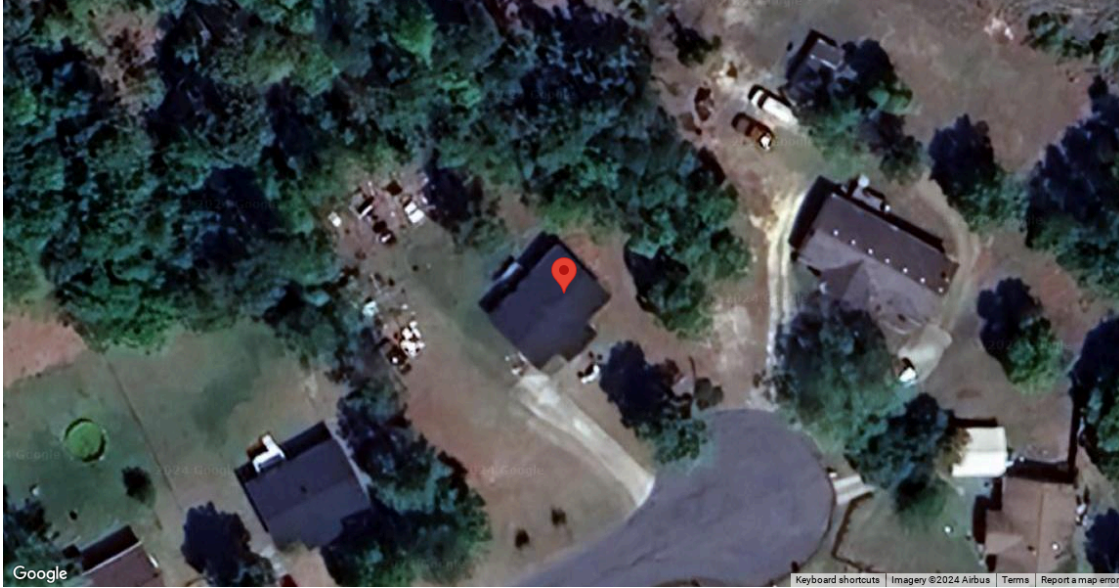


Project Details			
<b>Name</b>	William Finney	<b>Date</b>	04/05/2024
<b>Location</b>	163 Valley Forge Way North, Cameron, NC 28326	<b>Total modules</b>	20
<b>Module</b>	Jinko: JKM395M-72HL-V (40mm)	<b>Total watts</b>	7,900
<b>Dimensions</b>	Dimensions: 79.06" x 39.45" x 1.57" (2008.0mm x 1002.0mm x 40.0mm)	<b>Attachments</b>	52
<b>ASCE</b>	7-10	<b>Rails per row</b>	2



System Weight	
<b>Total system weight</b>	1,133.6 lbs
<b>Weight/attachment</b>	21.8 lbs
<b>Racking weight</b>	141.4 lbs
<b>Distributed weight</b>	2.6 psf

Load Assumptions	
<b>Wind exposure</b>	C
<b>Wind speed</b>	120 mph
<b>Ground snow load</b>	15 psf
<b>Attachment spacing portrait</b>	4.0'
<b>Attachment spacing landscape</b>	4.0'

Roof Information			
<b>Roof Material Family</b>	Comp Shingle	<b>Roof material</b>	Comp Shingle
<b>Risk category</b>	II	<b>Roof attachment</b>	Halo UltraGrip (Rafter attached)
		<b>Staggered attachments</b>	Yes
<b>Attachment hardware</b>	T Bolt		
<b>Specific gravity</b>	0.42		

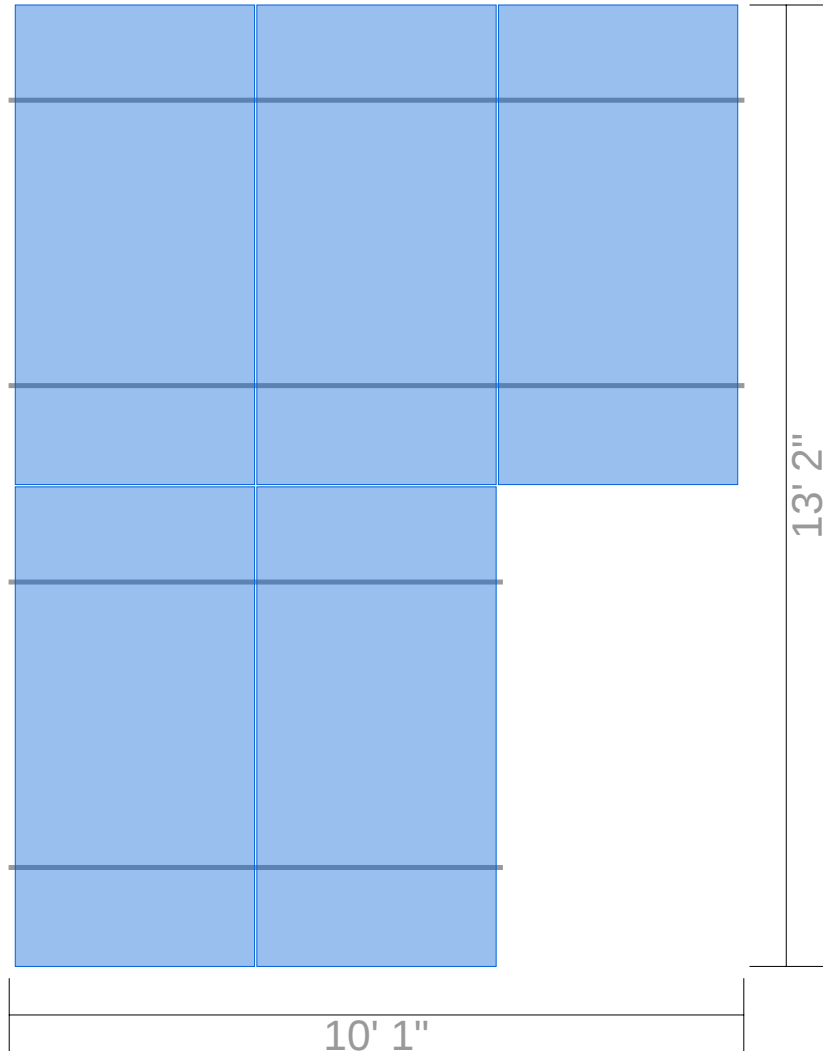
**Roof Plane A**

<b>Height</b>	15 ft	<b>Slope</b>	18 °	<b>Rafter spacing</b>	24 in
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**Roof Plane A: Roof Section 1**

Details		Weights
Panels: 5	Provided rail: 56' [4 x 168"]	Total weight: 282.7 lbs
Rail orientation: East-West	Attachments: 12	Weight/attachment: 23.6 lbs
Panel orientation: Portrait	Splices: 0	Total Area: 111.1 sq ft
Entry type: Graphical	Clamps: 14	Distributed weight: 2.5 psf

**Diagram**



**Segments**

Identifier	Columns	Row length	Rail length	Cantilever	Rail	Attachments	Splices	Clamps
A	3	10' 1"	10' 1"	1' 1"	28' [2 x 168"]	7	0	8
B	2	6' 9"	6' 9"	1' 5"	28' [2 x 168"]	5	0	6

**Span Details XR10 - Portrait**

Zone	Max span	Max cantilever
1	5' 6"	2' 2"
2	5' 4"	2' 2"
3	4' 3"	1' 8"

**Reaction Forces XR10 - Portrait**

Zone	Uplift (PSF)	Down (lbs)	Uplift (lbs)	Lateral Par (lbs)	Lateral Perp (lbs)
1	14.2	242	164	59	5
2	26.1	242	329	59	5
3	40.3	242	518	59	5

**Attachment Span Details Halo UltraGrip (Rafter attached) - Portrait**

Zone	Max attachment span
1	5' 6"
2	5' 4"
3	4' 3"

**\*Optional - Attachment Span Details Halo UltraGrip (Deck attached) - Portrait**

Zone	Max attachment span
1	3' 9"
2	2' 3"
3	1' 5"

\* Based on minimum 7/16" sheathing thickness

**Span Details XR10 - Landscape**

Zone	Max span	Max cantilever
1	7' 6"	3'
2	7' 1"	2' 10"
3	5' 11"	2' 4"

**Reaction Forces XR10 - Landscape**

Zone	Uplift (PSF)	Down (lbs)	Uplift (lbs)	Lateral Par (lbs)	Lateral Perp (lbs)
1	14.2	121	82	29	2
2	26.1	121	166	29	2
3	40.3	121	260	29	2

**Attachment Span Details Halo UltraGrip (Rafter attached) - Landscape**

Zone	Max attachment span
1	7' 6"
2	7' 1"
3	5' 11"

**\*Optional - Attachment Span Details Halo UltraGrip (Deck attached) - Landscape**

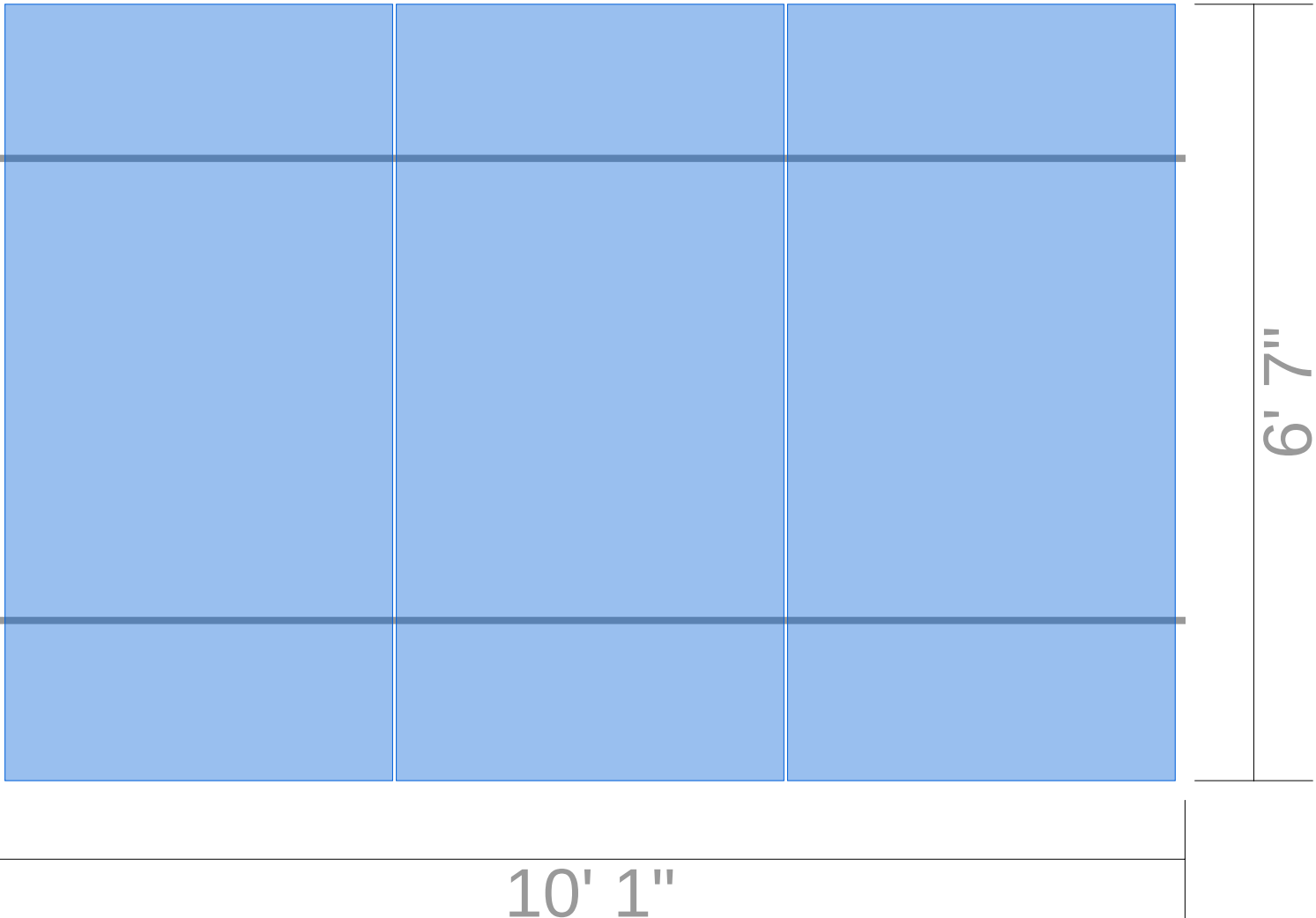
Zone	Max attachment span
1	7' 6"
2	4' 7"
3	2' 11"

\* Based on minimum 7/16" sheathing thickness

**Roof Plane A: Roof Section 2**

Details		Weights
Panels: 3	Provided rail: 28' [2 x 168"]	Total weight: 166.9 lbs
Rail orientation: East-West	Attachments: 7	Weight/attachment: 23.8 lbs
Panel orientation: Portrait	Splices: 0	Total Area: 66.5 sq ft
Entry type: Graphical	Clamps: 8	Distributed weight: 2.5 psf

**Diagram**



**Segments**

Identifier	Columns	Row length	Rail length	Cantilever	Rail	Attachments	Splices	Clamps
A	3	10' 1"	10' 1"	1' 1"	28' [2 x 168"]	7	0	8

**Span Details XR10 - Portrait**

Zone	Max span	Max cantilever
1	5' 6"	2' 2"
2	5' 4"	2' 2"
3	4' 3"	1' 8"

**Reaction Forces XR10 - Portrait**

Zone	Uplift (PSF)	Down (lbs)	Uplift (lbs)	Lateral Par (lbs)	Lateral Perp (lbs)
1	14.2	242	164	59	5
2	26.1	242	329	59	5
3	40.3	242	518	59	5

**Attachment Span Details Halo UltraGrip (Rafter attached) - Portrait**

Zone	Max attachment span
1	5' 6"
2	5' 4"
3	4' 3"

**\*Optional - Attachment Span Details Halo UltraGrip (Deck attached) - Portrait**

Zone	Max attachment span
1	3' 9"
2	2' 3"
3	1' 5"

\* Based on minimum 7/16" sheathing thickness

**Span Details XR10 - Landscape**

Zone	Max span	Max cantilever
1	7' 6"	3'
2	7' 1"	2' 10"
3	5' 11"	2' 4"

**Reaction Forces XR10 - Landscape**

Zone	Uplift (PSF)	Down (lbs)	Uplift (lbs)	Lateral Par (lbs)	Lateral Perp (lbs)
1	14.2	121	82	29	2
2	26.1	121	166	29	2
3	40.3	121	260	29	2

**Attachment Span Details Halo UltraGrip (Rafter attached) - Landscape**

Zone	Max attachment span
1	7' 6"
2	7' 1"
3	5' 11"

**\*Optional - Attachment Span Details Halo UltraGrip (Deck attached) - Landscape**

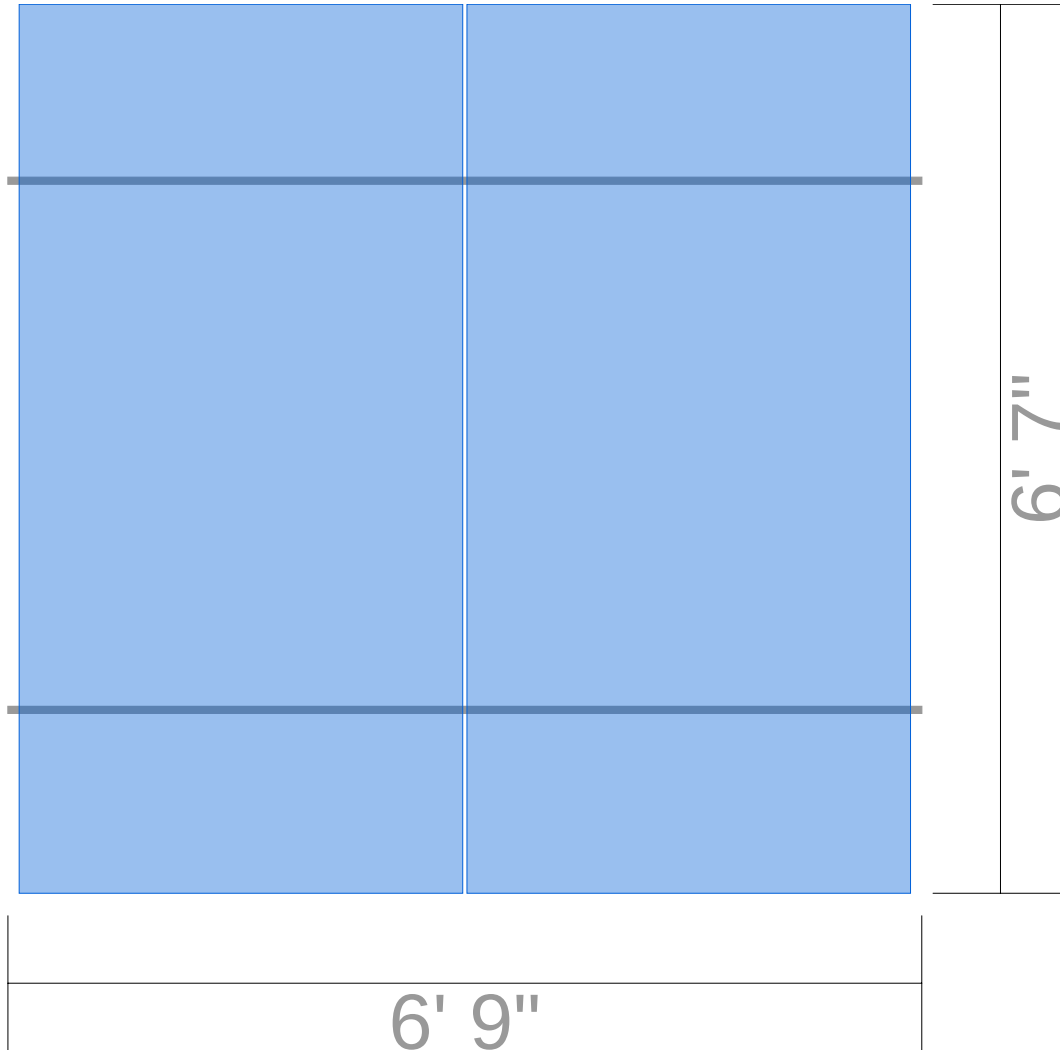
Zone	Max attachment span
1	7' 6"
2	4' 7"
3	2' 11"

\* Based on minimum 7/16" sheathing thickness

**Roof Plane A: Roof Section 3**

Details		Weights
Panels: 2	Provided rail: 28' [2 x 168"]	Total weight: 115.7 lbs
Rail orientation: East-West	Attachments: 5	Weight/attachment: 23.1 lbs
Panel orientation: Portrait	Splices: 0	Total Area: 44.6 sq ft
Entry type: Graphical	Clamps: 6	Distributed weight: 2.6 psf

**Diagram**



**Segments**

Identifier	Columns	Row length	Rail length	Cantilever	Rail	Attachments	Splices	Clamps
A	2	6' 9"	6' 9"	1' 5"	28' [2 x 168"]	5	0	6

**Span Details XR10 - Portrait**

Zone	Max span	Max cantilever
1	5' 6"	2' 2"
2	5' 4"	2' 2"
3	4' 3"	1' 8"

**Reaction Forces XR10 - Portrait**

Zone	Uplift (PSF)	Down (lbs)	Uplift (lbs)	Lateral Par (lbs)	Lateral Perp (lbs)
1	14.2	242	164	59	5
2	26.1	242	329	59	5
3	40.3	242	518	59	5

**Attachment Span Details Halo UltraGrip (Rafter attached) - Portrait**

Zone	Max attachment span
1	5' 6"
2	5' 4"
3	4' 3"

**\*Optional - Attachment Span Details Halo UltraGrip (Deck attached) - Portrait**

Zone	Max attachment span
1	3' 9"
2	2' 3"
3	1' 5"

\* Based on minimum 7/16" sheathing thickness

**Span Details XR10 - Landscape**

Zone	Max span	Max cantilever
1	7' 6"	3'
2	7' 1"	2' 10"
3	5' 11"	2' 4"

**Reaction Forces XR10 - Landscape**

Zone	Uplift (PSF)	Down (lbs)	Uplift (lbs)	Lateral Par (lbs)	Lateral Perp (lbs)
1	14.2	121	82	29	2
2	26.1	121	166	29	2
3	40.3	121	260	29	2

**Attachment Span Details Halo UltraGrip (Rafter attached) - Landscape**

Zone	Max attachment span
1	7' 6"
2	7' 1"
3	5' 11"

**\*Optional - Attachment Span Details Halo UltraGrip (Deck attached) - Landscape**

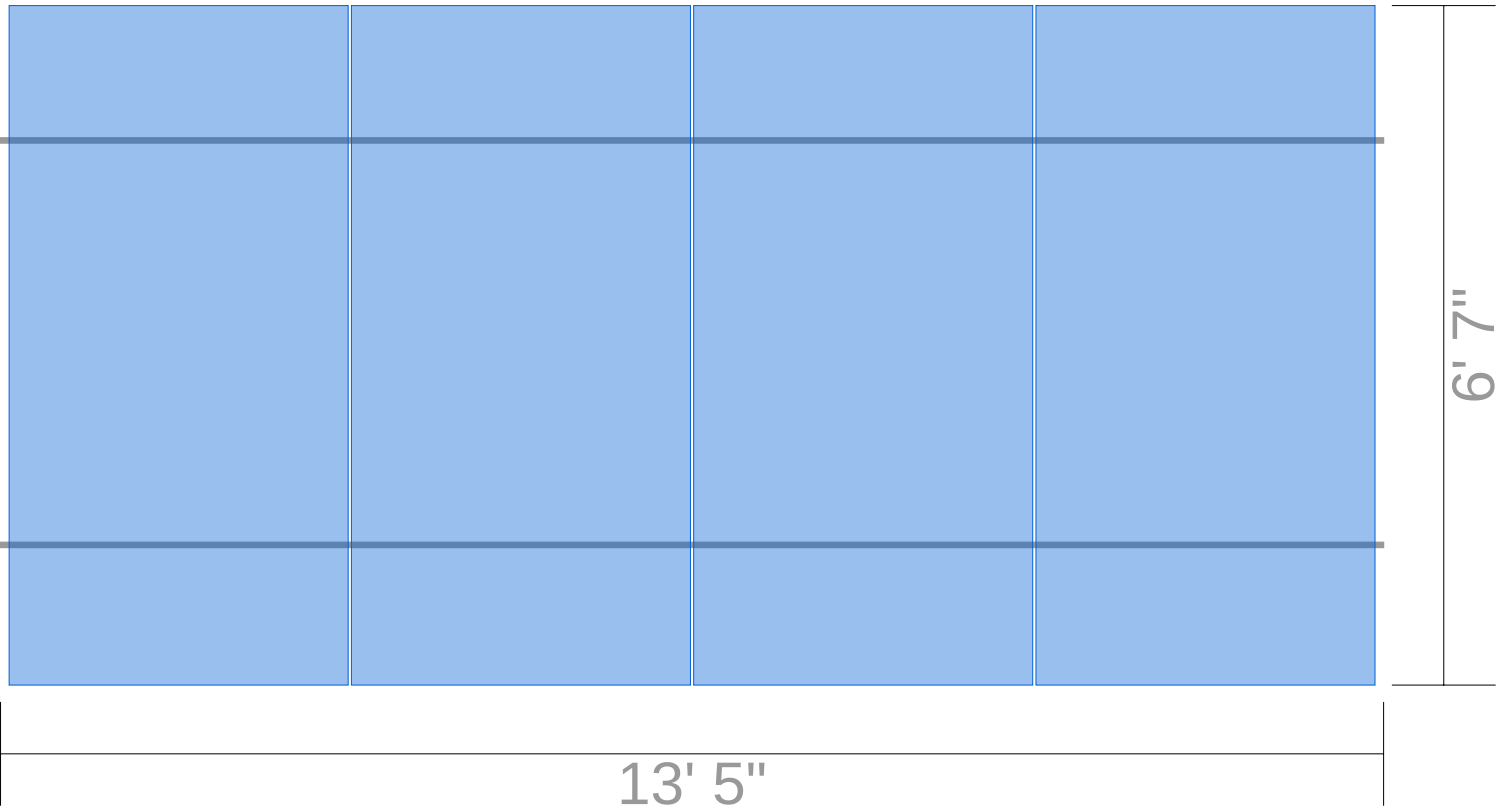
Zone	Max attachment span
1	7' 6"
2	4' 7"
3	2' 11"

\* Based on minimum 7/16" sheathing thickness

**Roof Plane A: Roof Section 4**

Details		Weights
Panels: 4	Provided rail: 28' [2 x 168"]	Total weight: 218.1 lbs
Rail orientation: East-West	Attachments: 9	Weight/attachment: 24.2 lbs
Panel orientation: Portrait	Splices: 0	Total Area: 88.4 sq ft
Entry type: Graphical	Clamps: 10	Distributed weight: 2.5 psf

**Diagram**



**Segments**

Identifier	Columns	Row length	Rail length	Cantilever	Rail	Attachments	Splices	Clamps
A	4	13' 5"	13' 5"	8"	28' [2 x 168"]	9	0	10



**Span Details XR10 - Portrait**

Zone	Max span	Max cantilever
1	5' 6"	2' 2"
2	5' 4"	2' 2"
3	4' 3"	1' 8"

**Reaction Forces XR10 - Portrait**

Zone	Uplift (PSF)	Down (lbs)	Uplift (lbs)	Lateral Par (lbs)	Lateral Perp (lbs)
1	14.2	242	164	59	5
2	26.1	242	329	59	5
3	40.3	242	518	59	5

**Attachment Span Details Halo UltraGrip (Rafter attached) - Portrait**

Zone	Max attachment span
1	5' 6"
2	5' 4"
3	4' 3"

**\*Optional - Attachment Span Details Halo UltraGrip (Deck attached) - Portrait**

Zone	Max attachment span
1	3' 9"
2	2' 3"
3	1' 5"

\* Based on minimum 7/16" sheathing thickness

**Span Details XR10 - Landscape**

Zone	Max span	Max cantilever
1	7' 6"	3'
2	7' 1"	2' 10"
3	5' 11"	2' 4"

**Reaction Forces XR10 - Landscape**

Zone	Uplift (PSF)	Down (lbs)	Uplift (lbs)	Lateral Par (lbs)	Lateral Perp (lbs)
1	14.2	121	82	29	2
2	26.1	121	166	29	2
3	40.3	121	260	29	2

**Attachment Span Details Halo UltraGrip (Rafter attached) - Landscape**

Zone	Max attachment span
1	7' 6"
2	7' 1"
3	5' 11"

**\*Optional - Attachment Span Details Halo UltraGrip (Deck attached) - Landscape**

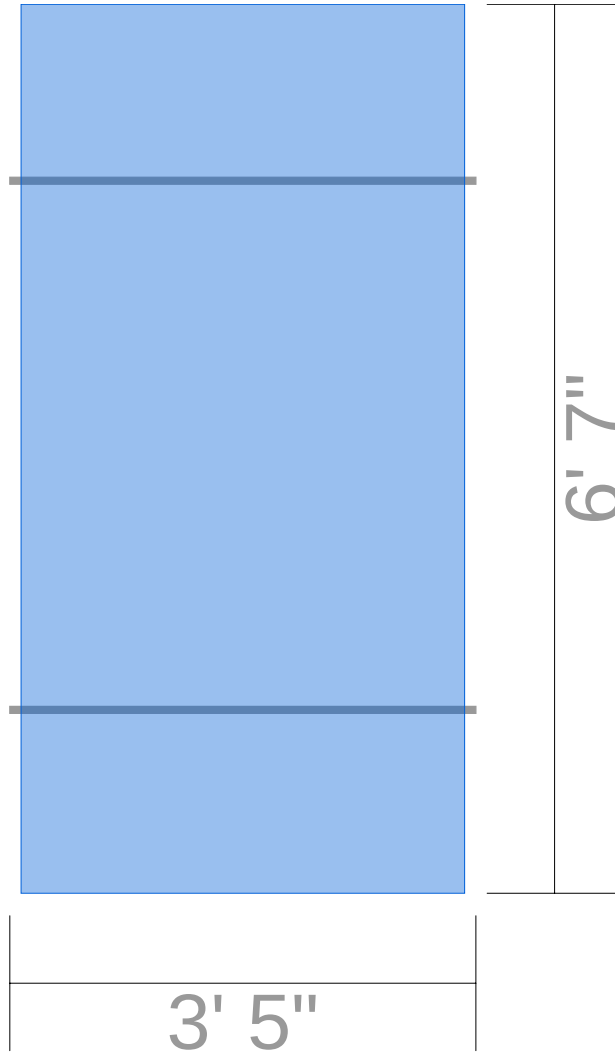
Zone	Max attachment span
1	7' 6"
2	4' 7"
3	2' 11"

\* Based on minimum 7/16" sheathing thickness

**Roof Plane A: Roof Section 5**

Details		Weights
Panels: 1	Provided rail: 28' [2 x 168"]	Total weight: 66.0 lbs
Rail orientation: East-West	Attachments: 5	Weight/attachment: 13.2 lbs
Panel orientation: Portrait	Splices: 0	Total Area: 22.8 sq ft
Entry type: Graphical	Clamps: 4	Distributed weight: 2.9 psf

**Diagram**



**Segments**

Identifier	Columns	Row length	Rail length	Cantilever	Rail	Attachments	Splices	Clamps
A	1	3' 5"	3' 5"	0"	28' [2 x 168"]	5	0	4

**Span Details XR10 - Portrait**

Zone	Max span	Max cantilever
1	5' 6"	2' 2"
2	5' 4"	2' 2"
3	4' 3"	1' 8"

**Reaction Forces XR10 - Portrait**

Zone	Uplift (PSF)	Down (lbs)	Uplift (lbs)	Lateral Par (lbs)	Lateral Perp (lbs)
1	14.2	242	164	59	5
2	26.1	242	329	59	5
3	40.3	242	518	59	5

**Attachment Span Details Halo UltraGrip (Rafter attached) - Portrait**

Zone	Max attachment span
1	5' 6"
2	5' 4"
3	4' 3"

**\*Optional - Attachment Span Details Halo UltraGrip (Deck attached) - Portrait**

Zone	Max attachment span
1	3' 9"
2	2' 3"
3	1' 5"

\* Based on minimum 7/16" sheathing thickness

**Span Details XR10 - Landscape**

Zone	Max span	Max cantilever
1	7' 6"	3'
2	7' 1"	2' 10"
3	5' 11"	2' 4"

**Reaction Forces XR10 - Landscape**

Zone	Uplift (PSF)	Down (lbs)	Uplift (lbs)	Lateral Par (lbs)	Lateral Perp (lbs)
1	14.2	121	82	29	2
2	26.1	121	166	29	2
3	40.3	121	260	29	2

**Attachment Span Details Halo UltraGrip (Rafter attached) - Landscape**

Zone	Max attachment span
1	7' 6"
2	7' 1"
3	5' 11"

**\*Optional - Attachment Span Details Halo UltraGrip (Deck attached) - Landscape**

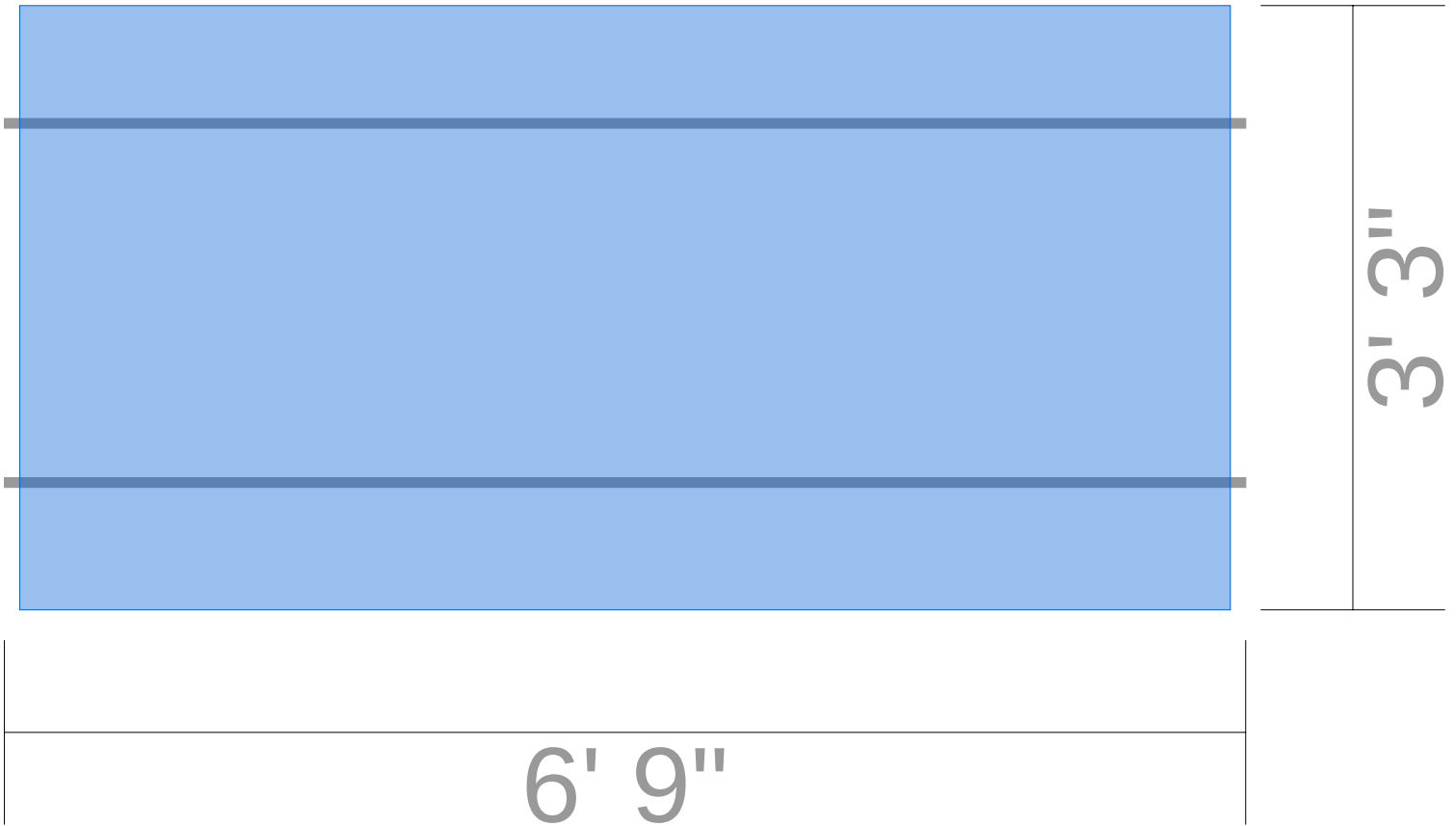
Zone	Max attachment span
1	7' 6"
2	4' 7"
3	2' 11"

\* Based on minimum 7/16" sheathing thickness

**Roof Plane A: Roof Section 6**

Details		Weights
Panels: 1	Provided rail: 28' [2 x 168"]	Total weight: 66.0 lbs
Rail orientation: East-West	Attachments: 5	Weight/attachment: 13.2 lbs
Panel orientation: Landscape	Splices: 0	Total Area: 22.2 sq ft
Entry type: Graphical	Clamps: 4	Distributed weight: 3.0 psf

**Diagram**



**Segments**

Identifier	Columns	Row length	Rail length	Cantilever	Rail	Attachments	Splices	Clamps
A	1	6' 9"	6' 9"	1' 5"	28' [2 x 168"]	5	0	4

**Span Details XR10 - Portrait**

Zone	Max span	Max cantilever
1	5' 6"	2' 2"
2	5' 4"	2' 2"
3	4' 3"	1' 8"

**Reaction Forces XR10 - Portrait**

Zone	Uplift (PSF)	Down (lbs)	Uplift (lbs)	Lateral Par (lbs)	Lateral Perp (lbs)
1	14.2	242	164	59	5
2	26.1	242	329	59	5
3	40.3	242	518	59	5

**Attachment Span Details Halo UltraGrip (Rafter attached) - Portrait**

Zone	Max attachment span
1	5' 6"
2	5' 4"
3	4' 3"

**\*Optional - Attachment Span Details Halo UltraGrip (Deck attached) - Portrait**

Zone	Max attachment span
1	3' 9"
2	2' 3"
3	1' 5"

\* Based on minimum 7/16" sheathing thickness

**Span Details XR10 - Landscape**

Zone	Max span	Max cantilever
1	7' 6"	3'
2	7' 1"	2' 10"
3	5' 11"	2' 4"

**Reaction Forces XR10 - Landscape**

Zone	Uplift (PSF)	Down (lbs)	Uplift (lbs)	Lateral Par (lbs)	Lateral Perp (lbs)
1	14.2	121	82	29	2
2	26.1	121	166	29	2
3	40.3	121	260	29	2

**Attachment Span Details Halo UltraGrip (Rafter attached) - Landscape**

Zone	Max attachment span
1	7' 6"
2	7' 1"
3	5' 11"

**\*Optional - Attachment Span Details Halo UltraGrip (Deck attached) - Landscape**

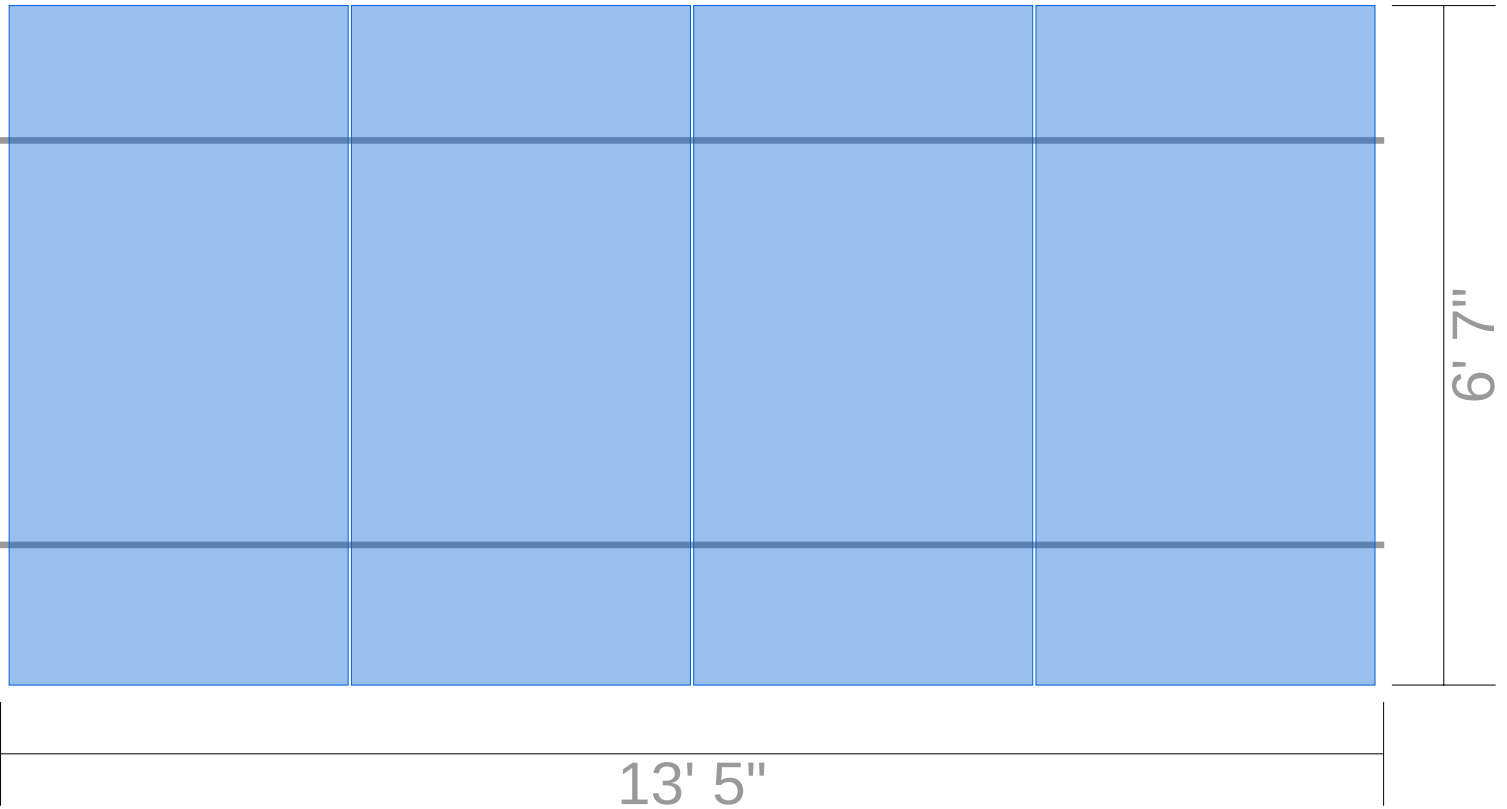
Zone	Max attachment span
1	7' 6"
2	4' 7"
3	2' 11"

\* Based on minimum 7/16" sheathing thickness

**Roof Plane A: Roof Section 7**

Details		Weights
Panels: 4	Provided rail: 28' [2 x 168"]	Total weight: 218.1 lbs
Rail orientation: East-West	Attachments: 9	Weight/attachment: 24.2 lbs
Panel orientation: Portrait	Splices: 0	Total Area: 88.4 sq ft
Entry type: Graphical	Clamps: 10	Distributed weight: 2.5 psf

**Diagram**



**Segments**

Identifier	Columns	Row length	Rail length	Cantilever	Rail	Attachments	Splices	Clamps
A	4	13' 5"	13' 5"	8"	28' [2 x 168"]	9	0	10

**Span Details XR10 - Portrait**

Zone	Max span	Max cantilever
1	5' 6"	2' 2"
2	5' 4"	2' 2"
3	4' 3"	1' 8"

**Reaction Forces XR10 - Portrait**

Zone	Uplift (PSF)	Down (lbs)	Uplift (lbs)	Lateral Par (lbs)	Lateral Perp (lbs)
1	14.2	242	164	59	5
2	26.1	242	329	59	5
3	40.3	242	518	59	5

**Attachment Span Details Halo UltraGrip (Rafter attached) - Portrait**

Zone	Max attachment span
1	5' 6"
2	5' 4"
3	4' 3"

**\*Optional - Attachment Span Details Halo UltraGrip (Deck attached) - Portrait**

Zone	Max attachment span
1	3' 9"
2	2' 3"
3	1' 5"

\* Based on minimum 7/16" sheathing thickness

**Span Details XR10 - Landscape**

Zone	Max span	Max cantilever
1	7' 6"	3'
2	7' 1"	2' 10"
3	5' 11"	2' 4"

**Reaction Forces XR10 - Landscape**

Zone	Uplift (PSF)	Down (lbs)	Uplift (lbs)	Lateral Par (lbs)	Lateral Perp (lbs)
1	14.2	121	82	29	2
2	26.1	121	166	29	2
3	40.3	121	260	29	2

**Attachment Span Details Halo UltraGrip (Rafter attached) - Landscape**

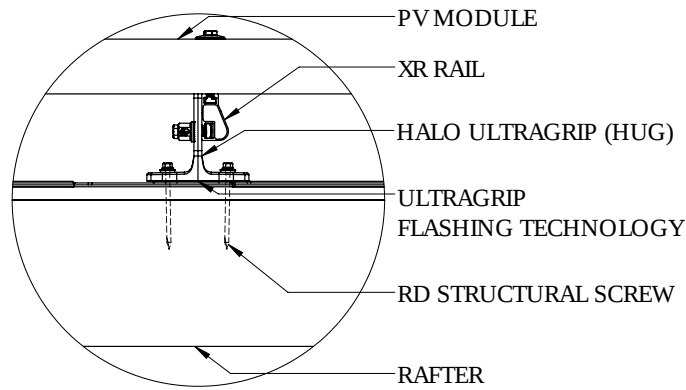
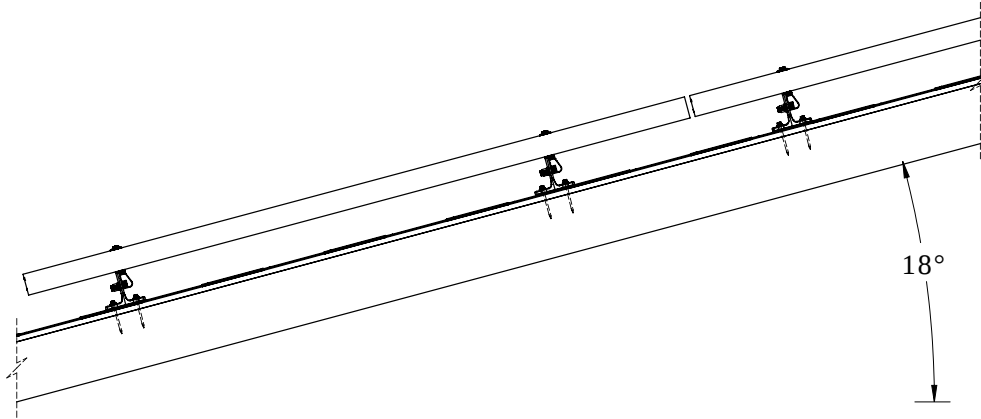
Zone	Max attachment span
1	7' 6"
2	7' 1"
3	5' 11"

**\*Optional - Attachment Span Details Halo UltraGrip (Deck attached) - Landscape**

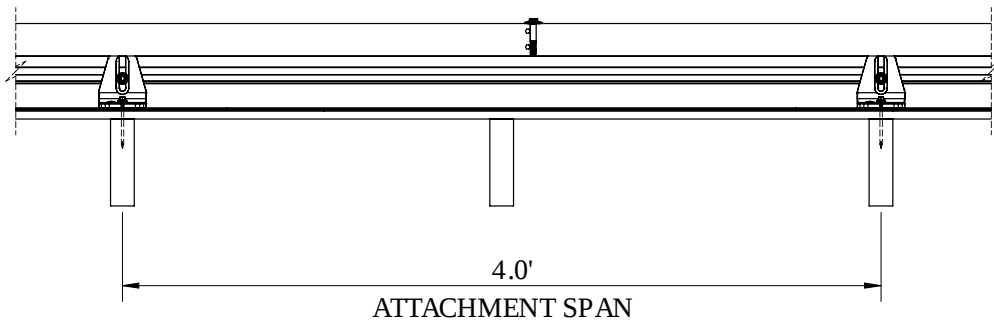
Zone	Max attachment span
1	7' 6"
2	4' 7"
3	2' 11"

\* Based on minimum 7/16" sheathing thickness

Side View (portrait)

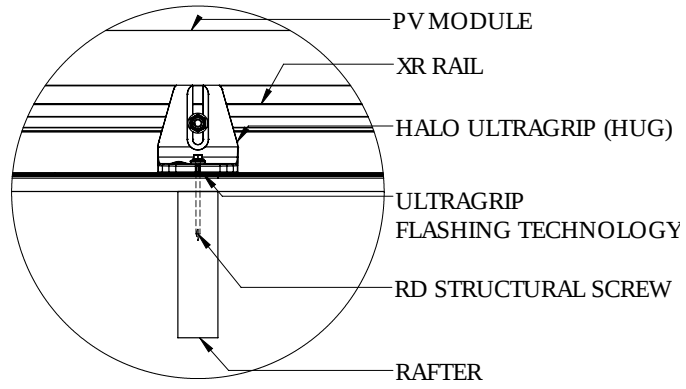


Front View (portrait)

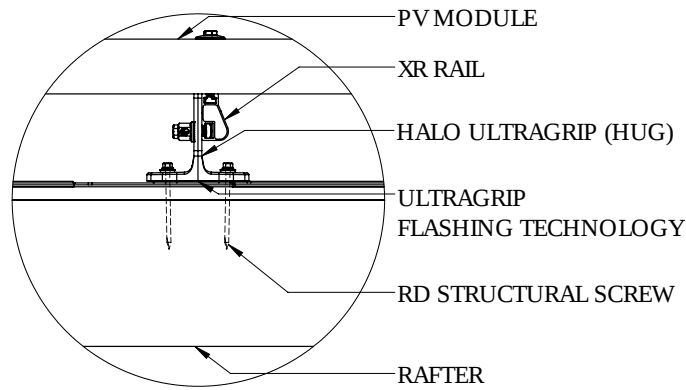
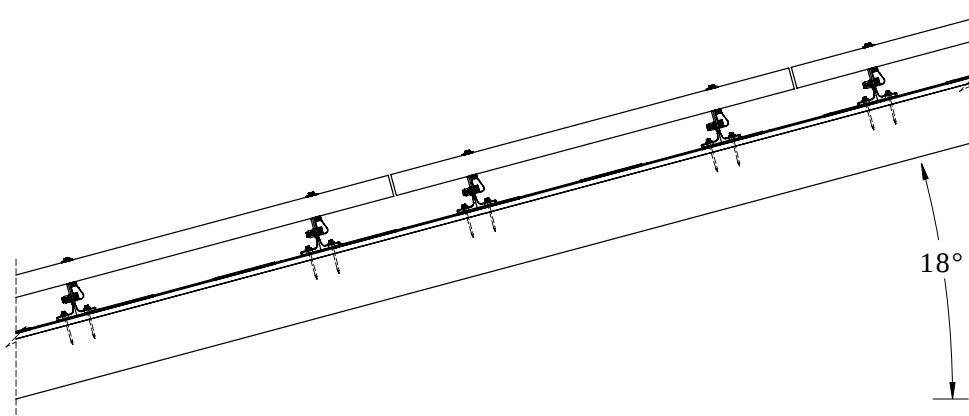




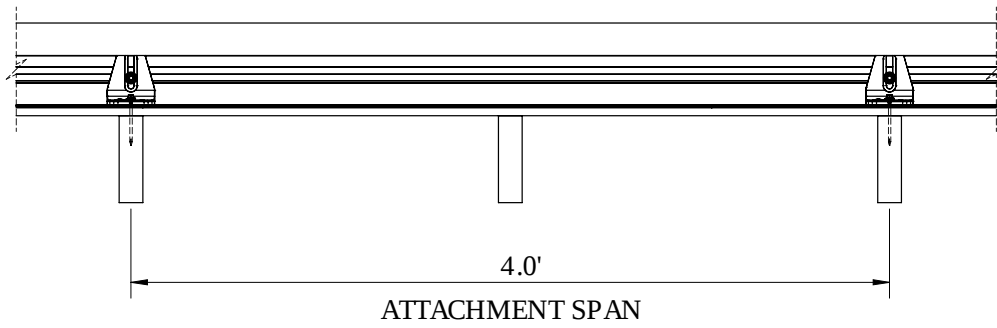
Front View (portrait)



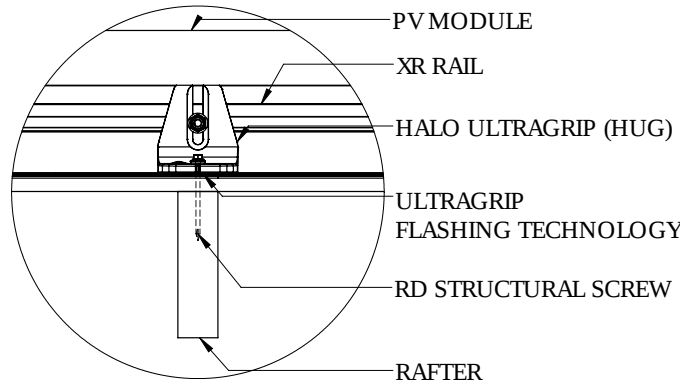
Side View (landscape)



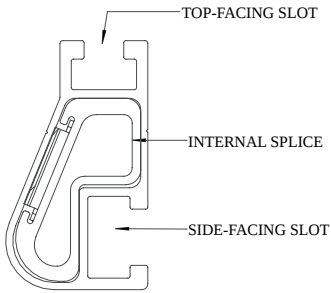
Front View (landscape)



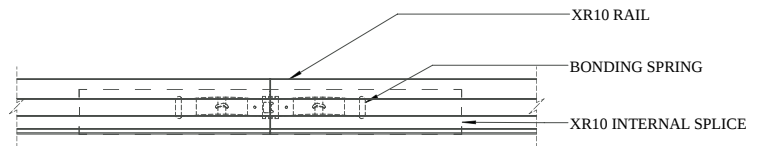
**Front View (landscape)**



**Splice Details**

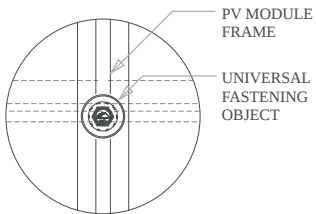


**XR10**

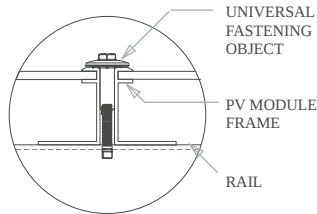


**Splice Connection**

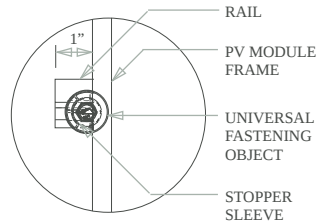
**Clamp Detail**



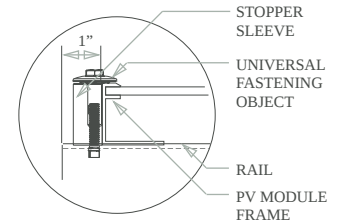
**Mid Clamp, Plan**



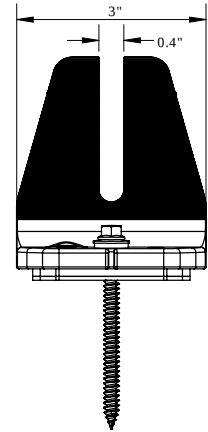
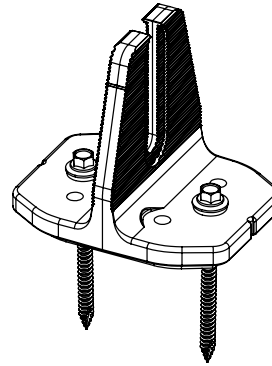
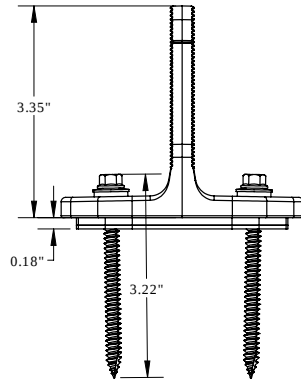
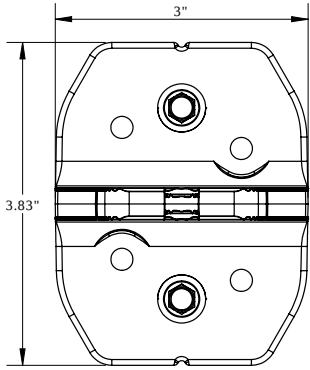
**Mid Clamp, Front**



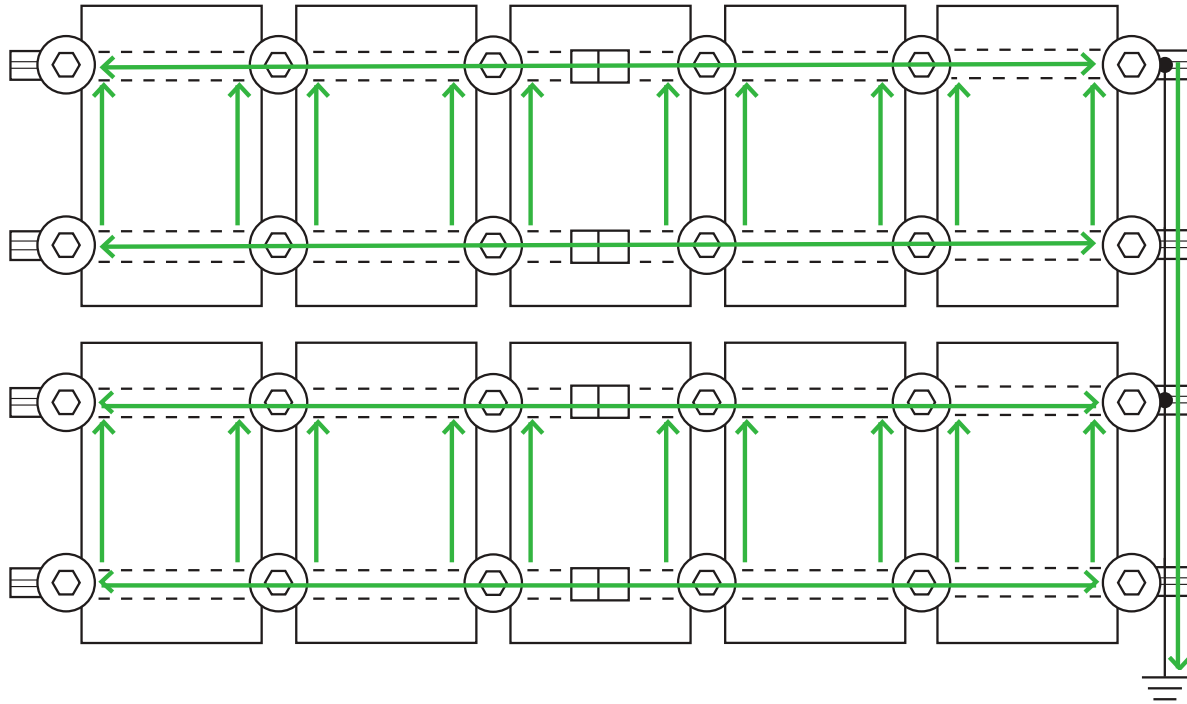
**End Clamp, Plan**



**End Clamp, Front**




### Grounding Diagram



 UFO Clamp

 Fault Current Ground Path

 Grounding Lug \*

 Min 10 AWG Copper Wire \*

 Bonded Splice (Rail Connection)

\* Grounding Lugs and Wire are not required in systems using Enphase microinverters.

**Bill of Materials**

Part	Spares	Total Qty
<b>Rails &amp; Splices</b>		
XR-10-168A XR10, Rail 168" Clear	0	16
<b>Clamps &amp; Grounding</b>		
UFO-CL-01-A1 Universal Module Clamp, Clear	0	56
UFO-STP-40MM-M1 Stopper Sleeve, 40MM, Mill	0	32
XR-LUG-03-A1 Grounding Lug, Low Profile	0	8
<b>Attachments</b>		
QM-HUG-01-M1 Halo UltraGrip, Mill	0	52
HW-RD1430-01-M1 RD Structural Screw, 3.0L <i>* Add desired additional screws by adjusting spares column.</i>	0	104
BHW-TB-02-A1 T-Bolt Bonding Hardware	0	52

# ATTACHMENTS

## PRE-INSTALLATION

- Verify module compatibility. See [Page 21](#) for info.

## TOOLS REQUIRED

- |                                 |                       |
|---------------------------------|-----------------------|
| □ Cordless Drill (non-impact)   | □ 3/8" Socket         |
| □ Impact Driver (for lag bolts) | □ 1/8" Drill Bit      |
| □ Torque Wrench (0-250 in-lbs)  | □ 1/4" Drill Bit      |
| □ 7/16" Socket                  | □ T30 Bit             |
| □ 1/2" Socket                   | □ Channel Lock Pliers |
| □ 9/16" Socket                  | □ #3 Phillips Bit     |
| □ 7/32" Drill Bit               | □ 3/16" Hex Bit       |

## BONDING HARDWARE TORQUE VALUES

Please refer to each attachment's individual section for full details on all torque values and instructions.

- 3/8" Bonding Hardware Nuts (7/16" Socket): 250 in-lbs
- All Tile Hook Carriage Bolts (7/16" Socket): 132 in-lbs
- Flat Roof Attachment Nuts (9/16" Socket): 250 in-lbs
- Lynx Set Screw (3/16" Hex Drive): 150 in-lbs
- Lynx Flange Nut (1/2" Socket): 150 in-lbs

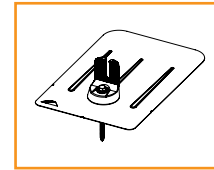
➤ If using previous version of Integrated Grounding Mid Clamps, End Clamps, Expansion Joints and for a list of approved 3rd party components please refer to Alternate Components Addendum (Version 1.9)

## ATTACHMENTS

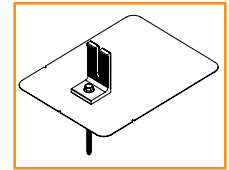
### COMPOSITION SHINGLE



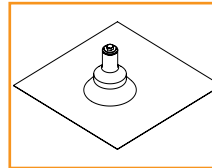
FlashFoot2



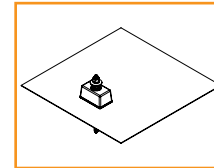
FlashVue



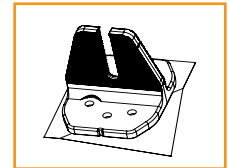
QM L-Mount



QM QBase

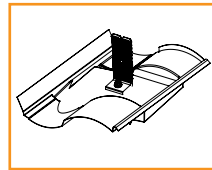


QM Classic Comp Mount

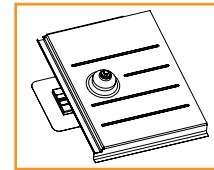


HUG (Halo UltraGrip)

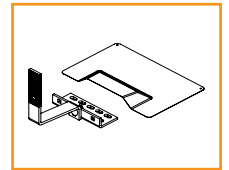
### TILE



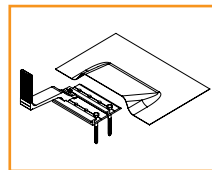
Knockout Tile



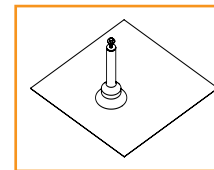
QM Tile Replacement



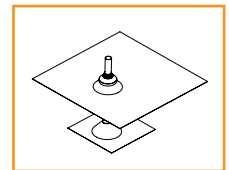
All Tile Hook and Flashing (optional)



QM Quick Hook and Flashing (optional)

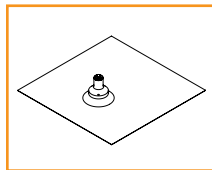


QM QBase Tile

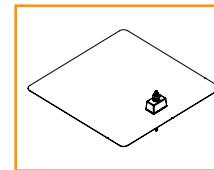


QM Tile Conduit Penetration

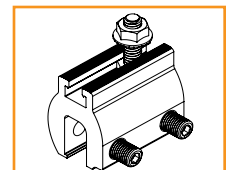
### ADDITIONAL ROOF TYPES



QM Qbase Shake - Slate - Metal Shingle

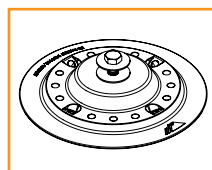


QM Classic Mount Shake

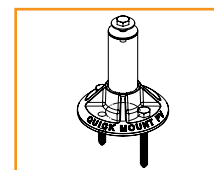


QM Lynx Metal Roof Attachment

### LOW SLOPE ROOF



Flat Roof Attachment



QM QBase Mount

# COMPONENTS

## PRE-INSTALLATION

- ❑ Verify module compatibility. See [Page 21](#) for info.

## TOOLS REQUIRED

- ❑ Cordless Drill (non-impact)
- ❑ Impact Driver (for lag bolts)
- ❑ Torque Wrench (0-250 in-lbs)
- ❑ 7/16" Socket
- ❑ 1/2" Socket
- ❑ 9/16" Socket
- ❑ 7/32" Drill bit
- ❑ 1/8" Drill bit
- ❑ 1/4" Drill bit
- ❑ T30 Torx Bit
- ❑ Channel Lock Pliers
- ❑ #3 Phillips Bit
- ❑ Paddle Bit

## BONDING HARDWARE TORQUE VALUES

Please refer to each attachment's individual section for full details on all torque values and instructions.

- ❑ Universal Fastening Object (7/16" Socket): 80 in-lbs
- ❑ Rail Grounding Lug Nut (7/16" Socket): 80 in-lbs
- ❑ Module Grounding Lug
  - ❑ Grounding Nut (7/16" Socket): 60 in-lbs
  - ❑ Grounding Lug Terminal Screws (7/16" Socket): 20 in-lbs
- ❑ Microinverter Kit Nuts (7/16" Socket): 80 in-lbs
- ❑ Frameless Module Kit Nuts (7/16" Socket): 80 in-lbs
- ❑ 3/8" Bonding Hardware Nuts (7/16" Socket): 250 in-lbs
- ❑ Contour Clamp (T-30 Torx Bit): 80 in-lbs

➤ Unless otherwise noted, all components have been evaluated for multiple use. They can be uninstalled and reinstalled in the same or new location.

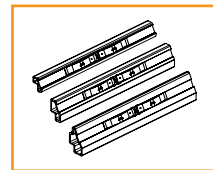
## COMPONENTS



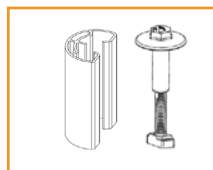
XR Rail



Wire Clip



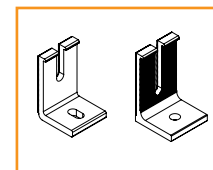
BOSS



UFO and Stopper Sleeve (30-46MM)



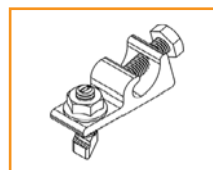
CAMO



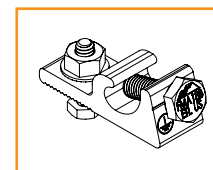
Ironridge L-Foot and QM L-Foot



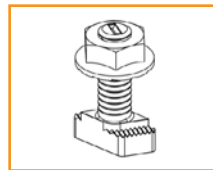
End Cap



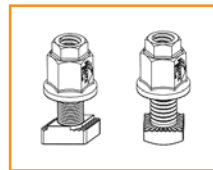
Rail Grounding Lug



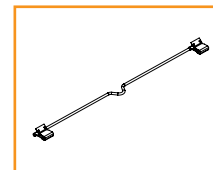
Module Grounding Lug



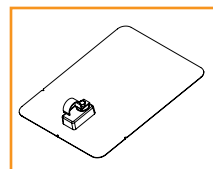
Microinverter Kit



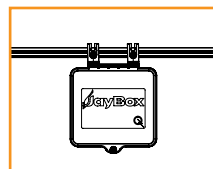
3/8" Bonding Hardware



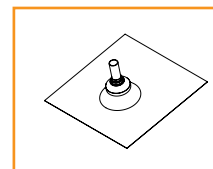
8" Bonding Jumper Single Use Only



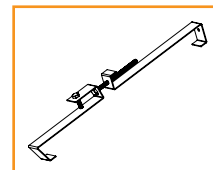
QM Classic Conduit Comp Mount



JAYBOX



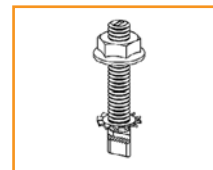
QM Composition Conduit Penetration



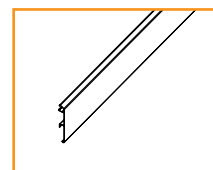
QM Tile Conduit Mount



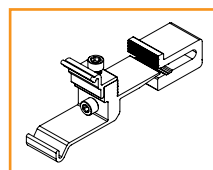
Frameless End/Mid Clamp



Frameless Module Kit



Contour Trim



Contour Clamp



**Rail:  
XR10**

**Flush Mount System Span Table (inches) - Portrait or Landscape Installation**  
 Max Module Length: 86", Max Module SF: 24.5 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*		
		Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3			
110 mph	8-20	81	61	49	72	61	49	58	58	49	57	57	49	52	52	49	48	48	48	43	43	43	40	40	40	38	38	38	36	36	36	34	34	34	33	33	33	32	32	32
	28-45	72	69	69	66	66	66	57	57	57	57	57	57	52	52	52	49	49	49	48	48	48	44	44	44	41	41	41	39	39	39	37	37	37	36	36	36	34	34	34
115 mph	8-20	79	58	48	72	58	48	58	58	48	57	57	48	52	52	48	48	48	43	43	43	40	40	40	38	38	38	36	36	36	34	34	34	33	33	33	32	32	32	
	28-45	68	66	66	64	64	64	56	56	56	56	56	56	52	52	52	49	49	49	48	48	48	44	44	44	41	41	41	39	39	39	37	37	37	36	36	36	34	34	34
120 mph	8-20	76	56	45	72	56	45	58	56	45	57	56	45	52	52	45	48	48	45	43	43	43	40	40	40	38	38	38	36	36	36	34	34	34	33	33	33	32	32	32
	28-45	66	64	64	64	64	64	55	55	55	55	55	55	51	51	51	48	48	48	48	48	48	43	43	43	41	41	41	39	39	39	37	37	37	36	36	36	34	34	34
130 mph	8-20	72	51	41	69	51	41	58	51	41	57	51	41	52	51	41	48	48	41	43	43	41	40	40	40	38	38	38	36	36	36	34	34	34	33	33	33	32	32	32
	28-45	64	59	59	60	59	59	54	54	54	53	53	53	50	50	50	48	48	48	44	44	44	42	42	42	41	41	41	39	39	39	37	37	37	36	36	36	34	34	34
140 mph	8-20	65	48	39	65	48	39	56	48	39	56	48	39	51	48	39	48	48	39	43	43	39	40	40	39	38	38	38	36	36	36	34	34	34	33	33	33	32	32	32
	28-45	58	55	55	58	55	55	52	52	52	51	51	51	48	48	48	48	48	48	43	43	43	42	42	42	40	40	40	38	38	38	37	37	37	36	36	36	34	34	34
150 mph	8-20	61	44	36	61	44	36	55	44	36	54	44	36	50	44	36	48	48	36	43	43	36	40	40	36	38	38	36	36	36	36	34	34	34	33	33	33	32	32	32
	28-45	55	51	51	55	51	51	50	50	50	50	50	50	48	48	48	44	44	44	42	42	42	41	41	41	39	39	39	38	38	38	37	37	37	35	35	35	34	34	34
160 mph	8-20	57	42	32	57	42	32	54	42	32	53	42	32	49	42	32	48	42	32	43	42	32	40	40	32	38	38	32	36	36	32	34	34	32	33	33	32	32	32	
	28-45	52	48	48	52	48	48	48	48	48	48	48	48	48	48	48	43	43	43	41	41	41	40	40	40	38	38	38	37	37	37	36	36	36	35	35	35	34	34	34
170 mph	8-20	54	39	28	54	39	28	53	39	28	52	39	28	48	39	28	45	39	28	42	39	28	40	39	28	38	38	28	36	36	28	34	34	28	33	33	28	32	32	
	28-45	50	48	48	50	48	48	48	48	48	48	48	48	44	44	44	42	42	42	40	40	40	39	39	39	38	38	38	36	36	36	35	35	35	34	34	34	33	33	33
180 mph	8-20	51	37	25	51	37	25	51	37	25	51	37	25	48	37	25	44	37	25	42	37	25	40	39	25	38	37	25	36	36	25	34	34	25	33	33	25	32	32	
	28-45	48	43	43	48	43	43	48	43	43	45	43	43	43	43	43	41	41	41	39	39	39	38	38	38	37	37	37	36	36	36	35	35	35	34	34	34	33	33	33

  = min 72" span    
   = min 64" span    
   = min 48" span  
  = Shaded cells indicate conditions in which UFO Mid Clamp connection capacity is exceeded. See Note 10 on page 2 for details.