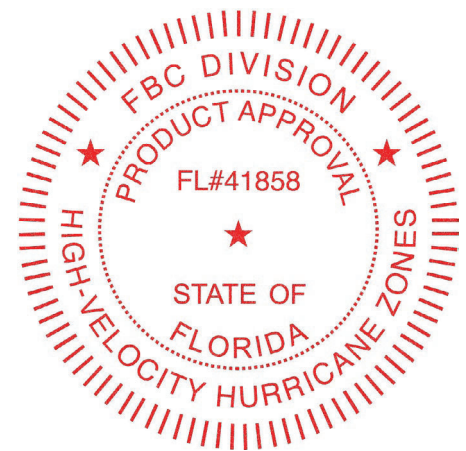


FLORIDA PRODUCT APPROVAL FOR XR FLUSH MOUNT STREAMLINES SOLAR DESIGN & PERMITTING

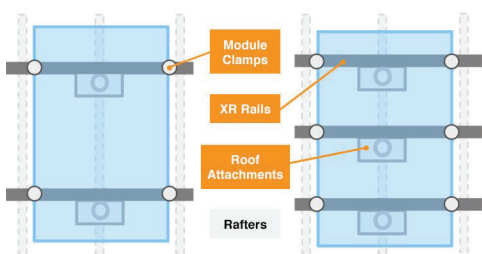













Committed to Safe Solar in Extreme Environments

IronRidge offers the most solar attachment choices for High Velocity Hurricane Zones (HVHZ) in Florida. Our systems are formally approved, in accordance with the 2020 Florida Building Code—providing solutions for many roof types. The rigorous evaluation process for Florida Product Approval includes testing to high-wind resistance, wind-driven rain, and ongoing auditing of quality assurance programs.

Our Florida Product Approval (FL#41858) covers many IronRidge Flush Mount components and applies to all regions of the state of Florida—both inside and outside the high-velocity hurricane zones (HVHZ), with up to 135 PSF of wind pressure on 3-rail systems. The approval also lists allowable rail spans for configurations using either XR10, XR100, or XR1000 mounting rails as well as multiple IronRidge and QuickMount Roof Attachments (covering 2- and 3-rail systems as well as larger format modules, up to 92.5" long).



Florida-Approved Configurations & Components

 <p>2-Rail Standard Rack Configuration</p> <p>3-Rail Extra Support for Module Frames</p>	 <p>UFO + Stopper Universal Mid & End Clamp</p>	 <p>CAMO Hidden End Cam (Cleaner Aesthetics)</p>
 <p>FlashVue Composition Shingle Roof Attachment</p>	 <p>FlashFoot2 Composition Shingle Roof Attachment</p>	 <p>Halo UltraGrip Composition Shingle Roof Attachment</p>
 <p>L-Mount Composition Shingle Roof Attachment</p>	 <p>Slotted L-Foot Alternative Attachment & Anchoring Options</p>	 <p>QBBase Mount Universal Tile Attachment</p>
 <p>XR Rails XR10, XR100, & XR1000 Rails</p>	 <p>BOSS Splice Bonded Structural Splice for XR Rails</p>	 <p>Deck Flashing (Optional)</p>
 <p>Knockout Tile Flat, S, & W Tile Roof Attachment</p>	 <p>GripCap+ (Optional)</p>	

Pressure Tables

The following tables provide a quick reference for the maximum wind uplift pressures on gable and hip roofs at different tilt angles.

Maximum Wind Uplift Pressure (psf)																		
Roof Slope	120 MPH																	
	Exposure B						Exposure C						Exposure D					
	Group 1		Group 2		Group 3		Group 1		Group 2		Group 3		Group 1		Group 2		Group 3	
	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip
8-20°	17	15	22	18	26	20	23	21	29	25	35	27	27	24	35	29	42	32
21-27°	13	10	18	15	21	15	17	14	25	20	28	20	20	17	30	24	33	24
28-45°	13	11	15	12	19	16	17	15	20	16	25	22	20	18	24	19	30	26
Roof Slope	130 MPH																	
	Exposure B						Exposure C						Exposure D					
	Group 1		Group 2		Group 3		Group 1		Group 2		Group 3		Group 1		Group 2		Group 3	
	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip
8-20°	20	18	26	21	31	23	27	24	34	29	41	31	32	29	41	34	49	37
21-27°	15	12	22	18	24	18	20	16	29	24	33	24	24	20	35	28	39	28
28-45°	15	13	18	14	22	19	20	18	24	19	29	26	24	21	28	22	35	30
Roof Slope	140 MPH																	
	Exposure B						Exposure C						Exposure D					
	Group 1		Group 2		Group 3		Group 1		Group 2		Group 3		Group 1		Group 2		Group 3	
	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip
8-20°	23	21	30	25	35	27	31	28	40	33	48	36	37	33	48	40	57	43
21-27°	17	14	25	21	28	21	23	19	34	28	38	28	28	23	40	33	45	33
28-45°	17	15	21	16	25	22	23	21	28	22	34	30	28	25	33	26	41	35
Roof Slope	150 MPH																	
	Exposure B						Exposure C						Exposure D					
	Group 1		Group 2		Group 3		Group 1		Group 2		Group 3		Group 1		Group 2		Group 3	
	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip
8-20°	26	24	34	29	41	31	35	32	46	38	55	42	42	38	55	46	65	50
21-27°	20	16	29	24	33	24	27	22	39	32	44	32	32	26	46	38	52	38
28-45°	20	18	24	19	29	25	27	24	32	25	39	34	32	28	38	30	47	41
Roof Slope	160 MPH																	
	Exposure B						Exposure C						Exposure D					
	Group 1		Group 2		Group 3		Group 1		Group 2		Group 3		Group 1		Group 2		Group 3	
	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip	Gable / Hip
8-20°	30	27	39	33	46	35	40	36	52	44	62	47	48	43	62	52	74	56
21-27°	23	18	33	27	37	27	31	25	44	36	50	36	36	30	52	43	59	43
28-45°	23	20	27	21	33	29	30	27	36	28	45	39	36	32	43	34	53	46

Maximum Wind Uplift Pressure (psf)																		
Roof Slope	170 MPH																	
	Exposure B						Exposure C						Exposure D					
	Group 1		Group 2		Group 3		Group 1		Group 2		Group 3		Group 1		Group 2		Group 3	
	Gable / Hip		Gable / Hip		Gable / Hip		Gable / Hip		Gable / Hip		Gable / Hip		Gable / Hip		Gable / Hip		Gable / Hip	
8-20°	34	31	44	37	52	40	45	41	59	49	70	53	54	49	70	59	83	64
21-27°	26	21	37	30	42	30	35	28	50	41	56	41	41	33	59	48	67	48
28-45°	26	23	30	24	37	33	34	31	41	32	50	44	41	36	48	38	60	52
Roof Slope	175 MPH																	
	Exposure B						Exposure C						Exposure D					
	Group 1		Group 2		Group 3		Group 1		Group 2		Group 3		Group 1		Group 2		Group 3	
	Gable / Hip		Gable / Hip		Gable / Hip		Gable / Hip		Gable / Hip		Gable / Hip		Gable / Hip		Gable / Hip		Gable / Hip	
8-20°	36	33	46	39	55	42	48	44	62	52	74	57	57	52	74	62	88	67
21-27°	27	22	39	32	44	32	37	30	53	43	59	43	44	35	63	51	71	51
28-45°	27	24	32	25	40	34	36	32	43	34	53	46	43	39	51	41	63	55
Roof Slope	180 MPH																	
	Exposure B						Exposure C						Exposure D					
	Group 1		Group 2		Group 3		Group 1		Group 2		Group 3		Group 1		Group 2		Group 3	
	Gable / Hip		Gable / Hip		Gable / Hip		Gable / Hip		Gable / Hip		Gable / Hip		Gable / Hip		Gable / Hip		Gable / Hip	
8-20°	38	34	49	41	58	45	51	46	66	55	79	60	61	55	79	66	94	71
21-27°	29	23	42	34	47	34	39	31	56	46	63	46	46	37	66	54	75	54
28-45°	29	25	34	27	42	36	38	34	46	36	56	49	46	41	54	43	67	58

Footnotes:

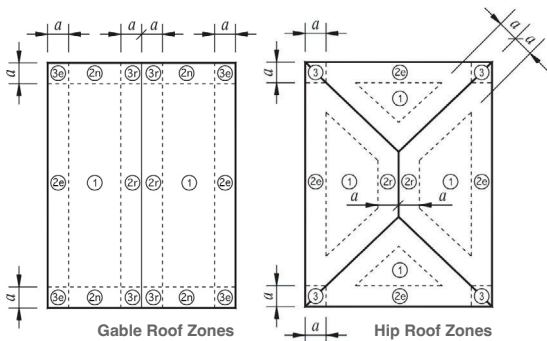
1. The pressure forces tabulated are per ASD (Allowable Stress Design) method and Florida Building Code 2020
2. The pressure values are calculated based on a single module area of 21 sqft as the maximum allowed and 25 foot building height defined as the average of the roof ridge and eave height.
3. The pressures are calculated for non-exposed modules in the array as defined by ASCE 7-16 Section 29.4.4. For exposed modules the pressure shall be multiplied by an edge factor of 1.5.
4. The table is applicable to an array which maintains a minimum edge distance (to ridge, eave, side rake or hip) of 2 x h2 (h2 is the clearnace from the roof surface to the topside of the module), and contains modules that meet the dimensional limits of ASCE 7-16
5. The tabulated values are based on the selected ultimate design wind speeds.
6. The pressure values are for a module top surface that is less than or equal to 10" (h2) above the roof surface.
7. Provided pressure for Hip roofs with Roof Slopes of 28-45° are calculated for the worst-case condition of a 45° roof slope per ASCE 7-16 Fig 30.3-2H.

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8-27°			28-45°		
Group	1	2	3	1	2	3
Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e

Grouping of ASCE 7-16 Roof Zones (Hip)

Roof Slope	8-20°			21-27°			28-45°		
Group	1	2	3	1	2	3	1	2	3
Roof Zones	1	2r	2e 3	1	2e 2r	3	1	2e	2r 3

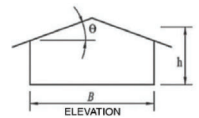

Notation (Per ASCE 7-16)

a = 10% of least horizontal dimension or $0.4h$, whichever is smaller, but not less than either 4% of least horizontal dimension or 3 ft (0.9 m). If an overhang exists, the edge distance shall be measured from the outside edge of the overhang. The horizontal dimensions used to compute the edge distance shall not include any overhang distances.

B = Horizontal dimension of building measured normal to wind direction, in ft (m).

h = Mean roof height, in ft (m).

θ = Angle of plane of roof from horizontal, in degrees.



This item has been electronically signed and sealed by Matthew S Kuzila on the 03/27/20223 using a SHA authentication code. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Expires Feb 28, 2025