kit spans the width of two panels installed in a portrait installation. It is best to use these whenever possible and use the single-panel version only as needed. Sold in quantities of 5.

SM-TC-2P	
Dimensions	128.2 x 33.3 x 2006 mm (5.05 x 1.31 x 78.98")
Weight	3.20 kg (7.05 lb)



## Trim Cover Kit, 1-Panel Portrait

### Model: SM-TC-1P

The SM-TC-1P Trim Cover Kit is only used in portrait installations with an odd number of columns. The single-panel version is used in the center. Sold in quantities of 5.

SM-TC-1P	
Dimensions	128.2 x 33.3 x 1003 mm (5.05 x 1.31 x 39.49")
Weight	1.61 kg (3.55 lb)

