

Design Criteria for Span Tables:

Values in the maximum allowable rail span tables provided herein are subject to the following general criteria and additional criteria shown on individual span tables sheets. Values in span tables are based on the same engineering methodology and calculation algorithms used for U-Builder and are provided here for reference.

Building Assumptions

- Building Risk Category: II
- Mean Roof Height: 30 ft
- Roof Pitch: 0°-45°
- Site Elevation: 0 ft

Wind Design Assumptions

- Wind loads used are based on ASCE 7-22 Sec. 29.4.4
- Exposure Category B, C, or D
- Basic Wind Speed = 90 – 180 mph
- Level terrain. Topographic factor, $k_{zt} = 1.0$
- $\gamma_E = 1.0$ for 'Interior' spans, $\gamma_E = 1.5$ for 'Exposed' spans (ASCE 7-22, Fig. 29.4-7)

Snow Design Assumptions

- Ground Snow Load = 0-100 psf
- Exposure Factor coefficients of Partially Exposed condition
- Thermal Factor = 1.0
- Results based on uniform snow load

Seismic Design Assumptions

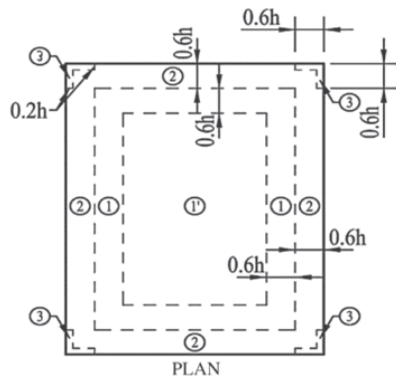
- 0.2-s Spectral Response Acceleration
- $S_s = 1.25$ and 3 with $S_{ds} = 1, 2.4$ respectively per criteria shown on individual span tables sheets.
- $S_1 = 0.5$ & $S_{d1} = 0.6$
- Seismic site class D

Array Assumptions

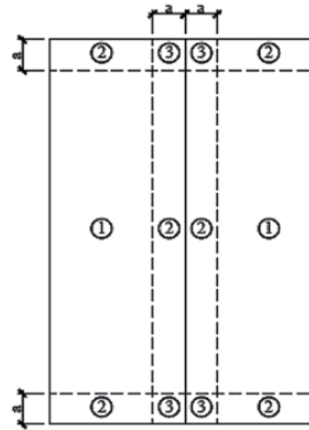
- Module orientation and Rail direction per criteria shown on individual span tables sheets.
- Maximum module dimensions of 40.1" x 67" (~19 sq.ft, 47.65 lbs) and 41" x 80" (~23 sq.ft, 58.6 lbs) per criteria shown on individual span tables sheets.
- Minimum distance between modules and roof edge is at least twice the module height above roof surface.
- Modules are parallel to roof surface and maximum height above roof surface is 5" to 10" depending on attachment type.
- Gaps between module rows and columns is 0.25" in to 1" depending on clamp type.
- The most restrictive of all roof zone spans shall be used when any part of the module is attributed to that span.
- 'Exposed' spans as defined in ASCE 7-22 sec. 29.4.4 shall be used when any part of an exposed module or panel as is attributed to that span.

Span Tables

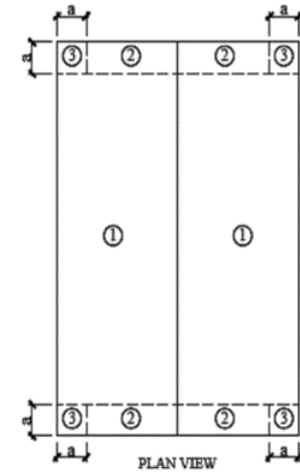
Zone should be considered as per ASCE 7-22, Fig. 30.3-2A to 30.3-2D



Gable Roofs $\theta \leq 7^\circ$

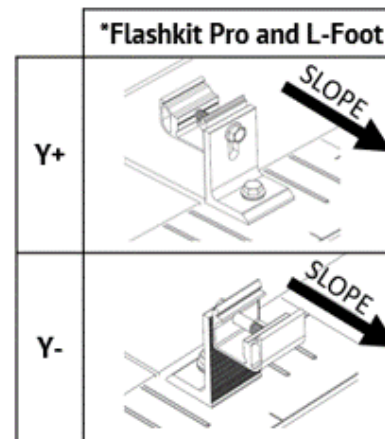


Gable Roofs $7^\circ < \theta \leq 27^\circ$



Gable Roofs $27^\circ < \theta \leq 45^\circ$

Rails can be installed in these possible orientations.



* Cells with an asterisk indicates that the L-foot must be oriented in the Y- direction as indicated in the image.

[illegible]

10 Highlighted cell indicate 3-rail system span. Contact Unirac Engineering Services for support.

[illegible]

* Cells with an asterisk indicates that the L-foot must be oriented in the Y- direction as indicated in the image.

[illegible]

* Cells with an asterisk indicates that the L-foot must be oriented in the Y- direction as indicated in the image.

Maximum Allowable Rail Spans for Rooftop Solar Panels Parallel to the Roof Surface (inches)

Ground Snow Load (psf)	Wind Exposure Category	Roof Tilt Angle (deg)	Panel Exposure	Basic Wind Speed (mph)																																						
				90			95			100			105			110			115			120			130			140			150			160			170			180		
				Roof Wind Zone																																						
				1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3			
0	B	0-7	Interior	102	102	102	102	102	102	102	102	102	102	97	102	102	88	102	98	85	102	91	79	98	85	73	92	79	69	86	75	65	81	71	62	77	68	60				
			Exposed	102	102	92	102	101	87	102	96	83	102	92	79	102	88	76	97	84	73	93	81	70	87	75	65	81	71	62	76	66	59	72	63	56	68	61	52	65	58	60
		7-20	Interior	102	102	102	102	102	102	102	102	102	102	94	102	102	89	102	99	85	102	94	81	102	87	75	95	80	70	88	75	65	82	70	62	77	66	60	73	64	57	
			Exposed	102	102	89	102	98	84	102	92	80	102	88	76	99	84	72	94	80	69	90	76	67	82	71	63	76	66	59	71	63	56	67	60	52	64	57	60	61	54	57
		20-27	Interior	103	103	103	103	103	103	103	103	103	103	103	103	103	103	99	103	103	94	103	99	90	103	91	82	103	84	76	99	78	71	93	73	67	87	69	64	83	65	61
			Exposed	103	103	99	103	103	93	103	97	88	103	92	83	103	87	79	103	83	76	101	80	73	93	73	67	87	68	63	81	64	60	76	61	57	72	59	54	68	56	51
		27-45	Interior	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	101	103	103	97	103	98	99	100	91	83	93	85	77	86	80	73	81	76	69	76	72	65
			Exposed	103	103	103	103	103	103	103	103	95	103	99	90	103	95	86	99	91	82	95	87	79	87	81	73	80	75	68	75	71	64	70	67	61	66	64	59	63	61	56
	C	0-7	Interior	102	102	95	102	102	90	102	98	85	102	94	81	102	90	78	100	86	75	96	83	72	89	77	67	83	72	63	78	68	60	73	65	57	70	62	54	66	59	51
			Exposed	102	90	78	99	85	74	94	81	70	90	78	67	86	75	65	82	72	63	79	69	61	74	65	57	69	61	53	65	59	60	62	55	57	60	52	53	57	59	50
		7-20	Interior	102	102	91	102	101	86	102	95	82	102	90	78	102	86	74	97	82	71	92	79	68	85	73	64	78	68	61	73	64	57	69	61	54	65	58	50	62	55	58
			Exposed	102	86	74	95	81	70	90	77	67	86	73	64	82	70	62	78	67	60	75	65	59	69	61	54	65	58	50	61	54	57	59	51	54	55	58	50	52	55	47
		20-27	Interior	103	103	102	103	103	96	103	100	90	103	94	86	103	90	82	103	86	78	103	82	75	96	75	69	89	70	64	83	66	61	78	63	59	74	60	55	70	57	52
			Exposed	103	90	81	103	85	77	102	80	73	97	76	70	92	73	67	88	70	64	85	67	62	78	63	59	73	60	55	69	56	51	65	53	59	62	60	55	60	57	52
		27-45	Interior	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	101	103	103	97	103	98	99	100	91	83	93	85	77	86	80	73	81	76	69	76	72	65
			Exposed	103	97	88	101	92	83	95	88	79	90	84	76	86	80	72	82	77	69	78	74	67	72	68	63	67	64	60	64	61	56	61	59	52	58	55	60	55	52	57
	D	0-7	Interior	102	100	87	102	95	82	102	91	78	100	87	75	96	83	72	92	80	69	88	77	66	82	71	63	76	67	59	72	63	56	68	61	52	65	58	60	62	55	57
			Exposed	96	83	72	91	79	68	86	75	65	83	72	63	79	69	61	76	67	59	73	64	57	68	61	52	64	58	59	61	54	56	59	50	52	55	58	49	52	55	46
		7-20	Interior	102	97	83	102	91	79	102	87	75	97	82	71	92	79	68	88	75	65	84	72	63	77	67	60	72	63	56	67	60	52	64	57	60	61	53	57	59	50	53
			Exposed	92	78	68	87	74	65	82	71	63	78	67	60	75	65	59	71	63	56	68	61	54	64	57	60	61	53	56	58	60	52	54	57	49	51	53	46	59	50	42
		20-27	Interior	103	102	92	103	96	87	103	91	82	103	86	78	103	82	75	99	78	71	95	75	68	88	69	64	82	65	61	76	62	58	72	59	54	68	56	51	65	52	59
			Exposed	103	82	74	98	77	71	93	73	67	89	70	64	85	67	62	81	64	60	78	62	59	78	62	59	64	58	55	60	64	51	57	61	59	54	59	55	50	55	48
		27-45	Interior	103	103	99	103	103	94	103	98	89	103	94	85	98	89	81	93	86	77	89	82	74	81	76	69	75	71	64	70	67	62	66	64	59	63	61	55	61	59	52
			Exposed	97	89	81	92	85	77	87	81	73	82	77	70	78	74	67	75	71	64	72	68	62	66	64	59	63	61	55	60	57	51	57	54	59	53	51	55	50	58	52
10	B	0-7	Interior	95	95	95	95	95	95	95	95	95	95	95	95	95	95	88	95	85	95	91	79	95	85	73	92	79	69	86	75	65	81	71	62	77	68	60				
			Exposed	95	95	92	95	95	87	95	95	83	95	82	79	95	88	76	95	84	73	93	81	70	87	75	65	81	71	62	76	66	59	72	63	56	68	61	52	65	58	60
		7-20	Interior	96	96	96	96	96	96	96	96	96	96	96	94	96	96	86	96	85	96	94	81	96	87	75	95	80	70	88	75	65	82	70	62	77	66	60	73	64	57	
			Exposed	96	96	89	96	96	84	96	92	80	96	88	76	96	84	72	94	80	69	90	76	67	82	71	63	76	66	59	71	63	56	67	60	52	64	57	60	61	54	57
		20-27	Interior	100	100	100	100	100	100	100	100	100	100	100	100	100	100	99	100	100	94	100	99	90	100	91	82	100	84	76	99	78	71	93	73	67	87	69	64	83	65	61
			Exposed	100	100	99	100	100	93	100	97	88	100	92	83	100	87	79	100	83	76	100	80	73	93	73	67	87	68	63	81	64	60	76	61	57	72	59	54	68	56	51
		27-45	Interior	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	98	89	100	91	83	93	85	77	86	80	73	81	76	69	76	72	65
			Exposed	102	102	102	102	102	102	102	102	95	102	99	90	102	95	86	99	91	82	95	87	79	87	81	73	80	75	68	75	71	64	70	67	61	66	64	59	63	61	56
	C	0-7	Interior	95	95	95	95	95	90	95	95	85	95	94	81	95	90	78	95	86	75	96	83	72	89	77	67	83	72	63	78	68	60	73	65	57	70	62	54	66	59	51
			Exposed	95	90	78	95	85	74	94	81	70	90	78	67	86	75	65	82	72	63	79	69	61	74	65	57	69	61	53	65	59	60	62	55	57	60	52	53	57	59	50
		7-20	Interior	96	96	91	96	96	86	96	95	82	96	90	78	96	86	74	96	82	71	92	79	68	85	73	64	78	68	61	73	64	57	69	61	54	65	58	50	62	55	58
			Exposed	96	86	74	95	81	70	90	77	67	86	73	64	82	70	62	78	67	60	75	65	59	69	61	54	65	58	50	61	54	57	59	51	54	55	58	50	52	55	47
		20-27	Interior	100	100	100	100	100	96	100	100	90	100	94	86	100	90	82	100	86	78	100	82	75	96	75	69	89	70	64	83	66	61	78	63	59	74	60	55	70	57	52
			Exposed	100	90	81	100	85	77	100	80	73	97	76	70	92	73	67	88	70	64	85	67	62	78	63	59	73	60	55	69	56	51	65	53	59	62	60	55	60	57	52
		27-45	Interior	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102																						

10 Highlighted cell indicate 3-rail system span. Contact Unirac Engineering Services for support.

* Cells with an asterisk indicates that the L-foot must be oriented in the Y- direction as indicated in the image.

[illegible]

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[illegible]

Highlighted cell with strikethrough indicate 3-rail system span and module clamp allowable capacity exceeds with 3-rails. 4-Rail system required. Contact Unirac Engineering Services for support.

Maximum Allowable Rail Spans for Rooftop Solar Panels Parallel to the Roof Surface (inches)

Ground Snow Load (psf)	Wind Exposure Category	Roof Tilt Angle (deg)	Panel Exposure	Basic Wind Speed (mph)																																										
				90			95			100			105			110			115			120			130			140			150			160			170			180						
				Roof Wind Zone																																										
				1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3							
0	B	0-7	Interior	101	101	101	101	101	101	101	101	101	101	101	96	101	101	91	101	101	87	101	97	84	101	90	78	97	84	73	91	79	68	85	74	65	81	70	62	77	67	59				
			Exposed	101	101	101	91	101	100	86	101	95	82	101	91	79	101	87	75	96	83	72	92	80	69	86	75	65	80	70	62	75	66	59	71	63	55	67	60	52	64	58	59			
		7-20	Interior	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	98	102	98	84	102	93	80	102	86	74	93	79	69	87	74	65	81	70	62	76	66	59	72	63	56
			Exposed	102	102	88	102	97	83	102	91	79	102	87	75	98	83	72	93	79	69	89	76	66	81	70	62	76	65	59	71	62	55	66	59	52	63	56	59	61	53	56				
		20-27	Interior	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	98	102	102	93	102	98	89	102	90	82	102	83	76	98	77	70	92	72	66	86	68	63	82	65	61
			Exposed	102	102	98	102	102	92	102	92	102	96	87	102	91	82	102	86	79	102	82	75	100	79	72	92	73	67	86	68	63	80	64	60	75	61	57	71	59	53	68	55	50		
	27-45	Interior	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	100	103	103	96	103	97	88	99	90	82	92	85	76	85	79	72	80	75	68	76	71	65				
		Exposed	103	103	103	103	103	99	103	103	94	103	98	89	103	94	85	98	90	81	94	86	78	86	80	72	79	74	67	74	70	64	69	66	61	65	63	58	63	61	55					
	C	0-7	Interior	101	101	94	101	101	89	101	98	84	101	93	81	101	89	77	99	85	74	95	82	71	88	76	66	82	72	63	77	67	60	73	64	56	69	61	53	66	59	60				
			Exposed	101	89	77	98	85	73	93	81	70	89	77	67	85	74	64	82	71	62	78	69	61	73	64	57	68	61	53	65	58	60	62	54	56	59	61	53	56	59	59				
		7-20	Interior	102	102	90	102	100	85	102	94	81	102	89	77	101	85	74	96	81	70	91	78	68	84	72	63	78	67	60	72	63	57	68	61	53	64	58	60	62	55	58				
			Exposed	100	85	73	94	80	70	89	76	66	85	73	64	81	69	62	77	66	60	74	64	58	68	61	53	64	57	60	61	53	57	58	60	53	55	58	59	52	54	47				
20-27		Interior	102	102	101	102	102	95	102	99	89	102	93	85	102	89	81	102	85	77	102	81	74	98	77	61	94	74	68	87	68	63	81	64	60	76	61	57	71	59	53	67	55	60		
		Exposed	102	89	81	102	84	76	101	79	72	96	75	69	91	72	66	87	69	64	84	66	62	78	62	59	73	59	54	68	56	51	64	52	58	62	59	55	59	56	51					
D	27-45	Interior	103	103	103	103	103	102	103	103	96	103	103	92	103	96	88	80	92	85	77	88	81	74	80	75	68	75	70	64	70	66	61	65	63	58	63	60	55	60	58	52				
		Exposed	103	96	87	100	91	82	94	87	78	89	83	75	85	79	72	81	76	69	78	73	66	72	68	62	67	64	59	63	61	55	60	58	62	58	55	59	54	52	56					
	0-7	Interior	101	99	86	101	94	82	101	90	78	99	86	74	95	82	71	91	79	68	87	76	66	81	71	62	76	66	59	71	63	55	67	60	52	64	57	59	62	54	56					
		Exposed	95	82	71	90	78	68	86	75	65	82	71	63	78	69	61	75	66	59	73	64	56	68	60	52	64	57	59	61	53	55	58	60	51	54	57	48	61	54	46					
	7-20	Interior	102	96	82	102	90	78	102	86	74	96	81	71	91	78	68	87	74	65	83	71	63	77	66	60	71	63	56	66	60	52	63	56	59	61	53	56	58	60	60	53				
		Exposed	91	78	67	86	73	64	81	70	62	77	67	60	74	64	58	71	62	55	68	60	53	63	57	59	60	52	55	57	59	52	53	56	48	60	53	46	58	60	44					
10	B	0-7	Interior	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101				
			Exposed	101	101	101	91	101	100	86	101	95	82	101	91	79	101	87	75	96	83	72	92	80	69	86	75	65	80	70	62	75	66	59	71	63	55	67	60	52	64	58	59			
		7-20	Interior	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102		
			Exposed	102	102	88	102	97	83	102	91	79	102	87	75	98	83	72	93	79	69	89	76	66	81	70	62	76	65	59	71	62	55	66	59	52	63	56	59	61	53	56				
		20-27	Interior	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102			
			Exposed	102	102	98	102	102	92	102	92	102	96	87	102	91	82	102	86	79	102	82	75	100	79	72	92	73	67	86	68	63	80	64	60	75	61	57	71	59	53	68	55	50		
	C	27-45	Interior	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103			
			Exposed	103	103	103	103	103	99	103	103	94	103	98	89	103	94	85	98	90	81	94	86	78	86	80	72	79	74	67	74	70	64	69	66	61	65	63	58	63	61	55				
		0-7	Interior	101	101	94	101	101	89	101	98	84	101	93	81	101	89	77	99	85	74	95	82	71	88	76	66	82	72	63	77	67	60	73	64	56	69	61	53	66	59	60				
			Exposed	101	89	77	98	85	73	93	81	70	89	77	67	85	74	64	82	71	62	78	69	61	73	64	57	68	61	53	65	58	60	62	54	56	59	61	53	56	59	59				
		7-20	Interior	102	102	90	102	100	85	102	94	81	102	89	77	101	85	74	96	81	70	91	78	68	84	72	63	78	67	60	72	63	57	68	61	53	64	58	60	62	55	58				
			Exposed	100	85	73	94	80	70	89	76	66	85	73	64	81	69	62	77	66	60	74	64	58	68	61	53	64	57	60	61	53	57	58	60	53	55	58	59	52	54	47				
D	20-27	Interior	102	102	101	102	102	95	102	99	89	102	93	85	102	89	81	102	85	77	102	81	74	98	77	61	94	74	68	87	68	63	81	64	60	76	61	57	71	59	53	67	55	60		
		Exposed	102	89	81	102	84	76	101	79	72	96	75	69	91	72	66	87	69	64	84	66	62	78	62	59	73	59	54	68	56	51	64	52	58	62	59	55	59	56	51					
	27-45	Interior	103	103	103	103	103	102	103	103	96	103	103	92	103	96	88	80	92	85	77	88	81	74	80	75	68	75	70	64	70	66	61	65	63	58	63	60	55	60	58	52				
		Exposed	103	96	87	100	91	82	94	87	78	89	83	75	85	79	72	81	76	69	78	73	66	72	68	62	67	64	59	63	61	55	60	58	62	58	55	59	54	52	56					
	20	B	0-7	Interior	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101			
				Exposed	101	101	101	91	101	100	86	101	95	82	101	91	79	101	87	75	96	83	72	92	80	69	86	75	65	80																

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[illegible]

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[illegible]

Highlighted cell with strikethrough indicate 3-rail system span and module clamp allowable capacity exceeds with 3-rails. 4-Rail system required. Contact Unirac Engineering Services for support.

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[illegible]

10 Highlighted cell indicate 3-rail system span. Contact Unirac Engineering Services for support.

[illegible]

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Maximum Allowable Rail Spans for Rooftop Solar Panels Parallel to the Roof Surface (inches)

Ground Snow Load (psf)	Wind Exposure Category	Roof Tilt Angle (deg)	Panel Exposure	Basic Wind Speed (mph)																																										
				90			95			100			105			110			115			120			130			140			150			160			170			180						
				Roof Wind Zone																																										
				1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3							
0	B	0-7	Interior	101	101	101	101	101	101	101	101	101	101	96	101	101	91	101	101	87	101	97	84	101	90	78	97	84	73	91	79	68	85	74	65	81	70	62	77	67	59					
			Exposed	101	101	91	101	100	86	101	95	82	101	91	79	101	87	75	96	83	72	92	80	69	86	75	65	80	70	62	75	66	59	71	63	55	67	60	52	64	58	59				
		7-20	Interior	102	102	102	102	102	102	102	102	102	102	102	98	102	102	98	102	88	102	98	84	102	93	80	102	86	74	93	79	69	87	74	65	81	70	62	76	66	59	72	63	56		
			Exposed	102	102	88	102	97	83	102	91	79	102	87	75	98	83	72	93	79	69	89	76	66	81	70	62	76	65	59	71	62	55	66	59	52	63	56	59	61	53	56				
		20-27	Interior	102	102	102	102	102	102	102	102	102	102	102	102	102	102	98	102	102	102	98	102	102	93	102	98	89	102	90	82	102	83	76	98	77	70	92	72	66	86	68	63	82	65	61
			Exposed	102	102	98	102	102	92	102	92	102	92	102	91	82	102	86	79	102	82	75	100	79	72	92	73	67	86	68	63	80	64	60	75	61	57	71	59	53	68	55	50			
		27-45	Interior	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	96	103	103	97	88	99	90	82	92	85	76	85	79	72	80	75	68	76	71	65		
			Exposed	103	103	103	103	103	99	103	103	94	103	98	89	103	94	85	98	90	81	94	86	78	86	80	72	79	74	67	74	70	64	69	66	61	65	63	58	63	61	55				
	C	0-7	Interior	101	101	94	101	101	89	101	98	84	101	93	81	101	89	77	99	85	74	95	82	71	88	76	66	82	72	63	77	67	60	73	64	56	69	61	53	66	59	60				
			Exposed	101	89	77	98	85	73	93	81	70	89	77	67	85	74	64	82	71	62	78	69	61	73	64	57	68	61	53	65	58	60	62	54	56	59	61	53	56	59	59				
		7-20	Interior	102	102	90	102	100	85	102	94	81	102	89	77	101	85	74	96	81	70	91	78	68	84	72	63	78	67	60	72	63	57	68	61	53	64	58	60	62	55	58				
			Exposed	100	85	73	94	80	70	89	76	66	85	73	64	81	69	62	77	66	60	74	64	58	68	61	53	64	57	60	61	53	57	58	60	53	55	58	59	52	54	47				
		20-27	Interior	102	102	101	102	102	95	102	99	89	102	93	85	102	89	81	102	85	77	102	81	74	95	75	68	88	69	64	82	65	61	77	62	58	73	60	55	69	57	52				
			Exposed	102	89	81	102	84	76	101	79	72	96	75	69	91	72	66	87	69	64	84	66	62	78	62	59	73	59	54	68	56	51	64	52	58	62	59	55	59	56	51				
		27-45	Interior	103	103	103	103	103	102	103	103	96	103	103	92	103	96	87	101	92	83	96	88	80	88	82	74	82	76	69	76	72	65	71	68	62	67	64	59	64	62	57				
			Exposed	103	96	87	100	91	82	94	87	78	89	83	75	85	79	72	81	76	69	78	73	66	72	68	62	67	64	59	63	61	55	60	58	62	58	55	59	54	52	56				
	D	0-7	Interior	101	99	86	101	94	82	101	90	78	99	86	74	95	82	71	91	79	68	87	76	66	81	71	62	76	66	59	71	63	55	67	60	52	64	57	59	62	54	56				
			Exposed	95	82	71	90	78	68	86	75	65	82	71	63	78	69	61	75	66	59	73	64	56	68	60	52	64	57	59	61	53	55	58	60	51	54	57	48	61	54	46				
		7-20	Interior	102	96	82	102	90	78	102	86	74	96	81	71	91	78	68	87	74	65	83	71	63	77	66	60	71	63	56	66	60	52	63	56	59	61	53	56	58	60	53				
			Exposed	91	78	67	86	73	64	81	70	62	77	67	60	74	64	58	71	62	55	68	60	53	63	57	59	60	52	55	57	59	52	53	56	48	60	53	46	58	60	44				
		20-27	Interior	102	101	91	102	95	86	102	90	81	102	85	77	102	81	74	98	77	71	94	74	68	87	68	63	81	64	60	76	61	57	71	59	53	67	55	60	64	52	58				
			Exposed	102	81	74	97	76	70	92	73	66	88	69	64	84	66	62	80	64	60	77	62	58	72	59	54	67	54	60	63	51	57	61	58	53	58	55	60	55	52	47				
		27-45	Interior	103	103	98	103	103	93	103	97	88	102	93	84	96	88	80	92	85	77	88	81	74	80	75	68	75	70	64	70	66	61	65	63	58	63	60	55	60	58	52				
			Exposed	96	88	80	91	84	76	86	80	72	81	76	69	78	73	66	74	70	64	71	67	62	66	63	59	62	60	54	59	57	51	56	53	58	53	60	55	60	58	52				
10	B	0-7	Interior	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	90	78	95	84	73	91	79	68	85	74	65	81	70	62	77	67	59						
			Exposed	95	95	91	95	95	86	95	95	82	95	91	79	95	87	75	95	83	72	92	80	69	86	75	65	80	70	62	75	66	59	71	63	55	67	60	52	64	58	59				
		7-20	Interior	95	95	95	95	95	95	95	95	95	95	95	93	95	95	88	95	95	84	95	93	80	95	86	74	93	79	69	87	74	65	81	70	62	76	66	59	72	63	56				
			Exposed	95	95	88	95	95	83	95	91	79	95	87	75	95	83	72	93	79	69	89	76	66	81	70	62	76	65	59	71	62	55	66	59	52	63	56	59	61	53	56				
		20-27	Interior	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	90	82	99	83	76	98	77	70	92	72	66	86	68	63	82	65	61					
			Exposed	99	99	98	99	99	92	99	96	87	99	91	82	99	86	79	99	82	75	99	79	72	92	73	67	86	68	63	80	64	60	75	61	57	71	59	53	68	55	50				
		27-45	Interior	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	96	102	97	88	99	90	82	92	85	76	85	79	72	80	75	68	76	71	65			
			Exposed	102	102	102	102	102	99	102	102	94	102	98	89	102	94	85	98	90	81	94	86	78	86	80	72	79	74	67	74	70	64	69	66	61	65	63	58	63	61	55				
	C	0-7	Interior	95	95	94	95	95	89	95	95	84	95	93	81	95	89	77	95	85	74	95	82	71	88	76	66	82	72	63	77	67	60	73	64	56	69	61	53	66	59	60				
D	0-7	Exposed	95	89	77	95	85	73	93	81	70	89	77	67	85	74	64	82	71	62	78	69	61	73	64	57	68	61	53	65	58	60	62	54	56	59	61	53	56	59	59					
		Interior	95	95	90	95	95	85	94	81	70	89	77	67	85	74	64	82	71	62	78	69	61	70	91	78	68	84	72	63	78	67	60	72	63	57	68	61	53	64	58	60	62	55	58	
	7-20	Exposed	95	85	73	94	80	70	89	76	66	85	73	64	81	69	62	77	66	60	74	64	58	68	61	53	64	57	60	61	53	57	58	60	53	55	58	59	52	54	47					
		Interior	99	99	99	99	99	95	99	99	99	99	99	93	85	99	89	81	99	85	77	99	81	74	95	75	68	88	69	64	82	65	61	77	62	58	73	60	55	69	57	52				
	20-27	Exposed	99	89	81	99	84	76	99	79	72	96	75	69	91	72	66	87	69	64	84	66	62	78	62	59	73	59	54	68	56	51	64	52	58	62	59	55	59	56	51					
		Interior	102	102	102	102	102	102																																						

10 Highlighted cell indicate 3-rail system span. Contact Unirac Engineering Services for support.

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[illegible]

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36 Highlighted cell with strikethrough indicate 3-rail system span and module clamp allowable capacity exceeds with 3-rails. 4-Rail system required. Contact Unirac Engineering Services for support.