



4/26/2017

Attn: Mr. Marshall Green
Quick Mount PV
2700 Mitchell Dr.
Walnut Creek, CA, 94598

RE: Quick Mount PV QBase Mount System for use with
Unirac Solarmount Flush-to-Roof Rail System

SEI Project No.: 17054.00

Dear Mr. Green

Structural Enginuity Inc. (SEI) has completed its review of the Quickmount PV QBase Mount System for use in conjunction with the Unirac Solarmount Flush-to-Roof Rail System. The QBase product line includes the Composition Mount (QMNC), Metal, Shake, & Slate Mount (QMNS), Standard Flat Tile Mount (QMSFT), Universal Tile Mount (QMLC), and the Low Slope Mount (QMLSH).

The review was based on the following reference data:

- Unirac, Design & Engineering Guide – Solarmount: Flush-to-Roof Design, May 19, 2016
- Applied Materials & Engineering, New Construction Composition Mount (QMNC 3-3/4" Finished Height) Load Testing, Project Number 111114C, March 23, 2011
- Applied Materials & Engineering, Quick Mount QBase with 6.5" Post as Used in Low Slope Mount (QMLSH-7) & Universal Tile Mount (QMUTM) Load Testing, Project Number 111316C, July 5, 2011
- Applied Materials & Engineering, Low Slope Mount QMLSH-9 Hardware Load Testing, Project Number 111203C, May 5, 2011
- Applied Materials & Engineering, Low Slope Mount QMLSH-12 Hardware Load Testing, Project Number 111204C, May 9, 2011
- Eclipse Engineering, Allowable Load Capacities for the Quick Mount PV QBase Mount system, June 19, 2014

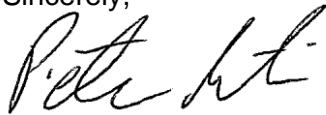
SEI has determined that the QMNC, QMNS, QMSFT, QMUTM, and QMLSH mounts are suitable for use with the Unirac Solarmount System. The approved installation and allowable loads for the Quick Mount PV QBase products is outlined in the Eclipse Engineering report referenced above. The allowable load values are shown below, no additional load duration factors may be applied to these values.

Table 1: QBase Roof Mounts					
Load Direction	Specific Gravity of Lumber Rafter	QMNC, QMNS, QMSFT	QMUTM, QMLSH-7	QMLSH-9	QMLSH-12
Tension	0.5	1179 lb.			
Shear - Parallel to Rafter	0.5	686 lb.	257 lb.	257 lb.	168 lb.
Shear - Perpendicular to Rafter	0.5	464 lb.	171 lb.	216 lb.	122 lb.

SEI has prepared allowable rail span charts for the Unirac Solarmount System used in conjunction with the Quick Mount PV QBase products. These span tables serve as a quick reference for looking up maximum rail spans based on building and site conditions and follow the 2016 CBC, 2015 IBC/IRC and applicable ASCE 7-10 load cases. The tables take into account the strength of the rail system as well as the allowable tension and shear forces of the QBase mounts. A site specific analysis is required if the site conditions or building characteristics do not meet the requirements listed in the attached tables. In all cases, the tables are meant to be used in conjunction with Unirac Solarmount System Structural Report and Calculations and all requirements listed are still applicable for these tables including edge zones and edge distances.

Please contact our office if you have any further questions relating to this matter.

Sincerely,



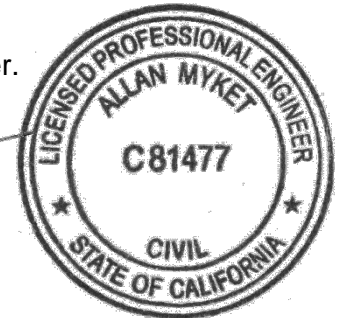
Peter Martin
Engineer II

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Allan T. Myket, P.E.
President/Founder

amyket@structuralengenuityinc.com 4/26/17



Structural Engenuity Inc.

Rail Spans (in.) for Unirac Solarmount Rails for use with QMNC, QMNS, & QMSFT Products

Table 1A		Roof Height: 0 - 30 feet						Rafter Species: Douglas Fir											
		Roof Angle: 7 - 27 degrees						Specific Gravity: 0.50											
Exposure B	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >7° to 27°	110	150	150	120	90	66	54	132	132	120	90	66	54	108	108	108	90	66	54
	115	150	132	120	90	66	54	120	120	120	90	66	54	108	108	108	90	66	54
	120	150	132	120	90	66	54	120	120	120	90	66	54	102	102	102	90	66	54
	130	150	132	120	90	66	54	120	120	120	90	66	54	90	90	90	90	66	54
	140	132	132	120	90	66	54	108	108	108	90	66	54	84	84	84	84	66	54
	150	132	132	120	90	66	54	102	102	102	90	66	54	78	78	78	78	66	54
	160	120	120	120	90	66	54	90	90	90	90	66	54	78	78	78	78	66	54
	170	120	120	120	90	66	54	90	90	90	90	66	54	72	72	72	72	66	54
	180	108	108	108	90	66	54	84	84	84	84	66	54	60	60	60	60	60	54
	200	102	102	102	90	66	54	78	78	78	78	66	54	48	48	48	48	48	48

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans (in.) for Unirac Solarmount Rails for use with QMUTM & QMLSH-7 Products

Table 1B		Roof Height: 0 - 30 feet						Rafter Species: Douglas Fir											
		Roof Angle: 7 - 27 degrees						Specific Gravity: 0.50											
Exposure B	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >7° to 27°	110	150	150	120	90	66	54	132	132	120	90	66	54	108	108	108	90	66	54
	115	150	132	120	90	66	54	120	120	120	90	66	54	108	108	108	90	66	54
	120	150	132	120	90	66	54	120	120	120	90	66	54	102	102	102	90	66	54
	130	150	132	120	90	66	54	120	120	120	90	66	54	90	90	90	90	66	54
	140	132	132	120	90	66	54	108	108	108	90	66	54	84	84	84	84	66	54
	150	132	132	120	90	66	54	102	102	102	90	66	54	78	78	78	78	66	54
	160	120	120	120	90	66	54	90	90	90	90	66	54	78	78	78	78	66	54
	170	120	120	120	90	66	54	90	90	90	90	66	54	72	72	72	72	66	54
	180	108	108	108	90	66	54	84	84	84	84	66	54	60	60	60	60	60	54
	200	102	102	102	90	66	54	78	78	78	78	66	54	48	48	48	48	48	48

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans (in.) for Unirac Solarmount Rails for use with QMLSH-9 Products

Table 1C		Roof Height: 0 - 30 feet						Rafter Species: Douglas Fir											
		Roof Angle: 7 - 27 degrees						Specific Gravity: 0.50											
Exposure B	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >7° to 27°	110	150	150	120	90	66	54	132	132	120	90	66	54	108	108	108	90	66	54
	115	150	132	120	90	66	54	120	120	120	90	66	54	108	108	108	90	66	54
	120	150	132	120	90	66	54	120	120	120	90	66	54	102	102	102	90	66	54
	130	150	132	120	90	66	54	120	120	120	90	66	54	90	90	90	90	66	54
	140	132	132	120	90	66	54	108	108	108	90	66	54	84	84	84	84	66	54
	150	132	132	120	90	66	54	102	102	102	90	66	54	78	78	78	78	66	54
	160	120	120	120	90	66	54	90	90	90	90	66	54	78	78	78	78	66	54
	170	120	120	120	90	66	54	90	90	90	90	66	54	72	72	72	72	66	54
	180	108	108	108	90	66	54	84	84	84	84	66	54	60	60	60	60	60	54
	200	102	102	102	90	66	54	78	78	78	78	66	54	48	48	48	48	48	48

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans (in.) for Unirac Solarmount Rails for use with QMLSH-12 Products

Table 1D		Roof Height: 0 - 30 feet						Rafter Species: Douglas Fir											
		Roof Angle: 7 - 27 degrees						Specific Gravity: 0.50											
Exposure B	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >7° to 27°	110	150	143	87	62	49	40	132	132	87	62	49	40	108	108	87	62	49	40
	115	150	132	87	62	49	40	120	120	87	62	49	40	108	108	87	62	49	40
	120	150	132	87	62	49	40	120	120	87	62	49	40	102	102	87	62	49	40
	130	150	132	87	62	49	40	120	120	87	62	49	40	90	90	87	62	49	40
	140	132	132	87	62	49	40	108	108	87	62	49	40	84	84	84	62	49	40
	150	132	132	87	62	49	40	102	102	87	62	49	40	78	78	78	62	49	40
	160	120	120	87	62	49	40	90	90	87	62	49	40	78	78	78	62	49	40
	170	120	120	87	62	49	40	90	90	87	62	49	40	72	72	72	62	49	40
	180	108	108	87	62	49	40	84	84	84	62	49	40	60	60	60	60	49	40
	200	102	102	87	62	49	40	78	78	78	62	49	40	48	48	48	48	48	40

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans (in.) for Unirac Solarmount Rails for use with QMNC, QMNS, & QMSFT Products

Table 2A		Roof Height: 0 - 30 feet						Rafter Species: Douglas Fir											
		Roof Angle: 7 - 27 degrees						Specific Gravity: 0.50											
Exposure C	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >7° to 27°	110	150	132	120	90	66	54	120	120	120	90	66	54	90	90	90	90	66	54
	115	132	132	120	90	66	54	108	108	108	90	66	54	90	90	90	90	66	54
	120	132	132	120	90	66	54	108	108	108	90	66	54	84	84	84	84	66	54
	130	132	132	120	90	66	54	102	102	102	90	66	54	78	78	78	78	66	54
	140	120	120	120	90	66	54	90	90	90	90	66	54	72	72	72	72	66	54
	150	120	120	120	90	66	54	84	84	84	84	66	54	71	71	71	71	66	54
	160	108	108	108	90	66	54	78	78	78	78	66	54	60	60	60	60	60	54
	170	102	102	102	90	66	54	78	78	78	78	66	54	48	48	48	48	48	48
	180	102	102	102	90	66	54	72	72	72	72	66	54	48	48	48	48	48	48
	200	84	84	84	84	66	54	60	60	60	60	60	54	30	30	30	30	30	30

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans (in.) for Unirac Solarmount Rails for use with QMUTM & QMLSH-7 Products

Table 2B		Roof Height: 0 - 30 feet						Rafter Species: Douglas Fir											
		Roof Angle: 7 - 27 degrees						Specific Gravity: 0.50											
Exposure C	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >7° to 27°	110	150	132	120	90	66	54	120	120	120	90	66	54	90	90	90	90	66	54
	115	132	132	120	90	66	54	108	108	108	90	66	54	90	90	90	90	66	54
	120	132	132	120	90	66	54	108	108	108	90	66	54	84	84	84	84	66	54
	130	132	132	120	90	66	54	102	102	102	90	66	54	78	78	78	78	66	54
	140	120	120	120	90	66	54	90	90	90	90	66	54	72	72	72	72	66	54
	150	120	120	120	90	66	54	84	84	84	84	66	54	71	71	71	71	66	54
	160	108	108	108	90	66	54	78	78	78	78	66	54	60	60	60	60	60	54
	170	102	102	102	90	66	54	78	78	78	78	66	54	48	48	48	48	48	48
	180	102	102	102	90	66	54	72	72	72	72	66	54	48	48	48	48	48	48
	200	84	84	84	84	66	54	60	60	60	60	60	54	30	30	30	30	30	30

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans (in.) for Unirac Solarmount Rails for use with QMLSH-9 Products

Table 2C		Roof Height: 0 - 30 feet						Rafter Species: Douglas Fir											
		Roof Angle: 7 - 27 degrees						Specific Gravity: 0.50											
Exposure C	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >7° to 27°	110	150	132	120	90	66	54	120	120	120	90	66	54	90	90	90	90	66	54
	115	132	132	120	90	66	54	108	108	108	90	66	54	90	90	90	90	66	54
	120	132	132	120	90	66	54	108	108	108	90	66	54	84	84	84	84	66	54
	130	132	132	120	90	66	54	102	102	102	90	66	54	78	78	78	78	66	54
	140	120	120	120	90	66	54	90	90	90	90	66	54	72	72	72	72	66	54
	150	120	120	120	90	66	54	84	84	84	84	66	54	71	71	71	71	66	54
	160	108	108	108	90	66	54	78	78	78	78	66	54	60	60	60	60	60	54
	170	102	102	102	90	66	54	78	78	78	78	66	54	48	48	48	48	48	48
	180	102	102	102	90	66	54	72	72	72	72	66	54	48	48	48	48	48	48
	200	84	84	84	84	66	54	60	60	60	60	60	54	30	30	30	30	30	30

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans (in.) for Unirac Solarmount Rails for use with QMLSH-12 Products

Table 2D		Roof Height: 0 - 30 feet						Rafter Species: Douglas Fir											
		Roof Angle: 7 - 27 degrees						Specific Gravity: 0.50											
Exposure C	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >7° to 27°	110	150	132	87	62	49	40	120	120	87	62	49	40	90	90	87	62	49	40
	115	132	132	87	62	49	40	108	108	87	62	49	40	90	90	87	62	49	40
	120	132	132	87	62	49	40	108	108	87	62	49	40	84	84	84	62	49	40
	130	132	132	87	62	49	40	102	102	87	62	49	40	78	78	78	62	49	40
	140	120	120	87	62	49	40	90	90	87	62	49	40	72	72	72	62	49	40
	150	120	120	87	62	49	40	84	84	84	62	49	40	71	71	71	62	49	40
	160	108	108	87	62	49	40	78	78	78	62	49	40	60	60	60	60	49	40
	170	102	102	87	62	49	40	78	78	78	62	49	40	48	48	48	48	48	40
	180	102	102	87	62	49	40	72	72	72	62	49	40	48	48	48	48	48	40
	200	84	84	84	62	49	40	60	60	60	60	49	40	30	30	30	30	30	30

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans (in.) for Unirac Solarmount Rails for use with QMNC, QMNS, & QMSFT Products

Table 3A		Roof Height: 0 - 30 feet						Rafter Species: Douglas Fir											
		Roof Angle: 7 - 27 degrees						Specific Gravity: 0.50											
Exposure D	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >7° to 27°	110	132	132	120	90	66	54	108	108	108	90	66	54	84	84	84	84	66	54
	115	132	132	120	90	66	54	102	102	102	90	66	54	78	78	78	78	66	54
	120	132	132	120	90	66	54	102	102	102	90	66	54	78	78	78	78	66	54
	130	120	120	120	90	66	54	90	90	90	90	66	54	72	72	72	72	66	54
	140	108	108	108	90	66	54	84	84	84	84	66	54	60	60	60	60	60	54
	150	108	108	108	90	66	54	78	78	78	78	66	54	60	60	60	60	60	54
	160	102	102	102	90	66	54	72	72	72	72	66	54	48	48	48	48	48	48
	170	90	90	90	90	66	54	71	71	71	71	66	54	30	30	30	30	30	30
	180	90	90	90	90	66	54	60	60	60	60	60	54	30	30	30	30	30	30
	200	78	78	78	78	66	54	48	48	48	48	48	48	24	24	24	24	24	24

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans (in.) for Unirac Solarmount Rails for use with QMUTM & QMLSH-7 Products

Table 3B		Roof Height: 0 - 30 feet						Rafter Species: Douglas Fir											
		Roof Angle: 7 - 27 degrees						Specific Gravity: 0.50											
Exposure D	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >7° to 27°	110	132	132	120	90	66	54	108	108	108	90	66	54	84	84	84	84	66	54
	115	132	132	120	90	66	54	102	102	102	90	66	54	78	78	78	78	66	54
	120	132	132	120	90	66	54	102	102	102	90	66	54	78	78	78	78	66	54
	130	120	120	120	90	66	54	90	90	90	90	66	54	72	72	72	72	66	54
	140	108	108	108	90	66	54	84	84	84	84	66	54	60	60	60	60	60	54
	150	108	108	108	90	66	54	78	78	78	78	66	54	60	60	60	60	60	54
	160	102	102	102	90	66	54	72	72	72	72	66	54	48	48	48	48	48	48
	170	90	90	90	90	66	54	71	71	71	71	66	54	30	30	30	30	30	30
	180	90	90	90	90	66	54	60	60	60	60	60	54	30	30	30	30	30	30
	200	78	78	78	78	66	54	48	48	48	48	48	48	24	24	24	24	24	24

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans (in.) for Unirac Solarmount Rails for use with QMLSH-9 Products

Table 3C		Roof Height: 0 - 30 feet						Rafter Species: Douglas Fir											
		Roof Angle: 7 - 27 degrees						Specific Gravity: 0.50											
Exposure D	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >7° to 27°	110	132	132	120	90	66	54	108	108	108	90	66	54	84	84	84	84	66	54
	115	132	132	120	90	66	54	102	102	102	90	66	54	78	78	78	78	66	54
	120	132	132	120	90	66	54	102	102	102	90	66	54	78	78	78	78	66	54
	130	120	120	120	90	66	54	90	90	90	90	66	54	72	72	72	72	66	54
	140	108	108	108	90	66	54	84	84	84	84	66	54	60	60	60	60	60	54
	150	108	108	108	90	66	54	78	78	78	78	66	54	60	60	60	60	60	54
	160	102	102	102	90	66	54	72	72	72	72	66	54	48	48	48	48	48	48
	170	90	90	90	90	66	54	71	71	71	71	66	54	30	30	30	30	30	30
	180	90	90	90	90	66	54	60	60	60	60	60	54	30	30	30	30	30	30
	200	78	78	78	78	66	54	48	48	48	48	48	48	24	24	24	24	24	24

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans (in.) for Unirac Solarmount Rails for use with QMLSH-12 Products

Table 3D		Roof Height: 0 - 30 feet						Rafter Species: Douglas Fir											
		Roof Angle: 7 - 27 degrees						Specific Gravity: 0.50											
Exposure D	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >7° to 27°	110	132	132	87	62	49	40	108	108	87	62	49	40	84	84	84	62	49	40
	115	132	132	87	62	49	40	102	102	87	62	49	40	78	78	78	62	49	40
	120	132	132	87	62	49	40	102	102	87	62	49	40	78	78	78	62	49	40
	130	120	120	87	62	49	40	90	90	87	62	49	40	72	72	72	62	49	40
	140	108	108	87	62	49	40	84	84	84	62	49	40	60	60	60	60	49	40
	150	108	108	87	62	49	40	78	78	78	62	49	40	60	60	60	60	49	40
	160	102	102	87	62	49	40	72	72	72	62	49	40	48	48	48	48	48	40
	170	90	90	87	62	49	40	71	71	71	62	49	40	30	30	30	30	30	30
	180	90	90	87	62	49	40	60	60	60	60	49	40	30	30	30	30	30	30
	200	78	78	78	62	49	40	48	48	48	48	48	40	24	24	24	24	24	24

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans (in.) for Unirac Solarmount Rails for use with QMNC, QMNS, & QMSFT Products

Table 4A		Roof Height: 0 - 30 feet Roof Angle: 27 - 45 degrees											Rafter Species: Douglas Fir Specific Gravity: 0.50						
Exposure B	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >27° to 45°	110	132	132	132	90	66	42	132	132	132	90	66	42	132	132	132	90	66	42
	115	132	132	132	90	66	42	132	132	132	90	66	42	132	132	132	90	66	42
	120	132	132	132	90	66	42	132	132	132	90	66	42	132	132	132	90	66	42
	130	132	132	120	90	66	42	132	132	120	90	66	42	132	132	120	90	66	42
	140	120	120	120	90	66	42	120	120	120	90	66	42	120	120	120	90	66	42
	150	120	120	120	90	66	42	120	120	120	90	66	42	120	120	120	90	66	42
	160	120	120	108	90	66	42	108	108	108	90	66	42	108	108	108	90	66	42
	170	108	108	108	90	66	42	108	108	108	90	66	42	108	108	108	90	66	42
	180	108	108	108	90	66	42	102	102	102	90	66	42	102	102	102	90	66	42
	200	102	102	96	90	66	42	90	90	90	90	66	42	90	90	90	90	66	42

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans (in.) for Unirac Solarmount Rails for use with QMUTM & QMLSH-7 Products

Table 4B		Roof Height: 0 - 30 feet						Rafter Species: Douglas Fir											
		Roof Angle: 27 - 45 degrees						Specific Gravity: 0.50											
Exposure B	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >27° to 45°	110	132	132	107	79	62	42	132	132	107	79	62	42	132	132	107	79	62	42
	115	132	132	107	79	62	42	132	132	107	79	62	42	132	132	107	79	62	42
	120	132	132	107	79	62	42	132	132	107	79	62	42	132	132	107	79	62	42
	130	132	132	107	79	62	42	132	132	107	79	62	42	132	132	107	79	62	42
	140	120	120	107	79	62	42	120	120	107	79	62	42	120	120	107	79	62	42
	150	120	120	107	79	62	42	120	120	107	79	62	42	120	120	107	79	62	42
	160	120	120	107	79	62	42	108	108	107	79	62	42	108	108	107	79	62	42
	170	108	108	107	79	62	42	108	108	107	79	62	42	108	108	107	79	62	42
	180	108	108	107	79	62	42	102	102	102	79	62	42	102	102	102	79	62	42
	200	102	102	96	79	62	42	90	90	90	79	62	42	90	90	90	79	62	42

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans (in.) for Unirac Solarmount Rails for use with QMLSH-9 Products

Table 4C		Roof Height: 0 - 30 feet						Rafter Species: Douglas Fir											
		Roof Angle: 27 - 45 degrees						Specific Gravity: 0.50											
Exposure B	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >27° to 45°	110	132	132	107	79	62	42	132	132	107	79	62	42	132	132	107	79	62	42
	115	132	132	107	79	62	42	132	132	107	79	62	42	132	132	107	79	62	42
	120	132	132	107	79	62	42	132	132	107	79	62	42	132	132	107	79	62	42
	130	132	132	107	79	62	42	132	132	107	79	62	42	132	132	107	79	62	42
	140	120	120	107	79	62	42	120	120	107	79	62	42	120	120	107	79	62	42
	150	120	120	107	79	62	42	120	120	107	79	62	42	120	120	107	79	62	42
	160	120	120	107	79	62	42	108	108	107	79	62	42	108	108	107	79	62	42
	170	108	108	107	79	62	42	108	108	107	79	62	42	108	108	107	79	62	42
	180	108	108	107	79	62	42	102	102	102	79	62	42	102	102	102	79	62	42
	200	102	102	96	79	62	42	90	90	90	79	62	42	90	90	90	79	62	42

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans (in.) for Unirac Solarmount Rails for use with QMLSH-12 Products

Table 4D		Roof Height: 0 - 30 feet						Rafter Species: Douglas Fir											
		Roof Angle: 27 - 45 degrees						Specific Gravity: 0.50											
Exposure B	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >27° to 45°	110	132	110	70	51	41	33	132	110	70	51	41	33	132	110	70	51	41	33
	115	132	110	70	51	41	33	132	110	70	51	41	33	132	110	70	51	41	33
	120	132	110	70	51	41	33	132	110	70	51	41	33	132	110	70	51	41	33
	130	132	110	70	51	41	33	132	110	70	51	41	33	132	110	70	51	41	33
	140	120	110	70	51	41	33	120	110	70	51	41	33	120	110	70	51	41	33
	150	120	110	70	51	41	33	120	110	70	51	41	33	120	110	70	51	41	33
	160	120	110	70	51	41	33	108	108	70	51	41	33	108	108	70	51	41	33
	170	108	108	70	51	41	33	108	108	70	51	41	33	108	108	70	51	41	33
	180	108	108	70	51	41	33	102	102	70	51	41	33	102	102	70	51	41	33
	200	102	102	70	51	41	33	90	90	70	51	41	33	90	90	70	51	41	33

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans (in.) for Unirac Solarmount Rails for use with QMNC, QMNS, & QMSFT Products

Table 5A		Roof Height: 0 - 30 feet						Rafter Species: Douglas Fir											
		Roof Angle: 27 - 45 degrees						Specific Gravity: 0.50											
Exposure C	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >27° to 45°	110	132	132	120	90	66	42	132	132	120	90	66	42	132	132	120	90	66	42
	115	132	132	120	90	66	42	120	120	120	90	66	42	120	120	120	90	66	42
	120	120	120	120	90	66	42	120	120	120	90	66	42	120	120	120	90	66	42
	130	120	120	120	90	66	42	120	120	120	90	66	42	120	120	120	90	66	42
	140	108	108	108	90	66	42	108	108	108	90	66	42	108	108	108	90	66	42
	150	108	108	108	90	66	42	102	102	102	90	66	42	102	102	102	90	66	42
	160	102	102	102	90	66	42	90	90	90	90	66	42	90	90	90	90	66	42
	170	102	102	96	90	66	42	90	90	90	90	66	42	90	90	90	90	66	42
	180	90	90	90	90	66	42	84	84	84	84	66	42	84	84	84	84	66	42
	200	78	78	78	78	66	42	78	78	78	78	66	42	78	78	78	78	66	42

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans (in.) for Unirac Solarmount Rails for use with QMUTM & QMLSH-7 Products

Table 5B		Roof Height: 0 - 30 feet						Rafter Species: Douglas Fir											
		Roof Angle: 27 - 45 degrees						Specific Gravity: 0.50											
Exposure C	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >27° to 45°	110	132	132	107	79	62	42	132	132	107	79	62	42	132	132	107	79	62	42
	115	132	132	107	79	62	42	120	120	107	79	62	42	120	120	107	79	62	42
	120	120	120	107	79	62	42	120	120	107	79	62	42	120	120	107	79	62	42
	130	120	120	107	79	62	42	120	120	107	79	62	42	120	120	107	79	62	42
	140	108	108	107	79	62	42	108	108	107	79	62	42	108	108	107	79	62	42
	150	108	108	107	79	62	42	102	102	102	79	62	42	102	102	102	79	62	42
	160	102	102	102	79	62	42	90	90	90	79	62	42	90	90	90	79	62	42
	170	102	102	96	79	62	42	90	90	90	79	62	42	90	90	90	79	62	42
	180	90	90	90	79	62	42	84	84	84	79	62	42	84	84	84	79	62	42
	200	78	78	78	78	62	42	78	78	78	78	62	42	78	78	78	78	62	42

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans (in.) for Unirac Solarmount Rails for use with QMLSH-9 Products

Table 5C		Roof Height: 0 - 30 feet						Rafter Species: Douglas Fir											
		Roof Angle: 27 - 45 degrees						Specific Gravity: 0.50											
Exposure C	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >27° to 45°	110	132	132	107	79	62	42	132	132	107	79	62	42	132	132	107	79	62	42
	115	132	132	107	79	62	42	120	120	107	79	62	42	120	120	107	79	62	42
	120	120	120	107	79	62	42	120	120	107	79	62	42	120	120	107	79	62	42
	130	120	120	107	79	62	42	120	120	107	79	62	42	120	120	107	79	62	42
	140	108	108	107	79	62	42	108	108	107	79	62	42	108	108	107	79	62	42
	150	108	108	107	79	62	42	102	102	102	79	62	42	102	102	102	79	62	42
	160	102	102	102	79	62	42	90	90	90	79	62	42	90	90	90	79	62	42
	170	102	102	96	79	62	42	90	90	90	79	62	42	90	90	90	79	62	42
	180	90	90	90	79	62	42	84	84	84	79	62	42	84	84	84	79	62	42
	200	78	78	78	78	62	42	78	78	78	78	62	42	78	78	78	78	62	42

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans (in.) for Unirac Solarmount Rails for use with QMLSH-12 Products

Table 5D		Roof Height: 0 - 30 feet						Rafter Species: Douglas Fir											
		Roof Angle: 27 - 45 degrees						Specific Gravity: 0.50											
Exposure C	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >27° to 45°	110	132	110	70	51	41	33	132	110	70	51	41	33	132	110	70	51	41	33
	115	132	110	70	51	41	33	120	110	70	51	41	33	120	110	70	51	41	33
	120	120	110	70	51	41	33	120	110	70	51	41	33	120	110	70	51	41	33
	130	120	110	70	51	41	33	120	110	70	51	41	33	120	110	70	51	41	33
	140	108	108	70	51	41	33	108	108	70	51	41	33	108	108	70	51	41	33
	150	108	108	70	51	41	33	102	102	70	51	41	33	102	102	70	51	41	33
	160	102	102	70	51	41	33	90	90	70	51	41	33	90	90	70	51	41	33
	170	102	102	70	51	41	33	90	90	70	51	41	33	90	90	70	51	41	33
	180	90	90	70	51	41	33	84	84	70	51	41	33	84	84	70	51	41	33
	200	78	78	70	51	41	33	78	78	70	51	41	33	78	78	70	51	41	33

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans (in.) for Unirac Solarmount Rails for use with QMNC, QMNS, & QMSFT Products

Table 6A		Roof Height: 0 - 30 feet						Rafter Species: Douglas Fir											
		Roof Angle: 27 - 45 degrees						Specific Gravity: 0.50											
Exposure D	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >27° to 45°	110	120	120	120	90	66	42	120	120	120	90	66	42	120	120	120	90	66	42
	115	120	120	120	90	66	42	120	120	120	90	66	42	120	120	120	90	66	42
	120	120	120	120	90	66	42	108	108	108	90	66	42	108	108	108	90	66	42
	130	108	108	108	90	66	42	108	108	108	90	66	42	108	108	108	90	66	42
	140	108	108	108	90	66	42	102	102	102	90	66	42	102	102	102	90	66	42
	150	102	102	102	90	66	42	90	90	90	90	66	42	90	90	90	90	66	42
	160	90	90	90	90	66	42	84	84	84	84	66	42	84	84	84	84	66	42
	170	90	90	90	90	66	42	78	78	78	78	66	42	78	78	78	78	66	42
	180	84	84	84	84	66	42	78	78	78	78	66	42	78	78	78	78	66	42
	200	78	78	78	78	66	42	72	72	72	72	66	42	72	72	72	72	66	42

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans (in.) for Unirac Solarmount Rails for use with QMUTM & QMLSH-7 Products

Table 6B		Roof Height: 0 - 30 feet						Rafter Species: Douglas Fir											
		Roof Angle: 27 - 45 degrees						Specific Gravity: 0.50											
Exposure D	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >27° to 45°	110	120	120	107	79	62	42	120	120	107	79	62	42	120	120	107	79	62	42
	115	120	120	107	79	62	42	120	120	107	79	62	42	120	120	107	79	62	42
	120	120	120	107	79	62	42	108	108	107	79	62	42	108	108	107	79	62	42
	130	108	108	107	79	62	42	108	108	107	79	62	42	108	108	107	79	62	42
	140	108	108	107	79	62	42	102	102	102	79	62	42	102	102	102	79	62	42
	150	102	102	102	79	62	42	90	90	90	79	62	42	90	90	90	79	62	42
	160	90	90	90	79	62	42	84	84	84	79	62	42	84	84	84	79	62	42
	170	90	90	90	79	62	42	78	78	78	78	62	42	78	78	78	78	62	42
	180	84	84	84	79	62	42	78	78	78	78	62	42	78	78	78	78	62	42
	200	78	78	78	78	62	42	72	72	72	72	62	42	72	72	72	72	62	42

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans (in.) for Unirac Solarmount Rails for use with QMLSH-9 Products

Table 6C		Roof Height: 0 - 30 feet						Rafter Species: Douglas Fir											
		Roof Angle: 27 - 45 degrees						Specific Gravity: 0.50											
Exposure D	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >27° to 45°	110	120	120	107	79	62	42	120	120	107	79	62	42	120	120	107	79	62	42
	115	120	120	107	79	62	42	120	120	107	79	62	42	120	120	107	79	62	42
	120	120	120	107	79	62	42	108	108	107	79	62	42	108	108	107	79	62	42
	130	108	108	107	79	62	42	108	108	107	79	62	42	108	108	107	79	62	42
	140	108	108	107	79	62	42	102	102	102	79	62	42	102	102	102	79	62	42
	150	102	102	102	79	62	42	90	90	90	79	62	42	90	90	90	79	62	42
	160	90	90	90	79	62	42	84	84	84	79	62	42	84	84	84	79	62	42
	170	90	90	90	79	62	42	78	78	78	78	62	42	78	78	78	78	62	42
	180	84	84	84	79	62	42	78	78	78	78	62	42	78	78	78	78	62	42
	200	78	78	78	78	62	42	72	72	72	72	62	42	72	72	72	72	62	42

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"

Rail Spans (in.) for Unirac Solarmount Rails for use with QMLSH-12 Products

Table 6D		Roof Height: 0 - 30 feet						Rafter Species: Douglas Fir											
		Roof Angle: 27 - 45 degrees						Specific Gravity: 0.50											
Exposure D	Ultimate Wind Speed, V (mph)	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	0	10	20	30	40	50	0	10	20	30	40	50
Roofs >27° to 45°	110	120	110	70	51	41	33	120	110	70	51	41	33	120	110	70	51	41	33
	115	120	110	70	51	41	33	120	110	70	51	41	33	120	110	70	51	41	33
	120	120	110	70	51	41	33	108	108	70	51	41	33	108	108	70	51	41	33
	130	108	108	70	51	41	33	108	108	70	51	41	33	108	108	70	51	41	33
	140	108	108	70	51	41	33	102	102	70	51	41	33	102	102	70	51	41	33
	150	102	102	70	51	41	33	90	90	70	51	41	33	90	90	70	51	41	33
	160	90	90	70	51	41	33	84	84	70	51	41	33	84	84	70	51	41	33
	170	90	90	70	51	41	33	78	78	70	51	41	33	78	78	70	51	41	33
	180	84	84	70	51	41	33	78	78	70	51	41	33	78	78	70	51	41	33
	200	78	78	70	51	41	33	72	72	70	51	41	33	72	72	70	51	41	33

Notes:

1. Tables are based on critical rail span for load combinations as specified in chapter 2 of the ASCE 7-10 and allowable uplift and lateral values of Quick Mount products per test reports.
2. Panels are assumed to be in portrait orientation with a maximum length of 66"