



June 4, 2024

Sunmodo Corp
14800 NE 65th St
Vancouver, WA 98682
TEL: (360) 844-0048

Attn.: Sunmodo Corp - Engineering Department

Re: Report # 2021-02963vHG.31.0 – Sunmodo SMR100
Subject: Engineering Certification for the State of Washington

PZSE, Inc. – Structural Engineers has provided engineering and span tables for the Sunmodo SMR100 Rail, as presented in PZSE Report # 2021-02963vHG.31.0, "Sunmodo SMR100 Rail, Engineering Certification for Gable and Hip Roofs". All information, data, and analysis therein are based on, and comply with, the following building codes and typical specifications:

- Building Codes:
1. ASCE/SEI 7-22, Minimum Design Loads for Buildings and other Structures, by American Society of Civil Engineers
 2. 2021 International Building Code, by International Code Council, Inc.
 3. 2021 International Residential Code, by International Code Council, Inc.
 4. AC428, Acceptance Criteria for Modular Framing Systems Used to Support Photovoltaic (PV) Panels, November 1, 2012 by ICC-ES
 5. Aluminum Design Manual 2020, by The Aluminum Association, Inc.
 6. ANSI/AWC NDS-2018, National Design Specification for Wood Construction, by the American Wood Council

Design Criteria:

Risk Category II
 Seismic Design Category = A - E
 Exposure Category = B, C & D
 Basic Wind Speed (ultimate) per ASCE 7-22 = 90 mph to 190 mph
 Ground Snow Load = 0 to 120 (psf)

This letter certifies that the loading criteria and design basis for the Sunmodo SMR100 Rail Span Tables are in compliance with the above codes.

If you have any questions on the above, do not hesitate to call.

Prepared by:
PZSE, Inc. – Structural Engineers
Roseville, CA

DIGITALLY SIGNED



EXPIRES 08/02/2025



February 01, 2024

SunModo Corp
14800 NE 65th St
Vancouver, WA 98682
TEL: (360) 844-0048

Attn.: Sunmodo - Engineering Department

Re: Report # 2021-02963vHG.31.0 SunModo SMR100 Rail, Engineering Certification for Gable and Hip roofs.

PZSE, Inc. - Structural Engineers have reviewed SunModo SMR100 Rail. All information, data, and analysis contained within the SunModo SMR100 Rail span tables are based on, and comply with the following codes:

1. Minimum Design Loads for Buildings and Other Structures, ASCE/SEI 7-22
2. 2021 International Building Code, by the International Code Council, Inc.
3. 2021 International Residential Code, by the International Code Council, Inc.
4. AC428, Acceptance Criteria for Modular Framing Systems Used to Support Photovoltaic (PV) Panels, November 1, 2012, by ICC-ES
5. Aluminum Design Manual 2020, by The Aluminum Association, Inc.
6. ANSI/AWC NDS-2018, National Design Specification for Wood Construction, by the American Wood Council

Following are typical specifications to meet the above code requirements:

Design Criteria: Ground Snow Load = 0 - 120 (psf)
Basic Wind Speed = 90 - 190 (mph)
Roof Mean Height = 0 - 30 (ft)
Enclosed and Partially Enclosed Gable and Hip Roof Pitch = 0° - 90° (degrees)
Open Gable Roof Pitch = 0° - 45° (degrees)
Exposure Category = B, C & D

SunModo Rail: The SMR100 Rail Aluminum Alloys: 6005-T5, 6005A-T61, 6061-T6

Attachment Devices: No attachment is considered in the rail span.

Clearance: 2" to 10" clear from the top of the roof to the top of the PV panel.

Cantilever: The maximum cantilever (L_c) is permitted to be $L/3$, where L is the corresponding maximum span noted in the Span Table(s) and the minimum spacing between cantilevers (Y). Where 'Y' is at least (1) module width or module short-dimension, see Figure 1.

A maximum cantilever length of $1/3$ of the installed span is permitted in all other cases.

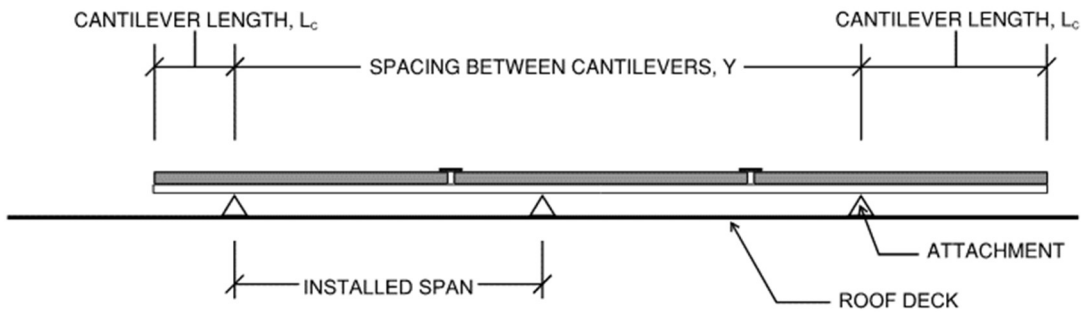


Figure 1: Cantilever Length

Splice: Rails installed with (2) Roof Attachments (1 rail span)*: SMR100 Rail Splice, where required, shall be installed within a distance of $L/4$ from either Roof Attachment, where "L" is the rail span.
Rails installed with (3) or more Roof Attachments (2 or more rail spans)*: SMR100 Rail Splice, where required, shall not be installed within a distance of $L/8$ from any Roof Attachment, where "L" is the rail span.
 *SMR100 Rail Splice may be installed on any portion of the span in instances where the rail is continuous over two roof attachments on both sides of the splice.

Tolerance(s): 1.0" tolerance for any specified dimension in this report is allowed for installation.

Installation Orientation: Landscape (L) - PV Panel long dimension is parallel to the ridge/eave line of roof, and the PV panel is mounted on the long side.
 Portrait (P) - PV Panel short dimension is parallel to the ridge/eave line of roof, and the PV panel is mounted on the short side.

Rail Spacing Tables assume maximum panel dimensions are: 82" x 42"

Components and Cladding Roof Zones:

Roof Zones — Enclosed and Partially Enclosed Gable Roofs $\theta \leq 7^\circ$:

1. The zones shall be determined using Figure 30.3-2A of ASCE 7-22. See Figure 1.
2. Interior Zone 1, span shall be the minimum of 1 and 1' (See Dual Rail Span Chart).

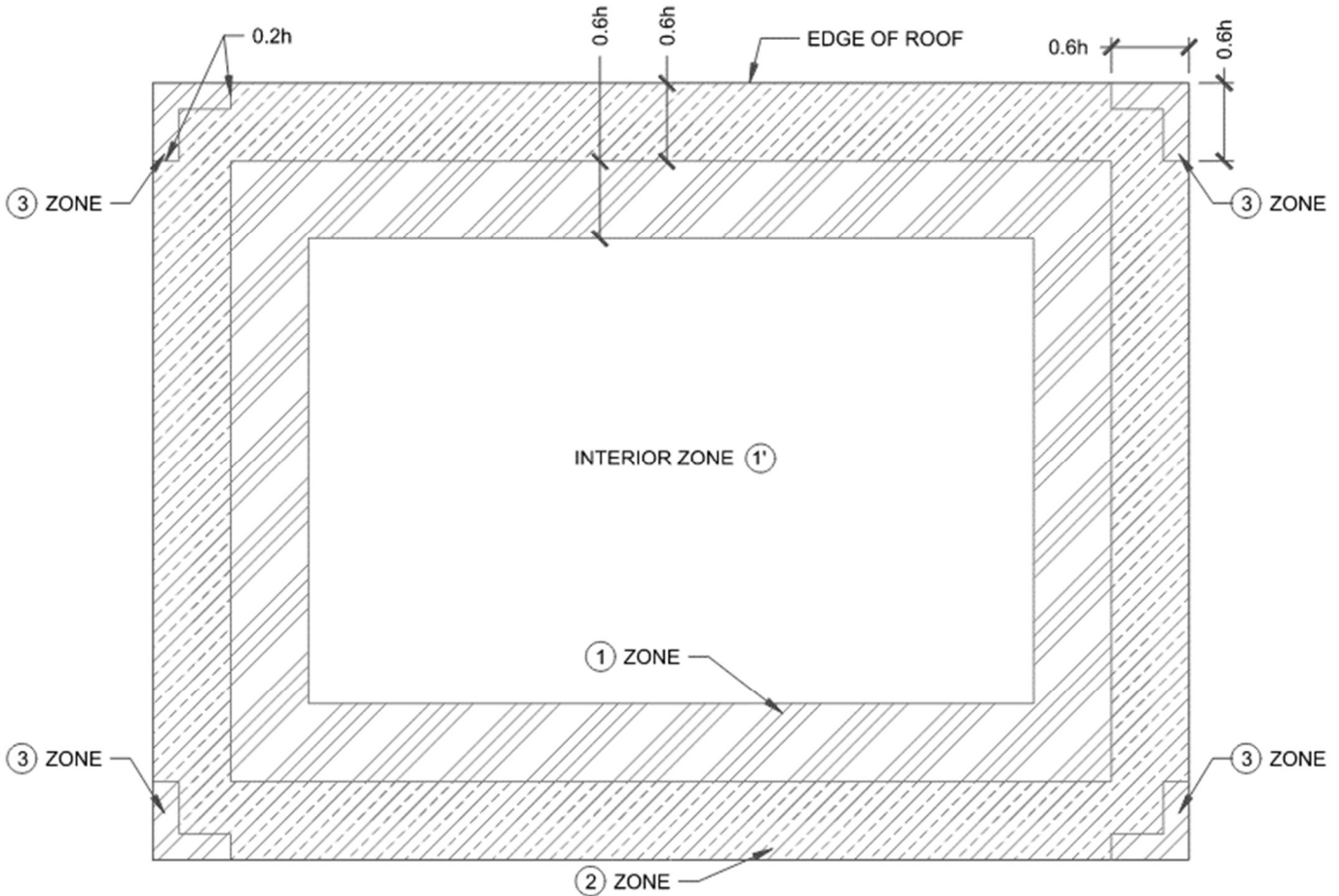


Figure 1: Roof Edge and Corner Zones, Gable Roofs, $\theta \leq 7^\circ$

Roof Zones – Enclosed and Partially Enclosed Gable Roofs, $7^\circ < \theta \leq 27^\circ$:

1. The zones shall be determined using figures 30.3-2B and 30.3-2C of ASCE 7-22. See Figure 2.

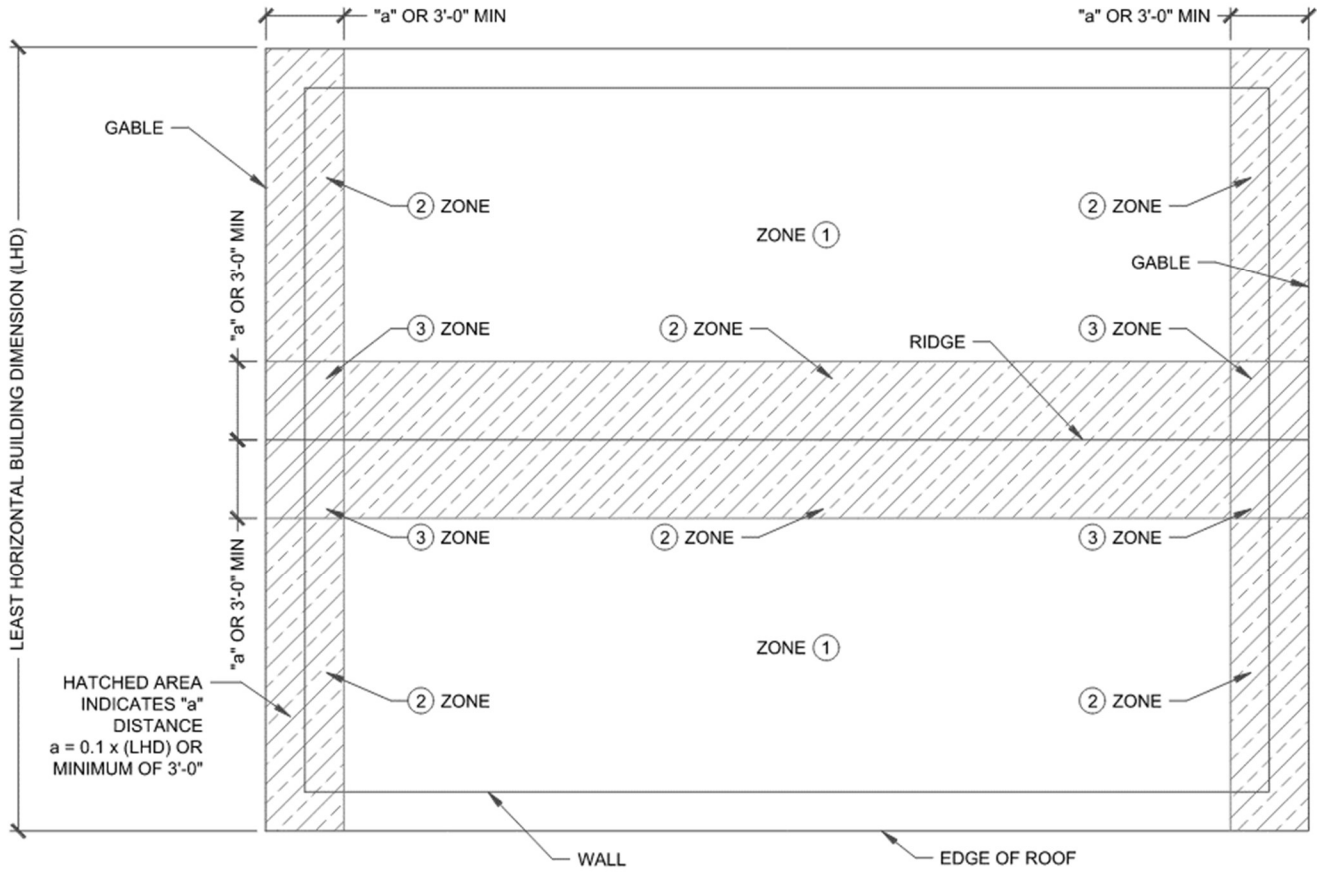


Figure 2: Roof Edge and Corner Zones, Gable Roofs, $7^\circ < \theta \leq 27^\circ$

Roof Zones – Enclosed and Partially Enclosed Gable Roofs, $27^\circ < \theta \leq 90^\circ$:

1. The zones shall be determined using figure 30.3-2D of ASCE 7-22. See Figure 3.
2. Roofs from $45^\circ < \theta \leq 90^\circ$ shall use the same Edge Zone, "a" determination as roofs from $27^\circ < \theta \leq 45^\circ$.

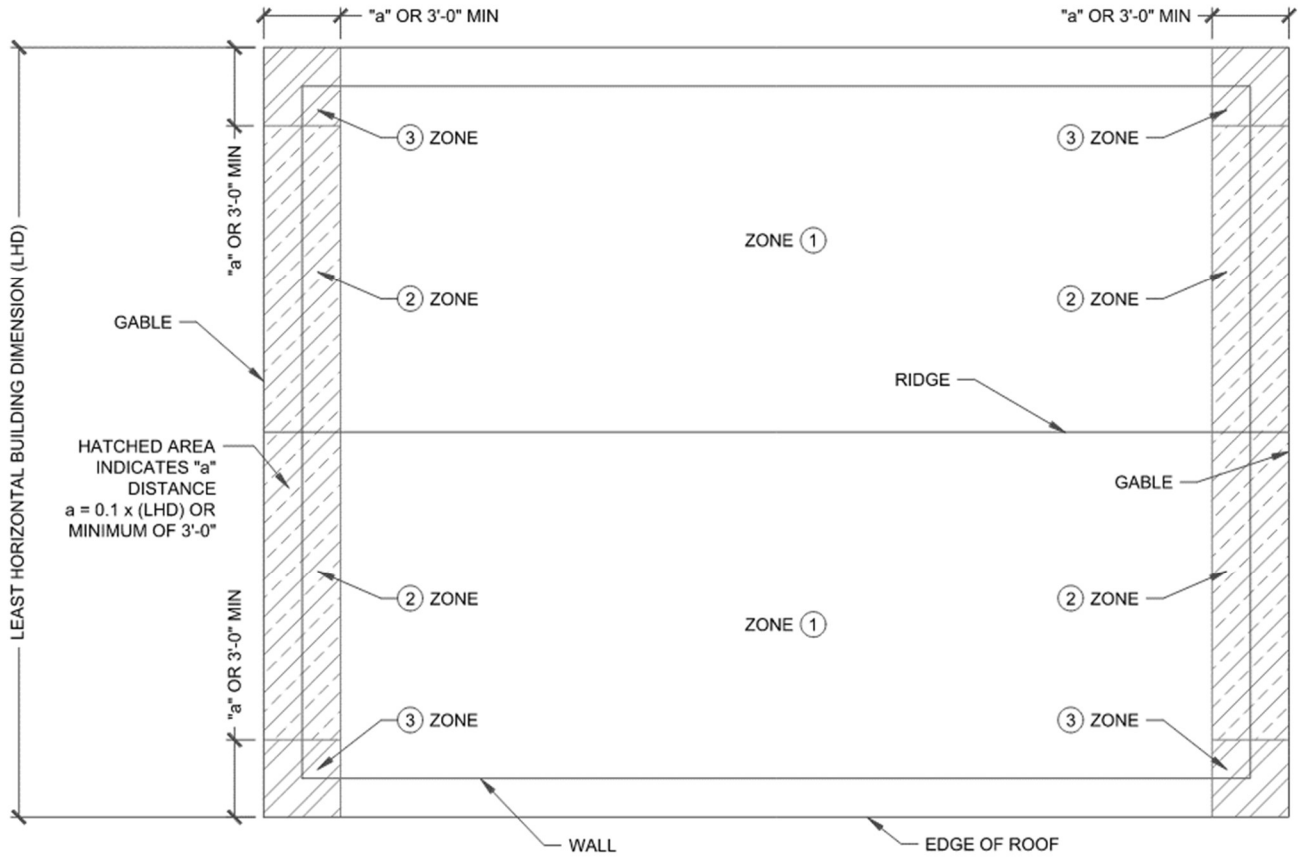


Figure 3: Roof Edge and Corner Zones, Gable Roofs, $27^\circ < \theta \leq 90^\circ$

Roof Zones – Enclosed and Partially Enclosed Hip Roofs, $7^\circ < \theta \leq 90^\circ$:

1. The zones shall be determined using Figure 30.3-2E thru 30.3-2G of ASCE 7-22. See Figure 4.
2. Roofs from $45^\circ < \theta \leq 90^\circ$ shall use the same Edge Zone, “a” determination as roofs from $7^\circ < \theta \leq 45^\circ$

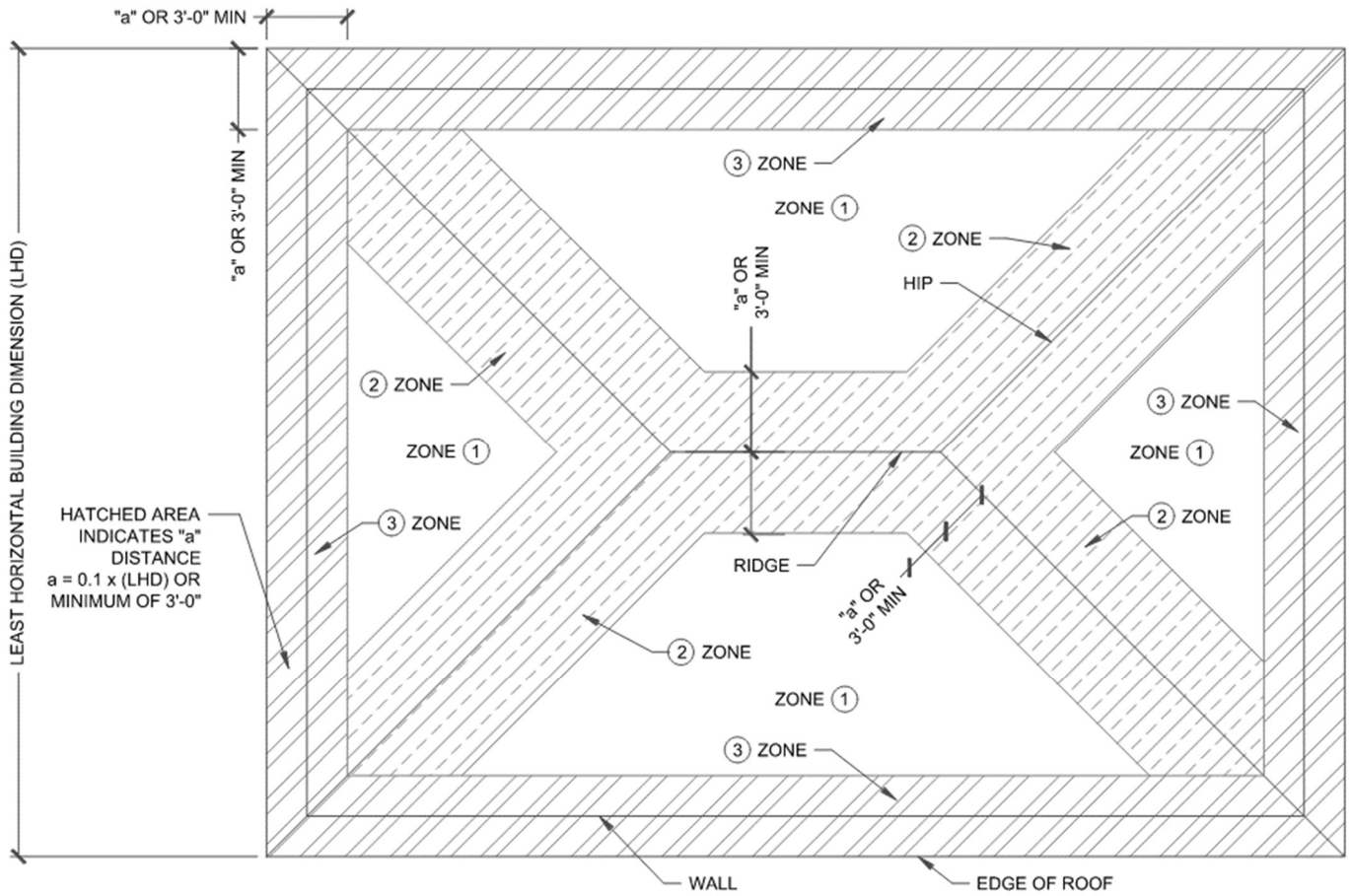


Figure 4: Roof Edge and Corner Zones, Hip Roofs, $7^\circ < \theta \leq 90^\circ$

Panel Array Edge:

Panels exposed at array edge shall use figure 29.4-7 of ASCE 7-22 to determine “ d_1 ” and “ d_2 ” to apply “Array Edge” spans that apply to an array layout. See Figure 5.

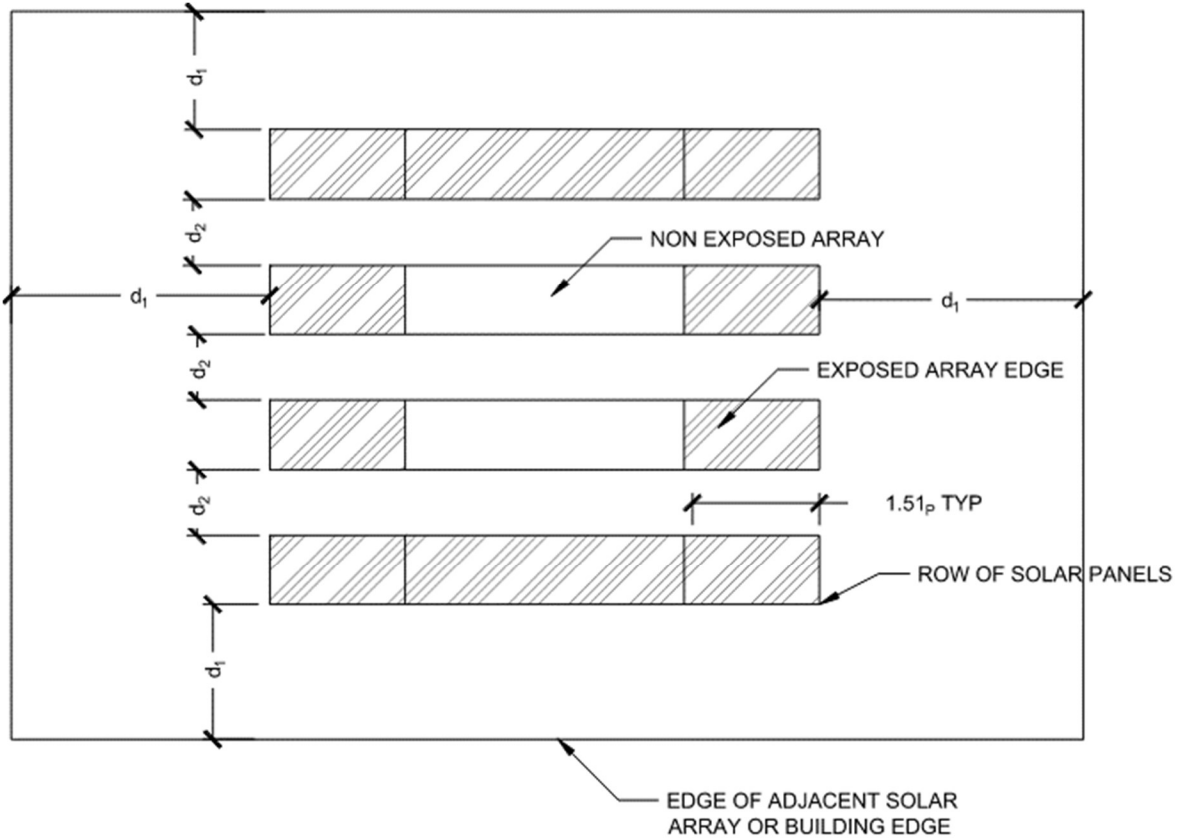


Figure 5: Array Edge

Panel with Support Mounts in Multiple Roof Zones:

Edge and Corner Zone spacings (Zone 2 & 3, respectively) apply only to mounts located in those Zones, not to all the mounts supporting the module.

- Notes:
- 1) Tables are determined for Dual Rail only and do not include roof capacity check.
 - 2) Risk Category II per ASCE 7-22.
 - 3) Topographic factor, k_{zt} is 1.0.
 - 4) Average parapet height is 0.0 ft.
 - 5) Wind speeds are LRFD values.
 - 6) Snow loads consider a Thermal Factor (C_t) of 1.2.
 - 7) Attachment spacing(s) apply to a seismic design category E or less.



Design Responsibility:

These tables are intended for use under the responsible charge of a registered design professional as required by the authority having jurisdiction. In all cases, a design professional with sufficient structural engineering knowledge and experience should direct the use of these tables to:

- Evaluate whether these tables are applicable to the project.
- Understand and determine the appropriate values for all input parameters of these tables.

This letter certifies that the SunModo SMR100 Rail System, when installed in accordance with the limitations outlined in this letter and the accompanying span tables, complies with the aforementioned codes and loading criteria. This certification excludes evaluation of the building structure to support the loads imposed on the building by the array, including strength and deflection of structural framing members, fastening and/or strength of roofing materials, and/or the effects of snow accumulation on the roof. Assessing these aspects will require additional knowledge of the building and is outside the scope of the certification for this racking system.

If you have any questions on the above, do not hesitate to call.

Prepared by:
PZSE, Inc. – Structural Engineers
Roseville, CA



SMR100 Rail Flush-Mount System – ASCE 7-22

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Maximum Rail Spans (Inches)			SMR100 Rail Flush-Mount on 0 to 30 Foot Roof -- ASCE 7-22-- 82" x 42" (P)																						
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed ->		90 mph			95 mph			100 mph			105 mph			110 mph			115 mph			120 mph		
			Roof Zone ->		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
0 psf	B	0 to 7	Array Interior	93	93	88	93	93	84	93	92	81	93	88	78	93	85	74	93	83	70	90	80	67	
			Array Edge	93	85	74	92	82	69	88	79	66	85	75	62	82	71	59	80	68	57	76	65	54	
		7 to 20	Array Interior	93	93	84	93	90	81	93	86	77	93	83	73	90	80	69	87	77	66	84	73	63	
			Array Edge	90	80	69	86	76	65	83	72	62	80	68	59	76	65	56	73	62	53	69	59	51	
		20 to 27	Array Interior	93	93	89	93	92	86	93	89	83	93	85	80	93	83	76	93	80	73	93	76	69	
			Array Edge	93	82	76	93	79	72	92	75	68	89	71	64	86	68	61	83	64	58	80	62	56	
		27 to 45	Array Interior	95	95	95	95	95	91	95	95	88	95	92	85	92	89	82	89	86	79	87	83	76	
			Array Edge	92	89	82	89	85	78	85	82	74	82	79	70	80	76	67	76	72	64	73	69	61	
		45 to 90	Array Interior	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	94	
			Array Edge	97	97	97	97	96	96	97	93	93	94	90	90	91	87	87	89	84	84	87	81	81	
		C	0 to 7	Array Interior	93	88	76	93	84	72	91	81	68	87	77	65	84	74	62	82	70	59	79	67	56
				Array Edge	84	73	61	81	69	58	77	66	55	73	62	52	70	59	50	66	56	47	63	54	45
	Array Interior			92	82	72	88	79	68	85	75	64	82	71	61	79	67	58	75	64	55	72	61	53	
	Array Edge			79	67	58	74	63	54	70	60	52	67	57	49	64	54	47	61	52	45	58	50	43	
	Array Interior			93	85	79	93	81	74	93	78	70	91	74	67	88	70	64	85	67	61	83	64	58	
	Array Edge			88	70	63	84	66	60	81	62	57	78	59	54	74	57	51	71	54	49	68	52	47	
	7 to 20		Array Interior	95	91	84	91	88	81	88	84	77	85	81	73	82	78	70	79	75	66	76	71	63	
			Array Edge	82	78	69	78	74	66	74	70	62	70	66	59	67	63	56	64	60	54	61	58	51	
			Array Interior	97	97	97	97	97	97	97	95	95	96	92	92	93	89	89	91	86	86	89	83	83	
			Array Edge	93	89	89	90	85	85	87	82	82	85	79	79	83	76	76	80	72	72	78	69	69	
			Array Interior	92	82	70	88	79	66	85	74	62	82	71	59	79	67	56	75	64	54	72	61	51	
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	D	0 to 7	Array Interior	86	76	65	83	72	62	80	68	58	76	65	56	72	62	53	69	59	50	66	56	48	
			Array Edge	72	61	53	68	58	50	64	55	47	61	52	45	58	50	43	56	47	41	53	45	39	
7 to 20		Array Interior	93	79	72	92	75	68	89	71	64	86	67	61	83	64	58	80	61	55	77	58	53		
		Array Edge	83	64	58	79	60	55	75	57	52	71	54	49	68	52	47	65	49	45	62	47	43		
27 to 45		Array Interior	89	86	79	86	82	74	82	79	70	80	75	67	76	72	64	72	68	61	69	65	58		
		Array Edge	76	71	64	71	67	60	68	64	57	64	61	54	61	58	52	58	55	49	56	53	47		
45 to 90	Array Interior	97	97	97	97	93	93	94	89	89	91	86	86	89	84	84	86	81	81	84	78	78			
	Array Edge	89	84	84	86	80	80	83	77	77	81	73	73	78	69	69	75	66	66	72	63	63			
5 psf	B	0 to 7	Array Interior	92	92	88	92	92	84	92	92	81	92	88	78	92	85	74	92	83	70	90	80	67	
			Array Edge	92	85	74	92	82	69	88	79	66	85	75	62	82	71	59	80	68	57	76	65	54	
		7 to 20	Array Interior	93	93	84	93	90	81	93	86	77	93	83	73	90	80	69	87	77	66	84	73	63	
			Array Edge	90	80	69	86	76	65	83	72	62	80	68	59	76	65	56	73	62	53	69	59	51	
		20 to 27	Array Interior	93	93	89	93	92	86	93	89	83	93	85	80	93	83	76	93	80	73	93	76	69	
			Array Edge	93	82	76	93	79	72	92	75	68	89	71	64	86	68	61	83	64	58	80	62	56	
		27 to 45	Array Interior	95	95	95	95	95	91	95	95	88	95	92	85	92	89	82	89	86	79	87	83	76	
			Array Edge	92	89	82	89	85	78	85	82	74	82	79	70	80	76	67	76	72	64	73	69	61	
		45 to 90	Array Interior	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	94	
			Array Edge	97	97	97	97	96	96	97	93	93	94	90	90	91	87	87	89	84	84	87	81	81	
		C	0 to 7	Array Interior	92	88	76	92	84	72	91	81	68	87	77	65	84	74	62	82	70	59	79	67	56
				Array Edge	84	73	61	81	69	58	77	66	55	73	62	52	70	59	50	66	56	47	63	54	45
	Array Interior			92	82	72	88	79	68	85	75	64	82	71	61	79	67	58	75	64	55	72	61	53	
	Array Edge			79	67	58	74	63	54	70	60	52	67	57	49	64	54	47	61	52	45	58	50	43	
	Array Interior			93	85	79	93	81	74	93	78	70	91	74	67	88	70	64	85	67	61	83	64	58	
	Array Edge			88	70	63	84	66	60	81	62	57	78	59	54	74	57	51	71	54	49	68	52	47	
	7 to 20		Array Interior	95	91	84	91	88	81	88	84	77	85	81	73	82	78	70	79	75	66	76	71	63	
			Array Edge	82	78	69	78	74	66	74	70	62	70	66	59	67	63	56	64	60	54	61	58	51	
			Array Interior	97	97	97	97	97	97	97	95	95	96	92	92	93	89	89	91	86	86	89	83	83	
			Array Edge	93	89	89	90	85	85	87	82	82	85	79	79	83	76	76	80	72	72	78	69	69	
			Array Interior	92	82	70	88	79	66	85	74	62	82	71	59	79	67	56	75	64	54	72	61	51	
			Array Edge	79	67	56	74	63	53	70	60	50	67	57	48	64	54	46	61	52	44	58	49	42	
	D	0 to 7	Array Interior	86	76	65	83	72	62	80	68	58	76	65	56	72	62	53	69	59	50	66	56	48	
			Array Edge	72	61	53	68	58	50	64	55	47	61	52	45	58	50	43	56	47	41	53	45	39	
7 to 20		Array Interior	93	79	72	92	75	68	89	71	64	86	67	61	83	64	58	80	61	55	77	58	53		
		Array Edge	83	64	58	79	60	55	75	57	52	71	54	49	68	52	47	65	49	45	62	47	43		
27 to 45		Array Interior	89	86	79	86	82	74	82	79	70	80	75	67	76	72	64	72	68	61	69	65	58		
		Array Edge	76	71	64	71	67	60	68	64	57	64	61	54	61	58	52	58	55	49	56	53	47		
45 to 90	Array Interior	97	97	97	97	93	93	94	89	89	91	86	86	89	84	84	86	81	81	84	78	78			
	Array Edge	89	84	84	86	80	80	83	77	77	81	73	73	78	69	69	75	66	66	72	63	63			
10 psf	B	0 to 7	Array Interior	87	87	87	87	87	84	87	87	81	87	87	78	87	85	74	87	83	70	87	80	67	
			Array Edge	87	85	74	87	82	69	87	79	66	85	75	62	82	71	59	80	68	57	76	65	54	
		7 to 20	Array Interior	92	92	84	92	90	81	92	86	77	92	83	73	90	80	69	87	77	66	84	73	63	
			Array Edge	90	80	69	86	76	65	83	72	62	80	68	59	76	65	56	73	62	53	69	59	51	
		20 to 27	Array Interior	93	93	89	93	92	86	93	89	83	93	85	80	93	83	76	93	80	73	93	76	69	
			Array Edge	93	82	76	93	79	72	92	75	68	89	71	64	86	68	61	83	64	58	80	62	56	
		27 to 45	Array Interior	95	95	95	95	95	91	95	95	88	95	92	85	92	89	82	89	86	79	87	83	76	
			Array Edge	92	89	82	89	85	78	85	82	74	82	79	70	80	76	67	76	72	64	73	69		

Maximum Rail Spans (Inches)			SMR100 Rail Flush-Mount on 0 to 30 Foot Roof -- ASCE 7-22-- 82" x 42" (P)																						
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed ->	130 mph			140 mph			150 mph			160 mph			170 mph			180 mph			190 mph			
			Roof Zone ->	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
0 psf	B	0 to 7	Array Interior	84	74	62	80	68	57	74	63	53	69	59	50	65	55	47	61	52	44	58	49	41	
			Array Edge	70	59	50	64	55	46	60	51	43	56	48	40	52	45	38	49	42	36	47	40	34	
		7 to 20	Array Interior	79	67	58	73	62	54	68	58	50	63	54	47	59	51	44	56	48	41	53	45	39	
			Array Edge	64	54	47	59	50	43	55	47	40	51	44	38	48	41	35	45	39	33	43	37	32	
		20 to 27	Array Interior	88	70	64	83	65	59	79	60	55	74	56	51	69	53	48	65	50	45	61	47	43	
			Array Edge	74	57	51	69	52	48	64	49	44	59	46	41	56	43	39	53	40	37	50	38	35	
		27 to 45	Array Interior	82	78	70	77	72	64	71	67	60	67	63	56	62	59	53	59	56	50	56	53	47	
			Array Edge	67	63	56	62	59	52	58	55	49	54	51	45	51	48	43	48	45	40	45	43	38	
		45 to 90	Array Interior	93	89	89	89	84	84	86	80	80	82	75	75	79	71	71	76	67	67	71	63	63	
			Array Edge	83	76	76	79	70	70	74	65	65	69	61	61	65	57	57	61	54	54	58	51	51	
		C	0 to 7	Array Interior	72	61	52	67	57	48	62	53	44	58	49	42	54	46	39	51	44	37	48	41	35
				Array Edge	58	50	42	54	46	39	50	43	36	47	40	34	44	38	32	41	35	30	39	33	28
	7 to 20		Array Interior	66	56	49	61	52	45	57	49	42	53	45	39	50	43	37	47	40	35	44	38	33	
			Array Edge	53	46	39	49	42	36	46	39	34	43	37	32	40	35	30	38	33	28	36	31	27	
	20 to 27		Array Interior	77	59	53	71	54	49	66	50	46	62	47	43	58	44	40	55	42	38	52	40	36	
			Array Edge	62	47	43	57	44	40	53	41	37	50	38	35	47	36	33	44	34	31	42	32	29	
	27 to 45		Array Interior	69	66	58	64	61	54	60	57	50	56	53	47	52	50	44	49	47	42	47	44	39	
			Array Edge	56	53	47	52	49	44	48	46	41	45	43	38	42	40	36	40	38	34	38	36	32	
	45 to 90		Array Interior	84	79	79	81	73	73	77	68	68	72	63	63	67	59	59	63	56	56	60	53	53	
			Array Edge	72	64	64	67	59	59	62	55	55	58	51	51	55	48	48	51	45	45	49	43	43	
	D		0 to 7	Array Interior	66	56	47	61	52	44	57	48	41	53	45	38	50	42	36	47	40	34	44	38	32
				Array Edge	49	42	36	45	39	33	42	36	31	39	34	29	37	32	27	35	30	26	33	28	24
		7 to 20	Array Interior	70	54	49	65	50	45	60	46	42	56	43	39	53	41	37	50	38	35	47	36	33	
			Array Edge	57	43	40	53	40	37	49	37	34	46	35	32	43	33	30	40	31	28	38	29	27	
27 to 45		Array Interior	63	60	53	59	56	50	55	52	46	51	48	43	48	45	41	45	43	38	43	41	36		
		Array Edge	51	49	43	48	45	40	44	42	37	41	39	35	39	37	33	37	35	31	35	33	29		
45 to 90		Array Interior	80	72	72	76	67	67	70	62	62	66	58	58	62	54	54	58	51	51	55	49	49		
		Array Edge	66	58	58	61	54	54	57	50	50	53	47	47	50	44	44	47	42	42	45	39	39		
5 psf		B	0 to 7	Array Interior	84	74	62	80	68	57	74	63	53	69	59	50	65	55	47	61	52	44	58	49	41
				Array Edge	70	59	50	64	55	46	60	51	43	56	48	40	52	45	38	49	42	36	47	40	34
			7 to 20	Array Interior	79	67	58	73	62	54	68	58	50	63	54	47	59	51	44	56	48	41	53	45	39
				Array Edge	64	54	47	59	50	43	55	47	40	51	44	38	48	41	35	45	39	33	43	37	32
	20 to 27		Array Interior	88	70	64	83	65	59	79	60	55	74	56	51	69	53	48	65	50	45	61	47	43	
			Array Edge	74	57	51	69	52	48	64	49	44	59	46	41	56	43	39	53	40	37	50	38	35	
	27 to 45		Array Interior	82	78	70	77	72	64	71	67	60	67	63	56	62	59	53	59	56	50	56	53	47	
			Array Edge	67	63	56	62	59	52	58	55	49	54	51	45	51	48	43	48	45	40	45	43	38	
	45 to 90		Array Interior	93	89	89	89	84	84	86	80	80	82	75	75	79	71	71	76	67	67	71	63	63	
			Array Edge	83	76	76	79	70	70	74	65	65	69	61	61	65	57	57	61	54	54	58	51	51	
	C		0 to 7	Array Interior	72	61	52	67	57	48	62	53	44	58	49	42	54	46	39	51	44	37	48	41	35
				Array Edge	58	50	42	54	46	39	50	43	36	47	40	34	44	38	32	41	35	30	39	33	28
		7 to 20	Array Interior	66	56	49	61	52	45	57	49	42	53	45	39	50	43	37	47	40	35	44	38	33	
			Array Edge	53	46	39	49	42	36	46	39	34	43	37	32	40	35	30	38	33	28	36	31	27	
		20 to 27	Array Interior	77	59	53	71	54	49	66	50	46	62	47	43	58	44	40	55	42	38	52	40	36	
			Array Edge	62	47	43	57	44	40	53	41	37	50	38	35	47	36	33	44	34	31	42	32	29	
		27 to 45	Array Interior	69	66	58	64	61	54	60	57	50	56	53	47	52	50	44	49	47	42	47	44	39	
			Array Edge	56	53	47	52	49	44	48	46	41	45	43	38	42	40	36	40	38	34	38	36	32	
		45 to 90	Array Interior	84	79	79	81	73	73	77	68	68	72	63	63	67	59	59	63	56	56	60	53	53	
			Array Edge	72	64	64	67	59	59	62	55	55	58	51	51	55	48	48	51	45	45	49	43	43	
		D	0 to 7	Array Interior	66	56	47	61	52	44	57	48	41	53	45	38	50	42	36	47	40	34	44	38	32
				Array Edge	49	42	36	45	39	33	42	36	31	39	34	29	37	32	27	35	30	26	33	28	24
	7 to 20		Array Interior	70	54	49	65	50	45	60	46	42	56	43	39	53	41	37	50	38	35	47	36	33	
			Array Edge	57	43	40	53	40	37	49	37	34	46	35	32	43	33	30	40	31	28	38	29	27	
27 to 45	Array Interior		63	60	53	59	56	50	55	52	46	51	48	43	48	45	41	45	43	38	43	41	36		
	Array Edge		51	49	43	48	45	40	44	42	37	41	39	35	39	37	33	37	35	31	35	33	29		
45 to 90	Array Interior		80	72	72	76	67	67	70	62	62	66	58	58	62	54	54	58	51	51	55	49	49		
	Array Edge		66	58	58	61	54	54	57	50	50	53	47	47	50	44	44	47	42	42	45	39	39		
10 psf	B		0 to 7	Array Interior	84	74	62	80	68	57	74	63	53	69	59	50	65	55	47	61	52	44	58	49	41
				Array Edge	70	59	50	64	55	46	60	51	43	56	48	40	52	45	38	49	42	36	47	40	34
			7 to 20	Array Interior	79	67	58	73	62	54	68	58	50	63	54	47	59	51	44	56	48	41	53	45	39
				Array Edge	64	54	47	59	50	43	55	47	40	51	44	38	48	41	35	45	39	33	43	37	32
		20 to 27	Array Interior	88	70	64	83	65	59	79	60	55	74	56	51	69	53	48	65	50	45	61	47	43	
			Array Edge	74	57	51	69	52	48	64	49	44	59	46	41	56	43	39	53	40	37	50	38	35	
		27 to 45	Array Interior	82	78	70	77	72	64	71	67	60	67	63	56	62	59	53	59	56	50	56	53	47	
			Array Edge	67	63	56	62	59	52	58	55	49	54	51	45	51	48	43	48	45	40	45	43	38	
		45 to 90	Array Interior	93	89	89	89	84	84	86	80	80	82	75	75	79	71	71	76	67	67	71	63	63	
			Array Edge	83	76	76	79	70	70	74	65	65	69	61	61	65	57	57	61	54	54	58	51	51	
		C	0 to 7	Array Interior	72	61	52	67	57	48	62	53	44	58	49	42	54	46	39	51	44	37	48	41	35
				Array Edge	58	50	42																		

Maximum Rail Spans (Inches)			SMR100 Rail Flush-Mount on 0 to 30 Foot Roof -- ASCE 7-22-- 82" x 42" (P)																									
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed ->		90 mph			95 mph			100 mph			105 mph			110 mph			115 mph			120 mph					
			Roof Zone ->		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3			
15 psf	B	0 to 7	Array Interior	82	82	82	82	82	82	82	82	81	82	82	78	82	82	74	82	82	70	82	82	67	82	80	67	
			Array Edge	82	82	74	82	82	69	82	79	66	82	75	62	82	71	59	80	68	57	76	65	54				
		7 to 20	Array Interior	89	89	84	89	89	81	89	86	77	89	83	73	89	80	69	87	77	66	84	73	63				
			Array Edge	89	80	69	86	76	65	83	72	62	80	68	59	76	65	56	73	62	53	69	59	51				
		20 to 27	Array Interior	92	92	89	92	92	86	92	89	83	92	85	80	92	83	76	92	80	73	92	76	69				
			Array Edge	92	82	76	92	79	72	92	75	68	89	71	64	86	68	61	83	64	58	80	62	56				
		27 to 45	Array Interior	95	95	95	95	95	91	95	95	88	95	92	85	92	89	82	89	86	79	87	83	76				
			Array Edge	92	89	82	89	85	78	85	82	74	82	79	70	80	76	67	76	72	64	73	69	61				
		45 to 90	Array Interior	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	94				
			Array Edge	97	97	97	97	96	96	97	93	93	94	90	90	91	87	87	89	84	84	87	81	81				
		C	0 to 7	Array Interior	82	82	76	82	82	72	82	81	68	82	77	65	82	74	62	82	70	59	79	67	56			
				Array Edge	82	73	61	81	69	58	77	66	55	73	62	52	70	59	50	66	56	47	63	54	45			
	7 to 20		Array Interior	89	82	72	88	79	68	85	75	64	82	71	61	79	67	58	75	64	55	72	61	53				
			Array Edge	79	67	58	74	63	54	70	60	52	67	57	49	64	54	47	61	52	45	58	50	43				
	20 to 27		Array Interior	92	85	79	92	81	74	92	78	70	91	74	67	88	70	64	85	67	61	83	64	58				
			Array Edge	88	70	63	84	66	60	81	62	57	78	59	54	74	57	51	71	54	49	68	52	47				
	27 to 45		Array Interior	95	91	84	91	88	81	88	84	77	85	81	73	82	78	70	79	75	66	76	71	63				
			Array Edge	82	78	69	78	74	66	74	70	62	70	66	59	67	63	56	64	60	54	61	58	51				
	45 to 90		Array Interior	97	97	97	97	97	97	97	95	95	96	92	92	93	89	89	91	86	86	89	83	83				
			Array Edge	93	89	89	90	85	85	87	82	82	85	79	79	83	76	76	80	72	72	78	69	69				
	D		0 to 7	Array Interior	82	82	70	82	79	66	82	74	62	82	71	59	79	67	56	75	64	54	72	61	51			
				Array Edge	79	67	56	74	63	53	70	60	50	67	57	48	64	54	46	61	52	44	58	49	42			
		7 to 20	Array Interior	86	76	65	83	72	62	80	68	58	76	65	56	72	62	53	69	59	50	66	56	48				
			Array Edge	72	61	53	68	58	50	64	55	47	61	52	45	58	50	43	56	47	41	53	45	39				
20 to 27		Array Interior	92	79	72	92	75	68	89	71	64	86	67	61	83	64	58	80	61	55	77	58	53					
		Array Edge	83	64	58	79	60	55	75	57	52	71	54	49	68	52	47	65	49	45	62	47	43					
27 to 45		Array Interior	89	86	79	86	82	74	82	79	70	80	75	67	76	72	64	72	68	61	69	65	58					
		Array Edge	76	71	64	71	67	60	68	64	57	64	61	54	61	58	52	58	55	49	56	53	47					
45 to 90		Array Interior	97	97	97	97	93	93	94	89	89	91	86	86	89	84	84	86	81	81	84	78	78					
		Array Edge	89	84	84	86	80	80	83	77	77	81	73	73	78	69	69	75	66	66	72	63	63					
20 psf		B	0 to 7	Array Interior	79	79	79	79	79	79	79	79	79	79	79	78	79	79	74	79	79	70	79	79	67			
				Array Edge	79	79	74	79	79	69	79	79	66	79	75	62	79	71	59	79	68	57	76	65	54			
	7 to 20		Array Interior	87	87	84	87	87	81	87	86	77	87	83	73	87	80	69	87	77	66	84	73	63				
			Array Edge	87	80	69	86	76	65	83	72	62	80	68	59	76	65	56	73	62	53	69	59	51				
	20 to 27		Array Interior	89	89	89	89	89	86	89	89	83	89	85	80	89	83	76	89	80	73	89	76	69				
			Array Edge	89	82	76	89	79	72	89	75	68	89	71	64	86	68	61	83	64	58	80	62	56				
	27 to 45		Array Interior	95	95	95	95	95	91	95	95	88	95	92	85	92	89	82	89	86	79	87	83	76				
			Array Edge	92	89	82	89	85	78	85	82	74	82	79	70	80	76	67	76	72	64	73	69	61				
	45 to 90		Array Interior	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	94				
			Array Edge	97	97	97	97	96	96	97	93	93	94	90	90	91	87	87	89	84	84	87	81	81				
	C		0 to 7	Array Interior	79	79	76	79	79	72	79	79	68	79	77	65	79	74	62	79	70	59	79	67	56			
				Array Edge	79	73	61	79	69	58	77	66	55	73	62	52	70	59	50	66	56	47	63	54	45			
		7 to 20	Array Interior	87	82	72	87	79	68	85	75	64	82	71	61	79	67	58	75	64	55	72	61	53				
			Array Edge	79	67	58	74	63	54	70	60	52	67	57	49	64	54	47	61	52	45	58	50	43				
		20 to 27	Array Interior	89	85	79	89	81	74	89	78	70	89	74	67	88	70	64	85	67	61	83	64	58				
			Array Edge	88	70	63	84	66	60	81	62	57	78	59	54	74	57	51	71	54	49	68	52	47				
		27 to 45	Array Interior	95	91	84	91	88	81	88	84	77	85	81	73	82	78	70	79	75	66	76	71	63				
			Array Edge	82	78	69	78	74	66	74	70	62	70	66	59	67	63	56	64	60	54	61	58	51				
		45 to 90	Array Interior	97	97	97	97	97	97	97	95	95	96	92	92	93	89	89	91	86	86	89	83	83				
			Array Edge	93	89	89	90	85	85	87	82	82	85	79	79	83	76	76	80	72	72	78	69	69				
		D	0 to 7	Array Interior	79	79	70	79	79	66	79	74	62	79	71	59	79	67	56	75	64	54	72	61	51			
				Array Edge	79	67	56	74	63	53	70	60	50	67	57	48	64	54	46	61	52	44	58	49	42			
	7 to 20		Array Interior	86	76	65	83	72	62	80	68	58	76	65	56	72	62	53	69	59	50	66	56	48				
			Array Edge	72	61	53	68	58	50	64	55	47	61	52	45	58	50	43	56	47	41	53	45	39				
20 to 27	Array Interior		90	79	72	90	75	68	89	71	64	86	67	61	83	64	58	80	61	55	77	58	53					
	Array Edge		83	64	58	79	60	55	75	57	52	71	54	49	68	52	47	65	49	45	62	47	43					
27 to 45	Array Interior		89	86	79	86	82	74	82	79	70	80	75	67	76	72	64	72	68	61	69	65	58					
	Array Edge		76	71	64	71	67	60	68	64	57	64	61	54	61	58	52	58	55	49	56	53	47					
45 to 90	Array Interior		97	97	97	97	93	93	94	89	89	91	86	86	89	84	84	86	81	81	84	78	78					
	Array Edge		89	84	84	86	80	80	83	77	77	81	73	73	78	69	69	75	66	66	72	63	63					
25 psf	B		0 to 7	Array Interior	79	79	79	79	79	79	79	79	79	79	79	78	79	79	74	79	79	70	79	79	67			
				Array Edge	79	79	74	79	79	69	79	79	66	79	75	62	79	71	59	79	68	57	76	65	54			
		7 to 20	Array Interior	84	84	84	84	84	81	84	84	77	84	83	7													

Maximum Rail Spans (Inches)			SMR100 Rail Flush-Mount on 0 to 30 Foot Roof -- ASCE 7-22-- 82" x 42" (P)																						
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed ->	130 mph			140 mph			150 mph			160 mph			170 mph			180 mph			190 mph			
			Roof Zone ->	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
15 psf	B	0 to 7	Array Interior	82	74	62	80	68	57	74	63	53	69	59	50	65	55	47	61	52	44	58	49	41	
			Array Edge	70	59	50	64	55	46	60	51	43	56	48	40	52	45	38	49	42	36	47	40	34	
		7 to 20	Array Interior	79	67	58	73	62	54	68	58	50	63	54	47	59	51	44	56	48	41	53	45	39	
			Array Edge	64	54	47	59	50	43	55	47	40	51	44	38	48	41	35	45	39	33	43	37	32	
		20 to 27	Array Interior	88	70	64	83	65	59	79	60	55	74	56	51	69	53	48	65	50	45	61	47	43	
			Array Edge	74	57	51	69	52	48	64	49	44	59	46	41	56	43	39	53	40	37	50	38	35	
		27 to 45	Array Interior	82	78	70	77	72	64	71	67	60	67	63	56	62	59	53	59	56	50	56	53	47	
			Array Edge	67	63	56	62	59	52	58	55	49	54	51	45	51	48	43	48	45	40	45	43	38	
		45 to 90	Array Interior	93	89	89	89	84	84	86	80	80	82	75	75	79	71	71	76	67	67	71	63	63	
			Array Edge	83	76	76	79	70	70	74	65	65	69	61	61	65	57	57	61	54	54	58	51	51	
		C	0 to 7	Array Interior	72	61	52	67	57	48	62	53	44	58	49	42	54	46	39	51	44	37	48	41	35
				Array Edge	58	50	42	54	46	39	50	43	36	47	40	34	44	38	32	41	35	30	39	33	28
	7 to 20		Array Interior	66	56	49	61	52	45	57	49	42	53	45	39	50	43	37	47	40	35	44	38	33	
			Array Edge	53	46	39	49	42	36	46	39	34	43	37	32	40	35	30	38	33	28	36	31	27	
	20 to 27		Array Interior	77	59	53	71	54	49	66	50	46	62	47	43	58	44	40	55	42	38	52	40	36	
			Array Edge	62	47	43	57	44	40	53	41	37	50	38	35	47	36	33	44	34	31	42	32	29	
	27 to 45		Array Interior	69	66	58	64	61	54	60	57	50	56	53	47	52	50	44	49	47	42	47	44	39	
			Array Edge	56	53	47	52	49	44	48	46	41	45	43	38	42	40	36	40	38	34	38	36	32	
	45 to 90		Array Interior	84	79	79	81	73	73	77	68	68	72	63	63	67	59	59	63	56	56	60	53	53	
			Array Edge	72	64	64	67	59	59	62	55	55	58	51	51	55	48	48	51	45	45	49	43	43	
	D		0 to 7	Array Interior	66	56	47	61	52	44	57	48	41	53	45	38	50	42	36	47	40	34	44	38	32
				Array Edge	53	45	38	49	42	35	46	39	33	43	37	31	40	34	29	38	32	27	36	31	26
		7 to 20	Array Interior	60	52	44	56	48	41	52	44	38	49	42	36	46	39	34	43	37	32	41	35	30	
			Array Edge	49	42	36	45	39	33	42	36	31	39	34	29	37	32	27	35	30	26	33	28	24	
20 to 27		Array Interior	70	54	49	65	50	45	60	46	42	56	43	39	53	41	37	50	38	35	47	36	33		
		Array Edge	57	43	40	53	40	37	49	37	34	46	35	32	43	33	30	40	31	28	38	29	27		
27 to 45		Array Interior	63	60	53	59	56	50	55	52	46	51	48	43	48	45	41	45	43	38	43	41	36		
		Array Edge	51	49	43	48	45	40	44	42	37	41	39	35	39	37	33	37	35	31	35	33	29		
45 to 90		Array Interior	80	72	72	76	67	67	70	62	62	66	58	58	62	54	54	58	51	51	55	49	49		
		Array Edge	66	58	58	61	54	54	57	50	50	53	47	47	50	44	44	47	42	42	45	39	39		
20 psf		B	0 to 7	Array Interior	79	74	62	79	68	57	74	63	53	69	59	50	65	55	47	61	52	44	58	49	41
				Array Edge	70	59	50	64	55	46	60	51	43	56	48	40	52	45	38	49	42	36	47	40	34
	7 to 20		Array Interior	79	67	58	73	62	54	68	58	50	63	54	47	59	51	44	56	48	41	53	45	39	
			Array Edge	64	54	47	59	50	43	55	47	40	51	44	38	48	41	35	45	39	33	43	37	32	
	20 to 27		Array Interior	88	70	64	83	65	59	79	60	55	74	56	51	69	53	48	65	50	45	61	47	43	
			Array Edge	74	57	51	69	52	48	64	49	44	59	46	41	56	43	39	53	40	37	50	38	35	
	27 to 45		Array Interior	82	78	70	77	72	64	71	67	60	67	63	56	62	59	53	59	56	50	56	53	47	
			Array Edge	67	63	56	62	59	52	58	55	49	54	51	45	51	48	43	48	45	40	45	43	38	
	45 to 90		Array Interior	93	89	89	89	84	84	86	80	80	82	75	75	79	71	71	76	67	67	71	63	63	
			Array Edge	83	76	76	79	70	70	74	65	65	69	61	61	65	57	57	61	54	54	58	51	51	
	C		0 to 7	Array Interior	72	61	52	67	57	48	62	53	44	58	49	42	54	46	39	51	44	37	48	41	35
				Array Edge	58	50	42	54	46	39	50	43	36	47	40	34	44	38	32	41	35	30	39	33	28
		7 to 20	Array Interior	66	56	49	61	52	45	57	49	42	53	45	39	50	43	37	47	40	35	44	38	33	
			Array Edge	53	46	39	49	42	36	46	39	34	43	37	32	40	35	30	38	33	28	36	31	27	
		20 to 27	Array Interior	77	59	53	71	54	49	66	50	46	62	47	43	58	44	40	55	42	38	52	40	36	
			Array Edge	62	47	43	57	44	40	53	41	37	50	38	35	47	36	33	44	34	31	42	32	29	
		27 to 45	Array Interior	69	66	58	64	61	54	60	57	50	56	53	47	52	50	44	49	47	42	47	44	39	
			Array Edge	56	53	47	52	49	44	48	46	41	45	43	38	42	40	36	40	38	34	38	36	32	
		45 to 90	Array Interior	84	79	79	81	73	73	77	68	68	72	63	63	67	59	59	63	56	56	60	53	53	
			Array Edge	72	64	64	67	59	59	62	55	55	58	51	51	55	48	48	51	45	45	49	43	43	
		D	0 to 7	Array Interior	66	56	47	61	52	44	57	48	41	53	45	38	50	42	36	47	40	34	44	38	32
				Array Edge	53	45	38	49	42	35	46	39	33	43	37	31	40	34	29	38	32	27	36	31	26
	7 to 20		Array Interior	60	52	44	56	48	41	52	44	38	49	42	36	46	39	34	43	37	32	41	35	30	
			Array Edge	49	42	36	45	39	33	42	36	31	39	34	29	37	32	27	35	30	26	33	28	24	
20 to 27	Array Interior		70	54	49	65	50	45	60	46	42	56	43	39	53	41	37	50	38	35	47	36	33		
	Array Edge		57	43	40	53	40	37	49	37	34	46	35	32	43	33	30	40	31	28	38	29	27		
27 to 45	Array Interior		63	60	53	59	56	50	55	52	46	51	48	43	48	45	41	45	43	38	43	41	36		
	Array Edge		51	49	43	48	45	40	44	42	37	41	39	35	39	37	33	37	35	31	35	33	29		
45 to 90	Array Interior		80	72	72	76	67	67	70	62	62	66	58	58	62	54	54	58	51	51	55	49	49		
	Array Edge		66	58	58	61	54	54	57	50	50	53	47	47	50	44	44	47	42	42	45	39	39		
25 psf	B		0 to 7	Array Interior	79	74	62	79	68	57	74	63	53	69	59	50	65	55	47	61	52	44	58	49	41
				Array Edge	70	59	50	64	55	46	60	51	43	56	48	40	52	45	38	49	42	36	47	40	34
		7 to 20	Array Interior	79	67	58	73	62	54	68	58	50	63	54	47	59	51	44	56	48	41	53	45	39	
			Array Edge	64	54	47	59	50	43	55	47	40	51	44	38	48	41	35	45	39	33	43	37	32	
		20 to 27	Array Interior	87	70	64	83	65	59	79	60	55	74	56	51	69	53	48	65	50	45	61	47	43	
			Array Edge	74	57	51	69	52	48	64	49	44	59	46	41	56	43	39	53	40	37	50	38	35	
		27 to 45	Array Interior	82	78	70	77	72	64	71	67	60	67	63	56	62	59	53	59	56	50	56	53	47	
			Array Edge	67	63	56	62																		

Maximum Rail Spans (Inches)			SMR100 Rail Flush-Mount on 0 to 30 Foot Roof -- ASCE 7-22-- 82" x 42" (P)																									
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed ->	90 mph			95 mph			100 mph			105 mph			110 mph			115 mph			120 mph						
			Roof Zone ->	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3				
30 psf	B	0 to 7	Array Interior	77	77	77	77	77	77	77	77	77	77	77	77	77	77	74	77	77	74	77	77	77	77	77	67	
			Array Edge	77	77	74	77	77	69	77	77	66	77	75	62	77	71	59	77	68	57	76	65	54				
		7 to 20	Array Interior	82	82	82	82	82	81	82	82	77	82	82	73	82	80	69	82	77	66	82	73	63	82	73	63	
			Array Edge	82	80	69	82	76	65	82	72	62	80	68	59	76	65	56	73	62	53	69	59	51				
		20 to 27	Array Interior	85	85	85	85	85	85	85	85	83	85	85	80	85	83	76	85	80	73	85	76	69	85	76	69	
			Array Edge	85	82	76	85	79	72	85	75	68	85	71	64	85	68	61	83	64	58	80	62	56				
		27 to 45	Array Interior	95	95	95	95	95	91	95	95	88	95	92	85	92	89	82	89	86	79	87	83	76	87	83	76	
			Array Edge	92	89	82	89	85	78	85	82	74	82	79	70	80	76	67	76	72	64	73	69	61				
		45 to 90	Array Interior	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	94	97	94	94	
			Array Edge	97	97	97	97	96	96	97	93	93	94	90	90	91	87	87	89	84	84	87	81	81				
		C	0 to 7	Array Interior	77	77	76	77	77	72	77	77	68	77	77	65	77	74	62	77	70	59	77	67	56	77	67	56
				Array Edge	77	73	61	77	69	58	77	66	55	73	62	52	70	59	50	66	56	47	63	54	45			
	7 to 20		Array Interior	82	82	72	82	79	68	82	75	64	82	71	61	79	67	58	75	64	55	72	61	53	72	61	53	
			Array Edge	79	67	58	74	63	54	70	60	52	67	57	49	64	54	47	61	52	45	58	50	43				
	20 to 27		Array Interior	85	85	79	85	81	74	85	78	70	85	74	67	85	70	64	85	67	61	83	64	58	83	64	58	
			Array Edge	85	70	63	84	66	60	81	62	57	78	59	54	74	57	51	71	54	49	68	52	47				
	27 to 45		Array Interior	95	91	84	91	88	81	88	84	77	85	81	73	82	78	70	79	75	66	76	71	63	76	71	63	
			Array Edge	82	78	69	78	74	66	74	70	62	70	66	59	67	63	56	64	60	54	61	58	51				
	45 to 90		Array Interior	97	97	97	97	97	97	97	95	95	96	92	92	93	89	89	91	86	86	89	83	83	89	83	83	
			Array Edge	93	89	89	90	85	85	87	82	82	85	79	79	83	76	76	80	72	72	78	69	69				
	D		0 to 7	Array Interior	79	79	70	79	79	66	79	74	62	79	71	59	79	67	56	75	64	54	72	61	51	72	61	51
				Array Edge	79	67	56	74	63	53	70	60	50	67	57	48	64	54	46	61	52	44	58	49	42			
		7 to 20	Array Interior	83	76	65	83	72	62	80	68	58	76	65	56	72	62	53	69	59	50	66	56	48	66	56	48	
			Array Edge	72	61	53	68	58	50	64	55	47	61	52	45	58	50	43	56	47	41	53	45	39				
20 to 27		Array Interior	86	79	72	86	75	68	86	71	64	86	67	61	83	64	58	80	61	55	77	58	53	77	58	53		
		Array Edge	83	64	58	79	60	55	75	57	52	71	54	49	68	52	47	65	49	45	62	47	43					
27 to 45		Array Interior	89	86	79	86	82	74	82	79	70	80	75	67	76	72	64	72	68	61	69	65	58	69	65	58		
		Array Edge	76	71	64	71	67	60	68	64	57	64	61	54	61	58	52	58	55	49	56	53	47					
45 to 90		Array Interior	97	97	97	97	93	93	94	89	89	91	86	86	89	84	84	86	81	81	84	78	78	84	78	78		
		Array Edge	89	84	84	86	80	80	83	77	77	81	73	73	78	69	69	75	66	66	72	63	63					
35 psf		B	0 to 7	Array Interior	75	75	75	75	75	75	75	75	75	75	75	75	75	75	74	75	75	70	75	75	67	75	75	67
				Array Edge	75	75	74	75	75	69	75	75	66	75	75	62	75	71	59	75	68	57	75	65	54			
	7 to 20		Array Interior	80	80	80	80	80	80	80	80	77	80	80	73	80	80	69	80	77	66	80	73	63	80	73	63	
			Array Edge	80	80	69	80	76	65	80	72	62	80	68	59	76	65	56	73	62	53	69	59	51				
	20 to 27		Array Interior	83	83	83	83	83	83	83	83	83	83	83	80	83	83	76	83	80	73	83	76	69	83	76	69	
			Array Edge	83	82	76	83	79	72	83	75	68	83	71	64	83	68	61	83	64	58	80	62	56				
	27 to 45		Array Interior	92	92	92	92	92	91	92	92	88	92	92	85	92	89	82	89	86	79	87	83	76	87	83	76	
			Array Edge	92	89	82	89	85	78	85	82	74	82	79	70	80	76	67	76	72	64	73	69	61				
	45 to 90		Array Interior	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	94	97	94	94	
			Array Edge	97	97	97	97	96	96	97	93	93	94	90	90	91	87	87	89	84	84	87	81	81				
	C		0 to 7	Array Interior	75	75	75	75	75	72	75	75	68	75	75	65	75	74	62	75	70	59	75	67	56	75	67	56
				Array Edge	75	73	61	75	69	58	75	66	55	73	62	52	70	59	50	66	56	47	63	54	45			
		7 to 20	Array Interior	80	80	72	80	79	68	80	75	64	80	71	61	79	67	58	75	64	55	72	61	53	72	61	53	
			Array Edge	79	67	58	74	63	54	70	60	52	67	57	49	64	54	47	61	52	45	58	50	43				
		20 to 27	Array Interior	83	83	79	83	81	74	83	78	70	83	74	67	83	70	64	83	67	61	83	64	58	83	64	58	
			Array Edge	83	70	63	83	66	60	81	62	57	78	59	54	74	57	51	71	54	49	68	52	47				
		27 to 45	Array Interior	92	91	84	91	88	81	88	84	77	85	81	73	82	78	70	79	75	66	76	71	63	76	71	63	
			Array Edge	82	78	69	78	74	66	74	70	62	70	66	59	67	63	56	64	60	54	61	58	51				
		45 to 90	Array Interior	97	97	97	97	97	97	97	95	95	96	92	92	93	89	89	91	86	86	89	83	83	89	83	83	
			Array Edge	93	89	89	90	85	85	87	82	82	85	79	79	83	76	76	80	72	72	78	69	69				
		D	0 to 7	Array Interior	77	77	70	77	77	66	77	74	62	77	71	59	77	67	56	75	64	54	72	61	51	72	61	51
				Array Edge	77	67	56	74	63	53	70	60	50	67	57	48	64	54	46	61	52	44	58	49	42			
	7 to 20		Array Interior	82	76	65	82	72	62	80	68	58	76	65	56	72	62	53	69	59	50	66	56	48	66	56	48	
			Array Edge	72	61	53	68	58	50	64	55	47	61	52	45	58	50	43	56	47	41	53	45	39				
20 to 27	Array Interior		85	79	72	85	75	68	85	71	64	85	67	61	83	64	58	80	61	55	77	58	53	77	58	53		
	Array Edge		83	64	58	79	60	55	75	57	52	71	54	49	68	52	47	65	49	45	62	47	43					
27 to 45	Array Interior		89	86	79	86	82	74	82	79	70	80	75	67	76	72	64	72	68	61	69	65	58	69	65	58		
	Array Edge		76	71	64	71	67	60	68	64	57	64	61	54	61	58	52	58	55	49	56	53	47					
45 to 90	Array Interior		97	97	97	97	93	93	94	89	89	91	86	86	89	84	84	86	81	81	84	78	78	84	78	78		
	Array Edge		89	84	84	86	80	80	83	77	77	81	73	73	78	69	69	75	66	66	72	63	63					
40 psf	B		0 to 7	Array Interior	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	67
				Array Edge	73	73	73	73	73	69	73	73	66	73	73	62	73	71	59	73	68	57	73	65	54			
		7 to 20	Array Interior	78	78	78	78	78	78	78	78	77	78	78	73	78	78	69	78	77	66	78	73	63	78	73	63	
			Array Edge	78	78	69	78	76																				

Maximum Rail Spans (Inches)			SMR100 Rail Flush-Mount on 0 to 30 Foot Roof -- ASCE 7-22-- 82" x 42" (P)																									
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed ->		130 mph			140 mph			150 mph			160 mph			170 mph			180 mph			190 mph					
			Roof Zone ->		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3			
30 psf	B	0 to 7	Array Interior	77	74	62	77	68	57	74	63	53	69	59	50	65	55	47	61	52	44	58	49	41	55	47	39	
			Array Edge	70	59	50	64	55	46	60	51	43	56	48	40	52	45	38	49	42	36	47	40	34	44	37	31	
		7 to 20	Array Interior	79	67	58	73	62	54	68	58	50	63	54	47	59	51	44	56	48	41	53	45	39	50	43	37	
			Array Edge	64	54	47	59	50	43	55	47	40	51	44	38	48	41	35	45	39	33	43	37	32	40	34	29	
		20 to 27	Array Interior	85	70	64	83	65	59	79	60	55	74	56	51	69	53	48	65	50	45	61	47	43	57	43	39	
			Array Edge	74	57	51	69	52	48	64	49	44	59	46	41	56	43	39	53	40	37	50	38	35	47	35	32	
		27 to 45	Array Interior	82	78	70	77	72	64	71	67	60	67	63	56	62	59	53	59	56	50	56	53	47	53	49	44	
			Array Edge	67	63	56	62	59	52	58	55	49	54	51	45	51	48	43	48	45	40	45	43	38	43	40	36	
		45 to 90	Array Interior	93	89	89	89	84	84	86	80	80	82	75	75	79	71	71	76	67	67	71	63	63	66	60	55	
			Array Edge	83	76	76	79	70	70	74	65	65	69	61	61	65	57	57	61	54	54	58	51	51	54	48	43	
	C	0 to 7	Array Interior	72	61	52	67	57	48	62	53	44	58	49	42	54	46	39	51	44	37	48	41	35	45	39	33	
			Array Edge	58	50	42	54	46	39	50	43	36	47	40	34	44	38	32	41	35	30	39	33	28	36	31	27	
		7 to 20	Array Interior	66	56	49	61	52	45	57	49	42	53	45	39	50	43	37	47	40	35	44	38	33	41	35	30	
			Array Edge	53	46	39	49	42	36	46	39	34	43	37	32	40	35	30	38	33	28	36	31	27	33	28	24	
		20 to 27	Array Interior	77	59	53	71	54	49	66	50	46	62	47	43	58	44	40	55	42	38	52	40	36	49	37	33	
			Array Edge	62	47	43	57	44	40	53	41	37	50	38	35	47	36	33	44	34	31	42	32	29	40	30	27	
		27 to 45	Array Interior	69	66	58	64	61	54	60	57	50	56	53	47	52	50	44	49	47	42	47	44	39	45	42	37	
			Array Edge	56	53	47	52	49	44	48	46	41	45	43	38	42	40	36	40	38	34	38	36	32	36	34	30	
		45 to 90	Array Interior	84	79	79	81	73	73	77	68	68	72	63	63	67	59	59	63	56	56	60	53	53	57	50	45	
			Array Edge	72	64	64	67	59	59	62	55	55	58	51	51	55	48	48	51	45	45	49	43	43	46	40	36	
	D	0 to 7	Array Interior	66	56	47	61	52	44	57	48	41	53	45	38	50	42	36	47	40	34	44	38	32	41	35	30	
			Array Edge	49	42	36	45	39	33	42	36	31	39	34	29	37	32	27	35	30	26	33	28	24	30	25	21	
		7 to 20	Array Interior	70	54	49	65	50	45	60	46	42	56	43	39	53	41	37	50	38	35	47	36	33	44	33	30	
			Array Edge	57	43	40	53	40	37	49	37	34	46	35	32	43	33	30	40	31	28	38	29	27	35	26	23	
27 to 45		Array Interior	63	60	53	59	56	50	55	52	46	51	48	43	48	45	41	45	43	38	43	41	36	41	39	34		
		Array Edge	51	49	43	48	45	40	44	42	37	41	39	35	39	37	33	37	35	31	35	33	29	33	31	27		
45 to 90		Array Interior	80	72	72	76	67	67	70	62	62	66	58	58	62	54	54	58	51	51	55	49	49	52	46	46		
		Array Edge	66	58	58	61	54	54	57	50	50	53	47	47	50	44	44	47	42	42	45	39	39	42	36	36		
35 psf		B	0 to 7	Array Interior	75	74	62	75	68	57	74	63	53	69	59	50	65	55	47	61	52	44	58	49	41	55	47	39
				Array Edge	70	59	50	64	55	46	60	51	43	56	48	40	52	45	38	49	42	36	47	40	34	44	37	31
	7 to 20		Array Interior	79	67	58	73	62	54	68	58	50	63	54	47	59	51	44	56	48	41	53	45	39	50	43	37	
			Array Edge	64	54	47	59	50	43	55	47	40	51	44	38	48	41	35	45	39	33	43	37	32	40	34	29	
	20 to 27		Array Interior	83	70	64	83	65	59	79	60	55	74	56	51	69	53	48	65	50	45	61	47	43	57	43	39	
			Array Edge	74	57	51	69	52	48	64	49	44	59	46	41	56	43	39	53	40	37	50	38	35	47	35	32	
	27 to 45		Array Interior	82	78	70	77	72	64	71	67	60	67	63	56	62	59	53	59	56	50	56	53	47	53	49	44	
			Array Edge	67	63	56	62	59	52	58	55	49	54	51	45	51	48	43	48	45	40	45	43	38	43	40	36	
	45 to 90		Array Interior	93	89	89	89	84	84	86	80	80	82	75	75	79	71	71	76	67	67	71	63	63	66	60	55	
			Array Edge	83	76	76	79	70	70	74	65	65	69	61	61	65	57	57	61	54	54	58	51	51	54	48	43	
	C	0 to 7	Array Interior	72	61	52	67	57	48	62	53	44	58	49	42	54	46	39	51	44	37	48	41	35	45	39	33	
			Array Edge	58	50	42	54	46	39	50	43	36	47	40	34	44	38	32	41	35	30	39	33	28	36	31	27	
		7 to 20	Array Interior	66	56	49	61	52	45	57	49	42	53	45	39	50	43	37	47	40	35	44	38	33	41	35	30	
			Array Edge	53	46	39	49	42	36	46	39	34	43	37	32	40	35	30	38	33	28	36	31	27	33	28	24	
		20 to 27	Array Interior	77	59	53	71	54	49	66	50	46	62	47	43	58	44	40	55	42	38	52	40	36	49	37	33	
			Array Edge	62	47	43	57	44	40	53	41	37	50	38	35	47	36	33	44	34	31	42	32	29	40	30	27	
		27 to 45	Array Interior	69	66	58	64	61	54	60	57	50	56	53	47	52	50	44	49	47	42	47	44	39	45	42	37	
			Array Edge	56	53	47	52	49	44	48	46	41	45	43	38	42	40	36	40	38	34	38	36	32	36	34	30	
		45 to 90	Array Interior	84	79	79	81	73	73	77	68	68	72	63	63	67	59	59	63	56	56	60	53	53	57	50	45	
			Array Edge	72	64	64	67	59	59	62	55	55	58	51	51	55	48	48	51	45	45	49	43	43	46	40	36	
	D	0 to 7	Array Interior	66	56	47	61	52	44	57	48	41	53	45	38	50	42	36	47	40	34	44	38	32	41	35	30	
			Array Edge	49	42	36	45	39	33	42	36	31	39	34	29	37	32	27	35	30	26	33	28	24	30	25	21	
		7 to 20	Array Interior	70	54	49	65	50	45	60	46	42	56	43	39	53	41	37	50	38	35	47	36	33	44	33	30	
			Array Edge	57	43	40	53	40	37	49	37	34	46	35	32	43	33	30	40	31	28	38	29	27	35	26	23	
27 to 45		Array Interior	63	60	53	59	56	50	55	52	46	51	48	43	48	45	41	45	43	38	43	41	36	41	39	34		
		Array Edge	51	49	43	48	45	40	44	42	37	41	39	35	39	37	33	37	35	31	35	33	29	33	31	27		
45 to 90		Array Interior	80	72	72	76	67	67	70	62	62	66	58	58	62	54	54	58	51	51	55	49	49	52	46	46		
		Array Edge	66	58	58	61	54	54	57	50	50	53	47	47	50	44	44	47	42	42	45	39	39	42	36	36		
40 psf		B	0 to 7	Array Interior	73	73	62	73	68	57	73	63	53	69	59	50	65	55	47	61	52	44	58	49	41	55	47	39
				Array Edge	70	59	50	64	55	46	60	51	43	56	48	40	52	45	38	49	42	36	47	40	34	44	37	31
	7 to 20		Array Interior	78	67	58	73	62	54	68	58	50	63	54	47	59	51	44	56	48	41	53	45	39	50	43	37	
			Array Edge	64	54	47	59	50	43	55	47	40	51	44	38	48	41	35	45	39	33	4						

Maximum Rail Spans (Inches)			SMR100 Rail Flush-Mount on 0 to 30 Foot Roof -- ASCE 7-22-- 82" x 42" (P)																						
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed ->	90 mph			95 mph			100 mph			105 mph			110 mph			115 mph			120 mph			
			Roof Zone ->	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
45 psf	B	0 to 7	Array Interior	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	70	71	71	67	
			Array Edge	71	71	71	71	71	69	71	71	66	71	71	62	71	71	59	71	68	57	71	65	54	
		7 to 20	Array Interior	77	77	77	77	77	77	77	77	77	77	77	73	77	77	69	77	77	66	77	73	63	
			Array Edge	77	77	69	77	76	65	77	72	62	77	68	59	76	65	56	73	62	53	69	59	51	
		20 to 27	Array Interior	80	80	80	80	80	80	80	80	80	80	80	80	80	80	76	80	80	73	80	76	69	
			Array Edge	80	80	76	80	79	72	80	75	68	80	71	64	80	68	61	80	64	58	80	62	56	
		27 to 45	Array Interior	87	87	87	87	87	87	87	87	87	87	87	85	87	87	82	87	86	79	87	83	76	
			Array Edge	87	87	82	87	85	78	85	82	74	82	79	70	80	76	67	76	72	64	73	69	61	
		45 to 90	Array Interior	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	94	94	
			Array Edge	97	97	97	97	96	96	97	93	93	94	90	90	91	87	87	89	84	84	87	81	81	
		C	0 to 7	Array Interior	71	71	71	71	71	71	71	71	68	71	71	65	71	71	62	71	70	59	71	67	56
				Array Edge	71	71	61	71	69	58	71	66	55	71	62	52	70	59	50	66	56	47	63	54	45
	7 to 20		Array Interior	77	77	72	77	77	68	77	75	64	77	71	61	77	67	58	75	64	55	72	61	53	
			Array Edge	77	67	58	74	63	54	70	60	52	67	57	49	64	54	47	61	52	45	58	50	43	
	20 to 27		Array Interior	80	80	79	80	80	74	80	78	70	80	74	67	80	70	64	80	67	61	80	64	58	
			Array Edge	80	70	63	80	66	60	80	62	57	78	59	54	74	57	51	71	54	49	68	52	47	
	27 to 45		Array Interior	87	87	84	87	87	81	87	84	77	85	81	73	82	78	70	79	75	66	76	71	63	
			Array Edge	82	78	69	78	74	66	74	70	62	70	66	59	67	63	56	64	60	54	61	58	51	
	45 to 90		Array Interior	97	97	97	97	97	97	97	95	95	96	92	92	93	89	89	91	86	86	89	83	83	
			Array Edge	93	89	89	90	85	85	87	82	82	85	79	79	83	76	76	80	72	72	78	69	69	
	D		0 to 7	Array Interior	73	73	70	73	73	66	73	73	62	73	71	59	73	67	56	73	64	54	72	61	51
				Array Edge	73	67	56	73	63	53	70	60	50	67	57	48	64	54	46	61	52	44	58	49	42
		7 to 20	Array Interior	78	76	65	78	72	62	78	68	58	76	65	56	72	62	53	69	59	50	66	56	48	
			Array Edge	72	61	53	68	58	50	64	55	47	61	52	45	58	50	43	56	47	41	53	45	39	
20 to 27		Array Interior	82	79	72	82	75	68	82	71	64	82	67	61	82	64	58	80	61	55	77	58	53		
		Array Edge	82	64	58	79	60	55	75	57	52	71	54	49	68	52	47	65	49	45	62	47	43		
27 to 45		Array Interior	89	86	79	86	82	74	82	79	70	80	75	67	76	72	64	72	68	61	69	65	58		
		Array Edge	76	71	64	71	67	60	68	64	57	64	61	54	61	58	52	58	55	49	56	53	47		
45 to 90		Array Interior	97	97	97	97	93	93	94	89	89	91	86	86	89	84	84	86	81	81	84	78	78		
		Array Edge	89	84	84	86	80	80	83	77	77	81	73	73	78	69	69	75	66	66	72	63	63		
50 psf		B	0 to 7	Array Interior	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	67
				Array Edge	70	70	70	70	70	69	70	70	66	70	70	62	70	70	59	70	68	57	70	65	54
	7 to 20		Array Interior	75	75	75	75	75	75	75	75	75	75	75	73	75	75	69	75	75	66	75	73	63	
			Array Edge	75	75	69	75	75	65	75	72	62	75	68	59	75	65	56	73	62	53	69	59	51	
	20 to 27		Array Interior	79	79	79	79	79	79	79	79	79	79	79	79	79	79	76	79	79	73	79	76	69	
			Array Edge	79	79	76	79	79	72	79	75	68	79	71	64	79	68	61	79	64	58	79	62	56	
	27 to 45		Array Interior	85	85	85	85	85	85	85	85	85	85	85	85	85	85	82	85	85	79	85	83	76	
			Array Edge	85	85	82	85	85	78	85	82	74	82	79	70	80	76	67	76	72	64	73	69	61	
	45 to 90		Array Interior	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97	94	94	
			Array Edge	97	97	97	97	96	96	97	93	93	94	90	90	91	87	87	89	84	84	87	81	81	
	C		0 to 7	Array Interior	70	70	70	70	70	70	70	70	68	70	70	65	70	70	62	70	70	59	70	67	56
				Array Edge	70	70	61	70	69	58	70	66	55	70	62	52	70	59	50	66	56	47	63	54	45
		7 to 20	Array Interior	75	75	72	75	75	68	75	75	64	75	71	61	75	67	58	75	64	55	72	61	53	
			Array Edge	75	67	58	74	63	54	70	60	52	67	57	49	64	54	47	61	52	45	58	50	43	
		20 to 27	Array Interior	79	79	79	79	79	74	79	78	70	79	74	67	79	70	64	79	67	61	79	64	58	
			Array Edge	79	70	63	79	66	60	79	62	57	78	59	54	74	57	51	71	57	49	68	52	47	
		27 to 45	Array Interior	85	85	84	85	85	81	85	84	77	85	81	73	82	78	70	79	75	66	76	71	63	
			Array Edge	82	78	69	78	74	66	74	70	62	70	66	59	67	63	56	64	60	54	61	58	51	
		45 to 90	Array Interior	97	97	97	97	97	97	97	95	95	96	92	92	93	89	89	91	86	86	89	83	83	
			Array Edge	93	89	89	90	85	85	87	82	82	85	79	79	83	76	76	80	72	72	78	69	69	
		D	0 to 7	Array Interior	72	72	70	72	72	66	72	72	62	72	71	59	72	67	56	72	64	54	72	61	51
				Array Edge	72	67	56	72	63	53	70	60	50	67	57	48	64	54	46	61	52	44	58	49	42
	7 to 20		Array Interior	77	76	65	77	72	62	77	68	58	76	65	56	72	62	53	69	59	50	66	56	48	
			Array Edge	72	61	53	68	58	50	64	55	47	61	52	45	58	50	43	56	47	41	53	45	39	
20 to 27	Array Interior		80	79	72	80	75	68	80	71	64	80	67	61	80	64	58	80	61	55	77	58	53		
	Array Edge		80	64	58	79	60	55	75	57	52	71	54	49	68	52	47	65	49	45	62	47	43		
27 to 45	Array Interior		87	86	79	86	82	74	82	79	70	80	75	67	76	72	64	72	68	61	69	65	58		
	Array Edge		76	71	64	71	67	60	68	64	57	64	61	54	61	58	52	58	55	49	56	53	47		
45 to 90	Array Interior		97	97	97	97	93	93	94	89	89	91	86	86	89	84	84	86	81	81	84	78	78		
	Array Edge		89	84	84	86	80	80	83	77	77	81	73	73	78	69	69	75	66	66	72	63	63		
60 psf	B		0 to 7	Array Interior	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65
				Array Edge	65	65	65	65	65	65	65	65	65	65	65	62	65	65	59	65	65	57	65	65	54
		7 to 20	Array Interior	72	72	72	72	72	72	72	72	72	72	72	72	72	72	69	72	72	66	72	72	63	
			Array Edge	72	72	69	72	72	65	72	72	62	72	68	59	72	65	56	72	62	53	69	59	51	
		20 to 27	Array Interior	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	73	76	76	69	
			Array Edge	76	76	76	76	76	72	76	75	68	76	71	64	76	68	61	76	64	58	76	62	56	
		27 to 45	Array Interior	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	79	81	81	76	
			Array Edge	81	81	81	81																		

Maximum Rail Spans (Inches)			SMR100 Rail Flush-Mount on 0 to 30 Foot Roof -- ASCE 7-22-- 82" x 42" (P)																					
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed ->	130 mph			140 mph			150 mph			160 mph			170 mph			180 mph			190 mph		
			Roof Zone ->	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
45 psf	B	0 to 7	Array Interior	71	71	62	71	68	57	71	63	53	69	59	50	65	55	47	61	52	44	58	49	41
			Array Edge	70	59	50	64	55	46	60	51	43	56	48	40	52	45	38	49	42	36	47	40	34
		7 to 20	Array Interior	77	67	58	73	62	54	68	58	50	63	54	47	59	51	44	56	48	41	53	45	39
			Array Edge	64	54	47	59	50	43	55	47	40	51	44	38	48	41	35	45	39	33	43	37	32
		20 to 27	Array Interior	80	70	64	80	65	59	79	60	55	74	56	51	69	53	48	65	50	45	61	47	43
			Array Edge	74	57	51	69	52	48	64	49	44	59	46	41	56	43	39	53	40	37	50	38	35
		27 to 45	Array Interior	82	78	70	77	72	64	71	67	60	67	63	56	62	59	53	59	56	50	56	53	47
			Array Edge	67	63	56	62	59	52	58	55	49	54	51	45	51	48	43	48	45	40	45	43	38
		45 to 90	Array Interior	93	89	89	89	84	84	86	80	80	82	75	75	79	71	71	76	67	67	71	63	63
			Array Edge	83	76	76	79	70	70	74	65	65	69	61	61	65	57	57	61	54	54	58	51	51
	C	0 to 7	Array Interior	71	61	52	67	57	48	62	53	44	58	49	42	54	46	39	51	44	37	48	41	35
			Array Edge	58	50	42	54	46	39	50	43	36	47	40	34	44	38	32	41	35	30	39	33	28
		7 to 20	Array Interior	66	56	49	61	52	45	57	49	42	53	45	39	50	43	37	47	40	35	44	38	33
			Array Edge	53	46	39	49	42	36	46	39	34	43	37	32	40	35	30	38	33	28	36	31	27
		20 to 27	Array Interior	77	59	53	71	54	49	66	50	46	62	47	43	58	44	40	55	42	38	52	40	36
			Array Edge	62	47	43	57	44	40	53	41	37	50	38	35	47	36	33	44	34	31	42	32	29
		27 to 45	Array Interior	69	66	58	64	61	54	60	57	50	56	53	47	52	50	44	49	47	42	47	44	39
			Array Edge	56	53	47	52	49	44	48	46	41	45	43	38	42	40	36	40	38	34	38	36	32
		45 to 90	Array Interior	84	79	79	81	73	73	77	68	68	72	63	63	67	59	59	63	56	56	60	53	53
			Array Edge	72	64	64	67	59	59	62	55	55	58	51	51	55	48	48	51	45	45	49	43	43
	D	0 to 7	Array Interior	66	56	47	61	52	44	57	48	41	53	45	38	50	42	36	47	40	34	44	38	32
			Array Edge	53	45	38	49	42	35	46	39	33	43	37	31	40	34	29	38	32	27	36	31	26
		7 to 20	Array Interior	60	52	44	56	48	41	52	44	38	49	42	36	46	39	34	43	37	32	41	35	30
			Array Edge	49	42	36	45	39	33	42	36	31	39	34	29	37	32	27	35	30	26	33	28	24
20 to 27		Array Interior	70	54	49	65	50	45	60	46	42	56	43	39	53	41	37	50	38	35	47	36	33	
		Array Edge	57	43	40	53	40	37	49	37	34	46	35	32	43	33	30	40	31	28	38	29	27	
27 to 45		Array Interior	63	60	53	59	56	50	55	52	46	51	48	43	48	45	41	45	43	38	43	41	36	
		Array Edge	51	49	43	48	45	40	44	42	37	41	39	35	39	37	33	37	35	31	35	33	29	
45 to 90		Array Interior	80	72	72	76	67	67	70	62	62	66	58	58	62	54	54	58	51	51	55	49	49	
		Array Edge	66	58	58	61	54	54	57	50	50	53	47	47	50	44	44	47	42	42	45	39	39	
50 psf	B	0 to 7	Array Interior	70	70	62	70	68	57	70	63	53	69	59	50	65	55	47	61	52	44	58	49	41
			Array Edge	70	59	50	64	55	46	60	51	43	56	48	40	52	45	38	49	42	36	47	40	34
		7 to 20	Array Interior	75	67	58	73	62	54	68	58	50	63	54	47	59	51	44	56	48	41	53	45	39
			Array Edge	64	54	47	59	50	43	55	47	40	51	44	38	48	41	35	45	39	33	43	37	32
		20 to 27	Array Interior	79	70	64	79	65	59	78	60	55	74	56	51	69	53	48	65	50	45	61	47	43
			Array Edge	74	57	51	69	52	48	64	49	44	59	46	41	56	43	39	53	40	37	50	38	35
		27 to 45	Array Interior	82	78	70	77	72	64	71	67	60	67	63	56	62	59	53	59	56	50	56	53	47
			Array Edge	67	63	56	62	59	52	58	55	49	54	51	45	51	48	43	48	45	40	45	43	38
		45 to 90	Array Interior	93	89	89	89	84	84	86	80	80	82	75	75	79	71	71	76	67	67	71	63	63
			Array Edge	83	76	76	79	70	70	74	65	65	69	61	61	65	57	57	61	54	54	58	51	51
	C	0 to 7	Array Interior	70	61	52	67	57	48	62	53	44	58	49	42	54	46	39	51	44	37	48	41	35
			Array Edge	58	50	42	54	46	39	50	43	36	47	40	34	44	38	32	41	35	30	39	33	28
		7 to 20	Array Interior	66	56	49	61	52	45	57	49	42	53	45	39	50	43	37	47	40	35	44	38	33
			Array Edge	53	46	39	49	42	36	46	39	34	43	37	32	40	35	30	38	33	28	36	31	27
		20 to 27	Array Interior	77	59	53	71	54	49	66	50	46	62	47	43	58	44	40	55	42	38	52	40	36
			Array Edge	62	47	43	57	44	40	53	41	37	50	38	35	47	36	33	44	34	31	42	32	29
		27 to 45	Array Interior	69	66	58	64	61	54	60	57	50	56	53	47	52	50	44	49	47	42	47	44	39
			Array Edge	56	53	47	52	49	44	48	46	41	45	43	38	42	40	36	40	38	34	38	36	32
		45 to 90	Array Interior	84	79	79	81	73	73	77	68	68	72	63	63	67	59	59	63	56	56	60	53	53
			Array Edge	72	64	64	67	59	59	62	55	55	58	51	51	55	48	48	51	45	45	49	43	43
	D	0 to 7	Array Interior	66	56	47	61	52	44	57	48	41	53	45	38	50	42	36	47	40	34	44	38	32
			Array Edge	53	45	38	49	42	35	46	39	33	43	37	31	40	34	29	38	32	27	36	31	26
		7 to 20	Array Interior	60	52	44	56	48	41	52	44	38	49	42	36	46	39	34	43	37	32	41	35	30
			Array Edge	49	42	36	45	39	33	42	36	31	39	34	29	37	32	27	35	30	26	33	28	24
20 to 27		Array Interior	70	54	49	65	50	45	60	46	42	56	43	39	53	41	37	50	38	35	47	36	33	
		Array Edge	57	43	40	53	40	37	49	37	34	46	35	32	43	33	30	40	31	28	38	29	27	
27 to 45		Array Interior	63	60	53	59	56	50	55	52	46	51	48	43	48	45	41	45	43	38	43	41	36	
		Array Edge	51	49	43	48	45	40	44	42	37	41	39	35	39	37	33	37	35	31	35	33	29	
45 to 90		Array Interior	80	72	72	76	67	67	70	62	62	66	58	58	62	54	54	58	51	51	55	49	49	
		Array Edge	66	58	58	61	54	54	57	50	50	53	47	47	50	44	44	47	42	42	45	39	39	
60 psf	B	0 to 7	Array Interior	65	65	62	65	65	57	65	63	53	65	59	50	65	55	47	61	52	44	58	49	41
			Array Edge	65	59	50	64	55	46	60	51	43	56	48	40	52	45	38	49	42	36	47	40	34
		7 to 20	Array Interior	72	67	58	72	62	54	68	58	50	63	54	47	59	51	44	56	48	41	53	45	39
			Array Edge	64	54	47	59	50	43	55	47	40	51	44	38	48	41	35	45	39	33	43	37	32
		20 to 27	Array Interior	76	70	64	76	65	59	76	60	55	74	56	51	69	53	48	65	50	45	61	47	43
			Array Edge	74	57	51	69	52	48	64	49	44	59	46	41	56	43	39	53	40	37	50	38	35
		27 to 45	Array Interior	81	78	70	77	72	64	71	67	60	67	63	56	62	59	53	59	56	50	56	53	47
			Array Edge	67	63	56	62																	

Maximum Rail Spans (Inches)			SMR100 Rail Flush-Mount on 0 to 30 Foot Roof -- ASCE 7-22-- 82" x 42" (P)																								
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed ->	130 mph			140 mph			150 mph			160 mph			170 mph			180 mph			190 mph					
			Roof Zone ->	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3			
70 psf	B	0 to 7	Array Interior	61	61	61	61	61	57	61	61	53	61	59	50	61	55	47	61	52	44	61	48	41	61	45	39
			Array Edge	61	59	50	61	55	46	60	51	43	56	48	40	52	45	38	49	42	36	47	40	34			
		7 to 20	Array Interior	70	67	58	70	62	54	68	58	50	63	54	47	59	51	44	56	48	41	53	45	39	48	41	35
			Array Edge	64	54	47	59	50	43	55	47	40	51	44	38	48	41	35	45	39	33	43	37	32			
		20 to 27	Array Interior	73	70	64	73	65	59	73	60	55	73	56	51	69	53	48	65	50	45	61	47	43	57	43	39
			Array Edge	73	57	51	69	52	48	64	49	44	59	46	41	56	43	39	53	40	37	50	38	35			
		27 to 45	Array Interior	78	78	70	77	72	64	71	67	60	67	63	56	62	59	53	59	56	50	56	53	47	53	47	41
			Array Edge	67	63	56	62	59	52	58	55	49	54	51	45	51	48	43	48	45	40	45	43	38			
		45 to 90	Array Interior	93	89	89	89	84	84	86	80	80	82	75	75	79	71	71	76	67	67	71	63	63	67	61	51
			Array Edge	83	76	76	79	70	70	74	65	65	69	61	61	65	57	57	61	54	54	58	51	51			
	C	0 to 7	Array Interior	61	61	52	61	57	48	61	53	44	58	49	42	54	46	39	51	44	37	48	41	35	45	39	33
			Array Edge	58	50	42	54	46	39	50	43	36	47	40	34	44	38	32	41	35	30	39	33	28			
		7 to 20	Array Interior	66	56	49	61	52	45	57	49	42	53	45	39	50	43	37	47	40	35	44	38	33	41	35	29
			Array Edge	53	46	39	49	42	36	46	39	34	43	37	32	40	35	30	38	33	28	36	31	27			
		20 to 27	Array Interior	73	59	53	71	54	49	66	50	46	62	47	43	58	44	40	55	42	38	52	40	36	48	42	36
			Array Edge	62	47	43	57	44	40	53	41	37	50	38	35	47	36	33	44	34	31	42	32	29			
		27 to 45	Array Interior	69	66	58	64	61	54	60	57	50	56	53	47	52	50	44	49	47	42	47	44	39	44	41	36
			Array Edge	56	53	47	52	49	44	48	46	41	45	43	38	42	40	36	40	38	34	38	36	32			
		45 to 90	Array Interior	84	79	79	81	73	73	77	68	68	72	63	63	67	59	59	63	56	56	60	53	53	57	51	45
			Array Edge	72	64	64	67	59	59	62	55	55	58	51	51	55	48	48	51	45	45	49	43	43			
	D	0 to 7	Array Interior	64	56	47	61	52	44	57	48	41	53	45	38	50	42	36	47	40	34	44	38	32	41	35	29
			Array Edge	53	45	38	49	42	35	46	39	33	43	37	31	40	34	29	38	32	27	36	31	26			
		7 to 20	Array Interior	60	52	44	56	48	41	52	44	38	49	42	36	46	39	34	43	37	32	41	35	30	38	32	26
			Array Edge	49	42	36	45	39	33	42	36	31	39	34	29	37	32	27	35	30	26	33	28	24			
20 to 27		Array Interior	70	54	49	65	50	45	60	46	42	56	43	39	53	41	37	50	38	35	47	36	33	44	33	29	
		Array Edge	57	43	40	53	40	37	49	37	34	46	35	32	43	33	30	40	31	28	38	29	27				
27 to 45		Array Interior	63	60	53	59	56	50	55	52	46	51	48	43	48	45	41	45	43	38	43	41	36	41	39	34	
		Array Edge	51	49	43	48	45	40	44	42	37	41	39	35	39	37	33	37	35	31	35	33	29				
45 to 90		Array Interior	80	72	72	76	67	67	70	62	62	66	58	58	62	54	54	58	51	51	55	49	49	51	45	41	
		Array Edge	66	58	58	61	54	54	57	50	50	53	47	47	50	44	44	47	42	42	45	39	39				
80 psf	B	0 to 7	Array Interior	57	57	57	57	57	57	57	57	53	57	57	50	57	55	47	57	52	44	57	49	41	57	45	39
			Array Edge	57	57	50	57	55	46	57	51	43	56	48	40	52	45	38	49	42	36	47	40	34			
		7 to 20	Array Interior	67	67	58	67	62	54	67	58	50	63	54	47	59	51	44	56	48	41	53	45	39	48	41	35
			Array Edge	64	54	47	59	50	43	55	47	40	51	44	38	48	41	35	45	39	33	43	37	32			
		20 to 27	Array Interior	70	70	64	70	65	59	70	60	55	70	56	51	69	53	48	65	50	45	61	47	43	57	43	39
			Array Edge	70	57	51	69	52	48	64	49	44	59	46	41	56	43	39	53	40	37	50	38	35			
		27 to 45	Array Interior	75	75	70	75	72	64	71	67	60	67	63	56	62	59	53	59	56	50	56	53	47	53	47	41
			Array Edge	67	63	56	62	59	52	58	55	49	54	51	45	51	48	43	48	45	40	45	43	38			
		45 to 90	Array Interior	93	89	89	89	84	84	86	80	80	82	75	75	79	71	71	76	67	67	71	63	63	67	61	51
			Array Edge	83	76	76	79	70	70	74	65	65	69	61	61	65	57	57	61	54	54	58	51	51			
	C	0 to 7	Array Interior	57	57	52	57	57	48	57	53	44	57	49	42	54	46	39	51	44	37	48	41	35	45	39	33
			Array Edge	57	50	42	54	46	39	50	43	36	47	40	34	44	38	32	41	35	30	39	33	28			
		7 to 20	Array Interior	66	56	49	61	52	45	57	49	42	53	45	39	50	43	37	47	40	35	44	38	33	41	35	29
			Array Edge	53	46	39	49	42	36	46	39	34	43	37	32	40	35	30	38	33	28	36	31	27			
		20 to 27	Array Interior	70	59	53	70	54	49	66	50	46	62	47	43	58	44	40	55	42	38	52	40	36	48	42	36
			Array Edge	62	47	43	57	44	40	53	41	37	50	38	35	47	36	33	44	34	31	42	32	29			
		27 to 45	Array Interior	69	66	58	64	61	54	60	57	50	56	53	47	52	50	44	49	47	42	47	44	39	44	41	36
			Array Edge	56	53	47	52	49	44	48	46	41	45	43	38	42	40	36	40	38	34	38	36	32			
		45 to 90	Array Interior	84	79	79	81	73	73	77	68	68	72	63	63	67	59	59	63	56	56	60	53	53	57	51	45
			Array Edge	72	64	64	67	59	59	62	55	55	58	51	51	55	48	48	51	45	45	49	43	43			
	D	0 to 7	Array Interior	60	56	47	60	52	44	57	48	41	53	45	38	50	42	36	47	40	34	44	38	32	41	35	29
			Array Edge	53	45	38	49	42	35	46	39	33	43	37	31	40	34	29	38	32	27	36	31	26			
		7 to 20	Array Interior	60	52	44	56	48	41	52	44	38	49	42	36	46	39	34	43	37	32	41	35	30	38	32	26
			Array Edge	49	42	36	45	39	33	42	36	31	39	34	29	37	32	27	35	30	26	33	28	24			
20 to 27		Array Interior	70	54	49	65	50	45	60	46	42	56	43	39	53	41	37	50	38	35	47	36	33	44	33	29	
		Array Edge	57	43	40	53	40	37	49	37	34	46	35	32	43	33	30	40	31	28	38	29	27				
27 to 45		Array Interior	63	60	53	59	56	50	55	52	46	51	48	43	48	45	41	45	43	38	43	41	36	41	39	34	
		Array Edge	51	49	43	48	45	40	44	42	37	41	39	35	39	37	33	37	35	31	35	33	29				
45 to 90		Array Interior	80	72	72	76	67	67	70	62	62	66	58	58	62	54	54	58	51	51	55	49	49	51	45	41	
		Array Edge	66	58	58	61	54	54	57	50	50	53	47	47	50	44	44	47	42	42	45	39	39				
90 psf	B	0 to 7	Array Interior	54	54	54	54	54	54	54	54	53	54	54	50	54	54	47	54	52	44	54	49	41	54	45	39
			Array Edge	54	54	50	54	54	46	54	51	43	54	48	40	52	45	38	49	42	36	47	40	34			
		7 to 20	Array Interior	64	64	58	64	62	54	64	58	50	63	54	47	59	51	44	56	48	41	53	45	39	48	41	35
			Array Edge	63	54	47	59																				

Maximum Rail Spans (Inches)			SMR100 Rail Flush-Mount on 0 to 30 Foot Roof -- ASCE 7-22-- 82" x 42" (P)																						
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed ->	90 mph			95 mph			100 mph			105 mph			110 mph			115 mph			120 mph			
			Roof Zone ->	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
100 psf	B	0 to 7	Array Interior	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	
			Array Edge	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	
		7 to 20	Array Interior	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	
			Array Edge	61	61	61	61	61	61	61	61	61	61	61	59	61	61	56	61	61	56	61	61	59	
		20 to 27	Array Interior	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	
			Array Edge	66	66	66	66	66	66	66	66	66	66	66	64	66	66	61	66	64	58	66	62	56	
		27 to 45	Array Interior	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	
			Array Edge	71	71	71	71	71	71	71	71	71	71	71	70	71	71	67	71	71	64	71	69	61	
		45 to 90	Array Interior	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	
			Array Edge	90	90	90	90	90	90	90	90	90	90	90	90	90	87	87	89	84	84	87	81	81	
		C	0 to 7	Array Interior	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
				Array Edge	51	51	51	51	51	51	51	51	51	51	51	51	51	51	50	51	51	47	51	51	45
	7 to 20		Array Interior	61	61	61	61	61	61	61	61	61	61	61	61	61	61	58	61	61	55	61	61	53	
			Array Edge	61	61	58	61	61	54	61	60	52	61	57	49	61	54	47	60	52	45	58	50	43	
	20 to 27		Array Interior	66	66	66	66	66	66	66	66	66	66	66	66	66	66	64	66	66	61	66	64	58	
			Array Edge	66	66	63	66	66	60	66	62	57	66	59	54	66	57	51	66	54	49	65	52	47	
	27 to 45		Array Interior	71	71	71	71	71	71	71	71	71	71	71	71	71	71	70	71	71	66	71	66	71	
			Array Edge	71	71	69	71	71	66	71	70	62	70	66	59	67	63	56	64	60	54	61	58	51	
	45 to 90		Array Interior	90	90	90	90	90	90	90	90	90	90	90	90	90	89	89	90	86	86	89	83	83	
			Array Edge	90	89	89	90	85	85	87	82	82	85	79	79	83	76	76	80	72	72	78	69	69	
	D		0 to 7	Array Interior	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	51
				Array Edge	54	54	54	54	54	53	54	54	50	54	54	48	54	54	46	54	52	44	54	49	42
		7 to 20	Array Interior	64	64	64	64	64	62	64	64	58	64	64	56	64	62	53	64	59	50	64	56	48	
			Array Edge	64	61	53	64	58	50	64	55	47	61	52	45	58	50	43	56	47	41	53	45	39	
20 to 27		Array Interior	68	68	68	68	68	68	68	68	64	68	67	61	68	64	58	68	61	55	68	58	53		
		Array Edge	68	64	58	68	60	55	68	57	52	68	54	49	67	52	47	65	49	45	62	47	43		
27 to 45		Array Interior	73	73	73	73	73	73	73	73	70	73	73	67	73	72	64	72	68	61	69	65	58		
		Array Edge	73	71	64	71	67	60	68	64	57	64	61	54	61	58	52	58	55	49	56	53	47		
45 to 90		Array Interior	92	92	92	92	92	92	92	89	89	91	86	86	89	84	84	86	81	81	84	78	78		
		Array Edge	89	84	84	86	80	80	83	77	77	81	73	73	78	69	69	75	66	66	72	63	63		
110 psf		B	0 to 7	Array Interior	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49
				Array Edge	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49
	7 to 20		Array Interior	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	
			Array Edge	58	58	58	58	58	58	58	58	58	58	58	58	58	58	56	58	58	53	58	58	51	
	20 to 27		Array Interior	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	
			Array Edge	64	64	64	64	64	64	64	64	64	64	64	64	64	64	61	64	64	58	64	62	56	
	27 to 45		Array Interior	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	
			Array Edge	69	69	69	69	69	69	69	69	69	69	69	69	69	69	67	69	69	64	69	69	61	
	45 to 90		Array Interior	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	
			Array Edge	88	88	88	88	88	88	88	88	88	88	88	88	88	87	87	88	84	84	87	81	81	
	C		0 to 7	Array Interior	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49
				Array Edge	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	45
		7 to 20	Array Interior	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	
			Array Edge	58	58	58	58	58	54	58	58	52	58	57	49	58	54	47	58	52	45	58	50	43	
		20 to 27	Array Interior	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	61	64	64	58	
			Array Edge	64	64	63	64	64	60	64	62	57	64	59	54	64	57	51	64	64	49	63	52	47	
		27 to 45	Array Interior	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	66	69	69	63	
			Array Edge	69	69	69	69	69	66	69	69	62	69	66	59	67	63	56	64	60	54	61	58	51	
		45 to 90	Array Interior	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	
			Array Edge	88	88	88	88	85	85	87	82	82	85	79	79	83	76	76	80	72	72	78	69	69	
		D	0 to 7	Array Interior	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	51
				Array Edge	52	52	52	52	52	52	52	52	50	52	52	48	52	52	46	52	52	44	52	49	42
	7 to 20		Array Interior	61	61	61	61	61	61	61	61	58	61	61	56	61	61	53	61	59	50	61	56	48	
			Array Edge	61	61	53	61	58	50	61	55	47	61	52	45	58	50	43	56	47	41	53	45	39	
20 to 27	Array Interior		66	66	66	66	66	66	66	66	64	66	66	61	66	64	58	66	61	55	66	58	53		
	Array Edge		66	64	58	66	60	55	66	57	52	66	54	49	65	52	47	65	49	45	62	47	43		
27 to 45	Array Interior		71	71	71	71	71	71	71	71	70	71	71	67	71	71	64	71	68	61	69	65	58		
	Array Edge		71	71	64	71	67	60	68	64	57	64	61	54	61	58	52	58	55	49	56	53	47		
45 to 90	Array Interior		90	90	90	90	90	90	90	89	89	90	86	86	89	84	84	86	81	81	84	78	78		
	Array Edge		89	84	84	86	80	80	83	77	77	81	73	73	78	69	69	75	66	66	72	63	63		
120 psf	B		0 to 7	Array Interior	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47
				Array Edge	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47
		7 to 20	Array Interior	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	
			Array Edge	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	51	
		20 to 27	Array Interior	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	
			Array Edge	62	62	62	62	62	62	62	62	62	62	62	62	62	62	61	62	62	58	62	62	56	
		27 to 45	Array Interior	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	
			Array Edge	67	67	67	67																		

Maximum Rail Spans (Inches)			SMR100 Rail Flush-Mount on 0 to 30 Foot Roof -- ASCE 7-22-- 82" x 42" (P)																						
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed ->	130 mph			140 mph			150 mph			160 mph			170 mph			180 mph			190 mph			
			Roof Zone ->	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
100 psf	B	0 to 7	Array Interior	51	51	51	51	51	51	51	51	51	51	51	50	51	51	47	51	51	44	51	49	41	
			Array Edge	51	51	50	51	51	46	51	51	43	51	48	40	51	45	38	49	42	36	47	40	34	
		7 to 20	Array Interior	61	61	58	61	61	54	61	58	50	61	54	47	59	51	44	56	48	41	53	45	39	
			Array Edge	61	54	47	59	50	43	55	47	40	51	44	38	48	41	35	45	39	33	43	37	32	
		20 to 27	Array Interior	66	66	64	66	65	59	66	60	55	66	56	51	65	53	48	64	50	45	61	47	43	
			Array Edge	66	57	51	65	52	48	64	49	44	59	46	41	56	43	39	53	40	37	50	38	35	
		27 to 45	Array Interior	71	71	70	71	71	64	71	67	60	67	63	56	62	59	53	59	56	50	56	53	47	
			Array Edge	67	63	56	62	59	52	58	55	49	54	51	45	51	48	43	48	45	40	45	43	38	
		45 to 90	Array Interior	90	89	89	89	84	84	86	80	80	82	75	75	79	71	71	76	67	67	71	63	63	
			Array Edge	83	76	76	79	70	70	74	65	65	69	61	61	65	57	57	61	54	54	58	51	51	
		C	0 to 7	Array Interior	51	51	51	51	51	48	51	51	44	51	49	42	51	46	39	51	44	37	48	41	35
				Array Edge	51	50	42	51	46	39	50	43	36	47	40	34	44	38	32	41	35	30	39	33	28
	7 to 20		Array Interior	61	56	49	60	52	45	57	49	42	53	45	39	50	43	37	47	40	35	44	38	33	
			Array Edge	53	46	39	49	42	36	46	39	34	43	37	32	40	35	30	38	33	28	36	31	27	
	20 to 27		Array Interior	66	59	53	66	54	49	65	50	46	62	47	43	58	44	40	55	42	38	52	40	36	
			Array Edge	62	47	43	57	44	40	53	41	37	50	38	35	47	36	33	44	34	31	42	32	29	
	27 to 45		Array Interior	69	66	58	64	61	54	60	57	50	56	53	47	52	50	44	49	47	42	47	44	39	
			Array Edge	56	53	47	52	49	44	48	46	41	45	43	38	42	40	36	40	38	34	38	36	32	
	45 to 90		Array Interior	84	79	79	81	73	73	77	68	68	72	63	63	67	59	59	63	56	56	60	53	53	
			Array Edge	72	64	64	67	59	59	62	55	55	58	51	51	55	48	48	51	45	45	49	43	43	
	D		0 to 7	Array Interior	54	54	47	54	52	44	54	48	41	53	45	38	50	42	36	47	40	34	44	38	32
				Array Edge	53	45	38	49	42	35	46	39	33	43	37	31	40	34	29	38	32	27	36	31	26
		7 to 20	Array Interior	60	52	44	56	48	41	52	44	38	49	42	36	46	39	34	43	37	32	41	35	30	
			Array Edge	49	42	36	45	39	33	42	36	31	39	34	29	37	32	27	35	30	26	33	28	24	
20 to 27		Array Interior	68	54	49	65	50	45	60	46	42	56	43	39	53	41	37	50	38	35	47	36	33		
		Array Edge	57	43	40	53	40	37	49	37	34	46	35	32	43	33	30	40	31	28	38	29	27		
27 to 45		Array Interior	63	60	53	59	56	50	55	52	46	51	48	43	48	45	41	45	43	38	43	41	36		
		Array Edge	51	49	43	48	45	40	44	42	37	41	39	35	39	37	33	37	35	31	35	33	29		
45 to 90		Array Interior	80	72	72	76	67	67	70	62	62	66	58	58	62	54	54	58	51	51	55	49	49		
		Array Edge	66	58	58	61	54	54	57	50	50	53	47	47	50	44	44	47	42	42	45	39	39		
110 psf		B	0 to 7	Array Interior	49	49	49	49	49	49	49	49	49	49	49	49	49	49	47	49	49	44	49	49	41
				Array Edge	49	49	49	49	49	46	49	49	43	49	48	40	49	45	38	49	42	36	47	40	34
	7 to 20		Array Interior	58	58	58	58	58	54	58	58	50	58	54	47	58	51	44	56	48	41	53	45	39	
			Array Edge	58	54	47	58	50	43	55	47	40	51	44	38	48	41	35	45	39	33	43	37	32	
	20 to 27		Array Interior	64	64	64	64	64	59	64	60	55	64	56	51	63	53	48	62	50	45	61	47	43	
			Array Edge	64	57	51	63	52	48	62	49	44	59	46	41	56	43	39	53	40	37	50	38	35	
	27 to 45		Array Interior	69	69	69	69	69	64	69	67	60	67	63	56	62	59	53	59	56	50	56	53	47	
			Array Edge	67	63	56	62	59	52	58	55	49	54	51	45	51	48	43	48	45	40	45	43	38	
	45 to 90		Array Interior	88	88	88	88	84	84	86	80	80	82	75	75	79	71	71	76	67	67	71	63	63	
			Array Edge	83	76	76	79	70	70	74	65	65	69	61	61	65	57	57	61	54	54	58	51	51	
	C		0 to 7	Array Interior	49	49	49	49	49	48	49	49	44	49	49	42	49	46	39	49	44	37	48	41	35
				Array Edge	49	49	42	49	46	39	49	43	36	47	40	34	44	38	32	41	35	30	39	33	28
		7 to 20	Array Interior	58	56	49	58	52	45	57	49	42	53	45	39	50	43	37	47	40	35	44	38	33	
			Array Edge	53	46	39	49	42	36	46	39	34	43	37	32	40	35	30	38	33	28	36	31	27	
		20 to 27	Array Interior	64	59	53	64	54	49	63	50	46	61	47	43	58	44	40	55	42	38	52	40	36	
			Array Edge	62	47	43	57	44	40	53	41	37	50	38	35	47	36	33	44	34	31	42	32	29	
		27 to 45	Array Interior	69	66	58	64	61	54	60	57	50	56	53	47	52	50	44	49	47	42	47	44	39	
			Array Edge	56	53	47	52	49	44	48	46	41	45	43	38	42	40	36	40	38	34	38	36	32	
		45 to 90	Array Interior	84	79	79	81	73	73	77	68	68	72	63	63	67	59	59	63	56	56	60	53	53	
			Array Edge	72	64	64	67	59	59	62	55	55	58	51	51	55	48	48	51	45	45	49	43	43	
		D	0 to 7	Array Interior	52	52	47	52	52	44	52	48	41	52	45	38	50	42	36	47	40	34	44	38	32
				Array Edge	52	45	38	49	42	35	46	39	33	43	37	31	40	34	29	38	32	27	36	31	26
	7 to 20		Array Interior	60	52	44	56	48	41	52	44	38	49	42	36	46	39	34	43	37	32	41	35	30	
			Array Edge	49	42	36	45	39	33	42	36	31	39	34	29	37	32	27	35	30	26	33	28	24	
20 to 27	Array Interior		66	54	49	65	50	45	60	46	42	56	43	39	53	41	37	50	38	35	47	36	33		
	Array Edge		57	43	40	53	40	37	49	37	34	46	35	32	43	33	30	40	31	28	38	29	27		
27 to 45	Array Interior		63	60	53	59	56	50	55	52	46	51	48	43	48	45	41	45	43	38	43	41	36		
	Array Edge		51	49	43	48	45	40	44	42	37	41	39	35	39	37	33	37	35	31	35	33	29		
45 to 90	Array Interior		80	72	72	76	67	67	70	62	62	66	58	58	62	54	54	58	51	51	55	49	49		
	Array Edge		66	58	58	61	54	54	57	50	50	53	47	47	50	44	44	47	42	42	45	39	39		
120 psf	B		0 to 7	Array Interior	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	44	47	47	41
				Array Edge	47	47	47	47	47	46	47	47	43	47	47	40	47	45	38	47	42	36	47	40	34
		7 to 20	Array Interior	56	56	56	56	56	54	56	56	50	56	54	47	56	51	44	55	48	41	53	45	39	
			Array Edge	56	54	47	56	50	43	55	47	40	51	44	38	48	41	35	45	39	33	43	37	32	
		20 to 27	Array Interior	62	62	62	62	62	59	62	60	55	62	56	51	62	53	48	61	50	45	60	47	43	
			Array Edge	62	57	51	61	52	48	60	49	44	59	46	41	56	43	39	53	40	37	50	38	35	
		27 to 45	Array Interior	67	67	67	67	67	64	67	67	60	67	63	56	62	59	53	59	56	50	56	53	47	
			Array Edge	67	63	56	62																		

Maximum Rail Spans (Inches)			SMR100 Rail Flush-Mount on 0 to 30 Foot Roof -- ASCE 7-22 -- 82" x 42" (L)																								
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed-->	90 mph			95 mph			100 mph			105 mph			110 mph			115 mph			120 mph					
			Roof Zone-->	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3			
0 psf	B	0 to 7	Array Interior	116	116	104	116	113	100	116	109	97	116	105	93	114	102	90	110	98	87	107	95	85	107	95	85
			Array Edge	114	102	90	109	98	87	105	94	84	101	91	81	98	88	78	95	85	74	92	83	71	92	83	71
		7 to 20	Array Interior	116	111	100	116	107	96	115	103	93	111	99	89	107	96	86	103	93	84	100	90	81	100	90	81
			Array Edge	107	96	86	103	92	83	99	89	80	95	86	76	92	83	73	89	80	70	87	77	67	87	77	67
		20 to 27	Array Interior	117	114	107	117	110	102	117	105	99	117	102	95	117	98	92	115	95	89	111	92	87	111	92	87
			Array Edge	117	98	92	114	94	89	110	91	85	106	88	83	102	85	80	99	83	76	96	80	73	96	80	73
		27 to 45	Array Interior	119	119	113	119	118	109	118	114	105	114	110	101	110	106	98	107	103	95	107	103	95	103	100	92
			Array Edge	110	106	98	106	102	94	102	98	91	98	95	88	95	92	85	92	89	82	90	86	80	90	86	80
		45 to 90	Array Interior	121	121	121	121	121	121	121	121	121	121	121	121	121	119	119	121	116	116	118	112	112	118	112	112
			Array Edge	121	119	119	120	115	115	116	111	111	113	107	107	110	103	103	107	100	100	104	97	97	104	97	97
	C	0 to 7	Array Interior	116	104	92	112	100	89	108	96	86	104	93	83	100	90	80	97	87	77	94	85	73	94	85	73
			Array Edge	100	90	80	96	87	76	93	83	72	90	81	68	87	77	65	84	74	62	82	71	59	82	71	59
		7 to 20	Array Interior	110	98	88	105	94	85	101	91	82	98	88	79	95	85	75	92	82	72	89	80	69	89	80	69
			Array Edge	94	85	75	91	82	71	88	78	67	85	75	64	82	71	61	79	68	58	76	65	56	76	65	56
		20 to 27	Array Interior	117	101	94	117	97	91	112	93	88	108	90	85	105	87	82	101	85	79	98	82	76	98	82	76
			Array Edge	105	87	82	101	84	78	97	81	74	94	77	70	91	74	67	88	70	64	85	67	61	85	67	61
		27 to 45	Array Interior	113	109	100	108	104	96	104	101	93	101	97	90	98	94	87	95	91	84	92	88	82	92	88	82
			Array Edge	97	94	87	94	90	84	90	87	81	87	84	77	85	82	74	82	79	70	80	75	67	80	75	67
		45 to 90	Array Interior	121	121	121	121	118	118	119	113	113	115	110	110	112	106	106	109	103	103	106	100	100	106	100	100
			Array Edge	112	106	106	108	102	102	105	98	98	102	95	95	99	92	92	96	89	89	94	87	87	94	87	87
	D	0 to 7	Array Interior	110	98	87	105	94	84	101	91	81	98	88	77	95	85	74	92	82	70	89	80	67	89	80	67
			Array Edge	94	85	73	91	82	69	87	78	66	85	74	63	82	71	60	79	68	57	76	65	54	76	65	54
		7 to 20	Array Interior	103	92	83	99	89	80	95	86	76	92	83	73	89	80	69	86	77	66	84	73	63	84	73	63
			Array Edge	89	80	69	86	76	65	83	72	62	80	68	59	76	65	56	73	62	54	69	59	51	69	59	51
20 to 27		Array Interior	114	95	89	110	91	85	106	88	82	102	85	80	99	82	76	95	80	73	93	76	69	93	76	69	
		Array Edge	98	82	76	95	79	72	91	75	68	88	71	65	85	68	62	83	65	59	80	62	56	80	62	56	
27 to 45		Array Interior	106	102	94	102	98	91	98	95	88	95	92	85	92	89	82	89	86	79	86	83	76	86	83	76	
		Array Edge	92	88	82	88	85	78	85	82	74	82	79	71	80	76	67	76	72	64	73	69	62	73	69	62	
45 to 90		Array Interior	120	115	115	116	111	111	113	107	107	110	103	103	107	100	100	104	97	97	101	94	94	101	94	94	
		Array Edge	106	100	100	103	96	96	100	93	93	97	90	90	94	87	87	91	84	84	89	82	82	89	82	82	
5 psf	B	0 to 7	Array Interior	115	115	104	115	113	100	115	109	97	115	105	93	114	102	90	110	98	87	107	95	85	107	95	85
			Array Edge	114	102	90	109	98	87	105	94	84	101	91	81	98	88	78	95	85	74	92	83	71	92	83	71
		7 to 20	Array Interior	116	111	100	116	107	96	115	103	93	111	99	89	107	96	86	103	93	84	100	90	81	100	90	81
			Array Edge	107	96	86	103	92	83	99	89	80	95	86	76	92	83	73	89	80	70	87	77	67	87	77	67
		20 to 27	Array Interior	117	114	107	117	110	102	117	105	99	117	102	95	117	98	92	115	95	89	111	92	87	111	92	87
			Array Edge	117	98	92	114	94	89	110	91	85	106	88	83	102	85	80	99	83	76	96	80	73	96	80	73
		27 to 45	Array Interior	119	119	113	119	118	109	118	114	105	114	110	101	110	106	98	107	103	95	107	103	95	103	100	92
			Array Edge	110	106	98	106	102	94	102	98	91	98	95	88	95	92	85	92	89	82	90	86	80	90	86	80
		45 to 90	Array Interior	121	121	121	121	121	121	121	121	121	121	121	121	121	119	119	121	116	116	118	112	112	118	112	112
			Array Edge	121	119	119	120	115	115	116	111	111	113	107	107	110	103	103	107	100	100	104	97	97	104	97	97
	C	0 to 7	Array Interior	115	104	92	112	100	89	108	96	86	104	93	83	100	90	80	97	87	77	94	85	73	94	85	73
			Array Edge	100	90	80	96	87	76	93	83	72	90	81	68	87	77	65	84	74	62	82	71	59	82	71	59
		7 to 20	Array Interior	110	98	88	105	94	85	101	91	82	98	88	79	95	85	75	92	82	72	89	80	69	89	80	69
			Array Edge	94	85	75	91	82	71	88	78	67	85	75	64	82	71	61	79	68	58	76	65	56	76	65	56
		20 to 27	Array Interior	117	101	94	117	97	91	112	93	88	108	90	85	105	87	82	101	85	79	98	82	76	98	82	76
			Array Edge	105	87	82	101	84	78	97	81	74	94	77	70	91	74	67	88	70	64	85	67	61	85	67	61
		27 to 45	Array Interior	113	109	100	108	104	96	104	101	93	101	97	90	98	94	87	95	91	84	92	88	82	92	88	82
			Array Edge	97	94	87	94	90	84	90	87	81	87	84	77	85	82	74	82	79	70	80	75	67	80	75	67
		45 to 90	Array Interior	121	121	121	121	118	118	119	113	113	115	110	110	112	106	106	109	103	103	106	100	100	106	100	100
			Array Edge	112	106	106	108	102	102	105	98	98	102	95	95	99	92	92	96	89	89	94	87	87	94	87	87
	D	0 to 7	Array Interior	110	98	87	105	94	84	101	91	81	98	88	77	95	85	74	92	82	70	89	80	67	89	80	67
			Array Edge	94	85	73	91	82	69	87	78	66	85	74	63	82	71	60	79	68	57	76	65	54	76	65	54
		7 to 20	Array Interior	103	92	83	99	89	80	95	86	76	92	83	73	89	80	69	86	77	66	84	73	63	84	73	63
			Array Edge	89	80	69	86	76	65	83	72	62	80	68	59	76	65	56	73	62	54	69	59	51	69	59	51
20 to 27		Array Interior	114	95	89	110	91	85	106	88	82	102	85	80	99	82	76	95	80	73	93	76	69	93	76	69	
		Array Edge	98	82	76	95	79	72	91	75	68	88	71	65	85	68	62	83	65	59	80	62	56	80	62	56	
27 to 45		Array Interior	106	102	94	102	98	91	98	95	88	95	92	85	92	89	82	89	86	79	86	83	76	86	83	76	
		Array Edge	92	88	82	88	85	78	85	82	74	82	79	71	80	76	67	76	72	64	73	69	62	7			

Maximum Rail Spans (Inches)			SMR100 Rail Flush-Mount on 0 to 30 Foot Roof -- ASCE 7-22 -- 82" x 42" (L)																					
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed-->	130 mph			140 mph			150 mph			160 mph			170 mph			180 mph			190 mph		
			Roof Zone-->	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
0 psf	B	0 to 7	Array Interior	101	90	80	95	86	74	91	81	69	87	77	65	83	72	61	80	68	57	75	64	54
			Array Edge	87	77	65	82	72	60	78	67	56	73	62	53	68	59	49	64	55	47	61	52	44
		7 to 20	Array Interior	95	85	76	90	81	70	85	76	65	82	71	61	78	66	57	73	63	54	69	59	51
			Array Edge	82	71	61	77	66	57	72	61	53	67	57	49	63	54	46	59	51	44	56	48	41
		20 to 27	Array Interior	105	87	82	99	83	77	95	79	72	90	74	67	87	69	63	83	65	59	80	62	56
			Array Edge	91	74	67	86	68	62	82	64	58	78	60	54	73	56	51	69	53	48	65	50	45
		27 to 45	Array Interior	98	94	87	93	89	83	88	85	78	84	81	73	81	77	69	77	73	65	73	69	61
			Array Edge	85	82	74	80	77	68	75	71	64	70	67	59	66	63	56	62	59	53	59	56	50
		45 to 90	Array Interior	112	106	106	107	101	101	103	96	96	99	92	92	95	88	88	92	85	85	89	81	81
			Array Edge	99	92	92	95	87	87	91	83	83	87	80	80	83	75	75	80	71	71	76	67	67
	C	0 to 7	Array Interior	89	80	67	84	74	62	80	69	58	76	65	54	71	61	51	67	57	48	63	54	46
			Array Edge	76	65	55	70	60	51	65	56	47	61	52	44	57	49	42	54	46	39	51	44	37
		7 to 20	Array Interior	84	74	63	80	68	59	74	63	55	69	59	51	65	56	48	61	53	45	58	50	43
			Array Edge	70	60	51	65	55	48	60	51	44	56	48	42	53	45	39	50	43	37	47	40	35
		20 to 27	Array Interior	93	77	70	88	71	65	84	66	60	80	62	56	76	58	53	71	55	50	67	52	47
			Array Edge	81	62	56	75	57	52	70	54	49	65	50	46	61	47	43	58	44	40	55	42	38
		27 to 45	Array Interior	87	84	76	82	79	71	78	74	66	73	69	62	69	65	58	65	61	55	61	58	52
			Array Edge	73	69	62	68	64	57	63	60	53	59	56	50	56	53	47	52	50	44	50	47	42
		45 to 90	Array Interior	101	94	94	97	90	90	93	85	85	89	82	82	85	78	78	82	73	73	78	69	69
			Array Edge	89	82	82	85	77	77	81	72	72	76	67	67	71	63	63	67	60	60	64	56	56
	D	0 to 7	Array Interior	84	73	62	80	68	57	74	63	53	69	59	50	65	56	47	61	52	44	58	50	42
			Array Edge	70	59	50	64	55	46	60	51	43	56	48	41	53	45	38	50	43	36	47	40	34
		7 to 20	Array Interior	79	67	58	73	62	54	68	58	50	64	54	47	60	51	44	56	48	42	53	46	39
			Array Edge	64	55	47	59	51	44	55	47	41	52	44	38	48	42	36	46	39	34	43	37	32
20 to 27		Array Interior	87	70	64	83	65	59	79	60	55	74	57	52	69	53	48	65	50	46	62	47	43	
		Array Edge	74	57	52	69	53	48	64	49	45	60	46	42	56	43	39	53	41	37	50	39	35	
27 to 45		Array Interior	82	78	70	77	73	65	71	68	60	67	63	56	63	60	53	59	56	50	56	53	47	
		Array Edge	67	64	57	62	59	53	58	55	49	54	51	46	51	48	43	48	46	41	46	43	39	
45 to 90		Array Interior	96	89	89	92	84	84	88	81	81	84	76	76	80	71	71	76	67	67	72	64	64	
		Array Edge	84	76	76	80	71	71	74	66	66	70	62	62	65	58	58	62	55	55	58	52	52	
5 psf	B	0 to 7	Array Interior	101	90	80	95	86	74	91	81	69	87	77	65	83	72	61	80	68	57	75	64	54
			Array Edge	87	77	65	82	72	60	78	67	56	73	62	53	68	59	49	64	55	47	61	52	44
		7 to 20	Array Interior	95	85	76	90	81	70	85	76	65	82	71	61	78	66	57	73	63	54	69	59	51
			Array Edge	82	71	61	77	66	57	72	61	53	67	57	49	63	54	46	59	51	44	56	48	41
		20 to 27	Array Interior	105	87	82	99	83	77	95	79	72	90	74	67	87	69	63	83	65	59	80	62	56
			Array Edge	91	74	67	86	68	62	82	64	58	78	60	54	73	56	51	69	53	48	65	50	45
		27 to 45	Array Interior	98	94	87	93	89	83	88	85	78	84	81	73	81	77	69	77	73	65	73	69	61
			Array Edge	85	82	74	80	77	68	75	71	64	70	67	59	66	63	56	62	59	53	59	56	50
		45 to 90	Array Interior	112	106	106	107	101	101	103	96	96	99	92	92	95	88	88	92	85	85	89	81	81
			Array Edge	99	92	92	95	87	87	91	83	83	87	80	80	83	75	75	80	71	71	76	67	67
	C	0 to 7	Array Interior	89	80	67	84	74	62	80	69	58	76	65	54	71	61	51	67	57	48	63	54	46
			Array Edge	76	65	55	70	60	51	65	56	47	61	52	44	57	49	42	54	46	39	51	44	37
		7 to 20	Array Interior	84	74	63	80	68	59	74	63	55	69	59	51	65	56	48	61	53	45	58	50	43
			Array Edge	70	60	51	65	55	48	60	51	44	56	48	42	53	45	39	50	43	37	47	40	35
		20 to 27	Array Interior	93	77	70	88	71	65	84	66	60	80	62	56	76	58	53	71	55	50	67	52	47
			Array Edge	81	62	56	75	57	52	70	54	49	65	50	46	61	47	43	58	44	40	55	42	38
		27 to 45	Array Interior	87	84	76	82	79	71	78	74	66	73	69	62	69	65	58	65	61	55	61	58	52
			Array Edge	73	69	62	68	64	57	63	60	53	59	56	50	56	53	47	52	50	44	50	47	42
		45 to 90	Array Interior	101	94	94	97	90	90	93	85	85	89	82	82	85	78	78	82	73	73	78	69	69
			Array Edge	89	82	82	85	77	77	81	72	72	76	67	67	71	63	63	67	60	60	64	56	56
	D	0 to 7	Array Interior	84	73	62	80	68	57	74	63	53	69	59	50	65	56	47	61	52	44	58	50	42
			Array Edge	70	59	50	64	55	46	60	51	43	56	48	41	53	45	38	50	43	36	47	40	34
		7 to 20	Array Interior	79	67	58	73	62	54	68	58	50	64	54	47	60	51	44	56	48	42	53	46	39
			Array Edge	64	55	47	59	51	44	55	47	41	52	44	38	48	42	36	46	39	34	43	37	32
20 to 27		Array Interior	87	70	64	83	65	59	79	60	55	74	57	52	69	53	48	65	50	46	62	47	43	
		Array Edge	74	57	52	69	53	48	64	49	45	60	46	42	56	43	39	53	41	37	50	39	35	
27 to 45		Array Interior	82	78	70	77	73	65	71	68	60	67	63	56	63	60	53	59	56	50	56	53	47	
		Array Edge	67	64	57	62	59	53	58	55	49	54	51	46	51	48	43	48	46	41	46	43	39	
45 to 90		Array Interior	96	89	89	92	84	84	88	81	81	84	76	76	80	71	71	76	67	67	72	64	64	
		Array Edge	84	76	76	80	71	71	74	66	66	70	62	62	65	58	58	62	55	55	58	52	52	
10 psf	B	0 to 7	Array Interior	101	90	80	95	86	74	91	81	69	87	77	65	83	72	61	80	68	57	75	64	54
			Array Edge	87	77	65	82	72	60	78	67	56	73	62	53	68	59	49	64	55	47	61	52	44
		7 to 20	Array Interior	95	85	76	90	81	70	85	76	65	82	71	61	78	66	57	73	63	54	69	59	51
			Array Edge	82	71	61	77	66	57	72	61	53	67	57	49	63	54	46	59	51	44	56	48	41
		20 to 27	Array Interior	105	87	82	99	83	77	95	79	72	90	74	67	87	69	63	83	65	59	80	62	56
			Array Edge	91	74	67	86	68	62	82	64	58	78	60	54	73	56	51	69	53	48	65	50	45
		27 to 45	Array Interior	98	94	87	93	89	83	88	85	78	84	81	73	81	77	69	77	73	65	73	69	61
			Array Edge	85																				

Maximum Rail Spans (Inches)			SMR100 Rail Flush-Mount on 0 to 30 Foot Roof -- ASCE 7-22 -- 82" x 42" (L)																						
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed-->	90 mph			95 mph			100 mph			105 mph			110 mph			115 mph			120 mph			
			Roof Zone-->	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
15 psf	B	0 to 7	Array Interior	103	103	103	103	103	100	103	103	97	103	103	93	103	102	90	103	98	87	103	95	85	
			Array Edge	103	102	90	103	98	87	103	94	84	101	91	81	98	88	78	95	85	74	92	83	71	
		7 to 20	Array Interior	112	111	100	112	107	96	112	103	93	111	99	89	107	96	86	103	93	84	100	90	81	
			Array Edge	107	96	86	103	92	83	99	89	80	95	86	76	92	83	73	89	80	70	87	77	67	
		20 to 27	Array Interior	115	114	107	115	110	102	115	105	99	115	102	95	115	98	92	115	95	89	111	92	87	
			Array Edge	115	98	92	114	94	89	110	91	85	106	88	83	102	85	80	99	83	76	96	80	73	
		27 to 45	Array Interior	119	119	113	119	118	109	118	114	105	114	110	101	110	106	98	107	103	95	103	100	92	
			Array Edge	110	106	98	106	102	94	102	98	91	98	95	88	95	92	85	92	89	82	90	86	80	
		45 to 90	Array Interior	121	121	121	121	121	121	121	121	121	121	121	121	121	119	119	121	116	116	118	112	112	
			Array Edge	121	119	119	120	115	115	116	111	111	113	107	107	110	103	103	107	100	100	104	97	97	
		C	0 to 7	Array Interior	103	103	92	103	100	89	103	96	86	103	93	83	100	90	80	97	87	77	94	85	73
				Array Edge	100	90	80	96	87	76	93	83	72	90	81	68	87	77	65	84	74	62	82	71	59
	7 to 20		Array Interior	110	98	88	105	94	85	101	91	82	98	88	79	95	85	75	92	82	72	89	80	69	
			Array Edge	94	85	75	91	82	71	88	78	67	85	75	64	82	71	61	79	68	58	76	65	56	
	20 to 27		Array Interior	115	101	94	115	97	91	112	93	88	108	90	85	105	87	82	101	85	79	98	82	76	
			Array Edge	105	87	82	101	84	78	97	81	74	94	77	70	91	74	67	88	70	64	85	67	61	
	27 to 45		Array Interior	113	109	100	108	104	96	104	101	93	101	97	90	98	94	87	95	91	84	92	88	82	
			Array Edge	97	94	87	94	90	84	90	87	81	87	84	77	85	82	74	82	79	70	80	75	67	
	45 to 90		Array Interior	121	121	121	121	118	118	119	113	113	115	110	110	112	106	106	109	103	103	106	100	100	
			Array Edge	112	106	106	108	102	102	105	98	98	102	95	95	99	92	92	96	89	89	94	87	87	
	D		0 to 7	Array Interior	103	98	87	103	94	84	101	91	81	98	88	77	95	85	74	92	82	70	89	80	67
				Array Edge	94	85	73	91	82	69	87	78	66	85	74	63	82	71	60	79	68	57	76	65	54
		7 to 20	Array Interior	103	92	83	99	89	80	95	86	76	92	83	73	89	80	69	86	77	66	84	73	63	
			Array Edge	89	80	69	86	76	65	83	72	62	80	68	59	76	65	56	73	62	54	69	59	51	
20 to 27		Array Interior	114	95	89	110	91	85	106	88	82	102	85	80	99	82	76	95	80	73	93	76	69		
		Array Edge	98	82	76	95	79	72	91	75	68	88	71	65	85	68	62	83	65	59	80	62	56		
27 to 45		Array Interior	106	102	94	102	98	91	98	95	88	95	92	85	92	89	82	89	86	79	86	83	76		
		Array Edge	92	88	82	88	85	78	85	82	74	82	79	71	80	76	67	76	72	64	73	69	62		
45 to 90		Array Interior	120	115	115	116	111	111	113	107	107	110	103	103	107	100	100	104	97	97	101	94	94		
		Array Edge	106	100	100	103	96	96	100	93	93	97	90	90	94	87	87	91	84	84	89	82	82		
20 psf		B	0 to 7	Array Interior	98	98	98	98	98	98	98	98	97	98	98	93	98	98	90	98	98	87	98	95	85
				Array Edge	98	98	90	98	98	87	98	94	84	98	91	81	98	88	78	95	85	74	92	83	71
	7 to 20		Array Interior	108	108	100	108	107	96	108	103	93	108	99	89	107	96	86	103	93	84	100	90	81	
			Array Edge	107	96	86	103	92	83	99	89	80	95	86	76	92	83	73	89	80	70	87	77	67	
	20 to 27		Array Interior	112	112	107	112	110	102	112	105	99	112	102	95	112	98	92	112	95	89	111	92	87	
			Array Edge	112	98	92	112	94	89	110	91	85	106	88	83	102	85	80	99	83	76	96	80	73	
	27 to 45		Array Interior	119	119	113	119	118	109	118	114	105	114	110	101	110	106	98	107	103	95	103	100	92	
			Array Edge	110	106	98	106	102	94	102	98	91	98	95	88	95	92	85	92	89	82	90	86	80	
	45 to 90		Array Interior	121	121	121	121	121	121	121	121	121	121	121	121	121	119	119	121	116	116	118	112	112	
			Array Edge	121	119	119	120	115	115	116	111	111	113	107	107	110	103	103	107	100	100	104	97	97	
	C		0 to 7	Array Interior	98	98	92	98	98	89	98	96	86	98	93	83	98	90	80	97	87	77	94	85	73
				Array Edge	98	90	80	96	87	76	93	83	72	90	81	68	87	77	65	84	74	62	82	71	59
		7 to 20	Array Interior	108	98	88	105	94	85	101	91	82	98	88	79	95	85	75	92	82	72	89	80	69	
			Array Edge	94	85	75	91	82	71	88	78	67	85	75	64	82	71	61	79	68	58	76	65	56	
		20 to 27	Array Interior	112	101	94	112	97	91	112	93	88	108	90	85	105	87	82	101	85	79	98	82	76	
			Array Edge	105	87	82	101	84	78	97	81	74	94	77	70	91	74	67	88	70	64	85	67	61	
		27 to 45	Array Interior	113	109	100	108	104	96	104	101	93	101	97	90	98	94	87	95	91	84	92	88	82	
			Array Edge	97	94	87	94	90	84	90	87	81	87	84	77	85	82	74	82	79	70	80	75	67	
		45 to 90	Array Interior	121	121	121	121	118	118	119	113	113	115	110	110	112	106	106	109	103	103	106	100	100	
			Array Edge	112	106	106	108	102	102	105	98	98	102	95	95	99	92	92	96	89	89	94	87	87	
		D	0 to 7	Array Interior	98	98	87	98	94	84	98	91	81	98	88	77	95	85	74	92	82	70	89	80	67
				Array Edge	94	85	73	91	82	69	87	78	66	85	74	63	82	71	60	79	68	57	76	65	54
	7 to 20		Array Interior	103	92	83	99	89	80	95	86	76	92	83	73	89	80	69	86	77	66	84	73	63	
			Array Edge	89	80	69	86	76	65	83	72	62	80	68	59	76	65	56	73	62	54	69	59	51	
20 to 27	Array Interior		113	95	89	110	91	85	106	88	82	102	85	80	99	82	76	95	80	73	93	76	69		
	Array Edge		98	82	76	95	79	72	91	75	68	88	71	65	85	68	62	83	65	59	80	62	56		
27 to 45	Array Interior		106	102	94	102	98	91	98	95	88	95	92	85	92	89	82	89	86	79	86	83	76		
	Array Edge		92	88	82	88	85	78	85	82	74	82	79	71	80	76	67	76	72	64	73	69	62		
45 to 90	Array Interior		120	115	115	116	111	111	113	107	107	110	103	103	107	100	100	104	97	97	101	94	94		
	Array Edge		106	100	100	103	96	96	100	93	93	97	90	90	94	87	87	91	84	84	89	82	82		
25 psf	B		0 to 7	Array Interior	98	98	98	98	98	98	98	98	97	98	98	93	98	98	90	98	98	87	98	95	85
				Array Edge	98	98	90	98	98	87	98	94	84	98	91	81	98	88	78	95	85	74	92	83	71
		7 to 20	Array Interior	105	105	100	105	105	96	105	103	93	105	99	89	105	96	86	103	93	84	100	90	81	
			Array Edge	105	96	86	103	92	83	99	89	80	95	86	76	92	83	73	89	80	70	87	77	67	
		20 to 27	Array Interior	109	109	107	109	109	102	109	105	99	109	102	95	109	98	92	109	95	89	109	92	87</	

Maximum Rail Spans (Inches)			SMR100 Rail Flush-Mount on 0 to 30 Foot Roof -- ASCE 7-22 -- 82" x 42" (L)																					
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed-->	130 mph			140 mph			150 mph			160 mph			170 mph			180 mph			190 mph		
			Roof Zone-->	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
15 psf	B	0 to 7	Array Interior	101	90	80	95	86	74	91	81	69	87	77	65	83	72	61	80	68	57	75	64	54
			Array Edge	87	77	65	82	72	60	78	67	56	73	62	53	68	59	49	64	55	47	61	52	44
		7 to 20	Array Interior	95	85	76	90	81	70	85	76	65	82	71	61	78	66	57	73	63	54	69	59	51
			Array Edge	82	71	61	77	66	57	72	61	53	67	57	49	63	54	46	59	51	44	56	48	41
		20 to 27	Array Interior	105	87	82	99	83	77	95	79	72	90	74	67	87	69	63	83	65	59	80	62	56
			Array Edge	91	74	67	86	68	62	82	64	58	78	60	54	73	56	51	69	53	48	65	50	45
		27 to 45	Array Interior	98	94	87	93	89	83	88	85	78	84	81	73	81	77	69	77	73	65	73	69	61
			Array Edge	85	82	74	80	77	68	75	71	64	70	67	59	66	63	56	62	59	53	59	56	50
		45 to 90	Array Interior	112	106	106	107	101	101	103	96	96	99	92	92	95	88	88	92	85	85	89	81	81
			Array Edge	99	92	92	95	87	87	91	83	83	87	80	80	83	75	75	80	71	71	76	67	67
	C	0 to 7	Array Interior	89	80	67	84	74	62	80	69	58	76	65	54	71	61	51	67	57	48	63	54	46
			Array Edge	76	65	55	70	60	51	65	56	47	61	52	44	57	49	42	54	46	39	51	44	37
		7 to 20	Array Interior	84	74	63	80	68	59	74	63	55	69	59	51	65	56	48	61	53	45	58	50	43
			Array Edge	70	60	51	65	55	48	60	51	44	56	48	42	53	45	39	50	43	37	47	40	35
		20 to 27	Array Interior	93	77	70	88	71	65	84	66	60	80	62	56	76	58	53	71	55	50	67	52	47
			Array Edge	81	62	56	75	57	52	70	54	49	65	50	46	61	47	43	58	44	40	55	42	38
		27 to 45	Array Interior	87	84	76	82	79	71	78	74	66	73	69	62	69	65	58	65	61	55	61	58	52
			Array Edge	73	69	62	68	64	57	63	60	53	59	56	50	56	53	47	52	50	44	50	47	42
		45 to 90	Array Interior	101	94	94	97	90	90	93	85	85	89	82	82	85	78	78	82	73	73	78	69	69
			Array Edge	89	82	82	85	77	77	81	72	72	76	67	67	71	63	63	67	60	60	64	56	56
	D	0 to 7	Array Interior	84	73	62	80	68	57	74	63	53	69	59	50	65	56	47	61	52	44	58	50	42
			Array Edge	70	59	50	64	55	46	60	51	43	56	48	41	53	45	38	50	43	36	47	40	34
		7 to 20	Array Interior	79	67	58	73	62	54	68	58	50	64	54	47	60	51	44	56	48	42	53	46	39
			Array Edge	64	55	47	59	51	44	55	47	41	52	44	38	48	42	36	46	39	34	43	37	32
20 to 27		Array Interior	87	70	64	83	65	59	79	60	55	74	57	52	69	53	48	65	50	46	62	47	43	
		Array Edge	74	57	52	69	53	48	64	49	45	60	46	42	56	43	39	53	41	37	50	39	35	
27 to 45		Array Interior	82	78	70	77	73	65	71	68	60	67	63	56	63	60	53	59	56	50	56	53	47	
		Array Edge	67	64	57	62	59	53	58	55	49	54	51	46	51	48	43	48	46	41	46	43	39	
45 to 90		Array Interior	96	89	89	92	84	84	88	81	81	84	76	76	80	71	71	76	67	67	72	64	64	
		Array Edge	84	76	76	80	71	71	74	66	66	70	62	62	65	58	58	62	55	55	58	52	52	
20 psf	B	0 to 7	Array Interior	98	90	80	95	86	74	91	81	69	87	77	65	83	72	61	80	68	57	75	64	54
			Array Edge	87	77	65	82	72	60	78	67	56	73	62	53	68	59	49	64	55	47	61	52	44
		7 to 20	Array Interior	95	85	76	90	81	70	85	76	65	82	71	61	78	66	57	73	63	54	69	59	51
			Array Edge	82	71	61	77	66	57	72	61	53	67	57	49	63	54	46	59	51	44	56	48	41
		20 to 27	Array Interior	105	87	82	99	83	77	95	79	72	90	74	67	87	69	63	83	65	59	80	62	56
			Array Edge	91	74	67	86	68	62	82	64	58	78	60	54	73	56	51	69	53	48	65	50	45
		27 to 45	Array Interior	98	94	87	93	89	83	88	85	78	84	81	73	81	77	69	77	73	65	73	69	61
			Array Edge	85	82	74	80	77	68	75	71	64	70	67	59	66	63	56	62	59	53	59	56	50
		45 to 90	Array Interior	112	106	106	107	101	101	103	96	96	99	92	92	95	88	88	92	85	85	89	81	81
			Array Edge	99	92	92	95	87	87	91	83	83	87	80	80	83	75	75	80	71	71	76	67	67
	C	0 to 7	Array Interior	89	80	67	84	74	62	80	69	58	76	65	54	71	61	51	67	57	48	63	54	46
			Array Edge	76	65	55	70	60	51	65	56	47	61	52	44	57	49	42	54	46	39	51	44	37
		7 to 20	Array Interior	84	74	63	80	68	59	74	63	55	69	59	51	65	56	48	61	53	45	58	50	43
			Array Edge	70	60	51	65	55	48	60	51	44	56	48	42	53	45	39	50	43	37	47	40	35
		20 to 27	Array Interior	93	77	70	88	71	65	84	66	60	80	62	56	76	58	53	71	55	50	67	52	47
			Array Edge	81	62	56	75	57	52	70	54	49	65	50	46	61	47	43	58	44	40	55	42	38
		27 to 45	Array Interior	87	84	76	82	79	71	78	74	66	73	69	62	69	65	58	65	61	55	61	58	52
			Array Edge	73	69	62	68	64	57	63	60	53	59	56	50	56	53	47	52	50	44	50	47	42
		45 to 90	Array Interior	101	94	94	97	90	90	93	85	85	89	82	82	85	78	78	82	73	73	78	69	69
			Array Edge	89	82	82	85	77	77	81	72	72	76	67	67	71	63	63	67	60	60	64	56	56
	D	0 to 7	Array Interior	84	73	62	80	68	57	74	63	53	69	59	50	65	56	47	61	52	44	58	50	42
			Array Edge	70	59	50	64	55	46	60	51	43	56	48	41	53	45	38	50	43	36	47	40	34
		7 to 20	Array Interior	79	67	58	73	62	54	68	58	50	64	54	47	60	51	44	56	48	42	53	46	39
			Array Edge	64	55	47	59	51	44	55	47	41	52	44	38	48	42	36	46	39	34	43	37	32
20 to 27		Array Interior	87	70	64	83	65	59	79	60	55	74	57	52	69	53	48	65	50	46	62	47	43	
		Array Edge	74	57	52	69	53	48	64	49	45	60	46	42	56	43	39	53	41	37	50	39	35	
27 to 45		Array Interior	82	78	70	77	73	65	71	68	60	67	63	56	63	60	53	59	56	50	56	53	47	
		Array Edge	67	64	57	62	59	53	58	55	49	54	51	46	51	48	43	48	46	41	46	43	39	
45 to 90		Array Interior	96	89	89	92	84	84	88	81	81	84	76	76	80	71	71	76	67	67	72	64	64	
		Array Edge	84	76	76	80	71	71	74	66	66	70	62	62	65	58	58	62	55	55	58	52	52	
25 psf	B	0 to 7	Array Interior	98	90	80	95	86	74	91	81	69	87	77	65	83	72	61	80	68	57	75	64	54
			Array Edge	87	77	65	82	72	60	78	67	56	73	62	53	68	59	49	64	55	47	61	52	44
		7 to 20	Array Interior	95	85	76	90	81	70	85	76	65	82	71	61	78	66	57	73	63	54	69	59	51
			Array Edge	82	71	61	77	66	57	72	61	53	67	57	49	63	54	46	59	51	44	56	48	41
		20 to 27	Array Interior	105	87	82	99	83	77	95	79	72	90	74	67	87	69	63	83	65	59	80	62	56
			Array Edge	91	74	67	86	68	62	82	64	58	78	60	54	73	56	51	69	53	48	65	50	45
		27 to 45	Array Interior	98	94	87	93	89	83	88	85	78	84	81	73	81	77	69	77	73	65	73	69	61
			Array Edge	85																				

Maximum Rail Spans (Inches)			SMR100 Rail Flush-Mount on 0 to 30 Foot Roof -- ASCE 7-22 -- 82" x 42" (L)																					
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed-->	90 mph			95 mph			100 mph			105 mph			110 mph			115 mph			120 mph		
			Roof Zone-->	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
30 psf	B	0 to 7	Array Interior	97	97	97	97	97	97	97	97	97	97	97	93	97	97	90	97	97	87	97	95	85
			Array Edge	97	97	90	97	97	87	97	94	84	97	91	81	97	88	78	95	85	74	92	83	71
		7 to 20	Array Interior	103	103	100	103	103	96	103	103	93	103	99	89	103	96	86	103	93	84	100	90	81
			Array Edge	103	96	86	103	92	83	99	89	80	95	86	76	92	83	73	89	80	70	87	77	67
		20 to 27	Array Interior	107	107	107	107	107	102	107	105	99	107	102	95	107	98	92	107	95	89	107	92	87
			Array Edge	107	98	92	107	94	89	107	91	85	106	88	83	102	85	80	99	83	76	96	80	73
		27 to 45	Array Interior	119	119	113	119	118	109	118	114	105	114	110	101	110	106	98	107	103	95	103	100	92
			Array Edge	110	106	98	106	102	94	102	98	91	98	95	88	95	92	85	92	89	82	90	86	80
		45 to 90	Array Interior	121	121	121	121	121	121	121	121	121	121	121	121	121	119	119	121	116	116	118	112	112
			Array Edge	121	119	119	120	115	115	116	111	111	113	107	107	110	103	103	107	100	100	104	97	97
	C	0 to 7	Array Interior	97	97	92	97	97	89	97	96	86	97	93	83	97	90	80	97	87	77	94	85	73
			Array Edge	97	90	80	96	87	76	93	83	72	90	81	68	87	77	65	84	74	62	82	71	59
		7 to 20	Array Interior	103	98	88	103	94	85	101	91	82	98	88	79	95	85	75	92	82	72	89	80	69
			Array Edge	94	85	75	91	82	71	88	78	67	85	75	64	82	71	61	79	68	58	76	65	56
		20 to 27	Array Interior	107	101	94	107	97	91	107	93	88	107	90	85	105	87	82	101	85	79	98	82	76
			Array Edge	105	87	82	101	84	78	97	81	74	94	77	70	91	74	67	88	70	64	85	67	61
		27 to 45	Array Interior	113	109	100	108	104	96	104	101	93	101	97	90	98	94	87	95	91	84	92	88	82
			Array Edge	97	94	87	94	90	84	90	87	81	87	84	77	85	82	74	82	79	70	80	75	67
		45 to 90	Array Interior	121	121	121	121	118	118	119	113	113	115	110	110	112	106	106	109	103	103	106	100	100
			Array Edge	112	106	106	108	102	102	105	98	98	102	95	95	99	92	92	96	89	89	94	87	87
	D	0 to 7	Array Interior	98	98	87	98	94	84	98	91	81	98	88	77	95	85	74	92	82	70	89	80	67
			Array Edge	94	85	73	91	82	69	87	78	66	85	74	63	82	71	60	79	68	57	76	65	54
		7 to 20	Array Interior	103	92	83	99	89	80	95	86	76	92	83	73	89	80	69	86	77	66	84	73	63
			Array Edge	89	80	69	86	76	65	83	72	62	80	68	59	76	65	56	73	62	54	69	59	51
20 to 27		Array Interior	108	95	89	108	91	85	106	88	82	102	85	80	99	82	76	95	80	73	93	76	69	
		Array Edge	98	82	76	95	79	72	91	75	68	88	71	65	85	68	62	83	65	59	80	62	56	
27 to 45		Array Interior	106	102	94	102	98	91	98	95	88	95	92	85	92	89	82	89	86	79	86	83	76	
		Array Edge	92	88	82	88	85	78	85	82	74	82	79	71	80	76	67	76	72	64	73	69	62	
45 to 90		Array Interior	120	115	115	116	111	111	113	107	107	110	103	103	107	100	100	104	97	97	101	94	94	
		Array Edge	106	100	100	103	96	96	100	93	93	97	90	90	94	87	87	91	84	84	89	82	82	
35 psf	B	0 to 7	Array Interior	94	94	94	94	94	94	94	94	94	94	94	93	94	94	90	94	94	87	94	94	85
			Array Edge	94	94	90	94	94	87	94	94	84	94	91	81	94	88	78	94	85	74	92	83	71
		7 to 20	Array Interior	100	100	100	100	100	96	100	100	93	100	99	89	100	96	86	100	93	84	100	90	81
			Array Edge	100	96	86	100	92	83	99	89	80	95	86	76	92	83	73	89	80	70	87	77	67
		20 to 27	Array Interior	104	104	104	104	104	102	104	104	99	104	102	95	104	98	92	104	95	89	104	92	87
			Array Edge	104	98	92	104	94	89	104	91	85	104	88	83	102	85	80	99	83	76	96	80	73
		27 to 45	Array Interior	115	115	113	115	115	109	115	114	105	114	110	101	110	106	98	107	103	95	103	100	92
			Array Edge	110	106	98	106	102	94	102	98	91	98	95	88	95	92	85	92	89	82	90	86	80
		45 to 90	Array Interior	121	121	121	121	121	121	121	121	121	121	121	121	121	119	119	121	116	116	118	112	112
			Array Edge	121	119	119	120	115	115	116	111	111	113	107	107	110	103	103	107	100	100	104	97	97
	C	0 to 7	Array Interior	94	94	92	94	94	89	94	94	86	94	93	83	94	90	80	94	87	77	94	85	73
			Array Edge	94	90	80	94	87	76	93	83	72	90	81	68	87	77	65	84	74	62	82	71	59
		7 to 20	Array Interior	100	98	88	100	94	85	100	91	82	98	88	79	95	85	75	92	82	72	89	80	69
			Array Edge	94	85	75	91	82	71	88	78	67	85	75	64	82	71	61	79	68	58	76	65	56
		20 to 27	Array Interior	104	101	94	104	97	91	104	93	88	104	90	85	104	87	82	101	85	79	98	82	76
			Array Edge	104	87	82	101	84	78	97	81	74	94	77	70	91	74	67	88	70	64	85	67	61
		27 to 45	Array Interior	113	109	100	108	104	96	104	101	93	101	97	90	98	94	87	95	91	84	92	88	82
			Array Edge	97	94	87	94	90	84	90	87	81	87	84	77	85	82	74	82	79	70	80	75	67
		45 to 90	Array Interior	121	121	121	121	118	118	119	113	113	115	110	110	112	106	106	109	103	103	106	100	100
			Array Edge	112	106	106	108	102	102	105	98	98	102	95	95	99	92	92	96	89	89	94	87	87
	D	0 to 7	Array Interior	96	96	87	96	94	84	96	91	81	96	88	77	95	85	74	92	82	70	89	80	67
			Array Edge	94	85	73	91	82	69	87	78	66	85	74	63	82	71	60	79	68	57	76	65	54
		7 to 20	Array Interior	102	92	83	99	89	80	95	86	76	92	83	73	89	80	69	86	77	66	84	73	63
			Array Edge	89	80	69	86	76	65	83	72	62	80	68	59	76	65	56	73	62	54	69	59	51
20 to 27		Array Interior	106	95	89	106	91	85	106	88	82	102	85	80	99	82	76	95	80	73	93	76	69	
		Array Edge	98	82	76	95	79	72	91	75	68	88	71	65	85	68	62	83	65	59	80	62	56	
27 to 45		Array Interior	106	102	94	102	98	91	98	95	88	95	92	85	92	89	82	89	86	79	86	83	76	
		Array Edge	92	88	82	88	85	78	85	82	74	82	79	71	80	76	67	76	72	64	73	69	62	
45 to 90		Array Interior	120	115	115	116	111	111	113	107	107	110	103	103	107	100	100	104	97	97	101	94	94	
		Array Edge	106	100	100	103	96	96	100	93	93	97	90	90	94	87	87	91	84	84	89	82	82	
40 psf	B	0 to 7	Array Interior	92	92	92	92	92	92	92	92	92	92	92	92	92	92	90	92	92	87	92	92	85
			Array Edge	92	92	90	92	92	87	92	92	84	92	91	81	92	88	78	92	85	74	92	83	71
		7 to 20	Array Interior	98	98	98	98	98	96	98	98	93	98	98	89	98	96	86	98	93	84	98	90	81
			Array Edge	98	96	86	98	92	83	98	89	80	95	86	76	92	83	73	89	80	70	87	77	67
		20 to 27	Array Interior	102	102	102	102	102	102	102	102	99	102	102	95	102	98	92	102	95	89	102	92	87
			Array Edge	102	98	92																		

Maximum Rail Spans (Inches)			SMR100 Rail Flush-Mount on 0 to 30 Foot Roof -- ASCE 7-22 -- 82" x 42" (L)																					
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed-->	130 mph			140 mph			150 mph			160 mph			170 mph			180 mph			190 mph		
			Roof Zone-->	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
30 psf	B	0 to 7	Array Interior	97	90	80	95	86	74	91	81	69	87	77	65	83	72	61	80	68	57	75	64	54
			Array Edge	87	77	65	82	72	60	78	67	56	73	62	53	68	59	49	64	55	47	61	52	44
		7 to 20	Array Interior	95	85	76	90	81	70	85	76	65	82	71	61	78	66	57	73	63	54	69	59	51
			Array Edge	82	71	61	77	66	57	72	61	53	67	57	49	63	54	46	59	51	44	56	48	41
		20 to 27	Array Interior	105	87	82	99	83	77	95	79	72	90	74	67	87	69	63	83	65	59	80	62	56
			Array Edge	91	74	67	86	68	62	82	64	58	78	60	54	73	56	51	69	53	48	65	50	45
		27 to 45	Array Interior	98	94	87	93	89	83	88	85	78	84	81	73	81	77	69	77	73	65	73	69	61
			Array Edge	85	82	74	80	77	68	75	71	64	70	67	59	66	63	56	62	59	53	59	56	50
		45 to 90	Array Interior	112	106	106	107	101	101	103	96	96	99	92	92	95	88	88	92	85	85	89	81	81
			Array Edge	99	92	92	95	87	87	91	83	83	87	80	80	83	75	75	80	71	71	76	67	67
	C	0 to 7	Array Interior	89	80	67	84	74	62	80	69	58	76	65	54	71	61	51	67	57	48	63	54	46
			Array Edge	76	65	55	70	60	51	65	56	47	61	52	44	57	49	42	54	46	39	51	44	37
		7 to 20	Array Interior	84	74	63	80	68	59	74	63	55	69	59	51	65	56	48	61	53	45	58	50	43
			Array Edge	70	60	51	65	55	48	60	51	44	56	48	42	53	45	39	50	43	37	47	40	35
		20 to 27	Array Interior	93	77	70	88	71	65	84	66	60	80	62	56	76	58	53	71	55	50	67	52	47
			Array Edge	81	62	56	75	57	52	70	54	49	65	50	46	61	47	43	58	44	40	55	42	38
		27 to 45	Array Interior	87	84	76	82	79	71	78	74	66	73	69	62	69	65	58	65	61	55	61	58	52
			Array Edge	73	69	62	68	64	57	63	60	53	59	56	50	56	53	47	52	50	44	50	47	42
		45 to 90	Array Interior	101	94	94	97	90	90	93	85	85	89	82	82	85	78	78	82	73	73	78	69	69
			Array Edge	89	82	82	85	77	77	81	72	72	76	67	67	71	63	63	67	60	60	64	56	56
	D	0 to 7	Array Interior	84	73	62	80	68	57	74	63	53	69	59	50	65	56	47	61	52	44	58	50	42
			Array Edge	70	59	50	64	55	46	60	51	43	56	48	41	53	45	38	50	43	36	47	40	34
		7 to 20	Array Interior	79	67	58	73	62	54	68	58	50	64	54	47	60	51	44	56	48	42	53	46	39
			Array Edge	64	55	47	59	51	44	55	47	41	52	44	38	48	42	36	46	39	34	43	37	32
20 to 27		Array Interior	87	70	64	83	65	59	79	60	55	74	57	52	69	53	48	65	50	46	62	47	43	
		Array Edge	74	57	52	69	53	48	64	49	45	60	46	42	56	43	39	53	41	37	50	39	35	
27 to 45		Array Interior	82	78	70	77	73	65	71	68	60	67	63	56	63	60	53	59	56	50	56	53	47	
		Array Edge	67	64	57	62	59	53	58	55	49	54	51	46	51	48	43	48	46	41	46	43	39	
45 to 90		Array Interior	96	89	89	92	84	84	88	81	81	84	76	76	80	71	71	76	67	67	72	64	64	
		Array Edge	84	76	76	80	71	71	74	66	66	70	62	62	65	58	58	62	55	55	58	52	52	
35 psf	B	0 to 7	Array Interior	94	90	80	94	86	74	91	81	69	87	77	65	83	72	61	80	68	57	75	64	54
			Array Edge	87	77	65	82	72	60	78	67	56	73	62	53	68	59	49	64	55	47	61	52	44
		7 to 20	Array Interior	95	85	76	90	81	70	85	76	65	82	71	61	78	66	57	73	63	54	69	59	51
			Array Edge	82	71	61	77	66	57	72	61	53	67	57	49	63	54	46	59	51	44	56	48	41
		20 to 27	Array Interior	104	87	82	99	83	77	95	79	72	90	74	67	87	69	63	83	65	59	80	62	56
			Array Edge	91	74	67	86	68	62	82	64	58	78	60	54	73	56	51	69	53	48	65	50	45
		27 to 45	Array Interior	98	94	87	93	89	83	88	85	78	84	81	73	81	77	69	77	73	65	73	69	61
			Array Edge	85	82	74	80	77	68	75	71	64	70	67	59	66	63	56	62	59	53	59	56	50
		45 to 90	Array Interior	112	106	106	107	101	101	103	96	96	99	92	92	95	88	88	92	85	85	89	81	81
			Array Edge	99	92	92	95	87	87	91	83	83	87	80	80	83	75	75	80	71	71	76	67	67
	C	0 to 7	Array Interior	89	80	67	84	74	62	80	69	58	76	65	54	71	61	51	67	57	48	63	54	46
			Array Edge	76	65	55	70	60	51	65	56	47	61	52	44	57	49	42	54	46	39	51	44	37
		7 to 20	Array Interior	84	74	63	80	68	59	74	63	55	69	59	51	65	56	48	61	53	45	58	50	43
			Array Edge	70	60	51	65	55	48	60	51	44	56	48	42	53	45	39	50	43	37	47	40	35
		20 to 27	Array Interior	93	77	70	88	71	65	84	66	60	80	62	56	76	58	53	71	55	50	67	52	47
			Array Edge	81	62	56	75	57	52	70	54	49	65	50	46	61	47	43	58	44	40	55	42	38
		27 to 45	Array Interior	87	84	76	82	79	71	78	74	66	73	69	62	69	65	58	65	61	55	61	58	52
			Array Edge	73	69	62	68	64	57	63	60	53	59	56	50	56	53	47	52	50	44	50	47	42
		45 to 90	Array Interior	101	94	94	97	90	90	93	85	85	89	82	82	85	78	78	82	73	73	78	69	69
			Array Edge	89	82	82	85	77	77	81	72	72	76	67	67	71	63	63	67	60	60	64	56	56
	D	0 to 7	Array Interior	84	73	62	80	68	57	74	63	53	69	59	50	65	56	47	61	52	44	58	50	42
			Array Edge	70	59	50	64	55	46	60	51	43	56	48	41	53	45	38	50	43	36	47	40	34
		7 to 20	Array Interior	79	67	58	73	62	54	68	58	50	64	54	47	60	51	44	56	48	42	53	46	39
			Array Edge	64	55	47	59	51	44	55	47	41	52	44	38	48	42	36	46	39	34	43	37	32
20 to 27		Array Interior	87	70	64	83	65	59	79	60	55	74	57	52	69	53	48	65	50	46	62	47	43	
		Array Edge	74	57	52	69	53	48	64	49	45	60	46	42	56	43	39	53	41	37	50	39	35	
27 to 45		Array Interior	82	78	70	77	73	65	71	68	60	67	63	56	63	60	53	59	56	50	56	53	47	
		Array Edge	67	64	57	62	59	53	58	55	49	54	51	46	51	48	43	48	46	41	46	43	39	
45 to 90		Array Interior	96	89	89	92	84	84	88	81	81	84	76	76	80	71	71	76	67	67	72	64	64	
		Array Edge	84	76	76	80	71	71	74	66	66	70	62	62	65	58	58	62	55	55	58	52	52	
40 psf	B	0 to 7	Array Interior	92	90	80	92	86	74	91	81	69	87	77	65	83	72	61	80	68	57	75	64	54
			Array Edge	87	77	65	82	72	60	78	67	56	73	62	53	68	59	49	64	55	47	61	52	44
		7 to 20	Array Interior	95	85	76	90	81	70	85	76	65	82	71	61	78	66	57	73	63	54	69	59	51
			Array Edge	82	71	61	77	66	57	72	61	53	67	57	49	63	54	46	59	51	44	56	48	41
		20 to 27	Array Interior	102	87	82	99	83	77	95	79	72	90	74	67	87	69	63	83	65	59	80	62	56
			Array Edge	91	74	67	86	68	62	82	64	58	78	60	54	73	56	51	69	53	48	65	50	45
		27 to 45	Array Interior	98	94	87	93	89	83	88	85	78	84	81	73	81	77	69	77	73	65	73	69	61
			Array Edge	85	8																			

Maximum Rail Spans (Inches)			SMR100 Rail Flush-Mount on 0 to 30 Foot Roof -- ASCE 7-22 -- 82" x 42" (L)																								
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed-->	90 mph			95 mph			100 mph			105 mph			110 mph			115 mph			120 mph					
			Roof Zone-->	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3			
45 psf	B	0 to 7	Array Interior	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	85
			Array Edge	89	89	89	89	89	87	89	89	84	89	89	81	89	88	78	89	85	74	89	83	71	89	83	71
		7 to 20	Array Interior	96	96	96	96	96	96	96	96	93	96	96	89	96	96	86	96	93	84	96	90	81	96	90	87
			Array Edge	96	96	86	96	92	83	96	89	80	95	86	76	92	83	73	89	80	70	87	77	67	87	77	67
		20 to 27	Array Interior	100	100	100	100	100	100	100	100	99	100	100	95	100	98	92	100	95	89	100	92	87	100	92	87
			Array Edge	100	98	92	100	94	89	100	91	85	100	88	83	100	85	80	99	83	76	96	80	73	96	80	73
		27 to 45	Array Interior	109	109	109	109	109	109	109	109	105	109	109	101	109	106	98	107	103	95	107	103	95	103	100	92
			Array Edge	109	106	98	106	102	94	102	98	91	98	95	88	95	92	85	92	89	82	90	86	80	90	86	80
		45 to 90	Array Interior	121	121	121	121	121	121	121	121	121	121	121	121	121	119	119	121	116	116	118	112	112	118	112	112
			Array Edge	121	119	119	120	115	115	116	111	111	113	107	107	110	103	103	107	100	100	104	97	97	104	97	97
	C	0 to 7	Array Interior	89	89	89	89	89	89	89	89	86	89	89	83	89	89	80	89	87	77	89	85	73	89	85	73
			Array Edge	89	89	80	89	87	76	89	83	72	89	81	68	87	77	65	84	74	62	82	71	59	82	71	59
		7 to 20	Array Interior	96	96	88	96	94	85	96	91	82	96	88	79	95	85	75	92	82	72	89	80	69	86	76	65
			Array Edge	94	85	75	91	82	71	88	78	67	85	75	64	82	71	61	79	68	58	76	65	56	76	65	56
		20 to 27	Array Interior	100	100	94	100	97	91	100	93	88	100	90	85	100	87	82	100	85	79	98	82	76	98	82	76
			Array Edge	100	87	82	100	84	78	97	81	74	94	77	70	91	74	67	88	70	64	85	67	61	85	67	61
		27 to 45	Array Interior	109	109	100	108	104	96	104	101	93	101	97	90	98	94	87	95	91	84	92	88	82	92	88	82
			Array Edge	97	94	87	94	90	84	90	87	81	87	84	77	85	82	74	82	79	70	80	75	67	80	75	67
		45 to 90	Array Interior	121	121	121	121	118	118	119	113	113	115	110	110	112	106	106	109	103	103	106	100	100	106	100	100
			Array Edge	112	106	106	108	102	102	105	98	98	102	95	95	99	92	92	96	89	89	94	87	87	94	87	87
	D	0 to 7	Array Interior	92	92	87	92	92	84	92	91	81	92	88	77	92	85	74	92	82	70	89	80	67	89	80	67
			Array Edge	92	85	73	91	82	69	87	78	66	85	74	63	82	71	60	79	68	57	76	65	54	76	65	54
		7 to 20	Array Interior	98	92	83	98	89	80	95	86	76	92	83	73	89	80	69	86	77	66	84	73	63	84	73	63
			Array Edge	89	80	69	86	76	65	83	72	62	80	68	59	76	65	56	73	62	54	69	59	51	69	59	51
20 to 27		Array Interior	102	95	89	102	91	85	102	88	82	102	85	80	99	82	76	95	80	73	93	76	69	93	76	69	
		Array Edge	98	82	76	95	79	72	91	75	68	88	71	65	85	68	62	83	65	59	80	62	56	80	62	56	
27 to 45		Array Interior	106	102	94	102	98	91	98	95	88	95	92	85	92	89	82	89	86	79	86	83	76	86	83	76	
		Array Edge	92	88	82	88	85	78	85	82	74	82	79	71	80	76	67	76	72	64	73	69	62	73	69	62	
45 to 90		Array Interior	120	115	115	116	111	111	113	107	107	110	103	103	107	100	100	104	97	97	101	94	94	101	94	94	
		Array Edge	106	100	100	103	96	96	100	93	93	97	90	90	94	87	87	91	84	84	89	82	82	89	82	82	
50 psf	B	0 to 7	Array Interior	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	85
			Array Edge	87	87	87	87	87	87	87	87	84	87	87	81	87	87	78	87	85	74	87	83	71	87	83	71
		7 to 20	Array Interior	94	94	94	94	94	94	94	94	93	94	94	89	94	94	86	94	93	84	94	90	81	94	90	81
			Array Edge	94	94	86	94	92	83	94	89	80	94	86	76	92	83	73	89	80	70	87	77	67	87	77	67
		20 to 27	Array Interior	99	99	99	99	99	99	99	99	99	99	99	95	99	98	92	99	95	89	99	92	87	99	92	87
			Array Edge	99	98	92	99	94	89	99	91	85	99	88	83	99	85	80	98	83	76	96	80	73	96	80	73
		27 to 45	Array Interior	106	106	106	106	106	106	106	106	105	106	106	101	106	106	98	106	103	95	103	100	92	103	100	92
			Array Edge	106	106	98	106	102	94	102	98	91	98	95	88	95	92	85	92	89	82	90	86	80	90	86	80
		45 to 90	Array Interior	121	121	121	121	121	121	121	121	121	121	121	121	121	119	119	121	116	116	118	112	112	118	112	112
			Array Edge	121	119	119	120	115	115	116	111	111	113	107	107	110	103	103	107	100	100	104	97	97	104	97	97
	C	0 to 7	Array Interior	87	87	87	87	87	87	87	87	86	87	87	83	87	87	80	87	87	77	87	85	73	87	85	73
			Array Edge	87	87	80	87	87	76	87	83	72	87	81	68	87	77	65	84	74	62	82	71	59	82	71	59
		7 to 20	Array Interior	94	94	88	94	94	85	94	91	82	94	88	79	94	85	75	92	82	72	89	80	69	86	76	65
			Array Edge	94	85	75	91	82	71	88	78	67	85	75	64	82	71	61	79	68	58	76	65	56	76	65	56
		20 to 27	Array Interior	99	99	94	99	97	91	99	93	88	99	90	85	99	87	82	99	85	79	98	82	76	98	82	76
			Array Edge	99	87	82	99	84	78	97	81	74	94	77	70	91	74	67	88	70	64	85	67	61	85	67	61
		27 to 45	Array Interior	106	106	100	106	104	96	104	101	93	101	97	90	98	94	87	95	91	84	92	88	82	92	88	82
			Array Edge	97	94	87	94	90	84	90	87	81	87	84	77	85	82	74	82	79	70	80	75	67	80	75	67
		45 to 90	Array Interior	121	121	121	121	118	118	119	113	113	115	110	110	112	106	106	109	103	103	106	100	100	106	100	100
			Array Edge	112	106	106	108	102	102	105	98	98	102	95	95	99	92	92	96	89	89	94	87	87	94	87	87
	D	0 to 7	Array Interior	90	90	87	90	90	84	90	88	77	90	88	77	90	85	74	90	82	70	89	80	67	89	80	67
			Array Edge	90	85	73	90	82	69	87	78	66	85	74	63	82	71	60	79	68	57	76	65	54	76	65	54
		7 to 20	Array Interior	96	92	83	96	89	80	95	86	76	92	83	73	89	80	69	86	77	66	84	73	63	84	73	63
			Array Edge	89	80	69	86	76	65	83	72	62	80	68	59	76	65	56	73	62	54	69	59	51	69	59	51
20 to 27		Array Interior	101	95	89	101	91	85	101	88	82	101	85	80	99	82	76	95	80	73	93	76	69	93	76	69	
		Array Edge	98	82	76	95	79	72	91	75	68	88	71	65	85	68	62	83	65	59	80	62	56	80	62	56	
27 to 45		Array Interior	106	102	94	102	98	91	98	95	88	95	92	85	92	89	82	89	86	79	86	83	76	86	83	76	
		Array Edge	92	88	82	88	85	78	85	82	74	82	79	71	80	76	67	76	72	64	73	69	62	73	69	62	
45 to 90		Array Interior	120	115	115	116	111	111	113	107	107																

Maximum Rail Spans (Inches)			SMR100 Rail Flush-Mount on 0 to 30 Foot Roof -- ASCE 7-22 -- 82" x 42" (L)																						
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed-->	130 mph			140 mph			150 mph			160 mph			170 mph			180 mph			190 mph			
			Roof Zone-->	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
45 psf	B	0 to 7	Array Interior	89	89	80	89	86	74	89	81	69	87	77	65	83	72	61	80	68	57	75	64	54	
			Array Edge	87	77	65	82	72	60	78	67	56	73	62	53	68	59	49	64	55	47	61	52	44	
		7 to 20	Array Interior	95	85	76	90	81	70	85	76	65	82	71	61	78	66	57	73	63	54	69	59	51	
			Array Edge	82	71	61	77	66	57	72	61	53	67	57	49	63	54	46	59	51	44	56	48	41	
		20 to 27	Array Interior	100	87	82	99	83	77	95	79	72	90	74	67	87	69	63	83	65	59	80	62	56	
			Array Edge	91	74	67	86	68	62	82	64	58	78	60	54	73	56	51	69	53	48	65	50	45	
		27 to 45	Array Interior	98	94	87	93	89	83	88	85	78	84	81	73	81	77	69	77	73	65	73	69	61	
			Array Edge	85	82	74	80	77	68	75	71	64	70	67	59	66	63	56	62	59	53	59	56	50	
		45 to 90	Array Interior	112	106	106	107	101	101	103	96	96	99	92	92	95	88	88	92	85	85	89	81	81	
			Array Edge	99	92	92	95	87	87	91	83	83	87	80	80	83	75	75	80	71	71	76	67	67	
		C	0 to 7	Array Interior	89	80	67	84	74	62	80	69	58	76	65	54	71	61	51	67	57	48	63	54	46
				Array Edge	76	65	55	70	60	51	65	56	47	61	52	44	57	49	42	54	46	39	51	44	37
	7 to 20		Array Interior	84	74	63	80	68	59	74	63	55	69	59	51	65	56	48	61	53	45	58	50	43	
			Array Edge	70	60	51	65	55	48	60	51	44	56	48	42	53	45	39	50	43	37	47	40	35	
	20 to 27		Array Interior	93	77	70	88	71	65	84	66	60	80	62	56	76	58	53	71	55	50	67	52	47	
			Array Edge	81	62	56	75	57	52	70	54	49	65	50	46	61	47	43	58	44	40	55	42	38	
	27 to 45		Array Interior	87	84	76	82	79	71	78	74	66	73	69	62	69	65	58	65	61	55	61	58	52	
			Array Edge	73	69	62	68	64	57	63	60	53	59	56	50	56	53	47	52	50	44	50	47	42	
	45 to 90		Array Interior	101	94	94	97	90	90	93	85	85	89	82	82	85	78	78	82	73	73	78	69	69	
			Array Edge	89	82	82	85	77	77	81	72	72	76	67	67	71	63	63	67	60	60	64	56	56	
	D		0 to 7	Array Interior	84	73	62	80	68	57	74	63	53	69	59	50	65	56	47	61	52	44	58	50	42
				Array Edge	70	59	50	64	55	46	60	51	43	56	48	41	53	45	38	50	43	36	47	40	34
		7 to 20	Array Interior	79	67	58	73	62	54	68	58	50	64	54	47	60	51	44	56	48	42	53	46	39	
			Array Edge	64	55	47	59	51	44	55	47	41	52	44	38	48	42	36	46	39	34	43	37	32	
20 to 27		Array Interior	87	70	64	83	65	59	79	60	55	74	57	52	69	53	48	65	50	46	62	47	43		
		Array Edge	74	57	52	69	53	48	64	49	45	60	46	42	56	43	39	53	41	37	50	39	35		
27 to 45		Array Interior	82	78	70	77	73	65	71	68	60	67	63	56	63	60	53	59	56	50	56	53	47		
		Array Edge	67	64	57	62	59	53	58	55	49	54	51	46	51	48	43	48	46	41	46	43	39		
45 to 90		Array Interior	96	89	89	92	84	84	88	81	81	84	76	76	80	71	71	76	67	67	72	64	64		
		Array Edge	84	76	76	80	71	71	74	66	66	70	62	62	65	58	58	62	55	55	58	52	52		
50 psf		B	0 to 7	Array Interior	87	87	80	87	86	74	87	81	69	87	77	65	83	72	61	80	68	57	75	64	54
				Array Edge	87	77	65	82	72	60	78	67	56	73	62	53	68	59	49	64	55	47	61	52	44
	7 to 20		Array Interior	94	85	76	90	81	70	85	76	65	82	71	61	78	66	57	73	63	54	69	59	51	
			Array Edge	82	71	61	77	66	57	72	61	53	67	57	49	63	54	46	59	51	44	56	48	41	
	20 to 27		Array Interior	99	87	82	98	83	77	95	79	72	90	74	67	87	69	63	83	65	59	80	62	56	
			Array Edge	91	74	67	86	68	62	82	64	58	78	60	54	73	56	51	69	53	48	65	50	45	
	27 to 45		Array Interior	98	94	87	93	89	83	88	85	78	84	81	73	81	77	69	77	73	65	73	69	61	
			Array Edge	85	82	74	80	77	68	75	71	64	70	67	59	66	63	56	62	59	53	59	56	50	
	45 to 90		Array Interior	112	106	106	107	101	101	103	96	96	99	92	92	95	88	88	92	85	85	89	81	81	
			Array Edge	99	92	92	95	87	87	91	83	83	87	80	80	83	75	75	80	71	71	76	67	67	
	C		0 to 7	Array Interior	87	80	67	84	74	62	80	69	58	76	65	54	71	61	51	67	57	48	63	54	46
				Array Edge	76	65	55	70	60	51	65	56	47	61	52	44	57	49	42	54	46	39	51	44	37
		7 to 20	Array Interior	84	74	63	80	68	59	74	63	55	69	59	51	65	56	48	61	53	45	58	50	43	
			Array Edge	70	60	51	65	55	48	60	51	44	56	48	42	53	45	39	50	43	37	47	40	35	
		20 to 27	Array Interior	93	77	70	88	71	65	84	66	60	80	62	56	76	58	53	71	55	50	67	52	47	
			Array Edge	81	62	56	75	57	52	70	54	49	65	50	46	61	47	43	58	44	40	55	42	38	
		27 to 45	Array Interior	87	84	76	82	79	71	78	74	66	73	69	62	69	65	58	65	61	55	61	58	52	
			Array Edge	73	69	62	68	64	57	63	60	53	59	56	50	56	53	47	52	50	44	50	47	42	
		45 to 90	Array Interior	101	94	94	97	90	90	93	85	85	89	82	82	85	78	78	82	73	73	78	69	69	
			Array Edge	89	82	82	85	77	77	81	72	72	76	67	67	71	63	63	67	60	60	64	56	56	
		D	0 to 7	Array Interior	84	73	62	80	68	57	74	63	53	69	59	50	65	56	47	61	52	44	58	50	42
				Array Edge	70	59	50	64	55	46	60	51	43	56	48	41	53	45	38	50	43	36	47	40	34
	7 to 20		Array Interior	79	67	58	73	62	54	68	58	50	64	54	47	60	51	44	56	48	42	53	46	39	
			Array Edge	64	55	47	59	51	44	55	47	41	52	44	38	48	42	36	46	39	34	43	37	32	
20 to 27	Array Interior		87	70	64	83	65	59	79	60	55	74	57	52	69	53	48	65	50	46	62	47	43		
	Array Edge		74	57	52	69	53	48	64	49	45	60	46	42	56	43	39	53	41	37	50	39	35		
27 to 45	Array Interior		82	78	70	77	73	65	71	68	60	67	63	56	63	60	53	59	56	50	56	53	47		
	Array Edge		67	64	57	62	59	53	58	55	49	54	51	46	51	48	43	48	46	41	46	43	39		
45 to 90	Array Interior		96	89	89	92	84	84	88	81	81	84	76	76	80	71	71	76	67	67	72	64	64		
	Array Edge		84	76	76	80	71	71	74	66	66	70	62	62	65	58	58	62	55	55	58	52	52		
60 psf	B		0 to 7	Array Interior	84	84	80	84	84	74	84	81	69	84	77	65	83	72	61	80	68	57	75	64	54
				Array Edge	84	77	65	82	72	60	78	67	56	73	62	53	68	59	49	64	55	47	61	52	44
		7 to 20	Array Interior	91	85	76	90	81	70	85	76	65	82	71	61	78	66	57	73	63	54	69	59	51	
			Array Edge	82	71	61	77	66	57	72	61	53	67	57	49	63	54	46	59	51	44	56	48	41	
		20 to 27	Array Interior	96	87	82	95	83	77	94	79	72	90	74	67	87	69	63	83	65	59	80	62	56	
			Array Edge	91	74	67	86	68	62	82	64	58	78	60	54	73	56	51	69	53	48	65	50	45	
		27 to 45	Array Interior	98	94	87	93	89	83	88	85	78	84	81	73	81	77	69	77	73	65	73	69	61	
			Array Edge	85	82</																				

Maximum Rail Spans (Inches)			SMR100 Rail Flush-Mount on 0 to 30 Foot Roof -- ASCE 7-22 -- 82" x 42" (L)																								
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed-->	90 mph			95 mph			100 mph			105 mph			110 mph			115 mph			120 mph					
			Roof Zone-->	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3			
70 psf	B	0 to 7	Array Interior	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
			Array Edge	80	80	80	80	80	80	80	80	80	80	80	80	80	80	78	80	80	74	80	80	71			
		7 to 20	Array Interior	88	88	88	88	88	88	88	88	88	88	88	88	88	88	86	88	88	84	88	88	81			
			Array Edge	88	88	86	88	88	83	88	88	80	88	86	76	88	83	73	87	80	70	87	77	67			
		20 to 27	Array Interior	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	89	91	91	87			
			Array Edge	91	91	91	91	91	89	91	91	85	91	88	83	91	85	80	91	83	76	91	80	73			
		27 to 45	Array Interior	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	98	95	98	98	92			
			Array Edge	98	98	98	98	98	94	98	98	91	98	95	88	98	92	85	92	89	82	90	86	80			
		45 to 90	Array Interior	120	120	120	120	120	120	120	120	120	120	120	120	120	119	119	120	116	116	118	112	112			
			Array Edge	120	119	119	120	115	115	116	111	111	113	107	107	110	103	103	107	100	100	104	97	97			
	C	0 to 7	Array Interior	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	77	80	80	73			
			Array Edge	80	80	80	80	80	76	80	80	72	80	80	68	80	77	65	80	74	62	80	71	59			
		7 to 20	Array Interior	88	88	88	88	88	85	88	88	82	88	88	79	88	85	75	88	82	72	87	80	69			
			Array Edge	88	85	75	88	82	71	87	78	67	85	75	64	82	71	61	79	68	58	76	65	56			
		20 to 27	Array Interior	91	91	91	91	91	91	91	91	88	91	90	85	91	87	82	91	85	79	91	82	76			
			Array Edge	91	87	82	91	84	78	91	81	74	91	77	70	90	74	67	88	70	64	85	67	61			
		27 to 45	Array Interior	98	98	98	98	98	96	98	98	93	98	97	90	98	94	87	95	91	84	92	88	82			
			Array Edge	97	94	87	94	90	84	90	87	81	87	84	77	85	82	74	82	79	70	80	75	67			
		45 to 90	Array Interior	120	120	120	120	118	118	119	113	113	115	110	110	112	106	106	109	103	103	106	100	100			
			Array Edge	112	106	106	108	102	102	105	98	98	102	95	95	99	92	92	96	89	89	94	87	87			
	D	0 to 7	Array Interior	83	83	83	83	83	83	83	83	81	83	83	77	83	83	74	83	82	70	83	80	67			
			Array Edge	83	83	73	83	82	69	83	78	66	83	74	63	82	71	60	79	68	57	76	65	54			
		7 to 20	Array Interior	90	90	83	90	89	80	90	86	76	90	83	73	89	80	69	86	77	66	84	73	63			
			Array Edge	89	80	69	86	76	65	83	72	62	80	68	59	76	65	56	73	62	54	69	59	51			
20 to 27		Array Interior	95	95	89	95	91	85	95	88	82	95	85	80	94	82	76	93	80	73	92	76	69				
		Array Edge	94	82	76	93	79	72	91	75	68	88	71	65	85	68	62	83	65	59	80	62	56				
27 to 45		Array Interior	101	101	94	101	98	91	98	95	88	95	92	85	92	89	82	89	86	79	86	83	76				
		Array Edge	92	88	82	88	85	78	85	82	74	82	79	71	80	76	67	76	67	64	73	69	62				
45 to 90		Array Interior	120	115	115	116	111	111	113	107	107	110	103	103	107	100	100	104	97	97	101	94	94				
		Array Edge	106	100	100	103	96	96	100	93	93	97	90	90	94	87	87	91	84	84	89	82	82				
80 psf	B	0 to 7	Array Interior	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77			
			Array Edge	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	74	77	77	71			
		7 to 20	Array Interior	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	84	85	85	81			
			Array Edge	85	85	85	85	85	83	85	85	80	85	85	76	85	83	73	85	80	70	84	77	67			
		20 to 27	Array Interior	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	87			
			Array Edge	88	88	88	88	88	88	88	88	85	88	88	83	88	85	80	88	83	76	88	80	73			
		27 to 45	Array Interior	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	92			
			Array Edge	94	94	94	94	94	94	94	94	91	94	94	88	94	92	85	92	89	82	90	86	80			
		45 to 90	Array Interior	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117	117	116	116	117	112	112			
			Array Edge	117	117	117	117	115	115	116	111	111	113	107	107	110	103	103	107	100	100	104	97	97			
	C	0 to 7	Array Interior	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	73			
			Array Edge	77	77	77	77	77	76	77	77	72	77	77	68	77	77	65	77	74	62	77	71	59			
		7 to 20	Array Interior	85	85	85	85	85	85	85	85	82	85	85	79	85	85	75	85	82	72	85	80	69			
			Array Edge	85	85	75	85	82	71	84	78	67	84	75	64	82	71	61	79	68	58	76	65	56			
		20 to 27	Array Interior	88	88	88	88	88	88	88	88	88	88	88	88	88	87	82	88	85	79	88	82	76			
			Array Edge	88	87	82	88	84	78	88	81	74	88	77	70	88	74	67	87	70	64	85	67	61			
		27 to 45	Array Interior	94	94	94	94	94	94	94	94	93	94	94	90	94	94	87	94	91	84	92	88	82			
			Array Edge	94	94	87	94	90	84	90	87	81	87	84	77	85	82	74	82	79	70	80	75	67			
		45 to 90	Array Interior	117	117	117	117	117	117	117	113	113	115	110	110	112	106	106	109	103	103	106	100	100			
			Array Edge	112	106	106	108	102	102	105	98	98	102	95	95	99	92	92	96	89	89	94	87	87			
	D	0 to 7	Array Interior	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	67			
			Array Edge	79	79	73	79	79	69	79	78	66	79	74	63	79	71	60	79	68	57	76	65	54			
		7 to 20	Array Interior	87	87	83	87	87	80	87	86	76	87	83	73	87	80	69	86	77	66	84	73	63			
			Array Edge	87	80	69	86	76	65	83	72	62	80	68	59	76	65	56	73	62	54	69	59	51			
20 to 27		Array Interior	91	91	89	91	91	85	91	88	82	91	85	80	91	82	76	91	80	73	90	76	69				
		Array Edge	91	82	76	91	79	72	90	75	68	88	71	65	85	68	62	83	65	59	80	62	56				
27 to 45		Array Interior	97	97	94	97	97	91	97	95	88	95	92	85	92	89	82	89	86	79	86	83	76				
		Array Edge	92	88	82	88	85	78	85	82	74	82	79	71	80	76	67	76	67	64	73	69	62				
45 to 90		Array Interior	119	115	115	116	111	111	113	107	107	110	103	103	107	100	100	104	97	97	101	94	94				
		Array Edge	106	100	100	103	96	96	100	93	93	97	90	90	94	87	87	91	84	84	89	82	82				
90 psf	B	0 to 7	Array Interior	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74			
			Array Edge	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	71			
		7 to 20	Array Interior	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	81			
			Array Edge	82	82	82	82	82	82	82	82	80	82	82	76	82	82	73	82	80	70	82	77	67			
		20 to 27	Array Interior	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85			
			Array Edge	85	85	85	85	85	85	85	85	85	85	85	83	85	85	80	85	83	76	85	80	73			
		27 to 45																									

Maximum Rail Spans (Inches)			SMR100 Rail Flush-Mount on 0 to 30 Foot Roof -- ASCE 7-22 -- 82" x 42" (L)																					
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed-->	130 mph			140 mph			150 mph			160 mph			170 mph			180 mph			190 mph		
			Roof Zone-->	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
70 psf	B	0 to 7	Array Interior	80	80	80	80	80	74	80	80	69	80	77	65	80	72	61	80	68	57	75	64	54
			Array Edge	80	77	65	80	72	60	78	67	56	73	62	53	68	59	49	64	55	47	61	52	44
		7 to 20	Array Interior	88	85	76	87	81	70	85	76	65	82	71	61	78	66	57	73	63	54	69	59	51
			Array Edge	82	71	61	77	66	57	72	61	53	67	57	49	63	54	46	59	51	44	56	48	41
		20 to 27	Array Interior	91	87	82	91	83	77	91	79	72	90	74	67	87	69	63	83	65	59	80	62	56
			Array Edge	90	74	67	86	68	62	82	64	58	78	60	54	73	56	51	69	53	48	65	50	45
		27 to 45	Array Interior	98	94	87	93	89	83	88	85	78	84	81	73	81	77	69	77	73	65	73	69	61
			Array Edge	85	82	74	80	77	68	75	71	64	70	67	59	66	63	56	62	59	53	59	56	50
		45 to 90	Array Interior	112	106	106	107	101	101	103	96	96	99	92	92	95	88	88	92	85	85	89	81	81
			Array Edge	99	92	92	95	87	87	91	83	83	87	80	80	83	75	75	80	71	71	76	67	67
	C	0 to 7	Array Interior	80	80	67	80	74	62	80	69	58	76	65	54	71	61	51	67	57	48	63	54	46
			Array Edge	76	65	55	70	60	51	65	56	47	61	52	44	57	49	42	54	46	39	51	44	37
		7 to 20	Array Interior	84	74	63	80	68	59	74	63	55	69	59	51	65	56	48	61	53	45	58	50	43
			Array Edge	70	60	51	65	55	48	60	51	44	56	48	42	53	45	39	50	43	37	47	40	35
		20 to 27	Array Interior	90	77	70	88	71	65	84	66	60	80	62	56	76	58	53	71	55	50	67	52	47
			Array Edge	81	62	56	75	57	52	70	54	49	65	50	46	61	47	43	58	44	40	55	42	38
		27 to 45	Array Interior	87	84	76	82	79	71	78	74	66	73	69	62	69	65	58	65	61	55	61	58	52
			Array Edge	73	69	62	68	64	57	63	60	53	59	56	50	56	53	47	52	50	44	50	47	42
		45 to 90	Array Interior	101	94	94	97	90	90	93	85	85	89	82	82	85	78	78	82	73	73	78	69	69
			Array Edge	89	82	82	85	77	77	81	72	72	76	67	67	71	63	63	67	60	60	64	56	56
	D	0 to 7	Array Interior	83	73	62	80	68	57	74	63	53	69	59	50	65	56	47	61	52	44	58	50	42
			Array Edge	70	59	50	64	55	46	60	51	43	56	48	41	53	45	38	50	43	36	47	40	34
		7 to 20	Array Interior	79	67	58	73	62	54	68	58	50	64	54	47	60	51	44	56	48	42	53	46	39
			Array Edge	64	55	47	59	51	44	55	47	41	52	44	38	48	42	36	46	39	34	43	37	32
20 to 27		Array Interior	87	70	64	83	65	59	79	60	55	74	57	52	69	53	48	65	50	46	62	47	43	
		Array Edge	74	57	52	69	53	48	64	49	45	60	46	42	56	43	39	53	41	37	50	39	35	
27 to 45		Array Interior	82	78	70	77	73	65	71	68	60	67	63	56	63	60	53	59	56	50	56	53	47	
		Array Edge	67	64	57	62	59	53	58	55	49	54	51	46	51	48	43	48	46	41	46	43	39	
45 to 90		Array Interior	96	89	89	92	84	84	88	81	81	84	76	76	80	71	71	76	67	67	72	64	64	
		Array Edge	84	76	76	80	71	71	74	66	66	70	62	62	65	58	58	62	55	55	58	52	52	
80 psf	B	0 to 7	Array Interior	77	77	77	77	77	74	77	77	69	77	77	65	77	72	61	77	68	57	75	64	54
			Array Edge	77	77	65	77	72	60	77	67	56	73	62	53	68	59	49	64	55	47	61	52	44
		7 to 20	Array Interior	85	85	76	85	81	70	84	76	65	82	71	61	78	66	57	73	63	54	69	59	51
			Array Edge	82	71	61	77	66	57	72	61	53	67	57	49	63	54	46	59	51	44	56	48	41
		20 to 27	Array Interior	88	87	82	88	83	77	88	79	72	87	74	67	86	69	63	83	65	59	80	62	56
			Array Edge	88	74	67	86	68	62	82	64	58	78	60	54	73	56	51	69	53	48	65	50	45
		27 to 45	Array Interior	94	94	87	93	89	83	88	85	78	84	81	73	81	77	69	77	73	65	73	69	61
			Array Edge	85	82	74	80	77	68	75	71	64	70	67	59	66	63	56	62	59	53	59	56	50
		45 to 90	Array Interior	112	106	106	107	101	101	103	96	96	99	92	92	95	88	88	92	85	85	89	81	81
			Array Edge	99	92	92	95	87	87	91	83	83	87	80	80	83	75	75	80	71	71	76	67	67
	C	0 to 7	Array Interior	77	77	67	77	74	62	77	69	58	76	65	54	71	61	51	67	57	48	63	54	46
			Array Edge	76	65	55	70	60	51	65	56	47	61	52	44	57	49	42	54	46	39	51	44	37
		7 to 20	Array Interior	83	74	63	80	68	59	74	63	55	69	59	51	65	56	48	61	53	45	58	50	43
			Array Edge	70	60	51	65	55	48	60	51	44	56	48	42	53	45	39	50	43	37	47	40	35
		20 to 27	Array Interior	88	77	70	87	71	65	84	66	60	80	62	56	76	58	53	71	55	50	67	52	47
			Array Edge	81	62	56	75	57	52	70	54	49	65	50	46	61	47	43	58	44	40	55	42	38
		27 to 45	Array Interior	87	84	76	82	79	71	78	74	66	73	69	62	69	65	58	65	61	55	61	58	52
			Array Edge	73	69	62	68	64	57	63	60	53	59	56	50	56	53	47	52	50	44	50	47	42
		45 to 90	Array Interior	101	94	94	97	90	90	93	85	85	89	82	82	85	78	78	82	73	73	78	69	69
			Array Edge	89	82	82	85	77	77	81	72	72	76	67	67	71	63	63	67	60	60	64	56	56
	D	0 to 7	Array Interior	79	73	62	79	68	57	74	63	53	69	59	50	65	56	47	61	52	44	58	50	42
			Array Edge	70	59	50	64	55	46	60	51	43	56	48	41	53	45	38	50	43	36	47	40	34
		7 to 20	Array Interior	79	67	58	73	62	54	68	58	50	64	54	47	60	51	44	56	48	42	53	46	39
			Array Edge	64	55	47	59	51	44	55	47	41	52	44	38	48	42	36	46	39	34	43	37	32
20 to 27		Array Interior	87	70	64	83	65	59	79	60	55	74	57	52	69	53	48	65	50	46	62	47	43	
		Array Edge	74	57	52	69	53	48	64	49	45	60	46	42	56	43	39	53	41	37	50	39	35	
27 to 45		Array Interior	82	78	70	77	73	65	71	68	60	67	63	56	63	60	53	59	56	50	56	53	47	
		Array Edge	67	64	57	62	59	53	58	55	49	54	51	46	51	48	43	48	46	41	46	43	39	
45 to 90		Array Interior	96	89	89	92	84	84	88	81	81	84	76	76	80	71	71	76	67	67	72	64	64	
		Array Edge	84	76	76	80	71	71	74	66	66	70	62	62	65	58	58	62	55	55	58	52	52	
90 psf	B	0 to 7	Array Interior	74	74	74	74	74	74	74	74	69	74	74	65	74	72	61	74	68	57	74	64	54
			Array Edge	74	74	65	74	72	60	74	67	56	73	62	53	68	59	49	64	55	47	61	52	44
		7 to 20	Array Interior	82	82	76	82	81	70	82	76	65	81	71	61	78	66	57	73	63	54	69	59	51
			Array Edge	81	71	61	77	66	57	72	61	53	67	57	49	63	54	46	59	51	44	56	48	41
		20 to 27	Array Interior	85	85	82	85	83	77	85	79	72	85	74	67	84	69	63	83	65	59	80	62	56
			Array Edge	85	74	67	84	68	62	82	64	58	78	60	54	73	56	51	69	53	48	65	50	45
		27 to 45	Array Interior	91	91	87	91	89	83	88	85	78	84	81	73	81	77	69	77	73	65	73	69	61
			Array Edge	85	82																			

Maximum Rail Spans (Inches)			SMR100 Rail Flush-Mount on 0 to 30 Foot Roof -- ASCE 7-22 -- 82" x 42" (L)																								
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed-->	90 mph			95 mph			100 mph			105 mph			110 mph			115 mph			120 mph					
			Roof Zone-->	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3			
100 psf	B	0 to 7	Array Interior	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71
			Array Edge	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71
		7 to 20	Array Interior	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79
			Array Edge	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79
		20 to 27	Array Interior	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
			Array Edge	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
		27 to 45	Array Interior	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89
			Array Edge	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89
		45 to 90	Array Interior	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112	112
			Array Edge	112	112	112	112	112	112	112	111	111	112	107	107	110	103	103	107	100	100	107	100	100	104	97	97
	C	0 to 7	Array Interior	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71
			Array Edge	71	71	71	71	71	71	71	71	71	71	71	68	71	71	65	71	71	62	71	71	59	71	71	59
		7 to 20	Array Interior	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79
			Array Edge	79	79	75	79	79	71	79	78	67	79	75	64	79	71	61	78	68	58	76	65	56	76	65	56
		20 to 27	Array Interior	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82	82
			Array Edge	82	82	82	82	82	78	82	81	74	82	77	70	82	74	67	82	70	64	82	67	61	82	67	61
		27 to 45	Array Interior	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89
			Array Edge	89	89	87	89	89	84	89	87	81	87	84	77	85	82	74	82	79	70	80	75	67	80	75	67
		45 to 90	Array Interior	112	112	112	112	112	112	112	112	112	112	110	110	112	106	106	109	103	103	106	100	100	106	100	100
			Array Edge	112	106	106	108	102	102	105	98	98	102	95	95	99	92	92	96	89	89	94	87	87	94	87	87
	D	0 to 7	Array Interior	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	70	74	74	70	74	74	67
			Array Edge	74	74	73	74	74	69	74	74	66	74	74	63	74	71	60	74	68	57	74	65	54	74	65	54
		7 to 20	Array Interior	82	82	82	82	82	80	82	82	76	82	82	73	82	80	69	82	77	66	82	73	63	82	73	63
			Array Edge	82	80	69	82	76	65	81	72	62	80	68	59	76	65	56	73	62	54	85	59	51	85	59	51
20 to 27		Array Interior	85	85	85	85	85	85	85	85	82	85	85	80	85	82	76	85	80	73	85	76	69	85	76	69	
		Array Edge	85	82	76	85	79	72	85	75	68	85	71	65	84	68	62	83	65	59	80	62	56	80	62	56	
27 to 45		Array Interior	92	92	92	92	92	91	92	92	88	92	92	85	92	89	82	89	86	79	86	83	76	86	83	76	
		Array Edge	92	88	82	88	85	78	85	82	74	82	79	71	80	76	67	76	67	64	73	69	62	73	69	62	
45 to 90		Array Interior	115	115	115	115	111	111	113	107	107	110	103	103	107	100	100	104	97	97	101	94	94	101	94	94	
		Array Edge	106	100	100	103	96	96	100	93	93	97	90	90	94	87	87	91	84	84	89	82	82	89	82	82	
110 psf	B	0 to 7	Array Interior	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69
			Array Edge	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69
		7 to 20	Array Interior	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
			Array Edge	77	77	77	77	77	77	77	77	77	77	77	76	77	77	73	77	77	70	77	77	67	77	77	67
		20 to 27	Array Interior	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
			Array Edge	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
		27 to 45	Array Interior	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87
			Array Edge	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87
		45 to 90	Array Interior	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
			Array Edge	110	110	110	110	110	110	110	110	110	110	107	107	110	103	103	107	100	100	104	97	97	104	97	97
	C	0 to 7	Array Interior	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69
			Array Edge	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69
		7 to 20	Array Interior	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77	77
			Array Edge	77	77	75	77	77	71	77	77	67	77	75	64	77	71	61	77	68	58	76	65	56	76	65	56
		20 to 27	Array Interior	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
			Array Edge	80	80	80	80	80	78	80	80	74	80	77	70	80	74	67	80	70	64	80	67	61	80	67	61
		27 to 45	Array Interior	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87
			Array Edge	87	87	87	87	87	84	87	87	81	87	84	77	85	82	74	82	79	70	80	75	67	80	75	67
		45 to 90	Array Interior	110	110	110	110	110	110	110	110	110	110	110	110	110	106	106	109	103	103	106	100	100	106	100	100
			Array Edge	110	106	106	108	102	102	105	98	98	102	95	95	99	92	92	96	89	89	94	87	87	94	87	87
	D	0 to 7	Array Interior	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72
			Array Edge	72	72	72	72	72	69	72	72	66	72	72	63	72	71	60	72	68	57	72	65	54	72	65	54
		7 to 20	Array Interior	80	80	80	80	80	80	80	80	76	80	80	73	80	80	69	80	77	66	80	73	63	80	73	63
			Array Edge	80	80	69	80	76	65	80	72	62	79	68	59	76	65	56	73	62	54	69	59	51	69	59	51
20 to 27		Array Interior	83	83	83	83	83	83	83	83	82	83	83	80	83	82	76	83	80	73	83	76	69	83	76	69	
		Array Edge	83	82	76	83	79	72	83	75	68	83	71	65	83	68	62	82	65	59	80	62	56	80	62	56	
27 to 45		Array Interior	89	89	89	89	89	89	89	89	88	89	89	85	89	89	82	89	86	79	86	83	76	86	83	76	
		Array Edge	89	88	82	88	85	78	85	82	74	82	79	71	80	76	67	76	72	64	73	69	62	73	69	62	
45 to 90		Array Interior	113	113	113	113	111	111	113	107	107	110	103	103	107	100	100	104	97	97	101	94	94	101			

Maximum Rail Spans (Inches)			SMR100 Rail Flush-Mount on 0 to 30 Foot Roof -- ASCE 7-22 -- 82" x 42" (L)																					
Ground Snow Load	Exposure Category	Panel Angle	Wind Speed-->	130 mph			140 mph			150 mph			160 mph			170 mph			180 mph			190 mph		
			Roof Zone-->	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
100 psf	B	0 to 7	Array Interior	71	71	71	71	71	71	71	71	69	71	71	65	71	71	61	71	68	57	71	64	54
			Array Edge	71	71	65	71	71	60	71	67	56	71	62	53	68	59	49	64	55	47	61	52	44
		7 to 20	Array Interior	79	79	76	79	79	70	79	76	65	79	71	61	78	66	57	73	63	54	69	59	51
			Array Edge	79	71	61	77	66	57	72	61	53	67	57	49	63	54	46	59	51	44	56	48	41
		20 to 27	Array Interior	82	82	82	82	82	77	82	79	72	82	74	67	82	69	63	82	65	59	80	62	56
			Array Edge	82	74	67	82	68	62	81	64	58	78	60	54	73	56	51	69	53	48	65	50	45
		27 to 45	Array Interior	89	89	87	89	89	83	88	85	78	84	81	73	81	77	69	77	73	65	73	69	61
			Array Edge	85	82	74	80	77	68	75	71	64	70	67	59	66	63	56	62	59	53	59	56	50
		45 to 90	Array Interior	112	106	106	107	101	101	103	96	96	99	92	92	95	88	88	92	85	85	89	81	81
			Array Edge	99	92	92	95	87	87	91	83	83	87	80	80	83	75	75	80	71	71	76	67	67
	C	0 to 7	Array Interior	71	71	67	71	71	62	71	69	58	71	65	54	71	61	51	67	57	48	63	54	46
			Array Edge	71	65	55	70	60	51	65	56	47	61	52	44	57	49	42	54	46	39	51	44	37
		7 to 20	Array Interior	79	74	63	78	68	59	74	63	55	69	59	51	65	56	48	61	53	45	58	50	43
			Array Edge	70	60	51	65	55	48	60	51	44	56	48	42	53	45	39	50	43	37	47	40	35
		20 to 27	Array Interior	82	77	70	82	71	65	82	66	60	80	62	56	76	58	53	71	55	50	67	52	47
			Array Edge	81	62	56	75	57	52	70	54	49	65	50	46	61	47	43	58	44	40	55	42	38
		27 to 45	Array Interior	87	84	76	82	79	71	78	74	66	73	69	62	69	65	58	65	61	55	61	58	52
			Array Edge	73	69	62	68	64	57	63	60	53	59	56	50	56	53	47	52	50	44	50	47	42
		45 to 90	Array Interior	101	94	94	97	90	90	93	85	85	89	82	82	85	78	78	82	73	73	78	69	69
			Array Edge	89	82	82	85	77	77	81	72	72	76	67	67	71	63	63	67	60	60	64	56	56
	D	0 to 7	Array Interior	74	73	62	74	68	57	74	63	53	69	59	50	65	56	47	61	52	44	58	50	42
			Array Edge	70	59	50	64	55	46	60	51	43	56	48	41	53	45	38	50	43	36	47	40	34
		7 to 20	Array Interior	79	67	58	73	62	54	68	58	50	64	54	47	60	51	44	56	48	42	53	46	39
			Array Edge	64	55	47	59	51	44	55	47	41	52	44	38	48	42	36	46	39	34	43	37	32
20 to 27		Array Interior	85	70	64	83	65	59	79	60	55	74	57	52	69	53	48	65	50	46	62	47	43	
		Array Edge	74	57	52	69	53	48	64	49	45	60	46	42	56	43	39	53	41	37	50	39	35	
27 to 45		Array Interior	82	78	70	77	73	65	71	68	60	67	63	56	63	60	53	59	56	50	56	53	47	
		Array Edge	67	64	57	62	59	53	58	55	49	54	51	46	51	48	43	48	46	41	46	43	39	
45 to 90		Array Interior	96	89	89	92	84	84	88	81	81	84	76	76	80	71	71	76	67	67	72	64	64	
		Array Edge	84	76	76	80	71	71	74	66	66	70	62	62	65	58	58	62	55	55	58	52	52	
110 psf	B	0 to 7	Array Interior	69	69	69	69	69	69	69	69	69	69	69	65	69	69	61	69	68	57	69	64	54
			Array Edge	69	69	65	69	69	60	69	67	56	69	62	53	68	59	49	64	55	47	61	52	44
		7 to 20	Array Interior	77	77	76	77	77	70	77	76	65	77	71	61	76	66	57	73	63	54	69	59	51
			Array Edge	77	71	61	76	66	57	72	61	53	67	57	49	63	54	46	59	51	44	56	48	41
		20 to 27	Array Interior	80	80	80	80	80	77	80	79	72	80	74	67	80	69	63	80	65	59	79	62	56
			Array Edge	80	74	67	80	68	62	80	64	58	78	60	54	73	56	51	69	53	48	65	50	45
		27 to 45	Array Interior	87	87	87	87	87	83	87	85	78	84	81	73	81	77	69	77	73	65	73	69	61
			Array Edge	85	82	74	80	77	68	75	71	64	70	67	59	66	63	56	62	59	53	59	56	50
		45 to 90	Array Interior	110	106	106	107	101	101	103	96	96	99	92	92	95	88	88	92	85	85	89	81	81
			Array Edge	99	92	92	95	87	87	91	83	83	87	80	80	83	75	75	80	71	71	76	67	67
	C	0 to 7	Array Interior	69	69	67	69	69	62	69	69	58	69	65	54	69	61	51	67	57	48	63	54	46
			Array Edge	69	65	55	69	60	51	65	56	47	61	52	44	57	49	42	54	46	39	51	44	37
		7 to 20	Array Interior	77	74	63	77	68	59	74	63	55	69	59	51	65	56	48	61	53	45	58	50	43
			Array Edge	70	60	51	65	55	48	60	51	44	56	48	42	53	45	39	50	43	37	47	40	35
		20 to 27	Array Interior	80	77	70	80	71	65	80	66	60	79	62	56	76	58	53	71	55	50	67	52	47
			Array Edge	79	62	56	75	57	52	70	54	49	65	50	46	61	47	43	58	44	40	55	42	38
		27 to 45	Array Interior	87	84	76	82	79	71	78	74	66	73	69	62	69	65	58	65	61	55	61	58	52
			Array Edge	73	69	62	68	64	57	63	60	53	59	56	50	56	53	47	52	50	44	50	47	42
		45 to 90	Array Interior	101	94	94	97	90	90	93	85	85	89	82	82	85	78	78	82	73	73	78	69	69
			Array Edge	89	82	82	85	77	77	81	72	72	76	67	67	71	63	63	67	60	60	64	56	56
	D	0 to 7	Array Interior	72	72	62	72	68	57	72	63	53	69	59	50	65	56	47	61	52	44	58	50	42
			Array Edge	70	59	50	64	55	46	60	51	43	56	48	41	53	45	38	50	43	36	47	40	34
		7 to 20	Array Interior	79	67	58	73	62	54	68	58	50	64	54	47	60	51	44	56	48	42	53	46	39
			Array Edge	64	55	47	59	51	44	55	47	41	52	44	38	48	42	36	46	39	34	43	37	32
20 to 27		Array Interior	83	70	64	82	65	59	79	60	55	74	57	52	69	53	48	65	50	46	62	47	43	
		Array Edge	74	57	52	69	53	48	64	49	45	60	46	42	56	43	39	53	41	37	50	39	35	
27 to 45		Array Interior	82	78	70	77	73	65	71	68	60	67	63	56	63	60	53	59	56	50	56	53	47	
		Array Edge	67	64	57	62	59	53	58	55	49	54	51	46	51	48	43	48	46	41	46	43	39	
45 to 90		Array Interior	96	89	89	92	84	84	88	81	81	84	76	76	80	71	71	76	67	67	72	64	64	
		Array Edge	84	76	76	80	71	71	74	66	66	70	62	62	65	58	58	62	55	55	58	52	52	
120 psf	B	0 to 7	Array Interior	66	66	66	66	66	66	66	66	66	66	66	65	66	66	61	66	66	57	66	64	54
			Array Edge	66	66	65	66	66	60	66	66	56	66	62	53	66	59	49	64	55	47	61	52	44
		7 to 20	Array Interior	75	75	75	75	75	70	75	75	65	75	71	61	75	66	57	73	63	54	69	59	51
			Array Edge	75	71	61	75	66	57	72	61	53	67	57	49	63	54	46	59	51	44	56	48	41
		20 to 27	Array Interior	78	78	78	78	78	77	78	78	72	78	74	67	78	69	63	78	65	59	78	62	56
			Array Edge	78	74	67	78	68	62	78	64	58	77	60	54	73	56	51	69	53	48	65	50	45
		27 to 45	Array Interior	84	84	84	84	84	83	84	84	78	84	81	73	81	77	69	77	73	65	73	69	61
			Array Edge	84	8																			