**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 7-10 Sec 30.4.2
- Exposure Category B, C, or D
- Basic Wind Speed = 90 – 180 mph
- Level terrain. Topographic factor, kzt = 1.0

Snow Design Assumptions

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

Seismic Design Assumptions

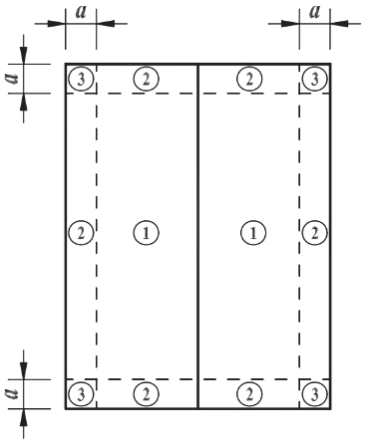
- 0.2-s Spectral Response Acceleration
- $S_S$ = 1.25 and 3 per criteria shown on individual span tables sheets.
- $S_1$ = 0.5
- Seismic site class D

Array Assumptions

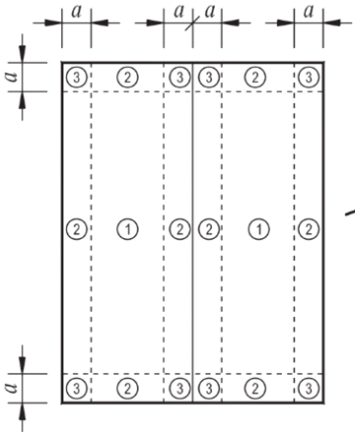
- Module orientation and Rail direction per criteria shown on individual span tables sheets.
- Maximum module dimensions of 40.1” x 67” (~19 sq.ft, 47.65 lbs) and 41” x 80” (~23 sq.ft, 58.6 lbs) per criteria shown on individual span tables sheets.
- Minimum distance between modules and roof edge is at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

# Span Tables

Zone should be considered as per ASCE 7-10, Fig. 30.4-2A to 30.4-2D

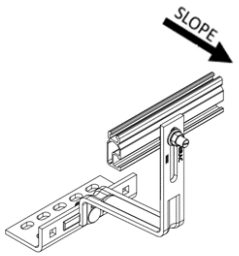



Gable Roofs θ ≤ 7°




Gable Roofs 7°< θ ≤ 45°

Rails can be installed in these possible orientations.

| | *CT5 |
|---|---|
| Y+ | Alternate orientation not allowed |
| Y- |   |

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| ASCE 7-10 | II | 30 ft | Ss = 1.25 | 18.66 sq.ft | PORTRAIT | CROSS-SLOPE | SML | PRO SERIES | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 83 | 83 | 76 | 83 | 83 | 72 | 83 | 82 | 67 | 83 | 79 | 63 | 83 | 76 | 55 | 83 | 72 | 48 | 83 | 69 | 42 | 81 | 61 | 36 | 77 | 50 | 31 | 72 | 42 | 26 | 67 | 37 | 23 | 61 | 32 | 31 | 54 | 29 | 27 |
| | | 7-27 | 83 | 83 | 75 | 83 | 83 | 71 | 83 | 82 | 67 | 83 | 79 | 63 | 83 | 76 | 56 | 83 | 73 | 51 | 83 | 70 | 46 | 83 | 64 | 38 | 79 | 53 | 33 | 75 | 45 | 28 | 71 | 39 | 25 | 66 | 34 | 33 | 60 | 30 | 29 |
| | | 27-45 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 82 | 82 | 82 | 78 | 78 | 78 | 68 | 68 | 68 | 59 | 59 | 59 | 52 | 52 | 52 | 46 | 46 | 46 | 41 | 41 | 41 | 37 | 37 | 37 |
| | C | 0-7 | 83 | 78 | 60 | 83 | 74 | 51 | 83 | 70 | 44 | 83 | 66 | 39 | 81 | 61 | 36 | 78 | 54 | 32 | 76 | 48 | 30 | 70 | 40 | 25 | 64 | 34 | 32 | 56 | 30 | 28 | 48 | 26 | 25 | 42 | 23 | 22 | 37 | 30 | 19 |
| | | 7-27 | 83 | 78 | 61 | 83 | 75 | 54 | 83 | 71 | 47 | 83 | 67 | 42 | 83 | 63 | 38 | 81 | 57 | 35 | 79 | 51 | 32 | 74 | 42 | 27 | 68 | 36 | 23 | 62 | 31 | 30 | 54 | 27 | 26 | 47 | 24 | 23 | 42 | 32 | 21 |
| | | 27-45 | 84 | 84 | 84 | 83 | 83 | 83 | 80 | 80 | 80 | 73 | 73 | 73 | 68 | 68 | 68 | 62 | 62 | 62 | 58 | 58 | 58 | 50 | 50 | 50 | 43 | 43 | 43 | 38 | 38 | 38 | 34 | 34 | 34 | 30 | 30 | 30 | 27 | 27 | 27 |
| | D | 0-7 | 83 | 72 | 47 | 83 | 67 | 41 | 82 | 63 | 36 | 79 | 55 | 33 | 76 | 49 | 30 | 73 | 43 | 27 | 69 | 40 | 25 | 63 | 33 | 32 | 54 | 29 | 27 | 46 | 25 | 24 | 40 | 33 | 21 | 35 | 29 | 18 | 31 | 26 | 16 |
| | | 7-27 | 83 | 73 | 50 | 83 | 68 | 44 | 83 | 64 | 39 | 82 | 58 | 35 | 79 | 52 | 32 | 76 | 46 | 29 | 73 | 42 | 27 | 67 | 35 | 23 | 60 | 30 | 29 | 52 | 26 | 25 | 45 | 23 | 22 | 39 | 30 | 20 | 35 | 27 | 17 |
| | | 27-45 | 82 | 82 | 82 | 76 | 76 | 76 | 69 | 69 | 69 | 63 | 63 | 63 | 58 | 58 | 58 | 53 | 53 | 53 | 49 | 49 | 49 | 42 | 42 | 42 | 37 | 37 | 37 | 32 | 32 | 32 | 29 | 29 | 29 | 26 | 26 | 26 | 23 | 23 | 23 |
| 10 | B | 0-7 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 55 | 62 | 62 | 48 | 62 | 62 | 42 | 62 | 61 | 36 | 62 | 50 | 31 | 62 | 42 | 26 | 62 | 37 | 23 | 61 | 32 | 31 | 54 | 29 | 27 |
| | | 7-27 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 56 | 63 | 63 | 51 | 63 | 63 | 46 | 63 | 63 | 38 | 63 | 53 | 33 | 63 | 45 | 28 | 59 | 39 | 25 | 55 | 34 | 33 | 52 | 30 | 29 |
| | | 27-45 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 68 | 68 | 68 | 59 | 59 | 59 | 52 | 52 | 52 | 46 | 46 | 46 | 41 | 41 | 41 | 37 | 37 | 37 |
| | C | 0-7 | 62 | 62 | 60 | 62 | 62 | 51 | 62 | 62 | 44 | 62 | 62 | 39 | 62 | 61 | 36 | 62 | 54 | 32 | 62 | 48 | 30 | 62 | 40 | 25 | 62 | 34 | 32 | 56 | 30 | 28 | 48 | 26 | 25 | 42 | 23 | 22 | 37 | 30 | 19 |
| | | 7-27 | 63 | 63 | 61 | 63 | 63 | 54 | 63 | 63 | 47 | 63 | 63 | 42 | 63 | 63 | 38 | 63 | 57 | 35 | 63 | 51 | 32 | 61 | 42 | 27 | 57 | 36 | 23 | 53 | 31 | 30 | 49 | 27 | 26 | 45 | 24 | 23 | 42 | 32 | 21 |
| | | 27-45 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 73 | 73 | 73 | 68 | 68 | 68 | 62 | 62 | 62 | 58 | 58 | 58 | 50 | 50 | 50 | 43 | 43 | 43 | 38 | 38 | 38 | 34 | 34 | 34 | 30 | 30 | 30 | 27 | 27 | 27 |
| | D | 0-7 | 62 | 62 | 47 | 62 | 62 | 41 | 62 | 62 | 36 | 62 | 55 | 33 | 62 | 49 | 30 | 62 | 43 | 27 | 62 | 40 | 25 | 62 | 33 | 32 | 54 | 29 | 27 | 46 | 25 | 24 | 40 | 33 | 21 | 35 | 29 | 18 | 31 | 26 | 16 |
| | | 7-27 | 63 | 63 | 50 | 63 | 63 | 44 | 63 | 63 | 39 | 63 | 58 | 35 | 63 | 52 | 32 | 63 | 46 | 29 | 61 | 42 | 27 | 56 | 35 | 23 | 52 | 30 | 29 | 48 | 26 | 25 | 44 | 23 | 22 | 39 | 30 | 20 | 35 | 27 | 17 |
| | | 27-45 | 81 | 81 | 81 | 76 | 76 | 76 | 69 | 69 | 69 | 63 | 63 | 63 | 58 | 58 | 58 | 53 | 53 | 53 | 49 | 49 | 49 | 42 | 42 | 42 | 37 | 37 | 37 | 32 | 32 | 32 | 29 | 29 | 29 | 26 | 26 | 26 | 23 | 23 | 23 |
| 20 | B | 0-7 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 42 | 43 | 43 | 36 | 43 | 43 | 31 | 43 | 42 | 26 | 43 | 37 | 23 | 43 | 32 | 31 | 43 | 29 | 27 |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 38 | 44 | 44 | 33 | 43 | 43 | 28 | 41 | 39 | 25 | 39 | 34 | 33 | 38 | 30 | 29 |
| | | 27-45 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 54 | 54 | 54 | 50 | 50 | 50 | 46 | 46 | 46 | 41 | 41 | 41 | 37 | 37 | 37 |
| | C | 0-7 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 39 | 43 | 43 | 36 | 43 | 43 | 32 | 43 | 43 | 30 | 43 | 40 | 25 | 43 | 34 | 32 | 43 | 30 | 28 | 43 | 26 | 25 | 41 | 23 | 22 | 37 | 30 | 19 |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 42 | 44 | 44 | 38 | 44 | 44 | 35 | 44 | 44 | 32 | 42 | 42 | 27 | 40 | 36 | 23 | 38 | 31 | 30 | 36 | 27 | 26 | 34 | 24 | 23 | 32 | 32 | 21 |
| | | 27-45 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 53 | 53 | 53 | 48 | 48 | 48 | 43 | 43 | 43 | 38 | 38 | 38 | 34 | 34 | 34 | 30 | 30 | 30 | 27 | 27 | 27 |
| | D | 0-7 | 43 | 43 | 43 | 43 | 43 | 41 | 43 | 43 | 36 | 43 | 43 | 33 | 43 | 43 | 30 | 43 | 43 | 27 | 43 | 40 | 25 | 43 | 33 | 32 | 43 | 29 | 27 | 42 | 25 | 24 | 40 | 33 | 21 | 35 | 29 | 18 | 31 | 26 | 16 |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 39 | 44 | 44 | 35 | 44 | 44 | 32 | 43 | 43 | 29 | 42 | 42 | 27 | 40 | 35 | 23 | 38 | 30 | 29 | 36 | 26 | 25 | 34 | 23 | 22 | 32 | 30 | 20 | 30 | 27 | 17 |
| | | 27-45 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 59 | 59 | 59 | 55 | 55 | 55 | 52 | 52 | 52 | 49 | 49 | 49 | 42 | 42 | 42 | 37 | 37 | 37 | 32 | 32 | 32 | 29 | 29 | 29 | 26 | 26 | 26 | 23 | 23 | 23 |
| 30 | B | 0-7 | 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 | 42 | 26 | 42 | 37 | 23 | 42 | 32 | 31 | 42 | 29 | 27 |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 38 | 44 | 44 | 33 | 43 | 43 | 28 | 41 | 39 | 25 | 39 | 34 | 33 | 38 | 30 | 29 |
| | | 27-45 | 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 | 40 | 38 | 38 | 38 | 35 | 35 | 35 |
| | C | 0-7 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 39 | 42 | 42 | 36 | 42 | 42 | 32 | 42 | 42 | 30 | 42 | 40 | 25 | 42 | 34 | 32 | 42 | 30 | 28 | 42 | 26 | 25 | 40 | 23 | 22 | 37 | 30 | 19 |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 42 | 44 | 44 | 38 | 44 | 44 | 35 | 44 | 44 | 32 | 42 | 42 | 27 | 40 | 36 | 23 | 38 | 31 | 30 | 36 | 27 | 26 | 34 | 24 | 23 | 32 | 32 | 21 |
| | | 27-45 | 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 | 40 | 38 | 38 | 38 | 35 | 35 | 35 |
| | D | 0-7 | 43 | 43 | 43 | 43 | 43 | 41 | 43 | 43 | 36 | 43 | 43 | 33 | 43 | 43 | 30 | 43 | 43 | 27 | 43 | 40 | 25 | 43 | 33 | 32 | 43 | 29 | 27 | 42 | 25 | 24 | 40 | 33 | 21 | 35 | 29 | 18 | 31 | 26 | 16 |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 39 | 44 | 44 | 35 | 44 | 44 | 32 | 43 | 43 | 29 | 42 | 42 | 27 | 40 | 35 | 23 | 38 | 30 | 29 | 36 | 26 | 25 | 34 | 23 | 22 | 32 | 30 | 20 | 30 | 27 | 17 |
| | | 27-45 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 40 | 40 | 40 | 36 | 36 | 36 | 32 | 32 | 32 | 29 | 29 | 29 | 26 | 26 | 26 | 23 | 23 | 23 |
| 40 | B | 0-7 | 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 | 31 | 35 | 35 | 26 | 35 | 35 | 23 | 35 | 32 | 31 | 35 | 29 | 27 |
| | | 7-27 | 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 | 33 | 34 | 34 | 28 | 34 | 34 | 25 | 34 | 34 | 33 | 32 | 30 | 29 |
| | | 27-45 | 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 | 32 | 32 | 32 | 32 |
| | C | 0-7 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 32 | 35 | 35 | 30 | 35 | 35 | 25 | 35 | 34 | 32 | 35 | 30 | 28 | 35 | 26 | 25 | 33 | 23 | 22 | 32 | 30 | 19 |
| | | 7-27 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 32 | 34 | 34 | 27 | 34 | 34 | 23 | 33 | 31 | 30 | 31 | 27 | 26 | 30 | 24 | 23 | 29 | 32 | 21 |
| | | 27-45 | 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 | 30 | 30 | 30 | 28 | 28 | 28 | 26 | 26 | 26 |
| | D | 0-7 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 36 | 37 | 37 | 33 | 37 | 37 | 30 | 37 | 37 | 27 | 37 | 37 | 25 | 37 | 33 | 32 | 37 | 29 | 27 | 37 | 25 | 24 | 35 | 33 | 21 | 34 | 29 | 18 | 31 | 26 | 16 |
| | | 7-27 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 35 | 37 | 37 | 32 | 37 | 37 | 29 | 37 | 37 | 27 | 36 | 35 | 23 | 34 | 30 | 29 | 33 | 26 | 25 | 31 | 23 | 22 | 29 | 30 | 20 | 28 | 27 | 17 |
| | | 27-45 | 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 | 30 | 30 | 30 | 28 | 28 | 28 | 26 | 26 | 26 | 23 | 23 | 23 |
| 50 | B | 0-7 | 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 | 31 | 28 | 28 | 27 |
| | | 7-27 | 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 | 33 | 28 | 28 | 29 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 32 | 28 | 28 | 28 | 28 | 26 | 25 | 28 | 23 | 22 | 28 | 30 | 19 |
| | | 7-27 | 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 | 30 | 27 | 27 | 26 | 26 | 24 | 23 | 25 | 32 | 21 |
| | | 27-45 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 24 | 24 | 24 |
| | D | 0-7 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 30 | 31 | 31 | 27 | 31 | 31 | 25 | 31 | 31 | 32 | 31 | 29 | 27 | 31 | 25 | 24 | 31 | 33 | 21 | 30 | 29 | 18 | 29 | 26 | 16 |
| | | 7-27 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 29 | 31 | 31 | 27 | 31 | 31 | 23 | 30 | 30 | 29 | 29 | 26 | 25 | 27 | 23 | 22 | 26 | 30 | 20 | 25 | 27 | 17 |
| | | 27-45 | 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 | 28 | 28 | 26 | 26 | 26 | 24 | 24 | 24 | 22 | 22 | 22 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 1.25 | 18.66 sq.ft | PORTRAIT | CROSS-SLOPE | SML | PRO SERIES | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 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 | 23 | 24 | 24 | 31 | 24 | 24 | 27 |
| | | 7-27 | 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 | 33 | 23 | 23 | 29 |
| | | 27-45 | 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 | 33 |
| | C | 0-7 | 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 | 32 | 24 | 24 | 28 | 24 | 24 | 25 | 24 | 23 | 22 | 24 | 30 | 19 |
| | | 7-27 | 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 | 30 | 23 | 23 | 26 | 23 | 23 | 23 | 23 | 32 | 21 |
| | | 27-45 | 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 | 33 |
| | D | 0-7 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 25 | 26 | 26 | 32 | 26 | 26 | 27 | 26 | 25 | 24 | 26 | 33 | 21 | 26 | 29 | 18 | 25 | 26 | 16 |
| | | 7-27 | 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 | 29 | 26 | 26 | 25 | 25 | 23 | 22 | 24 | 30 | 20 | 23 | 27 | 17 |
| | | 27-45 | 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 | 23 | 23 | 23 | 21 | 21 | 21 |
| 70 | B | 0-7 | 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 | 31 | 21 | 21 | 27 |
| | | 7-27 | 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 | 31 | 31 | 31 | 29 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 31 | 21 | 21 | 28 | 21 | 21 | 25 | 21 | 21 | 22 | 21 | 30 | 19 |
| | | 7-27 | 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 | 31 | 31 | 23 | 31 | 31 | 21 |
| | | 27-45 | 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 |
| | D | 0-7 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 32 | 23 | 23 | 27 | 23 | 23 | 24 | 23 | 33 | 21 | 23 | 29 | 18 | 23 | 26 | 16 |
| | | 7-27 | 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 | 25 | 34 | 34 | 22 | 34 | 30 | 20 | 34 | 27 | 17 |
| | | 27-45 | 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 | 32 | 30 | 30 | 30 |
| 80 | B | 0-7 | 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 | 27 | 18 | 18 | 27 |
| | | 7-27 | 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 | 27 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 27 | 18 | 18 | 27 | 18 | 18 | 25 | 18 | 18 | 22 | 18 | 27 | 19 |
| | | 7-27 | 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 | 27 | 27 | 23 | 27 | 27 | 21 |
| | | 27-45 | 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 |
| | D | 0-7 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 30 | 20 | 20 | 27 | 20 | 20 | 24 | 20 | 30 | 21 | 20 | 29 | 18 | 20 | 26 | 16 |
| | | 7-27 | 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 | 29 | 30 | 30 | 25 | 30 | 30 | 22 | 30 | 30 | 20 | 30 | 27 | 17 |
| | | 27-45 | 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 |
| 90 | B | 0-7 | 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 | 24 | 16 | 16 | 24 |
| | | 7-27 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 24 | 16 | 16 | 24 | 16 | 16 | 24 | 16 | 16 | 22 | 16 | 24 | 19 |
| | | 7-27 | 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 | 23 | 24 | 24 | 21 |
| | | 27-45 | 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 |
| | D | 0-7 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 27 | 18 | 18 | 27 | 18 | 18 | 24 | 18 | 27 | 21 | 18 | 27 | 18 | 18 | 26 | 16 |
| | | 7-27 | 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 | 25 | 27 | 27 | 22 | 27 | 27 | 20 | 27 | 27 | 17 |
| | | 27-45 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| 100 | B | 0-7 | 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 | 22 | 14 | 14 | 22 |
| | | 7-27 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 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 | 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 |
| | C | 0-7 | 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 | 22 | 14 | 14 | 22 | 14 | 14 | 22 | 14 | 14 | 22 | 14 | 22 | 19 |
| | | 7-27 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 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 |
| | | 27-45 | 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 |
| | D | 0-7 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 24 | 16 | 16 | 24 | 16 | 16 | 24 | 16 | 24 | 21 | 16 | 24 | 18 | 16 | 24 | 16 |
| | | 7-27 | 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 | 22 | 24 | 24 | 20 | 24 | 24 | 17 |
| | | 27-45 | 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 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 1.25 | 18.66 sq.ft | LANDSCAPE | CROSS-SLOPE | SML | PRO SERIES | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 98 | 98 | 92 | 98 | 98 | 87 | 98 | 98 | 83 | 98 | 94 | 80 | 98 | 91 | 76 | 98 | 87 | 72 | 98 | 84 | 68 | 97 | 79 | 60 | 91 | 74 | 51 | 86 | 67 | 45 | 82 | 62 | 39 | 79 | 54 | 52 | 75 | 48 | 46 |
| | | 7-27 | 99 | 99 | 90 | 99 | 99 | 86 | 99 | 99 | 83 | 99 | 95 | 79 | 99 | 91 | 77 | 99 | 88 | 74 | 99 | 85 | 70 | 99 | 80 | 64 | 95 | 75 | 55 | 90 | 69 | 48 | 86 | 64 | 42 | 82 | 58 | 56 | 78 | 51 | 50 |
| | | 27-45 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 97 | 97 | 97 | 95 | 95 | 95 | 91 | 90 | 90 | 87 | 85 | 85 | 83 | 81 | 81 | 78 | 77 | 77 | 69 | 69 | 69 | 62 | 62 | 62 |
| | C | 0-7 | 98 | 93 | 78 | 98 | 89 | 75 | 98 | 85 | 69 | 98 | 82 | 65 | 96 | 79 | 60 | 93 | 76 | 55 | 90 | 72 | 50 | 85 | 65 | 42 | 80 | 57 | 55 | 76 | 50 | 47 | 72 | 43 | 41 | 67 | 38 | 37 | 63 | 51 | 32 |
| | | 7-27 | 99 | 94 | 79 | 99 | 90 | 75 | 99 | 86 | 71 | 99 | 83 | 67 | 99 | 80 | 64 | 97 | 77 | 59 | 94 | 74 | 54 | 88 | 67 | 45 | 83 | 61 | 39 | 79 | 53 | 51 | 75 | 46 | 45 | 71 | 41 | 39 | 67 | 54 | 35 |
| | | 27-45 | 100 | 100 | 100 | 98 | 98 | 98 | 96 | 96 | 96 | 93 | 93 | 93 | 91 | 90 | 90 | 88 | 87 | 87 | 86 | 84 | 84 | 82 | 79 | 79 | 73 | 73 | 73 | 64 | 64 | 64 | 56 | 56 | 56 | 50 | 50 | 50 | 45 | 45 | 45 |
| | D | 0-7 | 98 | 87 | 71 | 98 | 83 | 66 | 97 | 79 | 61 | 94 | 76 | 55 | 90 | 73 | 50 | 87 | 68 | 46 | 85 | 65 | 42 | 80 | 56 | 53 | 75 | 48 | 46 | 70 | 42 | 40 | 65 | 55 | 35 | 59 | 48 | 31 | 53 | 43 | 27 |
| | | 7-27 | 99 | 87 | 73 | 99 | 84 | 69 | 99 | 80 | 65 | 97 | 77 | 60 | 94 | 74 | 54 | 91 | 71 | 49 | 88 | 67 | 45 | 83 | 59 | 38 | 78 | 51 | 49 | 74 | 44 | 43 | 69 | 39 | 38 | 65 | 51 | 33 | 59 | 46 | 29 |
| | | 27-45 | 97 | 97 | 97 | 94 | 94 | 94 | 91 | 90 | 90 | 89 | 87 | 87 | 86 | 84 | 84 | 84 | 81 | 81 | 82 | 79 | 79 | 71 | 71 | 71 | 62 | 62 | 62 | 54 | 54 | 54 | 48 | 48 | 48 | 43 | 43 | 43 | 39 | 39 | 39 |
| 10 | B | 0-7 | 88 | 88 | 88 | 88 | 88 | 87 | 88 | 88 | 83 | 88 | 88 | 80 | 88 | 88 | 76 | 88 | 87 | 72 | 88 | 84 | 68 | 88 | 79 | 60 | 88 | 74 | 51 | 86 | 67 | 45 | 82 | 62 | 39 | 79 | 54 | 52 | 75 | 48 | 46 |
| | | 7-27 | 88 | 88 | 88 | 88 | 88 | 86 | 88 | 88 | 83 | 88 | 88 | 79 | 88 | 88 | 77 | 88 | 88 | 74 | 88 | 85 | 70 | 88 | 80 | 64 | 88 | 75 | 55 | 88 | 69 | 48 | 86 | 64 | 42 | 82 | 58 | 56 | 78 | 51 | 50 |
| | | 27-45 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 97 | 97 | 97 | 95 | 95 | 95 | 91 | 90 | 90 | 87 | 85 | 85 | 83 | 81 | 81 | 78 | 77 | 77 | 69 | 69 | 69 | 62 | 62 | 62 |
| | C | 0-7 | 88 | 88 | 78 | 88 | 88 | 75 | 88 | 85 | 69 | 88 | 82 | 65 | 88 | 79 | 60 | 88 | 76 | 55 | 88 | 72 | 50 | 85 | 65 | 42 | 80 | 57 | 55 | 76 | 50 | 47 | 72 | 43 | 41 | 67 | 38 | 37 | 63 | 51 | 32 |
| | | 7-27 | 88 | 88 | 79 | 88 | 88 | 75 | 88 | 86 | 71 | 88 | 83 | 67 | 88 | 80 | 64 | 88 | 77 | 59 | 88 | 74 | 54 | 88 | 67 | 45 | 83 | 61 | 39 | 79 | 53 | 51 | 75 | 46 | 45 | 71 | 41 | 39 | 67 | 54 | 35 |
| | | 27-45 | 98 | 98 | 98 | 98 | 98 | 98 | 96 | 96 | 96 | 93 | 93 | 93 | 91 | 90 | 90 | 88 | 87 | 87 | 86 | 84 | 84 | 82 | 79 | 79 | 73 | 73 | 73 | 64 | 64 | 64 | 56 | 56 | 56 | 50 | 50 | 50 | 45 | 45 | 45 |
| | D | 0-7 | 88 | 87 | 71 | 88 | 83 | 66 | 88 | 79 | 61 | 88 | 76 | 55 | 88 | 73 | 50 | 87 | 68 | 46 | 85 | 65 | 42 | 80 | 56 | 53 | 75 | 48 | 46 | 70 | 42 | 40 | 65 | 55 | 35 | 59 | 48 | 31 | 53 | 43 | 27 |
| | | 7-27 | 88 | 87 | 73 | 88 | 84 | 69 | 88 | 80 | 65 | 88 | 77 | 60 | 88 | 74 | 54 | 88 | 71 | 49 | 88 | 67 | 45 | 83 | 59 | 38 | 78 | 51 | 49 | 74 | 44 | 43 | 69 | 39 | 38 | 65 | 51 | 33 | 59 | 46 | 29 |
| | | 27-45 | 97 | 97 | 97 | 94 | 94 | 94 | 91 | 90 | 90 | 89 | 87 | 87 | 86 | 84 | 84 | 84 | 81 | 81 | 82 | 79 | 79 | 71 | 71 | 71 | 62 | 62 | 62 | 54 | 54 | 54 | 48 | 48 | 48 | 43 | 43 | 43 | 39 | 39 | 39 |
| 20 | B | 0-7 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 68 | 72 | 72 | 60 | 72 | 72 | 51 | 72 | 67 | 45 | 72 | 62 | 39 | 72 | 54 | 52 | 72 | 48 | 46 |
| | | 7-27 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 70 | 73 | 73 | 64 | 73 | 73 | 55 | 72 | 69 | 48 | 69 | 64 | 42 | 66 | 58 | 56 | 63 | 51 | 50 |
| | | 27-45 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 91 | 91 | 91 | 89 | 89 | 89 | 87 | 87 | 87 | 84 | 84 | 84 | 82 | 81 | 81 | 77 | 77 | 77 | 69 | 69 | 69 | 62 | 62 | 62 |
| | C | 0-7 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 69 | 72 | 72 | 65 | 72 | 72 | 60 | 72 | 72 | 55 | 72 | 72 | 50 | 72 | 65 | 42 | 72 | 57 | 55 | 72 | 50 | 47 | 72 | 43 | 41 | 67 | 38 | 37 | 63 | 51 | 32 |
| | | 7-27 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 71 | 73 | 73 | 67 | 73 | 73 | 64 | 73 | 73 | 59 | 73 | 73 | 54 | 71 | 67 | 45 | 67 | 61 | 39 | 64 | 53 | 51 | 60 | 46 | 45 | 57 | 41 | 39 | 54 | 54 | 35 |
| | | 27-45 | 92 | 92 | 92 | 91 | 91 | 91 | 90 | 90 | 90 | 88 | 88 | 88 | 87 | 87 | 87 | 85 | 85 | 85 | 84 | 84 | 84 | 81 | 79 | 79 | 73 | 73 | 73 | 64 | 64 | 64 | 56 | 56 | 56 | 50 | 50 | 50 | 45 | 45 | 45 |
| | D | 0-7 | 72 | 72 | 71 | 72 | 72 | 66 | 72 | 72 | 61 | 72 | 72 | 55 | 72 | 72 | 50 | 72 | 68 | 46 | 72 | 65 | 42 | 72 | 56 | 53 | 72 | 48 | 46 | 70 | 42 | 40 | 65 | 55 | 35 | 59 | 48 | 31 | 53 | 43 | 27 |
| | | 7-27 | 73 | 73 | 73 | 73 | 73 | 69 | 73 | 73 | 65 | 73 | 73 | 60 | 73 | 73 | 54 | 73 | 71 | 49 | 71 | 67 | 45 | 67 | 59 | 38 | 63 | 51 | 49 | 59 | 44 | 43 | 56 | 39 | 38 | 53 | 51 | 33 | 50 | 46 | 29 |
| | | 27-45 | 92 | 92 | 92 | 90 | 90 | 90 | 88 | 88 | 88 | 86 | 86 | 86 | 85 | 84 | 84 | 83 | 81 | 81 | 82 | 79 | 79 | 71 | 71 | 71 | 62 | 62 | 62 | 54 | 54 | 54 | 48 | 48 | 48 | 43 | 43 | 43 | 39 | 39 | 39 |
| 30 | B | 0-7 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 68 | 70 | 70 | 60 | 70 | 70 | 51 | 70 | 67 | 45 | 70 | 62 | 39 | 70 | 54 | 52 | 70 | 48 | 46 |
| | | 7-27 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 70 | 73 | 73 | 64 | 73 | 73 | 55 | 72 | 69 | 48 | 69 | 64 | 42 | 66 | 58 | 56 | 63 | 51 | 50 |
| | | 27-45 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 63 | 63 | 63 | 59 | 59 | 59 |
| | C | 0-7 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 69 | 70 | 70 | 65 | 70 | 70 | 60 | 70 | 70 | 55 | 70 | 70 | 50 | 70 | 65 | 42 | 70 | 57 | 55 | 70 | 50 | 47 | 70 | 43 | 41 | 67 | 38 | 37 | 63 | 51 | 32 |
| | | 7-27 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 71 | 73 | 73 | 67 | 73 | 73 | 64 | 73 | 73 | 59 | 73 | 73 | 54 | 71 | 67 | 45 | 67 | 61 | 39 | 64 | 53 | 51 | 60 | 46 | 45 | 57 | 41 | 39 | 54 | 54 | 35 |
| | | 27-45 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 65 | 65 | 65 | 60 | 60 | 60 | 55 | 55 | 55 | 50 | 50 | 50 | 45 | 45 | 45 |
| | D | 0-7 | 72 | 72 | 71 | 72 | 72 | 66 | 72 | 72 | 61 | 72 | 72 | 55 | 72 | 72 | 50 | 72 | 68 | 46 | 72 | 65 | 42 | 72 | 56 | 53 | 72 | 48 | 46 | 70 | 42 | 40 | 65 | 55 | 35 | 59 | 48 | 31 | 53 | 43 | 27 |
| | | 7-27 | 73 | 73 | 73 | 73 | 73 | 69 | 73 | 73 | 65 | 73 | 73 | 60 | 73 | 73 | 54 | 73 | 71 | 49 | 71 | 67 | 45 | 67 | 59 | 38 | 63 | 51 | 49 | 59 | 44 | 43 | 56 | 39 | 38 | 53 | 51 | 33 | 50 | 46 | 29 |
| | | 27-45 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 66 | 66 | 66 | 60 | 60 | 60 | 54 | 54 | 54 | 48 | 48 | 48 | 43 | 43 | 43 | 39 | 39 | 39 |
| 40 | B | 0-7 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 51 | 58 | 58 | 45 | 58 | 58 | 39 | 58 | 54 | 52 | 58 | 48 | 46 |
| | | 7-27 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 55 | 57 | 57 | 48 | 57 | 57 | 42 | 56 | 56 | 56 | 54 | 51 | 50 |
| | | 27-45 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 |
| | C | 0-7 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 55 | 58 | 58 | 50 | 58 | 58 | 42 | 58 | 57 | 55 | 58 | 50 | 47 | 58 | 43 | 41 | 56 | 38 | 37 | 54 | 51 | 32 |
| | | 7-27 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 54 | 57 | 57 | 45 | 57 | 57 | 39 | 55 | 53 | 51 | 52 | 46 | 45 | 50 | 41 | 39 | 48 | 54 | 35 |
| | | 27-45 | 53 | 53 | 53 | 53 | 53 | 53 | 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 | 47 | 47 | 47 | 43 | 43 | 43 |
| | D | 0-7 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 61 | 62 | 62 | 55 | 62 | 62 | 50 | 62 | 62 | 46 | 62 | 62 | 42 | 62 | 56 | 53 | 62 | 48 | 46 | 61 | 42 | 40 | 59 | 55 | 35 | 57 | 48 | 31 | 53 | 43 | 27 |
| | | 7-27 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 60 | 62 | 62 | 54 | 62 | 62 | 49 | 62 | 62 | 45 | 61 | 59 | 38 | 58 | 51 | 49 | 55 | 44 | 43 | 52 | 39 | 38 | 49 | 51 | 33 | 47 | 46 | 29 |
| | | 27-45 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 56 | 56 | 56 | 51 | 51 | 51 | 47 | 47 | 47 | 43 | 43 | 43 | 39 | 39 | 39 |
| 50 | B | 0-7 | 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 | 45 | 48 | 48 | 39 | 48 | 48 | 52 | 48 | 48 | 46 |
| | | 7-27 | 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 | 46 | 46 | 46 | 46 | 46 | 42 | 46 | 46 | 56 | 46 | 46 | 50 |
| | | 27-45 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 |
| | C | 0-7 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 42 | 48 | 48 | 55 | 48 | 48 | 47 | 48 | 43 | 41 | 48 | 38 | 37 | 47 | 51 | 32 |
| | | 7-27 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 45 | 46 | 46 | 39 | 46 | 46 | 51 | 46 | 46 | 45 | 44 | 41 | 39 | 42 | 54 | 35 |
| | | 27-45 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 41 | 41 | 41 |
| | D | 0-7 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 50 | 53 | 53 | 46 | 53 | 53 | 42 | 53 | 53 | 53 | 53 | 48 | 46 | 53 | 42 | 40 | 51 | 55 | 35 | 50 | 48 | 31 | 48 | 43 | 27 |
| | | 7-27 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 49 | 51 | 51 | 45 | 51 | 51 | 38 | 51 | 51 | 49 | 48 | 44 | 43 | 46 | 39 | 38 | 44 | 51 | 33 | 42 | 46 | 29 |
| | | 27-45 | 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 | 47 | 47 | 47 | 44 | 44 | 44 | 40 | 40 | 40 | 37 | 37 | 37 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 1.25 | 18.66 sq.ft | LANDSCAPE | CROSS-SLOPE | SML | PRO SERIES | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 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 | 40 | 52 | 40 | 40 | 46 |
| | | 7-27 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 56 | 59 | 59 | 50 |
| | | 27-45 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 |
| | C | 0-7 | 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 | 55 | 40 | 40 | 47 | 40 | 40 | 41 | 40 | 38 | 37 | 40 | 51 | 32 |
| | | 7-27 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 51 | 59 | 59 | 45 | 59 | 59 | 39 | 59 | 54 | 35 |
| | | 27-45 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 |
| | D | 0-7 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 42 | 44 | 44 | 53 | 44 | 44 | 46 | 44 | 42 | 40 | 44 | 55 | 35 | 44 | 48 | 31 | 43 | 43 | 27 |
| | | 7-27 | 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 | 43 | 49 | 43 | 43 | 43 | 41 | 39 | 38 | 40 | 51 | 33 | 38 | 46 | 29 |
| | | 27-45 | 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 | 41 | 38 | 38 | 38 | 36 | 36 | 36 |
| 70 | B | 0-7 | 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 | 52 | 35 | 35 | 46 |
| | | 7-27 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 50 |
| | | 27-45 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 |
| | C | 0-7 | 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 | 52 | 35 | 35 | 47 | 35 | 35 | 41 | 35 | 35 | 37 | 35 | 51 | 32 |
| | | 7-27 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 45 | 51 | 51 | 39 | 51 | 51 | 35 |
| | | 27-45 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 |
| | D | 0-7 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 53 | 38 | 38 | 46 | 38 | 38 | 40 | 38 | 55 | 35 | 38 | 48 | 31 | 38 | 43 | 27 |
| | | 7-27 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 49 | 56 | 56 | 43 | 56 | 56 | 38 | 56 | 51 | 33 | 56 | 46 | 29 |
| | | 27-45 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 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 |
| 80 | B | 0-7 | 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 | 46 | 30 | 30 | 46 |
| | | 7-27 | 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 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 |
| | | 27-45 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 |
| | C | 0-7 | 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 | 46 | 30 | 30 | 46 | 30 | 30 | 41 | 30 | 30 | 37 | 30 | 46 | 32 |
| | | 7-27 | 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 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 39 | 45 | 45 | 35 |
| | | 27-45 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 |
| | D | 0-7 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 51 | 34 | 34 | 46 | 34 | 34 | 40 | 34 | 51 | 35 | 34 | 48 | 31 | 34 | 43 | 27 |
| | | 7-27 | 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 | 49 | 50 | 50 | 43 | 50 | 50 | 38 | 50 | 50 | 33 | 50 | 46 | 29 |
| | | 27-45 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| 90 | B | 0-7 | 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 | 41 | 27 | 27 | 41 |
| | | 7-27 | 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 | 41 | 41 | 41 | 41 | 41 | 41 | 41 |
| | | 27-45 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 |
| | C | 0-7 | 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 | 41 | 27 | 27 | 41 | 27 | 27 | 41 | 27 | 27 | 37 | 27 | 41 | 32 |
| | | 7-27 | 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 | 41 | 41 | 41 | 39 | 41 | 41 | 35 |
| | | 27-45 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 |
| | D | 0-7 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 45 | 30 | 30 | 45 | 30 | 30 | 40 | 30 | 45 | 35 | 30 | 45 | 31 | 30 | 43 | 27 |
| | | 7-27 | 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 | 45 | 45 | 43 | 45 | 45 | 38 | 45 | 45 | 33 | 45 | 45 | 29 |
| | | 27-45 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 |
| 100 | B | 0-7 | 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 | 37 | 24 | 24 | 37 |
| | | 7-27 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| | | 27-45 | 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 | 35 | 35 | 35 | 35 |
| | C | 0-7 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 37 | 24 | 24 | 37 | 24 | 24 | 37 | 24 | 24 | 37 | 24 | 24 | 37 | 24 | 37 | 32 |
| | | 7-27 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 35 |
| | | 27-45 | 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 | 35 | 35 | 35 | 35 |
| | D | 0-7 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 41 | 27 | 27 | 41 | 27 | 27 | 40 | 27 | 41 | 35 | 27 | 41 | 31 | 27 | 41 | 27 |
| | | 7-27 | 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 | 38 | 41 | 41 | 33 | 41 | 41 | 29 |
| | | 27-45 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 1.25 | 22.78 sq.ft | PORTRAIT | CROSS-SLOPE | SML | PRO SERIES | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 74 | 74 | 72 | 74 | 74 | 67 | 74 | 74 | 62 | 74 | 74 | 53 | 74 | 71 | 46 | 74 | 67 | 40 | 74 | 63 | 35 | 74 | 51 | 30 | 71 | 42 | 26 | 66 | 35 | 22 | 59 | 31 | 29 | 51 | 27 | 26 | 45 | 24 | 23 |
| | | 7-27 | 74 | 74 | 69 | 74 | 74 | 65 | 74 | 74 | 59 | 74 | 74 | 53 | 74 | 71 | 47 | 74 | 68 | 42 | 74 | 64 | 38 | 74 | 53 | 32 | 74 | 44 | 27 | 70 | 37 | 24 | 65 | 32 | 31 | 58 | 29 | 28 | 51 | 25 | 25 |
| | | 27-45 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 70 | 70 | 70 | 65 | 65 | 65 | 57 | 57 | 57 | 50 | 50 | 50 | 44 | 44 | 44 | 39 | 39 | 39 | 34 | 34 | 34 | 31 | 31 | 31 |
| | C | 0-7 | 74 | 73 | 51 | 74 | 69 | 43 | 74 | 64 | 37 | 74 | 58 | 33 | 74 | 51 | 30 | 73 | 45 | 27 | 70 | 40 | 25 | 64 | 33 | 32 | 54 | 28 | 27 | 47 | 25 | 23 | 40 | 32 | 20 | 35 | 29 | 18 | 31 | 25 | 16 |
| | | 7-27 | 74 | 74 | 51 | 74 | 69 | 45 | 74 | 65 | 40 | 74 | 60 | 35 | 74 | 53 | 32 | 74 | 48 | 29 | 74 | 43 | 27 | 68 | 35 | 23 | 61 | 30 | 29 | 52 | 26 | 25 | 45 | 23 | 22 | 39 | 30 | 19 | 35 | 27 | 17 |
| | | 27-45 | 76 | 76 | 76 | 73 | 73 | 73 | 67 | 67 | 67 | 61 | 61 | 61 | 57 | 57 | 57 | 52 | 52 | 52 | 48 | 48 | 48 | 42 | 42 | 42 | 36 | 36 | 36 | 32 | 32 | 32 | 28 | 28 | 28 | 25 | 25 | 25 | 23 | 23 | 23 |
| | D | 0-7 | 74 | 66 | 39 | 74 | 60 | 34 | 74 | 52 | 30 | 74 | 46 | 27 | 70 | 41 | 25 | 67 | 36 | 23 | 64 | 33 | 31 | 53 | 28 | 27 | 45 | 24 | 23 | 39 | 31 | 20 | 33 | 27 | 17 | 29 | 24 | 15 | 26 | 21 | 13 |
| | | 7-27 | 74 | 67 | 42 | 74 | 62 | 37 | 74 | 55 | 33 | 74 | 48 | 30 | 74 | 43 | 27 | 71 | 39 | 24 | 67 | 35 | 34 | 60 | 29 | 29 | 50 | 25 | 24 | 43 | 33 | 21 | 37 | 29 | 19 | 33 | 25 | 16 | 29 | 23 | 15 |
| | | 27-45 | 69 | 69 | 69 | 63 | 63 | 63 | 58 | 58 | 58 | 53 | 53 | 53 | 49 | 49 | 49 | 45 | 45 | 45 | 41 | 41 | 41 | 35 | 35 | 35 | 31 | 31 | 31 | 27 | 27 | 27 | 24 | 24 | 24 | 21 | 21 | 21 | 19 | 29 | 29 |
| 10 | B | 0-7 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 46 | 52 | 52 | 40 | 52 | 52 | 35 | 52 | 51 | 30 | 52 | 42 | 26 | 52 | 35 | 22 | 52 | 31 | 29 | 51 | 27 | 26 | 45 | 24 | 23 |
| | | 7-27 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 47 | 52 | 52 | 42 | 52 | 52 | 38 | 52 | 52 | 32 | 52 | 44 | 27 | 52 | 37 | 24 | 49 | 32 | 31 | 46 | 29 | 28 | 43 | 25 | 25 |
| | | 27-45 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 57 | 57 | 57 | 50 | 50 | 50 | 44 | 44 | 44 | 39 | 39 | 39 | 34 | 34 | 34 | 31 | 31 | 31 |
| | C | 0-7 | 52 | 52 | 51 | 52 | 52 | 43 | 52 | 52 | 37 | 52 | 52 | 33 | 52 | 51 | 30 | 52 | 45 | 27 | 52 | 40 | 25 | 52 | 33 | 32 | 52 | 28 | 27 | 47 | 25 | 23 | 40 | 32 | 20 | 35 | 29 | 18 | 31 | 25 | 16 |
| | | 7-27 | 52 | 52 | 51 | 52 | 52 | 45 | 52 | 52 | 40 | 52 | 52 | 35 | 52 | 52 | 32 | 52 | 48 | 29 | 52 | 43 | 27 | 51 | 35 | 23 | 47 | 30 | 29 | 44 | 26 | 25 | 41 | 23 | 22 | 38 | 30 | 19 | 35 | 27 | 17 |
| | | 27-45 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 61 | 61 | 61 | 57 | 57 | 57 | 52 | 52 | 52 | 48 | 48 | 48 | 42 | 42 | 42 | 36 | 36 | 36 | 32 | 32 | 32 | 28 | 28 | 28 | 25 | 25 | 25 | 23 | 23 | 23 |
| | D | 0-7 | 52 | 52 | 39 | 52 | 52 | 34 | 52 | 52 | 30 | 52 | 46 | 27 | 52 | 41 | 25 | 52 | 36 | 23 | 52 | 33 | 31 | 52 | 28 | 27 | 45 | 24 | 23 | 39 | 31 | 20 | 33 | 27 | 17 | 29 | 24 | 15 | 26 | 21 | 13 |
| | | 7-27 | 52 | 52 | 42 | 52 | 52 | 37 | 52 | 52 | 33 | 52 | 48 | 30 | 52 | 43 | 27 | 52 | 39 | 24 | 51 | 35 | 34 | 47 | 29 | 29 | 43 | 25 | 24 | 40 | 33 | 21 | 37 | 29 | 19 | 33 | 25 | 16 | 29 | 23 | 15 |
| | | 27-45 | 68 | 68 | 68 | 63 | 63 | 63 | 58 | 58 | 58 | 53 | 53 | 53 | 49 | 49 | 49 | 45 | 45 | 45 | 41 | 41 | 41 | 35 | 35 | 35 | 31 | 31 | 31 | 27 | 27 | 27 | 24 | 24 | 24 | 21 | 21 | 21 | 19 | 29 | 29 |
| 20 | B | 0-7 | 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 | 35 | 22 | 36 | 31 | 29 | 36 | 27 | 26 | 36 | 24 | 23 |
| | | 7-27 | 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 | 36 | 27 | 36 | 36 | 24 | 34 | 32 | 31 | 33 | 29 | 28 | 31 | 25 | 25 |
| | | 27-45 | 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 | 42 | 42 | 42 | 38 | 38 | 38 | 34 | 34 | 34 | 31 | 31 | 31 |
| | C | 0-7 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 33 | 36 | 36 | 30 | 36 | 36 | 27 | 36 | 36 | 25 | 36 | 33 | 32 | 36 | 28 | 27 | 36 | 25 | 23 | 36 | 32 | 20 | 35 | 29 | 18 | 31 | 25 | 16 |
| | | 7-27 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 35 | 36 | 36 | 32 | 36 | 36 | 29 | 36 | 36 | 27 | 35 | 35 | 23 | 33 | 30 | 29 | 32 | 26 | 25 | 30 | 23 | 22 | 29 | 30 | 19 | 27 | 27 | 17 |
| | | 27-45 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 45 | 45 | 45 | 40 | 40 | 40 | 36 | 36 | 36 | 32 | 32 | 32 | 28 | 28 | 28 | 25 | 25 | 25 | 23 | 23 | 23 |
| | D | 0-7 | 36 | 36 | 36 | 36 | 36 | 34 | 36 | 36 | 30 | 36 | 36 | 27 | 36 | 36 | 25 | 36 | 36 | 23 | 36 | 33 | 31 | 36 | 28 | 27 | 36 | 24 | 23 | 35 | 31 | 20 | 33 | 27 | 17 | 29 | 24 | 15 | 26 | 21 | 13 |
| | | 7-27 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 33 | 36 | 36 | 30 | 36 | 36 | 27 | 36 | 36 | 24 | 35 | 35 | 34 | 33 | 29 | 29 | 31 | 25 | 24 | 30 | 33 | 21 | 28 | 29 | 19 | 26 | 25 | 16 | 25 | 23 | 15 |
| | | 27-45 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 49 | 49 | 49 | 46 | 46 | 46 | 44 | 44 | 44 | 41 | 41 | 41 | 35 | 35 | 35 | 31 | 31 | 31 | 27 | 27 | 27 | 24 | 24 | 24 | 21 | 21 | 21 | 19 | 29 | 29 |
| 30 | B | 0-7 | 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 | 35 | 35 | 22 | 35 | 31 | 29 | 35 | 27 | 26 | 35 | 24 | 23 |
| | | 7-27 | 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 | 36 | 27 | 36 | 36 | 24 | 34 | 32 | 31 | 33 | 29 | 28 | 31 | 25 | 25 |
| | | 27-45 | 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 | 32 | 32 | 32 | 29 | 29 | 29 |
| | C | 0-7 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 33 | 35 | 35 | 30 | 35 | 35 | 27 | 35 | 35 | 25 | 35 | 33 | 32 | 35 | 28 | 27 | 35 | 25 | 23 | 35 | 32 | 20 | 34 | 29 | 18 | 31 | 25 | 16 |
| | | 7-27 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 35 | 36 | 36 | 32 | 36 | 36 | 29 | 36 | 36 | 27 | 35 | 35 | 23 | 33 | 30 | 29 | 32 | 26 | 25 | 30 | 23 | 22 | 29 | 30 | 19 | 27 | 27 | 17 |
| | | 27-45 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 33 | 33 | 33 | 30 | 30 | 30 | 27 | 27 | 27 | 25 | 25 | 25 | 23 | 23 | 23 |
| | D | 0-7 | 36 | 36 | 36 | 36 | 36 | 34 | 36 | 36 | 30 | 36 | 36 | 27 | 36 | 36 | 25 | 36 | 36 | 23 | 36 | 33 | 31 | 36 | 28 | 27 | 36 | 24 | 23 | 35 | 31 | 20 | 33 | 27 | 17 | 29 | 24 | 15 | 26 | 21 | 13 |
| | | 7-27 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 33 | 36 | 36 | 30 | 36 | 36 | 27 | 36 | 36 | 24 | 35 | 35 | 34 | 33 | 29 | 29 | 31 | 25 | 24 | 30 | 33 | 21 | 28 | 29 | 19 | 26 | 25 | 16 | 25 | 23 | 15 |
| | | 27-45 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 33 | 33 | 33 | 30 | 30 | 30 | 27 | 27 | 27 | 24 | 24 | 24 | 21 | 21 | 21 | 19 | 29 | 29 |
| 40 | B | 0-7 | 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 | 22 | 29 | 29 | 29 | 29 | 27 | 26 | 29 | 24 | 23 |
| | | 7-27 | 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 | 31 | 28 | 28 | 28 | 27 | 25 | 25 |
| | | 27-45 | 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 |
| | C | 0-7 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 27 | 29 | 29 | 25 | 29 | 29 | 32 | 29 | 28 | 27 | 29 | 25 | 23 | 29 | 32 | 20 | 28 | 29 | 18 | 27 | 25 | 16 |
| | | 7-27 | 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 | 29 | 27 | 26 | 25 | 26 | 23 | 22 | 25 | 30 | 19 | 24 | 27 | 17 |
| | | 27-45 | 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 | 25 | 25 | 25 | 23 | 23 | 23 | 22 | 22 | 22 |
| | D | 0-7 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 30 | 31 | 31 | 27 | 31 | 31 | 25 | 31 | 31 | 23 | 31 | 31 | 31 | 31 | 28 | 27 | 31 | 24 | 23 | 31 | 31 | 20 | 30 | 27 | 17 | 29 | 24 | 15 | 26 | 21 | 13 |
| | | 7-27 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 30 | 31 | 31 | 27 | 31 | 31 | 24 | 31 | 31 | 34 | 30 | 29 | 29 | 29 | 25 | 24 | 27 | 33 | 21 | 26 | 29 | 19 | 25 | 25 | 16 | 23 | 23 | 15 |
| | | 27-45 | 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 | 28 | 28 | 25 | 25 | 25 | 23 | 23 | 23 | 21 | 21 | 21 | 19 | 29 | 29 |
| 50 | B | 0-7 | 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 | 29 | 24 | 24 | 26 | 24 | 24 | 23 |
| | | 7-27 | 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 | 31 | 35 | 35 | 28 | 35 | 35 | 25 |
| | | 27-45 | 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 | 33 |
| | C | 0-7 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 32 | 24 | 24 | 27 | 24 | 24 | 23 | 24 | 32 | 20 | 24 | 29 | 18 | 23 | 25 | 16 |
| | | 7-27 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 34 | 35 | 35 | 29 | 35 | 35 | 25 | 35 | 34 | 22 | 35 | 30 | 19 | 35 | 27 | 17 |
| | | 27-45 | 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 | 30 | 30 |
| | D | 0-7 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 25 | 26 | 26 | 23 | 26 | 26 | 31 | 26 | 26 | 27 | 26 | 24 | 23 | 26 | 31 | 20 | 26 | 27 | 17 | 25 | 24 | 15 | 24 | 21 | 13 |
| | | 7-27 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 24 | 25 | 25 | 34 | 25 | 25 | 29 | 25 | 25 | 24 | 24 | 33 | 21 | 23 | 29 | 19 | 22 | 25 | 16 | 21 | 23 | 15 |
| | | 27-45 | 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 | 22 | 22 | 22 | 20 | 20 | 20 | 19 | 28 | 28 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 1.25 | 22.78 sq.ft | PORTRAIT | CROSS-SLOPE | SML | PRO SERIES | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 29 | 20 | 20 | 26 | 20 | 20 | 23 |
| | | 7-27 | 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 | 30 | 30 | 25 |
| | | 27-45 | 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 |
| | C | 0-7 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 30 | 20 | 20 | 27 | 20 | 20 | 23 | 20 | 30 | 20 | 20 | 29 | 18 | 20 | 25 | 16 |
| | | 7-27 | 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 | 29 | 30 | 30 | 25 | 30 | 30 | 22 | 30 | 30 | 19 | 30 | 27 | 17 |
| | | 27-45 | 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 |
| | D | 0-7 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 31 | 22 | 22 | 27 | 22 | 22 | 23 | 22 | 31 | 20 | 22 | 27 | 17 | 22 | 24 | 15 | 21 | 21 | 13 |
| | | 7-27 | 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 | 32 | 21 | 33 | 29 | 19 | 33 | 25 | 16 | 33 | 23 | 15 |
| | | 27-45 | 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 | 29 | 29 | 29 | 27 | 27 | 27 |
| 70 | B | 0-7 | 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 | 26 | 17 | 17 | 26 | 17 | 17 | 23 |
| | | 7-27 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 25 |
| | | 27-45 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| | C | 0-7 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 26 | 17 | 17 | 26 | 17 | 17 | 23 | 17 | 26 | 20 | 17 | 26 | 18 | 17 | 25 | 16 |
| | | 7-27 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 25 | 26 | 26 | 22 | 26 | 26 | 19 | 26 | 26 | 17 |
| | | 27-45 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| | D | 0-7 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 29 | 19 | 19 | 27 | 19 | 19 | 23 | 19 | 29 | 20 | 19 | 27 | 17 | 19 | 24 | 15 | 19 | 21 | 13 |
| | | 7-27 | 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 | 21 | 28 | 28 | 19 | 28 | 25 | 16 | 28 | 23 | 15 |
| | | 27-45 | 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 | 25 | 25 | 25 |
| 80 | B | 0-7 | 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 | 23 | 15 | 15 | 23 | 15 | 15 | 23 |
| | | 7-27 | 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 |
| | | 27-45 | 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 |
| | C | 0-7 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 23 | 15 | 15 | 23 | 15 | 15 | 23 | 15 | 23 | 20 | 15 | 23 | 18 | 15 | 23 | 16 |
| | | 7-27 | 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 | 22 | 23 | 23 | 19 | 23 | 23 | 17 |
| | | 27-45 | 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 |
| | D | 0-7 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 25 | 17 | 17 | 25 | 17 | 17 | 23 | 17 | 25 | 20 | 17 | 25 | 17 | 17 | 24 | 15 | 17 | 21 | 13 |
| | | 7-27 | 25 | 25 | 25 | 25 | 25 | 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 | 19 | 25 | 25 | 16 | 25 | 23 | 15 |
| | | 27-45 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| 90 | B | 0-7 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 20 | 13 | 13 | 20 | 13 | 13 | 20 |
| | | 7-27 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | 27-45 | 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 |
| | C | 0-7 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 20 | 13 | 13 | 20 | 13 | 13 | 20 | 13 | 20 | 20 | 13 | 20 | 18 | 13 | 20 | 16 |
| | | 7-27 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 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 |
| | | 27-45 | 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 |
| | D | 0-7 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 23 | 15 | 15 | 23 | 15 | 15 | 23 | 15 | 23 | 20 | 15 | 23 | 17 | 15 | 23 | 15 | 15 | 21 | 13 |
| | | 7-27 | 22 | 22 | 22 | 22 | 22 | 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 | 22 | 22 | 16 | 22 | 22 | 15 |
| | | 27-45 | 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 |
| 100 | B | 0-7 | 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 | 18 | 12 | 12 | 18 | 12 | 12 | 18 |
| | | 7-27 | 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 | 18 |
| | | 27-45 | 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 |
| | C | 0-7 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 18 | 12 | 12 | 18 | 12 | 12 | 18 | 12 | 18 | 18 | 12 | 18 | 18 | 12 | 18 | 16 |
| | | 7-27 | 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 | 17 |
| | | 27-45 | 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 |
| | D | 0-7 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 20 | 13 | 13 | 20 | 13 | 13 | 20 | 13 | 20 | 20 | 13 | 20 | 17 | 13 | 20 | 15 | 13 | 20 | 13 |
| | | 7-27 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 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 | 15 |
| | | 27-45 | 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 |

* 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 7-10 | II | 30 ft | Ss = 1.25 | 22.78 sq.ft | LANDSCAPE | CROSS-SLOPE | SML | PRO SERIES | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 98 | 98 | 91 | 98 | 98 | 86 | 98 | 98 | 82 | 98 | 94 | 79 | 98 | 90 | 76 | 98 | 86 | 71 | 98 | 83 | 67 | 96 | 78 | 59 | 90 | 73 | 50 | 86 | 66 | 44 | 82 | 60 | 57 | 78 | 53 | 51 | 75 | 47 | 45 |
| | | 7-27 | 98 | 98 | 89 | 98 | 98 | 85 | 98 | 98 | 82 | 98 | 94 | 79 | 98 | 90 | 76 | 98 | 87 | 73 | 98 | 84 | 69 | 98 | 79 | 63 | 94 | 75 | 54 | 89 | 69 | 47 | 85 | 64 | 62 | 81 | 56 | 55 | 78 | 50 | 48 |
| | | 27-45 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 96 | 96 | 96 | 94 | 94 | 94 | 90 | 89 | 89 | 86 | 84 | 84 | 83 | 80 | 80 | 76 | 76 | 76 | 68 | 68 | 68 | 61 | 61 | 61 |
| | C | 0-7 | 98 | 92 | 78 | 98 | 88 | 74 | 98 | 84 | 68 | 98 | 81 | 64 | 96 | 78 | 59 | 92 | 75 | 53 | 89 | 71 | 49 | 84 | 64 | 41 | 80 | 56 | 53 | 76 | 49 | 46 | 71 | 42 | 41 | 66 | 56 | 36 | 61 | 50 | 32 |
| | | 7-27 | 98 | 93 | 78 | 98 | 89 | 75 | 98 | 85 | 70 | 98 | 82 | 66 | 98 | 79 | 63 | 96 | 76 | 57 | 93 | 73 | 53 | 87 | 66 | 44 | 83 | 59 | 57 | 79 | 51 | 50 | 75 | 45 | 44 | 70 | 60 | 39 | 66 | 53 | 34 |
| | | 27-45 | 99 | 99 | 99 | 98 | 98 | 98 | 95 | 95 | 95 | 92 | 92 | 92 | 90 | 89 | 89 | 88 | 86 | 86 | 85 | 83 | 83 | 81 | 78 | 78 | 71 | 71 | 71 | 62 | 62 | 62 | 55 | 55 | 55 | 49 | 49 | 49 | 44 | 44 | 44 |
| | D | 0-7 | 98 | 86 | 70 | 98 | 82 | 65 | 97 | 79 | 60 | 93 | 76 | 54 | 90 | 72 | 49 | 87 | 68 | 45 | 84 | 64 | 41 | 79 | 55 | 52 | 75 | 47 | 45 | 69 | 61 | 39 | 65 | 54 | 34 | 58 | 47 | 30 | 51 | 42 | 27 |
| | | 7-27 | 98 | 87 | 72 | 98 | 83 | 68 | 98 | 80 | 64 | 97 | 77 | 58 | 93 | 74 | 53 | 90 | 70 | 48 | 87 | 66 | 44 | 82 | 58 | 56 | 78 | 50 | 48 | 73 | 43 | 42 | 68 | 57 | 37 | 64 | 50 | 32 | 57 | 45 | 29 |
| | | 27-45 | 96 | 96 | 96 | 93 | 93 | 93 | 90 | 90 | 90 | 88 | 86 | 86 | 86 | 83 | 83 | 83 | 81 | 81 | 81 | 78 | 78 | 70 | 70 | 70 | 61 | 61 | 61 | 53 | 53 | 53 | 47 | 47 | 47 | 42 | 42 | 42 | 38 | 57 | 57 |
| 10 | B | 0-7 | 87 | 87 | 87 | 87 | 87 | 86 | 87 | 87 | 82 | 87 | 87 | 79 | 87 | 87 | 76 | 87 | 86 | 71 | 87 | 83 | 67 | 87 | 78 | 59 | 87 | 73 | 50 | 86 | 66 | 44 | 82 | 60 | 57 | 78 | 53 | 51 | 75 | 47 | 45 |
| | | 7-27 | 87 | 87 | 87 | 87 | 87 | 85 | 87 | 87 | 82 | 87 | 87 | 79 | 87 | 87 | 76 | 87 | 87 | 73 | 87 | 84 | 69 | 87 | 79 | 63 | 87 | 75 | 54 | 87 | 69 | 47 | 85 | 64 | 62 | 81 | 56 | 55 | 78 | 50 | 48 |
| | | 27-45 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 96 | 96 | 96 | 94 | 94 | 94 | 90 | 89 | 89 | 86 | 84 | 84 | 83 | 80 | 80 | 76 | 76 | 76 | 68 | 68 | 68 | 61 | 61 | 61 |
| | C | 0-7 | 87 | 87 | 78 | 87 | 87 | 74 | 87 | 84 | 68 | 87 | 81 | 64 | 87 | 78 | 59 | 87 | 75 | 53 | 87 | 71 | 49 | 84 | 64 | 41 | 80 | 56 | 53 | 76 | 49 | 46 | 71 | 42 | 41 | 66 | 56 | 36 | 61 | 50 | 32 |
| | | 7-27 | 87 | 87 | 78 | 87 | 87 | 75 | 87 | 85 | 70 | 87 | 82 | 66 | 87 | 79 | 63 | 87 | 76 | 57 | 87 | 73 | 53 | 87 | 66 | 44 | 83 | 59 | 57 | 79 | 51 | 50 | 75 | 45 | 44 | 70 | 60 | 39 | 66 | 53 | 34 |
| | | 27-45 | 98 | 98 | 98 | 97 | 97 | 97 | 95 | 95 | 95 | 92 | 92 | 92 | 90 | 89 | 89 | 88 | 86 | 86 | 85 | 83 | 83 | 81 | 78 | 78 | 71 | 71 | 71 | 62 | 62 | 62 | 55 | 55 | 55 | 49 | 49 | 49 | 44 | 44 | 44 |
| | D | 0-7 | 87 | 86 | 70 | 87 | 82 | 65 | 87 | 79 | 60 | 87 | 76 | 54 | 87 | 72 | 49 | 87 | 68 | 45 | 84 | 64 | 41 | 79 | 55 | 52 | 75 | 47 | 45 | 69 | 61 | 39 | 65 | 54 | 34 | 58 | 47 | 30 | 51 | 42 | 27 |
| | | 7-27 | 87 | 87 | 72 | 87 | 83 | 68 | 87 | 80 | 64 | 87 | 77 | 58 | 87 | 74 | 53 | 87 | 70 | 48 | 87 | 66 | 44 | 82 | 58 | 56 | 78 | 50 | 48 | 73 | 43 | 42 | 68 | 57 | 37 | 64 | 50 | 32 | 57 | 45 | 29 |
| | | 27-45 | 96 | 96 | 96 | 93 | 93 | 93 | 90 | 90 | 90 | 88 | 86 | 86 | 86 | 83 | 83 | 83 | 81 | 81 | 81 | 78 | 78 | 70 | 70 | 70 | 61 | 61 | 61 | 53 | 53 | 53 | 47 | 47 | 47 | 42 | 42 | 42 | 38 | 57 | 57 |
| 20 | B | 0-7 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 67 | 71 | 71 | 59 | 71 | 71 | 50 | 71 | 66 | 44 | 71 | 60 | 57 | 71 | 53 | 51 | 71 | 47 | 45 |
| | | 7-27 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 69 | 71 | 71 | 63 | 71 | 71 | 54 | 70 | 69 | 47 | 67 | 64 | 62 | 64 | 56 | 55 | 62 | 50 | 48 |
| | | 27-45 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 86 | 86 | 86 | 84 | 84 | 84 | 81 | 80 | 80 | 75 | 75 | 75 | 68 | 68 | 68 | 61 | 61 | 61 |
| | C | 0-7 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 68 | 71 | 71 | 64 | 71 | 71 | 59 | 71 | 71 | 53 | 71 | 71 | 49 | 71 | 64 | 41 | 71 | 56 | 53 | 71 | 49 | 46 | 71 | 42 | 41 | 66 | 56 | 36 | 61 | 50 | 32 |
| | | 7-27 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 70 | 71 | 71 | 66 | 71 | 71 | 63 | 71 | 71 | 57 | 71 | 71 | 53 | 69 | 66 | 44 | 65 | 59 | 57 | 62 | 51 | 50 | 59 | 45 | 44 | 56 | 60 | 39 | 53 | 53 | 34 |
| | | 27-45 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 88 | 88 | 88 | 86 | 86 | 86 | 85 | 85 | 85 | 83 | 83 | 83 | 79 | 78 | 78 | 71 | 71 | 71 | 62 | 62 | 62 | 55 | 55 | 55 | 49 | 49 | 49 | 44 | 44 | 44 |
| | D | 0-7 | 71 | 71 | 70 | 71 | 71 | 65 | 71 | 71 | 60 | 71 | 71 | 54 | 71 | 71 | 49 | 71 | 68 | 45 | 71 | 64 | 41 | 71 | 55 | 52 | 71 | 47 | 45 | 69 | 61 | 39 | 65 | 54 | 34 | 58 | 47 | 30 | 51 | 42 | 27 |
| | | 7-27 | 71 | 71 | 71 | 71 | 71 | 68 | 71 | 71 | 64 | 71 | 71 | 58 | 71 | 71 | 53 | 71 | 70 | 48 | 69 | 66 | 44 | 65 | 58 | 56 | 61 | 50 | 48 | 58 | 43 | 42 | 55 | 57 | 37 | 52 | 50 | 32 | 49 | 45 | 29 |
| | | 27-45 | 91 | 91 | 91 | 89 | 89 | 89 | 87 | 87 | 87 | 86 | 86 | 86 | 84 | 83 | 83 | 82 | 81 | 81 | 81 | 78 | 78 | 70 | 70 | 70 | 61 | 61 | 61 | 53 | 53 | 53 | 47 | 47 | 47 | 42 | 42 | 42 | 38 | 57 | 57 |
| 30 | B | 0-7 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 67 | 68 | 68 | 59 | 68 | 68 | 50 | 68 | 66 | 44 | 68 | 60 | 57 | 68 | 53 | 51 | 68 | 47 | 45 |
| | | 7-27 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 69 | 71 | 71 | 63 | 71 | 71 | 54 | 70 | 69 | 47 | 67 | 64 | 62 | 64 | 56 | 55 | 62 | 50 | 48 |
| | | 27-45 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 62 | 62 | 62 | 57 | 57 | 57 |
| | C | 0-7 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 64 | 68 | 68 | 59 | 68 | 68 | 53 | 68 | 68 | 49 | 68 | 64 | 41 | 68 | 56 | 53 | 68 | 49 | 46 | 68 | 42 | 41 | 66 | 56 | 36 | 61 | 50 | 32 |
| | | 7-27 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 70 | 71 | 71 | 66 | 71 | 71 | 63 | 71 | 71 | 57 | 71 | 71 | 53 | 69 | 66 | 44 | 65 | 59 | 57 | 62 | 51 | 50 | 59 | 45 | 44 | 56 | 60 | 39 | 53 | 53 | 34 |
| | | 27-45 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 64 | 64 | 64 | 58 | 58 | 58 | 54 | 54 | 54 | 49 | 49 | 49 | 44 | 44 | 44 |
| | D | 0-7 | 71 | 71 | 70 | 71 | 71 | 65 | 71 | 71 | 60 | 71 | 71 | 54 | 71 | 71 | 49 | 71 | 68 | 45 | 71 | 64 | 41 | 71 | 55 | 52 | 71 | 47 | 45 | 69 | 61 | 39 | 65 | 54 | 34 | 58 | 47 | 30 | 51 | 42 | 27 |
| | | 7-27 | 71 | 71 | 71 | 71 | 71 | 68 | 71 | 71 | 64 | 71 | 71 | 58 | 71 | 71 | 53 | 71 | 70 | 48 | 69 | 66 | 44 | 65 | 58 | 56 | 61 | 50 | 48 | 58 | 43 | 42 | 55 | 57 | 37 | 52 | 50 | 32 | 49 | 45 | 29 |
| | | 27-45 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 65 | 65 | 65 | 59 | 59 | 59 | 53 | 53 | 53 | 47 | 47 | 47 | 42 | 42 | 42 | 38 | 57 | 57 |
| 40 | B | 0-7 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 50 | 57 | 57 | 44 | 57 | 57 | 57 | 57 | 53 | 51 | 57 | 47 | 45 |
| | | 7-27 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 54 | 55 | 55 | 47 | 55 | 55 | 62 | 55 | 55 | 55 | 53 | 50 | 48 |
| | | 27-45 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 |
| | C | 0-7 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 53 | 57 | 57 | 49 | 57 | 57 | 41 | 57 | 56 | 53 | 57 | 49 | 46 | 57 | 42 | 41 | 55 | 56 | 36 | 53 | 50 | 32 |
| | | 7-27 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 53 | 55 | 55 | 44 | 55 | 55 | 57 | 54 | 51 | 50 | 51 | 45 | 44 | 49 | 60 | 39 | 47 | 53 | 34 |
| | | 27-45 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 49 | 49 | 49 | 46 | 46 | 46 | 42 | 42 | 42 |
| | D | 0-7 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 60 | 61 | 61 | 54 | 61 | 61 | 49 | 61 | 61 | 45 | 61 | 61 | 41 | 61 | 55 | 52 | 61 | 47 | 45 | 60 | 61 | 39 | 58 | 54 | 34 | 56 | 47 | 30 | 51 | 42 | 27 |
| | | 7-27 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 58 | 61 | 61 | 53 | 61 | 61 | 48 | 61 | 61 | 44 | 59 | 58 | 56 | 56 | 50 | 48 | 54 | 43 | 42 | 51 | 57 | 37 | 48 | 50 | 32 | 46 | 45 | 29 |
| | | 27-45 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 54 | 54 | 54 | 50 | 50 | 50 | 46 | 46 | 46 | 42 | 42 | 42 | 38 | 57 | 57 |
| 50 | B | 0-7 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 44 | 47 | 47 | 57 | 47 | 47 | 51 | 47 | 47 | 45 |
| | | 7-27 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 67 | 68 | 68 | 62 | 68 | 68 | 55 | 68 | 68 | 49 |
| | | 27-45 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 |
| | C | 0-7 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 41 | 47 | 47 | 53 | 47 | 47 | 46 | 47 | 42 | 41 | 47 | 56 | 36 | 46 | 50 | 32 |
| | | 7-27 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 65 | 68 | 68 | 58 | 68 | 68 | 50 | 68 | 66 | 44 | 68 | 60 | 39 | 68 | 53 | 34 |
| | | 27-45 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 60 | 60 | 60 |
| | D | 0-7 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 49 | 51 | 51 | 45 | 51 | 51 | 41 | 51 | 51 | 52 | 51 | 47 | 45 | 51 | 61 | 39 | 50 | 54 | 34 | 49 | 47 | 30 | 47 | 42 | 27 |
| | | 7-27 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 48 | 50 | 50 | 44 | 50 | 50 | 56 | 49 | 49 | 48 | 47 | 43 | 42 | 45 | 57 | 37 | 43 | 50 | 32 | 41 | 45 | 29 |
| | | 27-45 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 67 | 67 | 67 | 62 | 62 | 62 | 57 | 55 | 55 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 1.25 | 22.78 sq.ft | LANDSCAPE | CROSS-SLOPE | SML | PRO SERIES | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 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 | 57 | 39 | 39 | 51 | 39 | 39 | 45 |
| | | 7-27 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 55 | 58 | 58 | 49 |
| | | 27-45 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| | C | 0-7 | 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 | 53 | 39 | 39 | 46 | 39 | 39 | 41 | 39 | 56 | 36 | 39 | 50 | 32 |
| | | 7-27 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 50 | 58 | 58 | 44 | 58 | 58 | 39 | 58 | 53 | 34 |
| | | 27-45 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| | D | 0-7 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 41 | 43 | 43 | 52 | 43 | 43 | 45 | 43 | 61 | 39 | 43 | 54 | 34 | 43 | 47 | 30 | 42 | 42 | 27 |
| | | 7-27 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 56 | 64 | 64 | 48 | 64 | 64 | 42 | 64 | 57 | 37 | 64 | 50 | 32 | 64 | 45 | 29 |
| | | 27-45 | 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 | 56 | 56 | 56 | 52 | 52 | 52 |
| 70 | B | 0-7 | 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 | 51 | 34 | 34 | 51 | 34 | 34 | 45 |
| | | 7-27 | 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 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 49 |
| | | 27-45 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 |
| | C | 0-7 | 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 | 51 | 34 | 34 | 46 | 34 | 34 | 41 | 34 | 51 | 36 | 34 | 50 | 32 |
| | | 7-27 | 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 | 50 | 50 | 50 | 44 | 50 | 50 | 39 | 50 | 50 | 34 |
| | | 27-45 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 |
| | D | 0-7 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 52 | 37 | 37 | 45 | 37 | 56 | 39 | 37 | 54 | 34 | 37 | 47 | 30 | 37 | 42 | 27 |
| | | 7-27 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 48 | 55 | 55 | 42 | 55 | 55 | 37 | 55 | 50 | 32 | 55 | 45 | 29 |
| | | 27-45 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 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 |
| 80 | B | 0-7 | 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 | 45 | 30 | 30 | 45 | 30 | 30 | 45 |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 |
| | | 27-45 | 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 | 42 | 42 | 42 | 42 |
| | C | 0-7 | 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 | 45 | 30 | 30 | 45 | 30 | 30 | 41 | 30 | 45 | 36 | 30 | 45 | 32 |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 39 | 44 | 44 | 34 |
| | | 27-45 | 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 | 42 | 42 | 42 | 42 |
| | D | 0-7 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 50 | 33 | 33 | 45 | 33 | 50 | 39 | 33 | 50 | 34 | 33 | 47 | 30 | 33 | 42 | 27 |
| | | 7-27 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 48 | 49 | 49 | 42 | 49 | 49 | 37 | 49 | 49 | 32 | 49 | 45 | 29 |
| | | 27-45 | 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 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 |
| 90 | B | 0-7 | 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 | 40 | 27 | 27 | 40 | 27 | 27 | 40 |
| | | 7-27 | 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 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| | | 27-45 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 |
| | C | 0-7 | 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 | 40 | 27 | 27 | 40 | 27 | 27 | 40 | 27 | 40 | 36 | 27 | 40 | 32 |
| | | 7-27 | 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 | 40 | 40 | 40 | 39 | 40 | 40 | 34 |
| | | 27-45 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 |
| | D | 0-7 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 44 | 29 | 29 | 44 | 29 | 44 | 39 | 29 | 44 | 34 | 29 | 44 | 30 | 29 | 42 | 27 |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 42 | 44 | 44 | 37 | 44 | 44 | 32 | 44 | 44 | 29 |
| | | 27-45 | 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 | 42 | 42 | 42 | 42 |
| 100 | B | 0-7 | 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 | 36 | 24 | 24 | 36 | 24 | 24 | 36 |
| | | 7-27 | 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 | 36 | 36 | 36 | 36 |
| | | 27-45 | 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 | 34 |
| | C | 0-7 | 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 | 36 | 24 | 24 | 36 | 24 | 24 | 36 | 24 | 36 | 36 | 24 | 36 | 32 |
| | | 7-27 | 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 | 36 | 36 | 36 | 34 |
| | | 27-45 | 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 | 34 |
| | D | 0-7 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 40 | 27 | 27 | 40 | 27 | 40 | 39 | 27 | 40 | 34 | 27 | 40 | 30 | 27 | 40 | 27 |
| | | 7-27 | 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 | 37 | 40 | 40 | 32 | 40 | 40 | 29 |
| | | 27-45 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 3.00 | 18.66 sq.ft | PORTRAIT | CROSS-SLOPE | SML | PRO SERIES | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 83 | 83 | 76 | 83 | 83 | 72 | 83 | 82 | 67 | 83 | 79 | 63 | 83 | 76 | 55 | 83 | 72 | 48 | 83 | 69 | 42 | 81 | 61 | 36 | 77 | 50 | 31 | 72 | 42 | 26 | 67 | 37 | 23 | 61 | 32 | 31 | 54 | 29 | 27 |
| | | 7-27 | 76 | 76 | 75 | 76 | 76 | 71 | 76 | 76 | 67 | 76 | 76 | 63 | 76 | 76 | 56 | 76 | 73 | 51 | 76 | 70 | 46 | 76 | 64 | 38 | 76 | 53 | 33 | 75 | 45 | 28 | 71 | 39 | 25 | 66 | 34 | 33 | 60 | 30 | 29 |
| | | 27-45 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 68 | 68 | 68 | 59 | 59 | 59 | 52 | 52 | 52 | 46 | 46 | 46 | 41 | 41 | 41 | 37 | 37 | 37 |
| | C | 0-7 | 83 | 78 | 60 | 83 | 74 | 51 | 83 | 70 | 44 | 83 | 66 | 39 | 81 | 61 | 36 | 78 | 54 | 32 | 76 | 48 | 30 | 70 | 40 | 25 | 64 | 34 | 32 | 56 | 30 | 28 | 48 | 26 | 25 | 42 | 23 | 22 | 37 | 30 | 19 |
| | | 7-27 | 76 | 76 | 61 | 76 | 75 | 54 | 76 | 71 | 47 | 76 | 67 | 42 | 76 | 63 | 38 | 76 | 57 | 35 | 76 | 51 | 32 | 74 | 42 | 27 | 68 | 36 | 23 | 62 | 31 | 30 | 54 | 27 | 26 | 47 | 24 | 23 | 42 | 32 | 21 |
| | | 27-45 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 68 | 68 | 68 | 62 | 62 | 62 | 58 | 58 | 58 | 50 | 50 | 50 | 43 | 43 | 43 | 38 | 38 | 38 | 34 | 34 | 34 | 30 | 30 | 30 | 27 | 27 | 27 |
| | D | 0-7 | 83 | 72 | 47 | 83 | 67 | 41 | 82 | 63 | 36 | 79 | 55 | 33 | 76 | 49 | 30 | 73 | 43 | 27 | 69 | 40 | 25 | 63 | 33 | 32 | 54 | 29 | 27 | 46 | 25 | 24 | 40 | 33 | 21 | 35 | 29 | 18 | 31 | 26 | 16 |
| | | 7-27 | 76 | 73 | 50 | 76 | 68 | 44 | 76 | 64 | 39 | 76 | 58 | 35 | 76 | 52 | 32 | 76 | 46 | 29 | 73 | 42 | 27 | 67 | 35 | 23 | 60 | 30 | 29 | 52 | 26 | 25 | 45 | 23 | 22 | 39 | 30 | 20 | 35 | 27 | 17 |
| | | 27-45 | 71 | 71 | 71 | 71 | 71 | 71 | 69 | 69 | 69 | 63 | 63 | 63 | 58 | 58 | 58 | 53 | 53 | 53 | 49 | 49 | 49 | 42 | 42 | 42 | 37 | 37 | 37 | 32 | 32 | 32 | 29 | 29 | 29 | 26 | 26 | 26 | 23 | 23 | 23 |
| 10 | B | 0-7 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 55 | 62 | 62 | 48 | 62 | 62 | 42 | 62 | 61 | 36 | 62 | 50 | 31 | 62 | 42 | 26 | 62 | 37 | 23 | 61 | 32 | 31 | 54 | 29 | 27 |
| | | 7-27 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 56 | 63 | 63 | 51 | 63 | 63 | 46 | 63 | 63 | 38 | 63 | 53 | 33 | 63 | 45 | 28 | 59 | 39 | 25 | 55 | 34 | 33 | 52 | 30 | 29 |
| | | 27-45 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 59 | 59 | 59 | 52 | 52 | 52 | 46 | 46 | 46 | 41 | 41 | 41 | 37 | 37 | 37 |
| | C | 0-7 | 62 | 62 | 60 | 62 | 62 | 51 | 62 | 62 | 44 | 62 | 62 | 39 | 62 | 61 | 36 | 62 | 54 | 32 | 62 | 48 | 30 | 62 | 40 | 25 | 62 | 34 | 32 | 56 | 30 | 28 | 48 | 26 | 25 | 42 | 23 | 22 | 37 | 30 | 19 |
| | | 7-27 | 63 | 63 | 61 | 63 | 63 | 54 | 63 | 63 | 47 | 63 | 63 | 42 | 63 | 63 | 38 | 63 | 57 | 35 | 63 | 51 | 32 | 61 | 42 | 27 | 57 | 36 | 23 | 53 | 31 | 30 | 49 | 27 | 26 | 45 | 24 | 23 | 42 | 32 | 21 |
| | | 27-45 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 58 | 58 | 58 | 50 | 50 | 50 | 43 | 43 | 43 | 38 | 38 | 38 | 34 | 34 | 34 | 30 | 30 | 30 | 27 | 27 | 27 |
| | D | 0-7 | 62 | 62 | 47 | 62 | 62 | 41 | 62 | 62 | 36 | 62 | 55 | 33 | 62 | 49 | 30 | 62 | 43 | 27 | 62 | 40 | 25 | 62 | 33 | 32 | 54 | 29 | 27 | 46 | 25 | 24 | 40 | 33 | 21 | 35 | 29 | 18 | 31 | 26 | 16 |
| | | 7-27 | 63 | 63 | 50 | 63 | 63 | 44 | 63 | 63 | 39 | 63 | 58 | 35 | 63 | 52 | 32 | 63 | 46 | 29 | 61 | 42 | 27 | 56 | 35 | 23 | 52 | 30 | 29 | 48 | 26 | 25 | 44 | 23 | 22 | 39 | 30 | 20 | 35 | 27 | 17 |
| | | 27-45 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 58 | 58 | 58 | 53 | 53 | 53 | 49 | 49 | 49 | 42 | 42 | 42 | 37 | 37 | 37 | 32 | 32 | 32 | 29 | 29 | 29 | 26 | 26 | 26 | 23 | 23 | 23 |
| 20 | B | 0-7 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 42 | 43 | 43 | 36 | 43 | 43 | 31 | 43 | 42 | 26 | 43 | 37 | 23 | 43 | 32 | 31 | 43 | 29 | 27 |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 38 | 44 | 44 | 33 | 43 | 43 | 28 | 41 | 39 | 25 | 39 | 34 | 33 | 38 | 30 | 29 |
| | | 27-45 | 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 | 46 | 46 | 46 | 46 | 46 | 46 | 41 | 41 | 41 | 37 | 37 | 37 |
| | C | 0-7 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 39 | 43 | 43 | 36 | 43 | 43 | 32 | 43 | 43 | 30 | 43 | 40 | 25 | 43 | 34 | 32 | 43 | 30 | 28 | 43 | 26 | 25 | 41 | 23 | 22 | 37 | 30 | 19 |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 42 | 44 | 44 | 38 | 44 | 44 | 35 | 44 | 44 | 32 | 42 | 42 | 27 | 40 | 36 | 23 | 38 | 31 | 30 | 36 | 27 | 26 | 34 | 24 | 23 | 32 | 32 | 21 |
| | | 27-45 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 43 | 43 | 43 | 38 | 38 | 38 | 34 | 34 | 34 | 30 | 30 | 30 | 27 | 27 | 27 |
| | D | 0-7 | 43 | 43 | 43 | 43 | 43 | 41 | 43 | 43 | 36 | 43 | 43 | 33 | 43 | 43 | 30 | 43 | 43 | 27 | 43 | 40 | 25 | 43 | 33 | 32 | 43 | 29 | 27 | 42 | 25 | 24 | 40 | 33 | 21 | 35 | 29 | 18 | 31 | 26 | 16 |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 39 | 44 | 44 | 35 | 44 | 44 | 32 | 43 | 43 | 29 | 42 | 42 | 27 | 40 | 35 | 23 | 38 | 30 | 29 | 36 | 26 | 25 | 34 | 23 | 22 | 32 | 30 | 20 | 30 | 27 | 17 |
| | | 27-45 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 42 | 42 | 42 | 37 | 37 | 37 | 32 | 32 | 32 | 29 | 29 | 29 | 26 | 26 | 26 | 23 | 23 | 23 |
| 30 | B | 0-7 | 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 | 42 | 26 | 42 | 37 | 23 | 42 | 32 | 31 | 42 | 29 | 27 |
| | | 7-27 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 38 | 40 | 40 | 33 | 40 | 40 | 28 | 40 | 39 | 25 | 39 | 34 | 33 | 38 | 30 | 29 |
| | | 27-45 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 35 | 35 | 35 |
| | C | 0-7 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 39 | 42 | 42 | 36 | 42 | 42 | 32 | 42 | 42 | 30 | 42 | 40 | 25 | 42 | 34 | 32 | 42 | 30 | 28 | 42 | 26 | 25 | 40 | 23 | 22 | 37 | 30 | 19 |
| | | 7-27 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 38 | 40 | 40 | 35 | 40 | 40 | 32 | 40 | 40 | 27 | 40 | 36 | 23 | 38 | 31 | 30 | 36 | 27 | 26 | 34 | 24 | 23 | 32 | 32 | 21 |
| | | 27-45 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 36 | 36 | 36 | 33 | 33 | 33 | 30 | 30 | 30 | 27 | 27 | 27 |
| | D | 0-7 | 43 | 43 | 43 | 43 | 43 | 41 | 43 | 43 | 36 | 43 | 43 | 33 | 43 | 43 | 30 | 43 | 43 | 27 | 43 | 40 | 25 | 43 | 33 | 32 | 43 | 29 | 27 | 42 | 25 | 24 | 40 | 33 | 21 | 35 | 29 | 18 | 31 | 26 | 16 |
| | | 7-27 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 39 | 42 | 42 | 35 | 42 | 42 | 32 | 42 | 42 | 29 | 42 | 42 | 27 | 40 | 35 | 23 | 38 | 30 | 29 | 36 | 26 | 25 | 34 | 23 | 22 | 32 | 30 | 20 | 30 | 27 | 17 |
| | | 27-45 | 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 | 36 | 36 | 32 | 32 | 32 | 29 | 29 | 29 | 26 | 26 | 26 | 23 | 23 | 23 |
| 40 | B | 0-7 | 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 | 31 | 35 | 35 | 26 | 35 | 35 | 23 | 35 | 32 | 31 | 35 | 29 | 27 |
| | | 7-27 | 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 | 25 | 33 | 33 | 33 | 32 | 30 | 29 |
| | | 27-45 | 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 | 32 | 32 | 32 | 32 |
| | C | 0-7 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 32 | 35 | 35 | 30 | 35 | 35 | 25 | 35 | 34 | 32 | 35 | 30 | 28 | 35 | 26 | 25 | 33 | 23 | 22 | 32 | 30 | 19 |
| | | 7-27 | 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 | 31 | 30 | 31 | 27 | 26 | 30 | 24 | 23 | 29 | 32 | 21 |
| | | 27-45 | 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 | 30 | 30 | 30 | 28 | 28 | 28 | 26 | 26 | 26 |
| | D | 0-7 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 36 | 37 | 37 | 33 | 37 | 37 | 30 | 37 | 37 | 27 | 37 | 37 | 25 | 37 | 33 | 32 | 37 | 29 | 27 | 37 | 25 | 24 | 35 | 33 | 21 | 34 | 29 | 18 | 31 | 26 | 16 |
| | | 7-27 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 32 | 35 | 35 | 29 | 35 | 35 | 27 | 35 | 35 | 23 | 34 | 30 | 29 | 33 | 26 | 25 | 31 | 23 | 22 | 29 | 30 | 20 | 28 | 27 | 17 |
| | | 27-45 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 33 | 33 | 33 | 30 | 30 | 30 | 28 | 28 | 28 | 26 | 26 | 26 | 23 | 23 | 23 |
| 50 | B | 0-7 | 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 | 31 | 28 | 28 | 27 |
| | | 7-27 | 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 | 33 | 28 | 28 | 29 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 32 | 28 | 28 | 28 | 28 | 26 | 25 | 28 | 23 | 22 | 28 | 30 | 19 |
| | | 7-27 | 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 | 30 | 27 | 27 | 26 | 26 | 24 | 23 | 25 | 32 | 21 |
| | | 27-45 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 24 | 24 | 24 |
| | D | 0-7 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 30 | 31 | 31 | 27 | 31 | 31 | 25 | 31 | 31 | 32 | 31 | 29 | 27 | 31 | 25 | 24 | 31 | 33 | 21 | 30 | 29 | 18 | 29 | 26 | 16 |
| | | 7-27 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 29 | 31 | 31 | 27 | 31 | 31 | 23 | 30 | 30 | 29 | 29 | 26 | 25 | 27 | 23 | 22 | 26 | 30 | 20 | 25 | 27 | 17 |
| | | 27-45 | 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 | 28 | 28 | 26 | 26 | 26 | 24 | 24 | 24 | 22 | 22 | 22 |

* 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 7-10 | II | 30 ft | Ss = 3.00 | 18.66 sq.ft | PORTRAIT | CROSS-SLOPE | SML | PRO SERIES | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 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 | 23 | 24 | 24 | 31 | 24 | 24 | 27 |
| | | 7-27 | 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 | 33 | 23 | 23 | 29 |
| | | 27-45 | 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 | 33 |
| | C | 0-7 | 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 | 32 | 24 | 24 | 28 | 24 | 24 | 25 | 24 | 23 | 22 | 24 | 30 | 19 |
| | | 7-27 | 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 | 30 | 23 | 23 | 26 | 23 | 23 | 23 | 23 | 32 | 21 |
| | | 27-45 | 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 | 33 |
| | D | 0-7 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 25 | 26 | 26 | 32 | 26 | 26 | 27 | 26 | 25 | 24 | 26 | 33 | 21 | 26 | 29 | 18 | 25 | 26 | 16 |
| | | 7-27 | 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 | 29 | 26 | 26 | 25 | 25 | 23 | 22 | 24 | 30 | 20 | 23 | 27 | 17 |
| | | 27-45 | 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 | 23 | 23 | 23 | 21 | 21 | 21 |
| 70 | B | 0-7 | 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 | 31 | 21 | 21 | 27 |
| | | 7-27 | 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 | 31 | 31 | 31 | 29 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 31 | 21 | 21 | 28 | 21 | 21 | 25 | 21 | 21 | 22 | 21 | 30 | 19 |
| | | 7-27 | 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 | 31 | 31 | 23 | 31 | 31 | 21 |
| | | 27-45 | 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 |
| | D | 0-7 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 32 | 23 | 23 | 27 | 23 | 23 | 24 | 23 | 33 | 21 | 23 | 29 | 18 | 23 | 26 | 16 |
| | | 7-27 | 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 | 25 | 34 | 34 | 22 | 34 | 30 | 20 | 34 | 27 | 17 |
| | | 27-45 | 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 | 32 | 30 | 30 | 30 |
| 80 | B | 0-7 | 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 | 27 | 18 | 18 | 27 |
| | | 7-27 | 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 | 27 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 27 | 18 | 18 | 27 | 18 | 18 | 25 | 18 | 18 | 22 | 18 | 27 | 19 |
| | | 7-27 | 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 | 27 | 27 | 23 | 27 | 27 | 21 |
| | | 27-45 | 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 |
| | D | 0-7 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 30 | 20 | 20 | 27 | 20 | 20 | 24 | 20 | 30 | 21 | 20 | 29 | 18 | 20 | 26 | 16 |
| | | 7-27 | 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 | 29 | 30 | 30 | 25 | 30 | 30 | 22 | 30 | 30 | 20 | 30 | 27 | 17 |
| | | 27-45 | 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 |
| 90 | B | 0-7 | 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 | 24 | 16 | 16 | 24 |
| | | 7-27 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 24 | 16 | 16 | 24 | 16 | 16 | 24 | 16 | 16 | 22 | 16 | 24 | 19 |
| | | 7-27 | 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 | 23 | 24 | 24 | 21 |
| | | 27-45 | 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 |
| | D | 0-7 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 27 | 18 | 18 | 27 | 18 | 18 | 24 | 18 | 27 | 21 | 18 | 27 | 18 | 18 | 26 | 16 |
| | | 7-27 | 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 | 25 | 27 | 27 | 22 | 27 | 27 | 20 | 27 | 27 | 17 |
| | | 27-45 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 |
| 100 | B | 0-7 | 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 | 22 | 14 | 14 | 22 |
| | | 7-27 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 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 | 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 |
| | C | 0-7 | 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 | 22 | 14 | 14 | 22 | 14 | 14 | 22 | 14 | 14 | 22 | 14 | 22 | 19 |
| | | 7-27 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 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 |
| | | 27-45 | 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 |
| | D | 0-7 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 24 | 16 | 16 | 24 | 16 | 16 | 24 | 16 | 24 | 21 | 16 | 24 | 18 | 16 | 24 | 16 |
| | | 7-27 | 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 | 22 | 24 | 24 | 20 | 24 | 24 | 17 |
| | | 27-45 | 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 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 3.00 | 18.66 sq.ft | LANDSCAPE | CROSS-SLOPE | SML | PRO SERIES | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 98 | 98 | 92 | 98 | 98 | 87 | 98 | 98 | 83 | 98 | 94 | 80 | 98 | 91 | 76 | 98 | 87 | 72 | 98 | 84 | 68 | 97 | 79 | 60 | 91 | 74 | 51 | 86 | 67 | 45 | 82 | 62 | 39 | 79 | 54 | 52 | 75 | 48 | 46 |
| | | 7-27 | 99 | 99 | 90 | 99 | 99 | 86 | 99 | 99 | 83 | 99 | 95 | 79 | 99 | 91 | 77 | 99 | 88 | 74 | 99 | 85 | 70 | 99 | 80 | 64 | 95 | 75 | 55 | 90 | 69 | 48 | 86 | 64 | 42 | 82 | 58 | 56 | 78 | 51 | 50 |
| | | 27-45 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 97 | 97 | 97 | 95 | 95 | 95 | 91 | 90 | 90 | 87 | 85 | 85 | 83 | 81 | 81 | 78 | 77 | 77 | 69 | 69 | 69 | 62 | 62 | 62 |
| | C | 0-7 | 98 | 93 | 78 | 98 | 89 | 75 | 98 | 85 | 69 | 98 | 82 | 65 | 96 | 79 | 60 | 93 | 76 | 55 | 90 | 72 | 50 | 85 | 65 | 42 | 80 | 57 | 55 | 76 | 50 | 47 | 72 | 43 | 41 | 67 | 38 | 37 | 63 | 51 | 32 |
| | | 7-27 | 99 | 94 | 79 | 99 | 90 | 75 | 99 | 86 | 71 | 99 | 83 | 67 | 99 | 80 | 64 | 97 | 77 | 59 | 94 | 74 | 54 | 88 | 67 | 45 | 83 | 61 | 39 | 79 | 53 | 51 | 75 | 46 | 45 | 71 | 41 | 39 | 67 | 54 | 35 |
| | | 27-45 | 100 | 100 | 100 | 98 | 98 | 98 | 96 | 96 | 96 | 93 | 93 | 93 | 91 | 90 | 90 | 88 | 87 | 87 | 86 | 84 | 84 | 82 | 79 | 79 | 73 | 73 | 73 | 64 | 64 | 64 | 56 | 56 | 56 | 50 | 50 | 50 | 45 | 45 | 45 |
| | D | 0-7 | 98 | 87 | 71 | 98 | 83 | 66 | 97 | 79 | 61 | 94 | 76 | 55 | 90 | 73 | 50 | 87 | 68 | 46 | 85 | 65 | 42 | 80 | 56 | 53 | 75 | 48 | 46 | 70 | 42 | 40 | 65 | 55 | 35 | 59 | 48 | 31 | 53 | 43 | 27 |
| | | 7-27 | 99 | 87 | 73 | 99 | 84 | 69 | 99 | 80 | 65 | 97 | 77 | 60 | 94 | 74 | 54 | 91 | 71 | 49 | 88 | 67 | 45 | 83 | 59 | 38 | 78 | 51 | 49 | 74 | 44 | 43 | 69 | 39 | 38 | 65 | 51 | 33 | 59 | 46 | 29 |
| | | 27-45 | 97 | 97 | 97 | 94 | 94 | 94 | 91 | 90 | 90 | 89 | 87 | 87 | 86 | 84 | 84 | 84 | 81 | 81 | 82 | 79 | 79 | 71 | 71 | 71 | 62 | 62 | 62 | 54 | 54 | 54 | 48 | 48 | 48 | 43 | 43 | 43 | 39 | 39 | 39 |
| 10 | B | 0-7 | 88 | 88 | 88 | 88 | 88 | 87 | 88 | 88 | 83 | 88 | 88 | 80 | 88 | 88 | 76 | 88 | 87 | 72 | 88 | 84 | 68 | 88 | 79 | 60 | 88 | 74 | 51 | 86 | 67 | 45 | 82 | 62 | 39 | 79 | 54 | 52 | 75 | 48 | 46 |
| | | 7-27 | 88 | 88 | 88 | 88 | 88 | 86 | 88 | 88 | 83 | 88 | 88 | 79 | 88 | 88 | 77 | 88 | 88 | 74 | 88 | 85 | 70 | 88 | 80 | 64 | 88 | 75 | 55 | 88 | 69 | 48 | 86 | 64 | 42 | 82 | 58 | 56 | 78 | 51 | 50 |
| | | 27-45 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 97 | 97 | 97 | 95 | 95 | 95 | 91 | 90 | 90 | 87 | 85 | 85 | 83 | 81 | 81 | 78 | 77 | 77 | 69 | 69 | 69 | 62 | 62 | 62 |
| | C | 0-7 | 88 | 88 | 78 | 88 | 88 | 75 | 88 | 85 | 69 | 88 | 82 | 65 | 88 | 79 | 60 | 88 | 76 | 55 | 88 | 72 | 50 | 85 | 65 | 42 | 80 | 57 | 55 | 76 | 50 | 47 | 72 | 43 | 41 | 67 | 38 | 37 | 63 | 51 | 32 |
| | | 7-27 | 88 | 88 | 79 | 88 | 88 | 75 | 88 | 86 | 71 | 88 | 83 | 67 | 88 | 80 | 64 | 88 | 77 | 59 | 88 | 74 | 54 | 88 | 67 | 45 | 83 | 61 | 39 | 79 | 53 | 51 | 75 | 46 | 45 | 71 | 41 | 39 | 67 | 54 | 35 |
| | | 27-45 | 98 | 98 | 98 | 98 | 98 | 98 | 96 | 96 | 96 | 93 | 93 | 93 | 91 | 90 | 90 | 88 | 87 | 87 | 86 | 84 | 84 | 82 | 79 | 79 | 73 | 73 | 73 | 64 | 64 | 64 | 56 | 56 | 56 | 50 | 50 | 50 | 45 | 45 | 45 |
| | D | 0-7 | 88 | 87 | 71 | 88 | 83 | 66 | 88 | 79 | 61 | 88 | 76 | 55 | 88 | 73 | 50 | 87 | 68 | 46 | 85 | 65 | 42 | 80 | 56 | 53 | 75 | 48 | 46 | 70 | 42 | 40 | 65 | 55 | 35 | 59 | 48 | 31 | 53 | 43 | 27 |
| | | 7-27 | 88 | 87 | 73 | 88 | 84 | 69 | 88 | 80 | 65 | 88 | 77 | 60 | 88 | 74 | 54 | 88 | 71 | 49 | 88 | 67 | 45 | 83 | 59 | 38 | 78 | 51 | 49 | 74 | 44 | 43 | 69 | 39 | 38 | 65 | 51 | 33 | 59 | 46 | 29 |
| | | 27-45 | 97 | 97 | 97 | 94 | 94 | 94 | 91 | 90 | 90 | 89 | 87 | 87 | 86 | 84 | 84 | 84 | 81 | 81 | 82 | 79 | 79 | 71 | 71 | 71 | 62 | 62 | 62 | 54 | 54 | 54 | 48 | 48 | 48 | 43 | 43 | 43 | 39 | 39 | 39 |
| 20 | B | 0-7 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 68 | 72 | 72 | 60 | 72 | 72 | 51 | 72 | 67 | 45 | 72 | 62 | 39 | 72 | 54 | 52 | 72 | 48 | 46 |
| | | 7-27 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 70 | 73 | 73 | 64 | 73 | 73 | 55 | 72 | 69 | 48 | 69 | 64 | 42 | 66 | 58 | 56 | 63 | 51 | 50 |
| | | 27-45 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 69 | 69 | 69 | 62 | 62 | 62 |
| | C | 0-7 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 69 | 72 | 72 | 65 | 72 | 72 | 60 | 72 | 72 | 55 | 72 | 72 | 50 | 72 | 65 | 42 | 72 | 57 | 55 | 72 | 50 | 47 | 72 | 43 | 41 | 67 | 38 | 37 | 63 | 51 | 32 |
| | | 7-27 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 71 | 73 | 73 | 67 | 73 | 73 | 64 | 73 | 73 | 59 | 73 | 73 | 54 | 71 | 67 | 45 | 67 | 61 | 39 | 64 | 53 | 51 | 60 | 46 | 45 | 57 | 41 | 39 | 54 | 54 | 35 |
| | | 27-45 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 73 | 73 | 73 | 64 | 64 | 64 | 56 | 56 | 56 | 50 | 50 | 50 | 45 | 45 | 45 |
| | D | 0-7 | 72 | 72 | 71 | 72 | 72 | 66 | 72 | 72 | 61 | 72 | 72 | 55 | 72 | 72 | 50 | 72 | 68 | 46 | 72 | 65 | 42 | 72 | 56 | 53 | 72 | 48 | 46 | 70 | 42 | 40 | 65 | 55 | 35 | 59 | 48 | 31 | 53 | 43 | 27 |
| | | 7-27 | 73 | 73 | 73 | 73 | 73 | 69 | 73 | 73 | 65 | 73 | 73 | 60 | 73 | 73 | 54 | 73 | 71 | 49 | 71 | 67 | 45 | 67 | 59 | 38 | 63 | 51 | 49 | 59 | 44 | 43 | 56 | 39 | 38 | 53 | 51 | 33 | 50 | 46 | 29 |
| | | 27-45 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 79 | 79 | 71 | 71 | 71 | 62 | 62 | 62 | 54 | 54 | 54 | 48 | 48 | 48 | 43 | 43 | 43 | 39 | 39 | 39 |
| 30 | B | 0-7 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 68 | 70 | 70 | 60 | 70 | 70 | 51 | 70 | 67 | 45 | 70 | 62 | 39 | 70 | 54 | 52 | 70 | 48 | 46 |
| | | 7-27 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 64 | 65 | 65 | 55 | 65 | 65 | 48 | 65 | 64 | 42 | 65 | 58 | 56 | 63 | 51 | 50 |
| | | 27-45 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 59 | 59 | 59 |
| | C | 0-7 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 69 | 70 | 70 | 65 | 70 | 70 | 60 | 70 | 70 | 55 | 70 | 70 | 50 | 70 | 65 | 42 | 70 | 57 | 55 | 70 | 50 | 47 | 70 | 43 | 41 | 67 | 38 | 37 | 63 | 51 | 32 |
| | | 7-27 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 64 | 65 | 65 | 59 | 65 | 65 | 54 | 65 | 65 | 45 | 65 | 61 | 39 | 64 | 53 | 51 | 60 | 46 | 45 | 57 | 41 | 39 | 54 | 54 | 35 |
| | | 27-45 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 60 | 60 | 60 | 55 | 55 | 55 | 50 | 50 | 50 | 45 | 45 | 45 |
| | D | 0-7 | 72 | 72 | 71 | 72 | 72 | 66 | 72 | 72 | 61 | 72 | 72 | 55 | 72 | 72 | 50 | 72 | 68 | 46 | 72 | 65 | 42 | 72 | 56 | 53 | 72 | 48 | 46 | 70 | 42 | 40 | 65 | 55 | 35 | 59 | 48 | 31 | 53 | 43 | 27 |
| | | 7-27 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 65 | 69 | 69 | 60 | 69 | 69 | 54 | 69 | 69 | 49 | 69 | 67 | 45 | 67 | 59 | 38 | 63 | 51 | 49 | 59 | 44 | 43 | 56 | 39 | 38 | 53 | 51 | 33 | 50 | 46 | 29 |
| | | 27-45 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 60 | 60 | 60 | 54 | 54 | 54 | 48 | 48 | 48 | 43 | 43 | 43 | 39 | 39 | 39 |
| 40 | B | 0-7 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 51 | 58 | 58 | 45 | 58 | 58 | 39 | 58 | 54 | 52 | 58 | 48 | 46 |
| | | 7-27 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 48 | 55 | 55 | 42 | 55 | 55 | 56 | 54 | 51 | 50 |
| | | 27-45 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 |
| | C | 0-7 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 55 | 58 | 58 | 50 | 58 | 58 | 42 | 58 | 57 | 55 | 58 | 50 | 47 | 58 | 43 | 41 | 56 | 38 | 37 | 54 | 51 | 32 |
| | | 7-27 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 54 | 55 | 55 | 45 | 55 | 55 | 39 | 55 | 53 | 51 | 52 | 46 | 45 | 50 | 41 | 39 | 48 | 54 | 35 |
| | | 27-45 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 51 | 51 | 51 | 47 | 47 | 47 | 43 | 43 | 43 |
| | D | 0-7 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 61 | 62 | 62 | 55 | 62 | 62 | 50 | 62 | 62 | 46 | 62 | 62 | 42 | 62 | 56 | 53 | 62 | 48 | 46 | 61 | 42 | 40 | 59 | 55 | 35 | 57 | 48 | 31 | 53 | 43 | 27 |
| | | 7-27 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 54 | 59 | 59 | 49 | 59 | 59 | 45 | 59 | 59 | 38 | 58 | 51 | 49 | 55 | 44 | 43 | 52 | 39 | 38 | 49 | 51 | 33 | 47 | 46 | 29 |
| | | 27-45 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 51 | 51 | 51 | 47 | 47 | 47 | 43 | 43 | 43 | 39 | 39 | 39 |
| 50 | B | 0-7 | 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 | 45 | 48 | 48 | 39 | 48 | 48 | 52 | 48 | 48 | 46 |
| | | 7-27 | 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 | 46 | 46 | 46 | 46 | 46 | 42 | 46 | 46 | 56 | 46 | 46 | 50 |
| | | 27-45 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 |
| | C | 0-7 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 42 | 48 | 48 | 55 | 48 | 48 | 47 | 48 | 43 | 41 | 48 | 38 | 37 | 47 | 51 | 32 |
| | | 7-27 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 45 | 46 | 46 | 39 | 46 | 46 | 51 | 46 | 46 | 45 | 44 | 41 | 39 | 42 | 54 | 35 |
| | | 27-45 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 41 | 41 | 41 |
| | D | 0-7 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 50 | 53 | 53 | 46 | 53 | 53 | 42 | 53 | 53 | 53 | 53 | 48 | 46 | 53 | 42 | 40 | 51 | 55 | 35 | 50 | 48 | 31 | 48 | 43 | 27 |
| | | 7-27 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 49 | 51 | 51 | 45 | 51 | 51 | 38 | 51 | 51 | 49 | 48 | 44 | 43 | 46 | 39 | 38 | 44 | 51 | 33 | 42 | 46 | 29 |
| | | 27-45 | 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 | 47 | 47 | 47 | 44 | 44 | 44 | 40 | 40 | 40 | 37 | 37 | 37 |

* 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 7-10 | II | 30 ft | Ss = 3.00 | 18.66 sq.ft | LANDSCAPE | CROSS-SLOPE | SML | PRO SERIES | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 |
| 60 | B | 0-7 | 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 | 40 | 52 | 40 | 40 | 46 |
| | | 7-27 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 56 | 59 | 59 | 50 |
| | | 27-45 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 |
| | C | 0-7 | 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 | 55 | 40 | 40 | 47 | 40 | 40 | 41 | 40 | 38 | 37 | 40 | 51 | 32 |
| | | 7-27 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 51 | 59 | 59 | 45 | 59 | 59 | 39 | 59 | 54 | 35 |
| | | 27-45 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 |
| | D | 0-7 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 42 | 44 | 44 | 53 | 44 | 44 | 46 | 44 | 42 | 40 | 44 | 55 | 35 | 44 | 48 | 31 | 43 | 43 | 27 |
| | | 7-27 | 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 | 43 | 49 | 43 | 43 | 43 | 41 | 39 | 38 | 40 | 51 | 33 | 38 | 46 | 29 |
| | | 27-45 | 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 | 41 | 38 | 38 | 38 | 36 | 36 | 36 |
| 70 | B | 0-7 | 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 | 52 | 35 | 35 | 46 |
| | | 7-27 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 50 |
| | | 27-45 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 |
| | C | 0-7 | 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 | 52 | 35 | 35 | 47 | 35 | 35 | 41 | 35 | 35 | 37 | 35 | 51 | 32 |
| | | 7-27 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 45 | 51 | 51 | 39 | 51 | 51 | 35 |
| | | 27-45 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 |
| | D | 0-7 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 53 | 38 | 38 | 46 | 38 | 38 | 40 | 38 | 55 | 35 | 38 | 48 | 31 | 38 | 43 | 27 |
| | | 7-27 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 49 | 56 | 56 | 43 | 56 | 56 | 38 | 56 | 51 | 33 | 56 | 46 | 29 |
| | | 27-45 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 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 |
| 80 | B | 0-7 | 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 | 46 | 30 | 30 | 46 |
| | | 7-27 | 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 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 |
| | | 27-45 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 |
| | C | 0-7 | 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 | 46 | 30 | 30 | 46 | 30 | 30 | 41 | 30 | 30 | 37 | 30 | 46 | 32 |
| | | 7-27 | 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 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 39 | 45 | 45 | 35 |
| | | 27-45 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 |
| | D | 0-7 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 51 | 34 | 34 | 46 | 34 | 34 | 40 | 34 | 51 | 35 | 34 | 48 | 31 | 34 | 43 | 27 |
| | | 7-27 | 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 | 49 | 50 | 50 | 43 | 50 | 50 | 38 | 50 | 50 | 33 | 50 | 46 | 29 |
| | | 27-45 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| 90 | B | 0-7 | 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 | 41 | 27 | 27 | 41 |
| | | 7-27 | 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 | 41 | 41 | 41 | 41 | 41 | 41 | 41 |
| | | 27-45 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 |
| | C | 0-7 | 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 | 41 | 27 | 27 | 41 | 27 | 27 | 41 | 27 | 27 | 37 | 27 | 41 | 32 |
| | | 7-27 | 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 | 41 | 41 | 41 | 39 | 41 | 41 | 35 |
| | | 27-45 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 |
| | D | 0-7 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 45 | 30 | 30 | 45 | 30 | 30 | 40 | 30 | 45 | 35 | 30 | 45 | 31 | 30 | 43 | 27 |
| | | 7-27 | 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 | 45 | 45 | 43 | 45 | 45 | 38 | 45 | 45 | 33 | 45 | 45 | 29 |
| | | 27-45 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 |
| 100 | B | 0-7 | 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 | 37 | 24 | 24 | 37 |
| | | 7-27 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| | | 27-45 | 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 | 35 | 35 | 35 | 35 |
| | C | 0-7 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 37 | 24 | 24 | 37 | 24 | 24 | 37 | 24 | 24 | 37 | 24 | 24 | 37 | 24 | 37 | 32 |
| | | 7-27 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 35 |
| | | 27-45 | 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 | 35 | 35 | 35 | 35 |
| | D | 0-7 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 41 | 27 | 27 | 41 | 27 | 27 | 40 | 27 | 41 | 35 | 27 | 41 | 31 | 27 | 41 | 27 |
| | | 7-27 | 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 | 38 | 41 | 41 | 33 | 41 | 41 | 29 |
| | | 27-45 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 |

* 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 7-10 | II | 30 ft | Ss = 3.00 | 22.78 sq.ft | PORTRAIT | CROSS-SLOPE | SML | PRO SERIES | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 74 | 74 | 72 | 74 | 74 | 67 | 74 | 74 | 62 | 74 | 74 | 53 | 74 | 71 | 46 | 74 | 67 | 40 | 74 | 63 | 35 | 74 | 51 | 30 | 71 | 42 | 26 | 66 | 35 | 22 | 59 | 31 | 29 | 51 | 27 | 26 | 45 | 24 | 23 |
| | | 7-27 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 59 | 64 | 64 | 53 | 64 | 64 | 47 | 64 | 64 | 42 | 64 | 64 | 38 | 64 | 53 | 32 | 64 | 44 | 27 | 64 | 37 | 24 | 64 | 32 | 31 | 58 | 29 | 28 | 51 | 25 | 25 |
| | | 27-45 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 57 | 57 | 57 | 50 | 50 | 50 | 44 | 44 | 44 | 39 | 39 | 39 | 34 | 34 | 34 | 31 | 31 | 31 |
| | C | 0-7 | 74 | 73 | 51 | 74 | 69 | 43 | 74 | 64 | 37 | 74 | 58 | 33 | 74 | 51 | 30 | 73 | 45 | 27 | 70 | 40 | 25 | 64 | 33 | 32 | 54 | 28 | 27 | 47 | 25 | 23 | 40 | 32 | 20 | 35 | 29 | 18 | 31 | 25 | 16 |
| | | 7-27 | 64 | 64 | 51 | 64 | 64 | 45 | 64 | 64 | 40 | 64 | 60 | 35 | 64 | 53 | 32 | 64 | 48 | 29 | 64 | 43 | 27 | 64 | 35 | 23 | 61 | 30 | 29 | 52 | 26 | 25 | 45 | 23 | 22 | 39 | 30 | 19 | 35 | 27 | 17 |
| | | 27-45 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 57 | 57 | 57 | 52 | 52 | 52 | 48 | 48 | 48 | 42 | 42 | 42 | 36 | 36 | 36 | 32 | 32 | 32 | 28 | 28 | 28 | 25 | 25 | 25 | 23 | 23 | 23 |
| | D | 0-7 | 74 | 66 | 39 | 74 | 60 | 34 | 74 | 52 | 30 | 74 | 46 | 27 | 70 | 41 | 25 | 67 | 36 | 23 | 64 | 33 | 31 | 53 | 28 | 27 | 45 | 24 | 23 | 39 | 31 | 20 | 33 | 27 | 17 | 29 | 24 | 15 | 26 | 21 | 13 |
| | | 7-27 | 64 | 64 | 42 | 64 | 62 | 37 | 64 | 55 | 33 | 64 | 48 | 30 | 64 | 43 | 27 | 64 | 39 | 24 | 64 | 35 | 34 | 60 | 29 | 29 | 50 | 25 | 24 | 43 | 33 | 21 | 37 | 29 | 19 | 33 | 25 | 16 | 29 | 23 | 15 |
| | | 27-45 | 59 | 59 | 59 | 59 | 59 | 59 | 58 | 58 | 58 | 53 | 53 | 53 | 49 | 49 | 49 | 45 | 45 | 45 | 41 | 41 | 41 | 35 | 35 | 35 | 31 | 31 | 31 | 27 | 27 | 27 | 24 | 24 | 24 | 21 | 21 | 21 | 19 | 29 | 29 |
| 10 | B | 0-7 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 46 | 52 | 52 | 40 | 52 | 52 | 35 | 52 | 51 | 30 | 52 | 42 | 26 | 52 | 35 | 22 | 52 | 31 | 29 | 51 | 27 | 26 | 45 | 24 | 23 |
| | | 7-27 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 47 | 52 | 52 | 42 | 52 | 52 | 38 | 52 | 52 | 32 | 52 | 44 | 27 | 52 | 37 | 24 | 49 | 32 | 31 | 46 | 29 | 28 | 43 | 25 | 25 |
| | | 27-45 | 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 | 44 | 44 | 44 | 39 | 39 | 39 | 34 | 34 | 34 | 31 | 31 | 31 |
| | C | 0-7 | 52 | 52 | 51 | 52 | 52 | 43 | 52 | 52 | 37 | 52 | 52 | 33 | 52 | 51 | 30 | 52 | 45 | 27 | 52 | 40 | 25 | 52 | 33 | 32 | 52 | 28 | 27 | 47 | 25 | 23 | 40 | 32 | 20 | 35 | 29 | 18 | 31 | 25 | 16 |
| | | 7-27 | 52 | 52 | 51 | 52 | 52 | 45 | 52 | 52 | 40 | 52 | 52 | 35 | 52 | 52 | 32 | 52 | 48 | 29 | 52 | 43 | 27 | 51 | 35 | 23 | 47 | 30 | 29 | 44 | 26 | 25 | 41 | 23 | 22 | 38 | 30 | 19 | 35 | 27 | 17 |
| | | 27-45 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 48 | 48 | 48 | 42 | 42 | 42 | 36 | 36 | 36 | 32 | 32 | 32 | 28 | 28 | 28 | 25 | 25 | 25 | 23 | 23 | 23 |
| | D | 0-7 | 52 | 52 | 39 | 52 | 52 | 34 | 52 | 52 | 30 | 52 | 46 | 27 | 52 | 41 | 25 | 52 | 36 | 23 | 52 | 33 | 31 | 52 | 28 | 27 | 45 | 24 | 23 | 39 | 31 | 20 | 33 | 27 | 17 | 29 | 24 | 15 | 26 | 21 | 13 |
| | | 7-27 | 52 | 52 | 42 | 52 | 52 | 37 | 52 | 52 | 33 | 52 | 48 | 30 | 52 | 43 | 27 | 52 | 39 | 24 | 51 | 35 | 34 | 47 | 29 | 29 | 43 | 25 | 24 | 40 | 33 | 21 | 37 | 29 | 19 | 33 | 25 | 16 | 29 | 23 | 15 |
| | | 27-45 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 49 | 49 | 49 | 45 | 45 | 45 | 41 | 41 | 41 | 35 | 35 | 35 | 31 | 31 | 31 | 27 | 27 | 27 | 24 | 24 | 24 | 21 | 21 | 21 | 19 | 29 | 29 |
| 20 | B | 0-7 | 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 | 35 | 22 | 36 | 31 | 29 | 36 | 27 | 26 | 36 | 24 | 23 |
| | | 7-27 | 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 | 36 | 27 | 36 | 36 | 24 | 34 | 32 | 31 | 33 | 29 | 28 | 31 | 25 | 25 |
| | | 27-45 | 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 | 34 | 34 | 34 | 31 | 31 | 31 |
| | C | 0-7 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 33 | 36 | 36 | 30 | 36 | 36 | 27 | 36 | 36 | 25 | 36 | 33 | 32 | 36 | 28 | 27 | 36 | 25 | 23 | 36 | 32 | 20 | 35 | 29 | 18 | 31 | 25 | 16 |
| | | 7-27 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 35 | 36 | 36 | 32 | 36 | 36 | 29 | 36 | 36 | 27 | 35 | 35 | 23 | 33 | 30 | 29 | 32 | 26 | 25 | 30 | 23 | 22 | 29 | 30 | 19 | 27 | 27 | 17 |
| | | 27-45 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 36 | 36 | 36 | 32 | 32 | 32 | 28 | 28 | 28 | 25 | 25 | 25 | 23 | 23 | 23 |
| | D | 0-7 | 36 | 36 | 36 | 36 | 36 | 34 | 36 | 36 | 30 | 36 | 36 | 27 | 36 | 36 | 25 | 36 | 36 | 23 | 36 | 33 | 31 | 36 | 28 | 27 | 36 | 24 | 23 | 35 | 31 | 20 | 33 | 27 | 17 | 29 | 24 | 15 | 26 | 21 | 13 |
| | | 7-27 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 33 | 36 | 36 | 30 | 36 | 36 | 27 | 36 | 36 | 24 | 35 | 35 | 34 | 33 | 29 | 29 | 31 | 25 | 24 | 30 | 33 | 21 | 28 | 29 | 19 | 26 | 25 | 16 | 25 | 23 | 15 |
| | | 27-45 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 35 | 35 | 35 | 31 | 31 | 31 | 27 | 27 | 27 | 24 | 24 | 24 | 21 | 21 | 21 | 19 | 29 | 29 |
| 30 | B | 0-7 | 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 | 35 | 35 | 22 | 35 | 31 | 29 | 35 | 27 | 26 | 35 | 24 | 23 |
| | | 7-27 | 33 | 33 | 33 | 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 | 24 | 33 | 32 | 31 | 33 | 29 | 28 | 31 | 25 | 25 |
| | | 27-45 | 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 | 32 | 29 | 29 | 29 |
| | C | 0-7 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 33 | 35 | 35 | 30 | 35 | 35 | 27 | 35 | 35 | 25 | 35 | 33 | 32 | 35 | 28 | 27 | 35 | 25 | 23 | 35 | 32 | 20 | 34 | 29 | 18 | 31 | 25 | 16 |
| | | 7-27 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 32 | 33 | 33 | 29 | 33 | 33 | 27 | 33 | 33 | 23 | 33 | 30 | 29 | 32 | 26 | 25 | 30 | 23 | 22 | 29 | 30 | 19 | 27 | 27 | 17 |
| | | 27-45 | 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 | 30 | 30 | 30 | 27 | 27 | 27 | 25 | 25 | 25 | 23 | 23 | 23 |
| | D | 0-7 | 36 | 36 | 36 | 36 | 36 | 34 | 36 | 36 | 30 | 36 | 36 | 27 | 36 | 36 | 25 | 36 | 36 | 23 | 36 | 33 | 31 | 36 | 28 | 27 | 36 | 24 | 23 | 35 | 31 | 20 | 33 | 27 | 17 | 29 | 24 | 15 | 26 | 21 | 13 |
| | | 7-27 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 33 | 35 | 35 | 30 | 35 | 35 | 27 | 35 | 35 | 24 | 35 | 35 | 34 | 33 | 29 | 29 | 31 | 25 | 24 | 30 | 33 | 21 | 28 | 29 | 19 | 26 | 25 | 16 | 25 | 23 | 15 |
| | | 27-45 | 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 | 30 | 30 | 27 | 27 | 27 | 24 | 24 | 24 | 21 | 21 | 21 | 19 | 29 | 29 |
| 40 | B | 0-7 | 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 | 22 | 29 | 29 | 29 | 29 | 27 | 26 | 29 | 24 | 23 |
| | | 7-27 | 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 | 31 | 28 | 28 | 28 | 27 | 25 | 25 |
| | | 27-45 | 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 |
| | C | 0-7 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 27 | 29 | 29 | 25 | 29 | 29 | 32 | 29 | 28 | 27 | 29 | 25 | 23 | 29 | 32 | 20 | 28 | 29 | 18 | 27 | 25 | 16 |
| | | 7-27 | 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 | 29 | 27 | 26 | 25 | 26 | 23 | 22 | 25 | 30 | 19 | 24 | 27 | 17 |
| | | 27-45 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 25 | 25 | 25 | 23 | 23 | 23 | 22 | 22 | 22 |
| | D | 0-7 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 30 | 31 | 31 | 27 | 31 | 31 | 25 | 31 | 31 | 23 | 31 | 31 | 31 | 31 | 28 | 27 | 31 | 24 | 23 | 31 | 31 | 20 | 30 | 27 | 17 | 29 | 24 | 15 | 26 | 21 | 13 |
| | | 7-27 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 27 | 30 | 30 | 24 | 30 | 30 | 34 | 30 | 29 | 29 | 29 | 25 | 24 | 27 | 33 | 21 | 26 | 29 | 19 | 25 | 25 | 16 | 23 | 23 | 15 |
| | | 27-45 | 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 | 25 | 25 | 23 | 23 | 23 | 21 | 21 | 21 | 19 | 29 | 29 |
| 50 | B | 0-7 | 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 | 29 | 24 | 24 | 26 | 24 | 24 | 23 |
| | | 7-27 | 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 | 31 | 35 | 35 | 28 | 35 | 35 | 25 |
| | | 27-45 | 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 | 33 |
| | C | 0-7 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 32 | 24 | 24 | 27 | 24 | 24 | 23 | 24 | 32 | 20 | 24 | 29 | 18 | 23 | 25 | 16 |
| | | 7-27 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 34 | 35 | 35 | 29 | 35 | 35 | 25 | 35 | 34 | 22 | 35 | 30 | 19 | 35 | 27 | 17 |
| | | 27-45 | 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 | 30 | 30 |
| | D | 0-7 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 25 | 26 | 26 | 23 | 26 | 26 | 31 | 26 | 26 | 27 | 26 | 24 | 23 | 26 | 31 | 20 | 26 | 27 | 17 | 25 | 24 | 15 | 24 | 21 | 13 |
| | | 7-27 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 24 | 25 | 25 | 34 | 25 | 25 | 29 | 25 | 25 | 24 | 24 | 33 | 21 | 23 | 29 | 19 | 22 | 25 | 16 | 21 | 23 | 15 |
| | | 27-45 | 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 | 22 | 22 | 22 | 20 | 20 | 20 | 19 | 28 | 28 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 3.00 | 22.78 sq.ft | PORTRAIT | CROSS-SLOPE | SML | PRO SERIES | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 29 | 20 | 20 | 26 | 20 | 20 | 23 |
| | | 7-27 | 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 | 30 | 30 | 25 |
| | | 27-45 | 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 |
| | C | 0-7 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 30 | 20 | 20 | 27 | 20 | 20 | 23 | 20 | 30 | 20 | 20 | 29 | 18 | 20 | 25 | 16 |
| | | 7-27 | 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 | 29 | 30 | 30 | 25 | 30 | 30 | 22 | 30 | 30 | 19 | 30 | 27 | 17 |
| | | 27-45 | 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 |
| | D | 0-7 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 31 | 22 | 22 | 27 | 22 | 22 | 23 | 22 | 31 | 20 | 22 | 27 | 17 | 22 | 24 | 15 | 21 | 21 | 13 |
| | | 7-27 | 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 | 32 | 21 | 33 | 29 | 19 | 33 | 25 | 16 | 33 | 23 | 15 |
| | | 27-45 | 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 | 29 | 29 | 29 | 27 | 27 | 27 |
| 70 | B | 0-7 | 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 | 26 | 17 | 17 | 26 | 17 | 17 | 23 |
| | | 7-27 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 25 |
| | | 27-45 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| | C | 0-7 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 26 | 17 | 17 | 26 | 17 | 17 | 23 | 17 | 26 | 20 | 17 | 26 | 18 | 17 | 25 | 16 |
| | | 7-27 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 25 | 26 | 26 | 22 | 26 | 26 | 19 | 26 | 26 | 17 |
| | | 27-45 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| | D | 0-7 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 29 | 19 | 19 | 27 | 19 | 19 | 23 | 19 | 29 | 20 | 19 | 27 | 17 | 19 | 24 | 15 | 19 | 21 | 13 |
| | | 7-27 | 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 | 21 | 28 | 28 | 19 | 28 | 25 | 16 | 28 | 23 | 15 |
| | | 27-45 | 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 | 25 | 25 | 25 |
| 80 | B | 0-7 | 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 | 23 | 15 | 15 | 23 | 15 | 15 | 23 |
| | | 7-27 | 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 |
| | | 27-45 | 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 |
| | C | 0-7 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 23 | 15 | 15 | 23 | 15 | 15 | 23 | 15 | 23 | 20 | 15 | 23 | 18 | 15 | 23 | 16 |
| | | 7-27 | 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 | 22 | 23 | 23 | 19 | 23 | 23 | 17 |
| | | 27-45 | 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 |
| | D | 0-7 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 25 | 17 | 17 | 25 | 17 | 17 | 23 | 17 | 25 | 20 | 17 | 25 | 17 | 17 | 24 | 15 | 17 | 21 | 13 |
| | | 7-27 | 25 | 25 | 25 | 25 | 25 | 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 | 19 | 25 | 25 | 16 | 25 | 23 | 15 |
| | | 27-45 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| 90 | B | 0-7 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 20 | 13 | 13 | 20 | 13 | 13 | 20 |
| | | 7-27 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | 27-45 | 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 |
| | C | 0-7 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 20 | 13 | 13 | 20 | 13 | 13 | 20 | 13 | 20 | 20 | 13 | 20 | 18 | 13 | 20 | 16 |
| | | 7-27 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 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 |
| | | 27-45 | 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 |
| | D | 0-7 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 23 | 15 | 15 | 23 | 15 | 15 | 23 | 15 | 23 | 20 | 15 | 23 | 17 | 15 | 23 | 15 | 15 | 21 | 13 |
| | | 7-27 | 22 | 22 | 22 | 22 | 22 | 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 | 22 | 22 | 16 | 22 | 22 | 15 |
| | | 27-45 | 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 |
| 100 | B | 0-7 | 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 | 18 | 12 | 12 | 18 | 12 | 12 | 18 |
| | | 7-27 | 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 | 18 |
| | | 27-45 | 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 |
| | C | 0-7 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 18 | 12 | 12 | 18 | 12 | 12 | 18 | 12 | 18 | 18 | 12 | 18 | 18 | 12 | 18 | 16 |
| | | 7-27 | 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 | 17 |
| | | 27-45 | 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 |
| | D | 0-7 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 20 | 13 | 13 | 20 | 13 | 13 | 20 | 13 | 20 | 20 | 13 | 20 | 17 | 13 | 20 | 15 | 13 | 20 | 13 |
| | | 7-27 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 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 | 15 |
| | | 27-45 | 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 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 3.00 | 22.78 sq.ft | LANDSCAPE | CROSS-SLOPE | SML | PRO SERIES | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 98 | 98 | 91 | 98 | 98 | 86 | 98 | 98 | 82 | 98 | 94 | 79 | 98 | 90 | 76 | 98 | 86 | 71 | 98 | 83 | 67 | 96 | 78 | 59 | 90 | 73 | 50 | 86 | 66 | 44 | 82 | 60 | 57 | 78 | 53 | 51 | 75 | 47 | 45 |
| | | 7-27 | 98 | 98 | 89 | 98 | 98 | 85 | 98 | 98 | 82 | 98 | 94 | 79 | 98 | 90 | 76 | 98 | 87 | 73 | 98 | 84 | 69 | 98 | 79 | 63 | 94 | 75 | 54 | 89 | 69 | 47 | 85 | 64 | 62 | 81 | 56 | 55 | 78 | 50 | 48 |
| | | 27-45 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 96 | 96 | 96 | 94 | 94 | 94 | 90 | 89 | 89 | 86 | 84 | 84 | 83 | 80 | 80 | 76 | 76 | 76 | 68 | 68 | 68 | 61 | 61 | 61 |
| | C | 0-7 | 98 | 92 | 78 | 98 | 88 | 74 | 98 | 84 | 68 | 98 | 81 | 64 | 96 | 78 | 59 | 92 | 75 | 53 | 89 | 71 | 49 | 84 | 64 | 41 | 80 | 56 | 53 | 76 | 49 | 46 | 71 | 42 | 41 | 66 | 56 | 36 | 61 | 50 | 32 |
| | | 7-27 | 98 | 93 | 78 | 98 | 89 | 75 | 98 | 85 | 70 | 98 | 82 | 66 | 98 | 79 | 63 | 96 | 76 | 57 | 93 | 73 | 53 | 87 | 66 | 44 | 83 | 59 | 57 | 79 | 51 | 50 | 75 | 45 | 44 | 70 | 60 | 39 | 66 | 53 | 34 |
| | | 27-45 | 99 | 99 | 99 | 98 | 98 | 98 | 95 | 95 | 95 | 92 | 92 | 92 | 90 | 89 | 89 | 88 | 86 | 86 | 85 | 83 | 83 | 81 | 78 | 78 | 71 | 71 | 71 | 62 | 62 | 62 | 55 | 55 | 55 | 49 | 49 | 49 | 44 | 44 | 44 |
| | D | 0-7 | 98 | 86 | 70 | 98 | 82 | 65 | 97 | 79 | 60 | 93 | 76 | 54 | 90 | 72 | 49 | 87 | 68 | 45 | 84 | 64 | 41 | 79 | 55 | 52 | 75 | 47 | 45 | 69 | 61 | 39 | 65 | 54 | 34 | 58 | 47 | 30 | 51 | 42 | 27 |
| | | 7-27 | 98 | 87 | 72 | 98 | 83 | 68 | 98 | 80 | 64 | 97 | 77 | 58 | 93 | 74 | 53 | 90 | 70 | 48 | 87 | 66 | 44 | 82 | 58 | 56 | 78 | 50 | 48 | 73 | 43 | 42 | 68 | 57 | 37 | 64 | 50 | 32 | 57 | 45 | 29 |
| | | 27-45 | 96 | 96 | 96 | 93 | 93 | 93 | 90 | 90 | 90 | 88 | 86 | 86 | 86 | 83 | 83 | 83 | 81 | 81 | 81 | 78 | 78 | 70 | 70 | 70 | 61 | 61 | 61 | 53 | 53 | 53 | 47 | 47 | 47 | 42 | 42 | 42 | 38 | 57 | 57 |
| 10 | B | 0-7 | 87 | 87 | 87 | 87 | 87 | 86 | 87 | 87 | 82 | 87 | 87 | 79 | 87 | 87 | 76 | 87 | 86 | 71 | 87 | 83 | 67 | 87 | 78 | 59 | 87 | 73 | 50 | 86 | 66 | 44 | 82 | 60 | 57 | 78 | 53 | 51 | 75 | 47 | 45 |
| | | 7-27 | 87 | 87 | 87 | 87 | 87 | 85 | 87 | 87 | 82 | 87 | 87 | 79 | 87 | 87 | 76 | 87 | 87 | 73 | 87 | 84 | 69 | 87 | 79 | 63 | 87 | 75 | 54 | 87 | 69 | 47 | 85 | 64 | 62 | 81 | 56 | 55 | 78 | 50 | 48 |
| | | 27-45 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 94 | 94 | 94 | 90 | 89 | 89 | 86 | 84 | 84 | 83 | 80 | 80 | 76 | 76 | 76 | 68 | 68 | 68 | 61 | 61 | 61 |
| | C | 0-7 | 87 | 87 | 78 | 87 | 87 | 74 | 87 | 84 | 68 | 87 | 81 | 64 | 87 | 78 | 59 | 87 | 75 | 53 | 87 | 71 | 49 | 84 | 64 | 41 | 80 | 56 | 53 | 76 | 49 | 46 | 71 | 42 | 41 | 66 | 56 | 36 | 61 | 50 | 32 |
| | | 7-27 | 87 | 87 | 78 | 87 | 87 | 75 | 87 | 85 | 70 | 87 | 82 | 66 | 87 | 79 | 63 | 87 | 76 | 57 | 87 | 73 | 53 | 87 | 66 | 44 | 83 | 59 | 57 | 79 | 51 | 50 | 75 | 45 | 44 | 70 | 60 | 39 | 66 | 53 | 34 |
| | | 27-45 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 92 | 92 | 92 | 90 | 89 | 89 | 88 | 86 | 86 | 85 | 83 | 83 | 81 | 78 | 78 | 71 | 71 | 71 | 62 | 62 | 62 | 55 | 55 | 55 | 49 | 49 | 49 | 44 | 44 | 44 |
| | D | 0-7 | 87 | 86 | 70 | 87 | 82 | 65 | 87 | 79 | 60 | 87 | 76 | 54 | 87 | 72 | 49 | 87 | 68 | 45 | 84 | 64 | 41 | 79 | 55 | 52 | 75 | 47 | 45 | 69 | 61 | 39 | 65 | 54 | 34 | 58 | 47 | 30 | 51 | 42 | 27 |
| | | 7-27 | 87 | 87 | 72 | 87 | 83 | 68 | 87 | 80 | 64 | 87 | 77 | 58 | 87 | 74 | 53 | 87 | 70 | 48 | 87 | 66 | 44 | 82 | 58 | 56 | 78 | 50 | 48 | 73 | 43 | 42 | 68 | 57 | 37 | 64 | 50 | 32 | 57 | 45 | 29 |
| | | 27-45 | 96 | 96 | 96 | 93 | 93 | 93 | 90 | 90 | 90 | 88 | 86 | 86 | 86 | 83 | 83 | 83 | 81 | 81 | 81 | 78 | 78 | 70 | 70 | 70 | 61 | 61 | 61 | 53 | 53 | 53 | 47 | 47 | 47 | 42 | 42 | 42 | 38 | 57 | 57 |
| 20 | B | 0-7 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 67 | 71 | 71 | 59 | 71 | 71 | 50 | 71 | 66 | 44 | 71 | 60 | 57 | 71 | 53 | 51 | 71 | 47 | 45 |
| | | 7-27 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 69 | 71 | 71 | 63 | 71 | 71 | 54 | 70 | 69 | 47 | 67 | 64 | 62 | 64 | 56 | 55 | 62 | 50 | 48 |
| | | 27-45 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 68 | 68 | 68 | 61 | 61 | 61 |
| | C | 0-7 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 68 | 71 | 71 | 64 | 71 | 71 | 59 | 71 | 71 | 53 | 71 | 71 | 49 | 71 | 64 | 41 | 71 | 56 | 53 | 71 | 49 | 46 | 71 | 42 | 41 | 66 | 56 | 36 | 61 | 50 | 32 |
| | | 7-27 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 70 | 71 | 71 | 66 | 71 | 71 | 63 | 71 | 71 | 57 | 71 | 71 | 53 | 69 | 66 | 44 | 65 | 59 | 57 | 62 | 51 | 50 | 59 | 45 | 44 | 56 | 60 | 39 | 53 | 53 | 34 |
| | | 27-45 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 71 | 71 | 71 | 62 | 62 | 62 | 55 | 55 | 55 | 49 | 49 | 49 | 44 | 44 | 44 |
| | D | 0-7 | 71 | 71 | 70 | 71 | 71 | 65 | 71 | 71 | 60 | 71 | 71 | 54 | 71 | 71 | 49 | 71 | 68 | 45 | 71 | 64 | 41 | 71 | 55 | 52 | 71 | 47 | 45 | 69 | 61 | 39 | 65 | 54 | 34 | 58 | 47 | 30 | 51 | 42 | 27 |
| | | 7-27 | 71 | 71 | 71 | 71 | 71 | 68 | 71 | 71 | 64 | 71 | 71 | 58 | 71 | 71 | 53 | 71 | 70 | 48 | 69 | 66 | 44 | 65 | 58 | 56 | 61 | 50 | 48 | 58 | 43 | 42 | 55 | 57 | 37 | 52 | 50 | 32 | 49 | 45 | 29 |
| | | 27-45 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 70 | 70 | 70 | 61 | 61 | 61 | 53 | 53 | 53 | 47 | 47 | 47 | 42 | 42 | 42 | 38 | 57 | 57 |
| 30 | B | 0-7 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 67 | 68 | 68 | 59 | 68 | 68 | 50 | 68 | 66 | 44 | 68 | 60 | 57 | 68 | 53 | 51 | 68 | 47 | 45 |
| | | 7-27 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 63 | 64 | 64 | 54 | 64 | 64 | 47 | 64 | 64 | 62 | 64 | 56 | 55 | 62 | 50 | 48 |
| | | 27-45 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 57 | 57 | 57 |
| | C | 0-7 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 64 | 68 | 68 | 59 | 68 | 68 | 53 | 68 | 68 | 49 | 68 | 64 | 41 | 68 | 56 | 53 | 68 | 49 | 46 | 68 | 42 | 41 | 66 | 56 | 36 | 61 | 50 | 32 |
| | | 7-27 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 63 | 64 | 64 | 57 | 64 | 64 | 53 | 64 | 64 | 44 | 64 | 59 | 57 | 62 | 51 | 50 | 59 | 45 | 44 | 56 | 60 | 39 | 53 | 53 | 34 |
| | | 27-45 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 58 | 58 | 58 | 54 | 54 | 54 | 49 | 49 | 49 | 44 | 44 | 44 |
| | D | 0-7 | 71 | 71 | 70 | 71 | 71 | 65 | 71 | 71 | 60 | 71 | 71 | 54 | 71 | 71 | 49 | 71 | 68 | 45 | 71 | 64 | 41 | 71 | 55 | 52 | 71 | 47 | 45 | 69 | 61 | 39 | 65 | 54 | 34 | 58 | 47 | 30 | 51 | 42 | 27 |
| | | 7-27 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 64 | 67 | 67 | 58 | 67 | 67 | 53 | 67 | 67 | 48 | 67 | 66 | 44 | 65 | 58 | 56 | 61 | 50 | 48 | 58 | 43 | 42 | 55 | 57 | 37 | 52 | 50 | 32 | 49 | 45 | 29 |
| | | 27-45 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 59 | 59 | 59 | 53 | 53 | 53 | 47 | 47 | 47 | 42 | 42 | 42 | 38 | 57 | 57 |
| 40 | B | 0-7 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 50 | 57 | 57 | 44 | 57 | 57 | 57 | 57 | 53 | 51 | 57 | 47 | 45 |
| | | 7-27 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 47 | 54 | 54 | 62 | 54 | 54 | 55 | 53 | 50 | 48 |
| | | 27-45 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 |
| | C | 0-7 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 53 | 57 | 57 | 49 | 57 | 57 | 41 | 57 | 56 | 53 | 57 | 49 | 46 | 57 | 42 | 41 | 55 | 56 | 36 | 53 | 50 | 32 |
| | | 7-27 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 53 | 54 | 54 | 44 | 54 | 54 | 57 | 54 | 51 | 50 | 51 | 45 | 44 | 49 | 60 | 39 | 47 | 53 | 34 |
| | | 27-45 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 49 | 49 | 49 | 46 | 46 | 46 | 42 | 42 | 42 |
| | D | 0-7 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 60 | 61 | 61 | 54 | 61 | 61 | 49 | 61 | 61 | 45 | 61 | 61 | 41 | 61 | 55 | 52 | 61 | 47 | 45 | 60 | 61 | 39 | 58 | 54 | 34 | 56 | 47 | 30 | 51 | 42 | 27 |
| | | 7-27 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 53 | 57 | 57 | 48 | 57 | 57 | 44 | 57 | 57 | 56 | 56 | 50 | 48 | 54 | 43 | 42 | 51 | 57 | 37 | 48 | 50 | 32 | 46 | 45 | 29 |
| | | 27-45 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 54 | 54 | 54 | 50 | 50 | 50 | 46 | 46 | 46 | 42 | 42 | 42 | 38 | 57 | 57 |
| 50 | B | 0-7 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 44 | 47 | 47 | 57 | 47 | 47 | 51 | 47 | 47 | 45 |
| | | 7-27 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 67 | 68 | 68 | 62 | 68 | 68 | 55 | 68 | 68 | 49 |
| | | 27-45 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 |
| | C | 0-7 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 41 | 47 | 47 | 53 | 47 | 47 | 46 | 47 | 42 | 41 | 47 | 56 | 36 | 46 | 50 | 32 |
| | | 7-27 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 65 | 68 | 68 | 58 | 68 | 68 | 50 | 68 | 66 | 44 | 68 | 60 | 39 | 68 | 53 | 34 |
| | | 27-45 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 60 | 60 | 60 |
| | D | 0-7 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 49 | 51 | 51 | 45 | 51 | 51 | 41 | 51 | 51 | 52 | 51 | 47 | 45 | 51 | 61 | 39 | 50 | 54 | 34 | 49 | 47 | 30 | 47 | 42 | 27 |
| | | 7-27 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 48 | 50 | 50 | 44 | 50 | 50 | 56 | 49 | 49 | 48 | 47 | 43 | 42 | 45 | 57 | 37 | 43 | 50 | 32 | 41 | 45 | 29 |
| | | 27-45 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 67 | 67 | 67 | 62 | 62 | 62 | 57 | 55 | 55 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 3.00 | 22.78 sq.ft | LANDSCAPE | CROSS-SLOPE | SML | PRO SERIES | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 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 | 57 | 39 | 39 | 51 | 39 | 39 | 45 |
| | | 7-27 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 55 | 58 | 58 | 49 |
| | | 27-45 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| | C | 0-7 | 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 | 53 | 39 | 39 | 46 | 39 | 39 | 41 | 39 | 56 | 36 | 39 | 50 | 32 |
| | | 7-27 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 50 | 58 | 58 | 44 | 58 | 58 | 39 | 58 | 53 | 34 |
| | | 27-45 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |
| | D | 0-7 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 41 | 43 | 43 | 52 | 43 | 43 | 45 | 43 | 61 | 39 | 43 | 54 | 34 | 43 | 47 | 30 | 42 | 42 | 27 |
| | | 7-27 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 56 | 64 | 64 | 48 | 64 | 64 | 42 | 64 | 57 | 37 | 64 | 50 | 32 | 64 | 45 | 29 |
| | | 27-45 | 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 | 56 | 56 | 56 | 52 | 52 | 52 |
| 70 | B | 0-7 | 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 | 51 | 34 | 34 | 51 | 34 | 34 | 45 |
| | | 7-27 | 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 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 49 |
| | | 27-45 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 |
| | C | 0-7 | 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 | 51 | 34 | 34 | 46 | 34 | 34 | 41 | 34 | 51 | 36 | 34 | 50 | 32 |
| | | 7-27 | 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 | 50 | 50 | 50 | 44 | 50 | 50 | 39 | 50 | 50 | 34 |
| | | 27-45 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 |
| | D | 0-7 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 52 | 37 | 37 | 45 | 37 | 56 | 39 | 37 | 54 | 34 | 37 | 47 | 30 | 37 | 42 | 27 |
| | | 7-27 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 48 | 55 | 55 | 42 | 55 | 55 | 37 | 55 | 50 | 32 | 55 | 45 | 29 |
| | | 27-45 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 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 |
| 80 | B | 0-7 | 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 | 45 | 30 | 30 | 45 | 30 | 30 | 45 |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 |
| | | 27-45 | 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 | 42 | 42 | 42 | 42 |
| | C | 0-7 | 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 | 45 | 30 | 30 | 45 | 30 | 30 | 41 | 30 | 45 | 36 | 30 | 45 | 32 |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 39 | 44 | 44 | 34 |
| | | 27-45 | 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 | 42 | 42 | 42 | 42 |
| | D | 0-7 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 50 | 33 | 33 | 45 | 33 | 50 | 39 | 33 | 50 | 34 | 33 | 47 | 30 | 33 | 42 | 27 |
| | | 7-27 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 48 | 49 | 49 | 42 | 49 | 49 | 37 | 49 | 49 | 32 | 49 | 45 | 29 |
| | | 27-45 | 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 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 |
| 90 | B | 0-7 | 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 | 40 | 27 | 27 | 40 | 27 | 27 | 40 |
| | | 7-27 | 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 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| | | 27-45 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 |
| | C | 0-7 | 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 | 40 | 27 | 27 | 40 | 27 | 27 | 40 | 27 | 40 | 36 | 27 | 40 | 32 |
| | | 7-27 | 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 | 40 | 40 | 40 | 39 | 40 | 40 | 34 |
| | | 27-45 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 |
| | D | 0-7 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 44 | 29 | 29 | 44 | 29 | 44 | 39 | 29 | 44 | 34 | 29 | 44 | 30 | 29 | 42 | 27 |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 42 | 44 | 44 | 37 | 44 | 44 | 32 | 44 | 44 | 29 |
| | | 27-45 | 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 | 42 | 42 | 42 | 42 |
| 100 | B | 0-7 | 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 | 36 | 24 | 24 | 36 | 24 | 24 | 36 |
| | | 7-27 | 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 | 36 | 36 | 36 | 36 |
| | | 27-45 | 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 | 34 |
| | C | 0-7 | 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 | 36 | 24 | 24 | 36 | 24 | 24 | 36 | 24 | 36 | 36 | 24 | 36 | 32 |
| | | 7-27 | 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 | 36 | 36 | 36 | 34 |
| | | 27-45 | 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 | 34 |
| | D | 0-7 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 40 | 27 | 27 | 40 | 27 | 40 | 39 | 27 | 40 | 34 | 27 | 40 | 30 | 27 | 40 | 27 |
| | | 7-27 | 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 | 37 | 40 | 40 | 32 | 40 | 40 | 29 |
| | | 27-45 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 1.25 | 18.66 sq.ft | PORTRAIT | CROSS-SLOPE | SML | UAF | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 83 | 83 | 76 | 83 | 83 | 72 | 83 | 82 | 67 | 83 | 79 | 63 | 83 | 76 | 55 | 83 | 72 | 48 | 83 | 69 | 42 | 81 | 61 | 36 | 77 | 50 | 31 | 72 | 42 | 26 | 67 | 37 | 23 | 61 | 32 | 20 | 54 | 29 | 18 |
| | | 7-27 | 83 | 83 | 75 | 83 | 83 | 71 | 83 | 82 | 67 | 83 | 79 | 63 | 83 | 76 | 56 | 83 | 73 | 51 | 83 | 70 | 46 | 83 | 64 | 38 | 79 | 53 | 33 | 75 | 45 | 28 | 71 | 39 | 25 | 66 | 34 | 22 | 60 | 30 | 19 |
| | | 27-45 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 84 | 82 | 82 | 82 | 78 | 78 | 78 | 68 | 68 | 68 | 59 | 59 | 59 | 52 | 52 | 52 | 46 | 46 | 46 | 41 | 41 | 41 | 37 | 37 | 37 |
| | C | 0-7 | 83 | 78 | 60 | 83 | 74 | 51 | 83 | 70 | 44 | 83 | 66 | 39 | 81 | 61 | 36 | 78 | 54 | 32 | 76 | 48 | 30 | 70 | 40 | 25 | 64 | 34 | 21 | 56 | 30 | 19 | 48 | 26 | 25 | 42 | 23 | 22 | 37 | 20 | 19 |
| | | 7-27 | 83 | 78 | 61 | 83 | 75 | 54 | 83 | 71 | 47 | 83 | 67 | 42 | 83 | 63 | 38 | 81 | 57 | 35 | 79 | 51 | 32 | 74 | 42 | 27 | 68 | 36 | 23 | 62 | 31 | 20 | 54 | 27 | 26 | 47 | 24 | 23 | 42 | 21 | 21 |
| | | 27-45 | 84 | 84 | 84 | 83 | 83 | 83 | 80 | 80 | 80 | 73 | 73 | 73 | 68 | 68 | 68 | 62 | 62 | 62 | 58 | 58 | 58 | 50 | 50 | 50 | 43 | 43 | 43 | 38 | 38 | 38 | 34 | 34 | 34 | 30 | 30 | 30 | 27 | 27 | 27 |
| | D | 0-7 | 83 | 72 | 47 | 83 | 67 | 41 | 82 | 63 | 36 | 79 | 55 | 33 | 76 | 49 | 30 | 73 | 43 | 27 | 69 | 40 | 25 | 63 | 33 | 21 | 54 | 29 | 18 | 46 | 25 | 24 | 40 | 22 | 21 | 35 | 19 | 18 | 31 | 26 | ~~16~~ |
| | | 7-27 | 83 | 73 | 50 | 83 | 68 | 44 | 83 | 64 | 39 | 82 | 58 | 35 | 79 | 52 | 32 | 76 | 46 | 29 | 73 | 42 | 27 | 67 | 35 | 23 | 60 | 30 | 19 | 52 | 26 | 25 | 45 | 23 | 22 | 39 | 20 | 20 | 35 | 18 | ~~17~~ |
| | | 27-45 | 82 | 82 | 82 | 76 | 76 | 76 | 69 | 69 | 69 | 63 | 63 | 63 | 58 | 58 | 58 | 53 | 53 | 53 | 49 | 49 | 49 | 42 | 42 | 42 | 37 | 37 | 37 | 32 | 32 | 32 | 29 | 29 | 29 | 26 | 26 | 26 | 23 | 23 | 23 |
| 10 | B | 0-7 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 55 | 62 | 62 | 48 | 62 | 62 | 42 | 62 | 61 | 36 | 62 | 50 | 31 | 62 | 42 | 26 | 62 | 37 | 23 | 61 | 32 | 20 | 54 | 29 | 18 |
| | | 7-27 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 56 | 63 | 63 | 51 | 63 | 63 | 46 | 63 | 63 | 38 | 63 | 53 | 33 | 63 | 45 | 28 | 59 | 39 | 25 | 55 | 34 | 22 | 52 | 30 | 19 |
| | | 27-45 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 68 | 68 | 68 | 59 | 59 | 59 | 52 | 52 | 52 | 46 | 46 | 46 | 41 | 41 | 41 | 37 | 37 | 37 |
| | C | 0-7 | 62 | 62 | 60 | 62 | 62 | 51 | 62 | 62 | 44 | 62 | 62 | 39 | 62 | 61 | 36 | 62 | 54 | 32 | 62 | 48 | 30 | 62 | 40 | 25 | 62 | 34 | 21 | 56 | 30 | 19 | 48 | 26 | 25 | 42 | 23 | 22 | 37 | 20 | 19 |
| | | 7-27 | 63 | 63 | 61 | 63 | 63 | 54 | 63 | 63 | 47 | 63 | 63 | 42 | 63 | 63 | 38 | 63 | 57 | 35 | 63 | 51 | 32 | 61 | 42 | 27 | 57 | 36 | 23 | 53 | 31 | 20 | 49 | 27 | 26 | 45 | 24 | 23 | 42 | 21 | 21 |
| | | 27-45 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 73 | 73 | 73 | 68 | 68 | 68 | 62 | 62 | 62 | 58 | 58 | 58 | 50 | 50 | 50 | 43 | 43 | 43 | 38 | 38 | 38 | 34 | 34 | 34 | 30 | 30 | 30 | 27 | 27 | 27 |
| | D | 0-7 | 62 | 62 | 47 | 62 | 62 | 41 | 62 | 62 | 36 | 62 | 55 | 33 | 62 | 49 | 30 | 62 | 43 | 27 | 62 | 40 | 25 | 62 | 33 | 21 | 54 | 29 | 18 | 46 | 25 | 24 | 40 | 22 | 21 | 35 | 19 | 18 | 31 | 26 | ~~16~~ |
| | | 7-27 | 63 | 63 | 50 | 63 | 63 | 44 | 63 | 63 | 39 | 63 | 58 | 35 | 63 | 52 | 32 | 63 | 46 | 29 | 61 | 42 | 27 | 56 | 35 | 23 | 52 | 30 | 19 | 48 | 26 | 25 | 44 | 23 | 22 | 39 | 20 | 20 | 35 | 18 | ~~17~~ |
| | | 27-45 | 81 | 81 | 81 | 76 | 76 | 76 | 69 | 69 | 69 | 63 | 63 | 63 | 58 | 58 | 58 | 53 | 53 | 53 | 49 | 49 | 49 | 42 | 42 | 42 | 37 | 37 | 37 | 32 | 32 | 32 | 29 | 29 | 29 | 26 | 26 | 26 | 23 | 23 | 23 |
| 20 | B | 0-7 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 42 | 43 | 43 | 36 | 43 | 43 | 31 | 43 | 42 | 26 | 43 | 37 | 23 | 43 | 32 | 20 | 43 | 29 | 18 |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 38 | 44 | 44 | 33 | 43 | 43 | 28 | 41 | 39 | 25 | 39 | 34 | 22 | 38 | 30 | 19 |
| | | 27-45 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 54 | 54 | 54 | 50 | 50 | 50 | 46 | 46 | 46 | 41 | 41 | 41 | 37 | 37 | 37 |
| | C | 0-7 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 39 | 43 | 43 | 36 | 43 | 43 | 32 | 43 | 43 | 30 | 43 | 40 | 25 | 43 | 34 | 21 | 43 | 30 | 19 | 43 | 26 | 25 | 41 | 23 | 22 | 37 | 20 | 19 |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 42 | 44 | 44 | 38 | 44 | 44 | 35 | 44 | 44 | 32 | 42 | 42 | 27 | 40 | 36 | 23 | 38 | 31 | 20 | 36 | 27 | 26 | 34 | 24 | 23 | 32 | 21 | 21 |
| | | 27-45 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 53 | 53 | 53 | 48 | 48 | 48 | 43 | 43 | 43 | 38 | 38 | 38 | 34 | 34 | 34 | 30 | 30 | 30 | 27 | 27 | 27 |
| | D | 0-7 | 43 | 43 | 43 | 43 | 43 | 41 | 43 | 43 | 36 | 43 | 43 | 33 | 43 | 43 | 30 | 43 | 43 | 27 | 43 | 40 | 25 | 43 | 33 | 21 | 43 | 29 | 18 | 42 | 25 | 24 | 40 | 22 | 21 | 35 | 19 | 18 | 31 | 26 | ~~16~~ |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 39 | 44 | 44 | 35 | 44 | 44 | 32 | 43 | 43 | 29 | 42 | 42 | 27 | 40 | 35 | 23 | 38 | 30 | 19 | 36 | 26 | 25 | 34 | 23 | 22 | 32 | 20 | 20 | 30 | 18 | ~~17~~ |
| | | 27-45 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 59 | 59 | 59 | 55 | 55 | 55 | 52 | 52 | 52 | 49 | 49 | 49 | 42 | 42 | 42 | 37 | 37 | 37 | 32 | 32 | 32 | 29 | 29 | 29 | 26 | 26 | 26 | 23 | 23 | 23 |
| 30 | B | 0-7 | 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 | 42 | 26 | 42 | 37 | 23 | 42 | 32 | 20 | 42 | 29 | 18 |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 38 | 44 | 44 | 33 | 43 | 43 | 28 | 41 | 39 | 25 | 39 | 34 | 22 | 38 | 30 | 19 |
| | | 27-45 | 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 | 40 | 38 | 38 | 38 | 35 | 35 | 35 |
| | C | 0-7 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 39 | 42 | 42 | 36 | 42 | 42 | 32 | 42 | 42 | 30 | 42 | 40 | 25 | 42 | 34 | 21 | 42 | 30 | 19 | 42 | 26 | 25 | 40 | 23 | 22 | 37 | 20 | 19 |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 42 | 44 | 44 | 38 | 44 | 44 | 35 | 44 | 44 | 32 | 42 | 42 | 27 | 40 | 36 | 23 | 38 | 31 | 20 | 36 | 27 | 26 | 34 | 24 | 23 | 32 | 21 | 21 |
| | | 27-45 | 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 | 36 | 36 | 36 | 33 | 33 | 33 |
| | D | 0-7 | 43 | 43 | 43 | 43 | 43 | 41 | 43 | 43 | 36 | 43 | 43 | 33 | 43 | 43 | 30 | 43 | 43 | 27 | 43 | 40 | 25 | 43 | 33 | 21 | 43 | 29 | 18 | 42 | 25 | 24 | 40 | 22 | 21 | 35 | 19 | 18 | 31 | 26 | ~~16~~ |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 39 | 44 | 44 | 35 | 44 | 44 | 32 | 43 | 43 | 29 | 42 | 42 | 27 | 40 | 35 | 23 | 38 | 30 | 19 | 36 | 26 | 25 | 34 | 23 | 22 | 32 | 20 | 20 | 30 | 18 | ~~17~~ |
| | | 27-45 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 40 | 40 | 40 | 36 | 36 | 36 | 32 | 32 | 32 | 29 | 29 | 29 | 26 | 26 | 26 | 23 | 23 | 23 |
| 40 | B | 0-7 | 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 | 31 | 35 | 35 | 26 | 35 | 35 | 23 | 35 | 32 | 20 | 35 | 29 | 18 |
| | | 7-27 | 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 | 33 | 34 | 34 | 28 | 34 | 34 | 25 | 34 | 34 | 22 | 32 | 30 | 19 |
| | | 27-45 | 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 | 32 | 32 | 32 | 32 |
| | C | 0-7 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 32 | 35 | 35 | 30 | 35 | 35 | 25 | 35 | 34 | 21 | 35 | 30 | 19 | 35 | 26 | 25 | 33 | 23 | 22 | 32 | 20 | 19 |
| | | 7-27 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 32 | 34 | 34 | 27 | 34 | 34 | 23 | 33 | 31 | 20 | 31 | 27 | 26 | 30 | 24 | 23 | 29 | 21 | 21 |
| | | 27-45 | 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 | 30 | 30 | 30 | 28 | 28 | 28 | 26 | 26 | 26 |
| | D | 0-7 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 36 | 37 | 37 | 33 | 37 | 37 | 30 | 37 | 37 | 27 | 37 | 37 | 25 | 37 | 33 | 21 | 37 | 29 | 18 | 37 | 25 | 24 | 35 | 22 | 21 | 34 | 19 | 18 | 31 | 26 | ~~16~~ |
| | | 7-27 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 35 | 37 | 37 | 32 | 37 | 37 | 29 | 37 | 37 | 27 | 36 | 35 | 23 | 34 | 30 | 19 | 33 | 26 | 25 | 31 | 23 | 22 | 29 | 20 | 20 | 28 | 18 | ~~17~~ |
| | | 27-45 | 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 | 30 | 30 | 30 | 28 | 28 | 28 | 26 | 26 | 26 | 23 | 23 | 23 |
| 50 | B | 0-7 | 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 | 28 | 18 |
| | | 7-27 | 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 | 19 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 21 | 28 | 28 | 19 | 28 | 26 | 25 | 28 | 23 | 22 | 28 | 20 | 19 |
| | | 7-27 | 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 | 27 | 27 | 26 | 26 | 24 | 23 | 25 | 21 | 21 |
| | | 27-45 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 24 | 24 | 24 |
| | D | 0-7 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 30 | 31 | 31 | 27 | 31 | 31 | 25 | 31 | 31 | 21 | 31 | 29 | 18 | 31 | 25 | 24 | 31 | 22 | 21 | 30 | 19 | 18 | 29 | 26 | ~~16~~ |
| | | 7-27 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 29 | 31 | 31 | 27 | 31 | 31 | 23 | 30 | 30 | 19 | 29 | 26 | 25 | 27 | 23 | 22 | 26 | 20 | 20 | 25 | 18 | ~~17~~ |
| | | 27-45 | 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 | 28 | 28 | 26 | 26 | 26 | 24 | 24 | 24 | 22 | 22 | 22 |

* 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 7-10 | II | 30 ft | Ss = 1.25 | 18.66 sq.ft | PORTRAIT | CROSS-SLOPE | SML | UAF | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 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 | 23 | 24 | 24 | 20 | 24 | 24 | 18 |
| | | 7-27 | 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 | 22 | 23 | 23 | 19 |
| | | 27-45 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 |
| | C | 0-7 | 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 | 24 | 25 | 24 | 23 | 22 | 24 | 20 | 19 |
| | | 7-27 | 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 | 26 | 23 | 23 | 23 | 23 | 21 | 21 |
| | | 27-45 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 |
| | D | 0-7 | 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 | 26 | 18 | 26 | 25 | 24 | 26 | 22 | 21 | 26 | 19 | 18 | 25 | 26 | ~~16~~ |
| | | 7-27 | 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 | 26 | 26 | 25 | 25 | 23 | 22 | 24 | 20 | 20 | 23 | 18 | ~~17~~ |
| | | 27-45 | 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 | 23 | 23 | 23 | 21 | 21 | 21 |
| 70 | B | 0-7 | 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 | 21 | 21 | 18 |
| | | 7-27 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 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 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 21 | 21 | 25 | 21 | 21 | 22 | 21 | 20 | 19 |
| | | 7-27 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 26 | 20 | 20 | 23 | 20 | 20 | 21 |
| | | 27-45 | 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 |
| | D | 0-7 | 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 | 23 | 24 | 23 | 22 | 21 | 23 | 19 | 18 | 23 | 26 | ~~16~~ |
| | | 7-27 | 22 | 22 | 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 | 22 | 25 | 22 | 22 | 22 | 22 | 20 | 20 | 21 | 18 | ~~17~~ |
| | | 27-45 | 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 |
| 80 | B | 0-7 | 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 | 18 |
| | | 7-27 | 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 | 18 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 25 | 18 | 18 | 22 | 18 | 18 | 19 |
| | | 7-27 | 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 | 26 | 18 | 18 | 23 | 18 | 18 | 21 |
| | | 27-45 | 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 |
| | D | 0-7 | 20 | 20 | 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 | 24 | 20 | 20 | 21 | 20 | 19 | 18 | 20 | 26 | ~~16~~ |
| | | 7-27 | 20 | 20 | 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 | 25 | 20 | 20 | 22 | 20 | 20 | 20 | 19 | 18 | ~~17~~ |
| | | 27-45 | 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 |
| 90 | B | 0-7 | 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 |
| | | 7-27 | 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 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 24 | 16 | 16 | 22 | 16 | 16 | 19 |
| | | 7-27 | 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 | 24 | 16 | 16 | 23 | 16 | 16 | 21 |
| | | 27-45 | 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 |
| | D | 0-7 | 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 | 24 | 18 | 18 | 21 | 18 | 18 | 18 | 18 | 26 | ~~16~~ |
| | | 7-27 | 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 | 25 | 18 | 18 | 22 | 18 | 18 | 20 | 18 | 18 | ~~17~~ |
| | | 27-45 | 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 |
| 100 | B | 0-7 | 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 |
| | | 7-27 | 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 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 22 | 14 | 14 | 22 | 14 | 14 | 19 |
| | | 7-27 | 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 | 22 | 14 | 14 | 22 | 14 | 14 | 21 |
| | | 27-45 | 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 |
| | D | 0-7 | 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 | 24 | 16 | 16 | 21 | 16 | 16 | 18 | 16 | 24 | ~~16~~ |
| | | 7-27 | 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 | 24 | 16 | 16 | 22 | 16 | 16 | 20 | 16 | 16 | ~~17~~ |
| | | 27-45 | 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 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 1.25 | 18.66 sq.ft | LANDSCAPE | CROSS-SLOPE | SML | UAF | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 98 | 98 | 92 | 98 | 98 | 87 | 98 | 98 | 83 | 98 | 94 | 80 | 98 | 91 | 76 | 98 | 87 | 72 | 98 | 84 | 68 | 97 | 79 | 60 | 91 | 74 | 51 | 86 | 67 | 45 | 82 | 62 | 39 | 79 | 54 | 34 | 75 | 48 | 31 |
| | | 7-27 | 99 | 99 | 90 | 99 | 99 | 86 | 99 | 99 | 83 | 99 | 95 | 79 | 99 | 91 | 77 | 99 | 88 | 74 | 99 | 85 | 70 | 99 | 80 | 64 | 95 | 75 | 55 | 90 | 69 | 48 | 86 | 64 | 42 | 82 | 58 | 37 | 78 | 51 | 33 |
| | | 27-45 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 97 | 97 | 97 | 95 | 95 | 95 | 91 | 90 | 90 | 87 | 85 | 85 | 83 | 81 | 81 | 78 | 77 | 77 | 69 | 69 | 69 | 62 | 62 | 62 |
| | C | 0-7 | 98 | 93 | 78 | 98 | 89 | 75 | 98 | 85 | 69 | 98 | 82 | 65 | 96 | 79 | 60 | 93 | 76 | 55 | 90 | 72 | 50 | 85 | 65 | 42 | 80 | 57 | 36 | 76 | 50 | 31 | 72 | 43 | 41 | 67 | 38 | 37 | 63 | 34 | 32 |
| | | 7-27 | 99 | 94 | 79 | 99 | 90 | 75 | 99 | 86 | 71 | 99 | 83 | 67 | 99 | 80 | 64 | 97 | 77 | 59 | 94 | 74 | 54 | 88 | 67 | 45 | 83 | 61 | 39 | 79 | 53 | 34 | 75 | 46 | 30 | 71 | 41 | 39 | 67 | 36 | 35 |
| | | 27-45 | 100 | 100 | 100 | 98 | 98 | 98 | 96 | 96 | 96 | 93 | 93 | 93 | 91 | 90 | 90 | 88 | 87 | 87 | 86 | 84 | 84 | 82 | 79 | 79 | 73 | 73 | 73 | 64 | 64 | 64 | 56 | 56 | 56 | 50 | 50 | 50 | 45 | 45 | 45 |
| | D | 0-7 | 98 | 87 | 71 | 98 | 83 | 66 | 97 | 79 | 61 | 94 | 76 | 55 | 90 | 73 | 50 | 87 | 68 | 46 | 85 | 65 | 42 | 80 | 56 | 35 | 75 | 48 | 30 | 70 | 42 | 40 | 65 | 36 | 35 | 59 | 32 | 31 | 53 | 43 | ~~27~~ |
| | | 7-27 | 99 | 87 | 73 | 99 | 84 | 69 | 99 | 80 | 65 | 97 | 77 | 60 | 94 | 74 | 54 | 91 | 71 | 49 | 88 | 67 | 45 | 83 | 59 | 38 | 78 | 51 | 33 | 74 | 44 | 43 | 69 | 39 | 38 | 65 | 34 | 33 | 59 | 30 | ~~29~~ |
| | | 27-45 | 97 | 97 | 97 | 94 | 94 | 94 | 91 | 90 | 90 | 89 | 87 | 87 | 86 | 84 | 84 | 84 | 81 | 81 | 82 | 79 | 79 | 71 | 71 | 71 | 62 | 62 | 62 | 54 | 54 | 54 | 48 | 48 | 48 | 43 | 43 | 43 | 39 | 39 | 39 |
| 10 | B | 0-7 | 88 | 88 | 88 | 88 | 88 | 87 | 88 | 88 | 83 | 88 | 88 | 80 | 88 | 88 | 76 | 88 | 87 | 72 | 88 | 84 | 68 | 88 | 79 | 60 | 88 | 74 | 51 | 86 | 67 | 45 | 82 | 62 | 39 | 79 | 54 | 34 | 75 | 48 | 31 |
| | | 7-27 | 88 | 88 | 88 | 88 | 88 | 86 | 88 | 88 | 83 | 88 | 88 | 79 | 88 | 88 | 77 | 88 | 88 | 74 | 88 | 85 | 70 | 88 | 80 | 64 | 88 | 75 | 55 | 88 | 69 | 48 | 86 | 64 | 42 | 82 | 58 | 37 | 78 | 51 | 33 |
| | | 27-45 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 97 | 97 | 97 | 95 | 95 | 95 | 91 | 90 | 90 | 87 | 85 | 85 | 83 | 81 | 81 | 78 | 77 | 77 | 69 | 69 | 69 | 62 | 62 | 62 |
| | C | 0-7 | 88 | 88 | 78 | 88 | 88 | 75 | 88 | 85 | 69 | 88 | 82 | 65 | 88 | 79 | 60 | 88 | 76 | 55 | 88 | 72 | 50 | 85 | 65 | 42 | 80 | 57 | 36 | 76 | 50 | 31 | 72 | 43 | 41 | 67 | 38 | 37 | 63 | 34 | 32 |
| | | 7-27 | 88 | 88 | 79 | 88 | 88 | 75 | 88 | 86 | 71 | 88 | 83 | 67 | 88 | 80 | 64 | 88 | 77 | 59 | 88 | 74 | 54 | 88 | 67 | 45 | 83 | 61 | 39 | 79 | 53 | 34 | 75 | 46 | 30 | 71 | 41 | 39 | 67 | 36 | 35 |
| | | 27-45 | 99 | 99 | 99 | 98 | 98 | 98 | 96 | 96 | 96 | 93 | 93 | 93 | 91 | 90 | 90 | 88 | 87 | 87 | 86 | 84 | 84 | 82 | 79 | 79 | 73 | 73 | 73 | 64 | 64 | 64 | 56 | 56 | 56 | 50 | 50 | 50 | 45 | 45 | 45 |
| | D | 0-7 | 88 | 87 | 71 | 88 | 83 | 66 | 88 | 79 | 61 | 88 | 76 | 55 | 88 | 73 | 50 | 87 | 68 | 46 | 85 | 65 | 42 | 80 | 56 | 35 | 75 | 48 | 30 | 70 | 42 | 40 | 65 | 36 | 35 | 59 | 32 | 31 | 53 | 43 | ~~27~~ |
| | | 7-27 | 88 | 87 | 73 | 88 | 84 | 69 | 88 | 80 | 65 | 88 | 77 | 60 | 88 | 74 | 54 | 88 | 71 | 49 | 88 | 67 | 45 | 83 | 59 | 38 | 78 | 51 | 33 | 74 | 44 | 43 | 69 | 39 | 38 | 65 | 34 | 33 | 59 | 30 | ~~29~~ |
| | | 27-45 | 97 | 97 | 97 | 94 | 94 | 94 | 91 | 90 | 90 | 89 | 87 | 87 | 86 | 84 | 84 | 84 | 81 | 81 | 82 | 79 | 79 | 71 | 71 | 71 | 62 | 62 | 62 | 54 | 54 | 54 | 48 | 48 | 48 | 43 | 43 | 43 | 39 | 39 | 39 |
| 20 | B | 0-7 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 68 | 72 | 72 | 60 | 72 | 72 | 51 | 72 | 67 | 45 | 72 | 62 | 39 | 72 | 54 | 34 | 72 | 48 | 31 |
| | | 7-27 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 70 | 73 | 73 | 64 | 73 | 73 | 55 | 72 | 69 | 48 | 69 | 64 | 42 | 66 | 58 | 37 | 63 | 51 | 33 |
| | | 27-45 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 91 | 91 | 91 | 89 | 89 | 89 | 87 | 87 | 87 | 84 | 84 | 84 | 82 | 81 | 81 | 77 | 77 | 77 | 69 | 69 | 69 | 62 | 62 | 62 |
| | C | 0-7 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 69 | 72 | 72 | 65 | 72 | 72 | 60 | 72 | 72 | 55 | 72 | 72 | 50 | 72 | 65 | 42 | 72 | 57 | 36 | 72 | 50 | 31 | 72 | 43 | 41 | 67 | 38 | 37 | 63 | 34 | 32 |
| | | 7-27 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 71 | 73 | 73 | 67 | 73 | 73 | 64 | 73 | 73 | 59 | 73 | 73 | 54 | 71 | 67 | 45 | 67 | 61 | 39 | 64 | 53 | 34 | 60 | 46 | 30 | 57 | 41 | 39 | 54 | 36 | 35 |
| | | 27-45 | 92 | 92 | 92 | 91 | 91 | 91 | 90 | 90 | 90 | 88 | 88 | 88 | 87 | 87 | 87 | 85 | 85 | 85 | 84 | 84 | 84 | 81 | 79 | 79 | 73 | 73 | 73 | 64 | 64 | 64 | 56 | 56 | 56 | 50 | 50 | 50 | 45 | 45 | 45 |
| | D | 0-7 | 72 | 72 | 71 | 72 | 72 | 66 | 72 | 72 | 61 | 72 | 72 | 55 | 72 | 72 | 50 | 72 | 68 | 46 | 72 | 65 | 42 | 72 | 56 | 35 | 72 | 48 | 30 | 70 | 42 | 40 | 65 | 36 | 35 | 59 | 32 | 31 | 53 | 43 | ~~27~~ |
| | | 7-27 | 73 | 73 | 73 | 73 | 73 | 69 | 73 | 73 | 65 | 73 | 73 | 60 | 73 | 73 | 54 | 73 | 71 | 49 | 71 | 67 | 45 | 67 | 59 | 38 | 63 | 51 | 33 | 59 | 44 | 43 | 56 | 39 | 38 | 53 | 34 | 33 | 50 | 30 | ~~29~~ |
| | | 27-45 | 92 | 92 | 92 | 90 | 90 | 90 | 88 | 88 | 88 | 86 | 86 | 86 | 85 | 84 | 84 | 83 | 81 | 81 | 82 | 79 | 79 | 71 | 71 | 71 | 62 | 62 | 62 | 54 | 54 | 54 | 48 | 48 | 48 | 43 | 43 | 43 | 39 | 39 | 39 |
| 30 | B | 0-7 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 68 | 70 | 70 | 60 | 70 | 70 | 51 | 70 | 67 | 45 | 70 | 62 | 39 | 70 | 54 | 34 | 70 | 48 | 31 |
| | | 7-27 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 70 | 73 | 73 | 64 | 73 | 73 | 55 | 72 | 69 | 48 | 69 | 64 | 42 | 66 | 58 | 37 | 63 | 51 | 33 |
| | | 27-45 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 63 | 63 | 63 | 59 | 59 | 59 |
| | C | 0-7 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 69 | 70 | 70 | 65 | 70 | 70 | 60 | 70 | 70 | 55 | 70 | 70 | 50 | 70 | 65 | 42 | 70 | 57 | 36 | 70 | 50 | 31 | 70 | 43 | 41 | 67 | 38 | 37 | 63 | 34 | 32 |
| | | 7-27 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 71 | 73 | 73 | 67 | 73 | 73 | 64 | 73 | 73 | 59 | 73 | 73 | 54 | 71 | 67 | 45 | 67 | 61 | 39 | 64 | 53 | 34 | 60 | 46 | 30 | 57 | 41 | 39 | 54 | 36 | 35 |
| | | 27-45 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 65 | 65 | 65 | 60 | 60 | 60 | 55 | 55 | 55 | 50 | 50 | 50 | 45 | 45 | 45 |
| | D | 0-7 | 72 | 72 | 71 | 72 | 72 | 66 | 72 | 72 | 61 | 72 | 72 | 55 | 72 | 72 | 50 | 72 | 68 | 46 | 72 | 65 | 42 | 72 | 56 | 35 | 72 | 48 | 30 | 70 | 42 | 40 | 65 | 36 | 35 | 59 | 32 | 31 | 53 | 43 | ~~27~~ |
| | | 7-27 | 73 | 73 | 73 | 73 | 73 | 69 | 73 | 73 | 65 | 73 | 73 | 60 | 73 | 73 | 54 | 73 | 71 | 49 | 71 | 67 | 45 | 67 | 59 | 38 | 63 | 51 | 33 | 59 | 44 | 43 | 56 | 39 | 38 | 53 | 34 | 33 | 50 | 30 | ~~29~~ |
| | | 27-45 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 66 | 66 | 66 | 60 | 60 | 60 | 54 | 54 | 54 | 48 | 48 | 48 | 43 | 43 | 43 | 39 | 39 | 39 |
| 40 | B | 0-7 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 51 | 58 | 58 | 45 | 58 | 58 | 39 | 58 | 54 | 34 | 58 | 48 | 31 |
| | | 7-27 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 55 | 57 | 57 | 48 | 57 | 57 | 42 | 56 | 56 | 37 | 54 | 51 | 33 |
| | | 27-45 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 |
| | C | 0-7 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 55 | 58 | 58 | 50 | 58 | 58 | 42 | 58 | 57 | 36 | 58 | 50 | 31 | 58 | 43 | 41 | 56 | 38 | 37 | 54 | 34 | 32 |
| | | 7-27 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 54 | 57 | 57 | 45 | 57 | 57 | 39 | 55 | 53 | 34 | 52 | 46 | 30 | 50 | 41 | 39 | 48 | 36 | 35 |
| | | 27-45 | 53 | 53 | 53 | 53 | 53 | 53 | 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 | 47 | 47 | 47 | 43 | 43 | 43 |
| | D | 0-7 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 61 | 62 | 62 | 55 | 62 | 62 | 50 | 62 | 62 | 46 | 62 | 62 | 42 | 62 | 56 | 35 | 62 | 48 | 30 | 61 | 42 | 40 | 59 | 36 | 35 | 57 | 32 | 31 | 53 | 43 | ~~27~~ |
| | | 7-27 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 60 | 62 | 62 | 54 | 62 | 62 | 49 | 62 | 62 | 45 | 61 | 59 | 38 | 58 | 51 | 33 | 55 | 44 | 43 | 52 | 39 | 38 | 49 | 34 | 33 | 47 | 30 | ~~29~~ |
| | | 27-45 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 56 | 56 | 56 | 51 | 51 | 51 | 47 | 47 | 47 | 43 | 43 | 43 | 39 | 39 | 39 |
| 50 | B | 0-7 | 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 | 45 | 48 | 48 | 39 | 48 | 48 | 34 | 48 | 48 | 31 |
| | | 7-27 | 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 | 46 | 46 | 46 | 46 | 46 | 42 | 46 | 46 | 37 | 46 | 46 | 33 |
| | | 27-45 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 |
| | C | 0-7 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 42 | 48 | 48 | 36 | 48 | 48 | 31 | 48 | 43 | 41 | 48 | 38 | 37 | 47 | 34 | 32 |
| | | 7-27 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 45 | 46 | 46 | 39 | 46 | 46 | 34 | 46 | 46 | 30 | 44 | 41 | 39 | 42 | 36 | 35 |
| | | 27-45 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 41 | 41 | 41 |
| | D | 0-7 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 50 | 53 | 53 | 46 | 53 | 53 | 42 | 53 | 53 | 35 | 53 | 48 | 30 | 53 | 42 | 40 | 51 | 36 | 35 | 50 | 32 | 31 | 48 | 43 | ~~27~~ |
| | | 7-27 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 49 | 51 | 51 | 45 | 51 | 51 | 38 | 51 | 51 | 33 | 48 | 44 | 43 | 46 | 39 | 38 | 44 | 34 | 33 | 42 | 30 | ~~29~~ |
| | | 27-45 | 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 | 47 | 47 | 47 | 44 | 44 | 44 | 40 | 40 | 40 | 37 | 37 | 37 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 1.25 | 18.66 sq.ft | LANDSCAPE | CROSS-SLOPE | SML | UAF | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 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 | 40 | 34 | 40 | 40 | 31 |
| | | 7-27 | 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 | 37 | 39 | 39 | 33 |
| | | 27-45 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| | C | 0-7 | 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 | 40 | 41 | 40 | 38 | 37 | 40 | 34 | 32 |
| | | 7-27 | 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 | 34 | 39 | 39 | 30 | 39 | 39 | 39 | 38 | 36 | 35 |
| | | 27-45 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| | D | 0-7 | 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 | 44 | 30 | 44 | 42 | 40 | 44 | 36 | 35 | 44 | 32 | 31 | 43 | 43 | ~~27~~ |
| | | 7-27 | 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 | 43 | 33 | 43 | 43 | 43 | 41 | 39 | 38 | 40 | 34 | 33 | 38 | 30 | ~~29~~ |
| | | 27-45 | 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 | 41 | 38 | 38 | 38 | 36 | 36 | 36 |
| 70 | B | 0-7 | 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 | 34 | 35 | 35 | 31 |
| | | 7-27 | 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 | 33 |
| | | 27-45 | 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 | 32 | 32 | 32 | 32 |
| | C | 0-7 | 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 | 31 | 35 | 35 | 41 | 35 | 35 | 37 | 35 | 34 | 32 |
| | | 7-27 | 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 | 34 | 39 | 34 | 34 | 35 |
| | | 27-45 | 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 | 32 | 32 | 32 | 32 |
| | D | 0-7 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 35 | 38 | 38 | 30 | 38 | 38 | 40 | 38 | 36 | 35 | 38 | 32 | 31 | 38 | 43 | ~~27~~ |
| | | 7-27 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 33 | 38 | 38 | 43 | 38 | 38 | 38 | 36 | 34 | 33 | 35 | 30 | ~~29~~ |
| | | 27-45 | 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 | 36 | 34 | 34 | 34 |
| 80 | B | 0-7 | 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 | 30 | 30 | 30 |
| | | 7-27 | 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 | 30 | 30 | 30 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 41 | 30 | 30 | 37 | 30 | 30 | 32 |
| | | 7-27 | 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 | 39 | 30 | 30 | 35 |
| | | 27-45 | 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 |
| | D | 0-7 | 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 | 34 | 40 | 34 | 34 | 35 | 34 | 32 | 31 | 34 | 43 | ~~27~~ |
| | | 7-27 | 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 | 43 | 33 | 33 | 38 | 33 | 33 | 33 | 32 | 30 | ~~29~~ |
| | | 27-45 | 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 | 32 | 32 | 32 | 32 |
| 90 | B | 0-7 | 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 |
| | | 7-27 | 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 | 27 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 41 | 27 | 27 | 37 | 27 | 27 | 32 |
| | | 7-27 | 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 | 39 | 27 | 27 | 35 |
| | | 27-45 | 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 |
| | D | 0-7 | 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 | 40 | 30 | 30 | 35 | 30 | 30 | 31 | 30 | 43 | ~~27~~ |
| | | 7-27 | 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 | 43 | 30 | 30 | 38 | 30 | 30 | 33 | 30 | 30 | ~~29~~ |
| | | 27-45 | 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 |
| 100 | B | 0-7 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| | | 7-27 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| | | 27-45 | 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 | 35 | 35 | 35 | 35 |
| | C | 0-7 | 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 | 37 | 24 | 24 | 37 | 24 | 24 | 32 |
| | | 7-27 | 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 | 37 | 24 | 24 | 35 |
| | | 27-45 | 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 | 35 | 35 | 35 | 35 |
| | D | 0-7 | 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 | 40 | 27 | 27 | 35 | 27 | 27 | 31 | 27 | 41 | ~~27~~ |
| | | 7-27 | 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 | 41 | 27 | 27 | 38 | 27 | 27 | 33 | 27 | 27 | ~~29~~ |
| | | 27-45 | 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 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 1.25 | 22.78 sq.ft | PORTRAIT | CROSS-SLOPE | SML | UAF | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 74 | 74 | 72 | 74 | 74 | 67 | 74 | 74 | 62 | 74 | 74 | 53 | 74 | 71 | 46 | 74 | 67 | 40 | 74 | 63 | 35 | 74 | 51 | 30 | 71 | 42 | 26 | 66 | 35 | 22 | 59 | 31 | 19 | 51 | 27 | 26 | 45 | 24 | 23 |
| | | 7-27 | 74 | 74 | 69 | 74 | 74 | 65 | 74 | 74 | 59 | 74 | 74 | 53 | 74 | 71 | 47 | 74 | 68 | 42 | 74 | 64 | 38 | 74 | 53 | 32 | 74 | 44 | 27 | 70 | 37 | 24 | 65 | 32 | 21 | 58 | 29 | 18 | 51 | 25 | 25 |
| | | 27-45 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 70 | 70 | 70 | 65 | 65 | 65 | 57 | 57 | 57 | 50 | 50 | 50 | 44 | 44 | 44 | 39 | 39 | 39 | 34 | 34 | 34 | 31 | 31 | 31 |
| | C | 0-7 | 74 | 73 | 51 | 74 | 69 | 43 | 74 | 64 | 37 | 74 | 58 | 33 | 74 | 51 | 30 | 73 | 45 | 27 | 70 | 40 | 25 | 64 | 33 | 21 | 54 | 28 | 18 | 47 | 25 | 23 | 40 | 21 | 20 | 35 | 19 | 18 | 31 | 25 | ~~16~~ |
| | | 7-27 | 74 | 74 | 51 | 74 | 69 | 45 | 74 | 65 | 40 | 74 | 60 | 35 | 74 | 53 | 32 | 74 | 48 | 29 | 74 | 43 | 27 | 68 | 35 | 23 | 61 | 30 | 19 | 52 | 26 | 25 | 45 | 23 | 22 | 39 | 20 | 19 | 35 | 18 | ~~17~~ |
| | | 27-45 | 76 | 76 | 76 | 73 | 73 | 73 | 67 | 67 | 67 | 61 | 61 | 61 | 57 | 57 | 57 | 52 | 52 | 52 | 48 | 48 | 48 | 42 | 42 | 42 | 36 | 36 | 36 | 32 | 32 | 32 | 28 | 28 | 28 | 25 | 25 | 25 | 23 | 23 | 23 |
| | D | 0-7 | 74 | 66 | 39 | 74 | 60 | 34 | 74 | 52 | 30 | 74 | 46 | 27 | 70 | 41 | 25 | 67 | 36 | 23 | 64 | 33 | 21 | 53 | 28 | 18 | 45 | 24 | 23 | 39 | 21 | 20 | 33 | 18 | ~~17~~ | 29 | 24 | ~~15~~ | 26 | 21 | ~~13~~ |
| | | 7-27 | 74 | 67 | 42 | 74 | 62 | 37 | 74 | 55 | 33 | 74 | 48 | 30 | 74 | 43 | 27 | 71 | 39 | 24 | 67 | 35 | 22 | 60 | 29 | 19 | 50 | 25 | 24 | 43 | 22 | 21 | 37 | 19 | 19 | 33 | 25 | ~~16~~ | 29 | 23 | ~~15~~ |
| | | 27-45 | 69 | 69 | 69 | 63 | 63 | 63 | 58 | 58 | 58 | 53 | 53 | 53 | 49 | 49 | 49 | 45 | 45 | 45 | 41 | 41 | 41 | 35 | 35 | 35 | 31 | 31 | 31 | 27 | 27 | 27 | 24 | 24 | 24 | 21 | 21 | 21 | 19 | 19 | 19 |
| 10 | B | 0-7 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 46 | 52 | 52 | 40 | 52 | 52 | 35 | 52 | 51 | 30 | 52 | 42 | 26 | 52 | 35 | 22 | 52 | 31 | 19 | 51 | 27 | 26 | 45 | 24 | 23 |
| | | 7-27 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 47 | 52 | 52 | 42 | 52 | 52 | 38 | 52 | 52 | 32 | 52 | 44 | 27 | 52 | 37 | 24 | 49 | 32 | 21 | 46 | 29 | 18 | 43 | 25 | 25 |
| | | 27-45 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 57 | 57 | 57 | 50 | 50 | 50 | 44 | 44 | 44 | 39 | 39 | 39 | 34 | 34 | 34 | 31 | 31 | 31 |
| | C | 0-7 | 52 | 52 | 51 | 52 | 52 | 43 | 52 | 52 | 37 | 52 | 52 | 33 | 52 | 51 | 30 | 52 | 45 | 27 | 52 | 40 | 25 | 52 | 33 | 21 | 52 | 28 | 18 | 47 | 25 | 23 | 40 | 21 | 20 | 35 | 19 | 18 | 31 | 25 | ~~16~~ |
| | | 7-27 | 52 | 52 | 51 | 52 | 52 | 45 | 52 | 52 | 40 | 52 | 52 | 35 | 52 | 52 | 32 | 52 | 48 | 29 | 52 | 43 | 27 | 51 | 35 | 23 | 47 | 30 | 19 | 44 | 26 | 25 | 41 | 23 | 22 | 38 | 20 | 19 | 35 | 18 | ~~17~~ |
| | | 27-45 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 61 | 61 | 61 | 57 | 57 | 57 | 52 | 52 | 52 | 48 | 48 | 48 | 42 | 42 | 42 | 36 | 36 | 36 | 32 | 32 | 32 | 28 | 28 | 28 | 25 | 25 | 25 | 23 | 23 | 23 |
| | D | 0-7 | 52 | 52 | 39 | 52 | 52 | 34 | 52 | 52 | 30 | 52 | 46 | 27 | 52 | 41 | 25 | 52 | 36 | 23 | 52 | 33 | 21 | 52 | 28 | 18 | 45 | 24 | 23 | 39 | 21 | 20 | 33 | 18 | ~~17~~ | 29 | 24 | ~~15~~ | 26 | 21 | ~~13~~ |
| | | 7-27 | 52 | 52 | 42 | 52 | 52 | 37 | 52 | 52 | 33 | 52 | 48 | 30 | 52 | 43 | 27 | 52 | 39 | 24 | 51 | 35 | 22 | 47 | 29 | 19 | 43 | 25 | 24 | 40 | 22 | 21 | 37 | 19 | 19 | 33 | 25 | ~~16~~ | 29 | 23 | ~~15~~ |
| | | 27-45 | 68 | 68 | 68 | 63 | 63 | 63 | 58 | 58 | 58 | 53 | 53 | 53 | 49 | 49 | 49 | 45 | 45 | 45 | 41 | 41 | 41 | 35 | 35 | 35 | 31 | 31 | 31 | 27 | 27 | 27 | 24 | 24 | 24 | 21 | 21 | 21 | 19 | 19 | 19 |
| 20 | B | 0-7 | 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 | 35 | 22 | 36 | 31 | 19 | 36 | 27 | 26 | 36 | 24 | 23 |
| | | 7-27 | 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 | 36 | 27 | 36 | 36 | 24 | 34 | 32 | 21 | 33 | 29 | 18 | 31 | 25 | 25 |
| | | 27-45 | 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 | 42 | 42 | 42 | 38 | 38 | 38 | 34 | 34 | 34 | 31 | 31 | 31 |
| | C | 0-7 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 33 | 36 | 36 | 30 | 36 | 36 | 27 | 36 | 36 | 25 | 36 | 33 | 21 | 36 | 28 | 18 | 36 | 25 | 23 | 36 | 21 | 20 | 35 | 19 | 18 | 31 | 25 | ~~16~~ |
| | | 7-27 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 35 | 36 | 36 | 32 | 36 | 36 | 29 | 36 | 36 | 27 | 35 | 35 | 23 | 33 | 30 | 19 | 32 | 26 | 25 | 30 | 23 | 22 | 29 | 20 | 19 | 27 | 18 | ~~17~~ |
| | | 27-45 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 45 | 45 | 45 | 40 | 40 | 40 | 36 | 36 | 36 | 32 | 32 | 32 | 28 | 28 | 28 | 25 | 25 | 25 | 23 | 23 | 23 |
| | D | 0-7 | 36 | 36 | 36 | 36 | 36 | 34 | 36 | 36 | 30 | 36 | 36 | 27 | 36 | 36 | 25 | 36 | 36 | 23 | 36 | 33 | 21 | 36 | 28 | 18 | 36 | 24 | 23 | 35 | 21 | 20 | 33 | 18 | ~~17~~ | 29 | 24 | ~~15~~ | 26 | 21 | ~~13~~ |
| | | 7-27 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 33 | 36 | 36 | 30 | 36 | 36 | 27 | 36 | 36 | 24 | 35 | 35 | 22 | 33 | 29 | 19 | 31 | 25 | 24 | 30 | 22 | 21 | 28 | 19 | 19 | 26 | 25 | ~~16~~ | 25 | 23 | ~~15~~ |
| | | 27-45 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 49 | 49 | 49 | 46 | 46 | 46 | 44 | 44 | 44 | 41 | 41 | 41 | 35 | 35 | 35 | 31 | 31 | 31 | 27 | 27 | 27 | 24 | 24 | 24 | 21 | 21 | 21 | 19 | 19 | 19 |
| 30 | B | 0-7 | 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 | 35 | 35 | 22 | 35 | 31 | 19 | 35 | 27 | 26 | 35 | 24 | 23 |
| | | 7-27 | 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 | 36 | 27 | 36 | 36 | 24 | 34 | 32 | 21 | 33 | 29 | 18 | 31 | 25 | 25 |
| | | 27-45 | 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 | 32 | 32 | 32 | 29 | 29 | 29 |
| | C | 0-7 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 33 | 35 | 35 | 30 | 35 | 35 | 27 | 35 | 35 | 25 | 35 | 33 | 21 | 35 | 28 | 18 | 35 | 25 | 23 | 35 | 21 | 20 | 34 | 19 | 18 | 31 | 25 | ~~16~~ |
| | | 7-27 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 35 | 36 | 36 | 32 | 36 | 36 | 29 | 36 | 36 | 27 | 35 | 35 | 23 | 33 | 30 | 19 | 32 | 26 | 25 | 30 | 23 | 22 | 29 | 20 | 19 | 27 | 18 | ~~17~~ |
| | | 27-45 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 33 | 33 | 33 | 30 | 30 | 30 | 27 | 27 | 27 | 25 | 25 | 25 | 23 | 23 | 23 |
| | D | 0-7 | 36 | 36 | 36 | 36 | 36 | 34 | 36 | 36 | 30 | 36 | 36 | 27 | 36 | 36 | 25 | 36 | 36 | 23 | 36 | 33 | 21 | 36 | 28 | 18 | 36 | 24 | 23 | 35 | 21 | 20 | 33 | 18 | ~~17~~ | 29 | 24 | ~~15~~ | 26 | 21 | ~~13~~ |
| | | 7-27 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 33 | 36 | 36 | 30 | 36 | 36 | 27 | 36 | 36 | 24 | 35 | 35 | 22 | 33 | 29 | 19 | 31 | 25 | 24 | 30 | 22 | 21 | 28 | 19 | 19 | 26 | 25 | ~~16~~ | 25 | 23 | ~~15~~ |
| | | 27-45 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 33 | 33 | 33 | 30 | 30 | 30 | 27 | 27 | 27 | 24 | 24 | 24 | 21 | 21 | 21 | 19 | 19 | 19 |
| 40 | B | 0-7 | 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 | 22 | 29 | 29 | 19 | 29 | 27 | 26 | 29 | 24 | 23 |
| | | 7-27 | 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 | 28 | 18 | 27 | 25 | 25 |
| | | 27-45 | 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 |
| | C | 0-7 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 27 | 29 | 29 | 25 | 29 | 29 | 21 | 29 | 28 | 18 | 29 | 25 | 23 | 29 | 21 | 20 | 28 | 19 | 18 | 27 | 25 | ~~16~~ |
| | | 7-27 | 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 | 19 | 27 | 26 | 25 | 26 | 23 | 22 | 25 | 20 | 19 | 24 | 18 | ~~17~~ |
| | | 27-45 | 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 | 25 | 25 | 25 | 23 | 23 | 23 | 22 | 22 | 22 |
| | D | 0-7 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 30 | 31 | 31 | 27 | 31 | 31 | 25 | 31 | 31 | 23 | 31 | 31 | 21 | 31 | 28 | 18 | 31 | 24 | 23 | 31 | 21 | 20 | 30 | 18 | ~~17~~ | 29 | 24 | ~~15~~ | 26 | 21 | ~~13~~ |
| | | 7-27 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 30 | 31 | 31 | 27 | 31 | 31 | 24 | 31 | 31 | 22 | 30 | 29 | 19 | 29 | 25 | 24 | 27 | 22 | 21 | 26 | 19 | 19 | 25 | 25 | ~~16~~ | 23 | 23 | ~~15~~ |
| | | 27-45 | 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 | 28 | 28 | 25 | 25 | 25 | 23 | 23 | 23 | 21 | 21 | 21 | 19 | 19 | 19 |
| 50 | B | 0-7 | 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 | 26 | 24 | 24 | 23 |
| | | 7-27 | 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 | 23 | 23 | 18 | 23 | 23 | 25 |
| | | 27-45 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 |
| | C | 0-7 | 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 | 24 | 23 | 24 | 21 | 20 | 24 | 19 | 18 | 23 | 25 | ~~16~~ |
| | | 7-27 | 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 | 23 | 23 | 25 | 23 | 23 | 22 | 22 | 20 | 19 | 21 | 18 | ~~17~~ |
| | | 27-45 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 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 | 20 | 20 |
| | D | 0-7 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 25 | 26 | 26 | 23 | 26 | 26 | 21 | 26 | 26 | 18 | 26 | 24 | 23 | 26 | 21 | 20 | 26 | 18 | ~~17~~ | 25 | 24 | ~~15~~ | 24 | 21 | ~~13~~ |
| | | 7-27 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 24 | 25 | 25 | 22 | 25 | 25 | 19 | 25 | 25 | 24 | 24 | 22 | 21 | 23 | 19 | 19 | 22 | 25 | ~~16~~ | 21 | 23 | ~~15~~ |
| | | 27-45 | 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 | 22 | 22 | 22 | 20 | 20 | 20 | 19 | 19 | 19 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 1.25 | 22.78 sq.ft | PORTRAIT | CROSS-SLOPE | SML | UAF | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 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 | 26 | 20 | 20 | 23 |
| | | 7-27 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 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 | 25 |
| | | 27-45 | 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 |
| | C | 0-7 | 20 | 20 | 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 | 23 | 20 | 20 | 20 | 20 | 19 | 18 | 20 | 25 | ~~16~~ |
| | | 7-27 | 20 | 20 | 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 | 25 | 20 | 20 | 22 | 20 | 20 | 19 | 19 | 18 | ~~17~~ |
| | | 27-45 | 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 |
| | D | 0-7 | 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 | 23 | 22 | 21 | 20 | 22 | 18 | ~~17~~ | 22 | 24 | ~~15~~ | 21 | 21 | ~~13~~ |
| | | 7-27 | 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 | 24 | 21 | 21 | 21 | 21 | 19 | 19 | 20 | 25 | ~~16~~ | 19 | 23 | ~~15~~ |
| | | 27-45 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 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 |
| 70 | B | 0-7 | 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 | 26 | 17 | 17 | 23 |
| | | 7-27 | 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 | 25 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 23 | 17 | 17 | 20 | 17 | 17 | 18 | 17 | 25 | ~~16~~ |
| | | 7-27 | 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 | 25 | 17 | 17 | 22 | 17 | 17 | 19 | 17 | 17 | ~~17~~ |
| | | 27-45 | 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 |
| | D | 0-7 | 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 | 23 | 19 | 19 | 20 | 19 | 18 | ~~17~~ | 19 | 24 | ~~15~~ | 19 | 21 | ~~13~~ |
| | | 7-27 | 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 | 24 | 19 | 19 | 21 | 19 | 19 | 19 | 18 | 25 | ~~16~~ | 17 | 23 | ~~15~~ |
| | | 27-45 | 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 | 17 | 17 | 17 |
| 80 | B | 0-7 | 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 | 23 | 15 | 15 | 23 |
| | | 7-27 | 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 | 23 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 23 | 15 | 15 | 20 | 15 | 15 | 18 | 15 | 23 | ~~16~~ |
| | | 7-27 | 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 | 23 | 15 | 15 | 22 | 15 | 15 | 19 | 15 | 15 | ~~17~~ |
| | | 27-45 | 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 |
| | D | 0-7 | 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 | 23 | 17 | 17 | 20 | 17 | 17 | ~~17~~ | 17 | 24 | ~~15~~ | 17 | 21 | ~~13~~ |
| | | 7-27 | 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 | 24 | 16 | 16 | 21 | 16 | 16 | 19 | 16 | 25 | ~~16~~ | 16 | 23 | ~~15~~ |
| | | 27-45 | 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 |
| 90 | B | 0-7 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 20 | 13 | 13 | 20 |
| | | 7-27 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | 27-45 | 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 |
| | C | 0-7 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 20 | 13 | 13 | 20 | 13 | 13 | 20 | 13 | 13 | 18 | 13 | 20 | ~~16~~ |
| | | 7-27 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 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~~ |
| | | 27-45 | 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 |
| | D | 0-7 | 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 | 23 | 15 | 15 | 20 | 15 | 15 | ~~17~~ | 15 | 23 | ~~15~~ | 15 | 21 | ~~13~~ |
| | | 7-27 | 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 | 22 | 15 | 15 | 21 | 15 | 15 | 19 | 15 | 22 | ~~16~~ | 15 | 22 | ~~15~~ |
| | | 27-45 | 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 |
| 100 | B | 0-7 | 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 | 18 | 12 | 12 | 18 |
| | | 7-27 | 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 | 18 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 18 | 12 | 12 | 18 | 12 | 12 | 18 | 12 | 18 | ~~16~~ |
| | | 7-27 | 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 | ~~17~~ |
| | | 27-45 | 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 |
| | D | 0-7 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 20 | 13 | 13 | 20 | 13 | 13 | ~~17~~ | 13 | 20 | ~~15~~ | 13 | 20 | ~~13~~ |
| | | 7-27 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 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 | ~~15~~ |
| | | 27-45 | 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 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 1.25 | 22.78 sq.ft | LANDSCAPE | CROSS-SLOPE | SML | UAF | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 98 | 98 | 91 | 98 | 98 | 86 | 98 | 98 | 82 | 98 | 93 | 79 | 98 | 90 | 76 | 98 | 86 | 71 | 98 | 83 | 67 | 96 | 78 | 59 | 90 | 73 | 50 | 86 | 66 | 44 | 82 | 60 | 38 | 78 | 53 | 34 | 75 | 47 | 45 |
| | | 7-27 | 98 | 98 | 89 | 98 | 98 | 85 | 98 | 98 | 82 | 98 | 94 | 79 | 98 | 90 | 76 | 98 | 87 | 73 | 98 | 84 | 69 | 98 | 79 | 63 | 94 | 75 | 54 | 89 | 69 | 47 | 85 | 64 | 41 | 81 | 56 | 36 | 78 | 50 | 48 |
| | | 27-45 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 96 | 96 | 96 | 94 | 94 | 94 | 90 | 89 | 89 | 86 | 84 | 84 | 83 | 80 | 80 | 76 | 76 | 76 | 68 | 68 | 68 | 61 | 61 | 61 |
| | C | 0-7 | 98 | 92 | 78 | 98 | 88 | 74 | 98 | 84 | 68 | 98 | 81 | 64 | 96 | 78 | 59 | 92 | 75 | 53 | 89 | 71 | 49 | 84 | 64 | 41 | 80 | 56 | 35 | 76 | 49 | 46 | 71 | 42 | 41 | 66 | 37 | 36 | 61 | 33 | 32 |
| | | 7-27 | 98 | 93 | 78 | 98 | 89 | 75 | 98 | 85 | 70 | 98 | 82 | 66 | 98 | 79 | 63 | 96 | 76 | 57 | 93 | 73 | 53 | 87 | 66 | 44 | 83 | 59 | 38 | 79 | 51 | 50 | 75 | 45 | 44 | 70 | 40 | 39 | 66 | 35 | 34 |
| | | 27-45 | 99 | 99 | 99 | 98 | 98 | 98 | 95 | 95 | 95 | 92 | 92 | 92 | 90 | 89 | 89 | 88 | 86 | 86 | 85 | 83 | 83 | 81 | 78 | 78 | 71 | 71 | 71 | 62 | 62 | 62 | 55 | 55 | 55 | 49 | 49 | 49 | 44 | 44 | 44 |
| | D | 0-7 | 98 | 86 | 70 | 98 | 82 | 65 | 97 | 79 | 60 | 93 | 76 | 54 | 90 | 72 | 49 | 87 | 68 | 45 | 84 | 64 | 41 | 79 | 55 | 35 | 75 | 47 | 45 | 69 | 41 | 39 | 65 | 36 | 34 | 58 | 47 | ~~30~~ | 51 | 42 | ~~27~~ |
| | | 7-27 | 98 | 87 | 72 | 98 | 83 | 68 | 98 | 80 | 64 | 97 | 77 | 58 | 93 | 74 | 53 | 90 | 70 | 48 | 87 | 66 | 44 | 82 | 58 | 37 | 78 | 50 | 48 | 73 | 43 | 42 | 68 | 38 | 37 | 64 | 50 | ~~32~~ | 57 | 45 | ~~29~~ |
| | | 27-45 | 96 | 96 | 96 | 93 | 93 | 93 | 90 | 90 | 90 | 88 | 86 | 86 | 86 | 83 | 83 | 83 | 81 | 81 | 81 | 78 | 78 | 70 | 70 | 70 | 61 | 61 | 61 | 53 | 53 | 53 | 47 | 47 | 47 | 42 | 42 | 42 | 38 | 38 | 38 |
| 10 | B | 0-7 | 87 | 87 | 87 | 87 | 87 | 86 | 87 | 87 | 82 | 87 | 87 | 79 | 87 | 87 | 76 | 87 | 86 | 71 | 87 | 83 | 67 | 87 | 78 | 59 | 87 | 73 | 50 | 86 | 66 | 44 | 82 | 60 | 38 | 78 | 53 | 34 | 75 | 47 | 45 |
| | | 7-27 | 87 | 87 | 87 | 87 | 87 | 85 | 87 | 87 | 82 | 87 | 87 | 79 | 87 | 87 | 76 | 87 | 87 | 73 | 87 | 84 | 69 | 87 | 79 | 63 | 87 | 75 | 54 | 87 | 69 | 47 | 85 | 64 | 41 | 81 | 56 | 36 | 78 | 50 | 48 |
| | | 27-45 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 96 | 96 | 96 | 94 | 94 | 94 | 90 | 89 | 89 | 86 | 84 | 84 | 83 | 80 | 80 | 76 | 76 | 76 | 68 | 68 | 68 | 61 | 61 | 61 |
| | C | 0-7 | 87 | 87 | 78 | 87 | 87 | 74 | 87 | 84 | 68 | 87 | 81 | 64 | 87 | 78 | 59 | 87 | 75 | 53 | 87 | 71 | 49 | 84 | 64 | 41 | 80 | 56 | 35 | 76 | 49 | 46 | 71 | 42 | 41 | 66 | 37 | 36 | 61 | 33 | 32 |
| | | 7-27 | 87 | 87 | 78 | 87 | 87 | 75 | 87 | 85 | 70 | 87 | 82 | 66 | 87 | 79 | 63 | 87 | 76 | 57 | 87 | 73 | 53 | 87 | 66 | 44 | 83 | 59 | 38 | 79 | 51 | 50 | 75 | 45 | 44 | 70 | 40 | 39 | 66 | 35 | 34 |
| | | 27-45 | 98 | 98 | 98 | 97 | 97 | 97 | 95 | 95 | 95 | 92 | 92 | 92 | 90 | 89 | 89 | 88 | 86 | 86 | 85 | 83 | 83 | 81 | 78 | 78 | 71 | 71 | 71 | 62 | 62 | 62 | 55 | 55 | 55 | 49 | 49 | 49 | 44 | 44 | 44 |
| | D | 0-7 | 87 | 86 | 70 | 87 | 82 | 65 | 87 | 79 | 60 | 87 | 76 | 54 | 87 | 72 | 49 | 87 | 68 | 45 | 84 | 64 | 41 | 79 | 55 | 35 | 75 | 47 | 45 | 69 | 41 | 39 | 65 | 36 | 34 | 58 | 47 | ~~30~~ | 51 | 42 | ~~27~~ |
| | | 7-27 | 87 | 87 | 72 | 87 | 83 | 68 | 87 | 80 | 64 | 87 | 77 | 58 | 87 | 74 | 53 | 87 | 70 | 48 | 87 | 66 | 44 | 82 | 58 | 37 | 78 | 50 | 48 | 73 | 43 | 42 | 68 | 38 | 37 | 64 | 50 | ~~32~~ | 57 | 45 | ~~29~~ |
| | | 27-45 | 96 | 96 | 96 | 93 | 93 | 93 | 90 | 90 | 90 | 88 | 86 | 86 | 86 | 83 | 83 | 83 | 81 | 81 | 81 | 78 | 78 | 70 | 70 | 70 | 61 | 61 | 61 | 53 | 53 | 53 | 47 | 47 | 47 | 42 | 42 | 42 | 38 | 38 | 38 |
| 20 | B | 0-7 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 67 | 71 | 71 | 59 | 71 | 71 | 50 | 71 | 66 | 44 | 71 | 60 | 38 | 71 | 53 | 34 | 71 | 47 | 45 |
| | | 7-27 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 69 | 71 | 71 | 63 | 71 | 71 | 54 | 70 | 69 | 47 | 67 | 64 | 41 | 64 | 56 | 36 | 62 | 50 | 48 |
| | | 27-45 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 86 | 86 | 86 | 84 | 84 | 84 | 81 | 80 | 80 | 75 | 75 | 75 | 68 | 68 | 68 | 61 | 61 | 61 |
| | C | 0-7 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 68 | 71 | 71 | 64 | 71 | 71 | 59 | 71 | 71 | 53 | 71 | 71 | 49 | 71 | 64 | 41 | 71 | 56 | 35 | 71 | 49 | 46 | 71 | 42 | 41 | 66 | 37 | 36 | 61 | 33 | 32 |
| | | 7-27 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 70 | 71 | 71 | 66 | 71 | 71 | 63 | 71 | 71 | 57 | 71 | 71 | 53 | 69 | 66 | 44 | 65 | 59 | 38 | 62 | 51 | 50 | 59 | 45 | 44 | 56 | 40 | 39 | 53 | 35 | 34 |
| | | 27-45 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 89 | 88 | 88 | 88 | 86 | 86 | 86 | 85 | 85 | 85 | 83 | 83 | 83 | 79 | 78 | 78 | 71 | 71 | 71 | 62 | 62 | 62 | 55 | 55 | 55 | 49 | 49 | 49 | 44 | 44 | 44 |
| | D | 0-7 | 71 | 71 | 70 | 71 | 71 | 65 | 71 | 71 | 60 | 71 | 71 | 54 | 71 | 71 | 49 | 71 | 68 | 45 | 71 | 64 | 41 | 71 | 55 | 35 | 71 | 47 | 45 | 69 | 41 | 39 | 65 | 36 | 34 | 58 | 47 | ~~30~~ | 51 | 42 | ~~27~~ |
| | | 7-27 | 71 | 71 | 71 | 71 | 71 | 68 | 71 | 71 | 64 | 71 | 71 | 58 | 71 | 71 | 53 | 71 | 70 | 48 | 69 | 66 | 44 | 65 | 58 | 37 | 61 | 50 | 48 | 58 | 43 | 42 | 55 | 38 | 37 | 52 | 50 | ~~32~~ | 49 | 45 | ~~29~~ |
| | | 27-45 | 91 | 91 | 91 | 89 | 89 | 89 | 87 | 87 | 87 | 86 | 86 | 86 | 84 | 83 | 83 | 82 | 81 | 81 | 81 | 78 | 78 | 70 | 70 | 70 | 61 | 61 | 61 | 53 | 53 | 53 | 47 | 47 | 47 | 42 | 42 | 42 | 38 | 38 | 38 |
| 30 | B | 0-7 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 67 | 68 | 68 | 59 | 68 | 68 | 50 | 68 | 66 | 44 | 68 | 60 | 38 | 68 | 53 | 34 | 68 | 47 | 45 |
| | | 7-27 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 69 | 71 | 71 | 63 | 71 | 71 | 54 | 70 | 69 | 47 | 67 | 64 | 41 | 64 | 56 | 36 | 62 | 50 | 48 |
| | | 27-45 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 62 | 62 | 62 | 57 | 57 | 57 |
| | C | 0-7 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 64 | 68 | 68 | 59 | 68 | 68 | 53 | 68 | 68 | 49 | 68 | 64 | 41 | 68 | 56 | 35 | 68 | 49 | 46 | 68 | 42 | 41 | 66 | 37 | 36 | 61 | 33 | 32 |
| | | 7-27 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 70 | 71 | 71 | 66 | 71 | 71 | 63 | 71 | 71 | 57 | 71 | 71 | 53 | 69 | 66 | 44 | 65 | 59 | 38 | 62 | 51 | 50 | 59 | 45 | 44 | 56 | 40 | 39 | 53 | 35 | 34 |
| | | 27-45 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 64 | 64 | 64 | 58 | 58 | 58 | 54 | 54 | 54 | 49 | 49 | 49 | 44 | 44 | 44 |
| | D | 0-7 | 71 | 71 | 70 | 71 | 71 | 65 | 71 | 71 | 60 | 71 | 71 | 54 | 71 | 71 | 49 | 71 | 68 | 45 | 71 | 64 | 41 | 71 | 55 | 35 | 71 | 47 | 45 | 69 | 41 | 39 | 65 | 36 | 34 | 58 | 47 | ~~30~~ | 51 | 42 | ~~27~~ |
| | | 7-27 | 71 | 71 | 71 | 71 | 71 | 68 | 71 | 71 | 64 | 71 | 71 | 58 | 71 | 71 | 53 | 71 | 70 | 48 | 69 | 66 | 44 | 65 | 58 | 37 | 61 | 50 | 48 | 58 | 43 | 42 | 55 | 38 | 37 | 52 | 50 | ~~32~~ | 49 | 45 | ~~29~~ |
| | | 27-45 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 65 | 65 | 65 | 59 | 59 | 59 | 53 | 53 | 53 | 47 | 47 | 47 | 42 | 42 | 42 | 38 | 38 | 38 |
| 40 | B | 0-7 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 50 | 57 | 57 | 44 | 57 | 57 | 38 | 57 | 53 | 34 | 57 | 47 | 45 |
| | | 7-27 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 54 | 55 | 55 | 47 | 55 | 55 | 41 | 55 | 55 | 36 | 53 | 50 | 48 |
| | | 27-45 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 |
| | C | 0-7 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 53 | 57 | 57 | 49 | 57 | 57 | 41 | 57 | 56 | 35 | 57 | 49 | 46 | 57 | 42 | 41 | 55 | 37 | 36 | 53 | 33 | 32 |
| | | 7-27 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 53 | 55 | 55 | 44 | 55 | 55 | 38 | 54 | 51 | 50 | 51 | 45 | 44 | 49 | 40 | 39 | 47 | 35 | 34 |
| | | 27-45 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 49 | 49 | 49 | 46 | 46 | 46 | 42 | 42 | 42 |
| | D | 0-7 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 60 | 61 | 61 | 54 | 61 | 61 | 49 | 61 | 61 | 45 | 61 | 61 | 41 | 61 | 55 | 35 | 61 | 47 | 45 | 60 | 41 | 39 | 58 | 36 | 34 | 56 | 47 | ~~30~~ | 51 | 42 | ~~27~~ |
| | | 7-27 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 58 | 61 | 61 | 53 | 61 | 61 | 48 | 61 | 61 | 44 | 59 | 58 | 37 | 56 | 50 | 48 | 54 | 43 | 42 | 51 | 38 | 37 | 48 | 50 | ~~32~~ | 46 | 45 | ~~29~~ |
| | | 27-45 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 54 | 54 | 54 | 50 | 50 | 50 | 46 | 46 | 46 | 42 | 42 | 42 | 38 | 38 | 38 |
| 50 | B | 0-7 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 44 | 47 | 47 | 38 | 47 | 47 | 34 | 47 | 47 | 45 |
| | | 7-27 | 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 | 45 | 45 | 45 | 45 | 45 | 41 | 45 | 45 | 36 | 45 | 45 | 48 |
| | | 27-45 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 |
| | C | 0-7 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 41 | 47 | 47 | 35 | 47 | 47 | 46 | 47 | 42 | 41 | 47 | 37 | 36 | 46 | 33 | 32 |
| | | 7-27 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 44 | 45 | 45 | 38 | 45 | 45 | 50 | 45 | 45 | 44 | 43 | 40 | 39 | 41 | 35 | 34 |
| | | 27-45 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 40 | 40 | 40 |
| | D | 0-7 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 49 | 51 | 51 | 45 | 51 | 51 | 41 | 51 | 51 | 35 | 51 | 47 | 45 | 51 | 41 | 39 | 50 | 36 | 34 | 49 | 47 | ~~30~~ | 47 | 42 | ~~27~~ |
| | | 7-27 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 48 | 50 | 50 | 44 | 50 | 50 | 37 | 49 | 49 | 48 | 47 | 43 | 42 | 45 | 38 | 37 | 43 | 50 | ~~32~~ | 41 | 45 | ~~29~~ |
| | | 27-45 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 46 | 46 | 46 | 43 | 43 | 43 | 40 | 40 | 40 | 37 | 37 | 37 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 1.25 | 22.78 sq.ft | LANDSCAPE | CROSS-SLOPE | SML | UAF | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 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 | 39 | 34 | 39 | 39 | 45 |
| | | 7-27 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 36 | 38 | 38 | 48 |
| | | 27-45 | 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 | 36 | 36 | 36 | 36 |
| | C | 0-7 | 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 | 46 | 39 | 39 | 41 | 39 | 37 | 36 | 39 | 33 | 32 |
| | | 7-27 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 50 | 38 | 38 | 44 | 38 | 38 | 39 | 37 | 35 | 34 |
| | | 27-45 | 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 | 36 | 36 | 36 | 36 |
| | D | 0-7 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 41 | 43 | 43 | 35 | 43 | 43 | 45 | 43 | 41 | 39 | 43 | 36 | 34 | 43 | 47 | ~~30~~ | 42 | 42 | ~~27~~ |
| | | 7-27 | 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 | 48 | 42 | 42 | 42 | 41 | 38 | 37 | 39 | 50 | ~~32~~ | 37 | 45 | ~~29~~ |
| | | 27-45 | 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 | 40 | 37 | 37 | 37 | 35 | 35 | 35 |
| 70 | B | 0-7 | 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 | 45 |
| | | 7-27 | 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 | 48 |
| | | 27-45 | 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 | 32 | 32 | 32 | 32 |
| | C | 0-7 | 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 | 46 | 34 | 34 | 41 | 34 | 34 | 36 | 34 | 33 | 32 |
| | | 7-27 | 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 | 50 | 33 | 33 | 44 | 33 | 33 | 39 | 33 | 33 | 34 |
| | | 27-45 | 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 | 32 | 32 | 32 | 32 |
| | D | 0-7 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 35 | 37 | 37 | 45 | 37 | 37 | 39 | 37 | 36 | 34 | 37 | 47 | ~~30~~ | 37 | 42 | ~~27~~ |
| | | 7-27 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 48 | 37 | 37 | 42 | 37 | 37 | 37 | 35 | 50 | ~~32~~ | 34 | 45 | ~~29~~ |
| | | 27-45 | 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 | 35 | 33 | 33 | 33 |
| 80 | B | 0-7 | 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 | 30 | 30 | 45 |
| | | 7-27 | 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 | 44 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 45 | 30 | 30 | 41 | 30 | 30 | 36 | 30 | 30 | 32 |
| | | 7-27 | 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 | 44 | 29 | 29 | 44 | 29 | 29 | 39 | 29 | 29 | 34 |
| | | 27-45 | 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 |
| | D | 0-7 | 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 | 45 | 33 | 33 | 39 | 33 | 33 | 34 | 33 | 47 | ~~30~~ | 33 | 42 | ~~27~~ |
| | | 7-27 | 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 | 48 | 33 | 33 | 42 | 33 | 33 | 37 | 33 | 49 | ~~32~~ | 31 | 45 | ~~29~~ |
| | | 27-45 | 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 | 31 | 31 | 31 | 31 |
| 90 | B | 0-7 | 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 | 40 |
| | | 7-27 | 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 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| | | 27-45 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 |
| | C | 0-7 | 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 | 40 | 27 | 27 | 40 | 27 | 27 | 36 | 27 | 27 | 32 |
| | | 7-27 | 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 | 40 | 40 | 40 | 39 | 40 | 40 | 34 |
| | | 27-45 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 |
| | D | 0-7 | 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 | 44 | 29 | 29 | 39 | 29 | 29 | 34 | 29 | 44 | ~~30~~ | 29 | 42 | ~~27~~ |
| | | 7-27 | 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 | 44 | 29 | 29 | 42 | 29 | 29 | 37 | 29 | 44 | ~~32~~ | 29 | 44 | ~~29~~ |
| | | 27-45 | 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 | 42 | 42 | 42 | 42 |
| 100 | B | 0-7 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 36 |
| | | 7-27 | 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 | 36 | 36 | 36 | 36 |
| | | 27-45 | 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 | 34 |
| | C | 0-7 | 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 | 36 | 24 | 24 | 36 | 24 | 24 | 36 | 24 | 24 | 32 |
| | | 7-27 | 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 | 36 | 36 | 36 | 34 |
| | | 27-45 | 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 | 34 |
| | D | 0-7 | 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 | 40 | 27 | 27 | 39 | 27 | 27 | 34 | 27 | 40 | ~~30~~ | 27 | 40 | ~~27~~ |
| | | 7-27 | 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 | 37 | 40 | 40 | ~~32~~ | 40 | 40 | ~~29~~ |
| | | 27-45 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 3.00 | 18.66 sq.ft | PORTRAIT | CROSS-SLOPE | SML | UAF | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 83 | 83 | 76 | 83 | 83 | 72 | 83 | 82 | 67 | 83 | 79 | 63 | 83 | 76 | 55 | 83 | 72 | 48 | 83 | 69 | 42 | 81 | 61 | 36 | 77 | 50 | 31 | 72 | 42 | 26 | 67 | 37 | 23 | 61 | 32 | 20 | 54 | 29 | 18 |
| | | 7-27 | 76 | 76 | 75 | 76 | 76 | 71 | 76 | 76 | 67 | 76 | 76 | 63 | 76 | 76 | 56 | 76 | 73 | 51 | 76 | 70 | 46 | 76 | 64 | 38 | 76 | 53 | 33 | 75 | 45 | 28 | 71 | 39 | 25 | 66 | 34 | 22 | 60 | 30 | 19 |
| | | 27-45 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 68 | 68 | 68 | 59 | 59 | 59 | 52 | 52 | 52 | 46 | 46 | 46 | 41 | 41 | 41 | 37 | 37 | 37 |
| | C | 0-7 | 83 | 78 | 60 | 83 | 74 | 51 | 83 | 70 | 44 | 83 | 66 | 39 | 81 | 61 | 36 | 78 | 54 | 32 | 76 | 48 | 30 | 70 | 40 | 25 | 64 | 34 | 21 | 56 | 30 | 19 | 48 | 26 | 25 | 42 | 23 | 22 | 37 | 20 | 19 |
| | | 7-27 | 76 | 76 | 61 | 76 | 75 | 54 | 76 | 71 | 47 | 76 | 67 | 42 | 76 | 63 | 38 | 76 | 57 | 35 | 76 | 51 | 32 | 74 | 42 | 27 | 68 | 36 | 23 | 62 | 31 | 20 | 54 | 27 | 26 | 47 | 24 | 23 | 42 | 21 | 21 |
| | | 27-45 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 68 | 68 | 68 | 62 | 62 | 62 | 58 | 58 | 58 | 50 | 50 | 50 | 43 | 43 | 43 | 38 | 38 | 38 | 34 | 34 | 34 | 30 | 30 | 30 | 27 | 27 | 27 |
| | D | 0-7 | 83 | 72 | 47 | 83 | 67 | 41 | 82 | 63 | 36 | 79 | 55 | 33 | 76 | 49 | 30 | 73 | 43 | 27 | 69 | 40 | 25 | 63 | 33 | 21 | 54 | 29 | 18 | 46 | 25 | 24 | 40 | 22 | 21 | 35 | 19 | 18 | 31 | 26 | ~~16~~ |
| | | 7-27 | 76 | 73 | 50 | 76 | 68 | 44 | 76 | 64 | 39 | 76 | 58 | 35 | 76 | 52 | 32 | 76 | 46 | 29 | 73 | 42 | 27 | 67 | 35 | 23 | 60 | 30 | 19 | 52 | 26 | 25 | 45 | 23 | 22 | 39 | 20 | 20 | 35 | 18 | ~~17~~ |
| | | 27-45 | 71 | 71 | 71 | 71 | 71 | 71 | 69 | 69 | 69 | 63 | 63 | 63 | 58 | 58 | 58 | 53 | 53 | 53 | 49 | 49 | 49 | 42 | 42 | 42 | 37 | 37 | 37 | 32 | 32 | 32 | 29 | 29 | 29 | 26 | 26 | 26 | 23 | 23 | 23 |
| 10 | B | 0-7 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 55 | 62 | 62 | 48 | 62 | 62 | 42 | 62 | 61 | 36 | 62 | 50 | 31 | 62 | 42 | 26 | 62 | 37 | 23 | 61 | 32 | 20 | 54 | 29 | 18 |
| | | 7-27 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 63 | 56 | 63 | 63 | 51 | 63 | 63 | 46 | 63 | 63 | 38 | 63 | 53 | 33 | 63 | 45 | 28 | 59 | 39 | 25 | 55 | 34 | 22 | 52 | 30 | 19 |
| | | 27-45 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 59 | 59 | 59 | 52 | 52 | 52 | 46 | 46 | 46 | 41 | 41 | 41 | 37 | 37 | 37 |
| | C | 0-7 | 62 | 62 | 60 | 62 | 62 | 51 | 62 | 62 | 44 | 62 | 62 | 39 | 62 | 61 | 36 | 62 | 54 | 32 | 62 | 48 | 30 | 62 | 40 | 25 | 62 | 34 | 21 | 56 | 30 | 19 | 48 | 26 | 25 | 42 | 23 | 22 | 37 | 20 | 19 |
| | | 7-27 | 63 | 63 | 61 | 63 | 63 | 54 | 63 | 63 | 47 | 63 | 63 | 42 | 63 | 63 | 38 | 63 | 57 | 35 | 63 | 51 | 32 | 61 | 42 | 27 | 57 | 36 | 23 | 53 | 31 | 20 | 49 | 27 | 26 | 45 | 24 | 23 | 42 | 21 | 21 |
| | | 27-45 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 58 | 58 | 58 | 50 | 50 | 50 | 43 | 43 | 43 | 38 | 38 | 38 | 34 | 34 | 34 | 30 | 30 | 30 | 27 | 27 | 27 |
| | D | 0-7 | 62 | 62 | 47 | 62 | 62 | 41 | 62 | 62 | 36 | 62 | 55 | 33 | 62 | 49 | 30 | 62 | 43 | 27 | 62 | 40 | 25 | 62 | 33 | 21 | 54 | 29 | 18 | 46 | 25 | 24 | 40 | 22 | 21 | 35 | 19 | 18 | 31 | 26 | ~~16~~ |
| | | 7-27 | 63 | 63 | 50 | 63 | 63 | 44 | 63 | 63 | 39 | 63 | 58 | 35 | 63 | 52 | 32 | 63 | 46 | 29 | 61 | 42 | 27 | 56 | 35 | 23 | 52 | 30 | 19 | 48 | 26 | 25 | 44 | 23 | 22 | 39 | 20 | 20 | 35 | 18 | ~~17~~ |
| | | 27-45 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 58 | 58 | 58 | 53 | 53 | 53 | 49 | 49 | 49 | 42 | 42 | 42 | 37 | 37 | 37 | 32 | 32 | 32 | 29 | 29 | 29 | 26 | 26 | 26 | 23 | 23 | 23 |
| 20 | B | 0-7 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 42 | 43 | 43 | 36 | 43 | 43 | 31 | 43 | 42 | 26 | 43 | 37 | 23 | 43 | 32 | 20 | 43 | 29 | 18 |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 38 | 44 | 44 | 33 | 43 | 43 | 28 | 41 | 39 | 25 | 39 | 34 | 22 | 38 | 30 | 19 |
| | | 27-45 | 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 | 46 | 46 | 46 | 46 | 46 | 46 | 41 | 41 | 41 | 37 | 37 | 37 |
| | C | 0-7 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 39 | 43 | 43 | 36 | 43 | 43 | 32 | 43 | 43 | 30 | 43 | 40 | 25 | 43 | 34 | 21 | 43 | 30 | 19 | 43 | 26 | 25 | 41 | 23 | 22 | 37 | 20 | 19 |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 42 | 44 | 44 | 38 | 44 | 44 | 35 | 44 | 44 | 32 | 42 | 42 | 27 | 40 | 36 | 23 | 38 | 31 | 20 | 36 | 27 | 26 | 34 | 24 | 23 | 32 | 21 | 21 |
| | | 27-45 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 43 | 43 | 43 | 38 | 38 | 38 | 34 | 34 | 34 | 30 | 30 | 30 | 27 | 27 | 27 |
| | D | 0-7 | 43 | 43 | 43 | 43 | 43 | 41 | 43 | 43 | 36 | 43 | 43 | 33 | 43 | 43 | 30 | 43 | 43 | 27 | 43 | 40 | 25 | 43 | 33 | 21 | 43 | 29 | 18 | 42 | 25 | 24 | 40 | 22 | 21 | 35 | 19 | 18 | 31 | 26 | ~~16~~ |
| | | 7-27 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 39 | 44 | 44 | 35 | 44 | 44 | 32 | 43 | 43 | 29 | 42 | 42 | 27 | 40 | 35 | 23 | 38 | 30 | 19 | 36 | 26 | 25 | 34 | 23 | 22 | 32 | 20 | 20 | 30 | 18 | ~~17~~ |
| | | 27-45 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 42 | 42 | 42 | 37 | 37 | 37 | 32 | 32 | 32 | 29 | 29 | 29 | 26 | 26 | 26 | 23 | 23 | 23 |
| 30 | B | 0-7 | 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 | 42 | 26 | 42 | 37 | 23 | 42 | 32 | 20 | 42 | 29 | 18 |
| | | 7-27 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 38 | 40 | 40 | 33 | 40 | 40 | 28 | 40 | 39 | 25 | 39 | 34 | 22 | 38 | 30 | 19 |
| | | 27-45 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 35 | 35 | 35 |
| | C | 0-7 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 39 | 42 | 42 | 36 | 42 | 42 | 32 | 42 | 42 | 30 | 42 | 40 | 25 | 42 | 34 | 21 | 42 | 30 | 19 | 42 | 26 | 25 | 40 | 23 | 22 | 37 | 20 | 19 |
| | | 7-27 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 38 | 40 | 40 | 35 | 40 | 40 | 32 | 40 | 40 | 27 | 40 | 36 | 23 | 38 | 31 | 20 | 36 | 27 | 26 | 34 | 24 | 23 | 32 | 21 | 21 |
| | | 27-45 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 36 | 36 | 36 | 33 | 33 | 33 | 30 | 30 | 30 | 27 | 27 | 27 |
| | D | 0-7 | 43 | 43 | 43 | 43 | 43 | 41 | 43 | 43 | 36 | 43 | 43 | 33 | 43 | 43 | 30 | 43 | 43 | 27 | 43 | 40 | 25 | 43 | 33 | 21 | 43 | 29 | 18 | 42 | 25 | 24 | 40 | 22 | 21 | 35 | 19 | 18 | 31 | 26 | ~~16~~ |
| | | 7-27 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 39 | 42 | 42 | 35 | 42 | 42 | 32 | 42 | 42 | 29 | 42 | 42 | 27 | 40 | 35 | 23 | 38 | 30 | 19 | 36 | 26 | 25 | 34 | 23 | 22 | 32 | 20 | 20 | 30 | 18 | ~~17~~ |
| | | 27-45 | 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 | 36 | 36 | 32 | 32 | 32 | 29 | 29 | 29 | 26 | 26 | 26 | 23 | 23 | 23 |
| 40 | B | 0-7 | 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 | 31 | 35 | 35 | 26 | 35 | 35 | 23 | 35 | 32 | 20 | 35 | 29 | 18 |
| | | 7-27 | 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 | 25 | 33 | 33 | 22 | 32 | 30 | 19 |
| | | 27-45 | 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 | 32 | 32 | 32 | 32 |
| | C | 0-7 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 32 | 35 | 35 | 30 | 35 | 35 | 25 | 35 | 34 | 21 | 35 | 30 | 19 | 35 | 26 | 25 | 33 | 23 | 22 | 32 | 20 | 19 |
| | | 7-27 | 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 | 31 | 20 | 31 | 27 | 26 | 30 | 24 | 23 | 29 | 21 | 21 |
| | | 27-45 | 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 | 30 | 30 | 30 | 28 | 28 | 28 | 26 | 26 | 26 |
| | D | 0-7 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 36 | 37 | 37 | 33 | 37 | 37 | 30 | 37 | 37 | 27 | 37 | 37 | 25 | 37 | 33 | 21 | 37 | 29 | 18 | 37 | 25 | 24 | 35 | 22 | 21 | 34 | 19 | 18 | 31 | 26 | ~~16~~ |
| | | 7-27 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 32 | 35 | 35 | 29 | 35 | 35 | 27 | 35 | 35 | 23 | 34 | 30 | 19 | 33 | 26 | 25 | 31 | 23 | 22 | 29 | 20 | 20 | 28 | 18 | ~~17~~ |
| | | 27-45 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 33 | 33 | 33 | 30 | 30 | 30 | 28 | 28 | 28 | 26 | 26 | 26 | 23 | 23 | 23 |
| 50 | B | 0-7 | 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 | 28 | 18 |
| | | 7-27 | 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 | 19 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 21 | 28 | 28 | 19 | 28 | 26 | 25 | 28 | 23 | 22 | 28 | 20 | 19 |
| | | 7-27 | 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 | 27 | 27 | 26 | 26 | 24 | 23 | 25 | 21 | 21 |
| | | 27-45 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 24 | 24 | 24 |
| | D | 0-7 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 30 | 31 | 31 | 27 | 31 | 31 | 25 | 31 | 31 | 21 | 31 | 29 | 18 | 31 | 25 | 24 | 31 | 22 | 21 | 30 | 19 | 18 | 29 | 26 | ~~16~~ |
| | | 7-27 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 29 | 31 | 31 | 27 | 31 | 31 | 23 | 30 | 30 | 19 | 29 | 26 | 25 | 27 | 23 | 22 | 26 | 20 | 20 | 25 | 18 | ~~17~~ |
| | | 27-45 | 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 | 28 | 28 | 26 | 26 | 26 | 24 | 24 | 24 | 22 | 22 | 22 |

* 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 7-10 | II | 30 ft | Ss = 3.00 | 18.66 sq.ft | PORTRAIT | CROSS-SLOPE | SML | UAF | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 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 | 23 | 24 | 24 | 20 | 24 | 24 | 18 |
| | | 7-27 | 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 | 22 | 23 | 23 | 19 |
| | | 27-45 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 |
| | C | 0-7 | 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 | 24 | 25 | 24 | 23 | 22 | 24 | 20 | 19 |
| | | 7-27 | 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 | 26 | 23 | 23 | 23 | 23 | 21 | 21 |
| | | 27-45 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 |
| | D | 0-7 | 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 | 26 | 18 | 26 | 25 | 24 | 26 | 22 | 21 | 26 | 19 | 18 | 25 | 26 | ~~16~~ |
| | | 7-27 | 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 | 26 | 26 | 25 | 25 | 23 | 22 | 24 | 20 | 20 | 23 | 18 | ~~17~~ |
| | | 27-45 | 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 | 23 | 23 | 23 | 21 | 21 | 21 |
| 70 | B | 0-7 | 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 | 21 | 21 | 18 |
| | | 7-27 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 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 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 21 | 21 | 25 | 21 | 21 | 22 | 21 | 20 | 19 |
| | | 7-27 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 26 | 20 | 20 | 23 | 20 | 20 | 21 |
| | | 27-45 | 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 |
| | D | 0-7 | 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 | 23 | 24 | 23 | 22 | 21 | 23 | 19 | 18 | 23 | 26 | ~~16~~ |
| | | 7-27 | 22 | 22 | 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 | 22 | 25 | 22 | 22 | 22 | 22 | 20 | 20 | 21 | 18 | ~~17~~ |
| | | 27-45 | 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 |
| 80 | B | 0-7 | 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 | 18 |
| | | 7-27 | 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 | 18 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 25 | 18 | 18 | 22 | 18 | 18 | 19 |
| | | 7-27 | 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 | 26 | 18 | 18 | 23 | 18 | 18 | 21 |
| | | 27-45 | 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 |
| | D | 0-7 | 20 | 20 | 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 | 24 | 20 | 20 | 21 | 20 | 19 | 18 | 20 | 26 | ~~16~~ |
| | | 7-27 | 20 | 20 | 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 | 25 | 20 | 20 | 22 | 20 | 20 | 20 | 19 | 18 | ~~17~~ |
| | | 27-45 | 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 |
| 90 | B | 0-7 | 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 |
| | | 7-27 | 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 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 24 | 16 | 16 | 22 | 16 | 16 | 19 |
| | | 7-27 | 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 | 24 | 16 | 16 | 23 | 16 | 16 | 21 |
| | | 27-45 | 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 |
| | D | 0-7 | 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 | 24 | 18 | 18 | 21 | 18 | 18 | 18 | 18 | 26 | ~~16~~ |
| | | 7-27 | 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 | 25 | 18 | 18 | 22 | 18 | 18 | 20 | 18 | 18 | ~~17~~ |
| | | 27-45 | 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 |
| 100 | B | 0-7 | 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 |
| | | 7-27 | 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 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 22 | 14 | 14 | 22 | 14 | 14 | 19 |
| | | 7-27 | 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 | 22 | 14 | 14 | 22 | 14 | 14 | 21 |
| | | 27-45 | 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 |
| | D | 0-7 | 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 | 24 | 16 | 16 | 21 | 16 | 16 | 18 | 16 | 24 | ~~16~~ |
| | | 7-27 | 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 | 24 | 16 | 16 | 22 | 16 | 16 | 20 | 16 | 16 | ~~17~~ |
| | | 27-45 | 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 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 3.00 | 18.66 sq.ft | LANDSCAPE | CROSS-SLOPE | SML | UAF | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 98 | 98 | 92 | 98 | 98 | 87 | 98 | 98 | 83 | 98 | 94 | 80 | 98 | 91 | 76 | 98 | 87 | 72 | 98 | 84 | 68 | 97 | 79 | 60 | 91 | 74 | 51 | 86 | 67 | 45 | 82 | 62 | 39 | 79 | 54 | 34 | 75 | 48 | 31 |
| | | 7-27 | 99 | 99 | 90 | 99 | 99 | 86 | 99 | 99 | 83 | 99 | 95 | 79 | 99 | 91 | 77 | 99 | 88 | 74 | 99 | 85 | 70 | 99 | 80 | 64 | 95 | 75 | 55 | 90 | 69 | 48 | 86 | 64 | 42 | 82 | 58 | 37 | 78 | 51 | 33 |
| | | 27-45 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 97 | 97 | 97 | 95 | 95 | 95 | 91 | 90 | 90 | 87 | 85 | 85 | 83 | 81 | 81 | 78 | 77 | 77 | 69 | 69 | 69 | 62 | 62 | 62 |
| | C | 0-7 | 98 | 93 | 78 | 98 | 89 | 75 | 98 | 85 | 69 | 98 | 82 | 65 | 96 | 79 | 60 | 93 | 76 | 55 | 90 | 72 | 50 | 85 | 65 | 42 | 80 | 57 | 36 | 76 | 50 | 31 | 72 | 43 | 41 | 67 | 38 | 37 | 63 | 34 | 32 |
| | | 7-27 | 99 | 94 | 79 | 99 | 90 | 75 | 99 | 86 | 71 | 99 | 83 | 67 | 99 | 80 | 64 | 97 | 77 | 59 | 94 | 74 | 54 | 88 | 67 | 45 | 83 | 61 | 39 | 79 | 53 | 34 | 75 | 46 | 30 | 71 | 41 | 39 | 67 | 36 | 35 |
| | | 27-45 | 100 | 100 | 100 | 98 | 98 | 98 | 96 | 96 | 96 | 93 | 93 | 93 | 91 | 90 | 90 | 88 | 87 | 87 | 86 | 84 | 84 | 82 | 79 | 79 | 73 | 73 | 73 | 64 | 64 | 64 | 56 | 56 | 56 | 50 | 50 | 50 | 45 | 45 | 45 |
| | D | 0-7 | 98 | 87 | 71 | 98 | 83 | 66 | 97 | 79 | 61 | 94 | 76 | 55 | 90 | 73 | 50 | 87 | 68 | 46 | 85 | 65 | 42 | 80 | 56 | 35 | 75 | 48 | 30 | 70 | 42 | 40 | 65 | 36 | 35 | 59 | 32 | 31 | 53 | 43 | ~~27~~ |
| | | 7-27 | 99 | 87 | 73 | 99 | 84 | 69 | 99 | 80 | 65 | 97 | 77 | 60 | 94 | 74 | 54 | 91 | 71 | 49 | 88 | 67 | 45 | 83 | 59 | 38 | 78 | 51 | 33 | 74 | 44 | 43 | 69 | 39 | 38 | 65 | 34 | 33 | 59 | 30 | ~~29~~ |
| | | 27-45 | 97 | 97 | 97 | 94 | 94 | 94 | 91 | 90 | 90 | 89 | 87 | 87 | 86 | 84 | 84 | 84 | 81 | 81 | 82 | 79 | 79 | 71 | 71 | 71 | 62 | 62 | 62 | 54 | 54 | 54 | 48 | 48 | 48 | 43 | 43 | 43 | 39 | 39 | 39 |
| 10 | B | 0-7 | 88 | 88 | 88 | 88 | 88 | 87 | 88 | 88 | 83 | 88 | 88 | 80 | 88 | 88 | 76 | 88 | 87 | 72 | 88 | 84 | 68 | 88 | 79 | 60 | 88 | 74 | 51 | 86 | 67 | 45 | 82 | 62 | 39 | 79 | 54 | 34 | 75 | 48 | 31 |
| | | 7-27 | 88 | 88 | 88 | 88 | 88 | 86 | 88 | 88 | 83 | 88 | 88 | 79 | 88 | 88 | 77 | 88 | 88 | 74 | 88 | 85 | 70 | 88 | 80 | 64 | 88 | 75 | 55 | 88 | 69 | 48 | 86 | 64 | 42 | 82 | 58 | 37 | 78 | 51 | 33 |
| | | 27-45 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 97 | 97 | 97 | 95 | 95 | 95 | 91 | 90 | 90 | 87 | 85 | 85 | 83 | 81 | 81 | 78 | 77 | 77 | 69 | 69 | 69 | 62 | 62 | 62 |
| | C | 0-7 | 88 | 88 | 78 | 88 | 88 | 75 | 88 | 85 | 69 | 88 | 82 | 65 | 88 | 79 | 60 | 88 | 76 | 55 | 88 | 72 | 50 | 85 | 65 | 42 | 80 | 57 | 36 | 76 | 50 | 31 | 72 | 43 | 41 | 67 | 38 | 37 | 63 | 34 | 32 |
| | | 7-27 | 88 | 88 | 79 | 88 | 88 | 75 | 88 | 86 | 71 | 88 | 83 | 67 | 88 | 80 | 64 | 88 | 77 | 59 | 88 | 74 | 54 | 88 | 67 | 45 | 83 | 61 | 39 | 79 | 53 | 34 | 75 | 46 | 30 | 71 | 41 | 39 | 67 | 36 | 35 |
| | | 27-45 | 98 | 98 | 98 | 98 | 98 | 98 | 96 | 96 | 96 | 93 | 93 | 93 | 91 | 90 | 90 | 88 | 87 | 87 | 86 | 84 | 84 | 82 | 79 | 79 | 73 | 73 | 73 | 64 | 64 | 64 | 56 | 56 | 56 | 50 | 50 | 50 | 45 | 45 | 45 |
| | D | 0-7 | 88 | 87 | 71 | 88 | 83 | 66 | 88 | 79 | 61 | 88 | 76 | 55 | 88 | 73 | 50 | 87 | 68 | 46 | 85 | 65 | 42 | 80 | 56 | 35 | 75 | 48 | 30 | 70 | 42 | 40 | 65 | 36 | 35 | 59 | 32 | 31 | 53 | 43 | ~~27~~ |
| | | 7-27 | 88 | 87 | 73 | 88 | 84 | 69 | 88 | 80 | 65 | 88 | 77 | 60 | 88 | 74 | 54 | 88 | 71 | 49 | 88 | 67 | 45 | 83 | 59 | 38 | 78 | 51 | 33 | 74 | 44 | 43 | 69 | 39 | 38 | 65 | 34 | 33 | 59 | 30 | ~~29~~ |
| | | 27-45 | 97 | 97 | 97 | 94 | 94 | 94 | 91 | 90 | 90 | 89 | 87 | 87 | 86 | 84 | 84 | 84 | 81 | 81 | 82 | 79 | 79 | 71 | 71 | 71 | 62 | 62 | 62 | 54 | 54 | 54 | 48 | 48 | 48 | 43 | 43 | 43 | 39 | 39 | 39 |
| 20 | B | 0-7 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 68 | 72 | 72 | 60 | 72 | 72 | 51 | 72 | 67 | 45 | 72 | 62 | 39 | 72 | 54 | 34 | 72 | 48 | 31 |
| | | 7-27 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 70 | 73 | 73 | 64 | 73 | 73 | 55 | 72 | 69 | 48 | 69 | 64 | 42 | 66 | 58 | 37 | 63 | 51 | 33 |
| | | 27-45 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 69 | 69 | 69 | 62 | 62 | 62 |
| | C | 0-7 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 69 | 72 | 72 | 65 | 72 | 72 | 60 | 72 | 72 | 55 | 72 | 72 | 50 | 72 | 65 | 42 | 72 | 57 | 36 | 72 | 50 | 31 | 72 | 43 | 41 | 67 | 38 | 37 | 63 | 34 | 32 |
| | | 7-27 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 73 | 71 | 73 | 73 | 67 | 73 | 73 | 64 | 73 | 73 | 59 | 73 | 73 | 54 | 71 | 67 | 45 | 67 | 61 | 39 | 64 | 53 | 34 | 60 | 46 | 30 | 57 | 41 | 39 | 54 | 36 | 35 |
| | | 27-45 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 76 | 73 | 73 | 73 | 64 | 64 | 64 | 56 | 56 | 56 | 50 | 50 | 50 | 45 | 45 | 45 |
| | D | 0-7 | 72 | 72 | 71 | 72 | 72 | 66 | 72 | 72 | 61 | 72 | 72 | 55 | 72 | 72 | 50 | 72 | 68 | 46 | 72 | 65 | 42 | 72 | 56 | 35 | 72 | 48 | 30 | 70 | 42 | 40 | 65 | 36 | 35 | 59 | 32 | 31 | 53 | 43 | ~~27~~ |
| | | 7-27 | 73 | 73 | 73 | 73 | 73 | 69 | 73 | 73 | 65 | 73 | 73 | 60 | 73 | 73 | 54 | 73 | 71 | 49 | 71 | 67 | 45 | 67 | 59 | 38 | 63 | 51 | 33 | 59 | 44 | 43 | 56 | 39 | 38 | 53 | 34 | 33 | 50 | 30 | ~~29~~ |
| | | 27-45 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 79 | 79 | 71 | 71 | 71 | 62 | 62 | 62 | 54 | 54 | 54 | 48 | 48 | 48 | 43 | 43 | 43 | 39 | 39 | 39 |
| 30 | B | 0-7 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 68 | 70 | 70 | 60 | 70 | 70 | 51 | 70 | 67 | 45 | 70 | 62 | 39 | 70 | 54 | 34 | 70 | 48 | 31 |
| | | 7-27 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 64 | 65 | 65 | 55 | 65 | 65 | 48 | 65 | 64 | 42 | 65 | 58 | 37 | 63 | 51 | 33 |
| | | 27-45 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 59 | 59 | 59 |
| | C | 0-7 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 69 | 70 | 70 | 65 | 70 | 70 | 60 | 70 | 70 | 55 | 70 | 70 | 50 | 70 | 65 | 42 | 70 | 57 | 36 | 70 | 50 | 31 | 70 | 43 | 41 | 67 | 38 | 37 | 63 | 34 | 32 |
| | | 7-27 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 64 | 65 | 65 | 59 | 65 | 65 | 54 | 65 | 65 | 45 | 65 | 61 | 39 | 64 | 53 | 34 | 60 | 46 | 30 | 57 | 41 | 39 | 54 | 36 | 35 |
| | | 27-45 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 60 | 60 | 60 | 55 | 55 | 55 | 50 | 50 | 50 | 45 | 45 | 45 |
| | D | 0-7 | 72 | 72 | 71 | 72 | 72 | 66 | 72 | 72 | 61 | 72 | 72 | 55 | 72 | 72 | 50 | 72 | 68 | 46 | 72 | 65 | 42 | 72 | 56 | 35 | 72 | 48 | 30 | 70 | 42 | 40 | 65 | 36 | 35 | 59 | 32 | 31 | 53 | 43 | ~~27~~ |
| | | 7-27 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 69 | 65 | 69 | 69 | 60 | 69 | 69 | 54 | 69 | 69 | 49 | 69 | 67 | 45 | 67 | 59 | 38 | 63 | 51 | 33 | 59 | 44 | 43 | 56 | 39 | 38 | 53 | 34 | 33 | 50 | 30 | ~~29~~ |
| | | 27-45 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 66 | 60 | 60 | 60 | 54 | 54 | 54 | 48 | 48 | 48 | 43 | 43 | 43 | 39 | 39 | 39 |
| 40 | B | 0-7 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 51 | 58 | 58 | 45 | 58 | 58 | 39 | 58 | 54 | 34 | 58 | 48 | 31 |
| | | 7-27 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 48 | 55 | 55 | 42 | 55 | 55 | 37 | 54 | 51 | 33 |
| | | 27-45 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 |
| | C | 0-7 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 55 | 58 | 58 | 50 | 58 | 58 | 42 | 58 | 57 | 36 | 58 | 50 | 31 | 58 | 43 | 41 | 56 | 38 | 37 | 54 | 34 | 32 |
| | | 7-27 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 54 | 55 | 55 | 45 | 55 | 55 | 39 | 55 | 53 | 34 | 52 | 46 | 30 | 50 | 41 | 39 | 48 | 36 | 35 |
| | | 27-45 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 51 | 51 | 51 | 47 | 47 | 47 | 43 | 43 | 43 |
| | D | 0-7 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 61 | 62 | 62 | 55 | 62 | 62 | 50 | 62 | 62 | 46 | 62 | 62 | 42 | 62 | 56 | 35 | 62 | 48 | 30 | 61 | 42 | 40 | 59 | 36 | 35 | 57 | 32 | 31 | 53 | 43 | ~~27~~ |
| | | 7-27 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 54 | 59 | 59 | 49 | 59 | 59 | 45 | 59 | 59 | 38 | 58 | 51 | 33 | 55 | 44 | 43 | 52 | 39 | 38 | 49 | 34 | 33 | 47 | 30 | ~~29~~ |
| | | 27-45 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 56 | 51 | 51 | 51 | 47 | 47 | 47 | 43 | 43 | 43 | 39 | 39 | 39 |
| 50 | B | 0-7 | 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 | 45 | 48 | 48 | 39 | 48 | 48 | 34 | 48 | 48 | 31 |
| | | 7-27 | 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 | 46 | 46 | 46 | 46 | 46 | 42 | 46 | 46 | 37 | 46 | 46 | 33 |
| | | 27-45 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 |
| | C | 0-7 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 42 | 48 | 48 | 36 | 48 | 48 | 31 | 48 | 43 | 41 | 48 | 38 | 37 | 47 | 34 | 32 |
| | | 7-27 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 45 | 46 | 46 | 39 | 46 | 46 | 34 | 46 | 46 | 30 | 44 | 41 | 39 | 42 | 36 | 35 |
| | | 27-45 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 44 | 41 | 41 | 41 |
| | D | 0-7 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 50 | 53 | 53 | 46 | 53 | 53 | 42 | 53 | 53 | 35 | 53 | 48 | 30 | 53 | 42 | 40 | 51 | 36 | 35 | 50 | 32 | 31 | 48 | 43 | ~~27~~ |
| | | 7-27 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 49 | 51 | 51 | 45 | 51 | 51 | 38 | 51 | 51 | 33 | 48 | 44 | 43 | 46 | 39 | 38 | 44 | 34 | 33 | 42 | 30 | ~~29~~ |
| | | 27-45 | 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 | 47 | 47 | 47 | 44 | 44 | 44 | 40 | 40 | 40 | 37 | 37 | 37 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 3.00 | 18.66 sq.ft | LANDSCAPE | CROSS-SLOPE | SML | UAF | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 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 | 40 | 34 | 40 | 40 | 31 |
| | | 7-27 | 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 | 37 | 39 | 39 | 33 |
| | | 27-45 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| | C | 0-7 | 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 | 40 | 41 | 40 | 38 | 37 | 40 | 34 | 32 |
| | | 7-27 | 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 | 34 | 39 | 39 | 30 | 39 | 39 | 39 | 38 | 36 | 35 |
| | | 27-45 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 |
| | D | 0-7 | 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 | 44 | 30 | 44 | 42 | 40 | 44 | 36 | 35 | 44 | 32 | 31 | 43 | 43 | ~~27~~ |
| | | 7-27 | 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 | 43 | 33 | 43 | 43 | 43 | 41 | 39 | 38 | 40 | 34 | 33 | 38 | 30 | ~~29~~ |
| | | 27-45 | 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 | 41 | 38 | 38 | 38 | 36 | 36 | 36 |
| 70 | B | 0-7 | 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 | 34 | 35 | 35 | 31 |
| | | 7-27 | 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 | 33 |
| | | 27-45 | 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 | 32 | 32 | 32 | 32 |
| | C | 0-7 | 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 | 31 | 35 | 35 | 41 | 35 | 35 | 37 | 35 | 34 | 32 |
| | | 7-27 | 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 | 34 | 39 | 34 | 34 | 35 |
| | | 27-45 | 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 | 32 | 32 | 32 | 32 |
| | D | 0-7 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 35 | 38 | 38 | 30 | 38 | 38 | 40 | 38 | 36 | 35 | 38 | 32 | 31 | 38 | 43 | ~~27~~ |
| | | 7-27 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 33 | 38 | 38 | 43 | 38 | 38 | 38 | 36 | 34 | 33 | 35 | 30 | ~~29~~ |
| | | 27-45 | 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 | 36 | 34 | 34 | 34 |
| 80 | B | 0-7 | 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 | 30 | 30 | 30 |
| | | 7-27 | 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 | 30 | 30 | 30 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 41 | 30 | 30 | 37 | 30 | 30 | 32 |
| | | 7-27 | 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 | 39 | 30 | 30 | 35 |
| | | 27-45 | 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 |
| | D | 0-7 | 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 | 34 | 40 | 34 | 34 | 35 | 34 | 32 | 31 | 34 | 43 | ~~27~~ |
| | | 7-27 | 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 | 43 | 33 | 33 | 38 | 33 | 33 | 33 | 32 | 30 | ~~29~~ |
| | | 27-45 | 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 | 32 | 32 | 32 | 32 |
| 90 | B | 0-7 | 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 |
| | | 7-27 | 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 | 27 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 41 | 27 | 27 | 37 | 27 | 27 | 32 |
| | | 7-27 | 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 | 39 | 27 | 27 | 35 |
| | | 27-45 | 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 |
| | D | 0-7 | 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 | 40 | 30 | 30 | 35 | 30 | 30 | 31 | 30 | 43 | ~~27~~ |
| | | 7-27 | 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 | 43 | 30 | 30 | 38 | 30 | 30 | 33 | 30 | 30 | ~~29~~ |
| | | 27-45 | 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 |
| 100 | B | 0-7 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| | | 7-27 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| | | 27-45 | 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 | 35 | 35 | 35 | 35 |
| | C | 0-7 | 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 | 37 | 24 | 24 | 37 | 24 | 24 | 32 |
| | | 7-27 | 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 | 37 | 24 | 24 | 35 |
| | | 27-45 | 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 | 35 | 35 | 35 | 35 |
| | D | 0-7 | 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 | 40 | 27 | 27 | 35 | 27 | 27 | 31 | 27 | 41 | ~~27~~ |
| | | 7-27 | 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 | 41 | 27 | 27 | 38 | 27 | 27 | 33 | 27 | 27 | ~~29~~ |
| | | 27-45 | 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 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 3.00 | 22.78 sq.ft | PORTRAIT | CROSS-SLOPE | SML | UAF | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 74 | 74 | 72 | 74 | 74 | 67 | 74 | 74 | 62 | 74 | 74 | 53 | 74 | 71 | 46 | 74 | 67 | 40 | 74 | 63 | 35 | 74 | 51 | 30 | 71 | 42 | 26 | 66 | 35 | 22 | 59 | 31 | 19 | 51 | 27 | 26 | 45 | 24 | 23 |
| | | 7-27 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 59 | 64 | 64 | 53 | 64 | 64 | 47 | 64 | 64 | 42 | 64 | 64 | 38 | 64 | 53 | 32 | 64 | 44 | 27 | 64 | 37 | 24 | 64 | 32 | 21 | 58 | 29 | 18 | 51 | 25 | 25 |
| | | 27-45 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 57 | 57 | 57 | 50 | 50 | 50 | 44 | 44 | 44 | 39 | 39 | 39 | 34 | 34 | 34 | 31 | 31 | 31 |
| | C | 0-7 | 74 | 73 | 51 | 74 | 69 | 43 | 74 | 64 | 37 | 74 | 58 | 33 | 74 | 51 | 30 | 73 | 45 | 27 | 70 | 40 | 25 | 64 | 33 | 21 | 54 | 28 | 18 | 47 | 25 | 23 | 40 | 21 | 20 | 35 | 19 | 18 | 31 | 25 | ~~16~~ |
| | | 7-27 | 64 | 64 | 51 | 64 | 64 | 45 | 64 | 64 | 40 | 64 | 60 | 35 | 64 | 53 | 32 | 64 | 48 | 29 | 64 | 43 | 27 | 64 | 35 | 23 | 61 | 30 | 19 | 52 | 26 | 25 | 45 | 23 | 22 | 39 | 20 | 19 | 35 | 18 | ~~17~~ |
| | | 27-45 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 59 | 57 | 57 | 57 | 52 | 52 | 52 | 48 | 48 | 48 | 42 | 42 | 42 | 36 | 36 | 36 | 32 | 32 | 32 | 28 | 28 | 28 | 25 | 25 | 25 | 23 | 23 | 23 |
| | D | 0-7 | 74 | 66 | 39 | 74 | 60 | 34 | 74 | 52 | 30 | 74 | 46 | 27 | 70 | 41 | 25 | 67 | 36 | 23 | 64 | 33 | 21 | 53 | 28 | 18 | 45 | 24 | 23 | 39 | 21 | 20 | 33 | 18 | ~~17~~ | 29 | 24 | ~~15~~ | 26 | 21 | ~~13~~ |
| | | 7-27 | 64 | 64 | 42 | 64 | 62 | 37 | 64 | 55 | 33 | 64 | 48 | 30 | 64 | 43 | 27 | 64 | 39 | 24 | 64 | 35 | 22 | 60 | 29 | 19 | 50 | 25 | 24 | 43 | 22 | 21 | 37 | 19 | 19 | 33 | 25 | ~~16~~ | 29 | 23 | ~~15~~ |
| | | 27-45 | 59 | 59 | 59 | 59 | 59 | 59 | 58 | 58 | 58 | 53 | 53 | 53 | 49 | 49 | 49 | 45 | 45 | 45 | 41 | 41 | 41 | 35 | 35 | 35 | 31 | 31 | 31 | 27 | 27 | 27 | 24 | 24 | 24 | 21 | 21 | 21 | 19 | 19 | 19 |
| 10 | B | 0-7 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 46 | 52 | 52 | 40 | 52 | 52 | 35 | 52 | 51 | 30 | 52 | 42 | 26 | 52 | 35 | 22 | 52 | 31 | 19 | 51 | 27 | 26 | 45 | 24 | 23 |
| | | 7-27 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 47 | 52 | 52 | 42 | 52 | 52 | 38 | 52 | 52 | 32 | 52 | 44 | 27 | 52 | 37 | 24 | 49 | 32 | 21 | 46 | 29 | 18 | 43 | 25 | 25 |
| | | 27-45 | 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 | 44 | 44 | 44 | 39 | 39 | 39 | 34 | 34 | 34 | 31 | 31 | 31 |
| | C | 0-7 | 52 | 52 | 51 | 52 | 52 | 43 | 52 | 52 | 37 | 52 | 52 | 33 | 52 | 51 | 30 | 52 | 45 | 27 | 52 | 40 | 25 | 52 | 33 | 21 | 52 | 28 | 18 | 47 | 25 | 23 | 40 | 21 | 20 | 35 | 19 | 18 | 31 | 25 | ~~16~~ |
| | | 7-27 | 52 | 52 | 51 | 52 | 52 | 45 | 52 | 52 | 40 | 52 | 52 | 35 | 52 | 52 | 32 | 52 | 48 | 29 | 52 | 43 | 27 | 51 | 35 | 23 | 47 | 30 | 19 | 44 | 26 | 25 | 41 | 23 | 22 | 38 | 20 | 19 | 35 | 18 | ~~17~~ |
| | | 27-45 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 48 | 48 | 48 | 42 | 42 | 42 | 36 | 36 | 36 | 32 | 32 | 32 | 28 | 28 | 28 | 25 | 25 | 25 | 23 | 23 | 23 |
| | D | 0-7 | 52 | 52 | 39 | 52 | 52 | 34 | 52 | 52 | 30 | 52 | 46 | 27 | 52 | 41 | 25 | 52 | 36 | 23 | 52 | 33 | 21 | 52 | 28 | 18 | 45 | 24 | 23 | 39 | 21 | 20 | 33 | 18 | ~~17~~ | 29 | 24 | ~~15~~ | 26 | 21 | ~~13~~ |
| | | 7-27 | 52 | 52 | 42 | 52 | 52 | 37 | 52 | 52 | 33 | 52 | 48 | 30 | 52 | 43 | 27 | 52 | 39 | 24 | 51 | 35 | 22 | 47 | 29 | 19 | 43 | 25 | 24 | 40 | 22 | 21 | 37 | 19 | 19 | 33 | 25 | ~~16~~ | 29 | 23 | ~~15~~ |
| | | 27-45 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 49 | 49 | 49 | 45 | 45 | 45 | 41 | 41 | 41 | 35 | 35 | 35 | 31 | 31 | 31 | 27 | 27 | 27 | 24 | 24 | 24 | 21 | 21 | 21 | 19 | 19 | 19 |
| 20 | B | 0-7 | 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 | 35 | 22 | 36 | 31 | 19 | 36 | 27 | 26 | 36 | 24 | 23 |
| | | 7-27 | 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 | 36 | 27 | 36 | 36 | 24 | 34 | 32 | 21 | 33 | 29 | 18 | 31 | 25 | 25 |
| | | 27-45 | 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 | 34 | 34 | 34 | 31 | 31 | 31 |
| | C | 0-7 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 33 | 36 | 36 | 30 | 36 | 36 | 27 | 36 | 36 | 25 | 36 | 33 | 21 | 36 | 28 | 18 | 36 | 25 | 23 | 36 | 21 | 20 | 35 | 19 | 18 | 31 | 25 | ~~16~~ |
| | | 7-27 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 35 | 36 | 36 | 32 | 36 | 36 | 29 | 36 | 36 | 27 | 35 | 35 | 23 | 33 | 30 | 19 | 32 | 26 | 25 | 30 | 23 | 22 | 29 | 20 | 19 | 27 | 18 | ~~17~~ |
| | | 27-45 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 39 | 36 | 36 | 36 | 32 | 32 | 32 | 28 | 28 | 28 | 25 | 25 | 25 | 23 | 23 | 23 |
| | D | 0-7 | 36 | 36 | 36 | 36 | 36 | 34 | 36 | 36 | 30 | 36 | 36 | 27 | 36 | 36 | 25 | 36 | 36 | 23 | 36 | 33 | 21 | 36 | 28 | 18 | 36 | 24 | 23 | 35 | 21 | 20 | 33 | 18 | ~~17~~ | 29 | 24 | ~~15~~ | 26 | 21 | ~~13~~ |
| | | 7-27 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 33 | 36 | 36 | 30 | 36 | 36 | 27 | 36 | 36 | 24 | 35 | 35 | 22 | 33 | 29 | 19 | 31 | 25 | 24 | 30 | 22 | 21 | 28 | 19 | 19 | 26 | 25 | ~~16~~ | 25 | 23 | ~~15~~ |
| | | 27-45 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 35 | 35 | 35 | 31 | 31 | 31 | 27 | 27 | 27 | 24 | 24 | 24 | 21 | 21 | 21 | 19 | 19 | 19 |
| 30 | B | 0-7 | 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 | 35 | 35 | 22 | 35 | 31 | 19 | 35 | 27 | 26 | 35 | 24 | 23 |
| | | 7-27 | 33 | 33 | 33 | 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 | 24 | 33 | 32 | 21 | 33 | 29 | 18 | 31 | 25 | 25 |
| | | 27-45 | 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 | 32 | 29 | 29 | 29 |
| | C | 0-7 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 33 | 35 | 35 | 30 | 35 | 35 | 27 | 35 | 35 | 25 | 35 | 33 | 21 | 35 | 28 | 18 | 35 | 25 | 23 | 35 | 21 | 20 | 34 | 19 | 18 | 31 | 25 | ~~16~~ |
| | | 7-27 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 33 | 32 | 33 | 33 | 29 | 33 | 33 | 27 | 33 | 33 | 23 | 33 | 30 | 19 | 32 | 26 | 25 | 30 | 23 | 22 | 29 | 20 | 19 | 27 | 18 | ~~17~~ |
| | | 27-45 | 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 | 30 | 30 | 30 | 27 | 27 | 27 | 25 | 25 | 25 | 23 | 23 | 23 |
| | D | 0-7 | 36 | 36 | 36 | 36 | 36 | 34 | 36 | 36 | 30 | 36 | 36 | 27 | 36 | 36 | 25 | 36 | 36 | 23 | 36 | 33 | 21 | 36 | 28 | 18 | 36 | 24 | 23 | 35 | 21 | 20 | 33 | 18 | ~~17~~ | 29 | 24 | ~~15~~ | 26 | 21 | ~~13~~ |
| | | 7-27 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 33 | 35 | 35 | 30 | 35 | 35 | 27 | 35 | 35 | 24 | 35 | 35 | 22 | 33 | 29 | 19 | 31 | 25 | 24 | 30 | 22 | 21 | 28 | 19 | 19 | 26 | 25 | ~~16~~ | 25 | 23 | ~~15~~ |
| | | 27-45 | 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 | 30 | 30 | 27 | 27 | 27 | 24 | 24 | 24 | 21 | 21 | 21 | 19 | 19 | 19 |
| 40 | B | 0-7 | 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 | 22 | 29 | 29 | 19 | 29 | 27 | 26 | 29 | 24 | 23 |
| | | 7-27 | 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 | 28 | 18 | 27 | 25 | 25 |
| | | 27-45 | 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 |
| | C | 0-7 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 29 | 27 | 29 | 29 | 25 | 29 | 29 | 21 | 29 | 28 | 18 | 29 | 25 | 23 | 29 | 21 | 20 | 28 | 19 | 18 | 27 | 25 | ~~16~~ |
| | | 7-27 | 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 | 19 | 27 | 26 | 25 | 26 | 23 | 22 | 25 | 20 | 19 | 24 | 18 | ~~17~~ |
| | | 27-45 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 25 | 25 | 25 | 23 | 23 | 23 | 22 | 22 | 22 |
| | D | 0-7 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 30 | 31 | 31 | 27 | 31 | 31 | 25 | 31 | 31 | 23 | 31 | 31 | 21 | 31 | 28 | 18 | 31 | 24 | 23 | 31 | 21 | 20 | 30 | 18 | ~~17~~ | 29 | 24 | ~~15~~ | 26 | 21 | ~~13~~ |
| | | 7-27 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 27 | 30 | 30 | 24 | 30 | 30 | 22 | 30 | 29 | 19 | 29 | 25 | 24 | 27 | 22 | 21 | 26 | 19 | 19 | 25 | 25 | ~~16~~ | 23 | 23 | ~~15~~ |
| | | 27-45 | 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 | 25 | 25 | 23 | 23 | 23 | 21 | 21 | 21 | 19 | 19 | 19 |
| 50 | B | 0-7 | 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 | 26 | 24 | 24 | 23 |
| | | 7-27 | 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 | 23 | 23 | 18 | 23 | 23 | 25 |
| | | 27-45 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 |
| | C | 0-7 | 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 | 24 | 23 | 24 | 21 | 20 | 24 | 19 | 18 | 23 | 25 | ~~16~~ |
| | | 7-27 | 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 | 23 | 23 | 25 | 23 | 23 | 22 | 22 | 20 | 19 | 21 | 18 | ~~17~~ |
| | | 27-45 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 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 | 20 | 20 |
| | D | 0-7 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 26 | 25 | 26 | 26 | 23 | 26 | 26 | 21 | 26 | 26 | 18 | 26 | 24 | 23 | 26 | 21 | 20 | 26 | 18 | ~~17~~ | 25 | 24 | ~~15~~ | 24 | 21 | ~~13~~ |
| | | 7-27 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 24 | 25 | 25 | 22 | 25 | 25 | 19 | 25 | 25 | 24 | 24 | 22 | 21 | 23 | 19 | 19 | 22 | 25 | ~~16~~ | 21 | 23 | ~~15~~ |
| | | 27-45 | 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 | 22 | 22 | 22 | 20 | 20 | 20 | 19 | 19 | 19 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 3.00 | 22.78 sq.ft | PORTRAIT | CROSS-SLOPE | SML | UAF | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 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 | 26 | 20 | 20 | 23 |
| | | 7-27 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 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 | 25 |
| | | 27-45 | 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 |
| | C | 0-7 | 20 | 20 | 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 | 23 | 20 | 20 | 20 | 20 | 19 | 18 | 20 | 25 | ~~16~~ |
| | | 7-27 | 20 | 20 | 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 | 25 | 20 | 20 | 22 | 20 | 20 | 19 | 19 | 18 | ~~17~~ |
| | | 27-45 | 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 |
| | D | 0-7 | 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 | 23 | 22 | 21 | 20 | 22 | 18 | ~~17~~ | 22 | 24 | ~~15~~ | 21 | 21 | ~~13~~ |
| | | 7-27 | 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 | 24 | 21 | 21 | 21 | 21 | 19 | 19 | 20 | 25 | ~~16~~ | 19 | 23 | ~~15~~ |
| | | 27-45 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 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 |
| 70 | B | 0-7 | 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 | 26 | 17 | 17 | 23 |
| | | 7-27 | 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 | 25 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 23 | 17 | 17 | 20 | 17 | 17 | 18 | 17 | 25 | ~~16~~ |
| | | 7-27 | 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 | 25 | 17 | 17 | 22 | 17 | 17 | 19 | 17 | 17 | ~~17~~ |
| | | 27-45 | 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 |
| | D | 0-7 | 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 | 23 | 19 | 19 | 20 | 19 | 18 | ~~17~~ | 19 | 24 | ~~15~~ | 19 | 21 | ~~13~~ |
| | | 7-27 | 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 | 24 | 19 | 19 | 21 | 19 | 19 | 19 | 18 | 25 | ~~16~~ | 17 | 23 | ~~15~~ |
| | | 27-45 | 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 | 17 | 17 | 17 |
| 80 | B | 0-7 | 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 | 23 | 15 | 15 | 23 |
| | | 7-27 | 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 | 23 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 23 | 15 | 15 | 20 | 15 | 15 | 18 | 15 | 23 | ~~16~~ |
| | | 7-27 | 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 | 23 | 15 | 15 | 22 | 15 | 15 | 19 | 15 | 15 | ~~17~~ |
| | | 27-45 | 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 |
| | D | 0-7 | 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 | 23 | 17 | 17 | 20 | 17 | 17 | ~~17~~ | 17 | 24 | ~~15~~ | 17 | 21 | ~~13~~ |
| | | 7-27 | 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 | 24 | 16 | 16 | 21 | 16 | 16 | 19 | 16 | 25 | ~~16~~ | 16 | 23 | ~~15~~ |
| | | 27-45 | 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 |
| 90 | B | 0-7 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 20 | 13 | 13 | 20 |
| | | 7-27 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| | | 27-45 | 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 |
| | C | 0-7 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 20 | 13 | 13 | 20 | 13 | 13 | 18 | 13 | 20 | ~~16~~ |
| | | 7-27 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 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~~ |
| | | 27-45 | 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 |
| | D | 0-7 | 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 | 23 | 15 | 15 | 20 | 15 | 15 | ~~17~~ | 15 | 23 | ~~15~~ | 15 | 21 | ~~13~~ |
| | | 7-27 | 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 | 22 | 15 | 15 | 21 | 15 | 15 | 19 | 15 | 22 | ~~16~~ | 15 | 22 | ~~15~~ |
| | | 27-45 | 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 |
| 100 | B | 0-7 | 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 | 18 | 12 | 12 | 18 |
| | | 7-27 | 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 | 18 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 18 | 12 | 12 | 18 | 12 | 12 | 18 | 12 | 18 | ~~16~~ |
| | | 7-27 | 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 | ~~17~~ |
| | | 27-45 | 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 |
| | D | 0-7 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 20 | 13 | 13 | 20 | 13 | 13 | ~~17~~ | 13 | 20 | ~~15~~ | 13 | 20 | ~~13~~ |
| | | 7-27 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 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 | ~~15~~ |
| | | 27-45 | 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 |

* 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 7-10 | II | 30 ft | Ss = 3.00 | 22.78 sq.ft | LANDSCAPE | CROSS-SLOPE | SML | UAF | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 98 | 98 | 91 | 98 | 98 | 86 | 98 | 98 | 82 | 98 | 93 | 79 | 98 | 90 | 76 | 98 | 86 | 71 | 98 | 83 | 67 | 96 | 78 | 59 | 90 | 73 | 50 | 86 | 66 | 44 | 82 | 60 | 38 | 78 | 53 | 34 | 75 | 47 | 45 |
| | | 7-27 | 98 | 98 | 89 | 98 | 98 | 85 | 98 | 98 | 82 | 98 | 94 | 79 | 98 | 90 | 76 | 98 | 87 | 73 | 98 | 84 | 69 | 98 | 79 | 63 | 94 | 75 | 54 | 89 | 69 | 47 | 85 | 64 | 41 | 81 | 56 | 36 | 78 | 50 | 48 |
| | | 27-45 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 96 | 96 | 96 | 94 | 94 | 94 | 90 | 89 | 89 | 86 | 84 | 84 | 83 | 80 | 80 | 76 | 76 | 76 | 68 | 68 | 68 | 61 | 61 | 61 |
| | C | 0-7 | 98 | 92 | 78 | 98 | 88 | 74 | 98 | 84 | 68 | 98 | 81 | 64 | 96 | 78 | 59 | 92 | 75 | 53 | 89 | 71 | 49 | 84 | 64 | 41 | 80 | 56 | 35 | 76 | 49 | 46 | 71 | 42 | 41 | 66 | 37 | 36 | 61 | 33 | 32 |
| | | 7-27 | 98 | 93 | 78 | 98 | 89 | 75 | 98 | 85 | 70 | 98 | 82 | 66 | 98 | 79 | 63 | 96 | 76 | 57 | 93 | 73 | 53 | 87 | 66 | 44 | 83 | 59 | 38 | 79 | 51 | 50 | 75 | 45 | 44 | 70 | 40 | 39 | 66 | 35 | 34 |
| | | 27-45 | 99 | 99 | 99 | 98 | 98 | 98 | 95 | 95 | 95 | 92 | 92 | 92 | 90 | 89 | 89 | 88 | 86 | 86 | 85 | 83 | 83 | 81 | 78 | 78 | 71 | 71 | 71 | 62 | 62 | 62 | 55 | 55 | 55 | 49 | 49 | 49 | 44 | 44 | 44 |
| | D | 0-7 | 98 | 86 | 70 | 98 | 82 | 65 | 97 | 79 | 60 | 93 | 76 | 54 | 90 | 72 | 49 | 87 | 68 | 45 | 84 | 64 | 41 | 79 | 55 | 35 | 75 | 47 | 45 | 69 | 41 | 39 | 65 | 36 | 34 | 58 | 47 | ~~30~~ | 51 | 42 | ~~27~~ |
| | | 7-27 | 98 | 87 | 72 | 98 | 83 | 68 | 98 | 80 | 64 | 97 | 77 | 58 | 93 | 74 | 53 | 90 | 70 | 48 | 87 | 66 | 44 | 82 | 58 | 37 | 78 | 50 | 48 | 73 | 43 | 42 | 68 | 38 | 37 | 64 | 50 | ~~32~~ | 57 | 45 | ~~29~~ |
| | | 27-45 | 96 | 96 | 96 | 93 | 93 | 93 | 90 | 90 | 90 | 88 | 86 | 86 | 86 | 83 | 83 | 83 | 81 | 81 | 81 | 78 | 78 | 70 | 70 | 70 | 61 | 61 | 61 | 53 | 53 | 53 | 47 | 47 | 47 | 42 | 42 | 42 | 38 | 38 | 38 |
| 10 | B | 0-7 | 87 | 87 | 87 | 87 | 87 | 86 | 87 | 87 | 82 | 87 | 87 | 79 | 87 | 87 | 76 | 87 | 86 | 71 | 87 | 83 | 67 | 87 | 78 | 59 | 87 | 73 | 50 | 86 | 66 | 44 | 82 | 60 | 38 | 78 | 53 | 34 | 75 | 47 | 45 |
| | | 7-27 | 87 | 87 | 87 | 87 | 87 | 85 | 87 | 87 | 82 | 87 | 87 | 79 | 87 | 87 | 76 | 87 | 87 | 73 | 87 | 84 | 69 | 87 | 79 | 63 | 87 | 75 | 54 | 87 | 69 | 47 | 85 | 64 | 41 | 81 | 56 | 36 | 78 | 50 | 48 |
| | | 27-45 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 94 | 94 | 94 | 90 | 89 | 89 | 86 | 84 | 84 | 83 | 80 | 80 | 76 | 76 | 76 | 68 | 68 | 68 | 61 | 61 | 61 |
| | C | 0-7 | 87 | 87 | 78 | 87 | 87 | 74 | 87 | 84 | 68 | 87 | 81 | 64 | 87 | 78 | 59 | 87 | 75 | 53 | 87 | 71 | 49 | 84 | 64 | 41 | 80 | 56 | 35 | 76 | 49 | 46 | 71 | 42 | 41 | 66 | 37 | 36 | 61 | 33 | 32 |
| | | 7-27 | 87 | 87 | 78 | 87 | 87 | 75 | 87 | 85 | 70 | 87 | 82 | 66 | 87 | 79 | 63 | 87 | 76 | 57 | 87 | 73 | 53 | 87 | 66 | 44 | 83 | 59 | 38 | 79 | 51 | 50 | 75 | 45 | 44 | 70 | 40 | 39 | 66 | 35 | 34 |
| | | 27-45 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 92 | 92 | 92 | 90 | 89 | 89 | 88 | 86 | 86 | 85 | 83 | 83 | 81 | 78 | 78 | 71 | 71 | 71 | 62 | 62 | 62 | 55 | 55 | 55 | 49 | 49 | 49 | 44 | 44 | 44 |
| | D | 0-7 | 87 | 86 | 70 | 87 | 82 | 65 | 87 | 79 | 60 | 87 | 76 | 54 | 87 | 72 | 49 | 87 | 68 | 45 | 84 | 64 | 41 | 79 | 55 | 35 | 75 | 47 | 45 | 69 | 41 | 39 | 65 | 36 | 34 | 58 | 47 | ~~30~~ | 51 | 42 | ~~27~~ |
| | | 7-27 | 87 | 87 | 72 | 87 | 83 | 68 | 87 | 80 | 64 | 87 | 77 | 58 | 87 | 74 | 53 | 87 | 70 | 48 | 87 | 66 | 44 | 82 | 58 | 37 | 78 | 50 | 48 | 73 | 43 | 42 | 68 | 38 | 37 | 64 | 50 | ~~32~~ | 57 | 45 | ~~29~~ |
| | | 27-45 | 96 | 96 | 96 | 93 | 93 | 93 | 90 | 90 | 90 | 88 | 86 | 86 | 86 | 83 | 83 | 83 | 81 | 81 | 81 | 78 | 78 | 70 | 70 | 70 | 61 | 61 | 61 | 53 | 53 | 53 | 47 | 47 | 47 | 42 | 42 | 42 | 38 | 38 | 38 |
| 20 | B | 0-7 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 67 | 71 | 71 | 59 | 71 | 71 | 50 | 71 | 66 | 44 | 71 | 60 | 38 | 71 | 53 | 34 | 71 | 47 | 45 |
| | | 7-27 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 69 | 71 | 71 | 63 | 71 | 71 | 54 | 70 | 69 | 47 | 67 | 64 | 41 | 64 | 56 | 36 | 62 | 50 | 48 |
| | | 27-45 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 68 | 68 | 68 | 61 | 61 | 61 |
| | C | 0-7 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 68 | 71 | 71 | 64 | 71 | 71 | 59 | 71 | 71 | 53 | 71 | 71 | 49 | 71 | 64 | 41 | 71 | 56 | 35 | 71 | 49 | 46 | 71 | 42 | 41 | 66 | 37 | 36 | 61 | 33 | 32 |
| | | 7-27 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 70 | 71 | 71 | 66 | 71 | 71 | 63 | 71 | 71 | 57 | 71 | 71 | 53 | 69 | 66 | 44 | 65 | 59 | 38 | 62 | 51 | 50 | 59 | 45 | 44 | 56 | 40 | 39 | 53 | 35 | 34 |
| | | 27-45 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 71 | 71 | 71 | 62 | 62 | 62 | 55 | 55 | 55 | 49 | 49 | 49 | 44 | 44 | 44 |
| | D | 0-7 | 71 | 71 | 70 | 71 | 71 | 65 | 71 | 71 | 60 | 71 | 71 | 54 | 71 | 71 | 49 | 71 | 68 | 45 | 71 | 64 | 41 | 71 | 55 | 35 | 71 | 47 | 45 | 69 | 41 | 39 | 65 | 36 | 34 | 58 | 47 | ~~30~~ | 51 | 42 | ~~27~~ |
| | | 7-27 | 71 | 71 | 71 | 71 | 71 | 68 | 71 | 71 | 64 | 71 | 71 | 58 | 71 | 71 | 53 | 71 | 70 | 48 | 69 | 66 | 44 | 65 | 58 | 37 | 61 | 50 | 48 | 58 | 43 | 42 | 55 | 38 | 37 | 52 | 50 | ~~32~~ | 49 | 45 | ~~29~~ |
| | | 27-45 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 78 | 70 | 70 | 70 | 61 | 61 | 61 | 53 | 53 | 53 | 47 | 47 | 47 | 42 | 42 | 42 | 38 | 38 | 38 |
| 30 | B | 0-7 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 67 | 68 | 68 | 59 | 68 | 68 | 50 | 68 | 66 | 44 | 68 | 60 | 38 | 68 | 53 | 34 | 68 | 47 | 45 |
| | | 7-27 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 63 | 64 | 64 | 54 | 64 | 64 | 47 | 64 | 64 | 41 | 64 | 56 | 36 | 62 | 50 | 48 |
| | | 27-45 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 57 | 57 | 57 |
| | C | 0-7 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 64 | 68 | 68 | 59 | 68 | 68 | 53 | 68 | 68 | 49 | 68 | 64 | 41 | 68 | 56 | 35 | 68 | 49 | 46 | 68 | 42 | 41 | 66 | 37 | 36 | 61 | 33 | 32 |
| | | 7-27 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 63 | 64 | 64 | 57 | 64 | 64 | 53 | 64 | 64 | 44 | 64 | 59 | 38 | 62 | 51 | 50 | 59 | 45 | 44 | 56 | 40 | 39 | 53 | 35 | 34 |
| | | 27-45 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 58 | 58 | 58 | 54 | 54 | 54 | 49 | 49 | 49 | 44 | 44 | 44 |
| | D | 0-7 | 71 | 71 | 70 | 71 | 71 | 65 | 71 | 71 | 60 | 71 | 71 | 54 | 71 | 71 | 49 | 71 | 68 | 45 | 71 | 64 | 41 | 71 | 55 | 35 | 71 | 47 | 45 | 69 | 41 | 39 | 65 | 36 | 34 | 58 | 47 | ~~30~~ | 51 | 42 | ~~27~~ |
| | | 7-27 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 64 | 67 | 67 | 58 | 67 | 67 | 53 | 67 | 67 | 48 | 67 | 66 | 44 | 65 | 58 | 37 | 61 | 50 | 48 | 58 | 43 | 42 | 55 | 38 | 37 | 52 | 50 | ~~32~~ | 49 | 45 | ~~29~~ |
| | | 27-45 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 64 | 59 | 59 | 59 | 53 | 53 | 53 | 47 | 47 | 47 | 42 | 42 | 42 | 38 | 38 | 38 |
| 40 | B | 0-7 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 50 | 57 | 57 | 44 | 57 | 57 | 38 | 57 | 53 | 34 | 57 | 47 | 45 |
| | | 7-27 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 47 | 54 | 54 | 41 | 54 | 54 | 36 | 53 | 50 | 48 |
| | | 27-45 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 |
| | C | 0-7 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 53 | 57 | 57 | 49 | 57 | 57 | 41 | 57 | 56 | 35 | 57 | 49 | 46 | 57 | 42 | 41 | 55 | 37 | 36 | 53 | 33 | 32 |
| | | 7-27 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 53 | 54 | 54 | 44 | 54 | 54 | 38 | 54 | 51 | 50 | 51 | 45 | 44 | 49 | 40 | 39 | 47 | 35 | 34 |
| | | 27-45 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 49 | 49 | 49 | 46 | 46 | 46 | 42 | 42 | 42 |
| | D | 0-7 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 60 | 61 | 61 | 54 | 61 | 61 | 49 | 61 | 61 | 45 | 61 | 61 | 41 | 61 | 55 | 35 | 61 | 47 | 45 | 60 | 41 | 39 | 58 | 36 | 34 | 56 | 47 | ~~30~~ | 51 | 42 | ~~27~~ |
| | | 7-27 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 57 | 53 | 57 | 57 | 48 | 57 | 57 | 44 | 57 | 57 | 37 | 56 | 50 | 48 | 54 | 43 | 42 | 51 | 38 | 37 | 48 | 50 | ~~32~~ | 46 | 45 | ~~29~~ |
| | | 27-45 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 54 | 54 | 54 | 50 | 50 | 50 | 46 | 46 | 46 | 42 | 42 | 42 | 38 | 38 | 38 |
| 50 | B | 0-7 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 44 | 47 | 47 | 38 | 47 | 47 | 34 | 47 | 47 | 45 |
| | | 7-27 | 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 | 45 | 45 | 45 | 45 | 45 | 41 | 45 | 45 | 36 | 45 | 45 | 48 |
| | | 27-45 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 |
| | C | 0-7 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 41 | 47 | 47 | 35 | 47 | 47 | 46 | 47 | 42 | 41 | 47 | 37 | 36 | 46 | 33 | 32 |
| | | 7-27 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 45 | 44 | 45 | 45 | 38 | 45 | 45 | 50 | 45 | 45 | 44 | 43 | 40 | 39 | 41 | 35 | 34 |
| | | 27-45 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 40 | 40 | 40 |
| | D | 0-7 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 49 | 51 | 51 | 45 | 51 | 51 | 41 | 51 | 51 | 35 | 51 | 47 | 45 | 51 | 41 | 39 | 50 | 36 | 34 | 49 | 47 | ~~30~~ | 47 | 42 | ~~27~~ |
| | | 7-27 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 48 | 50 | 50 | 44 | 50 | 50 | 37 | 49 | 49 | 48 | 47 | 43 | 42 | 45 | 38 | 37 | 43 | 50 | ~~32~~ | 41 | 45 | ~~29~~ |
| | | 27-45 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 46 | 46 | 46 | 43 | 43 | 43 | 40 | 40 | 40 | 37 | 37 | 37 |

* 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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| ASCE 7-10 | II | 30 ft | Ss = 3.00 | 22.78 sq.ft | LANDSCAPE | CROSS-SLOPE | SML | UAF | Solarhooks CT5 |
|---|---|---|---|---|---|---|---|---|---|
| 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) | 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 | 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 | 39 | 34 | 39 | 39 | 45 |
| | | 7-27 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 36 | 38 | 38 | 48 |
| | | 27-45 | 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 | 36 | 36 | 36 | 36 |
| | C | 0-7 | 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 | 46 | 39 | 39 | 41 | 39 | 37 | 36 | 39 | 33 | 32 |
| | | 7-27 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 50 | 38 | 38 | 44 | 38 | 38 | 39 | 37 | 35 | 34 |
| | | 27-45 | 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 | 36 | 36 | 36 | 36 |
| | D | 0-7 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 41 | 43 | 43 | 35 | 43 | 43 | 45 | 43 | 41 | 39 | 43 | 36 | 34 | 43 | 47 | ~~30~~ | 42 | 42 | ~~27~~ |
| | | 7-27 | 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 | 48 | 42 | 42 | 42 | 41 | 38 | 37 | 39 | 50 | ~~32~~ | 37 | 45 | ~~29~~ |
| | | 27-45 | 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 | 40 | 37 | 37 | 37 | 35 | 35 | 35 |
| 70 | B | 0-7 | 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 | 45 |
| | | 7-27 | 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 | 48 |
| | | 27-45 | 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 | 32 | 32 | 32 | 32 |
| | C | 0-7 | 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 | 46 | 34 | 34 | 41 | 34 | 34 | 36 | 34 | 33 | 32 |
| | | 7-27 | 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 | 50 | 33 | 33 | 44 | 33 | 33 | 39 | 33 | 33 | 34 |
| | | 27-45 | 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 | 32 | 32 | 32 | 32 |
| | D | 0-7 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 35 | 37 | 37 | 45 | 37 | 37 | 39 | 37 | 36 | 34 | 37 | 47 | ~~30~~ | 37 | 42 | ~~27~~ |
| | | 7-27 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 37 | 48 | 37 | 37 | 42 | 37 | 37 | 37 | 35 | 50 | ~~32~~ | 34 | 45 | ~~29~~ |
| | | 27-45 | 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 | 35 | 33 | 33 | 33 |
| 80 | B | 0-7 | 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 | 30 | 30 | 45 |
| | | 7-27 | 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 | 44 |
| | | 27-45 | 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 |
| | C | 0-7 | 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 | 45 | 30 | 30 | 41 | 30 | 30 | 36 | 30 | 30 | 32 |
| | | 7-27 | 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 | 44 | 29 | 29 | 44 | 29 | 29 | 39 | 29 | 29 | 34 |
| | | 27-45 | 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 |
| | D | 0-7 | 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 | 45 | 33 | 33 | 39 | 33 | 33 | 34 | 33 | 47 | ~~30~~ | 33 | 42 | ~~27~~ |
| | | 7-27 | 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 | 48 | 33 | 33 | 42 | 33 | 33 | 37 | 33 | 49 | ~~32~~ | 31 | 45 | ~~29~~ |
| | | 27-45 | 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 | 31 | 31 | 31 | 31 |
| 90 | B | 0-7 | 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 | 40 |
| | | 7-27 | 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 | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| | | 27-45 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 |
| | C | 0-7 | 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 | 40 | 27 | 27 | 40 | 27 | 27 | 36 | 27 | 27 | 32 |
| | | 7-27 | 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 | 40 | 40 | 40 | 39 | 40 | 40 | 34 |
| | | 27-45 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 |
| | D | 0-7 | 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 | 44 | 29 | 29 | 39 | 29 | 29 | 34 | 29 | 44 | ~~30~~ | 29 | 42 | ~~27~~ |
| | | 7-27 | 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 | 44 | 29 | 29 | 42 | 29 | 29 | 37 | 29 | 44 | ~~32~~ | 29 | 44 | ~~29~~ |
| | | 27-45 | 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 | 42 | 42 | 42 | 42 |
| 100 | B | 0-7 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 36 |
| | | 7-27 | 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 | 36 | 36 | 36 | 36 |
| | | 27-45 | 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 | 34 |
| | C | 0-7 | 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 | 36 | 24 | 24 | 36 | 24 | 24 | 36 | 24 | 24 | 32 |
| | | 7-27 | 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 | 36 | 36 | 36 | 34 |
| | | 27-45 | 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 | 34 |
| | D | 0-7 | 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 | 40 | 27 | 27 | 39 | 27 | 27 | 34 | 27 | 40 | ~~30~~ | 27 | 40 | ~~27~~ |
| | | 7-27 | 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 | 37 | 40 | 40 | ~~32~~ | 40 | 40 | ~~29~~ |
| | | 27-45 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 |

* 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.