



# Parts Catalog

**2016 Edition** v1.85

This catalog includes parts and accessories for IronRidge's Mounting Systems.

We've been designing and manufacturing solar mounting products since 1996. Our products are outstanding and our customers consistently rank us as #1 in both customer service and technical support. If you haven't already experienced why, please contact our customer service team at 800-227-9523 or via email at [support@ironridge.com](mailto:support@ironridge.com).

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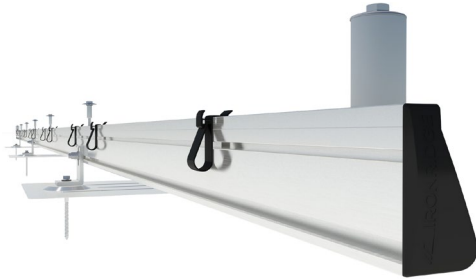
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## Overview



The **IronRidge Flush Mount System** is a rail based system for mounting solar modules on pitched roofs. The system utilizes IronRidge XR Rails with a variety of roof attachments to support extreme wind and snow loads. The entire system uses only aluminum and stainless steel components to ensure complete corrosion resistance.

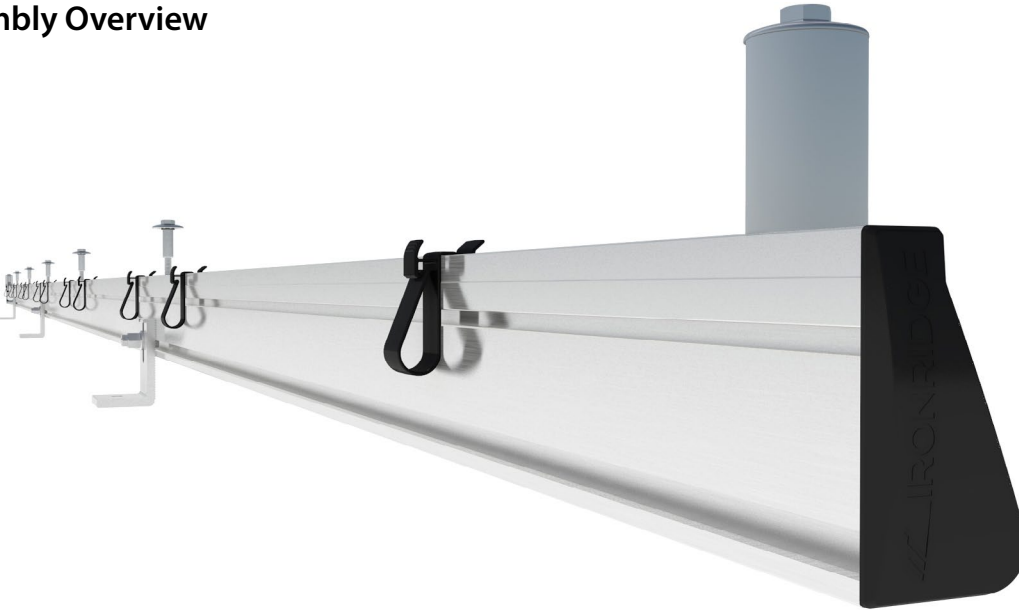


The **IronRidge Tilt Mount System** is an attached, fixed-tilt assembly for mounting solar modules on flat roofs. The system pairs IronRidge XR Rails with North & South Tilt Legs to achieve a wide range of mounting angles, while also supporting extreme wind and snow loads.



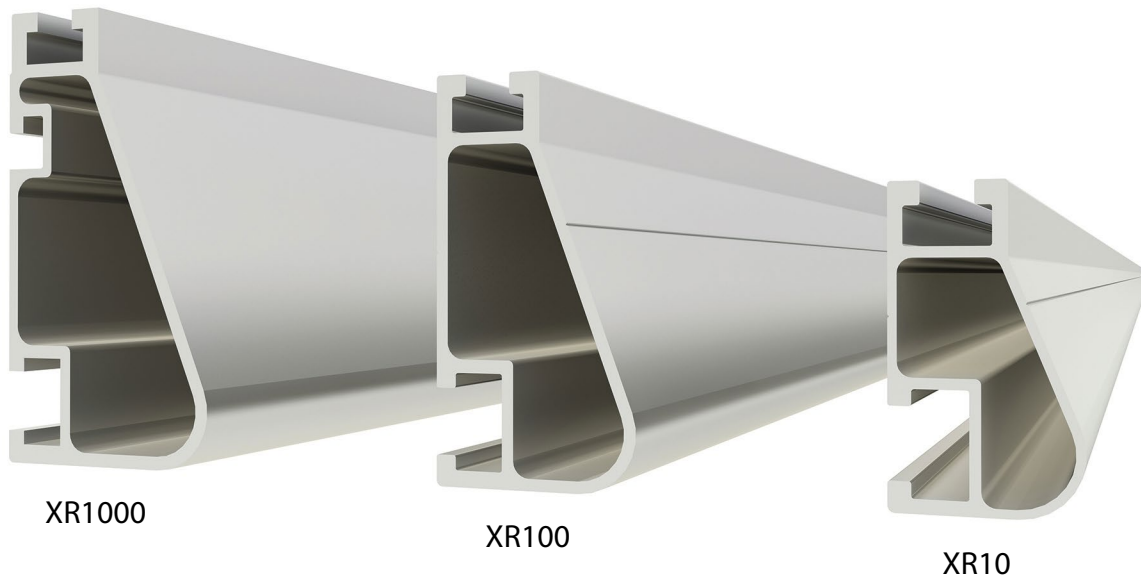
The **IronRidge Ground Mount System** scales to support a wide range of site and terrain challenges. This system consists of components that allow for installer-supplied steel pipe or mechanical tubing to combine with our XR1000 Rail assembly for simple, rapid, cost effective ground mounting.

## Rail Assembly Overview



Our product development team strives to keep things simple and intuitive for installers while accommodating a wide range of mounting scenarios. As a result, we offer three complementary types of rail within the XR Rail Family. Please refer to our website or contact our customer service team so that we can best assist in determining which rail assembly is best for you and your specific project.

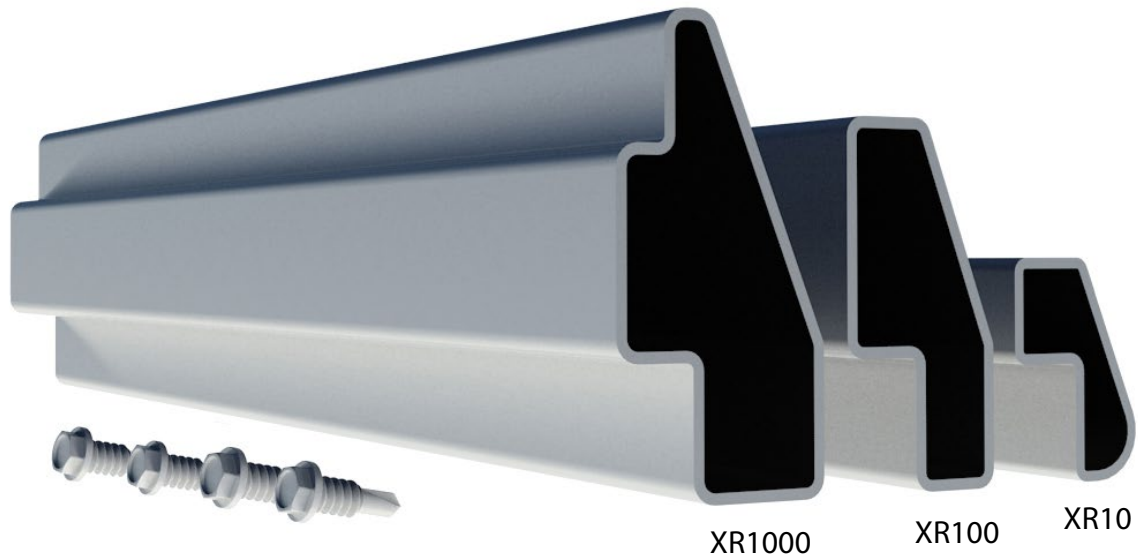
## XR Rail



Item Number	Description	Item Number	Description
XR-1000-132A	XR1000, Rail 132" (11 Feet) Clear	XR-10-132A	XR10, Rail 132" (11 Feet) Clear
XR-1000-168A	XR1000, Rail 168" (14 Feet) Clear	XR-10-132B	XR10, Rail 132" (11 Feet) Black
XR-1000-204A	XR1000, Rail 204" (17 Feet) Clear	XR-10-168A	XR10, Rail 168" (14 Feet) Clear
XR-100-132A	XR100, Rail 132" (11 Feet) Clear	XR-10-168B	XR10, Rail 168" (14 Feet) Black
XR-100-132B	XR100, Rail 132" (11 Feet) Black	XR-10-204A	XR10, Rail 204" (17 Feet) Clear
XR-100-168A	XR100, Rail 168" (14 Feet) Clear	XR-10-204B	XR10, Rail 204" (17 Feet) Black
XR-100-168B	XR100, Rail 168" (14 Feet) Black		
XR-100-204A	XR100, Rail 204" (17 Feet) Clear		
XR-100-204B	XR100, Rail 204" (17 Feet) Black		

The XR Rail Family offers the strength of a curved rail in three targeted sizes. Each size supports specific design loads, while minimizing material costs. Depending on your location, there is an XR Rail to match. XR1000 is a heavyweight among solar mounting rails. It's built to handle extreme climates and spans 12 feet or more for commercial applications. XR100 is the ultimate residential mounting rail. It supports a range of wind and snow conditions, while also maximizing spans. XR10 is a sleek, low-profile mounting rail, perfectly matched to regions with light or no snow. It achieves 6 foot spans, while also staying light and economical.

## Bonded Splices



Item Number	Description
XR-10-SPLC-BD	Kit, XR10 Bonded Splice
XR-100-SPLC-BD	Kit, XR100 Bonded Splice
XR-1000-SPLC-BD	Kit, XR1000 Bonded Splice

Multiple sections of XR Rails can easily be spliced and bonded together with our bonded splices. The internal splice bars do not interfere with clamping or mounting locations, and offer a seamless appearance. XR Rail Splices are made with extruded 6000 series aluminum. 12-14 x 5/8" self-drilling screws are included.

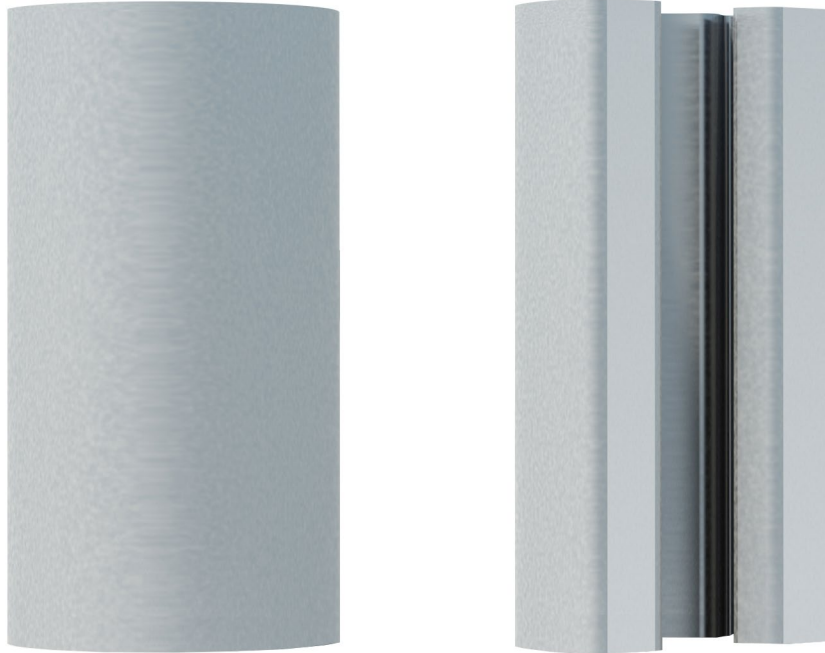
## Universal Fastening Objects (UFOs)



Item Number	Description
UFO-CL-001	Kit, 4pcs, Universal Module Clamp, Clear
UFO-CL-001B	Kit, 4pcs, Universal Module Clamp, Black

The IronRidge UFO (Universal Fastening Object) is a single-size, single-piece fastener, built to quickly and securely bond any solar modules to XR Rails. It comes fully-lubricated and fully-assembled, and it looks just as good as it performs. When combined with a Stopper Sleeve, the UFO functions as an end clamp. It comes in two finishes: Clear and Black.

## Stopper Sleeves



Item Number	Description (Clear)	Item Number	Description (Black)
UFO-STP-32MM	Kit, 4Pcs, Stopper Sleeve, 32MM	UFO-STP-32MM-B	Kit, 4Pcs, Stopper Sleeve, 32MM
UFO-STP-33MM	Kit, 4Pcs, Stopper Sleeve, 33MM	UFO-STP-33MM-B	Kit, 4Pcs, Stopper Sleeve, 33MM
UFO-STP-35MM	Kit, 4Pcs, Stopper Sleeve, 35MM	UFO-STP-35MM-B	Kit, 4Pcs, Stopper Sleeve, 35MM
UFO-STP-38MM	Kit, 4Pcs, Stopper Sleeve, 38MM	UFO-STP-38MM-B	Kit, 4Pcs, Stopper Sleeve, 38MM
UFO-STP-40MM	Kit, 4Pcs, Stopper Sleeve, 40MM	UFO-STP-40MM-B	Kit, 4Pcs, Stopper Sleeve, 40MM
UFO-STP-46MM	Kit, 4Pcs, Stopper Sleeve, 46MM	UFO-STP-46MM-B	Kit, 4Pcs, Stopper Sleeve, 46MM

The IronRidge Stopper Sleeve snaps onto the IronRidge UFO to transform it into an end clamp. It comes in clear and black finishes and 6 different sizes to accommodate a range of module frames.



## Grounding Mid Clamps



Item Number	Description (Clear Finish)	Item Number	Description (Black Finish)
RS-GD-MCL-200	Kit, 4pcs, 2.00", Tbolt	RS-GD-MCL-200B	Kit, 4pcs, 2.00", Tbolt
RS-GD-MCL-225	Kit, 4pcs, 2.25", Tbolt	RS-GD-MCL-225B	Kit, 4pcs, 2.25", Tbolt
RS-GD-MCL-250	Kit, 4pcs, 2.50", Tbolt	RS-GD-MCL-250B	Kit, 4pcs, 2.50", Tbolt
RS-GD-MCL-275	Kit, 4pcs, 2.75", Tbolt	RS-GD-MCL-275B	Kit, 4pcs, 2.75", Tbolt

Grounding Mid Clamps are used when top-mounting modules to the top slot of XR Rails. Each Grounding Mid Clamp pierces through the anodized coatings of both the module frame and the mounting rail to form secure electrical bonds, which are repeated throughout the array. These clamps are not dependent upon the module's mounting holes. These Mid Clamps may be ordered with T-bolts. Mid Clamps require .25" between modules thus maximizing the total number of modules per set of rails. Available in clear or black finish. Black Grounding Mid Clamps come with black clamps and clear hardware.

## End Clamps



Item Number	Description	Item Number	Description
29-7000-125	Kit, 4pcs, End Clamp I, 1.25" Mill	29-7000-125B	Kit, 4pcs, End Clamp I, 1.25" Black
29-7000-130	Kit, 4pcs, End Clamp L, 1.30" Mill	29-7000-130B	Kit, 4pcs, End Clamp L, 1.30" Black
29-7000-134	Kit, 4pcs, End Clamp A, 1.34" Mill	29-7000-134B	Kit, 4pcs, End Clamp A, 1.34" Black
29-7000-224	Kit, 4pcs, End Clamp B, 1.41" Mill	29-7000-224B	Kit, 4pcs, End Clamp B, 1.41" Black
29-7000-150	Kit, 4pcs, End Clamp M, 1.50" Mill	29-7000-150B	Kit, 4pcs, End Clamp M, 1.50" Black
29-7000-157	Kit, 4pcs, End Clamp C, 1.57" Mill	29-7000-157B	Kit, 4pcs, End Clamp C, 1.57" Black
29-7000-165	Kit, 4pcs, End Clamp J, 1.65" Mill	29-7000-165B	Kit, 4pcs, End Clamp J, 1.65" Black
29-7000-171	Kit, 4pcs, End Clamp E, 1.71" Mill	29-7000-171B	Kit, 4pcs, End Clamp E, 1.71" Black
29-7000-214	Kit, 4pcs, End Clamp F, 1.81" Mill	29-7000-214B	Kit, 4pcs, End Clamp F, 1.81" Black
29-7000-187	Kit, 4pcs, End Clamp K, 1.87" Mill	29-7000-187B	Kit, 4pcs, End Clamp K, 1.87" Black
29-7000-204	Kit, 4pcs, End Clamp G, 1.97" Mill	29-7000-204B	Kit, 4pcs, End Clamp G, 1.97" Black
29-7000-230	Kit, 4pcs, End Clamp H, 2.30" Mill	29-7000-230B	Kit, 4pcs, End Clamp H, 2.30" Black

End clamps are used when top-mounting modules to the top slot of XR Rails. These clamps are not dependent upon the module's mounting holes. IronRidge End Clamps require 1.5" of rail on each end and vary in height depending on the module being mounted. Please use the sizing chart on the next page to determine the right part for your project. Also available in black anodized finish. Black is special order, call for additional details.

## Calculating Rail Length

Calculate the row lengths as follows:

1. Add module widths
2. Add width of mid clamps between modules
3. Add allowances for end clamps on ends of rail

Depending on the clamp selected for the system, the clearance values will differ slightly.

	Grounding Mid Clamps	UFO
Mid Clamp	0.25"	0.375"
End Clamp	1.5"	1.0"

For example, to mount five modules that are each 40" wide (in portrait), the row length is calculated as follows:

	Using Grounding Mid Clamps	Using UFO
1. Add module widths	$5 \times 40" = 200"$	
2. Add width of mid clamps between modules	$4 \times 0.25" = 1"$	$4 \times 0.375" = 1.5"$
3. Add allowances for end clamps	$2 \times 1.5" = 3"$	$2 \times 1" = 2$
Total length of row	204"	203.5"

Two 17' rails will be required to mount this row of five modules.

IronRidge stock rail lengths: 11', 14', 17'. Custom lengths available via special order. Contact IronRidge Customer Service for additional details at 800-227-9523, or [support@ironridge.com](mailto:support@ironridge.com).

## Grounding Mid Clamp Sizing Chart

Clamp size depends on module frame height. Use table below to determine which clamp is required for your project.

Module Frame Height		Part Numbers	
Mm	Inches	End Clamp	Grounding Mid Clamp
31.0 - 32.5	1.22 - 1.28	29-7000-125	RS-GD-MCL-200
32.5 - 33.5	1.28 - 1.32	29-7000-130	RS-GD-MCL-200
33.3 - 34.8	1.31 - 1.37	29-7000-134	RS-GD-MCL-200
34.8 - 36.8	1.37 - 1.45	29-7000-224	RS-GD-MCL-225
37.6 - 38.6	1.48 - 1.52	29-7000-150	RS-GD-MCL-225
39.0 - 41.0	1.53 - 1.61	29-7000-157	RS-GD-MCL-225
41.1 - 42.7	1.62 - 1.68	29-7000-165	RS-GD-MCL-250
42.7 - 44.2	1.68 - 1.74	29-7000-171	RS-GD-MCL-250
45.0 - 47.0	1.77 - 1.85	29-7000-214	RS-GD-MCL-250
46.7 - 48.3	1.84 - 1.90	29-7000-187	RS-GD-MCL-275
49.0 - 51.1	1.93 - 2.01	29-7000-204	RS-GD-MCL-275

## End Caps



XR1000



XR100



XR10

Item Number	Description
XR-1000-CAP	XR1000 End Cap (Bag of 20)
XR-100-CAP	XR100 End Cap (Bag of 20)
XR-10-CAP	XR10 End Cap (Bag of 20)

End Caps provide a finished look to rails, while protecting the collection of water and debris inside the rail. End Caps are molded from black polycarbonate with UV protection.

## Wire Clips



Item Number	Description
29-4000-077	Wire Clip (Bag of 20)

Wire Clips fit XR Rails, and accommodate up to ten 5mm panel wires, or one MC4, one Enphase wire and one dual Enphase wire. Molded from black polycarbonate with UV protection.

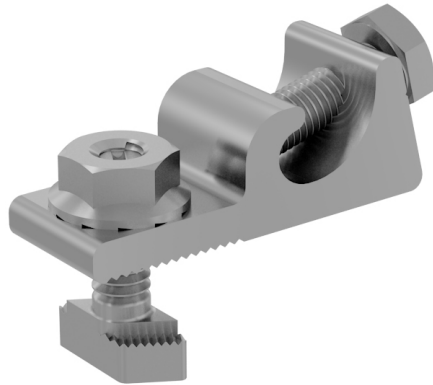
## Expansion Joints



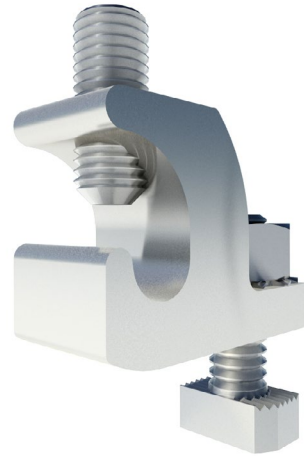
Item Number	Description
RS-GDXP-001	Bonding Strap Expansion Joint (Qty 1)

A Bonding Strap Expansion Joint is required for thermal expansion for rows exceeding 100 feet of rail. The kit comes with a bonding strap and hardware to secure the strap to the top slot.

## Grounding Lugs



GD-LUG-003

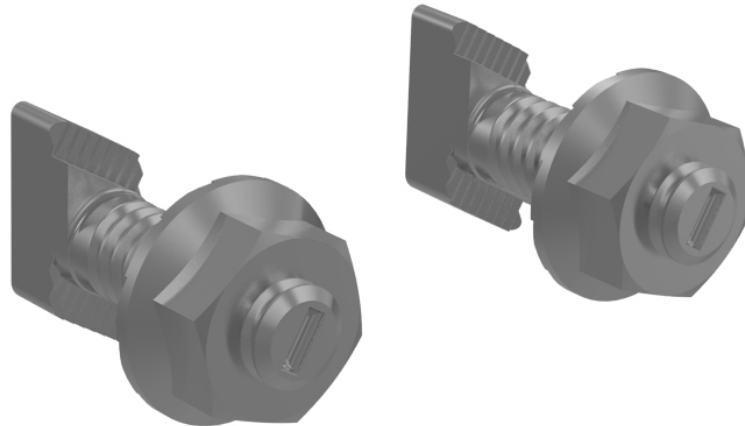


RS-GDLG-002

Item Number	Description
GD-LUG-003	IronRidge Grounding Lug, Low Profile (Qty 2)
RS-GDLG-002	IronRidge Grounding Lug, Integrated Grounding, T-Bolt (Qty 2)

A single Grounding Lug connects an entire row of PV modules to the grounding conductor.

## Microinverter / Power Optimizer Mounting Kit



Item Number	Description
MI-BHW	Kit, 1/4 x 3/4 Microinverter Mounting, T-Bolt

Use IronRidge's Microinverter Kit to bond compatible microinverters and power optimizers to the racking system.

### COMPATIBLE PRODUCTS

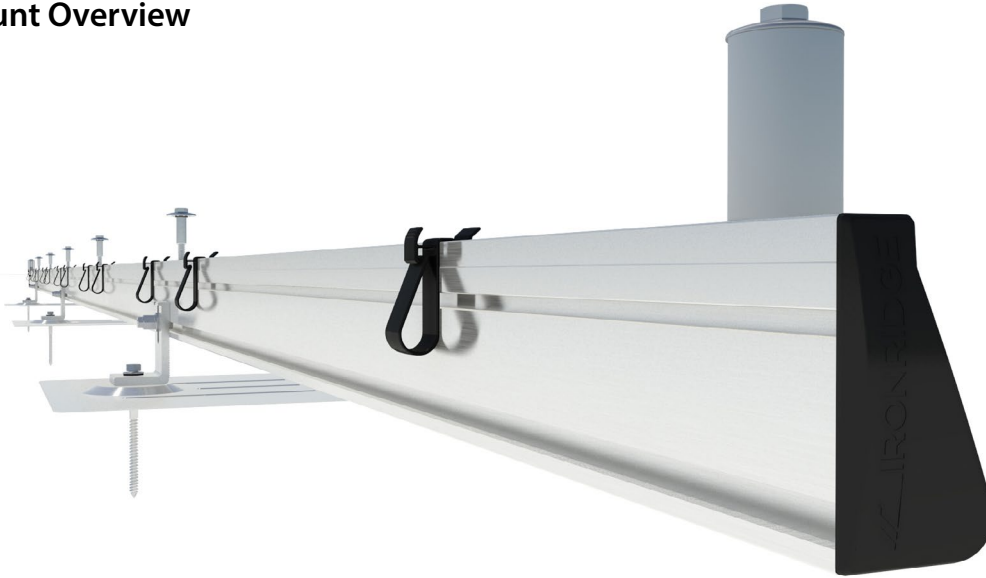
Enphase - M250-72, M250-60, M215-60, and C250-72

Darfon - MIG240, MIG300, G320, G640

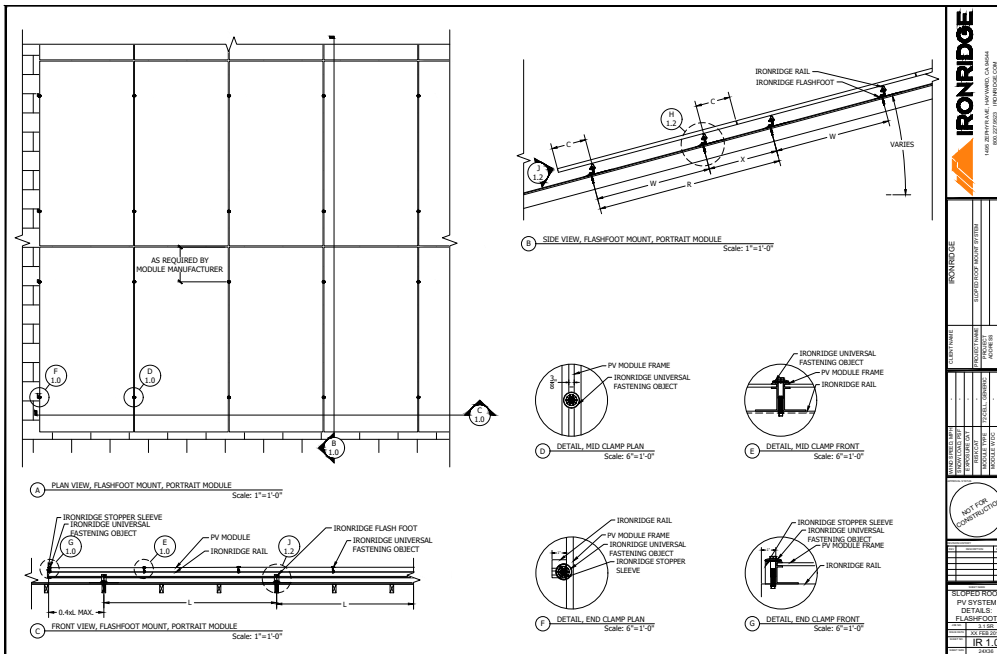
Solar Edge - P300, P320, P400, P405, P600, P700, P730



### Flush Mount Overview



The IronRidge Flush Mount System is a rail based system for mounting solar modules on pitched roofs. The system utilizes IronRidge XR Rails with a variety of roof attachments to support extreme wind and snow loads. The entire system uses only aluminum and stainless steel components to ensure complete corrosion resistance.



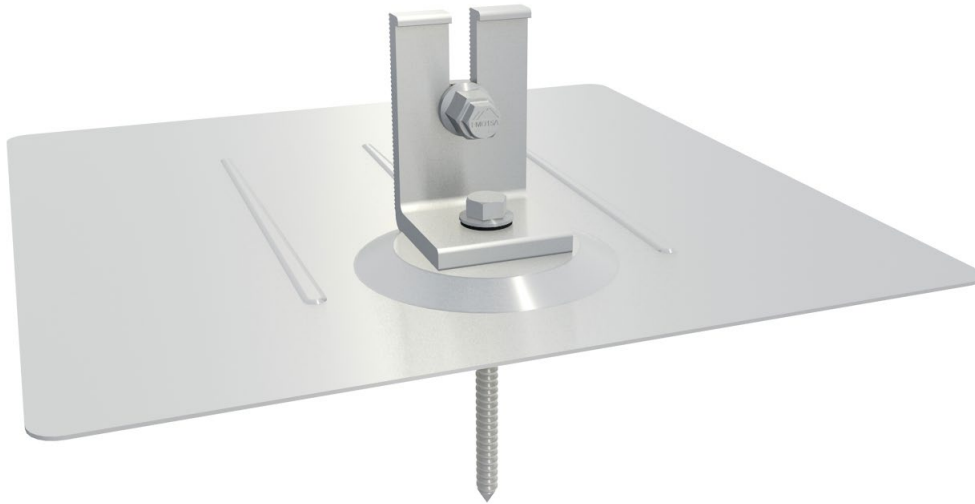
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## Bonded L-Foot



Item Number	Description
FM-LFT-002	Kit, 4Pcs, Slotted L-Foot, with Bonding Bolt, Mill
FM-LFT-002-B	Kit, 4Pcs, Slotted L-Foot, with Bonding Bolt, Black

Our Bonded L-feet are engineered for most roof mounting applications. Vertical slots allow for easily dropping in rails with pre-attached hardware and provide adjustability to account for roof irregularities. Our L-feet are manufactured using 6000 series aluminum and are also available in black anodized finish. Bonding hardware is included to attach and bond the rail to the L-foot. Step nut allows installers to use the same socket as the rest of the system.

**FlashFoot™**


Item Number	Description
FM-FF1-002	Kit, 6Pcs, FlashFoot, Mill
FM-FF1-002B	Kit, 6Pcs, FlashFoot, Black

IronRidge FlashFoot™ is an all-in-one solar mounting product for composition shingle roofs that eliminates the need for separate standoffs, flashings, and L-feet. FlashFoot incorporates a number of structural and waterproofing features to securely attach IronRidge XR Rails to roof structures, while also protecting against water intrusion and weather damage. Comes with flashing, lag bolt, and L-Foot.

## Flush Mount Standoffs



Item Number	Description
51-6004-500L	Kit, Standoff 4", Flush Mount, Mill
51-6007-500L	Kit, Standoff 7", Flush Mount, Mill

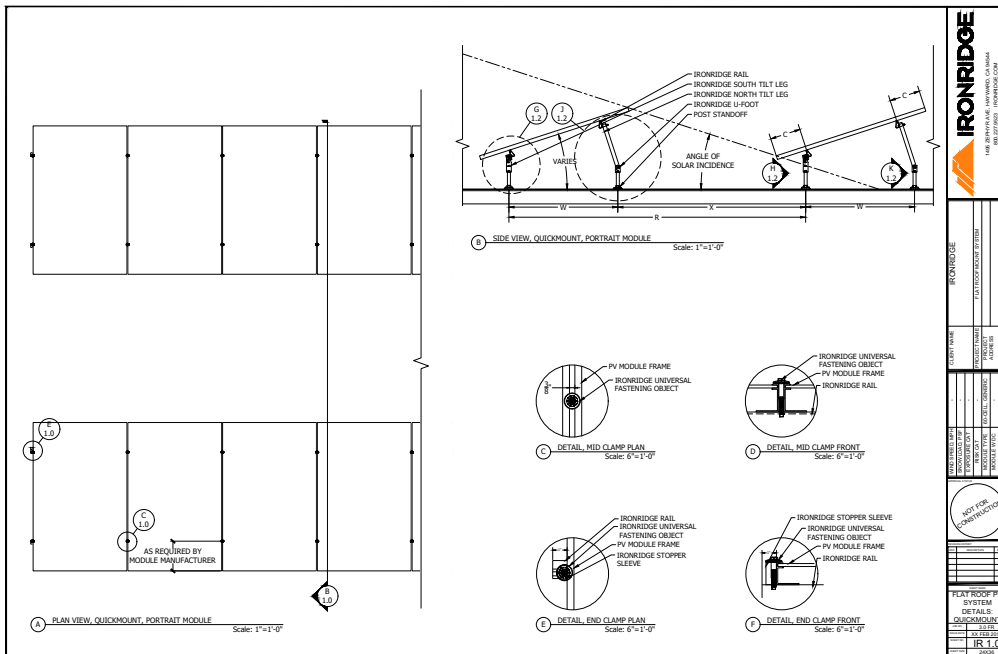
Our flat top Flush Mount Standoffs are ideal for flush-mounted applications and are sized to integrate easily with any conical-type flashing. IronRidge Aluminum Standoffs are available in 4" or 7" lengths. They ship assembled, as shown. Lag bolts not included.

## Tilt Mount Overview



The IronRidge Tilt Mount System is an attached, fixed-tilt assembly for mounting solar modules on flat roofs. The system pairs IronRidge XR Rails with North & South Tilt Legs to achieve a wide range of mounting angles, while also supporting extreme wind and snow loads. The entire system uses only aluminum and stainless steel components to ensure complete corrosion resistance.

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## Fixed Tilt Legs



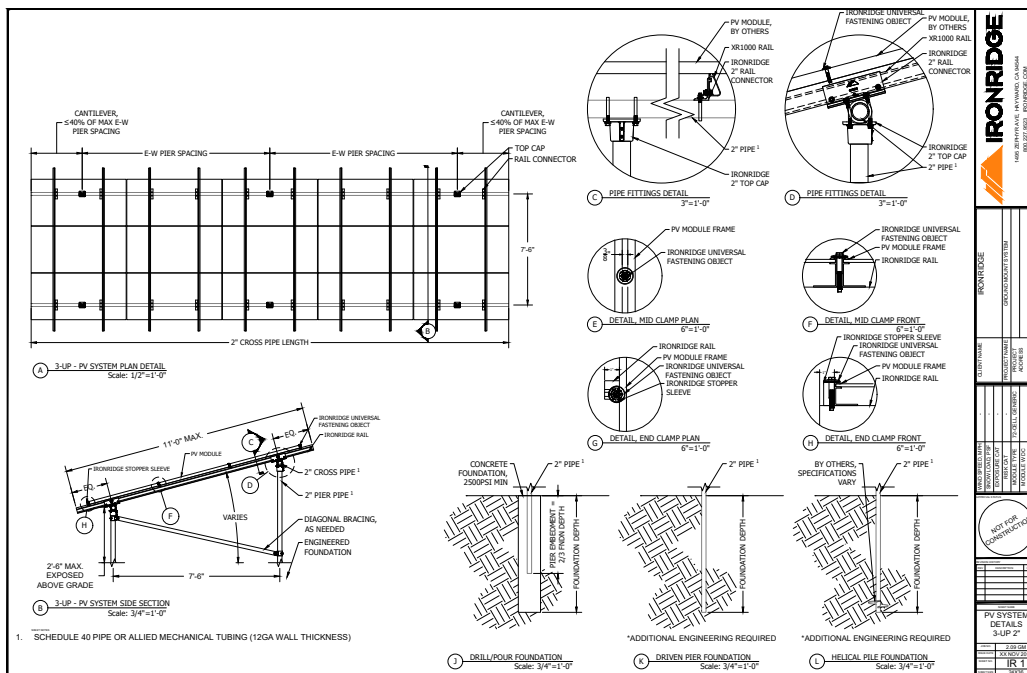
Item Number	Description
TM-FTL-007	Kit, Fixed Tilt Leg, 7", Mill
TM-FTL-010	Kit, Fixed Tilt Leg, 10", Mill
TM-FTL-015	Kit, Fixed Tilt Leg, 15", Mill
TM-FTL-020	Kit, Fixed Tilt Leg, 20", Mill
TM-FTL-025	Kit, Fixed Tilt Leg, 25", Mill
TM-FTL-030	Kit, Fixed Tilt Leg, 30", Mill

Fixed Tilt Leg Kits are available in multiple lengths to support a wide range of mounting angles. The Fixed Tilt Leg Kit includes a North & South Tilt Leg, plus hardware for attaching to XR Rails. South Tilt Legs come assembled and feature angle indicator markings to simplify installation. North Tilt Legs consists of a slotted aluminum tube and a pivot bracket for full adjustability.

## Ground Mount Overview



The IronRidge Ground Mount System scales to support a wide range of site and terrain challenges. This system consists of components that allow for installer-supplied steel pipe or mechanical tubing to combine with the XR1000 rail assembly for simple, rapid, cost effective ground mounting.



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## Top Caps



Item Number	Description
70-0200-SGA	SGA Top Cap at 2", Mill
70-0300-SGA	SGA Top Cap at 3", Mill

Our heavy duty cast aluminum IronRidge Top Caps secure quickly and easily to galvanized schedule 40 pipe (ASTM A53 Grade B) or mechanical tubing (i.e. Allied Flo-Coat, Gatorshield, Gatorshield-Plus) piers with with 2 set screws. Available in sizes that fit either 2" or 3" steel pipe and mechanical tubing, the top cap supports cross pipes with U-bolt hardware. The top caps are manufactured using cast aluminum ALMAG 535 and come with a mill finish. As a reminder, the substructure pipe and mechanical tubing are not included.

2" Pipe/Tubing Outside Diameter = 2.375" (2 3/8")

3" Pipe/Tubing Outside Diameter = 3.5"

2" Schedule 40 Pipe Wall Thickness = 0.154"

2" Allied Mechanical Tubing Wall Thickness = 0.109"

3" Schedule 40 Pipe Wall Thickness = 0.216"

3" Allied Mechanical Tubing Wall Thickness = 0.165"



## Bonded Rail Connectors



Item Number	Description
GM-BRC-002	Ground Mount Bonded Rail Connector - 2"
GM-BRC-003	Ground Mount Bonded Rail Connector - 3"

Our Bonded Rail Connectors attaches and bonds horizontal cross pipes to XR1000 Rails. Each rail requires two connectors to create a secure and bonded attachment. Available for both 2" and 3" sizes, these Rail Connectors are manufactured using extruded 6000 series aluminum. Review the images on the section overview for added context.

## Diagonal Brace Assembly Kit



Item Number	Description
70-0200-CBR	SGA 2" (7.5') Brace Assembly (bulk)
70-0300-CBR	SGA 3" (7.5') Brace Assembly (bulk)
70-0205-CBR	SGA 2" (9') Brace Assembly, 5-Panel (bulk)
70-0305-CBR	SGA 3" (9') Brace Assembly, 5-Panel (bulk)

This optional assembly kit is for installations that require extra support. This Diagonal Brace Kit includes the brace, sleeves, and hardware for installation between one north and south pair of support legs.

## Pipe & Mechanical Tubing Summary

To save installers money, we have engineered the use of locally sourced 2" or 3" schedule 40 steel pipe or mechanical tubing as the primary substructure element of our Ground Array System. By allowing customers to source these materials locally, installers benefit from reduced shipping, product and inventory costs, and shortened delivery times. We provide intuitive online tools that will help you quickly and easily craft a bill of materials to simplify substructure costing and purchasing.

When additional assistance is needed to address ground mounting your array, please contact our customer service team at 800-227-9523, or at [support@ironridge.com](mailto:support@ironridge.com). Many IronRidge customers prefer to use our online Design Assistant, found at [www.ironridge.com/gm](http://www.ironridge.com/gm).

A soils report is widely considered the most reliable and accurate method for determining the type and depth of piers for any ground array system. Soils reports can be obtained through a Geotechnical Engineer. A commonly relied upon alternative to obtaining a site-specific soils report is to use the IBC 2006 Table 1804.2. The advantage of purchasing a site specific soils report is that the information provided often results in shorter embedment depths, thus lowering both material and installation cost.

In many cases installers rely on our easy to use PE stamped certification and post/ pier installation guides that our engineering staff has made available for download. You will find these and other IronRidge Ground Array System documents located at [ironridge.com/products/groundmounting/resources](http://ironridge.com/products/groundmounting/resources).

### Schedule 40 Pipe

ASTM A53 Grade B standard weight (schedule 40) steel pipes or structural equivalent, with minimum geometry and material properties of:

- 3" pipe: OD 3.5", wall thickness 0.216", 35ksi yield strength
- 2" pipe: OD 2.38", wall thickness 0.154", 35ksi yield strength

### Mechanical Tubing

Steel mechanical tubing or structural equivalent, with minimum geometry and material properties of:

- 3" Tubing: OD 3.5", wall thickness 0.165", 45ksi yield strength
- 2" Tubing: OD 2.375", wall thickness 0.109", 50ksi yield strength

\*Always check local building codes for pier mounting requirements specific to your location.

