Span Tables

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, kzt = 1.0
- γE = 1.0 for 'Interior' spans, γE = 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

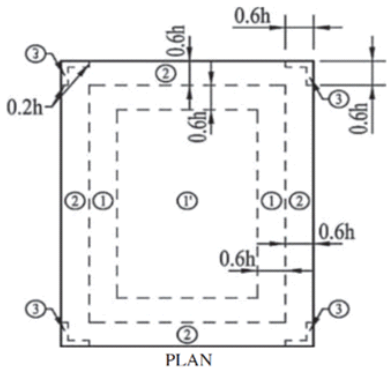
- 0.2-s Spectral Response Acceleration, SS ≤ 3
- S_S = 1.25 and 3 per criteria shown on individual span tables sheets.
- S_1 = 0.5
- Seismic site class D

Array Assumptions

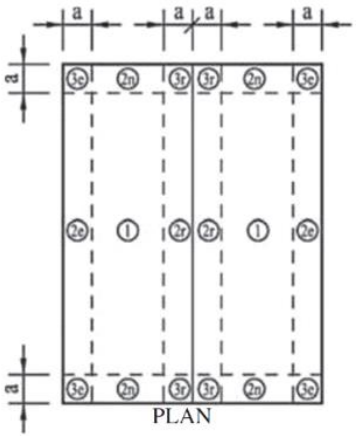
- Module orientation and Rail direction per criteria shown on individual span tables sheets.
- Maximum module dimensions of 40.1" x 67" (~19 sq.ft, 47.65 lbs) and 41" x 80" (~23 sq.ft, 58.6 lbs) per criteria shown on individual span tables sheets.
- Minimum distance between modules and roof edge is at 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 θ ≤ 7°



Gable Roofs 7°< θ ≤ 45°

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.

#N/A

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ASCE 7-16	II	30 ft	Ss = 1.25	19 sq.ft	PORTRAIT	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
0	B	0-7	Interior	86	86	86	86	86	86	86	86	83	86	86	68	86	86	58	86	86	49	86	74	43	86	56	36	73	44	31	58	38	26	47	33	23	40	29	20	35	26	18
			Exposed	86	86	57	86	82	47	86	69	41	86	58	37	84	50	33	72	43	30	62	39	28	47	33	23	39	28	20	34	24	17	29	21	15	26	19	13	23	17	12
		7-20	Interior	86	86	86	86	86	86	86	86	71	86	84	57	86	68	47	86	57	41	83	48	37	65	38	32	53	33	27	44	28	23	38	25	20	33	22	18	30	19	16
			Exposed	86	68	47	86	54	40	78	44	36	67	39	32	59	36	29	52	32	27	46	30	24	38	25	21	33	21	18	28	18	15	25	16	13	22	14	12	19	13	10
		20-27	Interior	88	88	88	88	88	88	88	88	88	88	88	88	88	88	74	88	81	60	88	68	50	88	50	38	80	40	31	65	34	26	54	30	21	46	26	18	40	23	16
			Exposed	88	88	73	88	77	57	88	62	46	88	52	39	88	43	34	78	39	30	69	36	27	55	30	22	45	26	18	38	22	15	33	19	13	29	17	12	26	15	10
		27-45	Interior	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	77	89	89	65	89	72	48	72	55	39	54	43	32	42	37	28	37	33	24	33	29	21
			Exposed	89	89	89	89	89	73	89	89	60	89	75	50	87	63	43	70	54	38	58	46	34	42	38	28	36	32	23	31	28	20	27	24	17	24	22	14	21	19	12
	C	0-7	Interior	86	86	65	86	86	53	86	77	45	86	65	39	86	56	36	81	48	33	69	42	30	53	36	25	42	30	21	36	26	19	32	23	16	28	20	14	25	18	13
			Exposed	86	55	36	77	46	32	65	40	28	55	36	26	47	33	23	41	30	21	38	27	19	32	23	16	27	20	14	24	17	12	21	15	11	18	13	9	16	12	8
		7-20	Interior	86	79	54	86	62	43	86	51	39	74	42	35	65	38	31	57	35	29	51	32	26	41	27	22	35	23	19	30	20	16	27	17	14	23	15	13	21	13	11
			Exposed	65	38	31	55	34	28	48	30	25	42	27	23	38	25	21	35	23	19	32	21	17	27	17	14	23	15	12	20	13	11	17	11	9	15	10	8	13	9	11
		20-27	Interior	88	88	87	88	88	66	88	72	53	88	59	43	88	49	38	87	42	33	76	38	30	61	32	24	49	28	20	41	24	16	36	21	14	32	18	13	28	16	11
			Exposed	88	49	37	83	41	32	72	37	28	62	33	24	55	30	22	48	27	19	43	25	17	36	21	14	31	18	12	27	16	11	23	14	9	21	12	8	18	11	7
		27-45	Interior	89	89	89	89	89	84	89	89	68	89	86	57	89	72	48	83	61	42	68	52	37	48	41	30	39	35	25	34	30	21	29	26	18	26	23	16	23	21	13
			Exposed	89	71	48	78	58	40	62	49	35	50	42	31	42	38	28	38	34	25	35	31	22	30	27	18	25	23	15	22	20	13	19	17	11	17	15	9	15	13	8
	D	0-7	Interior	86	83	48	86	69	41	86	58	37	83	49	33	70	43	30	60	39	27	52	35	25	41	30	21	35	25	18	30	22	16	26	19	14	23	17	12	21	15	11
			Exposed	70	42	30	58	38	27	49	34	24	42	30	21	38	28	19	35	25	18	32	23	16	27	19	14	23	17	12	20	14	10	17	13	9	15	11	12	13	10	10
		7-20	Interior	86	55	40	78	45	36	67	39	32	58	35	29	51	32	26	45	29	24	41	27	22	34	22	19	29	19	16	25	17	14	22	14	12	20	13	11	17	11	9
			Exposed	51	32	26	44	28	23	39	25	21	35	23	19	32	21	17	29	19	16	27	17	14	22	15	12	19	13	10	17	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	88	78	58	88	63	46	88	51	39	88	43	34	77	39	30	68	35	26	60	32	24	48	27	19	40	23	16	34	20	14	30	18	12	26	15	11	23	14	9
			Exposed	76	38	30	65	34	26	56	31	22	49	28	20	43	25	17	39	23	16	36	21	14	30	18	12	26	15	10	22	13	9	20	11	8	17	10	7	15	9	9
		27-45	Interior	89	89	74	89	89	60	89	75	50	86	62	42	69	53	38	56	45	33	47	40	30	38	34	25	33	29	20	28	25	17	25	22	15	22	19	13	19	17	11
			Exposed	68	52	37	54	43	33	44	39	29	39	35	25	35	32	22	32	29	20	29	26	18	25	22	15	21	19	12	18	17	10	16	14	9	14	13	8	13	11	7
10	B	0-7	Interior	61	61	61	61	61	61	61	61	61	61	61	61	61	61	58	61	61	49	61	61	43	61	56	36	61	44	31	58	38	26	47	33	23	40	29	20	35	26	18
			Exposed	61	61	57	61	61	47	61	61	41	61	58	37	61	50	33	61	43	30	61	39	28	47	33	23	39	28	20	34	24	17	29	21	15	26	19	13	23	17	12
		7-20	Interior	62	62	62	62	62	62	62	62	62	62	62	57	62	62	47	62	57	41	62	48	37	62	38	32	53	33	27	44	28	23	38	25	20	33	22	18	30	19	16
			Exposed	62	62	47	62	54	40	62	44	36	62	39	32	59	36	29	52	32	27	46	30	24	38	25	21	33	21	18	28	18	15	25	16	13	22	14	12	19	13	10
		20-27	Interior	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	60	72	68	50	72	50	38	72	40	31	65	34	26	54	30	21	46	26	18	40	23	16
			Exposed	72	72	72	72	72	57	72	62	46	72	52	39	72	43	34	72	39	30	69	36	27	55	30	22	45	26	18	38	22	15	33	19	13	29	17	12	26	15	10
		27-45	Interior	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	77	79	79	65	79	72	48	72	55	39	54	43	32	42	37	28	37	33	24	33	29	21
			Exposed	79	79	79	79	79	73	79	79	60	79	75	50	79	63	43	70	54	38	58	46	34	42	38	28	36	32	23	31	28	20	27	24	17	24	22	14	21	19	12
	C	0-7	Interior	61	61	61	61	61	53	61	61	45	61	61	39	61	56	36	61	48	33	61	42	30	53	36	25	42	30	21	36	26	19	32	23	16	28	20	14	25	18	13
			Exposed	61	55	36	61	46	32	61	40	28	55	36	26	47	33	23	41	30	21	38	27	19	32	23	16	27	20	14	24	17	12	21	15	11	18	13	9	16	12	8
		7-20	Interior	62	62	54	62	62	43	62	51	39	62	42	35	62	38	31	57	35	29	51	32	26	41	27	22	35	23	19	30	20	16	27	17	14	23	15	13	21	13	11
			Exposed	62	38	31	55	34	28	48	30	25	42	27	23	38	25	21	35	23	19	32	21	17	27	17	14	23	15	12	20	13	11	17	11	9	15	10	8	13	9	11
		20-27	Interior	72	72	72	72	72	66	72	72	53	72	59	43	72	49	38	72	42	33	72	38	30	61	32	24	49	28	20	41	24	16	36	21	14	32	18	13	28	16	11
			Exposed	72	49	37	72	41	32	72	37	28	62	33	24	55	30	22	48	27	19	43	25	17	36	21	14	31	18	12	27	16	11	23	14	9	21	12	8	18	11	7
		27-45	Interior	79	79	79	79	79	79	79	79	68	79	79	57	79	72	48	79	61	42	68	52	37	48	41	30	39	35	25	34	30	21	29	26	18	26	23	16	23	21	13
			Exposed	79	71	48	78	58	40	62	49	35	50	42	31	42	38	28	38	34	25	35	31	22	30	27	18	25	23	15	22	20	13	19	17	11	17	15	9	15	13	8
	D	0-7	Interior	61	61	48	61	61	41	61	58	37	61	49	33	61	43	30	60	39	27	52	35	25	41	30	21	35	25	18	30	22	16	26	19	14	23	17	12	21	15	11
			Exposed	61	42	30	58	38	27	49	34	24	42	30	21	38	28	19	35	25	18	32	23	16	27	19	14	23	17	12	20	14	10	17	13	9	15	11	12	13	10	10
		7-20	Interior	62	55	40	62	45	36	62	39	32	58	35	29	51	32	26	45	29	24	41	27	22	34	22	19	29	19	16	25	17	14	22	14	12	20	13	11	17	11	9
			Exposed	51	32	26	44	28	23	39	25	21	35	23	19	32	21	17	29	19	16	27	17	14	22	15	12	19	13	10	17	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	75	75	58	75	63	46	75	51	39	75	43	34	75	39	30	68	35	26	60	32	24	48	27	19	40	23	16	34	20	14	30	18	12	26	15	11	23	14	9
			Exposed	75	38	30	65	34	26	56	31	22	49	28	20	43	25	17	39	23	16	36	21	14	30	18	12	26	15	10	22	13	9	20	11	8	17	10	7	15	9	9
		27-45	Interior	81	81	74	81	81	60	81	75	50	81	62	42	69	53	38	56	45	33	47	40	30	38	34	25	33	29	20	28	25	17	25	22	15	22	19	13	19	17	11
			Exposed	68	52	37	54	43	33	44	39	29	39	35	25	35	32	22	32	29	20	29	26	18	25	22	15	21	19	12	18	17	10	16	14	9	14	13	8	13	11	7
20	B	0-7	Interior	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	36	43	43	31	43	38	26	43	33	23	40	29	20	35	26	18
			Exposed	43	43	43	43	43	43	43	43	41	43	43	37	43	43	33	43	43	30	43	39	28	43	33	23	39	28	20	34	24	17	29	21	15	26	19	13	23	17	12
		7-20	Interior	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	41	43	43	37	43	38	32	43	33	27	43	28	23	38	25	20	33	22	18	30	19	16
			Exposed	43	43	43	43	43	40	43	43	36	43	39	32	43	36	29	43	32	27	43	30	24	38	25	21	33	21	18	28	18	15	25	16	13	22	14	12	19	13	10
		20-27	Interior	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	50	54	50	38	54	40	31	54	34	26	54	30	21	46	26	18	40	23	16
			Exposed	54	54	54	54	54	54	54	54	46	54	52	39	54	43	34	54	39	30	54	36	27	54	30	22	45	26	18	38	22	15	33	19	13	29	17	12	26	15	10
		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	48	59	55	39	54	43	32	42	37	28	37	33	24	33	29	21
			Exposed	61	61	61	61	61	61	61	61	60	61	61	50	61	61	43	61	54	38	58	46	34	42	38	28	36	32	23	31	28	20	27	24	17	24	22	14	21	19	12
	C	0-7	Interior	43	43	43	43	43	43	43	43	43	43	43	39	43	43	36	43	43	33	43	42	30	43	36	25	42	30	21	36	26	19	32	23	16	28	20	14	25	18	13
			Exposed	43	43	36	43	43	32	43	40	28	43	36	26	43	33	23	41	30	21	38	27	19	32	23	16	27	20	14	24	17	12	21	15	11	18	13	9	16	12	8
		7-20	Interior	43	43	43	43	43	43	43	43	39	43	42	35	43	38	31	43	35	29	43	32	26	41	27	22	35	23	19	30	20	16	27	17	14	23	15	13	21	13	11
			Exposed	43	38	31	43	34	28	43	30	25	42	27	23	38	25	21	35	23	19	32	21	17	27	17	14	23	15	12	20	13	11	17	11	9	15	10	8	13	9	11
		20-27	Interior	54	54	54	54	54	54	54	54	53	54	54	43	54	49	38	54	42	33	54	38	30	54	32	24	49	28	20	41	24	16	36	21	14	32	18	13	28	16	11
			Exposed	54	49	37	54	41	32	54	37	28	54	33	24	54	30	22	48	27	19	43	25	17	36	21	14	31	18	12	27	16	11	23	14	9	21	12	8	18	11	7
		27-45	Interior	61	61	61	61	61	61	61	61	61	61	61	57	61	61	48	61	61	42	58	52	37	48	41	30	39	35	25	34	30	21	29	26	18	26	23	16	23	21	13
			Exposed	61	61	48	61	58	40	61	49	35	50	42	31	42	38	28	38	34	25	35	31	22	30	27	18	25	23	15	22	20	13	19	17	11	17	15	9	15	13	8
	D	0-7	Interior	43	43	43	43	43	41	43	43	37	43	43	33	43	43	30	43	39	27	43	35	25	41	30	21	35	25	18	30	22	16	26	19	14	23	17	12	21	15	11
			Exposed	43	42	30	43	38	27	43	34	24	42	30	21	38	28	19	35	25	18	32	23	16	27	19	14	23	17	12	20	14	10	17	13	9	15	11	12	13	10	10
		7-20	Interior	43	43	40	43	43	36	43	39	32	43	35	29	43	32	26	43	29	24	41	27	22	34	22	19	29	19	16	25	17	14	22	14	12	20	13	11	17	11	9
			Exposed	43	32	26	43	28	23	39	25	21	35	23	19	32	21	17	29	19	16	27	17	14	22	15	12	19	13	10	17	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	57	57	57	57	57	46	57	51	39	57	43	34	57	39	30	57	35	26	57	32	24	48	27	19	40	23	16	34	20	14	30	18	12	26	15	11	23	14	9
			Exposed	57	38	30	57	34	26	56	31	22	49	28	20	43	25	17	39	23	16	36	21	14	30	18	12	26	15	10	22	13	9	20	11	8	17	10	7	15	9	9
		27-45	Interior	64	64	64	64	64	60	64	64	50	64	62	42	62	53	38	56	45	33	47	40	30	38	34	25	33	29	20	28	25	17	25	22	15	22	19	13	19	17	11
			Exposed	64	52	37	54	43	33	44	39	29	39	35	25	35	32	22	32	29	20	29	26	18	25	22	15	21	19	12	18	17	10	16	14	9	14	13	8	13	11	7

* 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.

~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 1.25	19 sq.ft	PORTRAIT	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
30	B	0-7	Interior	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	36	37	37	31	37	37	26	37	33	23	37	29	20	35	26	18
			Exposed	37	37	37	37	37	37	37	37	37	37	37	37	37	37	33	37	37	30	37	37	28	37	33	23	37	28	20	34	24	17	29	21	15	26	19	13	23	17	12
		7-20	Interior	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	32	37	33	27	37	28	23	37	25	20	33	22	18	30	19	16
			Exposed	37	37	37	37	37	37	37	37	36	37	37	32	37	36	29	37	32	27	37	30	24	37	25	21	33	21	18	28	18	15	25	16	13	22	14	12	19	13	10
		20-27	Interior	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	38	43	40	31	43	34	26	43	30	21	42	26	18	40	23	16
			Exposed	43	43	43	43	43	43	43	43	43	43	43	39	43	43	34	43	39	30	43	36	27	43	30	22	43	26	18	38	22	15	33	19	13	29	17	12	26	15	10
		27-45	Interior	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	48	47	47	39	44	43	32	41	37	28	37	33	24	33	29	21
			Exposed	50	50	50	50	50	50	50	50	50	50	50	50	50	50	43	50	50	38	50	46	34	42	38	28	36	32	23	31	28	20	27	24	17	24	22	14	21	19	12
	C	0-7	Interior	37	37	37	37	37	37	37	37	37	37	37	37	37	37	36	37	37	33	37	37	30	37	36	25	37	30	21	36	26	19	32	23	16	28	20	14	25	18	13
			Exposed	37	37	36	37	37	32	37	37	28	37	36	26	37	33	23	37	30	21	37	27	19	32	23	16	27	20	14	24	17	12	21	15	11	18	13	9	16	12	8
		7-20	Interior	37	37	37	37	37	37	37	37	37	37	37	35	37	37	31	37	35	29	37	32	26	37	27	22	35	23	19	30	20	16	27	17	14	23	15	13	21	13	11
			Exposed	37	37	31	37	34	28	37	30	25	37	27	23	37	25	21	35	23	19	32	21	17	27	17	14	23	15	12	20	13	11	17	11	9	15	10	8	13	9	11
		20-27	Interior	43	43	43	43	43	43	43	43	43	43	43	43	43	43	38	43	42	33	43	38	30	43	32	24	43	28	20	41	24	16	36	21	14	32	18	13	28	16	11
			Exposed	43	43	37	43	41	32	43	37	28	43	33	24	43	30	22	43	27	19	43	25	17	36	21	14	31	18	12	27	16	11	23	14	9	21	12	8	18	11	7
		27-45	Interior	50	50	50	50	50	50	50	50	50	50	50	50	50	50	48	48	48	42	46	46	37	43	41	30	39	35	25	34	30	21	29	26	18	26	23	16	23	21	13
			Exposed	50	50	48	50	50	40	50	49	35	50	42	31	42	38	28	38	34	25	35	31	22	30	27	18	25	23	15	22	20	13	19	17	11	17	15	9	15	13	8
	D	0-7	Interior	40	40	40	40	40	40	40	40	37	40	40	33	40	40	30	40	39	27	40	35	25	40	30	21	35	25	18	30	22	16	26	19	14	23	17	12	21	15	11
			Exposed	40	40	30	40	38	27	40	34	24	40	30	21	38	28	19	35	25	18	32	23	16	27	19	14	23	17	12	20	14	10	17	13	9	15	11	12	13	10	10
		7-20	Interior	40	40	40	40	40	36	40	39	32	40	35	29	40	32	26	40	29	24	40	27	22	34	22	19	29	19	16	25	17	14	22	14	12	20	13	11	17	11	9
			Exposed	40	32	26	40	28	23	39	25	21	35	23	19	32	21	17	29	19	16	27	17	14	22	15	12	19	13	10	17	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	46	46	46	46	46	46	46	46	39	46	43	34	46	39	30	46	35	26	46	32	24	46	27	19	40	23	16	34	20	14	30	18	12	26	15	11	23	14	9
			Exposed	46	38	30	46	34	26	46	31	22	46	28	20	43	25	17	39	23	16	36	21	14	30	18	12	26	15	10	22	13	9	20	11	8	17	10	7	15	9	9
		27-45	Interior	53	53	53	53	53	53	53	53	50	52	52	42	49	49	38	47	45	33	45	40	30	38	34	25	33	29	20	28	25	17	25	22	15	22	19	13	19	17	11
			Exposed	53	52	37	53	43	33	44	39	29	39	35	25	35	32	22	32	29	20	29	26	18	25	22	15	21	19	12	18	17	10	16	14	9	14	13	8	13	11	7
40	B	0-7	Interior	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	26	29	29	23	29	29	20	29	26	18
			Exposed	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	28	29	29	23	29	28	20	29	24	17	29	21	15	26	19	13	23	17	12
		7-20	Interior	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	27	30	28	20	30	25	20	30	22	18	29	19	16			
			Exposed	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	30	30	27	30	30	24	30	25	21	30	21	18	28	18	15	25	16	13	22	14	12	19	13	10
		20-27	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	31	36	34	26	36	30	21	35	26	18	34	23	16			
			Exposed	36	36	36	36	36	36	36	36	36	36	36	36	36	36	34	36	36	30	36	36	27	36	30	22	36	26	18	36	22	15	33	19	13	29	17	12	26	15	10
		27-45	Interior	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	41	41	41	40	40	39	38	38	32	36	36	28	34	33	24	32	29	21
			Exposed	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	38	42	42	34	41	38	28	36	32	23	31	28	20	27	24	17	24	22	14	21	19	12
	C	0-7	Interior	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	25	29	29	21	29	26	19	29	23	16	28	20	14	25	18	13
			Exposed	29	29	29	29	29	29	29	29	28	29	29	26	29	29	23	29	29	21	29	27	19	29	23	16	27	20	14	24	17	12	21	15	11	18	13	9	16	12	8
		7-20	Interior	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	30	30	26	30	27	22	30	23	19	29	20	16	27	17	14	23	15	13	21	13	11
			Exposed	30	30	30	30	30	28	30	30	25	30	27	23	30	25	21	30	23	19	30	21	17	27	17	14	23	15	12	20	13	11	17	11	9	15	10	8	13	9	11
		20-27	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	33	36	36	30	36	32	24	35	28	20	34	24	16	33	21	14	31	18	13	28	16	11
			Exposed	36	36	36	36	36	32	36	36	28	36	33	24	36	30	22	36	27	19	36	25	17	36	21	14	31	18	12	27	16	11	23	14	9	21	12	8	18	11	7
		27-45	Interior	42	42	42	42	42	42	42	42	42	42	42	42	41	41	41	40	40	39	40	40	39	37	37	30	35	35	25	33	30	21	29	26	18	26	23	16	23	21	13
			Exposed	42	42	42	42	42	40	42	42	35	42	42	31	41	38	28	38	34	25	35	31	22	30	27	18	25	23	15	22	20	13	19	17	11	17	15	9	15	13	8
	D	0-7	Interior	32	32	32	32	32	32	32	32	32	32	32	32	32	32	30	32	32	27	32	32	25	32	30	21	32	25	18	30	22	16	26	19	14	23	17	12	21	15	11
			Exposed	32	32	30	32	32	27	32	32	24	32	30	21	32	28	19	32	25	18	32	23	16	27	19	14	23	17	12	20	14	10	17	13	9	15	11	12	13	10	10
		7-20	Interior	33	33	33	33	33	33	33	33	32	33	33	29	33	32	26	33	29	24	33	27	22	32	22	19	29	19	16	25	17	14	22	14	12	20	13	11	17	11	9
			Exposed	33	32	26	33	28	23	33	25	21	33	23	19	32	21	17	29	19	16	27	17	14	22	15	12	19	13	10	17	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	38	38	38	38	38	38	38	38	38	38	38	34	38	38	30	38	35	26	38	32	24	38	27	19	36	23	16	34	20	14	30	18	12	26	15	11	23	14	9
			Exposed	38	38	30	38	34	26	38	31	22	38	28	20	38	25	17	38	23	16	36	21	14	30	18	12	26	15	10	22	13	9	20	11	8	17	10	7	15	9	9
		27-45	Interior	45	45	45	45	45	45	45	45	45	43	43	42	42	42	38	40	40	33	39	39	30	36	34	25	33	29	20	28	25	17	25	22	15	22	19	13	19	17	11
			Exposed	45	45	37	45	43	33	44	39	29	39	35	25	35	32	22	32	29	20	29	26	18	25	22	15	21	19	12	18	17	10	16	14	9	14	13	8	13	11	7
50	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	20	24	24	18
			Exposed	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	23	24	24	20	24	24	17	24	21	15	24	19	13	23	17	12
		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	23	24	24	20	24	24	22	18	24	19	16
			Exposed	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	21	24	21	18	24	18	15	24	16	13	22	14	12	19	13	10
		20-27	Interior	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	26	30	30	21	30	26	18	29	23	16
			Exposed	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	27	30	30	22	30	26	18	30	22	15	30	19	13	29	17	12	26	15	10
		27-45	Interior	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	36	36	36	34	34	34	33	33	32	32	32	28	30	30	24	29	29	21
			Exposed	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	34	36	36	28	34	32	23	31	28	20	27	24	17	24	22	14	21	19	12
	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	21	24	24	19	24	23	16	24	20	14	24	18	13
			Exposed	24	24	24	24	24	24	24	24	24	24	24	23	24	24	21	24	23	19	24	21	17	24	17	14	23	15	12	20	13	11	17	11	9	15	10	8	13	9	11
		7-20	Interior	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	28	20	16	11
			Exposed	30	30	30	30	30	30	30	30	28	30	30	24	30	30	22	30	27	19	30	25	17	30	21	14	30	18	12	27	16	11	23	14	9	21	12	8	18	11	7
		20-27	Interior	37	37	37	37	37	37	37	37	37	37	37	37	36	36	36	35	35	35	34	34	34	32	32	30	31	31	25	29	29	21	28	26	18	26	23	16	23	21	13
			Exposed	37	37	37	37	37	37	37	37	35	37	37	31	36	36	28	35	34	25	34	34	31	30	27	18	25	23	15	22	20	13	19	17	11	17	15	9	15	13	8
	D	0-7	Interior	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	25	26	26	21	26	25	18	26	22	16	26	19	14	23	17	12	21	15	11
			Exposed	26	26	26	26	26	26	26	26	24	26	26	21	26	26	19	26	25	18	26	23	16	26	19	14	23	17	12	20	14	10	17	13	9	15	11	12	13	10	10
		7-20	Interior	27	27	27	27	27	27	27	27	27	27	27	27	27	27	26	27	27	24	27	27	22	27	22	19	26	19	16	25	17	14	22	14	12	20	13	11	17	11	9
			Exposed	27	27	26	27	27	23	27	25	21	27	23	19	27	21	17	27	19	16	27	17	14	22	15	12	19	13	10	17	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	33	33	33	33	33	33	33	33	33	33	33	33	33	33	30	33	33	26	33	32	24	32	27	19	31	23	16	30	20	14	28	18	12	26	15	11	23	14	9
			Exposed	33	33	30	33	33	26	33	31	22	33	28	20	33	25	17	33	23	16	33	21	14	30	18	12	26	15	10	22	13	9	20	11	8	17	10	7	15	9	9
		27-45	Interior	39	39	39	39	39	39	39	39	39	38	38	38	37	37	37	36	36	33	34	34	30	32	32	25	31	29	20	28	25	17	25	22	15	22	19	13	19	17	11
			Exposed	39	39	37	39	39	33	39	39	29	38	35	25	35	32	22	32	29	20	29	26	18	25	22	15	21	19	12	18	17	10	16	14	9	14	13	8	13	11	7

* 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.

~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 1.25	19 sq.ft	PORTRAIT	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
60	B	0-7	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	18
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	17	20	20	15	20	19	13	20	17	12
		7-20	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	18	20	19	16
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	18	20	18	15	20	16	13	20	14	12	19	13	10
		20-27	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	21	25	25	18	25	23	16			
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	22	25	25	18	25	22	15	25	19	13	25	17	12	25	15	10
		27-45	Interior	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	31	31	31	29	29	29	28	28	28	27	27	24	26	26	21
			Exposed	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	28	31	31	23	29	28	20	27	24	17	24	22	14	21	19	12
	C	0-7	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	20	20	16	20	20	14	20	18	13
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	20	20	20	20	20	20	20	17	12	20	15	11	18	13	9	16	12	8
		7-20	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	20	20	16	20	17	14	20	15	13	20	13	11			
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	20	20	17	20	17	14	20	15	12	20	13	11	17	11	9	15	10	8	13	9	11			
		20-27	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	25	25	20	25	24	16	25	21	14	24	18	13	23	16	11						
			Exposed	25	25	25	25	25	25	25	25	24	25	25	22	25	25	19	25	25	17	25	21	14	25	18	12	25	16	11	23	14	9	21	12	8	18	11	7			
		27-45	Interior	32	32	32	32	32	32	32	32	32	32	32	32	32	32	31	31	31	30	30	30	29	29	29	28	28	28	25	26	26	21	25	25	18	24	23	16	23	21	13
			Exposed	32	32	32	32	32	32	32	32	31	32	32	28	31	31	25	30	30	22	29	27	18	25	23	15	22	20	13	19	17	11	17	15	9	15	13	8			
	D	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	18	22	22	16	22	19	14	22	17	12	21	15	11			
			Exposed	22	22	22	22	22	22	22	22	22	22	22	21	22	22	19	22	22	18	22	22	16	22	19	14	22	17	12	20	14	10	17	13	9	15	11	12	13	10	10
		7-20	Interior	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	19	22	19	16	22	17	14	22	14	12	20	13	11	17	11	9
			Exposed	22	22	22	22	22	22	22	22	21	22	22	19	22	21	17	22	19	16	22	17	14	22	15	12	19	13	10	17	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	26	28	28	24	28	27	19	27	23	16	26	20	14	25	18	12	24	15	11	23	14	9
			Exposed	28	28	28	28	28	26	28	28	22	28	28	20	28	25	17	28	23	16	28	21	14	28	18	12	26	15	10	22	13	9	20	11	8	17	10	7	15	9	9
		27-45	Interior	35	35	35	35	35	35	34	34	34	33	33	33	33	33	33	32	32	32	31	31	30	29	29	25	28	28	20	26	25	17	25	22	15	22	19	13	19	17	11
			Exposed	35	35	35	35	35	33	34	34	29	33	33	25	33	32	22	32	29	20	29	26	18	25	22	15	21	19	12	18	17	10	16	14	9	14	13	8	13	11	7
70	B	0-7	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
			Exposed	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	15	17	17	13	17	17	12
		7-20	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16
			Exposed	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	15	17	16	13	17	14	12	17	13	10
		20-27	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	21	22	22	18	22	22	16			
			Exposed	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	18	22	22	15	22	19	13	22	17	12	22	15	10			
		27-45	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	26	26	26	25	25	24	24	24	21
			Exposed	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	23	27	27	20	26	24	17	24	22	14	21	19	12			
	C	0-7	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16	17	17	14	17	17	13
			Exposed	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	14	17	17	13	17	15	11	17	13	9
		7-20	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16	17	17	14	17	15	13	17	13	11
			Exposed	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	14	17	11	9	15	10	8	13	9	11
		20-27	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	20	22	21	14	21	18	13	21	16	11
			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	18	22	22	16	22	18	12	22	14	9
		27-45	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	26	26	25	24	24	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	20	26	24	17	24	22	14	21	19	12
	D	0-7	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
			Exposed	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
		7-20	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
			Exposed	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
		20-27	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	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	22	22
		27-45	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	27	27	27
			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	27	27	27
80	B	0-7	Interior	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
			Exposed	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	13	15	15	12
		7-20	Interior	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
			Exposed	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	13	15	14	12	15	13	10
		20-27	Interior	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	18	19	19	16			
			Exposed	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	18	19	19	15	19	19	13	19	17	12	19	15	10			
		27-45	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	23	23	23	23	23	23	22	22	21
			Exposed	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	23	24	24	20	23	23	17	23	22	14	21	19	12			
	C	0-7	Interior	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	14	15	15	13			
			Exposed	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	11	15	13	9	15	12	8			
		7-20	Interior	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	14	15	15	13	15	13	11			
			Exposed	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	12	15	13	11	15	11	9	15	10	8	13	9	11			
		20-27	Interior	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	17	19	19	14	19	19	13	19	18	13	19	16	11			
			Exposed	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	17	19	19	14	19	18	12	19	16	11	19	14	9	19	12	8
		27-45	Interior	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	22	24	24	18	23	23	15	22	22	15	21	20	13	19	17	11
			Exposed	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	22	24	24	18	23	23	15	22	20	13	19	17	11	17	15	9
	D	0-7	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16	17	17	14	17	17	12	17	15	11
			Exposed	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16	17	17	14	17	17	12	17	14	10	17	13	9	15	11	12	13	10	10
		7-20	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16	17	17	14	17	14	12	17	13	11	16	11	9			
			Exposed	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	13	17	17	10	17	13	9	15	11	8	13	8	10	11	11	9
		20-27	Interior	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	19	21	21	16	21	20	14	20	18	12	20	15	11	19	14	9
			Exposed	21	21	21	21	21	21	21	21	21	21	21	20	21	21	17	21	21	16	21	21	14	21	18	12	21	15	10	21	13	9	20	11	8	17	10	7	15	9	9
		27-45	Interior	27	27	27	27	27	27	27	27	27	27	27	27	27	27	26	26	26	26	26	26	24	24	24	23	23	20	22	22	17	21	21	15	20	19	13	19	17	11	
			Exposed	27	27	27	27	27	27	27	27	27	27	27	25	27	27	22	26	26	20	26	26	18	24	22	15	21	19	12	18	17	10	16	14	9	14	13	8	13	11	7

* 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.

~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 1.25	19 sq.ft	PORTRAIT	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
90	B	0-7	Interior	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
			Exposed	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12
		7-20	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	14	12	14	13	10	14	13	10
		20-27	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16
			Exposed	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	15	17	17	13	17	17	12	17	15	10
		27-45	Interior	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	20	20	20
			Exposed	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	20	21	21	17	21	21	14	20	19	12
	C	0-7	Interior	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
			Exposed	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	13	13	11	13	13	9	13	12	8
		7-20	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	13	11	14	13	11
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	12	14	13	11	14	11	9	14	10	8	13	9	11
		20-27	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16	17	17	14	17	17	14	17	17	13	17	16	11
			Exposed	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	14	17	17	12	17	16	11	17	14	9	17	12	8	17	11	7
		27-45	Interior	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	20	20	20	20	20	18	19	19	16	18	18	13
			Exposed	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	18	21	21	15	20	20	13	19	17	11	17	15	9	15	13	8
	D	0-7	Interior	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	14	15	15	12	15	15	11
			Exposed	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	14	15	15	12	15	14	10	15	13	9	15	11	12	13	10	10
		7-20	Interior	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	14	15	14	12	15	13	11	15	11	9	15	11	9
			Exposed	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	14	15	15	12	15	13	10	15	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	16	19	19	14	19	18	12	18	15	11	18	14	9
			Exposed	19	19	19	19	19	19	19	19	19	19	19	19	19	19	17	19	19	16	19	19	14	19	18	12	19	15	10	19	13	9	19	11	8	17	10	7	15	9	9
		27-45	Interior	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	23	23	23	22	22	20	21	21	17	20	20	15	19	19	13	18	17	11
			Exposed	24	24	24	24	24	24	24	24	24	24	24	24	24	24	22	24	24	20	24	24	18	23	22	15	21	19	12	18	17	10	16	14	9	14	13	8	13	11	7
100	B	0-7	Interior	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
			Exposed	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
		7-20	Interior	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
			Exposed	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	10
		20-27	Interior	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
			Exposed	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	13	15	15	12	15	15	10
		27-45	Interior	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
			Exposed	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	17	19	19	14	19	19	12
	C	0-7	Interior	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
			Exposed	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	11	12	12	9	12	12	8	12	12	8
		7-20	Interior	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	11
			Exposed	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	11	12	11	9	12	10	8	12	9	11
		20-27	Interior	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	14	15	15	12	15	15	14	15	15	13	15	15	11
			Exposed	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	12	15	14	9	15	12	8	15	11	7	15	11	7
		27-45	Interior	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	18	19	19	15	19	19	13	18	18	16	17	17	13
			Exposed	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	18	19	19	15	19	19	13	18	17	11	17	15	9	15	13	8
	D	0-7	Interior	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	13	13	11
			Exposed	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	13	13	10	13	13	9	13	11	12	13	10	10
		7-20	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	12	14	13	11	14	11	9
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	12	14	13	10	14	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16	17	17	14	17	17	12	17	15	11	16	14	9
			Exposed	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16	17	17	14	17	17	12	17	15	10	17	13	9	17	11	8	17	10	7	15	9	9			
		27-45	Interior	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	20	20	20	19	19	17	19	19	15	18	18	13	17	17	11			
			Exposed	21	21	21	21	21	21	21	21	21	21	21	21	21	21	20	21	21	18	21	21	15	20	19	12	18	17	10	16	14	9	14	13	8	13	11	7			

#N/A

*	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.
~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 3.00	19 sq.ft	PORTRAIT	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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) | | |

UNIRAC

ASCE 7-16	II	30 ft	Ss = 3.00	19 sq.ft	PORTRAIT	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
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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
30	B	0-7	Interior	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	36	37	37	31	37	37	26	37	33	23	37	29	20	35	26	18
			Exposed	37	37	37	37	37	37	37	37	37	37	37	37	37	37	33	37	37	30	37	37	28	37	33	23	37	28	20	34	24	17	29	21	15	26	19	13	23	17	12
		7-20	Interior	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	32	37	33	27	37	28	23	37	25	20	33	22	18	30	19	16
			Exposed	37	37	37	37	37	37	37	37	36	37	37	32	37	36	29	37	32	27	37	30	24	37	25	21	33	21	18	28	18	15	25	16	13	22	14	12	19	13	10
		20-27	Interior	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	40	43	40	31	43	34	26	43	30	21	42	26	18	40	23	16
			Exposed	43	43	43	43	43	43	43	43	43	43	43	39	43	43	34	43	39	30	43	36	27	43	30	22	43	26	18	38	22	15	33	19	13	29	17	12	26	15	10
		27-45	Interior	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	48	47	47	39	44	43	32	41	37	28	37	33	24	33	29	21
			Exposed	50	50	50	50	50	50	50	50	50	50	50	50	50	50	43	50	50	38	50	46	34	42	38	28	36	32	23	31	28	20	27	24	17	24	22	14	21	19	12
	C	0-7	Interior	37	37	37	37	37	37	37	37	37	37	37	37	37	37	36	37	37	33	37	37	30	37	36	25	37	30	21	36	26	19	32	23	16	28	20	14	25	18	13
			Exposed	37	37	36	37	37	32	37	37	28	37	36	26	37	33	23	37	30	21	37	27	19	32	23	16	27	20	14	24	17	12	21	15	11	18	13	9	16	12	8
		7-20	Interior	37	37	37	37	37	37	37	37	37	37	37	35	37	37	31	37	35	29	37	32	26	37	27	22	35	23	19	30	20	16	27	17	14	23	15	13	21	13	11
			Exposed	37	37	31	37	34	28	37	30	25	37	27	23	37	25	21	35	23	19	32	21	17	27	17	14	23	15	12	20	13	11	17	11	9	15	10	8	13	9	11
		20-27	Interior	43	43	43	43	43	43	43	43	43	43	43	43	43	43	38	43	42	33	43	38	30	43	32	24	43	28	20	41	24	16	36	21	14	32	18	13	28	16	11
			Exposed	43	43	37	43	41	32	43	37	28	43	33	24	43	30	22	43	27	19	43	25	17	36	21	14	31	18	12	27	16	11	23	14	9	21	12	8	18	11	7
		27-45	Interior	50	50	50	50	50	50	50	50	50	50	50	50	50	50	48	48	48	42	46	46	37	43	41	30	39	35	25	34	30	21	29	26	18	26	23	16	23	21	13
			Exposed	50	50	48	50	50	40	50	49	35	50	42	31	42	38	28	38	34	25	35	31	22	30	27	18	25	23	15	22	20	13	19	17	11	17	15	9	15	13	8
	D	0-7	Interior	40	40	40	40	40	40	40	40	37	40	40	33	40	40	30	40	39	27	40	35	25	40	30	21	35	25	18	30	22	16	26	19	14	23	17	12	21	15	11
			Exposed	40	40	30	40	38	27	40	34	24	40	30	21	38	28	19	35	25	18	32	23	16	27	19	14	23	17	12	20	14	10	17	13	9	15	11	12	13	10	10
		7-20	Interior	40	40	40	40	40	36	40	39	32	40	35	29	40	32	26	40	29	24	40	27	22	34	22	19	29	19	16	25	17	14	22	14	12	20	13	11	17	11	9
			Exposed	40	32	26	40	28	23	39	25	21	35	23	19	32	21	17	29	19	16	27	17	14	22	15	12	19	13	10	17	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	46	46	46	46	46	46	46	46	39	46	43	34	46	39	30	46	35	26	46	32	24	46	27	19	40	23	16	34	20	14	30	18	12	26	15	11	23	14	9
			Exposed	46	38	30	46	34	26	46	31	22	46	28	20	43	25	17	39	23	16	36	21	14	30	18	12	26	15	10	22	13	9	20	11	8	17	10	7	15	9	9
		27-45	Interior	53	53	53	53	53	53	53	53	50	52	52	42	49	49	38	47	45	33	45	40	30	38	34	25	33	29	20	28	25	17	25	22	15	22	19	13	19	17	11
			Exposed	53	52	37	53	43	33	44	39	29	39	35	25	35	32	22	32	29	20	29	26	18	25	22	15	21	19	12	18	17	10	16	14	9	14	13	8	13	11	7
40	B	0-7	Interior	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	26	29	29	23	29	29	20	29	26	18
			Exposed	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	28	29	29	23	29	28	20	29	24	17	29	21	15	26	19	13	23	17	12
		7-20	Interior	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	27	30	28	20	30	28	17	30	25	20	30	22	18	29	19	16
			Exposed	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	30	30	27	30	30	24	30	25	21	30	21	18	28	18	15	25	16	13	22	14	12	19	13	10
		20-27	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	31	36	34	26	36	30	21	35	26	18	34	23	16	32	21	16
			Exposed	36	36	36	36	36	36	36	36	36	36	36	36	36	36	34	36	36	30	36	36	27	36	30	22	36	26	18	36	22	15	33	19	13	29	17	12	26	15	10
		27-45	Interior	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	41	41	41	40	40	39	38	38	32	36	36	28	34	33	24	32	29	21
			Exposed	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	38	42	42	34	41	38	28	36	32	23	31	28	20	27	24	17	24	22	14	21	19	12
	C	0-7	Interior	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	25	29	29	21	29	26	19	29	23	16	28	20	14	25	18	13
			Exposed	29	29	29	29	29	29	29	29	28	29	29	26	29	29	23	29	29	21	29	27	19	29	23	16	27	20	14	24	17	12	21	15	11	18	13	9	16	12	8
		7-20	Interior	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	30	30	26	30	27	22	30	23	19	29	20	16	27	17	14	23	15	13	21	13	11
			Exposed	30	30	30	30	30	28	30	30	25	30	27	23	30	25	21	30	23	19	30	21	17	27	17	14	23	15	12	20	13	11	17	11	9	15	10	8	13	9	11
		20-27	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	33	36	36	30	36	32	24	35	28	20	34	24	16	33	21	14	31	18	13	28	16	11
			Exposed	36	36	36	36	36	32	36	36	28	36	33	24	36	30	22	36	27	19	36	25	17	36	21	14	31	18	12	27	16	11	23	14	9	21	12	8	18	11	7
		27-45	Interior	42	42	42	42	42	42	42	42	42	42	42	42	41	41	41	40	40	39	40	40	33	39	39	30	35	35	25	33	30	21	29	26	18	26	23	16	23	21	13
			Exposed	42	42	42	42	42	40	42	42	35	42	42	31	41	38	28	38	34	25	35	31	22	30	27	18	25	23	15	22	20	13	19	17	11	17	15	9	15	13	8
	D	0-7	Interior	32	32	32	32	32	32	32	32	32	32	32	32	32	32	30	32	32	27	32	32	25	32	30	21	32	25	18	30	22	16	26	19	14	23	17	12	21	15	11
			Exposed	32	32	30	32	32	27	32	32	24	32	30	21	32	28	19	32	25	18	32	23	16	27	19	14	23	17	12	20	14	10	17	13	9	15	11	12	13	10	10
		7-20	Interior	33	33	33	33	33	33	33	33	32	33	33	29	33	32	26	33	29	24	33	27	22	32	22	19	29	19	16	25	17	14	22	14	12	20	13	11	17	11	9
			Exposed	33	32	26	33	28	23	33	25	21	33	23	19	32	21	17	29	19	16	27	17	14	22	15	12	19	13	10	17	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	38	38	38	38	38	38	38	38	38	38	38	34	38	38	30	38	35	26	38	32	24	38	27	19	36	23	16	34	20	14	30	18	12	26	15	11	23	14	9
			Exposed	38	38	30	38	34	26	38	31	22	38	28	20	38	25	17	38	23	16	36	21	14	30	18	12	26	15	10	22	13	9	20	11	8	17	10	7	15	9	9
		27-45	Interior	45	45	45	45	45	45	45	45	45	43	43	42	42	42	38	40	40	33	39	39	30	36	34	25	33	29	20	28	25	17	25	22	15	22	19	13	19	17	11
			Exposed	45	45	37	45	43	33	44	39	29	39	35	25	35	32	22	32	29	20	29	26	18	25	22	15	21	19	12	18	17	10	16	14	9	14	13	8	13	11	7
50	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	20	24	24	18
			Exposed	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	23	24	24	20	24	24	17	24	21	15	24	19	13	23	17	12
		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	20	24	24	16
			Exposed	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	21	24	21	18	24	18	15	24	16	13	22	14	12	19	13	10
		20-27	Interior	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	26	30	30	21	30	26	16	28	23	16
			Exposed	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	27	30	30	22	30	26	18	30	22	15	30	19	13	29	17	12	26	15	10
		27-45	Interior	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	36	36	36	34	34	34	33	33	32	32	32	28	30	30	24	29	29	21
			Exposed	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	34	36	36	28	34	32	23	31	28	20	27	24	17	24	22	14	21	19	12
	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	21	24	24	19	24	23	16	24	20	14	24	18	13
			Exposed	24	24	24	24	24	24	24	24	24	24	24	23	24	24	21	24	23	19	24	21	17	24	17	14	23	15	12	20	13	11	17	11	9	15	10	8	13	9	11
		7-20	Interior	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	28	30	30	24	30	30	22	30	27	19	30	25	17	30	21	14
			Exposed	30	30	30	30	30	30	30	30	28	30	30	24	30	30	22	30	27	19	30	25	17	30	21	14	30	18	12	27	16	11	23	14	9	21	12	8	18	11	7
		20-27	Interior	37	37	37	37	37	37	37	37	37	37	37	37	36	36	36	35	35	35	34	34	34	32	32	30	31	31	25	29	29	21	28	26	18	26	23	16	23	21	13
			Exposed	37	37	37	37	37	37	37	37	35	37	37	31	36	36	28	35	34	25	34	34	31	30	27	18	25	23	15	22	20	13	19	17	11	17	15	9	15	13	8
	D	0-7	Interior	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	25	26	26	21	26	25	18	26	22	16	26	19	14	23	17	12	21	15	11
			Exposed	26	26	26	26	26	26	26	26	24	26	26	21	26	26	19	26	25	18	26	23	16	26	19	14	23	17	12	20	14	10	17	13	9	15	11	12	13	10	10
		7-20	Interior	27	27	27	27	27	27	27	27	27	27	27	27	27	27	26	27	27	24	27	27	22	27	22	19	26	19	16	25	17	14	22	14	12	20	13	11	17	11	9
			Exposed	27	27	26	27	27	23	27	25	21	27	23	19	27	21	17	27	19	16	27	17	14	22	15	12	19	13	10	17	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	33	33	33	33	33	33	33	33	33	33	33	33	33	33	30	33	33	26	33	32	24	32	27	19	31	23	16	30	20	14	28	18	12	26	15	11	23	14	9
			Exposed	33	33	30	33	33	26	33	31	22	33	28	20	33	25	17	33	23	16	33	21	14	30	18	12	26	15	10	22	13	9	20	11	8	17	10	7	15	9	9
		27-45	Interior	39	39	39	39	39	39	39	39	39	38	38	38	37	37	37	36	36	33	34	34	30	32	32	25	31	29	20	28	25	17	25	22	15	22	19	13	19	17	11
			Exposed	39	39	37	39	39	33	39	39	29	38	35	25	35	32	22	32	29	20	29	26	18	25	22	15	21	19	12	18	17	10	16	14	9	14	13	8	13	11	7

* 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.

~~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.

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Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	Attachment

SPAN TABLES

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Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	Attachment

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				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
90	B	0-7	Interior	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
			Exposed	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12
		7-20	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	14	12	14	13	10	14	13	10
		20-27	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16
			Exposed	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	15	17	17	13	17	17	12	17	15	10
		27-45	Interior	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	20	20	20
			Exposed	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	20	21	21	17	21	21	14	20	19	12
	C	0-7	Interior	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
			Exposed	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	13	13	11	13	13	9	13	12	8
		7-20	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	13	11	14	13	11
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	12	14	13	11	14	11	9	14	10	8	13	9	11
		20-27	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16	17	17	14	17	17	14	17	17	13	17	16	11
			Exposed	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	14	17	17	12	17	16	11	17	14	9	17	12	8	17	11	7
		27-45	Interior	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	20	20	20	20	20	18	19	19	16	18	18	13
			Exposed	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	18	21	21	15	20	20	13	19	17	11	17	15	9	15	13	8
	D	0-7	Interior	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	14	15	15	12	15	15	11
			Exposed	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	14	15	15	12	15	14	10	15	13	9	15	11	12	13	10	10
		7-20	Interior	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	14	15	14	12	15	13	11	15	11	9	15	11	9
			Exposed	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	14	15	15	12	15	13	10	15	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	16	19	19	14	19	18	12	18	15	11	18	14	9
			Exposed	19	19	19	19	19	19	19	19	19	19	19	19	19	19	17	19	19	16	19	19	14	19	18	12	19	15	10	19	13	9	19	11	8	17	10	7	15	9	9
		27-45	Interior	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	23	23	23	22	22	20	21	21	17	20	20	15	19	19	13	18	17	11
			Exposed	24	24	24	24	24	24	24	24	24	24	24	24	24	24	22	24	24	20	24	24	18	23	22	15	21	19	12	18	17	10	16	14	9	14	13	8	13	11	7
100	B	0-7	Interior	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
			Exposed	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
		7-20	Interior	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
			Exposed	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	10
		20-27	Interior	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
			Exposed	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	13	15	15	12	15	15	10	15	15	10
		27-45	Interior	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
			Exposed	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	17	19	19	14	19	19	12
	C	0-7	Interior	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
			Exposed	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	11	12	12	9	12	12	8	12	12	8
		7-20	Interior	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	11
			Exposed	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	11	12	11	9	12	10	8	12	9	11
		20-27	Interior	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	14	15	15	12	15	15	14	15	15	13	15	15	11
			Exposed	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	14	15	15	12	15	15	11	15	14	9	15	12	8	15	11	7
		27-45	Interior	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	18	18	13
			Exposed	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	18	19	19	15	19	19	13	18	17	11	17	15	9	15	13	8
	D	0-7	Interior	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	13	13	11
			Exposed	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	13	13	10	13	13	9	13	11	12	13	10	10
		7-20	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	12	14	13	11	14	11	9
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	12	14	13	10	14	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16	17	17	14	17	17	12	17	15	11	16	14	9
			Exposed	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16	17	17	14	17	17	12	17	15	10	17	13	9	17	11	8	17	10	7	15	9	9
		27-45	Interior	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	20	20	20	19	19	17	19	19	15	18	18	13	17	17	11
			Exposed	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	20	21	21	18	21	21	15	20	19	12	18	17	10	16	14	9	14	13	8	13	11	7

#N/A

* 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.

~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 1.25	19 sq.ft	LANDSCAPE	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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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ASCE 7-16	II	30 ft	Ss = 1.25	19 sq.ft	LANDSCAPE	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
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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
30	B	0-7	Interior	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	60	62	62	52	62	62	45	62	55	39	62	49	34	59	43	30
			Exposed	62	62	62	62	62	62	62	62	62	62	62	62	62	62	56	62	62	51	62	62	47	62	56	39	62	48	34	57	41	29	50	36	26	44	32	23	39	28	20
		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	53	63	55	46	63	48	39	63	42	34	56	37	30	50	33	27
			Exposed	63	63	63	63	63	63	63	63	60	63	63	54	63	60	49	63	54	45	63	50	41	63	42	35	55	36	30	48	31	26	42	27	23	37	24	20	33	21	18
		20-27	Interior	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	52	72	58	43	72	50	36	72	44	31	69	39	27			
			Exposed	72	72	72	72	72	72	72	72	72	72	72	72	72	72	58	72	69	51	72	60	45	72	51	37	72	44	30	64	38	26	56	33	23	49	29	20	44	26	18
		27-45	Interior	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	83	83	70	77	77	55	71	63	46	62	56	40	55	49	35
			Exposed	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	66	84	84	57	84	64	47	61	55	39	53	47	33	46	41	28	41	36	24	36	32	21
	C	0-7	Interior	62	62	62	62	62	62	62	62	62	62	62	62	62	62	60	62	62	55	62	62	50	62	60	42	62	51	36	61	44	31	53	39	27	47	34	24	41	30	21
			Exposed	62	62	60	62	62	53	62	62	48	62	61	43	62	56	39	62	51	36	62	46	33	54	39	28	46	33	24	40	29	21	35	25	18	31	22	16	27	20	14
		7-20	Interior	63	63	63	63	63	63	63	63	63	63	63	58	63	63	53	63	58	48	63	53	44	63	45	37	59	39	32	51	33	28	45	29	24	39	26	21	35	23	19
			Exposed	63	63	53	63	57	47	63	51	42	63	46	38	63	42	35	58	38	32	53	35	29	45	30	24	39	25	21	33	22	18	29	19	16	26	17	14	23	15	19
		20-27	Interior	72	72	72	72	72	72	72	72	72	72	72	72	72	72	66	72	72	56	72	65	50	72	55	40	72	47	33	70	40	28	60	35	24	53	31	21	47	28	19
			Exposed	72	72	65	72	72	54	72	62	47	72	56	41	72	51	36	72	46	32	72	42	29	61	36	24	52	31	21	45	27	18	39	23	16	35	20	14	31	18	12
		27-45	Interior	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	82	82	64	75	75	51	66	59	42	57	51	36	49	44	31	44	39	26	39	35	23
			Exposed	84	84	84	84	84	84	84	84	59	84	84	53	84	63	47	65	58	42	59	53	38	50	45	31	43	38	26	37	33	22	32	29	19	29	26	16	25	23	14
	D	0-7	Interior	66	66	66	66	66	66	66	66	62	66	66	56	66	66	50	66	65	46	66	59	42	66	50	35	59	43	30	51	37	26	45	32	23	39	29	20	35	25	18
			Exposed	66	66	50	66	63	45	66	57	40	66	51	36	64	47	33	58	42	30	53	39	27	45	33	23	39	28	20	33	24	17	29	21	15	26	19	13	23	17	18
		7-20	Interior	67	67	67	67	67	60	67	67	54	67	59	49	67	54	44	67	49	40	67	45	37	58	38	31	50	32	27	43	28	23	37	25	20	33	22	18	29	19	16
			Exposed	67	54	44	67	48	39	66	43	35	59	39	32	54	35	29	49	32	26	45	29	24	38	25	21	32	21	18	28	18	15	25	16	13	22	14	18	19	19	16
		20-27	Interior	77	77	77	77	77	77	77	77	77	77	77	57	77	65	50	77	59	45	77	54	40	77	46	32	68	39	27	58	34	23	51	30	20	45	26	18	40	23	16
			Exposed	77	65	50	77	58	43	77	52	38	77	47	33	77	42	29	67	39	26	60	35	24	51	30	21	44	26	18	38	22	15	33	19	13	29	17	12	26	15	16
		27-45	Interior	88	88	88	88	88	88	88	88	88	88	88	88	88	88	64	85	85	56	81	78	51	64	57	41	55	49	34	47	43	29	41	37	25	37	33	21	32	29	19
			Exposed	88	88	64	88	88	55	88	65	48	68	59	43	59	53	38	54	48	34	50	44	31	42	38	25	36	32	21	31	28	18	27	24	15	24	22	13	21	19	12
40	B	0-7	Interior	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	45	49	49	39	49	49	34	49	49	34	49	43	30			
			Exposed	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	47	49	49	39	49	48	34	49	41	29	49	36	26	44	32	23	39	28	20
		7-20	Interior	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	46	50	48	39	50	42	34	50	37	30	48	33	27			
			Exposed	50	50	50	50	50	50	50	50	50	50	50	50	50	50	49	50	50	45	50	50	41	50	42	35	50	36	30	48	31	26	42	27	23	37	24	20	33	21	18
		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	52	60	58	43	60	50	36	58	44	31	56	39	27			
			Exposed	60	60	60	60	60	60	60	60	60	60	60	60	60	60	58	60	60	51	60	60	45	60	51	37	60	44	30	60	38	26	56	33	23	49	29	20	44	26	18
		27-45	Interior	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	66	66	66	63	63	55	60	60	46	57	56	40	54	49	35
			Exposed	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	66	71	71	57	71	64	47	61	55	39	53	47	33	46	41	28	41	36	24	36	32	21
	C	0-7	Interior	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	42	49	49	36	49	44	31	49	39	27	47	34	24	41	30	21
			Exposed	49	49	49	49	49	49	49	49	48	49	49	43	49	49	39	49	49	36	49	46	33	49	39	28	46	33	24	40	29	21	35	25	18	31	22	16	27	20	14
		7-20	Interior	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	48	50	50	44	50	45	37	50	39	32	49	33	28	45	29	24	39	26	21	35	23	19
			Exposed	50	50	50	50	50	47	50	50	42	50	46	38	50	42	35	50	38	32	50	35	29	45	30	24	39	25	21	33	22	18	29	19	16	26	17	14	23	15	19
		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	50	60	56	36	60	50	36	58	44	31	56	39	27
			Exposed	60	60	60	60	60	54	60	60	47	60	56	41	60	51	36	60	46	32	60	42	29	60	36	24	52	31	21	45	27	18	39	23	16	35	20	14	31	18	12
		27-45	Interior	71	71	71	71	71	71	71	71	71	71	71	71	70	70	70	68	68	68	66	66	64	62	62	51	58	58	42	55	51	36	49	44	31	44	39	26	39	35	23
			Exposed	71	71	71	71	71	71	71	71	59	71	71	53	70	63	47	65	58	42	59	53	38	50	45	31	43	38	26	37	33	22	32	29	19	29	26	16	25	23	14
	D	0-7	Interior	54	54	54	54	54	54	54	54	54	54	54	54	54	54	50	54	54	46	54	54	42	54	50	35	54	43	30	51	37	26	45	32	23	39	29	20	35	25	18
			Exposed	54	54	50	54	54	45	54	54	40	54	51	36	54	47	33	54	42	30	53	39	27	45	33	23	39	28	20	33	24	17	29	21	15	26	19	13	23	17	18
		7-20	Interior	55	55	55	55	55	55	55	55	54	55	55	49	55	54	44	55	49	40	55	45	37	54	38	31	50	32	27	43	28	23	37	25	20	33	22	18	29	19	16
			Exposed	55	54	44	55	48	39	55	43	35	55	39	32	54	35	29	49	32	26	45	29	24	38	25	21	32	21	18	28	18	15	25	16	13	22	14	18	19	19	16
		20-27	Interior	64	64	64	64	64	64	64	64	64	64	64	57	64	64	50	64	59	45	64	54	40	63	46	32	60	39	27	57	34	23	51	30	20	45	26	18	40	23	16
			Exposed	64	64	50	64	58	43	64	52	38	64	47	33	64	42	29	64	39	26	60	35	24	51	30	21	44	26	18	38	22	15	33	19	13	29	17	12	26	15	16
		27-45	Interior	75	75	75	75	75	75	75	75	75	74	74	74	71	71	64	68	68	56	65	65	51	61	57	41	55	49	34	47	43	29	41	37	25	37	33	21	32	29	19
			Exposed	75	75	64	75	75	55	75	65	48	68	59	43	59	53	38	54	48	34	50	44	31	42	38	25	36	32	21	31	28	18	27	24	15	24	22	13	21	19	12
50	B	0-7	Interior	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	39	40	34	30			
			Exposed	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	39	40	40	34	40	40	29	40	36	26	40	32	23	39	28	20
		7-20	Interior	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	39	40	40	34	40	37	30			
			Exposed	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	35	40	36	30	40	31	26	40	27	23	37	24	20	33	21	18
		20-27	Interior	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	43	50	50	36	50	44	31	48	39	27
			Exposed	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	45	50	50	37	50	44	30	50	38	26	50	33	23	49	29	20	44	26	18
		27-45	Interior	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	60	60	60	58	58	58	55	55	55	53	53	46	51	51	40	49	49	35
			Exposed	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	57	60	60	47	58	55	39	53	47	33	46	41	28	41	36	24	36	32	21
	C	0-7	Interior	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	36	40	40	31	40	39	27	40	34	24	40	30	21
			Exposed	40	40	40	40	40	40	40	40	40	40	40	40	40	40	39	40	40	36	40	40	33	40	39	28	40	33	24	40	29	21	35	25	18	31	22	16	27	20	14
		7-20	Interior	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	37	40	39	32	40	33	28	40	29	24	39	26	21	35	23	19
			Exposed	40	40	40	40	40	40	40	40	38	40	40	35	40	38	32	40	35	29	40	30	24	39	25	21	33	22	18	29	19	16	26	17	14	23	15	19			
		20-27	Interior	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	40	50	47	33	49	40	28	47	35	24	45	31	21	44	28	19
			Exposed	50	50	50	50	50	50	50	50	47	50	50	41	50	50	36	50	46	32	50	42	29	50	36	24	50	31	21	45	27	18	39	23	16	35	20	14	31	18	12
		27-45	Interior	61	61	61	61	61	61	61	61	61	61	61	61	60	60	60	59	59	59	57	57	57	54	54	51	52	52	42	49	49	36	47	44	31	44	39	26	39	35	23
			Exposed	61	61	61	61	61	61	61	61	59	61	61	53	60	60	47	59	58	42	57	53	38	50	45	31	43	38	26	37	33	22	32	29	19	29	26	16	25	23	14
	D	0-7	Interior	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	42	44	44	35	44	43	30	44	37	26	44	32	23	39	29	20	35	25	18
			Exposed	44	44	44	44	44	44	44	44	40	44	44	36	44	44	33	44	42	30	44	39	27	44	33	23	39	28	20	33	24	17	29	21	15	26	19	13	23	17	18
		7-20	Interior	45	45	45	45	45	45	45	45	45	45	45	45	45	45	44	45	45	40	45	45	37	45	38	31	44	32	27	43	28	23	37	25	20	33	22	18	29	19	16
			Exposed	45	45	44	45	45	39	45	43	35	45	39	32	45	35	29	45	32	26	45	29	24	38	25	21	32	21	18	28	18	15	25	16	13	22	14	18	19	19	16
		20-27	Interior	55	55	55	55	55	55	55	55	55	55	55	55	55	55	50	55	55	45	55	54	40	54	46	32	52	39	27	50	34	23	48	30	20	45	26	18	40	23	16
			Exposed	55	55	50	55	55	43	55	52	38	55	47	33	55	42	29	55	39	26	55	35	24	51	30	21	44	26	18	38	22	15	33	19	13	29	17	12	26	15	16
		27-45	Interior	66	66	66	66	66	66	65	65	65	63	63	63	61	61	61	59	59	56	58	58	51	54	54	41	51	49	34	47	43	29	41	37	25	37	33	21	32	29	19
			Exposed	66	66	64	66	66	55	65	65	48	63	59	43	59	53	38	54	48	34	50	44	31	42	38	25	36	32	21	31	28	18	27	24	15	24	22	13	21	19	12

* 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.

~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 1.25	19 sq.ft	LANDSCAPE	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
60	B	0-7	Interior	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	30
			Exposed	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	29	34	34	26	34	32	23	34	28	20
		7-20	Interior	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	30	34	33	27
			Exposed	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	30	34	31	26	34	27	23	34	24	20	33	21	18
		20-27	Interior	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	36	42	42	31	42	39	27
			Exposed	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	37	42	42	30	42	38	26	42	33	23	42	29	20	42	26	18
		27-45	Interior	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	51	51	51	49	49	49	48	48	46	46	46	40	44	44	35
			Exposed	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	47	51	51	39	49	47	33	46	41	28	41	36	24	36	32	21
	C	0-7	Interior	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	31	34	34	27	34	34	24	34	30	21
			Exposed	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	33	34	34	28	34	33	24	34	29	21	34	25	18	31	22	16	27	20	14
		7-20	Interior	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	32	34	33	28	34	29	24	34	26	21	33	23	19			
			Exposed	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	32	34	34	29	34	30	24	34	25	21	33	22	18	29	19	16	26	17	14	23	15	19
		20-27	Interior	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	33	42	42	30	42	38	26	42	33	23	42	29	20	42	26	18
			Exposed	42	42	42	42	42	42	42	42	42	42	42	41	42	42	36	42	42	32	42	42	29	42	36	24	42	31	21	42	27	18	39	23	16	35	20	14	31	18	12
		27-45	Interior	53	53	53	53	53	53	53	53	53	53	53	53	53	53	52	52	52	51	51	51	49	49	49	46	46	42	44	44	36	42	42	31	40	39	26	38	35	23			
			Exposed	53	53	53	53	53	53	53	53	53	53	53	47	52	52	42	51	51	38	49	45	31	43	38	26	37	33	22	32	29	19	29	26	16	25	23	14			
	D	0-7	Interior	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	35	37	37	30	37	37	26	37	32	23	37	29	20	35	25	18			
			Exposed	37	37	37	37	37	37	37	37	37	37	37	36	37	37	33	37	37	30	37	37	27	37	33	23	37	28	20	33	24	17	29	21	15	26	19	13	23	17	18
		7-20	Interior	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	37	38	38	31	38	32	27	37	28	23	36	25	20	33	22	18	29	19	16	
			Exposed	38	38	38	38	38	38	38	38	35	38	38	32	38	35	29	38	32	26	38	29	24	38	25	21	32	21	18	28	18	15	25	16	13	22	14	18	19	19	16
		20-27	Interior	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	45	46	46	40	46	46	32	46	39	27	44	34	23	42	30	20	41	26	18	39	23	16
			Exposed	46	46	46	46	46	43	46	46	38	46	46	33	46	42	29	46	39	26	46	35	24	46	30	21	44	26	18	38	22	15	33	19	13	29	17	12	26	15	16
		27-45	Interior	58	58	58	58	58	58	57	57	57	56	56	56	55	55	55	53	53	53	52	52	51	49	49	41	47	47	34	44	43	29	41	37	25	37	33	21	32	29	19
			Exposed	58	58	58	58	58	55	57	57	48	56	56	43	55	53	38	53	48	34	50	44	31	42	38	25	36	32	21	31	28	18	27	24	15	24	22	13	21	19	12
70	B	0-7	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	26	29	29	23	29	28	20
		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	27
			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	26	29	27	23	29	24	20	29	21	18			
		20-27	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	31	36	36	27
			Exposed	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	30	36	36	26	36	33	23	36	29	20	36	26	18			
		27-45	Interior	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	45	45	45	43	43	43	41	41	40	40	40	35
			Exposed	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	39	45	45	33	43	41	28	41	36	24	36	32	21			
	C	0-7	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	27	29	29	24	29	29	21			
			Exposed	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	28	29	29	24	29	29	21	29	25	18	29	22	16	27	20	14
		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	28	29	29	24	29	26	21	29	23	19
			Exposed	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	24	29	25	21	29	22	18	29	19	16	26	17	14	23	15	19
		20-27	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	33	36	36	28	36	36	24	36	31	21	35	28	19			
			Exposed	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	32	36	36	29	36	36	24	36	31	21	36	27	18	36	23	16	35	20	14	31	18	12
		27-45	Interior	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	44	44	44	42	42	42	40	40	36	39	39	31	37	37	26	35	35	23			
			Exposed	46	46	46	46	46	46	46	46	46	46	46	46	46	46	42	46	46	38	44	44	31	42	38	26	37	33	22	32	29	19	29	26	16	25	23	14			
	D	0-7	Interior	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	30	32	32	26	32	32	23	32	29	20	32	25	18			
			Exposed	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	30	32	32	27	32	32	23	32	28	20	32	24	17	29	21	15	26	19	13	23	17	18
		7-20	Interior	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	31	32	32	27	32	28	23	32	25	20	31	22	18	29	19	16
			Exposed	32	32	32	32	32	32	32	32	32	32	32	32	32	32	29	32	32	26	32	29	24	32	25	21	32	21	18	28	18	15	25	16	13	22	14	18	19	19	16
		20-27	Interior	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	32	40	39	27	39	34	23	38	30	20	37	26	18	35	23	16
			Exposed	40	40	40	40	40	40	40	40	38	40	40	33	40	40	29	40	39	26	40	35	24	40	30	21	40	26	18	38	22	15	33	19	13	29	17	12	26	15	16
		27-45	Interior	51	51	51	51	51	51	51	51	51	50	50	50	49	49	49	48	48	48	47	47	47	45	45	41	43	43	34	40	40	29	38	37	25	36	33	21	32	29	19
			Exposed	51	51	51	51	51	51	51	51	48	50	50	43	49	49	38	48	48	34	47	44	31	42	38	25	36	32	21	31	28	18	27	24	15	24	22	13	21	19	12
80	B	0-7	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	23	25	25	20			
		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	26
			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	23	26	24	20	26	21	18
		20-27	Interior	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	31	32	32	27
			Exposed	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	30	32	32	26	32	32	23	32	29	20	32	26	18
		27-45	Interior	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	39	39	39	38	38	38	37	37	35
			Exposed	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	39	40	40	33	39	39	28	38	36	24	36	32	21			
	C	0-7	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	25	25	21			
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	25	25	21	25	25	18	25	22	16	25	20	14			
		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	24	26	26	21	26	23	19
			Exposed	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	24	26	25	21	26	22	18	26	19	16	26	17	14	23	15	19
		20-27	Interior	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	28	32	32	24	32	31	21	31	28	19
			Exposed	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	29	32	32	24	32	31	21	32	27	18	32	23	16	32	20	14
		27-45	Interior	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	39	39	39	37	37	36	36	36	31	34	34	26	33	33	23
			Exposed	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	31	39	38	26	37	33	22	32	29	19	29	26	16	25	23	14
	D	0-7	Interior	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	26	28	28	23	28	28	20	28	25	18
			Exposed	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	27	28	28	23	28	28	20	28	24	17	28	21	15	26	19	13	23	17	18
		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	27	29	28	23	29	25	20	28	22	18	28	19	16
			Exposed	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	26	29	29	24	29	25	21	29	21	18	28	18	15	25	16	13	22	14	18	19	19	16
		20-27	Interior	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	32	35	35	27	35	34	23	35	30	20	33	26	18	32	23	16
			Exposed	35	35	35	35	35	35	35	35	35	35	35	33	35	35	29	35	35	26	35	35	24	35	30	21	35	26	18	35	22	15	33	19	13	29	17	12	26	15	16
		27-45	Interior	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	44	44	44	43	43	43	41	41	41	39	39	34	37	37	29	36	36	25	34	33	21	32	29	19
			Exposed	45	45	45	45	45	45	45	45	45	45	45	43	45	45	38	44	44	34	43	43	31	41	38	25	36	32	21	31	28	18	27	24	15	24	22	13	21	19	12

* 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.

~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 1.25	19 sq.ft	LANDSCAPE	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
90	B	0-7	Interior	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
			Exposed	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	20
		7-20	Interior	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
			Exposed	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	20	23	21	18				
		20-27	Interior	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	27
			Exposed	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	26	28	28	23	28	28	20	28	26	18			
		27-45	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	35	35	35	34	34	34			
			Exposed	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	33	36	36	28	35	35	24	34	32	21						
	C	0-7	Interior	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	21			
			Exposed	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	21	23	23	18	23	22	16	23	20	14						
		7-20	Interior	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	21	23	23	19				
			Exposed	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	21	23	22	18	23	19	16	23	17	14	23	15	19			
		20-27	Interior	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	24	28	28	21	28	28	19			
			Exposed	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	24	28	28	21	28	27	18	28	23	16	28	20	14	28	18	12
		27-45	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	34	34	34	33	33	31	32	32	26	30	30	23
			Exposed	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	31	36	36	26	34	33	22	32	29	19	29	26	16	25	23	14
	D	0-7	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	23	25	25	20	25	25	18			
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	23	25	25	20	25	24	17	25	21	15	25	19	13	23	17	18
		7-20	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	23	25	25	20	25	22	18	25	19	16
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	25	25	21	25	21	18	25	18	15	25	16	13	22	14	18	19	19	16
		20-27	Interior	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	27	31	31	23	31	30	20	31	26	18	30	23	16
			Exposed	31	31	31	31	31	31	31	31	31	31	31	31	31	31	29	31	31	26	31	31	24	31	30	21	31	26	18	31	22	15	31	19	13	29	17	12	26	15	16
		27-45	Interior	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	38	38	38	36	36	34	35	35	29	33	33	25	32	32	21	30	29	19
			Exposed	40	40	40	40	40	40	40	40	40	40	40	40	40	40	38	40	40	34	40	40	31	38	38	25	36	32	21	31	28	18	27	24	15	24	22	13	21	19	12
100	B	0-7	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
		7-20	Interior	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
			Exposed	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	20	21	21	18			
		20-27	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	26
			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	23	26	26	20	26	26	18			
		27-45	Interior	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	32	32	32			
			Exposed	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	28	33	33	24	32	32	21			
	C	0-7	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20			
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	18	20	20	16	20	20	14						
		7-20	Interior	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	19			
			Exposed	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	18	21	19	16	21	17	14	21	15	19			
		20-27	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	24	26	26	21	26	26	19						
			Exposed	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	24	26	26	21	26	26	18	26	23	16	26	20	14	26	18	12
		27-45	Interior	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	32	32	32	31	31	31	30	30	26	29	29	23
			Exposed	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	31	33	33	26	32	32	22	31	29	19	29	26	16	25	23	14
	D	0-7	Interior	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	20	23	23	18			
			Exposed	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	20	23	23	17	23	21	15	23	19	13	23	17	18			
		7-20	Interior	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	20	23	22	18	23	19	16
			Exposed	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	21	23	21	18	23	18	15	23	16	13	22	14	18	19	19	16
		20-27	Interior	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	27	28	28	23	28	28	20	28	26	18	27	23	16
			Exposed	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	26	28	28	24	28	28	21	28	26	18	28	22	15	28	19	13	28	17	12	26	15	16
		27-45	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	35	35	35	34	34	34	33	33	29	31	31	25	30	30	21	29	29	19
			Exposed	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	34	36	36	31	35	35	25	34	32	21	31	28	18	27	24	15	24	22	13	21	19	12

#N/A

*	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.
~~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.

UNIRAC

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Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	Attachment

SPAN TABLES

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				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	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	108	136	136	60	136	95	52	136	63	45	117	55	39	70	49	34	59	43	30
			Exposed	136	136	136	136	136	136	136	136	80	136	136	62	136	136	56	136	90	51	136	68	47	126	56	39	67	48	34	57	41	29	50	36	26	44	32	23	39	28	20
		7-20	Interior	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	63	136	65	53	136	55	46	80	48	39	64	42	34	56	37	30	50	33	27
			Exposed	136	136	136	136	136	136	136	136	60	136	72	54	136	60	49	136	54	45	87	50	41	65	42	35	55	36	30	48	31	26	42	27	23	37	24	20	33	21	18
		20-27	Interior	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	73	136	76	52	136	58	43	136	50	36	86	44	31	69	39	27
			Exposed	136	136	136	136	136	136	136	136	136	136	136	136	136	136	58	136	69	51	136	60	45	136	51	37	83	44	30	64	38	26	56	33	23	49	29	20	44	26	18
		27-45	Interior	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	70	136	136	55	136	63	46	62	56	40	55	49	35
			Exposed	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	66	136	136	57	136	64	47	61	55	39	53	47	33	46	41	28	41	36	24	36	32	21
	C	0-7	Interior	136	136	136	136	136	136	136	136	136	136	136	70	136	136	60	136	128	55	136	84	50	136	60	42	83	51	36	61	44	31	53	39	27	47	34	24	41	30	21
			Exposed	136	136	60	136	110	53	136	74	48	136	61	43	122	56	39	80	51	36	64	46	33	54	39	28	46	33	24	40	29	21	35	25	18	31	22	16	27	20	14
		7-20	Interior	136	136	136	136	136	136	136	136	65	136	136	58	136	64	53	136	58	48	136	53	44	73	45	37	59	39	32	51	33	28	45	29	24	39	26	21	35	23	19
			Exposed	136	64	53	136	57	47	92	51	42	76	46	38	64	42	35	58	38	32	53	35	29	45	30	24	39	25	21	33	22	18	29	19	16	26	17	14	23	15	19
		20-27	Interior	136	136	136	136	136	136	136	136	136	136	136	136	136	136	66	136	136	56	136	65	50	136	55	40	111	47	33	72	40	28	60	35	24	53	31	21	47	28	19
			Exposed	136	136	65	136	136	54	136	62	47	136	56	41	136	51	36	96	46	32	78	42	29	61	36	24	52	31	21	45	27	18	39	23	16	35	20	14	31	18	12
		27-45	Interior	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	64	136	82	51	66	59	42	57	51	36	49	44	31	44	39	26	39	35	23
			Exposed	136	136	136	136	136	87	136	136	59	136	100	53	136	63	47	65	58	42	59	53	38	50	45	31	43	38	26	37	33	22	32	29	19	29	26	16	25	23	14
	D	0-7	Interior	136	136	136	136	136	81	136	136	62	136	136	56	136	86	50	136	65	46	136	59	42	78	50	35	59	43	30	51	37	26	45	32	23	39	29	20	35	25	18
			Exposed	136	85	50	136	63	45	136	57	40	84	51	36	64	47	33	58	42	30	53	39	27	45	33	23	39	28	20	33	24	17	29	21	15	26	19	13	23	17	18
		7-20	Interior	136	136	136	136	136	60	136	70	54	136	59	49	136	54	44	85	49	40	72	45	37	58	38	31	50	32	27	43	28	23	37	25	20	33	22	18	29	19	16
			Exposed	136	54	44	81	48	39	66	43	35	59	39	32	54	35	29	49	32	26	45	29	24	38	25	21	32	21	18	28	18	15	25	16	13	22	14	18	19	19	16
		20-27	Interior	136	136	136	136	136	136	136	136	136	136	136	57	136	65	50	136	59	45	136	54	40	92	46	32	68	39	27	58	34	23	51	30	20	45	26	18	40	23	16
			Exposed	136	65	50	136	58	43	136	52	38	116	47	33	79	42	29	67	39	26	60	35	24	51	30	21	44	26	18	38	22	15	33	19	13	29	17	12	26	15	16
		27-45	Interior	136	136	136	136	136	136	136	136	136	136	136	136	136	136	64	136	136	56	136	78	51	64	57	41	55	49	34	47	43	29	41	37	25	37	33	21	32	29	19
			Exposed	136	136	64	136	136	55	136	65	48	68	59	43	59	53	38	54	48	34	50	44	31	42	38	25	36	32	21	31	28	18	27	24	15	24	22	13	21	19	12
10	B	0-7	Interior	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	60	102	95	52	102	63	45	102	55	39	70	49	34	59	43	30
			Exposed	102	102	102	102	102	102	102	102	80	102	102	62	102	102	56	102	90	51	102	68	47	102	56	39	67	48	34	57	41	29	50	36	26	44	32	23	39	28	20
		7-20	Interior	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	63	103	65	53	103	55	46	80	48	39	64	42	34	56	37	30	50	33	27
			Exposed	103	103	103	103	103	103	103	103	60	103	72	54	103	60	49	103	54	45	87	50	41	65	42	35	55	36	30	48	31	26	42	27	23	37	24	20	33	21	18
		20-27	Interior	121	121	121	121	121	121	121	121	121	121	121	121	121	121	121	121	121	121	121	121	121	121	121	73	121	76	52	121	58	43	121	50	36	86	44	31	69	39	27
			Exposed	121	121	121	121	121	121	121	121	121	121	121	121	121	121	58	121	69	51	121	60	45	121	51	37	83	44	30	64	38	26	56	33	23	49	29	20	44	26	18
		27-45	Interior	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	70	132	132	55	132	63	46	62	56	40	55	49	35
			Exposed	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	66	132	132	57	132	64	47	61	55	39	53	47	33	46	41	28	41	36	24	36	32	21
	C	0-7	Interior	102	102	102	102	102	102	102	102	102	102	102	70	102	102	60	102	102	55	102	84	50	102	60	42	83	51	36	61	44	31	53	39	27	47	34	24	41	30	21
			Exposed	102	102	60	102	102	53	102	74	48	102	61	43	102	56	39	80	51	36	64	46	33	54	39	28	46	33	24	40	29	21	35	25	18	31	22	16	27	20	14
		7-20	Interior	103	103	103	103	103	103	103	103	65	103	103	58	103	64	53	103	58	48	103	53	44	73	45	37	59	39	32	51	33	28	45	29	24	39	26	21	35	23	19
			Exposed	103	64	53	103	57	47	92	51	42	76	46	38	64	42	35	58	38	32	53	35	29	45	30	24	39	25	21	33	22	18	29	19	16	26	17	14	23	15	19
		20-27	Interior	121	121	121	121	121	121	121	121	121	121	121	121	121	121	66	121	121	56	121	65	50	121	55	40	111	47	33	72	40	28	60	35	24	53	31	21	47	28	19
			Exposed	121	121	65	121	121	54	121	62	47	121	56	41	121	51	36	96	46	32	78	42	29	61	36	24	52	31	21	45	27	18	39	23	16	35	20	14	31	18	12
		27-45	Interior	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	70	132	132	55	95	63	46	62	56	40	55	49	35
			Exposed	132	132	132	132	132	87	132	132	59	132	100	53	132	63	47	65	58	42	59	53	38	50	45	31	43	38	26	37	33	22	32	29	19	29	26	16	25	23	14
	D	0-7	Interior	102	102	102	102	102	81	102	102	62	102	102	56	102	86	50	102	65	46	102	59	42	78	50	35	59	43	30	51	37	26	45	32	23	39	29	20	35	25	18
			Exposed	102	85	50	102	63	45	102	57	40	84	51	36	64	47	33	58	42	30	53	39	27	45	33	23	39	28	20	33	24	17	29	21	15	26	19	13	23	17	18
		7-20	Interior	103	103	103	103	103	60	103	70	54	103	59	49	103	54	44	85	49	40	72	45	37	58	38	31	50	32	27	43	28	23	37	25	20	33	22	18	29	19	16
			Exposed	103	54	44	81	48	39	66	43	35	59	39	32	54	35	29	49	32	26	45	29	24	38	25	21	32	21	18	28	18	15	25	16	13	22	14	18	19	19	16
		20-27	Interior	125	125	125	125	125	125	125	125	125	125	125	57	125	65	50	125	59	45	125	54	40	92	46	32	68	39	27	58	34	23	51	30	20	45	26	18	40	23	16
			Exposed	125	65	50	125	58	43	125	52	38	116	47	33	79	42	29	67	39	26	60	35	24	51	30	21	44	26	18	38	22	15	33	19	13	29	17	12	26	15	16
		27-45	Interior	135	135	135	135	135	135	135	135	135	135	135	135	135	135	64	135	135	56	135	78	51	64	57	41	55	49	34	47	43	29	41	37	25	37	33	21	32	29	19
			Exposed	135	135	64	135	135	55	135	65	48	68	59	43	59	53	38	54	48	34	50	44	31	42	38	25	36	32	21	31	28	18	27	24	15	24	22	13	21	19	12
20	B	0-7	Interior	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	60	72	72	52	72	63	45	72	55	39	70	49	34	59	43	30
			Exposed	72	72	72	72	72	72	72	72	72	72	72	62	72	72	56	72	72	51	72	68	47	72	56	39	67	48	34	57	41	29	50	36	26	44	32	23	39	28	20
		7-20	Interior	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	63	72	65	53	72	55	46	72	48	39	64	42	34	56	37	30	50	33	27
			Exposed	72	72	72	72	72	72	72	72	60	72	72	54	72	60	49	72	54	45	72	50	41	65	42	35	55	36	30	48	31	26	42	27	23	37	24	20	33	21	18
		20-27	Interior	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	73	90	76	52	90	58	43	90	50	36	86	44	31	69	39	27
			Exposed	90	90	90	90	90	90	90	90	90	90	90	90	90	90	58	90	69	51	90	60	45	90	51	37	83	44	30	64	38	26	56	33	23	49	29	20	44	26	18
		27-45	Interior	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	70	102	102	55	95	63	46	62	56	40	55	49	35
			Exposed	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	66	102	102	57	102	64	47	61	55	39	53	47	33	46	41	28	41	36	24	36	32	21
	C	0-7	Interior	72	72	72	72	72	72	72	72	72	72	72	70	72	72	60	72	72	55	72	72	50	72	60	42	72	51	36	61	44	31	53	39	27	47	34	24	41	30	21
			Exposed	72	72	60	72	72	53	72	72	48	72	61	43	72	56	39	72	51	36	64	46	33	54	39	28	46	33	24	40	29	21	35	25	18	31	22	16	27	20	14
		7-20	Interior	72	72	72	72	72	72	72	72	65	72	72	58	72	64	53	72	58	48	72	53	44	72	45	37	59	39	32	51	33	28	45	29	24	39	26	21	35	23	19
			Exposed	72	64	53	72	57	47	72	51	42	72	46	38	64	42	35	58	38	32	53	35	29	45	30	24	39	25	21	33	22	18	29	19	16	26	17	14	23	15	19
		20-27	Interior	90	90	90	90	90	90	90	90	90	90	90	90	90	90	66	90	90	56	90	65	50	90	55	40	90	47	33	72	40	28	60	35	24	53	31	21	47	28	19
			Exposed	90	90	65	90	90	54	90	62	47	90	56	41	90	51	36	90	46	32	78	42	29	61	36	24	52	31	21	45	27	18	39	23	16	35	20	14	31	18	12
		27-45	Interior	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	64	101	82	51	66	59	42	57	51	36	49	44	31	44	39	26	39	35	23
			Exposed	102	102	102	102	102	87	102	102	59	102	100	53	102	63	47	65	58	42	59	53	38	50	45	31	43	38	26	37	33	22	32	29	19	29	26	16	25	23	14
	D	0-7	Interior	72	72	72	72	72	72	72	72	62	72	72	56	72	72	50	72	65	46	72	59	42	72	50	35	59	43	30	51	37	26	45	32	23	39	29	20	35	25	18
			Exposed	72	72	50	72	63	45	72	57	40	72	51	36	64	47	33	58	42	30	53	39	27	45	33	23	39	28	20	33	24	17	29	21	15	26	19	13	23	17	18
		7-20	Interior	72	72	72	72	72	60	72	70	54	72	59	49	72	54	44	72	49	40	72	45	37	58	38	31	50	32	27	43	28	23	37	25	20	33	22	18	29	19	16
			Exposed	72	54	44	72	48	39	66	43	35	59	39	32	54	35	29	49	32	26	45	29	24	38	25	21	32	21	18	28	18	15	25	16	13	22	14	18	19	19	16
		20-27	Interior	95	95	95	95	95	95	95	95	95	95	95	57	95	65	50	95	59	45	95	54	40	92	46	32	68	39	27	58	34	23	51	30	20	45	26	18	40	23	16
			Exposed	95	65	50	95	58	43	95	52	38	95	47	33	79	42	29	67	39	26	60	35	24	51	30	21	44	26	18	38	22	15	33	19	13	29	17	12	26	15	16
		27-45	Interior	107	107	107	107	107	107	107	107	107	107	107	107	107	107	64	107	107	56	107	78	51	64	57	41	55	49	34	47	43	29	41	37	25	37	33	21	32	29	19
			Exposed	107	107	64	107	107	55	107	65	48	68	59	43	59	53	38	54	48	34	50	44	31	42	38	25	36	32	21	31	28	18	27	24	15	24	22	13	21	19	12

* 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.

~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 3.00	19 sq.ft	LANDSCAPE	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
30	B	0-7	Interior	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	60	62	62	52	62	62	45	62	55	39	62	49	34	59	43	30
			Exposed	62	62	62	62	62	62	62	62	62	62	62	62	62	62	56	62	62	51	62	62	47	62	56	39	62	48	34	57	41	29	50	36	26	44	32	23	39	28	20
		7-20	Interior	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	53	63	55	46	63	48	39	63	42	34	56	37	30	50	33	27			
			Exposed	63	63	63	63	63	63	63	63	60	63	63	54	63	60	49	63	54	45	63	50	41	63	42	35	55	36	30	48	31	26	42	27	23	37	24	20	33	21	18
		20-27	Interior	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	52	72	58	43	72	50	36	72	44	31	69	39	27			
			Exposed	72	72	72	72	72	72	72	72	72	72	72	72	72	72	58	72	69	51	72	60	45	72	51	37	72	44	30	64	38	26	56	33	23	49	29	20	44	26	18
		27-45	Interior	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	83	83	70	77	77	55	71	63	46	62	56	40	55	49	35
			Exposed	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	66	84	84	57	84	64	47	61	55	39	53	47	33	46	41	28	41	36	24	36	32	21
	C	0-7	Interior	62	62	62	62	62	62	62	62	62	62	62	62	62	62	60	62	62	55	62	62	50	62	60	42	62	51	36	61	44	31	53	39	27	47	34	24	41	30	21
			Exposed	62	62	60	62	62	53	62	62	48	62	61	43	62	56	39	62	51	36	62	46	33	54	39	28	46	33	24	40	29	21	35	25	18	31	22	16	27	20	14
		7-20	Interior	63	63	63	63	63	63	63	63	63	63	63	58	63	63	53	63	58	48	63	53	44	63	45	37	59	39	32	51	33	28	45	29	24	39	26	21	35	23	19
			Exposed	63	63	53	63	57	47	63	51	42	63	46	38	63	42	35	58	38	32	53	35	29	45	30	24	39	25	21	33	22	18	29	19	16	26	17	14	23	15	19
		20-27	Interior	72	72	72	72	72	72	72	72	72	72	72	72	72	72	66	72	72	56	72	65	50	72	55	40	72	47	33	70	40	28	60	35	24	53	31	21	47	28	19
			Exposed	72	72	65	72	72	54	72	62	47	72	56	41	72	51	36	72	46	32	72	42	29	61	36	24	52	31	21	45	27	18	39	23	16	35	20	14	31	18	12
		27-45	Interior	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	82	82	82	64	75	75	51	66	59	42	57	51	36	49	44	31	44	39	26	39	35	23
			Exposed	84	84	84	84	84	84	84	84	59	84	84	53	84	63	47	65	58	42	59	53	38	50	45	31	43	38	26	37	33	22	32	29	19	29	26	16	25	23	14
	D	0-7	Interior	66	66	66	66	66	66	66	66	62	66	66	56	66	66	50	66	65	46	66	59	42	66	50	35	59	43	30	51	37	26	45	32	23	39	29	20	35	25	18
			Exposed	66	66	50	66	63	45	66	57	40	66	51	36	64	47	33	58	42	30	53	39	27	45	33	23	39	28	20	33	24	17	29	21	15	26	19	13	23	17	18
		7-20	Interior	67	67	67	67	67	60	67	67	54	67	59	49	67	54	44	67	49	40	67	45	37	58	38	31	50	32	27	43	28	23	37	25	20	33	22	18	29	19	16
			Exposed	67	54	44	67	48	39	66	43	35	59	39	32	54	35	29	49	32	26	45	29	24	38	25	21	32	21	18	28	18	15	25	16	13	22	14	18	19	19	16
		20-27	Interior	77	77	77	77	77	77	77	77	77	77	77	57	77	65	50	77	59	45	77	54	40	77	46	32	68	39	27	58	34	23	51	30	20	45	26	18	40	23	16
			Exposed	77	65	50	77	58	43	77	52	38	77	47	33	77	42	29	67	39	26	60	35	24	51	30	21	44	26	18	38	22	15	33	19	13	29	17	12	26	15	16
		27-45	Interior	88	88	88	88	88	88	88	88	88	88	88	88	88	88	64	85	85	56	81	78	51	64	57	41	55	49	34	47	43	29	41	37	25	37	33	21	32	29	19
			Exposed	88	88	64	88	88	55	88	65	48	68	59	43	59	53	38	54	48	34	50	44	31	42	38	25	36	32	21	31	28	18	27	24	15	24	22	13	21	19	12
40	B	0-7	Interior	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	45	49	49	39	49	49	39	49	49	34	49	43	30			
			Exposed	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	47	49	49	39	49	48	34	49	41	29	49	36	26	44	32	23	39	28	20
		7-20	Interior	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	46	50	48	39	50	42	34	50	37	30	48	33	27			
			Exposed	50	50	50	50	50	50	50	50	50	50	50	50	50	50	49	50	50	45	50	50	41	50	42	35	50	36	30	48	31	26	42	27	23	37	24	20	33	21	18
		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	52	60	58	43	60	50	36	58	44	31	56	39	27			
			Exposed	60	60	60	60	60	60	60	60	60	60	60	60	60	60	58	60	60	51	60	60	45	60	51	37	60	44	30	60	38	26	56	33	23	49	29	20	44	26	18
		27-45	Interior	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	66	66	66	63	63	55	60	60	46	57	56	40	54	49	35
			Exposed	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	66	71	71	57	71	64	47	61	55	39	53	47	33	46	41	28	41	36	24	36	32	21
	C	0-7	Interior	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	42	49	49	36	49	44	31	49	39	27	47	34	24	41	30	21
			Exposed	49	49	49	49	49	49	49	49	48	49	49	43	49	49	39	49	49	36	49	46	33	49	39	28	46	33	24	40	29	21	35	25	18	31	22	16	27	20	14
		7-20	Interior	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	48	50	50	44	50	45	37	50	39	32	49	33	28	45	29	24	39	26	21	35	23	19
			Exposed	50	50	50	50	50	47	50	50	42	50	46	38	50	42	35	50	38	32	50	35	29	45	30	24	39	25	21	33	22	18	29	19	16	26	17	14	23	15	19
		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			
			Exposed	60	60	60	60	60	54	60	60	47	60	56	41	60	51	36	60	46	32	60	42	29	60	36	24	52	31	21	45	27	18	39	23	16	35	20	14	31	18	12
		27-45	Interior	71	71	71	71	71	71	71	71	71	71	71	71	70	70	70	68	68	68	66	66	64	62	62	51	58	58	42	55	51	36	49	44	31	44	39	26	39	35	23
			Exposed	71	71	71	71	71	71	71	71	59	71	71	53	70	63	47	65	58	42	59	53	38	50	45	31	43	38	26	37	33	22	32	29	19	29	26	16	25	23	14
	D	0-7	Interior	54	54	54	54	54	54	54	54	54	54	54	54	54	54	50	54	54	46	54	54	42	54	50	35	54	43	30	51	37	26	45	32	23	39	29	20	35	25	18
			Exposed	54	54	50	54	54	45	54	54	40	54	51	36	54	47	33	54	42	30	53	39	27	45	33	23	39	28	20	33	24	17	29	21	15	26	19	13	23	17	18
		7-20	Interior	55	55	55	55	55	55	55	55	54	55	55	49	55	54	44	55	49	40	55	45	37	54	38	31	50	32	27	43	28	23	37	25	20	33	22	18	29	19	16
			Exposed	55	54	44	55	48	39	55	43	35	55	39	32	54	35	29	49	32	26	45	29	24	38	25	21	32	21	18	28	18	15	25	16	13	22	14	18	19	19	16
		20-27	Interior	64	64	64	64	64	64	64	64	64	64	64	57	64	64	50	64	59	45	64	54	40	63	46	32	60	39	27	57	34	23	51	30	20	45	26	18	40	23	16
			Exposed	64	64	50	64	58	43	64	52	38	64	47	33	64	42	29	64	39	26	60	35	24	51	30	21	44	26	18	38	22	15	33	19	13	29	17	12	26	15	16
		27-45	Interior	75	75	75	75	75	75	75	75	75	74	74	74	71	71	64	68	68	56	65	65	51	61	57	41	55	49	34	47	43	29	41	37	25	37	33	21	32	29	19
			Exposed	75	75	64	75	75	55	75	65	48	68	59	43	59	53	38	54	48	34	50	44	31	42	38	25	36	32	21	31	28	18	27	24	15	24	22	13	21	19	12
50	B	0-7	Interior	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	39	40	34	30			
			Exposed	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	39	40	40	34	40	40	29	40	36	26	40	32	23	39	28	20
		7-20	Interior	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	39	40	40	34	40	37	30			
			Exposed	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	35	40	36	30	40	31	26	40	27	23	37	24	20	33	21	18
		20-27	Interior	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	43	50	50	36	50	44	31	48	39	27
			Exposed	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	45	50	50	37	50	44	30	50	38	26	50	33	23	49	29	20	44	26	18
		27-45	Interior	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	60	60	60	58	58	58	55	55	55	53	53	46	51	51	40	49	49	35
			Exposed	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	57	60	60	47	58	55	39	53	47	33	46	41	28	41	36	24	36	32	21
	C	0-7	Interior	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	36	40	40	31	40	39	27	40	34	24	40	30	21
			Exposed	40	40	40	40	40	40	40	40	40	40	40	40	40	40	39	40	40	36	40	40	33	40	39	28	40	33	24	40	29	21	35	25	18	31	22	16	27	20	14
		7-20	Interior	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	37	40	39	32	40	33	28	40	29	24	39	26	21	35	23	19
			Exposed	40	40	40	40	40	40	40	40	38	40	40	35	40	38	32	40	35	29	40	30	24	39	25	21	33	22	18	29	19	16	26	17	14	23	15	19			
		20-27	Interior	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	40	50	47	33	49	40	28	47	35	24	45	31	21	44	28	19
			Exposed	50	50	50	50	50	50	50	50	47	50	50	41	50	50	36	50	46	32	50	42	29	50	36	24	50	31	21	45	27	18	39	23	16	35	20	14	31	18	12
		27-45	Interior	61	61	61	61	61	61	61	61	61	61	61	61	60	60	60	59	59	59	57	57	57	54	54	51	52	52	42	49	49	36	47	44	31	44	39	26	39	35	23
			Exposed	61	61	61	61	61	61	61	61	59	61	61	53	60	60	47	59	58	42	57	53	38	50	45	31	43	38	26	37	33	22	32	29	19	29	26	16	25	23	14
	D	0-7	Interior	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	42	44	44	35	44	43	30	44	37	26	44	32	23	39	29	20	35	25	18
			Exposed	44	44	44	44	44	44	44	44	40	44	44	36	44	44	33	44	42	30	44	39	27	44	33	23	39	28	20	33	24	17	29	21	15	26	19	13	23	17	18
		7-20	Interior	45	45	45	45	45	45	45	45	45	45	45	45	45	45	44	45	45	40	45	45	37	45	38	31	44	32	27	43	28	23	37	25	20	33	22	18	29	19	16
			Exposed	45	45	44	45	45	39	45	43	35	45	39	32	45	35	29	45	32	26	45	29	24	38	25	21	32	21	18	28	18	15	25	16	13	22	14	18	19	19	16
		20-27	Interior	55	55	55	55	55	55	55	55	55	55	55	55	55	55	50	55	55	45	55	54	40	54	46	32	52	39	27	50	34	23	48	30	20	45	26	18	40	23	16
			Exposed	55	55	50	55	55	43	55	52	38	55	47	33	55	42	29	55	39	26	55	35	24	51	30	21	44	26	18	38	22	15	33	19	13	29	17	12	26	15	16
		27-45	Interior	66	66	66	66	66	66	65	65	65	63	63	63	61	61	61	59	59	56	58	58	51	54	54	41	51	49	34	47	43	29	41	37	25	37	33	21	32	29	19
			Exposed	66	66	64	66	66	55	65	65	48	63	59	43	59	53	38	54	48	34	50	44	31	42	38	25	36	32	21	31	28	18	27	24	15	24	22	13	21	19	12

* 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.

~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 3.00	19 sq.ft	LANDSCAPE	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
60	B	0-7	Interior	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	30
			Exposed	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	29	34	34	26	34	32	23	34	28	20
		7-20	Interior	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	30	34	33	27
			Exposed	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	30	34	31	26	34	27	23	34	24	20	33	21	18
		20-27	Interior	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	31	42	39	27
			Exposed	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	37	42	42	30	42	38	26	42	33	23	42	29	20	42	26	18
		27-45	Interior	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	51	51	51	49	49	49	48	48	46	46	46	40	44	44	35
			Exposed	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	47	51	51	39	49	47	33	46	41	28	41	36	24	36	32	21
	C	0-7	Interior	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	31	34	34	27	34	34	24	34	30	21
			Exposed	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	33	34	34	28	34	33	24	34	29	21	34	25	18	31	22	16	27	20	14
		7-20	Interior	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	32	34	33	28	34	29	24	34	26	21	33	23	19			
			Exposed	34	34	34	34	34	34	34	34	34	34	34	34	34	34	32	34	34	29	34	30	24	34	25	21	33	22	18	29	19	16	26	17	14	23	15	19			
		20-27	Interior	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	33	42	40	28	41	35	24	40	31	21	39	28	19						
			Exposed	42	42	42	42	42	42	42	42	42	41	42	42	36	42	42	32	42	42	29	42	36	24	42	31	21	42	27	18	39	23	16	35	20	14	31	18	12			
		27-45	Interior	53	53	53	53	53	53	53	53	53	53	53	53	53	53	52	52	52	51	51	51	49	49	49	46	46	42	44	44	36	42	42	31	40	39	26	38	35	23		
			Exposed	53	53	53	53	53	53	53	53	53	53	53	47	52	52	42	51	51	38	49	45	31	43	38	26	37	33	22	32	29	19	29	26	16	25	23	14			
	D	0-7	Interior	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	35	37	37	30	37	37	26	37	32	23	37	29	20	35	25	18			
			Exposed	37	37	37	37	37	37	37	37	37	36	37	37	33	37	37	30	37	37	27	37	33	23	37	28	20	33	24	17	29	21	15	26	19	13	23	17	18			
		7-20	Interior	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	37	38	38	31	38	32	27	37	28	23	36	25	20	33	22	18	29	19	16		
			Exposed	38	38	38	38	38	38	38	38	35	38	38	32	38	35	29	38	32	26	38	29	24	38	25	21	32	21	18	28	18	15	25	16	13	22	14	18	19	19	16
		20-27	Interior	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	45	46	46	40	46	46	32	46	39	27	44	34	23	42	30	20	41	26	18	39	23	16
			Exposed	46	46	46	46	46	43	46	46	38	46	46	33	46	42	29	46	39	26	46	35	24	46	30	21	44	26	18	38	22	15	33	19	13	29	17	12	26	15	16
		27-45	Interior	58	58	58	58	58	58	57	57	57	56	56	56	55	55	55	53	53	53	52	52	51	49	49	41	47	47	34	44	43	29	41	37	25	37	33	21	32	29	19
			Exposed	58	58	58	58	58	55	57	57	48	56	56	43	55	53	38	53	48	34	50	44	31	42	38	25	36	32	21	31	28	18	27	24	15	24	22	13	21	19	12
70	B	0-7	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	26	29	29	23	29	28	20			
		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	27			
			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	26	29	27	23	29	24	20	29	21	18			
		20-27	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	31	36	36	27			
			Exposed	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	30	36	36	26	36	33	23	36	29	20	36	26	18			
		27-45	Interior	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	45	45	45	43	43	43	41	41	40	40	40	35
			Exposed	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	39	45	45	33	43	41	28	41	36	24	36	32	21			
	C	0-7	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	27	29	29	24	29	29	21			
			Exposed	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	28	29	29	24	29	29	21	29	25	18	29	22	16	27	20	14
		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	28	29	29	24	29	26	21	29	23	19			
			Exposed	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	24	29	25	21	29	22	18	29	19	16	26	17	14	23	15	19			
		20-27	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	33	36	36	28	36	36	24	36	31	21	35	28	19						
			Exposed	36	36	36	36	36	36	36	36	36	36	36	36	36	36	32	36	36	29	36	36	24	36	31	21	36	27	18	36	23	16	35	20	14	31	18	12			
		27-45	Interior	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	44	44	44	42	42	42	40	40	36	39	39	31	37	37	26	35	35	23			
			Exposed	46	46	46	46	46	46	46	46	46	46	46	46	46	46	42	46	46	38	44	44	31	42	38	26	37	33	22	32	29	19	29	26	16	25	23	14			
	D	0-7	Interior	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	30	32	32	26	32	32	23	32	29	20	32	25	18						
			Exposed	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	30	32	32	27	32	32	23	32	28	20	32	24	17	29	21	15	26	19	13	23	17	18
		7-20	Interior	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	31	32	32	27	32	28	23	32	25	20	31	22	18	29	19	16
			Exposed	32	32	32	32	32	32	32	32	32	32	32	32	32	32	29	32	32	26	32	29	24	32	25	21	32	21	18	28	18	15	25	16	13	22	14	18	19	19	16
		20-27	Interior	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	32	40	39	27	39	34	23	38	30	20	37	26	18	35	23	16
			Exposed	40	40	40	40	40	40	40	40	38	40	40	33	40	40	29	40	39	26	40	35	24	40	30	21	40	26	18	38	22	15	33	19	13	29	17	12	26	15	16
		27-45	Interior	51	51	51	51	51	51	51	51	51	50	50	50	49	49	49	48	48	48	47	47	47	45	45	41	43	43	34	40	40	29	38	37	25	36	33	21	32	29	19
			Exposed	51	51	51	51	51	51	51	51	48	50	50	43	49	49	38	48	48	34	47	44	31	42	38	25	36	32	21	31	28	18	27	24	15	24	22	13	21	19	12
80	B	0-7	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	23	25	25	20
		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	26
			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	23	26	24	20	26	21	18			
		20-27	Interior	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	31	32	32	27			
			Exposed	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	30	32	32	26	32	32	23	32	29	20	32	26	18
		27-45	Interior	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	39	39	39	38	38	38	37	37	35
			Exposed	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	39	40	40	33	39	39	28	38	36	24	36	32	21			
	C	0-7	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	25	25	21			
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	25	25	21	25	25	18	25	22	16	25	20	14			
		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	24	26	26	21	26	23	19			
			Exposed	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	24	26	25	21	26	22	18	26	19	16	26	17	14	23	15	19
		20-27	Interior	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	28	32	32	24	32	31	21	31	28	19
			Exposed	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	29	32	32	24	32	31	21	32	27	18	32	23	16	32	20	14
		27-45	Interior	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	39	39	39	37	37	36	36	36	31	34	34	26	33	33	23
			Exposed	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	31	39	38	26	37	33	22	32	29	19	29	26	16	25	23	14
	D	0-7	Interior	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	26	28	28	23	28	28	20	28	28	20	28	25	18			
			Exposed	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	27	28	28	23	28	28	20	28	24	17	28	21	15	26	19	13	23	17	18
		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	27	29	28	23	29	25	20	28	22	18	28	19	16			
			Exposed	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	26	29	29	24	29	25	21	29	21	18	28	18	15	25	16	13	22	14	18	19	19	16
		20-27	Interior	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	32	35	35	27	35	34	23	35	30	20	33	26	18	32	23	16
			Exposed	35	35	35	35	35	35	35	35	35	35	35	33	35	35	29	35	35	26	35	35	24	35	30	21	35	26	18	35	22	15	33	19	13	29	17	12	26	15	16
		27-45	Interior	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	44	44	44	43	43	43	41	41	41	39	39	34	37	37	29	36	36	25	34	33	21	32	29	19
			Exposed	45	45	45	45	45	45	45	45	45	45	45	43	45	45	38	44	44	34	43	43	31	41	38	25	36	32	21	31	28	18	27	24	15	24	22	13	21	19	12

* 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.

~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 3.00	19 sq.ft	LANDSCAPE	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
90	B	0-7	Interior	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
			Exposed	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	20
		7-20	Interior	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
			Exposed	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	20	23	21	18				
		20-27	Interior	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	27
			Exposed	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	26	28	28	23	28	28	20	28	26	18			
		27-45	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	35	35	35	34	34	34			
			Exposed	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	33	36	36	28	35	35	24	34	32	21						
	C	0-7	Interior	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	21			
			Exposed	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	21	23	23	18	23	22	16	23	20	14						
		7-20	Interior	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	21	23	23	19				
			Exposed	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	21	23	22	18	23	19	16	23	17	14	23	15	19			
		20-27	Interior	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	24	28	28	21	28	28	19			
			Exposed	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	24	28	28	21	28	27	18	28	23	16	28	20	14	28	18	12
		27-45	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	34	34	34	33	33	31	32	32	26	30	30	23
			Exposed	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	31	36	36	26	34	33	22	32	29	19	29	26	16	25	23	14
	D	0-7	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	23	25	25	20	25	25	18						
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	23	25	25	20	25	24	17	25	21	15	25	19	13	23	17	18
		7-20	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	23	25	25	20	25	22	18	25	19	16
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	25	25	21	25	21	18	25	18	15	25	16	13	22	14	18	19	19	16
		20-27	Interior	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	27	31	31	23	31	30	20	31	26	18	30	23	16
			Exposed	31	31	31	31	31	31	31	31	31	31	31	31	31	31	29	31	31	26	31	31	24	31	30	21	31	26	18	31	22	15	31	19	13	29	17	12	26	15	16
		27-45	Interior	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	38	38	38	36	36	34	35	35	29	33	33	25	32	32	21	30	29	19
			Exposed	40	40	40	40	40	40	40	40	40	40	40	40	40	40	38	40	40	34	40	40	31	38	38	25	36	32	21	31	28	18	27	24	15	24	22	13	21	19	12
100	B	0-7	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
		7-20	Interior	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
			Exposed	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	20	21	21	18			
		20-27	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	26
			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	23	26	26	20	26	26	18			
		27-45	Interior	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	32	32	32			
			Exposed	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	28	33	33	24	32	32	21						
	C	0-7	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20			
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	18	20	20	16	20	20	14						
		7-20	Interior	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	19			
			Exposed	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	18	21	19	16	21	17	14	21	15	19			
		20-27	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	24	26	26	21	26	26	19						
			Exposed	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	24	26	26	21	26	26	18	26	23	16	26	20	14	26	18	12			
		27-45	Interior	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	32	32	32	31	31	31	30	30	26	29	29	23
			Exposed	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	31	33	33	26	32	32	22	31	29	19	29	26	16	25	23	14
	D	0-7	Interior	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	20	23	23	18			
			Exposed	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	20	23	23	17	23	21	15	23	19	13	23	17	18			
		7-20	Interior	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	20	23	22	18	23	19	16			
			Exposed	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	21	23	21	18	23	18	15	23	16	13	22	14	18	19	19	16			
		20-27	Interior	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	27	28	28	23	28	28	20	28	26	18	27	23	16
			Exposed	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	26	28	28	24	28	28	21	28	26	18	28	22	15	28	19	13	28	17	12	26	15	16
		27-45	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	35	35	35	34	34	34	33	33	29	31	31	25	30	30	21	29	29	19
			Exposed	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	34	36	36	31	35	35	25	34	32	21	31	28	18	27	24	15	24	22	13	21	19	12

#N/A

*	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.
~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 1.25	23 sq.ft	PORTRAIT	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
0	B	0-7	Interior	72	72	72	72	72	72	72	72	69	72	72	57	72	72	48	72	71	41	72	61	36	72	47	30	61	37	26	48	31	22	39	27	19	33	24	17	29	21	15
			Exposed	72	72	48	72	68	40	72	57	34	72	48	31	70	42	28	60	36	25	52	33	23	40	28	19	33	24	17	28	20	14	25	18	13	22	16	11	19	14	10
		7-20	Interior	73	73	73	73	73	73	73	73	59	73	70	48	73	57	40	73	47	34	69	40	31	55	32	26	44	27	23	37	24	19	32	21	17	28	18	15	25	16	13
			Exposed	73	57	39	73	45	33	65	37	30	56	33	27	49	30	24	44	27	22	39	25	20	32	21	17	27	18	15	24	15	13	21	13	11	18	12	10	16	10	9
		20-27	Interior	74	74	74	74	74	74	74	74	74	74	74	74	74	74	62	74	68	50	74	57	42	74	41	32	66	33	26	54	29	21	45	25	18	38	22	15	33	19	13
			Exposed	74	74	61	74	64	48	74	52	38	74	43	33	74	36	29	65	33	25	58	30	22	46	25	18	37	22	15	32	19	13	28	16	11	25	14	10	22	13	9
		27-45	Interior	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	64	75	75	54	75	60	40	60	46	32	45	36	27	35	31	23	31	28	20	27	24	17
			Exposed	75	75	75	75	75	61	75	75	50	75	63	42	73	53	36	59	45	32	49	39	29	35	32	23	30	27	19	26	23	16	23	20	14	20	18	12	18	16	10
	C	0-7	Interior	72	72	54	72	72	44	72	64	37	72	54	33	72	46	30	67	40	27	58	35	25	44	30	21	35	25	18	30	22	15	26	19	13	23	17	12	21	15	10
			Exposed	72	46	30	65	39	26	54	34	24	46	30	21	39	28	19	35	25	18	32	23	16	27	19	14	23	17	12	20	14	10	17	12	9	15	11	8	13	10	10
		7-20	Interior	73	66	45	73	52	36	73	42	32	62	35	29	54	32	26	48	29	24	42	26	22	34	22	18	29	19	16	25	17	14	22	14	12	19	13	10	17	11	9
			Exposed	54	32	26	46	28	23	40	25	21	35	23	19	32	21	17	29	19	16	26	17	14	22	15	12	19	12	10	17	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	74	74	72	74	74	55	74	60	44	74	49	36	74	41	31	72	35	28	64	32	25	50	27	20	41	23	16	34	20	14	30	17	12	26	15	10	23	14	9
			Exposed	74	41	31	70	34	27	60	31	23	52	28	20	46	25	18	40	23	16	36	21	14	30	18	12	26	15	10	22	13	9	19	11	8	17	10	7	15	9	9
		27-45	Interior	75	75	75	75	75	70	75	75	57	75	72	48	75	60	40	69	51	35	56	44	31	40	34	25	32	29	21	28	25	18	24	22	15	22	19	13	19	17	11
			Exposed	75	59	40	65	49	34	52	41	29	42	35	26	35	31	23	32	29	21	29	26	19	25	22	15	21	19	13	18	16	11	16	14	9	14	13	8	12	11	7
	D	0-7	Interior	72	69	40	72	57	34	72	48	31	69	41	28	59	35	25	50	32	23	44	29	21	34	25	18	29	21	15	25	18	13	22	16	11	19	14	10	17	12	9
			Exposed	58	35	25	48	31	22	41	28	20	35	25	18	32	23	16	29	21	15	26	19	13	22	16	11	19	14	10	16	12	8	14	10	11	13	9	10	11	8	9
		7-20	Interior	73	46	34	65	37	30	56	33	27	49	29	24	43	27	22	38	24	20	34	22	18	29	19	15	25	16	13	21	14	11	19	12	10	16	11	9	14	9	8
			Exposed	43	27	22	37	24	20	33	21	18	29	19	16	27	17	14	24	16	13	22	14	12	19	12	10	16	10	9	14	9	11	12	8	10	11	11	9	9	9	8
		20-27	Interior	74	65	48	74	52	38	74	43	32	74	36	28	64	32	25	56	29	22	50	27	20	40	23	16	33	19	13	29	17	11	25	15	10	22	13	9	20	11	8
			Exposed	64	32	25	54	29	21	47	26	19	41	23	16	36	21	14	33	19	13	30	17	12	25	15	10	22	13	9	19	11	7	16	9	6	14	8	9	13	11	8
		27-45	Interior	75	75	62	75	75	50	75	63	42	71	52	35	57	44	31	47	38	28	40	34	25	32	28	20	27	24	17	23	21	14	21	18	12	18	16	10	16	14	9
			Exposed	57	44	31	45	36	27	36	32	24	32	29	21	29	26	19	27	24	17	25	22	15	21	19	12	18	16	10	15	14	9	13	12	7	12	11	6	10	9	9
10	B	0-7	Interior	51	51	51	51	51	51	51	51	51	51	51	51	51	51	48	51	51	41	51	51	36	51	47	30	51	37	26	48	31	22	39	27	19	33	24	17	29	21	15
			Exposed	51	51	48	51	51	40	51	51	34	51	48	31	51	42	28	51	36	25	51	33	23	40	28	19	33	24	17	28	20	14	25	18	13	22	16	11	19	14	10
		7-20	Interior	52	52	52	52	52	52	52	52	52	52	52	48	52	52	40	52	47	34	52	40	31	52	32	26	44	27	23	37	24	19	32	21	17	28	18	15	25	16	13
			Exposed	52	52	39	52	45	33	52	37	30	52	33	27	49	30	24	44	27	22	39	25	20	32	21	17	27	18	15	24	15	13	21	13	11	18	12	10	16	10	9
		20-27	Interior	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	50	61	57	42	61	41	32	61	33	26	54	29	21	45	25	18	38	22	15	33	19	13
			Exposed	61	61	61	61	61	48	61	52	38	61	43	33	61	36	29	61	33	25	58	30	22	46	25	18	37	22	15	32	19	13	28	16	11	25	14	10	22	13	9
		27-45	Interior	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	64	66	66	54	66	60	40	60	46	32	45	36	27	35	31	23	31	28	20	27	24	17
			Exposed	66	66	66	66	66	61	66	66	50	66	63	42	66	53	36	59	45	32	49	39	29	35	32	23	30	27	19	26	23	16	23	20	14	20	18	12	18	16	10
	C	0-7	Interior	51	51	51	51	51	44	51	51	37	51	51	33	51	46	30	51	40	27	51	35	25	44	30	21	35	25	18	30	22	15	26	19	13	23	17	12	21	15	10
			Exposed	51	46	30	51	39	26	51	34	24	46	30	21	39	28	19	35	25	18	32	23	16	27	19	14	23	17	12	20	14	10	17	12	9	15	11	8	13	10	10
		7-20	Interior	52	52	45	52	52	36	52	42	32	52	35	29	52	32	26	48	29	24	42	26	22	34	22	18	29	19	16	25	17	14	22	14	12	19	13	10	17	11	9
			Exposed	52	32	26	46	28	23	40	25	21	35	23	19	32	21	17	29	19	16	26	17	14	22	15	12	19	12	10	17	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	61	61	61	61	61	55	61	60	44	61	49	36	61	41	31	61	35	28	61	32	25	50	27	20	41	23	16	34	20	14	30	17	12	26	15	10	23	14	9
			Exposed	61	41	31	61	34	27	60	31	23	52	28	20	46	25	18	40	23	16	36	21	14	30	18	12	26	15	10	22	13	9	19	11	8	17	10	7	15	9	9
		27-45	Interior	66	66	66	66	66	66	66	66	57	66	66	48	66	60	40	66	51	35	56	44	31	40	34	25	32	29	21	28	25	18	24	22	15	22	19	13	19	17	11
			Exposed	66	59	40	65	49	34	52	41	29	42	35	26	35	31	23	32	29	21	29	26	19	25	22	15	21	19	13	18	16	11	16	14	9	14	13	8	12	11	7
	D	0-7	Interior	51	51	40	51	51	34	51	51	31	51	41	28	51	35	25	50	32	23	44	29	21	34	25	18	29	21	15	25	18	13	22	16	11	19	14	10	17	12	9
			Exposed	51	35	25	48	31	22	41	28	20	35	25	18	32	23	16	29	21	15	26	19	13	22	16	11	19	14	10	16	12	8	14	10	11	13	9	10	11	8	9
		7-20	Interior	52	46	34	52	37	30	52	33	27	49	29	24	43	27	22	38	24	20	34	22	18	29	19	15	25	16	13	21	14	11	19	12	10	16	11	9	14	9	8
			Exposed	43	27	22	37	24	20	33	21	18	29	19	16	27	17	14	24	16	13	22	14	12	19	12	10	16	10	9	14	9	11	12	8	10	11	11	9	9	9	8
		20-27	Interior	63	63	48	63	52	38	63	43	32	63	36	28	63	32	25	56	29	22	50	27	20	40	23	16	33	19	13	29	17	11	25	15	10	22	13	9	20	11	8
			Exposed	63	32	25	54	29	21	47	26	19	41	23	16	36	21	14	33	19	13	30	17	12	25	15	10	22	13	9	19	11	7	16	9	6	14	8	9	13	11	8
		27-45	Interior	68	68	62	68	68	50	68	63	42	68	52	35	57	44	31	47	38	28	40	34	25	32	28	20	27	24	17	23	21	14	21	18	12	18	16	10	16	14	9
			Exposed	57	44	31	45	36	27	36	32	24	32	29	21	29	26	19	27	24	17	25	22	15	21	19	12	18	16	10	15	14	9	13	12	7	12	11	6	10	9	9
20	B	0-7	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	30	36	36	30	36	36	26	36	31	22	36	27	19	33	24	17	29	21	15
			Exposed	36	36	36	36	36	36	36	36	34	36	36	31	36	36	28	36	36	25	36	33	23	36	28	19	33	24	17	28	20	14	25	18	13	22	16	11	19	14	10
		7-20	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	34	36	36	31	36	32	26	36	27	23	36	24	19	32	21	17	28	18	15	25	16	13
			Exposed	36	36	36	36	36	33	36	36	30	36	33	27	36	30	24	36	27	22	36	25	20	32	21	17	27	18	15	24	15	13	21	13	11	18	12	10	16	10	9
		20-27	Interior	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	42	45	41	32	45	33	26	45	29	21	45	25	18	38	22	15	33	19	13
			Exposed	45	45	45	45	45	45	45	45	38	45	43	33	45	36	29	45	33	25	45	30	22	45	25	18	37	22	15	32	19	13	28	16	11	25	14	10	22	13	9
		27-45	Interior	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	40	50	46	32	45	36	27	35	31	23	31	28	20	27	24	17
			Exposed	51	51	51	51	51	51	51	51	50	51	51	42	51	51	36	51	45	32	49	39	29	35	32	23	30	27	19	26	23	16	23	20	14	20	18	12	18	16	10
	C	0-7	Interior	36	36	36	36	36	36	36	36	36	36	36	33	36	36	30	36	36	27	36	35	25	36	30	21	35	25	18	30	22	15	26	19	13	23	17	12	21	15	10
			Exposed	36	36	30	36	36	26	36	34	24	36	30	21	36	28	19	35	25	18	32	23	16	27	19	14	23	17	12	20	14	10	17	12	9	15	11	8	13	10	10
		7-20	Interior	36	36	36	36	36	36	36	36	32	36	35	29	36	32	26	36	29	24	36	26	22	34	22	18	29	19	16	25	17	14	22	14	12	19	13	10	17	11	9
			Exposed	36	32	26	36	28	23	36	25	21	35	23	19	32	21	17	29	19	16	26	17	14	22	15	12	19	12	10	17	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	45	45	45	45	45	45	45	45	44	45	45	36	45	41	31	45	35	28	45	32	25	45	27	20	41	23	16	34	20	14	30	17	12	26	15	10	23	14	9
			Exposed	45	41	31	45	34	27	45	31	23	45	28	20	45	25	18	40	23	16	36	21	14	30	18	12	26	15	10	22	13	9	19	11	8	17	10	7	15	9	9
		27-45	Interior	51	51	51	51	51	51	51	51	51	51	51	48	51	51	40	51	51	35	49	44	31	40	34	25	32	29	21	28	25	18	24	22	15	22	19	13	19	17	11
			Exposed	51	51	40	51	49	34	51	41	29	42	35	26	35	31	23	32	29	21	29	26	19	25	22	15	21	19	13	18	16	11	16	14	9	14	13	8	12	11	7
	D	0-7	Interior	36	36	36	36	36	34	36	36	31	36	36	28	36	35	25	36	32	23	36	29	21	34	25	18	29	21	15	25	18	13	22	16	11	19	14	10	17	12	9
			Exposed	36	35	25	36	31	22	36	28	20	35	25	18	32	23	16	29	21	15	26	19	13	22	16	11	19	14	10	16	12	8	14	10	11	13	9	10	11	8	9
		7-20	Interior	36	36	34	36	36	30	36	33	27	36	29	24	36	27	22	36	24	20	34	22	18	29	19	15	25	16	13	21	14	11	19	12	10	16	11	9	14	9	8
			Exposed	36	27	22	36	24	20	33	21	18	29	19	16	27	17	14	24	16	13	22	14	12	19	12	10	16	10	9	14	9	11	12	8	10	11	11	9	9	9	8
		20-27	Interior	48	48	48	48	48	38	48	43	32	48	36	28	48	32	25	48	29	22	48	27	20	40	23	16	33	19	13	29	17	11	25	15	10	22	13	9	20	11	8
			Exposed	48	32	25	48	29	21	47	26	19	41	23	16	36	21	14	33	19	13	30	17	12	25	15	10	22	13	9	19	11	7	16	9	6	14	8	9	13	11	8
		27-45	Interior	54	54	54	54	54	50	54	54	42	54	52	35	52	44	31	47	38	28	40	34	25	32	28	20	27	24	17	23	21	14	21	18	12	18	16	10	16	14	9
			Exposed	54	44	31	45	36	27	36	32	24	32	29	21	29	26	19	27	24	17	25	22	15	21	19	12	18	16	10	15	14	9	13	12	7	12	11	6	10	9	9

* 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.

~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 1.25	23 sq.ft	PORTRAIT	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
30	B	0-7	Interior	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	26	31	31	22	31	27	19	31	24	17	29	21	15
			Exposed	31	31	31	31	31	31	31	31	31	31	31	31	31	31	28	31	31	25	31	31	23	31	28	19	31	24	17	28	20	14	25	18	13	22	16	11	19	14	10
		7-20	Interior	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	26	31	27	23	31	24	19	31	21	17	28	18	15	25	16	13
			Exposed	31	31	31	31	31	31	31	31	30	31	31	27	31	30	24	31	27	22	31	25	20	31	21	17	27	18	15	24	15	13	21	13	11	18	12	10	16	10	9
		20-27	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	32	36	33	26	36	29	21	36	25	18	35	22	15	33	19	13
			Exposed	36	36	36	36	36	36	36	36	36	36	36	33	36	36	29	36	33	25	36	30	22	36	25	18	36	22	15	32	19	13	28	16	11	25	14	10	22	13	9
		27-45	Interior	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	40	39	39	32	37	36	27	35	31	23	31	28	20	27	24	17
			Exposed	42	42	42	42	42	42	42	42	42	42	42	42	42	42	36	42	42	32	42	39	29	35	32	23	30	27	19	26	23	16	23	20	14	20	18	12	18	16	10
	C	0-7	Interior	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	27	31	31	25	31	30	21	31	25	18	30	22	15	26	19	13	23	17	12	21	15	10
			Exposed	31	31	30	31	31	26	31	31	24	31	30	21	31	28	19	31	25	18	31	23	16	27	19	14	23	17	12	20	14	10	17	12	9	15	11	8	13	10	10
		7-20	Interior	31	31	31	31	31	31	31	31	31	31	31	29	31	31	26	31	29	24	31	26	22	31	22	18	29	19	16	25	17	14	22	14	12	19	13	10	17	11	9
			Exposed	31	31	26	31	28	23	31	25	21	31	23	19	31	21	17	29	19	16	26	17	14	22	15	12	19	12	10	17	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	31	36	35	28	36	32	25	36	27	20	36	23	16	34	20	14	30	17	12	26	15	10	23	14	9
			Exposed	36	36	31	36	34	27	36	31	23	36	28	20	36	25	18	36	23	16	36	21	14	30	18	12	26	15	10	22	13	9	19	11	8	17	10	7	15	9	9
		27-45	Interior	42	42	42	42	42	42	42	42	42	42	42	42	42	42	40	40	40	35	39	39	31	36	34	25	32	29	21	28	25	18	24	22	15	22	19	13	19	17	11
			Exposed	42	42	40	42	42	34	42	41	29	42	35	26	35	31	23	32	29	21	29	26	19	25	22	15	21	19	13	18	16	11	16	14	9	14	13	8	12	11	7
	D	0-7	Interior	33	33	33	33	33	33	33	33	31	33	33	28	33	33	25	33	32	23	33	29	21	33	25	18	29	21	15	25	18	13	22	16	11	19	14	10	17	12	9
			Exposed	33	33	25	33	31	22	33	28	20	33	25	18	32	23	16	29	21	15	26	19	13	22	16	11	19	14	10	16	12	8	14	10	11	13	9	10	11	8	9
		7-20	Interior	33	33	33	33	33	30	33	33	27	33	29	24	33	27	22	33	24	20	33	22	18	29	19	15	25	16	13	21	14	11	19	12	10	16	11	9	14	9	8
			Exposed	33	27	22	33	24	20	33	21	18	29	19	16	27	17	14	24	16	13	22	14	12	19	12	10	16	10	9	14	9	11	12	8	10	11	11	9	9	9	~~8~~
		20-27	Interior	38	38	38	38	38	38	38	38	32	38	36	28	38	32	25	38	29	22	38	27	20	38	23	16	33	19	13	29	17	11	25	15	10	22	13	9	20	11	8
			Exposed	38	32	25	38	29	21	38	26	19	38	23	16	36	21	14	33	19	13	30	17	12	25	15	10	22	13	9	19	11	7	16	9	6	14	8	9	13	11	8
		27-45	Interior	44	44	44	44	44	44	44	44	42	43	43	35	41	41	31	40	38	28	38	34	25	32	28	20	27	24	17	23	21	14	21	18	12	18	16	10	16	14	9
			Exposed	44	44	31	44	36	27	36	32	24	32	29	21	29	26	19	27	24	17	25	22	15	21	19	12	18	16	10	15	14	9	13	12	7	12	11	6	10	9	9
40	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	22	24	24	19	24	24	17	24	21	15
			Exposed	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	23	24	24	19	24	24	17	24	20	14	24	18	13	22	16	11	19	14	10
		7-20	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	23	25	24	19	25	21	17	25	18	15	24	16	13	24	16	13
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	25	25	22	25	25	20	25	21	17	25	18	15	24	15	13	21	13	11	18	12	10	16	10	9
		20-27	Interior	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	26	30	29	21	30	25	18	29	22	15	25	18	13	28	19	13
			Exposed	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	30	30	25	30	30	22	30	25	18	30	22	15	30	19	13	28	16	11	25	14	10	22	13	9
		27-45	Interior	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	33	33	32	32	32	27	30	30	23	29	28	20	27	24	17
			Exposed	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	32	35	35	29	35	32	23	30	27	19	26	23	16	23	20	14	20	18	12	18	16	10
	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	21	24	24	18	24	22	15	24	19	13	23	17	12	21	15	10
			Exposed	24	24	24	24	24	24	24	24	24	24	24	21	24	24	19	24	24	18	24	23	16	24	19	14	23	17	12	20	14	10	17	12	9	15	11	8	13	10	10
		7-20	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	25	25	22	25	22	18	25	19	16	24	17	14	22	14	12	19	13	10	17	11	9
			Exposed	25	25	25	25	25	23	25	25	21	25	23	19	25	21	17	25	19	16	25	17	14	22	15	12	19	12	10	17	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	28	30	30	25	30	27	20	29	23	16	28	20	14	27	17	12	26	15	10	23	14	9
			Exposed	30	30	30	30	30	27	30	30	23	30	28	20	30	25	18	30	23	16	30	21	14	30	18	12	26	15	10	22	13	9	19	11	8	17	10	7	15	9	9
		27-45	Interior	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	34	34	34	33	33	31	31	31	25	29	29	21	27	25	18	24	22	15	22	19	13	19	17	11
			Exposed	35	35	35	35	35	34	35	35	29	35	35	26	35	31	23	32	29	21	29	26	19	25	22	15	21	19	13	18	16	11	16	14	9	14	13	8	12	11	7
	D	0-7	Interior	27	27	27	27	27	27	27	27	27	27	27	27	27	27	25	27	27	23	27	27	21	27	25	18	27	21	15	25	18	13	22	16	11	19	14	10	17	12	9
			Exposed	27	27	25	27	27	22	27	27	20	27	25	18	27	23	16	27	21	15	26	19	13	22	16	11	19	14	10	16	12	8	14	10	11	13	9	10	11	8	9
		7-20	Interior	27	27	27	27	27	27	27	27	27	27	27	24	27	27	22	27	24	20	27	22	18	27	19	15	25	16	13	21	14	11	19	12	10	16	11	9	14	9	8
			Exposed	27	27	22	27	24	20	27	21	18	27	19	16	27	17	14	24	16	13	22	14	12	19	12	10	16	10	9	14	9	11	12	8	10	11	11	9	9	9	~~8~~
		20-27	Interior	32	32	32	32	32	32	32	32	32	32	32	28	32	32	25	32	29	22	32	27	20	32	23	16	30	19	13	29	17	11	25	15	10	22	13	9	20	11	8
			Exposed	32	32	25	32	29	21	32	26	19	32	23	16	32	21	14	32	19	13	30	17	12	25	15	10	22	13	9	19	11	7	16	9	6	14	8	9	13	11	8
		27-45	Interior	38	38	38	38	38	38	37	37	37	36	36	35	35	35	31	34	34	28	33	33	25	30	28	20	27	24	17	23	21	14	21	18	12	18	16	10	16	14	9
			Exposed	38	38	31	38	36	27	36	32	24	32	29	21	29	26	19	27	24	17	25	22	15	21	19	12	18	16	10	15	14	9	13	12	7	12	11	6	10	9	9
50	B	0-7	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	20	20	17	20	20	15	20	20	15
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	20	20	17	20	20	14	20	18	13	20	16	11	19	14	10	20	20	15
		7-20	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	20	20	17	20	18	13	20	16	13
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	17	20	18	15	20	15	13	20	13	11	18	12	10	16	10	9
		20-27	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	21	25	25	18	25	22	15	24	19	13
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	22	25	25	18	25	22	15	25	19	13	25	16	11	25	14	10	22	13	9
		27-45	Interior	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	30	30	29	29	29	28	28	27	26	26	23	25	25	20	24	24	17
			Exposed	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	29	30	30	23	29	27	19	26	23	16	23	20	14	20	18	12	18	16	10
	C	0-7	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	18	20	20	15	20	19	13	20	17	12
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	20	20	18	20	20	16	20	19	14	20	17	12	20	14	10	17	12	9	15	11	8	13	10	10
		7-20	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	18	20	19	16	20	17	14	20	14	12	19	13	10	17	11	9
			Exposed	20	20	20	20	20	20	20	20	19	20	20	17	20	19	16	20	17	14	20	15	12	19	12	10	17	11	9	14	9	8	13	8	10	11	11	9	9	9	~~8~~
		20-27	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	20	25	23	16	24	20	14	23	17	12	23	15	10	22	14	9	19	13	9
			Exposed	25	25	25	25	25	25	25	25	23	25	25	20	25	25	18	25	23	16	25	21	14	25	18	12	25	15	10	22	13	9	19	11	8	17	10	7	15	9	9
		27-45	Interior	31	31	31	31	31	31	31	31	31	31	31	31	30	30	30	29	29	29	29	29	27	27	25	26	26	21	24	24	18	23	22	15	22	19	13	19	17	11	
			Exposed	31	31	31	31	31	31	31	31	29	31	31	26	30	30	23	29	29	21	29	26	19	25	22	15	21	19	13	18	16	11	16	14	9	14	13	8	12	11	7
	D	0-7	Interior	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	21	22	22	18	22	21	15	22	18	13	22	16	11	19	14	10	17	12	9
			Exposed	22	22	22	22	22	22	22	22	20	22	22	18	22	22	16	22	21	15	22	19	13	22	16	11	19	14	10	16	12	8	14	10	11	13	9	10	11	8	9
		7-20	Interior	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	20	22	22	18	22	19	15	22	16	13	21	14	11	19	12	10	16	11	9	14	9	8
			Exposed	22	22	22	22	22	20	22	21	18	22	19	16	22	17	14	22	16	13	22	14	12	19	12	10	16	10	9	14	9	11	12	8	10	11	11	9	9	9	~~8~~
		20-27	Interior	27	27	27	27	27	27	27	27	27	27	27	27	27	27	25	27	27	22	27	27	20	27	23	16	26	19	13	25	17	11	24	15	10	22	13	9	20	11	8
			Exposed	27	27	25	27	27	21	27	26	19	27	23	16	27	21	14	27	19	13	27	17	12	25	15	10	22	13	9	19	11	7	16	9	6	14	8	9	13	11	8
		27-45	Interior	33	33	33	33	33	33	32	32	32	31	31	31	31	31	31	30	30	28	29	29	25	27	27	20	26	24	17	23	21	14	21	18	12	18	16	10	16	14	9
			Exposed	33	33	31	33	33	27	32	32	24	31	29	21	29	26	19	27	24	17	25	22	15	21	19	12	18	16	10	15	14	9	13	12	7	12	11	6	10	9	9

* 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.

~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 1.25	23 sq.ft	PORTRAIT	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
60	B	0-7	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	15
			Exposed	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	14	17	17	13	17	16	11	17	14	10	17	14	10
		7-20	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	15	17	16	13
			Exposed	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	15	17	15	13	17	13	11	17	12	10	16	10	9
		20-27	Interior	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	18	21	21	15	21	19	13			
			Exposed	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	18	21	21	15	21	19	13	21	16	11	21	14	10	21	13	9
		27-45	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	25	25	25	24	24	23	23	23	20	22	22	17
			Exposed	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	23	26	26	19	25	23	16	23	20	14	20	18	12	18	16	10
	C	0-7	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	15	17	17	13	17	17	12	17	15	10
			Exposed	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16	17	17	14	17	17	12	17	14	10	17	12	9	15	11	8	13	10	10
		7-20	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16	17	17	14	17	14	12	17	13	10	16	11	9
			Exposed	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16	17	17	14	17	15	12	17	12	10	17	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	16	21	20	14	20	17	12	20	15	10	19	14	9			
			Exposed	21	21	21	21	21	21	21	21	21	20	21	21	18	21	21	16	21	21	14	21	18	12	21	15	10	21	13	9	19	11	8	17	10	7	15	9	9			
		27-45	Interior	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	25	25	25	24	24	24	23	23	21	22	22	18	21	21	15	20	19	13	19	17	11
			Exposed	26	26	26	26	26	26	26	26	26	26	26	26	23	26	26	21	25	25	19	24	22	15	21	19	13	18	16	11	16	14	9	14	13	8	12	11	7			
	D	0-7	Interior	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	15	18	18	13	18	16	11	18	14	10	17	12	9			
			Exposed	18	18	18	18	18	18	18	18	18	18	18	18	16	18	18	15	18	18	13	18	16	11	18	14	10	16	12	8	14	10	11	13	9	10	11	8	9			
		7-20	Interior	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	18	19	19	15	19	16	13	19	14	11	18	12	10	16	11	9	14	9	8
			Exposed	19	19	19	19	19	19	19	19	18	19	19	16	19	17	14	19	16	13	19	14	12	19	12	10	16	10	9	14	9	11	12	8	10	11	11	9	9	9	8
		20-27	Interior	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	22	23	23	20	23	23	16	23	19	13	22	17	11	21	15	10	20	13	9	19	11	8
			Exposed	23	23	23	23	23	21	23	23	19	23	23	16	23	21	14	23	19	13	23	17	12	23	15	10	22	13	9	19	11	7	16	9	6	14	8	9	13	11	8
		27-45	Interior	29	29	29	29	29	29	29	29	29	28	28	28	27	27	27	27	27	27	26	26	25	24	24	20	23	23	17	22	21	14	21	18	12	18	16	10	16	14	9
			Exposed	29	29	29	29	29	27	29	29	24	28	28	21	27	26	19	27	24	17	25	22	15	21	19	12	18	16	10	15	14	9	13	12	7	12	11	6	10	9	9
70	B	0-7	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	14	11	14	14	10	14	14	10
		7-20	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	13	11	14	12	10	14	10	9
		20-27	Interior	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	13
			Exposed	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	15	18	18	13	18	16	11	18	14	10	18	13	9
		27-45	Interior	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	22	22	22	21	21	21	21	21	20	20	20	17
			Exposed	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	19	22	22	16	21	20	14	20	18	12	18	16	10
	C	0-7	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	14	12	14	14	10
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	12	14	14	10	14	12	9	14	11	8	13	10	10
		7-20	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	12	14	13	10	14	11	9
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	12	10	14	11	9	14	9	8	13	8	10	11	11	9	9	9	8
		20-27	Interior	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	16	18	18	14	18	18	12	18	15	10	17	14	9			
			Exposed	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	12	18	15	10	18	13	9	18	11	8	17	10	7	15	9	9
		27-45	Interior	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	22	22	22	21	21	21	20	20	18	19	19	15	18	18	13	17	17	11
			Exposed	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	15	21	19	13	18	16	11	16	14	9	14	13	8	12	11	7
	D	0-7	Interior	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	15	16	16	13	16	16	11	16	14	10	16	12	9			
			Exposed	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	15	16	16	13	16	16	11	16	14	10	16	12	8	14	10	11	13	9	10	11	8	9			
		7-20	Interior	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	15	16	16	13	16	14	11	16	12	10	15	11	9	14	9	8
			Exposed	16	16	16	16	16	16	16	16	16	16	16	16	14	16	16	13	16	14	12	16	12	10	16	10	9	14	9	11	12	8	10	11	11	9	9	9	8		
		20-27	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	16	20	19	13	20	17	11	19	15	10	18	13	9	17	11	8
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		27-45	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	24	24	23	23	23	22	22	20	21	21	17	20	20	14	19	18	12	18	16	10	16	14	9
			Exposed	25	25	25	25	25	25	25	25	24	25	25	21	25	25	19	24	24	17	23	22	15	21	19	12	18	16	10	15	14	9	13	12	7	12	11	6	10	9	9
80	B	0-7	Interior	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
			Exposed	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	11	13	13	10	13	13	10
		7-20	Interior	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
			Exposed	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	11	13	12	10	13	10	9			
		20-27	Interior	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	15	16	16	13			
			Exposed	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	15	16	16	13	16	16	11	16	14	10	16	13	9			
		27-45	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	19	19	19	19	19	18	18	17
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	20	20	16	19	19	14	19	18	12	18	16	10
	C	0-7	Interior	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	13	13	10
			Exposed	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	13	13	10	13	13	10	13	12	9	13	11	8	13	10	10
		7-20	Interior	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	13	13	10	13	11	9
			Exposed	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	13	12	10	13	11	9	13	9	8	13	8	10	11	11	9
		20-27	Interior	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	14	16	16	12	16	15	10	16	10	7	15	9	9			
			Exposed	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	12	16	15	10	16	13	9	16	11	8	16	10	7	15	9	9
		27-45	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	19	19	18	18	18	18	18	15	17	17	13	16	16	11
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	15	19	19	13	18	16	11	16	14	9	14	13	8	12	11	7
	D	0-7	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	14	11	14	14	10	14	12	9
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	14	11	14	14	10	14	12	8	14	10	11	13	9	10	11	8	9
		7-20	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	14	11	14	12	10	14	11	9	14	9	8			
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	12	14	12	10	14	11	9	14	9	11	12	8	10	11	11	9	9	9	8
		20-27	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16	17	17	13	17	17	11	17	15	10	17	13	9	16	11	8
			Exposed	17	17	17	17	17	17	17	17	17	17	17	16	17	17	14	17	17	13	17	17	12	17	15	10	17	13	9	16	9	6	14	8	9	13	11	8			
		27-45	Interior	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	21	21	21	20	20	20	19	19	17	19	19	14	18	18	12	17	16	10	16	14	9
			Exposed	22	22	22	22	22	22	22	22	22	22	22	21	22	22	19	22	22	17	21	21	15	20	19	12	18	16	10	15	14	9	13	12	7	12	11	6	10	9	9

* 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.

~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 1.25	23 sq.ft	PORTRAIT	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
90	B	0-7	Interior	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
			Exposed	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10
		7-20	Interior	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
			Exposed	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10	11	10	9	11	10	9
		20-27	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	14	11	14	14	10	14	13	9
		27-45	Interior	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	17	17	17	17	17	17
			Exposed	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	16	18	18	14	17	17	12	17	16	10	18	18	14	18	18	14
	C	0-7	Interior	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10
			Exposed	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10	11	11	9	11	11	8	11	10	10	11	11	9	11	11	9
		7-20	Interior	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10	11	11	9	11	11	9
			Exposed	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10	11	11	9	11	9	8	11	8	10	11	11	9
		20-27	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	12	14	14	10	14	14	9	14	14	9
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	12	14	14	10	14	13	9	14	11	8	14	10	7	14	9	9
		27-45	Interior	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	17	17	17	16	16	15	16	16	13	15	15	11
			Exposed	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	15	18	18	13	17	16	11	16	14	9	14	13	8	12	11	7
	D	0-7	Interior	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	10	12	12	11	12	12	10	12	12	9
			Exposed	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	11	12	12	10	12	12	8	12	10	11	12	9	10	11	8	9
		7-20	Interior	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	11	13	12	10	13	11	9	12	9	8
			Exposed	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	13	12	10	13	10	9	13	9	11	12	8	10	11	11	9	9	9	~~8~~	
		20-27	Interior	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	13	16	16	11	16	15	10	15	13	9	15	11	8
			Exposed	16	16	16	16	16	16	16	16	16	16	16	16	16	16	14	16	16	13	16	16	12	16	15	10	16	13	9	16	11	7	16	9	6	14	8	9	13	11	8
		27-45	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	19	19	18	18	17	17	17	14	16	16	12	16	16	10	15	14	9
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	20	20	17	20	20	15	19	19	12	18	16	10	15	14	9	13	12	7	12	11	6	10	9	9
100	B	0-7	Interior	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
			Exposed	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
		7-20	Interior	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
			Exposed	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9
		20-27	Interior	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
			Exposed	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	11	13	13	10	13	13	9	13	13	9
		27-45	Interior	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
			Exposed	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	14	16	16	12	16	16	12	16	16	10
	C	0-7	Interior	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
			Exposed	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
		7-20	Interior	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9
			Exposed	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	10	9	8	10	8	10	10	11	9
		20-27	Interior	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	13	13	10	13	13	9	13	13	9
			Exposed	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	13	13	10	13	13	9	13	11	8	13	10	7	13	9	9
		27-45	Interior	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	15	15	15	15	15	13	14	14	11
			Exposed	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	15	16	16	13	16	16	11	15	14	9	14	13	8	12	11	7
	D	0-7	Interior	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10	11	11	9
			Exposed	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10	11	11	8	11	10	11	11	9	10	11	8	9			
		7-20	Interior	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10	11	11	9	11	9	8
			Exposed	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10	11	11	9	11	9	11	11	8	10	11	11	9	9	~~8~~	
		20-27	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	14	11	14	14	10	14	13	9
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	14	12	14	14	10	14	13	9	14	11	7	14	9	6	14	8	9	13	11	8
		27-45	Interior	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	17	17	17	16	16	14	15	15	12	15	15	10
			Exposed	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	17	18	18	15	18	18	12	17	16	10	15	14	9	13	12	7	12	11	6	10	9	9

#N/A

*	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.
~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 3.00	23 sq.ft	PORTRAIT	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
0	B	0-7	Interior	71	71	71	71	71	71	71	71	69	71	71	57	71	71	48	71	71	41	71	61	36	71	47	30	61	37	26	48	31	22	39	27	19	33	24	17	29	21	15
			Exposed	71	71	48	71	68	40	71	57	34	71	48	31	70	42	28	60	36	25	52	33	23	40	28	19	33	24	17	28	20	14	25	18	13	22	16	11	19	14	10
		7-20	Interior	71	71	71	71	71	71	71	71	59	71	70	48	71	57	40	71	47	34	69	40	31	55	32	26	44	27	23	37	24	19	32	21	17	28	18	15	25	16	13
			Exposed	71	57	39	71	45	33	65	37	30	56	33	27	49	30	24	44	27	22	39	25	20	32	21	17	27	18	15	24	15	13	21	13	11	18	12	10	16	10	9
		20-27	Interior	71	71	71	71	71	71	71	71	71	71	71	71	71	71	62	71	68	50	71	57	42	71	41	32	66	33	26	54	29	21	45	25	18	38	22	15	33	19	13
			Exposed	71	71	61	71	64	48	71	52	38	71	43	33	71	36	29	65	33	25	58	30	22	46	25	18	37	22	15	32	19	13	28	16	11	25	14	10	22	13	9
		27-45	Interior	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	64	71	71	54	71	60	40	60	46	32	45	36	27	35	31	23	31	28	20	27	24	17
			Exposed	71	71	71	71	71	61	71	71	50	71	63	42	71	53	36	59	45	32	49	39	29	35	32	23	30	27	19	26	23	16	23	20	14	20	18	12	18	16	10
	C	0-7	Interior	71	71	54	71	71	44	71	64	37	71	54	33	71	46	30	67	40	27	58	35	25	44	30	21	35	25	18	30	22	15	26	19	13	23	17	12	21	15	10
			Exposed	71	46	30	65	39	26	54	34	24	46	30	21	39	28	19	35	25	18	32	23	16	27	19	14	23	17	12	20	14	10	17	12	9	15	11	8	13	10	10
		7-20	Interior	71	66	45	71	52	36	71	42	32	62	35	29	54	32	26	48	29	24	42	26	22	34	22	18	29	19	16	25	17	14	22	14	12	19	13	10	17	11	9
			Exposed	54	32	26	46	28	23	40	25	21	35	23	19	32	21	17	29	19	16	26	17	14	22	15	12	19	12	10	17	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	71	71	71	71	71	55	71	60	44	71	49	36	71	41	31	71	35	28	64	32	25	50	27	20	41	23	16	34	20	14	30	17	12	26	15	10	23	14	9
			Exposed	71	41	31	70	34	27	60	31	23	52	28	20	46	25	18	40	23	16	36	21	14	30	18	12	26	15	10	22	13	9	19	11	8	17	10	7	15	9	9
		27-45	Interior	71	71	71	71	71	70	71	71	57	71	71	48	71	60	40	69	51	35	56	44	31	40	34	25	32	29	21	28	25	18	24	22	15	22	19	13	19	17	11
			Exposed	71	59	40	65	49	34	52	41	29	42	35	26	35	31	23	32	29	21	29	26	19	25	22	15	21	19	13	18	16	11	16	14	9	14	13	8	12	11	7
	D	0-7	Interior	71	69	40	71	57	34	71	48	31	69	41	28	59	35	25	50	32	23	44	29	21	34	25	18	29	21	15	25	18	13	22	16	11	19	14	10	17	12	9
			Exposed	58	35	25	48	31	22	41	28	20	35	25	18	32	23	16	29	21	15	26	19	13	22	16	11	19	14	10	16	12	8	14	10	11	13	9	10	11	8	9
		7-20	Interior	71	46	34	65	37	30	56	33	27	49	29	24	43	27	22	38	24	20	34	22	18	29	19	15	25	16	13	21	14	11	19	12	10	16	11	9	14	9	8
			Exposed	43	27	22	37	24	20	33	21	18	29	19	16	27	17	14	24	16	13	22	14	12	19	12	10	16	10	9	14	9	11	12	8	10	11	11	9	9	9	8
		20-27	Interior	71	65	48	71	52	38	71	43	32	71	36	28	64	32	25	56	29	22	50	27	20	40	23	16	33	19	13	29	17	11	25	15	10	22	13	9	20	11	8
			Exposed	64	32	25	54	29	21	47	26	19	41	23	16	36	21	14	33	19	13	30	17	12	25	15	10	22	13	9	19	11	7	16	9	6	14	8	9	13	11	8
		27-45	Interior	71	71	62	71	71	50	71	63	42	71	52	35	57	44	31	47	38	28	40	34	25	32	28	20	27	24	17	23	21	14	21	18	12	18	16	10	16	14	9
			Exposed	57	44	31	45	36	27	36	32	24	32	29	21	29	26	19	27	24	17	25	22	15	21	19	12	18	16	10	15	14	9	13	12	7	12	11	6	10	9	9
10	B	0-7	Interior	51	51	51	51	51	51	51	51	51	51	51	51	51	51	48	51	51	41	51	51	36	51	47	30	51	37	26	48	31	22	39	27	19	33	24	17	29	21	15
			Exposed	51	51	48	51	51	40	51	51	34	51	48	31	51	42	28	51	36	25	51	33	23	40	28	19	33	24	17	28	20	14	25	18	13	22	16	11	19	14	10
		7-20	Interior	52	52	52	52	52	52	52	52	52	52	52	48	52	52	40	52	47	34	52	40	31	52	32	26	44	27	23	37	24	19	32	21	17	28	18	15	25	16	13
			Exposed	52	52	39	52	45	33	52	37	30	52	33	27	49	30	24	44	27	22	39	25	20	32	21	17	27	18	15	24	15	13	21	13	11	18	12	10	16	10	9
		20-27	Interior	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	50	61	57	42	61	41	32	61	33	26	54	29	21	45	25	18	38	22	15	33	19	13
			Exposed	61	61	61	61	61	48	61	52	38	61	43	33	61	36	29	61	33	25	58	30	22	46	25	18	37	22	15	32	19	13	28	16	11	25	14	10	22	13	9
		27-45	Interior	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	64	66	66	54	66	60	40	60	46	32	45	36	27	35	31	23	31	28	20	27	24	17
			Exposed	66	66	66	66	66	61	66	66	50	66	63	42	66	53	36	59	45	32	49	39	29	35	32	23	30	27	19	26	23	16	23	20	14	20	18	12	18	16	10
	C	0-7	Interior	51	51	51	51	51	44	51	51	37	51	51	33	51	46	30	51	40	27	51	35	25	44	30	21	35	25	18	30	22	15	26	19	13	23	17	12	21	15	10
			Exposed	51	46	30	51	39	26	51	34	24	46	30	21	39	28	19	35	25	18	32	23	16	27	19	14	23	17	12	20	14	10	17	12	9	15	11	8	13	10	10
		7-20	Interior	52	52	45	52	52	36	52	42	32	52	35	29	52	32	26	48	29	24	42	26	22	34	22	18	29	19	16	25	17	14	22	14	12	19	13	10	17	11	9
			Exposed	52	32	26	46	28	23	40	25	21	35	23	19	32	21	17	29	19	16	26	17	14	22	15	12	19	12	10	17	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	61	61	61	61	61	55	61	60	44	61	49	36	61	41	31	61	35	28	61	32	25	50	27	20	41	23	16	34	20	14	30	17	12	26	15	10	23	14	9
			Exposed	61	41	31	61	34	27	60	31	23	52	28	20	46	25	18	40	23	16	36	21	14	30	18	12	26	15	10	22	13	9	19	11	8	17	10	7	15	9	9
		27-45	Interior	66	66	66	66	66	66	66	66	57	66	66	48	66	60	40	66	51	35	56	44	31	40	34	25	32	29	21	28	25	18	24	22	15	22	19	13	19	17	11
			Exposed	66	59	40	65	49	34	52	41	29	42	35	26	35	31	23	32	29	21	29	26	19	25	22	15	21	19	13	18	16	11	16	14	9	14	13	8	12	11	7
	D	0-7	Interior	51	51	40	51	51	41	51	51	34	51	41	28	51	35	25	50	32	23	44	29	21	34	25	18	29	21	15	25	18	13	22	16	11	19	14	10	17	12	9
			Exposed	51	35	25	48	31	22	41	28	20	35	25	18	32	23	16	29	21	15	26	19	13	22	16	11	19	14	10	16	12	8	14	10	11	13	9	10	11	8	9
		7-20	Interior	52	46	34	52	37	30	52	33	27	49	29	24	43	27	22	38	24	20	34	22	18	29	19	15	25	16	13	21	14	11	19	12	10	16	11	9	14	9	8
			Exposed	43	27	22	37	24	20	33	21	18	29	19	16	27	17	14	24	16	13	22	14	12	19	12	10	16	10	9	14	9	11	12	8	10	11	11	9	9	9	8
		20-27	Interior	63	63	48	63	52	38	63	43	32	63	36	28	63	32	25	56	29	22	50	27	20	40	23	16	33	19	13	29	17	11	25	15	10	22	13	9	20	11	8
			Exposed	63	32	25	54	29	21	47	26	19	41	23	16	36	21	14	33	19	13	30	17	12	25	15	10	22	13	9	19	11	7	16	9	6	14	8	9	13	11	8
		27-45	Interior	68	68	62	68	68	50	68	63	42	68	52	35	57	44	31	47	38	28	40	34	25	32	28	20	27	24	17	23	21	14	21	18	12	18	16	10	16	14	9
			Exposed	57	44	31	45	36	27	36	32	24	32	29	21	29	26	19	27	24	17	25	22	15	21	19	12	18	16	10	15	14	9	13	12	7	12	11	6	10	9	9
20	B	0-7	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	30	36	36	30	36	36	26	36	31	22	36	27	19	33	24	17	29	21	15
			Exposed	36	36	36	36	36	36	36	36	34	36	36	31	36	36	28	36	36	25	36	33	23	36	28	19	33	24	17	28	20	14	25	18	13	22	16	11	19	14	10
		7-20	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	34	36	36	31	36	32	26	36	27	23	36	24	19	32	21	17	28	18	15	25	16	13
			Exposed	36	36	36	36	36	33	36	36	30	36	33	27	36	30	24	36	27	22	36	25	20	32	21	17	27	18	15	24	15	13	21	13	11	18	12	10	16	10	9
		20-27	Interior	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	42	45	41	32	45	33	26	45	29	21	45	25	18	38	22	15	33	19	13
			Exposed	45	45	45	45	45	45	45	45	38	45	43	33	45	36	29	45	33	25	45	30	22	45	25	18	37	22	15	32	19	13	28	16	11	25	14	10	22	13	9
		27-45	Interior	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	40	50	46	32	45	36	27	35	31	23	31	28	20	27	24	17
			Exposed	51	51	51	51	51	51	51	51	50	51	51	42	51	51	36	51	45	32	49	39	29	35	32	23	30	27	19	26	23	16	23	20	14	20	18	12	18	16	10
	C	0-7	Interior	36	36	36	36	36	36	36	36	36	36	36	33	36	36	30	36	36	27	36	35	25	36	30	21	35	25	18	30	22	15	26	19	13	23	17	12	21	15	10
			Exposed	36	36	30	36	36	26	36	34	24	36	30	21	36	28	19	35	25	18	32	23	16	27	19	14	23	17	12	20	14	10	17	12	9	15	11	8	13	10	10
		7-20	Interior	36	36	36	36	36	36	36	36	32	36	35	29	36	32	26	36	29	24	36	26	22	34	22	18	29	19	16	25	17	14	22	14	12	19	13	10	17	11	9
			Exposed	36	32	26	36	28	23	36	25	21	35	23	19	32	21	17	29	19	16	26	17	14	22	15	12	19	12	10	17	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	45	45	45	45	45	45	45	45	44	45	45	36	45	41	31	45	35	28	45	32	25	45	27	20	41	23	16	34	20	14	30	17	12	26	15	10	23	14	9
			Exposed	45	41	31	45	34	27	45	31	23	45	28	20	45	25	18	40	23	16	36	21	14	30	18	12	26	15	10	22	13	9	19	11	8	17	10	7	15	9	9
		27-45	Interior	51	51	51	51	51	51	51	51	51	51	51	48	51	51	40	51	51	35	49	44	31	40	34	25	32	29	21	28	25	18	24	22	15	22	19	13	19	17	11
			Exposed	51	51	40	51	49	34	51	41	29	42	35	26	35	31	23	32	29	21	29	26	19	25	22	15	21	19	13	18	16	11	16	14	9	14	13	8	12	11	7
	D	0-7	Interior	36	36	36	36	36	34	36	36	31	36	36	28	36	35	25	36	32	23	36	29	21	34	25	18	29	21	15	25	18	13	22	16	11	19	14	10	17	12	9
			Exposed	36	35	25	36	31	22	36	28	20	35	25	18	32	23	16	29	21	15	26	19	13	22	16	11	19	14	10	16	12	8	14	10	11	13	9	10	11	8	9
		7-20	Interior	36	36	34	36	36	30	36	33	27	36	29	24	36	27	22	36	24	20	34	22	18	29	19	15	25	16	13	21	14	11	19	12	10	16	11	9	14	9	8
			Exposed	36	27	22	36	24	20	33	21	18	29	19	16	27	17	14	24	16	13	22	14	12	19	12	10	16	10	9	14	9	11	12	8	10	11	11	9	9	9	8
		20-27	Interior	48	48	48	48	48	38	48	43	32	48	36	28	48	32	25	48	29	22	48	27	20	40	23	16	33	19	13	29	17	11	25	15	10	22	13	9	20	11	8
			Exposed	48	32	25	48	29	21	47	26	19	41	23	16	36	21	14	33	19	13	30	17	12	25	15	10	22	13	9	19	11	7	16	9	6	14	8	9	13	11	8
		27-45	Interior	54	54	54	54	54	50	54	54	42	54	52	35	52	44	31	47	38	28	40	34	25	32	28	20	27	24	17	23	21	14	21	18	12	18	16	10	16	14	9
			Exposed	54	44	31	45	36	27	36	32	24	32	29	21	29	26	19	27	24	17	25	22	15	21	19	12	18	16	10	15	14	9	13	12	7	12	11	6	10	9	9

* 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.

~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 3.00	23 sq.ft	PORTRAIT	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
30	B	0-7	Interior	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	26	31	31	22	31	27	19	31	24	17	29	21	15
			Exposed	31	31	31	31	31	31	31	31	31	31	31	31	31	31	28	31	31	25	31	31	23	31	28	19	31	24	17	28	20	14	25	18	13	22	16	11	19	14	10
		7-20	Interior	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	26	31	27	23	31	24	19	31	21	17	28	18	15	25	16	13
			Exposed	31	31	31	31	31	31	31	31	30	31	31	27	31	30	24	31	27	22	31	25	20	31	21	17	27	18	15	24	15	13	21	13	11	18	12	10	16	10	9
		20-27	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	32	36	33	26	36	29	21	36	25	18	35	22	15	33	19	13
			Exposed	36	36	36	36	36	36	36	36	36	36	36	33	36	36	29	36	33	25	36	30	22	36	25	18	36	22	15	32	19	13	28	16	11	25	14	10	22	13	9
		27-45	Interior	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	40	39	39	32	37	36	27	35	31	23	31	28	20	27	24	17
			Exposed	42	42	42	42	42	42	42	42	42	42	42	42	42	42	36	42	42	32	42	39	29	35	32	23	30	27	19	26	23	16	23	20	14	20	18	12	18	16	10
	C	0-7	Interior	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	27	31	31	25	31	30	21	31	25	18	30	22	15	26	19	13	23	17	12	21	15	10
			Exposed	31	31	30	31	31	26	31	31	24	31	30	21	31	28	19	31	25	18	31	23	16	27	19	14	23	17	12	20	14	10	17	12	9	15	11	8	13	10	10
		7-20	Interior	31	31	31	31	31	31	31	31	31	31	31	29	31	31	26	31	29	24	31	26	22	31	22	18	29	19	16	25	17	14	22	14	12	19	13	10	17	11	9
			Exposed	31	31	26	31	28	23	31	25	21	31	23	19	31	21	17	29	19	16	26	17	14	22	15	12	19	12	10	17	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	31	36	35	28	36	32	25	36	27	20	36	23	16	34	20	14	30	17	12	26	15	10	23	14	9
			Exposed	36	36	31	36	34	27	36	31	23	36	28	20	36	25	18	36	23	16	36	21	14	30	18	12	26	15	10	22	13	9	19	11	8	17	10	7	15	9	9
		27-45	Interior	42	42	42	42	42	42	42	42	42	42	42	42	42	42	40	40	40	35	39	39	31	36	34	25	32	29	21	28	25	18	24	22	15	22	19	13	19	17	11
			Exposed	42	42	40	42	42	34	42	41	29	42	35	26	35	31	23	32	29	21	29	26	19	25	22	15	21	19	13	18	16	11	16	14	9	14	13	8	12	11	7
	D	0-7	Interior	33	33	33	33	33	33	33	33	31	33	33	28	33	33	25	33	32	23	33	29	21	33	25	18	29	21	15	25	18	13	22	16	11	19	14	10	17	12	9
			Exposed	33	33	25	33	31	22	33	28	20	33	25	18	32	23	16	29	21	15	26	19	13	22	16	11	19	14	10	16	12	8	14	10	11	13	9	10	11	8	9
		7-20	Interior	33	33	33	33	33	30	33	33	27	33	29	24	33	27	22	33	24	20	33	22	18	29	19	15	25	16	13	21	14	11	19	12	10	16	11	9	14	9	8
			Exposed	33	27	22	33	24	20	33	21	18	29	19	16	27	17	14	24	16	13	22	14	12	19	12	10	16	10	9	14	9	11	12	8	10	11	11	9	9	9	~~8~~
		20-27	Interior	38	38	38	38	38	38	38	38	32	38	36	28	38	32	25	38	29	22	38	27	20	38	23	16	33	19	13	29	17	11	25	15	10	22	13	9	20	11	8
			Exposed	38	32	25	38	29	21	38	26	19	38	23	16	36	21	14	33	19	13	30	17	12	25	15	10	22	13	9	19	11	7	16	9	6	14	8	9	13	11	8
		27-45	Interior	44	44	44	44	44	44	44	44	42	43	43	35	41	41	31	40	38	28	38	34	25	32	28	20	27	24	17	23	21	14	21	18	12	18	16	10	16	14	9
			Exposed	44	44	31	44	36	27	36	32	24	32	29	21	29	26	19	27	24	17	25	22	15	21	19	12	18	16	10	15	14	9	13	12	7	12	11	6	10	9	9
40	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	22	24	24	19	24	24	17	24	21	15
			Exposed	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	23	24	24	19	24	24	17	24	20	14	24	18	13	22	16	11	19	14	10
		7-20	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	23	25	24	19	25	21	17	25	18	15	24	16	13	24	16	13
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	25	25	22	25	25	20	25	21	17	25	18	15	24	15	13	21	13	11	18	12	10	16	10	9
		20-27	Interior	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	26	30	29	21	30	25	18	29	22	15	25	18	13	28	19	13
			Exposed	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	30	30	25	30	30	22	30	25	18	30	22	15	30	19	13	28	16	11	25	14	10	22	13	9
		27-45	Interior	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	33	33	32	32	32	27	30	30	23	29	28	20	27	24	17
			Exposed	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	32	35	35	29	35	32	23	30	27	19	26	23	16	23	20	14	20	18	12	18	16	10
	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	21	24	24	18	24	22	15	24	19	13	23	17	12	21	15	10
			Exposed	24	24	24	24	24	24	24	24	24	24	24	21	24	24	19	24	24	18	24	23	16	24	19	14	23	17	12	20	14	10	17	12	9	15	11	8	13	10	10
		7-20	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	25	25	22	25	22	18	25	19	16	24	17	14	22	14	12	19	13	10	17	11	9
			Exposed	25	25	25	25	25	23	25	25	21	25	23	19	25	21	17	25	19	16	25	17	14	22	15	12	19	12	10	17	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	28	30	30	25	30	27	20	29	23	16	28	20	14	27	17	12	26	15	10	23	14	9
			Exposed	30	30	30	30	30	27	30	30	23	30	28	20	30	25	18	30	23	16	30	21	14	30	18	12	26	15	10	22	13	9	19	11	8	17	10	7	15	9	9
		27-45	Interior	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	34	34	34	33	33	31	31	31	25	29	29	21	27	25	18	24	22	15	22	19	13	19	17	11
			Exposed	35	35	35	35	35	34	35	35	29	35	35	26	35	31	23	32	29	21	29	26	19	25	22	15	21	19	13	18	16	11	16	14	9	14	13	8	12	11	7
	D	0-7	Interior	27	27	27	27	27	27	27	27	27	27	27	27	27	27	25	27	27	23	27	27	21	27	25	18	27	21	15	25	18	13	22	16	11	19	14	10	17	12	9
			Exposed	27	27	25	27	27	22	27	27	20	27	25	18	27	23	16	27	21	15	26	19	13	22	16	11	19	14	10	16	12	8	14	10	11	13	9	10	11	8	9
		7-20	Interior	27	27	27	27	27	27	27	27	27	27	27	24	27	27	22	27	24	20	27	22	18	27	19	15	25	16	13	21	14	11	19	12	10	16	11	9	14	9	8
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		20-27	Interior	32	32	32	32	32	32	32	32	32	32	32	28	32	32	25	32	29	22	32	27	20	32	23	16	30	19	13	29	17	11	25	15	10	22	13	9	20	11	8
			Exposed	32	32	25	32	29	21	32	26	19	32	23	16	32	21	14	32	19	13	30	17	12	25	15	10	22	13	9	19	11	7	16	9	6	14	8	9	13	11	8
		27-45	Interior	38	38	38	38	38	38	37	37	37	36	36	35	35	35	31	34	34	28	33	33	25	30	28	20	27	24	17	23	21	14	21	18	12	18	16	10	16	14	9
			Exposed	38	38	31	38	36	27	36	32	24	32	29	21	29	26	19	27	24	17	25	22	15	21	19	12	18	16	10	15	14	9	13	12	7	12	11	6	10	9	9
50	B	0-7	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	20	20	17	20	20	15
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	20	20	17	20	20	14	20	18	13	20	16	11	19	14	10
		7-20	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	20	20	17	20	18	15	20	16	13
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		20-27	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	21	25	25	18	25	22	15	25	19	13	25	16	11	25	14	10
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	22	25	25	18	25	22	15	25	19	13	25	16	11	25	14	10	22	13	9
		27-45	Interior	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	30	30	29	29	29	28	28	27	26	26	23	25	25	20	24	24	17
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	C	0-7	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	18	20	20	15	20	19	13
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	20	20	18	20	20	16	20	19	14	20	17	12	20	14	10	17	12	9	15	11	8	13	10	10
		7-20	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	18	20	19	16	20	17	14	20	14	12	19	13	10	17	11	9
			Exposed	20	20	20	20	20	20	20	20	20	20	20	19	20	20	17	20	19	16	20	17	14	20	15	12	19	12	10	17	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	20	25	23	16	24	20	14	23	17	12	23	15	10	22	14	9
			Exposed	25	25	25	25	25	25	25	25	23	25	25	20	25	25	18	25	23	16	25	21	14	25	18	12	25	15	10	22	13	9	19	11	8	17	10	7	15	9	9
		27-45	Interior	31	31	31	31	31	31	31	31	31	31	31	31	30	30	30	29	29	29	29	29	27	27	25	26	26	21	24	24	18	23	22	15	22	19	13	19	17	11
			Exposed	31	31	31	31	31	31	31	31	29	31	31	26	30	30	23	29	29	21	29	26	19	25	22	15	21	19	13	18	16	11	16	14	9	14	13	8	12	11	7
	D	0-7	Interior	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	21	22	22	18	22	21	15	22	18	13	22	16	11	19	14	10	17	12	9
			Exposed	22	22	22	22	22	22	22	22	20	22	22	18	22	22	16	22	21	15	22	19	13	22	16	11	19	14	10	16	12	8	14	10	11	13	9	10	11	8	9
		7-20	Interior	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	20	22	22	18	22	19	15	22	16	13	21	14	11	19	12	10	16	11	9	14	9	8
			Exposed	22	22	22	22	22	20	22	21	18	22	19	16	22	17	14	22	16	13	22	14	12	19	12	10	16	10	9	14	9	11	12	8	10	11	11	9	9	9	~~8~~
		20-27	Interior	27	27	27	27	27	27	27	27	27	27	27	27	27	27	25	27	27	22	27	27	20	27	23	16	26	19	13	25	17	11	24	15	10	22	13	9	20	11	8
			Exposed	27	27	25	27	27	21	27	26	19	27	23	16	27	21	14	27	19	13	27	17	12	25	15	10	22	13	9	19	11	7	16	9	6	14	8	9	13	11	8
		27-45	Interior	33	33	33	33	33	33	32	32	32	31	31	31	31	31	31	30	30	28	29	29	25	27	27	20	26	24	17	23	21	14	21	18	12	18	16	10	16	14	9
			Exposed	33	33	31	33	33	27	32	32	24	31	29	21	29	26	19	27	24	17	25	22	15	21	19	12	18	16	10	15	14	9	13	12	7	12	11	6	10	9	9

* 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.

~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 3.00	23 sq.ft	PORTRAIT	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
60	B	0-7	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	15
			Exposed	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	14	17	17	13	17	16	11	17	14	10	17	14	10
		7-20	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	15	17	16	13
			Exposed	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	15	17	15	13	17	13	11	17	12	10	16	10	9
		20-27	Interior	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	18	21	21	15	21	19	13			
			Exposed	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	18	21	21	15	21	19	13	21	16	11	21	14	10	21	13	9
		27-45	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	25	25	25	24	24	23	23	23	20	22	22	17
			Exposed	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	23	26	26	19	25	23	16	23	20	14	20	18	12	18	16	10
	C	0-7	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	15	17	17	13	17	17	12	17	15	10
			Exposed	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16	17	17	14	17	17	12	17	14	10	17	12	9	15	11	8	13	10	10
		7-20	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16	17	17	14	17	14	12	17	13	10	16	11	9
			Exposed	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16	17	17	14	17	15	12	17	12	10	17	11	9	14	9	8	13	8	10	11	11	9			
		20-27	Interior	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	20	21	20	14	20	17	12	20	15	10	19	14	9						
			Exposed	21	21	21	21	21	21	21	21	21	20	21	21	18	21	21	16	21	21	14	21	18	12	21	15	10	21	13	9	19	11	8	17	10	7	15	9	9			
		27-45	Interior	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	25	25	25	24	24	24	23	23	21	22	22	18	21	21	15	20	19	13	19	17	11
			Exposed	26	26	26	26	26	26	26	26	26	26	26	26	23	26	26	21	25	25	19	24	22	15	21	19	13	18	16	11	16	14	9	14	13	8	12	11	7			
	D	0-7	Interior	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	15	18	18	13	18	16	11	18	14	10	17	12	9			
			Exposed	18	18	18	18	18	18	18	18	18	18	18	18	16	18	18	15	18	18	13	18	16	11	18	14	10	16	12	8	14	10	11	13	9	10	11	8	9			
		7-20	Interior	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	18	19	19	15	19	16	13	19	14	11	18	12	10	16	11	9	14	9	8
			Exposed	19	19	19	19	19	19	19	19	18	19	19	16	19	17	14	19	16	13	19	14	12	19	12	10	16	10	9	14	9	11	12	8	10	11	11	9	9	9	
		20-27	Interior	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	22	23	23	20	23	23	16	23	19	13	22	17	11	21	15	10	20	13	9	19	11	8			
			Exposed	23	23	23	23	23	21	23	23	19	23	23	16	23	21	14	23	19	13	23	17	12	23	15	10	22	13	9	19	11	7	16	9	6	14	8	9	13	11	8
		27-45	Interior	29	29	29	29	29	29	29	29	29	28	28	28	27	27	27	27	27	27	26	26	25	24	24	20	23	23	17	22	21	14	21	18	12	18	16	10	16	14	9
			Exposed	29	29	29	29	29	27	29	29	24	28	28	21	27	26	19	27	24	17	25	22	15	21	19	12	18	16	10	15	14	9	13	12	7	12	11	6	10	9	9
70	B	0-7	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	14	11	14	14	10	14	14	10
		7-20	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	14	13
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	13	11	14	12	10	14	10	9
		20-27	Interior	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	15	18	18	13
			Exposed	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	15	18	18	13	18	16	11	18	14	10	18	13	9
		27-45	Interior	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	22	22	22	21	21	21	21	21	20	20	20	17
			Exposed	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	19	22	22	16	21	20	14	20	18	12	18	16	10
	C	0-7	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	14	12	14	14	10
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	12	14	14	10	14	12	9	14	11	8	13	10	10
		7-20	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	12	14	13	10	14	11	9
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	12	14	12	10	14	11	9	14	9	8	13	8	10	11	11	9
		20-27	Interior	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	16	18	18	14	18	18	12	18	15	10	17	14	9			
			Exposed	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	12	18	15	10	18	13	9	18	11	8	17	10	7
		27-45	Interior	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	22	22	22	22	22	22	22	22	22	21	21	21	20	20	18	19	19	15
			Exposed	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	19	22	22	16	21	20	14	20	18	12	18	16	10
	D	0-7	Interior	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	15	16	16	13	16	16	11	16	14	10	16	12	9			
			Exposed	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	15	16	16	13	16	16	11	16	14	10	16	12	8	14	10	11	13	9	10	11	8	9			
		7-20	Interior	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	15	16	16	13	16	14	11	16	12	10	15	11	9	14	9	8
			Exposed	16	16	16	16	16	16	16	16	16	16	16	16	16	16	14	16	16	13	16	14	12	16	12	10	16	10	9	14	9	11	12	8	10	11	11	9	9	9	
		20-27	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	16	20	19	13	20	17	11	19	15	10	18	13	9	17	11	8
			Exposed	20	20	20	20	20	20	20	20	19	20	20	16	20	20	14	20	19	13	20	17	12	20	15	10	20	13	9	19	11	7	16	9	6	14	8	9	13	11	8
		27-45	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	24	24	23	23	23	22	22	20	21	21	17	20	20	14	19	18	12	18	16	10	16	14	9
			Exposed	25	25	25	25	25	25	25	25	24	25	25	21	25	25	19	24	24	17	23	22	15	21	19	12	18	16	10	15	14	9	13	12	7	12	11	6	10	9	9
80	B	0-7	Interior	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
			Exposed	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	11	13	13	10	13	13	10
		7-20	Interior	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
			Exposed	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	11	13	12	10	13	10	9			
		20-27	Interior	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	15	16	16	13			
			Exposed	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	15	16	16	13	16	16	11	16	14	10	16	13	9			
		27-45	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	19	19	19	19	19	18	18	17
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	20	20	16	19	19	14	19	18	12	18	16	10
	C	0-7	Interior	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	13	13	10
			Exposed	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	13	13	10	13	13	10	13	13	10	13	12	9	13	11	8	13	10	10
		7-20	Interior	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	13	13	10	13	11	9
			Exposed	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	13	12	10	13	11	9	13	9	8	13	8	10	11	11	9			
		20-27	Interior	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	12	16	15	10	16	16	12	16	15	10	16	14	9			
			Exposed	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	12	16	15	10	16	13	9	16	11	8	16	10	7	15	9	9
		27-45	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	19	19	18	18	18	18	18	15	17	17	13	16	16	11
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	15	19	19	13	18	16	11	16	14	9	14	13	8	12	11	7
	D	0-7	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	14	11	14	14	10	14	14	10	14	12	9
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	14	11	14	14	10	14	12	8	14	10	11	13	9	10	11	8	9
		7-20	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	14	11	14	12	10	14	11	9	14	9	8			
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	14	11	14	14	10	14	12	8	14	10	11	13	9	10	11	8	9	9	
		20-27	Interior	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	16	17	17	13	17	17	11	17	15	10	17	13	9	16	11	8
			Exposed	17	17	17	17	17	17	17	17	17	17	17	16	17	17	14	17	17	13	17	17	12	17	15	10	17	13	9	16	9	6	14	8	9	13	11	8			
		27-45	Interior	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	21	21	21	20	20	20	19	19	17	19	19	14	18	18	12	17	16	10	16	14	9
			Exposed	22	22	22	22	22	22	22	22	22	22	22	21	22	22	19	22	22	17	21	21	15	20	19	12	18	16	10	15	14	9	13	12	7	12	11	6	10	9	9

* 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.

~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 3.00	23 sq.ft	PORTRAIT	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
90	B	0-7	Interior	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
			Exposed	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10
		7-20	Interior	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
			Exposed	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10	11	10	9	11	10	9
		20-27	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	14	11	14	14	10	14	13	9
		27-45	Interior	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	17	17	17	17	17	17
			Exposed	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	16	18	18	14	17	17	12	17	16	10	18	16	10	18	16	10
	C	0-7	Interior	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10
			Exposed	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10	11	11	9	11	11	8	11	10	10	11	10	10	11	10	10
		7-20	Interior	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10	11	11	9	11	11	9
			Exposed	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10	11	11	9	11	9	8	11	8	10	11	11	9
		20-27	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	12	14	14	10	14	14	9	14	14	9
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	12	14	14	10	14	13	9	14	11	8	14	10	7	14	9	9
		27-45	Interior	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	17	17	17	16	16	15	16	16	13	15	15	11
			Exposed	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	15	18	18	13	17	16	11	16	14	9	14	13	8	12	11	7
	D	0-7	Interior	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	11	12	12	10	12	12	9
			Exposed	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	11	12	12	10	12	12	8	12	10	11	12	9	10	11	8	9
		7-20	Interior	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	11	13	12	10	13	11	9	12	9	8
			Exposed	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	13	12	10	13	10	9	13	9	11	12	8	10	11	11	9	9	9	8	
		20-27	Interior	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	13	16	16	11	16	15	10	15	13	9	15	11	8
			Exposed	16	16	16	16	16	16	16	16	16	16	16	16	16	16	14	16	16	13	16	16	12	16	15	10	16	13	9	16	11	7	16	9	6	14	8	9	13	11	8
		27-45	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	19	19	18	18	17	17	17	14	16	16	12	16	16	10	15	14	9
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	20	20	17	20	20	15	19	19	12	18	16	10	15	14	9	13	12	7	12	11	6	10	9	9
100	B	0-7	Interior	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
			Exposed	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
		7-20	Interior	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
			Exposed	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9
		20-27	Interior	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
			Exposed	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	11	13	13	10	13	13	9	13	13	9
		27-45	Interior	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
			Exposed	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	14	16	16	14	16	16	12	16	16	10
	C	0-7	Interior	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
			Exposed	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	10	10	8	10	10	10
		7-20	Interior	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9
			Exposed	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	10	9	8	10	8	10	10	11	9
		20-27	Interior	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	13	13	10	13	13	9
			Exposed	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	12	13	13	10	13	13	9	13	11	8	13	10	7	13	9	9
		27-45	Interior	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	15	16	16	13	16	16	11	15	15	15	15	15	13	14	14	11
			Exposed	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	15	16	16	13	16	16	11	15	14	9	14	13	8	12	11	7
	D	0-7	Interior	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10	11	11	9
			Exposed	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10	11	11	8	11	10	11	11	9	10	11	8	9	11	8	9
		7-20	Interior	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10	11	11	9	11	9	8
			Exposed	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	10	11	11	9	11	9	11	11	8	10	11	11	9	9	9	
		20-27	Interior	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	11	14	14	10	14	13	9	14	11	8
			Exposed	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	14	14	12	14	14	10	14	13	9	14	11	7	14	9	6	14	8	9	13	11	8
		27-45	Interior	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	17	17	17	16	16	14	15	15	12	15	15	10	14	14	9
			Exposed	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	17	18	18	15	18	18	12	17	16	10	15	14	9	13	12	7	12	11	6	10	9	9

#N/A

* 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.

~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 1.25	23 sq.ft	LANDSCAPE	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
0	B	0-7	Interior	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	90	140	140	59	140	87	50	140	62	44	103	54	38	66	47	34	58	42	30
			Exposed	140	140	140	140	140	140	140	140	73	140	140	60	140	128	55	140	83	50	140	65	46	109	55	39	64	47	33	55	40	29	48	35	25	43	31	22	38	28	20
		7-20	Interior	141	141	141	141	141	141	141	141	141	141	141	141	141	141	141	141	141	141	141	141	62	141	63	52	141	54	45	77	47	39	62	41	34	55	36	30	49	32	26
			Exposed	141	141	141	141	141	71	141	141	59	141	65	53	141	58	48	141	53	44	84	49	40	63	41	34	54	35	29	47	31	25	41	27	22	36	24	19	32	21	17
		20-27	Interior	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	143	63	143	65	51	143	56	42	143	49	35	82	43	30	66	38	26
			Exposed	143	143	143	143	143	143	143	143	143	143	143	73	143	143	56	143	64	50	143	59	44	143	50	36	80	43	29	63	37	25	55	32	22	48	28	19	43	25	17
		27-45	Interior	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	64	145	145	53	145	62	45	61	54	39	54	48	34
			Exposed	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	63	145	145	56	145	62	46	59	53	38	52	46	32	45	40	27	40	36	24	35	32	21
	C	0-7	Interior	140	140	140	140	140	140	140	140	118	140	140	65	140	140	59	140	112	54	140	78	49	140	59	41	77	50	35	60	43	31	52	38	27	46	33	24	41	30	21
			Exposed	140	140	59	140	99	52	140	69	47	140	60	42	107	54	38	74	49	35	62	45	32	53	38	27	45	33	23	39	28	20	34	25	18	30	22	15	27	19	21
		7-20	Interior	141	141	141	141	141	141	141	141	63	141	141	57	141	63	52	141	57	47	141	52	43	70	44	36	58	38	31	50	33	27	44	29	24	38	25	21	34	22	19
			Exposed	141	63	52	141	56	46	88	50	41	73	45	37	63	41	34	57	37	31	52	34	28	44	29	24	38	25	20	33	21	18	29	19	15	25	17	14	22	15	18
		20-27	Interior	143	143	143	143	143	143	143	143	143	143	143	143	143	143	62	143	143	55	143	63	49	143	53	39	91	46	32	69	40	27	59	35	24	52	30	21	46	27	18
			Exposed	143	143	62	143	86	53	143	61	46	143	55	40	143	49	36	89	45	32	75	41	28	60	35	24	51	30	20	44	26	18	39	23	15	34	20	14	30	18	12
		27-45	Interior	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	88	145	145	61	145	73	50	64	57	42	55	50	35	48	43	30	43	38	26	38	34	22
			Exposed	145	145	145	145	145	74	145	145	58	145	82	51	145	62	46	63	56	41	58	52	37	49	44	30	42	37	25	36	33	21	32	28	18	28	25	16	25	22	14
	D	0-7	Interior	140	140	140	140	140	73	140	140	60	140	121	54	140	80	49	140	64	45	140	58	41	72	49	35	58	42	30	50	36	26	44	32	22	38	28	20	34	25	18
			Exposed	140	79	49	140	62	44	123	56	39	78	50	35	63	45	32	57	41	29	52	38	27	44	32	23	38	27	19	33	24	17	28	21	15	25	18	20	22	16	17
		7-20	Interior	141	141	82	141	141	59	141	64	53	141	58	48	141	53	43	81	48	40	69	44	36	57	37	31	48	32	26	42	27	23	37	24	20	32	21	17	29	19	16
			Exposed	141	52	43	77	47	39	64	42	35	58	38	31	53	34	28	48	31	26	44	29	24	37	24	20	32	21	17	27	18	15	24	16	20	21	14	17	19	19	15
		20-27	Interior	143	143	143	143	143	143	143	143	67	143	143	56	143	64	49	143	58	43	143	53	39	88	45	31	66	38	26	57	33	23	49	29	20	44	26	17	39	23	16
			Exposed	143	63	49	143	56	42	143	51	37	92	46	32	76	42	29	65	38	26	59	35	24	50	29	20	43	25	17	37	22	15	32	19	13	29	17	11	25	15	15
		27-45	Interior	145	145	145	145	145	145	145	145	145	145	145	145	145	145	62	145	145	55	145	70	49	63	56	41	54	48	34	46	42	28	41	36	24	36	32	21	32	28	18
			Exposed	145	145	61	145	145	53	145	63	47	64	57	42	58	52	37	53	47	33	48	43	30	41	37	25	35	31	21	30	27	17	27	24	15	23	21	13	21	19	11
10	B	0-7	Interior	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	90	100	100	59	100	87	50	100	62	44	100	54	38	66	47	34	58	42	30
			Exposed	100	100	100	100	100	100	100	100	73	100	100	60	100	100	55	100	83	50	100	65	46	100	55	39	64	47	33	55	40	29	48	35	25	43	31	22	38	28	20
		7-20	Interior	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	62	101	63	52	101	54	45	77	47	39	62	41	34	55	36	30	49	32	26
			Exposed	101	101	101	101	101	71	101	101	59	101	65	53	101	58	48	101	53	44	84	49	40	63	41	34	54	35	29	47	31	25	41	27	22	36	24	19	32	21	17
		20-27	Interior	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	63	118	65	51	118	56	42	118	49	35	82	43	30	66	38	26
			Exposed	118	118	118	118	118	118	118	118	118	118	118	73	118	118	56	118	64	50	118	59	44	118	50	36	80	43	29	63	37	25	55	32	22	48	28	19	43	25	17
		27-45	Interior	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	64	129	129	53	129	62	45	61	54	39	54	48	34
			Exposed	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	63	129	129	56	129	62	46	59	53	38	52	46	32	45	40	27	40	36	24	35	32	21
	C	0-7	Interior	100	100	100	100	100	100	100	100	100	100	100	65	100	100	59	100	100	54	100	78	49	100	59	41	77	50	35	60	43	31	52	38	27	46	33	24	41	30	21
			Exposed	100	100	59	100	99	52	100	69	47	100	60	42	100	54	38	74	49	35	62	45	32	53	38	27	45	33	23	39	28	20	34	25	18	30	22	15	27	19	21
		7-20	Interior	101	101	101	101	101	101	101	101	63	101	101	57	101	63	52	101	57	47	101	52	43	70	44	36	58	38	31	50	33	27	44	29	24	38	25	21	34	22	19
			Exposed	101	63	52	101	56	46	88	50	41	73	45	37	63	41	34	57	37	31	52	34	28	44	29	24	38	25	20	33	21	18	29	19	15	25	17	14	22	15	18
		20-27	Interior	118	118	118	118	118	118	118	118	118	118	118	118	118	118	62	118	118	55	118	63	49	118	53	39	91	46	32	69	40	27	59	35	24	52	30	21	46	27	18
			Exposed	118	118	62	118	86	53	118	61	46	118	55	40	118	49	36	89	45	32	75	41	28	60	35	24	51	30	20	44	26	18	39	23	15	34	20	14	30	18	12
		27-45	Interior	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	88	129	129	61	129	73	50	64	57	42	55	50	35	48	43	30	43	38	26	38	34	22
			Exposed	129	129	129	129	129	74	129	129	58	129	82	51	129	62	46	63	56	41	58	52	37	49	44	30	42	37	25	36	33	21	32	28	18	28	25	16	25	22	14
	D	0-7	Interior	100	100	100	100	100	73	100	100	60	100	100	54	100	80	49	100	64	45	100	58	41	72	49	35	58	42	30	50	36	26	44	32	22	38	28	20	34	25	18
			Exposed	100	79	49	100	62	44	100	56	39	78	50	35	63	45	32	57	41	29	52	38	27	44	32	23	38	27	19	33	24	17	28	21	15	25	18	20	22	16	17
		7-20	Interior	101	101	82	101	101	59	101	64	53	101	58	48	101	53	43	81	48	40	69	44	36	57	37	31	48	32	26	42	27	23	37	24	20	32	21	17	29	19	16
			Exposed	101	52	43	77	47	39	64	42	35	58	38	31	53	34	28	48	31	26	44	29	24	37	24	20	32	21	17	27	18	15	24	16	20	21	14	17	19	19	15
		20-27	Interior	122	122	122	122	122	122	122	122	67	122	122	56	122	64	49	122	58	43	122	53	39	88	45	31	66	38	26	57	33	23	49	29	20	44	26	17	39	23	16
			Exposed	122	63	49	122	56	42	122	51	37	92	46	32	76	42	29	65	38	26	59	35	24	50	29	20	43	25	17	37	22	15	32	19	13	29	17	11	25	15	15
		27-45	Interior	133	133	133	133	133	133	133	133	133	133	133	133	133	133	62	133	133	55	133	70	49	63	56	41	54	48	34	46	42	28	41	36	24	36	32	21	32	28	18
			Exposed	133	133	61	133	133	53	133	63	47	64	57	42	58	52	37	53	47	33	48	43	30	41	37	25	35	31	21	30	27	17	27	24	15	23	21	13	21	19	11
20	B	0-7	Interior	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	59	70	70	50	70	62	44	70	54	38	66	47	34	58	42	30
			Exposed	70	70	70	70	70	70	70	70	70	70	70	60	70	70	55	70	70	50	70	65	46	70	55	39	64	47	33	55	40	29	48	35	25	43	31	22	38	28	20
		7-20	Interior	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	62	71	63	52	71	54	45	71	47	39	62	41	34	55	36	30	49	32	26
			Exposed	71	71	71	71	71	71	71	71	59	71	65	53	71	58	48	71	53	44	71	49	40	63	41	34	54	35	29	47	31	25	41	27	22	36	24	19	32	21	17
		20-27	Interior	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	63	88	65	51	88	56	42	88	49	35	82	43	30	66	38	26
			Exposed	88	88	88	88	88	88	88	88	88	88	88	73	88	88	56	88	64	50	88	59	44	88	50	36	80	43	29	63	37	25	55	32	22	48	28	19	43	25	17
		27-45	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	64	100	100	53	92	62	45	61	54	39	54	48	34
			Exposed	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	63	100	100	56	100	62	46	59	53	38	52	46	32	45	40	27	40	36	24	35	32	21
	C	0-7	Interior	70	70	70	70	70	70	70	70	70	70	70	65	70	70	59	70	70	54	70	70	49	70	59	41	70	50	35	60	43	31	52	38	27	46	33	24	41	30	21
			Exposed	70	70	59	70	70	52	70	69	47	70	60	42	70	54	38	70	49	35	62	45	32	53	38	27	45	33	23	39	28	20	34	25	18	30	22	15	27	19	21
		7-20	Interior	71	71	71	71	71	71	71	71	63	71	71	57	71	63	52	71	57	47	71	52	43	70	44	36	58	38	31	50	33	27	44	29	24	38	25	21	34	22	19
			Exposed	71	63	52	71	56	46	71	50	41	71	45	37	63	41	34	57	37	31	52	34	28	44	29	24	38	25	20	33	21	18	29	19	15	25	17	14	22	15	18
		20-27	Interior	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	55	88	63	49	88	53	39	88	46	32	69	40	27	59	35	24	52	30	21	46	27	18
			Exposed	88	88	62	88	86	53	88	61	46	88	55	40	88	49	36	88	45	32	75	41	28	60	35	24	51	30	20	44	26	18	39	23	15	34	20	14	30	18	12
		27-45	Interior	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	88	100	100	61	97	73	50	64	57	42	55	50	35	48	43	30	43	38	26	38	34	22
			Exposed	100	100	100	100	100	74	100	100	58	100	82	51	100	62	46	63	56	41	58	52	37	49	44	30	42	37	25	36	33	21	32	28	18	28	25	16	25	22	14
	D	0-7	Interior	70	70	70	70	70	70	70	70	60	70	70	54	70	70	49	70	64	45	70	58	41	70	49	35	58	42	30	50	36	26	44	32	22	38	28	20	34	25	18
			Exposed	70	70	49	70	62	44	70	56	39	70	50	35	63	45	32	57	41	29	52	38	27	44	32	23	38	27	19	33	24	17	28	21	15	25	18	20	22	16	17
		7-20	Interior	71	71	71	71	71	59	71	64	53	71	58	48	71	53	43	71	48	40	69	44	36	57	37	31	48	32	26	42	27	23	37	24	20	32	21	17	29	19	16
			Exposed	71	52	43	71	47	39	64	42	35	58	38	31	53	34	28	48	31	26	44	29	24	37	24	20	32	21	17	27	18	15	24	16	20	21	14	17	19	19	15
		20-27	Interior	93	93	93	93	93	93	93	93	67	93	93	56	93	64	49	93	58	43	93	53	39	88	45	31	66	38	26	57	33	23	49	29	20	44	26	17	39	23	16
			Exposed	93	63	49	93	56	42	93	51	37	92	46	32	76	42	29	65	38	26	59	35	24	50	29	20	43	25	17	37	22	15	32	19	13	29	17	11	25	15	15
		27-45	Interior	105	105	105	105	105	105	105	105	105	105	105	105	105	105	62	105	105	55	105	70	49	63	56	41	54	48	34	46	42	28	41	36	24	36	32	21	32	28	18
			Exposed	105	105	61	105	105	53	105	63	47	64	57	42	58	52	37	53	47	33	48	43	30	41	37	25	35	31	21	30	27	17	27	24	15	23	21	13	21	19	11

* 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.

~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 1.25	23 sq.ft	LANDSCAPE	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
30	B	0-7	Interior	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	59	61	61	50	61	61	44	61	54	38	61	47	34	58	42	30
			Exposed	61	61	61	61	61	61	61	61	61	61	61	60	61	61	55	61	61	50	61	61	46	61	55	39	61	47	33	55	40	29	48	35	25	43	31	22	38	28	20
		7-20	Interior	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	52	61	54	45	61	47	39	61	41	34	55	36	30	49	32	26
			Exposed	61	61	61	61	61	61	61	61	59	61	61	53	61	58	48	61	53	44	61	49	40	61	41	34	54	35	29	47	31	25	41	27	22	36	24	19	32	21	17
		20-27	Interior	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	63	71	65	51	71	56	42	71	49	35	70	43	30	66	38	26
			Exposed	71	71	71	71	71	71	71	71	71	71	71	71	71	71	56	71	64	50	71	59	44	71	50	36	71	43	29	63	37	25	55	32	22	48	28	19	43	25	17
		27-45	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	81	81	64	75	75	53	69	62	45	61	54	39	54	48	34
			Exposed	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	63	82	82	56	82	62	46	59	53	38	52	46	32	45	40	27	40	36	24	35	32	21
	C	0-7	Interior	61	61	61	61	61	61	61	61	61	61	61	61	61	61	59	61	61	54	61	61	49	61	59	41	61	50	35	60	43	31	52	38	27	46	33	24	41	30	21
			Exposed	61	61	59	61	61	52	61	61	47	61	60	42	61	54	38	61	49	35	61	45	32	53	38	27	45	33	23	39	28	20	34	25	18	30	22	15	27	19	21
		7-20	Interior	61	61	61	61	61	61	61	61	61	61	61	57	61	61	52	61	57	47	61	52	43	61	44	36	58	38	31	50	33	27	44	29	24	38	25	21	34	22	19
			Exposed	61	61	52	61	56	46	61	50	41	61	45	37	61	41	34	57	37	31	52	34	28	44	29	24	38	25	20	33	21	18	29	19	15	25	17	14	22	15	18
		20-27	Interior	71	71	71	71	71	71	71	71	71	71	71	71	71	71	62	71	71	55	71	63	49	71	53	39	71	46	32	68	40	27	59	35	24	52	30	21	46	27	18
			Exposed	71	71	62	71	71	53	71	61	46	71	55	40	71	49	36	71	45	32	71	41	28	60	35	24	51	30	20	44	26	18	39	23	15	34	20	14	30	18	12
		27-45	Interior	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	79	79	61	73	73	50	64	57	42	55	50	35	48	43	30	43	38	26	38	34	22			
			Exposed	82	82	82	82	82	74	82	82	58	82	82	51	82	62	46	63	56	41	58	52	37	49	44	30	42	37	25	36	33	21	32	28	18	28	25	16	25	22	14
	D	0-7	Interior	65	65	65	65	65	65	65	65	60	65	65	54	65	65	49	65	64	45	65	58	41	65	49	35	58	42	30	50	36	26	44	32	22	38	28	20	34	25	18
			Exposed	65	65	49	65	62	44	65	56	39	65	50	35	63	45	32	57	41	29	52	38	27	44	32	23	38	27	19	33	24	17	28	21	15	25	18	20	22	16	17
		7-20	Interior	66	66	66	66	66	59	66	64	53	66	58	48	66	53	43	66	48	40	66	44	36	57	37	31	48	32	26	42	27	23	37	24	20	32	21	17	29	19	16
			Exposed	66	52	43	66	47	39	64	42	35	58	38	31	53	34	28	48	31	26	44	29	24	37	24	20	32	21	17	27	18	15	24	16	20	21	14	17	19	19	15
		20-27	Interior	75	75	75	75	75	75	75	75	67	75	75	56	75	64	49	75	58	43	75	53	39	75	45	31	66	38	26	57	33	23	49	29	20	44	26	17	39	23	16
			Exposed	75	63	49	75	56	42	75	51	37	75	46	32	75	42	29	65	38	26	59	35	24	50	29	20	43	25	17	37	22	15	32	19	13	29	17	11	25	15	15
		27-45	Interior	87	87	87	87	87	87	87	87	87	87	87	87	86	86	62	82	82	55	78	70	49	63	56	41	54	48	34	46	42	28	41	36	24	36	32	21	32	28	18
			Exposed	87	87	61	87	87	53	87	63	47	64	57	42	58	52	37	53	47	33	48	43	30	41	37	25	35	31	21	30	27	17	27	24	15	23	21	13	21	19	11
40	B	0-7	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	44	48	48	38	48	47	34	48	42	30
			Exposed	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	46	48	48	39	48	47	33	48	40	29	48	35	25	43	31	22	38	28	20
		7-20	Interior	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	45	49	47	39	49	41	34	49	36	30	47	32	26			
			Exposed	49	49	49	49	49	49	49	49	49	49	49	49	49	49	48	49	49	44	49	49	40	49	41	34	49	35	29	47	31	25	41	27	22	36	24	19	32	21	17
		20-27	Interior	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	51	59	56	42	59	49	35	57	43	30	55	38	26			
			Exposed	59	59	59	59	59	59	59	59	59	59	59	59	59	59	56	59	59	50	59	59	44	59	50	36	59	43	29	59	37	25	55	32	22	48	28	19	43	25	17
		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	65	65	64	62	62	53	59	59	45	56	54	39	53	48	34
			Exposed	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	63	69	69	56	69	62	46	59	53	38	52	46	32	45	40	27	40	36	24	35	32	21
	C	0-7	Interior	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	41	48	48	35	48	43	31	48	38	27	46	33	24	41	30	21
			Exposed	48	48	48	48	48	48	48	48	47	48	48	42	48	48	38	48	48	35	48	45	32	48	38	27	45	33	23	39	28	20	34	25	18	30	22	15	27	19	21
		7-20	Interior	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	47	49	49	43	49	44	36	49	38	31	48	33	27	44	29	24	38	25	21	34	22	19
			Exposed	49	49	49	49	49	46	49	49	41	49	45	37	49	41	34	49	37	31	49	34	28	44	29	24	38	25	20	33	21	18	29	19	15	25	17	14	22	15	18
		20-27	Interior	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	55	59	59	49	59	53	39	58	46	32	56	40	27	53	35	24	51	30	21	46	27	18
			Exposed	59	59	59	59	59	53	59	59	46	59	55	40	59	49	36	59	45	32	59	41	28	59	35	24	51	30	20	44	26	18	39	23	15	34	20	14	30	18	12
		27-45	Interior	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	66	66	66	64	64	61	61	61	50	57	57	42	54	50	35	48	43	30	43	38	26	38	34	22
			Exposed	69	69	69	69	69	69	69	69	58	69	69	51	69	62	46	63	56	41	58	52	37	49	44	30	42	37	25	36	33	21	32	28	18	28	25	16	25	22	14
	D	0-7	Interior	53	53	53	53	53	53	53	53	53	53	53	53	53	53	49	53	53	45	53	53	41	53	49	35	53	42	30	50	36	26	44	32	22	38	28	20	34	25	18
			Exposed	53	53	49	53	53	44	53	53	39	53	50	35	53	45	32	53	41	29	52	38	27	44	32	23	38	27	19	33	24	17	28	21	15	25	18	20	22	16	17
		7-20	Interior	54	54	54	54	54	54	54	54	53	54	54	48	54	53	43	54	48	40	54	44	36	53	37	31	48	32	26	42	27	23	37	24	20	32	21	17	29	19	16
			Exposed	54	52	43	54	47	39	54	42	35	54	38	31	53	34	28	48	31	26	44	29	24	37	24	20	32	21	17	27	18	15	24	16	20	21	14	17	19	19	15
		20-27	Interior	63	63	63	63	63	63	63	63	63	63	63	56	63	63	49	63	58	43	63	53	39	62	45	31	59	38	26	56	33	23	49	29	20	44	26	17	39	23	16
			Exposed	63	63	49	63	56	42	63	51	37	63	46	32	63	42	29	63	38	26	59	35	24	50	29	20	43	25	17	37	22	15	32	19	13	29	17	11	25	15	15
		27-45	Interior	74	74	74	74	74	74	74	74	74	72	72	72	69	69	62	66	66	55	64	64	49	60	56	41	54	48	34	46	42	28	41	36	24	36	32	21	32	28	18
			Exposed	74	74	61	74	74	53	74	63	47	64	57	42	58	52	37	53	47	33	48	43	30	41	37	25	35	31	21	30	27	17	27	24	15	23	21	13	21	19	11
50	B	0-7	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	38	39	34	39	39	30
			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	33	39	39	29	39	35	25	39	31	22	38	28	20
		7-20	Interior	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	39	40	40	34	40	36	30	40	32	26
			Exposed	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	34	40	35	29	40	31	25	40	27	22	36	24	19	32	21	17
		20-27	Interior	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	42	49	49	35	49	43	30	47	38	26						
			Exposed	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	44	49	49	36	49	43	29	49	37	25	49	32	22	48	28	19	43	25	17			
		27-45	Interior	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	59	59	59	57	57	57	54	54	53	52	52	45	50	50	39	48	48	34
			Exposed	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	59	59	46	57	53	38	52	46	32	45	40	27	40	36	24	35	32	21
	C	0-7	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	35	39	39	31	39	38	27	39	33	24	39	30	21
			Exposed	39	39	39	39	39	39	39	39	39	39	39	39	39	38	39	39	39	35	39	39	32	39	38	27	39	33	23	39	28	20	34	25	18	30	22	15	27	19	21
		7-20	Interior	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	36	40	38	31	40	33	27	39	29	24	38	25	21	34	22	19
			Exposed	40	40	40	40	40	40	40	40	40	40	40	37	40	40	34	40	37	31	40	34	28	40	29	24	38	25	20	33	21	18	29	19	15	25	17	14	22	15	18
		20-27	Interior	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	39	49	46	32	48	40	27	46	35	24	44	30	21	43	27	18
			Exposed	49	49	49	49	49	49	49	49	46	49	49	40	49	49	36	49	45	32	49	41	28	49	35	24	49	30	20	44	26	18	39	23	15	34	20	14	30	18	12
		27-45	Interior	60	60	60	60	60	60	60	60	60	60	60	60	59	59	59	57	57	57	56	56	56	53	53	50	51	51	42	48	48	35	46	43	30	43	38	26	38	34	22
			Exposed	60	60	60	60	60	60	60	60	58	60	60	51	59	59	46	57	56	41	56	52	37	49	44	30	42	37	25	36	33	21	32	28	18	28	25	16	25	22	14
	D	0-7	Interior	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	41	43	43	35	43	42	30	43	36	26	43	32	22	38	28	20	34	25	18			
			Exposed	43	43	43	43	43	43	43	43	39	43	43	35	43	43	32	43	41	29	43	38	27	43	32	23	38	27	19	33	24	17	28	21	15	25	18	20	22	16	17
		7-20	Interior	44	44	44	44	44	44	44	44	44	44	44	44	44	44	43	44	44	40	44	44	36	44	37	31	43	32	26	42	27	23	37	24	20	32	21	17	29	19	16
			Exposed	44	44	43	44	44	39	44	42	35	44	38	31	44	34	28	44	31	26	44	29	24	37	24	20	32	21	17	27	18	15	24	16	20	21	14	17	19	19	15
		20-27	Interior	54	54	54	54	54	54	54	54	54	54	54	54	54	54	49	54	54	43	54	53	39	53	45	31	51	38	26	49	33	23	47	29	20	44	26	17	39	23	16
			Exposed	54	54	49	54	54	42	54	51	37	54	46	32	54	42	29	54	38	26	54	35	24	50	29	20	43	25	17	37	22	15	32	19	13	29	17	11	25	15	15
		27-45	Interior	64	64	64	64	64	64	63	63	63	62	62	62	60	60	60	58	58	55	57	57	49	53	53	41	50	48	34	46	42	28	41	36	24	36	32	21	32	28	18
			Exposed	64	64	61	64	64	53	63	63	47	62	57	42	58	52	37	53	47	33	48	43	30	41	37	25	35	31	21	30	27	17	27	24	15	23	21	13	21	19	11

* 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.

~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 1.25	23 sq.ft	LANDSCAPE	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
60	B	0-7	Interior	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	30
			Exposed	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	29	33	33	25	33	31	22	33	28	20
		7-20	Interior	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	30	33	32	26
			Exposed	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	29	33	31	25	33	27	22	33	24	19	32	21	17
		20-27	Interior	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	35	41	41	30	41	38	26
			Exposed	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	36	41	41	29	41	37	25	41	32	22	41	28	19	41	25	17
		27-45	Interior	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	50	50	50	48	48	48	47	47	45	45	45	39	43	43	34
			Exposed	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	46	50	50	38	48	46	32	45	40	27	40	36	24	35	32	21
	C	0-7	Interior	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	31	33	33	27	33	33	24	33	30	21
			Exposed	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	32	33	33	27	33	33	23	33	28	20	33	25	18	30	22	15	27	19	21
		7-20	Interior	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	31	33	33	27	33	29	24	33	25	21	32	22	19
			Exposed	33	33	33	33	33	33	33	33	33	33	33	33	33	33	31	33	33	28	33	29	24	33	25	20	33	21	18	29	19	15	25	17	14	22	15	18			
		20-27	Interior	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	39	41	41	32	41	40	27	40	35	24	39	30	21	38	27	18						
			Exposed	41	41	41	41	41	41	41	41	40	41	41	36	41	41	32	41	41	28	41	35	24	41	30	20	41	26	18	39	23	15	34	20	14	30	18	12			
		27-45	Interior	52	52	52	52	52	52	52	52	52	52	52	52	52	52	51	51	51	50	50	50	48	48	48	45	45	42	43	43	35	41	41	30	39	38	26	37	34	22	
			Exposed	52	52	52	52	52	52	52	52	51	52	52	46	51	51	41	50	50	37	48	44	30	42	37	25	36	33	21	32	28	18	28	25	16	25	22	14			
	D	0-7	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	35	36	36	30	36	36	26	36	32	22	36	28	20	34	25	18			
			Exposed	36	36	36	36	36	36	36	36	35	36	36	32	36	36	29	36	36	27	36	32	23	36	27	19	33	24	17	28	21	15	25	18	20	22	16	17			
		7-20	Interior	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	36	37	37	31	37	32	26	37	27	23	35	24	20	32	21	17	29	19	16	
			Exposed	37	37	37	37	37	37	37	37	35	37	37	31	37	34	28	37	31	26	37	29	24	37	24	20	32	21	17	27	18	15	24	16	20	21	14	17	19	19	15
		20-27	Interior	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	43	45	45	39	45	45	31	45	38	26	43	33	23	41	29	20	40	26	17	38	23	16
			Exposed	45	45	45	45	45	45	42	45	45	37	45	45	32	45	42	29	45	38	26	45	35	24	45	29	20	43	25	17	37	22	15	32	19	13	29	17	11	25	15	15
		27-45	Interior	57	57	57	57	57	57	56	56	56	55	55	55	53	53	53	52	52	52	51	51	49	48	48	41	46	46	34	43	42	28	41	36	24	36	32	21	32	28	18
			Exposed	57	57	57	57	57	53	56	56	47	55	55	42	53	52	37	52	47	33	48	43	30	41	37	25	35	31	21	30	27	17	27	24	15	23	21	13	21	19	11
70	B	0-7	Interior	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
			Exposed	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	25	28	28	22	28	28	20
		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	26
			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	25	29	27	22	29	24	19	29	21	17
		20-27	Interior	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	30	35	35	26
			Exposed	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	29	35	35	25	35	32	22	35	28	19	35	25	17			
		27-45	Interior	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	44	44	44	42	42	42	41	41	39	39	39	34
			Exposed	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	38	44	44	32	42	40	27	40	36	24	35	32	21			
	C	0-7	Interior	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	27	28	28	24	28	28	21
			Exposed	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	27	28	28	23	28	28	20	28	25	18	28	22	15	27	19	21
		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	27	29	29	24	29	25	21	29	22	19
			Exposed	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	28	29	29	24	29	25	20	29	21	18	29	19	15	25	17	14	22	15	18			
		20-27	Interior	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	32	35	35	24	35	30	20	35	26	18	30	21	34	27	18	
			Exposed	35	35	35	35	35	35	35	35	35	35	35	32	35	35	28	35	35	24	35	30	20	35	26	18	35	23	15	34	20	14	30	18	12						
		27-45	Interior	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	43	43	43	41	41	41	39	39	35	38	38	30	36	36	26	35	34	22	
			Exposed	45	45	45	45	45	45	45	45	45	45	45	41	45	45	37	43	43	30	41	37	25	36	33	21	32	28	18	28	25	16	25	22	14						
	D	0-7	Interior	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	26	31	31	22	31	28	20	31	25	18			
			Exposed	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	29	31	31	27	31	31	23	31	27	19	31	24	17	28	21	15	25	18	20	22	16	17
		7-20	Interior	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	31	32	32	26	32	27	23	32	24	20	31	21	17	29	19	16
			Exposed	32	32	32	32	32	32	32	32	32	32	31	32	32	28	32	31	26	32	29	24	32	24	20	32	21	17	27	18	15	24	16	20	21	14	17	19	19	15	
		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	31	39	38	26	39	33	23	37	29	20	36	26	17	35	23	16
			Exposed	39	39	39	39	39	39	39	39	37	39	39	32	39	39	29	39	38	26	39	35	24	39	29	20	39	25	17	37	22	15	32	19	13	29	17	11	25	15	15
		27-45	Interior	49	49	49	49	49	49	49	49	49	49	49	49	48	48	48	47	47	47	46	46	46	44	44	41	42	42	34	40	40	28	38	36	24	36	32	21	32	28	18
			Exposed	49	49	49	49	49	49	49	49	47	49	49	42	48	48	37	47	47	33	46	43	30	41	37	25	35	31	21	30	27	17	27	24	15	23	21	13	21	19	11
80	B	0-7	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	22	25	25	20
		7-20	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	22	25	24	19	25	21	17
		20-27	Interior	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	26
			Exposed	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	29	31	31	25	31	31	22	31	28	19	31	25	17
		27-45	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	38	38	38	37	37	37	36	36	34
			Exposed	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	38	39	39	32	38	38	27	37	36	24	35	32	21			
	C	0-7	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	25	25	21
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	23	25	25	20	25	25	18	25	22	15	25	19	21			
		7-20	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	25	25	21	25	22	19
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	25	25	20	25	21	18	25	19	15	25	17	14	22	15	18
		20-27	Interior	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	27	31	31	24	31	30	20	31	26	18	31	27	18
			Exposed	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	28	31	31	24	31	30	20	31	26	18	31	23	15	31	20	14	30	18	12			
		27-45	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	38	38	38	36	36	35	35	35	30	33	33	26	32	32	22
			Exposed	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	37	39	39	30	38	37	25	36	33	21	32	28	18	28	25	16	25	22	14			
	D	0-7	Interior	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	26	28	28	22	28	28	20	28	25	18
			Exposed	28	28	28	28	28	28	28	28	28	28	28	28	28	28	27	28	28	23	28	27	19	28	24	17	28	21	15	25	18	20	22	16	17						
		7-20	Interior	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	26	28	27	23	28	24	20	28	21	17	27	19	16			
			Exposed	28	28	28	28	28	28	28	28	28	28	28	28	28	28	26	28	28	24	28	24	20	28	21	17	27	18	15	24	16	20	21	14	17	19	19	15			
		20-27	Interior	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	31	34	34	26	34	33	23	34	29	20	33	26	17	32	23	16
			Exposed	34	34	34	34	34	34	34	34	34	34	34	32	34	34	29	34	34	26	34	34	24	34	29	20	34	25	17	34	22	15	32	19	13	29	17	11	25	15	15
		27-45	Interior	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	43	43	43	42	42	42	40	40	40	38	38	34	37	37	28	35	35	24	33	32	21	32	28	18
			Exposed	44	44	44	44	44	44	44	44	44	44	44	42	44	44	37	43	43	33	42	42	30	40	37	25	35	31	21	30	27	17	27	24	15	23	21	13	21	19	11

* 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.

~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 1.25	23 sq.ft	LANDSCAPE	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
90	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	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	22	20
		7-20	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	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	19	22	21	17	22	21	17
		20-27	Interior	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	26
			Exposed	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	25	28	28	22	28	28	19	28	25	17
		27-45	Interior	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	34	34	34	33	33	33	33
			Exposed	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	32	35	35	27	34	34	24	33	32	21						
	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	22	22	21
			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	20	22	22	18	22	22	15	22	19	21			
		7-20	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	21	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	20	22	21	18	22	19	15	22	17	14	22	15	18
		20-27	Interior	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	27	28	28	24	28	28	21	28	27	18			
			Exposed	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	24	28	28	20	28	26	18	28	23	15	28	20	14	28	18	12			
		27-45	Interior	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	33	33	33	32	32	30	31	31	26	30	30	22				
			Exposed	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	30	35	35	25	33	33	21	32	28	18	28	25	16	25	22	14			
	D	0-7	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	22	25	25	20	25	25	18						
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	23	25	25	19	25	24	17	25	21	15	25	18	20	22	16	17			
		7-20	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	23	25	25	20	25	21	17	25	19	16						
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	25	24	20	25	21	17	25	18	15	24	16	20	21	14	17	19	19	15
		20-27	Interior	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	26	31	31	23	31	29	20	30	26	17	29	23	16			
			Exposed	31	31	31	31	31	31	31	31	31	31	31	31	31	29	31	31	26	31	31	24	31	29	20	31	25	17	31	22	15	31	19	13	29	17	11	25	15	15	
		27-45	Interior	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	37	37	37	36	36	34	34	34	28	33	33	24	31	31	21	30	28	18
			Exposed	39	39	39	39	39	39	39	39	39	39	39	39	39	37	39	39	33	39	39	30	37	37	25	35	31	21	30	27	17	27	24	15	23	21	13	21	19	11			
100	B	0-7	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
		7-20	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	20	20	17			
		20-27	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25			
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	22	25	25	19	25	25	17						
		27-45	Interior	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	31	31	31				
			Exposed	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	27	32	32	24	31	31	21						
	C	0-7	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	18	20	20	18	20	20	15	20	19	21			
		7-20	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19			
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	18	20	19	15	20	17	14	20	15	18						
		20-27	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	25	25	21	25	25	18						
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	25	25	20	25	25	18	25	23	15	25	20	14	25	18	12			
		27-45	Interior	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	30	32	32	25	31	31	21	30	28	18	28	25	16
			Exposed	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	30	32	32	25	31	31	21	30	28	18	28	25	16	25	22	14			
	D	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	20	22	22	18			
			Exposed	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	19	22	22	17	22	21	15	22	18	20	22	16	17			
		7-20	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	20	22	21	17	22	19	16			
			Exposed	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	20	22	21	17	22	18	15	22	16	20	21	14	17	19	19	15
		20-27	Interior	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	26	28	28	23	28	28	20	28	26	17	27	23	16
			Exposed	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	26	28	28	24	28	28	20	28	25	17	28	22	15	28	19	13	28	17	11	25	15	15
		27-45	Interior	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	33	33	33	32	32	28	31	31	24	29	29	21	28	28	18	
			Exposed	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	33	35	35	30	35	35	25	33	31	21	30	27	17	27	24	15	23	21	13	21	19	11			

#N/A

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UNIRAC

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Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	Attachment

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				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	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	90	134	134	59	134	87	50	134	62	44	103	54	38	66	47	34	58	42	30
			Exposed	134	134	134	134	134	134	134	134	73	134	134	60	134	128	55	134	83	50	134	65	46	109	55	39	64	47	33	55	40	29	48	35	25	43	31	22	38	28	20
		7-20	Interior	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	62	134	63	52	134	54	45	77	47	39	62	41	34	55	36	30	49	32	26
			Exposed	134	134	134	134	134	71	134	134	59	134	65	53	134	58	48	134	53	44	84	49	40	63	41	34	54	35	29	47	31	25	41	27	22	36	24	19	32	21	17
		20-27	Interior	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	63	134	65	51	134	56	42	134	49	35	82	43	30	66	38	26
			Exposed	134	134	134	134	134	134	134	134	134	134	134	73	134	134	56	134	64	50	134	59	44	134	50	36	80	43	29	63	37	25	55	32	22	48	28	19	43	25	17
		27-45	Interior	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	64	134	134	53	134	62	45	61	54	39	54	48	34
			Exposed	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	63	134	134	56	134	62	46	59	53	38	52	46	32	45	40	27	40	36	24	35	32	21
	C	0-7	Interior	134	134	134	134	134	134	134	134	118	134	134	65	134	134	59	134	112	54	134	78	49	134	59	41	77	50	35	60	43	31	52	38	27	46	33	24	41	30	21
			Exposed	134	134	59	134	99	52	134	69	47	134	60	42	107	54	38	74	49	35	62	45	32	53	38	27	45	33	23	39	28	20	34	25	18	30	22	15	27	19	21
		7-20	Interior	134	134	134	134	134	134	134	134	63	134	134	57	134	63	52	134	57	47	134	52	43	70	44	36	58	38	31	50	33	27	44	29	24	38	25	21	34	22	19
			Exposed	134	63	52	134	56	46	88	50	41	73	45	37	63	41	34	57	37	31	52	34	28	44	29	24	38	25	20	33	21	18	29	19	15	25	17	14	22	15	18
		20-27	Interior	134	134	134	134	134	134	134	134	134	134	134	134	134	134	62	134	134	55	134	63	49	134	53	39	91	46	32	69	40	27	59	35	24	52	30	21	46	27	18
			Exposed	134	134	62	134	86	53	134	61	46	134	55	40	134	49	36	89	45	32	75	41	28	60	35	24	51	30	20	44	26	18	39	23	15	34	20	14	30	18	12
		27-45	Interior	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	88	134	134	61	134	73	50	64	57	42	55	50	35	48	43	30	43	38	26	38	34	22
			Exposed	134	134	134	134	134	74	134	134	58	134	82	51	134	62	46	63	56	41	58	52	37	49	44	30	42	37	25	36	33	21	32	28	18	28	25	16	25	22	14
	D	0-7	Interior	134	134	134	134	134	73	134	134	60	134	121	54	134	80	49	134	64	45	134	58	41	72	49	35	58	42	30	50	36	26	44	32	22	38	28	20	34	25	18
			Exposed	134	79	49	134	62	44	123	56	39	78	50	35	63	45	32	57	41	29	52	38	27	44	32	23	38	27	19	33	24	17	28	21	15	25	18	20	22	16	17
		7-20	Interior	134	134	82	134	134	59	134	64	53	134	58	48	134	53	43	81	48	40	69	44	36	57	37	31	48	32	26	42	27	23	37	24	20	32	21	17	29	19	16
			Exposed	134	52	43	77	47	39	64	42	35	58	38	31	53	34	28	48	31	26	44	29	24	37	24	20	32	21	17	27	18	15	24	16	20	21	14	17	19	19	15
		20-27	Interior	134	134	134	134	134	134	134	134	67	134	134	56	134	64	49	134	58	43	134	53	39	88	45	31	66	38	26	57	33	23	49	29	20	44	26	17	39	23	16
			Exposed	134	63	49	134	56	42	134	51	37	92	46	32	76	42	29	65	38	26	59	35	24	50	29	20	43	25	17	37	22	15	32	19	13	29	17	11	25	15	15
		27-45	Interior	134	134	134	134	134	134	134	134	134	134	134	134	134	134	62	134	134	55	134	70	49	63	56	41	54	48	34	46	42	28	41	36	24	36	32	21	32	28	18
			Exposed	134	134	61	134	134	53	134	63	47	64	57	42	58	52	37	53	47	33	48	43	30	41	37	25	35	31	21	30	27	17	27	24	15	23	21	13	21	19	11
10	B	0-7	Interior	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	90	100	100	59	100	87	50	100	62	44	100	54	38	66	47	34	58	42	30
			Exposed	100	100	100	100	100	100	100	100	73	100	100	60	100	100	55	100	83	50	100	65	46	100	55	39	64	47	33	55	40	29	48	35	25	43	31	22	38	28	20
		7-20	Interior	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	62	101	63	52	101	54	45	77	47	39	62	41	34	55	36	30	49	32	26
			Exposed	101	101	101	101	101	71	101	101	59	101	65	53	101	58	48	101	53	44	84	49	40	63	41	34	54	35	29	47	31	25	41	27	22	36	24	19	32	21	17
		20-27	Interior	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	63	118	65	51	118	56	42	118	49	35	82	43	30	66	38	26
			Exposed	118	118	118	118	118	118	118	118	118	118	118	73	118	118	56	118	64	50	118	59	44	118	50	36	80	43	29	63	37	25	55	32	22	48	28	19	43	25	17
		27-45	Interior	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	64	129	129	53	129	62	45	61	54	39	54	48	34
			Exposed	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	63	129	129	56	129	62	46	59	53	38	52	46	32	45	40	27	40	36	24	35	32	21
	C	0-7	Interior	100	100	100	100	100	100	100	100	100	100	100	65	100	100	59	100	100	54	100	78	49	100	59	41	77	50	35	60	43	31	52	38	27	46	33	24	41	30	21
			Exposed	100	100	59	100	99	52	100	69	47	100	60	42	100	54	38	74	49	35	62	45	32	53	38	27	45	33	23	39	28	20	34	25	18	30	22	15	27	19	21
		7-20	Interior	101	101	101	101	101	101	101	101	63	101	101	57	101	63	52	101	57	47	101	52	43	70	44	36	58	38	31	50	33	27	44	29	24	38	25	21	34	22	19
			Exposed	101	63	52	101	56	46	88	50	41	73	45	37	63	41	34	57	37	31	52	34	28	44	29	24	38	25	20	33	21	18	29	19	15	25	17	14	22	15	18
		20-27	Interior	118	118	118	118	118	118	118	118	118	118	118	118	118	118	62	118	118	55	118	63	49	118	53	39	91	46	32	69	40	27	59	35	24	52	30	21	46	27	18
			Exposed	118	118	62	118	86	53	118	61	46	118	55	40	118	49	36	89	45	32	75	41	28	60	35	24	51	30	20	44	26	18	39	23	15	34	20	14	30	18	12
		27-45	Interior	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	129	88	129	129	61	129	73	50	64	57	42	55	50	35	48	43	30	43	38	26	38	34	22
			Exposed	129	129	129	129	129	74	129	129	58	129	82	51	129	62	46	63	56	41	58	52	37	49	44	30	42	37	25	36	33	21	32	28	18	28	25	16	25	22	14
	D	0-7	Interior	100	100	100	100	100	73	100	100	60	100	100	54	100	80	49	100	64	45	100	58	41	72	49	35	58	42	30	50	36	26	44	32	22	38	28	20	34	25	18
			Exposed	100	79	49	100	62	44	100	56	39	78	50	35	63	45	32	57	41	29	52	38	27	44	32	23	38	27	19	33	24	17	28	21	15	25	18	20	22	16	17
		7-20	Interior	101	101	82	101	101	59	101	64	53	101	58	48	101	53	43	81	48	40	69	44	36	57	37	31	48	32	26	42	27	23	37	24	20	32	21	17	29	19	16
			Exposed	101	52	43	77	47	39	64	42	35	58	38	31	53	34	28	48	31	26	44	29	24	37	24	20	32	21	17	27	18	15	24	16	20	21	14	17	19	19	15
		20-27	Interior	122	122	122	122	122	122	122	122	67	122	122	56	122	64	49	122	58	43	122	53	39	88	45	31	66	38	26	57	33	23	49	29	20	44	26	17	39	23	16
			Exposed	122	63	49	122	56	42	122	51	37	92	46	32	76	42	29	65	38	26	59	35	24	50	29	20	43	25	17	37	22	15	32	19	13	29	17	11	25	15	15
		27-45	Interior	133	133	133	133	133	133	133	133	133	133	133	133	133	133	62	133	133	55	133	70	49	63	56	41	54	48	34	46	42	28	41	36	24	36	32	21	32	28	18
			Exposed	133	133	61	133	133	53	133	63	47	64	57	42	58	52	37	53	47	33	48	43	30	41	37	25	35	31	21	30	27	17	27	24	15	23	21	13	21	19	11
20	B	0-7	Interior	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	59	70	70	50	70	62	44	70	54	38	66	47	34	58	42	30
			Exposed	70	70	70	70	70	70	70	70	70	70	70	60	70	70	55	70	70	50	70	65	46	70	55	39	64	47	33	55	40	29	48	35	25	43	31	22	38	28	20
		7-20	Interior	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	62	71	63	52	71	54	45	71	47	39	62	41	34	55	36	30	49	32	26
			Exposed	71	71	71	71	71	71	71	71	59	71	65	53	71	58	48	71	53	44	71	49	40	63	41	34	54	35	29	47	31	25	41	27	22	36	24	19	32	21	17
		20-27	Interior	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	63	88	65	51	88	56	42	88	49	35	82	43	30	66	38	26
			Exposed	88	88	88	88	88	88	88	88	88	88	88	73	88	88	56	88	64	50	88	59	44	88	50	36	80	43	29	63	37	25	55	32	22	48	28	19	43	25	17
		27-45	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	64	100	100	53	92	62	45	61	54	39	54	48	34
			Exposed	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	63	100	100	56	100	62	46	59	53	38	52	46	32	45	40	27	40	36	24	35	32	21
	C	0-7	Interior	70	70	70	70	70	70	70	70	70	70	70	65	70	70	59	70	70	54	70	70	49	70	59	41	70	50	35	60	43	31	52	38	27	46	33	24	41	30	21
			Exposed	70	70	59	70	70	52	70	69	47	70	60	42	70	54	38	70	49	35	62	45	32	53	38	27	45	33	23	39	28	20	34	25	18	30	22	15	27	19	21
		7-20	Interior	71	71	71	71	71	71	71	71	63	71	71	57	71	63	52	71	57	47	71	52	43	70	44	36	58	38	31	50	33	27	44	29	24	38	25	21	34	22	19
			Exposed	71	63	52	71	56	46	71	50	41	71	45	37	63	41	34	57	37	31	52	34	28	44	29	24	38	25	20	33	21	18	29	19	15	25	17	14	22	15	18
		20-27	Interior	88	88	88	88	88	88	88	88	88	88	88	88	88	88	62	88	88	55	88	63	49	88	53	39	88	46	32	69	40	27	59	35	24	52	30	21	46	27	18
			Exposed	88	88	62	88	86	53	88	61	46	88	55	40	88	49	36	88	45	32	75	41	28	60	35	24	51	30	20	44	26	18	39	23	15	34	20	14	30	18	12
		27-45	Interior	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	61	97	73	50	64	57	42	55	50	35	48	43	30	43	38	26	38	34	22
			Exposed	100	100	100	100	100	74	100	100	58	100	82	51	100	62	46	63	56	41	58	52	37	49	44	30	42	37	25	36	33	21	32	28	18	28	25	16	25	22	14
	D	0-7	Interior	70	70	70	70	70	70	70	70	60	70	70	54	70	70	49	70	64	45	70	58	41	70	49	35	58	42	30	50	36	26	44	32	22	38	28	20	34	25	18
			Exposed	70	70	49	70	62	44	70	56	39	70	50	35	63	45	32	57	41	29	52	38	27	44	32	23	38	27	19	33	24	17	28	21	15	25	18	20	22	16	17
		7-20	Interior	71	71	71	71	71	59	71	64	53	71	58	48	71	53	43	71	48	40	69	44	36	57	37	31	48	32	26	42	27	23	37	24	20	32	21	17	29	19	16
			Exposed	71	52	43	71	47	39	64	42	35	58	38	31	53	34	28	48	31	26	44	29	24	37	24	20	32	21	17	27	18	15	24	16	20	21	14	17	19	19	15
		20-27	Interior	93	93	93	93	93	93	93	93	67	93	93	56	93	64	49	93	58	43	93	53	39	88	45	31	66	38	26	57	33	23	49	29	20	44	26	17	39	23	16
			Exposed	93	63	49	93	56	42	93	51	37	92	46	32	76	42	29	65	38	26	59	35	24	50	29	20	43	25	17	37	22	15	32	19	13	29	17	11	25	15	15
		27-45	Interior	105	105	105	105	105	105	105	105	105	105	105	105	105	105	62	105	105	55	105	70	49	63	56	41	54	48	34	46	42	28	41	36	24	36	32	21	32	28	18
			Exposed	105	105	61	105	105	53	105	63	47	64	57	42	58	52	37	53	47	33	48	43	30	41	37	25	35	31	21	30	27	17	27	24	15	23	21	13	21	19	11

* 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.

~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 3.00	23 sq.ft	LANDSCAPE	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
30	B	0-7	Interior	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	59	61	61	50	61	61	44	61	54	38	61	47	34	58	42	30
			Exposed	61	61	61	61	61	61	61	61	61	61	61	60	61	61	55	61	61	50	61	61	46	61	55	39	61	47	33	55	40	29	48	35	25	43	31	22	38	28	20
		7-20	Interior	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	52	61	54	45	61	47	39	61	41	34	55	36	30	49	32	26
			Exposed	61	61	61	61	61	61	61	61	59	61	61	53	61	58	48	61	53	44	61	49	40	61	41	34	54	35	29	47	31	25	41	27	22	36	24	19	32	21	17
		20-27	Interior	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	63	71	65	51	71	56	42	71	49	35	70	43	30	66	38	26
			Exposed	71	71	71	71	71	71	71	71	71	71	71	71	71	71	56	71	64	50	71	59	44	71	50	36	71	43	29	63	37	25	55	32	22	48	28	19	43	25	17
		27-45	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	81	81	64	75	75	53	69	62	45	61	54	39	54	48	34
			Exposed	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	63	82	82	56	82	62	46	59	53	38	52	46	32	45	40	27	40	36	24	35	32	21
	C	0-7	Interior	61	61	61	61	61	61	61	61	61	61	61	61	61	61	59	61	61	54	61	61	49	61	59	41	61	50	35	60	43	31	52	38	27	46	33	24	41	30	21
			Exposed	61	61	59	61	61	52	61	61	47	61	60	42	61	54	38	61	49	35	61	45	32	53	38	27	45	33	23	39	28	20	34	25	18	30	22	15	27	19	21
		7-20	Interior	61	61	61	61	61	61	61	61	61	61	61	57	61	61	52	61	57	47	61	52	43	61	44	36	58	38	31	50	33	27	44	29	24	38	25	21	34	22	19
			Exposed	61	61	52	61	56	46	61	50	41	61	45	37	61	41	34	57	37	31	52	34	28	44	29	24	38	25	20	33	21	18	29	19	15	25	17	14	22	15	18
		20-27	Interior	71	71	71	71	71	71	71	71	71	71	71	71	71	71	62	71	71	55	71	63	49	71	53	39	71	46	32	68	40	27	59	35	24	52	30	21	46	27	18
			Exposed	71	71	62	71	71	53	71	61	46	71	55	40	71	49	36	71	45	32	71	41	28	60	35	24	51	30	20	44	26	18	39	23	15	34	20	14	30	18	12
		27-45	Interior	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	79	79	61	73	73	50	64	57	42	55	50	35	48	43	30	43	38	26	38	34	22			
			Exposed	82	82	82	82	82	74	82	82	58	82	82	51	82	62	46	63	56	41	58	52	37	49	44	30	42	37	25	36	33	21	32	28	18	28	25	16	25	22	14
	D	0-7	Interior	65	65	65	65	65	65	65	65	60	65	65	54	65	65	49	65	64	45	65	58	41	65	49	35	58	42	30	50	36	26	44	32	22	38	28	20	34	25	18
			Exposed	65	65	49	65	62	44	65	56	39	65	50	35	63	45	32	57	41	29	52	38	27	44	32	23	38	27	19	33	24	17	28	21	15	25	18	20	22	16	17
		7-20	Interior	66	66	66	66	66	59	66	64	53	66	58	48	66	53	43	66	48	40	66	44	36	57	37	31	48	32	26	42	27	23	37	24	20	32	21	17	29	19	16
			Exposed	66	52	43	66	47	39	64	42	35	58	38	31	53	34	28	48	31	26	44	29	24	37	24	20	32	21	17	27	18	15	24	16	20	21	14	17	19	19	15
		20-27	Interior	75	75	75	75	75	75	75	75	67	75	75	56	75	64	49	75	58	43	75	53	39	75	45	31	66	38	26	57	33	23	49	29	20	44	26	17	39	23	16
			Exposed	75	63	49	75	56	42	75	51	37	75	46	32	75	42	29	65	38	26	59	35	24	50	29	20	43	25	17	37	22	15	32	19	13	29	17	11	25	15	15
		27-45	Interior	87	87	87	87	87	87	87	87	87	87	87	87	86	86	62	82	82	55	78	70	49	63	56	41	54	48	34	46	42	28	41	36	24	36	32	21	32	28	18
			Exposed	87	87	61	87	87	53	87	63	47	64	57	42	58	52	37	53	47	33	48	43	30	41	37	25	35	31	21	30	27	17	27	24	15	23	21	13	21	19	11
40	B	0-7	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	44	48	48	38	48	47	34	48	42	30
			Exposed	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	46	48	48	39	48	47	33	48	40	29	48	35	25	43	31	22	38	28	20
		7-20	Interior	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	45	49	47	39	49	41	34	49	36	30	47	32	26			
			Exposed	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	48	49	49	44	49	49	40	49	41	34	49	35	29	47	31	25	41	27	22	36	24	19	32	21	17
		20-27	Interior	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	51	59	56	42	59	49	35	57	43	30	55	38	26			
			Exposed	59	59	59	59	59	59	59	59	59	59	59	59	59	59	56	59	59	50	59	59	44	59	50	36	59	43	29	59	37	25	55	32	22	48	28	19	43	25	17
		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	65	65	64	62	62	53	59	59	45	56	54	39	53	48	34
			Exposed	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	63	69	69	56	69	62	46	59	53	38	52	46	32	45	40	27	40	36	24	35	32	21
	C	0-7	Interior	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	41	48	48	35	48	43	31	48	38	27	46	33	24	41	30	21
			Exposed	48	48	48	48	48	48	48	48	47	48	48	42	48	48	38	48	48	35	48	45	32	48	38	27	45	33	23	39	28	20	34	25	18	30	22	15	27	19	21
		7-20	Interior	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	47	49	49	43	49	44	36	49	38	31	48	33	27	44	29	24	38	25	21	34	22	19
			Exposed	49	49	49	49	49	46	49	49	41	49	45	37	49	41	34	49	37	31	49	34	28	44	29	24	38	25	20	33	21	18	29	19	15	25	17	14	22	15	18
		20-27	Interior	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	55	59	59	49	59	53	39	58	46	32	56	40	27	53	35	24	51	30	21	46	27	18
			Exposed	59	59	59	59	59	53	59	59	46	59	55	40	59	49	36	59	45	32	59	41	28	59	35	24	51	30	20	44	26	18	39	23	15	34	20	14	30	18	12
		27-45	Interior	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	66	66	66	64	64	61	61	61	50	57	57	42	54	50	35	48	43	30	43	38	26	38	34	22
			Exposed	69	69	69	69	69	69	69	69	58	69	69	51	69	62	46	63	56	41	58	52	37	49	44	30	42	37	25	36	33	21	32	28	18	28	25	16	25	22	14
	D	0-7	Interior	53	53	53	53	53	53	53	53	53	53	53	53	53	53	49	53	53	45	53	53	41	53	49	35	53	42	30	50	36	26	44	32	22	38	28	20	34	25	18
			Exposed	53	53	49	53	53	44	53	53	39	53	50	35	53	45	32	53	41	29	52	38	27	44	32	23	38	27	19	33	24	17	28	21	15	25	18	20	22	16	17
		7-20	Interior	54	54	54	54	54	54	54	54	53	54	54	48	54	53	43	54	48	40	54	44	36	53	37	31	48	32	26	42	27	23	37	24	20	32	21	17	29	19	16
			Exposed	54	52	43	54	47	39	54	42	35	54	38	31	53	34	28	48	31	26	44	29	24	37	24	20	32	21	17	27	18	15	24	16	20	21	14	17	19	19	15
		20-27	Interior	63	63	63	63	63	63	63	63	63	63	63	56	63	63	49	63	58	43	63	53	39	62	45	31	59	38	26	56	33	23	49	29	20	44	26	17	39	23	16
			Exposed	63	63	49	63	56	42	63	51	37	63	46	32	63	42	29	63	38	26	59	35	24	50	29	20	43	25	17	37	22	15	32	19	13	29	17	11	25	15	15
		27-45	Interior	74	74	74	74	74	74	74	74	74	72	72	72	69	69	62	66	66	55	64	64	49	60	56	41	54	48	34	46	42	28	41	36	24	36	32	21	32	28	18
			Exposed	74	74	61	74	74	53	74	63	47	64	57	42	58	52	37	53	47	33	48	43	30	41	37	25	35	31	21	30	27	17	27	24	15	23	21	13	21	19	11
50	B	0-7	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	30	39	39	30
			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	33	39	39	29	39	35	25	39	31	22	38	28	20
		7-20	Interior	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	39	40	40	34	40	36	30	40	32	26
			Exposed	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	34	40	35	29	40	31	25	40	27	22	36	24	19	32	21	17
		20-27	Interior	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	42	49	49	35	49	43	30	47	38	26						
			Exposed	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	44	49	49	36	49	43	29	49	37	25	49	32	22	48	28	19	43	25	17			
		27-45	Interior	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	59	59	59	57	57	57	54	54	53	52	52	45	50	50	39	48	48	34
			Exposed	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	59	59	59	57	53	38	52	46	32	45	40	27	40	36	24	35	32	21
	C	0-7	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	35	39	39	31	39	38	27	39	33	24	39	30	21
			Exposed	39	39	39	39	39	39	39	39	39	39	39	39	39	38	39	39	39	35	39	39	32	39	38	27	39	33	23	39	28	20	34	25	18	30	22	15	27	19	21
		7-20	Interior	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	36	40	38	31	40	33	27	39	29	24	38	25	21	34	22	19
			Exposed	40	40	40	40	40	40	40	40	40	40	40	37	40	40	34	40	37	31	40	34	28	40	29	24	38	25	20	33	21	18	29	19	15	25	17	14	22	15	18
		20-27	Interior	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	39	49	46	32	48	40	27	46	35	24	44	30	21	43	27	18
			Exposed	49	49	49	49	49	49	49	49	46	49	49	40	49	49	36	49	45	32	49	41	28	49	35	24	49	30	20	44	26	18	39	23	15	34	20	14	30	18	12
		27-45	Interior	60	60	60	60	60	60	60	60	60	60	60	60	59	59	59	57	57	57	56	56	56	53	53	50	51	51	42	48	48	35	46	43	30	43	38	26	38	34	22
			Exposed	60	60	60	60	60	60	60	60	58	60	60	51	59	59	46	57	56	41	56	52	37	49	44	30	42	37	25	36	33	21	32	28	18	28	25	16	25	22	14
	D	0-7	Interior	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	41	43	43	35	43	42	30	43	36	26	43	32	22	38	28	20	34	25	18			
			Exposed	43	43	43	43	43	43	43	43	39	43	43	35	43	43	32	43	41	29	43	38	27	43	32	23	38	27	19	33	24	17	28	21	15	25	18	20	22	16	17
		7-20	Interior	44	44	44	44	44	44	44	44	44	44	44	44	44	44	43	44	44	40	44	44	36	44	37	31	43	32	26	42	27	23	37	24	20	32	21	17	29	19	16
			Exposed	44	44	43	44	44	39	44	42	35	44	38	31	44	34	28	44	31	26	44	29	24	37	24	20	32	21	17	27	18	15	24	16	20	21	14	17	19	19	15
		20-27	Interior	54	54	54	54	54	54	54	54	54	54	54	54	54	54	49	54	54	43	54	53	39	53	45	31	51	38	26	49	33	23	47	29	20	44	26	17	39	23	16
			Exposed	54	54	49	54	54	42	54	51	37	54	46	32	54	42	29	54	38	26	54	35	24	50	29	20	43	25	17	37	22	15	32	19	13	29	17	11	25	15	15
		27-45	Interior	64	64	64	64	64	64	63	63	63	62	62	62	60	60	60	58	58	55	57	57	49	53	53	41	50	48	34	46	42	28	41	36	24	36	32	21	32	28	18
			Exposed	64	64	61	64	64	53	63	63	47	62	57	42	58	52	37	53	47	33	48	43	30	41	37	25	35	31	21	30	27	17	27	24	15	23	21	13	21	19	11

* 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.

~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 3.00	23 sq.ft	LANDSCAPE	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
60	B	0-7	Interior	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	30
			Exposed	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	29	33	33	25	33	31	22	33	28	20
		7-20	Interior	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	30	33	32	26
			Exposed	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	29	33	31	25	33	27	22	33	24	19	32	21	17
		20-27	Interior	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	35	41	41	30	41	38	26
			Exposed	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	36	41	41	29	41	37	25	41	32	22	41	28	19	41	25	17
		27-45	Interior	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	50	50	50	48	48	48	47	47	45	45	45	39	43	43	34
			Exposed	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	46	50	50	38	48	46	32	45	40	27	40	36	24	35	32	21
	C	0-7	Interior	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	31	33	33	27	33	33	24	33	30	21
			Exposed	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	32	33	33	27	33	33	23	33	28	20	33	25	18	30	22	15	27	19	21
		7-20	Interior	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	31	33	33	27	33	29	24	33	25	21	32	22	19
			Exposed	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	31	33	33	28	33	29	24	33	25	20	33	21	18	29	19	15	25	17	14	22	15	18
		20-27	Interior	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	39	41	41	32	41	40	27	40	35	24	39	30	21	38	27	18
			Exposed	41	41	41	41	41	41	41	41	41	41	41	40	41	41	36	41	41	32	41	41	28	41	35	24	41	30	20	41	26	18	39	23	15	34	20	14	30	18	12
		27-45	Interior	52	52	52	52	52	52	52	52	52	52	52	52	52	52	51	51	51	50	50	50	48	48	48	45	45	42	43	43	35	41	41	30	39	38	26	37	34	22
			Exposed	52	52	52	52	52	52	52	52	52	52	52	51	52	52	46	51	51	41	50	50	37	48	44	30	42	37	25	36	33	21	32	28	18	28	25	16	25	22	14
	D	0-7	Interior	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	35	36	36	30	36	36	26	36	32	22	36	28	20	34	25	18
			Exposed	36	36	36	36	36	36	36	36	36	36	36	35	36	36	32	36	36	29	36	36	27	36	32	23	36	27	19	33	24	17	28	21	15	25	18	20	22	16	17
		7-20	Interior	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	36	37	37	31	37	32	26	37	27	23	35	24	20	32	21	17	29	19	16
			Exposed	37	37	37	37	37	37	37	37	35	37	37	31	37	34	28	37	31	26	37	29	24	37	24	20	32	21	17	27	18	15	24	16	20	21	14	17	19	19	15
		20-27	Interior	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	43	45	45	39	45	45	31	45	38	26	43	33	23	41	29	20	40	26	17	38	23	16
			Exposed	45	45	45	45	45	45	42	45	45	37	45	45	32	45	42	29	45	38	26	45	35	24	45	29	20	43	25	17	37	22	15	32	19	13	29	17	11	25	15	15
		27-45	Interior	57	57	57	57	57	57	56	56	56	55	55	55	53	53	53	52	52	52	51	51	49	48	48	41	46	46	34	43	42	28	41	36	24	36	32	21	32	28	18
			Exposed	57	57	57	57	57	53	56	56	47	55	55	42	53	52	37	52	47	33	48	43	30	41	37	25	35	31	21	30	27	17	27	24	15	23	21	13	21	19	11
70	B	0-7	Interior	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
			Exposed	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	25	28	28	22	28	28	20
		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	26
			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	25	29	27	22	29	24	19	29	21	17
		20-27	Interior	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	30	35	35	26
			Exposed	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	29	35	35	25	35	32	22	35	28	19	35	25	17	34	27	18
		27-45	Interior	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	44	44	44	42	42	42	41	41	39	39	39	34
			Exposed	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	38	44	44	32	42	40	27	40	36	24	35	32	21	32	28	21
	C	0-7	Interior	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	27	28	28	24	28	28	21
			Exposed	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	27	28	28	23	28	28	20	28	25	18	28	22	15	27	19	21	22	16	17
		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	27	29	29	24	29	25	21	29	22	19
			Exposed	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	28	29	29	24	29	25	20	29	21	18	29	19	15	25	17	14	22	15	18
		20-27	Interior	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	32	35	35	27	35	35	24	35	30	21	34	27	18	32	24	18
			Exposed	35	35	35	35	35	35	35	35	35	35	35	32	35	35	28	35	35	24	35	30	20	35	26	18	35	23	15	34	20	14	30	18	12	30	18	12	30	18	12
		27-45	Interior	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	43	43	43	41	41	41	39	39	35	38	38	30	36	36	26	35	34	22
			Exposed	45	45	45	45	45	45	45	45	45	45	45	41	45	45	37	43	43	30	41	37	25	36	33	21	32	28	18	28	25	16	25	22	14	25	22	14	25	22	14
	D	0-7	Interior	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	26	31	31	22	31	28	20	31	25	18	31	25	18
			Exposed	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	29	31	31	27	31	31	23	31	27	19	31	24	17	28	21	15	25	18	20	22	16	17
		7-20	Interior	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	31	32	32	26	32	27	23	32	24	20	31	21	17	29	19	16
			Exposed	32	32	32	32	32	32	32	32	32	32	31	32	32	32	28	32	31	26	32	29	24	32	24	20	32	21	17	27	18	15	24	16	20	21	14	17	19	19	15
		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	31	39	38	26	39	33	23	37	29	20	36	26	17	35	23	16
			Exposed	39	39	39	39	39	39	39	39	37	39	39	32	39	39	29	39	38	26	39	35	24	39	29	20	39	25	17	37	22	15	32	19	13	29	17	11	25	15	15
		27-45	Interior	49	49	49	49	49	49	49	49	49	49	49	49	48	48	48	47	47	47	46	46	46	44	44	41	42	42	34	40	40	28	38	36	24	36	32	21	32	28	18
			Exposed	49	49	49	49	49	49	49	49	47	49	49	42	48	48	37	47	47	33	46	43	30	41	37	25	35	31	21	30	27	17	27	24	15	23	21	13	21	19	11
80	B	0-7	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	22	25	25	20
		7-20	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	22	25	24	19	25	21	17
		20-27	Interior	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	26
			Exposed	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	29	31	31	25	31	31	22	31	28	19	31	25	17
		27-45	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	38	38	38	37	37	37	36	36	34
			Exposed	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	38	39	39	32	38	38	27	37	36	24	35	32	21	32	28	21
	C	0-7	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	25	25	21
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	23	25	25	20	25	25	18	25	25	18	25	22	15	25	19	21
		7-20	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	25	25	21	25	22	19
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	25	25	20	25	21	18	25	19	15	25	17	14	22	15	18
		20-27	Interior	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	27	31	31	24	31	30	21	31	27	18	31	27	18
			Exposed	31	31	31	31	31	31	31	31	31	31	31	31	31	31	28	31	31	24	31	30	20	31	26	18	31	23	15	31	20	14	30	18	12	30	18	12	30	18	12
		27-45	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	38	38	38	36	36	35	35	35	30	33	33	26	32	32	22
			Exposed	39	39	39	39	39	39	39	39	39	39	39	39	39	39	37	39	39	30	38	37	25	36	33	21	32	28	18	28	25	16	25	22	14	25	22	14	25	22	14
	D	0-7	Interior	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	26	28	28	22	28	28	20	28	25	18	28	25	18	28	25	18
			Exposed	28	28	28	28	28	28	28	28	28	28	28	28	28	28	27	28	28	23	28	27	19	28	24	17	28	21	15	25	18	20	22	16	17	22	16	17	22	16	17
		7-20	Interior	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	26	28	27	23	28	24	20	28	21	17	27	19	16	27	19	16
			Exposed	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	26	28	28	24	28	24	20	28	21	17	27	18	15	24	16	20	21	14	17	19	19	15
		20-27	Interior	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	31	34	34	26	34	33	23	34	29	20	33	26	17	32	23	16
			Exposed	34	34	34	34	34	34	34	34	34	34	34	32	34	34	29	34	34	26	34	34	24	34	29	20	34	25	17	34	22	15	32	19	13	29	17	11	25	15	15
		27-45	Interior	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	43	43	43	42	42	42	40	40	40	38	38	34	37	37	28	35	35	24	33	32	21	32	28	18
			Exposed	44	44	44	44	44	44	44	44	44	44	44	42	44	44	37	43	43	33	42	42	30	40	37	25	35	31	21	30	27	17	27	24	15	23	21	13	21	19	11

* 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.

~~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.

UNIRAC

ASCE 7-16	II	30 ft	Ss = 3.00	23 sq.ft	LANDSCAPE	CROSS-SLOPE	NXT HD	NXT COMBO	Solarhooks CT2
Design Standard	Risk Category	Roof Height	Seismic	Module Area	Orientation	Rail Direction	Rail Type	Clamp	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
90	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	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	22	20
		7-20	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	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	19	22	21	17	22	21	17
		20-27	Interior	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	26
			Exposed	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	25	28	28	22	28	28	19	28	25	17
		27-45	Interior	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	34	34	34	33	33	33	33
			Exposed	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	32	35	35	27	34	34	24	33	32	21
	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	22	22	21
			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	20	22	22	18	22	22	15	22	19	21
		7-20	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	21	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	20	22	21	18	22	19	15	22	17	14	22	15	18
		20-27	Interior	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	27	28	28	24	28	28	21	28	27	18			
			Exposed	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	24	28	28	20	28	26	18	28	23	15	28	20	14	28	18	12			
		27-45	Interior	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	33	33	33	32	32	30	31	31	26	30	30	22			
			Exposed	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	30	35	35	25	33	33	21	32	28	18	28	25	16	25	22	14			
	D	0-7	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	22	25	25	20	25	25	18			
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	23	25	25	19	25	24	17	25	21	15	25	18	20	22	16	17
		7-20	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	23	25	24	20	25	21	17	25	19	16
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	25	24	20	25	21	17	25	18	15	24	16	20	21	14	17	19	19	15
		20-27	Interior	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	26	31	31	23	31	29	20	30	26	17	29	23	16
			Exposed	31	31	31	31	31	31	31	31	31	31	31	31	31	31	29	31	31	26	31	31	24	31	29	20	31	25	17	31	22	15	31	19	13	29	17	11	25	15	15
		27-45	Interior	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	37	37	37	36	36	34	34	34	28	33	33	24	31	31	21	30	28	18
			Exposed	39	39	39	39	39	39	39	39	39	39	39	39	39	39	37	39	39	33	39	39	30	37	37	25	35	31	21	30	27	17	27	24	15	23	21	13	21	19	11
100	B	0-7	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
		7-20	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19	20	20	17			
		20-27	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25			
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	22	25	25	19	25	25	17			
		27-45	Interior	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	31	31	31			
			Exposed	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	27	32	32	24	31	31	21			
	C	0-7	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	18	20	20	15	20	19	21
		7-20	Interior	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	19
			Exposed	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	18	20	19	15	20	17	14	20	15	18			
		20-27	Interior	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	25	25	21	25	25	18						
			Exposed	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	24	25	25	20	25	25	18	25	23	15	25	20	14	25	18	12			
		27-45	Interior	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	31	31	31	30	30	30	29	29	26	28	28	22
			Exposed	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	30	32	32	25	31	31	21	30	28	18	28	25	16	25	22	14			
	D	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	20	22	22	18			
			Exposed	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	19	22	22	17	22	21	15	22	18	20	22	16	17			
		7-20	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	20	22	21	17	22	19	16
			Exposed	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	20	22	21	17	22	18	15	22	16	20	21	14	17	19	19	15
		20-27	Interior	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	26	28	28	23	28	28	20	28	26	17	27	23	16
			Exposed	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	26	28	28	24	28	28	20	28	25	17	28	22	15	28	19	13	28	17	11	25	15	15
		27-45	Interior	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	33	33	33	32	32	28	31	31	24	29	29	21	28	28	18
			Exposed	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	33	35	35	30	35	35	25	33	31	21	30	27	17	27	24	15	23	21	13	21	19	11

#N/A

* 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.

~~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.