



March 22, 2023

Mr. Ryan Estrada
K2 Systems LLC
4665 North Avenue, Suite I
Oceanside, CA 92056

Re: PV Tilt Up Rack System
Creation of Span Tables
Various Locations in the USA

LEI Project No: 21220004.004

Dear Mr. Estrada:

Pursuant to your request, Larson Engineering, Inc. (LEI) has performed a structural analysis of the K2 CrossRail Tilt Up System using the rail type: 44-X, 48-X, 48-XL and 80 for a panel size of 46 inches x 92.5 inches in Portrait orientation. The purpose of the analysis was to provide tables for the maximum spans and reactions to the roof under various loading conditions.

The analysis was performed in accordance with the following codes and guidelines:

- *ASCE 7-16 Minimum Design Loads for Buildings and Other Structures*, referenced by the International Building Code 2018 and 2021 editions and the International Residential Code 2018 and 2021 editions, 2019 California Building Standards Code and 2022 California Building Standards Code,
- *2015 Aluminum Design Manual* and the *2020 Aluminum Design Manual* by the Aluminum Association,
- *Wind Design for Low-Profile Solar Photovoltaic Arrays on Flat Roofs* Report SEAOC PV2-2012 dated August 2012 by the Structural Engineers Association of California (SEAOC), portions of this are referenced in ASCE 7-16, chapter 29.

The rail system used 6000 series aluminum alloy with a minimum yield strength of 34.8ksi. Section properties for each rail system was provided by K2 Systems, LLC.

DESCRIPTION

The K2 CrossRail Tilt Up System consists of extruded aluminum PV support rails that span between an L-shaped support consisting of two (2) members, the front leg and the rear leg, whose lengths can be adjusted as required to vary the tilt angle of the panels. The front and rear legs are constructed of the same type of rail as the PV support rails. They are connected to one another using plates with screws to form a 90 degree triangle and each leg is attached to the roof using an L-foot. The PV support rails connect to the front leg with angle attachments. The PV panels connect to the PV support rails using a clamp. Attachment of the Tilt Up System to the existing roof shall be the responsibility of the installer and is required to be analyzed by a registered professional or structural engineer.

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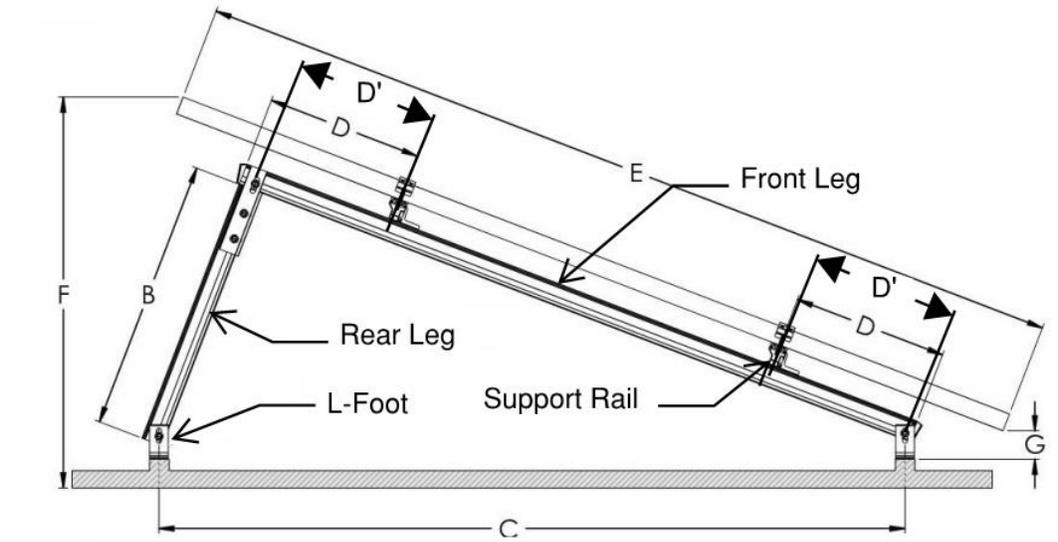


Figure 1 Typical Configuration (refer to K2 CrossRail Tilt Up System Assembly Instructions)

METHODS AND DESIGN PARAMETERS

Load combinations were provided in accordance with the ASCE 7-16 guidelines based on the assumption that the rail is a single span condition or multi-span condition and using an allowable deflection of 1/120. Wind pressure was determined in accordance with ASCE 7-16 chapter 26 and ASCE 7-16 section 29.4.3 “Rooftop Solar Panels for Buildings of all Heights with Flat Roofs or Gable or Hip Roofs with slopes less than 7°” whose tilt angles are less than 35°.

The snow loads indicated in the tables are based on a flat roof snow load. The snow load applied to the system may be adjusted with the tilt angle in accordance with sloped roof snow loads. The appropriate ground snow loads should be determined in accordance with the ground snow load maps in ASCE 7-16 or per the local building code.

The following table shows the equivalent ground snow value associated with the flat snow load shown in the span and reaction tables assuming $C_t=1.0$, $C_e=1.0$, $I=1.0$.

Determine Equivalent Ground Snow for indicated flat snow (psf)

Pf, flat snow (psf)	10	20	30	40	50	60	70
Pg, ground snow (psf)	14.3	28.5	42.8	57.2	71.4	85.7	100

Seismic criteria were considered per the provisions of ASCE 7-16, chapter 13. Seismic effects did not govern the capacity of this system.

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The following design parameters were used for the purpose of this analysis:

<u>General</u>	<u>Wind</u>	<u>Snow</u>	<u>Seismic</u>
Risk Category: II	V, ult: 90 - 180 mph	Flat snow pf: 0 - 70 psf	Site Class: D
Roof Mean Height: ≤ 30 ft	Exposures: B, C & D Pressure Zones: 1, 2 & 3	Ce: 1.0	Design Category: A-E
Roof Slope: 0° to 7°		Ct: 1.0	Ss: ≤ 2.0
Panel Slope: 7° to 25° (from ground)		Cs: Varies	S1: ≤ 1.25
Panel Orientation: See Charts		Is: 1.0	Ip: 1.0
Panel Size: See Charts			ap: 1.0
			Rp: 1.5

DESIGN RESULTS

The allowable span lengths of the system are controlled by applicable wind and snow load combinations. The reaction loads provided in the tables are only applicable to the corresponding span lengths provided. Reaction loads shown are based on the worst case of the front and rear mounting brackets. Reactions may be scaled linearly where shorter spans are used. The reactions shown for Multi Span assumes an interior support location. The maximum span length may be limited due to the capacity of the support rail, the capacity of the front leg to resist the reaction load from the support rail, or the capacity of the L-foot connection.

The following tables are provided for each exposure category, B, C & D for Interior and Edge Multi-Span Conditions in the **Portrait** Orientation:

Maximum Span Length (Inches) Multi Span Only, Tables 1.1, 1.1A, 2.1, 2.1A, 3.1, 3.1A
 Maximum Downward Force (lbs) Multi Span Only, Tables 1.2, 1.2A, 2.2, 2.2A, 3.2, 3.2A
 Maximum Horizontal Force (lbs) Multi Span Only, Tables 1.3, 1.3A, 2.3, 2.3A, 3.3, 3.3A
 Maximum Uplift Force (lbs) Multi Span Only, Tables 1.4, 1.4A, 2.4, 2.4A, 3.4, 3.4A
 Maximum Span Length (Inches) Single Span Only, Tables 1.5, 1.5A, 2.5, 2.5A, 3.5, 3.5A
 Maximum Downward Force (lbs) Single Span Only, Tables 1.6, 1.6A, 2.6, 2.6A, 3.6, 3.6A
 Maximum Horizontal Force (lbs) Single Span Only, Tables 1.7, 1.7A, 2.7, 2.7A, 3.7, 3.7A
 Maximum Uplift Force (lbs) Single Span Only, Tables 1.8, 1.8A, 2.8, 2.8A, 3.8, 3.8A

Figures 2 & 3 define the roof zones per ASCE 7-16 Figure 29.4-1 and are referenced in the attached Tables for Interior and Edge Conditions. Figure 4 defines the array edge factors used for wind uplift. The Edge Condition tables should be applied to the north and south rows and to the spans that occur within 1.5 panel lengths of the east and west edges as defined in Figure 4.

The following notations should be applied to Figures 2 through 4.

- d1: Horizontal distance orthogonal to the panel edge to an adjacent panel or building edge.
- d2: Horizontal distance orthogonal from the edge of one panel to the nearest edge in the next row.
- h: Mean Roof Height.
- WL=Width of a Building on its longest side.
- Ws=Width of a Building on its shortest side.
- Lp: Panel Length.

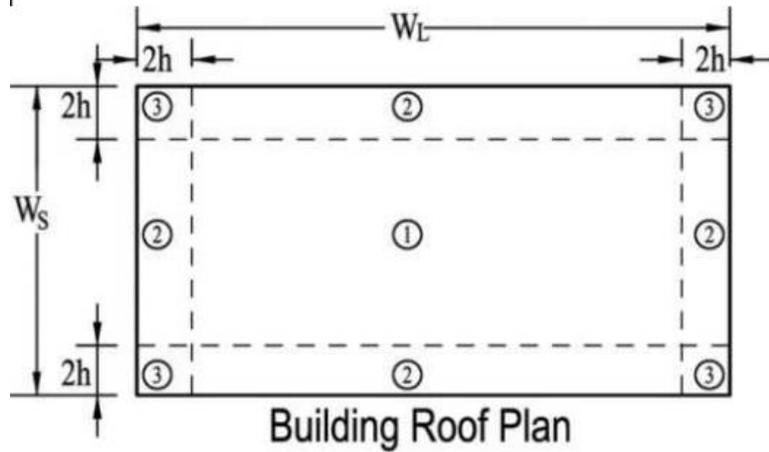


Figure 2. ASCE 7-16 Figure 29.4-7 shows the Building Roof Plan defining the roof zones.

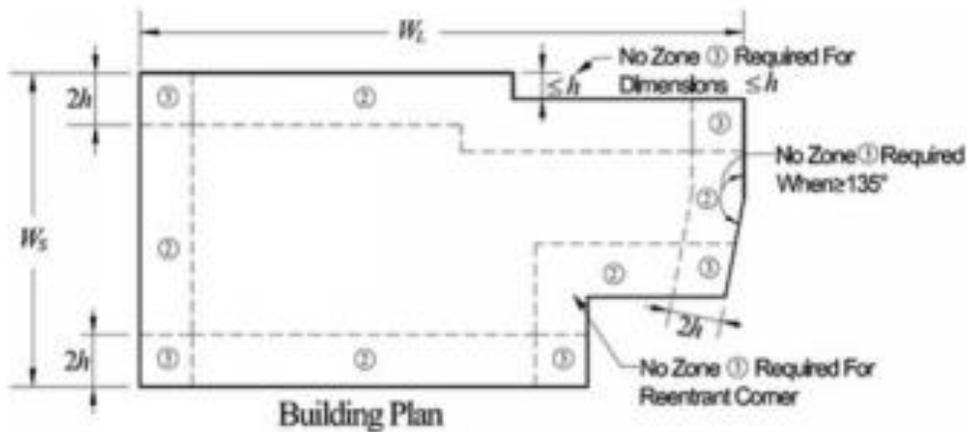


Figure 3. ASCE 7-16 Figure C29.4-1 shows a sketch of Building with Irregular Plan Dimensions

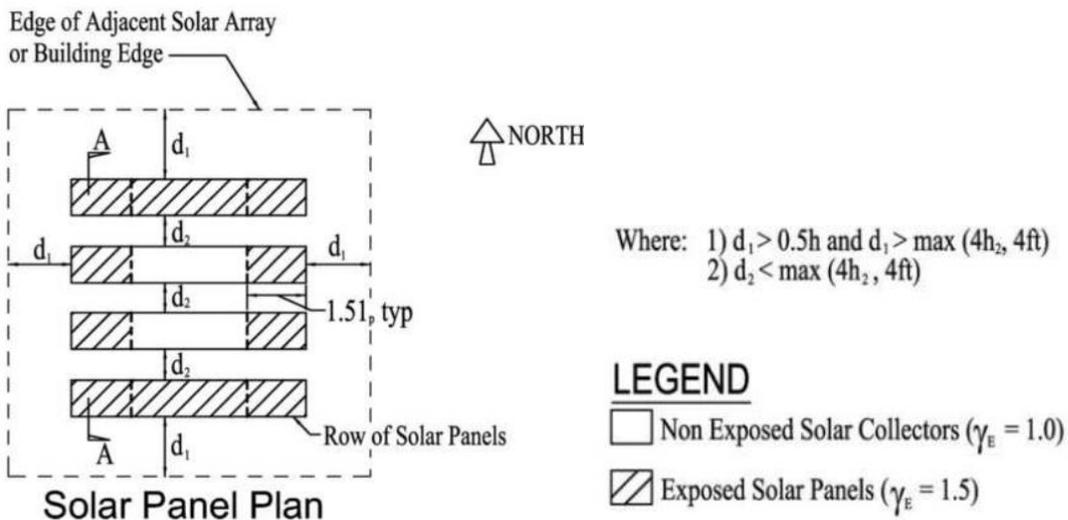


Figure 4. ASCE 7-16 Figure 29.4-7 Array Edge Factors

INSTALLATION & CONFIGURATION NOTES

The following guidelines apply to all installations using the K2 CrossRail Tilt Up System product line:

- Refer to Tilt Up Kit allowable geometry and installation guidelines by K2 Systems, LLC,
- All fasteners and connective hardware shall be installed per manufacturer specifications,
- The support rails shall be placed no further from the center of the L-Foot or Rear leg than 6", see dimension D' on Figure 1,
- This analysis is limited to installations south of any roof ridge, if present. On pitched roofs the northern most row of panels should be located between 3' and 12' from the ridge,
- Span tables assume (2) two independent horizontal support rails per panel. Rails shall be located no further than 8" from cut end of diagonal member (refer to Figure 1),
- High edge of panel not to exceed 30" from roof surface,
- Maximum end cantilever of horizontal support rail shall not exceed one-third (1/3) of allowable span in the roof wind pressure zone,
- Rails shall be continuous over a minimum of two (2) supports unless using an approved K2 Structural Splice,
- Installations over roof overhangs or within 12" of any roof edge is not advised,
- Observe all local jurisdictional requirements regarding roof setback requirements.

SUMMARY

This assessment has provided design validation for code compliant installations of the K2 CrossRail Tilt Up System in the state noted in the stamp below. Local jurisdictions shall be consulted for the proper code requirements. For the configurations and design loadings noted previously, the attached span tables represent maximum span lengths based on allowable stresses and deflection criteria. For all other configurations, refer to K2 Systems, LLC for engineering support.

This report does not provide analysis of any existing structures to support the loading imposed by the K2 CrossRail Tilt Up System, as may be required by the local authority having jurisdiction.

If you have any further questions regarding this matter, please feel free to contact our office.

Sincerely,
Larson Engineering, Inc.



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CAW:ng

Attachments: Tables as indicated above



K2 Systems, LLC

PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 1.1 Max Length L (inches) for Multi Span only Interior Conditions

Exp B	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70
90	44-X	62	46	32	22	0	0	0	0	49	42	30	0	0	0	0	0	42	38	28	0	0	0	0	0	
	48-X	63	48	33	23	0	0	0	0	50	43	31	0	0	0	0	0	43	39	30	0	0	0	0	0	
	48-XL	131	94	65	45	35	28	24	20	104	86	61	45	35	28	24	20	89	81	58	45	35	28	24	20	
	80	156	119	82	57	44	36	30	26	123	106	77	57	44	36	30	26	106	96	74	57	44	36	30	26	
100	44-X	53	43	30	0	0	0	0	0	42	38	28	0	0	0	0	0	36	34	0	0	0	0	0	0	
	48-X	54	45	32	0	0	0	0	0	42	39	29	0	0	0	0	0	36	35	0	0	0	0	0	0	
	48-XL	113	88	62	45	35	28	24	20	88	79	57	44	35	28	24	20	75	72	55	43	35	28	24	20	
	80	134	111	78	57	44	36	30	26	104	95	72	56	44	36	30	26	89	85	68	54	44	36	30	26	
110	44-X	46	40	29	0	0	0	0	0	36	34	0	0	0	0	0	0	30	30	0	0	0	0	0	0	
	48-X	47	41	30	0	0	0	0	0	36	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	97	82	59	45	35	28	24	20	75	72	54	42	35	28	24	20	64	62	51	41	34	28	24	0	
	80	116	102	74	57	44	36	30	26	89	85	68	53	44	36	30	26	76	74	62	51	42	36	30	26	
120	44-X	40	37	27	0	0	0	0	0	31	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	41	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	85	76	56	44	35	28	24	20	65	63	50	40	33	28	24	0	55	54	47	39	32	28	24	0	
	80	101	93	71	55	44	36	30	26	77	75	62	51	42	36	30	26	66	64	56	48	40	35	30	26	
130	44-X	35	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	36	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	75	71	53	42	34	28	24	20	57	55	47	38	32	28	24	0	48	47	43	36	31	26	0	0	
	80	89	85	67	53	43	36	30	26	67	66	57	48	40	35	30	26	57	56	51	44	39	33	29	26	
140	44-X	31	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	32	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	66	64	50	40	33	28	24	20	50	49	44	36	31	26	0	0	42	41	39	34	29	0	0	0	
	80	78	76	63	50	42	36	30	26	59	58	52	45	39	33	29	26	50	49	47	41	36	32	28	25	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	58	57	47	38	32	28	24	0	44	43	41	34	29	25	0	0	37	36	36	32	28	0	0	0	
	80	69	68	58	48	40	35	30	26	52	51	48	42	37	32	28	26	44	43	42	38	34	31	27	0	
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	52	51	45	37	31	27	23	0	39	39	37	32	28	0	0	0	33	32	32	29	0	0	0	0	
	80	62	61	54	46	39	34	30	26	47	46	44	39	35	31	27	25	39	39	38	35	32	29	0	0	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	47	46	42	35	30	26	0	0	35	35	34	31	0	0	0	0	0	0	0	0	0	0	0	0	
	80	50	49	47	41	36	31	28	25	37	37	36	34	31	28	0	0	31	31	30	30	27	0	0	0	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	39	38	37	35	33	31	30	28	33	33	32	32	30	29	28	27	30	30	30	29	29	27	27	26	
	48-XL	42	42	40	33	28	0	0	0	32	31	30	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	50	49	47	41	36	31	28	25	37	37	36	34	31	28	0	0	31	31	30	30	27	0	0	0	

Note: The Length is based on use of at least two spans. Cantilevered ends may be used that are no greater than 1/3 of the backspan.
See SEAOC PV-2 2012 for definition of Roof Zones

Larson Engineering Inc

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K2 Systems, LLC

PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 1.1A Max Length L (inches) for Multi Span only Exterior Conditions

Exp B	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70
90	44-X	58	46	32	22	0	0	0	0	40	40	30	0	0	0	0	0	32	32	28	0	0	0	0	0	
	48-X	63	47	32	23	0	0	0	0	44	43	30	0	0	0	0	0	35	35	29	0	0	0	0	0	
	48-XL	127	98	68	47	36	29	25	21	100	86	63	47	36	29	25	21	87	78	61	47	36	29	25	21	
	80	145	104	72	50	38	31	26	23	114	94	67	50	38	31	26	23	99	89	64	50	38	31	26	23	
100	44-X	45	43	30	0	0	0	0	0	32	32	28	0	0	0	0	0	26	26	0	0	0	0	0	0	
	48-X	50	44	31	0	0	0	0	0	35	35	28	0	0	0	0	0	28	28	0	0	0	0	0	0	
	48-XL	109	91	64	47	36	29	25	21	85	77	59	46	36	29	25	21	73	70	55	45	36	29	25	21	
	80	124	97	68	50	38	31	26	23	97	87	63	49	38	31	26	23	83	79	60	47	38	31	26	23	
110	44-X	37	37	29	0	0	0	0	0	26	26	0	0	0	0	0	0	21	21	0	0	0	0	0	0	
	48-X	40	40	29	0	0	0	0	0	28	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	94	83	61	47	36	29	25	21	73	70	55	44	36	29	25	21	62	61	50	42	35	29	25	0	
	80	108	90	65	50	38	31	26	23	83	79	59	47	38	31	26	23	70	69	56	45	37	31	26	23	
120	44-X	30	30	27	0	0	0	0	0	21	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	33	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	82	76	58	45	36	29	25	21	63	61	51	42	35	29	25	0	52	52	46	39	33	29	25	0	
	80	94	84	62	48	38	31	26	23	71	70	56	44	37	31	26	23	58	58	52	42	35	30	26	23	
130	44-X	25	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	36	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	72	69	55	43	36	29	25	21	53	53	47	40	33	29	25	0	44	44	42	36	32	28	0	0	
	80	82	78	58	46	38	31	26	23	60	60	52	42	35	30	26	23	49	49	48	40	34	29	26	23	
140	44-X	31	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	24	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	64	62	51	42	35	29	25	21	46	46	43	37	32	28	0	0	37	37	37	33	30	0	0	0	
	80	72	71	55	44	37	31	26	23	51	51	49	40	34	29	26	23	42	42	42	38	32	28	25	22	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	55	55	47	40	33	29	25	0	39	39	39	34	30	26	0	0	32	32	32	31	28	0	0	0	
	80	62	62	52	42	35	30	26	23	44	44	44	38	32	28	25	22	36	36	36	35	31	27	24	0	
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	48	48	44	38	32	28	24	0	35	35	35	32	29	0	0	0	28	28	28	28	0	0	0	0	
	80	54	54	49	40	34	29	26	23	39	39	39	36	31	27	24	22	32	32	32	32	29	26	0	0	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	43	43	41	36	31	27	0	0	30	30	30	30	0	0	0	0	0	0	0	0	0	0	0	0	
	80	42	42	42	37	31	27	24	22	30	30	30	30	28	25	0	0	25	25	25	25	25	0	0	0	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	38	38	38	33	30	0	0	0	27	27	27	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	42	42	42	37	31	27	24	22	30	30	30	30	28	25	0	0	25	25	25	25	25	0	0	0	

Note: The Length is based on use of at least two spans. Cantilevered ends may be used that are no greater than 1/3 of the backspan.
See SEAOC PV-2 2012 for definition of Roof Zones

Larson Engineering Inc

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K2 Systems, LLC

PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 1.2 Maximum Downward Force (lbs) Multi Span Only Interior Conditions

Exp B	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1										Roof Wind Pressure Zone 2										Roof Wind Pressure Zone 3									
			Roof Snow Load (psf)										Roof Snow Load (psf)										Roof Snow Load (psf)									
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70						
90	44-X	213	228	234	234	0	0	0	0	215	229	234	0	0	0	0	0	215	223	234	0	0	0	0	0							
	48-X	218	239	246	246	0	0	0	0	219	236	245	0	0	0	0	0	220	227	246	0	0	0	0	0							
	48-XL	452	468	480	480	480	481	481	481	455	470	479	480	480	481	482	481	456	471	480	481	480	481	481	481							
	80	537	590	605	606	606	606	607	607	540	581	605	606	606	606	609	607	542	560	606	607	606	606	607	607							
100	44-X	214	229	233	0	0	0	0	0	216	226	234	0	0	0	0	0	216	220	0	0	0	0	0	0							
	48-X	219	240	245	0	0	0	0	0	220	231	246	0	0	0	0	0	220	224	0	0	0	0	0	0							
	48-XL	454	469	479	480	480	481	481	481	456	472	480	479	480	481	482	481	458	466	481	482	480	481	481	481							
	80	539	592	604	606	606	606	607	607	542	568	606	605	606	606	609	607	544	553	596	608	606	606	607	607							
110	44-X	215	230	234	0	0	0	0	0	216	221	0	0	0	0	0	0	217	215	0	0	0	0	0	0							
	48-X	219	237	246	0	0	0	0	0	220	226	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	455	179	212	238	263	292	318	343	198	193	225	250	272	293	319	343	216	211	230	258	279	299	318	343							
	80	541	584	605	606	606	606	607	607	544	557	605	605	606	606	609	607	545	541	582	609	605	606	607	607							
120	44-X	216	228	234	0	0	0	0	0	217	216	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	220	233	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	457	473	480	479	480	481	481	481	459	457	482	480	479	481	482	0	460	449	479	483	480	479	481	0							
	80	542	574	606	605	606	606	607	607	545	542	593	606	605	606	609	607	546	533	569	601	606	605	607	607							
130	44-X	216	225	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	221	229	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	458	474	481	480	479	481	481	481	460	449	483	481	480	479	482	0	461	451	469	484	481	480	0	0							
	80	544	565	607	606	604	606	607	607	546	533	581	607	606	605	609	607	547	536	557	589	607	606	605	607							
140	44-X	217	218	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	221	222	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	459	461	482	481	479	481	481	481	461	451	481	482	481	480	0	0	462	453	465	484	481	0	0	0							
	80	545	548	601	606	605	606	607	607	547	535	571	601	607	606	605	607	548	538	553	577	601	606	605	605							
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	460	448	483	481	480	479	481	0	461	453	473	483	481	480	0	0	462	455	462	477	482	0	0	0							
	80	546	532	592	607	606	605	607	607	548	537	562	591	607	606	605	605	549	540	548	566	589	607	606	0							
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	460	450	483	482	481	480	479	0	462	454	466	483	482	0	0	0	463	456	450	469	0	0	0	0							
	80	547	534	584	608	607	605	605	607	548	539	553	581	604	607	606	605	549	541	534	556	579	598	0	0							
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	461	452	484	482	481	480	0	0	462	455	456	482	0	0	0	0	0	0	0	0	0	0	0	0							
	80	547	536	576	604	607	606	605	605	549	541	541	573	595	608	607	0	550	543	532	553	569	0	0	0							
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	461	453	479	483	482	0	0	0	463	456	447	0	0	0	0	0	0	0	0	0	0	0	0	0							
	80	548	538	569	596	608	607	606	605	549	542	531	565	586	603	0	0	550	544	534	553	560	0	0	0							

Note: The Reactions shown in the tables above account for reactions associated with the exterior support of a multi span condition. See Max length for Multi Span Only for corresponding span length.
See SEAOC PV-2 2012 for definition of Roof Zones

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K2 Systems, LLC

PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 1.2A Maximum Downward Force (lbs) Multi Span Only Exterior Conditions

Exp B	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70
90	44-X	200	228	234	234	0	0	0	0	175	219	234	0	0	0	0	0	165	188	234	0	0	0	0	0	
	48-X	218	232	238	239	0	0	0	0	192	234	238	0	0	0	0	0	181	207	239	0	0	0	0	0	
	48-XL	438	486	499	499	500	500	500	500	441	475	498	499	500	500	502	500	442	457	499	500	500	500	500	500	
	80	499	516	529	530	530	530	530	530	502	518	529	530	530	530	532	530	504	520	529	531	530	530	530	530	
100	44-X	183	229	233	0	0	0	0	0	164	189	234	0	0	0	0	0	156	166	0	0	0	0	0	0	
	48-X	201	233	238	0	0	0	0	0	180	207	239	0	0	0	0	0	171	183	0	0	0	0	0	0	
	48-XL	440	486	498	499	500	500	500	500	442	464	499	498	500	500	502	500	444	451	487	501	500	500	500	500	
	80	501	518	528	530	530	530	530	530	504	520	530	528	530	530	532	530	505	514	530	531	530	530	530	530	
110	44-X	171	210	234	0	0	0	0	0	156	168	0	0	0	0	0	0	150	152	0	0	0	0	0	0	
	48-X	187	230	238	0	0	0	0	0	171	184	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	441	477	499	499	500	500	500	500	444	454	494	499	500	500	502	500	444	441	475	502	498	500	500	0	
	80	503	519	529	530	530	530	530	530	505	518	530	529	530	530	532	530	497	503	531	532	529	530	530	530	
120	44-X	162	187	234	0	0	0	0	0	150	154	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	178	205	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	443	469	500	498	500	500	500	500	445	443	484	500	499	500	502	0	430	430	464	491	499	498	500	0	
	80	504	521	530	529	530	530	530	530	498	504	531	530	529	530	532	530	481	481	529	533	529	528	530	530	
130	44-X	156	169	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	171	186	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	444	461	499	499	498	500	500	500	432	432	474	500	499	498	502	0	419	419	455	480	500	499	0	0	
	80	506	523	531	529	528	530	530	530	483	483	532	531	529	529	532	530	469	469	518	534	530	529	528	530	
140	44-X	150	156	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	165	171	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	445	447	491	500	499	500	500	500	422	422	466	491	500	499	0	0	411	411	443	471	490	0	0	0	
	80	500	509	531	530	529	530	530	530	472	472	531	531	530	529	528	530	459	459	496	534	531	530	529	528	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	435	434	483	500	499	498	500	0	413	413	458	482	501	500	0	0	404	404	420	462	481	0	0	0	
	80	487	487	532	531	529	528	530	530	462	462	515	532	531	530	529	528	452	452	470	527	532	531	530	0	
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	425	425	476	500	500	499	498	0	407	407	430	475	493	0	0	0	398	398	401	452	0	0	0	0	
	80	476	476	533	531	530	529	528	530	455	455	481	533	531	530	530	529	446	446	449	506	532	531	0	0	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	418	418	470	493	500	499	0	0	401	401	411	467	0	0	0	0	0	0	0	0	0	0	0	0	
	80	467	467	534	532	531	530	529	528	449	449	460	533	532	531	530	0	441	441	441	479	529	0	0	0	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	411	411	458	487	501	0	0	0	397	397	397	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	460	460	512	533	531	530	529	529	444	444	444	504	533	532	0	0	436	436	436	459	508	0	0	0	

Note: The Reactions shown in the tables above account for reactions associated with the exterior support of a multi span condition. See Max length for Multi Span Only for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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K2 Systems, LLC

PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 1.3 Maximum Horizontal Force (lbs) Multi span only Interior Conditions

Exp B	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1										Roof Wind Pressure Zone 2										Roof Wind Pressure Zone 3									
			Roof Snow Load (psf)										Roof Snow Load (psf)										Roof Snow Load (psf)									
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70						
90	44-X	72	53	37	26	0	0	0	0	78	67	47	26	0	0	0	0	90	74	55	32	0	0	0	0							
	48-X	73	56	38	27	0	0	0	0	80	69	50	28	0	0	0	0	91	75	58	34	0	0	0	0							
	48-XL	152	109	75	52	40	33	27	24	166	137	97	72	56	45	38	33	190	156	113	87	67	54	46	40							
	80	180	138	95	66	51	41	35	30	197	169	122	91	70	57	48	41	226	185	142	110	85	69	58	50							
100	44-X	76	61	43	0	0	0	0	0	82	74	55	0	0	0	0	0	95	81	54	0	0	0	0	0							
	48-X	78	64	45	0	0	0	0	0	83	76	58	0	0	0	0	0	97	82	57	0	0	0	0	0							
	48-XL	161	59	51	45	40	36	33	31	77	75	67	60	54	50	46	92	86	84	78	71	64	60	56	52							
	80	191	159	112	82	90	51	43	37	206	187	142	110	87	70	59	51	239	203	161	129	105	85	71	62							
110	44-X	80	69	50	0	0	0	0	0	85	81	51	0	0	0	0	0	100	87	62	0	0	0	0	0							
	48-X	81	71	52	0	0	0	0	0	87	82	54	0	0	0	0	0	102	89	65	0	0	0	0	0							
	48-XL	169	142	102	78	86	49	41	35	180	171	128	101	83	67	57	49	211	180	147	117	97	81	68	44							
	80	200	176	128	99	109	62	52	45	213	203	161	127	105	85	72	62	250	220	178	148	122	103	86	75							
120	44-X	83	76	56	0	0	0	0	0	87	85	58	0	0	0	0	0	103	95	70	0	0	0	0	0							
	48-X	84	77	0	0	0	0	0	0	87	80	0	0	0	0	0	0	105	97	0	0	0	0	0	0							
	48-XL	175	157	115	90	103	58	49	42	185	180	143	114	95	80	68	44	219	197	162	132	110	95	82	53							
	80	208	191	145	113	130	73	62	53	219	213	176	144	120	101	85	73	260	239	192	164	139	120	103	89							
130	44-X	85	81	0	0	0	0	0	0	88	84	0	0	0	0	0	0	106	102	0	0	0	0	0	0							
	48-X	87	83	0	0	0	0	0	0	90	86	0	0	0	0	0	0	108	104	0	0	0	0	0	0							
	48-XL	180	171	128	101	120	68	57	49	189	184	158	127	107	92	79	51	225	214	173	146	123	107	72	62							
	80	214	204	161	127	151	86	72	62	224	219	190	161	134	116	100	86	267	256	206	178	155	135	119	104							
140	44-X	87	85	0	0	0	0	0	0	90	88	0	0	0	0	0	0	109	106	0	0	0	0	0	0							
	48-X	89	86	0	0	0	0	0	0	92	89	0	0	0	0	0	0	111	108	0	0	0	0	0	0							
	48-XL	184	179	140	112	134	79	67	57	192	188	171	140	118	102	69	59	231	224	184	160	136	99	83	72							
	80	219	213	175	141	169	100	84	72	228	224	202	175	149	129	114	100	274	266	219	191	170	150	132	119							
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	188	183	152	123	148	88	76	0	195	192	180	152	130	113	79	0	235	229	191	170	148	111	96	0							
	80	223	218	187	155	187	112	96	83	232	228	214	186	164	142	126	113	279	272	234	202	182	164	146	104							
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	191	187	164	134	162	97	86	0	198	194	189	164	141	101	89	0	239	234	205	179	141	122	107	0							
	80	227	222	198	169	204	123	108	95	235	231	224	197	176	156	138	125	284	278	248	213	192	176	135	118							
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	194	190	175	144	176	106	0	0	201	197	192	175	127	110	0	0	243	238	219	180	153	133	0	0							
	80	230	226	208	180	222	134	119	106	238	234	228	207	187	168	151	110	288	282	260	226	203	168	148	133							
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	196	193	183	154	189	0	0	0	203	199	195	159	136	0	0	0	245	241	229	193	165	0	0	0							
	80	233	229	217	190	239	145	129	116	241	237	231	217	196	180	133	120	291	286	272	238	212	182	161	145							

Note: The Reactions shown in the tables above account for reactions associated with the exterior support of a multi span condition. See Max length for Multi Span Only for corresponding span length.
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Standard size 46"x 92.5" Portrait Orientation

Table 1.3A Maximum Horizontal Force (lbs) Multi span only Exterior Conditions

Exp B	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1										Roof Wind Pressure Zone 2										Roof Wind Pressure Zone 3									
			Roof Snow Load (psf)										Roof Snow Load (psf)										Roof Snow Load (psf)									
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70						
90	44-X	67	53	37	26	0	0	0	0	69	64	47	26	0	0	0	0	84	67	55	32	0	0	0	0							
	48-X	73	54	37	26	0	0	0	0	76	68	48	27	0	0	0	0	91	69	56	33	0	0	0	0							
	48-XL	147	114	78	55	42	34	29	25	160	138	101	75	58	47	40	34	184	151	117	91	70	57	48	41							
	80	168	120	83	58	44	36	30	26	183	151	107	80	61	50	42	36	210	172	124	96	74	60	51	44							
100	44-X	65	61	43	0	0	0	0	0	67	63	55	0	0	0	0	0	81	77	54	0	0	0	0	0							
	48-X	71	63	44	0	0	0	0	0	74	68	56	0	0	0	0	0	89	78	55	0	0	0	0	0							
	48-XL	156	130	92	67	52	42	35	30	168	153	117	91	71	58	49	42	195	166	132	106	86	70	59	51							
	80	178	139	98	71	55	44	37	32	191	171	124	96	76	61	52	45	222	189	143	113	91	74	62	54							
110	44-X	63	63	50	0	0	0	0	0	65	65	51	0	0	0	0	0	79	79	62	0	0	0	0	0							
	48-X	69	69	51	0	0	0	0	0	72	72	52	0	0	0	0	0	87	87	63	0	0	0	0	0							
	48-XL	163	144	106	81	63	51	43	37	174	166	132	105	86	70	59	51	204	180	145	122	101	85	71	46							
	80	186	156	112	86	66	54	45	39	198	189	142	111	92	74	63	54	233	199	162	129	107	90	76	65							
120	44-X	62	62	56	0	0	0	0	0	64	64	58	0	0	0	0	0	78	78	70	0	0	0	0	0							
	48-X	68	68	0	0	0	0	0	0	70	70	0	0	0	0	0	0	85	85	0	0	0	0	0	0							
	48-XL	169	156	120	93	74	60	51	44	179	174	144	119	99	83	70	45	212	195	157	134	115	98	85	55							
	80	193	173	127	99	79	64	54	47	201	198	158	126	105	88	75	64	242	217	179	146	121	104	90	78							
130	44-X	61	61	0	0	0	0	0	0	63	63	0	0	0	0	0	0	77	77	0	0	0	0	0	0							
	48-X	67	67	0	0	0	0	0	0	69	69	0	0	0	0	0	0	84	84	0	0	0	0	0	0							
	48-XL	174	167	133	105	86	71	60	51	181	178	155	132	111	95	83	53	218	209	168	145	128	111	75	64							
	80	199	189	141	111	92	75	63	55	206	199	174	140	118	101	88	75	249	237	191	162	136	118	104	91							
140	44-X	60	60	0	0	0	0	0	0	63	63	0	0	0	0	0	0	76	76	0	0	0	0	0	0							
	48-X	66	66	0	0	0	0	0	0	69	69	0	0	0	0	0	0	83	83	0	0	0	0	0	0							
	48-XL	179	174	143	116	97	82	69	60	185	180	165	142	123	106	72	62	224	217	179	156	138	103	87	75							
	80	201	198	155	123	103	87	73	63	208	205	188	154	130	113	99	87	251	248	195	177	150	131	116	104							
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	178	178	153	128	107	92	79	0	184	184	174	152	135	117	82	0	223	222	191	165	148	115	99	0							
	80	199	199	168	135	113	98	84	73	206	206	196	168	143	124	110	99	249	249	210	188	164	144	128	91							
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	177	177	161	139	117	101	89	0	183	183	174	161	144	105	92	0	221	221	202	173	147	127	112	0							
	80	198	198	181	147	124	107	95	83	205	205	195	181	155	136	121	109	247	247	226	194	177	156	118	103							
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	176	176	170	147	127	111	0	0	182	182	176	169	132	114	0	0	220	212	212	184	159	138	0	0							
	80	196	196	193	159	135	117	104	93	203	203	200	193	167	147	132	96	246	246	241	199	188	147	130	116							
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	175	175	175	155	137	0	0	0	181	181	181	161	142	0	0	0	219	219	219	194	171	0	0	0							
	80	195	195	195	170	145	127	113	101	202	202	202	193	179	158	117	105	245	245	245	212	192	159	141	127							

Note: The Reactions shown in the tables above account for reactions associated with the exterior support of a multi span condition. See Max length for Multi Span Only for corresponding span length.
See SEAOC PV-2 2012 for definition of Roof Zones

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K2 Systems, LLC

PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 1.4 Max Uplift Force (lbs) Multi span only Interior Conditions

Exp B	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1										Roof Wind Pressure Zone 2										Roof Wind Pressure Zone 3									
			Roof Snow Load (psf)										Roof Snow Load (psf)										Roof Snow Load (psf)									
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70						
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70						
90	44-X	-118	-88	-60	-42	0	0	0	0	-139	-119	-84	0	0	0	0	0	-150	-136	-101	0	0	0	0	0							
	48-X	-120	-92	-63	-44	0	0	0	0	-142	-122	-88	0	0	0	0	0	-153	-139	-106	0	0	0	0	0							
	48-XL	-250	-180	-124	-86	-66	-54	-45	-39	-295	-244	-173	-129	-99	-80	-68	-58	-318	-288	-208	-161	-124	-101	-85	-73							
	80	-297	-227	-156	-109	-84	-68	-57	-49	-350	-302	-218	-163	-125	-101	-86	-74	-378	-342	-262	-203	-156	-127	-107	-92							
100	44-X	-132	-107	-75	0	0	0	0	0	-152	-138	-102	0	0	0	0	0	-161	-154	0	0	0	0	0	0							
	48-X	-135	-112	-79	0	0	0	0	0	-155	-141	-107	0	0	0	0	0	-165	-157	0	0	0	0	0	0							
	48-XL	-280	-219	-154	-113	-86	-70	-59	-51	-321	-288	-209	-162	-127	-103	-87	-114	-342	-325	-247	-195	-158	-128	-108	-93							
	80	-333	-276	-194	-142	-109	-89	-75	-64	-381	-347	-264	-204	-160	-130	-110	-144	-406	-386	-307	-246	-199	-162	-136	-117							
110	44-X	-144	-125	-90	0	0	0	0	0	-161	-154	0	0	0	0	0	0	-170	-165	0	0	0	0	0	0							
	48-X	-147	-129	-94	0	0	0	0	0	-165	-157	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-305	-257	-184	-142	-109	-88	-74	-64	-342	-326	-244	-192	-158	-128	-108	-143	-360	-350	-286	-228	-188	-158	-133	0							
	80	-362	-319	-233	-179	-137	-111	-94	-81	-406	-387	-307	-242	-199	-162	-137	-180	-427	-416	-345	-288	-238	-200	-168	-145							
120	44-X	-154	-141	-104	0	0	0	0	0	-169	-165	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	-157	-144	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-326	-293	-214	-167	-133	-108	-91	-79	-359	-349	-278	-222	-184	-156	-131	0	-375	-366	-320	-261	-218	-187	-161	0							
	80	-387	-356	-270	-211	-168	-137	-115	-99	-426	-414	-342	-280	-232	-196	-166	-220	-445	-435	-380	-325	-275	-236	-203	-175							
130	44-X	-162	-155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	-165	-158	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-343	-327	-244	-192	-158	-130	-109	-94	-372	-364	-311	-251	-210	-181	-157	0	-387	-379	-347	-293	-247	-213	0	0							
	80	-407	-389	-307	-242	-200	-164	-138	-119	-442	-432	-375	-317	-265	-228	-198	-263	-459	-450	-412	-356	-311	-269	-237	-209							
140	44-X	-169	-164	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	-172	-167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-357	-347	-272	-217	-180	-153	-129	-111	-384	-376	-340	-279	-236	-204	0	0	-397	-390	-371	-324	-275	0	0	0							
	80	-424	-413	-339	-274	-228	-193	-163	-140	-456	-446	-404	-348	-298	-258	-227	-310	-471	-463	-440	-386	-343	-302	-268	-240							
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-369	-360	-299	-241	-202	-174	-150	0	-393	-386	-363	-307	-261	-227	0	0	-405	-398	-389	-347	-302	0	0	0							
	80	-439	-428	-367	-305	-255	-219	-189	-163	-467	-458	-431	-375	-330	-287	-254	-355	-481	-473	-462	-412	-370	-335	-298	0							
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-380	-371	-325	-265	-224	-193	-170	0	-401	-395	-383	-333	-286	0	0	0	-412	-406	-397	-368	0	0	0	0							
	80	-451	-441	-393	-335	-282	-244	-215	-188	-477	-469	-455	-401	-358	-316	-281	-395	-489	-482	-472	-437	-395	-360	0	0							
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-389	-381	-350	-288	-245	-213	0	0	-408	-402	-393	-357	0	0	0	0	0	0	0	0	0	0	0	0							
	80	-461	-452	-417	-361	-309	-269	-238	-213	-485	-477	-467	-424	-381	-344	-308	0	-496	-489	-480	-459	-418	0	0	0							
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-396	-389	-369	-311	-266	0	0	0	-414	-408	-400	0	0	0	0	0	0	0	0	0	0	0	0	0							
	80	-470	-462	-439	-384	-336	-293	-260	-234	-492	-485	-475	-445	-403	-369	0	0	-502	-496	-487	-479	-439	0	0	0							

Note: The Reactions shown in the tables above account for reactions associated with the exterior support of a multi span condition. See Max length for Multi Span Only for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 1.4A Max Uplift Force (lbs) Multi span only Exterior Conditions

Exp B	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1										Roof Wind Pressure Zone 2										Roof Wind Pressure Zone 3									
			Roof Snow Load (psf)										Roof Snow Load (psf)										Roof Snow Load (psf)									
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70						
90	44-X	-110	-88	-60	-42	0	0	0	0	-114	-114	-84	0	0	0	0	0	-115	-115	-101	0	0	0	0	0							
	48-X	-120	-89	-61	-43	0	0	0	0	-125	-121	-86	0	0	0	0	0	-126	-126	-103	0	0	0	0	0							
	48-XL	-242	-187	-129	-90	-69	-56	-47	-41	-286	-246	-180	-134	-103	-84	-71	-61	-309	-279	-216	-167	-129	-105	-88	-76							
	80	-276	-198	-136	-95	-73	-59	-50	-43	-326	-269	-191	-142	-109	-89	-75	-64	-352	-318	-229	-178	-137	-111	-93	-81							
100	44-X	-113	-107	-75	0	0	0	0	0	-115	-115	-102	0	0	0	0	0	-116	-116	0	0	0	0	0	0							
	48-X	-124	-109	-76	0	0	0	0	0	-127	-127	-104	0	0	0	0	0	-128	-128	0	0	0	0	0	0							
	48-XL	-271	-227	-160	-117	-90	-73	-61	-53	-311	-283	-217	-168	-132	-107	-91	-119	-331	-315	-250	-203	-164	-133	-112	-97							
	80	-309	-241	-170	-124	-95	-77	-65	-56	-354	-317	-230	-179	-140	-114	-96	-126	-377	-359	-273	-215	-174	-141	-119	-102							
110	44-X	-114	-114	-90	0	0	0	0	0	-116	-116	0	0	0	0	0	0	-117	-117	0	0	0	0	0	0							
	48-X	-126	-126	-92	0	0	0	0	0	-128	-128	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-296	-260	-192	-147	-113	-92	-77	-67	-331	-316	-251	-200	-164	-133	-113	-149	-348	-339	-282	-237	-196	-165	-138	0							
	80	-337	-283	-203	-156	-120	-97	-82	-71	-377	-360	-269	-212	-174	-141	-119	-158	-390	-387	-315	-252	-208	-175	-147	-127							
120	44-X	-116	-116	-104	0	0	0	0	0	-117	-117	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	-127	-127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-316	-290	-223	-174	-139	-113	-95	-82	-347	-338	-279	-230	-191	-162	-137	0	-350	-350	-310	-265	-226	-195	-168	0							
	80	-360	-323	-236	-184	-147	-119	-100	-87	-389	-385	-307	-244	-203	-172	-145	-192	-392	-392	-354	-288	-240	-206	-178	-153							
130	44-X	-116	-116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	-128	-128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-332	-318	-253	-200	-165	-135	-114	-98	-350	-350	-306	-260	-218	-188	-163	0	-352	-352	-336	-291	-256	-222	0	0							
	80	-379	-360	-269	-212	-175	-143	-120	-104	-392	-392	-343	-277	-232	-199	-173	-230	-394	-394	-383	-323	-272	-235	-207	-182							
140	44-X	-117	-117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	-129	-129	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-346	-337	-277	-226	-188	-159	-134	-116	-352	-352	-330	-284	-245	-212	0	0	-353	-353	-353	-315	-280	0	0	0							
	80	-389	-384	-300	-239	-199	-169	-142	-123	-393	-393	-376	-308	-260	-225	-198	-271	-395	-395	-395	-357	-303	-264	-234	-210							
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-350	-349	-300	-251	-210	-181	-156	0	-353	-353	-351	-306	-272	-236	0	0	-354	-354	-354	-336	-302	0	0	0							
	80	-391	-391	-330	-266	-223	-192	-165	-143	-394	-394	-394	-338	-288	-251	-222	-310	-396	-396	-396	-383	-333	-292	-260	0							
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-351	-351	-321	-275	-233	-201	-177	0	-354	-354	-354	-327	-292	0	0	0	-355	-355	-355	-355	0	0	0	0							
	80	-393	-393	-359	-292	-247	-213	-188	-164	-395	-395	-395	-367	-315	-276	-246	-345	-397	-397	-397	-397	-363	-320	0	0							
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-352	-352	-340	-295	-255	-222	0	0	-354	-354	-354	-346	0	0	0	0	0	0	0	0	0	0	0	0							
	80	-394	-394	-386	-318	-277	0	0	0	-355	-355	-355	0	0	0	0	0	0	0	0	0	0	0	0	0							
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-353	-353	-353	-313	-277	0	0	0	-355	-355	-355	0	0	0	0	0	0	0	0	0	0	0	0	0							
	80	-395	-395	-395	-343	-293	-256	-227	-205	-397	-397	-397	-397	-367	-325	0	0	-398	-398	-398	-398	-398	0	0	0							

Note: The Reactions shown in the tables above account for reactions associated with the exterior support of a multi span condition. See Max length for Multi Span Only for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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Standard size 46"x 92.5" Portrait Orientation

Table 1.5 Max Length L (inches) for Single Span Interior Conditions

Exp B	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1										Roof Wind Pressure Zone 2										Roof Wind Pressure Zone 3									
			Roof Snow Load (psf)										Roof Snow Load (psf)										Roof Snow Load (psf)									
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70						
90	44-X	50	38	26	18	0	0	0	0	39	34	25	0	0	0	0	0	34	31	24	0	0	0	0	0							
	48-X	51	48	33	23	0	0	0	0	50	43	31	0	0	0	0	0	43	39	30	0	0	0	0	0							
	48-XL	102	78	54	38	29	23	20	17	80	69	50	38	29	23	20	17	69	63	48	38	29	23	20	17							
	80	156	120	83	58	44	36	30	26	123	106	77	58	44	36	30	26	106	96	74	58	44	36	30	26							
100	44-X	43	43	30	0	0	0	0	0	42	38	28	0	0	0	0	0	36	34	0	0	0	0	0	0							
	48-X	43	36	26	0	0	0	0	0	34	31	24	0	0	0	0	0	29	28	0	0	0	0	0	0							
	48-XL	87	73	52	38	29	23	20	17	68	62	48	37	29	23	20	17	58	56	44	36	29	23	20	17							
	80	134	112	79	58	44	36	30	26	104	95	73	57	44	36	30	26	89	85	68	55	44	36	30	26							
110	44-X	37	33	24	0	0	0	0	0	28	27	0	0	0	0	0	0	24	24	0	0	0	0	0	0							
	48-X	38	34	24	0	0	0	0	0	29	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	76	66	49	38	29	23	20	17	58	56	44	35	29	23	20	17	50	48	40	34	28	23	20	0							
	80	116	102	75	58	44	36	30	26	89	85	68	54	44	36	30	26	76	74	62	52	43	36	30	26							
120	44-X	32	31	23	0	0	0	0	0	25	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	33	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	66	61	46	36	29	23	20	17	50	49	41	33	28	23	20	0	43	42	37	31	27	23	20	0							
	80	101	93	71	55	44	36	30	26	77	75	62	51	43	36	30	26	66	64	56	48	41	35	30	26							
130	44-X	28	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	29	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	58	55	44	35	29	23	20	17	44	43	37	32	27	23	20	0	37	36	33	29	25	22	0	0							
	80	89	85	67	53	44	36	30	26	67	66	57	49	41	35	30	26	57	56	51	44	39	34	30	26							
140	44-X	25	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	25	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	51	50	41	33	28	23	20	17	39	38	34	29	25	22	0	0	33	32	30	27	24	0	0	0							
	80	78	76	63	51	42	36	30	26	59	58	52	45	39	34	30	26	50	49	47	41	36	32	29	26							
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	45	44	38	32	27	23	20	0	34	33	31	27	24	21	0	0	29	28	28	25	22	0	0	0							
	80	69	68	58	49	41	35	30	26	52	51	48	42	37	32	29	26	44	43	42	38	34	31	28	0							
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	41	40	35	30	26	22	20	0	30	30	29	26	23	0	0	0	26	25	25	23	0	0	0	0							
	80	62	61	54	46	39	34	30	26	47	46	44	39	35	31	28	25	39	39	38	35	32	29	0	0							
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	36	36	33	29	25	21	0	0	27	27	26	24	0	0	0	0	0	0	0	0	0	0	0	0							
	80	56	55	50	44	38	33	29	26	42	41	40	36	33	30	27	0	35	34	34	32	29	0	0	0							
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	33	32	31	27	24	0	0	0	24	24	24	0	0	0	0	0	0	0	0	0	0	0	0	0							
	80	50	49	47	41	36	32	28	25	37	37	36	34	31	28	0	0	31	31	30	30	27	0	0	0							

Note: The Length is based on use of 2 or more spans. Cantilevered ends may be used that are no greater than 1/3 of the backspan.
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K2 Systems, LLC

PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 1.5A Max Length L (inches) for Single Span Exterior Conditions

Exp B	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70
90	44-X	50	37	25	18	0	0	0	0	35	33	24	0	0	0	0	0	28	28	23	0	0	0	0	0	
	48-X	51	38	26	18	0	0	0	0	37	34	24	0	0	0	0	0	30	30	23	0	0	0	0	0	
	48-XL	102	72	50	35	27	22	18	16	80	66	47	35	27	22	18	16	65	62	45	35	27	22	18	16	
	80	143	111	76	53	41	33	28	24	111	97	71	53	41	33	28	24	90	88	68	53	41	33	28	24	
100	44-X	40	34	24	0	0	0	0	0	28	28	22	0	0	0	0	0	23	23	0	0	0	0	0	0	
	48-X	43	35	25	0	0	0	0	0	30	30	23	0	0	0	0	0	24	24	0	0	0	0	0	0	
	48-XL	87	68	48	35	27	22	18	16	64	61	44	34	27	22	18	16	52	52	42	33	27	22	18	16	
	80	123	103	73	53	41	33	28	24	88	87	67	52	41	33	28	24	72	72	62	51	41	33	28	24	
110	44-X	32	32	23	0	0	0	0	0	23	23	0	0	0	0	0	0	18	18	0	0	0	0	0	0	
	48-X	34	33	23	0	0	0	0	0	24	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	73	63	45	35	27	22	18	16	52	52	41	32	27	22	18	16	42	42	39	31	26	22	18	0	
	80	102	94	69	53	41	33	28	24	72	72	62	50	41	33	28	24	58	58	57	48	40	33	28	24	
120	44-X	27	27	22	0	0	0	0	0	19	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	28	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	61	59	43	33	27	22	18	16	43	43	39	31	26	22	18	0	35	35	35	30	25	21	18	0	
	80	84	84	66	51	41	33	28	24	59	59	57	47	39	33	28	24	49	49	49	44	38	32	28	24	
130	44-X	22	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	24	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	51	51	41	32	26	22	18	16	36	36	36	29	25	21	18	0	30	30	30	28	23	20	0	0	
	80	71	71	62	49	41	33	28	24	50	50	50	45	38	32	28	24	41	41	41	41	36	31	27	24	
140	44-X	19	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	20	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	43	43	38	31	26	22	18	16	31	31	31	28	23	20	0	0	25	25	25	25	22	0	0	0	
	80	60	60	58	47	39	33	28	24	43	43	43	42	36	31	27	24	35	35	35	35	33	30	26	24	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	37	37	36	29	25	21	18	0	27	27	27	26	22	20	0	0	22	22	22	22	21	0	0	0	
	80	52	52	52	45	38	32	28	24	37	37	37	37	34	30	26	24	30	30	30	30	30	28	25	0	
160	44-X	0	27	22	0	0	0	0	0	19	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	33	33	33	28	24	20	18	0	23	23	23	23	21	0	0	0	19	19	19	19	19	0	0	0	
	80	45	45	45	43	36	31	28	24	32	32	32	32	32	29	26	23	27	27	27	27	27	26	0	0	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	29	29	29	27	23	20	0	0	21	21	21	21	0	0	0	0	0	0	0	0	0	0	0	0	
	80	40	40	40	40	35	30	27	24	29	29	29	29	29	27	25	0	24	24	24	24	24	0	0	0	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	26	26	26	26	22	0	0	0	18	18	18	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	35	35	35	35	33	29	26	23	25	25	25	25	25	25	25	0	21	21	21	21	21	0	0	0	

Note: The Length is based on use of 2 or more spans. Cantilevered ends may be used that are no greater than 1/3 of the backspan.
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K2 Systems, LLC

PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 1.6 Maximum Downward Force (lbs) Single span only Interior Conditions

Exp B	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1										Roof Wind Pressure Zone 2										Roof Wind Pressure Zone 3									
			Roof Snow Load (psf)										Roof Snow Load (psf)										Roof Snow Load (psf)									
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70						
90	44-X	85	95	72	54	0	0	0	0	86	93	72	0	0	0	0	0	86	89	60	0	0	0	0	0							
	48-X	87	97	74	55	0	0	0	0	88	94	73	0	0	0	0	0	88	91	62	0	0	0	0	0							
	48-XL	175	194	148	110	74	67	61	45	176	190	147	96	83	72	52	51	177	183	124	108	89	61	59	55							
	80	268	298	227	168	113	103	93	68	270	291	225	148	127	111	80	78	271	280	190	165	137	94	90	85							
100	44-X	86	95	75	0	0	0	0	0	86	90	75	0	0	0	0	0	86	88	0	0	0	0	0	0							
	48-X	87	97	77	0	0	0	0	0	88	92	77	0	0	0	0	0	88	90	0	0	0	0	0	0							
	48-XL	176	194	154	122	80	74	67	48	177	186	154	102	91	80	56	56	177	180	134	112	99	71	65	61							
	80	269	298	236	187	122	113	103	74	271	284	236	156	139	123	86	85	272	276	206	172	151	109	99	94							
110	44-X	86	96	78	0	0	0	0	0	86	89	0	0	0	0	0	0	87	86	0	0	0	0	0	0							
	48-X	88	98	80	0	0	0	0	0	88	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	177	191	160	137	86	81	74	52	177	182	161	107	100	88	61	61	178	177	144	121	105	84	71	0							
	80	270	292	245	210	132	124	114	80	272	278	247	164	153	136	93	94	272	270	220	185	161	129	109	105							
120	44-X	86	96	82	0	0	0	0	0	87	86	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	88	98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	177	187	168	148	94	89	82	57	178	177	166	118	105	98	70	0	178	174	152	130	111	96	82	0							
	80	271	287	257	227	143	136	126	87	272	271	254	181	161	150	107	104	273	267	233	199	170	146	126	116							
130	44-X	86	96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	88	98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	177	184	176	159	100	97	91	62	178	174	170	129	110	105	80	0	179	175	160	139	122	106	0	0							
	80	272	282	269	243	154	149	139	95	273	266	260	197	169	161	123	114	274	268	245	212	187	162	143	129							
140	44-X	87	92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	88	98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	178	179	181	169	105	107	100	67	179	175	174	136	118	111	0	0	179	176	167	146	130	0	0	0							
	80	272	274	277	259	161	163	153	103	273	268	266	209	180	171	138	125	274	269	256	224	199	177	157	141							
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	178	174	186	179	109	114	110	0	179	175	177	144	127	118	0	0	179	176	172	154	138	0	0	0							
	80	273	266	285	275	167	174	168	112	274	269	272	220	195	180	150	135	274	270	264	235	211	191	172	0							
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	178	174	190	189	114	120	119	0	179	176	181	150	134	0	0	0	179	177	173	160	0	0	0	0							
	80	273	267	291	289	174	184	182	121	274	270	277	230	206	190	163	147	275	271	265	245	222	202	0	0							
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	179	175	194	196	121	126	0	0	179	176	180	157	0	0	0	0	0	0	0	0	0	0	0	0							
	80	274	268	297	300	185	193	193	130	274	270	275	240	216	198	176	0	275	271	266	254	231	0	0	0							
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	179	176	198	202	129	0	0	0	179	177	178	0	0	0	0	0	0	0	0	0	0	0	0	0							
	80	274	269	303	309	197	203	204	138	275	271	273	249	225	206	0	0	275	272	267	263	241	0	0	0							

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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Standard size 46"x 92.5" Portrait Orientation

Table 1.6A Maximum Downward Force (lbs) Single span only Exterior Conditions

Exp B	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1										Roof Wind Pressure Zone 2										Roof Wind Pressure Zone 3									
			Roof Snow Load (psf)										Roof Snow Load (psf)										Roof Snow Load (psf)									
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70						
90	44-X	87	91	69	51	0	0	0	0	77	92	69	0	0	0	0	0	73	83	58	0	0	0	0	0							
	48-X	89	93	71	52	0	0	0	0	82	93	70	0	0	0	0	0	77	88	59	0	0	0	0	0							
	48-XL	175	180	137	101	68	62	56	41	176	180	136	89	77	67	48	47	166	181	114	100	82	57	54	51							
	80	247	275	210	155	105	95	86	63	245	267	208	136	117	102	73	72	230	257	175	152	126	87	83	78							
100	44-X	80	91	72	0	0	0	0	0	72	83	72	0	0	0	0	0	69	73	0	0	0	0	0	0							
	48-X	86	93	74	0	0	0	0	0	77	89	74	0	0	0	0	0	73	78	0	0	0	0	0	0							
	48-XL	176	180	142	113	74	68	62	45	165	181	142	94	84	74	1266	52	157	167	127	104	91	66	60	57							
	80	248	274	218	173	113	104	95	68	229	261	218	144	129	113	1939	79	218	232	189	159	139	101	91	87							
110	44-X	75	92	75	0	0	0	0	0	69	74	0	0	0	0	0	0	66	67	0	0	0	0	0	0							
	48-X	80	94	76	0	0	0	0	0	73	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	172	181	148	127	80	75	69	48	157	168	151	99	92	82	1304	57	150	153	140	112	97	77	66	0							
	80	238	269	226	194	122	115	105	74	218	234	227	151	141	125	1998	87	209	213	203	171	149	119	101	97							
120	44-X	71	82	79	0	0	0	0	0	66	67	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	76	87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	163	181	155	137	86	82	76	53	151	154	158	109	97	90	1346	0	146	146	146	123	103	88	76	0							
	80	226	260	237	209	132	126	116	81	209	214	233	167	149	138	2062	96	202	202	202	183	157	135	116	107							
130	44-X	68	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	73	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	156	170	163	146	93	90	84	57	146	146	165	119	102	97	1392	0	142	142	142	134	113	98	0	0							
	80	217	236	248	224	142	138	128	87	203	203	229	181	156	149	2132	105	197	197	197	195	172	149	132	119							
140	44-X	66	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	71	73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	151	156	171	156	97	98	92	62	143	143	157	129	109	103	0	0	139	139	139	139	123	0	0	0							
	80	210	217	255	239	148	151	141	95	198	198	218	192	166	157	2161	116	193	193	193	193	183	164	145	130							
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	147	147	178	165	101	105	101	0	140	140	151	138	118	109	0	0	137	137	137	137	132	0	0	0							
	80	204	204	255	253	155	161	155	103	194	194	209	194	180	166	2163	125	190	190	190	190	190	176	158	0							
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	144	144	176	175	105	111	110	0	138	138	146	138	126	0	0	0	135	135	135	135	0	0	0	0							
	80	200	200	244	266	161	170	168	112	191	191	202	191	189	175	2165	136	187	187	187	187	187	186	0	0							
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	141	141	170	184	112	117	0	0	136	136	141	136	0	0	0	0	0	0	0	0	0	0	0	0							
	80	196	196	236	274	171	178	178	120	189	189	196	189	189	182	2168	0	185	185	185	185	185	0	0	0							
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	139	139	165	192	119	0	0	0	134	134	138	0	0	0	0	0	0	0	0	0	0	0	0	0							
	80	193	193	229	267	182	187	188	127	186	186	191	186	186	186	0	0	183	183	183	183	183	0	0	0							

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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K2 Systems, LLC

PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 1.7 Maximum Horizontal Force (lbs) Single span only Interior Conditions

Exp B	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70
90	44-X	29	22	15	11	0	0	0	0	31	27	20	11	0	0	0	0	36	30	23	13	0	0	0	0	
	48-X	29	23	16	11	0	0	0	0	32	27	20	11	0	0	0	0	37	30	23	14	0	0	0	0	
	48-XL	59	45	31	22	17	14	11	10	64	55	40	30	23	19	16	14	74	61	47	36	28	23	19	16	
	80	70	48	33	26	21	18	15	15	98	85	62	46	35	29	24	21	113	93	72	56	43	35	29	25	
100	44-X	30	26	18	0	0	0	0	0	33	30	23	0	0	0	0	0	38	32	22	0	0	0	0	0	
	48-X	31	26	18	0	0	0	0	0	33	30	23	0	0	0	0	0	39	33	23	0	0	0	0	0	
	48-XL	62	52	37	27	21	17	14	12	67	61	47	36	29	23	20	17	78	66	53	43	34	28	24	20	
	80	96	80	56	41	32	26	22	19	103	94	72	56	44	35	30	26	120	102	81	65	53	43	36	31	
110	44-X	32	29	21	0	0	0	0	0	34	32	21	0	0	0	0	0	40	36	26	0	0	0	0	0	
	48-X	32	29	21	0	0	0	0	0	35	33	22	0	0	0	0	0	41	37	26	0	0	0	0	0	
	48-XL	65	57	42	33	25	20	17	15	70	66	53	42	35	28	24	20	82	72	58	49	40	34	28	18	
	80	100	88	65	50	38	31	26	23	107	102	81	64	53	43	36	31	125	110	89	75	62	52	44	38	
120	44-X	33	32	23	0	0	0	0	0	35	34	24	0	0	0	0	0	41	40	29	0	0	0	0	0	
	48-X	34	33	0	0	0	0	0	0	35	34	0	0	0	0	0	0	42	41	0	0	0	0	0	0	
	48-XL	68	62	48	37	30	24	20	18	72	70	58	47	39	33	28	18	85	78	63	54	46	39	34	22	
	80	104	95	73	57	46	37	31	27	110	107	88	73	60	51	43	37	130	119	96	82	70	60	52	45	
130	44-X	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	
	48-X	35	36	0	0	0	0	0	0	36	37	0	0	0	0	0	0	43	44	0	0	0	0	0	0	
	48-XL	70	67	53	42	35	28	24	21	73	71	62	53	44	38	33	21	87	83	67	58	51	44	30	26	
	80	107	102	81	64	53	43	37	32	112	109	95	81	68	58	51	44	134	128	103	89	78	68	60	53	
140	44-X	35	36	0	0	0	0	0	0	36	37	0	0	0	0	0	0	44	44	0	0	0	0	0	0	
	48-X	36	38	0	0	0	0	0	0	37	40	0	0	0	0	0	0	44	48	0	0	0	0	0	0	
	48-XL	71	69	57	47	39	33	28	24	75	73	66	57	49	43	29	25	89	87	72	62	55	41	35	30	
	80	109	106	88	71	59	50	42	37	114	112	101	87	75	65	57	50	137	133	110	95	85	75	67	60	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	73	71	61	51	43	37	32	0	76	74	70	61	54	47	33	0	91	89	76	66	59	46	40	0	
	80	112	109	93	78	66	56	49	42	116	114	107	93	83	72	64	57	140	136	117	101	91	82	74	53	
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	74	72	65	55	47	41	36	0	77	75	73	64	58	42	37	0	93	91	81	70	59	51	45	0	
	80	113	111	99	85	72	62	55	48	118	115	112	99	88	79	70	63	142	139	124	106	96	88	68	60	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	75	74	68	59	51	44	0	0	78	76	75	68	53	46	0	0	94	92	85	74	64	55	0	0	
	80	115	113	104	90	78	68	60	54	119	117	114	104	93	85	76	56	144	141	130	113	101	85	75	67	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	76	75	71	62	55	0	0	0	79	77	76	64	57	0	0	0	95	93	89	78	69	0	0	0	
	80	116	114	109	95	84	73	65	59	121	118	116	108	98	90	67	61	146	143	136	119	106	92	81	73	

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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K2 Systems, LLC

PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 1.7A Maximum Horizontal Force (lbs) Single span only Exterior Conditions

Exp B	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70
90	44-X	29	21	15	10	0	0	0	0	30	27	19	11	0	0	0	0	36	27	22	13	0	0	0	0	
	48-X	30	22	15	10	0	0	0	0	31	27	19	11	0	0	0	0	37	29	22	13	0	0	0	0	
	48-XL	59	42	29	20	15	13	11	9	64	53	37	28	21	17	15	13	74	60	43	34	26	21	18	15	
	80	83	64	44	31	24	19	16	14	89	78	57	43	33	27	22	19	104	85	66	51	40	32	27	23	
100	44-X	28	25	17	0	0	0	0	0	29	27	22	0	0	0	0	0	36	31	22	0	0	0	0	0	
	48-X	30	25	18	0	0	0	0	0	31	29	22	0	0	0	0	0	38	31	22	0	0	0	0	0	
	48-XL	62	48	34	25	19	15	13	11	65	60	43	34	26	21	18	16	78	62	50	39	32	26	22	19	
	80	88	73	52	38	29	24	20	17	91	86	66	51	40	33	28	24	110	92	74	60	49	40	33	29	
110	44-X	28	28	20	0	0	0	0	0	29	29	21	0	0	0	0	0	35	35	25	0	0	0	0	0	
	48-X	30	28	20	0	0	0	0	0	31	29	21	0	0	0	0	0	37	35	25	0	0	0	0	0	
	48-XL	64	54	39	30	23	19	16	14	66	62	49	39	32	26	22	19	79	68	56	45	37	31	26	17	
	80	88	81	60	46	35	29	24	21	91	85	74	59	49	40	33	29	110	101	82	69	57	48	40	35	
120	44-X	27	27	22	0	0	0	0	0	28	28	23	0	0	0	0	0	34	34	28	0	0	0	0	0	
	48-X	29	29	0	0	0	0	0	0	30	30	0	0	0	0	0	0	36	36	0	0	0	0	0	0	
	48-XL	62	60	44	34	27	22	19	16	65	62	55	44	36	31	26	17	78	75	60	51	42	36	31	20	
	80	87	87	68	53	42	34	29	25	90	90	81	67	56	47	40	34	108	108	85	76	65	56	48	41	
130	44-X	27	27	0	0	0	0	0	0	28	28	0	0	0	0	0	0	34	34	0	0	0	0	0	0	
	48-X	29	29	0	0	0	0	0	0	30	30	0	0	0	0	0	0	36	36	0	0	0	0	0	0	
	48-XL	61	61	49	39	32	26	22	19	64	64	60	49	41	35	31	20	77	77	61	56	47	41	28	24	
	80	85	85	75	59	49	40	34	29	88	88	83	74	63	54	47	40	107	107	93	82	72	63	55	49	
140	44-X	27	27	0	0	0	0	0	0	28	28	0	0	0	0	0	0	33	33	0	0	0	0	0	0	
	48-X	28	28	0	0	0	0	0	0	29	29	0	0	0	0	0	0	35	35	0	0	0	0	0	0	
	48-XL	61	61	54	43	36	30	26	22	63	63	60	54	45	39	26	23	76	76	67	59	52	38	32	28	
	80	84	84	81	66	55	46	39	34	87	87	83	80	70	60	53	47	106	106	101	82	78	70	62	55	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	60	60	59	47	40	34	29	0	62	62	61	58	50	43	30	0	75	75	73	59	57	43	37	0	
	80	84	84	84	72	61	52	45	39	87	87	87	82	76	66	59	53	105	105	105	90	82	76	68	48	
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	60	60	60	51	43	37	33	0	62	62	62	59	54	39	34	0	75	75	75	64	54	47	41	0	
	80	83	83	83	78	66	57	50	44	86	86	86	82	81	73	65	58	104	104	104	98	83	81	63	55	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	59	59	59	55	47	41	0	0	62	62	62	59	49	42	0	0	74	74	74	69	59	51	0	0	
	80	83	83	83	83	72	62	55	50	85	85	85	85	81	78	70	51	103	103	103	103	90	78	69	62	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	59	59	59	59	51	0	0	0	61	61	61	61	52	0	0	0	74	74	74	74	63	0	0	0	
	80	82	82	82	82	77	68	60	54	85	85	85	85	81	81	62	56	103	103	103	103	97	85	75	68	

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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Table 1.8 Max Uplift Force (lbs) Single span only Interior Conditions

Exp B	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1									Roof Wind Pressure Zone 2									Roof Wind Pressure Zone 3								
			Roof Snow Load (psf)									Roof Snow Load (psf)									Roof Snow Load (psf)								
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70			
90	44-X	-47	-36	-25	-18	0	0	0	0	-88	-48	-35	0	0	0	0	0	-60	-54	-42	0	0	0	0	0				
	48-X	-48	-37	-26	-18	0	0	0	0	-90	-49	-36	0	0	0	0	0	-61	-56	-43	0	0	0	0	0				
	48-XL	-97	-75	-51	-36	-28	-22	-19	-16	-180	-98	-72	-54	-41	-33	-28	-24	-123	-112	-86	-67	-52	-42	-35	-30				
	80	-148	-114	-79	-55	-42	-34	-29	-25	-276	-151	-110	-82	-63	-51	-43	-37	-189	-171	-132	-103	-79	-64	-54	-47				
100	44-X	-53	-44	-31	0	0	0	0	0	-74	-55	-42	0	0	0	0	0	-65	-61	0	0	0	0	0	0				
	48-X	-54	-45	-32	0	0	0	0	0	-76	-56	-43	0	0	0	0	0	-66	-63	0	0	0	0	0	0				
	48-XL	-109	-91	-64	-47	-36	-29	-25	-21	-153	-113	-87	-67	-53	-43	-36	-31	-132	-126	-100	-81	-66	-53	-45	-39				
	80	-166	-139	-98	-72	-55	-45	-38	-32	-234	-173	-133	-103	-81	-66	-55	-48	-203	-193	-153	-124	-100	-82	-69	-59				
110	44-X	-58	-52	-37	0	0	0	0	0	-65	-62	0	0	0	0	0	0	-68	-66	0	0	0	0	0	0				
	48-X	-59	-53	-38	0	0	0	0	0	-66	-63	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	-118	-104	-77	-59	-45	-37	-31	-27	-132	-126	-100	-80	-66	-53	-45	-39	-140	-136	-113	-95	-78	-66	-55	0				
	80	-181	-159	-117	-90	-69	-56	-47	-41	-203	-193	-154	-122	-101	-82	-69	-59	-214	-208	-173	-145	-120	-101	-85	-73				
120	44-X	-62	-59	-44	0	0	0	0	0	-68	-66	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	-63	-61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	-126	-116	-89	-69	-55	-45	-38	-33	-139	-135	-112	-92	-77	-65	-55	0	-145	-142	-124	-106	-91	-78	-67	0				
	80	-193	-178	-137	-106	-85	-69	-58	-50	-213	-207	-171	-141	-117	-99	-84	-72	-223	-217	-190	-162	-139	-119	-103	-89				
130	44-X	-65	-66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	-66	-68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	-133	-127	-101	-80	-66	-54	-45	-39	-144	-141	-122	-104	-87	-75	-65	0	-150	-147	-134	-116	-103	-89	0	0				
	80	-204	-195	-155	-122	-101	-83	-70	-60	-221	-216	-187	-160	-134	-115	-100	-86	-230	-225	-206	-178	-157	-136	-120	-105				
140	44-X	-67	-69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	-69	-74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	-138	-135	-111	-90	-75	-64	-54	-46	-149	-146	-132	-114	-98	-85	0	0	-154	-151	-144	-126	-112	0	0	0				
	80	-212	-206	-170	-138	-115	-98	-82	-71	-228	-223	-202	-174	-150	-130	-115	-101	-236	-231	-220	-193	-171	-153	-135	-121				
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	-143	-140	-120	-100	-84	-72	-62	0	-152	-150	-141	-123	-109	-95	0	0	-157	-154	-151	-135	-121	0	0	0				
	80	-219	-214	-184	-154	-129	-111	-96	-82	-234	-229	-215	-188	-166	-145	-128	-115	-240	-237	-231	-206	-185	-168	-150	0				
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	-147	-144	-128	-110	-93	-80	-71	0	-156	-153	-148	-131	-117	0	0	0	-160	-157	-154	-142	0	0	0	0				
	80	-225	-220	-196	-169	-143	-123	-109	-95	-238	-234	-227	-200	-179	-159	-142	-128	-244	-241	-236	-218	-197	-180	0	0				
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	-151	-148	-136	-118	-102	-89	0	0	-158	-156	-152	-138	0	0	0	0	0	0	0	0	0	0	0	0				
	80	-231	-226	-208	-181	-156	-136	-120	-108	-242	-239	-233	-212	-191	-173	-155	0	-248	-245	-240	-229	-209	0	0	0				
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	-154	-151	-143	-125	-111	0	0	0	-161	-158	-155	0	0	0	0	0	0	0	0	0	0	0	0	0				
	80	-235	-231	-219	-192	-169	-148	-131	-118	-246	-242	-238	-223	-202	-184	0	0	-251	-248	-244	-239	-219	0	0	0				

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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K2 Systems, LLC

PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 1.8A Max Uplift Force (lbs) Single span only Exterior Conditions

Exp B	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1										Roof Wind Pressure Zone 2										Roof Wind Pressure Zone 3									
			Roof Snow Load (psf)										Roof Snow Load (psf)										Roof Snow Load (psf)									
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70						
90	44-X	-48	-35	-24	-17	0	0	0	0	-50	-48	-34	0	0	0	0	0	-51	-51	-40	0	0	0	0	0							
	48-X	-49	-36	-25	-17	0	0	0	0	-53	-48	-34	0	0	0	0	0	-54	-54	-41	0	0	0	0	0							
	48-XL	-97	-69	-47	-33	-25	-21	-17	-15	-114	-94	-66	-50	-38	-31	-26	-22	-116	-111	-80	-62	-48	-39	-32	-28							
	80	-136	-106	-73	-51	-39	-32	-27	-23	-159	-139	-102	-76	-58	-47	-40	-34	-161	-157	-122	-95	-73	-59	-50	-43							
100	44-X	-50	-43	-30	0	0	0	0	0	-51	-51	-41	0	0	0	0	0	-51	-51	0	0	0	0	0	0							
	48-X	-53	-44	-31	0	0	0	0	0	-54	-54	-42	0	0	0	0	0	-55	-55	0	0	0	0	0	0							
	48-XL	-109	-84	-59	-43	-33	-27	-23	-20	-116	-111	-80	-62	-49	-40	-33	-29	-117	-117	-95	-75	-61	-49	-41	-36							
	80	-153	-128	-91	-66	-51	-41	-35	-30	-161	-159	-123	-95	-75	-61	-51	-44	-162	-162	-141	-115	-93	-75	-63	-55							
110	44-X	-50	-50	-36	0	0	0	0	0	-51	-51	0	0	0	0	0	0	-52	-52	0	0	0	0	0	0							
	48-X	-54	-51	-37	0	0	0	0	0	-55	-55	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-115	-99	-71	-54	-42	-34	-29	-25	-117	-117	-94	-74	-61	-49	-42	-36	-118	-118	-110	-88	-72	-61	-51	0							
	80	-160	-147	-108	-83	-64	-52	-44	-38	-162	-162	-141	-113	-93	-75	-64	-55	-164	-164	-159	-134	-111	-93	-78	-68							
120	44-X	-51	-51	-42	0	0	0	0	0	-52	-52	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	-54	-54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-116	-112	-82	-64	-51	-42	-35	-30	-118	-118	-107	-85	-71	-60	-50	0	-119	-119	-119	-100	-84	-72	-62	0							
	80	-161	-161	-126	-98	-78	-64	-54	-46	-164	-164	-157	-130	-108	-92	-77	-66	-165	-165	-165	-149	-128	-110	-95	-82							
130	44-X	-51	-51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	-55	-55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-117	-117	-94	-74	-61	-50	-42	-36	-118	-118	-118	-96	-81	-69	-60	0	-119	-119	-119	-113	-95	-82	0	0							
	80	-163	-163	-142	-113	-93	-76	-64	-55	-164	-164	-164	-147	-124	-106	-92	-79	-165	-165	-165	-164	-145	-125	-111	-97							
140	44-X	-52	-52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	-55	-55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-118	-118	-104	-83	-69	-59	-49	-43	-119	-119	-119	-107	-91	-78	0	0	-119	-119	-119	-119	-106	0	0	0							
	80	-164	-164	-156	-128	-106	-90	-76	-65	-165	-165	-165	-160	-139	-120	-106	-93	-166	-166	-166	-166	-158	-141	-125	-112							
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-118	-118	-115	-93	-78	-67	-58	0	-119	-119	-119	-118	-100	-87	0	0	-120	-120	-120	-120	-116	0	0	0							
	80	-164	-164	-164	-142	-119	-102	-88	-76	-166	-166	-166	-166	-153	-134	-118	-106	-166	-166	-166	-166	-166	-154	-139	0							
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-119	-119	-119	-102	-86	-74	-65	0	-120	-120	-120	-120	-110	0	0	0	-120	-120	-120	-120	-120	0	0	0							
	80	-165	-165	-165	-155	-132	-114	-100	-88	-166	-166	-166	-166	-165	-147	-131	-118	-167	-167	-167	-167	-167	-166	0	0							
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-119	-119	-119	-111	-94	-82	0	0	-120	-120	-120	-120	0	0	0	0	0	0	0	0	0	0	0	0							
	80	-165	-165	-165	-165	-144	-125	-111	-99	-166	-166	-166	-166	-166	-160	-143	0	-167	-167	-167	-167	-167	0	0	0							
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-119	-119	-119	-119	-102	0	0	0	-120	-120	-120	0	0	0	0	0	0	0	0	0	0	0	0	0							
	80	-166	-166	-166	-166	-156	-137	-121	-109	-167	-167	-167	-167	-167	-167	-167	0	-167	-167	-167	-167	-167	0	0	0							

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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Standard size 46"x 92.5" Portrait Orientation

Table 2.1 Max Length L (inches) for Multi span only Interior Conditions

Exp C	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70
90	44-X	48	39	28	0	0	0	0	0	37	35	0	0	0	0	0	0	32	31	0	0	0	0	0	0	
	48-X	48	38	27	0	0	0	0	0	37	34	0	0	0	0	0	0	32	31	0	0	0	0	0	0	
	48-XL	103	81	58	44	33	27	23	20	80	72	53	41	33	27	23	20	68	66	50	40	33	27	23	20	
	80	112	97	73	56	43	35	29	25	87	81	64	53	43	35	29	25	74	72	59	49	42	35	29	25	
100	44-X	40	36	26	0	0	0	0	0	31	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	41	35	26	0	0	0	0	0	31	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	88	74	54	42	33	27	23	20	67	65	49	39	32	27	23	20	57	56	46	37	31	27	23	20	
	80	95	87	67	54	43	35	29	25	73	71	58	49	41	35	29	25	62	60	52	45	39	34	29	25	
110	44-X	35	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	35	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	75	68	51	40	33	27	23	20	57	56	45	37	31	26	23	20	48	47	43	35	29	25	0	0	
	80	81	78	62	51	42	35	29	25	62	60	52	45	39	34	29	25	52	51	47	41	36	32	29	25	
120	44-X	30	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	65	62	48	38	32	27	23	0	49	48	42	34	29	25	0	0	41	41	39	33	28	0	0	0	
	80	70	68	57	48	40	35	29	25	53	52	47	41	36	32	28	25	45	44	42	37	33	30	27	25	
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	56	55	45	36	30	26	23	0	42	42	39	32	28	0	0	0	36	35	34	30	0	0	0	0	
	80	61	60	52	44	39	33	29	25	46	45	43	38	33	30	27	24	39	38	37	34	30	28	25	0	
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	50	49	42	34	29	25	0	0	37	36	36	30	0	0	0	0	31	31	30	0	0	0	0	0	
	80	54	53	48	41	36	32	28	25	40	40	39	35	31	28	26	0	34	33	33	31	28	26	0	0	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	44	43	39	32	28	24	0	0	33	32	32	28	0	0	0	0	0	0	0	0	0	0	0	0	
	80	47	47	44	38	34	31	27	24	35	35	34	32	29	26	0	0	30	29	29	28	26	0	0	0	
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	39	38	36	31	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	42	42	40	36	32	29	26	24	31	31	30	29	27	0	0	0	0	0	0	0	0	0	0	0	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	35	34	34	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	38	37	36	33	30	27	25	0	28	28	27	27	0	0	0	0	0	0	0	0	0	0	0	0	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	31	31	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	34	34	33	31	28	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 2.1A Max Length L (inches) for Multi span only Exterior Conditions

Exp C	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70
90	44-X	44-X	40	39	28	0	0	0	0	0	28	28	0	0	0	0	0	0	23	23	0	0	0	0	0	0
		48-X	42	39	28	0	0	0	0	0	29	29	0	0	0	0	0	0	24	24	0	0	0	0	0	0
		48-XL	101	85	60	45	35	28	24	20	71	71	55	43	35	28	24	20	58	58	53	42	34	28	24	20
		80	110	95	68	52	40	32	27	23	85	80	63	49	40	32	27	23	72	70	57	47	39	32	27	23
	100	44-X	32	32	26	0	0	0	0	0	22	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-X	33	33	26	0	0	0	0	0	23	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-XL	80	78	57	44	35	28	24	20	56	56	51	41	34	28	24	20	46	46	46	39	33	28	24	0
		80	93	85	64	50	40	32	27	23	71	69	57	46	38	32	27	23	60	59	51	44	37	32	27	23
	110	44-X	26	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-X	27	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-XL	65	65	53	42	35	28	24	20	46	46	46	38	32	28	24	0	38	38	38	37	31	27	0	0
		80	80	76	60	48	39	32	27	23	59	59	51	43	36	31	27	23	49	49	46	40	35	30	27	23
120	44-X	21	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	54	54	50	40	33	28	24	20	38	38	38	36	31	26	0	0	31	31	31	31	29	0	0	0	
	80	69	67	55	45	38	32	27	23	50	50	46	40	35	30	26	23	41	41	41	36	32	29	25	23	
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	45	45	45	38	32	27	24	0	32	32	32	32	29	0	0	0	27	27	27	27	0	0	0	0	
	80	59	58	51	43	36	31	27	23	42	42	42	37	33	29	25	23	34	34	34	33	30	27	24	0	
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	39	39	39	36	30	26	0	0	28	28	28	28	27	0	0	0	23	23	23	0	0	0	0	0	
	80	50	50	47	40	34	30	26	23	36	36	36	34	30	27	24	0	30	30	30	30	27	25	0	0	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	34	34	34	34	29	25	0	0	24	24	24	24	0	0	0	0	0	0	0	0	0	0	0	0	
	80	43	43	43	38	33	29	25	23	31	31	31	31	28	26	0	0	26	26	26	26	25	0	0	0	
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	29	29	29	29	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	38	38	38	35	31	27	24	22	27	27	27	27	26	0	0	0	0	0	0	0	0	0	0	0	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	26	26	26	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	34	34	34	32	29	26	23	0	24	24	24	24	0	0	0	0	0	0	0	0	0	0	0	0	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	23	23	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	30	30	30	30	27	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Note: The Forces shown in the tables above account for reactions associated with the exterior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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K2 Systems, LLC

PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 2.2 Maximum Downward Force (lbs) Multi Span Only Interior Conditions

Exp C	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1							Roof Wind Pressure Zone 2							Roof Wind Pressure Zone 3								
			Roof Snow Load (psf)							Roof Snow Load (psf)							Roof Snow Load (psf)								
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60
90	44-X	211	220	224	0	0	0	0	0	212	219	0	0	0	0	0	0	213	214	0	0	0	0	0	0
	48-X	214	214	218	0	0	0	0	0	215	216	0	0	0	0	0	0	215	217	0	0	0	0	0	0
	48-XL	458	452	460	461	461	461	461	461	461	454	461	460	461	461	463	461	462	465	462	463	460	461	461	461
	80	497	541	587	589	589	589	589	589	500	516	561	588	589	589	591	589	501	504	540	571	587	589	589	589
100	44-X	212	221	224	0	0	0	0	0	213	213	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	214	215	219	0	0	0	0	0	215	216	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	460	453	461	460	461	461	461	461	462	460	462	461	460	461	463	461	463	452	463	464	461	460	461	0
	80	499	530	574	587	589	589	589	589	501	502	547	576	587	589	591	589	502	490	525	555	578	587	589	589
110	44-X	213	221	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	215	216	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	461	455	462	461	460	461	461	461	463	452	463	462	461	460	463	0	464	455	464	465	461	461	0	0
	80	500	520	562	588	587	589	589	589	502	490	535	563	585	587	591	589	503	493	512	541	563	581	587	589
120	44-X	213	213	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	463	457	463	461	460	461	461	0	464	455	464	463	462	461	0	0	465	457	469	465	462	0	0	0
	80	501	500	552	580	588	589	589	589	503	493	524	551	572	588	587	589	504	495	508	529	550	568	582	587
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	463	453	464	462	461	460	461	0	465	457	465	463	462	0	0	0	466	459	460	466	0	0	0	0
	80	502	490	542	569	588	587	589	589	504	495	514	540	561	578	588	587	505	497	499	517	538	556	570	0
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	464	455	464	463	462	461	0	0	466	458	464	464	0	0	0	0	466	460	451	0	0	0	0	0
	80	503	493	533	559	580	588	587	589	505	497	503	530	551	567	581	0	506	499	489	508	528	544	0	0
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	465	456	465	463	462	461	0	0	466	460	451	465	0	0	0	0	0	0	0	0	0	0	0	0
	80	504	495	525	550	570	586	588	587	505	498	489	521	541	557	0	0	506	500	491	508	518	0	0	0
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	465	458	466	464	463	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80	505	496	517	542	562	578	589	588	506	499	490	513	532	0	0	0	0	0	0	0	0	0	0	0
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	466	459	460	465	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80	505	497	499	535	554	569	583	0	506	501	492	505	0	0	0	0	0	0	0	0	0	0	0	0
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	466	460	451	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80	506	499	489	528	546	562	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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K2 Systems, LLC

PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 2.2A Maximum Downward Force (lbs) Multi Span Only Exterior Conditions

Exp C	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1										Roof Wind Pressure Zone 2										Roof Wind Pressure Zone 3									
			Roof Snow Load (psf)										Roof Snow Load (psf)										Roof Snow Load (psf)									
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70						
90	44-X	178	220	224	0	0	0	0	0	161	177	0	0	0	0	0	0	154	160	0	0	0	0	0	0							
	48-X	186	218	222	0	0	0	0	0	169	186	0	0	0	0	0	0	162	167	0	0	0	0	0	0							
	48-XL	442	470	479	480	480	481	481	481	400	444	481	479	480	481	482	481	383	398	481	482	479	481	481	481							
	80	486	529	546	547	547	548	548	548	489	504	548	546	547	548	550	548	490	493	528	550	546	548	548	548							
100	44-X	166	193	224	0	0	0	0	0	154	158	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	174	203	223	0	0	0	0	0	161	166	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	413	472	480	479	480	481	481	481	381	394	482	480	479	481	482	481	367	367	457	483	480	479	481	0							
	80	488	518	547	546	547	548	548	548	490	491	535	547	546	548	550	548	483	480	514	543	547	546	548	548							
110	44-X	158	172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	166	180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	393	430	481	480	479	481	481	481	367	367	465	481	480	479	482	0	356	356	407	484	481	480	0	0							
	80	489	508	548	547	546	548	548	548	483	480	523	548	547	546	550	548	469	469	501	530	548	547	546	548							
120	44-X	152	156	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	378	389	482	481	480	481	481	481	356	356	419	482	481	480	0	0	347	347	374	445	481	0	0	0							
	80	490	489	540	548	547	548	548	548	470	470	512	539	548	547	546	548	458	458	490	517	538	548	547	546							
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	366	366	468	481	480	479	481	0	349	349	383	461	481	0	0	0	341	341	352	404	0	0	0	0							
	80	482	480	530	549	547	546	548	548	459	459	501	529	549	548	547	546	449	449	461	506	527	544	548	0							
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	357	357	429	482	481	480	0	0	342	342	357	422	482	0	0	0	336	336	336	0	0	0	0	0							
	80	471	471	521	547	548	547	546	548	451	451	468	519	539	548	548	0	443	443	443	489	516	533	0	0							
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	350	350	397	478	481	481	0	0	337	337	340	391	0	0	0	0	0	0	0	0	0	0	0	0							
	80	462	462	513	538	549	548	547	546	445	445	446	510	529	545	0	0	437	437	437	464	506	0	0	0							
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	344	344	372	443	482	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	80	454	454	486	530	549	548	547	547	440	440	440	479	521	0	0	0	0	0	0	0	0	0	0	0							
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	340	340	351	413	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	80	448	448	459	523	542	549	548	0	435	435	435	454	0	0	0	0	0	0	0	0	0	0	0	0							
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	336	336	336	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	80	443	443	443	509	534	549	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							

Note: The Forces shown in the tables above account for reactions associated with the exterior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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K2 Systems, LLC

PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 2.3 Maximum Horizontal Force (lbs) Multi span only Interior Conditions

Exp C	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1										Roof Wind Pressure Zone 2										Roof Wind Pressure Zone 3									
			Roof Snow Load (psf)										Roof Snow Load (psf)										Roof Snow Load (psf)									
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70						
90	44-X	77	64	45	0	0	0	0	0	82	77	47	0	0	0	0	0	96	83	57	0	0	0	0	0							
	48-X	78	62	44	0	0	0	0	0	83	76	46	0	0	0	0	0	98	84	55	0	0	0	0	0							
	48-XL	167	131	93	70	54	44	37	32	179	160	118	92	75	61	51	44	209	180	136	108	89	73	62	53							
	80	181	157	119	90	69	56	47	41	194	182	143	118	95	77	65	56	227	196	158	133	113	93	79	68							
100	44-X	81	72	53	0	0	0	0	0	85	83	55	0	0	0	0	0	101	90	66	0	0	0	0	0							
	48-X	82	70	51	0	0	0	0	0	86	84	53	0	0	0	0	0	102	88	64	0	0	0	0	0							
	48-XL	175	148	108	84	96	54	46	39	185	179	135	107	89	75	63	54	219	186	154	125	104	89	76	49							
	80	190	173	135	107	123	69	58	50	201	195	160	134	114	96	81	69	238	217	175	149	130	114	97	84							
110	44-X	84	80	0	0	0	0	0	0	87	83	0	0	0	0	0	0	105	100	0	0	0	0	0	0							
	48-X	85	78	0	0	0	0	0	0	88	81	0	0	0	0	0	0	106	98	0	0	0	0	0	0							
	48-XL	181	165	123	97	115	66	55	48	190	186	152	122	102	88	76	49	227	206	172	141	118	103	69	60							
	80	197	188	150	124	147	84	70	61	206	202	175	149	130	113	98	84	246	235	190	164	145	129	115	101							
120	44-X	86	84	0	0	0	0	0	0	89	87	0	0	0	0	0	0	108	105	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	187	180	137	110	131	78	66	0	195	191	167	137	116	100	68	0	233	225	187	156	133	98	82	0							
	80	202	197	163	138	167	100	84	72	211	207	188	163	143	128	113	100	253	246	204	178	158	143	130	118							
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	191	186	151	122	147	88	77	0	198	194	181	150	129	91	80	0	239	233	194	171	128	110	96	0							
	80	207	202	176	150	188	113	98	85	214	211	200	175	156	140	127	114	259	253	220	190	171	155	142	106							
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	194	190	163	134	163	98	0	0	201	197	193	164	117	102	0	0	243	238	204	167	142	123	0	0							
	80	211	206	187	162	205	125	111	98	218	214	209	187	168	152	139	102	263	258	234	202	182	167	139	123							
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	197	193	175	145	178	108	0	0	204	200	196	176	129	112	0	0	247	242	219	182	155	136	0	0							
	80	214	210	198	173	220	138	123	110	221	217	212	197	178	163	127	114	267	262	247	216	193	172	153	138							
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	200	196	186	156	193	0	0	0	207	203	193	162	139	0	0	0	250	246	233	196	168	0	0	0							
	80	216	213	207	183	235	148	134	121	224	220	215	207	188	153	139	125	271	266	259	229	204	185	168	152							
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	202	199	194	167	0	0	0	0	209	206	201	173	0	0	0	0	252	248	243	209	0	0	0	0							
	80	219	215	211	192	249	157	144	0	226	223	218	214	179	163	149	0	273	269	263	240	216	197	181	0							
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	203	201	197	0	0	0	0	0	211	208	204	0	0	0	0	0	254	251	246	0	0	0	0	0							
	80	220	217	213	200	261	166	0	0	228	225	221	207	188	172	0	0	276	272	267	251	227	208	0	0							

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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K2 Systems, LLC

PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 2.3A Maximum Horizontal Force (lbs) Multi span only Exterior Conditions

Exp C	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1									Roof Wind Pressure Zone 2									Roof Wind Pressure Zone 3								
			Roof Snow Load (psf)									Roof Snow Load (psf)									Roof Snow Load (psf)								
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70			
90	44-X	65	64	45	0	0	0	0	0	67	66	47	0	0	0	0	0	81	80	57	0	0	0	0	0				
	48-X	68	63	45	0	0	0	0	0	70	66	47	0	0	0	0	0	85	79	56	0	0	0	0	0				
	48-XL	161	135	96	72	55	45	38	33	166	155	121	95	76	62	52	45	201	168	139	111	91	75	63	54				
	80	177	153	111	84	64	52	44	38	190	178	140	110	89	72	61	52	222	192	155	128	105	87	73	63				
100	44-X	63	63	53	0	0	0	0	0	66	66	55	0	0	0	0	0	79	79	66	0	0	0	0	0				
	48-X	82	70	51	0	0	0	0	0	86	84	53	0	0	0	0	0	102	88	64	0	0	0	0	0				
	48-XL	157	153	111	86	68	55	47	40	162	158	139	110	91	76	64	55	196	191	150	128	106	91	78	50				
	80	186	170	129	100	79	64	54	47	197	191	157	128	106	89	75	64	232	212	171	146	123	106	90	78				
110	44-X	62	62	0	0	0	0	0	0	64	64	0	0	0	0	0	0	78	78	0	0	0	0	0	0				
	48-X	65	65	0	0	0	0	0	0	67	67	0	0	0	0	0	0	82	82	0	0	0	0	0	0				
	48-XL	154	154	126	99	82	67	56	49	159	159	150	126	105	90	78	50	193	193	158	145	122	105	70	61				
	80	192	184	146	115	95	78	66	57	199	197	171	145	122	105	91	78	241	230	185	161	141	122	107	94				
120	44-X	61	61	0	0	0	0	0	0	64	64	0	0	0	0	0	0	77	77	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	152	152	141	112	94	80	67	58	157	157	149	141	119	103	69	60	190	190	176	148	137	100	84	72				
	80	198	193	160	130	108	93	78	67	205	199	184	159	137	119	105	93	248	241	200	174	155	138	122	110				
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	150	150	150	125	105	90	79	0	156	156	156	148	132	94	81	0	188	188	188	157	131	113	98	0				
	80	198	197	172	145	121	105	91	79	205	204	195	172	153	133	118	106	248	247	215	186	167	152	137	99				
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	149	149	149	138	116	101	0	0	154	154	154	147	145	104	0	0	187	187	187	172	146	126	0	0				
	80	197	197	183	158	135	117	103	92	204	204	194	183	164	147	131	95	246	246	229	198	178	163	129	115				
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	148	148	148	148	128	111	0	0	153	153	153	153	132	115	0	0	185	185	185	185	160	139	0	0				
	80	196	196	193	169	147	129	114	102	203	203	200	193	175	159	118	106	245	245	242	211	189	161	143	128				
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	147	147	147	147	138	0	0	0	153	153	153	153	143	0	0	0	184	184	184	184	173	0	0	0				
	80	195	195	195	179	160	140	125	113	202	202	202	193	184	145	129	117	244	244	244	224	200	175	156	141				
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	147	147	147	147	0	0	0	0	152	152	152	152	0	0	0	0	184	184	184	184	0	0	0	0				
	80	194	194	194	188	169	152	136	0	201	201	201	194	175	157	141	0	243	243	243	235	212	190	170	0				
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	146	146	146	0	0	0	0	0	151	151	151	0	0	0	0	0	183	183	183	0	0	0	0	0				
	80	193	193	193	193	178	163	0	0	200	200	200	200	184	168	0	0	242	242	242	242	222	204	0	0				

Note: The Forces shown in the tables above account for reactions associated with the exterior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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K2 Systems, LLC

PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 2.4 Max Uplift Force (lbs) Multi span only Interior Conditions

Exp C	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1							Roof Wind Pressure Zone 2							Roof Wind Pressure Zone 3								
			Roof Snow Load (psf)							Roof Snow Load (psf)							Roof Snow Load (psf)								
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60
90	44-X	-138	-114	-81	0	0	0	0	0	-156	-146	0	0	0	0	0	0	-164	-160	0	0	0	0	0	0
	48-X	-139	-111	-79	0	0	0	0	0	-157	-144	0	0	0	0	0	0	-166	-162	0	0	0	0	0	0
	48-XL	-299	-234	-167	-126	-97	-78	-66	-57	-338	-302	-223	-174	-141	-114	-97	-83	-357	-347	-262	-208	-171	-141	-119	-103
	80	-324	-280	-212	-161	-123	-100	-84	-73	-366	-343	-271	-222	-180	-146	-123	-106	-387	-376	-306	-256	-218	-180	-152	-131
100	44-X	-150	-134	-98	0	0	0	0	0	-165	-161	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	-151	-131	-95	0	0	0	0	0	-167	-163	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-325	-275	-201	-156	-124	-101	-85	-73	-359	-347	-262	-208	-172	-145	-122	-162	-375	-366	-304	-245	-204	-175	-150	0
	80	-352	-322	-250	-199	-158	-128	-108	-93	-389	-378	-310	-260	-220	-185	-156	-207	-407	-397	-345	-294	-256	-224	-191	-165
110	44-X	-159	-152	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	-161	-149	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-346	-314	-234	-185	-152	-125	-105	-91	-376	-367	-299	-241	-202	-174	-151	0	-390	-382	-344	-282	-237	-205	0	0
	80	-375	-358	-285	-236	-195	-160	-134	-116	-407	-397	-345	-294	-256	-222	-192	-256	-423	-414	-379	-328	-289	-259	-231	-203
120	44-X	-167	-163	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-363	-350	-266	-213	-177	-152	-128	0	-389	-381	-334	-273	-231	-200	0	0	-402	-394	-378	-317	-269	0	0	0
	80	-393	-383	-318	-267	-226	-194	-163	-141	-422	-413	-377	-326	-287	-256	-226	-310	-435	-428	-410	-360	-321	-289	-263	-239
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-376	-368	-297	-241	-202	-174	-152	0	-400	-392	-367	-304	-260	0	0	0	-411	-405	-395	-349	0	0	0	0
	80	-408	-398	-347	-296	-258	-222	-194	-168	-433	-425	-405	-354	-315	-284	-257	-359	-445	-439	-429	-388	-349	-317	-291	0
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-388	-380	-326	-267	-226	-196	0	0	-409	-402	-393	-333	0	0	0	0	-418	-413	-405	0	0	0	0	0
	80	-420	-412	-374	-323	-284	-251	-221	-197	-443	-436	-426	-381	-342	-310	-284	0	-454	-447	-439	-413	-375	-343	0	0
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-397	-390	-353	-293	-250	-218	0	0	-416	-410	-402	-361	0	0	0	0	0	0	0	0	0	0	0	0
	80	-431	-423	-399	-348	-309	-278	-247	-222	-451	-444	-435	-405	-366	-334	0	0	-460	-455	-447	-436	-399	0	0	0
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-405	-399	-379	-318	-273	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80	-439	-432	-421	-371	-332	-300	-273	-246	-457	-452	-443	-426	-389	0	0	0	0	0	0	0	0	0	0	0
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-412	-406	-397	-341	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80	-447	-440	-430	-392	-353	-322	-295	0	-463	-458	-450	-443	0	0	0	0	0	0	0	0	0	0	0	0
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-418	-412	-404	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80	-453	-447	-438	-412	-374	-342	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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Standard size 46"x 92.5" Portrait Orientation

Table 2.4A Max Uplift Force (lbs) Multi span only Exterior Conditions

Exp C	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1										Roof Wind Pressure Zone 2										Roof Wind Pressure Zone 3									
			Roof Snow Load (psf)										Roof Snow Load (psf)										Roof Snow Load (psf)									
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70						
90	44-X	-116	-114	-81	0	0	0	0	0	-118	-118	0	0	0	0	0	0	-119	-119	0	0	0	0	0	0							
	48-X	-121	-113	-81	0	0	0	0	0	-124	-124	0	0	0	0	0	0	-125	-125	0	0	0	0	0	0							
	48-XL	-286	-240	-170	-128	-98	-80	-67	-58	-291	-291	-228	-178	-143	-116	-98	-84	-294	-294	-268	-213	-175	-144	-121	-105							
	80	-317	-274	-198	-150	-115	-93	-78	-68	-358	-336	-264	-207	-167	-136	-115	-99	-378	-368	-299	-247	-203	-168	-141	-122							
100	44-X	-117	-117	-98	0	0	0	0	0	-119	-119	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	-123	-123	-97	0	0	0	0	0	-125	-125	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-290	-283	-206	-160	-126	-102	-86	-74	-294	-294	-269	-213	-176	-147	-125	-165	-296	-296	-296	-252	-209	-180	-153	0							
	80	-345	-315	-238	-185	-147	-119	-100	-87	-380	-370	-303	-247	-205	-172	-145	-192	-392	-389	-337	-287	-242	-208	-178	-154							
110	44-X	-119	-119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	-124	-124	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-293	-293	-240	-189	-156	-127	-107	-92	-296	-296	-296	-247	-207	-178	-154	0	-298	-298	-298	-289	-243	-210	0	0							
	80	-367	-351	-278	-219	-181	-148	-125	-108	-392	-389	-337	-286	-240	-206	-179	-238	-394	-394	-371	-321	-281	-244	-215	-189							
120	44-X	-119	-119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-295	-295	-274	-218	-181	-154	-130	-112	-297	-297	-297	-281	-237	-205	0	0	-299	-299	-299	-299	-276	0	0	0							
	80	-385	-374	-311	-253	-210	-180	-152	-131	-393	-393	-368	-319	-274	-238	-210	-289	-395	-395	-395	-352	-314	-279	-247	-222							
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-296	-296	-296	-247	-207	-178	-155	0	-299	-299	-299	-299	-267	0	0	0	-300	-300	-300	-300	0	0	0	0							
	80	-392	-390	-340	-286	-240	-207	-181	-156	-395	-395	-395	-347	-308	-269	-239	-334	-396	-396	-396	-380	-341	-310	-279	0							
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-297	-297	-297	-274	-232	-201	0	0	-299	-299	-299	-299	-295	0	0	0	-300	-300	-300	0	0	0	0	0							
	80	-393	-393	-366	-316	-269	-233	-206	-183	-396	-396	-396	-372	-334	-300	-267	0	-397	-397	-397	-397	-367	-336	0	0							
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-298	-298	-298	-298	-257	-224	0	0	-300	-300	-300	-300	0	0	0	0	0	0	0	0	0	0	0	0							
	80	-395	-395	-390	-340	-297	-259	-230	-207	-397	-397	-397	-396	-358	-327	0	0	-398	-398	-398	-398	-390	0	0	0							
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-299	-299	-299	-299	-281	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	80	-396	-396	-396	-363	-325	-285	-254	-229	-398	-398	-398	-398	-380	0	0	0	0	0	0	0	0	0	0	0							
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-300	-300	-300	-300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	80	-396	-396	-396	-384	-346	-310	-278	0	-398	-398	-398	-398	0	0	0	0	0	0	0	0	0	0	0	0							
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	48-XL	-300	-300	-300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							
	80	-397	-397	-397	-397	-365	-334	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							

Note: The Forces shown in the tables above account for reactions associated with the exterior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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K2 Systems, LLC

PV Tilt Up Kit Solar PV Mount System

Standard size 46" x 92.5" Portrait Orientation

Table 2.5 Max Length L (inches) for Single Span Interior Conditions

Exp C	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70
90	44-X	40	34	24	0	0	0	0	0	31	29	0	0	0	0	0	0	26	26	0	0	0	0	0	0	
	48-X	39	33	24	0	0	0	0	0	31	29	0	0	0	0	0	0	26	25	0	0	0	0	0	0	
	48-XL	79	69	50	38	29	23	20	17	62	58	46	36	29	23	20	17	53	51	42	35	28	23	20	17	
	80	117	99	71	53	41	33	28	24	91	85	65	51	41	33	28	24	77	75	61	49	40	33	28	24	
	100	44-X	34	31	23	0	0	0	0	0	26	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-X	33	31	22	0	0	0	0	0	26	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-XL	67	64	47	36	29	23	20	17	52	50	41	34	28	23	20	17	44	43	37	32	27	23	20	0
		80	99	91	66	52	41	33	28	24	76	74	60	48	40	33	28	24	65	63	55	46	38	33	28	24
	110	44-X	29	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-X	29	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-XL	58	59	44	35	29	23	20	17	44	43	37	32	27	23	20	0	37	36	33	29	25	22	0	0
		80	85	83	62	49	40	33	28	24	64	63	55	45	38	32	28	24	55	53	49	42	36	31	27	24
120	44-X	25	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	50	54	40	33	27	23	20	0	38	37	34	29	25	22	0	0	32	31	30	26	23	0	0	0	
	80	73	77	58	47	39	33	28	24	55	54	49	42	36	31	27	24	47	46	44	39	34	30	26	24	
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	43	50	37	31	26	23	20	0	33	32	30	27	24	0	0	0	27	27	26	24	0	0	0	0	
	80	64	70	54	44	37	32	28	24	48	47	45	39	34	29	26	23	40	40	39	35	32	28	25	0	
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	38	46	34	29	25	22	0	0	29	28	27	25	0	0	0	0	24	24	23	0	0	0	0	0	
	80	56	62	50	42	35	31	27	24	42	41	40	36	32	28	25	0	35	35	34	32	29	27	0	0	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	34	40	31	27	24	21	0	0	25	25	24	23	0	0	0	0	0	0	0	0	0	0	0	0	
	80	50	53	46	40	34	29	26	24	37	36	36	33	30	27	0	0	31	31	30	29	27	0	0	0	
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	30	35	29	25	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	44	46	42	37	32	28	25	23	33	32	32	31	28	0	0	0	0	0	0	0	0	0	0	0	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	27	31	26	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	39	41	38	35	31	27	24	0	29	29	28	28	0	0	0	0	0	0	0	0	0	0	0	0	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	24	27	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	35	36	34	32	29	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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Standard size 46"x 92.5" Portrait Orientation

Table 2.5A Max Length L (inches) for SingleSpan Exterior Conditions

Exp C	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70
90	44-X	35	33	23	0	0	0	0	0	24	24	0	0	0	0	0	0	20	20	0	0	0	0	0	0	
	48-X	35	33	24	0	0	0	0	0	25	25	0	0	0	0	0	0	20	20	0	0	0	0	0	0	
	48-XL	81	68	48	36	28	23	19	16	57	57	44	35	28	23	19	16	46	46	42	33	27	23	19	16	
	80	110	97	71	53	41	33	28	24	77	77	64	51	41	33	28	24	63	63	59	49	40	33	28	24	
100	44-X	27	27	22	0	0	0	0	0	19	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	28	28	22	0	0	0	0	0	20	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	64	62	45	35	28	23	19	16	45	45	41	33	27	23	19	16	37	37	37	31	26	22	19	0	
	80	87	87	66	52	41	33	28	24	61	61	58	48	40	33	28	24	50	50	50	45	38	33	28	24	
110	44-X	22	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	23	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	52	52	43	34	28	23	19	16	37	37	37	31	26	22	19	0	30	30	30	29	25	21	0	0	
	80	70	70	62	49	40	33	28	24	50	50	50	45	38	32	28	24	41	41	41	41	36	31	27	24	
120	44-X	18	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	43	43	40	32	27	23	19	16	31	31	31	29	24	21	0	0	25	25	25	25	23	0	0	0	
	80	58	58	57	47	39	33	28	24	42	42	42	41	36	31	27	24	34	34	34	34	33	30	26	24	
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	36	36	36	30	25	22	19	0	26	26	26	26	23	0	0	0	21	21	21	21	0	0	0	0	
	80	49	49	49	44	37	32	28	24	35	35	35	35	33	29	26	23	29	29	29	29	29	28	25	0	
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	31	31	31	29	24	21	0	0	22	22	22	22	22	0	0	0	18	18	18	0	0	0	0	0	
	80	42	42	42	41	35	31	27	24	30	30	30	30	30	28	25	0	25	25	25	25	25	25	0	0	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	27	27	27	27	23	20	0	0	19	19	19	19	0	0	0	0	0	0	0	0	0	0	0	0	
	80	37	37	37	37	34	29	26	24	26	26	26	26	26	26	0	0	22	22	22	22	22	0	0	0	
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	24	24	24	24	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	32	32	32	32	32	28	25	23	23	23	23	23	23	0	0	0	0	0	0	0	0	0	0	0	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	21	21	21	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	28	28	28	28	28	27	24	0	20	20	20	20	0	0	0	0	0	0	0	0	0	0	0	0	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	18	18	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	25	25	25	25	25	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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Table 2.6 Maximum Downward Force (lbs) Single span only Interior Conditions

Exp C	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70
90	44-X	90	96	77	0	0	0	0	0	90	93	0	0	0	0	0	0	89	91	0	0	0	0	0	0	
	48-X	88	94	75	0	0	0	0	0	88	91	0	0	0	0	0	0	88	89	0	0	0	0	0	0	
	48-XL	176	192	158	132	84	78	72	51	177	183	159	104	97	85	59	59	178	179	141	117	103	79	69	66	
	80	259	277	223	186	119	111	102	72	261	269	226	147	137	121	84	84	261	263	207	165	146	112	97	93	
	100	44-X	90	96	81	0	0	0	0	0	89	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-X	88	94	79	0	0	0	0	0	88	88	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-XL	177	196	166	146	92	87	81	56	178	178	165	116	104	96	68	67	178	174	151	129	110	94	80	0
		80	260	278	235	207	131	124	114	79	261	262	241	164	147	136	97	94	262	256	222	186	156	133	113	105
	110	44-X	90	96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-X	88	94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-XL	177	197	176	159	100	98	91	62	178	174	170	129	110	105	81	0	179	175	160	139	122	106	0	0
		80	261	279	250	224	142	138	129	88	262	256	250	182	156	149	114	105	263	257	236	204	173	150	132	119
120	44-X	88	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	178	198	182	171	106	109	102	0	179	175	174	138	120	113	0	0	179	176	169	148	132	0	0	0	
	80	262	280	264	242	149	153	144	97	263	257	257	200	169	159	129	118	263	258	248	217	191	167	148	133	
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	178	204	187	183	111	116	114	0	179	176	179	146	130	0	0	0	179	176	172	156	0	0	0	0	
	80	262	288	276	259	157	164	161	106	263	258	263	215	185	170	143	129	263	259	254	230	206	183	163	0	
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	179	214	193	193	117	123	0	0	179	176	180	154	0	0	0	0	179	177	173	0	0	0	0	0	
	80	263	290	283	275	166	175	174	117	263	259	265	226	201	180	157	0	264	260	255	240	218	199	0	0	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	179	214	197	200	127	131	0	0	179	177	178	161	0	0	0	0	0	0	0	0	0	0	0	0	
	80	263	283	290	291	179	185	186	125	264	260	262	237	214	191	0	0	264	261	256	250	229	0	0	0	
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	179	210	201	207	135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	263	278	296	305	192	195	198	136	264	261	260	246	224	0	0	0	0	0	0	0	0	0	0	0	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	179	207	200	214	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	264	273	294	314	205	205	210	0	264	261	258	253	0	0	0	0	0	0	0	0	0	0	0	0	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	179	204	199	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	264	270	292	323	217	215	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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K2 Systems, LLC

PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 2.6A Maximum Downward Force (lbs) Single span only Exterior Conditions

Exp C	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70
90	44-X	77	92	74	0	0	0	0	0	70	77	0	0	0	0	0	0	67	69	0	0	0	0	0	0	
	48-X	78	91	75	0	0	0	0	0	71	78	0	0	0	0	0	0	68	70	0	0	0	0	0	0	
	48-XL	177	188	151	125	80	75	68	49	160	178	153	100	92	81	57	57	153	159	140	111	99	75	66	63	
	80	243	271	223	186	119	111	102	72	221	243	224	147	137	121	84	84	212	219	198	165	146	112	97	93	
100	44-X	72	84	78	0	0	0	0	0	66	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	73	85	79	0	0	0	0	0	68	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	165	189	159	139	88	83	77	53	152	158	163	110	100	91	65	63	147	147	147	125	105	89	76	0	
	80	228	265	235	207	131	124	114	79	211	217	232	164	147	136	97	94	203	203	203	181	156	133	113	105	
110	44-X	68	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	70	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	157	172	169	151	96	93	86	59	147	147	166	123	105	100	76	0	142	142	142	138	116	101	0	0	
	80	217	236	248	224	142	138	129	88	203	203	228	181	156	149	114	105	197	197	197	196	172	150	132	119	
120	44-X	66	67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	151	156	178	163	101	103	97	65	143	143	156	135	114	107	0	0	139	139	139	139	128	0	0	0	
	80	209	214	256	242	149	153	144	97	197	197	216	194	169	159	129	118	192	192	192	192	186	167	148	133	
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	146	146	182	175	106	111	108	0	139	139	149	139	124	0	0	0	136	136	136	136	0	0	0	0	
	80	203	203	250	259	157	164	161	106	193	193	206	193	183	170	143	129	189	189	189	189	189	180	163	0	
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	143	143	174	186	112	118	0	0	137	137	144	137	135	0	0	0	134	134	134	0	0	0	0	0	
	80	198	198	240	272	166	175	174	117	190	190	199	190	190	180	157	0	186	186	186	186	186	186	0	0	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	140	140	167	195	121	125	0	0	135	135	139	135	0	0	0	0	0	0	0	0	0	0	0	0	
	80	194	194	231	269	179	185	186	125	187	187	193	187	187	187	0	0	184	184	184	184	184	0	0	0	
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	138	138	162	189	129	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	191	191	224	262	191	195	198	136	185	185	188	185	185	0	0	0	0	0	0	0	0	0	0	0	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	136	136	158	185	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	188	188	218	256	188	205	210	0	183	183	184	183	0	0	0	0	0	0	0	0	0	0	0	0	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	134	134	154	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	186	186	213	251	186	208	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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Standard size 46"x 92.5" Portrait Orientation

Table 2.7 Maximum Horizontal Force (lbs) Single span only Interior Conditions

Exp C	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1									Roof Wind Pressure Zone 2									Roof Wind Pressure Zone 3								
			Roof Snow Load (psf)									Roof Snow Load (psf)									Roof Snow Load (psf)								
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70			
90	44-X	33	28	20	0	0	0	0	0	35	33	20	0	0	0	0	0	41	35	25	0	0	0	0	0				
	48-X	32	27	19	0	0	0	0	0	34	32	20	0	0	0	0	0	40	34	24	0	0	0	0	0				
	48-XL	64	56	40	31	23	19	16	14	69	65	51	40	32	26	22	19	81	70	56	47	38	32	27	23				
	80	95	80	57	43	33	27	23	20	101	95	72	57	46	37	31	27	118	102	83	66	54	45	38	33				
100	44-X	34	31	23	0	0	0	0	0	36	35	24	0	0	0	0	0	43	39	29	0	0	0	0	0				
	48-X	33	31	22	0	0	0	0	0	35	34	23	0	0	0	0	0	42	38	28	0	0	0	0	0				
	48-XL	67	64	47	36	29	23	20	17	71	69	57	47	39	32	27	24	84	80	62	53	45	39	33	21				
	80	99	91	66	52	41	33	28	24	105	102	83	66	55	46	39	33	124	114	91	76	63	55	47	40				
110	44-X	35	35	0	0	0	0	0	0	37	36	0	0	0	0	0	0	44	44	0	0	0	0	0	0				
	48-X	35	34	0	0	0	0	0	0	36	35	0	0	0	0	0	0	43	43	0	0	0	0	0	0				
	48-XL	70	71	53	42	35	28	24	21	73	74	62	53	44	38	33	21	87	89	67	58	51	44	30	26				
	80	103	101	75	59	49	40	34	29	108	105	91	75	63	54	47	40	128	126	99	86	73	63	55	49				
120	44-X	35	35	0	0	0	0	0	0	37	37	0	0	0	0	0	0	44	44	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	72	78	58	47	40	34	28	0	75	81	67	58	50	43	29	0	90	98	73	63	56	42	36	0				
	80	106	110	84	67	56	48	40	35	110	114	98	84	71	61	54	48	132	138	106	93	81	71	63	57				
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	73	84	62	53	44	38	33	0	76	87	71	62	55	40	35	0	92	105	78	67	55	48	42	0				
	80	108	119	92	75	63	54	47	41	112	123	105	92	79	69	61	55	135	148	115	99	89	79	71	51				
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	75	89	66	57	49	43	0	0	77	92	74	66	51	44	0	0	93	112	83	72	61	53	0	0				
	80	110	121	98	82	69	60	53	47	114	125	109	97	86	76	68	49	137	152	122	105	95	87	67	59				
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	76	91	70	61	54	47	0	0	78	94	75	70	56	49	0	0	95	114	88	77	67	59	0	0				
	80	111	120	103	89	76	66	59	53	115	124	111	103	93	83	61	55	139	150	129	111	101	83	74	66				
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	77	90	73	65	58	0	0	0	79	93	76	67	60	0	0	0	96	113	92	81	73	0	0	0				
	80	113	119	108	95	82	72	65	58	117	123	112	108	98	75	67	60	141	149	135	119	103	91	81	73				
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	78	89	75	68	0	0	0	0	80	93	77	70	0	0	0	0	97	112	93	85	0	0	0	0				
	80	114	118	110	100	89	78	70	0	118	122	114	112	92	81	73	0	143	148	137	125	111	98	88	0				
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	78	89	76	0	0	0	0	0	81	92	78	0	0	0	0	0	98	111	95	0	0	0	0	0				
	80	115	118	111	105	95	84	0	0	119	122	115	108	98	87	0	0	144	147	139	131	118	105	0	0				

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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Table 2.7A Maximum Horizontal Force (lbs) Singlespan only Exerior Conditions

Exp C	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70
90	44-X	28	27	19	0	0	0	0	0	29	28	20	0	0	0	0	0	35	33	24	0	0	0	0	0	
	48-X	29	27	19	0	0	0	0	0	30	28	20	0	0	0	0	0	36	33	24	0	0	0	0	0	
	48-XL	64	54	38	29	22	18	15	13	66	62	49	38	30	25	21	18	80	67	56	44	36	30	25	22	
	80	89	78	57	43	33	27	23	20	92	86	72	57	46	37	31	27	111	98	79	66	54	45	38	33	
100	44-X	27	27	22	0	0	0	0	0	28	28	23	0	0	0	0	0	34	34	28	0	0	0	0	0	
	48-X	28	28	22	0	0	0	0	0	29	29	23	0	0	0	0	0	35	35	28	0	0	0	0	0	
	48-XL	63	61	44	35	27	22	19	16	65	63	56	44	37	31	26	22	78	76	60	51	43	36	31	20	
	80	87	87	66	52	41	33	28	24	90	90	80	66	55	46	39	33	109	108	83	75	63	55	47	40	
110	44-X	27	27	0	0	0	0	0	0	28	28	0	0	0	0	0	0	34	34	0	0	0	0	0	0	
	48-X	27	27	0	0	0	0	0	0	28	28	0	0	0	0	0	0	34	34	0	0	0	0	0	0	
	48-XL	62	62	51	40	33	27	23	19	64	64	60	50	42	36	31	20	77	77	63	58	49	42	28	24	
	80	85	85	75	59	49	40	34	29	88	88	83	75	63	54	47	40	107	107	94	82	72	63	55	49	
120	44-X	27	27	0	0	0	0	0	0	27	27	0	0	0	0	0	0	33	33	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	61	61	56	45	37	32	27	23	63	63	60	56	48	41	28	24	76	76	71	59	55	40	34	29	
	80	84	84	82	67	56	48	40	35	87	87	85	81	71	61	54	48	105	105	102	84	79	71	63	57	
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	60	60	60	50	42	36	31	0	62	62	62	59	53	37	33	0	75	75	75	63	53	45	39	0	
	80	83	83	83	75	63	54	47	41	86	86	86	82	78	69	61	55	104	104	104	93	82	78	71	51	
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	60	60	60	55	47	40	0	0	62	62	62	59	58	42	0	0	75	75	75	69	58	51	0	0	
	80	83	83	83	81	69	60	53	47	86	86	86	84	82	76	68	49	103	103	103	101	87	81	67	59	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	59	59	59	59	51	44	0	0	61	61	61	61	53	46	0	0	74	74	74	74	64	56	0	0	
	80	82	82	82	82	76	66	59	53	85	85	85	85	81	81	61	55	103	103	103	103	95	83	74	66	
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	59	59	59	59	55	0	0	0	61	61	61	61	57	0	0	0	74	74	74	74	69	0	0	0	
	80	82	82	82	82	82	72	65	58	85	85	85	85	85	75	67	60	102	102	102	102	102	91	81	73	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	59	59	59	59	0	0	0	0	61	61	61	61	0	0	0	0	73	73	73	73	0	0	0	0	
	80	81	81	81	81	81	78	70	0	84	84	84	84	84	81	73	0	102	102	102	102	102	98	88	0	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	59	59	59	0	0	0	0	0	61	61	61	0	0	0	0	0	73	73	73	0	0	0	0	0	
	80	81	81	81	81	81	81	0	0	84	84	84	84	84	84	0	0	102	102	102	102	102	102	0	0	

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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Table 2.8 Max Uplift Force (lbs) Single span only Interior Conditions

Exp C	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1							Roof Wind Pressure Zone 2							Roof Wind Pressure Zone 3								
			Roof Snow Load (psf)							Roof Snow Load (psf)							Roof Snow Load (psf)								
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60
90	44-X	-58	-49	-35	0	0	0	0	-66	-62	0	0	0	0	0	0	-69	-68	0	0	0	0	0	0	
	48-X	-57	-48	-35	0	0	0	0	-65	-61	0	0	0	0	0	0	-68	-66	0	0	0	0	0	0	
	48-XL	-115	-99	-72	-55	-42	-34	-29	-25	-208	-122	-96	-75	-61	-50	-42	-36	-137	-133	-108	-90	-74	-61	-52	-44
	80	-169	-143	-102	-77	-59	-48	-40	-35	-191	-179	-136	-107	-86	-70	-59	-51	-202	-196	-159	-127	-105	-87	-73	-63
100	44-X	-63	-58	-42	0	0	0	0	-69	-68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	-62	-57	-42	0	0	0	0	-69	-67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	-125	-119	-87	-68	-54	-44	-37	-32	-174	-134	-110	-90	-75	-63	-53	-46	-144	-141	-122	-104	-88	-76	-65	0
	80	-184	-169	-123	-96	-76	-62	-52	-45	-203	-197	-160	-127	-106	-89	-75	-64	-212	-207	-180	-150	-125	-107	-92	-79
110	44-X	-68	-66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	-66	-65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	-133	-136	-101	-80	-66	-54	-46	-39	-148	-141	-122	-104	-88	-75	-65	0	-150	-147	-135	-117	-103	-89	0	0
	80	-196	-192	-144	-113	-93	-77	-64	-56	-212	-207	-180	-148	-124	-106	-92	-79	-221	-216	-198	-171	-145	-126	-111	-97
120	44-X	-69	-69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	-139	-151	-113	-92	-77	-66	-55	0	-150	-146	-134	-116	-100	-87	0	0	-154	-152	-145	-128	-114	0	0	0
	80	-205	-214	-163	-130	-109	-93	-78	-68	-220	-215	-197	-167	-142	-123	-108	-96	-227	-223	-214	-188	-165	-144	-128	-115
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	-145	-166	-123	-104	-88	-75	-66	0	-154	-151	-144	-126	-112	0	0	0	-158	-156	-152	-138	0	0	0	0
	80	-213	-234	-181	-147	-124	-107	-93	-80	-226	-222	-211	-185	-159	-139	-123	-111	-232	-229	-224	-202	-182	-162	-144	0
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	-149	-178	-133	-115	-98	-85	0	0	-157	-155	-151	-135	0	0	0	0	-161	-159	-156	0	0	0	0	0
	80	-219	-242	-195	-164	-139	-120	-106	-94	-231	-227	-222	-199	-176	-155	-138	0	-237	-233	-229	-216	-196	-179	0	0
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	-153	-183	-141	-123	-108	-95	0	0	-160	-158	-154	-144	0	0	0	0	0	0	0	0	0	0	0	
	80	-225	-242	-208	-180	-153	-134	-119	-107	-235	-232	-227	-211	-191	-170	0	0	-240	-237	-233	-228	-208	0	0	0
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	-156	-183	-149	-132	-118	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	-229	-242	-220	-194	-168	-147	-131	-118	-239	-236	-231	-222	-203	0	0	0	0	0	0	0	0	0	0	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	-159	-183	-153	-139	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	-233	-242	-225	-205	-181	-160	-143	0	-242	-239	-235	-231	0	0	0	0	0	0	0	0	0	0	0	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	-161	-183	-155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	-236	-242	-229	-215	-194	-173	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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Table 2.8A Max Uplift Force (lbs) Single span only Exterior Conditions

Exp C	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70
90	44-X		-50	-48	-34	0	0	0	0	0	-51	-51	0	0	0	0	0	0	-51	-51	0	0	0	0	0	0
	48-X		-51	-47	-35	0	0	0	0	0	-52	-52	0	0	0	0	0	0	-52	-52	0	0	0	0	0	0
	48-XL		-114	-96	-68	-51	-39	-32	-27	-23	-117	-117	-91	-71	-57	-47	-39	-34	-118	-118	-107	-85	-70	-58	-48	-42
	80		-159	-140	-102	-77	-59	-48	-40	-35	-162	-162	-135	-107	-86	-70	-59	-51	-163	-163	-153	-127	-105	-87	-73	-63
100	44-X		-51	-51	-41	0	0	0	0	0	-51	-51	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X		-52	-52	-42	0	0	0	0	0	-52	-52	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL		-116	-113	-82	-64	-50	-41	-34	-30	-118	-118	-107	-85	-71	-59	-50	-43	-118	-118	-118	-101	-84	-72	-61	0
	80		-161	-161	-123	-96	-76	-62	-52	-45	-163	-163	-155	-127	-106	-89	-75	-64	-164	-164	-164	-147	-125	-107	-92	-79
110	44-X		-51	-51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X		-52	-52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL		-117	-117	-96	-76	-62	-51	-43	-37	-118	-118	-118	-99	-83	-71	-61	0	-119	-119	-119	-116	-97	-84	0	0
	80		-163	-163	-143	-113	-93	-77	-64	-56	-164	-164	-164	-147	-124	-106	-92	-79	-165	-165	-165	-164	-145	-126	-111	-97
120	44-X		-52	-52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL		-118	-118	-109	-87	-73	-62	-52	-45	-119	-119	-119	-112	-95	-82	0	0	-120	-120	-120	-120	-111	0	0	0
	80		-164	-164	-159	-130	-109	-93	-78	-68	-165	-165	-165	-163	-142	-123	-108	-96	-166	-166	-166	-166	-160	-144	-128	-115
130	44-X		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL		-118	-118	-118	-99	-83	-71	-62	0	-119	-119	-119	-119	-107	0	0	0	-120	-120	-120	-120	0	0	0	0
	80		-165	-165	-165	-147	-124	-107	-93	-80	-166	-166	-166	-166	-158	-139	-123	-111	-166	-166	-166	-166	-166	-159	-144	0
140	44-X		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL		-119	-119	-119	-110	-93	-80	0	0	-120	-120	-120	-120	-118	0	0	0	-120	-120	-120	0	0	0	0	0
	80		-165	-165	-165	-162	-139	-120	-106	-94	-166	-166	-166	-166	-166	-155	-138	0	-167	-167	-167	-167	-167	-167	0	0
150	44-X		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL		-119	-119	-119	-119	-103	-90	0	0	-120	-120	-120	-120	0	0	0	0	0	0	0	0	0	0	0	0
	80		-166	-166	-166	-166	-153	-134	-119	-107	-167	-167	-167	-167	-167	-167	0	0	-167	-167	-167	-167	-167	0	0	0
160	44-X		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL		-120	-120	-120	-120	-112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80		-166	-166	-166	-166	-166	-147	-131	-118	-167	-167	-167	-167	-167	0	0	0	0	0	0	0	0	0	0	0
170	44-X		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL		-120	-120	-120	-120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80		-167	-167	-167	-167	-167	-160	-143	0	-167	-167	-167	-167	0	0	0	0	0	0	0	0	0	0	0	0
180	44-X		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL		-120	-120	-120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80		-167	-167	-167	-167	-167	-167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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Table 3.1 Max Length L (inches) for Multi span only Interior Conditions

Exp D	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	61
90	44-X	41	37	27	0	0	0	0	0	32	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	42	37	27	0	0	0	0	0	32	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	91	80	58	45	35	29	24	21	70	68	53	42	35	29	24	21	59	58	49	40	33	29	24	0	
	80	102	93	70	54	43	35	29	25	79	76	62	50	42	35	29	25	67	65	56	48	40	34	29	25	
100	44-X	35	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	36	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	76	73	54	43	35	29	24	21	58	57	48	39	33	28	24	0	49	48	44	37	31	27	0	0	
	80	86	82	65	51	42	35	29	25	66	64	55	47	39	34	29	25	56	55	50	43	38	33	29	25	
110	44-X	29	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	65	63	50	40	34	29	24	0	49	48	44	36	31	27	0	0	41	41	39	34	29	0	0	0	
	80	74	72	59	49	40	35	29	25	56	54	50	43	37	32	28	25	47	46	44	39	34	31	27	25	
120	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	56	55	47	38	32	28	24	0	42	41	39	34	29	0	0	0	35	35	34	31	0	0	0	0	
	80	63	62	54	46	39	33	29	25	48	47	45	39	35	31	27	24	40	39	39	35	31	29	26	0	
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	49	48	44	36	30	26	0	0	36	36	35	31	0	0	0	0	0	0	0	0	0	0	0	0	
	80	55	54	49	43	37	32	28	25	41	40	40	36	32	29	26	0	35	34	33	32	29	26	0	0	
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	43	42	40	34	29	0	0	0	32	31	31	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	48	47	45	39	35	30	27	24	36	35	35	33	29	27	0	0	30	30	29	29	0	0	0	0	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	38	37	36	32	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	43	42	41	36	33	29	26	0	32	31	31	30	27	0	0	0	0	0	0	0	0	0	0	0	
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	33	33	32	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	38	37	36	34	30	28	0	0	28	28	27	27	0	0	0	0	0	0	0	0	0	0	0	0	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	34	33	33	31	28	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	30	30	29	29	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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Table 3.1A Max Length L (inches) for Multi span only Exterior Conditions

Exp D	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	61
90	44-X	33	33	28	0	0	0	0	0	23	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	36	36	26	0	0	0	0	0	26	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	86	83	60	47	37	30	25	22	60	60	55	43	36	30	25	22	49	49	49	42	35	30	25	0	
	80	100	91	70	57	48	39	32	28	76	75	60	51	43	38	33	28	62	62	55	47	40	36	32	28	
100	44-X	26	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	29	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	68	68	56	44	37	30	25	22	48	48	48	41	34	29	25	0	39	39	39	39	32	28	0	0	
	80	85	80	64	53	45	39	32	28	61	61	54	46	40	36	32	28	50	50	49	42	37	33	30	27	
110	44-X	21	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	55	55	52	42	35	30	25	0	39	39	39	38	32	28	0	0	32	32	32	32	30	0	0	0	
	80	70	70	58	49	42	37	32	28	50	50	49	42	37	33	30	27	41	41	41	38	34	30	28	25	
120	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	46	46	46	40	33	29	25	0	33	33	33	33	30	0	0	0	27	27	27	27	0	0	0	0	
	80	58	58	53	45	39	35	31	28	42	42	42	38	34	31	28	26	34	34	34	34	31	28	26	0	
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	39	39	39	37	32	27	0	0	28	28	28	28	0	0	0	0	0	0	0	0	0	0	0	0	
	80	49	49	48	42	37	33	30	27	35	35	35	35	31	28	26	0	29	29	29	29	28	26	0	0	
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	33	33	33	33	30	0	0	0	24	24	24	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	42	42	42	39	34	31	28	26	30	30	30	30	29	26	0	0	25	25	25	25	0	0	0	0	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	29	29	29	29	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	37	37	37	36	32	29	26	0	26	26	26	26	26	0	0	0	0	0	0	0	0	0	0	0	
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	25	25	25	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	32	32	32	32	30	27	0	0	23	23	23	23	0	0	0	0	0	0	0	0	0	0	0	0	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	28	28	28	28	28	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	25	25	25	25	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Note: The Forces shown in the tables above account for reactions associated with the exterior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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K2 Systems, LLC

PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 3.2 Maximum Downward Force (lbs) Multi Span Only Interior Conditions

Exp D	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1							Roof Wind Pressure Zone 2							Roof Wind Pressure Zone 3									
			Roof Snow Load (psf)							Roof Snow Load (psf)							Roof Snow Load (psf)									
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70
90	44-X	44-X	208	220	224	0	0	0	0	0	209	211	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-X	214	225	229	0	0	0	0	0	215	218	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-XL	460	479	488	487	488	488	488	488	462	467	489	488	487	488	490	488	463	452	487	491	487	487	488	0
		80	520	555	588	587	589	589	589	589	523	528	574	588	587	589	591	589	524	511	551	583	588	587	589	589
	100	44-X	209	218	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-X	215	224	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-XL	461	480	489	488	487	488	488	488	463	452	490	489	488	487	490	0	464	455	474	492	488	487	0	0
		80	522	543	588	588	587	589	589	589	524	511	559	589	588	587	591	589	525	514	536	567	589	588	587	589
	110	44-X	210	209	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-XL	463	462	490	488	487	488	488	0	464	455	483	490	488	488	0	0	465	457	469	488	489	0	0	0
		80	523	522	576	589	588	589	589	589	525	514	547	576	589	588	587	589	526	517	531	552	575	589	588	587
120	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	464	453	491	489	488	487	488	0	465	457	473	491	489	0	0	0	466	459	460	477	0	0	0	0	
	80	524	512	565	590	589	587	589	589	526	517	535	563	585	589	588	587	527	519	520	539	561	579	589	0	
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	464	455	490	490	489	488	0	0	466	458	462	488	0	0	0	0	0	0	0	0	0	0	0	0	
	80	525	514	555	582	589	588	587	589	527	519	523	552	573	590	589	0	528	521	511	531	549	567	0	0	
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	465	457	482	491	489	0	0	0	466	460	451	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	526	516	546	572	590	589	588	587	527	520	510	542	562	579	0	0	528	522	513	531	0	0	0	0	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	466	458	472	491	490	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	527	518	534	563	583	590	589	0	528	522	512	533	552	0	0	0	0	0	0	0	0	0	0	0	
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	466	459	454	490	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	527	520	513	555	574	591	0	0	528	523	514	522	0	0	0	0	0	0	0	0	0	0	0	0	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	528	521	511	547	566	582	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	528	522	513	540	559	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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Standard size 46"x 92.5" Portrait Orientation

Table 3.2A Maximum Downward Force (lbs) Multi Span Only Exterior Conditions

Exp D	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1									Roof Wind Pressure Zone 2									Roof Wind Pressure Zone 3								
			Roof Snow Load (psf)									Roof Snow Load (psf)									Roof Snow Load (psf)								
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70			
90	44-X	208	220	224	0	0	0	0	0	209	211	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	185	219	223	0	0	0	0	0	170	177	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	434	498	507	506	507	507	507	508	400	416	508	507	506	507	510	508	385	385	485	510	507	506	507	0				
	80	509	544	589	618	657	657	657	657	506	517	562	592	613	649	660	657	487	487	540	570	593	611	649	657				
100	44-X	159	174	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	175	191	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	411	450	508	507	506	507	507	508	384	384	487	508	507	506	510	0	372	372	426	509	508	507	0	0				
	80	511	532	576	605	626	657	657	657	485	485	548	577	599	616	645	657	470	470	525	555	577	595	610	638				
110	44-X	152	156	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	394	404	509	508	506	507	507	0	372	372	434	509	508	507	0	0	362	362	388	461	508	0	0	0				
	80	498	511	564	592	613	633	657	657	470	470	535	564	585	602	616	638	458	458	491	541	563	581	595	608				
120	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	381	381	481	508	507	506	507	0	363	363	394	474	509	0	0	0	355	355	364	416	0	0	0	0				
	80	482	482	553	581	602	618	636	657	459	459	499	551	573	590	604	615	449	449	460	526	550	567	582	0				
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	371	371	438	509	508	507	0	0	356	356	368	431	0	0	0	0	0	0	0	0	0	0	0	0				
	80	469	469	543	570	591	607	621	635	450	450	465	540	561	578	592	0	442	442	442	485	537	555	0	0				
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	364	364	404	485	509	0	0	0	351	351	351	0	0	0	0	0	0	0	0	0	0	0	0	0				
	80	460	460	511	560	581	597	611	622	444	444	444	503	551	567	0	0	436	436	436	459	0	0	0	0				
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	358	358	377	447	509	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	80	452	452	477	551	571	587	601	0	438	438	438	470	533	0	0	0	0	0	0	0	0	0	0	0				
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	353	353	356	417	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	80	446	446	450	527	562	578	0	0	434	434	434	447	0	0	0	0	0	0	0	0	0	0	0	0				
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	80	441	441	441	495	554	570	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	80	437	437	437	469	529	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

Note: The Forces shown in the tables above account for reactions associated with the exterior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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Table 3.3 Maximum Horizontal Force (lbs) Multi span only Interior Conditions

Exp D	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70
90	44-X	79	70	51	0	0	0	0	0	83	81	53	0	0	0	0	0	98	88	64	0	0	0	0	0	
	48-X	81	72	52	0	0	0	0	0	86	83	54	0	0	0	0	0	101	90	65	0	0	0	0	0	
	48-XL	174	153	111	86	68	55	46	40	184	179	139	110	91	76	64	55	217	192	158	128	106	91	77	50	
	80	196	177	134	104	82	66	56	48	208	202	164	133	110	92	77	66	246	222	179	152	128	110	93	80	
100	44-X	82	78	0	0	0	0	0	0	85	81	0	0	0	0	0	0	102	97	0	0	0	0	0	0	
	48-X	84	80	0	0	0	0	0	0	87	83	0	0	0	0	0	0	105	100	0	0	0	0	0	0	
	48-XL	181	172	128	101	120	68	57	49	190	185	158	128	107	92	79	51	226	215	173	147	123	107	71	62	
	80	204	195	154	122	144	82	69	59	215	210	181	154	129	111	95	82	256	243	196	169	149	129	113	99	
110	44-X	84	82	0	0	0	0	0	0	87	85	0	0	0	0	0	0	106	103	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	186	181	145	116	138	82	69	0	194	190	173	144	122	106	72	0	233	227	186	164	140	103	86	0	
	80	211	205	170	139	167	99	83	72	220	215	196	169	147	127	112	99	264	257	213	185	165	147	131	117	
120	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	191	186	160	130	157	94	82	0	198	194	185	160	137	97	85	0	239	233	200	176	136	118	103	0	
	80	216	211	184	156	189	113	99	86	224	220	210	184	164	144	128	115	270	264	231	199	179	163	148	107	
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	195	191	174	143	175	106	0	0	202	198	193	174	126	109	0	0	244	239	218	179	152	132	0	0	
	80	220	216	197	170	211	127	112	101	228	224	219	197	177	160	143	104	276	270	247	213	192	176	141	126	
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	198	194	184	157	193	0	0	0	205	201	196	162	139	0	0	0	247	243	231	196	168	0	0	0	
	80	224	220	209	183	232	141	125	113	232	227	222	208	189	173	130	117	280	275	261	228	202	177	157	141	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	200	197	192	169	210	0	0	0	207	204	199	175	151	0	0	0	251	246	241	212	183	0	0	0	
	80	226	223	218	194	250	155	138	0	234	231	225	219	200	160	143	0	283	279	272	242	217	194	173	0	
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	202	199	195	180	0	0	0	0	210	206	202	187	0	0	0	0	253	250	244	226	0	0	0	0	
	80	229	226	221	204	265	168	0	0	237	234	229	224	191	174	0	0	286	282	276	255	231	210	0	0	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	231	228	224	213	279	178	0	0	239	236	231	221	201	184	0	0	289	285	280	267	243	223	0	0	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	233	230	226	222	292	0	0	0	241	238	234	230	210	0	0	0	291	288	283	277	254	0	0	0	

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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K2 Systems, LLC

PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 3.3A Maximum Horizontal Force (lbs) Multi span only Exterior Conditions

Exp D	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70
90	44-X	64	64	53	0	0	0	0	0	66	66	55	0	0	0	0	0	80	80	67	0	0	0	0	0	
	48-X	70	70	51	0	0	0	0	0	72	72	53	0	0	0	0	0	87	87	64	0	0	0	0	0	
	48-XL	164	159	116	90	70	57	48	42	170	165	145	115	95	79	67	57	205	199	157	133	111	95	80	52	
	80	192	174	134	110	91	74	62	54	202	198	160	134	115	101	86	74	241	217	175	149	129	114	103	90	
100	44-X	62	62	0	0	0	0	0	0	65	65	0	0	0	0	0	0	78	78	0	0	0	0	0	0	
	48-X	69	69	0	0	0	0	0	0	71	71	0	0	0	0	0	0	86	86	0	0	0	0	0	0	
	48-XL	161	161	133	105	87	71	59	51	167	167	157	133	111	95	82	53	201	201	167	152	128	111	74	64	
	80	200	190	151	125	107	91	77	66	207	199	177	151	131	116	104	92	251	238	192	166	146	130	118	108	
110	44-X	61	61	0	0	0	0	0	0	64	64	0	0	0	0	0	0	77	77	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	159	159	150	120	100	85	72	0	164	164	156	150	127	110	74	0	198	198	188	154	146	107	90	0	
	80	201	201	166	140	121	106	93	80	208	208	192	166	146	131	118	108	251	251	208	181	161	145	132	122	
120	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	157	157	157	135	113	98	86	0	162	162	162	155	142	101	89	0	196	196	196	169	142	122	107	0	
	80	198	198	180	154	134	119	107	96	205	205	195	180	160	144	131	120	248	248	226	194	175	159	146	120	
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	156	156	156	149	126	110	0	0	161	161	161	154	131	114	0	0	195	195	195	187	158	137	0	0	
	80	197	197	193	167	147	131	119	108	204	204	200	193	173	157	144	112	246	246	241	209	188	172	149	136	
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	155	155	155	155	139	0	0	0	160	160	160	160	144	0	0	0	193	193	193	193	174	0	0	0	
	80	195	195	195	179	159	143	130	119	202	202	202	193	185	169	135	124	245	245	245	224	199	179	163	149	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	154	154	154	154	152	0	0	0	159	159	159	159	157	0	0	0	192	192	192	192	190	0	0	0	
	80	194	194	194	190	170	154	141	0	201	201	201	196	193	160	146	0	243	243	243	237	213	193	176	0	
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	153	153	153	153	0	0	0	0	159	159	159	159	0	0	0	0	192	192	192	192	0	0	0	0	
	80	194	194	194	194	180	165	0	0	200	200	200	200	187	170	0	0	242	242	242	242	226	206	0	0	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	193	193	193	193	190	174	0	0	200	200	200	200	197	180	0	0	241	241	241	241	238	218	0	0	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	192	192	192	192	192	0	0	0	199	199	199	199	199	0	0	0	241	241	241	241	241	0	0	0	0

Note: The Forces shown in the tables above account for reactions associated with the exterior support of a multi-span condition. See Max length for Multi Span for corresponding span length.
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K2 Systems, LLC

PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 3.4 Max Uplift Force (lbs) Multi span only Interior Conditions

Exp D	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1							Roof Wind Pressure Zone 2							Roof Wind Pressure Zone 3								
			Roof Snow Load (psf)							Roof Snow Load (psf)							Roof Snow Load (psf)								
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60
90	44-X	-145	-130	-94	0	0	0	0	0	-161	-156	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	-149	-132	-96	0	0	0	0	0	-165	-161	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-320	-283	-205	-159	-125	-101	-85	-74	-355	-345	-269	-213	-176	-146	-124	-106	-372	-363	-311	-252	-209	-179	-152	0
	80	-362	-327	-247	-192	-151	-122	-103	-89	-401	-390	-315	-256	-212	-176	-149	-128	-421	-410	-352	-299	-252	-216	-183	-158
100	44-X	-156	-148	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	-160	-152	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-344	-327	-244	-192	-158	-129	-109	-94	-374	-365	-312	-251	-210	-181	-156	0	-388	-380	-346	-294	-247	-213	0	0
	80	-389	-370	-293	-231	-191	-156	-131	-113	-423	-412	-356	-303	-253	-218	-188	-250	-439	-430	-392	-338	-298	-257	-227	-198
110	44-X	-164	-160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-362	-352	-281	-224	-187	-160	-134	0	-389	-380	-347	-288	-244	-211	0	0	-401	-394	-377	-331	-284	0	0	0
	80	-410	-399	-330	-271	-225	-193	-162	-140	-439	-430	-392	-339	-294	-255	-225	-308	-454	-446	-427	-374	-333	-298	-265	-238
120	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-377	-368	-316	-256	-215	-186	-162	0	-400	-393	-375	-324	-277	0	0	0	-411	-405	-396	-359	0	0	0	0
	80	-427	-417	-364	-309	-260	-224	-196	-169	-453	-445	-424	-371	-331	-291	-258	-362	-465	-458	-448	-406	-366	-333	-302	0
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-389	-381	-349	-287	-243	-211	0	0	-410	-403	-394	-355	0	0	0	0	0	0	0	0	0	0	0	0
	80	-440	-431	-394	-341	-293	-255	-225	-201	-463	-456	-446	-401	-360	-327	-292	0	-474	-468	-459	-435	-395	-362	0	0
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-399	-392	-373	-316	-271	0	0	0	-417	-412	-403	0	0	0	0	0	0	0	0	0	0	0	0	0
	80	-452	-444	-421	-369	-326	-285	-253	-228	-472	-466	-456	-428	-388	-355	0	0	-482	-476	-468	-460	0	0	0	0
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-408	-401	-392	-344	-297	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80	-461	-454	-443	-394	-354	-315	-281	0	-479	-474	-465	-452	-413	0	0	0	0	0	0	0	0	0	0	0
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-415	-409	-400	-369	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80	-469	-462	-452	-418	-378	-344	0	0	-485	-480	-472	-465	0	0	0	0	0	0	0	0	0	0	0	0
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80	-476	-470	-461	-439	-400	-367	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80	-481	-476	-468	-459	-420	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 3.4A Max Uplift Force (lbs) Multi span only Exterior Conditions

Exp D	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1									Roof Wind Pressure Zone 2									Roof Wind Pressure Zone 3								
			Roof Snow Load (psf)									Roof Snow Load (psf)									Roof Snow Load (psf)								
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70			
90	44-X	-117	-117	-98	0	0	0	0	0	-119	-119	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	-129	-129	-94	0	0	0	0	0	-131	-131	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	-303	-294	-213	-165	-130	-105	-89	-77	-307	-307	-279	-221	-183	-152	-128	-110	-309	-309	-309	-261	-217	-186	-158	0				
	80	-355	-320	-248	-202	-168	-136	-115	-99	-388	-382	-308	-258	-222	-194	-166	-143	-391	-391	-344	-292	-254	-225	-202	-176				
100	44-X	-118	-118	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	-130	-130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	-306	-306	-253	-199	-164	-134	-113	-97	-309	-309	-309	-261	-218	-188	-162	0	-311	-311	-311	-304	-256	-222	0	0				
	80	-380	-362	-287	-238	-203	-174	-146	-126	-391	-391	-348	-296	-258	-228	-205	-279	-393	-393	-384	-331	-292	-261	-236	-215				
110	44-X	-119	-119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	-308	-308	-292	-233	-194	-166	-140	0	-311	-311	-311	-300	-253	-219	0	0	-312	-312	-312	-312	-295	0	0	0				
	80	-390	-390	-323	-272	-235	-207	-181	-156	-393	-393	-384	-332	-292	-261	-236	-334	-395	-395	-395	-367	-326	-294	-268	-246				
120	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	-310	-310	-310	-266	-224	-193	-169	0	-312	-312	-312	-312	-287	0	0	0	-313	-313	-313	-313	0	0	0	0				
	80	-392	-392	-356	-304	-265	-235	-212	-189	-395	-395	-395	-364	-324	-292	-265	-379	-396	-396	-396	-396	-358	-326	-299	0				
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	-311	-311	-311	-298	-253	-219	0	0	-313	-313	-313	-313	0	0	0	0	0	0	0	0	0	0	0	0				
	80	-394	-394	-386	-334	-294	-263	-238	-217	-396	-396	-396	-393	-353	-320	-293	0	-397	-397	-397	-397	-387	-355	0	0				
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	-312	-312	-312	-312	-281	0	0	0	-314	-314	-314	0	0	0	0	0	0	0	0	0	0	0	0	0				
	80	-395	-395	-395	-361	-321	-289	-263	-241	-397	-397	-397	-397	-380	-347	0	0	-398	-398	-398	-398	0	0	0	0				
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	-313	-313	-313	-313	-309	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	80	-396	-396	-396	-386	-346	-314	-287	0	-398	-398	-398	-398	-398	0	0	0	0	0	0	0	0	0	0	0				
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	-314	-314	-314	-314	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	80	-397	-397	-397	-397	-370	-337	0	0	-398	-398	-398	-398	0	0	0	0	0	0	0	0	0	0	0	0				
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	80	-397	-397	-397	-397	-391	-359	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	80	-398	-398	-398	-398	-398	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

Note: The Forces shown in the tables above account for reactions associated with the exterior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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K2 Systems, LLC

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Standard size 46"x 92.5" Portrait Orientation

Table 3.5 Max Length L (inches) for Single Span Interior Conditions

Exp D	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70
90	44-X	36	32	24	0	0	0	0	0	27	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	33	30	22	0	0	0	0	0	25	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	72	65	48	37	29	23	20	17	55	54	43	34	28	23	20	17	47	46	39	33	27	23	20	0	
	80	102	93	67	52	41	33	28	24	79	76	61	48	40	33	28	24	67	65	56	46	38	33	28	24	
	100	44-X	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-X	28	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-XL	61	60	44	35	29	23	20	17	46	45	39	32	27	23	20	0	39	38	35	30	26	22	0	0
		80	86	84	63	49	41	33	28	24	66	64	55	45	38	33	28	24	56	55	50	43	36	31	28	24
	110	44-X	25	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-XL	52	54	41	33	27	23	20	0	39	38	35	30	25	22	0	0	33	32	31	27	24	0	0	0
		80	74	77	58	47	39	33	28	24	56	54	50	42	36	31	27	24	47	46	44	39	34	30	26	24
120	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	44	49	38	31	26	23	20	0	33	33	31	27	24	0	0	0	28	28	27	25	0	0	0	0	
	80	63	70	54	44	37	32	28	24	48	47	45	39	34	29	26	23	40	39	39	35	31	28	25	0	
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	39	45	35	29	25	22	0	0	29	28	28	25	0	0	0	0	0	0	0	0	0	0	0	0	
	80	55	60	49	42	35	31	27	24	41	40	40	36	32	28	25	0	35	34	33	32	29	26	0	0	
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	34	39	32	28	24	0	0	0	25	25	24	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	48	52	45	39	33	29	26	23	36	35	35	33	29	26	0	0	30	30	29	29	0	0	0	0	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	30	34	29	26	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	43	45	41	36	32	28	25	0	32	31	31	30	27	0	0	0	0	0	0	0	0	0	0	0	
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	27	29	26	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	38	39	36	34	30	27	0	0	28	28	27	27	0	0	0	0	0	0	0	0	0	0	0	0	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	34	34	33	31	28	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	30	30	29	29	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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Standard size 46"x 92.5" Portrait Orientation

Table 3.5A Max Length L (inches) for Single Span Exterior Conditions

Exp D	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70
90	44-X	44-X	29	29	22	0	0	0	0	0	20	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-X	29	29	23	0	0	0	0	0	21	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-XL	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65
		80	91	89	67	52	41	33	28	24	64	64	59	48	40	33	28	24	52	52	52	46	38	33	28	24
	100	44-X	23	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-X	23	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-XL	52	52	43	34	28	23	19	16	37	37	37	31	26	22	19	0	30	30	30	29	25	21	0	0
		80	72	72	62	49	41	33	28	24	51	51	51	45	38	33	28	24	42	42	42	41	36	31	28	24
	110	44-X	19	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-XL	42	42	40	32	26	23	19	0	30	30	30	29	24	21	0	0	25	25	25	25	23	0	0	0
		80	59	59	57	47	39	33	28	24	42	42	42	41	36	31	27	24	34	34	34	34	33	30	26	24
120	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	35	35	35	30	25	22	19	0	25	25	25	25	23	0	0	0	21	21	21	21	0	0	0	0	
	80	49	49	49	44	37	32	28	24	35	35	35	35	33	29	26	23	29	29	29	29	29	27	25	0	
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	30	30	30	28	24	21	0	0	21	21	21	21	0	0	0	0	0	0	0	0	0	0	0	0	
	80	41	41	41	41	35	31	27	24	30	30	30	30	30	28	25	0	24	24	24	24	24	24	0	0	
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	25	25	25	25	23	0	0	0	18	18	18	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	35	35	35	35	33	29	26	23	25	25	25	25	25	25	0	0	21	21	21	21	0	0	0	0	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	22	22	22	22	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	31	31	31	31	31	28	25	0	22	22	22	22	22	0	0	0	0	0	0	0	0	0	0	0	
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	19	19	19	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	27	27	27	27	27	27	0	0	19	19	19	19	0	0	0	0	0	0	0	0	0	0	0	0	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	24	24	24	24	24	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	21	21	21	21	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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Table 3.6 Maximum Downward Force (lbs) Single span only Interior Conditions

Exp D	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70
90	44-X	44-X	91	97	82	0	0	0	0	0	90	93	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-X	84	90	75	0	0	0	0	0	85	86	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-XL	182	195	164	144	91	86	79	55	183	185	168	113	103	94	66	65	184	179	154	128	109	91	77	0
		80	262	278	232	203	128	121	112	78	261	264	238	160	145	133	93	92	262	255	219	181	154	129	109	103
	100	44-X	92	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-X	85	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-XL	183	197	175	157	100	96	90	61	184	179	175	127	110	104	79	0	184	180	164	142	121	104	0	0
		80	261	279	248	222	141	136	127	87	262	256	249	180	155	147	112	104	263	257	234	202	171	148	130	117
	110	44-X	88	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-XL	184	198	186	171	106	108	101	0	184	180	180	141	119	112	0	0	185	181	174	152	135	0	0	0
		80	262	280	263	241	149	153	143	96	263	257	256	199	169	159	129	117	263	258	247	217	190	166	147	132
120	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	184	204	194	184	111	116	114	0	185	181	185	151	132	0	0	0	185	182	178	162	0	0	0	0	
	80	262	289	276	260	157	165	162	107	263	258	263	216	186	170	144	130	263	259	254	230	207	184	164	0	
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	184	215	199	196	119	125	0	0	185	182	186	160	0	0	0	0	0	0	0	0	0	0	0	0	
	80	263	288	284	278	168	176	176	118	263	259	265	228	203	181	159	0	264	260	255	242	220	201	0	0	
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	185	213	204	209	129	0	0	0	185	183	184	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	263	282	291	295	182	187	189	127	264	260	262	239	217	194	0	0	264	261	257	252	0	0	0	0	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	185	209	208	216	139	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	263	276	296	308	196	198	202	0	264	261	259	249	227	0	0	0	0	0	0	0	0	0	0	0	
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	185	206	206	223	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	264	272	293	318	210	209	0	0	263	261	257	253	0	0	0	0	0	0	0	0	0	0	0	0	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	264	268	291	327	222	220	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	264	265	290	336	230	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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K2 Systems, LLC

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Standard size 46"x 92.5" Portrait Orientation

Table 3.6A Maximum Downward Force (lbs) Single span only Exterior Conditions

Exp D	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70
90	44-X	44-X	73	86	77	0	0	0	0	0	67	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-X	74	87	78	0	0	0	0	0	68	71	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-XL	166	189	158	138	87	82	76	53	153	159	162	109	99	90	63	63	147	147	147	123	105	88	74	0
		80	231	266	232	203	128	121	112	78	212	221	231	160	145	133	93	92	205	205	205	178	154	129	109	103
	100	44-X	69	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-X	70	77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-XL	157	172	169	151	96	93	86	59	147	147	166	123	105	100	76	0	142	142	142	138	116	100	0	0
		80	218	239	247	222	141	136	127	87	204	204	230	180	155	147	112	104	197	197	197	194	171	148	130	117
	110	44-X	66	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		48-XL	151	155	179	164	101	104	98	0	142	142	156	136	115	108	0	0	139	139	139	139	130	0	0	0
		80	209	214	256	241	149	153	143	96	197	197	216	194	169	159	129	117	192	192	192	192	185	166	147	132
120	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	146	146	180	177	107	112	110	0	139	139	148	139	127	0	0	0	136	136	136	136	0	0	0	0	
	80	202	202	250	260	157	165	162	107	193	193	206	193	184	170	144	130	189	189	189	189	189	181	164	0	
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	142	142	172	189	114	120	0	0	136	136	142	136	0	0	0	0	0	0	0	0	0	0	0	0	
	80	197	197	238	273	168	176	176	118	189	189	198	189	189	181	159	0	186	186	186	186	186	186	0	0	
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	139	139	165	192	124	0	0	0	134	134	138	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	193	193	229	267	182	187	189	127	186	186	191	186	186	186	0	0	183	183	183	183	0	0	0	0	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	137	137	160	187	134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	190	190	222	260	190	198	202	0	184	184	186	184	184	0	0	0	0	0	0	0	0	0	0	0	
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	135	135	156	183	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	187	187	216	254	187	209	0	0	182	182	182	182	0	0	0	0	0	0	0	0	0	0	0	0	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	185	185	211	249	185	205	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	183	183	207	245	183	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 3.7 Maximum Horizontal Force (lbs) Single span only Interior Conditions

Exp D	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1									Roof Wind Pressure Zone 2									Roof Wind Pressure Zone 3								
			Roof Snow Load (psf)									Roof Snow Load (psf)									Roof Snow Load (psf)								
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70			
90	44-X	34	31	23	0	0	0	0	0	36	35	24	0	0	0	0	0	43	39	28	0	0	0	0	0				
	48-X	32	29	21	0	0	0	0	0	34	33	22	0	0	0	0	0	40	36	26	0	0	0	0	0				
	48-XL	69	62	46	35	28	23	19	16	73	71	57	45	37	31	26	23	86	78	63	52	44	37	32	20				
	80	98	89	64	50	39	32	27	23	104	101	81	64	53	44	37	32	123	111	90	74	62	53	45	39				
100	44-X	36	35	0	0	0	0	0	0	37	37	0	0	0	0	0	0	45	44	0	0	0	0	0	0				
	48-X	32	29	21	0	0	0	0	0	34	33	22	0	0	0	0	0	40	36	26	0	0	0	0	0				
	48-XL	72	71	53	41	34	28	23	20	75	74	63	52	44	38	32	21	90	88	69	59	51	44	29	25				
	80	102	100	74	58	48	39	33	29	107	105	90	74	62	53	46	39	128	125	98	85	71	62	54	48				
110	44-X	35	35	0	0	0	0	0	0	37	37	0	0	0	0	0	0	44	44	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	74	78	59	47	39	34	28	0	77	80	69	59	50	43	29	0	93	97	74	65	57	42	35	0				
	80	105	110	84	67	56	48	40	35	110	114	98	83	71	61	54	48	132	138	105	92	81	71	63	56				
120	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	76	84	65	53	45	38	34	0	79	87	74	64	56	40	35	0	95	105	81	70	56	48	42	0				
	80	108	119	92	75	63	54	48	41	112	123	105	92	79	69	61	55	135	149	115	99	90	80	71	51				
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	77	90	69	59	50	43	0	0	80	93	77	69	52	45	0	0	97	113	87	73	62	54	0	0				
	80	110	121	99	83	70	61	54	48	114	125	109	98	87	77	69	50	138	151	123	106	96	88	68	60				
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	78	91	73	64	55	0	0	0	81	94	78	66	57	0	0	0	98	113	92	80	69	0	0	0				
	80	112	120	104	91	78	68	60	54	116	124	111	104	94	85	62	56	140	150	131	113	97	85	75	68				
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	79	90	76	68	60	0	0	0	82	93	79	70	62	0	0	0	99	112	96	85	75	0	0	0				
	80	113	119	109	97	84	74	66	0	117	123	113	109	100	77	69	0	142	149	136	121	106	93	83	0				
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	80	89	77	72	0	0	0	0	83	92	80	74	0	0	0	0	100	112	97	90	0	0	0	0				
	80	114	118	110	102	91	81	0	0	118	122	114	112	94	83	0	0	143	148	138	128	114	101	0	0				
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	80	115	117	112	107	97	87	0	0	120	122	116	110	100	90	0	0	144	147	140	133	121	109	0	0				
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	80	116	117	113	111	102	0	0	0	120	121	117	115	105	0	0	0	146	146	141	139	127	0	0	0				

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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 Standard size 46"x 92.5" Portrait Orientation

Table 3.7A Maximum Horizontal Force (lbs) Single span only Exterior Conditions

Exp D	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70
90	44-X	27	27	21	0	0	0	0	0	28	28	22	0	0	0	0	0	34	34	27	0	0	0	0	0	
	48-X	28	28	22	0	0	0	0	0	29	29	23	0	0	0	0	35	35	27	0	0	0	0	0		
	48-XL	63	60	44	34	27	22	18	16	65	62	55	43	36	30	25	22	79	76	60	50	42	36	30	20	
	80	87	85	64	50	39	32	27	23	90	88	78	64	53	44	37	32	109	106	84	73	62	53	45	39	
100	44-X	27	27	0	0	0	0	0	0	28	28	0	0	0	0	0	34	34	0	0	0	0	0	0		
	48-X	28	28	22	0	0	0	0	0	29	29	23	0	0	0	0	35	35	27	0	0	0	0	0		
	48-XL	62	62	50	40	33	27	22	19	64	64	60	50	42	36	31	20	77	77	63	58	49	42	28	24	
	80	85	85	74	58	48	39	33	29	88	88	84	74	62	53	46	39	107	107	93	81	71	62	54	48	
110	44-X	27	27	0	0	0	0	0	0	27	27	0	0	0	0	0	33	33	0	0	0	0	0	0		
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	48-XL	61	61	57	45	38	32	27	0	63	63	60	57	48	42	28	0	76	76	71	59	55	40	34	0	
	80	84	84	81	67	56	48	40	35	87	87	84	81	71	61	54	48	105	105	102	84	79	71	63	56	
120	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	48-XL	60	60	60	51	43	37	32	0	62	62	62	59	54	38	34	0	75	75	75	64	54	46	41	0	
	80	83	83	83	75	63	54	48	41	86	86	86	82	78	69	61	55	104	104	104	94	81	78	71	51	
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	48-XL	60	60	60	56	48	42	0	0	62	62	62	59	50	43	0	0	74	74	74	71	60	52	0	0	
	80	83	83	83	82	70	61	54	48	86	86	86	85	82	77	69	50	103	103	103	102	88	81	68	60	
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	48-XL	59	59	59	59	53	0	0	0	61	61	61	61	55	0	0	0	74	74	74	74	66	0	0	0	
	80	82	82	82	82	78	68	60	54	85	85	85	85	81	81	62	56	103	103	103	103	97	85	75	68	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	48-XL	59	59	59	59	57	0	0	0	61	61	61	61	59	0	0	0	74	74	74	74	72	0	0	0	
	80	82	82	82	82	82	74	66	0	85	85	85	85	85	77	69	0	102	102	102	102	102	93	83	0	
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	48-XL	59	59	59	59	0	0	0	0	61	61	61	61	0	0	0	0	73	73	73	73	0	0	0	0	
	80	81	81	81	81	81	81	0	0	84	84	84	84	84	83	0	0	102	102	102	102	102	101	0	0	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	81	81	81	81	81	81	0	0	84	84	84	84	84	84	0	0	101	101	101	101	101	101	0	0	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	81	81	81	81	81	0	0	0	84	84	84	84	84	0	0	0	101	101	101	101	101	0	0	0	

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length.
 See SEAOC PV-2 2012 for definition of Roof Zones



K2 Systems, LLC

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Standard size 46"x 92.5" Portrait Orientation

Table 3.8 Max Uplift Force (lbs) Single span only Interior Conditions

Exp D	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1								Roof Wind Pressure Zone 2								Roof Wind Pressure Zone 3							
			Roof Snow Load (psf)								Roof Snow Load (psf)								Roof Snow Load (psf)							
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70
90	44-X	-64	-57	-42	0	0	0	0	0	-111	-68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	-59	-53	-38	0	0	0	0	0	-104	-63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	-127	-115	-84	-65	-51	-42	-35	-30	-226	-137	-110	-87	-72	-60	-51	-43	-148	-144	-123	-103	-86	-73	-62	0	
	80	-181	-164	-119	-92	-72	-59	-49	-43	-322	-195	-155	-123	-102	-85	-72	-61	-210	-205	-176	-146	-121	-104	-88	-76	
100	44-X	-68	-67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	-63	-61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	-136	-134	-100	-79	-65	-53	-44	-38	-189	-145	-125	-103	-86	-74	-64	0	-154	-151	-137	-119	-101	-87	0	0	
	80	-194	-190	-141	-111	-92	-75	-63	-54	-269	-206	-178	-145	-122	-105	-90	-78	-220	-215	-196	-169	-143	-124	-109	-95	
110	44-X	-69	-69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	-144	-348	-325	-293	-269	-250	-235	-220	-438	-431	-420	-393	-364	-341	-321	-305	-490	-483	-474	-454	-430	-405	-383	-364	
	80	-205	-214	-163	-130	-108	-92	-78	-67	-228	-215	-196	-167	-141	-122	-108	-95	-227	-223	-213	-187	-164	-143	-127	-114	
120	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	-150	-166	-128	-105	-88	-76	-67	0	-159	-156	-149	-130	-113	0	0	0	-163	-161	-157	-143	0	0	0	0	
	80	-213	-235	-182	-148	-125	-107	-94	-81	-226	-222	-212	-186	-160	-140	-124	-111	-233	-229	-224	-203	-183	-163	-145	0	
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	-155	-180	-138	-117	-100	-86	0	0	-163	-160	-156	-141	0	0	0	0	0	0	0	0	0	0	0	0	
	80	-220	-242	-197	-166	-141	-122	-108	-96	-232	-228	-223	-201	-178	-157	-140	0	-237	-234	-229	-217	-198	-181	0	0	
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	-159	-183	-148	-129	-111	0	0	0	-166	-163	-160	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	-226	-242	-211	-183	-157	-137	-122	-109	-236	-233	-228	-214	-194	-174	0	0	-241	-238	-234	-230	0	0	0	0	
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	-162	-183	-155	-138	-122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	-231	-242	-222	-197	-172	-151	-135	0	-240	-237	-233	-226	-206	0	0	0	0	0	0	0	0	0	0	0	
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	-165	-183	-159	-147	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	-235	-242	-226	-209	-187	-165	0	0	-242	-240	-236	-233	0	0	0	0	0	0	0	0	0	0	0	0	
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	-238	-242	-230	-220	-200	-179	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	80	-241	-242	-234	-229	-210	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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K2 Systems, LLC

PV Tilt Up Kit Solar PV Mount System

Standard size 46"x 92.5" Portrait Orientation

Table 3.8A Max Uplift Force (lbs) Singlespan only Exterior Conditions

Exp D	Ultimate Wind Speed, V (mph)	Rail Type	Roof Wind Pressure Zone 1							Roof Wind Pressure Zone 2							Roof Wind Pressure Zone 3								
			Roof Snow Load (psf)							Roof Snow Load (psf)							Roof Snow Load (psf)								
			0	10	20	30	40	50	60	70	0	10	20	30	40	50	60	70	0	10	20	30	40	50	60
90	44-X	-51	-51	-39	0	0	0	0	0	-51	-51	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	-52	-52	-40	0	0	0	0	0	-52	-52	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-116	-111	-81	-63	-49	-40	-34	-29	-118	-118	-106	-84	-69	-58	-49	-42	-118	-118	-118	-99	-82	-70	-60	0
	80	-161	-157	-119	-92	-72	-59	-49	-43	-163	-163	-151	-123	-102	-85	-72	-61	-164	-164	-164	-143	-121	-104	-88	-76
100	44-X	-51	-51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	-52	-52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-117	-117	-96	-76	-62	-51	-43	-37	-118	-118	-118	-99	-83	-71	-61	0	-119	-119	-119	-116	-97	-84	0	0
	80	-162	-162	-141	-111	-92	-75	-63	-54	-164	-164	-164	-145	-122	-105	-90	-78	-165	-165	-165	-162	-143	-124	-109	-95
110	44-X	-52	-52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-118	-118	-111	-88	-74	-63	-53	0	-119	-119	-119	-113	-96	-83	0	0	-120	-120	-120	-120	-112	0	0	0
	80	-164	-164	-158	-130	-108	-92	-78	-67	-165	-165	-165	-162	-141	-122	-108	-95	-166	-166	-166	-166	-160	-143	-127	-114
120	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-119	-119	-119	-101	-85	-73	-64	0	-120	-120	-120	-120	-109	0	0	0	-120	-120	-120	-120	0	0	0	0
	80	-165	-165	-165	-148	-125	-107	-94	-81	-166	-166	-166	-166	-158	-140	-124	-111	-166	-166	-166	-166	-166	-159	-145	0
130	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-119	-119	-119	-113	-96	-83	0	0	-120	-120	-120	-120	0	0	0	0	0	0	0	0	0	0	0	0
	80	-165	-165	-165	-163	-141	-122	-108	-96	-166	-166	-166	-166	-166	-157	-140	0	-167	-167	-167	-167	-167	-167	0	0
140	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-119	-119	-119	-119	-107	0	0	0	-120	-120	-120	0	0	0	0	0	0	0	0	0	0	0	0	0
	80	-166	-166	-166	-166	-157	-137	-122	-109	-167	-167	-167	-167	-167	-167	0	0	-167	-167	-167	-167	0	0	0	0
150	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-120	-120	-120	-120	-117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80	-166	-166	-166	-166	-166	-151	-135	0	-167	-167	-167	-167	-167	0	0	0	0	0	0	0	0	0	0	0
160	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	-120	-120	-120	-120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80	-167	-167	-167	-167	-167	-165	0	0	-167	-167	-167	-167	0	0	0	0	0	0	0	0	0	0	0	0
170	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80	-167	-167	-167	-167	-167	-167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	44-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	48-XL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80	-167	-167	-167	-167	-167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: The Forces shown in the tables above account for reactions associated with the interior support of a multi-span condition. See Max length for Multi Span for corresponding span length. See SEAOC PV-2 2012 for definition of Roof Zones

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