EcoX

The new EcoX is an innovative, rail-less racking system, proven to organize the installation process. The flexible design offers a clean aesthetic, simplified logistics, and delivers a higher quality installation at a lower cost per watt.

Fast.

Modules drop in from above and there is never a need to reach over or walk on modules. Pre-assembled components and quick connections make EcoX easy to install.

Simple.

Universal components mount to standard framed modules. With a single socket size and a wide range of adjustment, it is quick and easy to install any array with a clean, finished look.

Supported.

The Ecolibrium field support team offers on-site installation training and ongoing technical support. And from project planning to logistics to installation, we are dedicated to customer service.

Ecolibrium Solar

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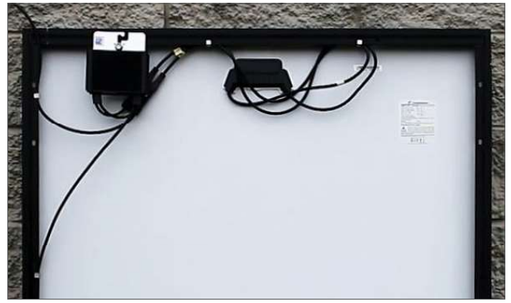
Aesthetic Design

A wide range of adjustment makes it easy to install a straight, level system. Components are designed to blend into the array, and the aesthetic skirt creates a finished look. Alternatively, a skirt free option is available to provide a more traditional look.

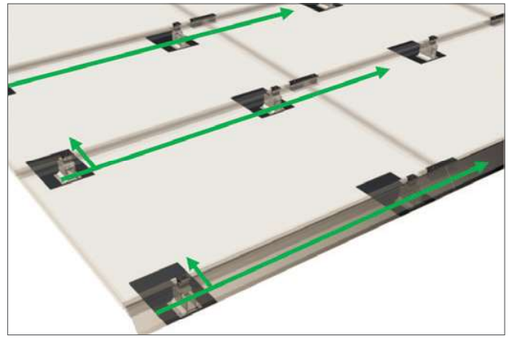


Cable Management

Whether installing with Microinverters, Power Optimizers, or String Inverters, EcoX provides wire management provisions to both prep the modules, and to route homerun or trunk cables throughout the array.

Flexible System Design

The EcoX Estimator is a powerful racking system design tool. The user inputs all site conditions and can layout multiple roof surfaces. The EcoX Estimator outputs a site specific design package with engineering specs and bill of materials.



Single Point Grounding

EcoX and approved modules create a continuously bonded system. The installer can connect a finished array to ground with a single bonding lug.

Technical Specifications	
Materials	Racking components: Aluminum, stainless hardware, dark bronze anodized upper surface, mill finish lower surfaces Flashings: Aluminum, black powder coated finish
Grounding/Bonding Validation	UL2703 - *see installation manual for specific module approvals*
Fire Resistance Validation	UL2703 - Class A, Type 1 and Type 2 modules
Mechanical Load Validation	UL2703 - *see installation manual for specific module approvals*
Flashing Validation	ICC-ES AC286/UL441 Rain Test for Roof Flashing
Adjustability	1" vertical range, 3.5" North/South range, connect anywhere in East/West direction
Warranty	15 years

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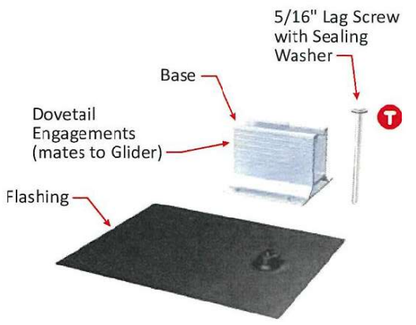
EcoX Components

Attachment Kit



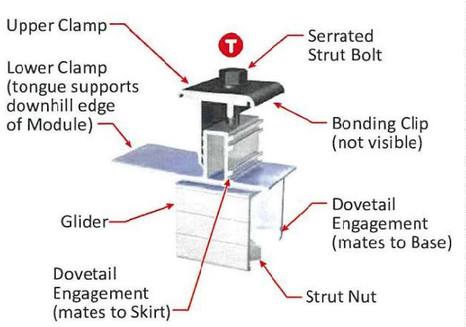
The Attachment Kit is secured to the roof and supports the array via the Clamp Assembly.

Its features include:

- Grooves along sides of Base are Dovetail Engagements which provide adjustability of the Clamp Assembly in *height* and *uphill-downhill* directions.
- Base is attached via a single Lag Screw.
- Lag Screw includes a factory pre-installed Sealing Washer.

Torque Spec: 14 ft-lbs

Clamp Assembly

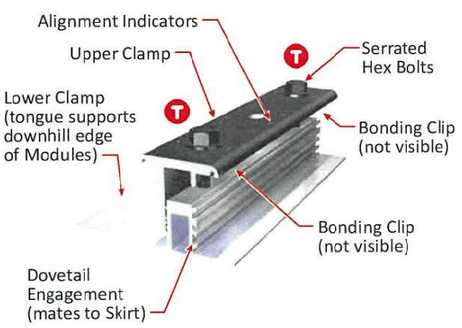


Torque Spec: 14 ft-lbs

The Clamp Assembly is mounted to the Base of the Attachment Kit.

- Dovetail Engagement to Base for height and uphill/downhill adjustments.
- Upper and Lower Clamp secures edges of Modules
- Upper and Lower Clamp engage Skirt on Skirt row.
- Strut Bolt and Strut Nut secure Clamp Assembly to Base and Modules to Clamp Assembly.
- Factory installed Bond Clip bonds Skirt to Attachment Kit on south row, and Module to Attachment Kit on subsequent rows.

Coupling Assembly

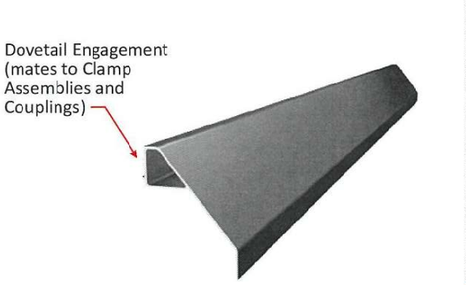


Couplings connect up to four Modules together.

- Couplings include indicator marks to set a 1/2" gap between Modules.
- On the first downhill row, Couplings secure adjacent Skirts at their joints.
- Factory installed Bond Clips (two per Coupling) bond Modules left and right.

Torque Spec: 14 ft-lbs

Skirts (optional item)



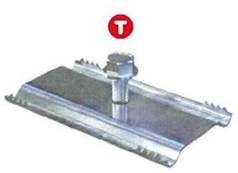
Skirts are used on the first downhill row to enhance the appearance along the edge of the array.

- Dovetail Engagement positions height of and locks Skirt to Clamp Assemblies and Couplings.
- Factory cut to length to match specific Modules.
- Available in three configurations (height variances) to fit the most common Module sizes.

See Appendix G for skirt-less installation details.

EcoX Components (cont.)

Power Accessory Bracket



Power Accessory Bracket mounts a micro-inverter or power optimizer to the Module.

- The serrated teeth ensure a secure connection to the module.
- The Power Accessory Bracket bonds the micro inverter or power optimizer to the Module.

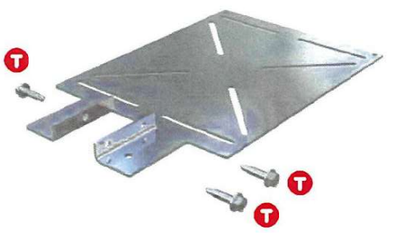
Torque Spec: 14 ft-lbs

Row to Row Bonding Clip

The Row to Row Bonding Clip bonds each row of modules to the next.

- Bonding Clip is added to the uphill side of one clamp per row.
- For systems using the skirt, Bonding Clip bonds skirt to first row of Modules.

Junction Box Bracket

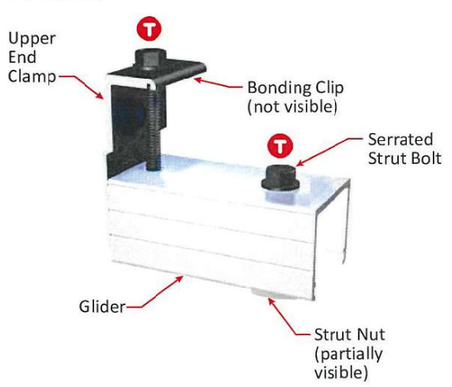


The Junction Box Bracket mounts to the Base, and acts as a support for a Junction Box.

- Can be installed to any base.
- Can be installed before or after modules are installed.

Torque Spec: 10 ft-lbs

End Clamp

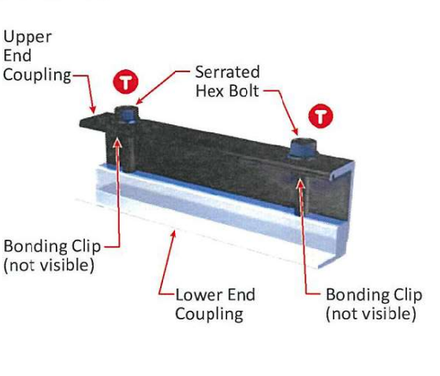


The End Clamp is mounted to the base on the downhill row, and may be used in place of the Skirt for a Skirt-Free installation.

- Dovetail Engagement to base for height and uphill/cownhill adjustment.
- Upper End Clamp secures module.
- Integrated bonding clip bonds module to clamp and Attachment Kit.

Torque Spec: 14 ft-lbs

End Coupling

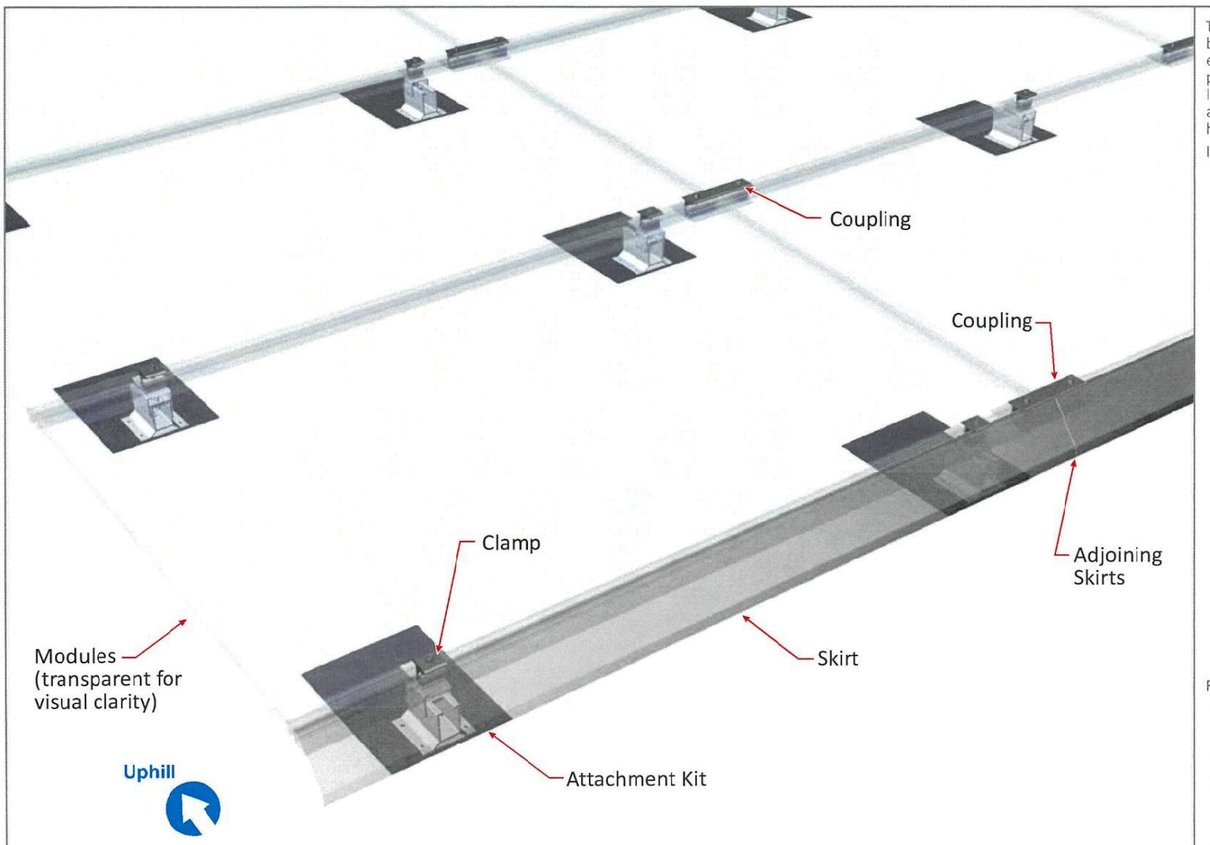


End Coupling connects two modules left to right.

- End Couplings include indicator marks to set a ½" gap between Modules.
- Factory installed Bonding Clips (two per End Coupling) bond modules left to right.

Torque Spec: 14 ft-lbs

Overview of Components



Note: Rooftop and shingles not shown for clarity

The EcoX installation begins at the downhill edge of the roof and progresses uphill. Installation is sequential and requires minimal hand tools.

Installation steps:

1. Layout Array on rooftop.
2. Install Attachment Kits to rooftop.
3. Install the Junction Box Bracket.
4. Install Clamp Assemblies on downhill row.
5. Install the Skirts.
6. Install Couplings to Skirts.
7. Install Modules
8. Install Clamps and Couplings on uphill side of Modules.
9. Level the row of Modules.
10. Repeat Module install on subsequent rows.
11. Install additional Bonding Clips at one end of each row to complete row to row bonding.

Required Tools:

- Tape Measure
- Chalk Line
- Hammer
- Drill with 3/16" Bit
- Flat Roofing Bar
- Impact Driver
- 1/2" Socket
- String Line
- Torque Wrench
- Chalk