

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 7-16 Sec 29.4.4 with Provisions from SEAOC PV2-2017
- 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 7-16, 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

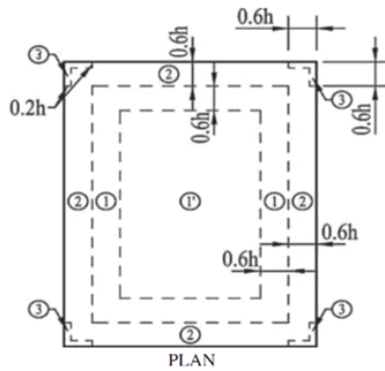
- 0.2-s Spectral Response Acceleration, $S_S \leq 3$
- $S_S = 1.25$ and 3 per criteria shown on individual span tables sheets.
- $S_1 = 0.5$
- Seismic site class D

Array Assumptions

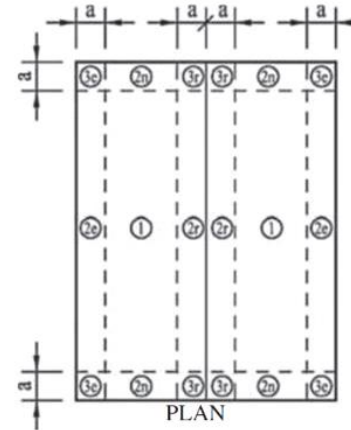
- Module orientation and Rail direction per criteria shown on individual span tables sheets.
- Maximum module dimensions of 40.1” x 67” (~19 sq.ft, 47.65 lbs) and 41” x 80” (~23 sq.ft, 58.6 lbs) per criteria shown on individual span tables sheets.
- Minimum distance between modules and roof edge is at 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 7-16 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 7-16, Fig. 30.3-2A to 30.3-2D



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

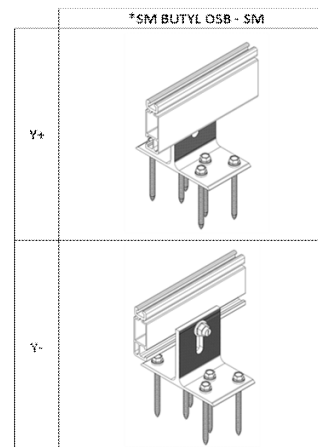


Gable Roofs $7^\circ < \theta \leq 45^\circ$

Grouping of ASCE 7-16 Roof Zones (Gable and Flat)

- **Roof Tilt 0° - 7°**
Roof Zone 1 = 1
Roof Zone 2 = 2
Roof Zone 3 = 3
- **Roof Tilt 7° - 27°**
Roof Zone 1 = 1, 2e
Roof Zone 2 = 2n, 2r, 3e
Roof Zone 3 = 3r
- **Roof Tilt 27° - 45°**
Roof Zone 1 = 1, 2e, 2r
Roof Zone 2 = 2n, 3r
Roof Zone 3 = 3e

Rails can be installed in these possible orientations.



[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.

[illegible]

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

[illegible]

[illegible]

Highlighted cell indicate 3-rail system span. 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.

[illegible]

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

[illegible]



ASCE 7-16
Design Standard

II
Risk Category

30 ft
Roof Height

Ss = 1.25
Seismic

23 sq.ft
Module Area

PORTRAIT
Orientation

CROSS-SLOPE
Rail Direction

SM
Rail Type

PRO SERIES
Clamp

SM BUTYL OSB
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)																																																																													
				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	67	67	67	67	67	67	67	67	63	67	67	67	53	67	67	45	67	66	39	67	57	35	67	44	29	57	35	25	46	31	21	37	27	19	32	23	16	29	21	15	16	29	21	15																																		
			Exposed	67	67	45	67	63	38	67	54	33	67	46	30	65	40	27	56	35	25	49	32	22	38	27	19	32	23	16	27	20	14	24	17	12	21	15	16	19	13	14	16	19	13	14																																			
		7-20	Interior	67	67	67	67	67	67	67	67	67	54	67	63	45	67	53	37	67	44	33	64	38	30	52	31	26	42	27	22	35	23	19	31	20	16	27	18	14	24	16	16	13	14	24	16	13																																	
			Exposed	67	52	37	67	43	32	61	35	29	53	32	26	47	29	24	42	26	22	37	24	20	31	20	17	27	17	14	23	15	12	20	13	16	18	17	14	16	15	13	16	15	13																																				
		20-27	Interior	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68	68																																		
			Exposed	68	68	55	68	59	44	68	48	38	68	68	41	31	68	35	28	61	32	24	54	29	22	44	24	17	36	21	14	31	18	12	27	16	11	24	14	14	21	12	13	16	15	13																																			
	27-45	Interior	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69																																			
		Exposed	69	69	68	69	69	56	69	69	47	69	58	40	64	49	34	53	42	31	45	37	27	34	31	22	29	26	19	25	23	16	22	20	13	19	17	11	17	15	10	17	15	10																																					
	C	0-7	Interior	67	67	51	67	67	42	67	60	36	67	51	32	67	44	29	62	39	26	54	34	24	42	29	20	34	25	17	29	21	15	26	19	13	22	16	17	20	14	15	16	19	13	14	15	16																																	
			Exposed	67	44	29	60	37	26	51	33	23	44	30	21	38	27	19	34	24	17	31	22	16	26	19	13	22	16	17	19	14	15	17	18	13	15	16	14	13	14	16	14	14																																					
		7-20	Interior	67	60	42	67	48	35	67	40	31	58	34	28	51	31	26	46	28	23	41	26	21	33	22	18	29	19	15	25	16	13	21	14	17	19	12	15	17	17	17	17	17	17	17	17																																		
			Exposed	51	31	25	44	27	23	39	25	20	34	22	18	31	20	17	28	18	15	26	17	14	22	14	18	19	12	15	16	16	13	14	14	14	19	19	12	16	17	14	17	14	9																																				
20-27		Interior	68	68	64	68	67	51	68	55	41	68	46	35	68	39	30	67	34	27	60	31	24	48	26	19	39	22	16	33	19	13	29	17	11	26	15	10	23	13	14	16	15	13	14																																				
		Exposed	68	39	30	65	33	26	56	30	22	49	27	20	44	24	17	39	22	15	35	20	14	29	17	12	25	15	10	22	13	13	19	17	11	17	15	10	15	13	9	15	13	9																																					
27-45	Interior	69	69	69	69	69	63	69	69	53	69	65	45	69	55	38	62	47	33	52	41	30	38	33	24	31	28	20	27	24	17	24	21	14	21	19	12	19	12	17	11	17	11	17																																					
	Exposed	69	55	38	59	46	32	48	38	28	39	34	25	34	21	22	31	28	20	28	25	18	24	21	15	21	18	12	18	16	10	15	14	13	14	12	11	12	16	10	16	14	13																																						
D	0-7	Interior	67	64	38	67	54	33	67	46	30	64	39	27	55	35	24	47	31	22	42	29	20	33	24	17	28	21	14	25	18	13	21	15	17	19	14	15	17	18	13	14	15	17	18	13																																			
		Exposed	54	34	24	46	31	21	39	27	19	34	25	17	31	22	16	28	20	14	26	19	13	22	16	17	18	13	14	16	18	14	15	14	12	13	14	10	16	12	8	14	10	14																																					
	7-20	Interior	67	43	33	61	35	29	53	32	26	46	29	24	41	26	21	37	24	19	33	22	18	28	18	15	24	15	13	21	13	17	18	18	15	16	16	13	14	14	14	14	14	14	14																																				
		Exposed	41	26	21	35	23	19	32	21	17	29	19	15	26	17	14	24	15	13	22	14	18	18	15	15	15	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13																																				
	20-27	Interior	68	60	45	68	49	36	68	40	31	68	35	27	60	31	24	53	29	21	48	26	19	38	22	15	32	19	13	28	16	11	24	14	15	21	12	13	19	17	11	17	11	17	11																																				
		Exposed	60	31	24	52	28	21	45	25	18	40	22	16	35	20	14	32	19	13	29	17	11	25	14	10	21	12	13	18	16	11	16	14	10	14	12	8	19	14	12	8	19	14	12																																				
27-45	Interior	69	69	57	69	69	47	69	57	40	63	49	34	52	42	30	44	36	27	37	33	24	31	28	20	26	24	16	23	20	14	20	18	12	17	16	10	16	14	13	16	14	13	16	14	13																																			
	Exposed	52	41	30	42	35	26	35	31	23	32	28	20	29	26	18	26	23	16	24	21	15	20	18	12	17	15	10	15	13	13	13	18	11	17	16	9	15	14	8	15	14	8																																						
10	B	0-7	Interior	47	47	47	47	47	47	47	47	47	47	47	47	47	45	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47																																				
			Exposed	47	47	45	47	47	38	47	47	33	47	46	30	47	40	27	47	35	25	47	32	22	38	27	19	32	23	16	27	20	14	24	17	12	21	15	16	19	13	14	16	19	13	14																																			
		7-20	Interior	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48																																		
			Exposed	48	48	37	48	43	32	48	35	29	48	32	26	47	29	24	42	26	22	37	24	20	31	20	17	27	17	14	23	15	12	20	13	16	18	17	14	16	15	13	16	15	13																																				
		20-27	Interior	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62																																			
			Exposed	62	62	55	62	59	44	62	48	38	62	62	41	31	62	35	28	61	32	24	54	29	22	44	24	17	36	21	14	31	18	12	27	16	11	24	14	14	21	12	13	16	15	13																																			
	27-45	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	67	67	67	67																																			
		Exposed	67	67	67	67	67	56	67	67	47	67	58	40	64	49	34	53	42	31	45	37	27	34	31	22	29	26	19	25	23	16	22	20	13	19	17	11	17	15	10	17	15	10																																					
	C	0-7	Interior	47	47	47	47	47	47	47	47	47	47	47	47	47	47	45	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47																																			
			Exposed	47	44	29	47	37	26	47	33	23	44	30	21	38	27	19	34	24	17	31	22	16	26	19	13	22	16	17	19	14	15	17	18	13	15	16	14	13	14	16	19	13	14																																				
		7-20	Interior	48	48	42	48	48	35	48	40	31	48	34	28	48	31	26	46	28	23	41	26	21	33	22	18	29	19	15	25	16	13	21	14	17	19	12	15	17	17	17	17	17	17	17																																			
			Exposed	48	31	25	44	27	23	39	25	20	34	22	18	31	20	17	28	18	15	26	17	14	22	14	18	19	12	15	16	16	13	14	14	14	19	19	12	16	17	14	17	14	9																																				
20-27		Interior	62	62	62	62	62	51	62	55	41	62	46	35	62	39	30	62	34	27	60	31	24	48	26	19	39	22	16	33	19	13	29	17	11	26	15	10	23	13	14	16	15	13	14																																				
		Exposed	62	39	30	62	33	26	56	30	22	49	27	20	44	24																																																																	

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]

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[illegible]

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.

[illegible]

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							
0	B	0-7	Interior	80	80	80	80	80	80	80	80	76	80	80	64	80	80	54	80	79	47	80	68	41	80	53	35	68	42	30	55	37	26	45	32	22	39	28	20	34	25	17				
			Exposed	80	80	54	80	76	45	80	64	40	80	55	36	77	48	32	67	42	29	58	38	27	45	32	23	38	27	19	33	24	17	29	21	15	25	18	13	22	16	17				
		7-20	Interior	80	80	80	80	80	80	80	80	80	65	80	76	53	80	63	45	80	53	40	77	46	36	62	37	31	51	32	26	42	27	23	37	24	20	32	21	17	29	19	15			
			Exposed	80	63	45	80	51	39	73	42	35	64	38	31	56	35	28	50	31	26	45	29	24	37	24	20	32	21	17	27	18	15	24	16	13	21	14	17	19	18	15				
		20-27	Interior	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	67	81	74	56	81	63	47	81	47	36	74	39	30	62	33	25	52	29	21	44	26	18	39	23	15
			Exposed	81	81	66	81	70	53	81	58	43	81	49	38	81	42	33	73	38	29	65	35	26	53	29	21	43	25	17	37	22	15	32	19	13	29	17	11	25	15	15				
	C	0-7	Interior	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82				
			Exposed	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82				
		7-20	Interior	80	80	61	80	80	51	80	71	43	80	61	38	80	53	35	75	46	32	65	41	29	50	35	24	41	30	21	35	26	18	31	22	16	27	20	14	24	17	19				
			Exposed	80	53	35	72	45	31	61	39	28	52	35	25	45	32	23	40	29	21	37	27	19	31	22	16	26	19	14	23	17	18	20	14	16	18	13	14	16	17	12				
		20-27	Interior	80	71	51	80	58	42	80	48	37	70	41	34	62	37	31	55	34	28	49	31	25	40	26	21	34	22	18	30	19	16	26	17	14	23	15	18	20	13	16				
			Exposed	61	37	30	53	33	27	46	30	24	41	27	22	37	24	20	34	22	18	31	20	17	26	17	14	22	14	18	19	13	16	17	17	14	15	15	12	13	13	11				
D	0-7	Interior	81	81	77	81	80	61	81	66	49	81	55	41	81	47	36	80	41	32	71	37	28	57	31	23	47	27	19	40	23	16	35	20	14	31	18	12	27	16	11					
		Exposed	81	46	36	78	40	31	68	36	27	59	32	24	52	29	21	47	27	18	42	24	17	35	20	14	30	18	12	26	15	10	23	13	14	20	18	12	18	16	11					
	7-20	Interior	82	82	82	82	82	76	82	82	63	82	78	53	82	66	46	74	57	40	62	49	36	45	39	29	38	34	24	33	29	20	28	25	17	25	22	15	22	20	13					
		Exposed	82	66	45	70	55	39	57	46	34	47	40	30	41	37	27	37	33	24	34	30	21	29	26	18	25	22	15	21	19	12	19	17	11	16	15	14	15	13	12					
	20-27	Interior	80	77	46	80	64	40	80	55	36	76	47	32	65	41	29	57	38	26	50	34	24	40	29	20	34	25	17	29	21	15	26	19	13	23	16	18	20	15	16					
		Exposed	65	41	29	55	37	26	47	33	23	41	30	21	37	27	19	34	24	17	31	22	16	26	19	13	22	16	17	19	14	15	17	18	13	15	16	11	13	14	10					
10	B	0-7	Interior	80	52	39	73	43	35	63	38	31	56	34	28	49	31	26	44	28	23	40	26	21	33	22	18	29	19	15	25	16	13	22	14	18	19	12	15	17	17	14				
			Exposed	49	31	25	42	28	23	38	25	20	34	22	18	31	20	17	28	18	15	26	17	14	22	14	18	19	18	15	16	16	13	14	14	14	12	12	12	10	17	11	9			
		7-20	Interior	81	71	54	81	58	44	81	48	37	81	42	33	72	38	29	64	34	25	57	31	23	46	26	18	39	23	15	33	19	13	29	17	12	26	15	10	23	13	14				
			Exposed	72	37	29	62	33	25	54	30	21	47	27	19	42	24	17	38	22	15	35	20	14	29	17	12	25	15	15	13	13	19	17	11	17	15	10	15	13	9					
		20-27	Interior	82	82	68	82	82	56	82	69	47	76	58	41	63	50	36	52	43	32	45	39	29	37	33	24	32	28	20	27	24	17	24	21	14	21	19	12	19	17	11				
			Exposed	62	49	36	50	42	31	42	37	28	38	34	24	34	31	22	31	28	19	29	26	17	24	22	14	21	18	12	18	16	10	16	14	13	14	19	11	18	17	10				
	C	0-7	Interior	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56				
			Exposed	56	53	35	56	45	31	56	39	28	52	35	25	45	32	23	40	29	21	37	27	19	31	22	16	26	19	14	23	17	18	20	14	16	18	13	14	16	17	12				
		7-20	Interior	57	57	51	57	57	42	57	48	37	57	41	34	57	37	31	55	34	28	49	31	25	40	26	21	34	22	18	30	19	16	26	17	14	23	15	18	20	13	16				
			Exposed	57	37	30	53	33	27	46	30	24	41	27	22	37	24	20	34	22	18	31	20	17	26	17	14	22	14	18	19	13	16	17	17	14	15	15	12	13	13	11				
		20-27	Interior	74	74	74	74	74	61	74	66	49	74	55	41	74	47	36	74	41	32	71	37	28	57	31	23	47	27	19	40	23	16	35	20	14	31	18	12	27	16	11				
			Exposed	74	46	36	74	40	31	68	36	27	59	32	24	52	29	21	47	27	18	42	24	17	35	20	14	30	18	12	26	15	10	23	13	14	20	18	12	18	16	11				
D	0-7	Interior	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80					
		Exposed	80	80	80	80	80	67	80	80	56	80	69	48	77	59	41	64	51	37	54	44	33	41	37	27	35	31	22	30	27	19	27	24	16	23	21	14	21	19	12					
	7-20	Interior	56	56	46	56	56	40	56	55	36	56	47	32	56	41	29	56	38	26	50	34	24	40	29	20	34	25	17	29	21	15	26	19	13	23	16	18	20	15	16					
		Exposed	56	41	29	55	37	26	47	33	23	41	30	21	37	27	19	34	24	17	31	22	16	26	19	13	22	16	17	19	14	15	17	18	13	15	16	11	13	14	10					
	20-27	Interior	57	52	39	57	43	35	57	38	31	56	34	28	49	31	26	44	28	23	40	26	21	33	22	18	29	19	15	25	16	13	22	14	18	19	12	15	17	17	14					
		Exposed	49	31	25	42	28	23	38	25	20	34	22	18	31	20	17	28	18	15	26	17	14	22	14	18	19	18	15	16	16	13	14	14	14	12	12	12	10	17	11	9				
20	B	0-7	Interior	76	71	54	76	58	44	76	48	37	76	42	33	72	38	29	64	34	25	57	31	23	46	26	18	39	23	15	33	19	13	29	17	12	26	15	10	23	13	14				
			Exposed	72	37	29	62	33	25	54	30	21	47	27	19	42	24	17	38	22	15	35	20	14	29	17	12	25	15	15	13	13	19	17	11	17	15	10	15	13	9					
		7-20	Interior	82	82	68	82	82	56	82	69	47	76	58	41	63	50	36	52	43	32	45	39	29	37	33	24	32	28	20	27	24	17	24	21	14	21	19	12	19	17	11				
			Exposed	62	49	36	50	42	31	42	37	28	38	34	24	34	31	22	31	28	19	29	26	17	24	22	14	21	18	12	18	16	10	16	14	13	14	19	11	18	17	10				
		20-27	Interior	39	39	39	39	39	39	39																																				

[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]

[illegible]

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

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[illegible]

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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			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			
90	B	0-7	Interior	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24			
			Exposed	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	26	
		7-20	Interior	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	24
			Exposed	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	23	
		20-27	Interior	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
			Exposed	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
	27-45	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*	
		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*	
	C	0-7	Interior	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	19	
			Exposed	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	19	
		7-20	Interior	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	25
			Exposed	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	16	
20-27		Interior	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
		Exposed	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
27-45	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*		
	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*			
D	0-7	Interior	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	24			
		Exposed	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	24			
	7-20	Interior	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	
		Exposed	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29		
	20-27	Interior	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	
		Exposed	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39		
27-45	Interior	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*		
	Exposed	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*	74*		
100	B	0-7	Interior	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22		
			Exposed	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22		
		7-20	Interior	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	
			Exposed	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24		
		20-27	Interior	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	
			Exposed	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48		
	27-45	Interior	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*		
		Exposed	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*	61*			
	C	0-7	Interior	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	19		
			Exposed	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	19		
		7-20	Interior	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	
			Exposed	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24		
20-27		Interior	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48		
		Exposed	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48																								

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 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.

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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