

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

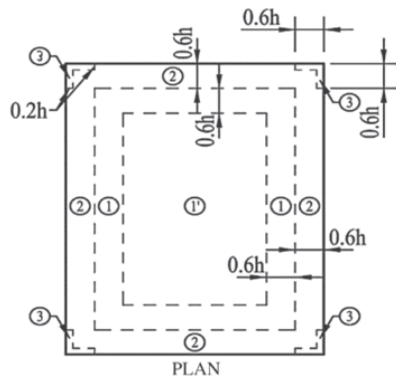
- 0.2-s Spectral Response Acceleration
- $S_s = 1.25$ and 3 with $S_{ds} = 1, 2.4$ respectively per criteria shown on individual span tables sheets.
- $S_1 = 0.5$ & $S_{d1} = 0.6$
- Seismic site class D

Array Assumptions

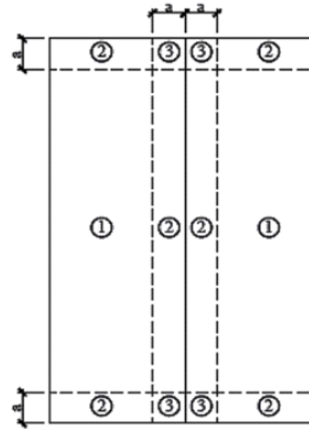
- Module orientation and Rail direction per criteria shown on individual span tables sheets.
- Maximum module dimensions of 40.1” x 67” (~19 sq.ft, 47.65 lbs) and 41” x 80” (~23 sq.ft, 58.6 lbs) per criteria shown on individual span tables sheets.
- Minimum distance between modules and roof edge is at 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

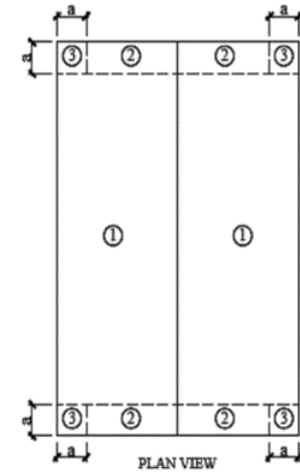
Zone should be considered as per ASCE 7-22, Fig. 30.3-2A to 30.3-2D



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

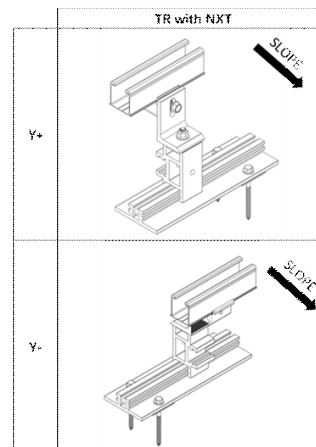


Gable Roofs $7^\circ < \theta \leq 27^\circ$



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

Rails can be installed in these possible orientations.



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										
0	B	0-7	Interior	86	86	86	86	86	86	84	86	86	80	86	86	80	86	86	77	86	84	74	86	81	71	86	78	69	83	73	62	78	69	48	73	65	40	70	53	35	66	44	31	59	39	27
			Exposed	86	84	74	86	80	70	86	77	67	84	74	65	80	71	55	77	68	48	75	66	42	70	54	35	66	43	30	55	37	26	45	32	23	39	28	30	35	25	27				
		7-20	Interior	86	86	85	86	86	81	86	86	78	86	84	74	86	81	71	86	78	69	86	75	66	80	70	52	75	66	41	70	52	35	67	42	31	58	37	27	46	33	23	24			
			Exposed	86	81	71	86	77	68	84	73	65	81	70	54	77	68	46	74	65	40	72	56	37	67	42	31	56	36	27	43	31	23	37	27	31	33	24	27	29	21	24				
		20-27	Interior	86	86	86	86	86	86	86	86	84	86	86	81	86	84	77	86	81	74	86	78	72	86	72	67	83	68	56	78	61	43	74	47	37	70	40	33	67	35	29				
			Exposed	86	84	77	86	80	74	86	76	70	86	73	68	86	70	65	83	67	55	80	65	46	74	48	38	70	39	32	66	34	28	56	29	24	45	26	22	39	23	29				
	27-45	Interior	87	87	87	87	87	87	87	87	87	87	87	87	87	87	82	87	86	79	87	83	76	83	78	71	78	73	67	73	69	59	65	46	66	55	39	56	45	35						
		Exposed	87	87	82	87	85	78	87	82	75	84	78	82	81	75	69	78	73	67	75	70	64	70	66	47	66	53	39	52	42	34	41	37	29	36	33	26	32	29	23					
	C	0-7	Interior	86	86	75	86	82	72	86	78	69	86	75	66	82	72	60	79	70	52	76	67	45	71	59	37	67	46	32	60	39	28	49	34	24	41	30	21	37	27	29				
			Exposed	82	72	60	78	69	50	75	66	42	72	61	38	69	52	35	67	46	32	64	41	29	50	34	24	40	30	21	35	26	27	31	22	24	27	30	21	24	26	19				
		7-20	Interior	86	83	73	86	79	70	86	75	67	83	72	61	79	69	50	76	67	43	73	63	39	68	46	33	62	38	28	47	33	24	39	29	21	35	25	28	31	23	25				
			Exposed	79	69	50	75	66	42	72	58	37	69	48	34	66	41	31	61	38	28	51	34	25	40	29	22	34	25	28	30	22	24	26	29	21	23	25	19	31	22	17				
20-27		Interior	86	86	79	86	82	75	86	78	72	86	75	69	86</																															

* 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.

10 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.

* Cells with an asterisk indicates that the L-root 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)																																									
				Roof Wind Zone																																									
				90			95			100			105			110			115			120			130			140			150			160			170			180					
				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	1	2	3			
0	B	0-7	Interior	102	102	102	102	102	102	102	102	98	102	102	93	102	102	88	102	98	85	102	94	81	101	87	75	94	81	70	88	76	66	83	72	59	78	68	52	74	65	46			
			Exposed	102	102	88	102	97	84	102	92	79	102	88	76	98	84	73	93	81	70	90	78	67	83	72	59	77	67	51	73	62	44	69	54	39	65	48	51	58	43	46			
		7-20	Interior	102	102	102	102	102	101	102	102	95	102	102	89	102	100	85	102	95	81	102	90	77	98	83	71	90	77	66	84	71	59	78	67	52	73	62	46	69	55	41			
			Exposed	102	100	85	102	93	80	102	88	76	100	84	72	94	80	69	90	76	66	85	73	62	78	67	52	73	61	45	68	53	39	63	46	51	55	41	45	49	36	40			
		20-27	Interior	103	103	103	103	103	103	103	103	103	103	103	103	100	103	103	95	103	100	90	103	95	86	103	86	78	102	80	73	95	74	68	89	69	63	83	65	55	79	59	49		
			Exposed	103	103	94	103	99	89	103	92	84	103	87	79	103	83	76	102	79	72	97	76	69	89	70	63	83	65	54	77	57	47	73	50	41	69	44	36	65	39	49			
	27-45	Interior	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	102	103	97	103	103	93	103	94	85	96	87	79	88	82	74	82	77	69	77	72	65	73	69	59	59			
		Exposed	103	103	102	103	103	96	103	101	91	103	95	86	100	91	82	95	87	78	90	83	75	83	77	69	76	72	65	71	67	56	67	62	49	61	55	44	54	49	39				
	C	0-7	Interior	102	102	91	102	100	86	102	95	82	102	90	78	100	86	74	96	83	71	92	79	69	85	74	63	79	69	54	74	65	47	70	57	41	66	51	36	62	45	48			
			Exposed	100	86	74	95	82	71	90	78	67	86	75	64	82	71	58	79	69	53	76	66	49	70	58	41	66	50	35	59	43	46	52	38	40	45	50	36	40	45	32			
		7-20	Interior	102	102	87	102	96	82	102	91	78	102	86	74	97	82	71	92	78	68	88	75	65	81	69	55	75	64	47	70	55	41	65	49	36	58	43	48	52	38	43			
			Exposed	97	82	71	91	77	67	86	73	63	82	70	57	78	63	47	71	58	43	66	49	36	57	42	47	50	36	41	44	48	36	38	42	32	51	38	29	38	29				
		20-27	Interior	103	103	97	103	102	91	103	95	86	103	90	82	103	86	78	103	82	74	100	78	71	95	74	68	91	71	65	84	66	56	78	58	48	73	50	41	69	44	36	67	41	51
			Exposed	103	85	77	103	81	73	98	76	70	93	73	66	88	69	62	84	66	57	81	63	52	75	53	44	70	45	38	66	39	49	59	35	52	43	52	46	38	46	41	34		
	D	0-7	Interior	103	103	103	103	103	99	103	103	103	93	103	98	88	103	93	84	98	89	80	93	86	77	85	79	71	79	74	66	73	69	60	68	65	52	65	58	46	57	52	41		
			Exposed	103	93	84	97	88	80	91	84	76	86	80	72	82	76	69	78	73	66	75	70	62	71	67	57	68	65	52	65	44	53	48	38	46	41	49	40	36	48	43	34		
		7-20	Interior	102	96	83	102	91	79	101	87	75	96	83	72	92	79	69	88	76	66	84	73	62	78	68	52	73	63	45	69	55	39	65	48	51	58	42	45	51	37	40			
			Exposed	92	79	68	87	75	65	83	72	59	79	69	53	76	66	49	73	62	44	70	57	41	65	48	34	57	41	44	49	36	39	43	47	34	38	42	36	51	37	27			
		20-27	Interior	102	93	79	102	87	75	98	83	71	93	78	68	88	75	65	84	71	60	80	69	55	74	62	46	68	53	40	63	46	34	55	40	45	49	36	40	43	48	36			
			Exposed	88	75	65	83	71	58	78	67	52	74	64	47	71	58	43	68	53	39	65	48	36	56	41	46	48	35	39	41	46	34	36	40	35	49	35	26	43	32	23			
	B	0-7	Interior	103	97	88	103	91	83	103	86	78	103	82	74	100	78	71	95	74	68	91	71	65	84	66	56	78	58	48	73	50	41	69	44	36	65	39	48	58	34	43			
			Exposed	100	78	71	94	73	67	89	70	63	85	66	57	81	63	52	78	57	47	74	52	43	69	44	37	64	38	47	56	50	41	49	43	36	43	38	32	38	34	29			
		7-20	Interior	103	103	95	103	99	90	103	94	85	98	90	81	93	85	77	88	82	74	84	78	71	77	73	66	72	68	57	67	63	50	61	55	44	54	48	38	48	43	52			
			Exposed	93	85	77	87	81	73	83	77	69	78	73	66	75	70	62	71	67	57	68	65	52	62	55	44	53	48	38	46	41	49	40	36	43	36	48	38	48	43	34			
		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			
			Exposed	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			
10	B	0-7	Interior	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	94	81	95	87	75	94	81	70	88	76	66	83	72	59	78	68	52	74	65	46				
			Exposed	95	95	88	95	95	84	95	92	79	95	88	76	95	84	73	93	81	70	90	78	67	83	72	59	77	67	51	73	62	44	69	54	39	65	48	51	58	43	46			
		7-20	Interior	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95			
			Exposed	95	95	85	95	93	80	95	88	76	95	84	72	94	80	69	90	76	66	85	73	62	78	67	52	73	61	45	68	53	39	63	46	51	55	41	45	49	36	40			
		20-27	Interior	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100			
			Exposed	100	100	94	100	98	89	100	92	84	100	87	79	100	83	76	100	79	72	97	76	69	89	70	63	83	65	54	77	57	47	73	50	41	69	44	36	65	39	49			
	C	0-7	Interior	102	102																																								

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

* Cells with an asterisk indicates that the L-root 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)

[illegible]

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

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

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	1	2	3			
0	B	0-7	Interior	78	78	78	78	78	78	78	77	78	78	74	78	78	71	78	77	68	78	75	66	78	70	52	75	66	41	70	54	33	67	44	29	60	37	26	49	32	23				
			Exposed	78	78	71	78	77	68	78	73	65	78	70	54	77	68	46	74	65	40	72	58	35	67	45	29	58	36	25	46	31	22	38	27	29	33	24	25	29	21	23			
		7-20	Interior	78	78	78	78	78	78	78	78	75	78	78	72	78	69	78	65	66	78	72	60	67	67	67	64	72	57	34	68	44	29	62	35	26	48	31	23	39	27	20			
			Exposed	78	78	69	78	74	66	78	71	55	78	68	45	75	65	38	72	56	34	69	47	31	64	35	26	47	30	22	36	26	29	31	23	26	27	20	22	24	27	20			
		20-27	Interior	79	79	79	79	79	79	79	79	79	79	79	79	79	79	78	79	79	75	79	78	72	79	65	69	79	70	64	79	65	47	75	51	36	71	39	31	68	33	27	63	29	24
			Exposed	79	79	75	79	77	71	79	74	68	79	71	65	79	68	55	79	65	46	76	56	39	71	40	31	67	33	27	59	28	23	47	25	20	38	22	27	33	29	24			
	C	27-45	Interior	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	76	80	80	74	80	61	66	79	70	64	71	66	49	67	57	39	60	46	33	47	38	29		
			Exposed	80	80	79	80	80	76	80	79	72	80	76	69	78	73	67	75	70	63	72	67	53	67	58	39	58	45	32	43	35	28	34	31	24	30	27	22	27	24	29			
		0-7	Interior	78	78	72	78	78	69	78	75	66	78	72	60	78	69	51	76	67	43	73	64	38	68	49	31	63	39	27	50	33	23	41	28	20	34	25	27	31	22	24			
			Exposed	78	69	50	75	66	42	72	59	35	69	51	32	66	44	29	62	38	26	54	34	24	42	29	20	34	25	26	29	21	23	26	28	20	23	25	18	30	22	16			
		7-20	Interior	78	78	70	78	76	67	78	73	62	78	70	51	77	67	42	74	62	36	71	52	32	66	38	27	52	32	24	40	28	20	33	24	27	29	21	24	26	28	21			
			Exposed	76	67	42	73	59	35	70	48	31	67	40	28	61	34	26	51	31	23	43	29	21	33	24	23	28	21	23	25	27	20	22	24	18	29	21	16	25	19	14			
10	B	20-27	Interior	79	79	77	79	79	73	79	75	70	79	72	67	79	69	62	79	67	51	78	62	43	73	45	33	69	34	28	65	30	25	51	26	22	41	23	29	35	20	25			
			Exposed	79	69	61	79	66	48	77	57	39	74	47	34	71	39	31	68	34	28	66	31	26	52	26	22	40	23	28	33	29	24	29	26	21	26	23	19	23	20	17			
		27-45	Interior	80	80	80	80	80	77	80	80	74	80	77	71	80	74	68	77	71	66	74	69	59	69	64	43	65	49	34	48	39	30	37	33	26	32	29	23	29	26	20			
			Exposed	80	74	68	76	71	65	73	68	54	70	65	45	67	56	38	63	48	34	52	41	31	38	33	26	32	28	22	24	29	24	21	26	21	29	23	28	25	20				
	C	0-7	Interior	78	76	67	78	73	62	78	70	52	76	67	44	73	64	38	70	55	34	68	48	31	61	37	26	47	31	22	38	27	29	33	24	25	29	21	22	25	28	20			
			Exposed	73	63	37	70	53	33	67	45	29	63	38	27	54	34	24	47	31	22	41	28	30	33	24	26	28	21	22	24	27	19	21	24	17	28	21	16	25	18	13			
		7-20	Interior	78	74	65	78	70	53	77	67	43	74	63	36	71	52	32	68	44	30	66	37	27	49	31	23	37	26	30	31	23	26	27	20	22	24	27	20	21	24	18			
			Exposed	71	52	32	67	42	29	63	35	26	51	32	23	43	29	21	36	26	29	33	24	27	28	20	23	24	26	19	21	23	17	27	20	16	24	18	13	21	16	12			
		20-27	Interior	79	77	71	79	73	68	79	70	64	79	67	52	78	62	43	75	51	36	73	43	33	68	33	28	60	29	24	47	25	21	38	22	27	33	29	24	29	26	21			
			Exposed	78	62	42	75	49	35	71	40	31	68	34	28	66	31	26	59	28	23	51	26	21	39	22	27	32	28	24	28	25	20	24	22	18	21	19	16	29	17	14			
20	B	27-45	Interior	80	80	75	80	78	72	80	75	69	77	72	66	74	69	59	71	66	50	69	62	42	61	47	33	45	36	28	35	31	25	30	27	22	27	24	29	24	21	26			
			Exposed	74	69	58	70	66	47	67	58	39	64	48	34	52	41	31	44	35	28	37	32	26	31	27	22	26	24	28	23	20	25	20	27	21	27	24	19	24	21	17			
	C	0-7	Interior	71	71	71	71	71	69	71	71	66	71	71	60	71	69	51	71	67	43	71	64	38	68	49	31	63	39	27	50	33	23	41	28	20	34	25	27	31	22	24			
			Exposed	71	69	50	71	66	42	71	59	35	69	51	32	66	44	29	62	38	26	54	34	24	42	29	20	34	25	26	29	21	23	26	28	20	23	25	18	30	22	16			
		7-20	Interior	71	71	70	71	71	67	71	71	62	71	70	51	71	67	42	71	62	36	71	52	32	66	38	27	52	32	24	40	28	20	33	24	27	29	21	24	26	28	21			
			Exposed	71	67	42	71	59	35	70	48	31	67	40	28	61	34	26	51	31	23	43	29	21	33	24	27	28	21	23	25	27	20	22	24	18	29	21	16	25	19	14			
		20-27	Interior	76	76	76	76	73	76	75	70	76	72	67	76	69	62	76	67	51	76	62	43	73	45	33	69	34	28	65	30	25	51	26	22	41	23	29	35	20	25				
			Exposed	76	69	61	76	66	48	76	57	39	74	47	34	71	39	31	68	34	28	66	31	26	52	26	22	40	23	28	33	29	24	29	26	21	26	23	19	23	20	17			
30	B	27-45	Interior	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78		
			Exposed	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78		
	C	0-7	Interior	71	71	71	71	71	69	71	71	66	71	71	60	71	69	51	71	67	43	71	64	38	68	49	31	63	39	27	50	33	23	41	28	20	34	25	27	31	22	24			

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

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.

[illegible]

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

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

40 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											
				Roof Wind Zone																																																	
0	B	0-7	Interior	101	101	101	101	101	101	101	101	101	101	101	101	97	101	101	101	92	101	101	87	101	97	84	101	93	80	100	86	74	93	65	82	71	57	77	67	51	73	63	45	45									
			Exposed	101	101	87	101	96	83	101	91	79	101	87	75	97	83	72	93	80	69	89	77	66	82	71	58	77	67	50	72	61	43	68	53	38	64	47	50	57	42	45											
		7-20	Interior	101	101	101	101	101	99	101	101	93	101	101	88	101	99	84	101	94	80	101	89	77	92	82	71	89	76	66	83	71	58	77	66	51	72	60	45	68	54	40											
			Exposed	101	98	84	101	92	79	101	87	75	98	83	71	93	79	68	89	75	65	84	72	61	78	67	51	72	59	44	67	51	38	61	45	50	54	40	44	48	35	39											
		20-27	Interior	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	99	102	102	93	102	98	89	102	94	85	102	85	78	101	79	72	94	73	67	88	69	61	83	65	54	78	58	48							
			Exposed	102	102	93	102	97	88	102	91	83	102	86	78	102	102	82	75	100	78	71	96	75	68	88	69	62	82	64	53	77	56	46	72	49	40	68	43	35	65	38	48										
	C	27-45	Interior	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	96	102	102	96	102	102	92	102	93	84	94	87	78	81	73	81	76	68	76	72	65	72	68	58									
			Exposed	102	102	101	102	102	95	102	99	90	102	94	85	99	90	81	94	86	78	89	82	74	82	76	69	76	71	64	70	67	55	66	61	48	60	54	43	53	48	38											
		0-7	Interior	101	101	90	101	99	85	101	94	81	101	89	77	99	85	74	95	82	71	91	79	68	87	76	65	84	73	60	78	68	51	72	62	44	68	54	38	64	47	50	56	41	44	50	37	39					
			Exposed	99	85	73	94	81	70	89	77	67	85	74	63	81	71	57	78	68	52	75	66	47	72	61	43	69	56	40	65	47	52	58	42	45	50	37	40	44	49	86	39	44	84								
		7-20	Interior	101	101	86	101	95	81	101	90	77	101	85	73	96	81	70	91	77	67	87	74	64	80	68	54	74	63	46	69	54	40	65	47	35	57	42	47	51	37	42											
			Exposed	96	81	70	90	76	66	85	72	61	81	69	55	77	66	50	73	62	46	70	57	42	65	48	36	56	41	46	49	36	40	43	47	35	38	42	84	50	37	27											
	D	20-27	Interior	102	102	96	102	100	90	102	94	85	102	89	81	102	85	77	102	81	73	99	77	70	91	71	65	84	66	56	79	59	49	74	51	42	70	45	37	66	40	50											
			Exposed	102	84	77	102	80	72	97	75	69	92	72	65	87	68	61	84	65	55	80	67	51	74	52	43	69	44	37	65	39	48	57	51	42	50	45	37	45	40	33											
		27-45	Interior	102	102	102	102	102	97	102	102	92	102	92	83	97	88	80	92	85	76	87	81	73	83	78	70	77	72	65	71	67	56	66	61	49	60	54	43	53	47	38	47	42	50								
			Exposed	102	92	83	95	87	79	90	83	75	85	79	71	81	76	68	77	82	65	74	70	61	71	67	55	68	64	51	60	54	43	52	47	37	45	40	48	39	53	42	35	47	37	47	42	89					
10	B	0-7	Interior	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94					
			Exposed	94	94	87	94	94	83	94	91	79	94	84	72	93	80	69	89	77	66	82	71	58	77	67	50	72	61	43	68	53	38	64	47	50	57	42	45														
		7-20	Interior	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95	95				
			Exposed	95	95	84	95	92	79	95	87	75	95	83	71	93	79	68	89	75	65	84	72	61	78	67	51	72	59	44	67	51	38	61	45	50	54	40	44	48	35	39											
		20-27	Interior	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99					
			Exposed	99	99	93	99	97	88	99	91	83	99	86	78	99	82	75	99	78	71	96	75	68	88	69	62	82	64	53	77	56	46	72	49	40	68	43	35	65	38	48											
	C	27-45	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	101	101	101	101	101	101	101				
			Exposed	101	101	101	101	101	95	101	99	90	101	94	85	99	90	81	94	86	78	89	82	74	82	76	69	76	71	64	70	67	55	66	61	48	60	54	43	53	48	38											
		0-7	Interior	94	94	90	94	94	85	94	94	81	94	89	77	94	85	74	94	82	71	91	79	68	84	73	61	79	68	53	74	64	46	70	56	40	66	49	53	60	44	47											
			Exposed	94	85	73	94	81	70	89	77	67	85	74	63	81	71	57	78	68	52	75	66	47	72	61	43	69	56	40	65	47	52	58	42	45	50	37	40	44	49	86	39	44	84								
		7-20	Interior	95	95	86	95	95	81	95	90	77	95	85	73	95	81	70	91	77	67	87	74	64	80	68	54	74	63	46	69	54	40	65	47	35	57	42	47	51	37	42											
			Exposed	95	81	70	90	76	66	85	72	61	81	69	55	77	66	50	73	62	46	70	57	42	65	48	36	56	41	46	49	36	40	43	47	35	38	42	84	50	37	27											
	D	20-27	Interior	99	99	96	99	99	90	99	94	85	99	89	81	99	85	77	99	81	73	99	77	70	91	71	65	84	66	56	79	59	49	74	51	42	70	45	37	66	40	50											
			Exposed	99	84	77	99	80	72	97	75	69	92	72	65	87	68	61	84	65	55	80	67	51	74	52	43	69	44	37	65	39																					

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[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									
				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	1	2	3	1	2	3	1	2	3			
0	B	0-7	Interior	86	86	86	86	86	84	86	86	80	86	86	77	86	84	74	86	81	71	86	78	69	83	73	62	78	69	48	73	65	40	70	53	35	66	44	31	59	39	27	27								
			Exposed	86	84	74	86	80	70	86	77	67	84	74	65	80	71	55	77	68	48	75	66	42	70	54	35	66	43	30	55	37	26	45	32	23	39	28	30	35	25	27									
		7-20	Interior	86	86	85	86	86	81	86	86	78	86	84	74	86	81	71	86	78	69	86	75	66	80	70	52	35	67	42	31	58	37	27	46	31	58	37	27	46	33	24									
			Exposed	86	81	71	86	77	68	84	73	65	81	70	54	77	68	46	74	65	40	72	56	37	67	42	31	56	36	27	43	31	23	37	27	31	33	24	27	29	21	24									
		20-27	Interior	86	86	86	86	86	86	86	86	84	86	86	81	86	84	77	86	81	74	86	78	72	86	72	67	83	68	56	78	61	43	74	47	37	70	40	33	67	35	29									
			Exposed	86	84	77	86	80	74	86	76	70	86	73	68	86	70	65	83	67	55	80	65	46	74	48	38	70	39	32	66	34	28	56	29	24	45	26	22	39	23	29									
		27-45	Interior	87	87	87	87	87	87	87	87	87	87	87	86	87	87	82	87	86	79	87	83	76	83	78	71	78	73	67	73	69	59	65	46	66	55	39	56	45	35										
			Exposed	87	87	82	87	85	78	87	82	75	84	78	72	81	75	69	78	73	67	75	70	64	70	66	47	66	53	39	52	42	34	41	37	29	36	33	26	32	29	23									
	C	0-7	Interior	86	86	75	86	82	72	86	78	69	86	75	66	82	72	60	79	70	52	76	67	45	71	59	37	67	46	32	60	39	28	49	34	24	41	30	21	37	27	29									
			Exposed	82	72	60	78	69	50	75	66	42	72	61	38	69	52	35	67	46	32	64	41	29	50	34	24	40	30	21	35	26	27	31	22	24	27	30	21	24	26	19									
		7-20	Interior	86	83	73	86	79	70	86	75	67	83	72	61	79	69	50	76	67	43	73	63	39	68	46	33	62	38	28	47	33	24	39	29	21	35	25	28	31	23	25									
			Exposed	79	69	50	75	66	42	72	58	37	69	48	34	66	41	31	61	38	28	51	34	25	40	29	22	34	25	28	30	22	24	26	29	21	23	25	19	31	22	17									
		20-27	Interior	86	86	79	86	82	75	86	78	72	86	75	69	86	72	66	84	69	61	81	67	51	76	53	40	71	41	34	67	36	29	61	31	26	50	27	23	42	24	31									
			Exposed	86	72	66	84	68	58	80	65	47	77	56	41	74	46	37	71	41	34	69	37	31	62	31	26	48	27	22	40	23	29	35	31	26	31	27	23	27	24	20									
		27-45	Interior	87	87	84	87	87	80	87	84	77	86	80	74	83	77	71	79	74	68	77	72	66	71	67	52	67	59	41	58	46	35	45	39	31	38	34	27	34	31	24									
			Exposed	83	77	71	79	74	68	75	71	65	72	68	54	69	65	46	67	57	40	63	49	37	45	39	31	38	34	27	33	29	23	29	26	31	25	23	27	22	30	24									
	D	0-7	Interior	86	79	70	86	76	67	83	73	62	79	70	53	76	67	45	74	65	40	71	57	37	67	45	31	57	38	27	46	33	23	39	28	30	34	25	27	30	22	24									
			Exposed	76	67	45	73	63	39	70	54	35	67	46	32	64	41	29	56	37	26	49	34	24	39	29	31	34	25	26	29	21	23	26	28	20	22	25	18	30	22	16									
		7-20	Interior	86	76	68	84	73	64	80	70	52	76	67	43	73	63	39	70	53	35	68	45	32	59	37	27	44	32	24	38	27	31	33	24	27	29	21	24	26	28	21									
			Exposed	73	62	39	70	50	35	67	42	31	62	38	28	51	34	25	43	31	23	39	29	21	33	24	27	28	21	23	25	27	20	22	24	18	29	21	16	25	19	14									
		20-27	Interior	86	79	73	86	76	70	86	72	67	85	69	62	81	67	51	78	62	43	75	52	39	71	40	33	66	34	28	57	30	25	45	26	21	39	23	29	35	31	25									
			Exposed	81	66	51	78	59	42	74	48	38	71	41	34	69	37	31	66	34	28	61	31	26	46	26	22	38	23	28	33	29	24	29	26	21	26	23	19	23	20	17									
		27-45	Interior	87	85	78	87	81	74	83	78	71	80	75	68	77	72	66	74	69	59	71	67	51	66	56	40	53	43	34	42	37	30	36	33	26	32	29	23	28	26	31									
			Exposed	76	72	66	73	68	57	70	66	47	67	58	41	63	49	37	52	42	34	44	39	31	37	33	26	32	28	22	27	24	29	24	21	26	21	29	23	28	25	20									
10	B	0-7	Interior	77	77	77	77	77	77	77	77	77	77	77	77	77	77	74	77	77	71	77	77	69	77	73	62	77	69	48	73	65	40	70	53	35	66	44	31	59	39	27									
			Exposed	77	77	74	77	77	70	77	77	67	77	74	65	77	71	55	77	68	48	75	66	42	70	54	35	66	43	30	55	37	26	45	32	23	39	28	30	35	25	27									
		7-20	Interior	77	77	77	77	77	77	77	77	77	77	77	74	77	77	71	77	77	69	77	75	66	77	70	52	75	66	41	70	52	35	67	42	31	58	37	27	46	33	24									
			Exposed	77	77	71	77	77	68	77	73	65	77	70	54	77	68	46	74	65	40	72	56	37	67	42	31	56	36	27	43	31	23	37	27	31	33	24	27	29	21	24									
		20-27	Interior	83	83	83	83	83	83	83	83	83	83	83	81	83	83	77	83	81	74	83	78	72	83	72	67	83	68	56	78	61	43	74	47	37	70	40	33	67	35	29									
			Exposed	83	83	77	83	80	74	83	76	70	83	73	68	83	70	65	83	70	65	83	67	55	80	65	46	74	48	38	70	39																			

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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	1	2	3	
60	B	0-7	Interior	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63
			Exposed	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63
		7-20	Interior	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63
			Exposed	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63
		20-27	Interior	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
			Exposed	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
		27-45	Interior	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76
			Exposed	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76
	C	0-7	Interior	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63
			Exposed	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63
		7-20	Interior	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63
			Exposed	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63
		20-27	Interior	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
			Exposed	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
		27-45	Interior	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76
			Exposed	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76
	D	0-7	Interior	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66
			Exposed	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66
		7-20	Interior	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67
			Exposed	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67
		20-27	Interior	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73
			Exposed	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73
		27-45	Interior	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79
			Exposed	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79
70	B	0-7	Interior	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59
			Exposed	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59
		7-20	Interior	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59
			Exposed	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59
		20-27	Interior	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65
			Exposed	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65
		27-45	Interior	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*
			Exposed	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*	86*
	C																																										

Ground Snow Load (psf)				Wind Exposure Category	Roof Tilt Angle (deg)	Panel Exposure	Basic Wind Speed (mph)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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90		95		100		105		110		115		120		130		140		150		160		170		180		190		200		210		220		230		240		250		260		270		280		290		300		310		320		330		340		350		360		370		380		390		400		410		420		430		440		450		460		470		480		490		500		510		520		530		540		550		560		570		580		590		600		610		620		630		640		650		660		670		680		690		700		710		720		730		740		750		760		770		780		790		800		810		820		830		840		850		860		870		880		890		900		910		920		930		940		950		960		970		980		990		1000		1010		1020		1030		1040		1050		1060		1070		1080		1090		1100		1110		1120		1130		1140		1150		1160		1170		1180		1190		1200		1210		1220		1230		1240		1250		1260		1270		1280		1290		1300		1310		1320		1330		1340		1350		1360		1370		1380		1390		1400		1410		1420		1430		1440		1450		1460		1470		1480		1490		1500		1510		1520		1530		1540		1550		1560		1570		1580		1590		1600		1610		1620		1630		1640		1650		1660		1670		1680		1690		1700		1710		1720		1730		1740		1750		1760		1770		1780		1790		1800		1810		1820		1830		1840		1850		1860		1870		1880		1890		1900		1910		1920		1930		1940		1950		1960		1970		1980		1990		2000		2010		2020		2030		2040		2050		2060		2070		2080		2090		2100		2110		2120		2130		2140		2150		2160		2170		2180		2190		2200		2210		2220		2230		2240		2250		2260		2270		2280		2290		2300		2310		2320		2330		2340		2350		2360		2370		2380		2390		2400		2410		2420		2430		2440		2450		2460		2470		2480		2490		2500		2510		2520		2530		2540		2550		2560		2570		2580		2590		2600		2610		2620		2630		2640		2650		2660		2670		2680		2690		2700		2710		2720		2730		2740		2750		2760		2770		2780		2790		2800		2810		2820		2830		2840		2850		2860		2870		2880		2890		2900		2910		2920		2930		2940		2950		2960		2970		2980		2990		3000		3010		3020		3030		3040		3050		3060		3070		3080		3090		3100		3110		3120		3130	

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

10	Highlighted cell indicate 3-rail system span. Contact Unirac Engineering Services for support.
40	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											
				Roof Wind Zone																																																			
0	B	0-7	Interior	78	78	78	78	78	78	78	78	78	77	78	78	74	78	78	71	78	77	68	78	75	66	78	70	52	75	66	41	70	54	33	67	44	29	60	37	26	49	32	23												
			Exposed	78	78	71	78	77	68	78	73	65	78	70	54	77	68	46	74	65	40	72	58	35	67	45	29	58	36	25	46	31	22	38	27	29	33	24	25	29	21	23													
		7-20	Interior	78	78	78	78	78	78	78	78	75	78	78	72	78	69	78	65	78	66	78	72	60	67	67	67	64	72	57	34	68	44	29	62	35	26	48	31	23	39	27	20												
			Exposed	78	78	69	78	74	66	78	71	55	78	68	45	75	65	38	72	56	34	69	47	31	64	35	26	47	30	22	36	26	29	31	23	26	27	20	22	24	27	20													
		20-27	Interior	79	79	79	79	79	79	79	79	79	79	79	79	79	78	79	79	75	79	78	72	79	75	69	79	70	64	79	65	47	75	51	36	71	39	31	68	33	27	63	29	24											
			Exposed	79	79	75	79	77	71	79	74	68	79	71	65	79	68	55	79	65	46	76	56	39	71	40	31	67	33	27	59	28	23	47	25	20	38	22	27	33	29	24													
	C	0-7	Interior	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	76	80	80	74	80	69	76	56	39	70	64	71	66	49	67	57	39	60	46	33	47	38	29									
			Exposed	80	80	79	80	80	76	80	79	72	80	76	69	78	73	67	75	70	63	72	67	53	67	58	39	58	45	32	43	35	28	34	31	24	30	27	22	27	24	22	24												
		7-20	Interior	78	78	72	78	78	69	78	75	66	78	72	60	78	69	51	78	67	43	73	64	38	68	49	31	63	39	27	50	33	23	41	28	20	34	25	27	31	22	24													
			Exposed	78	69	50	75	66	42	72	59	35	69	51	32	66	44	29	62	38	26	54	34	24	42	29	20	34	25	26	29	21	23	26	28	20	23	25	18	30	22	16													
		20-27	Interior	78	78	70	78	76	67	78	73	62	78	70	51	77	67	42	74	62	36	71	52	32	66	38	27	52	32	24	40	28	20	33	24	27	29	21	24	26	28	21													
			Exposed	76	67	42	73	59	35	70	48	31	67	40	28	61	34	26	51	31	23	43	29	21	33	24	23	28	21	23	25	27	20	22	24	18	29	21	16	25	19	14													
	D	0-7	Interior	79	79	77	79	79	73	79	75	70	79	72	67	79	69	62	79	67	51	78	62	43	73	45	33	69	34	28	65	30	25	51	26	22	41	23	29	35	20	25													
			Exposed	79	69	61	79	66	48	77	57	39	74	47	34	71	39	31	68	34	28	66	31	26	59	28	23	52	27	32	28	24	22	18	21	19	16	29	17	14															
		7-20	Interior	80	80	80	80	80	77	80	80	74	80	77	71	80	74	68	77	71	66	74	69	59	64	43	65	49	34	48	39	30	37	33	26	32	29	23	29	26	20														
			Exposed	80	74	68	76	71	65	73	68	54	70	65	45	67	56	38	63	48	34	52	41	31	38	33	26	32	28	22	24	29	24	21	26	21	29	23	28	25	20														
		20-27	Interior	78	76	67	78	73	62	78	70	52	76	67	44	73	64	38	70	55	34	68	48	31	61	37	26	47	31	22	38	27	29	33	24	25	29	21	22	25	28	20													
			Exposed	73	63	37	70	53	33	67	45	29	63	38	27	54	34	24	47	31	22	41	28	30	33	24	26	28	21	22	24	27	19	21	24	17	28	21	16	25	18	13													
10	B	0-7	Interior	78	74	65	78	70	53	77	67	43	74	63	36	71	52	32	68	44	30	66	37	27	49	31	23	37	26	30	31	23	26	27	20	22	24	17	20	21	24	18													
			Exposed	71	52	32	67	42	29	63	35	26	51	32	23	43	29	21	36	26	29	33	24	27	28	21	23	24	26	19	21	23	17	27	20	16	24	18	13	21	16	12													
		7-20	Interior	79	77	71	79	73	68	79	70	64	79	67	52	78	62	43	75	51	36	73	43	33	68	33	28	60	29	24	47	25	21	38	22	27	33	29	24	29	26	21													
			Exposed	78	62	42	75	49	35	71	40	31	68	34	28	66	31	26	59	28	23	51	26	21	39	22	27	32	28	24	28	25	20	24	22	18	21	19	16	29	17	14													
		20-27	Interior	80	80	75	80	78	72	80	75	69	77	72	66	74	69	59	71	66	50	69	62	42	61	47	33	45	36	28	35	31	25	30	27	22	27	24	29	24	21	26													
			Exposed	74	69	58	70	66	47	67	58	39	64	48	34	52	41	31	44	35	28	37	32	26	31	27	22	26	24	28	23	20	25	20	27	21	27	24	19	24	21	17													
	C	0-7	Interior	71	71	71	71	71	69	71	71	66	71	71	60	71	69	51	71	67	43	71	64	38	68	49	31	63	39	27	50	33	23	41	28	20	34	25	27	31	22	24													
			Exposed	71	69	50	71	66	42	71	59	35	69	51	32	66	44	29	62	38	26	54	34	24	42	29	20	34	25	26	29	21	23	26	28	20	23	25	18	30	22	16													
		7-20	Interior	71	71	70	71	71	67	71	71	62	71	70	51	71	67	42	71	62	36	71	52	32	66	38	27	52	32	24	40	28	20	33	24	27	29	21	24	26	28	21													
			Exposed	71	67	42	71	59	35	70	48	31	67	40	28	61	34	26	51	31	23	43	29	21	33	24	27	28	21	23	25	27	20	22	24	18	29	21	16	25	19	14													
		20-27	Interior	76	76	76	76	76	73	76	75	70	76	72	67	76	69	62	76	67	51	76	62	43	73	45	33	69	34	28	65	30	25	51	26	22	41	23	29	35	20	25													
			Exposed	76	69	61	76	66	48	76	57	39	74	47	34	71	39	31	68	34	28	66	31	26	52	26	22	40	23	28	33	29	24	29	26	21	26	23	19	23	20	17													
	D	0-7	Interior	78	78	78	78	78	77	78	78	7																																											

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

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.

[illegible]

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

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

40 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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10 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.

[illegible]

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