

# Photovoltaic panel clamp bolt torque standard





## Overview

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The ET installation manual recommends the clamp bolt should be torqued to 8-10 Nm (6-7.3 ft-lbs), but the Unirac manual recommends a torque value of 15 ft-lbs. How far should a clamp be connected to a PV module?

Clamps should be connected to the module between 300 and 400 mm from the edge of the module. This distance is from the module edge to the middle of the clamp. \*Note: Need two support rails below the PV module to make sure the Mechanical load. \*Note: The above-described distance is from the module edge to the middle of the clamp.

What size bolt & nut do I need for a clamp?

Please note that all dimensions below are in mm units. Trina suggests using M8 bolts to fix the clamp. The torque for M8 screw is 16-20 N\*M. When choosing the bolts and nuts for the clamp, please note your racking's dimensions first. Trina suggests using M8 bolts to fix the clamp. The torque for M8 screw is 16-20 N\*M.

What is tilt angle of PV module?

Tilt angle of PV modules refer to the included angle between module surface and horizontal ground. The module will obtain the maximum power output when directly facing the sunlight. Modules are preferred to be south-facing in the north hemisphere and north-facing in the south hemisphere.

Which Racking clamps should I use for Trina Solar racking?

For C structure steel type 1 racking, due to the amount of space inside the racking section, many choices are available including T-shape nuts. Please consult with a Trina Solar engineer before installing with the frameless clamps. Clamps should be connected to the module between 300 and 400 mm from the edge of the module.

What is the recommended twist torque?



The recommended twist torque value is 2.3 N.m. A copper core in size of 12 AWG can be used as grounding clamp. The copper wire should not be squashed during the installation. The existing mounting holes which have not been used can be used for grounding. Direct the grounding clamp to the mounting hole on the frame.

How much torque should a bolt nut have?

The yield strength of bolt and nut should not be less than 450 MPa. Tightening torques should be 17~23 Nm (12.5~17.0 ft-lbs) respectively for M8 (5/16"-18) coarse thread bolts, depending on bolt class. In areas with heavy wind loads, additional mounting points should be used.



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### [Roof Anchor System for Solar Panels](#)

Specify double-nutting of the panel clamp bolts. For the first nut, specify nuts that are furnished with T-bolts. should have maintenance staff or a contractor annually check the tightness of the PV array's bolted connectors with a torque ...

### [IronRidge Roof Mount Manual](#)

Torque to 250 in-lbs B Preload and Space Square Bolts A Torque to 20 in-lbs 6" Inside Rail 1" í Tested or evaluated third-party roof attachments: o Anchor Products - U-Anchor o S-5! ...

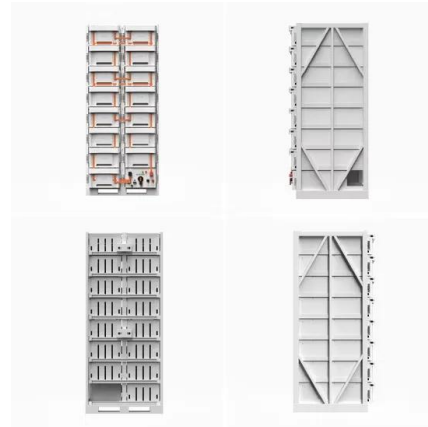


### [Mounting Solar Modules and Estimating Parts](#)

3) Mid Clamps (Unirac Master List page 20) The number of end clamps required is equal to one less than the number of modules on each row. For nine modules, I need eight mid-clamps for each rail. As I have four rails, I need 32 mid ...

### **Solar Panel Clamping Zones: Are your panels ...**

Discover what solar panel clamping zones are, why they matter and whether your solar panels have been installed properly. Clamps Rule and Clamp Rules. Because bolts are so bothersome, by far the most common ...



### [RoofTrac® Rail Clamping Technology](#)

End clamps precision fitted to module frame to ensure strength and safety in PV solar module mounting system installation. 1-1/2" Channel Nut Offers min 10x rail grip vs. competitor t ...



### [Fast Rack - Solar Panel Mounting System](#)

Ensure grounding lug assembly is placed under solar panel (i.e. between end clamps) FIG. 12 DWG # 101135 15. Step by step installation guide Step 10: Solar panel installation oTorque ...



### [PV-ezRack Klip-Lok Standing Seam Clamp](#)

clamp. Recommended torque is 18 ~20 Nm. Figure 3 4.3 PV Module Installation There are two types of clamps for PV Modules Installation. Option 1: Standard Inter and End Clamps Step 1: ...



## [How to Mount Solar Panels . AltE Store](#)

Several manufacturers make stationary solar panel mounting structures designed to work with almost any solar panel model. This hardware is intended for multiple applications and different ...



### **Standard Rail Roof Mounting Installation Manual**

1/4-20 x 2.75" hex cap bolt, SS 4 23-2520-200, 23-2520-250, 23-2520-275 Length of bolt depends on the thickness of the PV panel. 1/4-20 flange nut, SS 4 25-2501-014 End Clamp ...

### **Does higher Torque Value on installation damage PV module?**

I am installing ET Solar panels (ET-P660230B) on Unirac HD rails using top-mounted clamps. The ET installation manual recommends the clamp bolt should be torqued to 8-10 Nm (6-7.3 ft-lbs), ...



### **L-Foot Solar Panel Mounting Kit: Streamlined for Snap Lock**

L-Foot Solar Panel Mounting Kit for Snap Lock Standing Seam Metal Roofs. Part#: 5058-LF This AceClamp l-foot PV mounting kit . has been specially designed for a precise fit primarily on tall ...



What to know about mid clamps and end clamps

Mid and end clamps are two of the most critical components that secure PV modules to the racking system. Here to explain what they do, how they do it and what to look for in a clamp are Mark Gies, director of solar ...



**Don't Let Your Solar Panels Down: The Ultimate Guide to ...**

In the dynamic world of solar energy, the efficiency and longevity of your solar panels hinge not just on the panels themselves but also on the often-overlooked heroes of ...

**UFO®**

UFO® mid clamps join forces with the EFO(TM) end clamps to provide a universal family of fasteners. The UFO® is a part of the IronRidge® Integrated Grounding System, which is listed to UL 2703 and eliminates the need for separate ...



**The Importance of Torque for PV System Longevity**

Image 1: Mechanical Lug Image 2: Compression Lug Image 3: Structural Bolt Image 4: Failed Torque Demonstration (hot spot due to poor torque) How Hardware Fails. There are two ...





### Solar Panel Fixing Options

Here is a piece on Solar Panel Fixing Options built to help Developers, Contractors, Architects, and Homeowners grasp what's on offer for fixing PV panels. One of the benefits of in-roof ...



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