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Pegasus Solar™ Inc.
100 West Ohio Avenue
Richmond, CA 94804

October 16, 2018
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Attn: Mr. Kai Stephan, CEO

Subject: Pegasus Solar™ Mounting System For Composite Asphalt or Concrete Tile Roofs Supporting IronRidge XR100 Rails - Maximum Attachment Spacing

SML Job No.: 182-15

Dear Mr. Stephan:

We have analyzed the Pegasus Solar™ photovoltaic (PV) panel roof mount system for its use on a composite asphalt or concrete tile roofs in conjunction with the IronRidge XR100 rail attached. It was determined that, for the configurations and criteria described below, this system is in compliance with the applicable sections of the following reference documents:

- Codes: ASCE/SEI 7-10 Min. Design Loads for Buildings & Other Structures
California Building Code 2016 Edition
California Residential Building Code 2016 Edition
- Other: Aluminum Design Manual, ADM 2015 Edition

This letter is intended to address the allowable attachment spacing for the Pegasus Solar™ Mounting systems when used in conjunction with the IronRidge XR100 Roof Mount System rails.

We have reviewed the test data for the Pegasus Solar™ Concrete Tile Roof and L-Foot Composite Asphalt Roof Solar Mounting Systems prepared by Western Technologies (WT), tested January 7, 2017, and by Applied Materials & Engineering (AME), tested September 20, 2017 respectively, in conjunction with the span tables from the IronRidge XR100 Rail, Roof Flush Mounting System – Structural Analysis letter by SML, Inc. dated February 17, 2017. We have determined that, subject to the limitations outlined below, the Pegasus Solar™ L-Foot Composite Asphalt Roof or Concrete Tile Roof Solar Mounting Systems are suitable for use with the IronRidge XR100 Rail Roof Mounting system.

When using the Pegasus Solar™ L-Foot on Composite Asphalt Roofs, refer to the maximum span of the IronRidge XR100 Rail Roof Mounting system shown in the span tables recommended by the manufacturer. **Exception:** PV panels greater than 67.5” in length shall not be installed in Roof Zone 3 for wind speeds more than 160 mph for all exposure categories.

When using the Pegasus Solar™ Concrete Tile Roof Mounting system, refer to the values in the tables provided below, which represent the lowest value for the attachment spacing based on either the allowable loads of the Pegasus Solar™ Concrete Tile Roof Mounting system or the maximum span of the IronRidge XR100 rail recommended by the manufacturer. The values in the tables below shall be verified by the end user of this letter to comply with all the requirements of the rail manufacturers installation recommendations. These values are based on a maximum building height of 30 feet.

Table 1A - MAXIMUM SPANS (inches) - ASCE 7-10												
67.5 inch Module - Roof Slope 0 to 6 Degrees - Roof Zone 1												
XR100 Tile Rail	Wind Speed	Ground Snow Load										
Exposure	mph	0 psf	10 psf	20 psf	30 psf	40 psf	50 psf	60 psf	70 psf	80 psf	90 psf	
Category B	100	122	104	88	82	73	66	61	56	53	49	
	105	122	104	88	82	73	66	61	56	53	49	
	110	122	104	88	82	73	66	61	56	53	49	
	120	122	104	88	82	73	66	61	56	53	49	
	130	112	104	88	82	73	66	61	56	53	49	
	140	104	104	88	82	73	66	61	56	53	49	
	150	97	97	88	82	73	66	61	56	53	49	
	160	91	91	88	82	73	66	61	56	53	49	
Category C	170	85	85	85	82	73	66	59	52	46	41	
	100	122	104	88	82	73	66	61	56	53	49	
	105	117	104	88	82	73	66	61	56	53	49	
	110	112	104	88	82	73	66	61	56	53	49	
	120	102	102	88	82	73	66	61	56	53	49	
	130	94	94	88	82	73	66	61	56	53	49	
	140	88	88	88	82	73	66	61	56	53	49	
	150	82	82	82	82	73	66	61	56	53	49	
Category D	160	77	77	77	77	73	66	61	56	53	49	
	170	72	72	72	72	72	66	58	51	46	41	
	100	113	104	88	82	73	66	61	56	53	37	
	105	108	104	88	82	73	66	61	56	53	49	
	110	103	103	88	82	73	66	61	56	53	49	
	120	94	94	88	82	73	66	61	56	53	49	
	130	87	87	87	82	73	66	61	56	53	49	
	140	80	80	80	80	73	66	61	56	53	49	
Category D	150	75	75	75	75	73	66	61	56	53	48	
	160	70	70	70	70	70	66	61	56	52	48	
	170	66	66	66	66	66	65	56	50	45	41	

Table 2A - MAXIMUM SPANS (inches) - ASCE 7-10											
67.5 inch Module - Roof Slope 7 to 27 Degrees - Roof Zone 1											
XR100 Tile Rail	Wind Speed	Ground Snow Load									
Exposure	mph	0 psf	10 psf	20 psf	30 psf	40 psf	50 psf	60 psf	70 psf	80 psf	90 psf
Category B	100	112	97	83	72	64	58	53	49	46	41
	105	112	97	83	72	64	58	53	49	46	41
	110	112	97	83	72	64	58	53	49	46	41
	120	112	97	83	72	64	58	53	49	46	41
	130	112	97	83	72	64	58	53	49	46	41
	140	105	97	83	72	64	58	53	49	46	41
	150	98	96	82	72	64	58	53	49	46	41
	160	92	92	81	72	64	58	53	49	46	41
Category C	170	87	87	79	71	64	58	53	49	44	40
	100	112	97	83	72	64	58	53	49	46	41
	105	112	97	83	72	64	58	53	49	46	41
	110	112	97	83	72	64	58	53	49	46	41
	120	103	97	83	72	64	58	53	49	46	41
	130	96	95	82	72	64	58	53	49	46	41
	140	89	89	80	71	64	58	53	49	45	41
	150	84	84	78	70	64	58	53	49	44	40
Category D	160	79	79	76	69	63	58	53	48	43	39
	170	74	74	74	67	62	57	52	46	42	38
	100	112	97	83	72	64	58	53	49	46	41
	105	108	97	83	72	64	58	53	49	46	41
	110	103	97	83	72	64	58	53	49	46	41
	120	95	95	82	72	64	58	53	49	46	41
	130	88	88	80	71	64	58	53	49	45	41
	140	82	82	78	70	63	58	53	49	44	40
150	77	77	76	68	62	58	53	47	43	39	
160	73	73	73	67	61	57	51	46	42	38	
170	68	68	68	65	60	56	49	44	40	37	

Table 3A - MAXIMUM SPANS (inches) - ASCE 7-10											
67.5 inch Module - Roof Slope 28 to 45 Degrees - Roof Zone 1											
XR100 Tile Rail	Wind Speed	Ground Snow Load									
Exposure	mph	0 psf	10 psf	20 psf	30 psf	40 psf	50 psf	60 psf	70 psf	80 psf	90 psf
Category B	100	107	98	84	75	67	61	56	52	49	46
	105	107	98	84	75	67	61	56	52	49	46
	110	106	97	84	75	67	61	56	52	49	46
	120	101	94	82	74	67	61	56	52	49	46
	130	96	91	80	72	66	61	56	52	49	46
	140	91	88	78	70	65	60	56	52	49	46
	150	87	85	76	69	64	59	56	52	49	46
	160	83	82	74	67	62	58	55	52	48	44
Category C	170	79	79	72	66	61	57	54	51	47	43
	100	101	94	82	74	67	61	56	52	49	46
	105	98	93	81	73	67	61	56	52	49	46
	110	95	91	80	72	66	61	56	52	49	46
	120	90	87	77	70	65	60	56	52	49	46
	130	85	84	75	68	63	59	56	52	49	45
	140	81	80	72	66	62	58	55	52	47	44
	150	76	76	70	65	60	57	53	49	46	42
Category D	160	73	73	68	63	59	55	52	47	44	41
	170	69	69	66	61	57	54	49	45	42	39
	100	96	91	80	72	66	61	56	52	49	46
	105	93	89	79	71	65	61	56	52	49	46
	110	90	87	77	70	65	60	56	52	49	46
	120	85	83	75	68	63	59	55	52	49	45
	130	80	80	72	66	61	58	54	51	47	44
	140	75	75	70	64	60	56	53	49	45	42
Category D	150	71	71	67	62	58	55	51	47	43	40
	160	68	68	65	60	57	53	48	45	41	38
	170	64	64	62	58	54	50	46	42	39	37

Table 4A - MAXIMUM SPANS (inches) - ASCE 7-10											
67.5 inch Module - Roof Slope 0 to 6 Degrees - Roof Zone 2											
XR100 Tile Rail	Wind Speed	Ground Snow Load									
Exposure	mph	0 psf	10 psf	20 psf	30 psf	40 psf	50 psf	60 psf	70 psf	80 psf	90 psf
Category B	100	109	104	88	82	73	66	61	56	50	45
	105	103	103	88	82	73	66	61	56	50	45
	110	98	98	88	82	73	66	61	56	50	45
	120	90	90	88	82	73	66	61	56	50	45
	130	83	83	83	82	73	66	61	56	50	45
	140	77	77	77	77	73	66	61	56	50	45
	150	72	72	72	72	72	66	61	56	50	45
	160	68	68	68	68	68	66	61	56	50	45
Category C	170	62	62	62	62	62	62	53	45	40	36
	100	91	91	88	82	73	66	61	56	50	45
	105	87	87	87	82	73	66	61	56	50	45
	110	83	83	83	82	73	66	61	56	50	45
	120	76	76	76	76	73	66	61	56	50	45
	130	70	70	70	70	70	66	61	56	50	45
	140	65	65	65	65	65	65	61	56	50	45
	150	57	57	57	57	57	57	57	56	50	45
Category D	160	50	50	50	50	50	50	50	50	50	45
	170	44	44	44	44	44	44	44	44	40	36
	100	84	84	84	82	73	66	61	56	50	36
	105	80	80	80	80	73	66	61	56	50	45
	110	76	76	76	76	73	66	61	56	50	45
	120	70	70	70	70	70	66	61	56	50	45
	130	64	64	64	64	64	64	61	56	50	45
	140	55	55	55	55	55	55	55	55	50	45
150	48	48	48	48	48	48	48	48	48	45	
160	42	42	42	42	42	42	42	42	42	42	
170	37	37	37	37	37	37	37	37	37	37	36

Table 5A - MAXIMUM SPANS (inches) -ASCE 7-10											
67.5 inch Module - Roof Slope 7 to 27 Degrees - Roof Zone 2											
XR100 Tile Rail	Wind Speed	Ground Snow Load									
Exposure	mph	0 psf	10 psf	20 psf	30 psf	40 psf	50 psf	60 psf	70 psf	80 psf	90 psf
Category B	100	106	97	83	72	64	58	53	49	46	43
	105	102	97	83	72	64	58	53	49	46	43
	110	97	97	83	72	64	58	53	49	46	43
	120	90	90	83	72	64	58	53	49	46	43
	130	83	83	83	72	64	58	53	49	46	43
	140	77	77	77	72	64	58	53	49	46	43
	150	73	73	73	72	64	58	53	49	46	43
	160	68	68	68	68	64	58	53	49	46	43
Category C	170	64	64	64	64	64	58	53	49	46	43
	100	91	91	83	72	64	58	53	49	46	43
	105	87	87	83	72	64	58	53	49	46	43
	110	83	83	83	72	64	58	53	49	46	43
	120	76	76	76	72	64	58	53	49	46	43
	130	71	71	71	71	64	58	53	49	46	43
	140	66	66	66	66	64	58	53	49	46	43
	150	59	59	59	59	59	58	53	49	46	43
Category D	160	52	52	52	52	52	52	52	49	46	43
	170	46	46	46	46	46	46	46	46	46	43
	100	84	84	83	72	64	58	53	49	46	43
	105	80	80	80	72	64	58	53	49	46	43
	110	77	77	77	72	64	58	53	49	46	43
	120	70	70	70	70	64	58	53	49	46	43
	130	65	65	65	65	64	58	53	49	46	43
	140	57	57	57	57	57	57	53	49	46	43
150	50	50	50	50	50	50	50	49	46	43	
160	44	44	44	44	44	44	44	44	44	43	
170	39	39	39	39	39	39	39	39	39	39	

Table 6A - MAXIMUM SPANS (inches) - ASCE 7-10											
67.5 inch Module - Roof Slope 28 to 45 Degrees - Roof Zone 2											
XR100 Tile Rail	Wind Speed	Ground Snow Load									
Exposure	mph	0 psf	10 psf	20 psf	30 psf	40 psf	50 psf	60 psf	70 psf	80 psf	90 psf
Category B	100	107	98	84	75	67	61	56	52	49	46
	105	107	98	84	75	67	61	56	52	49	46
	110	106	97	84	75	67	61	56	52	49	46
	120	101	94	82	74	67	61	56	52	49	46
	130	94	91	80	72	66	61	56	52	49	46
	140	88	88	78	70	65	60	56	52	49	46
	150	83	83	76	69	64	59	56	52	49	46
	160	78	78	74	67	62	58	55	52	49	46
Category C	170	74	74	72	66	61	57	54	51	49	46
	100	101	94	82	74	67	61	56	52	49	46
	105	98	93	81	73	67	61	56	52	49	46
	110	94	91	80	72	66	61	56	52	49	46
	120	87	87	77	70	65	60	56	52	49	46
	130	81	81	75	68	63	59	56	52	49	46
	140	76	76	72	66	62	58	55	52	49	46
	150	71	71	70	65	60	57	53	51	49	46
Category D	160	67	67	67	63	59	55	52	50	48	46
	170	64	64	64	61	57	54	51	49	47	45
	100	95	91	80	72	66	61	56	52	49	46
	105	91	89	79	71	65	61	56	52	49	46
	110	87	87	77	70	65	60	56	52	49	46
	120	81	81	75	68	63	59	55	52	49	46
	130	75	75	72	66	61	58	54	52	49	46
	140	70	70	70	64	60	56	53	51	48	46
Category D	150	66	66	66	62	58	55	52	50	48	46
	160	61	61	61	60	57	54	51	49	47	45
	170	54	54	54	54	54	54	52	50	48	46
	170	54	54	54	54	54	54	52	50	48	44

Table 7A - MAXIMUM SPANS (inches) - ASCE 7-10											
67.5 inch Module - Roof Slope 0 to 6 Degrees - Roof Zone 3											
XR100 Tile Rail	Wind Speed	Ground Snow Load									
Exposure	mph	0 psf	10 psf	20 psf	30 psf	40 psf	50 psf	60 psf	70 psf	80 psf	90 psf
Category B	100	87	87	87	82	73	66	61	56	50	45
	105	83	83	83	82	73	66	61	56	50	45
	110	79	79	79	79	73	66	61	56	50	45
	120	72	72	72	72	72	66	61	56	50	45
	130	67	67	67	67	67	66	61	56	50	45
	140	59	59	59	59	59	59	59	56	50	45
	150	51	51	51	51	51	51	51	51	50	45
	160	45	45	45	45	45	45	45	45	45	45
Category C	170	39	39	39	39	39	39	39	39	39	36
	100	73	73	73	73	73	66	61	56	50	45
	105	70	70	70	70	70	66	61	56	50	45
	110	67	67	67	67	67	66	61	56	50	45
	120	57	57	57	57	57	57	57	56	50	45
	130	48	48	48	48	48	48	48	48	48	45
	140	42	42	42	42	42	42	42	42	42	42
	150	36	36	36	36	36	36	36	36	36	36
Category D	160	32	32	32	32	32	32	32	32	32	32
	170	28	28	28	28	28	28	28	28	28	28
	100	67	67	67	67	67	66	61	56	50	23
	105	63	63	63	63	63	63	61	56	50	45
	110	58	58	58	58	58	58	58	56	50	45
	120	48	48	48	48	48	48	48	48	48	45
	130	41	41	41	41	41	41	41	41	41	41
	140	35	35	35	35	35	35	35	35	35	35
150	30	30	30	30	30	30	30	30	30	30	
160	26	26	26	26	26	26	26	26	26	26	
170	23	23	23	23	23	23	23	23	23	23	

Table 8A - MAXIMUM SPANS (inches) - ASCE 7-10												
67.5 inch Module - Roof Slope 7 to 27 Degrees - Roof Zone 3												
XR100 Tile Rail	Wind Speed	Ground Snow Load										
Exposure	mph	0 psf	10 psf	20 psf	30 psf	40 psf	50 psf	60 psf	70 psf	80 psf	90 psf	
Category B	100	87	87	83	72	64	58	53	49	46	43	
	105	83	83	83	72	64	58	53	49	46	43	
	110	80	80	80	72	64	58	53	49	46	43	
	120	73	73	73	72	64	58	53	49	46	43	
	130	68	68	68	68	64	58	53	49	46	43	
	140	62	62	62	62	62	58	53	49	46	43	
	150	54	54	54	54	54	54	53	49	46	43	
	160	48	48	48	48	48	48	48	48	46	43	
Category C	170	42	42	42	42	42	42	42	42	42	42	
	100	74	74	74	72	64	58	53	49	46	43	
	105	71	71	71	71	64	58	53	49	46	43	
	110	68	68	68	68	64	58	53	49	46	43	
	120	61	61	61	61	61	58	53	49	46	43	
	130	51	51	51	51	51	51	51	49	46	43	
	140	44	44	44	44	44	44	44	44	44	43	
	150	38	38	38	38	38	38	38	38	38	38	
Category D	160	34	34	34	34	34	34	34	34	34	34	
	170	30	30	30	30	30	30	30	30	30	30	
	100	68	68	68	68	64	58	53	49	46	43	
	105	65	65	65	65	64	58	53	49	46	43	
	110	61	61	61	61	61	58	53	49	46	43	
	120	51	51	51	51	51	51	51	49	46	43	
	130	43	43	43	43	43	43	43	43	43	43	
	140	37	37	37	37	37	37	37	37	37	37	
Category D	150	32	32	32	32	32	32	32	32	32	32	
	160	28	28	28	28	28	28	28	28	28	28	
	170	25	25	25	25	25	25	25	25	25	25	
	170	25	25	25	25	25	25	25	25	25	25	

Table 9A - MAXIMUM SPANS (inches) - ASCE 7-10											
67.5 inch Module - Roof Slope 28 to 45 Degrees - Roof Zone 3											
XR100 Tile Rail	Wind Speed	Ground Snow Load									
Exposure	mph	0 psf	10 psf	20 psf	30 psf	40 psf	50 psf	60 psf	70 psf	80 psf	90 psf
Category B	100	107	98	84	75	67	61	56	52	49	46
	105	107	98	84	75	67	61	56	52	49	46
	110	106	97	84	75	67	61	56	52	49	46
	120	101	94	82	74	67	61	56	52	49	46
	130	94	91	80	72	66	61	56	52	49	46
	140	88	88	78	70	65	60	56	52	49	46
	150	83	83	76	69	64	59	56	52	49	46
	160	78	78	74	67	62	58	55	52	49	46
Category C	170	74	74	72	66	61	57	54	51	49	46
	100	101	94	82	74	67	61	56	52	49	46
	105	98	93	81	73	67	61	56	52	49	46
	110	94	91	80	72	66	61	56	52	49	46
	120	87	87	77	70	65	60	56	52	49	46
	130	81	81	75	68	63	59	56	52	49	46
	140	76	76	72	66	62	58	55	52	49	46
	150	71	71	70	65	60	57	53	51	49	46
Category D	160	67	67	67	63	59	55	52	50	48	46
	170	64	64	64	61	57	54	51	49	47	45
	100	95	91	80	72	66	61	56	52	49	46
	105	91	89	79	71	65	61	56	52	49	46
	110	87	87	77	70	65	60	56	52	49	46
	120	81	81	75	68	63	59	55	52	49	46
	130	75	75	72	66	61	58	54	52	49	46
	140	70	70	70	64	60	56	53	51	48	46
Category D	150	66	66	66	62	58	55	52	50	48	46
	160	61	61	61	60	57	54	51	49	47	45
	170	54	54	54	54	54	54	52	50	48	46
	170	54	54	54	54	54	54	52	50	48	44

Table 1B - MAXIMUM SPANS (inches) - ASCE 7-10											
78.5 inch Module - Roof Slope 0 to 6 Degrees - Roof Zone 1											
XR100 Tile Rail	Wind Speed	Ground Snow Load									
Exposure	mph	0 psf	10 psf	20 psf	30 psf	40 psf	50 psf	60 psf	70 psf	80 psf	90 psf
Category B	100	114	97	82	76	68	61	56	52	47	42
	105	114	97	82	76	68	61	56	52	47	42
	110	114	97	82	76	68	61	56	52	47	42
	120	114	97	82	76	68	61	56	52	47	42
	130	105	97	82	76	68	61	56	52	47	42
	140	97	97	82	76	68	61	56	52	47	42
	150	90	90	82	76	68	61	56	52	47	42
	160	85	85	82	76	68	61	56	52	47	42
Category C	170	80	80	80	76	68	61	53	46	40	36
	100	114	97	82	76	68	61	56	52	47	42
	105	110	97	82	76	68	61	56	52	47	42
	110	105	97	82	76	68	61	56	52	47	42
	120	96	96	82	76	68	61	56	52	47	42
	130	88	88	82	76	68	61	56	52	47	42
	140	82	82	82	76	68	61	56	52	47	42
	150	76	76	76	76	68	61	56	52	47	42
Category D	160	71	71	71	71	68	61	56	52	47	42
	170	67	67	67	67	67	61	53	46	40	36
	100	106	97	82	76	68	61	56	52	47	35
	105	101	97	82	76	68	61	56	52	47	42
	110	96	96	82	76	68	61	56	52	47	42
	120	88	88	82	76	68	61	56	52	47	42
	130	81	81	81	76	68	61	56	52	47	42
	140	75	75	75	75	68	61	56	52	47	42
150	70	70	70	70	68	61	56	52	47	42	
160	66	66	66	66	66	61	56	52	47	42	
170	59	59	59	59	59	59	59	53	46	40	36

Table 2B - MAXIMUM SPANS (inches) - ASCE 7-10												
78.5 inch Module - Roof Slope 7 to 27 Degrees - Roof Zone 1												
XR100 Tile Rail	Wind Speed	Ground Snow Load										
Exposure	mph	0 psf	10 psf	20 psf	30 psf	40 psf	50 psf	60 psf	70 psf	80 psf	90 psf	
Category B	100	105	91	77	67	59	54	49	45	40	36	
	105	105	91	77	67	59	54	49	45	40	36	
	110	105	91	77	67	59	54	49	45	40	36	
	120	105	91	77	67	59	54	49	45	40	36	
	130	105	91	77	67	59	54	49	45	40	36	
	140	98	91	77	67	59	54	49	45	40	36	
	150	91	89	76	67	59	54	49	45	40	36	
	160	86	86	75	67	59	54	49	45	40	36	
Category C	170	81	81	74	66	59	54	49	45	39	35	
	100	105	91	77	67	59	54	49	45	40	36	
	105	105	91	77	67	59	54	49	45	40	36	
	110	104	91	77	67	59	54	49	45	40	36	
	120	96	91	77	67	59	54	49	45	40	36	
	130	89	89	76	67	59	54	49	45	40	36	
	140	83	83	74	66	59	54	49	45	40	36	
	150	78	78	73	65	59	54	49	45	40	36	
Category D	160	73	73	71	64	58	54	49	45	40	36	
	170	69	69	69	62	57	53	49	45	39	35	
	100	105	91	77	67	59	54	49	45	40	36	
	105	101	91	77	67	59	54	49	45	40	36	
	110	97	91	77	67	59	54	49	45	40	36	
	120	89	88	76	67	59	54	49	45	40	36	
	130	82	82	74	66	59	54	49	45	40	36	
	140	77	77	72	65	59	54	49	45	40	36	
Category D	150	72	72	70	63	58	54	49	45	40	36	
	160	68	68	68	62	57	53	49	45	40	36	
	170	64	64	64	61	56	52	49	44	39	35	

Table 3B - MAXIMUM SPANS (inches) - ASCE 7-10											
78.5 inch Module - Roof Slope 28 to 45 Degrees - Roof Zone 1											
XR100 Tile Rail	Wind Speed	Ground Snow Load									
Exposure	mph	0 psf	10 psf	20 psf	30 psf	40 psf	50 psf	60 psf	70 psf	80 psf	90 psf
Category B	100	99	91	78	70	62	56	52	48	45	43
	105	99	91	78	70	62	56	52	48	45	43
	110	98	90	78	70	62	56	52	48	45	43
	120	93	87	76	68	62	56	52	48	45	43
	130	89	84	74	67	61	56	52	48	45	43
	140	85	82	72	65	60	56	52	48	45	43
	150	81	79	70	64	59	55	52	48	45	43
	160	77	76	68	62	58	54	51	48	45	43
Category C	170	73	73	66	61	57	53	50	48	45	43
	100	94	88	76	69	62	56	52	48	45	43
	105	91	86	75	68	62	56	52	48	45	43
	110	89	84	74	67	61	56	52	48	45	43
	120	84	81	72	65	60	56	52	48	45	43
	130	79	78	70	63	59	55	52	48	45	43
	140	75	75	67	62	57	54	51	48	45	43
	150	71	71	65	60	56	52	50	47	45	42
Category D	160	67	67	63	58	54	51	49	46	44	41
	170	64	64	61	57	53	50	48	45	42	39
	100	89	85	74	67	61	56	52	48	45	43
	105	87	83	73	66	61	56	52	48	45	43
	110	84	81	72	65	60	56	52	48	45	43
	120	79	78	69	63	59	55	52	48	45	43
	130	74	74	67	61	57	53	50	48	45	43
	140	70	70	65	60	56	52	49	47	45	42
150	66	66	62	58	54	51	48	46	43	40	
160	63	63	60	56	53	50	47	45	41	38	
170	56	56	56	54	51	48	46	42	39	37	

Table 4B - MAXIMUM SPANS (inches) - ASCE 7-10											
78.5 inch Module - Roof Slope 0 to 6 Degrees - Roof Zone 2											
XR100 Tile Rail	Wind Speed	Ground Snow Load									
Exposure	mph	0 psf	10 psf	20 psf	30 psf	40 psf	50 psf	60 psf	70 psf	80 psf	90 psf
Category B	100	101	97	82	76	68	61	56	49	44	39
	105	96	96	82	76	68	61	56	49	44	39
	110	92	92	82	76	68	61	56	49	44	39
	120	84	84	82	76	68	61	56	49	44	39
	130	78	78	78	76	68	61	56	49	44	39
	140	72	72	72	72	68	61	56	49	44	39
	150	67	67	67	67	67	61	56	49	44	39
	160	61	61	61	61	61	61	56	49	44	39
Category C	170	54	54	54	54	54	54	46	39	35	31
	100	85	85	82	76	68	61	56	49	44	39
	105	81	81	81	76	68	61	56	49	44	39
	110	77	77	77	76	68	61	56	49	44	39
	120	71	71	71	71	68	61	56	49	44	39
	130	66	66	66	66	66	61	56	49	44	39
	140	57	57	57	57	57	57	56	49	44	39
	150	49	49	49	49	49	49	49	49	44	39
Category D	160	43	43	43	43	43	43	43	43	43	39
	170	38	38	38	38	38	38	38	38	35	31
	100	78	78	78	76	68	61	56	49	44	31
	105	75	75	75	75	68	61	56	49	44	39
	110	71	71	71	71	68	61	56	49	44	39
	120	65	65	65	65	65	61	56	49	44	39
	130	56	56	56	56	56	56	56	49	44	39
	140	48	48	48	48	48	48	48	48	44	39
150	41	41	41	41	41	41	41	41	41	39	
160	36	36	36	36	36	36	36	36	36	36	
170	32	32	32	32	32	32	32	32	32	32	

Table 5B - MAXIMUM SPANS (inches) - ASCE 7-10											
78.5 inch Module - Roof Slope 7 to 27 Degrees - Roof Zone 2											
XR100 Tile Rail	Wind Speed	Ground Snow Load									
Exposure	mph	0 psf	10 psf	20 psf	30 psf	40 psf	50 psf	60 psf	70 psf	80 psf	90 psf
Category B	100	99	91	77	67	59	54	49	46	43	40
	105	95	91	77	67	59	54	49	46	43	40
	110	91	91	77	67	59	54	49	46	43	40
	120	84	84	77	67	59	54	49	46	43	40
	130	78	78	77	67	59	54	49	46	43	40
	140	72	72	72	67	59	54	49	46	43	40
	150	68	68	68	67	59	54	49	46	43	40
	160	63	63	63	63	59	54	49	46	43	40
Category C	170	56	56	56	56	56	54	49	46	43	40
	100	85	85	77	67	59	54	49	46	43	40
	105	81	81	77	67	59	54	49	46	43	40
	110	77	77	77	67	59	54	49	46	43	40
	120	71	71	71	67	59	54	49	46	43	40
	130	66	66	66	66	59	54	49	46	43	40
	140	59	59	59	59	59	54	49	46	43	40
	150	51	51	51	51	51	51	49	46	43	40
Category D	160	45	45	45	45	45	45	45	45	43	40
	170	40	40	40	40	40	40	40	40	40	40
	100	78	78	77	67	59	54	49	46	43	40
	105	75	75	75	67	59	54	49	46	43	40
	110	71	71	71	67	59	54	49	46	43	40
	120	66	66	66	66	59	54	49	46	43	40
	130	58	58	58	58	58	54	49	46	43	40
	140	50	50	50	50	50	50	49	46	43	40
150	43	43	43	43	43	43	43	43	43	40	
160	38	38	38	38	38	38	38	38	38	38	
170	33	33	33	33	33	33	33	33	33	33	

Table 6B - MAXIMUM SPANS (inches) - ASCE 7-10											
78.5 inch Module - Roof Slope 28 to 45 Degrees - Roof Zone 2											
XR100 Tile Rail	Wind Speed	Ground Snow Load									
Exposure	mph	0 psf	10 psf	20 psf	30 psf	40 psf	50 psf	60 psf	70 psf	80 psf	90 psf
Category B	100	99	91	78	70	62	56	52	48	45	43
	105	99	91	78	70	62	56	52	48	45	43
	110	98	90	78	70	62	56	52	48	45	43
	120	93	87	76	68	62	56	52	48	45	43
	130	88	84	74	67	61	56	52	48	45	43
	140	82	82	72	65	60	56	52	48	45	43
	150	78	78	70	64	59	55	52	48	45	43
	160	73	73	68	62	58	54	51	48	45	43
Category C	170	69	69	66	61	57	53	50	48	45	43
	100	94	88	76	69	62	56	52	48	45	43
	105	91	86	75	68	62	56	52	48	45	43
	110	88	84	74	67	61	56	52	48	45	43
	120	81	81	72	65	60	56	52	48	45	43
	130	76	76	70	63	59	55	52	48	45	43
	140	71	71	67	62	57	54	51	48	45	43
	150	67	67	65	60	56	52	50	47	45	43
Category D	160	62	62	62	58	54	51	49	46	44	43
	170	55	55	55	55	53	50	48	45	44	42
	100	89	85	74	67	61	56	52	48	45	43
	105	85	83	73	66	61	56	52	48	45	43
	110	82	81	72	65	60	56	52	48	45	43
	120	75	75	69	63	59	55	52	48	45	43
	130	70	70	67	61	57	53	50	48	45	43
	140	66	66	65	60	56	52	49	47	45	43
150	60	60	60	58	54	51	48	46	44	42	
160	53	53	53	53	53	50	47	45	43	42	
170	47	47	47	47	47	47	47	46	44	42	41

Table 7B - MAXIMUM SPANS (inches) - ASCE 7-10											
78.5 inch Module - Roof Slope 0 to 6 Degrees - Roof Zone 3											
XR100 Tile Rail	Wind Speed	Ground Snow Load									
Exposure	mph	0 psf	10 psf	20 psf	30 psf	40 psf	50 psf	60 psf	70 psf	80 psf	90 psf
Category B	100	81	81	81	76	68	61	56	49	44	39
	105	77	77	77	76	68	61	56	49	44	39
	110	74	74	74	74	68	61	56	49	44	39
	120	67	67	67	67	67	61	56	49	44	39
	130	60	60	60	60	60	60	56	49	44	39
	140	51	51	51	51	51	51	51	49	44	39
	150	44	44	44	44	44	44	44	44	44	39
	160	39	39	39	39	39	39	39	39	39	39
Category C	170	34	34	34	34	34	34	34	34	34	31
	100	68	68	68	68	68	61	56	49	44	39
	105	65	65	65	65	65	61	56	49	44	39
	110	59	59	59	59	59	59	56	49	44	39
	120	49	49	49	49	49	49	49	49	44	39
	130	42	42	42	42	42	42	42	42	42	39
	140	36	36	36	36	36	36	36	36	36	36
	150	31	31	31	31	31	31	31	31	31	31
Category D	160	27	27	27	27	27	27	27	27	27	27
	170	24	24	24	24	24	24	24	24	24	24
	100	61	61	61	61	61	61	56	49	44	20
	105	55	55	55	55	55	55	55	49	44	39
	110	50	50	50	50	50	50	50	49	44	39
	120	41	41	41	41	41	41	41	41	41	39
	130	35	35	35	35	35	35	35	35	35	35
	140	30	30	30	30	30	30	30	30	30	30
150	26	26	26	26	26	26	26	26	26	26	
160	23	23	23	23	23	23	23	23	23	23	
170	20	20	20	20	20	20	20	20	20	20	

Table 8B - MAXIMUM SPANS (inches) - ASCE 7-10											
78.5 inch Module - Roof Slope 7 to 27 Degrees - Roof Zone 3											
XR100 Tile Rail	Wind Speed	Ground Snow Load									
Exposure	mph	0 psf	10 psf	20 psf	30 psf	40 psf	50 psf	60 psf	70 psf	80 psf	90 psf
Category B	100	81	81	77	67	59	54	49	46	43	40
	105	78	78	77	67	59	54	49	46	43	40
	110	74	74	74	67	59	54	49	46	43	40
	120	68	68	68	67	59	54	49	46	43	40
	130	63	63	63	63	59	54	49	46	43	40
	140	54	54	54	54	54	54	49	46	43	40
	150	47	47	47	47	47	47	47	46	43	40
	160	41	41	41	41	41	41	41	41	41	41
Category C	100	69	69	69	67	59	54	49	46	43	40
	105	66	66	66	66	59	54	49	46	43	40
	110	63	63	63	63	59	54	49	46	43	40
	120	52	52	52	52	52	52	49	46	43	40
	130	44	44	44	44	44	44	44	44	43	40
	140	38	38	38	38	38	38	38	38	38	38
	150	33	33	33	33	33	33	33	33	33	33
	160	29	29	29	29	29	29	29	29	29	29
Category D	100	64	64	64	64	59	54	49	46	43	40
	105	58	58	58	58	58	54	49	46	43	40
	110	53	53	53	53	53	53	49	46	43	40
	120	44	44	44	44	44	44	44	44	43	40
	130	37	37	37	37	37	37	37	37	37	37
	140	32	32	32	32	32	32	32	32	32	32
	150	28	28	28	28	28	28	28	28	28	28
	160	24	24	24	24	24	24	24	24	24	24
170	22	22	22	22	22	22	22	22	22	22	22

Table 9B - MAXIMUM SPANS (inches) - ASCE 7-10											
78.5 inch Module - Roof Slope 28 to 45 Degrees - Roof Zone 3											
XR100 Tile Rail	Wind Speed	Ground Snow Load									
Exposure	mph	0 psf	10 psf	20 psf	30 psf	40 psf	50 psf	60 psf	70 psf	80 psf	90 psf
Category B	100	99	91	78	70	62	56	52	48	45	43
	105	99	91	78	70	62	56	52	48	45	43
	110	98	90	78	70	62	56	52	48	45	43
	120	93	87	76	68	62	56	52	48	45	43
	130	88	84	74	67	61	56	52	48	45	43
	140	82	82	72	65	60	56	52	48	45	43
	150	78	78	70	64	59	55	52	48	45	43
	160	73	73	68	62	58	54	51	48	45	43
Category C	170	69	69	66	61	57	53	50	48	45	43
	100	94	88	76	69	62	56	52	48	45	43
	105	91	86	75	68	62	56	52	48	45	43
	110	88	84	74	67	61	56	52	48	45	43
	120	81	81	72	65	60	56	52	48	45	43
	130	76	76	70	63	59	55	52	48	45	43
	140	71	71	67	62	57	54	51	48	45	43
	150	67	67	65	60	56	52	50	47	45	43
Category D	160	62	62	62	58	54	51	49	46	44	43
	170	55	55	55	55	53	50	48	45	44	42
	100	89	85	74	67	61	56	52	48	45	43
	105	85	83	73	66	61	56	52	48	45	43
	110	82	81	72	65	60	56	52	48	45	43
	120	75	75	69	63	59	55	52	48	45	43
	130	70	70	67	61	57	53	50	48	45	43
	140	66	66	65	60	56	52	49	47	45	43
150	60	60	60	58	54	51	48	46	44	42	
160	53	53	53	53	53	50	47	45	43	42	
170	47	47	47	47	47	47	47	46	44	42	41

Pegasus Solar™ Inc.

Mr. Kai Stephan

October 16, 2018

Pegasus Solar™ Inc. Concrete Tile Roof Mounting System

For Composite Asphalt or Concrete Tile Roofs Supporting IronRidge XR100 Rails

SML Job No.: 182-15

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Our analysis assumes that the connections and associated hardware are installed in a workmanlike manner in accordance with the Pegasus Solar™ Mount Installation Manual and generally accepted standards of construction practice. It is the responsibility of the contractor to verify that the roof framing can safely support the loads imposed by the addition of the PV array. Starling Madison Lofquist, Inc. and Pegasus Solar™ assume no liability beyond what is specifically shown in this letter. Additional information is available at the Pegasus Solar™ web site, <http://pegasussolar.com/>

Please feel free to contact me at your convenience if you have any questions.

Respectfully yours,



Jesse Light, S.E.
Sr. Structural Engineer

Rusmir Begic, E.I.T., M.S.E.
Structural Designer