SUNPOWER AC Modules Instruction Manual

Contents

SUNPOWER

SUNPOWER AC Modules

Product Information

The SunPower AC photovoltaic (PV) modules are designed to generate internal direct current (DC) and output alternating current (AC) for residential and commercial use. The product is certified by TUV and EnTest and comes with a limited warranty described in the Maxeon Solar Technologies warranty certificates.

Product Usage Instructions

Before installing, wiring or using the product, it is important to read all safety instructions provided in the user manual. Failure to comply with these instructions may invalidate the warranty.

Product Safety Precautions

AC Modules generate internal direct current (DC) and output alternating current (AC), and are a source of voltage when under load and when exposed to light. Electrical currents can arc across gaps and may cause injury or death if improper connection or disconnection is made, or if contact is made with module leads that are frayed or torn. Follow these safety precautions:

- Read all safety instructions before installing, wiring or using the product.
- Do not touch the module leads or wiring while the module is under load or exposed to light.
- Ensure proper grounding of the AC module and microinverter.
- Use caution when handling the module to avoid damaging the leads or frame.

Installation Instructions

Follow these instructions to install the SunPower AC modules:

1. Choose a suitable location for installation that receives adequate sunlight.
2. Ensure that the mounting surface is strong enough to support the weight of the module.
3. Install the microinverter in accordance with the manufacturer’s instructions.

4. Connect the AC module to the microinverter using the provided wiring.
5. Ensure proper grounding of the AC module and microinverter.
6. Test the system to ensure proper operation.

For additional information and updates, refer to the latest version of the user manual available at www.sunpower.maxeon.com/int/InstallGuideACModules.

Safety and Installation Instructions for SunPower AC modules

In case of inconsistencies or conflicts between the English version and any other versions of this manual (or document), the English version shall prevail and take control in all respects.

For the latest version please refer to www.sunpower.maxeon.com/int/InstallGuideACModules
Contents are subject to change without notice.
Maxeon Solar Technologies, Ltd.
sunpower.maxeon.com

Introduction

This document provides safety and installation instructions for the SunPower AC photovoltaic (PV) modules described herein, all of which bear both TUV and EnTest logos on the product label in respect to DC and AC (Microinverter) standards:

Important! Please read these instructions in their entirety before installing, wiring, or using this product in any way. Failure to comply with these instructions will invalidate the Maxeon Solar Technologies Limited Warranty for PV Modules and/or Enphase Energy Limited Warranty for microinverters.

Definition of Terms
AC Module: Maxeon 5, Maxeon 6, Perfomance 3 and 6 AC module
DC Module: A typical photovoltaic solar module without microinverter unit attached.
Enphase Microinverter: Smart grid ready IQ7A, IQ8A or IQ8MC microinverter converts the DC output of the PV module into grid-compliant AC power. Enphase AC cable: also called Q Cable, it is an AC cable with a length varying from 1.3m to 2.3m depending to AC Module orientation (Portrait or Landscape), with 3.3 mm2 cross section, double insulated, outdoor rated with integrated connectors for microinverters. Maxeon Solar Technologies recommends the use at least of 2.0m long Q cable for greater flexibility in module installation in Portrait configuration. AC Module plugs directly into the Q that includes factory integrated connectors.
Enphase Enlighten: Web-based monitoring and management software. Installers can use Enlighten Manager to view detailed performance data, manage multiple PV systems, etc.

DC Connector: Even if allowed by local regulation, Plug and Socket connectors mated together in a PV system must be of the same type (model, rating) from the same manufacturer i.e. a plug connector from one manufacturer and a socket connector from another manufacturer, or vice versa, shall not be used to make a connection. Approved **compatible connectors:** Tyco Electronics PV4S

Disclaimer of Liability
The installation techniques, handling and use of this product are beyond company control. Therefore, Maxeon Solar Technologies does not assume responsibility for loss, damage, or expense resulting from improper installation, handling, or use.

Certified Body Certification Information
This product intents to meet or exceed the requirements set forth by IEC 62109-3 for SunPower AC modules. The IEC 62109-3 Standard covers flat-plate PV modules intended for installation on buildings; or those intended to be freestanding. The TUV certification does not include integration into a building surface because additional requirements may apply. This product is not intended for use where artificially concentrated sunlight is applied to the module. This manual shall be used in combination with industry recognized best practices and SunPower AC modules should be installed by certified professionals only.

Limited Warranty
AC Module limited warranties are described in the Maxeon Solar Technologies warranty certificates obtainable at **www.sunpower.maxeon.com** (Refer to the limited warranty document).

Safety Precautions

Before installing this device, read all safety instructions in this document.

Danger! AC Modules generate internal direct current (DC) and output alternating current (AC); and are a source of voltage when under load and when exposed to light. Electrical currents can arc across gaps and may cause injury or death if improper connection or disconnection is made; or if contact is made with module leads that are frayed or torn.

- Disconnect the AC source from all AC Modules and/or cover all modules in the PV array with an opaque cloth or material before making or breaking electrical connections
- Do not connect or disconnect modules when current from the modules in the string or an external source is present
- Use only the AC locking connectors in order to defend against untrained personnel disconnecting the modules after they have been installed.
- All installations must be performed in compliance with the applicable local codes.
- Installation should be performed only by qualified and suitably licensed personnel
- Remove all metallic jewelry prior to installing this product to reduce the chance of accidental exposure to live circuits.
- Use only insulated tools to reduce your risk of electric shock.
- Do not stand on, drop, scratch, or allow objects to fall on AC Modules.
- Broken glass, J-boxes, broken connectors, and/or damaged backsheets are electrical hazards as well as laceration hazards. If a module is cracked after installation, a qualified person should remove the module from the array and contact the supplier for disposal instructions.
- Do not install or handle modules when they are wet or during periods of high wind.
- Unconnected connectors must always be protected from pollution (e.g. dust, humidity, foreign particles, etc.), prior to installation. Do not leave unconnected (unprotected) connectors exposed to the environment. A clean

installation environment is essential in order to avoid performance degradation.

Do not block drain holes or allow water to pool in or near AC Module frames

- Contact your module supplier if maintenance is necessary.
- Save these instructions!

Electrical Characteristics

Electrical characteristics and grid interaction data are shown in Table 2 and AC Module datasheet. It is the installer's responsibility to set the grid profile and to check Enphase pre-configured country grid detail and this can be done with internet access and by connecting into the Enphase Enlighten system.
If an installation involves a SunPower AC module which does not appear on this list, please consult the product label on the back of the module or visit **www.sunpower.maxeon.com** for the product datasheet.
As a reminder for DC modules: a photovoltaic module may produce more current and/or voltage than reported at STC. Sunny, cool weather and reflection from snow or water can increase current and power output. Therefore, the values of Isc and Voc marked on the module should be multiplied by a factor of 1.25 when determining component voltage ratings, conductor ampacities, fuse sizes, and size of controls connected to PV output. An additional 1.25 multiplier may be required by certain local codes for sizing fuses and conductors. SunPower recommends the use of open- circuit voltage temperature coefficients listed on the datasheets when determining Maximum System Voltage.

Fire Rating

The AC Module has the same fire rating as DC modules.

Electrical Connections

Modules must only be connected using the correct Enphase AC cable and integrated connectors. Do not alter any connectors.
Ensure that the cabling is not under mechanical stress (comply with bending radius of ≥ 60 mm) and must not be bent on the direct exit of the connector or junction box. The AC Module cable system features locking connectors which, after connected, require the use of a tool to disconnect. This defends against untrained personnel disconnecting the modules when under load. Enphase AC cable connectors are rated and tested to interrupt load current; however, Maxeon Solar Technologies recommends that you always open the utility dedicated branch circuit breaker to remove power before plugging or unplugging any connectors; install an AC isolator in accordance with local codes.

Equipment Grounding

Module grounding is required as per IEC 60364-7-712 and where deemed mandatory within the local regulatory framework. The purpose of the module grounding is both for protection and functional reasons. The functional aspect of this requirement is to enable the Inverter or power conditioning device to provide earth fault detection and any alarm indication. Maxeon Solar Technologies recommends using one of the following methods of grounding the module frame. In addition, to avoid corrosion due to dissimilar metal interfaces, Maxeon Solar Technologies recommends stainless steel hardware between copper and aluminum. Testing should be done to validate grounding with temperature, salt environment and high current.

1. Grounding using specified grounding holes: Use the mounting frame provisioned grounding holes for connecting the module to the racking with a suitably sized earthing conductor.
2. Grounding with clamp / claw: Clamp or claw can be installed between the module and racking system. Align a grounding clamp to the frame hole, and place a grounding bolt through the grounding clamp and frame. Ensure the clamp used when is fastened, will effectively pierce the anodized coating of the module and ensure suitable conductivity.
3. Modules may be grounded by attaching a lay-in lug to one of the grounding holes on the module frame, and attach the ground conductor to the lug. Use stainless steel hardware (bolt, washers, and nut). Use an external-tooth star washer between the lug and the module frame in order to pierce the anodizing and establish

electrical contact with the aluminum frame. The assembly must end with a nut that's torqued to 2.3-2.8 Nm (for a M4 bolt). A lock washer or other locking mechanism is required to maintain tension between the bolt and the assembly. The conductor must be attached to the ground lug using the lug's set screw.

4. Modules may be grounded using a ground clip or ground washer or as part of a module clamp. These grounding clips/washers must be able to effectively pierce the anodized coating of the module frame and establish suitable electrical conductivity.

All above solutions are possible but should be tested with the mounting structure for grounding purpose.

Connection to AC Circuits

It is the installer's responsibility to verify grid compatibility in your installation region (240/380 or 4-wire 2-pole). The AC Modules must be connected to a utility source at the correct voltage and frequency in order to operate and produce power. They are not standalone generators and do not create AC voltage thus are not capable of operation independent of a utility-generated AC signal. The AC Modules must be connected only to a dedicated branch circuit. The AC cables and connectors are certified and rated for the maximum number of AC units in parallel only. When connecting modules, DO NOT exceed the following single AC branch circuit maximum number of modules.

The maximum number of microinverters that can be installed on each AC branch circuit can be found in the Product's datasheet. This circuit must be protected by overcurrent protection. Plan your AC branch circuits to meet the following limits for maximum number of AC Module per branch when protected with a 20 amp (maximum) over current protection device.

Maximum* IQ Micros per AC branch circuit (240 VAC) **Region: EU**	Maximum* IQ Micros per AC branch circuit (230 VAC) **Region: APAC**
IQ7A or IQ8A: 10 IQ8MC: 11	IQ7A: 11

Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

CAUTION! To reduce the risk of fire, connect only to a circuit provided with 20 A maximum branch circuit overcurrent protection.

Below are the major installation steps:

1. Install the Field-wireable connector pair, optional J-Box
2. Position the Enphase Q Cable

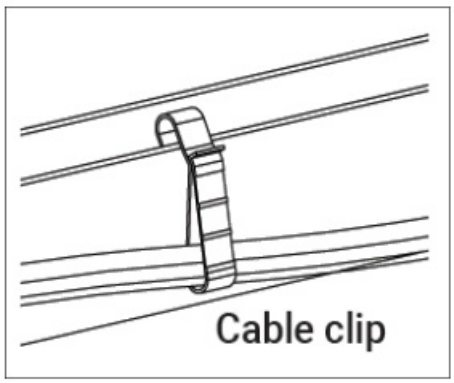
   Per module:
3. Position AC module and pop-out microinverters. Refer to Section 5.3 for illustation
4. Connect microinverters to Q Cable connector
5. Install AC Modules
6. Manage Q cable to module frame and rail

   Per row:
7. Create installation map
8. Terminate Q cable at last microinverter
9. Connect to J-Box

10. Energize system

Cable Management
Use cable clips or cable ties wraps to attach the AC cable to the racking. The cable must be supported to avoid any cable undue sag as per local requirement.

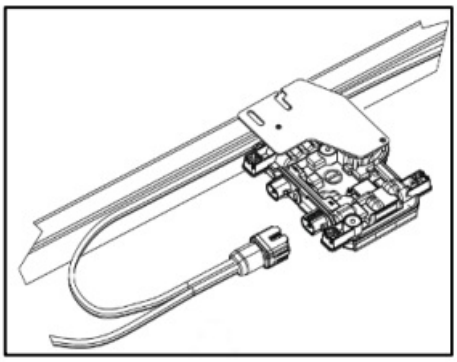
For Performance 3 AC modules, be careful to not unplug the DC cable premounted in factory into specific cable supports.
Dress any excess cabling in loops so that it does not contact the roof. Do not form loops smaller than 12 cm in diameter.



Microinverters Connection
Refer to the major installation steps defined in Section4.2and listen for a click:

1. when the microinverters are pop out and
2. when AC connectors engage

   Inspect the AC connectors to ensure that they are not broken, misshapen, or otherwise degraded prior to connection. Cover any unused connectors on the AC cable with Enphase Sealing Caps. Listen for a click as the sealing caps engage.



CAUTION! Install sealing caps on all unused AC connectors as these connectors become live when the system is energized. Sealing caps are required for protection against moisture ingress.

Module Mounting

This section contains information for AC Modules. Ensure that you use the correct information for your module type.
The Maxeon Solar Technologies Limited Warranty for PV Modules is contingent upon modules being mounted in accordance with the requirements described in this section.

Site Considerations
AC Module should only be mounted in locations that meet the following requirements:

- **Maximum Altitude:** AC Modules can be installed in locations with a maximum of 2000 meter above sea level.
- **Operating Temperature:** AC Modules must be mounted in environments that ensure that the modules will operate within the following maximum and minimum temperatures:

Max. Operating Cell Temp.	+85°C
Max. Operating microinverter Temp.	+ 60°C
Max. AC Module Ambient Temp.	+50°C
Min. AC Module Operating Temp.	–40°C

- **Design Strength:** AC Modules are designed to meet a maximum positive (or upward, e.g. wind) and negative (or downward, e.g. static load) design pressure when mounted in the mounting configurations specified in Appendix for the details on load ratings and mounting locations. AC Modules have also been evaluated to IEC 61215 for a positive or negative design load of 3600 Pa with a 1.5 Safety Factor.
  When mounting modules in snow-prone or high-wind environments, special care should be taken to mount the modules in a manner that provides sufficient design strength while meeting local code requirements.
  Important! Refer to Appendix that show where to mount in module frame and the allowable load ratings corresponding to the mounting zones chosen. To use the tables, identify the two mounting zones in which you wish to mount. You may choose to mount at any location as long as the mounting points are symmetric about one axis of the module. Identify the combination of mounting zones you have chosen in the Appendix and then refer to the corresponding load rating. Note also that load ratings are different for modules supported by rails; versus systems that attach modules underneath the module frame or without rail support.

Additional Authorized Operating Environments:
Modules can be mounted in the following aggressive environment according to the test limits mentioned below:
Salt mist corrosion testing: IEC 61701 Severity 6
Ammonia Corrosion Resistance: IEC 62716 Concentration: 6,667 ppm

Excluded Operating Environments
Certain operating environments are not recommended for SunPower AC modules, and are excluded from the Maxeon Solar Technologies Limited Warranty for these modules. Maxeon's modules should not be mounted a site where it may be subject to direct contact with salt water, or other aggressive environment. Maxeon's modules should not be installed near flammable liquids, gases, or locations with hazardous materials; or moving vehicles of any type. Contact Maxeon Solar Technologies if there are any unanswered questions concerning the operating environment.

Mounting Configurations
Modules may be mounted at, appropriate orientation to maximize sunlight exposure.
In order to prevent water from entering the junction box (which could present a safety hazard), modules should be oriented such that the junction box is in the uppermost position and should not be mounted such that the top surface faces downward.
In addition, ensure the module orientation also prevents the microinverter from direct exposure to rain, UV and other harmful weather events (ice/snow).
We also want to remind that the watertightness is not ensured by the modules but by the mounting system and that drainage should be well designed for AC modules. Maxeon recommends for a good performance of the system (reduction of soiling effect/water pooling) a minimum of 5° tilt angle.
Clearance between the module frames and structure or ground is required to prevent wiring damage and allows air to circulate behind the module. The recommended assembling clearance between each module installed on any mounting system is a minimum of 5 mm distance.

Clearance between the module frame and roof surface is required to prevent wiring damage and to enable air to circulate behind the module. Therefore a minimum of 50mm is required between the module frame and the roof surface.
When installed on a roof, the module shall be mounted according to the local and regional building and fire safety regulations. In case the module is installed in a roof integrated PV-System (BIPV), it shall be mounted over a watertight and fire-resistant underlayment rated for such application.
For Peformance 3 and 6 AC modules, in order to provide better access of connection for AC cables into the microinverter, Maxeon recommends the following installation sequence:

- When the microinverter is in lower position, then it is recommended to install the modules from Left to Right.
- When the microinverter is in upper position, then it is recommended to install the modules from Right to Left.

Modules mounting systems should only be installed on building that have been formally considered for structural integrity and confirmed to be capable of handling the additional weighted load of the modules and mounting systems, by a certified building specialist or engineer.
AC Modules are only certified for use when their factory frames are fully intact. Do not remove or alter any module frame. Creating additional mounting holes may damage the module and reduce the strength of the frame.
Modules may be mounted using the following methods only:

1. Pressure Clamps or Clips:

   Mount the module with the clips attached to the longer sides of the module. Refer to the allowable ranges in Section 5.0 (Appendix). Installers must

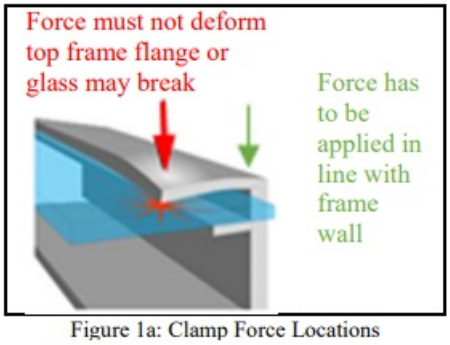


Figure 1a: Clamp Force Locations

   ensure the clamps are of sufficient strength to allow for the maximum design Figure 1a: Clamp Force Locations pressure of the module. Clips and clamps are not provided by Maxeon Solar Technologies. Clamps that secure to the top of the frame must not deform the top flange. Clamps must apply force collinear with the ‘wall’ of the module frame and not only to the top flange. Clamps shall not apply excessive force to the frame, warp the top flange, or contact the glass – these practices void the module warranty and risk frame and glass breakage. Figure 1a illustrates locations for top frame clamp force. Avoid clamping within 50mm of module corners to reduce risk of frame corner deflection and glass breakage. When clamping to the module frame, torque shall never exceed 15 N.m to reduce chances of frame deformation. A calibrated torque wrench must be used. Mounting systems should be evaluated for compatibility before installing specially when the system is not using Clamps or clips. Please contact Maxeon Solar Technologies for the approval of the use of non-standard pressure clamps or clips where torque values are higher than otherwise stated.
   Minimum clamp width allowance is ≥35mm, and for corner clamping the minimum clamp width is: ≥50mm. Clamps should not be in contact with the front glass and clamps should not deform the frame.
   Maxeon does not recommend nor endorse the application on the modules of clamps which, as part of their grounding or earthing function, have teeth or claw features (see Figure 2) which may, individually or cumulatively, cause the module breakage due to (and without limitation):

   1. the grounding features touching the front glass which is incorporated into the module due to the position of such grounding feature,

2. the shape, the position or the number of the grounding features deforming the module top frame, or
3. the clamp being over-torqued during the installation.

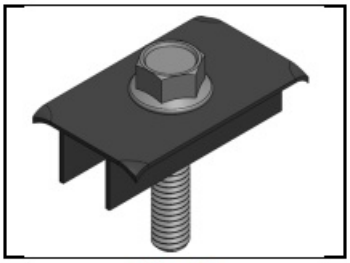


Figure 2

2. **End Mount:** End mounting is clipping/clamping of solar modules at the corner of short side to the supporting rail. The end-mounting rail and clips or clamps must be of sufficient strength to allow for the maximum design pressure of the module. Verify this capacity for both 1) clamps or clips and 2) end mounting system vendor before installation.

Handling of Modules during Installation
Never lift or move the modules using cables or the junction box under any circumstances. Do not place modules face forward in direct contact with abrasive surfaces such as roofs, driveways, wooden pallets, railings, or walls etc. The front surface of a module is sensitive to oils and abrasive surfaces, which may lead to scratches and irregular soiling.

Be careful not to touch the micro-inverter while unloading the Performance 3 AC modules, as the micro-inverter height exceeds the module frame slightly.

Shipping Position: X = 31.7mm

Install Position: X = 46.7mm

AC Modules are featured with antireflective coated glass and they are prone to visible finger print marks if touched on the front glass surface. Maxeon Solar Technologies recommends handing AC Modules with gloves (no leather gloves) or limiting touching of the front surface. Any finger print marks resulting from installation will naturally disappear over time or can be reduced by following the washing guidelines in Section 6.0 below. Any module coverage (colored plastic tarps or similar) during installation can lead to permanent front glass discoloration and is not recommended. The use of vacuum lifting pads can cause permanent marks on the front glass.
Shading incidence need to be avoided during PV system operation. The system is not supposed to be energized until the mounting scaffolding or railing have been removed from the roof.
Systems should be disconnected in any cases of maintenance which can cause shading (e.g. chimney sweeping, any roof maintenance, antenna/dish installations, etc.).

Maintenance

Maxeon Solar Technologies recommends visual inspection on a regular basis of AC modules for safe electrical connections, sound mechanical connection, and free from corrosion. This visual inspection should be performed by trained and licensed personnel. The standard frequency is once a year according to environmental conditions. Periodic cleaning of AC Modules is recommended, but is not required. Periodic cleaning has resulted in improved module performance, especially in regions with low levels of annual precipitation (less than 46,3cm (18,25 inches)). Consult installer supplier about recommended cleaning schedules for your area. Do not clean or spray modules with water during normal operation (module glass surface is hot). To clean a module, spray it with potable, non-heated water. Normal water pressure is more than adequate, but pressurized water 100 bar (min 50 cm distance) may be used. Fingerprints, stains, or accumulations of dirt on the front surface of the module may be removed as follows: rinse the area and wait 5 minutes. Re-wet the area and then use a soft sponge or seamless cloth to wipe the glass surface in a circular motion. Fingerprints typically can be removed with a soft cloth or sponge and water after wetting. NEVER use harsh cleaning materials such as scouring powder, steel wool, scrapers, blades, or other sharp instruments to clean module glass. Use of such materials on the modules will void the product warranty.

Troubleshooting

Make sure to follow all safety precautions described in this installation manual. The microinverters are monitored by Enphase Enlighten system. If a module is found to not produce power through the Enphase Enlighten System, please contact Enphase as the first point in the trouble shooting process. If Enphase microinverter is found to be functioning properly, Enphase will contact Maxeon Technical Support directly.
Troubleshooting an inoperative microinverter, please follow the Enphase troubleshooting process:

1. **Web forms –** send an email through **https://enphase.com/en-in/support/contact-support#form**
2. Call center

Europe
Netherlands: +31-73-7041633
France/Belgium: +33(0)484350555
Germany: +49 761 887893-20
UK: +44 (0)1908 828928
APAC
Melbourne, Australia: +1800 006 374
New Zealand: +09 887 0421
India: +91-80-6117-2500

Claiming process through Enlighten for installers: https://enphase.com/en-uk/support/system-owners/troubleshooting
All other faults please refer to the Enphase IQ Gateway Installation and Operation Manual at enphase.com/support for troubleshooting procedures.

Appendix (Supplementary Technical Information)

1. Enphase IQ7/IQ8A/ IQ8MC Installation and Operation Manual

   Please refer to local installation guide on Enphase website, for instance, **https://enphase.com/en-uk/support/enphase-iq-7-iq-7-iq-7x-microinverter-installation-and-operation-manual**
2. Enphase Installer Toolkit Commissioning:

   https://enphase.com/en-in/support/gettingstarted/commission

   Enphase Installer Toolkit is the mobile app where you can view the microinverter serial numbers and connect to the IQ Gateway to track system installation progress. To download, go to **http://www.enphase.com/toolkit**

and log in to your Enlighten account.

Getting Started Guide:

https://enphase.com/sites/default/files/GettingStartedGuide_SystemVerificationUsingInstallerToolkit_Insic

Installation Troubleshooting :

https://enphase.com/en-uk/support-associated-products/installer-toolkit

3. **Enphase IQ Gateway Installation and Operation Manual:**

   Refer to the Enphase IQ Gateway Installation and Operation Manual to activate the system monitoring and grid management functions.

   https://enphase.com/sites/default/files/downloads/support/IQ-Envoy-Manual-EN-US.pdf

   The guide provides the following:

   - Connecting the Gateway
   - Detecting devices and scanning the installation map
   - Connecting to Enlighten and registering the system

Table 2. Electrical Characteristics and Grid Interaction.
DC Electrical Characteristics:

	DC Ratings											
	DC values @ STC						Temperature				Efficiency	
Model	**Nom. Power (W)**	**Power Tol. (%)**	**Voltage at Rated Power (Vmpp)**	**Curr. at Rated Power, Impp (A)**	**Open Circuit Voltage, Voc (V)**	**Short Circuit Curr., Isc(A)**	**Curr. (Isc) Temp. Coeff. (%/°C)**	**Voltage (Voc) Temp. Coeff. (%/°C)**	**Power Temp. Coeff. (%/°C)**	**NOCT @ 20°C (value ± 2 °C)**	**Module Efficiency (%)**	**Nom. Peak power (W) per unit area: m2 / ft2**
SPR-MAX6-440-E4-AC	440	+5/–0	40.5	10.87	48.2	11.58	0.057	–0.239	–0.29	47.1	22.8	228/21.2
SPR-MAX6-435-E4-AC	435	+5/–0	40.3	10.82	48.2	11.57	0.057	–0.239	–0.29	47.1	22.5	225/20.9
SPR-MAX6-425-E4-AC	425	+5/–0	39.8	10.68	48.1	11.55	0.057	–0.239	–0.29	47.1	22.0	220/20.4
SPR-MAX6-420-E4-AC	420	+5/–0	39.6	10.62	48.1	11.53	0.057	–0.239	–0.29	47.1	21.7	217/20.2
SPR-MAX6-425-BLK-E4-AC	425	+5/–0	40.3	10.58	48.2	11.32	0.057	–0.239	–0.29	46.9	22.0	220/20.4

SPR-MAX6-415-BLK-E4-AC	415	+5/–0	39.8	10.43	48.1	11.29	0.057	–0.239	–0.29	46.9	21.5	215/20.0
SPR-MAX6-410-BLK-E4-AC	410	+5/–0	39.5	10.37	48.1	11.28	0.057	–0.239	–0.29	46.9	21.2	212/19.7
SPR-MAX6-450-E3-AC	450	+5/–0	41.0	10.99	48.3	11.61	0.057	–0.239	–0.29	47.1	23.3	233/21.6
SPR-MAX6-445-E3-AC	445	+5/–0	40.7	10.93	48.2	11.60	0.057	–0.239	–0.29	47.1	23.0	230/21.4
SPR-MAX6-440-E3-AC	440	+5/–0	40.5	10.87	48.2	11.58	0.057	–0.239	–0.29	47.1	22.8	228/21.2
SPR-MAX6-435-E3-AC	435	+5/–0	40.3	10.82	48.2	11.57	0.057	–0.239	–0.29	47.1	22.5	225/20.9
SPR-MAX6-430-E3-AC	430	+5/–0	40.0	10.74	48.2	11.56	0.057	–0.239	–0.29	47.1	22.3	223/20.7
SPR-MAX6-425-E3-AC	425	+5/–0	39.8	10.68	48.1	11.55	0.057	–0.239	–0.29	47.1	22.0	220/20.4
SPR-MAX6-420-E3-AC	420	+5/–0	39.6	10.62	48.1	11.53	0.057	–0.239	–0.29	47.1	21.7	217/20.2
SPR-MAX6-430-BLK-E3-AC	430	+5/–0	40.5	10.62	48.2	11.33	0.057	–0.239	–0.29	46.9	22.3	223/20.7
SPR-MAX6-425-BLK-E3-AC	425	+5/–0	40.3	10.58	48.2	11.32	0.057	–0.239	–0.29	46.9	22.0	220/20.4
SPR-MAX6-420-BLK-E3-AC	420	+5/–0	40.0	10.49	48.2	11.30	0.057	–0.239	–0.29	46.9	21.7	217/20.2
SPR-MAX6-415-BLK-E3-AC	415	+5/–0	39.8	10.43	48.1	11.29	0.057	–0.239	–0.29	46.9	21.5	215/20.0
SPR-MAX6-410-BLK-E3-AC	410	+5/–0	39.5	10.37	48.1	11.28	0.057	–0.239	–0.29	46.9	21.2	212/19.7
SPR-MAX6-405-BLK-E3-AC	405	+5/–0	39.3	10.30	48.1	11.26	0.057	–0.239	–0.29	46.9	21.0	210/19.5
SPR-MAX6-400-BLK-E3-AC	400	+5/–0	39.1	10.24	48.0	11.25	0.057	–0.239	–0.29	46.9	20.7	207/19.2

SPR-MAX5-420-E3-AC	420	+5/−0	40.5	10.4	48.2	10.9	0.057	−0.239	−0.29	43	22.5	225/20.9
SPR-MAX5-415-E3-AC	415	+5/−0	40.3	10.3	48.2	10.9	0.057	−0.239	−0.29	43	22.3	221/20.5
SPR-MAX5-410-E3-AC	410	+5/−0	40.0	10.2	48.2	10.9	0.057	−0.239	−0.29	43	22.0	220/20.4
SPR-MAX5-400-E3-AC	400	+5/−0	39.5	10.1	48.1	10.9	0.057	−0.239	−0.29	43	21.5	212/19.7
SPR-MAX5-390-E3-AC	390	+5/−0	39.0	9.99	48.0	10.8	0.057	−0.239	−0.29	43	20.9	209/19.4
SPR-P6-415-BLK-E9-AC	415	+3/−0	30.2	13.76	36.7	14.39	0.04	−0.27	−0.34	45	21.1	211/19.6
SPR-P6-410-BLK-E9-AC	410	+3/−0	29.9	13.73	36.4	14.38	0.04	−0.27	−0.34	45	20.9	209/19.4
SPR-P6-405-BLK-E9-AC	405	+3/−0	29.6	13.70	36.2	14.37	0.04	−0.27	−0.34	45	20.6	206/19.2
SPR-P6-415-BLK-E8-AC	415	+3/−0	30.2	13.76	36.7	14.39	0.04	−0.27	−0.34	45	21.1	211/19.6
SPR-P6-410-BLK-E8-AC	410	+3/−0	29.9	13.73	36.4	14.38	0.04	−0.27	−0.34	45	20.9	209/19.4
SPR-P6-405-BLK-E8-AC	405	+3/−0	29.6	13.70	36.2	14.37	0.04	−0.27	−0.34	45	20.6	206/19.2
SPR-P3-385-BLK-E4-AC	385	+5/−0	36.3	10.61	43.7	11.31	0.06	−0.28	−0.34	45	19.6	196/17.3
SPR-P3-380-BLK-E4-AC	380	+5/−0	35.9	10.59	43.4	11.28	0.06	−0.28	−0.34	45	19.4	194/17.1
SPR-P3-375-BLK-E4-AC	375	+5/−0	35.5	10.57	43.0	11.26	0.06	−0.28	−0.34	45	19.1	191/16.9
SPR-P3-370-BLK-E4-AC	370	+5/−0	35.1	10.55	42.6	11.24	0.06	−0.28	−0.34	45	18.9	189/16.7
SPR-P3-385-BLK-E3-AC	385	+5/−0	36.3	10.61	43.7	11.31	0.06	−0.28	−0.34	45	19.6	196/17.3

SPR-P3-380-BLK-E3-AC	380	+5/–0	35.9	10.59	43.4	11.28	0.06	–0.28	–0.34	45	19.4	194/17.1
SPR-P3-375-BLK-E3-AC	375	+5/–0	35.5	10.57	43.0	11.26	0.06	–0.28	–0.34	45	19.1	191/16.9
SPR-P3-370-BLK-E3-AC	370	+5/–0	35.1	10.55	42.6	11.24	0.06	–0.28	–0.34	45	18.9	189/16.7

AC Electrical Characteristics:

	AC values @ STC					AC Ratings							
						Operating Limits							
Model	**AC Voltage Output (nom., V)**	**AC Max. Cont. Output Curr. (A)**	**Max. Series Fuse (A)**	**AC Max. Cont. Output Power, W or VA**	**AC Peak Output Power (W) or VA**	**Freq. (nom., Hz)**	**Extended Frequency Range (Hz)**	**AC Short Circuit Fault Current Over 3 Cycles (A rms)**	**Overvoltage Class AC Port**	**AC Port Backfeed Current (mA)**	**Power Factor Setting**	**Power Factor (adjustable) lead. / lag.**	**Max. Units per Branch (Europe – Australia)**
SPR-MAX6-440-E4-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-MAX6-435-E4-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-MAX6-425-E4-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-MAX6-420-E4-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-MAX6-425-BLK-E4-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11

SPR-MAX6-415-BLK-E4-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-MAX6-410-BLK-E4-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-MAX6-450-E3-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-MAX6-445-E3-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-MAX6-440-E3-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-MAX6-435-E3-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-MAX6-430-E3-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-MAX6-425-E3-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-MAX6-420-E3-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-MAX6-430-BLK-E3-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-MAX6-425-BLK-E3-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-MAX6-420-BLK-E3-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-MAX6-415-BLK-E3-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-MAX6-410-BLK-E3-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-MAX6-405-BLK-E3-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11

SPR-MAX6-400-BLK-E3-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-MAX5-420-E3-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-MAX5-415-E3-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-MAX5-410-E3-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 -11
SPR-MAX5-400-E3-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-MAX5-390-E3-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-P6-415-BLK-E9-AC	184-276	1.43	20	325	330	50	45-55	–	III	–	1.0	0.8 / 0.8	11 – N/A
SPR-P6-410-BLK-E9-AC	184-276	1.43	20	325	330	50	45-55	–	III	–	1.0	0.8 / 0.8	11 – N/A
SPR-P6-405-BLK-E9-AC	184-276	1.43	20	325	330	50	45-55	–	III	–	1.0	0.8 / 0.8	11 – N/A
SPR-P6-415-BLK-E8-AC	184-276	1.59	20	360	366	50	45-55	–	III	–	1.0	0.8 / 0.8	10 – N/A
SPR-P6-410-BLK-E8-AC	184-276	1.59	20	360	366	50	45-55	–	III	–	1.0	0.8 / 0.8	10 – N/A
SPR-P6-405-BLK-E8-AC	184-276	1.59	20	360	366	50	45-55	–	III	–	1.0	0.8 / 0.8	10 – N/A
SPR-P3-385-BLK-E4-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 -11
SPR-P3-380-BLK-E4-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-P3-375-BLK-E4-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11

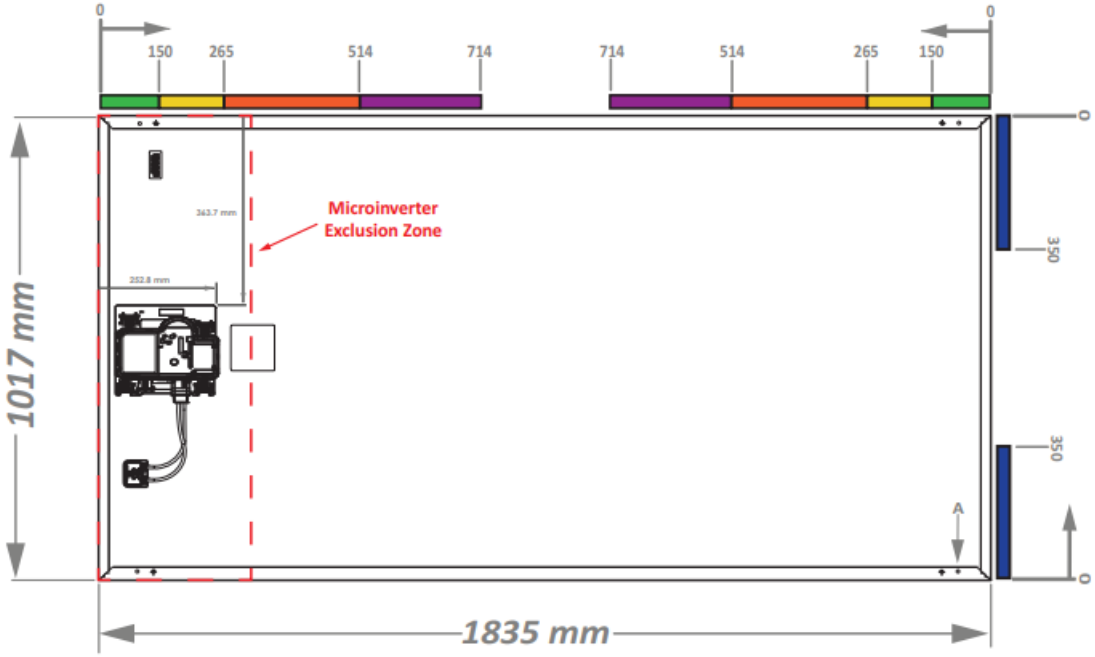
SPR-P3-370-BLK-E4-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-P3-385-BLK-E3-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 -11
SPR-P3-380-BLK-E3-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-P3-375-BLK-E3-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11
SPR-P3-370-BLK-E3-AC	219-264	1.52	20	349	366	50	45-55	5.8	III	18	1.0	0.8 / 0.8	10 – 11

Please refer to the module datasheet for the AC electrical characteristics

APPENDIX

MOUNTING CONFIGURATIONS AND LOAD RATINGS

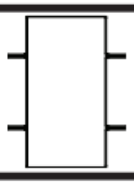
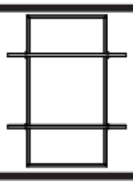
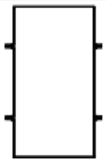
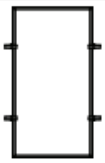
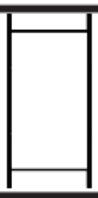
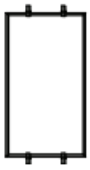
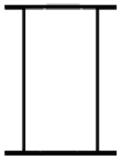
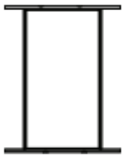
SunPower Maxeon 5 AC Residential Solar Panel (SPR-MAX5-XXX-BLK-E3-AC)



Measurement Tolerances are +/-3mm for the Length and Width of the module.

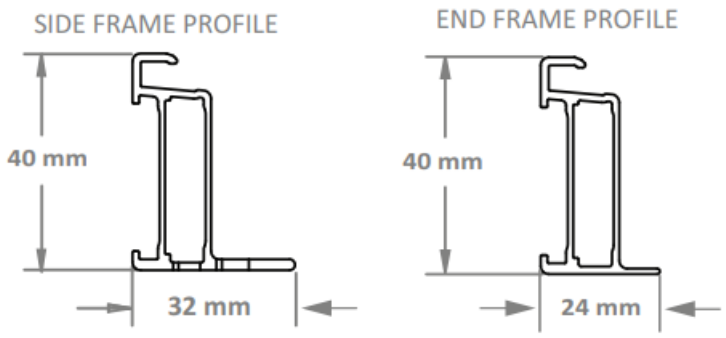
A - Ground Holes (4X Ø 4.2mm)

TOP CLAMPS

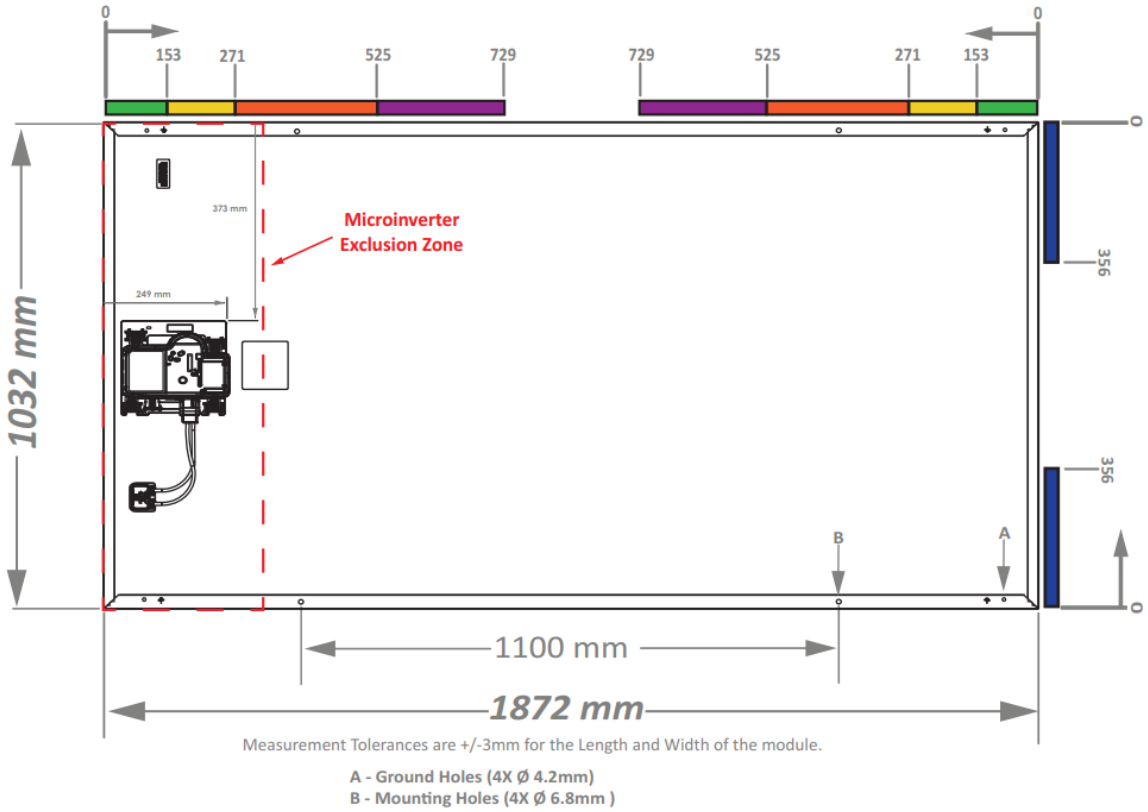
Mounting Configuration Description[4]	Mounting Configuration Diagram		Mounting Zone Locations (distance from corner in mm)	Test Load[2] Downward/Upward (Pa)	Design Load[1] Downward/Upward (Pa)
	Front View	Back View			
Long Side Mounting, Rails Perpendincular to Mounting Frame			265 - 514[3]	+5400/-4050	+3600/-2700
			514 - 714	+2400/-2550	+1600/-1700
Long Side Mounting, Point Supported[5]			0 - 150	+2400/-2400	+1600/-1600
			150 - 265	+2400/-2400	+1600/-1600
			265 - 514	+5400/-3600	+3600/-2400
			514- 714	+2400/-2400	+1600/-1600
Long Side Mounting, Rails Parallel to Mounting Frame[6]			0 - 150	+2400/-2400	+1600/-1600
			150 - 265	+2400/-2400	+1600/-1600
			265 - 514	+5400/-3600	+3600/-2400
			514- 714	+2400/-2400	+1600/-1600
Short Side Mounting, Rails Perpendicular to Mounting Frame (End Mount)			0 - 350	+3600/-2400	+2400/-1600
Short Side Mounting, Point Supported (End Mount)			0 - 350	+2400/-2400	+1600/-1600
Short Side Mounting, Rails Parallel to Mounting Frame (End Mount)			0 - 350	+2400/-2400	+1600/-1600

1. Design Load considers 1.5 Factor of Safety, Test load = Design load x 1.5. Product Warranty covers only design load values. The design loads listed in this table supersede all other loads that may be defined by other parties, unless there is a formal authorizayion by Maxeon.
2. Test loads are for information purposes only, design loads should be considered for the project design.
3. Rails must not be under the Microinverter.
4. In the cases where hybrid mounting is necessary (combinayion of long and short side mounting), the lowest design load values should be considered as allowable design load.
5. Bottom flange mounting
6. Range indicates positioning of the clamp and not the rails

GEN 5.2 FRAME PROFILE



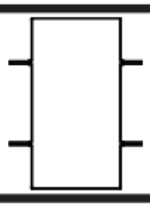
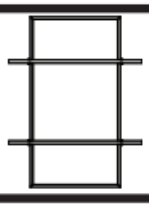
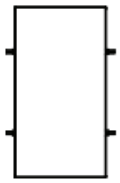
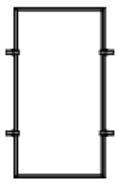
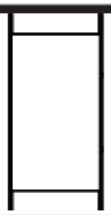
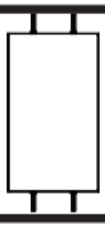
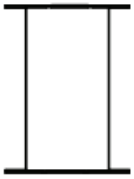
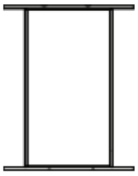
SunPower Maxeon 6 AC Residential Solar Panel
(SPR-MAX6-XXX-BLK-E3-AC, SPR-MAX6-XXX-E3-AC, SPR-MAX6-XXX-BLK-E4-AC, SPR-MAX6-XXX-E4-AC)



Measurement Tolerances are +/-3mm for the Length and Width of the module.

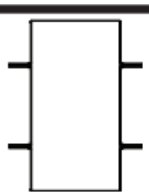
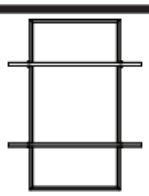
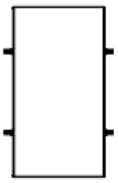
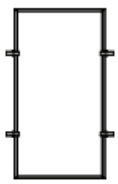
A - Ground Holes (4X Ø 4.2mm)
B - Mounting Holes (4X Ø 6.8mm)

TOP CLAMPS

Mounting Configuration Description[4]	Mounting Configuration Diagram		Mounting Zone Locations (distance from corner in mm)	Test Load[2] Downward/Upward (Pa)	Design Load[1] Downward/Upward (Pa)
	Front View	Back View			
Long Side Mounting, Rails Perpendincular to Mounting Frame			271 - 525[3]	+5400/-4050	+3600/-2700
			525 - 729	+2400/-2550	+1600/-1700
Long Side Mounting, Point Supported[5]			0 - 153	+2400/-2400	+1600/-1600
			153 - 271	+2400/-2400	+1600/-1600
			271 - 525	+5400/-3600	+3600/-2400
			525- 729	+2400/-2400	+1600/-1600
Long Side Mounting, Rails Parallel to Mounting Frame[6]			0 - 153	+2400/-2400	+1600/-1600
			153 - 271	+2400/-2400	+1600/-1600
			271 - 525	+5400/-3600	+3600/-2400
			525- 729	+2400/-2400	+1600/-1600
Short Side Mounting, Rails Perpendicular to Mounting Frame (End Mount)			0 - 356	+3600/-2400	+2400/-1600
Short Side Mounting, Point Supported (End Mount)			0 - 356	+2400/-2400	+1600/-1600
Short Side Mounting, Rails Parallel to Mounting Frame (End Mount)			0 - 356	+2400/-2400	+1600/-1600

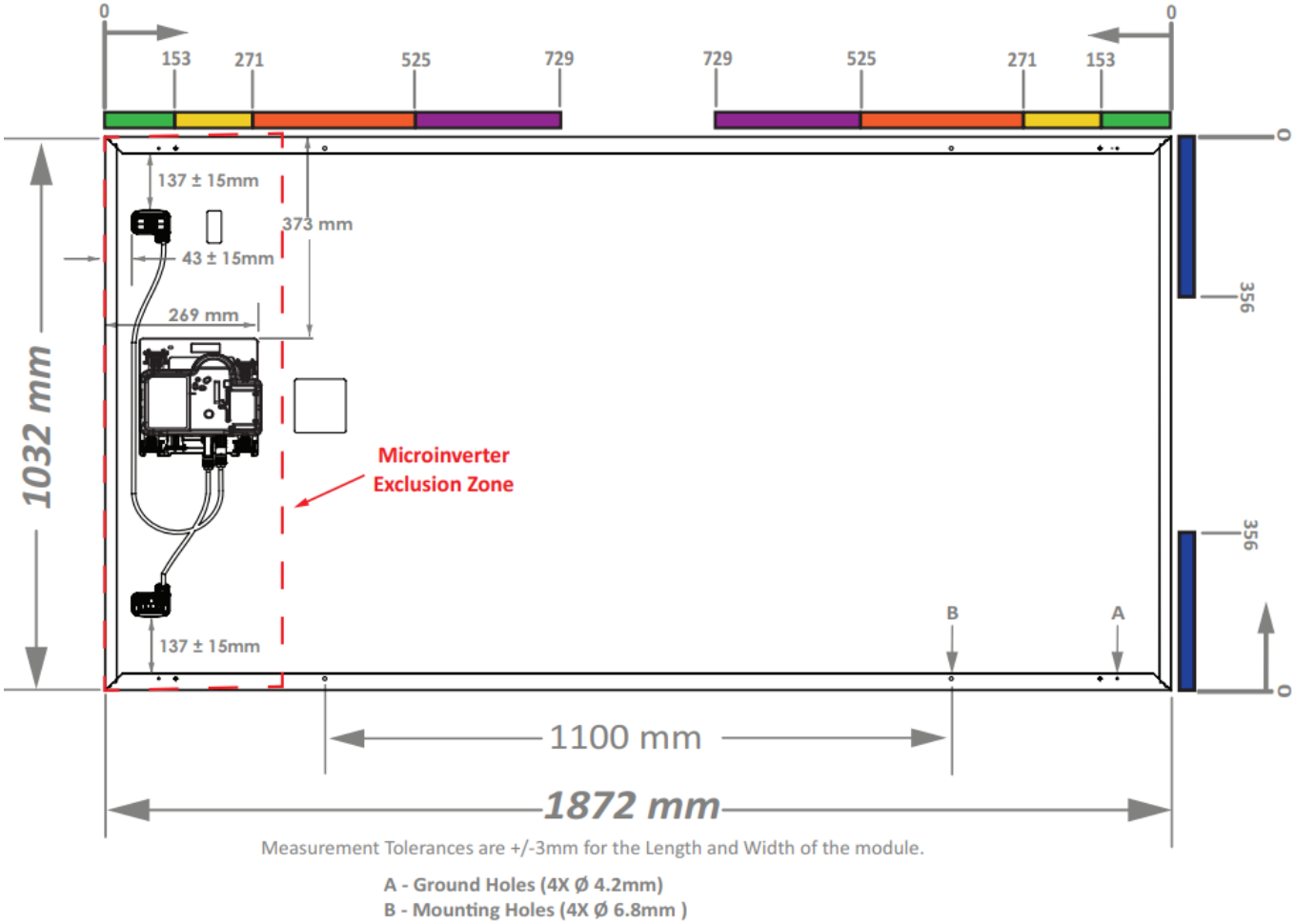
1. Design Load considers 1.5 Factor of Safety, Test load = Design load x 1.5. Product Warranty covers only design load values. The design loads listed in this table supersede all other loads that may be defined by other parties, unless there is a formal authorization by Maxeon.
2. Test loads are for information purposes only, design loads should be considered for the project design.
3. Rails must not be under the Microinverter.

BOLTS

Mounting Configuration Description	Mounting Configuration Diagram		Mounting Zone Locations (distance from corner in mm)	Test Load[2] Downward/Upward (Pa)	Design Load[1] Downward/Upward (Pa)
	Front View	Back View			
Long Side Mounting, Rails Perpendincular to Mounting Frame			**1100mm Holes**	+9000/-6000	+6000/-4000
Long Side Mounting, Point Supported			**1100mm Holes**	+5400/-5400	+3600/-3600

4. In the cases where hybrid mounting is necessary (combination of long and short side mounting), the lowest design load values should be considered as allowable design load.
5. Bottom flange mounting
6. Range indicates positioning of the clamp and not the rails

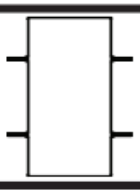
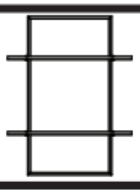
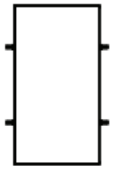
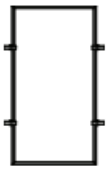
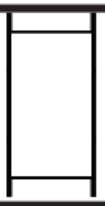
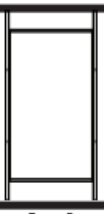
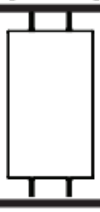
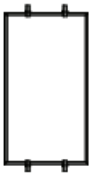
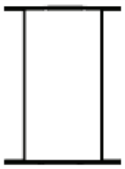
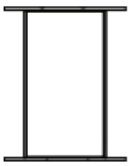
SunPower Maxeon 6 AC Residential Solar Panel (SPR-MAX6-XXX-BLK-E4-AC, SPR-MAX6-XXX-E4-AC)



Measurement Tolerances are +/-3mm for the Length and Width of the module.

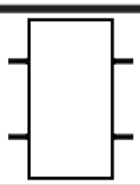
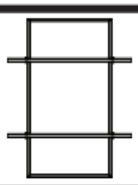
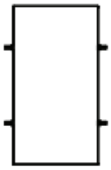
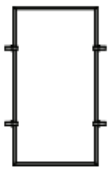
A - Ground Holes (4X Ø 4.2mm)
B - Mounting Holes (4X Ø 6.8mm)

TOP CLAMPS

Mounting Configuration Description[4]	Mounting Configuration Diagram		Mounting Zone Locations (distance from corner in mm)	Test Load[2] Downward/Upward (Pa)	Design Load[1] Downward/Upward (Pa)
	Front View	Back View			
Long Side Mounting, Rails Perpendincular to Mounting Frame			271 - 525[3]	+5400/-4050	+3600/-2700
			525 - 729	+2400/-2550	+1600/-1700
Long Side Mounting, Point Supported[5]			0 - 153	+2400/-2400	+1600/-1600
			153 - 271	+2400/-2400	+1600/-1600
			271 - 525	+5400/-3600	+3600/-2400
			525- 729	+2400/-2400	+1600/-1600
Long Side Mounting, Rails Parallel to Mounting Frame[6]			0 - 153	+2400/-2400	+1600/-1600
			153 - 271	+2400/-2400	+1600/-1600
			271 - 525	+5400/-3600	+3600/-2400
			525- 729	+2400/-2400	+1600/-1600
Short Side Mounting, Rails Perpendicular to Mounting Frame (End Mount)			0 - 356	+3600/-2400	+2400/-1600
Short Side Mounting, Point Supported (End Mount)			0 - 356	+2400/-2400	+1600/-1600
Short Side Mounting, Rails Parallel to Mounting Frame (End Mount)			0 - 356	+2400/-2400	+1600/-1600

1. Design Load considers 1.5 Factor of Safety, Test load = Design load x 1.5. Product Warranty covers only design load values. The design loads listed in this table supersede all other loads that may be defined by other parties, unless there is a formal authorization by Maxeon.
2. Test loads are for information purposes only, design loads should be considered for the project design.
3. Rails must not be under the Microinverter.

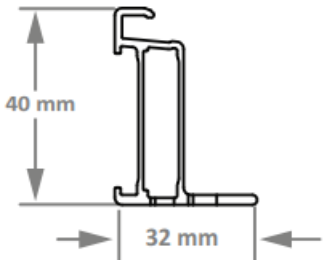
BOLTS

Mounting Configuration Description	Mounting Configuration Diagram		Mounting Zone Locations (distance from corner in mm)	Test Load[2] Downward/Upward (Pa)	Design Load[1] Downward/Upward (Pa)
	Front View	Back View			
Long Side Mounting, Rails Perpendincular to Mounting Frame			**1100mm Holes**	+9000/-6000	+6000/-4000
Long Side Mounting, Point Supported			**1100mm Holes**	+5400/-5400	+3600/-3600

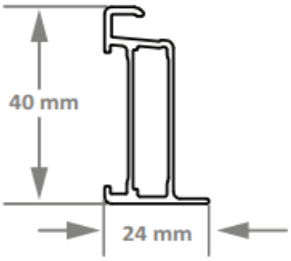
4. In the cases where hybrid mounting is necessary (combination of long and short side mounting), the lowest design load values should be considered as allowable design load.
5. Bottom flange mounting
6. Range indicates positioning of the clamp and not the rails

GEN 5.2 FRAME PROFILE

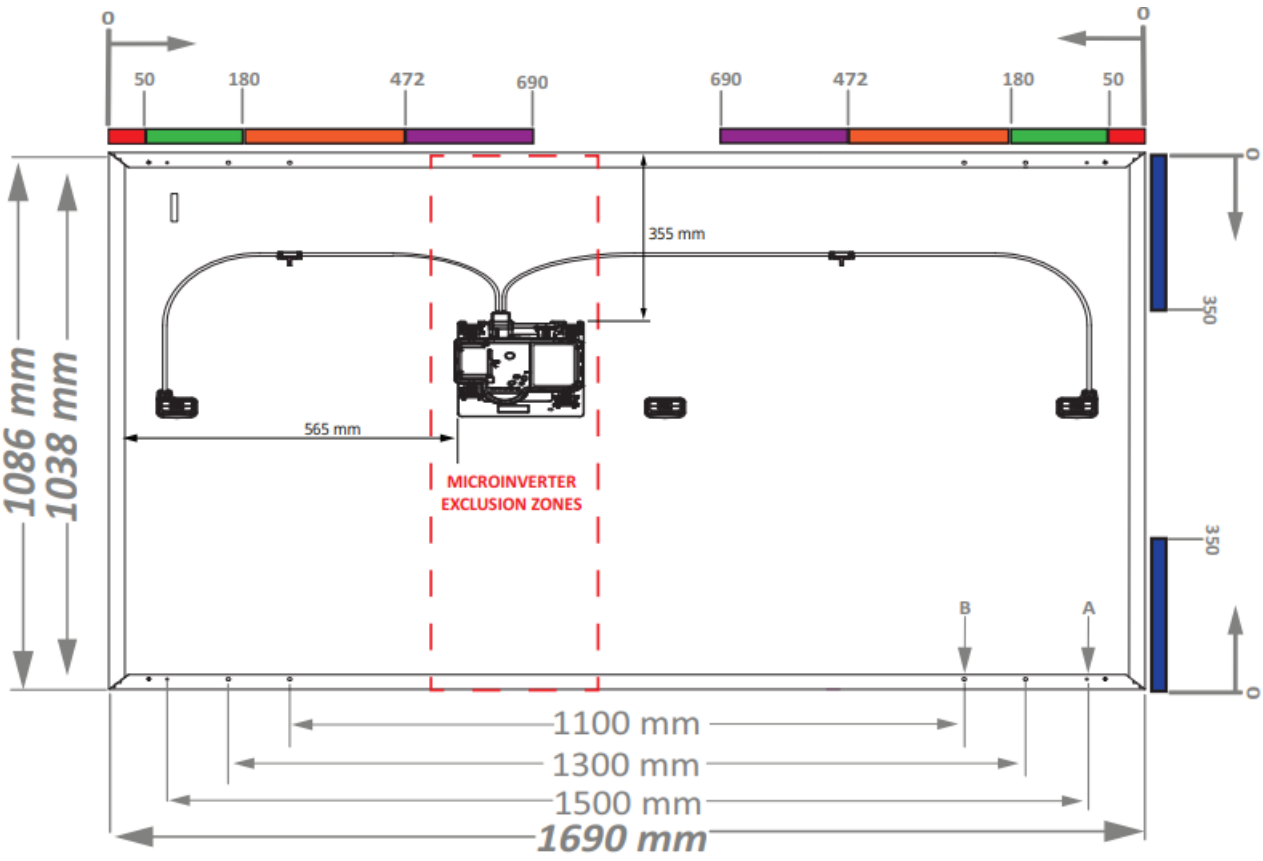
SIDE FRAME PROFILE



END FRAME PROFILE



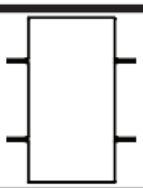
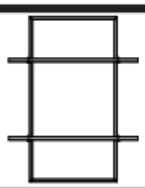
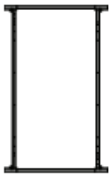
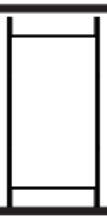
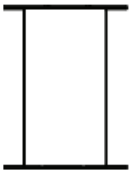
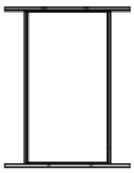
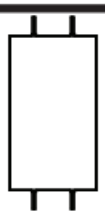
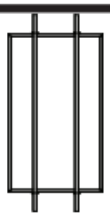
SunPower Performance 3 Residential AC Solar Panel (SPR-P3-XXX-BLK-E3-AC, SPR-P3-XXX-BLK-E4-AC)



Measurement Tolerances are +/-3mm for the Length and Width of the module.

A - Ground Holes (4X Ø 4.2mm)
B - Mounting Holes (8X Ø 6.8mm)

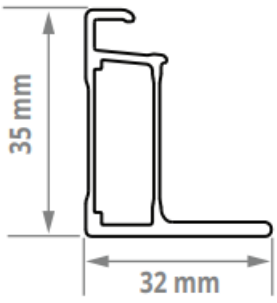
TOP CLAMPS

Mounting Configuration Description [4]	Mounting Configuration Diagram		Mounting Zone Locations (distance from corner in mm)	Test Load [2] Downward/Upward (Pa)	Design Load [1] Downward/Upward (Pa)
	Front View	Back View			
Long Side Mounting, Rails Perpedincular to Mounting Frame			50 - 180	+2400/-2400	+1600/-1600
			180 - 472	+5400/-2400	+3600/-1600
			472 - 690 [3]	+2400/-2400	+1600/-1600
Corner Mounting, Long Side [5]			0 - 50	+2400/-1600	+1600/-1067
Long Side Mounting, Rails Parallel to Mounting Frame [6]			50 - 372	+3600/-1800	+2400/-1200
			372 - 472	+3600/-2400	+2400/-1600
Short Side Mounting, Rails Parallel to Mounting Frame (End Mount)			0 - 240	+1400/-1400	+933/-933
			240 - 340	+2400/-2000	+1600/-1333
Short Side Mounting, Rails Perpedincular to Mounting Frame (End Mount)			80 - 180	+6000/-2400	+4000/-1600
			240 - 340	+6000/-2400	+4000/-1600

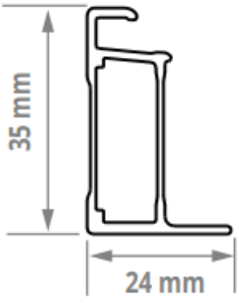
1. Design Load considers 1.5 Factor of Safety, Test load = Design load x 1.5. Product Warranty covers only design load values. The design loads listed in this table supersede all other loads that may be defined by other parties, unless there is a formal authorization by Maxeon.
2. Test loads are for information purposes only, design loads should be considered for the project design.
3. Rails must not be under the Microinverter.
4. In the cases where hybrid mounting is necessary (combination of long and short side mounting), the lowest design load values should be considered as allowable design load.
5. Bottom flange mounting
6. Range indicates positioning of the clamp and not the rails

GEN 4.3 FRAME PROFILE

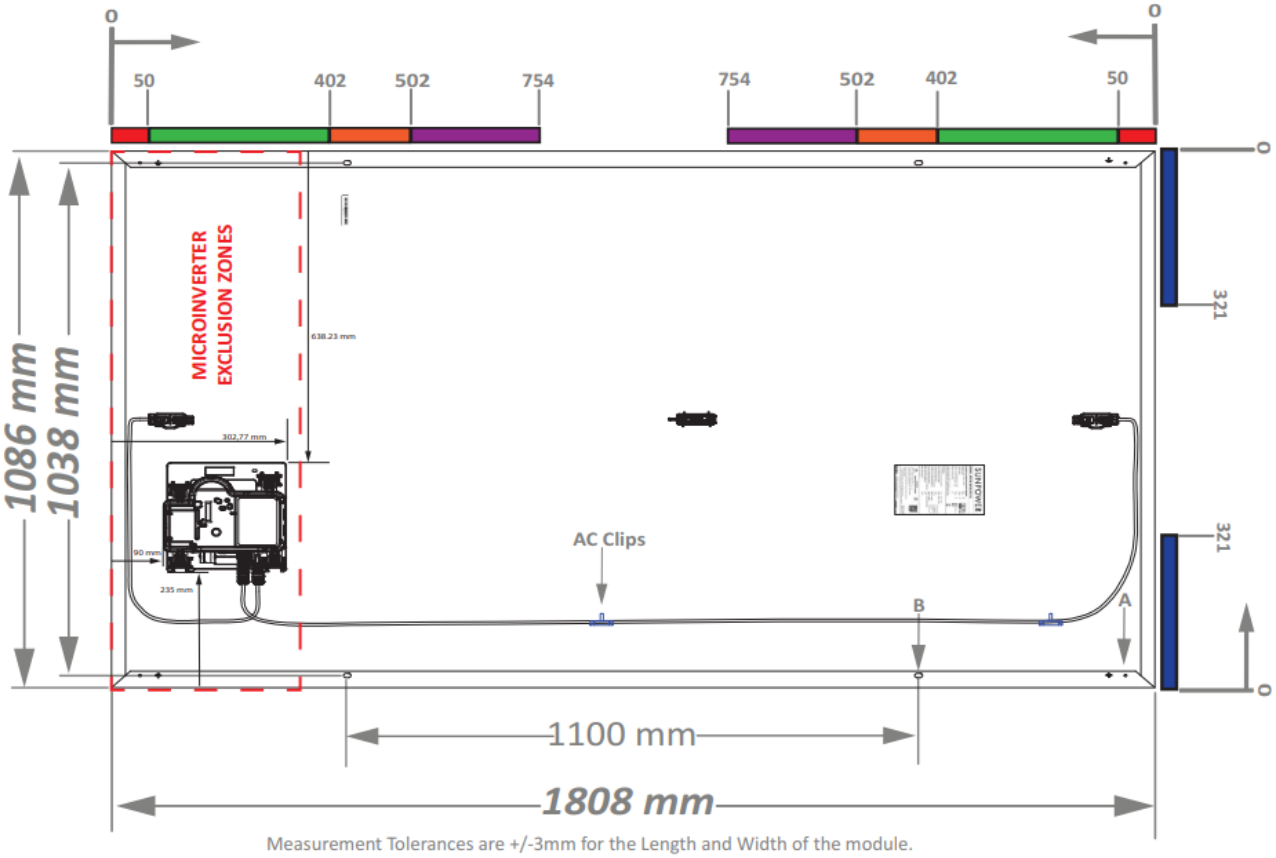
SIDE FRAME PROFILE



END FRAME PROFILE



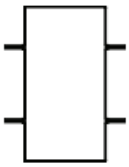
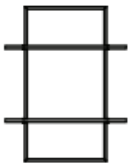
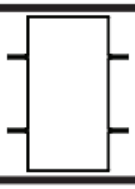
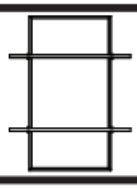
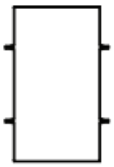
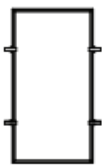
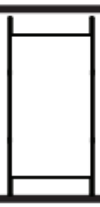
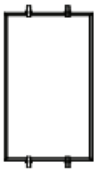
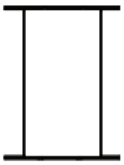
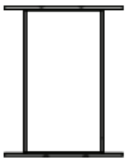
SunPower Performance 6 Residential AC Solar Panel (SPR-P6-XXX-BLK-E8-AC, SPR-P6-XXX-BLK-E9-AC)



Measurement Tolerances are +/-3mm for the Length and Width of the module.

A - Ground Holes (4X Ø 4.2mm)
B - Mounting Holes (4X 9mm (W) x 14mm (L), R4.5mm)

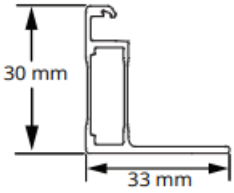
TOP CLAMPS

Mounting Configuration Description[3]	Mounting Configuration Diagram		Mounting Zone Locations (distance from corner in mm)	Test Load[2] Downward/Upward (Pa)	Design Load[1] Downward/Upward (Pa)
	Front View	Back View			
Long Side Mounting, Rails Perpedincular to Mounting Frame			303 - 617	+2700/-2000	+1800/-1333
Long Side Mounting, Rails Perpedincular to Mounting Frame			303- 402	+2000/-2000	+1333/-1333
			402 - 502	+5400/-2400	+3600/-1600
			502 - 754	+2000/-1800	+1333/-1200
Long Side Mounting, Point Supported[4]			50 - 402	+2000/-2000	+1333/-1333
			402 - 502	+2000/-2400	+1333/-1600
			502 - 754	+1400/-1800	+933/-1200
Long Side Mounting, Rails Parallel to Mounting Frame[5]			50 - 402	+2800/-1800	+1867/-1200
			402 - 502	+2800/-1800	+1867/-1200
			502 - 754	+2800/-1800	+1867/-1200
Short Side Mounting, Point Supported (End Mount)			0 - 221	+1400/-1400	+933/-933
			221 - 321	+1800/-1200	+1200/-800
Short Side Mounting, Rails Parallel to Mounting Frame (End Mount)			0 - 221	+1400/-1400	+933/-933
			221 - 321	+1600/-1600	+1067/-1067

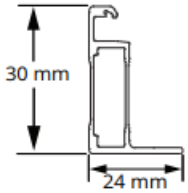
1. Design Load considers 1.5 Factor of Safety, Test load = Design load x 1.5. Product Warranty covers only design load values. The design loads listed in this table supersede all other loads that may be defined by other parties, unless there is a formal authorization by Maxeon.
2. Test loads are for information purposes only, design loads should be considered for the project design.
3. In the cases where hybrid mounting is necessary (combination of long and short side mounting), the lowest design load values should be considered as allowable design load.
4. Bottom flange mounting
5. Range indicates positioning of the clamp and not the rails

GEN 4.4 FRAME PROFILE

SIDE FRAME PROFILE



END FRAME PROFILE



Documents / Resources

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