

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

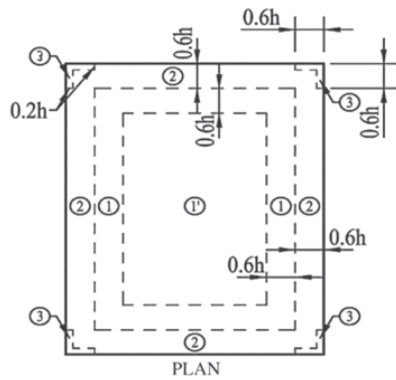
- 0.2-s Spectral Response Acceleration
- $S_s = 1.25$ and 3 with $S_{ds} = 1, 2.4$ respectively per criteria shown on individual span tables sheets.
- $S_1 = 0.5$ & $S_{d1} = 0.6$
- Seismic site class D

Array Assumptions

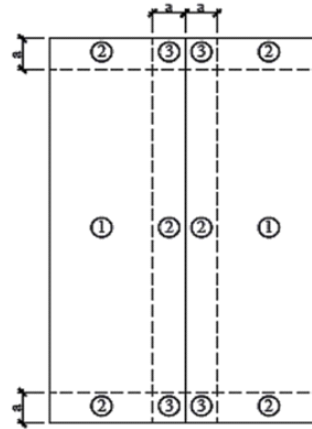
- Module orientation and Rail direction per criteria shown on individual span tables sheets.
- Maximum module dimensions of 40.1” x 67” (~19 sq.ft, 47.65 lbs) and 41” x 80” (~23 sq.ft, 58.6 lbs) per criteria shown on individual span tables sheets.
- Minimum distance between modules and roof edge is at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

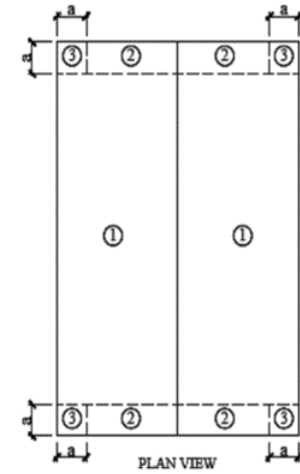
Zone should be considered as per ASCE 7-22, Fig. 30.3-2A to 30.3-2D



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

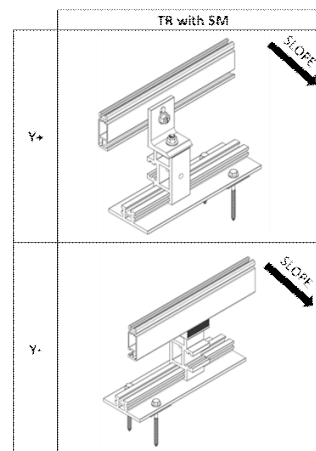


Gable Roofs $7^\circ < \theta \leq 27^\circ$



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

Rails can be installed in these possible orientations.



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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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)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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ASCE 7-22
Design Standard

II
Risk Category

30 ft
Roof Height

Ss = 3.00
Seismic

19 sq.ft
Module Area

LANDSCAPE
Orientation

CROSS-SLOPE
Rail Direction

SM
Rail Type

PRO SERIES
Clamp

Tile Replacement
Attachment

SPAN TABLES

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

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			Exposed	120*	120*	114*	120*	120*	92	120*	118*	76	120*	107	64	120*	90	54	119*	78	47	115*	67	40	86	52	33	67	41	28	54	34	24	44	30	32	66	26	28	32	23	25									
		7-20	Interior	101*	101*	101*	101*	101*	101*	101*	101*	101*	101*	101*	101*	101*	101*	101*	101*	101*	101*	89	101*	101*	73	101*	96*	52	101*	69	40	101*	52	33	75	41	29	58	34	25	46	30	34								
			Exposed	101*	101*	101*	101*	101*	84	101*	101*	67	101*	101*	55	101*	81	46	101*	67	39	101*	57	34	77	42	29	56	33	25	43	29	32	35	25	28	30	34	25	27	30	22									
		20-27	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*	84	57	94*	62	43	94*	47	34	92*	38	30	74	33	27								
			Exposed	94*	94*	94*	94*	94*	94*	94*	94*	94*	94*	94*	82	94*	67	94*	81	55	94*	67	47	94*	48	35	89*	37	30	69	31	26	55	27	34	45	24	30	37	32	27										
	27-45	Interior	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	77	88*	85*	58	88*	67	46	73	54	37	57	44	32									
		Exposed	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	75	88*	88*	63	88*	68	47	70	52	36	52	41	31	41	34	27	34	30	24	30	27	32								
	C	0-7	Interior	120*	120*	117*	120*	120*	102	120*	120*	84	120*	115*	70	120*	99	59	120*	85	51	118*	74	44	95	57	35	73	45	30	58	36	26	48	32	34	39	28	30	34	25	26									
			Exposed	120*	98	59	120*	82	49	115*	69	41	98	59	35	84	51	32	72	44	29	62	39	27	48	32	34	38	27	29	32	24	25	28	31	22	25	28	26	33	24	17									
		7-20	Interior	101*	101*	101*	101*	101*	95*	101*	101*	75	101*	101*	61	101*	92*	51	101*	75	43	101*	63	36	87	46	30	63	35	26	48	31	34	37	27	30	32	23	26	29	32	23									
			Exposed	101*	91*	50	101*	72	41	101*	58	35	92*	48	31	74	40	28	61	35	26	52	32	24	38	27	30	32	23	26	27	30	22	24	26	20	32	29	17	28	21	15									
		20-27	Interior	94*	94*	94*	94*	94*	94*	94*	94*	94*	94*	94*	94*	94*	94*	94*	94*	92*	62	94*	76	52	94*	54	38	94*	40	32	76	33	27	60	29	24	49	25	32	40	34	28									
			Exposed	94*	94*	74	94*	87*	59	94*	69	48	94*	56	39	94*	47	34	94*	39	31	82	34	28	61	29	24	47	25	31	38	33	27	32	29	24	28	25	21	25	22	19									
	27-45	Interior	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	83*	88*	88*	70	88*	67	52	79*	57	40	58	45	33	45	37	29	36	32	25	32	28	34										
		Exposed	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	79*	54	88*	66	45	77	56	39	64	49	34	53	42	31	44	36	29	34	30	24	33	26	28	23	32	25	31	28	22									
	D	0-7	Interior	120*	120*	89	120*	117*	73	120*	102	61	120*	86	52	118*	73	44	108*	63	38	92	55	34	70	43	29	55	35	25	44	30	32	36	26	28	32	35	25	28	31	22									
			Exposed	117*	73	44	103	61	37	86	52	33	73	45	29	62	39	27	54	34	24	47	31	34	37	27	28	31	34	24	27	30	21	24	26	18	31	25	16	28	20	14									
		7-20	Interior	101*	101*	81	101*	101*	64	101*	96*	52	101*	76	43	101*	63	36	101*	53	33	84	45	30	59	34	25	44	29	33	35	25	28	30	34	25	27	30	22	24	26	20									
			Exposed	101*	62	36	98*	50	32	77	42	29	62	35	26	51	32	24	43	29	32	37	27	30	31	34	25	26	29	22	34	25	19	30	22	16	27	19	14	24	17	13									
		20-27	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*									
			Exposed	94*	75	51	94*	59	41	94*	48	35	94*	40	31	82	34	28	70	31	26	60	29	24	45	24	30	35	31	26	31	27	29	27	24	20	24	21	17	32	19	15									
	27-45	Interior	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*									
		Exposed	88*	88*	69	88*	82*	56	88*	68	47	79*	57	39	64	49	34	53	42	31	44	36	29	34	30	24	29	26	31	25	34	27	33	30	24	29	26	21	26	23	19										
10	B	0-7	Interior	111*	111*	111*	111*	111*	102	111*	111*	84	111*	111*	70	111*	99	59	111*	85	51	111*	74	44	95	57	35	73	45	30	58	36	26	48	32	34	39	28	30	34	25	26									
			Exposed	111*	98	59	111*	82	49	111*	69	41	98	59	35	84	51	32	72	44	29	62	39	27	48	32	34	38	27	29	32	24	25	28	31	22	25	28	26	33	24	17									
		7-20	Interior	101*	101*	101*	101*	101*	95*	101*	101*	75	101*	101*	61	101*	92*	51	101*	75	43	101*	63	36	87	46	30	63	35	26	48	31	34	37	27	30	32	23	26	29	32	23									
			Exposed	101*	91*	50	101*	72	41	101*	58	35	92*	48	31	74	40	28	61	35	26	52	32	24	38	27	30	32	23	26	27	30	22	24	26	20	32	29	17	28	21	15									
		20-27	Interior	94*	94*	94*	94*	94*	94*	94*	94*	94*	94*	94*	94*	94*	94*	94*	94*	92*	62	94*	76	52	94*	54	38	94*	40	32	76	33	27	60	29	24	49	25	32	40	34	28									
			Exposed	94*	94*	74	94*	87*	59	94*	69	48	94*	56	39	94*	47	34	94*	39	31	82	34	28	61	29	24	47	25	31	38	33	27	32	29	24	28	25	21	25	22	19									
	27-45	Interior	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	83*	88*	88*	70	88*	67	52	79*	57	40	58	45	33	45	37	29	36	32	25	32	28	34										
		Exposed	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	79*	54	88*	66	45	77	56	39	64	49	34	53	42	31	44	36	29	34	30	24	33	26	28	23	32	25	31	28	22									
	C	0-7	Interior	111*	111*	89	111*	111*	73	111*	102	61	111*	86	52	111*	73	44	108*	63	38	92	55	34	70	43	29	55	35	25	44	30	32	36	26	28	32	35	25	28	31	22									
			Exposed	111*	73	44	103	61	37	86	52	33	73	45	29	62	39	27	54	34	24	47	31	34	37	27	28	31	34	24	27	30	21	24	26	18	31	25	16	28	20	14									
		7-20	Interior	101*	101*	81	101*	101*	64	101*	96*	52	101*	76	43	101*	63	36	101*	53	33	84	45	30	59	34	25	44	29	33	35	25	28	30	34	25	27	30	22	24	26	20									
			Exposed	101*	62	36	98*	50	32	77	42	29	62	35	26	51	32	24	43	29	32	37	27	30	31	34	25	26	29	22	34	25	19	30	22	16	27	19	14	24	17	13									
		20-27	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*										
			Exposed	94*	75	51	94*	59	41	94*	48	35	94*	40	31	82	34	28	70	31	26	60	29	24	45	24	30	35	31	26	31	27	29	27	24	20	24	21	17	32	19	15									
	27-45	Interior	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*	88*																																

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.

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.

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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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.

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							
0	B	0-7	Interior	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127						
			Exposed	127	127	121	127	127	100	127	125	82	127	118	68	127	99	58	127	85	50	121	73	43	94	57	36	73	45	31	58	38	27	47	33	24	40	29	21	36	26	28
		7-20	Interior	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127			
			Exposed	127	127	121	127	127	89	127	126	71	127	118	58	127	86	48	127	71	42	122	60	38	82	44	32	59	37	28	45	32	24	38	28	21	34	25	28	30	22	25
		20-27	Interior	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128		
			Exposed	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128		
	C	0-7	Interior	127	127	125	127	127	117	127	127	90	127	122	75	127	116	64	127	93	55	125	80	47	112	62	38	80	49	33	63	40	29	51	35	25	43	31	22	38	28	29
			Exposed	127	116	63	127	89	53	122	75	44	116	64	39	91	55	36	78	48	33	68	42	30	52	36	25	42	30	22	36	26	28	32	23	25	28	20	22	25	27	19
		7-20	Interior	127	127	125	127	127	116	127	127	79	127	122	64	127	98	53	127	80	45	126	67	40	92	49	34	66	39	29	50	34	25	41	30	22	36	26	29	32	23	26
			Exposed	127	97	53	127	76	43	123	61	38	97	51	35	78	43	32	65	39	29	54	35	26	41	30	22	35	26	29	30	22	25	27	29	22	23	21	23	17		
		20-27	Interior	128	128	128	128	128	128	128	128	124	128	128	99	128	123	79	128	98	65	128	80	54	127	57	41	117	43	35	82	37	30	65	32	27	52	28	23	23	25	21
			Exposed	128	122	78	128	92	62	128	73	50	128	59	42	122	49	38	116	42	35	89	38	32	66	32	27	51	28	23	41	24	30	36	21	26	32	28	23	28	25	21
D	0-7	Interior	128																																							

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]

* 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.

[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.

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

[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.

[illegible]

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

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	120	120	120	120	120	120	120	120	120	120	120	117	120	120	105	120	120	87	120	118	74	120	94	55	118	72	43	98	57	34	77	46	30	63	38	26	52	33	23						
			Exposed	120	120	104	120	120	82	120	115	68	120	98	57	120	83	49	117	71	42	106	61	36	79	47	30	61	37	26	49	32	23	40	28	20	34	24	26	30	22	23						
		7-20	Interior	120	120	120	120	120	120	120	120	120	120	120	117	120	120	98	120	120	78	120	117	64	120	85	46	118	61	35	91	46	30	67	36	27	51	32	23	41	28	21						
			Exposed	120	120	97	120	120	74	120	115	59	120	90	48	120	72	40	117	60	35	101	50	32	68	37	27	50	31	23	38	27	20	32	23	26	28	21	23	25	28	21						
		20-27	Interior	121	121	121	121	121	121	121	121	121	121	121	121	121	121	121	121	118	121	121	104	121	108	69	121	74	50	120	54	38	108	42	32	84	34	28	67	30	25							
			Exposed	121	121	121	121	121	116	121	121	121	121	115	72	121	89	59	121	72	49	121	59	41	110	43	32	81	34	28	62	29	24	49	25	21	40	22	28	34	20	25						
	27-45	Interior	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	119	123*	120	95	123*	102	68	116	77	52	86	60	41	64	48	34	50	40	30							
		Exposed	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*	123*								
	C	0-7	Interior	120	120	115	120	120	92	120	118	76	120	108	63	120	91	53	120	77	46	115	67	40	86	51	32	67	41	28	53	34	24	43	29	21	36	26	28	32	23	25						
			Exposed	120	90	53	119	74	44	108	62	37	90	53	33	76	46	30	65	40	27	57	35	25	44	30	21	35	25	27	30	22	24	26	29	21	23	26	18	21	23	16						
		7-20	Interior	120	120	112	120	120	84	120	118	66	120	103	54	120	81	45	120	67	38	115	56	34	77	41	28	55	33	24	42	28	21	34	25	28	30	22	25	27	29	22						
			Exposed	120	81	44	119	63	36	105	51	32	81	42	29	65	36	26	54	32	24	45	30	22	34	25	28	29	21	24	25	28	21	22														

* 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]

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.

* 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.

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	1	2	3																																				
0	B	0-7	Interior	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*	127*																																		
			Exposed	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*																																		
		7-20	Interior	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*																																	
			Exposed	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*																																	
		20-27	Interior	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*																																	
			Exposed	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*	103*	103*	103*	103*	103*																																	
	C	0-7	Interior	127*	127*	125	127*	127*	117	127*	127*	90	127*	122	75	127*	116	64	127*	93	55	125	80	47	112	62	38	80	49	33	63	40	29	51	35	25	43	31	22	38	28	29	29	29	29	29	29	29	29																																
			Exposed	127*	116	63	127*	89	53	122	75	44	116	64	39	91	55	36	78	48	33	68	42	30	52	36	25	42	30	22	36	26	28	32	23	25	28	20	22	25	27	29	29	29	29	29	29	29																																	
		7-20	Interior	118*	118*	118*	118*	118*	116*	118*	118*	79	118*	118*	64	118*	98	53	118*	80	45	118*	67	40	92	49	34	66	39	29	50	34	25	41	30	22	36	26	29	32	23	26	29	32	23	26	29	32	23	26																															
			Exposed	118*	97	53	118*	76	43	118*	61	38	97	51	35	78	43	32	65	39	29	54	35	26	41	30	22	35	26	29	30	22	25	27	29	22	23	26	19	21	23	17	19	21	23	17																																			
		20-27	Interior	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*																																	
			Exposed	111*	79	54	111*	92	62	111*	73	50	111*	59	42	111*	49	38	111*	42	35	89	38	32	75	51	28	23	41	24	30	36	21	26	32	28	23	28	23	28	25	21	25	21	25	21	25																																		
	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*	103*	103*	103*	103*	103*	103*																																	
		Exposed	103*	103*	103*	103*	103*	85	103*	103*	69	103*	84	57	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*																																	
	D	0-7	Interior	127*	127*	97	127*	123	79	127*	117	66	127*	94	55	125	80	47	119	69	41	103	60	38	76	47	32	60	39	27	48	34	24	40	29	21	35	26	28	31	23	25	25	25	25	25	25	25	25																																
			Exposed	124	79	47	117	66	40	94	56	36	79	48	33	68	42	30	59	38	27	51	35	25	41	30	21	35	25	27	30	22	24	26	29	21	23	26	18	21	23	16	18	21	23	16																																			
		7-20	Interior	118*	118*	86	118*	118*	68	118*	116*	55	118*	81	46	118*	67	40	118*	56	37	89	47	33	63	38	28	47	33	24	39	28	21	34	25	28	30	22	25	27	29	29	29	29	29	29	29	29																																	
			Exposed	118*	66	40	117*	53	36	81	44	32	66	39	29	54	35	26	46	32	24	40	30	22	34	25	28	29	21	24	25	28	21	22	25	18	30	22	16	26	19	14	14	14	14																																				
20-27		Interior	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*																																		
		Exposed	111*	79	54	111*	92	62	111*	73	50	111*	59	42	111*	49	38	111*	42	35	89	38	32	75	51	28	23	41	24	30	36	21	26	32	28	23	28	23	28	25	21	25	21	25	21	25																																			
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*	103*	103*	103*	103*	103*																																			
	Exposed	103*	103*	74	103*	89	60	103*	73	50	82	61	42	67	52	38	55	45	35	47	40	32	38	34	27	32	29	23	28	25	30	25	22	27	22	29	23	29	26	21	25	25	25	25																																					
10	B	0-7	Interior	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119	119																																		
			Exposed	119	119	119	119	119	100	119	119	82	119	118	68	119	99	58	119	85	50	119	73	43	94	57	36	73	45	31	58	38	27	47	33	24	40	29	21	36	26	28	28	28	28	28	28																																		
		7-20	Interior	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*	118*																																
			Exposed	118*	118*	118*	118*	118*	89	118*	118*	71	118*	118*	58	118*	86	48	118*	71	42	118*	60	38	82	44	32	59	37	28	45	32	24	38	28	21	34	25	28	30	22	25	28	30	22	25	28	30																																	
		20-27	Interior	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*																																	
			Exposed	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*	111*																																	
	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*	103*	103*	103*	103*	103*	103*																																	
		Exposed	103*	103*	103*	103*	103*	85	103*	103*	69	103*	84	57	103*	103*	103*	103*	103*	103*	103*	103*	103*	103*	103*	103*	103*	103*	103*	103*	103*	103*	103*	103*	103*	103*	103*	103*																																											

[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.

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

[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.

[illegible]

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

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