

Attn: Sean McDonald, CEO, IronRidge Inc.

Date: July 8th, 2024

Re: Report #7.22 XR100: Engineering Certification and Span Tables for the IronRidge XR100 Rail Flush Mount System, for Gable and Hip roofs Rev A.

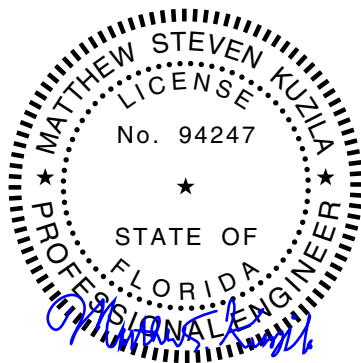
This letter certifies the loading criteria and design basis used for the structural analysis of the IronRidge XR System as shown in Report # 7.22 XR100 " Engineering Certification and Span Tables for the IronRidge XR100 Rail Flush Mount System, for Gable and Hip roofs" Rev A. All information, data, and analysis therein are based on, and comply with, the following building codes and typical specifications. The Span Tables provided in the referenced report may be used when all conditions of the design criteria provided therein are met.

Building Codes:

1. ASCE/SEI 7-22, Minimum Design Loads for Buildings and Other Structures, by American Society of Civil Engineers
2. 2023 Florida Building Code (8th Edition)
3. AC428, Acceptance Criteria for Modular Framing Systems Used to Support Photovoltaic (PV) Panels, November 1, 2012 by ICC-ES
4. Aluminum Design Manual 2020, by The Aluminum Association, Inc.
5. ANSI/AWC NDS-2018, National Design Specification for Wood Construction, by the American Wood Council

Please note our evaluation only applies to IronRidge products and excludes the structural adequacy of the chosen roof attachments, PV modules, or underlying roof supporting members. It shall be the responsibility of the installer or system designer to verify the structural capacity and adequacy of the referenced system components with respect to the applied or resultant loads of the chosen array configuration.

Sincerely,



Matthew S Kuzila, P.E.

Expires 02.28.2025

This item has been electronically signed and sealed by Matthew S Kuzila on July 8th 2024, 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.

Re: Report #7.22 XR100: Engineering Certification and Span Tables for the IronRidge XR100 Rail Flush Mount System, for Gable and Hip Roofs.

This report addresses the structural performance and code compliance of IronRidge's XR Rail Flush Mount System. The contents of the report shall be reviewed in its entirety before application to any project design. The XR Rail Flush Mount System is a proprietary rooftop mounting system used to support photovoltaic (PV) modules installed in portrait or landscape orientation and set parallel to the underlying roof surface. PV modules are supported by extruded aluminum XR Rails and secured to the rails with IronRidge mounting clamps. The XR Rails are side mounted to a roof attachment with 3/8" stainless steel bonding hardware and the attachment is secured directly to the underlying roof structure. Assembly details of a typical XR Rail Flush Mount System installation and its core components are shown in Exhibit EX-0015.

The IronRidge XR Rail Flush Mount System is designed and certified to the structural requirements of the reference standards listed below, for the load conditions and configurations tabulated in the attached span tables.

- Minimum Design Loads for Buildings and Other Structures, ASCE/SEI 7-22
- SEAOC (Structural Engineers Association of California) report PV2-2017 Wind Design for Solar Arrays
- AC428, Acceptance Criteria for Modular Framing Systems Used to Support Photovoltaic (PV) Panels, November 1, 2012 by ICC-ES
- Aluminum Design Manual (ADM) 2020, by the Aluminum Association, Inc.

The span tables provided in this report are certified based on the structural performance of IronRidge XR Rails only with no consideration of the structural adequacy of the chosen roof attachments, PV modules, or the underlying roof supporting members. It is the responsibility of the installer or system designer to verify the structural capacity and adequacy of the aforementioned system components in regards to the applied or resultant loads of any chosen array configuration. This report certifies the IronRidge products referenced within this document and provides no determination of the project specific conditions including site loads, building profile, & roof zones, which remain the responsibility of the installer or system designer.

The span tables included in this report provide the maximum allowable spans of XR Rail Flush Mount System for the respective loads and configurations listed, covering wind exposure categories B, C, & D, roof zones provided in ASCE 7 for enclosed and partially enclosed gable & hip roof profiles with roof slopes of 8° to 60°.

The tabulated spans are applicable when the following conditions are met:

- A. *Span* is the distance between two adjacent attachment points and is to be measured with respect to the center of the attachment fastener.
- B. Each module shall be supported by 2 rails (2 rail system) or 3 rails (3 rail system). Spans are calculated based on 2 rail systems and are conservatively deemed applicable for 3 rail systems.
- C. The underlying roof slope, measured between the roof surface and horizontal plane, is 8° to 60°.
- D. The *mean roof height*, defined as the average of the roof eave height and the roof ridge height measured from grade for roofs with pitches above 10 degrees and defined as the eave height for roofs with pitches less than or equal to 10 degrees, does not exceed 30 feet.

- E. A clearance from the underside of the array to the roof surface of 2" minimum shall be provided and the height of the array, the distance from the module top surface to the roof surface (defined as h_2), shall not exceed 10".
- F. Module length and area shall not exceed the maximum values listed on the respective span tables. The maximum module length within the scope of this report is 98.5 inches. The maximum module length specified within ASCE 7-22 is 80.4 inches. Wind pressure loads used to generate the span tables for modules with lengths above this value are based on the wind tunnel study "Design Wind Loads for Solar Modules Mounted parallel to the Roof of a Low-rise Building" referenced in ASCE 7 Section C29.4.4.
- G. All Flush Mount components shall be installed in a professional workmanlike manner per IronRidge's *Flush Mount Installation Manual* and other applicable standards for the general roof construction.

The parameters and adjustments allowed in the span tables are defined as the following:

- 1. The Flush Mount System is designed as a Risk Category II structure as defined by ASCE 7-22 Table 1.5-1.
- 2. Wind speed shall conform to ASCE 7-22 Fig. 26.5-1B (for Risk Category II) and applicable state & local county/city amendments to the IBC. No special wind topographic features are included and both topographic coefficient (K_{zt}) and wind ground elevation factor (K_e) are taken as 1.0.
- 3. Snow load used in the span tables is the *ground snow* and shall conform to ASCE 7-22 Fig. 7.2-1B and applicable state & local county/city amendments to the IBC. If the local jurisdiction specified snow load is in the format of a *flat roof snow*, it shall first be converted to a *ground snow* following the local building code/ amendments before the application of the attached span tables.
- 4. No special snow conditions are considered including unbalanced, drifting, sliding, retention, or ponding snow. No rain-on-snow surcharge load is considered. The span tables do not apply to buildings which are intentionally kept below freezing, kept just above freezing, or unheated without first converting the snow load based on the difference in Thermal Factor and snow sliding. The Thermal Factor, C_t , is assumed to be 1.101, the roof exposure factor is assumed to be 1.0, and the Sliding Factor is based on ASCE 7-22 Figure 7.4-1b for a warm roof with unobstructed slippery surfaces.
- 5. The span tables reflect the ASCE 7 prescribed earthquake loads with the maximum magnitudes being:
 - a) For ground snow no greater than 58psf: $S_S \leq 2.0g$ for Site Class A, B, C, & D.
 - b) For ground snow greater than 90psf: $S_S \leq 1.0g$ for Site Class A, B, C, & D.
 - c) For ground snow between 58 and 90psf: $S_S \leq 1.5g$ for Site Class A, B, C, & D.
- 6. Roof zones are defined by ASCE 7-22 Figure 30.3-2B to Figure 30.3-2G. Roof zone size and location to be used with the spans in this report are depicted in Figures 2 and 3 below each span table.
- 7. The maximum rail cantilever length, measured from the rail end to the nearest attachment point, shall be the lesser of the following two conditions: 40% of the allowable span provided for the respective load & configuration condition from the span tables, or 36".
- 8. Allowable span length in the charts may be multiplied by a factor of 1.08 if the rails are continuous over a minimum of three spans. This factor may not be used in determining maximum cantilever length.

9. No splices are allowed in the rail cantilever. For each XR splice type install per the following requirements:
 - a) XR Bonded Splice cannot be installed in the center 1/3 of interior spans, or the outer 2/3 of end spans.
 - b) BOSS Splice can be installed at any location within a span.
10. Shaded cells of the span tables indicate conditions in which UFO Mid Clamp connection capacity is exceeded. If such conditions are encountered contact techsupport@ironridge.com.
11. Systems using CAMO module clamps shall be installed with the following guidance:
 - a) For single module installations (orphan modules), CAMO clamps shall not be installed in regions that experience ground snow loads in exceedance of what is listed in the following table. Such scenarios are shown by asterisks in the applicable span tables

Maximum Ground Snow load for Orphan Modules using CAMO per ASCE 7-22				
Module Area	21.7 ft ²	23.5 ft ²	28.0 ft ²	30.5 ft ²
Ground Snow	80 psf	75 psf	60 psf	55 psf

- b) CAMO will function within a module's design load ratings. Be sure the specific module being used with CAMO meets the dimensional requirements shown in the figure below and that the module selected is suitable for the environmental conditions of a particular project.

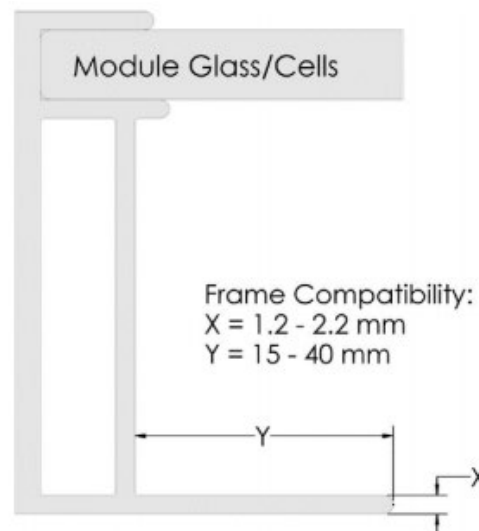


Figure 1: CAMO Module Frame Dimensional Requirements

Spans for Exposed and Edge Modules

Span values for Exposed and Edge module conditions, as defined below, are included in the attached span tables and shall be used when each condition exists.

- A module is defined as Exposed (per Section 29.4.4 of ASCE 7) if the distance from any of its free edges (an edge with no connectivity to other modules) to its facing roof edge (such as eave, ridge, rake, or hip) is greater than $0.5h$ (h is ASCE defined building height) AND if the distance from the same free edge to any other adjacent array or panel is greater than $2h_2$ where h_2 refers to the array height.
- A module is defined as an Edge Module when its distance from any side of the module to its facing perimeter roof edge (such as eave, ridge, rake, or hip) is less than 2 times the height of the array ($2h_2$) where h_2 is measured from the roof surface to the top surface of the module.

The maximum allowable span for Exposed or Edge modules shall be the lesser of the following two:

1. The span value for the Exposed or Edge module condition.
2. The span value determined by site wind speed and ground snow load.

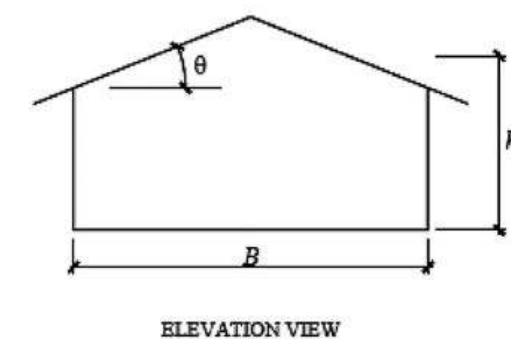
The allowable spans and cantilever shall only be applied to the portion of rail directly under Exposed or Edge Modules. Additionally, the shaded cells for the Exposed and Edge module conditions indicate conditions in which UFO Mid Clamp connection capacity is exceeded. If such conditions are encountered, contact techsupport@ironridge.com.

Prepared By:

Matthew S Kuzila, PE & Nancy E Schubert, PE

Rail: XR100		Gable Roof Flush Mount System Span Table (inches) - Portrait or Landscape Installation																																															
		Max Module Length: 69.5", Max Module SF: 21.7 SF																																															
		Exposure B																																															
Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 5 psf			10 psf			20 psf			30 psf			40 psf			50 psf			60 psf			70 psf			80 psf*			90 psf*			100 psf*			110 psf*			120 psf*			Exposed Mod.			Edge Mod.					
		Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3						
90 mph	8-20	129	129	129	117	117	117	100	100	100	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	129	129	129	126	101	85			
	21-27	129	129	129	120	120	120	106	106	106	95	95	95	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	129	129	129	129	106	95			
	28-60	125	125	125	120	120	120	107	107	107	97	97	97	90	90	90	83	83	83	77	77	77	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	125	125	125	125	112	101			
95 mph	8-20	129	129	129	117	117	117	100	100	100	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	129	129	112	116	95	80			
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100 mph	8-20	129	129	129	117	117	117	100	100	100	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	129	129	101	108	89	76			
	21-27	129	129	129	120	120	120	106	106	106	95	95	95	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	129	129	123	121	93	84			
	28-60	125	125	125	120	120	120	107	107	107	97	97	97	90	90	90	83	83	83	77	77	77	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	125	125	125	112	99	90			
105 mph	8-20	129	129	129	117	117	117	100	100	100	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	129	123	95	101	84	71			
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	28-60	125	125	125	120	120	120	107	107	107	97	97	97	90	90	90	83	83	83	77	77	77	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	125	125	118	104	94	85			
110 mph	8-20	129	129	129	117	117	117	100	100	100	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	129	110	89	96	80	68			
	21-27	129	129	129	120	120	120	106	106	106	95	95	95	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	129	121	100	108	83	75			
	28-60	125	125	125	120	120	120	107	107	107	97	97	97	90	90	90	83	83	83	77	77	77	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	125	125	108	99	90	81			
115 mph	8-20	129	129	115	117	117	115	100	100	100	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	129	101	83	91	76	64			
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120 mph	8-20	129	129	104	117	117	104	100	100	100	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	129	95	79	86	72	61			
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130 mph	8-20	129	120	93	117	117	93	100	100	93	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	108	86	71	79	66	52			
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	28-60	125	125	116	120	120	116	107	107	107	97	97	97	90	90	90	83	83	83	77	77	77	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	114	97	86	82	75	67			
140 mph	8-20	129	102	84	117	102	84	100	100	84	88	88	84	87	87	84	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	96	77	64	72	60	43			
	21-27	129	110	95	120	110	95	106	106	95	95	95	93	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	111	81	72	82	63	55			
	28-60	125	118	10																																													

Rail: XR100		Gable Roof Flush Mount System Span Table (inches) - Portrait or Landscape Installation Max Module Length: 69.5", Max Module SF: 21.7 SF Exposure C																																												
Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 5 psf			10 psf			20 psf			30 psf			40 psf			50 psf			60 psf			70 psf			80 psf*			90 psf*			100 psf*			110 psf*			120 psf*			Exposed Mod.			Edge Mod.		
		Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3			
90 mph	8-20	129	129	129	117	117	117	100	100	100	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	129	117	92	98	82	70
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95 mph	8-20	129	129	120	117	117	117	100	100	100	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	129	103	85	92	77	65
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100 mph	8-20	129	129	106	117	117	106	100	100	100	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	129	96	79	87	73	62
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105 mph	8-20	129	129	98	117	117	98	100	100	98	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	118	90	74	82	69	57
	21-27	129	129	117	120	120	117	106	106	106	95	95	95	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	129	95	84	93	72	65
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110 mph	8-20	129	117	92	117	117	92	100	100	92	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	105	84	70	78	65	51
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115 mph	8-20	129	106	86	117	106	86	100	100	86	88	88	86	87	87	85	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	98	80	66	74	62	45
	21-27	129	115	98	120	115	98	106	106	98	95	95	95	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	116	84	74	84	65	58
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120 mph	8-20	129	99	82	117	99	82	100	99	82	88	88	82	87	87	82	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	93	75	62	70	59	40
	21-27	129	105	92	120	105	92	106	105	92	95	95	91	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	107	79	70	80	61	51
	28-60	125	114	99	120	114	99	107	107	99	97	97	96	90	90	90	83	83	83	77	77	77	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	97	87	77	74	68	60
130 mph	8-20	115	89	73	115	89	73	100	89	73	88	88	73	87	87	73	79	79	73	73	73	71	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	83	67	50	64	47	34
	21-27	129	93	83	120	93	83	106	93	83	95	92	83	87	87	81	80	80	78	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	96	71	63	73	53	41
	28-60	121	101	89	120	101	89	106	101	89	96	96	89	88	88	86	82	82	82	77	77	77	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	87	78	69	67	62	52
140 mph	8-20	99	80	66	99	80	66	99	80	66	88	80	66	87	80	66	79	78	66	73	73	66	68	68	65	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	75	61	39	58	39	29
	21-27	117	84	75	117	84	75	106	84	75	95	84	75	87	82	75	80	79	73	74	74	71	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	87	64	54	68	43	35
	28-60	103	92	81	103	92	81	102	92	81	93	92	81	86	86	81	81	81	78	76	76	76	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	79	72	63	62	57	43
150 mph	8-																																													



Rail: XR100		Gable Roof Flush Mount System Span Table (inches) - Portrait or Landscape Installation Max Module Length: 75.5", Max Module SF: 23.5 SF Exposure B																																												
Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 5 psf			10 psf			20 psf			30 psf			40 psf			50 psf			60 psf			70 psf			80 psf*			90 psf*			100 psf*			110 psf*			120 psf*			Exposed Mod.			Edge Mod.		
		Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3			
90 mph	8-20	125	125	125	113	113	113	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	125	125	116	119	98	83
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	124	124	124	102	92
	28-60	120	120	120	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	120	120	120	107	97
95 mph	8-20	125	125	125	113	113	113	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	125	125	106	110	91	78
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	124	124	123	96	86
	28-60	120	120	120	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	120	120	113	101	92
100 mph	8-20	125	125	125	113	113	113	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	125	125	99	104	86	73
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	124	112	115	90	81
	28-60	120	120	120	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	120	119	107	96	87
105 mph	8-20	125	125	125	113	113	113	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	125	112	92	98	81	69
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	123	105	109	85	77
	28-60	120	120	120	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	120	110	101	91	82
110 mph	8-20	125	125	117	113	113	113	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	125	105	86	92	77	65
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	111	98	103	81	73
	28-60	120	120	120	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	117	104	96	87	78
115 mph	8-20	125	125	108	113	113	108	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	125	99	81	88	73	62
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	104	92	98	77	69
	28-60	120	120	120	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	110	98	91	83	74
120 mph	8-20	125	125	102	113	113	102	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	119	93	77	83	70	59
	21-27	124	124	117	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	98	87	94	73	66
	28-60	120	120	120	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	104	93	87	79	71
130 mph	8-20	125	111	91	113	111	91	96	96	91	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	104	83	69	76	63	48
	21-27	124	119	103	115	115	103	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	119	88	78	86	66	60
	28-60	120	120	109	116	116	109	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	107	95	84	79	72	65
140 mph	8-20	125	100	82	113	100	82	96	96	82	85	85	82	83	83	81	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	93	75	62	70	57	39
	21-27	124	105	93	115	105	93	101	101	93	91	91	90	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	106	79	70	79	61	50
	28-60	120	111	99	116	111	99	103	103	99	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54							

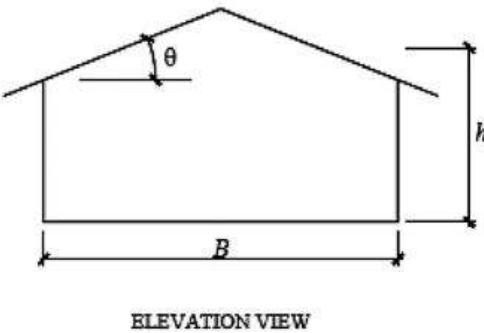
* = Note: additional installation requirement for CAMO module clamp. See Note 11 on Page 3 for details.

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 dimensions.

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

h = Mean roof height, in ft (m), except that eave height shall be used for $\theta \leq 10^\circ$.

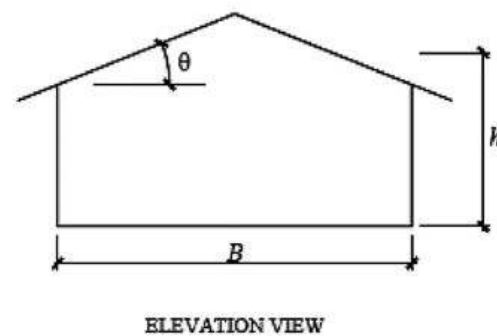
θ = Angle of plane of roof from horizontal, degrees.

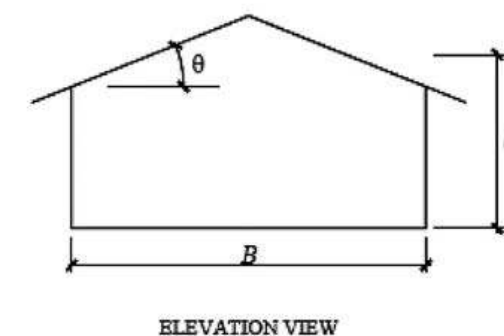


Rail: XR100		Gable Roof Flush Mount System Span Table (inches) - Portrait or Landscape Installation																																												
		Max Module Length: 75.5", Max Module SF: 23.5 SF																																												
		Exposure D																																												
Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 5 psf			10 psf			20 psf			30 psf			40 psf			50 psf			60 psf			70 psf			80 psf*			90 psf*			100 psf*			110 psf*			120 psf*			Exposed Mod.			Edge Mod.		
		Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3			
90 mph	8-20	125	125	105	113	113	105	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	125	96	79	86	72	61
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	101	90	96	75	68
	28-60	120	120	120	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	107	96	89	81	73
95 mph	8-20	125	123	97	113	113	97	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	111	89	74	81	67	55
	21-27	124	124	111	115	115	111	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	94	83	91	70	63
	28-60	120	120	117	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	115	101	90	84	76	69
100 mph	8-20	125	110	91	113	110	91	96	96	91	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	103	83	69	76	63	48
	21-27	124	119	103	115	115	103	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	119	88	78	86	66	60
	28-60	120	120	108	116	116	108	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	107	95	84	79	72	65
105 mph	8-20	125	103	85	113	103	85	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	97	78	64	72	60	42	
	21-27	124	109	96	115	109	96	101	101	96	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	110	82	73	81	63	54
	28-60	120	114	102	116	114	102	103	103	102	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	100	89	79	75	69	61
110 mph	8-20	125	97	80	113	97	80	96	96	80	85	85	80	83	83	79	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	90	73	60	68	54	37
	21-27	124	102	90	115	102	90	101	101	90	91	91	88	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	103	77	68	77	59	47
	28-60	120	108	96	116	108	96	103	103	96	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	94	84	74	71	65	58
115 mph	8-20	114	91	75	113	91	75	96	91	75	85	85	75	83	83	75	76	76	74	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	85	69	53	64	48	34
	21-27	124	96	85	115	96	85	101	96	85	91	91	85	84	84	81	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	97	73	64	74	53	42
	28-60	118	102	91	116	102	91	103	102	91	93	93	90	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	89	80	70	68	62	52
120 mph	8-20	107	86	71	107	86	71	96	86	71	85	85	71	83	83	71	76	76	71	70	70	69	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	80	65	45	61	43	31
	21-27	123	90	80	115	90	80	101	90	80	91	88	80	84	84	78	77	77	75	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	92	69	61	70	48	37
	28-60	110	97	86	110	97	86	101	97	86	92	92	86	85	85	83	79	79	79	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	84	76	67	64	59	47
130 mph	8-20	95	77	63	95	77	63	95	77	63	85	77	63	83	77	63	76	75	63	70	70	63	65	65	62	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	72	57	35	52	35	26
	21-27	108	81	72	108	81	72	101	81	72	91	81	72	84	79	72	77	76	70	71	71	68	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	83	62	47	64	38	32
	28-60	99	88	78	99	88	78	98	88	78	89	88	78	83	83	78	77	77	75	73	73	73	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	76	68	60	59	50	38
140 mph	8-20	86	69	54	86	69	54	86	69	54	84	69	54	83	69	54	76	69	54	70	68	54	65	65	54	61	61	54	58	58	54	55	55	54	53	53	53	50	50	50	65	43	30	42	30	23
	21-27	98	73	65	98	73	65	98	73	65	91	73	65	84	73	65	77	71	65	71	69	64	66	66	62	62	62	61	59	59	59	56	56	56	54	54	54	51	51	51	76	50	37	59	33	27
	28-60	90	80	71	90	80	71	90	80	71	87	80	71	81	79	71	75	75	70	71	71	68	68	68	67	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	69	62	49	49	42	33
150 mph	8-20	78	63	42	78	63	42	78	63>																																					

Rail: XR100		Gable Roof Flush Mount System Span Table (inches) - Portrait or Landscape Installation Max Module Length: 90", Max Module SF: 28 SF Exposure B																																												
Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 5 psf			10 psf			20 psf			30 psf			40 psf			50 psf			60 psf*			70 psf*			80 psf*			90 psf*			100 psf*			110 psf*			120 psf*			Exposed Mod.			Edge Mod.		
		Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3			
90 mph	8-20	115	115	115	103	103	103	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	115	115	103	104	86	73
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	113	113	113	90	82
	28-60	110	110	110	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	110	110	110	107	95	86
95 mph	8-20	115	115	115	103	103	103	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	115	115	95	98	81	69
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	113	108	108	85	77
	28-60	110	110	110	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	110	110	110	101	90	81
100 mph	8-20	115	115	115	103	103	103	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	115	108	88	92	76	65
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	113	101	102	80	72
	28-60	110	110	110	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	110	110	105	95	85	77
105 mph	8-20	115	115	111	103	103	103	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	115	101	83	87	72	61
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	106	94	96	75	68
	28-60	110	110	110	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	110	110	99	90	81	73
110 mph	8-20	115	115	103	103	103	103	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	115	94	77	82	68	57
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	99	88	91	71	64
	28-60	110	110	110	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	110	104	93	85	77	69
115 mph	8-20	115	115	97	103	103	97	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	111	88	73	78	65	50
	21-27	113	113	110	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	93	83	87	68	61
	28-60	110	110	110	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	110	98	88	81	73	66
120 mph	8-20	115	111	91	103	103	91	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	104	83	69	74	62	45
	21-27	113	113	104	106	106	104	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	88	78	83	65	58
	28-60	110	110	108	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	107	93	83	77	70	63
130 mph	8-20	115	99	81	103	99	81	88	88	81	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	93	75	61	67	53	36
	21-27	113	105	92	106	105	92	93	93	92	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	104	79	70	76	59	46
	28-60	110	108	97	106	106	97	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	96	85	75	71	64	58
140 mph	8-20	112	89	73	103	89	73	88	88	73	78	78	73	76	76	73	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	84	67	50	62	43	30
	21-27	113	94	83	106	94	83	93	93	83	84	84	81	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	95	71	63	70	48	38
	28-60	110	99	89	106	99	89	94	94	89	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	87	77	69	65	59	47
150 mph	8-20	101	81	67	101	81	677																																							

Rail: XR100		Gable Roof Flush Mount System Span Table (inches) - Portrait or Landscape Installation Max Module Length: 90", Max Module SF: 28 SF Exposure C																																															
Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 5 psf			10 psf			20 psf			30 psf			40 psf			50 psf			60 psf*			70 psf*			80 psf*			90 psf*			100 psf*			110 psf*			120 psf*			Exposed Mod.			Edge Mod.					
		Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3						
90 mph	8-20	115	115	107	103	103	103	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	115	97	80	84	70	60			
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	103	91	94	74	66			
	28-60	110	110	110	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	110	107	96	88	79	71			
95 mph	8-20	115	115	99	103	103	99	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	114	90	74	79	66	52			
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	95	84	88	69	62			
	28-60	110	110	110	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	110	100	90	82	74	67			
100 mph	8-20	115	112	92	103	103	92	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	105	84	69	74	62	45			
	21-27	113	113	105	106	106	105	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	89	79	84	65	59			
	28-60	110	110	109	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	108	94	84	78	70	63			
105 mph	8-20	115	105	86	103	103	86	88	88	86	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	98	78	65	70	58	40			
	21-27	113	110	98	106	106	98	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	110	83	73	79	61	51			
	28-60	110	110	102	106	106	102	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	101	89	79	74	67	60			
110 mph	8-20	115	98	80	103	98	80	88	88	80	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	92	74	61	67	51	35			
	21-27	113	103	91	106	103	91	93	93	91	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	103	78	69	75	58	45			
	28-60	110	107	96	106	106	96	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	95	84	74	70	63	56			
115 mph	8-20	115	92	75	103	92	75	88	88	75	78	78	75	76	76	74	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	86	69	54	63	46	31			
	21-27	113	97	86	106	97	86	93	93	86	84	84	83	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	97	73	65	72	51	40			
	28-60	110	102	91	106	102	91	94	94	91	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	90	79	70	66	61	50			
120 mph	8-20	108	86	71	103	86	71	88	86	71	78	78	71	76	76	71	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	81	65	45	60	41	29			
	21-27	113	91	81	106	91	81	93	91	81	84	84	80	77	77	76	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	92	69	61	68	45	35			
	28-60	110	96	86	106	96	86	94	94	86	86	86	84	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	85	75	67	63	58	45			
130 mph	8-20	96	77	64	96	77	64	88	77	64	78	77	64	76	76	64	69	69	64	64	64	62	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	72	58	33	49	33	24			
	21-27	108	82	72	106	82	72	93	82	72	84	80	72	77	77	71	70	70	68	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	83	62	48	62	36	29			
	28-60	100	87	78	100	87	78	92	87	78	84	84	78	77	77	75	72	72	72	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	76	68	60	58	47	36			
140 mph	8-20	87	70	55	87	70	55	87	70	55	78	70	55	76	70	55	69	68	55	64	64	55	60	60	55	56	56	55	53	53	53	50	50	50	48	48	48	46	46	46	65	43	28	40	28	21			
	21-27	98	74	65	98	74	65	93	74	65	84	74	65	77	72	65	70	69	64	65	65	62	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	75	51	36	57	30	25			
	28-60	91	80	71	91	80	71	90	80	71	82	80	71	75	75	71	70	70	68	66	66	66	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	69	62	49	47	39	30			
150 mph	8-20	79	64	42	79	64	42	79	64	42	77	64	42	76	64																																		





Rail: XR100		Gable Roof Flush Mount System Span Table (inches) - Portrait or Landscape Installation Max Module Length: 98.5", Max Module SF: 30.5 SF Exposure C																																															
Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 5 psf			10 psf			20 psf			30 psf			40 psf			50 psf			60 psf*			70 psf*			80 psf*			90 psf*			100 psf*			110 psf*			120 psf*			Exposed Mod.			Edge Mod.					
		Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3						
90 mph	8-20	109	109	99	98	98	98	84	84	84	74	74	74	73	73	73	66	66	66	61	61	61	57	57	57	53	53	53	51	51	51	48	48	48	46	46	46	44	44	44	109	91	74	78	65	51			
	21-27	108	108	108	101	101	101	89	89	89	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	54	54	54	51	51	51	49	49	49	47	47	47	45	45	45	108	96	85	87	68	61			
	28-60	105	105	105	101	101	101	90	90	90	82	82	82	75	75	75	70	70	70	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	105	100	89	81	73	66			
95 mph	8-20	109	109	92	98	98	92	84	84	84	74	74	74	73	73	73	66	66	66	61	61	61	57	57	57	53	53	53	51	51	51	48	48	48	46	46	46	44	44	44	105	84	69	73	61	44			
	21-27	108	108	105	101	101	101	89	89	89	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	54	54	54	51	51	51	49	49	49	47	47	47	45	45	45	108	89	78	82	64	57			
	28-60	105	105	105	101	101	101	90	90	90	82	82	82	75	75	75	70	70	70	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	105	93	83	77	69	62			
100 mph	8-20	109	104	85	98	98	85	84	84	84	74	74	74	73	73	73	66	66	66	61	61	61	57	57	57	53	53	53	51	51	51	48	48	48	46	46	46	44	44	44	98	78	64	69	56	38			
	21-27	108	108	97	101	101	97	89	89	89	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	54	54	54	51	51	51	49	49	49	47	47	47	45	45	45	108	82	73	77	60	49			
	28-60	105	105	101	101	101	101	90	90	90	82	82	82	75	75	75	70	70	70	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	101	88	78	72	65	59			
105 mph	8-20	109	97	80	98	97	80	84	84	80	74	74	74	73	73	73	66	66	66	61	61	61	57	57	57	53	53	53	51	51	51	48	48	48	46	46	46	44	44	44	91	73	60	65	49	33			
	21-27	108	103	91	101	101	91	89	89	89	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	54	54	54	51	51	51	49	49	49	47	47	47	45	45	45	102	77	68	73	55	43			
	28-60	105	105	95	101	101	95	90	90	90	82	82	82	75	75	75	70	70	70	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	94	82	73	68	62	53			
110 mph	8-20	109	91	75	98	91	75	84	84	75	74	74	74	73	73	73	66	66	66	61	61	61	57	57	57	53	53	53	51	51	51	48	48	48	46	46	46	44	44	44	85	68	52	62	43	29			
	21-27	108	96	85	101	96	85	89	89	85	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	54	54	54	51	51	51	49	49	49	47	47	47	45	45	45	96	72	64	70	48	38			
	28-60	105	100	90	101	100	90	90	90	90	82	82	82	75	75	75	70	70	70	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	89	78	69	65	59	47			
115 mph	8-20	107	85	70	98	85	70	84	84	70	74	74	70	73	73	70	66	66	66	61	61	61	57	57	57	53	53	53	51	51	51	48	48	48	46	46	46	44	44	44	80	64	43	58	38	27			
	21-27	108	90	80	101	90	80	89	89	80	80	80	78	73	73	73	67	67	67	62	62	62	58	58	58	54	54	54	51	51	51	49	49	49	47	47	47	45	45	45	90	68	60	66	43	33			
	28-60	105	95	85	101	95	85	90	90	85	82	82	82	75	75	75	70	70	70	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	84	74	65	62	54	42			
120 mph	8-20	101	80	66	98	80	66	84	80	66	74	74	66	73	73	66	66	66	65	61	61	61	57	57	57	53	53	53	51	51	51	48	48	48	46	46	46	44	44	44	75	61	37	52	34	24			
	21-27	108	85	75	101	85	75	89	85	75	80	80	75	73	73	72	67	67	67	62	62	62	58	58	58	54	54	54	51	51	51	49	49	49	47	47	47	45	45	45	85	64	54	63	38	30			
	28-60	103	90	80	101	90	80	90	90	80	81	81	79	75	75	75	70	70	70	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	79	70	62	59	49	37			
130 mph	8-20	90	72	59	90	72	59	84	72	59	74	72	59	73	71	59	66	66	59	61	61	58	57	57	57	53	53	53	51	51	51	48	48	48	46	46	46	44	44	44	67	47	28	41	28	21			
	21-27	100	76	67	100	76	67	89	76	67	80	75	67	73	72	67	67	67	64	62	62	62	58	58	58	54	54	54	51	51	51	49	49	49	47	47	47	45	45	45	77	56	38	57	30	25			
	28-60	93	81	72	93	81	72	87	81	72	79	79	72	73	73	71	68	68	68	64	64	64	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	71	63	53	48	40	30			
140 mph	8-20	81	65	44	81	65	44	81	65	44	74	65	44	73	65	44	66	64	44	61	61	44	57	57	44	53	53	44	51	51	44	48	48	44	46	46	44	44	44	44	61	35	24	34	24	18			
	21-27	91	68	61	91	68	61	89	68	61	80	68	61	73	67	61	67	65	60	62	62	58	58	58	57	54	54	54	51	51	51	49	49	49	47	47	47	45	45	45	70	41	29	48	26	21			
	28-60	84	74	66	84	74	66	84	74	66	77	74	66	71	71	66	67	67	64	63	63	62	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	64	58	40	39	33	26			
150 mph	8-20	73	59	34	73	59	34	73																																									

= min 72" span = min 64" span = min 48" span

= Shaded cells indicate conditions in which UFO Mid Clamp connection capacity is exceeded. If such conditions are encountered contact techsupport@ironridge.com.

= Contact techsupport@ironridge.com

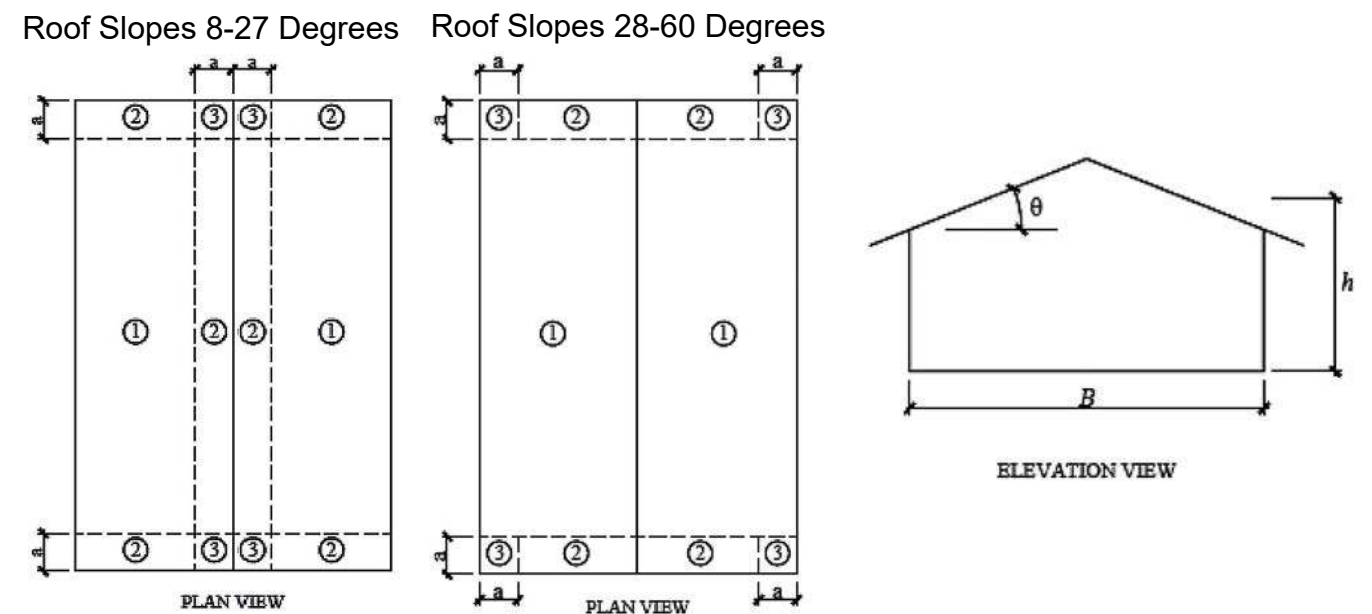
REV 06/03/2024

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 dimensions.

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

h = Mean roof height, in ft (m), except that eave height shall be used for $\theta \leq 10^\circ$.

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



Rail: XR100		Hip Roof Flush Mount System Span Table (inches) - Portrait or Landscape Installation																																													
		Max Module Length: 69.5", Max Module SF: 21.7 SF																																													
		Exposure B																																													
Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 5 psf			10 psf			20 psf			30 psf			40 psf			50 psf			60 psf			70 psf			80 psf*			90 psf*			100 psf*			110 psf*			120 psf*			Exposed Mod.			Edge Mod.			
		Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3				
90 mph	8-20	129	129	129	117	117	117	100	100	100	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	129	129	129	129	104	100	
	21-27	129	129	129	120	120	120	106	106	106	95	95	95	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	129	129	129	129	123	123	
	28-60	125	125	125	120	120	120	107	107	107	97	97	97	90	90	90	83	83	83	77	77	77	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	125	125	125	125	123	107	
95 mph	8-20	129	129	129	117	117	117	100	100	100	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	129	129	129	121	98	94	
	21-27	129	129	129	120	120	120	106	106	106	95	95	95	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	129	129	129	129	114	114	
	28-60	125	125	125	120	120	120	107	107	107	97	97	97	90	90	90	83	83	83	77	77	77	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	125	125	125	125	114	100	
100 mph	8-20	129	129	129	117	117	117	100	100	100	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	129	129	129	112	93	88	
	21-27	129	129	129	120	120	120	106	106	106	95	95	95	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	129	129	129	129	106	106	
	28-60	125	125	125	120	120	120	107	107	107	97	97	97	90	90	90	83	83	83	77	77	77	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	125	125	125	125	106	94	
105 mph	8-20	129	129	129	117	117	117	100	100	100	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	129	126	117	105	88	84	
	21-27	129	129	129	120	120	120	106	106	106	95	95	95	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	129	129	129	122	100	100	
	28-60	125	125	125	120	120	120	107	107	107	97	97	97	90	90	90	83	83	83	77	77	77	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	125	125	125	117	100	89	
110 mph	8-20	129	129	129	117	117	117	100	100	100	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	129	115	107	100	83	80	
	21-27	129	129	129	120	120	120	106	106	106	95	95	95	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	129	129	129	115	94	94	
	28-60	125	125	125	120	120	120	107	107	107	97	97	97	90	90	90	83	83	83	77	77	77	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	125	125	123	110	95	85	
115 mph	8-20	129	129	129	117	117	117	100	100	100	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	129	106	100	95	79	76	
	21-27	129	129	129	120	120	120	106	106	106	95	95	95	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	129	129	129	109	90	90	
	28-60	125	125	125	120	120	120	107	107	107	97	97	97	90	90	90	83	83	83	77	77	77	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	125	125	111	104	90	81	
120 mph	8-20	129	129	129	117	117	117	100	100	100	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	129	99	94	90	75	72	
	21-27	129	129	129	120	120	120	106	106	106	95	95	95	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	129	126	126	103	85	85	
	28-60	125	125	125	120	120	120	107	107	107	97	97	97	90	90	90	83	83	83	77	77	77	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	125	125	102	99	86	77	
130 mph	8-20	129	124	114	117	117	114	100	100	100	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	115	89	85	82	69	66	
	21-27	129	129	129	120	120	120	106	106	106	95	95	95	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	129	105	105	94	78	78	
	28-60	125	125	125	120	120	120	107	107	107	97	97	97	90	90	90	83	83	83	77	77	77	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	125	105	92	91	78	70	
140 mph	8-20	129	107	101	117	107	101	100	100	100	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	100	81	77	76	64	61	
	21-27	129	129	129	120	120	120	106	106	106	95	95	95	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	125	94	94	86	72	72	
	28-60	125	125	112	120	120	112	107	107	107	97	97	97	90	90	90	83	83	83	77	77	77	72	72	72	68	68	68																			

= min 72" span = min 64" span = min 48" span

= Shaded cells indicate conditions in which UFO Mid Clamp connection capacity is exceeded. If such conditions are encountered contact techsupport@ironridge.com

* ≡ Note: additional installation requirement for CAMO module clamp. See Note 11 on Page 3 for details

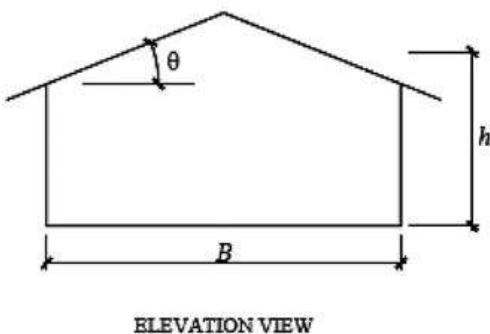
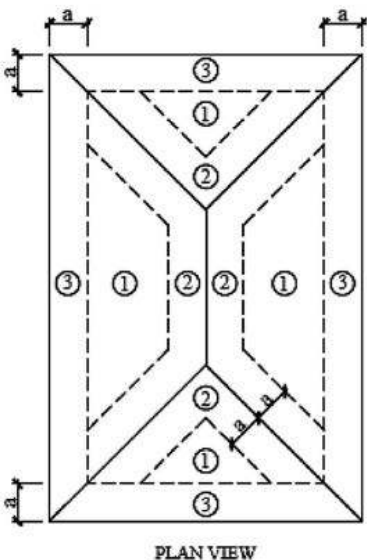
Notation

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 dimensions.

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

h = Mean roof height, in ft (m), except that eave height shall be used for $\theta \leq 10^\circ$.

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



Rail: XR100		Hip Roof Flush Mount System Span Table (inches) - Portrait or Landscape Installation Max Module Length: 69.5", Max Module SF: 21.7 SF Exposure D																																												
Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 5 psf			10 psf			20 psf			30 psf			40 psf			50 psf			60 psf			70 psf			80 psf*			90 psf*			100 psf*			110 psf*			120 psf*			Exposed Mod.			Edge Mod.		
		Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3						
90 mph	8-20	129	129	129	117	117	117	100	100	100	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	129	103	97	93	78	74
	21-27	129	129	129	120	120	120	106	106	106	95	95	95	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	129	129	129	106	88	88
	28-60	125	125	125	120	120	120	107	107	107	97	97	97	90	90	90	83	83	83	77	77	77	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	125	125	106	102	88	79
95 mph	8-20	129	129	126	117	117	117	100	100	100	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	129	96	91	87	73	70
	21-27	129	129	129	120	120	120	106	106	106	95	95	95	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	129	117	117	99	83	83
	28-60	125	125	125	120	120	120	107	107	107	97	97	97	90	90	90	83	83	83	77	77	77	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	125	118	98	96	83	74
100 mph	8-20	129	123	114	117	117	114	100	100	100	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	115	89	85	82	69	66
	21-27	129	129	129	120	120	120	106	106	106	95	95	95	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	129	104	104	94	78	78
	28-60	125	125	125	120	120	120	107	107	107	97	97	97	90	90	90	83	83	83	77	77	77	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	125	105	92	90	78	70
105 mph	8-20	129	112	104	117	112	104	100	100	100	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	104	84	80	78	65	62
	21-27	129	129	129	120	120	120	106	106	106	95	95	95	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	129	97	97	89	74	74
	28-60	125	125	119	120	120	119	107	107	107	97	97	97	90	90	90	83	83	83	77	77	77	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	122	98	86	86	74	66
110 mph	8-20	129	103	98	117	103	98	100	100	98	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	97	79	75	74	62	59
	21-27	129	129	129	120	120	120	106	106	106	95	95	95	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	119	91	91	84	70	70
	28-60	125	125	107	120	120	107	107	107	107	97	97	97	90	90	90	83	83	83	77	77	77	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	111	92	81	81	70	63
115 mph	8-20	129	97	92	117	97	92	100	97	92	88	88	88	87	87	87	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	92	75	71	70	59	54
	21-27	129	120	120	120	120	120	106	106	106	95	95	95	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	109	86	86	80	66	66
	28-60	125	121	100	120	120	100	107	107	100	97	97	97	90	90	90	83	83	83	77	77	77	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	102	86	76	77	66	60
120 mph	8-20	120	92	87	117	92	87	100	92	87	88	88	87	87	87	86	79	79	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	87	71	67	67	53	48
	21-27	129	109	109	120	109	109	106	106	106	95	95	95	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	101	81	81	76	63	63
	28-60	125	110	94	120	110	94	107	107	94	97	97	94	90	90	90	83	83	83	77	77	77	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	97	82	72	74	63	55
130 mph	8-20	102	83	79	102	83	79	100	83	79	88	83	79	87	83	79	79	79	77	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	78	64	61	61	44	40
	21-27	128	96	96	120	96	96	106	96	96	95	93	93	87	87	87	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	91	73	73	70	56	56
	28-60	119	96	85	119	96	85	107	96	85	97	93	85	90	89	85	83	83	82	77	77	77	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	87	73	65	67	57	44
140 mph	8-20	92	75	71	92	75	71	92	75	71	87	75	71	85	75	71	79	75	71	73	73	70	68	68	68	64	64	64	60	60	60	57	57	57	55	55	55	53	53	53	71	57	49	53	37	34
	21-27	110	87	87	110	87	87	105	87	87	94	87	87	86	84	84	80	80	80	74	74	74	69	69	69	65	65	65	61	61	61	58	58	58	56	56	56	54	54	54	83	66	66	64	46	46
	28-60	103	87	77	103	87	77	103	87	77	96	87	77	88	84	77	82	81	77	77	77	75	72	72	72	68	68	68	64	64	64	61	61	61	59	59	59	56	56	56	79	66	59	62	46	37
150 mph	8-20	84	69																																											

Rail: XR100		Hip Roof Flush Mount System Span Table (inches) - Portrait or Landscape Installation Max Module Length: 75.5", Max Module SF: 23.5 SF Exposure B																																												
Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 5 psf			10 psf			20 psf			30 psf			40 psf			50 psf			60 psf			70 psf			80 psf*			90 psf*			100 psf*			110 psf*			120 psf*			Exposed Mod.			Edge Mod.		
		Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3						
90 mph	8-20	125	125	125	113	113	113	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	125	125	125	123	100	96
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	124	124	124	116	116
	28-60	120	120	120	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	120	120	120	116	103
95 mph	8-20	125	125	125	113	113	113	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	125	125	125	114	95	90
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	124	124	124	108	108
	28-60	120	120	120	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	120	120	120	109	97
100 mph	8-20	125	125	125	113	113	113	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	125	125	119	107	89	85
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	124	124	124	102	102
	28-60	120	120	120	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	120	120	118	102	91
105 mph	8-20	125	125	125	113	113	113	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	125	117	110	101	84	81
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	124	124	116	96	96
	28-60	120	120	120	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	120	120	111	97	87
110 mph	8-20	125	125	125	113	113	113	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	125	109	103	96	80	77
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	124	124	110	91	91
	28-60	120	120	120	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	120	112	105	92	82
115 mph	8-20	125	125	125	113	113	113	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	125	102	97	91	76	73
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	124	124	104	87	87
	28-60	120	120	120	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	120	105	100	87	78
120 mph	8-20	125	125	124	113	113	113	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	125	97	92	87	73	70
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	114	114	99	83	83
	28-60	120	120	120	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	115	100	96	83	74
130 mph	8-20	125	114	108	113	113	108	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	108	87	83	79	67	64
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	102	102	91	75	75
	28-60	120	120	120	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	102	90	88	75	68
140 mph	8-20	125	103	98	113	103	98	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	98	79	75	73	61	58
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	115	92	92	83	69	69
	28-60	120	120	106	116	116	106	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	5						

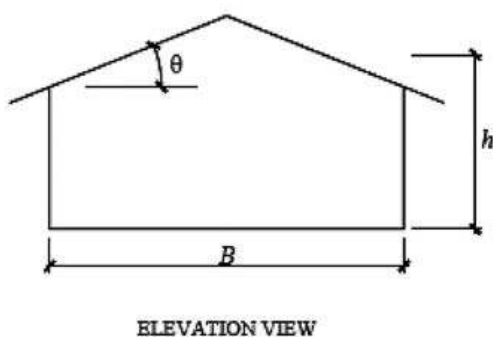
Rail: XR100		Hip Roof Flush Mount System Span Table (inches) - Portrait or Landscape Installation Max Module Length: 75.5", Max Module SF: 23.5 SF Exposure C																																												
Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 5 psf			10 psf			20 psf			30 psf			40 psf			50 psf			60 psf			70 psf			80 psf*			90 psf*			100 psf*			110 psf*			120 psf*			Exposed Mod.			Edge Mod.		
		Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3						
90 mph	8-20	125	125	125	113	113	113	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	125	112	106	99	82	79
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	124	124	113	94	94
	28-60	120	120	120	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	120	117	108	94	84
95 mph	8-20	125	125	125	113	113	113	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	125	104	99	93	78	74
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	124	124	106	88	88
	28-60	120	120	120	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	120	107	102	88	79
100 mph	8-20	125	125	125	113	113	113	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	125	97	92	88	73	70
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	116	116	100	83	83
	28-60	120	120	120	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	116	100	96	83	75
105 mph	8-20	125	123	114	113	113	113	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	115	91	87	83	69	66
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	107	107	95	79	79
	28-60	120	120	120	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	107	94	91	79	71
110 mph	8-20	125	112	107	113	112	107	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	107	86	82	79	66	63
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	100	100	90	74	74
	28-60	120	120	118	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	101	88	87	75	67
115 mph	8-20	125	106	101	113	106	101	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	100	81	77	75	63	60
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	120	95	95	85	71	71
	28-60	120	120	109	116	116	109	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	112	95	83	82	71	64
120 mph	8-20	125	100	95	113	100	95	96	96	95	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	95	77	73	71	60	55
	21-27	124	122	122	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	111	89	89	81	67	67
	28-60	120	120	103	116	116	103	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	106	89	79	79	68	61
130 mph	8-20	112	90	86	112	90	86	96	90	86	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	85	69	66	65	50	45
	21-27	124	106	106	115	106	106	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	99	80	80	74	61	61
	28-60	120	106	93	116	106	93	103	103	93	93	93	92	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	95	80	71	72	62	52
140 mph	8-20	101	82	78	101	82	78	96	82	78	85	82	78	83	81	78	76	76	75	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	77	63	60	60	42	38
	21-27	121	95	95	115	95	95	101	95	95	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	90	72	72	68	54	54
	28-60	112	96	84	112	96	84	103	96	84	93	92	84	86	86	83	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	86	73	64	66	54	42
1																																														

Rail: XR100		Hip Roof Flush Mount System Span Table (inches) - Portrait or Landscape Installation Max Module Length: 75.5", Max Module SF: 23.5 SF Exposure D																																												
Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 5 psf			10 psf			20 psf			30 psf			40 psf			50 psf			60 psf			70 psf			80 psf*			90 psf*			100 psf*			110 psf*			120 psf*			Exposed Mod.			Edge Mod.		
		Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3			
90 mph	8-20	125	125	125	113	113	113	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	125	100	95	89	75	72
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	121	121	102	85	85
	28-60	120	120	120	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	120	103	98	85	76
95 mph	8-20	125	125	117	113	113	113	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	118	93	88	84	70	67
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	109	109	96	80	80
	28-60	120	120	120	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	109	96	93	80	72
100 mph	8-20	125	114	108	113	113	108	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	108	87	82	79	66	64
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	124	102	102	91	75	75
	28-60	120	120	120	116	116	116	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	120	102	89	87	75	68
105 mph	8-20	125	106	101	113	106	101	96	96	96	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	101	81	77	75	63	60
	21-27	124	124	124	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	121	95	95	86	71	71
	28-60	120	120	110	116	116	110	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	112	95	84	83	71	64
110 mph	8-20	125	100	95	113	100	95	96	96	95	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	95	77	73	71	60	55
	21-27	124	122	122	115	115	115	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	111	89	89	81	67	67
	28-60	120	120	103	116	116	103	103	103	103	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	106	89	79	79	68	61
115 mph	8-20	121	94	90	113	94	90	96	94	90	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	89	72	69	68	54	49
	21-27	124	111	111	115	111	111	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	104	84	84	77	64	64
	28-60	120	111	97	116	111	97	103	103	97	93	93	93	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	100	84	74	75	64	57
120 mph	8-20	111	89	85	111	89	85	96	89	85	85	85	83	83	83	76	76	76	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	84	69	65	64	49	44	
	21-27	124	104	104	115	104	104	101	101	101	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	99	79	79	74	61	61
	28-60	120	105	92	116	105	92	103	103	92	93	93	92	86	86	86	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	94	79	70	71	61	51
130 mph	8-20	99	80	76	99	80	76	96	80	76	85	80	76	83	80	76	76	76	75	70	70	70	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	76	62	59	59	40	37
	21-27	118	94	94	115	94	94	101	94	94	91	91	91	84	84	84	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	89	71	71	67	52	52
	28-60	110	94	83	110	94	83	103	94	83	93	91	83	86	86	82	80	80	80	74	74	74	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	85	71	63	65	52	40
140 mph	8-20	90	73	69	90	73	69	90	73	69	83	73	69	82	73	69	76	72	69	70	70	68	65	65	65	61	61	61	58	58	58	55	55	55	53	53	53	50	50	50	69	52	46	48	34	32
	21-27	105	85	85	105	85	85	101	85	85	90	85	85	83	81	81	77	77	77	71	71	71	66	66	66	62	62	62	59	59	59	56	56	56	54	54	54	51	51	51	80	64	64	62	42	42
	28-60	100	85	75	100	85	75	100	85	75	93	85	75	85	81	75	79	78	75	74	74	73	69	69	69	65	65	65	62	62	62	59	59	59	56	56	56	54	54	54	77	65	55	60	43	34
150 mph	8-20	82	67	64	82	6																																								

Rail: XR100		Hip Roof Flush Mount System Span Table (inches) - Portrait or Landscape Installation Max Module Length: 90", Max Module SF: 28 SF Exposure B																																												
Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 5 psf			10 psf			20 psf			30 psf			40 psf			50 psf			60 psf*			70 psf*			80 psf*			90 psf*			100 psf*			110 psf*			120 psf*			Exposed Mod.			Edge Mod.		
		Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3						
90 mph	8-20	115	115	115	103	103	103	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	115	115	115	108	89	85
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	113	113	113	102	102
	28-60	110	110	110	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	110	110	110	110	103	92
95 mph	8-20	115	115	115	103	103	103	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	115	115	112	101	83	80
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	113	113	113	96	96
	28-60	110	110	110	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	110	110	110	110	96	86
100 mph	8-20	115	115	115	103	103	103	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	115	110	104	95	79	75
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	113	113	108	90	90
	28-60	110	110	110	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	110	110	110	104	91	81
105 mph	8-20	115	115	115	103	103	103	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	115	103	98	90	75	71
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	113	113	102	85	85
	28-60	110	110	110	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	110	110	107	99	86	77
110 mph	8-20	115	115	115	103	103	103	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	115	97	92	85	71	68
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	113	113	97	81	81
	28-60	110	110	110	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	110	110	101	94	81	73
115 mph	8-20	115	115	114	103	103	103	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	115	91	87	81	67	64
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	108	108	92	77	77
	28-60	110	110	110	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	110	109	95	89	77	69
120 mph	8-20	115	113	107	103	103	103	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	108	86	82	77	64	61
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	102	102	88	73	73
	28-60	110	110	110	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	110	102	90	85	73	66
130 mph	8-20	115	102	96	103	102	96	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	97	78	74	70	59	53
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	91	91	80	67	67
	28-60	110	110	106	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	108	91	80	78	67	60
140 mph	8-20	115	92	87	103	92	87	88	88	87	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	87	70	67	64	49	44
	21-27	113	109	109	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	102	82	82	74	61	61
	28-60	110	109	96	106	106	96	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	98	83	73	72	61	52
150 mph	8-20	105	84																																											

Rail: XR100		Hip Roof Flush Mount System Span Table (inches) - Portrait or Landscape Installation																																												
		Max Module Length: 90", Max Module SF: 28 SF																																												
		Exposure C																																												
Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 5 psf			10 psf			20 psf			30 psf			40 psf			50 psf			60 psf*			70 psf*			80 psf*			90 psf*			100 psf*			110 psf*			120 psf*			Exposed Mod.			Edge Mod.		
		Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3			
90 mph	8-20	115	115	115	103	103	103	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	115	100	95	87	73	70
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	113	113	100	83	83
	28-60	110	110	110	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	110	110	104	96	84	75
95 mph	8-20	115	115	115	103	103	103	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	115	93	88	82	69	66
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	111	111	94	78	78
	28-60	110	110	110	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	110	110	97	91	78	70
100 mph	8-20	115	114	108	103	103	103	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	109	87	82	77	65	62
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	103	103	89	74	74
	28-60	110	110	110	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	110	103	90	86	74	66
105 mph	8-20	115	107	101	103	103	101	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	102	81	77	73	61	58
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	96	96	84	70	70
	28-60	110	110	110	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	110	96	85	81	70	63
110 mph	8-20	115	100	95	103	100	95	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	95	77	73	69	57	52
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	111	90	90	80	66	66
	28-60	110	110	104	106	106	104	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	106	90	79	77	66	60
115 mph	8-20	115	94	90	103	94	90	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	90	72	69	66	51	47
	21-27	113	112	112	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	105	85	85	76	63	63
	28-60	110	110	98	106	106	98	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	100	85	75	73	63	55
120 mph	8-20	112	89	85	103	89	85	88	88	85	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	85	68	65	63	46	42
	21-27	113	106	106	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	99	80	80	72	60	60
	28-60	110	106	93	106	106	93	94	94	93	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	95	80	71	70	60	49
130 mph	8-20	100	80	76	100	80	76	88	80	76	78	78	76	76	76	75	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	76	62	58	56	38	34
	21-27	113	95	95	106	95	95	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	89	72	72	66	49	49
	28-60	110	95	83	106	95	83	94	94	83	86	86	83	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	85	72	63	64	50	39
140 mph	8-20	90	73	69	90	73	69	88	73	69	78	73	69	76	73	69	69	69	68	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	69	51	45	46	32	29
	21-27	106	85	85	106	85	85	93	85	85	84	83	83	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	81	65	65	61	40	40
	28-60	101	86	75	101	86	75	94	86	75	86	83	75	79	79	75	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	77	65	57	59	41	31
150 mph	8-20	82	67</																																											

Rail: XR100		Hip Roof Flush Mount System Span Table (inches) - Portrait or Landscape Installation																																															
		Max Module Length: 90", Max Module SF: 28 SF																																															
		Exposure D																																															
Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 5 psf			10 psf			20 psf			30 psf			40 psf			50 psf			60 psf*			70 psf*			80 psf*			90 psf*			100 psf*			110 psf*			120 psf*			Exposed Mod.			Edge Mod.					
		Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3						
90 mph	8-20	115	115	111	103	103	103	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	112	89	84	79	66	63			
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	105	105	90	75	75			
	28-60	110	110	110	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	110	106	93	87	75	68			
95 mph	8-20	115	109	103	103	103	103	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	104	83	79	74	62	59			
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	98	98	85	71	71			
	28-60	110	110	110	106	106	106	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	110	98	86	82	71	64			
100 mph	8-20	115	101	96	103	101	96	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	96	77	73	70	59	53			
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	91	91	80	67	67			
	28-60	110	110	105	106	106	105	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	107	91	80	78	67	60			
105 mph	8-20	115	95	90	103	95	90	88	88	88	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	90	73	69	66	52	47			
	21-27	113	113	113	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	105	85	85	76	63	63			
	28-60	110	110	99	106	106	99	94	94	94	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	101	85	75	73	63	56			
110 mph	8-20	112	89	85	103	89	85	88	88	85	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	85	68	65	63	46	42			
	21-27	113	106	106	106	106	106	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	99	80	80	72	60	60			
	28-60	110	106	93	106	106	93	94	94	93	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	95	80	71	70	60	49			
115 mph	8-20	105	84	80	103	84	80	88	84	80	78	78	78	76	76	76	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	80	65	61	60	41	37			
	21-27	113	99	99	106	99	99	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	93	75	75	69	54	54			
	28-60	110	100	87	106	100	87	94	94	87	86	86	86	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	89	75	67	66	55	43			
120 mph	8-20	99	79	75	99	79	75	88	79	75	78	78	75	76	76	74	69	69	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	75	61	57	55	37	34			
	21-27	113	94	94	106	94	94	93	93	93	84	84	84	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	88	71	71	65	48	48			
	28-60	110	94	83	106	94	83	94	93	83	86	86	83	79	79	79	73	73	73	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	85	71	63	63	49	38			
130 mph	8-20	89	72	68	89	72	68	88	72	68	78	72	68	76	72	68	69	69	67	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	68	49	43	44	31	28			
	21-27	104	84	84	104	84	84	93	84	84	84	82	82	77	77	77	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	79	64	64	60	39	39			
	28-60	99	84	74	99	84	74	94	84	74	86	82	74	79	78	74	73	73	72	68	68	68	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	76	64	54	58	39	31			
140 mph	8-20	80	65	62	80	65	62	80	65	62	76	65	62	75	65	62	69	65	62	64	63	61	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	61	38	33	37	26	24			
	21-27	94	76	76	94	76	76	92	76	76	82	76	76	75	73	73	70	70	70	65	65	65	60	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	72	56	56	51	32	32			
	28-60	90	76	67	90	76	67	90	76	67	84	76	67	78	73	67	72	70	67	68	68	66	63	63	63	60	60	60	57	57	57	54	54	54	52	52	52	49	49	49	69	57	39	47	32	26			
150 mph	8-20	73	59	53	73	59	53	73	59	53	73	5																																					



Rail: XR100		Hip Roof Flush Mount System Span Table (inches) - Portrait or Landscape Installation Max Module Length: 98.5", Max Module SF: 30.5 SF Exposure C																																												
Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 5 psf			10 psf			20 psf			30 psf			40 psf			50 psf			60 psf*			70 psf*			80 psf*			90 psf*			100 psf*			110 psf*			120 psf*			Exposed Mod.			Edge Mod.		
		Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3	Zone 1	Zone 2	Zone 3			
90 mph	8-20	109	109	109	98	98	98	84	84	84	74	74	74	73	73	73	66	66	66	61	61	61	57	57	57	53	53	53	51	51	51	48	48	48	46	46	46	44	44	44	109	93	88	81	67	64
	21-27	108	108	108	101	101	101	89	89	89	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	54	54	54	51	51	51	49	49	49	47	47	47	45	45	45	108	108	108	93	77	77
	28-60	105	105	105	101	101	101	90	90	90	82	82	82	75	75	75	70	70	70	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	105	105	97	89	77	70
95 mph	8-20	109	109	108	98	98	98	84	84	84	74	74	74	73	73	73	66	66	66	61	61	61	57	57	57	53	53	53	51	51	51	48	48	48	46	46	46	44	44	44	109	86	82	76	63	61
	21-27	108	108	108	101	101	101	89	89	89	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	54	54	54	51	51	51	49	49	49	47	47	47	45	45	45	108	103	103	87	72	72
	28-60	105	105	105	101	101	101	90	90	90	82	82	82	75	75	75	70	70	70	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	105	103	90	84	73	65
100 mph	8-20	109	106	100	98	98	98	84	84	84	74	74	74	73	73	73	66	66	66	61	61	61	57	57	57	53	53	53	51	51	51	48	48	48	46	46	46	44	44	44	101	81	76	72	60	56
	21-27	108	108	108	101	101	101	89	89	89	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	54	54	54	51	51	51	49	49	49	47	47	47	45	45	45	108	96	96	82	68	68
	28-60	105	105	105	101	101	101	90	90	90	82	82	82	75	75	75	70	70	70	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	105	96	84	79	68	62
105 mph	8-20	109	99	94	98	98	94	84	84	84	74	74	74	73	73	73	66	66	66	61	61	61	57	57	57	53	53	53	51	51	51	48	48	48	46	46	46	44	44	44	94	76	72	68	54	49
	21-27	108	108	108	101	101	101	89	89	89	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	54	54	54	51	51	51	49	49	49	47	47	47	45	45	45	108	89	89	78	65	65
	28-60	105	105	104	101	101	101	90	90	90	82	82	82	75	75	75	70	70	70	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	105	90	79	75	65	58
110 mph	8-20	109	93	88	98	93	88	84	84	84	74	74	74	73	73	73	66	66	66	61	61	61	57	57	57	53	53	53	51	51	51	48	48	48	46	46	46	44	44	44	89	71	67	64	48	44
	21-27	108	108	108	101	101	101	89	89	89	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	54	54	54	51	51	51	49	49	49	47	47	47	45	45	45	104	84	84	74	61	61
	28-60	105	105	97	101	101	97	90	90	90	82	82	82	75	75	75	70	70	70	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	99	84	74	71	61	52
115 mph	8-20	109	88	83	98	88	83	84	84	83	74	74	74	73	73	73	66	66	66	61	61	61	57	57	57	53	53	53	51	51	51	48	48	48	46	46	46	44	44	44	83	67	64	61	43	39
	21-27	108	105	105	101	101	101	89	89	89	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	54	54	54	51	51	51	49	49	49	47	47	47	45	45	45	97	79	79	70	58	58
	28-60	105	105	92	101	101	92	90	90	90	82	82	82	75	75	75	70	70	70	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	93	79	70	68	58	46
120 mph	8-20	104	83	79	98	83	79	84	83	79	74	74	74	73	73	73	66	66	66	61	61	61	57	57	57	53	53	53	51	51	51	48	48	48	46	46	46	44	44	44	79	63	60	58	39	35
	21-27	108	98	98	101	98	98	89	89	89	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	54	54	54	51	51	51	49	49	49	47	47	47	45	45	45	92	74	74	67	51	51
	28-60	105	99	87	101	99	87	90	90	87	82	82	82	75	75	75	70	70	70	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	88	74	66	65	52	40
130 mph	8-20	93	74	71	93	74	71	84	74	71	74	74	71	73	73	70	66	66	66	61	61	61	57	57	57	53	53	53	51	51	51	48	48	48	46	46	46	44	44	44	70	55	47	47	32	29
	21-27	108	88	88	101	88	88	89	88	88	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	54	54	54	51	51	51	49	49	49	47	47	47	45	45	45	83	66	66	61	41	41
	28-60	104	88	78	101	88	78	90	88	78	82	82	78	75	75	75	70	70	70	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	80	67	59	59	41	32
140 mph	8-20	84	68	64	84	68	64	84	68	64	74	68	64	73	68	64	66	66	64	61	61	61	57	57	57	53	53	53	51	51	51	48	48	48	46	46	46	44	44	44	64	42	37	38	27	25
	21-27	98	79	79	98	79	79	89	79	79	80	78	78	73	73	73	67	67	67	62	62	62	58	58	58	54	54	54	51	51	51	49	49	49	47	47	47	45	45	45	75	60	60	53	34	34
	28-60	94	80	70	94	80	70	90	80	70	82	78	70	75	74	70	70	70	68	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	72	60	45	50	34	27
150 mph	8-20	76	62	59	76	62	59	76	62	59	73	62	59	72	62	59	6																													

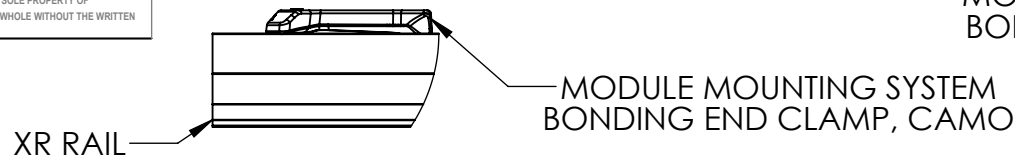
α = 10% of least horizontal dimension or $0.4h$, whichever is smaller, but not less than either 4% of least horizontal dimension or 3 ft (0.9 m). If an overhang exists, the edge distance shall be measured from the outside edge of the overhang. The horizontal dimensions used to compute the edge distance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

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

h = Mean roof height, in ft (m), except that eave height shall be used for $\theta \leq 10^\circ$.

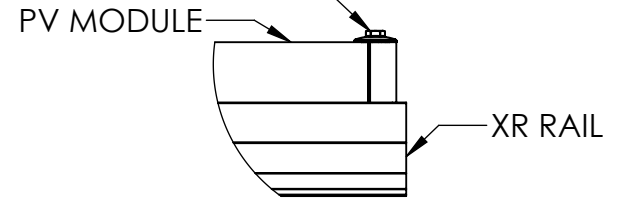
θ = Angle of plane of roof from horizontal, degrees.





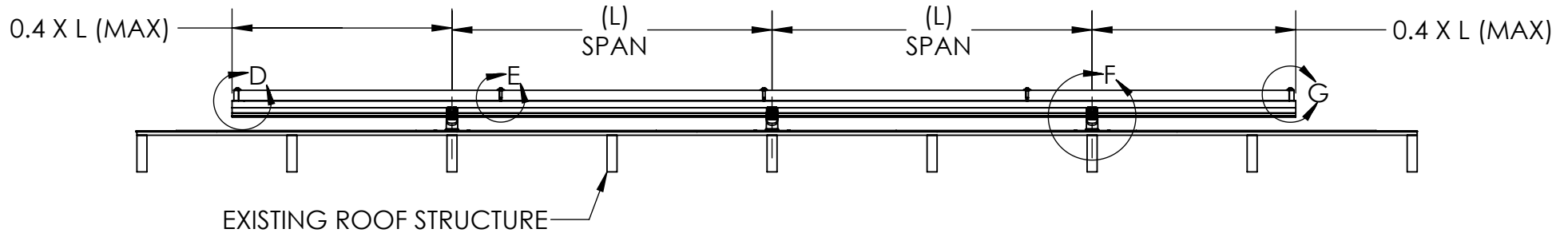
DETAIL D
(MODULE REMOVED FOR CLARITY)

MODULE MOUNTING SYSTEM
BONDING END CLAMP, UFO



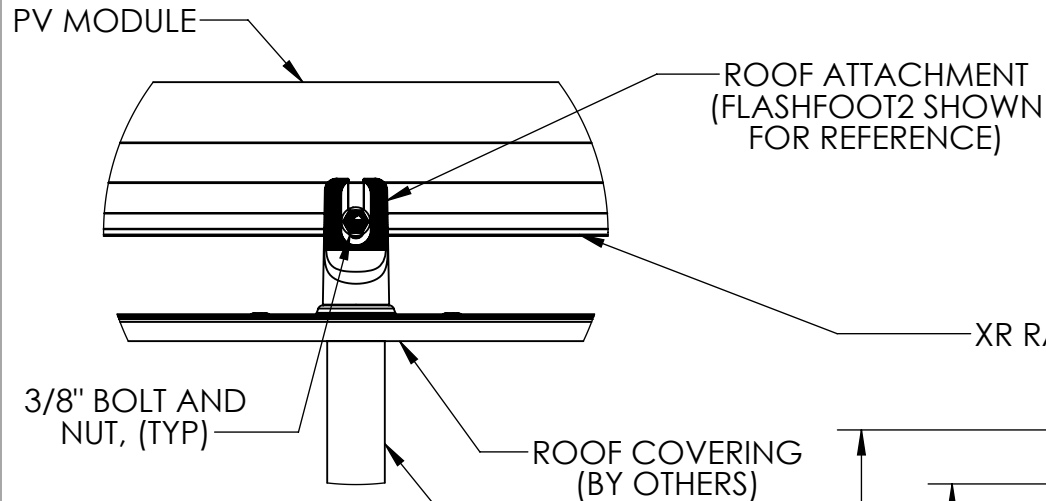
DETAIL G

PLAN VIEW

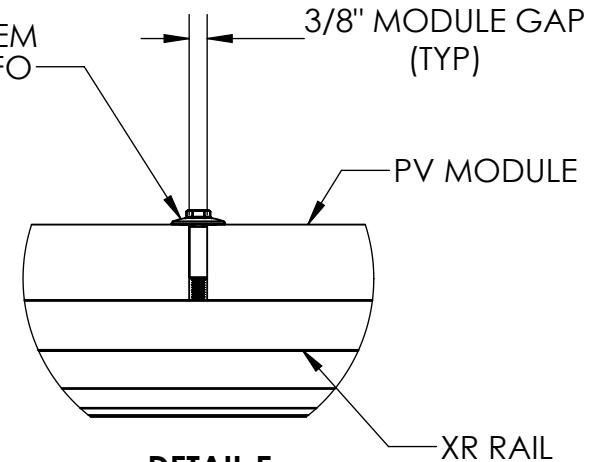


MODULE MOUNTING SYSTEM
BONDING MID CLAMP, UFO

3/8" MODULE GAP
(TYP)

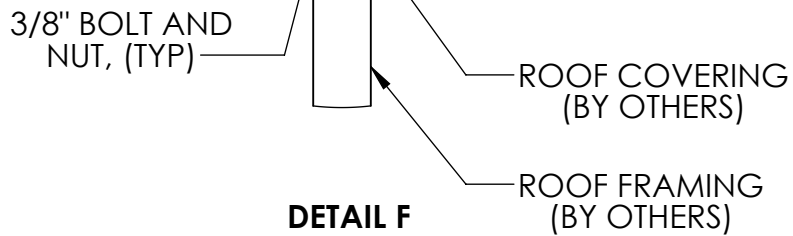


DETAIL F



DETAIL E

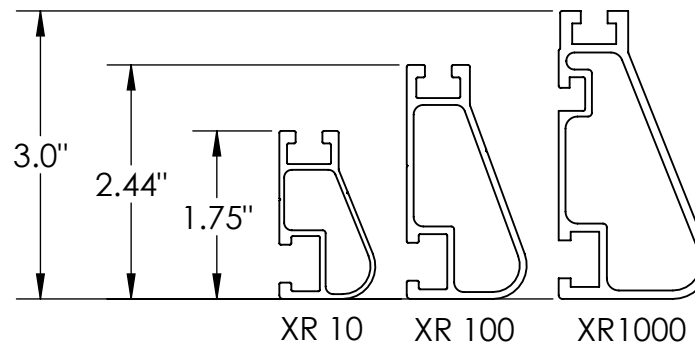
XR RAIL OPTIONS, TYP:



3/8" BOLT AND
NUT, (TYP)

ROOF COVERING
(BY OTHERS)

ROOF FRAMING
(BY OTHERS)



FLUSH MOUNT SYSTEM

SIZE	DWG. NO.
--	EX-0015
SCALE: NTS	WEIGHT: N/A
SHEET 2 OF 2	