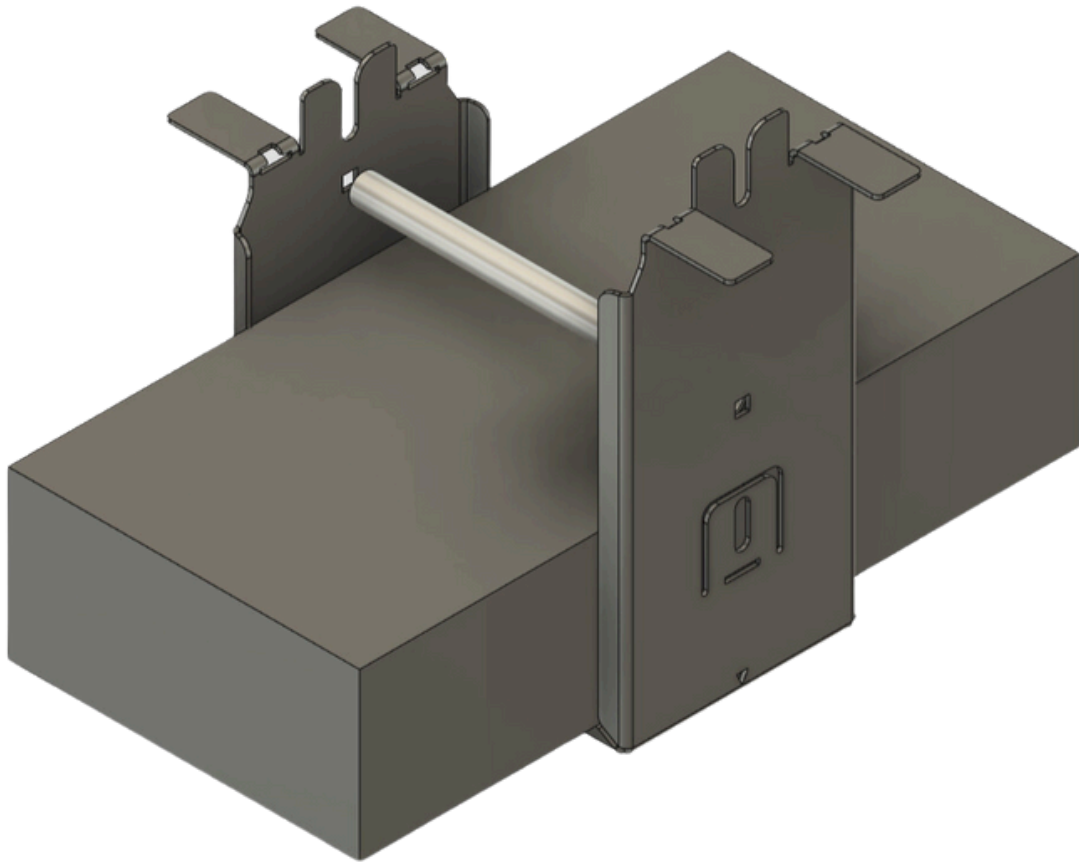




Revolutionary Solar Racking Systems



**IR-05**

**INSTALL INSTRUCTIONS**

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IntegraRack® backs all of its products with a 25 year limited product warranty. We fully stand by the quality and guarantee that they will hold up under the harshest conditions when properly installed.

## Disclaimer

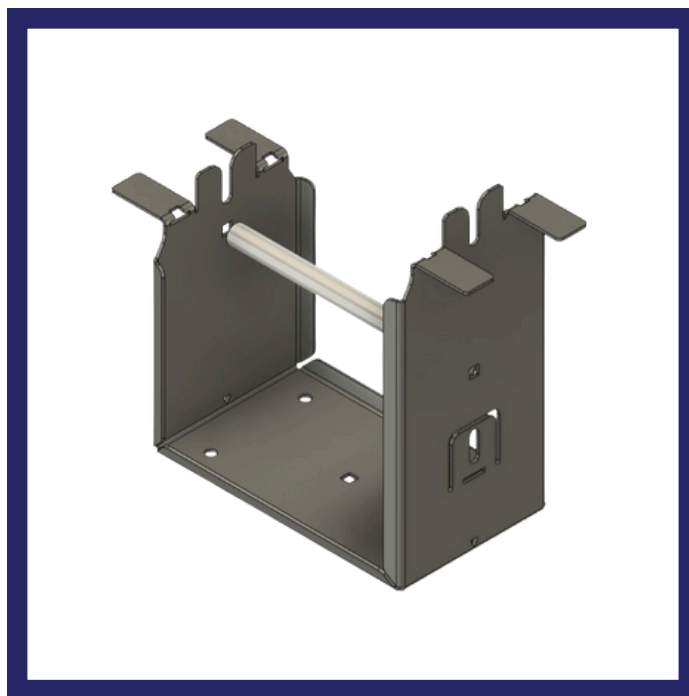
The instructions detailed in this manual will provide the knowledge and requirements necessary for proper installation of the given product. Be sure to read them thoroughly and make sure that you fully understand them before proceeding with installation. Any improper use or installation of these products will void any and all warranty coverage, and may cause failure, property damage or personal injury. IntegraRack is not responsible for any damages caused by improper use.

### **IT IS THE RESPONSIBILITY OF THE INSTALLER TO:**

- Comply with any and all applicable local or national codes and regulations.
- Ensure all products are appropriate for the installation according to the environmental and loading conditions.
- Ensure roof structure is in good condition prior to installation
- Disconnect AC power before servicing or removing modules, micro-inverters or power optimizers.
- Review manufacturer's documentation for compatibility and compliance for solar modules and 3rd party systems.
- If loose components or loose fasteners are found during periodic inspection, re-tighten immediately. Any components showing signs of corrosion or damage that compromise safety shall be replaced immediately.
- Provide an appropriate method of direct-to-earth grounding according to the latest edition of the National Electrical Code, including NEC 250: Grounding and Bonding, and NEC 690: Solar Photovoltaic Systems.
- Ensure safe installation of all electrical aspects of the solar system (All electrical installation and procedures should be conducted by a licensed and bonded electrician or solar contractor). Regular maintenance of a module or panel shall not involve breaking or disturbing the bonding path of the system. All work must comply with national, state and local installation procedures, product and safety standards.
- Ensure bare copper grounding wire does not contact aluminum and zinc-plated steel components, to prevent risk of galvanic corrosion.
- Ensure provided information is accurate. Issues resulting from inaccurate information are the installer's responsibility.

# Included Components

- (1) IR-05
- (1) Tube Handle
- (2) Tube Handle Bolts



IR-05 Flat Roof Ballast System

## Required Tools & Components

### Required Components

- (4) IR-F2 Solar Module Flange Clamp Bonding Brackets per solar panel
- IR-B1 Bonding Jumpers are required for multiple row systems

### Required Tools

- 1/2" Wrench or Screw Gun
- Line Chalk
- Tape Measure

### Materials Required - Ballasted Installation

- (1) 4" x 8" x 16" cinder block per IR-05

### Materials Required - Adhesive Installation

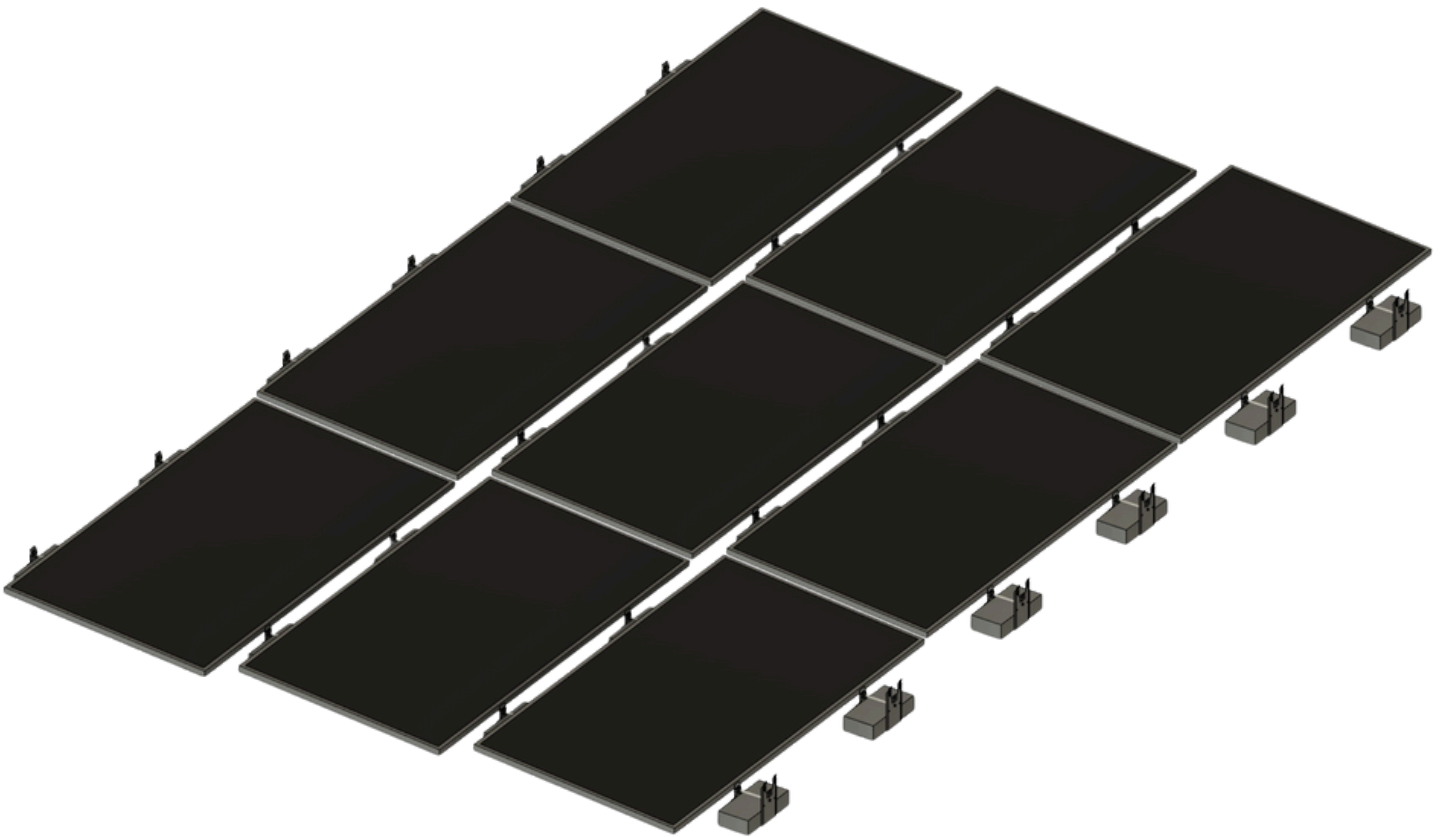
- (1) Tube of IntegraGel Epoxy for every five mounts
- Caulk gun with spreader attachment

### Materials Required - Deck Mounted Installation

- (1) Tube of IntegraGel Epoxy for every five mounts
- Caulk gun with spreader attachment
- (4) Deck mounting bolts with EPDM sealing washers for every mount

## Example Layout

In the example given below, you can see a nine panel system laid out in three even rows using (24) IR-05s, (36) IR-F2 Solar Module Flange Clamp Bonding Brackets and (2) IR-B1 Bonding Jumpers. Each panel requires at least two IR-05s with two extras needed to end the row and (4) IR-F2 Clamps. Each IR-05 works to bond the panels together in the row, but bonding jumpers will be required to bond the rows together.



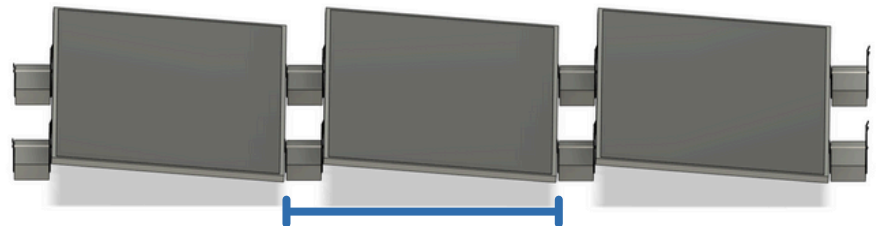
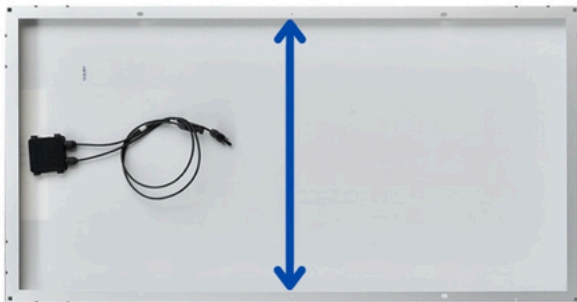
## Spacing Between IR-05 Brackets

This system is designed to rack solar modules of any size in landscape orientation on any flat roof. (2) IR-05s are required per solar module after the first row is placed on the roof. The center point of each IR-05 will need to be located under the ideal loading point of the solar module (Typically 15%-25% in from each end) as per the solar module manufacturer's ideal mounting point guidelines.



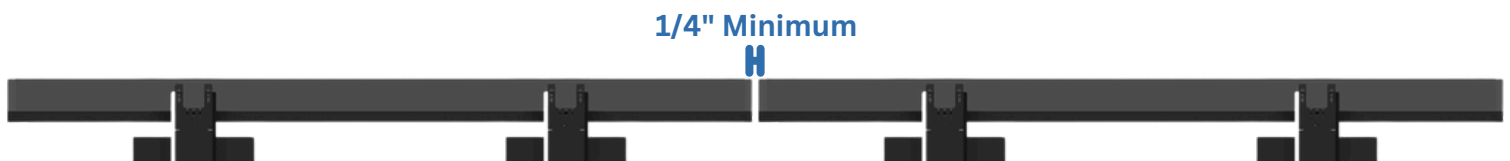
## Chalkline Spacing Between Brackets

To calculate the spacing between IR-05s at each side of solar module, measure the width of the underside of solar module from inside of inner flange to the inside of inner flange and add 12" to that number. (e.g. if the inside to inside flange of solar module measures 40", the calculation will be  $40" + 12" = 52"$ ) Each series of brackets for the example above will be chalked at 52" apart. Make sure to measure from the back of each IR-05 to the back of the next IR-05.



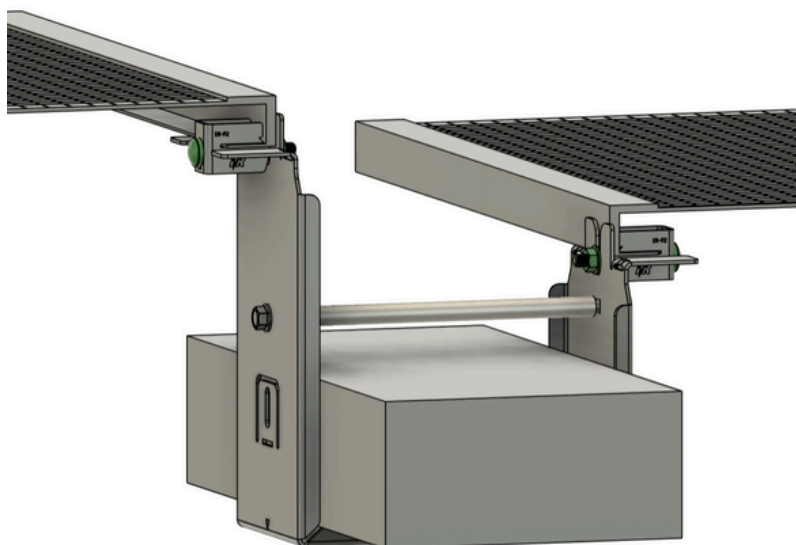
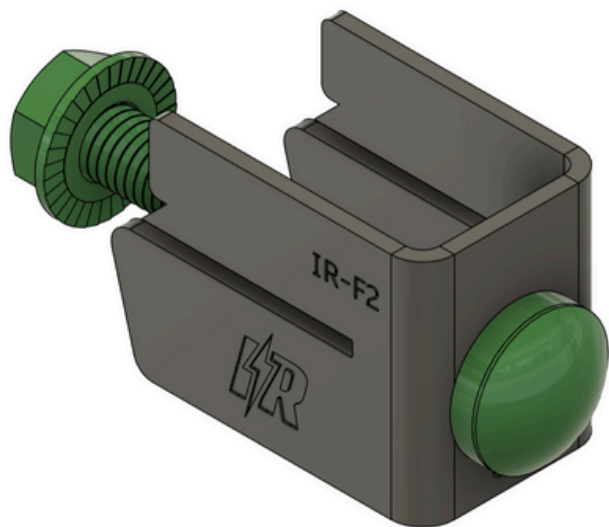
## Spacing Between Each Row

The design of this system allows for solar module rows to be placed within 1/4" apart from each other, from solar module end to solar module end.



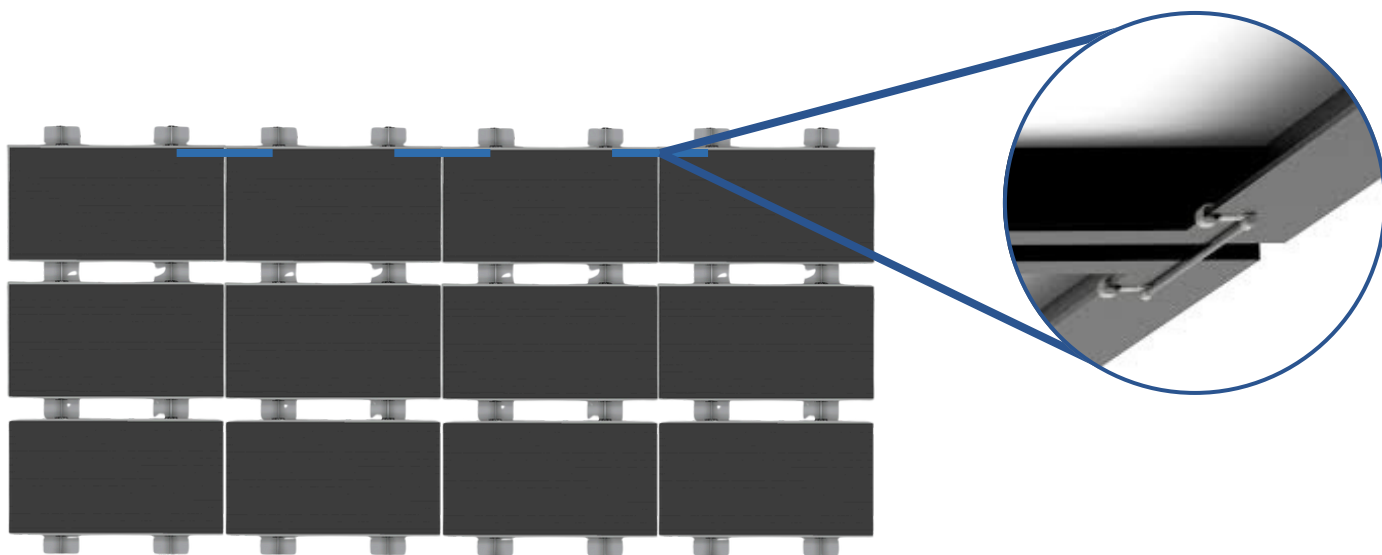
## Solar Module Bonding

The IR-F2 Solar Module Flange Clamp Bonding Bracket is specially designed to hold the solar module in the most ideal location with the easiest possible installation while also bonding the modules together. The sharp barbs on the clamp will penetrate through the anodized aluminum coating of the frame to guarantee bonding when properly mounted.

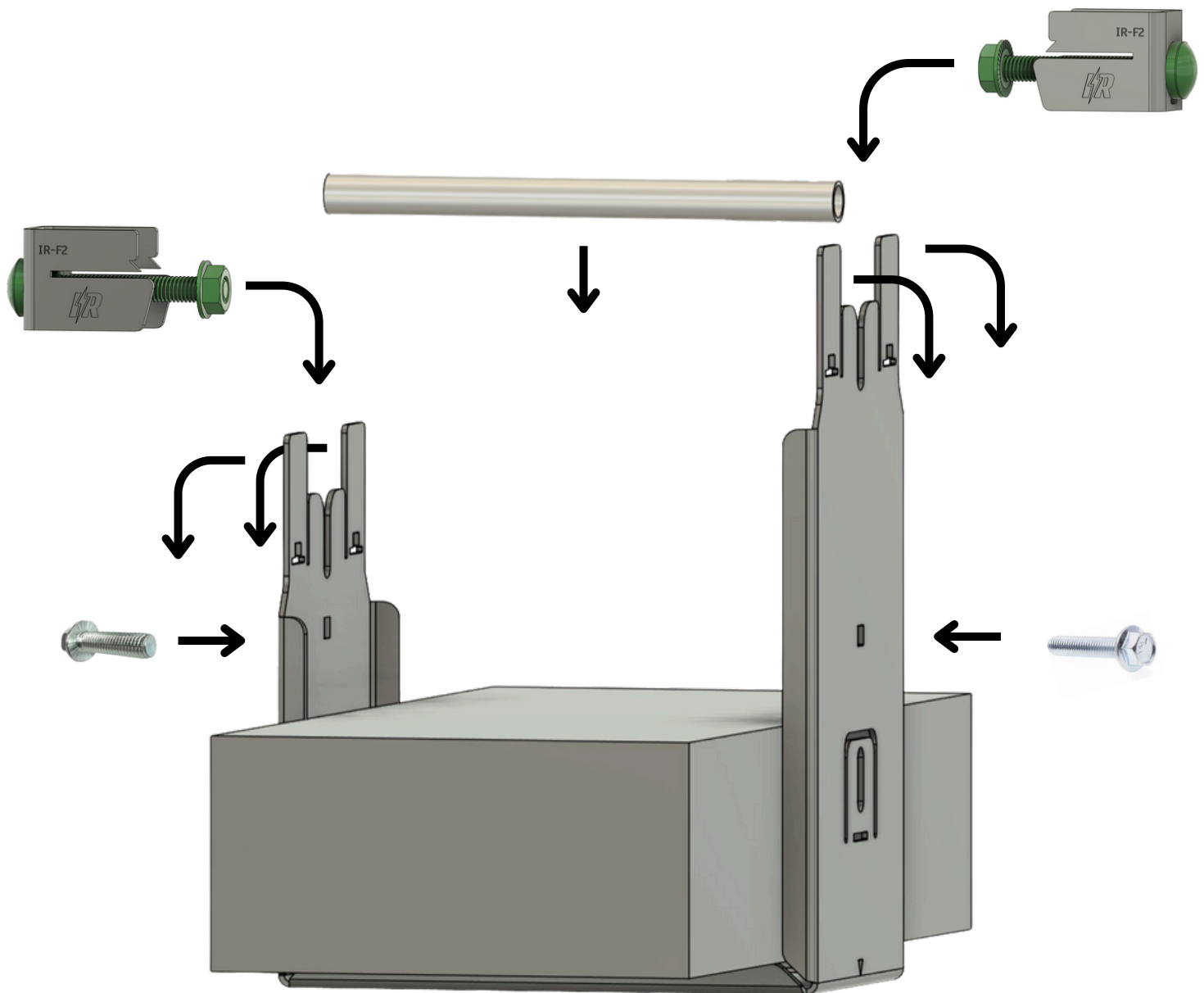


## Bonding Between Rows

For bonding between rows of modules, we offer our 8" and 12" IR-B1 Bonding Jumpers that are UL 2703 recognized. The bonding jumpers have small internal bonding barbs and they clamp to the bottom inner flange of the solar modules to provide bonding from row to row.



# Assembly & Fastener Locations







## 1.Place Weight Block

Place your cinder block into the IR-05 base and make sure that it is centered.



## 2.Lock The Cinder Block In Position

With the cinder block in place, mount the tube handle using the provided bolts to keep the cinder block from moving.



## 3.Place IR-05 Systems In Place

Using the integrated tube handle, carry and place the IR-05s in position on the roof. The tube handle and all-in-one design allow for multiple ballasted systems to be carried and placed in one trip for fast and easy setup.

SEE **PAGE 10** FOR SOLAR MODULE INSTALLATION

## ⚠️ IMPORTANT

- It is important to double check measurements and spacing before applying adhesive locations, as this will be difficult to fix later.
- IntegraGel Epoxy can take up to 1 hour to fully cure and it must be cured before installing solar modules.

### 1. Assemble The IR-05s

Using the two provided bolts, mount the tube handle into place to give the mount proper structural rigidity.

### 2. Mark Adhesive Areas

Place the IR-05s in position around the roof, and use a marker to trace around them to mark where the adhesive will be applied.

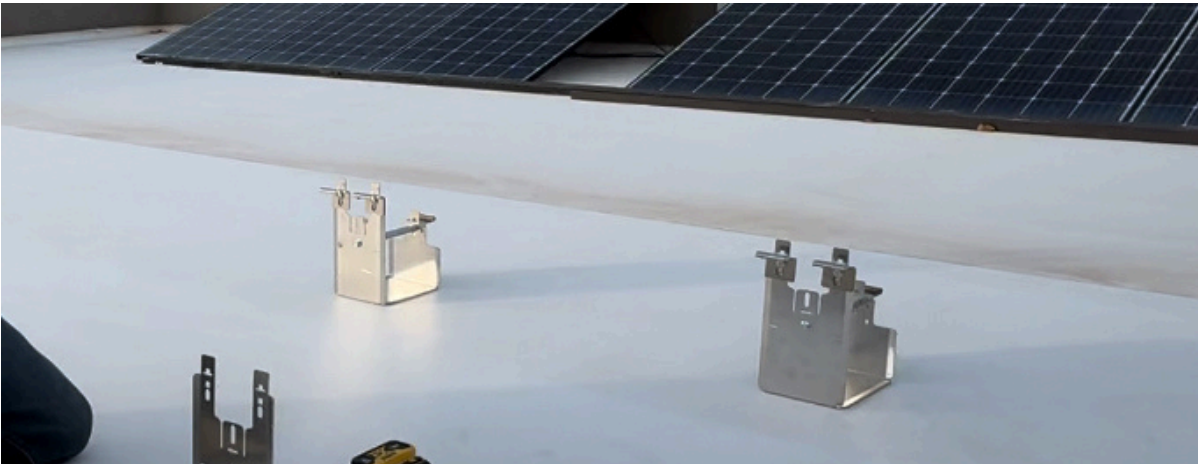
### 3. Prep Mounting Surfaces

Before applying adhesive, be sure to thoroughly clean the marked locations on the roof as well as the bottom of each IR-05. We also recommend scuffing both surfaces with a scuff pad or sand paper for the best possible adhesion.

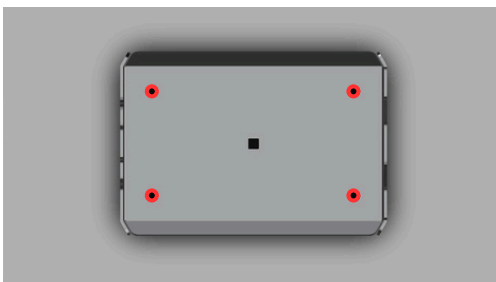
### 4. Apply IntegraGel Epoxy & Mount IR-05s

Using a caulk gun with a spreader attachment, apply an even layer of IntegraGel Epoxy where each IR-05 will be mounted. The entire bottom surface of each mount must be in contact with the adhesive. Press the IR-05 into the wet epoxy and push it firmly until the adhesive flows up through the holes cut into the bottom of the mount.

*IntegraGel can take up to 1 hour to fully cure. Make sure the adhesive has cured before proceeding the solar module installation.*



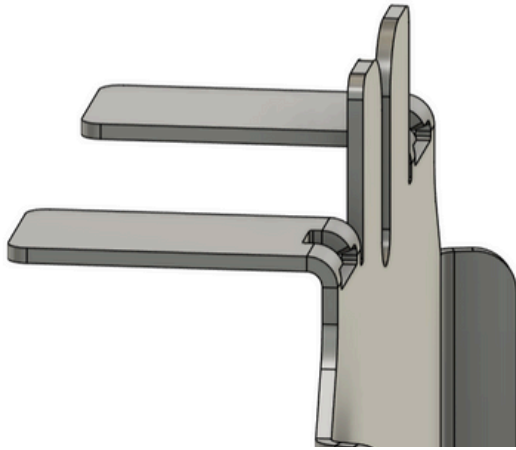
## Deck Mounting



### 5. Deck Mounting

After following all of the steps for Adhesive Mounting, you can now use four deck mounting bolts to secure each IR-05 to the roof using the IntegraGel Epoxy to create a water-tight seal.

*We recommend using EPDM sealing washers with the bolts for added security.*



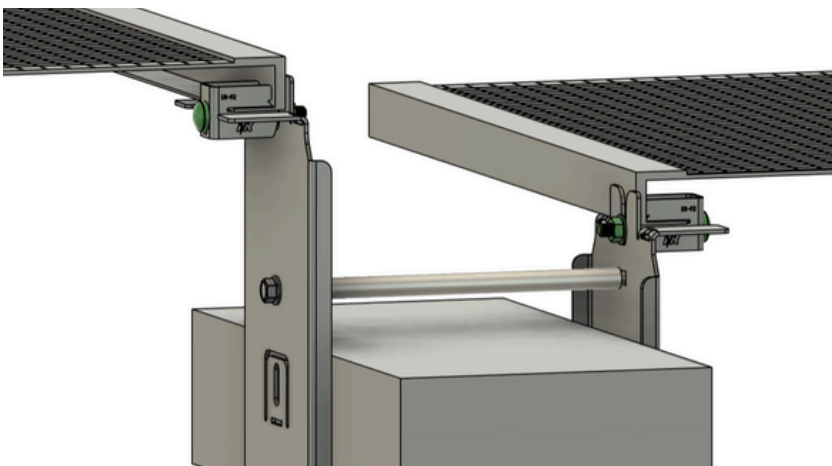
## 4. Fold The Bend Tabs

Use a flathead screwdriver to fold the four bend tabs at the top of each IR-05. Make sure to bend each one 90° out and away from the cinder block.



## 5. Place Solar Modules

The folded out bend tabs will act as a shelf to hold the solar module in position.



## 6. Attach IR-F2 Clamps

Attach the first IR-F2 clamp to the flange of the module next to one of the IR-05 mounts. Lift the panel up, slide the IR-F2 until it is over the open slot, and drop the bolt down into it. Tighten the serrated nut by hand for now and repeat this process for the other three clamps. After all clamps are in place, tighten the serrated nuts with a wrench or screw gun.

*Be careful not to over tighten serrated nuts.*



**View Installation Video**



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