

Sizing and Ordering a SolarMount™ System



Once you've selected PV modules and planned your installation layout, you're ready to choose SolarMount components.

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SolarMount Component Prices

Rails

SMR: SolarMount Rail Sets

Includes 2 rails, L-feet, and hardware to attach feet to rails.

Model	No. of L-feet	Shipping wt (lbs)	List price
SMR48	4	13	\$ 83.00
SMR60	4	14	99.00
SMR72	4	16	115.00
SMR84	4	17	131.00
SMR96	4	19	145.00
SMR106	4	20	157.00
SMR120	6	22	178.00*
SMR132	6	24	190.00*
SMR144	6	25	202.00*
SMR156	6	27	214.00*
SMR168	6	28	226.00*
SMR180	6	30	238.00*
SMR192	8	31	259.00*
SMR204	8	33	271.00*
SMR216	8	34	283.00†

*If shipped via UPS, rails are cut in half. Add \$20.00 for cuts and splice kit (item #UPS-20).

†Cannot ship via UPS.

SP: SolarMount Rail Splice Kit

Includes 2 splices plus hardware. One kit is required whenever 2 rail sets are spliced together. Consult UniRac if splicing more than 2 rail sets into a single row.

Model	Shipping wt (lbs)	List price
SP2	2	\$16.00



Clamps or Clips

CT: Top Mounting Clamp Sets

Includes all clamps and hardware to attach the indicated no. of PV modules to 1 pair of rails.

Model	No. of PV modules	Shipping wt (lbs)	List price
CT2A thru F	2	1	\$16.00
CT3A thru F	3	2	20.00
CT4A thru F	4	2	24.00
CT5A thru F	5	2	28.00
CT6A thru F	6	2	32.00
CT7A thru F	7	2	36.00
CT8A thru F	8	3	40.00

CB: Bottom Mounting Clip Sets

Includes the clips and hardware to attach the indicated number of PV modules to 1 pair of rails.

Model	No. of PV modules	Shipping wt (lbs)	List price
CB2	2	2	\$14.00
CB3	3	2	18.00
CB4	4	3	22.00
CB5	5	3	26.00
CB6	6	4	30.00
CB7	7	4	34.00
CB8	8	5	38.00

Tilt Legs (optional)

TLH: High-Profile Leg Kits

TLH2 kits include 2 legs and additional hardware to complete foot-leg-rail assembly. TLH4 kits include 2 long legs, 2 short legs, and additional hardware to complete foot-leg-rail assembly.

Model	Legs per kit	Shipping wt (lbs)	List price
TLH2-12	2	3	\$ 37.00
TLH2-44	2	7	54.00
TLH2-72	2	10	68.00
TLH4-18	4	7	65.00
TLH4-64	4	16	99.00
TLH4-104	4	20	129.00

TLL: Low-Profile Tilt Leg Kits

Includes legs and additional hardware to complete foot-leg-rail assembly.

Model	Legs per kit	Shipping wt (lbs)	List price
TLL2-12	2	3	\$49.00
TLL2-30	2	5	59.00
TLL2-44	2	7	67.00
TLL3-12	3	4	68.00
TLL3-30	3	7	83.00
TLL3-44	3	10	94.00

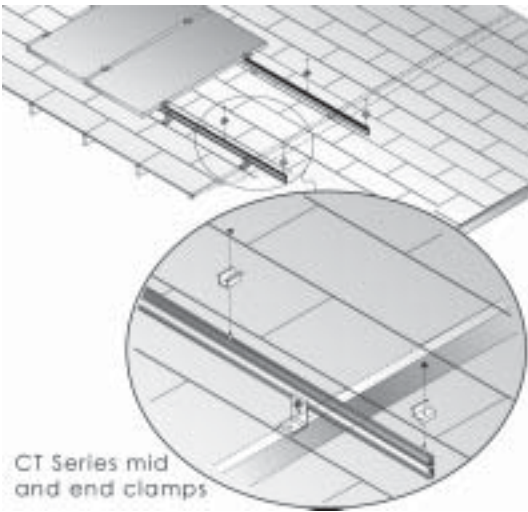
Standoffs (optional)

ST: Standoffs

Includes 1 standoff and 2 lag bolts (3-1/2" x 5/16"). In addition, flat-top standoffs include hardware to attach stringer to standoff.

Flat-top models	Shipping wt (lbs)	List price	Raised-flange models	Shipping wt (lbs)	List price
STF3	2	\$17.00	STR3	2	\$18.00
STF4	2	17.50	STR4	2	18.50
STF6	2	18.00	STR6	2	19.00
STF7	2	18.50	STR7	2	19.50

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When to Choose Top Mounting CT Series Clamps

Select top mounting clamps if you prefer to install modules last—in other words, if you plan to secure the footings and attach rails to the footings on site prior to attaching modules.

This installation sequence is well suited for:

- Plug and Play modules.
- Flush mounting—especially flush mounting onto standoffs.

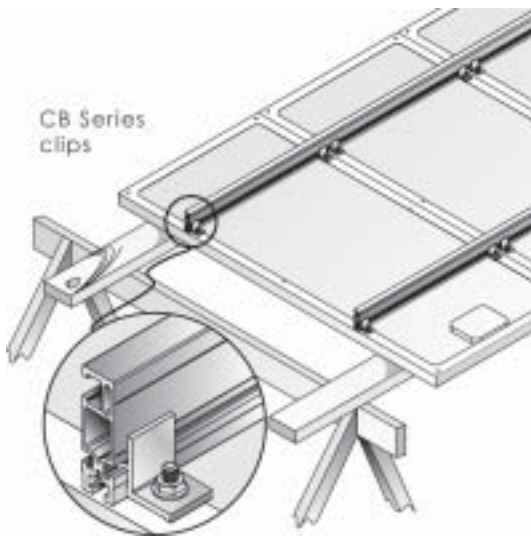
Top mounting clamps do not depend of the spacing of module mounting holes. In roof mount installations, therefore, rails placed parallel to rafters can be spaced to lag directly into the rafters without the addition of special supports.

Note that top mounting requires 1 inch of space between modules and that rails must extend 1-1/2 inches beyond the last module on each end.

$$\text{Rail length in inches} = \text{SMR120} + \text{CT4E} \left\{ \begin{array}{l} \text{Number of modules accommodated} \\ \text{Clamp size required for specific modules} \end{array} \right.$$

Sizing Chart 1: Select Rail Sets (SMR) + Top Mounting Clamp Sets (CT)

Module make and model	Number of modules to be mounted						
	2	3	4	5	6	7	8
ASE 300	SMR106+CT2E	SMR168+CT3E	SMR216+CT4E				
AstroPower AP65, AP75 AP110, AP120 AP150	SMR48+CT2C SMR60+CT2C SMR72+CT2C	SMR72+CT3C SMR84+CT3C SMR106+CT3C	SMR96+CT4C SMR120+CT4C SMR132+CT4C	SMR120+CT5C SMR144+CT5C SMR168+CT5C	SMR144+CT6C SMR168+CT6C SMR192+CT6C	SMR156+CT7C SMR192+CT7C	SMR180+CT8C
BP Solar 275, 380, 585, SX75TU 3160, 4160, 5170 MSX120 SX110, SX120 SX150	SMR48+CT2E SMR72+CT2E SMR84+CT2E SMR72+CT2E SMR72+CT2E	SMR72+CT3E SMR106+CT3E SMR132+CT3E SMR96+CT3E SMR106+CT3E	SMR96+CT4E SMR132+CT4E SMR168+CT4E SMR132+CT4E SMR132+CT4E	SMR120+CT5E SMR168+CT5E SMR204+CT5E SMR156+CT5E SMR168+CT5E	SMR144+CT6E SMR204+CT6E SMR192+CT6E SMR192+CT6E SMR204+CT6E	SMR168+CT7E SMR216+CT7E	SMR180+CT8E
Evergreen EC94, EC102, EC110	SMR60+CT2C	SMR84+CT3C	SMR120+CT4C	SMR144+CT5C	SMR168+CT6C	SMR192+CT7C	SMR216+CT8C
Kyocera KC70, KC80, KC120 KC158G	SMR60+CT2C SMR84+CT2C	SMR84+CT3C SMR132+CT3C	SMR120+CT4C SMR168+CT4C	SMR144+CT5C SMR204+CT5C	SMR168+CT6C	SMR192+CT7C	SMR216+CT8C
Photowatt PW750 PW1000 PW1250 PW1650	SMR48+CT2A SMR60+CT2A SMR72+CT2C SMR96+CT2C	SMR72+CT3A SMR96+CT3A SMR106+CT3C SMR144+CT3C	SMR96+CT4A SMR120+CT4A SMR144+CT4C SMR180+CT4C	SMR120+CT5A SMR144+CT5A SMR180+CT5C	SMR144+CT6A SMR168+CT6A SMR204+CT6C	SMR168+CT7A SMR204+CT7A	SMR192+CT8A
Sanyo HIT167, HIT175, HIT180	SMR84+CT2C	SMR120+CT3C	SMR156+CT4C	SMR192+CT5C			
Sharp 80 123 165 (Schott), 175	SMR48+CT2F SMR60+CT2F SMR72+CT2F	SMR72+CT3F SMR84+CT3F SMR106+CT3F	SMR96+CT4F SMR120+CT4F SMR144+CT4F	SMR120+CT5F SMR144+CT5F SMR180+CT5F	SMR144+CT6F SMR168+CT6F SMR204+CT6F	SMR156+CT7F SMR192+CT7F	SMR180+CT8F
Shell (Siemens) SM100, SM110 SP65, SP70, SP75 SP130, SP140, SP150	SMR60+CT2D SMR48+CT2C SMR72+CT2D	SMR84+CT3D SMR72+CT3C SMR106+CT3D	SMR120+CT4D SMR96+CT4C SMR144+CT4D	SMR144+CT5D SMR120+CT5C SMR168+CT5D	SMR168+CT6D SMR144+CT6C SMR204+CT6D	SMR192+CT7D SMR156+CT7C	SMR180+CT8C
SunWize SW85, SW90, SW95 SW115, SW120	SMR60+CT2C SMR60+CT2C	SMR84+CT3C SMR84+CT3C	SMR106+CT4C SMR120+CT4C	SMR132+CT5C SMR144+CT5C	SMR156+CT6C SMR168+CT6C	SMR180+CT7C SMR192+CT7C	SMR204+CT8C SMR216+CT8C
UniSolar US64 US116	SMR72+CT2B SMR72+CT2E	SMR96+CT3B SMR106+CT3E	SMR132+CT4B SMR132+CT4E	SMR156+CT5B SMR168+CT5E	SMR192+CT6B SMR192+CT6E	SMR216+CT7B	



When to Choose Bottom Mounting CB Series Clips

Select bottom mounting clips if you plan to attach modules to rails prior to final installation. This installation sequence is well suited whenever rows of modules must be pre-wired.

Bottom mounted installations also use space more efficiently. Space between modules is not required and rails need not extend past the end modules.

Clips are more often used than clamps in ground mount installations and with adjustable tilt legs because the modules and rails are usually pre-assembled for these installations.

The use of clips on flush mount roof installations is generally more difficult than top mounting clamps. See details regarding these limitations at www.unirac.com/solarmount.htm.

$$\text{Rail length in inches} \xrightarrow{\text{Number of modules accommodated}} \text{SMR120} + \text{CB4}$$

Sizing Chart 2: Select Rail Sets (SMR) + Bottom Mounting Clip Sets (CB)

Module make and model	Number of modules to be mounted						
	2	3	4	5	6	7	8
ASE							
300	SMR106+CB2	SMR156+CB3	SMR204+CB4				
AstroPower							
AP65, AP75	SMR48+CB2	SMR72+CB3	SMR84+CB4	SMR106+CB5	SMR132+CB6	SMR156+CB7	SMR168+CB8
AP110, AP120	SMR60+CB2	SMR84+CB3	SMR106+CB4	SMR132+CB5	SMR156+CB6	SMR204+CB7	SMR216+CB8
AP150	SMR72+CB2	SMR96+CB3	SMR132+CB4	SMR156+CB5	SMR192+CB6	SMR216+CB7	
BP Solar							
275, 380, 585, SX75TU	SMR48+CB2	SMR72+CB3	SMR96+CB4	SMR106+CB5	SMR132+CB6	SMR156+CB7	SMR180+CB8
3160, 4160, 5170	SMR72+CB2	SMR96+CB3	SMR132+CB4	SMR156+CB5	SMR192+CB6		
MSX120	SMR84+CB2	SMR120+CB3	SMR168+CB4	SMR204+CB5			
SX110, SX120	SMR60+CB2	SMR96+CB3	SMR120+CB4	SMR144+CB5	SMR180+CB6	SMR204 +CB7	
SX150	SMR72+CB2	SMR96+CB3	SMR132+CB4	SMR156+CB5	SMR192+CB6		
Evergreen							
EC94, EC102, EC110	SMR60+CB2	SMR84+CB3	SMR106+CB4	SMR132+CB5	SMR156+CB6	SMR180+CB7	
Kyocera							
KC70, KC80, KC120	SMR60+CB2	SMR84+CB3	SMR106+CB4	SMR132+CB5	SMR156+CB6	SMR180+CB7	SMR216+CB8
KC158G	SMR84+CB2	SMR120+CB3	SMR156+CB4	SMR204+CB5			
Photowatt							
PW750	SMR48+CB2	SMR72+CB3	SMR96+CB4	SMR120+CB5	SMR132+CB6	SMR156+CB7	SMR180+CB8
PW1000	SMR60+CB2	SMR84+CB3	SMR106+CB4	SMR144+CB5	SMR168+CB6	SMR192+CB7	SMR216+CB8
PW1250	SMR72+CB2	SMR106+CB3	SMR132+CB4	SMR168+CB5	SMR204+CB6		
PW1650	SMR96+CB2	SMR132+CB3	SMR180+CB4	SMR216+CB5			
Sanyo	Sanyo modules have no module mounting holes and thus cannot be used with bottom mounting clips.						
Sharp							
80	SMR48+CB2	SMR72+CB3	SMR84+CB4	SMR106+CB5	SMR132+CB6	SMR156+CB7	SMR168+CB8
123	SMR60+CB2	SMR84+CB3	SMR106+CB4	SMR132+CB5	SMR168+CB6	SMR192+CB7	SMR216+CB8
165 (Schott), 175	SMR72+CB2	SMR106+CB3	SMR132+CB4	SMR168+CB5	SMR204+CB6		
Shell (Siemens)							
SM100, SM110	SMR60+CB2	SMR84+CB3	SMR106+CB4	SMR132+CB5	SMR156+CB6	SMR192+CB7	SMR216+CB8
SP65, SP70, SP75	SMR48+CB2	SMR72+CB3	SMR84+CB4	SMR106+CB5	SMR132+CB6	SMR156+CB7	SMR168+CB8
SP130, SP140, SP150	SMR72+CB2	SMR106+CB3	SMR132+CB4	SMR168+CB5	SMR204+CB6		
SunWize							
SW85, SW90, SW95	SMR48+CB2	SMR72+CB3	SMR96+CB4	SMR120+CB5	SMR144+CB6	SMR168+CB7	SMR192+CB8
SW115, SW120	SMR60+CB2	SMR84+CB3	SMR106+CB4	SMR132+CB5	SMR156+CB6	SMR180+CB7	SMR204+CB8
UniSolar							
US42, US64	SMR60+CB2	SMR96+CB3	SMR120+CB4	SMR156+CB5	SMR180+CB6	SMR216+CB7	
US116	SMR72+CB2	SMR96+CB3	SMR132+CB4	SMR156+CB5	SMR192+CB6	SMR216+CB7	

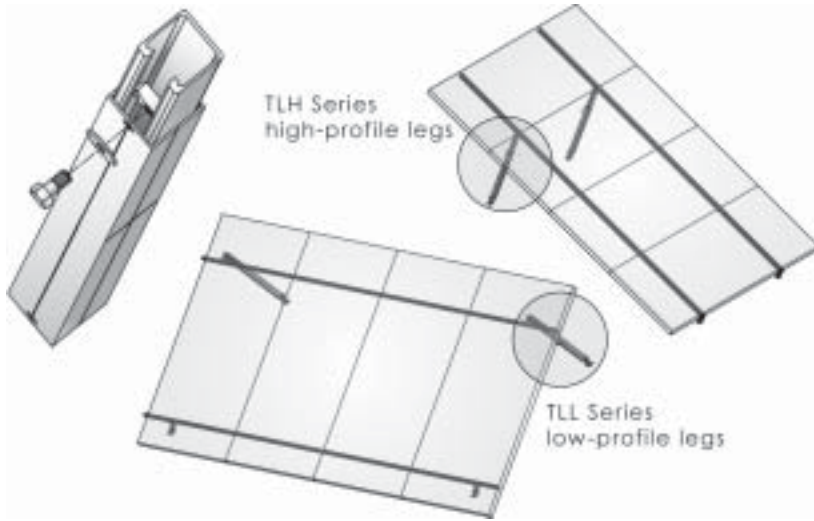
Adjustable Tilt Legs

Select the orientation—high profile or low—and leg length for your array. Charts 3 and 4 list the range of tilt angles for each combination of leg kits and modules or rail sets.

For low-profile installations, be sure the total number of legs (not kits) equals half the number of L-feet in your rail sets (listed with rail set prices, page 1). For example, order two TLL2 kits (4 legs total) for an SMR192 rail set (8 L-feet).

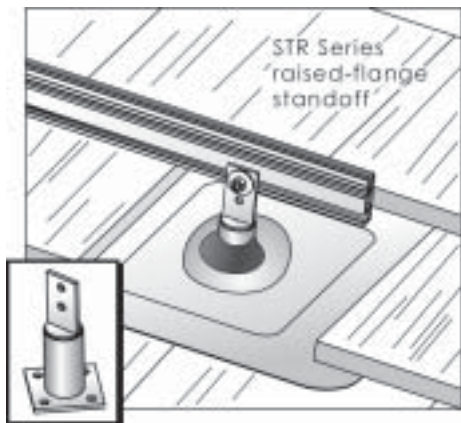
For high-profile installations, order one TLH leg kit for each rail set.

H = high profile; L = low profile
TLH4-64 Number of legs per kit
 Maximum length of (longer) leg in inches



Sizing Chart 4: High-Profile Tilt Angle Range (degrees)

SolarMnt rail sets	High-profile leg kits (1 leg per rail)			SolarMnt rail sets	High-profile leg kits (2 legs per rail)		
	TLH2-12	TLH2-44	TLH2-72		TLH4-18	TLH4-64	TLH4-104
SMR48	9-21	31-60+	NA	SMR120	5-10	17-38	27-60+
SMR60	7-17	24-60+	40-60+	SMR132	4-9	15-35	24-59
SMR72	6-14	20-54	33-60+	SMR144	4-8	14-32	22-53
SMR84	5-12	17-46	28-60+	SMR156	4-8	13-29	20-49
SMR96	4-10	15-40	24-60+	SMR168	3-7	12-27	19-45
SMR106	4-9	13-36	22-60	SMR180	3-7	11-25	18-42
				SMR192-216	Not recommended		



Standoffs

STR raised-flange standoffs fasten directly to rails. Order sufficient standoffs to replace L-feet in rail sets.

STF flat-top standoffs support strut or other stringers to which L-feet attach. Spacing required to support the load on the stringer and other considerations determine the number of standoffs.

Order 3-, 4-, 6-, or 7-inch standoffs to raise rails above roofing material.

F = flat top; R = raised flange
STF6 Height of standoff in inches

Sizing Chart 3: Low-Profile Tilt Angle Range (degrees)

Module make and model	Low-profile leg kits (2 or 3 legs per kit)		
	TLL2-12 or TLL3-12	TLL2-30 or TLL3-30	TLL2-44 or TLL3-44
ASE 300	6-13	13-34	20-50
AstroPower AP65, AP75 AP110, AP120 AP150	9-20 7-17 6-13	21-54 17-43 14-34	31-60+ 25-60+ 20-51
BP Solar 275, 380, 585, SX75TU 3160, 4160, 5170 MSX120 SX110, SX120 SX150	9-20 7-15 10-22 8-17 7-15	21-53 16-40 23-58 18-44 16-40	31-60+ 23-60+ 34-60+ 26-60+ 23-60+
Evergreen EC94, EC102, EC110	7-16	16-40	24-60+
Kyocera KC70, KC80 KC120 KC158G	11-25 8-17 9-19	27-60+ 18-45 20-50	39-60+ 26-60 29-60+
Photowatt PW750, PW1250, PW1650 PW1000	9-20 8-18	21-52 19-48	30-60+ 28-60+
Sanyo HIT167, HIT175, HIT180	8-19	19-49	28-60+
Sharp 80 123 165 (Schott), 175	9-20 7-16 7-16	21-54 17-43 16-40	31-60+ 25-60+ 24-60+
Shell (Siemens) SM100, SM110 SP65, SP70, SP75 SP130, SP140, SP150	8-19 9-20 7-15	19-48 21-54 16-39	28-60+ 31-60+ 23-60
SunWize SW85, SW90, SW95 SW115, SW120	8-17 8-17	18-44 18-44	26-60+ 26-60+
UniSolar US42, US64 US116	8-18 4-10	19-47 10-26	27-60+ 15-39

