28357 Industrial Blvd.
Hayward, CA 94545
1-800-227-9523
IronRidge.com

Attn: Sean McDonald, CEO, IronRidge Inc.
Date: October 28th 2024

Re: Report #7.16 XR100: Engineering Certification and Span Tables for the IronRidge XR100 Rail Flush Mount System, for Gable and Hip roofs.

This letter certifies the loading criteria and design basis used for the structural analysis of the IronRidge XR System as shown in Report # 7.16 XR100 "Engineering Certification and Span Tables for the IronRidge XR100 Rail Flush Mount System, for Gable and Hip roofs Rev B". 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. Requirements for loading conditions that are not certified in this letter can be determined by using the online Design Assistant at IronRidge.com.

Building Codes:

1. ASCE/SEI 7-16, Minimum Design Loads for Buildings and Other Structures, by American Society of Civil Engineers
2. 2021 International Residential Code
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. SEAOC (Structural Engineers Association of California) report PV2-2017 Wind Design for Solar Arrays

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.

Digitally Sealed 10.28.2024

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Re: Report #7.16 XR100: Engineering Certification and Span Tables for the IronRidge XR100 Rail Flush Mount System, for Gable and Hip Roofs, Rev B.

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 7-16
- 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) 2015/2020, 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 8º to 60º.

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.

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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 7-16 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 "Wind Loads on photovoltaic arrays mounted on sloped roofs of low-rise building, parallel to the roof surface." 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 7-16 Table 1.5-1.

2. Wind speed shall conform to ASCE 7-16 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 7-16 Fig. 7.2-1 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, Ct, is assumed to be 1.0, the roof exposure factor is assumed to be 1.0, and the Sliding Factor is based on ASCE 7-16 Figure 7.4-1 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 42psf: $S_S \leq 2.0g$ for Site Class A, B, C, & D.
   b) For ground snow greater than 65psf: $S_S \leq 1.0g$ for Site Class A, B, C, & D.
   c) For ground snow between 42 and 65psf: $S_S \leq 1.5g$ for Site Class A, B, C, & D.

6. Roof zones are defined by ASCE 7-16 Figure 30.3-2B to Figure 30.3-2I and are organized into three *groups* in which the zones are assumed to share the same External Pressure Coefficients (GC_p). Roof zones comprising each group along with each roof zone's 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".

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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 7-16				
Module Area	21.7 ft^2	23.5 ft^2	28.0 ft^2	30.5 ft^2
Ground Snow	60 psf	55 psf	40 psf	40 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.

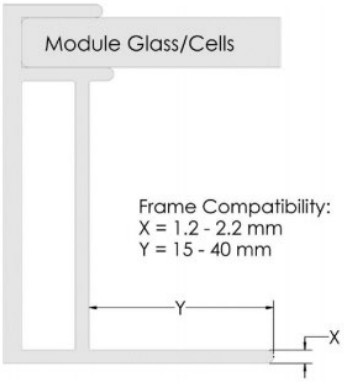

Figure 1: CAMO Module Frame Dimensional Requirements

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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 0.5*h* (*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 4 feet.
- 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

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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: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	129	129	129	111	111	111	92	92	92	90	90	90	81	81	81	73	73	73	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	129	129	126	123	94	85
	21-27	129	129	129	117	117	117	101	101	101	91	91	91	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	129	129	127	102	96
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	125	125	125	111	99
95 mph	8-20	129	129	129	111	111	111	92	92	92	90	90	90	81	81	81	73	73	73	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	129	129	110	107	88	79
	21-27	129	129	129	117	117	117	101	101	101	91	91	91	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	129	129	119	96	90
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	125	125	118	104	93
100 mph	8-20	129	129	129	111	111	111	92	92	92	90	90	90	81	81	81	73	73	73	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	129	119	100	98	83	75
	21-27	129	129	129	117	117	117	101	101	101	91	91	91	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	129	127	111	91	85
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	125	123	110	99	88
105 mph	8-20	129	129	129	111	111	111	92	92	92	90	90	90	81	81	81	73	73	73	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	129	107	94	92	78	71
	21-27	129	129	129	117	117	117	101	101	101	91	91	91	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	124	112	105	86	80
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	125	113	103	94	84
110 mph	8-20	129	129	127	111	111	111	92	92	92	90	90	90	81	81	81	73	73	73	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	129	99	88	86	74	67
	21-27	129	129	129	117	117	117	101	101	101	91	91	91	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	112	102	100	81	76
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	125	104	98	89	79
115 mph	8-20	129	129	114	111	111	111	92	92	92	90	90	90	81	81	81	73	73	73	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	129	93	83	82	70	64
	21-27	129	129	129	117	117	117	101	101	101	91	91	91	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	103	95	95	77	72
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	116	99	93	85	76
120 mph	8-20	129	125	103	111	111	103	92	92	92	90	90	90	81	81	81	73	73	73	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	129	88	78	78	67	61
	21-27	129	129	129	117	117	117	101	101	101	91	91	91	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	97	90	91	74	68
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	108	94	89	81	72
130 mph	8-20	129	104	92	111	104	92	92	92	92	90	90	90	81	81	81	73	73	73	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	96	79	70	72	61	51
	21-27	129	121	109	117	117	109	101	101	101	91	91	91	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	113	87	81	83	67	62
	28-60	125	125	111	117	117	111	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	112	97	85	81	74	66
140 mph	8-20	129	94	83	111	94	83	92	92	83	90	90	83	81	81	81	73	73	73	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	85	71	63	67	53	42
	21-27	129	104	96	117	104	96	101	101	96	91	91	91	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	100	79	73	77	62	55
	28-60	125	117	99	117	117	99	103	103	99	93	93	93	85	85	85	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	99	88	77	75	69	61
150 mph	8-20	111	85	76	111	85	76	92	85	76	90	85	76	81	81	76	73	73	73	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	78	65	55	62	44	36
	21-27	127	95	87	117	95	87	101	95	87	91	90	85	82	82	81	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	92	72	66	72	56	45
	28-60	125	104	91	117	104	91	103	103	91	92	92	89	84	84	84	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	90	81	71	69	64	55
160 mph	8-20	95	78	70	95	78	70	92	78	70	90	78	70	81	77	70	73	73	69	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	72	60	43	58	38	32
	21-27	112	87	80	112	87	80	101	87	80	91	85	80	82	81	77	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	85	67	61	67	47	38
	28-60	111	96	84	111	96	84	101	96	84	90	90	84	83	83	81	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	83	75	66	64	59	47
170 mph	8-20	86	72	64	86	72	64	86	72	64	86	72	64	81	72	64	73	71	64	67	67	64	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	67	49	37	51	34	28
	21-27	102	80	74	102	80	74	100	80	74	91	80	74	82	77	73	74	74	70	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	79	62	51	63	40	32
	28-60	100	89	78	100	89	78	98	89	78	89	88	78	81	81	77	76	76	74	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	77	69	61	60	53	40
175 mph	8-20	82	69	62	82	69	62	82	69	62	82	69	62	80	69	62	73	69	62	67	67	62	62	62	60	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	65	44	35	48	32	26
	21-27	98	77	71	98	77	71	98	77	71	91	77	71	82	75	71	74	73	69	68	68	67	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	76	59	45	61	38	30
	28-60	96	86	75	96	86	75	96	86	75	88	85	75	81	81	75	75	75	72	71	71	70	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	74	67	59	58	49	37
180 mph	8-20	79	67	59	79	67	59	79	67	59	79	67	59	78	67	59	73	67	59	67	65	59	62	62	59	59	59	58	55	55	55	53	53	53	50	50	50	48	48	48	63	40	33	45	30	25
	21-27	94	74	68	94	74	68	94	74	68	90	74	68	82	74	68	74	71	67	68	68	65	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	74	55	41	60	36	28
	28-60	93	83	73	93	83	73	93	83	73	87	83	73	80	80	73	75	75	71	70	70	68	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	71	65	54	54	46	35

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

REV 07/16/2024

= 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.

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8° - 27°			28° - 45°		
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e

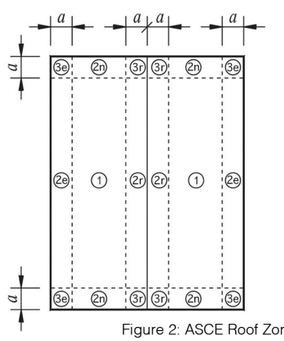
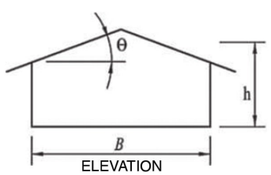


Figure 2: ASCE Roof Zone Locations for Gable Roofs



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 distances.

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

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

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

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: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	129	129	129	111	111	111	92	92	92	90	90	90	81	81	81	73	73	73	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	129	103	92	90	77	70
	21-27	129	129	129	117	117	117	101	101	101	91	91	91	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	120	108	103	84	78
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	125	110	102	92	82
95 mph	8-20	129	129	120	111	111	111	92	92	92	90	90	90	81	81	81	73	73	73	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	129	96	85	84	72	65
	21-27	129	129	129	117	117	117	101	101	101	91	91	91	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	107	98	97	79	74
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	120	101	96	87	78
100 mph	8-20	129	129	106	111	111	106	92	92	92	90	90	90	81	81	81	73	73	73	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	129	89	79	79	68	62
	21-27	129	129	129	117	117	117	101	101	101	91	91	91	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	99	92	92	75	69
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	110	95	90	82	73
105 mph	8-20	129	115	98	111	111	98	92	92	92	90	90	90	81	81	81	73	73	73	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	103	84	74	75	64	57
	21-27	129	129	122	117	117	117	101	101	101	91	91	91	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	123	93	86	87	71	65
	28-60	125	125	120	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	124	102	90	86	78	70
110 mph	8-20	129	104	92	111	104	92	92	92	92	90	90	90	81	81	81	73	73	73	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	95	79	70	72	61	50
	21-27	129	120	108	117	117	108	101	101	101	91	91	91	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	113	87	80	83	67	62
	28-60	125	125	111	117	117	111	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	112	96	85	81	74	66
115 mph	8-20	129	97	87	111	97	87	92	92	87	90	90	87	81	81	81	73	73	73	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	89	74	66	69	57	45
	21-27	129	110	100	117	110	100	101	101	99	91	91	91	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	104	82	76	79	64	59
	28-60	125	123	103	117	117	103	103	103	102	93	93	93	85	85	85	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	102	91	80	77	71	63
120 mph	8-20	129	92	82	111	92	82	92	92	82	90	90	82	81	81	80	73	73	73	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	83	70	62	66	51	40
	21-27	129	102	94	117	102	94	101	100	94	91	91	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	99	78	71	76	61	53
	28-60	125	114	98	117	114	98	103	103	98	93	93	93	85	85	85	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	97	87	76	74	68	60
130 mph	8-20	101	82	73	101	82	73	92	82	73	90	82	73	81	80	73	73	73	71	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	75	63	50	61	41	34
	21-27	121	91	84	117	91	84	101	91	84	91	88	83	82	82	80	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	89	70	64	70	52	42
	28-60	121	101	88	117	101	88	102	101	88	92	92	87	84	84	83	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	87	79	69	67	62	52
140 mph	8-20	90	75	66	90	75	66	90	75	66	88	75	66	81	75	66	73	72	66	67	67	65	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	69	53	39	54	35	29
	21-27	105	83	76	105	83	76	101	83	76	91	82	76	82	79	75	74	74	72	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	81	64	56	65	43	35
	28-60	103	92	81	103	92	81	99	92	81	89	89	81	82	82	78	76	76	75	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	79	72	63	62	56	43
150 mph	8-20	81	68	60	81	68	60	81	68	60	81	68	60	79	68	60	73	68	60	67	66	60	62	62	60	59	59	58	55	55	55	53	53	53	50	50	50	48	48	48	64	41	34	47	31	25
	21-27	96	76	69	96	76	69	96	76	69	91	76	69	82	74	69	74	72	68	68	68	66	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	75	57	43	60	37	29
	28-60	94	84	74	94	84	74	94	84	74	87	84	74	80	80	74	75	75	71	70	70	69	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	72	66	57	56	48	36
160 mph	8-20	75	62	49	75	62	49	75	62	49	75	62	49	75	62	49	73	62	49	67	62	49	62	61	49	59	59	49	55	55	49	53	53	49	50	50	49	48	48	48	59	36	30	41	27	22
	21-27	88	70	64	88	70	64	88	70	64	86	70	64	82	70	64	74	68	64	68	66	62	63	63	61	60	60	59	56	56	56	54	54	54	51	51	51	49	49	49	70	45	35	55	32	24
	28-60	87	78	68	87	78	68	87	78	68	85	78	68	79	77	68	73	73	68	69	69	66	66	66	64	63	63	62	59	59	59	56	56	56	54	54	54	52	52	52	66	61	45	47	41	31
170 mph	8-20	70	55	40	70	55	40	70	55	40	70	55	40	70	55	40	69	55	40	67	55	40	62	55	40	59	55	40	55	55	40	53	53	40	50	50	40	48	48	40	51	32	26	36	24	20
	21-27	82	64	58	82	64	58	82	64	58	82	64	58	79	64	58	74	64	58	68	63	58	63	61	57	60	60	56	56	56	55	54	54	54	51	51	51	49	49	49	65	38	30	48	29	21
	28-60	80	72	63	80	72	63	80	72	63	80	72	63	77	72	63	72	70	63	68	68	62	65	65	61	62	62	59	59	59	58	56	56	56	54	54	54	52	52	52	61	53	38	40	36	27
175 mph	8-20	68	49	38	68	49	38	68	49	38	68	49	38	68	49	38	68	49	38	66	49	38	62	49	38	59	49	38	55	49	38	53	49	38	50	49	38	48	48	38	47	30	25	34	22	18
	21-27	79	62	52	79	62	52	79	62	52	79	62	52	77	62	52	74	62	52	68	61	52	63	60	52	60	58	52	56	56	52	54	54	52	51	51	51	49	49	49	63	36	28	46	27	19
	28-60	77	70	61	77	70	61	77	70	61	77	70	61	76	70	61	71	69	61	67	67	61	64	64	59	61	61	58	59	59	57	56	56	56	54	54	54	52	52	52	59	48	35	38	34	25
180 mph	8-20	65	45	36	65	45	36	65	45	36	65	45	36	65	45	36	65	45	36	64	45	36	62	45	36	59	45	36	55	45	36	53	45	36	50	45	36	48	45	36	44	28	23	32	21	17
	21-27	77	60	46	77	60	46	77	60	46	77	60	46	75	60	46	73	60	46	68	60	46	63	58	46	60	57	46	56	56	46	54	54	46	51	51	46	49	49	46	61	34	26	43	25	18
	28-60	74	67	59	74	67	59	74	67	59	74	67	59	74	67	59	70	67	59	67	65	59	63	63	58	61	61	57	58	58	56	56	56	55	54	54	54	52	52	52	55	44	33	35	32	23

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

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= 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.

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8° - 27°			28° - 45°		
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e

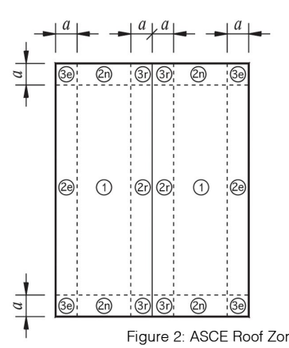
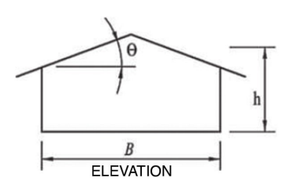


Figure 2: ASCE Roof Zone Locations for Gable Roofs



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 distances.

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

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

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

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 D

Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	129	129	111	111	111	111	92	92	92	90	90	90	81	81	81	73	73	73	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	129	92	82	81	70	63
	21-27	129	129	129	117	117	117	101	101	101	91	91	91	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	102	94	94	77	71
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	114	98	93	84	75
95 mph	8-20	129	120	100	111	111	100	92	92	92	90	90	90	81	81	81	73	73	73	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	112	85	76	77	66	59
	21-27	129	129	128	117	117	117	101	101	101	91	91	91	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	127	95	88	89	72	67
	28-45	125	125	123	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	104	91	87	79	71
100 mph	8-20	129	106	93	111	106	93	92	92	92	90	90	90	81	81	81	73	73	73	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	97	80	71	73	62	52
	21-27	129	123	111	117	117	111	101	101	101	91	91	91	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	115	89	82	84	68	63
	28-45	125	125	113	117	117	113	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	114	98	86	82	75	67
105 mph	8-20	129	98	87	111	98	87	92	92	87	90	90	87	81	81	81	73	73	73	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	90	75	66	69	58	46
	21-27	129	111	101	117	111	101	101	101	100	91	91	91	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	106	83	76	80	64	59
	28-45	125	124	104	117	117	104	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	103	92	81	78	71	63
110 mph	8-20	129	92	82	111	92	82	92	92	82	90	90	82	81	81	80	73	73	73	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	83	70	62	66	51	40
	21-27	129	102	95	117	102	95	101	101	95	91	91	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	99	78	72	76	61	53
	28-60	125	115	98	117	115	98	103	103	98	93	93	93	85	85	85	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	97	87	76	74	68	60
115 mph	8-20	129	87	77	111	87	77	92	87	77	90	87	77	81	81	77	73	73	73	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	79	66	58	63	46	37
	21-27	129	96	89	117	96	89	101	96	89	91	91	86	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	93	74	67	73	58	47
	28-60	125	106	93	117	106	93	103	103	93	92	92	90	84	84	84	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	92	82	72	70	65	57
120 mph	8-20	101	82	73	101	82	73	92	82	73	90	82	73	81	80	73	73	73	71	67	67	67	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	75	63	49	60	41	34
	21-27	120	91	84	117	91	84	101	91	84	91	88	83	82	82	79	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	89	70	64	70	51	42
	28-60	120	100	88	117	100	88	102	100	88	91	91	87	84	84	83	77	77	77	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	87	78	68	67	62	51
130 mph	8-20	88	74	65	88	74	65	88	74	65	87	74	65	81	74	65	73	72	65	67	67	64	62	62	62	59	59	59	55	55	55	53	53	53	50	50	50	48	48	48	68	51	39	53	35	29
	21-27	104	82	75	104	82	75	101	82	75	91	82	75	82	78	74	74	74	71	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	80	63	54	64	42	34
	28-60	102	91	80	102	91	80	99	91	80	89	89	80	82	82	78	76	76	75	71	71	71	67	67	67	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	78	71	62	61	55	42
140 mph	8-20	79	67	59	79	67	59	79	67	59	79	67	59	78	67	59	73	67	59	67	65	59	62	62	59	59	59	58	55	55	55	53	53	53	50	50	50	48	48	48	63	40	33	45	30	25
	21-27	94	74	68	94	74	68	94	74	68	90	74	68	82	73	68	74	71	67	68	68	65	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	74	54	41	60	36	28
	28-60	92	83	73	92	83	73	92	83	73	87	83	73	80	80	73	75	75	70	70	70	68	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	71	65	54	54	46	35
150 mph	8-20	73	61	46	73	61	46	73	61	46	73	61	46	73	61	46	72	61	46	67	61	46	62	60	46	59	59	46	55	55	46	53	53	46	50	50	46	48	48	46	57	35	29	39	26	21
	21-27	86	68	62	86	68	62	86	68	62	85	68	62	81	68	62	74	67	62	68	65	61	63	63	60	60	60	58	56	56	56	54	54	54	51	51	51	49	49	49	68	42	34	53	31	23
	28-60	84	76	67	84	76	67	84	76	67	84	76	67	78	75	67	73	73	66	69	69	65	65	65	63	62	62	61	59	59	59	56	56	56	54	54	54	52	52	52	65	59	42	44	39	29
160 mph	8-20	68	50	38	68	50	38	68	50	38	68	50	38	68	50	38	68	50	38	66	50	38	62	50	38	59	50	38	55	50	38	53	50	38	50	50	38	48	48	38	48	30	25	34	23	19
	21-27	80	62	53	80	62	53	80	62	53	80	62	53	77	62	53	74	62	53	68	61	53	63	60	53	60	59	53	56	56	53	54	54	53	51	51	51	49	49	49	63	37	28	46	27	19
	28-60	78	70	62	78	70	62	78	70	62	78	70	62	76	70	62	71	69	62	67	67	61	64	64	60	61	61	58	59	59	57	56	56	56	54	54	54	52	52	52	60	49	36	38	34	25
170 mph	8-20	63	41	34	63	41	34	63	41	34	63	41	34	63	41	34	63	41	34	63	41	34	62	41	34	59	41	34	55	41	34	53	41	34	50	41	34	48	41	34	41	27	22	30	20	16
	21-27	74	56	42	74	56	42	74	56	42	74	56	42	74	56	42	71	56	42	68	56	42	63	56	42	60	56	42	56	55	42	54	54	42	51	51	42	49	49	42	59	32	24	41	24	17
	28-60	72	65	55	72	65	55	72	65	55	72	65	55	72	65	55	70	65	55	66	64	55	63	62	55	60	60	55	58	58	54	56	56	53	54	54	52	52	52	52	49	40	31	34	30	22
175 mph	8-20	61	38	32	61	38	32	61	38	32	61	38	32	61	38	32	61	38	32	61	38	32	60	38	32	59	38	32	55	38	32	53	38	32	50	38	32	48	38	32	38	25	21	28	19	16
	21-27	72	50	38	72	50	38	72	50	38	72	50	38	72	50	38	70	50	38	68	50	38	63	50	38	60	50	38	56	50	38	54	50	38	51	50	38	49	49	38	55	30	22	38	23	16
	28-60	69	63	50	69	63	50	69	63	50	69	63	50	69	63	50	68	63	50	65	62	50	62	61	50	60	59	50	57	57	50	55	55	50	53	53	50	52	52	50	44	38	29	32	28	20
180 mph	8-20	59	36	30	59	36	30	59	36	30	59	36	30	59	36	30	59	36	30	59	36	30	59	36	30	58	36	30	55	36	30	53	36	30	50	36	30	48	36	30	36	24	20	27	18	15
	21-27	70	46	36	70	46	36	70	46	36	70	46	36	70	46	36	68	46	36	66	46	36	63	46	36	60	46	36	56	46	36	54	46	36	51	46	36	49	46	36	51	29	21	36	21	15
	28-60	67	61	45	67	61	45	67	61	45	67	61	45	67	61	45	66	61	45	64	61	45	62	59	45	59	58	45	57	57	45	55	55	45	53	53	45	51	51	45	40	36	27	30	27	19

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

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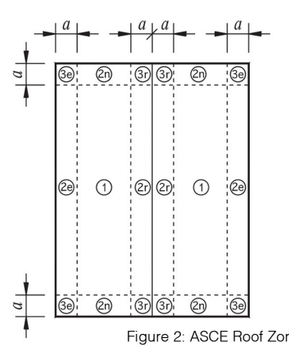
= Shaded cells indicate conditions in which UFO Mid Clamp connection capacity is exceeded. If such conditions are encountered contact techsupport@ironridge.com.

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

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8° - 27°			28° - 45°		
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e



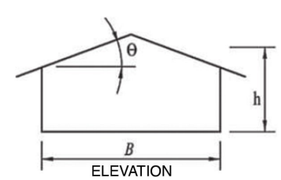


Figure 2: ASCE Roof Zone Locations for Gable Roofs

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 distances.

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

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

θ = Angle of plane of roof from horizontal, in 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 B

Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	125	125	125	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	125	125	114	111	91	82
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	124	124	121	99	93
	28-60	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	120	120	120	106	95
95 mph	8-20	125	125	125	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	125	123	105	103	85	77
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	124	124	113	93	87
	28-45	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	120	120	112	100	90
100 mph	8-20	125	125	125	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	125	110	98	96	80	72
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	124	114	107	87	82
	28-45	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	120	114	106	95	85
105 mph	8-20	125	125	125	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	125	103	91	90	76	68
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	113	106	101	83	77
	28-45	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	120	107	100	90	81
110 mph	8-20	125	125	115	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	125	96	85	84	72	65
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	106	99	96	79	73
	28-60	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	116	101	95	86	77
115 mph	8-20	125	125	107	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	125	91	80	79	68	62
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	100	93	91	75	69
	28-60	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	109	96	90	82	73
120 mph	8-20	125	114	101	106	106	101	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	108	85	76	75	65	58
	21-27	124	124	120	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	122	95	88	87	71	66
	28-60	120	120	118	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	103	91	86	78	70
130 mph	8-20	125	101	90	106	101	90	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	94	77	68	69	59	47
	21-27	124	111	104	112	111	104	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	107	85	78	80	65	60
	28-60	120	120	106	113	113	106	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	106	94	82	79	72	64
140 mph	8-20	125	91	81	106	91	81	88	88	81	86	86	81	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	83	69	62	64	49	38
	21-27	124	101	94	112	101	94	97	97	94	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	98	77	71	74	60	50
	28-60	120	110	96	113	110	96	99	99	96	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	96	86	75	72	66	59
150 mph	8-20	105	83	74	105	83	74	88	83	74	86	83	74	77	77	73	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	75	63	51	60	41	33
	21-27	117	92	85	112	92	85	97	92	85	87	87	83	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	89	70	64	69	51	42
	28-60	116	101	89	113	101	89	99	99	89	89	89	86	81	81	81	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	88	79	69	67	62	51
160 mph	8-20	93	76	68	93	76	68	88	76	68	86	76	68	77	75	68	70	70	67	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	69	56	40	53	35	29
	21-27	107	84	78	107	84	78	97	84	78	87	82	78	78	78	75	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	82	65	59	65	43	35
	28-60	105	93	82	105	93	82	97	93	82	87	87	81	80	80	78	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	81	73	64	62	57	43
170 mph	8-20	85	70	62	85	70	62	85	70	62	84	70	62	77	70	62	70	68	62	64	64	61	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	65	45	34	47	31	26
	21-27	99	78	72	99	78	72	97	78	72	87	78	72	78	75	71	71	71	68	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	76	60	47	61	37	30
	28-60	97	86	76	97	86	76	95	86	76	85	85	76	78	78	74	73	73	71	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	75	67	59	58	49	37
175 mph	8-20	81	67	60	81	67	60	81	67	60	81	67	60	77	67	60	70	67	60	64	64	60	60	60	58	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	63	40	32	44	29	24
	21-27	95	75	69	95	75	69	94	75	69	87	75	69	78	73	69	71	70	66	65	65	64	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	74	56	42	59	35	27
	28-60	94	83	73	94	83	73	94	83	73	84	83	73	78	78	72	72	72	70	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	72	65	55	54	45	34
180 mph	8-20	77	65	55	77	65	55	77	65	55	77	65	55	75	65	55	70	65	55	64	63	55	60	60	55	56	56	55	53	53	53	50	50	50	48	48	48	46	46	46	61	37	31	42	27	23
	21-27	92	72	66	92	72	66	92	72	66	87	72	66	78	71	66	71	69	65	65	65	63	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	71	50	37	56	33	25
	28-60	90	81	71	90	81	71	90	81	71	84	81	71	77	77	71	72	72	68	67	67	66	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	69	63	50	49	42	32

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

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= 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.

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8° - 27°			28° - 45°		
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e

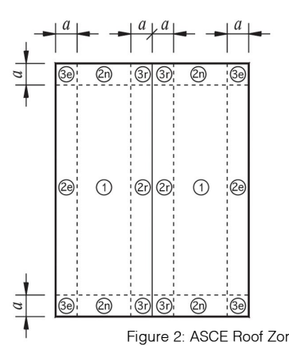
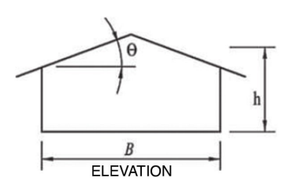


Figure 2: ASCE Roof Zone Locations for Gable Roofs



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 distances.

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

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

θ = Angle of plane of roof from horizontal, in 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 C

Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	125	125	124	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	125	101	89	88	74	67
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	111	104	100	81	76
	28-60	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	120	105	98	89	79
95 mph	8-20	125	125	110	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	125	93	83	82	70	63
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	103	96	94	77	71
	28-60	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	112	98	93	84	75
100 mph	8-20	125	117	102	106	106	102	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	111	87	77	76	66	59
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	96	89	89	72	67
	28-60	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	105	92	87	79	71
105 mph	8-20	125	108	96	106	106	96	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	102	81	72	72	62	53
	21-27	124	122	111	112	112	111	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	114	90	83	84	68	63
	28-60	120	120	112	113	113	112	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	112	99	87	83	75	67
110 mph	8-20	125	101	90	106	101	90	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	94	76	68	69	59	46
	21-27	124	111	104	112	111	104	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	107	85	78	80	65	60
	28-60	120	120	105	113	113	105	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	106	94	82	78	72	64
115 mph	8-20	125	95	84	106	95	84	88	88	84	86	86	84	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	87	72	64	66	52	41
	21-27	124	105	98	112	105	98	97	97	96	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	101	80	74	76	62	55
	28-60	120	114	100	113	113	100	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	100	89	78	75	68	61
120 mph	8-20	125	89	79	106	89	79	88	88	79	86	86	79	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	81	68	60	63	47	37
	21-27	124	99	92	112	99	92	97	97	92	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	96	76	69	73	59	48
	28-60	120	108	95	113	108	95	99	99	95	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	94	84	74	71	65	58
130 mph	8-20	100	80	71	100	80	71	88	80	71	86	80	71	77	77	71	70	70	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	73	61	46	58	38	31
	21-27	112	89	82	112	89	82	97	89	82	87	85	81	78	78	77	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	86	68	62	67	48	39
	28-60	111	98	86	111	98	86	98	97	86	88	88	84	80	80	80	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	85	76	67	65	60	48
140 mph	8-20	88	73	64	88	73	64	88	73	64	86	73	64	77	72	64	70	70	64	64	64	63	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	67	49	36	49	32	27
	21-27	102	81	74	102	81	74	97	81	74	87	80	74	78	76	72	71	71	70	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	79	62	52	62	40	32
	28-60	101	89	78	101	89	78	96	89	78	86	86	78	79	79	76	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	77	69	61	60	52	39
150 mph	8-20	79	66	58	79	66	58	79	66	58	79	66	58	76	66	58	70	66	58	64	64	58	60	60	58	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	62	38	31	43	28	23
	21-27	93	74	68	93	74	68	93	74	68	87	74	68	78	72	68	71	69	66	65	65	64	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	72	53	39	58	34	26
	28-60	92	82	72	92	82	72	92	82	72	84	82	72	77	77	71	72	72	69	68	68	67	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	70	64	52	51	44	33
160 mph	8-20	72	61	45	72	61	45	72	61	45	72	61	45	72	61	45	70	61	45	64	60	45	60	59	45	56	56	45	53	53	45	50	50	45	48	48	45	46	46	45	55	33	27	37	25	20
	21-27	86	68	62	86	68	62	86	68	62	83	68	62	78	68	62	71	66	62	65	64	60	61	61	59	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	67	42	33	50	30	22
	28-60	84	76	66	84	76	66	84	76	66	82	76	66	76	74	66	71	71	65	67	67	63	63	63	62	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	65	59	42	43	37	28
170 mph	8-20	67	51	37	67	51	37	67	51	37	67	51	37	67	51	37	67	51	37	64	51	37	60	51	37	56	51	37	53	51	37	50	50	37	48	48	37	46	46	37	47	29	24	33	22	18
	21-27	79	62	54	79	62	54	79	62	54	79	62	54	76	62	54	71	62	54	65	61	54	61	59	54	57	57	54	54	54	53	51	51	51	49	49	49	47	47	47	63	35	28	44	26	19
	28-60	78	70	61	78	70	61	78	70	61	78	70	61	74	70	61	69	68	61	65	65	60	62	62	59	59	59	57	57	57	56	54	54	54	52	52	52	50	50	50	60	49	35	37	33	24
175 mph	8-20	65	45	35	65	45	35	65	45	35	65	45	35	65	45	35	65	45	35	64	45	35	60	45	35	56	45	35	53	45	35	50	45	35	48	45	35	46	45	35	43	28	23	31	20	17
	21-27	76	60	48	76	60	48	76	60	48	76	60	48	74	60	48	71	60	48	65	59	48	61	58	48	57	56	48	54	54	48	51	51	48	49	49	48	47	47	47	61	33	26	42	25	18
	28-60	75	68	59	75	68	59	75	68	59	75	68	59	73	68	59	69	66	59	65	64	59	62	62	57	59	59	56	56	56	55	54	54	54	52	52	52	50	50	50	56	44	32	35	31	23
180 mph	8-20	63	41	33	63	41	33	63	41	33	63	41	33	63	41	33	63	41	33	62	41	33	60	41	33	56	41	33	53	41	33	50	41	33	48	41	33	46	41	33	40	26	22	29	19	16
	21-27	74	57	43	74	57	43	74	57	43	74	57	43	72	57	43	70	57	43	65	57	43	61	56	43	57	55	43	54	54	43	51	51	43	49	49	43	47	47	43	59	31	24	39	23	16
	28-60	72	65	56	72	65	56	72	65	56	72	65	56	72	65	56	68	65	56	64	63	56	61	61	56	58	58	55	56	56	54	54	54	53	52	52	52	50	50	50	50	40	30	33	29	21

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

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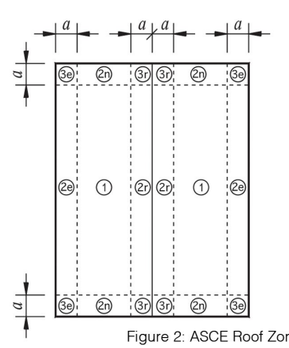
= Shaded cells indicate conditions in which UFO Mid Clamp connection capacity is exceeded. If such conditions are encountered contact techsupport@ironridge.com.

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

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8° - 27°			28° - 45°		
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e



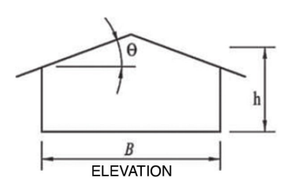


Figure 2: ASCE Roof Zone Locations for Gable Roofs

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 distances.

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

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

θ = Angle of plane of roof from horizontal, in 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: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	125	124	106	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	125	90	80	78	67	61
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	99	92	91	74	69
	28-60	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	108	95	90	81	72
95 mph	8-20	125	110	98	106	106	98	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	105	83	74	74	63	55
	21-27	124	124	114	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	118	92	85	85	70	65
	28-45	120	120	114	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	116	101	89	84	77	68
100 mph	8-20	125	103	91	106	103	91	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	96	78	69	70	60	48
	21-27	124	113	106	112	112	106	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	109	86	79	81	66	61
	28-45	120	120	107	113	113	107	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	107	95	83	79	73	65
105 mph	8-20	125	96	85	106	96	85	88	88	85	86	86	84	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	88	73	65	66	53	42
	21-27	124	106	98	112	106	98	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	102	81	74	77	62	56
	28-45	120	115	101	113	113	101	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	101	89	78	75	69	61
110 mph	8-20	125	90	80	106	90	80	88	88	80	86	86	80	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	82	68	61	63	47	37
	21-27	124	99	92	112	99	92	97	97	92	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	96	76	70	73	59	49
	28-60	120	108	95	113	108	95	99	99	95	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	95	84	74	71	65	58
115 mph	8-20	107	85	75	106	85	75	88	85	75	86	84	75	77	77	74	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	76	64	54	61	42	34
	21-27	120	94	87	112	94	87	97	93	87	87	87	84	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	91	72	66	70	53	43
	28-60	119	102	90	113	102	90	99	99	90	89	89	87	81	81	81	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	89	80	70	68	62	52
120 mph	8-20	99	80	71	99	80	71	88	80	71	86	80	71	77	77	71	70	70	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	72	61	46	57	38	31
	21-27	112	88	82	112	88	82	97	88	82	87	85	81	78	78	77	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	86	68	62	67	47	38
	28-60	110	97	85	110	97	85	98	97	85	88	88	84	80	80	80	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	84	76	66	65	60	47
130 mph	8-20	87	72	64	87	72	64	87	72	64	85	72	64	77	72	64	70	69	64	64	64	62	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	66	47	35	48	32	26
	21-27	101	80	73	101	80	73	97	80	73	87	79	73	78	76	72	71	71	69	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	78	61	50	62	39	31
	28-60	99	88	77	99	88	77	95	88	77	86	86	77	79	79	75	73	73	72	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	76	69	60	59	51	38
140 mph	8-20	77	65	55	77	65	55	77	65	55	77	65	55	75	65	55	70	65	55	64	63	55	60	60	55	56	56	55	53	53	53	50	50	50	48	48	48	46	46	46	61	37	30	41	27	23
	21-27	91	72	66	91	72	66	91	72	66	87	72	66	78	71	66	71	69	65	65	65	63	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	71	50	37	56	33	25
	28-60	90	80	70	90	80	70	90	80	70	84	80	70	77	77	70	72	72	68	67	67	66	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	69	63	49	49	42	32
150 mph	8-20	71	59	42	71	59	42	71	59	42	71	59	42	71	59	42	69	59	42	64	59	42	60	58	42	56	56	42	53	53	42	50	50	42	48	48	42	46	46	42	52	32	26	36	24	20
	21-27	84	66	60	84	66	60	84	66	60	82	66	60	78	66	60	71	65	60	65	63	59	61	61	58	57	57	56	54	54	54	51	51	51	49	49	49	47	47	47	66	39	31	48	29	21
	28-60	82	74	65	82	74	65	82	74	65	81	74	65	75	73	65	70	70	64	66	66	62	63	63	61	60	60	59	57	57	57	54	54	54	52	52	52	50	50	50	63	57	39	41	36	27
160 mph	8-20	66	46	35	66	46	35	66	46	35	66	46	35	66	46	35	65	46	35	64	46	35	60	46	35	56	46	35	53	46	35	50	46	35	48	46	35	46	46	35	44	28	23	31	21	17
	21-27	77	61	49	77	61	49	77	61	49	77	61	49	74	61	49	71	61	49	65	59	49	61	58	49	57	57	49	54	54	49	51	51	49	49	49	49	47	47	47	61	34	26	42	25	18
	28-60	76	68	60	76	68	60	76	68	60	76	68	60	73	68	60	69	67	60	65	65	59	62	62	58	59	59	56	56	56	55	54	54	54	52	52	52	50	50	50	58	45	33	35	31	23
170 mph	8-20	61	37	31	61	37	31	61	37	31	61	37	31	61	37	31	61	37	31	61	37	31	59	37	31	56	37	31	53	37	31	50	37	31	48	37	31	46	37	31	37	25	20	28	18	15
	21-27	72	51	38	72	51	38	72	51	38	72	51	38	71	51	38	69	51	38	65	51	38	61	51	38	57	51	38	54	51	38	51	51	38	49	49	38	47	47	38	55	30	22	37	22	15
	28-60	70	63	51	70	63	51	70	63	51	70	63	51	70	63	51	67	63	51	64	62	51	60	60	51	58	58	51	55	55	51	53	53	51	52	52	51	50	50	50	45	37	28	31	28	20
175 mph	8-20	59	35	29	59	35	29	59	35	29	59	35	29	59	35	29	59	35	29	59	35	29	58	35	29	56	35	29	53	35	29	50	35	29	48	35	29	46	35	29	35	23	19	26	17	14
	21-27	69	46	35	69	46	35	69	46	35	69	46	35	69	46	35	67	46	35	65	46	35	61	46	35	57	46	35	54	46	35	51	46	35	49	46	35	47	46	35	51	28	21	35	21	14
	28-60	67	61	46	67	61	46	67	61	46	67	61	46	67	61	46	66	61	46	63	60	46	60	59	46	57	57	46	55	55	46	53	53	46	51	51	46	50	50	46	40	35	26	29	26	18
180 mph	8-20	55	33	28	55	33	28	55	33	28	55	33	28	55	33	28	55	33	28	55	33	28	55	33	28	55	33	28	53	33	28	50	33	28	48	33	28	46	33	28	33	22	18	25	16	13
	21-27	67	42	33	67	42	33	67	42	33	67	42	33	67	42	33	66	42	33	64	42	33	61	42	33	57	42	33	54	42	33	51	42	33	49	42	33	47	42	33	47	26	19	33	20	13
	28-60	65	59	42	65	59	42	65	59	42	65	59	42	65	59	42	64	59	42	62	59	42	59	57	42	57	56	42	55	55	42	53	53	42	51	51	42	49	49	42	37	33	25	27	25	17

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

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= 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.

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8° - 27°			28° - 45°		
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e

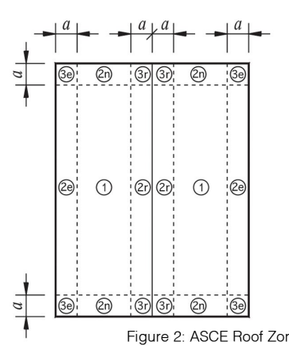
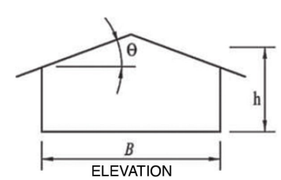


Figure 2: ASCE Roof Zone Locations for Gable Roofs



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 distances.

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

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

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

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: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	115	115	115	97	97	97	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	115	115	102	100	80	73
	21-27	113	113	113	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	113	113	113	106	87	82
	28-60	110	110	110	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	110	110	110	106	94	84
95 mph	8-20	115	115	115	97	97	97	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	115	106	94	92	75	68
	21-27	113	113	113	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	113	113	110	100	82	77
	28-45	110	110	110	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	110	110	108	100	89	80
100 mph	8-20	115	115	115	97	97	97	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	115	99	87	86	71	64
	21-27	113	113	113	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	113	108	102	94	77	73
	28-45	110	110	110	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	110	110	102	94	84	75
105 mph	8-20	115	115	109	97	97	97	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	115	92	82	80	67	61
	21-27	113	113	113	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	113	101	95	89	73	68
	28-45	110	110	110	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	110	109	96	89	80	71
110 mph	8-20	115	115	102	97	97	97	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	115	86	76	75	63	55
	21-27	113	113	113	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	113	95	89	85	69	65
	28-60	110	110	110	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	110	103	91	84	76	68
115 mph	8-20	115	108	96	97	97	96	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	107	81	72	71	60	49
	21-27	113	113	112	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	113	89	83	81	66	62
	28-60	110	110	110	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	110	97	86	80	73	65
120 mph	8-20	115	102	90	97	97	90	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	99	76	68	67	55	44
	21-27	113	111	105	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	106	84	79	77	63	59
	28-60	110	110	104	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	106	92	81	77	69	62
130 mph	8-20	115	91	80	97	91	80	81	81	80	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	86	68	61	61	45	35
	21-27	113	100	94	103	100	94	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	96	76	70	71	56	47
	28-60	110	107	95	103	103	95	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	95	84	74	70	64	55
140 mph	8-20	108	82	72	97	82	72	81	81	72	79	79	72	71	71	70	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	75	62	48	54	37	29
	21-27	113	90	84	103	90	84	89	89	84	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	87	69	63	65	46	38
	28-60	110	98	86	103	98	86	90	90	86	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	86	76	67	64	59	46
150 mph	8-20	95	74	66	95	74	66	81	74	66	79	74	66	71	71	66	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	67	52	37	47	31	25
	21-27	104	82	76	103	82	76	89	82	76	79	78	75	72	72	71	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	80	63	56	61	39	31
	28-60	103	90	79	103	90	79	90	90	79	81	81	77	74	74	74	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	79	70	61	59	51	38
160 mph	8-20	85	68	60	85	68	60	81	68	60	79	68	60	71	67	60	64	64	60	59	59	58	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	62	40	30	41	27	22
	21-27	95	75	70	95	75	70	89	75	70	79	74	70	72	71	67	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	73	56	43	55	33	26
	28-60	95	83	73	95	83	73	88	83	73	79	79	73	73	73	70	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	72	65	55	52	43	33
170 mph	8-20	77	63	50	77	63	50	77	63	50	76	63	50	71	63	50	64	62	50	59	59	50	55	55	50	51	51	50	49	49	49	46	46	46	44	44	44	42	42	42	55	32	26	36	24	20
	21-27	88	70	64	88	70	64	87	70	64	79	70	64	72	67	64	65	65	62	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	68	45	33	49	29	22
	28-60	87	77	68	87	77	68	86	77	68	78	76	68	71	71	67	66	66	64	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	67	60	44	44	37	28
175 mph	8-20	73	60	44	73	60	44	73	60	44	73	60	44	70	60	44	64	60	44	59	58	44	55	55	44	51	51	44	49	49	44	46	46	44	44	44	44	42	42	42	51	30	25	34	22	19
	21-27	85	67	62	85	67	62	85	67	62	79	67	62	72	66	62	65	63	60	60	60	58	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	65	40	30	46	27	21
	28-60	84	75	65	84	75	65	84	75	65	77	74	65	71	71	65	66	66	63	62	62	61	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	64	58	40	40	34	26
180 mph	8-20	70	56	40	70	56	40	70	56	40	70	56	40	68	56	40	64	56	40	59	56	40	55	55	40	51	51	40	49	49	40	46	46	40	44	44	40	42	42	40	47	28	24	32	21	17
	21-27	82	65	59	82	65	59	82	65	59	78	65	59	72	64	59	65	62	58	60	60	57	56	56	55	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	63	36	28	43	25	19
	28-60	81	72	63	81	72	63	81	72	63	76	72	63	70	70	63	65	65	61	61	61	60	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	62	53	36	37	32	24

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

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= 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.

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8° - 27°			28° - 45°		
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e

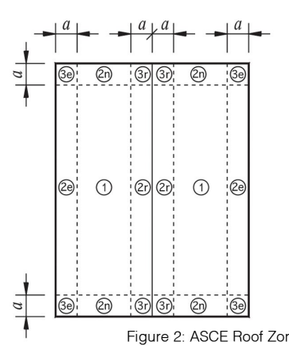
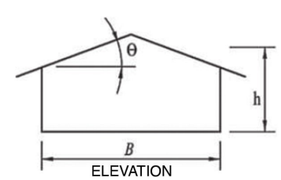


Figure 2: ASCE Roof Zone Locations for Gable Roofs



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 distances.

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

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

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

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: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	115	115	107	97	97	97	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	115	90	80	79	66	59
	21-27	113	113	113	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	113	99	93	88	72	67
	28-60	110	110	110	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	110	107	94	88	79	70
95 mph	8-20	115	111	99	97	97	97	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	112	84	74	73	62	52
	21-27	113	113	113	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	113	92	86	83	68	63
	28-60	110	110	110	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	110	100	88	82	74	66
100 mph	8-20	115	103	92	97	97	92	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	101	78	69	68	58	45
	21-27	113	113	107	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	108	86	80	78	64	59
	28-60	110	110	106	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	108	94	83	78	70	63
105 mph	8-20	115	97	86	97	97	86	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	93	73	65	64	50	40
	21-27	113	106	100	103	103	100	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	102	81	75	74	60	53
	28-60	110	110	100	103	103	100	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	101	89	78	74	67	59
110 mph	8-20	115	90	80	97	90	80	81	81	80	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	85	68	61	61	44	35
	21-27	113	99	93	103	99	93	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	96	76	70	70	56	46
	28-60	110	107	94	103	103	94	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	95	84	73	70	63	55
115 mph	8-20	114	85	75	97	85	75	81	81	75	79	79	75	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	79	64	54	57	39	31
	21-27	113	94	88	103	94	88	89	89	87	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	90	71	66	67	50	41
	28-60	110	101	89	103	101	89	90	90	89	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	90	79	69	66	60	49
120 mph	8-20	105	80	71	97	80	71	81	80	71	79	79	71	71	71	69	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	74	61	45	52	35	29
	21-27	111	88	82	103	88	82	89	87	82	79	79	78	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	85	67	62	64	45	36
	28-60	110	96	85	103	96	85	90	90	85	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	85	75	66	63	58	44
130 mph	8-20	91	72	64	91	72	64	81	72	64	79	72	64	71	70	64	64	64	62	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	65	47	33	44	29	24
	21-27	100	79	74	100	79	74	89	79	74	79	77	73	72	72	70	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	77	61	50	59	36	29
	28-60	100	87	77	100	87	77	89	87	77	80	80	76	73	73	72	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	76	68	59	58	47	36
140 mph	8-20	80	65	55	80	65	55	80	65	55	78	65	55	71	65	55	64	63	55	59	59	55	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	59	35	28	38	25	21
	21-27	91	72	66	91	72	66	89	72	66	79	72	66	72	69	65	65	65	63	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	70	49	37	51	30	24
	28-60	90	80	70	90	80	70	87	80	70	78	78	70	72	72	68	67	67	66	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	69	62	48	47	39	30
150 mph	8-20	71	59	42	71	59	42	71	59	42	71	59	42	69	59	42	64	59	42	59	58	42	55	55	42	51	51	42	49	49	42	46	46	42	44	44	42	42	42	42	49	29	24	33	22	18
	21-27	83	66	60	83	66	60	83	66	60	79	66	60	72	65	60	65	63	59	60	60	57	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	64	38	29	44	26	20
	28-60	82	73	64	82	73	64	82	73	64	76	73	64	70	70	64	66	66	62	62	62	60	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	63	56	38	39	33	25
160 mph	8-20	64	46	33	64	46	33	64	46	33	64	46	33	64	46	33	63	46	33	59	46	33	55	46	33	51	46	33	49	46	33	46	46	33	44	44	33	42	42	33	41	26	21	29	19	16
	21-27	76	60	49	76	60	49	76	60	49	75	60	49	72	60	49	65	59	49	60	57	49	56	56	49	52	52	49	49	49	49	47	47	47	45	45	45	43	43	43	59	31	25	39	23	17
	28-60	76	68	59	76	68	59	76	68	59	75	68	59	69	67	59	64	64	59	61	61	57	57	57	56	55	55	54	52	52	52	49	49	49	47	47	47	45	45	45	58	44	31	32	29	21
170 mph	8-20	60	37	28	60	37	28	60	37	28	60	37	28	60	37	28	60	37	28	58	37	28	55	37	28	51	37	28	49	37	28	46	37	28	44	37	28	42	37	28	35	23	19	25	17	14
	21-27	71	51	38	71	51	38	71	51	38	71	51	38	68	51	38	65	51	38	60	51	38	56	51	38	52	51	38	49	49	38	47	47	38	45	45	38	43	43	38	52	27	21	34	20	14
	28-60	70	63	50	70	63	50	70	63	50	70	63	50	67	63	50	63	61	50	59	59	50	56	56	50	54	54	50	52	52	50	49	49	49	47	47	47	45	45	45	45	36	26	28	25	18
175 mph	8-20	56	33	27	56	33	27	56	33	27	56	33	27	56	33	27	56	33	27	56	33	27	55	33	27	51	33	27	49	33	27	46	33	27	44	33	27	42	33	27	33	21	18	24	16	13
	21-27	68	46	34	68	46	34	68	46	34	68	46	34	66	46	34	64	46	34	60	46	34	56	46	34	52	46	34	49	46	34	47	46	34	45	45	34	43	43	34	48	26	19	32	19	13
	28-60	67	60	45	67	60	45	67	60	45	67	60	45	66	60	45	62	60	45	59	58	45	56	56	45	53	53	45	51	51	45	49	49	45	47	47	45	45	45	45	40	33	25	27	24	17
180 mph	8-20	52	30	25	52	30	25	52	30	25	52	30	25	52	30	25	52	30	25	52	30	25	52	30	25	51	30	25	49	30	25	46	30	25	44	30	25	42	30	25	30	20	17	23	15	12
	21-27	66	41	31	66	41	31	66	41	31	66	41	31	65	41	31	63	41	31	60	41	31	56	41	31	52	41	31	49	41	31	47	41	31	45	41	31	43	41	31	44	24	18	30	18	12
	28-60	65	58	41	65	58	41	65	58	41	65	58	41	65	58	41	62	58	41	58	57	41	55	55	41	53	53	41	51	51	41	49	49	41	47	47	41	45	45	41	36	30	23	25	23	16

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

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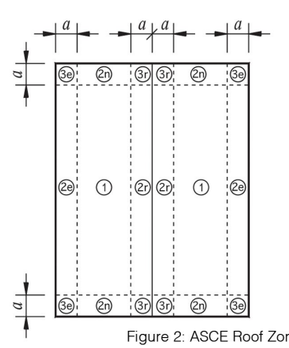
= Shaded cells indicate conditions in which UFO Mid Clamp connection capacity is exceeded. If such conditions are encountered contact techsupport@ironridge.com.

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

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8° - 27°			28° - 45°		
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e



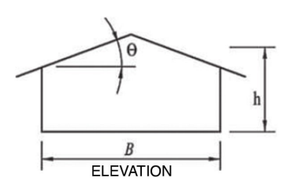


Figure 2: ASCE Roof Zone Locations for Gable Roofs

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 distances.

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

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

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

Rail: XR100

Gable 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: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	115	107	95	97	97	95	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	105	80	71	70	60	48
	21-27	113	113	110	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	111	89	83	80	65	61
	28-60	110	110	109	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	110	96	85	80	72	64
95 mph	8-20	115	99	88	97	97	88	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	95	74	66	65	53	41
	21-27	113	108	102	103	103	102	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	104	82	76	76	62	55
	28-45	110	110	102	103	103	102	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	103	90	79	75	68	60
100 mph	8-20	115	92	81	97	92	81	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	87	69	62	61	46	36
	21-27	113	101	95	103	101	95	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	97	77	71	71	58	48
	28-45	110	109	96	103	103	96	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	97	85	74	71	64	57
105 mph	8-20	115	86	76	97	86	76	81	81	76	79	79	76	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	80	65	55	58	40	32
	21-27	113	95	88	103	95	88	89	89	87	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	91	72	67	68	51	42
	28-45	110	102	90	103	102	90	90	90	89	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	91	80	70	67	61	50
110 mph	8-20	106	80	71	97	80	71	81	80	71	79	79	71	71	71	70	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	74	61	46	53	36	29
	21-27	112	89	83	103	89	83	89	88	83	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	86	68	62	64	45	37
	28-60	110	97	85	103	97	85	90	90	85	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	85	75	66	63	58	44
115 mph	8-20	97	76	67	97	76	67	81	76	67	79	76	67	71	71	67	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	69	55	39	48	32	26
	21-27	105	84	78	103	84	78	89	84	78	79	79	76	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	81	64	59	61	40	32
	28-60	105	92	80	103	92	80	90	90	80	81	81	78	74	74	74	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	80	71	62	60	52	40
120 mph	8-20	90	71	63	90	71	63	81	71	63	79	71	63	71	70	63	64	64	62	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	64	46	33	44	29	24
	21-27	100	79	73	100	79	73	89	79	73	79	76	73	72	72	69	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	77	60	49	59	36	29
	28-60	99	87	76	99	87	76	89	87	76	80	80	76	73	73	72	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	76	68	59	57	47	36
130 mph	8-20	79	64	53	79	64	53	79	64	53	78	64	53	71	64	53	64	63	53	59	59	53	55	55	53	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	58	34	27	37	25	20
	21-27	90	71	66	90	71	66	88	71	66	79	71	66	72	68	65	65	65	62	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	69	47	36	50	30	23
	28-60	89	79	69	89	79	69	87	79	69	78	77	69	72	72	68	67	67	65	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	68	61	47	45	38	29
140 mph	8-20	69	56	39	69	56	39	69	56	39	69	56	39	68	56	39	64	56	39	59	56	39	55	55	39	51	51	39	49	49	39	46	46	39	44	44	39	42	42	39	47	28	23	32	21	17
	21-27	81	64	59	81	64	59	81	64	59	78	64	59	72	64	59	65	62	58	60	60	57	56	56	55	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	63	36	28	43	25	19
	28-60	81	72	63	81	72	63	81	72	63	76	72	63	70	69	63	65	65	61	61	61	59	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	62	53	36	37	32	24
150 mph	8-20	63	43	31	63	43	31	63	43	31	63	43	31	63	43	31	62	43	31	59	43	31	55	43	31	51	43	31	49	43	31	46	43	31	44	43	31	42	42	31	39	25	20	28	18	15
	21-27	75	59	45	75	59	45	75	59	45	74	59	45	70	59	45	65	58	45	60	56	45	56	55	45	52	52	45	49	49	45	47	47	45	45	45	45	43	43	43	58	30	23	37	22	16
	28-60	74	66	58	74	66	58	74	66	58	74	66	58	68	66	58	64	63	58	60	60	56	57	57	55	54	54	53	52	52	52	49	49	49	47	47	47	45	45	45	54	41	29	31	28	20
160 mph	8-20	57	34	27	57	34	27	57	34	27	57	34	27	57	34	27	57	34	27	57	34	27	55	34	27	51	34	27	49	34	27	46	34	27	44	34	27	42	34	27	33	21	18	24	16	13
	21-27	69	47	35	69	47	35	69	47	35	69	47	35	67	47	35	64	47	35	60	47	35	56	47	35	52	47	35	49	47	35	47	47	35	45	45	35	43	43	35	48	26	20	33	19	13
	28-60	68	61	46	68	61	46	68	61	46	68	61	46	67	61	46	62	60	46	59	58	46	56	56	46	54	54	46	51	51	46	49	49	46	47	47	46	45	45	45	41	33	25	27	24	17
170 mph	8-20	48	29	24	48	29	24	48	29	24	48	29	24	48	29	24	48	29	24	48	29	24	48	29	24	48	29	24	48	29	24	46	29	24	44	29	24	42	29	24	29	19	16	21	14	12
	21-27	64	37	29	64	37	29	64	37	29	64	37	29	63	37	29	61	37	29	60	37	29	56	37	29	52	37	29	49	37	29	47	37	29	45	37	29	43	37	29	41	23	17	29	17	12
	28-60	62	54	37	62	54	37	62	54	37	62	54	37	62	54	37	61	54	37	58	54	37	55	54	37	53	53	37	50	50	37	49	49	37	47	47	37	45	45	37	32	29	21	24	21	15
175 mph	8-20	45	27	22	45	27	22	45	27	22	45	27	22	45	27	22	45	27	22	45	27	22	45	27	22	45	27	22	45	27	22	45	27	22	44	27	22	42	27	22	27	18	15	20	13	
	21-27	61	34	27	61	34	27	61	34	27	61	34	27	61	34	27	60	34	27	58	34	27	56	34	27	52	34	27	49	34	27	47	34	27	45	34	27	43	34	27	38	22	15	27	16	
	28-60	60	49	34	60	49	34	60	49	34	60	49	34	60	49	34	59	49	34	57	49	34	54	49	34	52	49	34	50	49	34	48	48	34	47	47	34	45	45	34	30	27	20	22	20	14
180 mph	8-20	41	26	21	41	26	21	41	26	21	41	26	21	41	26	21	41	26	21	41	26	21	41	26	21	41	26	21	41	26	21	41	26	21	41	26	21	41	26	21	26	17	14	19	12	
	21-27	59	31	25	59	31	25	59	31	25	59	31	25	59	31	25	59	31	25	57	31	25	56	31	25	52	31	25	49	31	25	47	31	25	45	31	25	43	31	25	35	20	14	26	15	
	28-60	58	44	31	58	44	31	58	44	31	58	44	31	58	44	31	58	44	31	56	44	31	54	44	31	52	44	31	50	44	31	48	44	31	46	44	31	45	44	31	28	26	19	21	19	13

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

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= 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

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

Grouping of ASCE 7-16 Roof Zones (Gable)

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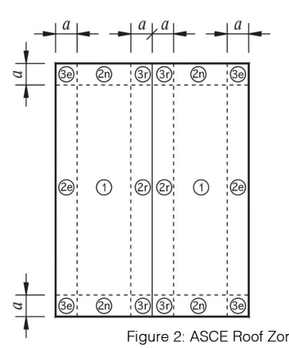
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e



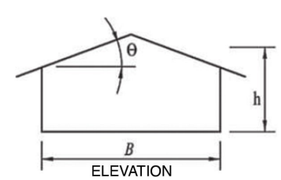


Figure 2: ASCE Roof Zone Locations for Gable Roofs

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 distances.

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

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

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

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 B

Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	110	110	110	93	93	93	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	110	107	94	93	74	67
	21-27	108	108	108	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	108	108	108	98	81	76
	28-60	105	105	105	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	105	105	105	98	87	78
95 mph	8-20	110	110	110	93	93	93	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	110	99	87	86	70	63
	21-27	108	108	108	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	108	108	102	93	76	71
	28-45	105	105	105	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	105	105	101	93	82	74
100 mph	8-20	110	110	109	93	93	93	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	110	92	81	80	66	59
	21-27	108	108	108	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	108	101	95	87	72	67
	28-45	105	105	105	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	105	105	95	87	78	70
105 mph	8-20	110	110	101	93	93	93	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	110	85	76	74	62	53
	21-27	108	108	108	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	108	94	88	83	68	63
	28-45	105	105	105	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	105	101	89	83	74	66
110 mph	8-20	110	107	95	93	93	93	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	109	80	71	70	59	46
	21-27	108	108	108	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	108	88	83	79	64	60
	28-60	105	105	105	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	105	96	84	78	71	63
115 mph	8-20	110	100	89	93	93	89	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	100	75	67	66	52	41
	21-27	108	108	104	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	104	83	78	75	61	55
	28-60	105	105	102	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	105	91	80	75	67	60
120 mph	8-20	110	94	84	93	93	84	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	92	71	63	62	46	36
	21-27	108	103	98	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	99	78	73	71	58	49
	28-60	105	105	97	99	99	97	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	99	86	76	71	64	57
130 mph	8-20	110	84	75	93	84	75	77	77	75	76	76	74	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	80	63	52	54	37	29
	21-27	108	93	87	98	93	87	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	89	70	65	65	47	39
	28-60	105	100	88	99	99	88	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	89	78	68	65	59	46
140 mph	8-20	101	76	67	93	76	67	77	76	67	76	75	67	68	68	66	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	70	55	39	46	31	25
	21-27	105	84	78	98	84	78	85	83	78	76	76	75	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	81	64	59	60	39	32
	28-60	105	91	80	99	91	80	86	86	80	78	78	77	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	81	71	62	60	51	38
150 mph	8-20	89	69	61	89	69	61	77	69	61	76	69	61	68	67	61	61	61	60	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	63	42	30	40	26	22
	21-27	96	76	71	96	76	71	85	76	71	76	74	70	68	68	67	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	74	58	44	54	32	26
	28-60	96	84	74	96	84	74	86	84	74	77	77	73	70	70	69	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	73	65	57	52	43	32
160 mph	8-20	79	63	51	79	63	51	77	63	51	76	63	51	68	63	51	61	61	51	56	56	51	52	52	51	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	55	33	26	35	23	19
	21-27	88	70	65	88	70	65	85	70	65	76	70	65	68	66	63	62	62	61	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	68	45	34	47	28	22
	28-60	88	77	68	88	77	68	84	77	68	75	75	68	69	69	66	64	64	63	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	67	60	45	43	36	27
170 mph	8-20	71	57	40	71	57	40	71	57	40	71	57	40	68	57	40	61	57	40	56	56	40	52	52	40	49	49	40	46	46	40	44	44	40	42	42	40	41	41	40	46	27	23	31	20	17
	21-27	82	65	60	82	65	60	82	65	60	76	65	60	68	63	60	62	61	58	57	57	56	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	63	36	27	41	24	19
	28-60	81	72	63	81	72	63	81	72	63	74	71	63	68	68	63	63	63	60	59	59	58	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	62	53	36	36	31	24
175 mph	8-20	68	51	36	68	51	36	68	51	36	68	51	36	66	51	36	61	51	36	56	51	36	52	51	36	49	49	36	46	46	36	44	44	36	42	42	36	41	41	36	43	26	21	29	19	16
	21-27	79	62	55	79	62	55	79	62	55	75	62	55	68	62	55	62	59	55	57	57	55	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	61	33	25	39	23	17
	28-60	78	69	61	78	69	61	78	69	61	73	69	61	67	67	61	63	63	59	59	59	57	56	56	55	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	60	48	33	33	29	22
180 mph	8-20	65	45	32	65	45	32	65	45	32	65	45	32	64	45	32	61	45	32	56	45	32	52	45	32	49	45	32	46	45	32	44	44	32	42	42	32	41	41	32	40	24	20	27	18	15
	21-27	76	60	49	76	60	49	76	60	49	73	60	49	68	60	49	62	58	49	57	56	49	53	53	49	50	50	49	47	47	47	45	45	45	43	43	43	41	41	41	58	30	24	37	22	16
	28-60	75	67	59	75	67	59	75	67	59	72	67	59	66	65	59	62	62	58	58	58	56	55	55	54	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	58	43	30	31	27	20

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

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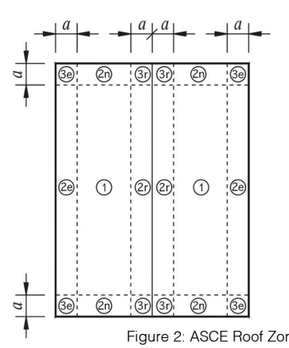
= Shaded cells indicate conditions in which UFO Mid Clamp connection capacity is exceeded. If such conditions are encountered contact techsupport@ironridge.com.

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

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8° - 27°			28° - 45°		
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e



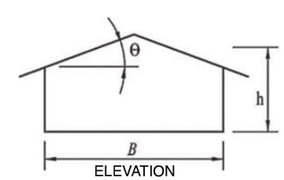


Figure 2: ASCE Roof Zone Locations for Gable Roofs

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 distances.

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

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

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

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: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	110	110	99	93	93	93	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	110	84	74	73	61	50
	21-27	108	108	108	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	108	92	86	81	67	62
	28-60	105	105	105	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	105	99	88	81	73	65
95 mph	8-20	110	104	92	93	93	92	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	104	78	69	68	55	43
	21-27	108	108	107	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	108	86	80	77	63	59
	28-60	105	105	105	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	105	93	82	76	69	61
100 mph	8-20	110	96	85	93	93	85	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	94	72	64	63	48	38
	21-27	108	105	100	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	101	80	74	72	59	51
	28-60	105	105	99	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	101	87	77	72	65	58
105 mph	8-20	110	90	79	93	90	79	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	86	67	60	59	42	33
	21-27	108	98	93	98	98	93	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	94	75	69	69	53	44
	28-60	105	105	93	99	99	93	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	94	82	72	68	62	52
110 mph	8-20	110	84	74	93	84	74	77	77	74	76	76	74	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	80	63	51	54	37	29
	21-27	108	92	87	98	92	87	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	89	70	65	65	47	39
	28-60	105	100	88	99	99	88	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	89	78	68	65	59	46
115 mph	8-20	107	79	70	93	79	70	77	77	70	76	76	70	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	74	60	43	49	33	27
	21-27	108	87	81	98	87	81	85	85	81	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	84	66	61	62	42	34
	28-60	105	94	83	99	94	83	86	86	83	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	84	74	64	61	54	41
120 mph	8-20	98	74	66	93	74	66	77	74	66	76	74	66	68	68	65	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	69	52	36	45	30	24
	21-27	103	82	77	98	82	77	85	82	77	76	76	74	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	79	63	56	59	37	30
	28-60	103	90	79	99	90	79	86	86	79	78	78	76	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	79	70	61	59	49	37
130 mph	8-20	85	66	59	85	66	59	77	66	59	76	66	59	68	65	59	61	61	58	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	60	38	28	38	25	21
	21-27	93	74	68	93	74	68	85	74	68	76	72	68	68	68	65	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	71	53	40	51	30	24
	28-60	93	81	71	93	81	71	85	81	71	76	76	71	70	70	68	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	71	63	51	48	40	30
140 mph	8-20	74	60	44	74	60	44	74	60	44	74	60	44	68	60	44	61	59	44	56	56	44	52	52	44	49	49	44	46	46	44	44	44	44	42	42	42	41	41	41	50	29	24	32	21	18
	21-27	84	67	62	84	67	62	83	67	62	76	67	62	68	65	61	62	62	59	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	65	40	30	44	26	20
	28-60	84	74	65	84	74	65	82	74	65	74	73	65	68	68	64	63	63	62	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	64	58	39	39	33	25
150 mph	8-20	66	48	34	66	48	34	66	48	34	66	48	34	65	48	34	61	48	34	56	48	34	52	48	34	49	48	34	46	46	34	44	44	34	42	42	34	41	41	34	41	25	21	28	18	15
	21-27	77	61	51	77	61	51	77	61	51	74	61	51	68	61	51	62	59	51	57	57	51	53	53	51	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	59	31	24	38	22	17
	28-60	77	68	60	77	68	60	77	68	60	72	68	60	67	66	60	62	62	58	59	59	56	55	55	55	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	59	45	31	32	28	21
160 mph	8-20	60	37	27	60	37	27	60	37	27	60	37	27	60	37	27	59	37	27	56	37	27	52	37	27	49	37	27	46	37	27	44	37	27	42	37	27	41	37	27	35	22	18	25	16	13
	21-27	71	52	39	71	52	39	71	52	39	70	52	39	67	52	39	62	52	39	57	52	39	53	52	39	50	50	39	47	47	39	45	45	39	43	43	39	41	41	39	51	26	20	33	20	14
	28-60	70	63	50	70	63	50	70	63	50	70	63	50	65	62	50	61	60	50	57	57	50	55	55	50	52	52	50	50	50	50	47	47	47	45	45	45	43	43	43	46	36	26	27	25	18
170 mph	8-20	51	30	24	51	30	24	51	30	24	51	30	24	51	30	24	51	30	24	51	30	24	51	30	24	49	30	24	46	30	24	44	30	24	42	30	24	41	30	24	29	19	16	22	14	12
	21-27	66	41	31	66	41	31	66	41	31	66	41	31	64	41	31	62	41	31	57	41	31	53	41	31	50	41	31	47	41	31	45	41	31	43	41	31	41	41	31	43	23	17	29	17	12
	28-60	65	58	41	65	58	41	65	58	41	65	58	41	64	58	41	60	57	41	56	56	41	54	54	41	51	51	41	49	49	41	47	47	41	45	45	41	43	43	41	36	29	22	24	22	16
175 mph	8-20	47	28	23	47	28	23	47	28	23	47	28	23	47	28	23	47	28	23	47	28	23	47	28	23	47	28	23	46	28	23	44	28	23	42	28	23	41	28	23	28	18	15	20	13	
	21-27	63	37	28	63	37	28	63	37	28	63	37	28	62	37	28	60	37	28	57	37	28	53	37	28	50	37	28	47	37	28	45	37	28	43	37	28	41	37	28	40	22	16	28	16	
	28-60	63	54	37	63	54	37	63	54	37	63	54	37	62	54	37	59	54	37	56	54	37	53	53	37	51	51	37	49	49	37	47	47	37	45	45	37	43	43	37	32	27	21	23	20	14
180 mph	8-20	43	26	22	43	26	22	43	26	22	43	26	22	43	26	22	43	26	22	43	26	22	43	26	22	43	26	22	43	26	22	43	26	22	42	26	22	41	26	22	26	17	14	19	13	
	21-27	61	33	26	61	33	26	61	33	26	61	33	26	61	33	26	59	33	26	57	33	26	53	33	26	50	33	26	47	33	26	45	33	26	43	33	26	41	33	26	37	21	15	26	15	
	28-60	60	49	33	60	49	33	60	49	33	60	49	33	60	49	33	58	49	33	55	49	33	53	49	33	50	49	33	48	48	33	47	47	33	45	45	33	43	43	33	29	26	19	21	19	13

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

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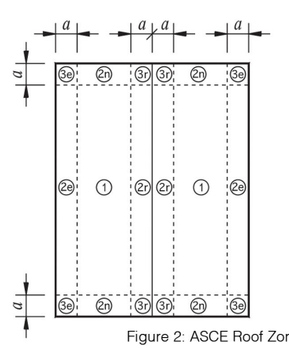
= Shaded cells indicate conditions in which UFO Mid Clamp connection capacity is exceeded. If such conditions are encountered contact techsupport@ironridge.com.

= Contact techsupport@ironridge.com

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

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8° - 27°			28° - 45°		
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e



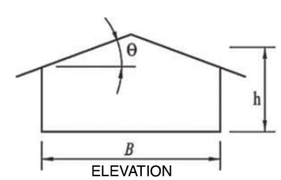


Figure 2: ASCE Roof Zone Locations for Gable Roofs

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 distances.

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

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

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

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 D

Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	110	99	88	93	93	88	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	98	74	66	65	51	40
	21-27	108	108	103	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	103	82	77	74	61	54
	28-60	105	105	101	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	103	90	79	74	67	59
95 mph	8-20	110	92	81	93	92	81	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	89	69	61	60	44	35
	21-27	108	101	95	98	98	95	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	96	76	71	70	55	46
	28-60	105	105	95	99	99	95	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	96	84	74	69	63	54
100 mph	8-20	110	85	76	93	85	76	77	77	76	76	76	75	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	81	64	54	55	38	30
	21-27	108	94	88	98	94	88	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	90	71	66	66	48	40
	28-60	105	101	89	99	99	89	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	90	79	69	66	59	48
105 mph	8-20	108	80	71	93	80	71	77	77	71	76	76	71	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	75	60	44	50	34	27
	21-27	108	88	82	98	88	82	85	85	82	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	84	67	62	63	42	35
	28-60	105	95	84	99	95	84	86	86	84	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	84	74	65	62	55	42
110 mph	8-20	99	75	66	93	75	66	77	75	66	76	74	66	68	68	65	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	69	52	37	45	30	24
	21-27	104	82	77	98	82	77	85	82	77	76	76	74	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	79	63	57	59	38	31
	28-60	104	90	79	99	90	79	86	86	79	78	78	76	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	79	70	61	59	49	37
115 mph	8-20	91	70	62	91	70	62	77	70	62	76	70	62	68	68	62	61	61	60	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	64	44	31	41	27	22
	21-27	98	78	72	98	78	72	85	78	72	76	74	71	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	75	59	47	55	34	27
	28-60	98	85	75	98	85	75	86	85	75	77	77	73	70	70	70	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	75	66	58	54	44	33
120 mph	8-20	84	66	59	84	66	59	77	66	59	76	66	59	68	65	59	61	61	58	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	60	37	28	38	25	20
	21-27	92	73	68	92	73	68	85	73	68	76	72	68	68	68	65	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	71	52	39	51	30	24
	28-60	92	81	71	92	81	71	85	81	71	76	76	71	70	70	68	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	71	63	51	47	39	30
130 mph	8-20	73	59	42	73	59	42	73	59	42	73	59	42	68	59	42	61	59	42	56	56	42	52	52	42	49	49	42	46	46	42	44	44	42	42	42	42	41	41	41	48	28	23	32	21	17
	21-27	83	66	61	83	66	61	83	66	61	76	66	61	68	64	61	62	62	59	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	64	38	29	43	25	19
	28-60	83	73	64	83	73	64	82	73	64	74	72	64	68	68	63	63	63	61	59	59	59	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	63	56	38	38	32	25
140 mph	8-20	65	45	32	65	45	32	65	45	32	65	45	32	64	45	32	61	45	32	56	45	32	52	45	32	49	45	32	46	45	32	44	44	32	42	42	32	41	41	32	39	24	20	27	18	15
	21-27	76	60	48	76	60	48	76	60	48	73	60	48	68	60	48	62	58	48	57	56	48	53	53	48	50	50	48	47	47	47	45	45	45	43	43	43	41	41	41	58	29	23	37	22	16
	28-60	75	67	58	75	67	58	75	67	58	72	67	58	66	65	58	62	62	57	58	58	56	55	55	54	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	57	43	29	31	27	20
150 mph	8-20	57	34	26	57	34	26	57	34	26	57	34	26	57	34	26	57	34	26	56	34	26	52	34	26	49	34	26	46	34	26	44	34	26	42	34	26	41	34	26	33	21	17	24	16	13
	21-27	69	48	36	69	48	36	69	48	36	69	48	36	66	48	36	62	48	36	57	48	36	53	48	36	50	48	36	47	47	36	45	45	36	43	43	36	41	41	36	48	25	19	32	19	13
	28-60	69	61	47	69	61	47	69	61	47	69	61	47	65	61	47	61	59	47	57	57	47	54	54	47	52	52	47	50	50	47	47	47	47	45	45	45	43	43	43	43	34	25	26	24	17
160 mph	8-20	48	28	23	48	28	23	48	28	23	48	28	23	48	28	23	48	28	23	48	28	23	48	28	23	48	28	23	46	28	23	44	28	23	42	28	23	41	28	23	28	18	15	21	14	
	21-27	64	38	28	64	38	28	64	38	28	64	38	28	63	38	28	60	38	28	57	38	28	53	38	28	50	38	28	47	38	28	45	38	28	43	38	28	41	38	28	40	22	16	28	16	
	28-60	63	55	37	63	55	37	63	55	37	63	55	37	63	55	37	59	55	37	56	55	37	53	53	37	51	51	37	49	49	37	47	47	37	45	45	37	43	43	37	33	28	21	23	21	15
170 mph	8-20	40	25	20	40	25	20	40	25	20	40	25	20	40	25	20	40	25	20	40	25	20	40	25	20	40	25	20	40	25	20	40	25	20	40	25	20	40	25	20	25	16	13	18	12	
	21-27	59	30	24	59	30	24	59	30	24	59	30	24	59	30	24	57	30	24	56	30	24	53	30	24	50	30	24	47	30	24	45	30	24	43	30	24	41	30	24	34	19	14	25	14	
	28-60	58	44	30	58	44	30	58	44	30	58	44	30	58	44	30	57	44	30	55	44	30	52	44	30	50	44	30	48	44	30	46	44	30	45	44	30	43	43	30	27	24	18	20	18	13
175 mph	8-20	37	23	19	37	23	19	37	23	19	37	23	19	37	23	19	37	23	19	37	23	19	37	23	19	37	23	19	37	23	19	37	23	19	37	23	19	37	23	19	23	15	13	17		
	21-27	55	28	22	55	28	22	55	28	22	55	28	22	55	28	22	55	28	22	55	28	22	53	28	22	50	28	22	47	28	22	45	28	22	43	28	22	41	28	22	32	18	13	23	14	
	28-60	53	40	28	53	40	28	53	40	28	53	40	28	53	40	28	53	40	28	53	40	28	52	40	28	49	40	28	47	40	28	46	40	28	44	40	28	43	40	28	26	23	17	19	17	12
180 mph	8-20	35	22	18	35	22	18	35	22	18	35	22	18	35	22	18	35	22	18	35	22	18	35	22	18	35	22	18	35	22	18	35	22	18	35	22	18	35	22	18	22	14	12	16		
	21-27	51	26	21	51	26	21	51	26	21	51	26	21	51	26	21	51	26	21	51	26	21	51	26	21	50	26	21	47	26	21	45	26	21	43	26	21	41	26	21	30	17	12	22	13	
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= min 72" span = min 64" span = min 48" span

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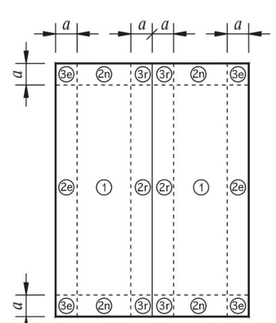
= Shaded cells indicate conditions in which UFO Mid Clamp connection capacity is exceeded. If such conditions are encountered contact techsupport@ironridge.com.

= Contact techsupport@ironridge.com

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

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8° - 27°			28° - 45°		
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e



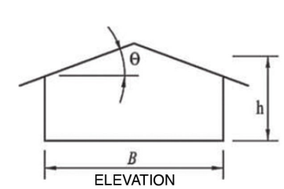


Figure 2: ASCE Roof Zone Locations for Gable Roofs

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 distances.

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

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

θ = Angle of plane of roof from horizontal, in 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: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	129	129	129	111	111	111	92	92	92	90	90	90	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	129	129	129	120	103	99
	21-27	129	129	129	117	117	117	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	129	129	129	115	115
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	125	125	125	125	108
95 mph	8-20	129	129	129	111	111	111	92	92	92	90	90	90	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	129	129	129	110	97	93
	21-27	129	129	129	117	117	117	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	129	129	129	108	108
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	125	125	124	125	101
100 mph	8-20	129	129	129	111	111	111	92	92	92	90	90	90	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	129	129	127	103	92	88
	21-27	129	129	129	117	117	117	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	129	129	129	101	101
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	125	125	116	117	95
105 mph	8-20	129	129	129	111	111	111	92	92	92	90	90	90	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	129	124	115	97	87	83
	21-27	129	129	129	117	117	117	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	129	129	121	96	96
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	125	125	110	109	90
110 mph	8-20	129	129	129	111	111	111	92	92	92	90	90	90	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	129	113	105	91	82	79
	21-27	129	129	129	117	117	117	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	129	129	114	91	91
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	125	124	104	102	86
115 mph	8-20	129	129	129	111	111	111	92	92	92	90	90	90	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	129	104	99	87	78	75
	21-27	129	129	129	117	117	117	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	123	123	108	87	87
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	125	112	99	97	81
120 mph	8-20	129	129	129	111	111	111	92	92	92	90	90	90	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	121	98	93	82	75	72
	21-27	129	129	129	117	117	117	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	113	113	102	83	83
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	125	103	95	92	78
130 mph	8-20	129	122	112	111	111	111	92	92	92	90	90	90	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	101	89	84	76	68	65
	21-27	129	129	129	117	117	117	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	99	99	93	76	76
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	120	123	93	87	84	71
140 mph	8-20	129	105	99	111	105	99	92	92	92	90	90	90	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	91	80	76	70	63	60
	21-27	129	125	125	117	117	117	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	123	90	90	86	70	70
	28-60	125	125	114	117	117	114	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	106	103	84	80	77	65
150 mph	8-20	114	96	91	111	96	91	92	92	91	90	90	89	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	82	74	70	66	58	52
	21-27	129	109	109	117	109	109	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	106	83	83	79	65	65
	28-60	125	125	100	117	117	100	103	103	100	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	97	94	77	74	71	59
160 mph	8-20	100	88	84	100	88	84	92	88	84	90	87	84	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	76	68	64	62	49	45
	21-27	129	99	99	117	99	99	101	98	98	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	97	76	76	74	60	60
	28-60	119	121	92	117	117	92	103	103	92	93	93	91	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	89	86	71	69	65	50
170 mph	8-20	92	81	77	92	81	77	92	81	77	90	81	77	80	79	77	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	71	63	60	57	42	39
	21-27	125	91	91	117	91	91	101	91	91	90	88	88	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	89	70	70	69	53	53
	28-60	107	105	85	107	105	85	103	102	85	93	93	85	85	85	83	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	83	79	65	65	61	40
175 mph	8-20	88	78	74	88	78	74	88	78	74	88	78	74	80	77	74	73	73	72	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	69	60	55	53	40	37
	21-27	118	88	88	117	88	88	101	88	88	90	86	86	81	81	81	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	86	68	68	67	50	50
	28-60	103	100	82	103	100	82	103	100	82	93	93	82	85	85	81	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	80	76	62	63	59	37
180 mph	8-20	85	76	72	85	76	72	85	76	72	85	76	72	80	76	72	73	73	71	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	67	57	50	50	38	35
	21-27	111	85	85	111	85	85	100	85	85	89	84	84	81	80	80	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	83	65	65	65	46	46
	28-60	99	96	79	99	96	79	99	96	79	92	92	79	84	84	79	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	77	73	60	61	54	34

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

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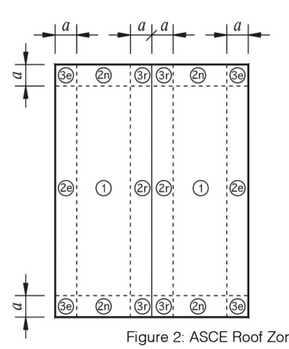
= Shaded cells indicate conditions in which UFO Mid Clamp connection capacity is exceeded. If such conditions are encountered contact techsupport@ironridge.com.

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

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8° - 27°			28° - 45°		
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e



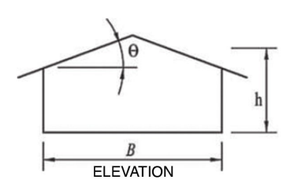


Figure 2: ASCE Roof Zone Locations for Gable Roofs

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 distances.

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

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

θ = Angle of plane of roof from horizontal, in 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 C

Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	129	129	129	111	111	111	92	92	92	90	90	90	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	129	121	112	95	85	82
	21-27	129	129	129	117	117	117	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	129	129	119	94	94
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	125	125	108	106	89
95 mph	8-20	129	129	129	111	111	111	92	92	92	90	90	90	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	129	108	102	89	80	77
	21-27	129	129	129	117	117	117	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	129	129	111	89	89
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	125	118	101	99	83
100 mph	8-20	129	129	129	111	111	111	92	92	92	90	90	90	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	125	100	95	84	76	73
	21-27	129	129	129	117	117	117	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	116	116	104	84	84
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	125	105	96	94	79
105 mph	8-20	129	129	123	111	111	111	92	92	92	90	90	90	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	110	94	89	80	72	69
	21-27	129	129	129	117	117	117	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	106	106	98	79	79
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	125	98	91	88	75
110 mph	8-20	129	121	112	111	111	111	92	92	92	90	90	90	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	100	88	84	76	68	65
	21-27	129	129	129	117	117	117	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	99	99	93	75	75
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	120	122	92	87	84	71
115 mph	8-20	129	111	103	111	111	103	92	92	92	90	90	90	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	94	83	79	72	65	62
	21-27	129	129	129	117	117	117	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	94	94	88	72	72
	28-60	125	125	121	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	111	109	87	83	80	67
120 mph	8-20	129	103	98	111	103	98	92	92	92	90	90	90	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	89	79	75	69	62	59
	21-27	129	121	121	117	117	117	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	119	89	89	84	69	69
	28-60	125	125	110	117	117	110	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	103	101	82	79	75	64
130 mph	8-20	107	93	88	107	93	88	92	92	88	90	90	87	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	80	71	68	64	54	49
	21-27	129	104	104	117	104	104	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	102	80	80	77	63	63
	28-60	125	125	97	117	117	97	103	103	97	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	94	91	74	72	68	57
140 mph	8-20	95	84	80	95	84	80	92	84	80	90	84	80	80	80	78	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	73	65	62	59	45	41
	21-27	129	94	94	117	94	94	101	94	94	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	93	73	73	71	57	57
	28-60	112	111	88	112	111	88	103	103	88	93	93	88	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	85	82	67	67	63	44
150 mph	8-20	86	77	73	86	77	73	86	77	73	86	77	73	80	76	73	73	73	71	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	68	59	52	52	39	36
	21-27	114	86	86	114	86	86	101	86	86	89	85	85	81	81	81	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	84	67	67	66	48	48
	28-60	101	98	80	101	98	80	101	98	80	92	92	80	84	84	80	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	78	74	61	62	57	35
160 mph	8-20	80	71	67	80	71	67	80	71	67	80	71	67	78	71	67	73	70	67	67	67	66	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	63	48	42	45	34	31
	21-27	101	79	79	101	79	79	98	79	79	88	79	79	80	77	77	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	78	61	61	61	41	41
	28-60	93	90	74	93	90	74	93	90	74	91	88	74	83	83	74	77	77	73	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	72	68	48	57	46	29
170 mph	8-20	74	65	62	74	65	62	74	65	62	74	65	62	74	65	62	72	65	62	67	64	62	62	62	61	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	58	40	37	40	30	27
	21-27	94	74	74	94	74	74	94	74	74	86	74	74	79	73	73	73	70	70	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	72	54	54	55	36	36
	28-60	86	83	68	86	83	68	86	83	68	86	83	68	82	80	68	76	76	68	71	71	68	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	67	62	37	49	38	24
175 mph	8-20	72	63	60	72	63	60	72	63	60	72	63	60	72	63	60	71	63	60	67	63	60	62	61	59	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	54	38	35	38	28	26
	21-27	90	71	71	90	71	71	90	71	71	85	71	71	78	71	71	72	69	69	68	67	67	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	69	49	49	51	34	34
	28-60	83	80	65	83	80	65	83	80	65	83	80	65	81	78	65	75	75	65	71	71	65	66	66	64	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	65	60	34	46	35	22
180 mph	8-20	69	61	56	69	61	56	69	61	56	69	61	56	69	61	56	69	61	56	66	61	56	62	60	56	58	58	56	55	55	55	53	53	53	50	50	50	48	48	48	50	36	33	36	26	24
	21-27	87	68	68	87	68	68	87	68	68	84	68	68	77	68	68	72	67	67	67	65	65	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	67	44	44	47	32	32
	28-60	80	76	63	80	76	63	80	76	63	80	76	63	80	76	63	75	74	63	70	70	63	66	66	63	63	63	61	59	59	59	56	56	56	54	54	54	52	52	52	62	56	31	43	32	20

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

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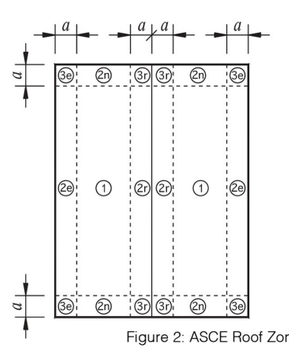
= Shaded cells indicate conditions in which UFO Mid Clamp connection capacity is exceeded. If such conditions are encountered contact techsupport@ironridge.com.

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

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8° - 27°			28° - 45°		
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e



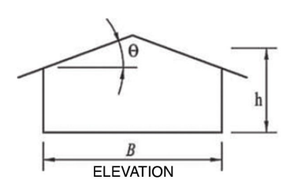


Figure 2: ASCE Roof Zone Locations for Gable Roofs

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 distances.

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

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

θ = Angle of plane of roof from horizontal, in 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: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	129	129	129	111	111	111	92	92	92	90	90	90	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	129	103	98	86	78	74
	21-27	129	129	129	117	117	117	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	121	121	106	86	86
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	125	110	98	96	81
95 mph	8-20	129	129	127	111	111	111	92	92	92	90	90	90	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	115	96	91	81	73	70
	21-27	129	129	129	117	117	117	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	109	109	100	81	81
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	125	125	100	93	90	76
100 mph	8-20	129	124	114	111	111	111	92	92	92	90	90	90	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	102	90	85	77	69	66
	21-27	129	129	129	117	117	117	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	101	101	94	76	76
	28-60	125	125	125	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	122	125	94	88	85	72
105 mph	8-20	129	112	104	111	111	104	92	92	92	90	90	90	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	95	84	80	73	65	63
	21-27	129	129	129	117	117	117	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	129	94	94	89	72	72
	28-60	125	125	123	117	117	117	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	112	111	88	83	80	68
110 mph	8-20	129	103	98	111	103	98	92	92	92	90	90	90	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	89	79	75	70	62	60
	21-27	129	122	122	117	117	117	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	120	89	89	85	69	69
	28-60	125	125	111	117	117	111	103	103	103	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	104	101	83	79	76	64
115 mph	8-20	118	97	92	111	97	92	92	92	92	90	90	90	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	84	75	71	67	59	54
	21-27	129	112	112	117	112	112	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	109	84	84	80	65	65
	28-60	125	125	102	117	117	102	103	103	102	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	98	95	78	75	72	60
120 mph	8-20	106	92	87	106	92	87	92	92	87	90	90	87	80	80	80	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	80	71	67	64	54	49
	21-27	129	103	103	117	103	103	101	101	101	90	90	90	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	101	80	80	77	62	62
	28-60	125	125	96	117	117	96	103	103	96	93	93	93	85	85	85	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	93	90	74	72	68	56
130 mph	8-20	94	83	79	94	83	79	92	83	79	90	83	79	80	80	78	73	73	73	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	73	64	61	59	44	40
	21-27	129	93	93	117	93	93	101	93	93	90	89	89	82	82	82	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	91	72	72	70	55	55
	28-60	110	108	87	110	108	87	103	103	87	93	93	87	85	85	84	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	84	81	66	66	62	43
140 mph	8-20	85	75	72	85	75	72	85	75	72	85	75	72	80	75	72	73	73	70	67	67	67	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	67	57	50	50	37	34
	21-27	111	85	85	111	85	85	100	85	85	89	84	84	81	80	80	74	74	74	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	83	65	65	64	46	46
	28-60	99	96	79	99	96	79	99	96	79	92	92	79	84	84	79	77	77	77	71	71	71	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	77	73	59	61	54	33
150 mph	8-20	78	69	66	78	69	66	78	69	66	78	69	66	77	69	66	73	69	66	67	67	65	62	62	62	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	61	45	40	44	32	30
	21-27	99	77	77	99	77	77	98	77	77	87	77	77	79	76	76	74	73	73	68	68	68	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	76	60	60	60	39	39
	28-60	91	88	72	91	88	72	91	88	72	90	87	72	83	83	72	77	77	72	71	71	70	66	66	66	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	71	66	44	55	43	27
160 mph	8-20	72	64	60	72	64	60	72	64	60	72	64	60	72	64	60	71	64	60	67	63	60	62	62	60	58	58	58	55	55	55	53	53	53	50	50	50	48	48	48	55	38	35	38	28	26
	21-27	91	71	71	91	71	71	91	71	71	85	71	71	78	71	71	72	69	69	68	67	67	63	63	63	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	70	50	50	52	34	34
	28-60	84	80	66	84	80	66	84	80	66	84	80	66	81	78	66	75	75	66	71	71	66	66	66	65	63	63	63	59	59	59	56	56	56	54	54	54	52	52	52	65	60	35	46	36	22
170 mph	8-20	67	59	51	67	59	51	67	59	51	67	59	51	67	59	51	67	59	51	66	59	51	62	59	51	58	57	51	55	55	51	53	53	51	50	50	50	48	48	48	47	34	31	34	25	23
	21-27	84	66	66	84	66	66	84	66	66	83	66	66	76	66	66	71	66	66	67	64	64	63	62	62	60	60	60	56	56	56	54	54	54	51	51	51	49	49	49	64	41	41	44	30	30
	28-60	78	74	60	78	74	60	78	74	60	78	74	60	78	74	60	74	72	60	70	70	60	66	66	60	63	63	60	59	59	59	56	56	56	54	54	54	52	52	52	60	49	29	40	30	19
175 mph	8-20	65	53	47	65	53	47	65	53	47	65	53	47	65	53	47	65	53	47	64	53	47	62	53	47	58	53	47	55	53	47	53	53	47	50	50	47	48	48	47	43	32	29	32	24	22
	21-27	81	64	64	81	64	64	81	64	64	81	64	64	76	64	64	70	64	64	66	62	62	63	61	61	60	59	59	56	56	56	54	54	54	51	51	51	49	49	49	62	38	38	41	28	28
	28-60	75	71	57	75	71	57	75	71	57	75	71	57	75	71	57	73	70	57	69	68	57	66	66	57	62	62	57	59	59	57	56	56	56	54	54	54	52	52	52	58	43	26	38	27	17
180 mph	8-20	63	48	42	63	48	42	63	48	42	63	48	42	63	48	42	63	48	42	63	48	42	61	48	42	58	48	42	55	48	42	53	48	42	50	48	42	48	48	42	40	30	28	30	22	21
	21-27	78	61	61	78	61	61	78	61	61	78	61	61	75	61	61	70	61	61	66	61	61	62	59	59	59	58	58	56	56	56	54	54	54	51	51	51	49	49	49	60	36	36	39	27	27
	28-60	72	68	49	72	68	49	72	68	49	72	68	49	72	68	49	72	68	49	69	66	49	65	65	49	62	62	49	59	59	49	56	56	49	54	54	49	52	52	49	53	39	24	36	25	16

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

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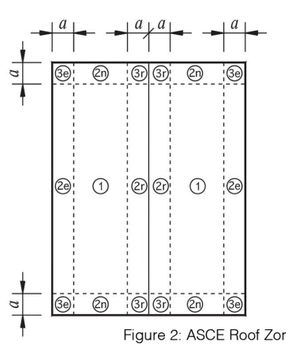
= Shaded cells indicate conditions in which UFO Mid Clamp connection capacity is exceeded. If such conditions are encountered contact techsupport@ironridge.com.

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

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8° - 27°			28° - 45°		
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e



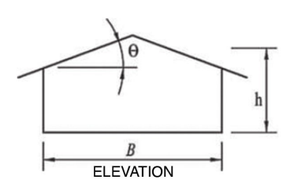


Figure 2: ASCE Roof Zone Locations for Gable Roofs

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 distances.

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

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

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

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: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	125	125	125	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	125	125	125	113	100	95
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	124	124	124	110	110
	28-60	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	120	120	120	120	104
95 mph	8-20	125	125	125	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	125	125	125	106	94	90
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	124	124	124	103	103
	28-60	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	120	120	117	118	98
100 mph	8-20	125	125	125	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	125	125	117	99	88	85
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	124	124	123	98	98
	28-60	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	120	120	111	110	92
105 mph	8-20	125	125	125	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	125	115	108	94	84	80
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	124	124	115	93	93
	28-60	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	120	120	105	104	87
110 mph	8-20	125	125	125	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	125	107	102	88	79	76
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	124	124	109	88	88
	28-60	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	120	113	100	99	83
115 mph	8-20	125	125	125	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	122	101	96	84	76	72
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	114	114	103	84	84
	28-60	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	120	106	96	94	79
120 mph	8-20	125	125	122	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	111	96	91	80	72	69
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	107	107	98	80	80
	28-60	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	120	101	91	89	75
130 mph	8-20	125	113	107	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	98	86	82	73	66	63
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	97	97	90	73	73
	28-60	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	112	112	90	84	81	68
140 mph	8-20	124	102	97	106	102	97	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	89	78	74	68	61	57
	21-27	124	115	115	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	113	88	88	83	67	67
	28-60	120	120	107	113	113	107	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	102	101	82	77	75	63
150 mph	8-20	107	93	88	106	93	88	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	80	71	68	63	53	48
	21-27	124	105	105	112	105	105	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	103	80	80	77	62	62
	28-60	120	120	98	113	113	98	99	99	98	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	94	92	75	72	69	57
160 mph	8-20	98	86	81	98	86	81	88	86	81	86	85	81	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	74	66	63	59	45	41
	21-27	124	96	96	112	96	96	97	95	95	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	94	74	74	71	57	57
	28-60	111	111	90	111	111	90	99	99	90	89	89	88	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	87	84	69	67	63	46
170 mph	8-20	90	79	75	90	79	75	88	79	75	86	79	75	77	77	74	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	69	61	56	52	39	36
	21-27	115	89	89	112	89	89	97	89	89	87	85	85	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	87	68	68	66	49	49
	28-60	103	102	83	103	102	83	99	99	83	89	89	83	82	82	81	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	80	77	63	63	59	37
175 mph	8-20	86	76	72	86	76	72	86	76	72	85	76	72	77	75	72	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	67	58	51	49	37	34
	21-27	110	86	86	110	86	86	97	86	86	86	83	83	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	84	66	66	64	46	46
	28-60	100	98	80	100	98	80	99	97	80	89	89	80	81	81	79	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	78	74	61	61	55	34
180 mph	8-20	83	73	70	83	73	70	83	73	70	83	73	70	77	73	70	70	70	68	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	64	53	46	46	34	32
	21-27	106	82	82	106	82	82	97	82	82	86	81	81	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	81	64	64	62	42	42
	28-60	96	94	77	96	94	77	96	94	77	89	89	77	81	81	77	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	75	71	58	59	50	31

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

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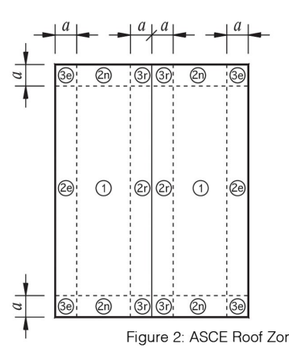
= Shaded cells indicate conditions in which UFO Mid Clamp connection capacity is exceeded. If such conditions are encountered contact techsupport@ironridge.com.

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

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8° - 27°			28° - 45°		
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e



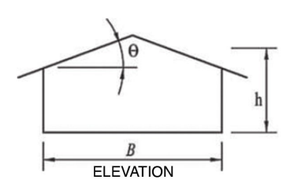


Figure 2: ASCE Roof Zone Locations for Gable Roofs

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 distances.

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

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

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

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: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	125	125	125	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	125	112	106	92	82	79
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	124	124	113	91	91
	28-60	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	120	120	104	102	86
95 mph	8-20	125	125	125	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	125	104	99	86	77	74
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	119	119	106	86	86
	28-60	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	120	109	98	96	81
100 mph	8-20	125	125	125	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	113	97	92	81	73	70
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	109	109	100	81	81
	28-60	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	120	102	93	91	76
105 mph	8-20	125	123	114	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	105	91	87	76	69	66
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	103	103	95	77	77
	28-60	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	120	96	88	86	72
110 mph	8-20	125	112	107	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	98	86	82	73	66	63
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	96	96	90	73	73
	28-60	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	112	111	90	84	81	68
115 mph	8-20	125	106	100	106	106	100	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	92	81	77	70	63	60
	21-27	124	122	122	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	120	91	91	85	69	69
	28-60	120	120	111	113	113	111	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	106	105	85	80	77	65
120 mph	8-20	119	100	95	106	100	95	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	87	77	73	67	60	55
	21-27	124	112	112	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	111	86	86	81	66	66
	28-60	120	120	105	113	113	105	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	100	99	80	76	73	62
130 mph	8-20	103	90	85	103	90	85	88	88	85	86	86	85	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	78	69	66	61	50	45
	21-27	124	101	101	112	101	101	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	99	78	78	74	60	60
	28-60	118	120	95	113	113	95	99	99	95	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	91	89	72	70	66	52
140 mph	8-20	93	82	78	93	82	78	88	82	78	86	82	78	77	77	76	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	71	63	60	55	42	38
	21-27	121	92	92	112	92	92	97	92	92	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	90	71	71	68	52	52
	28-60	107	106	86	107	106	86	99	99	86	89	89	86	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	83	80	66	64	61	40
150 mph	8-20	84	75	71	84	75	71	84	75	71	84	75	71	77	74	71	70	70	69	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	65	55	48	48	35	33
	21-27	108	84	84	108	84	84	97	84	84	86	82	82	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	82	65	65	63	44	44
	28-60	98	96	78	98	96	78	98	96	78	89	89	78	81	81	78	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	76	73	60	60	52	32
160 mph	8-20	77	69	65	77	69	65	77	69	65	77	69	65	76	69	65	70	68	65	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	61	44	39	42	31	29
	21-27	99	77	77	99	77	77	95	77	77	84	77	77	77	74	74	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	76	60	60	59	37	37
	28-60	90	88	72	90	88	72	90	88	72	87	85	72	80	80	72	73	73	71	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	70	66	44	53	42	26
170 mph	8-20	72	64	60	72	64	60	72	64	60	72	64	60	72	64	60	69	64	60	64	62	60	60	60	59	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	54	37	34	37	27	25
	21-27	91	71	71	91	71	71	91	71	71	83	71	71	76	71	71	70	68	68	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	70	49	49	51	33	33
	28-60	84	81	66	84	81	66	84	81	66	84	81	66	79	78	66	73	73	66	68	68	66	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	65	61	34	45	35	22
175 mph	8-20	69	61	57	69	61	57	69	61	57	69	61	57	69	61	57	68	61	57	64	61	57	60	59	57	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	50	35	32	35	26	24
	21-27	88	69	69	88	69	69	88	69	69	82	69	69	75	69	69	70	67	67	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	67	45	45	47	31	31
	28-60	81	78	64	81	78	64	81	78	64	81	78	64	78	76	64	72	72	64	68	68	64	64	64	63	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	63	58	31	42	32	20
180 mph	8-20	67	59	52	67	59	52	67	59	52	67	59	52	67	59	52	66	59	52	64	59	52	60	58	52	56	56	52	53	53	52	50	50	50	48	48	48	46	46	46	46	33	30	33	24	22
	21-27	84	66	66	84	66	66	84	66	66	81	66	66	74	66	66	69	65	65	65	63	63	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	65	41	41	44	29	29
	28-60	78	75	61	78	75	61	78	75	61	78	75	61	77	74	61	72	71	61	68	68	61	64	64	61	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	61	51	29	39	30	19

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

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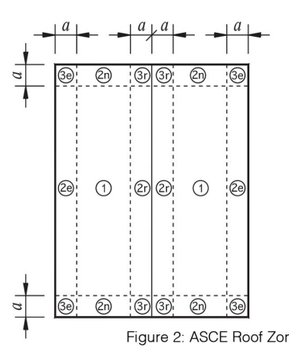
= Shaded cells indicate conditions in which UFO Mid Clamp connection capacity is exceeded. If such conditions are encountered contact techsupport@ironridge.com.

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

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8° - 27°			28° - 45°		
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e



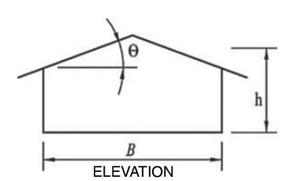


Figure 2: ASCE Roof Zone Locations for Gable Roofs

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 distances.

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

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

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

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: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	125	125	125	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	119	100	95	83	75	72
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	112	112	102	83	83
	28-60	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	120	105	95	93	78
95 mph	8-20	125	125	117	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	107	93	88	78	71	68
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	105	105	96	78	78
	28-60	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	120	120	98	89	87	73
100 mph	8-20	125	115	108	106	106	106	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	100	87	83	74	67	64
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	124	98	98	91	74	74
	28-60	120	120	120	113	113	113	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	113	113	92	85	82	69
105 mph	8-20	125	107	101	106	106	101	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	93	82	78	70	63	60
	21-27	124	124	124	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	121	92	92	86	70	70
	28-60	120	120	112	113	113	112	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	107	106	86	80	78	65
110 mph	8-20	120	100	95	106	100	95	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	87	77	73	67	60	55
	21-27	124	113	113	112	112	112	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	111	86	86	82	66	66
	28-60	120	120	105	113	113	105	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	101	99	81	76	74	62
115 mph	8-20	109	95	90	106	95	90	88	88	88	86	86	86	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	82	73	69	64	55	50
	21-27	124	106	106	112	106	106	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	105	82	82	78	63	63
	28-60	120	120	99	113	113	99	99	99	99	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	95	93	76	73	70	59
120 mph	8-20	103	89	85	103	89	85	88	88	85	86	86	84	77	77	77	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	77	69	65	61	49	45
	21-27	124	101	101	112	101	101	97	97	97	87	87	87	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	99	77	77	74	60	60
	28-60	118	119	94	113	113	94	99	99	94	89	89	89	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	91	88	72	69	66	51
130 mph	8-20	92	81	77	92	81	77	88	81	77	86	81	77	77	77	75	70	70	70	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	70	62	59	54	41	37
	21-27	119	91	91	112	91	91	97	91	91	87	86	86	78	78	78	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	89	70	70	68	51	51
	28-60	105	104	85	105	104	85	99	99	85	89	89	85	82	82	82	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	82	79	65	64	60	39
140 mph	8-20	83	73	70	83	73	70	83	73	70	83	73	70	77	73	70	70	70	68	64	64	64	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	64	53	46	46	34	32
	21-27	105	82	82	105	82	82	97	82	82	86	81	81	78	77	77	71	71	71	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	81	63	63	62	42	42
	28-60	96	94	77	96	94	77	96	94	77	89	89	77	81	81	76	73	73	73	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	75	71	58	59	50	31
150 mph	8-20	75	67	64	75	67	64	75	67	64	75	67	64	74	67	64	70	66	64	64	64	62	60	60	60	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	59	42	37	40	30	27
	21-27	96	75	75	96	75	75	94	75	75	84	75	75	77	73	73	71	70	70	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	74	57	57	56	36	36
	28-60	88	86	70	88	86	70	88	86	70	87	84	70	79	79	70	73	73	70	68	68	68	64	64	64	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	69	64	40	50	40	25
160 mph	8-20	70	62	58	70	62	58	70	62	58	70	62	58	70	62	58	68	62	58	64	61	58	60	60	58	56	56	56	53	53	53	50	50	50	48	48	48	46	46	46	50	35	32	35	26	24
	21-27	88	69	69	88	69	69	88	69	69	82	69	69	75	69	69	70	67	67	65	65	65	61	61	61	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	68	46	46	48	31	31
	28-60	81	78	64	81	78	64	81	78	64	81	78	64	78	76	64	73	73	64	68	68	64	64	64	63	60	60	60	57	57	57	54	54	54	52	52	52	50	50	50	63	59	32	43	33	20
170 mph	8-20	65	54	47	65	54	47	65	54	47	65	54	47	65	54	47	65	54	47	63	54	47	60	54	47	56	54	47	53	53	47	50	50	47	48	48	47	46	46	46	43	31	29	31	23	21
	21-27	82	64	64	82	64	64	82	64	64	80	64	64	74	64	64	68	63	63	64	62	62	61	60	60	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	63	37	37	41	28	28
	28-60	76	72	59	76	72	59	76	72	59	76	72	59	76	72	59	71	70	59	67	67	59	64	64	59	60	60	58	57	57	57	54	54	54	52	52	52	50	50	50	59	45	26	37	27	17
175 mph	8-20	63	49	43	63	49	43	63	49	43	63	49	43	63	49	43	63	49	43	62	49	43	60	49	43	56	49	43	53	49	43	50	49	43	48	48	43	46	46	43	40	29	27	29	22	20
	21-27	78	62	62	78	62	62	78	62	62	78	62	62	73	62	62	68	62	62	64	60	60	60	59	59	57	57	57	54	54	54	51	51	51	49	49	49	47	47	47	60	35	35	38	26	26
	28-60	73	69	52	73	69	52	73	69	52	73	69	52	73	69	52	71	68	52	67	66	52	63	63	52	60	60	52	57	57	52	54	54	52	52	52	52	50	50	50	54	39	24	35	25	16
180 mph	8-20	61	45	39	61	45	39	61	45	39	61	45	39	61	45	39	61	45	39	61	45	39	59	45	39	56	45	39	53	45	39	50	45	39	48	45	39	46	45	39	37	28	25	28	20	19
	21-27	76	60	60	76	60	60	76	60	60	76	60	60	72	60	60	67	60	60	63	59	59	60	57	57	57	56	56	54	54	54	51	51	51	49	49	49	47	47	47	57	33	33	36	25	25
	28-60	70	66	45	70	66	45	70	66	45	70	66	45	70	66	45	70	66	45	66	64	45	63	63	45	60	60	45	57	57	45	54	54	45	52	52	45	50	50	45	49	35	22	33	23	15

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

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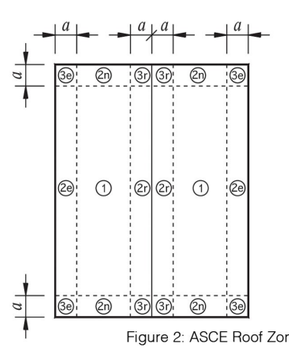
= Shaded cells indicate conditions in which UFO Mid Clamp connection capacity is exceeded. If such conditions are encountered contact techsupport@ironridge.com.

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

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8° - 27°			28° - 45°		
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e



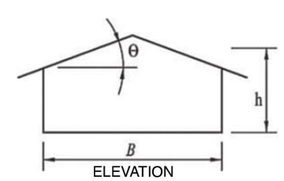


Figure 2: ASCE Roof Zone Locations for Gable Roofs

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 distances.

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

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

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

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: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	115	115	115	97	97	97	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	115	115	115	100	88	84
	21-27	113	113	113	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	113	113	113	113	97	97
	28-60	110	110	110	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	110	110	110	110	110	92
95 mph	8-20	115	115	115	97	97	97	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	115	115	111	94	83	79
	21-27	113	113	113	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	113	113	113	113	92	92
	28-60	110	110	110	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	110	110	110	104	104	87
100 mph	8-20	115	115	115	97	97	97	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	115	109	103	88	78	75
	21-27	113	113	113	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	113	113	113	107	86	86
	28-60	110	110	110	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	110	110	110	98	98	82
105 mph	8-20	115	115	115	97	97	97	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	115	102	97	83	74	71
	21-27	113	113	113	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	113	113	113	102	82	82
	28-60	110	110	110	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	110	110	108	93	93	78
110 mph	8-20	115	115	115	97	97	97	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	113	96	91	78	70	67
	21-27	113	113	113	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	113	108	108	96	78	78
	28-60	110	110	110	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	110	110	101	89	88	74
115 mph	8-20	115	115	112	97	97	97	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	106	90	86	74	67	64
	21-27	113	113	113	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	113	102	102	92	74	74
	28-60	110	110	110	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	110	110	96	85	83	70
120 mph	8-20	115	112	106	97	97	97	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	99	85	81	71	64	61
	21-27	113	113	113	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	113	96	96	87	71	71
	28-60	110	110	110	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	110	110	90	81	79	67
130 mph	8-20	115	100	95	97	97	95	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	88	77	73	64	58	52
	21-27	113	113	113	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	112	86	86	80	64	64
	28-60	110	110	106	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	100	101	81	74	72	61
140 mph	8-20	107	91	86	97	91	86	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	79	70	66	60	48	43
	21-27	113	102	102	103	102	102	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	101	78	78	73	59	59
	28-60	110	110	96	103	103	96	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	92	91	74	69	66	53
150 mph	8-20	96	83	79	96	83	79	81	81	79	79	79	78	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	72	64	60	52	40	37
	21-27	113	93	93	103	93	93	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	92	72	72	68	51	51
	28-60	108	109	88	103	103	88	90	90	88	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	84	82	67	64	61	42
160 mph	8-20	88	76	72	88	76	72	81	76	72	79	76	72	71	71	70	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	66	58	51	46	34	31
	21-27	111	86	86	103	86	86	89	86	86	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	84	66	66	63	43	43
	28-60	100	100	81	100	100	81	90	90	81	81	81	80	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	78	75	62	59	55	33
170 mph	8-20	80	70	67	80	70	67	80	70	67	79	70	67	71	69	67	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	61	47	41	40	30	28
	21-27	102	79	79	102	79	79	89	79	79	79	77	77	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	78	61	61	59	37	37
	28-60	93	92	74	93	92	74	90	90	74	81	81	74	75	75	73	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	72	69	55	53	44	27
175 mph	8-20	77	68	64	77	68	64	77	68	64	77	68	64	71	67	64	64	64	63	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	59	43	37	38	28	26
	21-27	98	76	76	98	76	76	89	76	76	79	75	75	72	71	71	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	75	59	59	55	35	35
	28-60	89	88	72	89	88	72	89	88	72	81	81	72	74	74	71	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	69	67	47	49	40	25
180 mph	8-20	74	65	62	74	65	62	74	65	62	74	65	62	70	65	62	64	64	61	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	55	39	34	36	27	24
	21-27	95	74	74	95	74	74	88	74	74	78	73	73	71	70	70	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	72	54	54	51	32	32
	28-60	86	85	69	86	85	69	86	85	69	81	81	69	74	74	69	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	67	64	40	46	37	23

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

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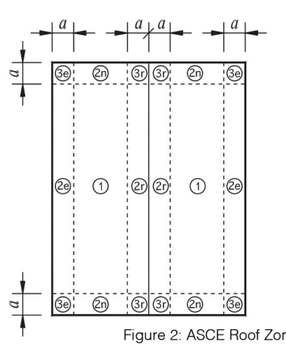
= Shaded cells indicate conditions in which UFO Mid Clamp connection capacity is exceeded. If such conditions are encountered contact techsupport@ironridge.com.

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

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8° - 27°			28° - 45°		
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e



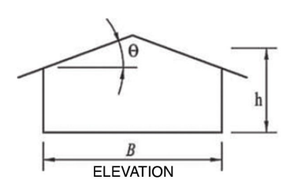


Figure 2: ASCE Roof Zone Locations for Gable Roofs

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 distances.

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

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

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

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: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	115	115	115	97	97	97	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	115	100	95	81	73	70
	21-27	113	113	113	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	113	112	112	100	81	81
	28-60	110	110	110	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	110	110	106	92	91	76
95 mph	8-20	115	115	115	97	97	97	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	109	93	88	76	68	65
	21-27	113	113	113	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	113	105	105	94	76	76
	28-60	110	110	110	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	110	110	98	87	86	72
100 mph	8-20	115	114	108	97	97	97	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	101	87	82	72	65	62
	21-27	113	113	113	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	113	98	98	89	72	72
	28-60	110	110	110	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	110	110	92	82	81	68
105 mph	8-20	115	107	101	97	97	97	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	94	81	77	68	61	58
	21-27	113	113	113	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	113	92	92	84	68	68
	28-60	110	110	110	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	106	107	86	78	76	64
110 mph	8-20	115	100	95	97	97	95	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	88	76	73	64	57	52
	21-27	113	113	113	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	111	86	86	79	64	64
	28-60	110	110	106	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	100	100	81	74	72	61
115 mph	8-20	111	94	89	97	94	89	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	83	72	69	61	51	46
	21-27	113	106	106	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	105	81	81	76	61	61
	28-60	110	110	100	103	103	100	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	95	94	76	71	68	58
120 mph	8-20	104	89	85	97	89	85	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	78	68	65	58	46	42
	21-27	113	100	100	103	100	100	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	99	77	77	72	58	58
	28-60	110	110	95	103	103	95	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	90	89	72	67	65	51
130 mph	8-20	93	80	76	93	80	76	81	80	76	79	79	76	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	69	62	58	49	38	34
	21-27	113	90	90	103	90	90	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	89	69	69	66	48	48
	28-60	105	105	85	103	103	85	90	90	85	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	81	80	65	62	59	38
140 mph	8-20	83	73	69	83	73	69	81	73	69	79	73	69	71	71	68	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	63	51	45	42	32	29
	21-27	106	82	82	103	82	82	89	82	82	79	78	78	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	80	63	63	60	40	40
	28-60	95	95	77	95	95	77	90	90	77	81	81	77	75	75	74	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	74	72	59	56	48	30
150 mph	8-20	75	67	63	75	67	63	75	67	63	75	67	63	71	66	63	64	64	62	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	57	40	35	37	27	25
	21-27	96	75	75	96	75	75	88	75	75	78	74	74	71	71	71	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	73	56	56	53	33	33
	28-60	88	86	70	88	86	70	88	86	70	81	81	70	74	74	70	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	68	65	43	47	38	24
160 mph	8-20	69	61	57	69	61	57	69	61	57	69	61	57	68	61	57	64	61	57	59	59	57	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	48	33	30	32	24	22
	21-27	88	69	69	88	69	69	86	69	69	77	69	69	70	67	67	65	64	64	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	67	45	45	45	29	29
	28-60	81	79	64	81	79	64	81	79	64	80	77	64	73	73	64	67	67	64	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	63	60	31	40	31	20
170 mph	8-20	63	53	46	63	53	46	63	53	46	63	53	46	63	53	46	62	53	46	59	53	46	55	53	46	51	51	46	49	49	46	46	46	46	44	44	44	42	42	42	40	28	26	28	21	19
	21-27	81	64	64	81	64	64	81	64	64	75	64	64	69	63	63	64	61	61	60	59	59	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	62	36	36	38	25	25
	28-60	75	73	59	75	73	59	75	73	59	75	73	59	72	70	59	67	67	59	62	62	59	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	58	47	25	34	26	16
175 mph	8-20	61	48	42	61	48	42	61	48	42	61	48	42	61	48	42	61	48	42	59	48	42	55	48	42	51	48	42	49	48	42	46	46	42	44	44	42	42	42	42	37	27	25	27	20	18
	21-27	78	61	61	78	61	61	78	61	61	75	61	61	68	61	61	63	60	60	59	58	58	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	60	33	33	35	24	24
	28-60	72	70	56	72	70	56	72	70	56	72	70	56	71	68	56	66	66	56	62	62	56	58	58	56	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	53	41	23	32	24	15
180 mph	8-20	59	43	38	59	43	38	59	43	38	59	43	38	59	43	38	59	43	38	58	43	38	55	43	38	51	43	38	49	43	38	46	43	38	44	43	38	42	42	38	35	25	23	25	19	17
	21-27	75	59	59	75	59	59	75	59	59	74	59	59	68	59	59	63	58	58	59	57	57	56	55	55	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	57	30	30	33	23	23
	28-60	70	67	49	70	67	49	70	67	49	70	67	49	70	67	49	65	64	49	62	62	49	58	58	49	55	55	49	52	52	49	49	49	49	47	47	47	45	45	45	48	35	21	30	22	14

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

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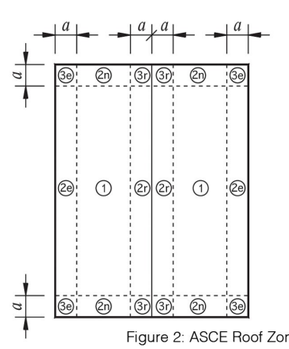
= Shaded cells indicate conditions in which UFO Mid Clamp connection capacity is exceeded. If such conditions are encountered contact techsupport@ironridge.com.

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

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8° - 27°			28° - 45°		
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e



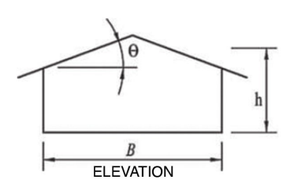


Figure 2: ASCE Roof Zone Locations for Gable Roofs

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 distances.

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

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

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

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: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	115	115	111	97	97	97	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	104	89	85	74	66	63
	21-27	113	113	113	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	113	100	100	91	73	73
	28-60	110	110	110	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	110	110	95	84	83	69
95 mph	8-20	115	109	103	97	97	97	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	96	83	79	69	62	60
	21-27	113	113	113	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	113	94	94	85	69	69
	28-60	110	110	110	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	108	109	88	79	78	65
100 mph	8-20	115	102	96	97	97	96	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	89	78	74	65	59	53
	21-27	113	113	113	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	113	87	87	80	65	65
	28-60	110	110	108	103	103	103	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	101	102	82	75	73	61
105 mph	8-20	112	95	90	97	95	90	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	83	73	69	62	52	47
	21-27	113	107	107	103	103	103	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	106	82	82	76	62	62
	28-60	110	110	101	103	103	101	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	96	95	77	71	69	58
110 mph	8-20	105	89	85	97	89	85	81	81	81	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	78	69	65	59	46	42
	21-27	113	101	101	103	101	101	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	99	77	77	72	59	59
	28-60	110	110	95	103	103	95	90	90	90	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	90	89	72	68	65	51
115 mph	8-20	98	84	80	97	84	80	81	81	80	79	79	79	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	73	65	61	54	42	38
	21-27	113	95	95	103	95	95	89	89	89	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	94	73	73	69	53	53
	28-60	110	110	89	103	103	89	90	90	89	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	85	84	68	64	62	44
120 mph	8-20	92	80	76	92	80	76	81	80	76	79	79	76	71	71	71	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	69	61	57	49	37	34
	21-27	113	90	90	103	90	90	89	88	88	79	79	79	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	88	69	69	65	47	47
	28-60	104	105	85	103	103	85	90	90	85	81	81	81	75	75	75	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	81	79	64	62	59	38
130 mph	8-20	82	72	68	82	72	68	81	72	68	79	72	68	71	70	68	64	64	64	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	62	50	43	42	31	28
	21-27	104	81	81	103	81	81	89	81	81	79	78	78	72	72	72	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	79	62	62	60	39	39
	28-60	94	94	76	94	94	76	90	90	76	81	81	76	75	75	74	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	73	71	58	55	47	29
140 mph	8-20	74	65	62	74	65	62	74	65	62	74	65	62	70	65	62	64	63	61	59	59	59	55	55	55	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	54	38	34	36	26	24
	21-27	94	73	73	94	73	73	88	73	73	78	73	73	71	70	70	65	65	65	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	72	53	53	51	32	32
	28-60	86	85	69	86	85	69	86	85	69	81	81	69	74	74	69	67	67	67	62	62	62	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	67	64	39	45	37	23
150 mph	8-20	67	60	53	67	60	53	67	60	53	67	60	53	67	60	53	64	60	53	59	58	53	55	55	53	51	51	51	49	49	49	46	46	46	44	44	44	42	42	42	45	31	28	31	23	21
	21-27	86	67	67	86	67	67	86	67	67	76	67	67	70	66	66	65	63	63	60	60	60	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	66	42	42	42	28	28
	28-60	79	77	63	79	77	63	79	77	63	79	76	63	72	72	63	67	67	63	62	62	61	58	58	58	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	61	58	29	38	30	18
160 mph	8-20	62	49	42	62	49	42	62	49	42	62	49	42	62	49	42	61	49	42	59	49	42	55	49	42	51	49	42	49	49	42	46	46	42	44	44	42	42	42	42	38	27	25	27	20	18
	21-27	79	62	62	79	62	62	79	62	62	75	62	62	68	62	62	63	60	60	60	58	58	56	56	56	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	60	33	33	36	24	24
	28-60	73	70	58	73	70	58	73	70	58	73	70	58	71	69	58	66	66	58	62	62	58	58	58	57	55	55	55	52	52	52	49	49	49	47	47	47	45	45	45	54	42	23	32	24	15
170 mph	8-20	56	40	35	56	40	35	56	40	35	56	40	35	56	40	35	56	40	35	56	40	35	55	40	35	51	40	35	49	40	35	46	40	35	44	40	35	42	40	35	32	24	22	24	18	16
	21-27	73	55	55	73	55	55	73	55	55	72	55	55	67	55	55	62	55	55	59	55	55	55	54	54	52	52	52	49	49	49	47	47	47	45	45	45	43	43	43	51	29	29	31	21	21
	28-60	67	65	41	67	65	41	67	65	41	67	65	41	67	65	41	65	63	41	61	61	41	58	58	41	55	55	41	52	52	41	49	49	41	47	47	41	45	45	41	44	31	19	28	20	13
175 mph	8-20	51	36	31	51	36	31	51	36	31	51	36	31	51	36	31	51	36	31	51	36	31	51	36	31	51	36	31	49	36	31	46	36	31	44	36	31	42	36	31	30	22	21	22	17	15
	21-27	70	49	49	70	49	49	70	49	49	70	49	49	66	49	49	62	49	49	58	49	49	55	49	49	52	49	49	49	49	49	47	47	47	45	45	45	43	43	43	46	27	27	29	20	20
	28-60	65	62	35	65	62	35	65	62	35	65	62	35	65	62	35	64	61	35	61	60	35	57	57	35	55	55	35	52	52	35	49	49	35	47	47	35	45	45	35	39	29	18	27	19	12
180 mph	8-20	48	33	30	48	33	30	48	33	30	48	33	30	48	33	30	48	33	30	48	33	30	48	33	30	48	33	30	48	33	30	46	33	30	44	33	30	42	33	30	29	21	20	21	16	14
	21-27	68	45	45	68	45	45	68	45	45	68	45	45	66	45	45	61	45	45	58	45	45	55	45	45	52	45	45	49	45	45	47	45	45	45	45	45	43	43	43	41	26	26	27	19	19
	28-60	63	60	31	63	60	31	63	60	31	63	60	31	63	60	31	63	60	31	60	58	31	57	57	31	54	54	31	52	52	31	49	49	31	47	47	31	45	45	31	36	26	16	25	17	

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

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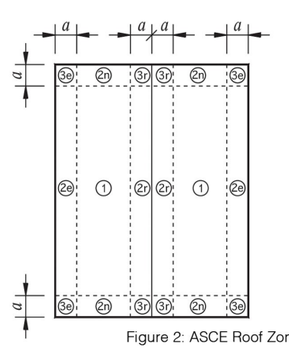
= Shaded cells indicate conditions in which UFO Mid Clamp connection capacity is exceeded. If such conditions are encountered contact techsupport@ironridge.com.

= Contact techsupport@ironridge.com

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

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8° - 27°			28° - 45°		
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e



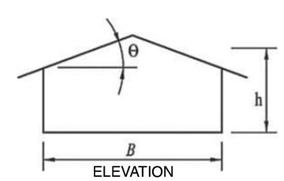


Figure 2: ASCE Roof Zone Locations for Gable Roofs

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 distances.

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

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

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

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 B

Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	110	110	110	93	93	93	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	110	110	110	93	81	78
	21-27	108	108	108	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	108	108	108	108	90	90
	28-60	105	105	105	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	105	105	105	102	103	86
95 mph	8-20	110	110	110	93	93	93	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	110	108	103	87	77	73
	21-27	108	108	108	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	108	108	108	105	85	85
	28-60	105	105	105	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	105	105	105	96	97	81
100 mph	8-20	110	110	110	93	93	93	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	110	101	96	82	72	69
	21-27	108	108	108	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	108	108	108	99	80	80
	28-60	105	105	105	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	105	105	105	91	91	76
105 mph	8-20	110	110	110	93	93	93	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	110	95	90	77	68	65
	21-27	108	108	108	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	108	106	106	94	76	76
	28-60	105	105	105	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	105	105	101	87	86	72
110 mph	8-20	110	110	110	93	93	93	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	105	89	84	73	65	62
	21-27	108	108	108	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	108	100	100	89	72	72
	28-60	105	105	105	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	105	105	95	82	82	68
115 mph	8-20	110	110	104	93	93	93	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	98	84	79	69	62	59
	21-27	108	108	108	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	108	94	94	85	68	68
	28-60	105	105	105	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	105	105	89	79	77	65
120 mph	8-20	110	104	98	93	93	93	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	92	79	75	65	59	54
	21-27	108	108	108	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	108	89	89	81	65	65
	28-60	105	105	105	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	103	105	84	75	74	62
130 mph	8-20	110	93	88	93	93	88	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	82	71	68	60	48	44
	21-27	108	105	105	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	104	80	80	74	60	60
	28-60	105	105	99	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	93	94	76	69	67	55
140 mph	8-20	99	84	80	93	84	80	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	74	65	61	51	40	36
	21-27	108	95	95	98	95	95	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	94	73	73	68	51	51
	28-60	105	105	90	99	99	90	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	85	84	68	64	61	43
150 mph	8-20	89	77	73	89	77	73	77	77	73	76	76	73	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	67	59	52	45	34	31
	21-27	108	87	87	98	87	87	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	85	66	66	63	43	43
	28-60	101	102	82	99	99	82	86	86	82	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	78	77	62	59	55	34
160 mph	8-20	81	71	67	81	71	67	77	71	67	76	71	67	68	68	66	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	61	47	41	39	29	27
	21-27	103	80	80	98	80	80	85	80	80	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	78	61	61	58	36	36
	28-60	93	93	75	93	93	75	86	86	75	78	78	75	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	72	70	57	52	44	27
170 mph	8-20	75	65	62	75	65	62	75	65	62	74	65	62	68	65	62	61	61	60	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	53	38	34	34	26	23
	21-27	95	74	74	95	74	74	85	74	74	75	72	72	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	72	54	54	50	31	31
	28-60	86	86	69	86	86	69	86	85	69	78	78	69	71	71	68	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	67	65	42	44	36	23
175 mph	8-20	72	63	60	72	63	60	72	63	60	72	63	60	67	63	60	61	61	59	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	49	35	30	32	24	22
	21-27	91	71	71	91	71	71	84	71	71	75	70	70	68	67	67	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	70	48	48	46	29	29
	28-60	83	82	67	83	82	67	83	82	67	77	77	67	71	71	67	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	64	62	35	41	33	21
180 mph	8-20	69	61	56	69	61	56	69	61	56	69	61	56	67	61	56	61	59	56	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	46	32	28	31	23	21
	21-27	88	68	68	88	68	68	84	68	68	74	68	68	68	65	65	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	67	43	43	43	27	27
	28-60	80	79	64	80	79	64	80	79	64	77	76	64	70	70	64	64	64	63	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	62	60	30	38	30	19

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

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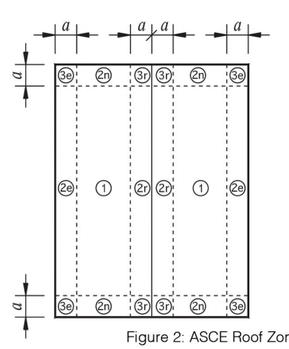
= Shaded cells indicate conditions in which UFO Mid Clamp connection capacity is exceeded. If such conditions are encountered contact techsupport@ironridge.com.

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

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8° - 27°			28° - 45°		
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e



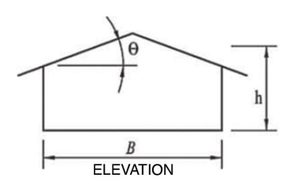


Figure 2: ASCE Roof Zone Locations for Gable Roofs

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 distances.

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

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

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

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: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	110	110	110	93	93	93	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	110	93	88	75	67	64
	21-27	108	108	108	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	108	104	104	92	75	75
	28-60	105	105	105	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	105	105	99	85	85	71
95 mph	8-20	110	110	108	93	93	93	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	101	86	82	71	63	61
	21-27	108	108	108	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	108	97	97	87	70	70
	28-60	105	105	105	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	105	105	92	80	79	67
100 mph	8-20	110	106	100	93	93	93	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	94	80	76	67	60	55
	21-27	108	108	108	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	108	91	91	82	66	66
	28-60	105	105	105	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	105	105	86	76	75	63
105 mph	8-20	110	99	94	93	93	93	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	87	75	72	63	54	49
	21-27	108	108	108	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	108	85	85	78	63	63
	28-60	105	105	105	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	99	100	80	72	71	59
110 mph	8-20	110	93	88	93	93	88	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	82	71	67	59	48	44
	21-27	108	105	105	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	103	80	80	74	60	60
	28-60	105	105	99	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	93	93	75	69	67	55
115 mph	8-20	103	87	83	93	87	83	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	77	67	64	54	43	39
	21-27	108	99	99	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	97	75	75	70	55	55
	28-60	105	105	93	99	99	93	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	88	88	71	65	63	48
120 mph	8-20	97	83	78	93	83	78	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	72	63	60	50	39	35
	21-27	108	93	93	98	93	93	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	92	71	71	67	49	49
	28-60	105	105	88	99	99	88	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	84	83	67	62	60	41
130 mph	8-20	86	74	71	86	74	71	77	74	71	76	74	71	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	64	54	47	42	32	29
	21-27	108	84	84	98	84	84	85	83	83	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	82	64	64	61	40	40
	28-60	97	98	79	97	98	79	86	86	79	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	76	74	60	57	51	31
140 mph	8-20	77	67	64	77	67	64	77	67	64	75	67	64	68	66	64	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	57	42	36	36	27	25
	21-27	98	76	76	98	76	76	85	76	76	76	73	73	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	75	58	58	53	33	33
	28-60	89	89	72	89	89	72	86	86	72	78	78	72	71	71	70	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	69	67	49	47	39	24
150 mph	8-20	70	62	58	70	62	58	70	62	58	70	62	58	67	62	58	61	60	58	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	47	33	29	31	23	21
	21-27	89	69	69	89	69	69	84	69	69	75	69	69	68	66	66	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	68	46	46	44	28	28
	28-60	82	80	65	82	80	65	82	80	65	77	77	65	70	70	65	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	63	61	33	40	32	20
160 mph	8-20	64	53	46	64	53	46	64	53	46	64	53	46	64	53	46	61	53	46	56	53	46	52	52	46	49	49	46	46	46	46	44	44	44	42	42	42	41	41	41	40	27	25	27	20	19
	21-27	82	64	64	82	64	64	82	64	64	73	64	64	67	63	63	62	60	60	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	63	36	36	37	25	25
	28-60	75	74	60	75	74	60	75	74	60	75	73	60	69	69	60	64	64	60	60	60	60	59	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	58	51	25	34	26	16
170 mph	8-20	59	43	38	59	43	38	59	43	38	59	43	38	59	43	38	58	43	38	56	43	38	52	43	38	49	43	38	46	43	38	44	43	38	42	42	38	41	41	38	34	24	22	24	18	17
	21-27	76	59	59	76	59	59	76	59	59	72	59	59	65	59	59	61	57	57	57	56	56	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	57	30	30	32	22	22
	28-60	70	68	51	70	68	51	70	68	51	70	68	51	68	66	51	63	63	51	59	59	51	56	56	51	52	52	51	50	50	50	47	47	47	45	45	45	43	43	43	48	36	21	29	22	13
175 mph	8-20	54	39	34	54	39	34	54	39	34	54	39	34	54	39	34	54	39	34	54	39	34	52	39	34	49	39	34	46	39	34	44	39	34	42	39	34	41	39	34	31	23	21	23	17	16
	21-27	73	54	54	73	54	54	73	54	54	71	54	54	65	54	54	60	54	54	56	54	54	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	51	28	28	30	20	20
	28-60	67	65	43	67	65	43	67	65	43	67	65	43	67	64	43	63	62	43	59	59	43	56	56	43	52	52	43	50	50	43	47	47	43	45	45	43	43	43	43	43	32	19	27	20	12
180 mph	8-20	50	35	31	50	35	31	50	35	31	50	35	31	50	35	31	50	35	31	50	35	31	50	35	31	49	35	31	46	35	31	44	35	31	42	35	31	41	35	31	29	22	20	22	16	15
	21-27	70	49	49	70	49	49	70	49	49	70	49	49	64	49	49	60	49	49	56	49	49	53	49	49	50	49	49	47	47	47	45	45	45	43	43	43	41	41	41	46	26	26	28	19	19
	28-60	65	62	36	65	62	36	65	62	36	65	62	36	65	62	36	62	61	36	58	58	36	55	55	36	52	52	36	50	50	36	47	47	36	45	45	36	43	43	36	39	28	17	26	18	

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

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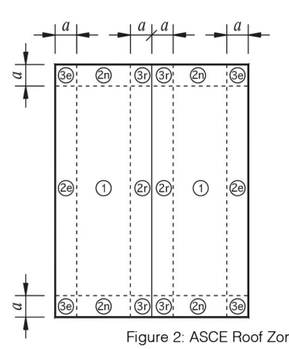
= Shaded cells indicate conditions in which UFO Mid Clamp connection capacity is exceeded. If such conditions are encountered contact techsupport@ironridge.com.

= Contact techsupport@ironridge.com

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

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8° - 27°			28° - 45°		
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e



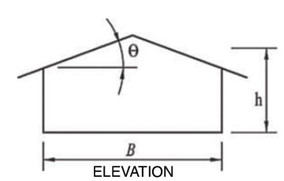


Figure 2: ASCE Roof Zone Locations for Gable Roofs

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 distances.

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

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

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

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 D

Wind Speed (mph)	Roof Slope (deg.)	Ground Snow: 0 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.		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
90 mph	8-20	110	109	103	93	93	93	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	97	83	79	68	61	59
	21-27	108	108	108	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	108	93	93	84	68	68
	28-60	105	105	105	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	105	105	88	78	77	64
95 mph	8-20	110	101	96	93	93	93	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	90	77	73	64	56	51
	21-27	108	108	108	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	108	87	87	79	64	64
	28-60	105	105	105	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	101	102	82	74	72	60
100 mph	8-20	110	94	89	93	93	89	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	83	72	68	60	50	45
	21-27	108	106	106	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	105	81	81	75	60	60
	28-60	105	105	100	99	99	99	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	94	95	77	70	68	57
105 mph	8-20	104	88	84	93	88	84	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	77	68	64	55	44	40
	21-27	108	100	100	98	98	98	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	98	76	76	71	56	56
	28-60	105	105	94	99	99	94	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	89	89	72	66	64	49
110 mph	8-20	97	83	79	93	83	79	77	77	77	76	76	76	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	72	64	60	50	39	35
	21-27	108	94	94	98	94	94	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	92	72	72	67	49	49
	28-60	105	105	88	99	99	88	86	86	86	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	84	83	67	63	61	42
115 mph	8-20	91	78	74	91	78	74	77	77	74	76	76	74	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	68	60	54	46	35	32
	21-27	108	88	88	98	88	88	85	85	85	76	76	76	68	68	68	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	87	68	68	64	44	44
	28-60	102	104	83	99	99	83	86	86	83	78	78	78	71	71	71	64	64	64	60	60	60	56	56	56	52	52	52	50	50	50	47	47	47	45	45	45	43	43	43	79	78	63	60	58	35
120 mph	8-20	86	74	70	86	74	70	77	74	70	76	73	70	68	68	68	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	64	54	46	42	32	29
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130 mph	8-20	76	67	63	76	67	63	76	67	63	75	67	63	68	66	63	61	61	61	56	56	56	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	56	40	35	35	26	24
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140 mph	8-20	69	60	55	69	60	55	69	60	55	69	60	55	67	60	55	61	59	55	56	56	55	52	52	52	49	49	49	46	46	46	44	44	44	42	42	42	41	41	41	45	31	28	30	23	21
	21-27	88	68	68	88	68	68	84	68	68	74	68	68	68	65	65	62	62	62	57	57	57	53	53	53	50	50	50	47	47	47	45	45	45	43	43	43	41	41	41	67	43	43	43	27	27
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170 mph	8-20	47	32	29	47	32	29	47	32	29	47	32	29	47	32	29	47	32	29	47	32	29	47	32	29	47	32	29	46	32	29	44	32	29	42	32	29	41	32	29	27	20	19	20	15	14
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	28-60	58	51	25	58	51	25	58	51	25	58	51	25	58	51	25	58	51	25	57	51	25	54	51	25	52	51	25	49	49	25	47	47	25	45	45	25	43	43	25	29	22	14	22	14	

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

REV 07/16/2024

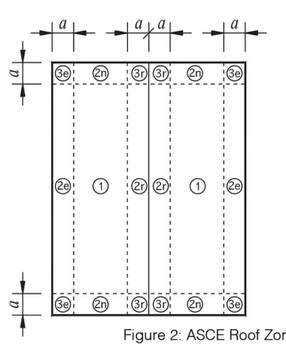
= Shaded cells indicate conditions in which UFO Mid Clamp connection capacity is exceeded. If such conditions are encountered contact techsupport@ironridge.com.

= Contact techsupport@ironridge.com

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

Grouping of ASCE 7-16 Roof Zones (Gable)

Roof Slope	8° - 27°			28° - 45°		
Group	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
ASCE 7-16 Roof Zones	1 2e	2n 2r 3e	3r	1 2e 2r	2n 3r	3e



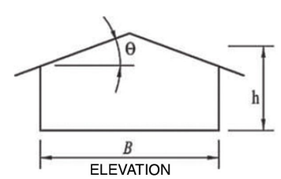


Figure 2: ASCE Roof Zone Locations for Gable Roofs

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 distances.

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

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

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

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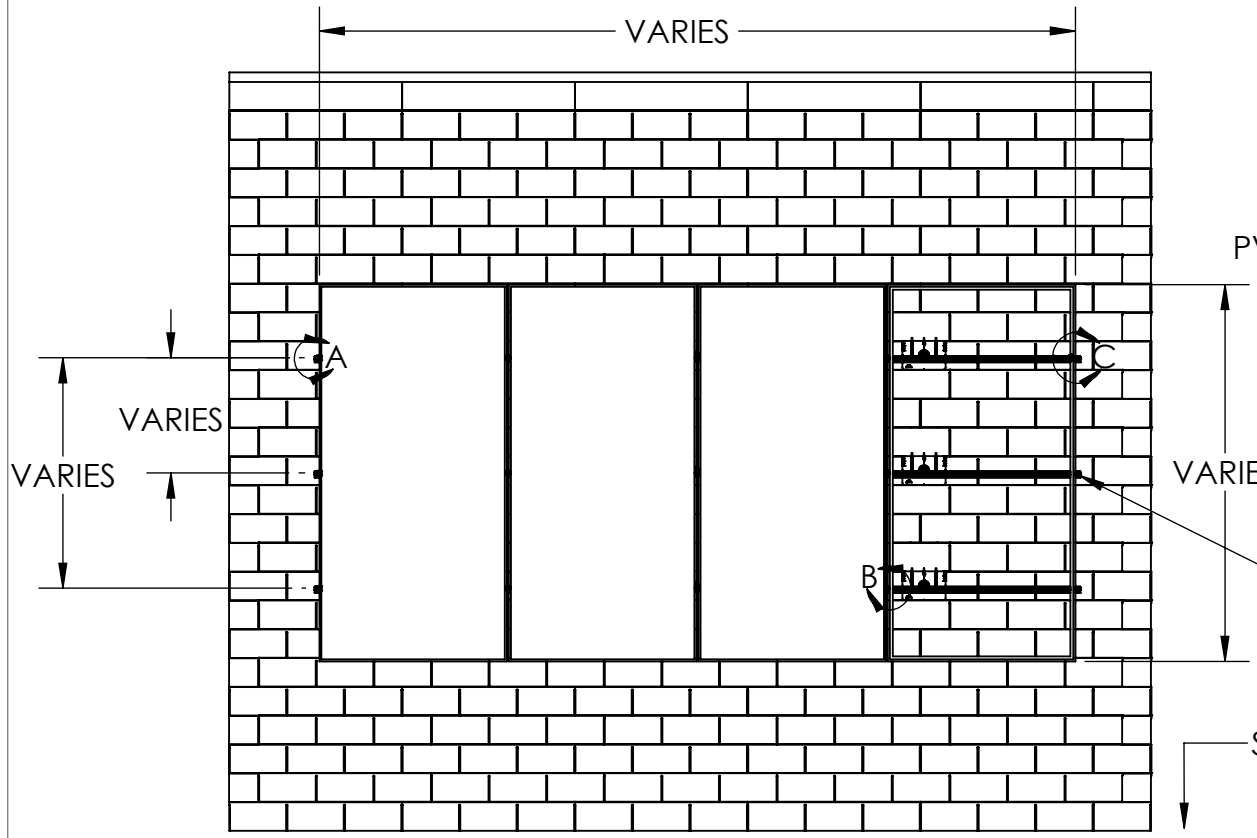
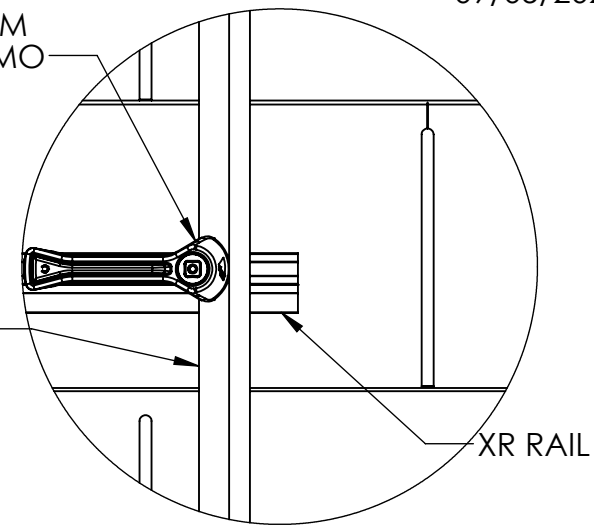
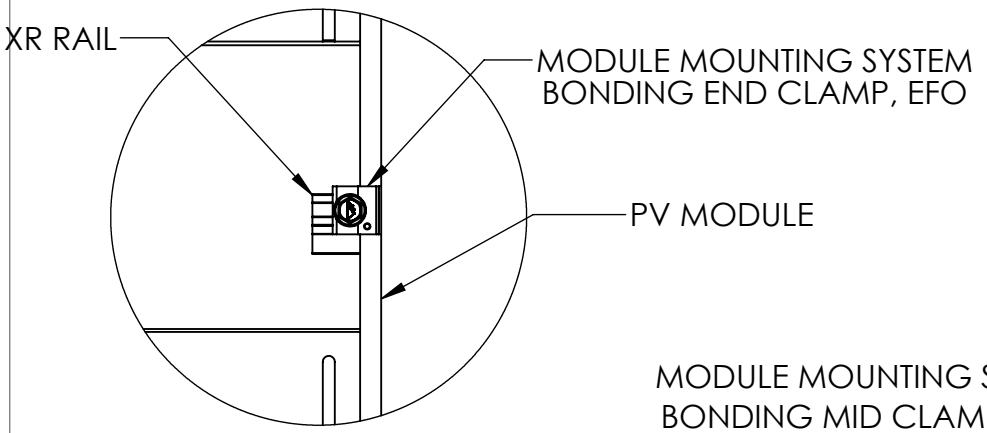


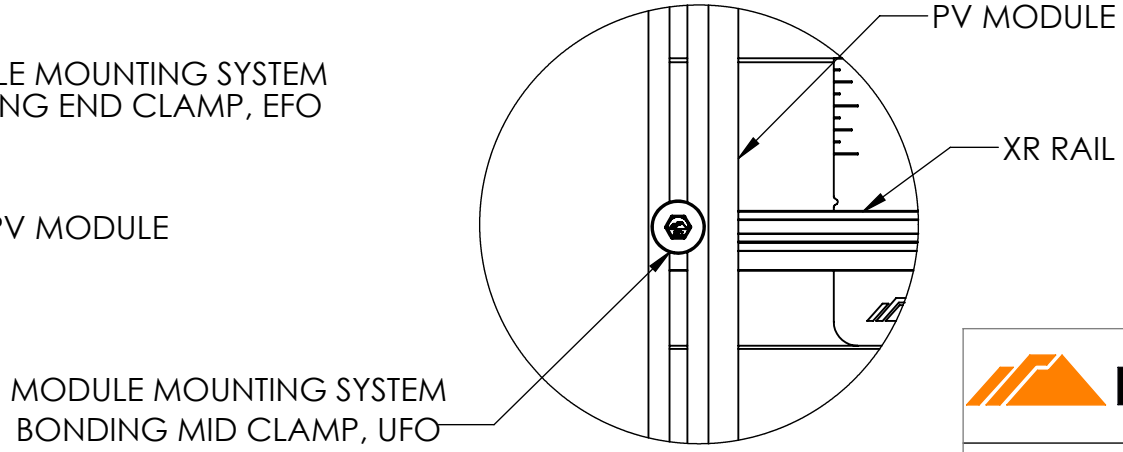
PLAN VIEW



DETAIL C
(MODULE GLASS REMOVED FOR CLARITY)



DETAIL A



DETAIL B
(MODULE GLASS REMOVED FOR CLARITY)

EXHIBIT: EX-0015 - page 1 of 2

IRONRIDGE

FLUSH MOUNT SYSTEM

SIZE	DWG. NO.	
--	EX-0015	
SCALE: NTS	WEIGHT: N/A	SHEET 1 OF 2

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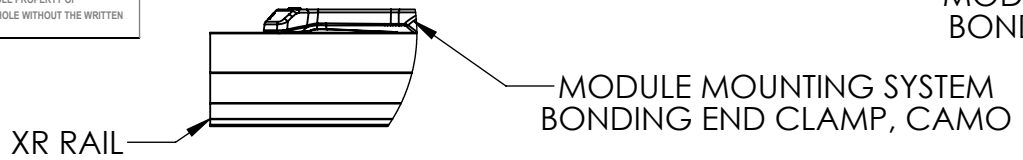

DETAIL D
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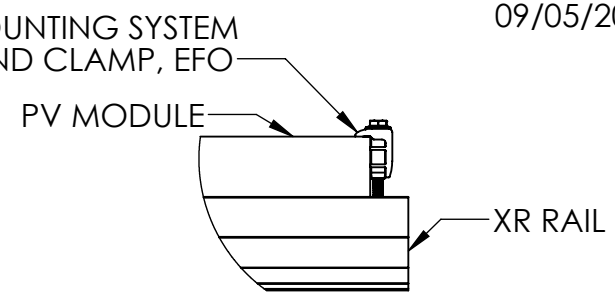
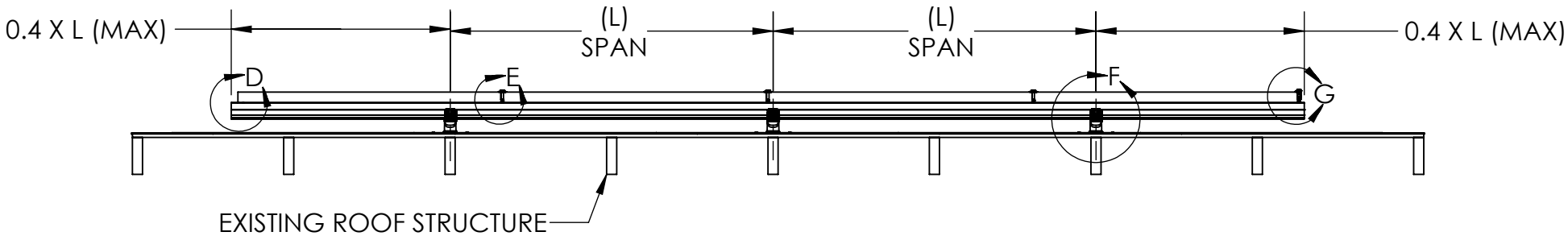
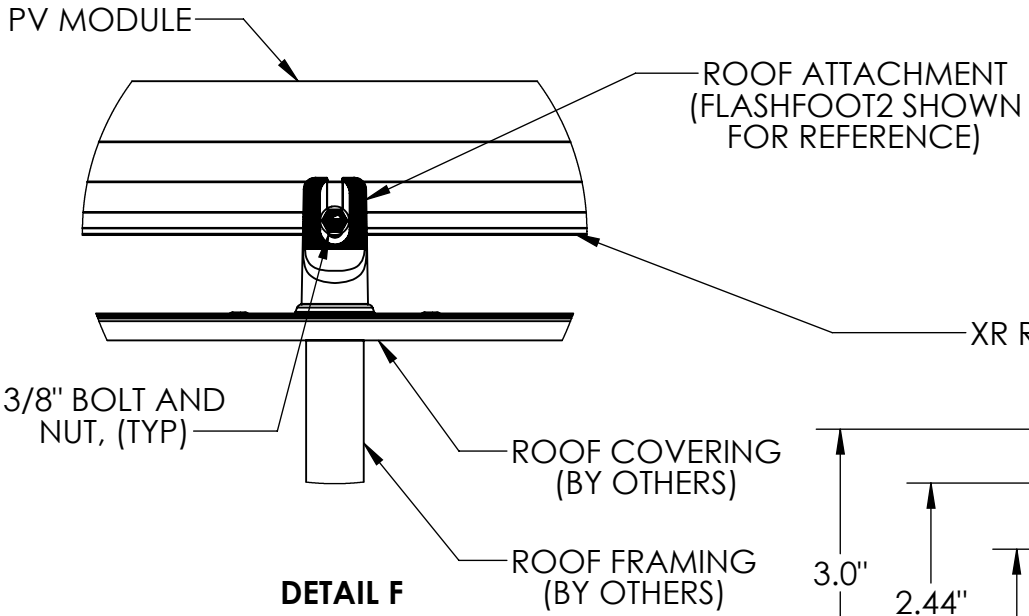


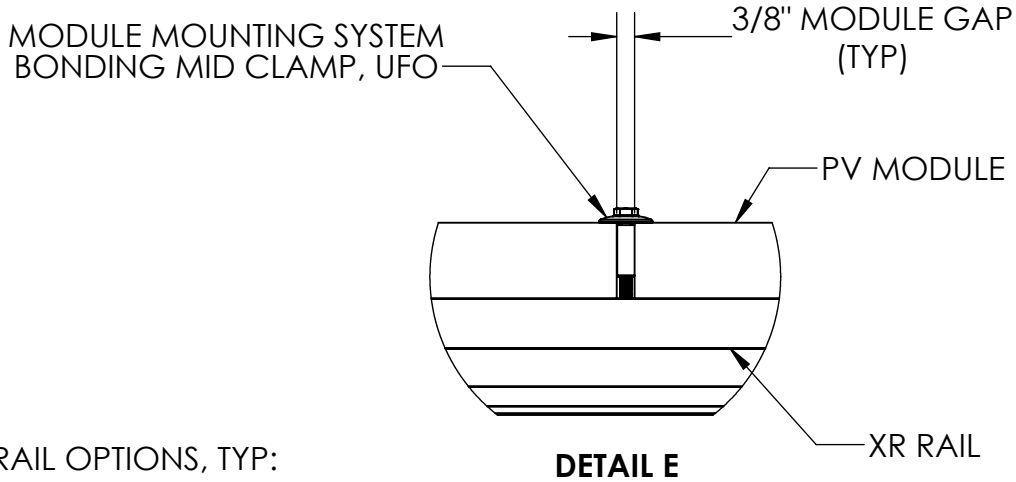
DETAIL G

PLAN VIEW





DETAIL F



DETAIL E

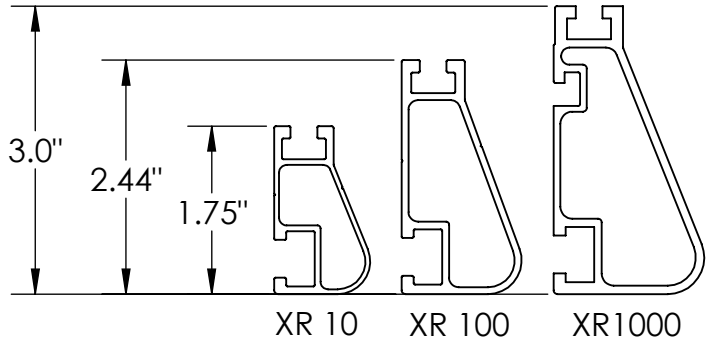


EXHIBIT: EX-0015 - page 2 of 2

IRONRIDGE

FLUSH MOUNT SYSTEM

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