IRONRIDGE

ROKR

COMPLETE SEGMENTED RAIL RACKING SYSTEM

INSTALLATION GUIDE

REVISION DATE: 03/11/26	VERSION: v1.3

ROKR

INSTALLATION GUIDE

QuickMount IRONRIDGE

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ROKR

INSTALLATION GUIDE

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ROKR

The ROKR system conforms to UL 2703 (and UL 2703A when using the ROKR Smart Slide) and is the industry's premier segmented rail PV racking system for composition shingle, roll roofing, metal and flat rooftops. Designed in conjunction with installers, ROKR quickly & easily installs with a single tool. It features an easy-to-position mount alignment and a top-down leveling system. ROKR is logistically intelligent with no need to ship or transport long rails. Components are available in a black finish that compliments both commercial and residential applications.

FEATURES

- Patented Watertight Technology
- Fully integrated bonding
- Top-down leveling system
- North-South adjustability
- Single tool install

DISCLAIMER

This manual describes proper installation procedures and provides necessary standards required for product reliability. Warranty details are available on the website. All installers must thoroughly read this manual and have a clear understanding of the installation procedures prior to installation. Failure to follow these guidelines may result in property damage, bodily injury or even death.

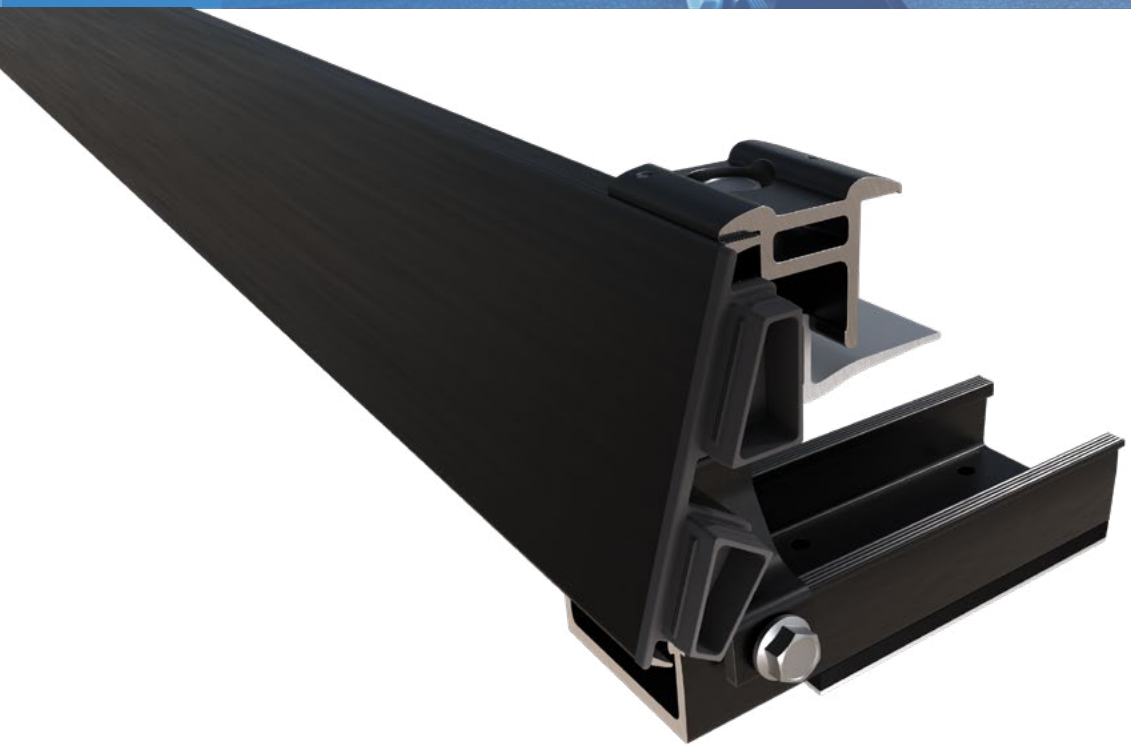
IT IS THE INSTALLER'S RESPONSIBILITY TO:

- Ensure safe installation of all electrical aspects of the array. All electrical installation and procedures should be conducted by a licensed and bonded electrician or solar contractor.
- All work must comply with national, state and local installation procedures, product and safety standards, including the proper use of PPE.
- Comply with all applicable local or national building and fire codes, including any that may supersede this manual.
- Ensure all products are appropriate for the installation, environment, and array under the site's loading conditions.
- Use only QuickMount and IronRidge parts or parts recommended by IronRidge; substituting parts may void any applicable warranty.
- Review the Design Assistant and Certification Letters to confirm design specifications.
- Ensure bare copper grounding wire does not contact aluminum and zinc-plated steel components, to prevent risk of galvanic corrosion.
- If loose components or loose fasteners are found during periodic inspection, re-tighten immediately. Any components showing signs of corrosion or damage that compromise safety should be replaced immediately.
- Provide an appropriate method of direct-to-earth grounding according to the latest edition of the National Electrical Code, including NEC 250: Grounding and Bonding, and NEC 690: Solar Photovoltaic Systems.
- Disconnect AC power before servicing or removing modules, AC modules, microinverters and power optimizers.
- Review module and any 3rd party manufacturer's documentation for compatibility and compliance with warranty terms and conditions.
- Ensure that the roof is in good condition prior to installing any QuickMount or IronRdige components.

ROKR

INSTALLATION GUIDE

QuickMount IRONRIDGE



ROKR SYSTEM SPECIFICATIONS			
Leveling Range	3.22" to 4.77" above the roof	**Materials**	300 series stainless steel, 6000 series aluminum
North-South Slide Range	Slide dependent 3 to 6.5 inches	**Finish**	Black anodization/Mill finish
Warranty	25 - year material and workmanship		

TOOL LIST

Smart Slide

- ½” Deep-well socket (not thick wall impact)
- 5/16” Nutdriver for impact with 2” extension
- Chalk line
- String line (optional)

Comp Slide & Flashings

- 7/32” Drill bit
- ½” Deep-well socket (not thick wall impact)
- Chalk line
- String line (optional)

PLEASE NOTE: Review module and any third-party manufacturer’s documentation for compatibility and compliance with warranty terms and conditions.

REQUIRED SYSTEM COMPONENTS

ROKR SYSTEM

MOUNT

COUPLING

HYBRID COUPLING

SKIRT & END CAP / SPLICE

COMP SHINGLE INSTALLATION

SMART SLIDE

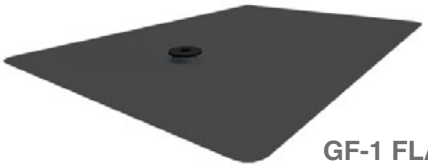
SMART SLIDE

#14 SMART SCREW

COMP SHINGLE INSTALLATION

COMP SLIDE & FLASHING

COMP SLIDE*



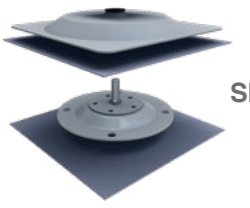
GF-1 FLASHING

LAG SCREW

FLAT ROOF INSTALLATION

COMP SLIDE + SIMPLEGRIP

COMP SLIDE*



SIMPLEGRIP

STANDING SEAM INSTALLATION

COMP SLIDE & LYNX

COMP SLIDE*

LYNX

*AVAILABLE AS NON-STANDARD SKU

COMPONENTS

TRAPEZOIDAL INSTALLATION

COMP SLIDE & CORRUSLIDE

COMP SLIDE*

CORRUSLIDE

OPTIONAL ACCESSORIES

EBOS & WIRE MANAGEMENT

JAYBOX

FRAME MLPE MOUNT

MANTIS
MID CLIP

MANTIS
SIDE CLIP

BUG CONDUIT
MOUNT

*AVAILABLE AS NON-STANDARD SKU

RATINGS

Fire Ratings	Class A* and B** System Fire Rating
Max System Voltage	1500V
Max Fuse Rating	40A
Certification	Conforms to UL STD 2703 and UL SUBJECT 2703A
Markings	Bolt head on Mount and Couplings
Roof Pitch	1/4 to 21:12 (1.2 to 60 degrees)
UL 2703 Allowable Design Load Rating	30 psf downward, 30 psf upward and 20 psf lateral (landscape) 20 psf downward, 20 psf upward and 20 psf lateral (portrait)
Max Module Size	30.5 sq. ft.
Maximum Cantilever	1/3 of span
Maximum Span	6 ft Landscape, 4 ft Portrait
Multiple use Rated Components (Position Independent)	ROKR Mount, ROKR Couplings & MLPE Module Mount
UL 2703A Smart Slide Ratings	• Steep Slope Ratings applicable for Asphalt Shingle roofs with slopes 2:12 and up • Low Slope Ratings applicable for Roll Roofing (Rolled Comp) roofs with slopes 1:12 and up • Low Slope Ratings applicable for Modified Bitumen (Mod-Bit) roofs with slopes 1/4:12 and up

*Class A System fire rating with Steep and Low Slope Roofs and Type 1, 2, 3, 4, 5, 13, 19, 25, 29, 30 and 38 PV modules with no skirt required. Class A System fire rating with Steep Slope Roofs and Type 4 and 5 modules with south edge skirt required. Any roof-to-module gap is permitted. This rating is applicable with any roof attachment.

MARKINGS:

ETL LISTED US
Intertek

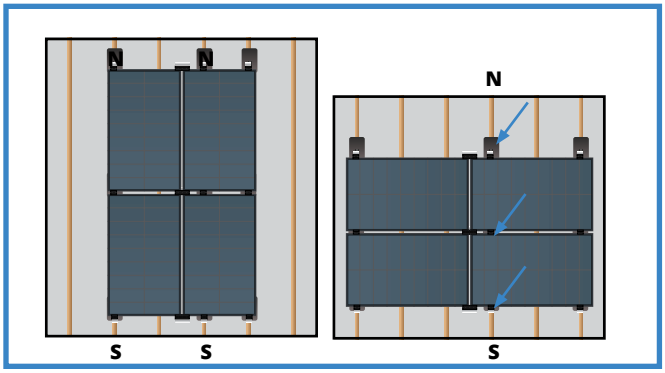
5003807
5033614
CONFORMS TO UL STD 2703

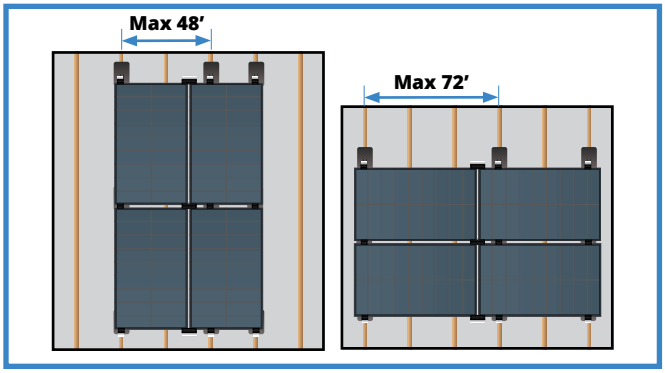
TORQUE SPECIFICATIONS

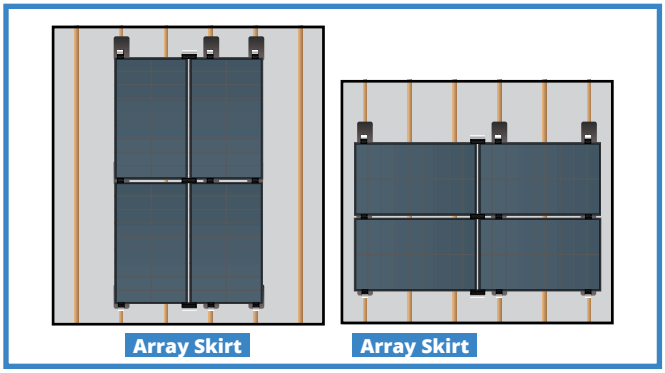
Component	Torque (in-lb)	Notes
Smart Screws	N/A	Fully Seat. Use visual indicator of the black EPDM ring around the bonded washer for torquing.
Mount	180	
Coupling	180	
MLPE Module Mount	144	
Ground Lug	N/A	Refer to specific ground lug manufacturer's installation manual
ROKR Pedestal Screw	180	

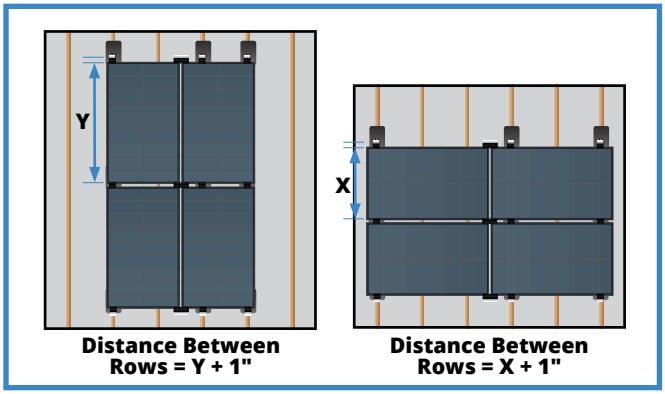
System components should be periodically re-inspected for loose components, loose fasteners, and corrosion such that if found, the affected components are to be immediately replaced.

SLIDE PLACEMENT









FIND STRUCTURAL ATTACHMENT POINTS

- Find the required structural attachment points.

SLIDE SPACING

- Spacing (also referred to as “spans”) vary depending on project specific site conditions: i.e. high snow and wind load areas may require lesser bracket spacing in the East-West axis vs. the maximum spacing.
- Max spacing is 48" OC for portrait orientation and 72" OC for landscape orientation. There must be at least one Mount or Hybrid per module for each row of attachments.
- Consult project layout diagram for project specific slide spacing on the roof.
- Install slides to predetermined mount spacing.

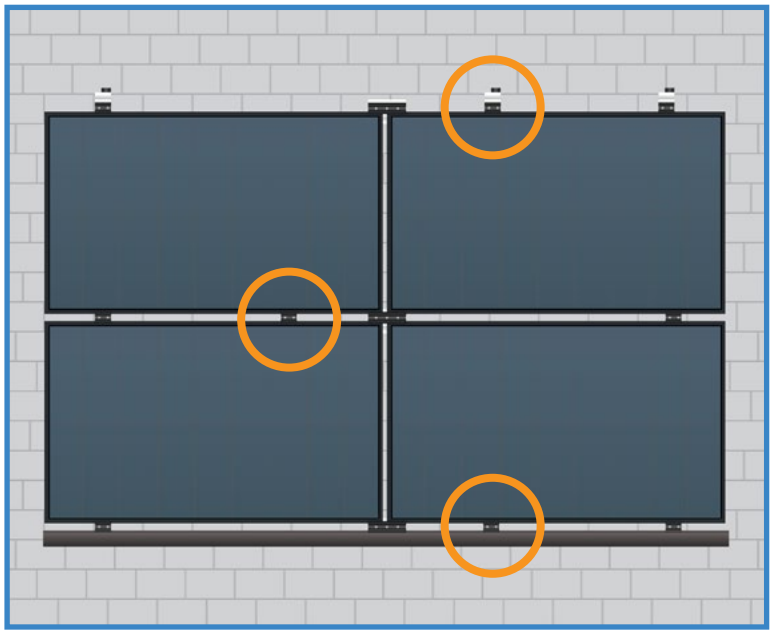
ARRAY SKIRT SECTIONS

- Use the array skirt as a guide to lay out module placement.

ROW SPACING

- The distance between the rows of mounts is calculated by the module dimension North-South plus 1".

SLIDE PLACEMENT

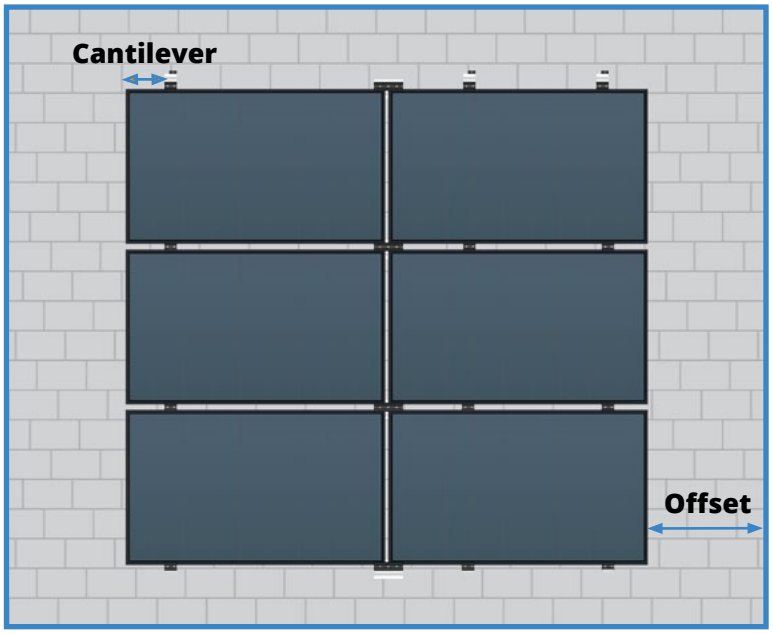


LAYOUT WITH STAGGERED SLIDES

- To reduce the load on an individual rafter, slides can be mounted in a staggered configuration
- Reference each project layout

ROKR Mount

ROKR Coupling



CANTILEVER & OFFSET

- **CANTILEVER:** Maximum cantilever is 1/3 allowable span.
- **OFFSET:** Offset from all roof edges depends on wind speed, snow loads, local fire and building codes per location.

COMP SHINGLE INSTALLATION
SMART SLIDE

ARRAY POSITIONING

Use the shingle overlap as your starting position to snap your first chalk line (See image below). The chalk line for the first row of panels should be snapped at or near the edge of the shingle course. We recommend snapping chalk lines at every row to make sure every installation is done correctly. After chalk lines have been snapped for each row, locate the rafters within the array making sure to follow the span chart and cantilever guidelines.

NOTE: For landscape module orientation, the north-south distance between each chalk line is equal to the module width plus 1". For portrait, the distance is the module length plus 1".

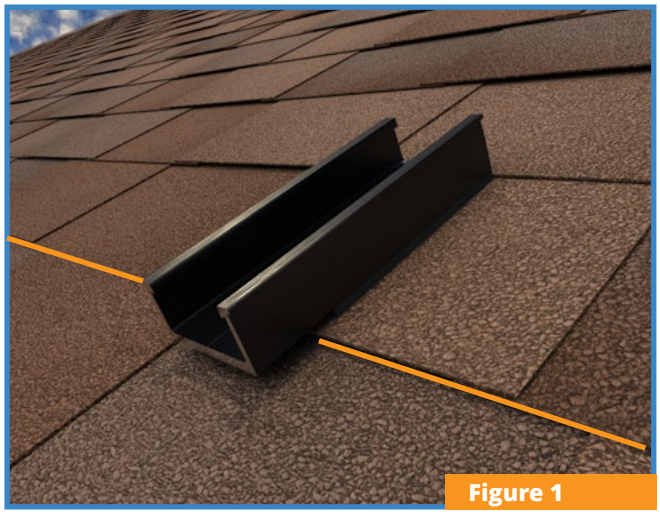


Figure 1

PLACING THE SLIDE

Once the general location of each rafter is marked, clean the mounting location with a nylon brush for proper sealing. Peel off the release liner and place the center of the slide over the rafter. The end of the Slide with the seal must be pushed up against the upslope shingle course edge (see figures above).

NOTE: Only install on clean roofs free of snow , ice and debris in ambient temperatures between 5° F and 118° F. If installing on Presidential shingles of rare thickness over 1/8", cut off the shingle tabs to ensure the slide lies flat.

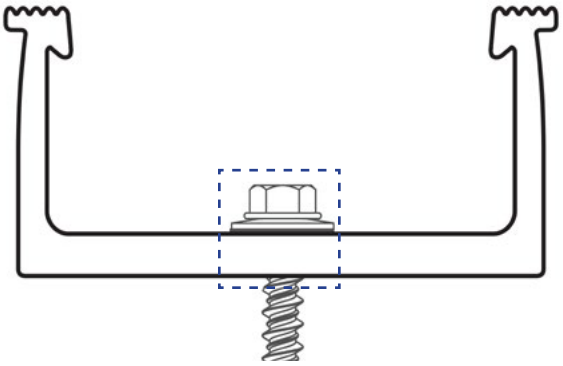
COMP SHINGLE INSTALLATION
SMART SLIDE

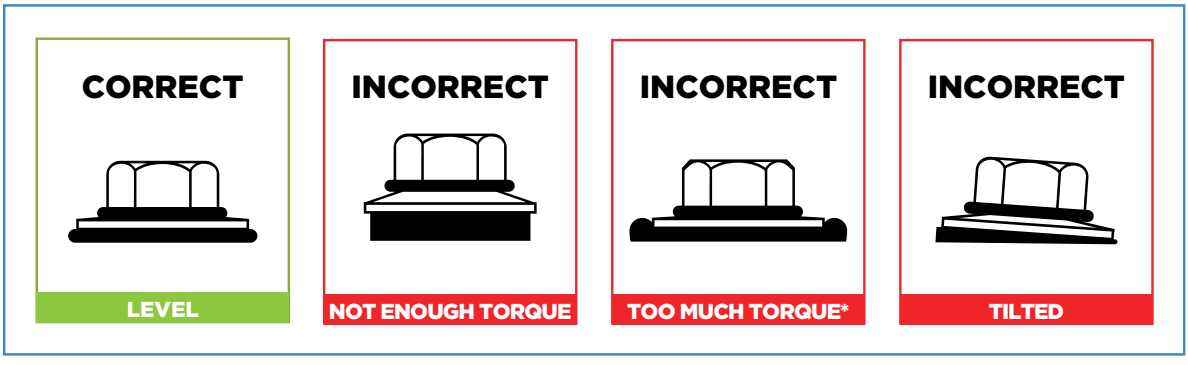
SCREW PLACEMENT & DRIVING THE SCREWS

Once the slide is in position, it will be difficult to remove cleanly without leaving any sealant on the roof. Never remove a screw for any reason even if the rafter is missed. Smart Slide is designed to give the installer multiple opportunities to find the rafter.

NOTE: All the structural testing and leak testing were performed with the #14 screws supplied by QuickMount/IronRidge. These screws were custom designed and manufactured for this application. Failure to use the Quickmount/IronRidge supplied screws will void the warranty and could cause structural or leak failures.

EPDM TORQUE GUIDE





NOTE: If too much torque is used it could damage the EPDM washer. Damaged or blown out EPDM washers should be replaced with a new washer as needed.

COMP SHINGLE INSTALLATION

SMART SLIDE

TWO-SCREW STANDARD RAFTER MOUNTED SCREW PLACEMENT

Reference “Two-Screw Rafter Mounted” span tables for Slide spacing. Do not use Holes G, H, and I here.

1. INSTALLATION – FIRST ATTEMPT

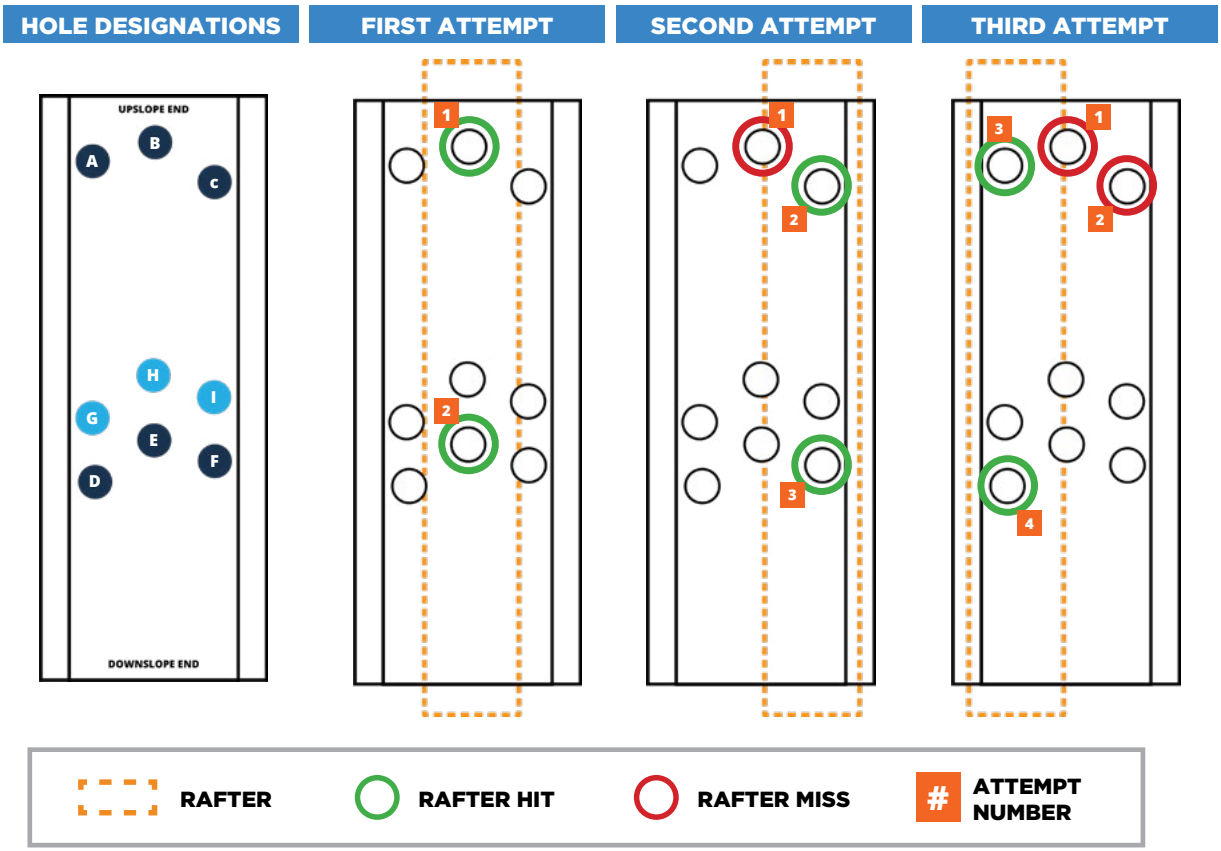
Drive a screw in Hole B. If the rafter is hit, drive an additional screw in Hole E to complete the installation.

2. INSTALLATION – SECOND ATTEMPT

If the rafter is missed with the first screw as circled below in red, drive a second screw through Hole C. If the rafter is hit, drive an additional screw through Hole F to complete the installation. (Never remove a screw.)

3. INSTALLATION – THIRD ATTEMPT

If the rafter is missed in both Holes B & C, then try Hole A. If the rafter is hit in Hole A, drive an additional screw through Hole D to complete the installation. (Never remove a screw.)



NOTE: If the rafter is missed completely, screws must be added to holes a, b, c, d, e, and f then add another smart slide to the previous rafter and pick up with the spans from there.

COMP SHINGLE INSTALLATION

SMART SLIDE

THREE-SCREW RAFTER MOUNTED SCREW PLACEMENT

Reference “Three-Screw Rafter Mounted” span tables for Slide spacing.

1. INSTALLATION – FIRST ATTEMPT

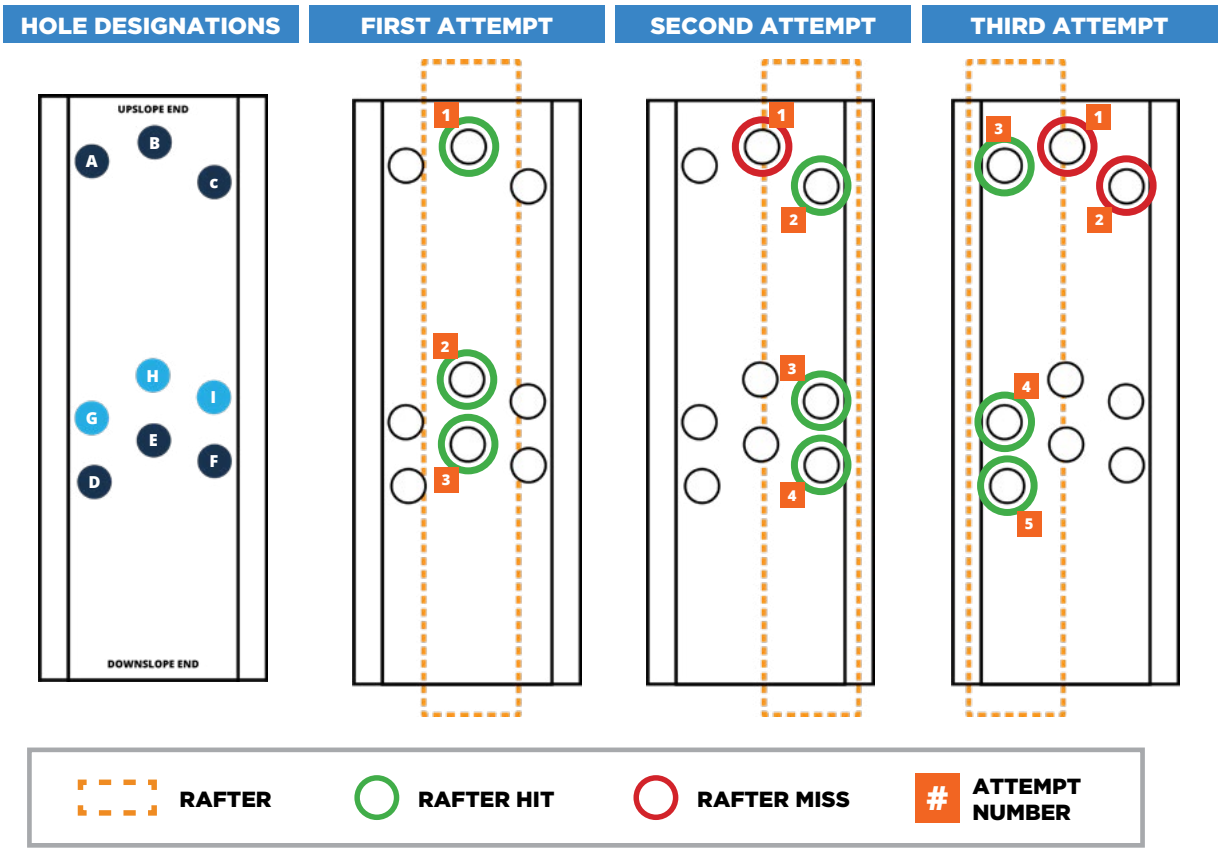
Drive a screw in Hole B. If the rafter is hit, drive additional screws in Hole H and Hole E to complete the installation.

2. INSTALLATION – SECOND ATTEMPT

If the rafter is missed with the first screw as circled below in red, drive a second screw through Hole C. If the rafter is hit, drive additional screws through Hole I and Hole F to complete the installation. (Never remove a screw.)

3. INSTALLATION – THIRD ATTEMPT

If the rafter is missed in both Holes B & C, then try Hole A. If the rafter is hit in Hole A, drive a screw through Hole D and Hole G to complete the installation. (Never remove a screw.)



NOTE: If the rafter is missed completely, screws must be added to holes a, b, c, d, e, and f then add another smart slide to the previous rafter and pick up with the spans from there.

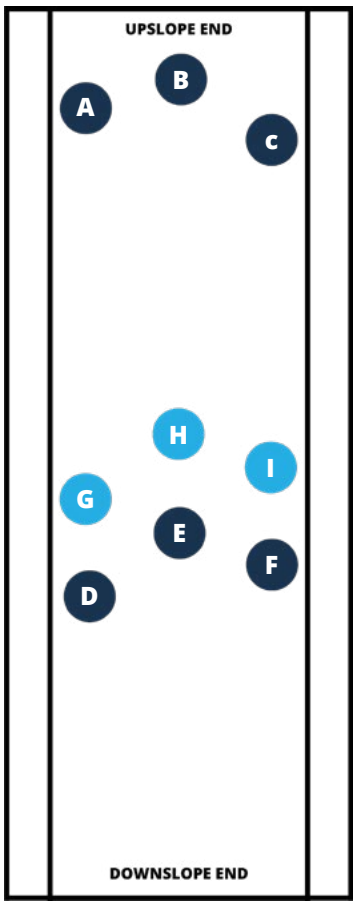
COMP SHINGLE INSTALLATION
SMART SLIDE

DECK MOUNTED SCREW PLACEMENT

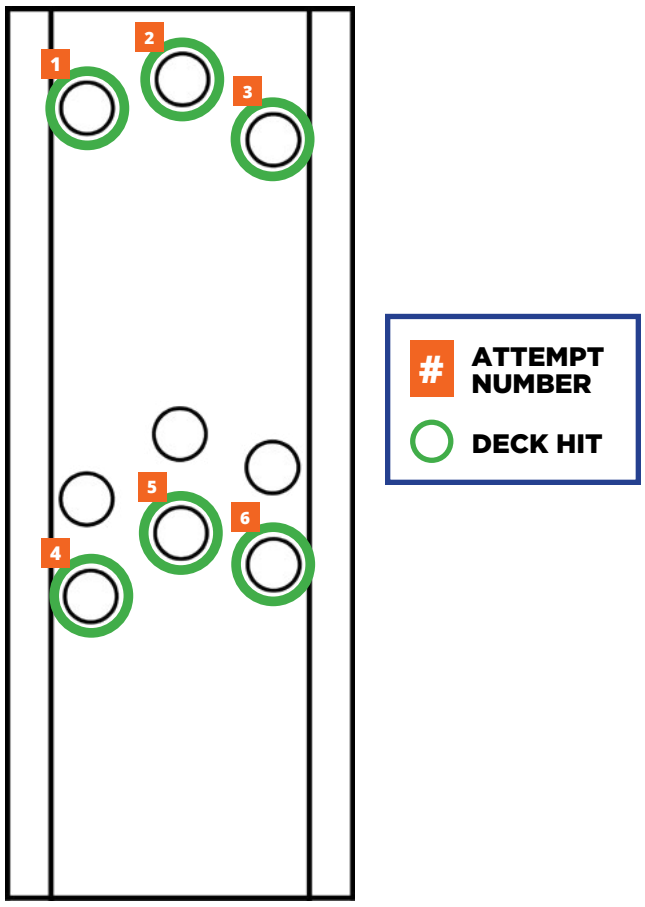
Reference “Deck Mounted” span tables for Slide spacing. Do not use Holes G, H, and I here.

INSTALLATION – Drive a total of six screws through Holes A, B, C, D, E and F. Be careful not to strip screws in the deck.

HOLE DESIGNATIONS

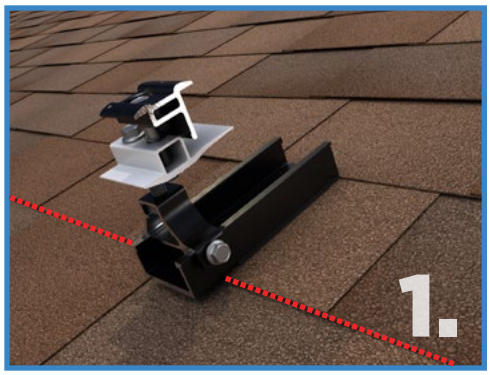


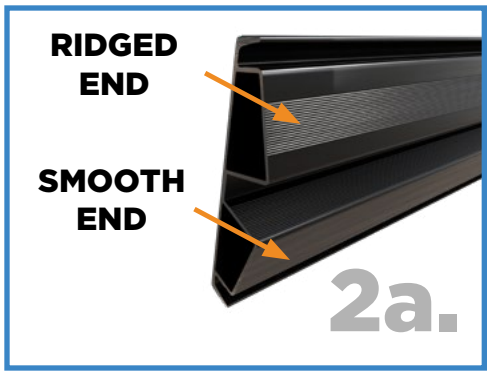
FIRST ATTEMPT

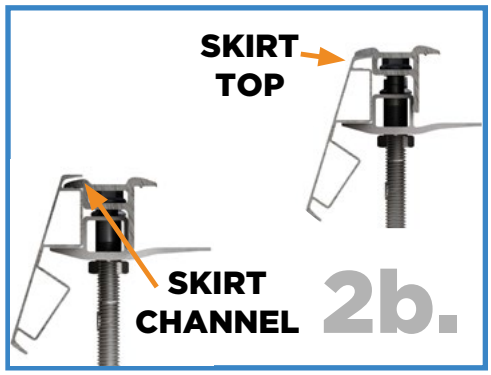


NOTE: If a rafter is missed completely within the slide, you must add another slide to the previous rafter.

SYSTEM INSTALLATION







1. MOUNTS & ALIGNMENT

- It is best practice to start the first row of panels at the shingle course line. Reference the chalk line snapped for the first row to mark where the array will begin
- Begin with the row that will get Skirts, which is usually the far south row. On the far east and far west Slides, install a Mount on a Slide so that the north side of the Mount base is flush with your chalk line
- Tighten side bolts to 180 in-lbs.
- Run a string line across the north edge of the base of the two Mounts.
- Add a Mount to each of the other Slides, position them up against the string line, and tighten the side bolts to 180 in-bs.

2. SKIRT ORIENTATION & LOCATION

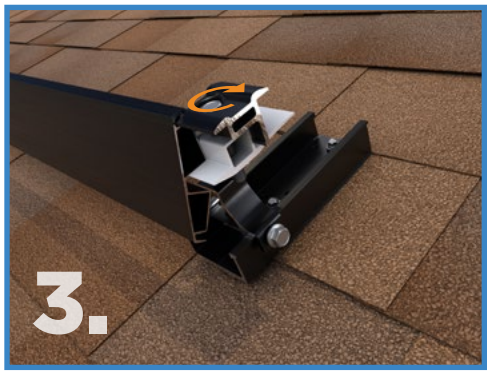
- Rotate the top of the Mount so that the long, stepped shelf is facing north.
- Depending on the module frame size, the skirt needs to be specifically oriented and then installed either inside or ontop of the Mount channel.

NOTE that the Skirt backside has a smooth end and an end that has ridges, as shown in image 2a.

- Rotate the skirt to either the smooth end or the ridged end, then set the Skirt so the Mount Leg is on top or inside the channel as shown, using the following criteria:

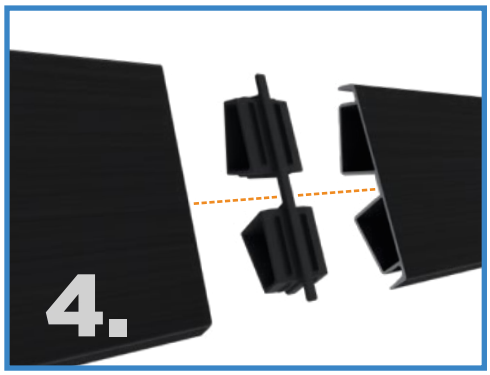
- **30mm: Inside channel of smooth end**
- **32mm: Inside channel of ridged end**
- **35mm: On top of smooth end**
- **40mm: On top of ridged end**

SYSTEM INSTALLATION



3. SKIRT TIGHTENING

- Tighten top bolt in Mount to 180 in-lbs to secure the Skirt



4. SKIRTS END CAPS

- Line up the ridges on the edge of the End Cap with the ridges on the Skirt then press fit End Caps at every Skirt connection and (optionally) on the ends.

NOTE: The End Caps make it easier to align the Skirts and are required for strength.

5. COUPLINGS ON SKIRTS

- Continue the row of Skirts along the south edge of the array
- Everywhere two modules will meet, install a Coupling on the Skirt with the bonding pins facing south.
- Tighten top clamp bolts to 180 in-lbs.

NOTE: There must be at least one Mount, one Coupling or one Hybrid on each Skirt section.

6. COUPLING POSITIONING

- Couplings can be positioned off center to avoid running into a Mount, but make sure the module corners land inside the Coupling notch
- Torque to 180 in-lbs.

SYSTEM INSTALLATION

7. HYBRID MOUNTS

- If a Coupling can not be positioned to avoid running into a Mount, install a Hybrid Mount onto the Slide
- Torque both clamp bolts to 180 in-lbs.

8. ALIGN & STRAIGHTEN SKIRTS

- If the row of Skirts is not straight in the north-south direction, loosen appropriate side bolts, adjust the Mount to straighten the skirts, and retighten to 180 in-lbs.
- If the row of Skirts is not level, adjust the leveling bolt inside the Mount.
- Align skirts with module edge.

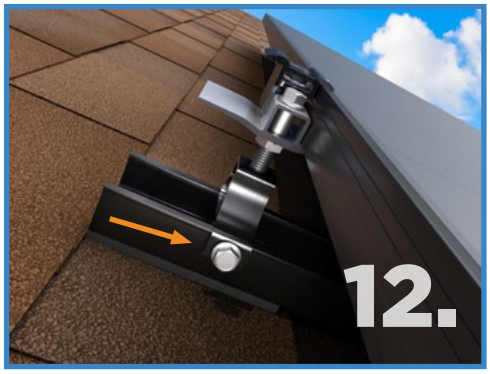
9. INSTALL FIRST ROW OF PV MODULES

- Place the modules into the first row of Mounts and Couplings at a 45 degree angle. While applying pressure against the Mounts and Couplings, lower the modules until parallel to the roof ensuring the modules are fully seated.
- Space the modules in the east/west direction ½" to ¾".

10. INSTALL SECOND ROW OF COUPLINGS

- At the intersection of the north side of two modules, install a Coupling with the two bonding pins facing south.
- Coupling can be positioned off center to avoid running into a Mount, but make sure the module corners land inside the Coupling notch
- Torque to 180 in-lbs.

SYSTEM INSTALLATION



11. HYBRID MOUNTS

- If a Coupling can not be positioned to avoid running into a Mount, install a Hybrid Mount onto the Slide
- Torque both clamp bolts to 180 in-lbs.

12. INSTALL SECOND ROW OF MOUNTS

- Lift the modules slightly and install the Mounts on the Slides to engage the north side of the module.
- Tighten the top clamp bolt to 180 in-lbs first then tighten the side bolt to 180 in-lbs.

13. LEVELING & WIRE MANAGEMENT

- Before installing next row of modules, level the row (if needed) by turning the leveling bolt .
- Manage wires after each row of modules is installed

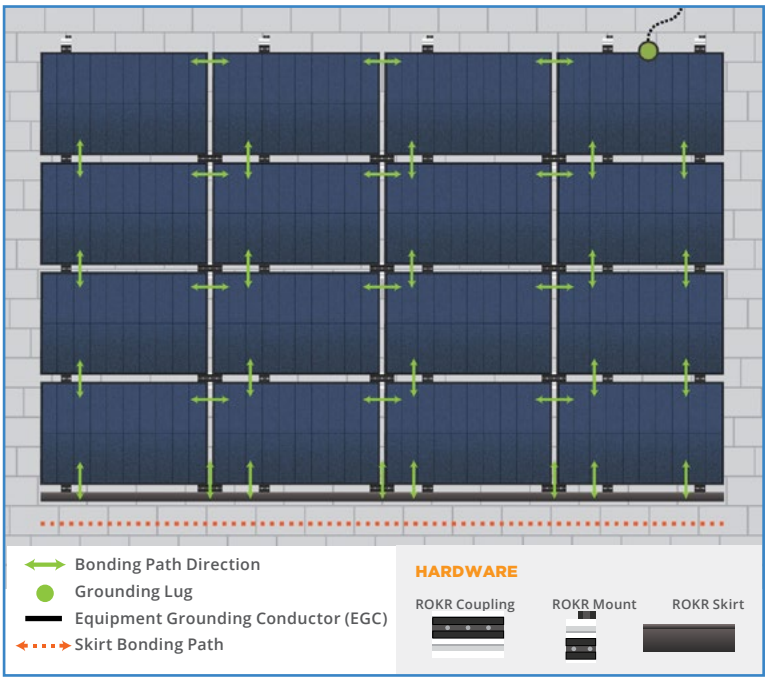
14. COMPLETE THE ARRAY

- Repeat steps above for all other rows in the array.

BONDING AND GROUNDING

THERMAL EXPANSION & BONDING

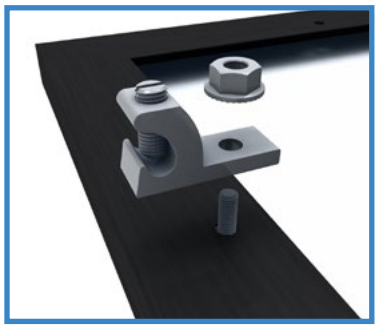
- A thermal expansion gap is required per each continuous 70' length of modules.
- Omit a coupling and leave a 2" gap in the ROKR array skirt and also between the modules at that point.
- Bonding across the thermal gap should be accomplished with an approved ground lug for each array and an equipment grounding conductor.

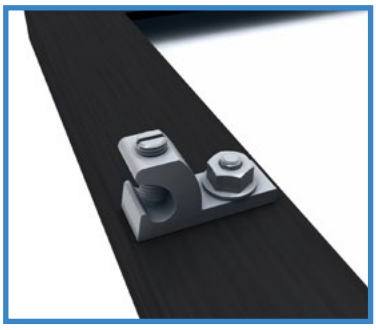


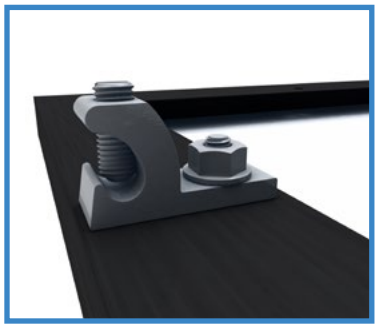
BONDING PATH & ASSEMBLY

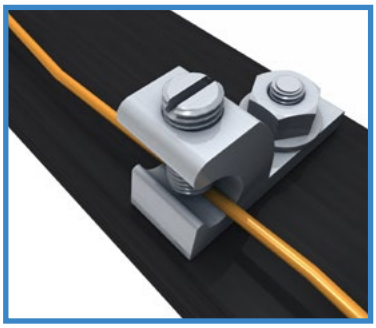
- ROKR mount bonds North-South rows of modules.
- ROKR coupling bonds East-West rows of modules.
- ROKR array skirt is bonded to the array via the ROKR mount.
- One approved ground lug is required per continuous PV array.
- Ilsco SGB-4 Approved for Mounting to ROKR Mount or ROKR Slides as alternate grounding location

BONDING AND GROUNDING









NECESSARY COMPONENTS

One of the following grounding lugs (or any UL 2703 Compliant ground Lug):

- Burndy CL50-1TN Ground Lug (UL2703 - E3514343 / UL 467 - E9999)
- ILSCO SGB-4 Ground Lug (UL2703 - E354420/ UL 467 - E34440)
- ILSCO GBL-4DBT (UL2703 - E354420 / UL 467 - E34440)
- ILSCO GBL-4DBTH (UL2703 - E354420 / UL 467 - E34440)
- ILSCO GBL-4SS (UL2703 - E354420 / UL 467 - E34440)

Above: Optional Locations for grounding lug on last row upslope of array

**Equipment grounding wire should be sized in accordance with the National Electrical Code, NFPA70 and a minimum of 1/4" clearance is required between bare copper wires and aluminum components.*

OTHER INSTALLATION OPTIONS
SUPPLEMENTAL GUIDES

ROOF ATTACHMENTS

LYNX INSTALLATION

Click here to view guide

SIMPLEGRIP INSTALLATION

Click here to view guide

CORRUSLIDE INSTALLATION

Click here to view guide

ACCESSORIES

FRAME MLPE INSTALLATION

Click here to view guide

MANTIS SIDE CLIP & MID CLIP INSTALLATION

Click here to view guide

JAYBOX INSTALLATION

Click here to view guide

BUG INSTALLATION

Click here to view guide

COMPATIBLE MODULES

The ROKR System has been tested and evaluated to UL 2703 for bonding, grounding, mechanical loading and fire classification, and may be used to ground and/or mount PV modules listed to UL 1703 or UL 61730. A list of approved modules is included below.

Unless otherwise noted, “xxx” refers to the module power rating and both black and silver frames are included in the certification.

TYPE 1, 2, 3, 4, 5, 13, 19, 25, 29, 30 AND 38 MODULES

MANUFACTURER	LIST OF UL 2703 APPROVED PV MODULES*
Adani	Adani modules with 30, 35 and 40 mm frames ASX-Y-ZZ-xxx Where “S” can be S or blank; “X” can be B, M or P, “Y” can be 6, 7, G12R or M10 and “ZZ” can be blank, 132, 144, PERC, B-PERC, or AB-PERC
AIONRISE	Aionrise modules with 35 and 40 mm frames AIONyyG1-xxx Where “yy” can be 60 or 72
Amerisolar	Amerisolar modules with 35 and 40 mm frames AS-bYxxxZ Where “b” can be 5 or 6; “Y” can be M, P, M27, P27, M30, or P30; and “Z” can be blank, W or WB
AMPS	AMPS modules with 30 and 35 mm frames AMPS-xxxY-ZZZ Where “Y” can be N or P; and “ZZZ” can be 54BB or 108BB
Aptos Solar	Aptos modules with 30, 35 and 40 mm frames DNA-yy-zzaa-xxxbb Where “yy” can be 108, 120 or 144; “zz” can be BF, BFN, MF, or MFN; “aa” can be 10, 23 or 26; and “bb” can be blank, W, W-DG, W-USAptos1, W-USAptos1a or W-USAptos2
Astronergy Solar	Astronergy modules with 30, 35 and 40 mm frames aaSMbbyyC/zz-xxx Where aa can be CH or A; “bb” can be 60, 66, or 72; yy can be blank, 10 or 12; “C” can M, P, M(BL), M-HC, M(BL)-HC, P-HC, M(DG), M(DGT) or N(DG); and zz can be blank, HV, F-B, or F-BH

MANUFACTURER	LIST OF UL 2703 APPROVED PV MODULES*
ASUN	ASUN modules with 35 and 40 mm frames ASUN-xxx-YYZZ-aa Where "YY" can be 60 or 72; "ZZ" can be M,or MH5; and "aa" can be blank or BB
Auxin	Auxin modules with 35 and 40 mm frames AXNCyzAxxxB Where "C" can be 6, 10 or G1; "y" can be M or P; "z" can be blank, 08, 09, 610, 11, or 612; and "A" can be blank, F, M or T; and "B" can be blank, A, B, C or W
Axitec	Axitec Modules with 30, 35 and 40 mm frames AC-xxxY/aaZZb Where "Y" can be M, P, MB, MBT, MH or TGB; "aa" can be blank, 125-, or 156-; "ZZ" can be 54, 60, 72, 108, 120, or 144; "b" can be BB, BB-US, S, X, V, MX, TS, TS-US, US, VB or XV
Big Shine Solar	Big Shine Solar modules with 35mm frames BSExxxN-144BMH-DG
Bila Solar	Bila Solar modules with 30 mm frames AA-xxxUS-6x24GG
Bluesun Solar	Bluesun modules with 30 and 35 mm frames BSMxxxY-AAA Where "Y" can be M or M10; and "AAA" can be 54HPH, 60HPH or 72HBD
Boviet	Boviet modules with 33, 35 and 40 mm frames BVMZZaaYY-xxxBcc Where "ZZ" can be 66, 76 or 86; "aa" can be 9, 10, 11 or 12; "YY" is M or P; and "B" can be blank, L or S; and "cc" can be blank, H, H-BF, H-BF-DG, H-HC, H-HC-BF, H-HC-BF-DG, HC-BF, HC-BF-DG, R-H-HC-BF or R-H-HC-BF-DG
BYD	BYD modules with 30 and 35 mm frames BYDxxxAY-ZZ Where "A" can be M6, P6, MH, MLB, MLT, NLB or PH; "Y" can be C or K; and "ZZ" can be 30 or 36
Canadian Solar	Canadian Solar modules with 30, 32, 35 and 40 mm frames CSbY-xxxZ Where "b" can be 1, 3, 6, 6.1, 6.2 or 7; "Y" can be H, K, L, N, P, R, U, V, W, X, Y, -48TD, -48TM, -54TM, -66TB, -66TM or -72TB; and "Z" can be blank, H, HP, M, P, T, MS, PX , M-SD, P-AG, P-SD, MB-AG, PB-AG, MS-AG, MS-HL, MS-SD or TB-AG

MANUFACTURER	LIST OF UL 2703 APPROVED PV MODULES*
CertainTeed	CertainTeed modules with 30, 35 and 40 mm frames CTBBxxxYZZ-AA Where "BB" can be blank, M10 or TC; "Y" can be M, P, or HC; "ZZ" can be 00, 01, 10, 11 or 12; and "AA" can be 01, 02, 03, 04, 06, 08 or 09
Crossroads Solar	Crossroads Solar modules with 40 mm frames Crossroads Solar xxx
CSUN	Csun modules with 35 and 40 mm frames YYxxx-zzAbb Where "YY" is CSUN or SST; "zz" is blank, 60, or 72; and "A" is blank, P, M or MM; "bb" is blank, BB, 5BB, BW, or ROOF
Dehui	Dehui modules with 30, 35 and 40 mm frames DH-MYYYZ-xxx Where "YYY" can be 760, 772, 860, or 872; and "Z" can be B, F or W
Ecosolargy	Ecosolargy modules with 35 and 40 mm frames ECOxxxYzzA-bbD Where "Y" can be A, H, S, or T; "zz" can be 125 or 156; "A" can be M or P; "bb" can be 60 or 72; and "D" can be blank or B
Emmvee	Emmvee modules with 35 mm frames Exxx-YYZZZ-A Where "YY" can be M, P, HCM, HCMW, HCBG, HCBT; "ZZZ" can be 72, 108, 120, 132 or 144; and "A" can be blank, B, T, or BT
Energy America	Energy America modules with 30 and 40 mm frames EA-ZLKY-ZZZxxx/M Where "Y" can be 7 or 8; and "ZZZ" can be SHDB108 or THLDD132
ET Solar (EliTe Solar)	ET Solar modules with 30, 33, 35 and 40 mm frames ET-YZZZxxxAA Where "Y" can be P, L, M, N or NR; "ZZZ" can be 48TBH, 660, 660BH, 672, 672BH, 754BH, 760BH, 766BH, 772BH, 760TBH, 766TBH, 772TBH, 778TBH or 848TBH; and "AA" can be GB, GL, TB, TW, WB, WW, BB, WBG, WWG, WBAC, WBCO, WWCO, WWBCO or BBAC
Flex	Flex modules with 35 and 40 mm frames FXS-xxxYY-ZZ; Where "YY" can be BB or BC; and "ZZ" can be MAA1B, MAA1W, MAB1W, SAA1B, SAA1W, SAC1B, SAC1W, SAD1W, SBA1B, SBA1W, SBC1B, or SBC1W

MANUFACTURER	LIST OF UL 2703 APPROVED PV MODULES*
Freedom Forever	Freedom Forever modules with 35 mm frames FF-MPa-BBB-xxx Where “a” can be blank or 1
Freevolt	Freevolt modules with 35 mm frames ECP-PVGRAF-144HC-xxx
GCL	GCL modules with 35 mm and 40 mm frames GCL-ab/YY xxx Where “a” can be M or P; “b” can be 3 or 6; and “YY” can be 60, 72, 72H, or 72DH
GigaWatt Solar	Gigawatt modules with 40 mm frames GWxxxYY Where YY can be either PB or MB
Goldi	Goldi modules with 35 mm frames GS10-Byyy-zz-xxx Where “yyy” can be 108 or 144; and “zz” can be GF or TF
Goldi America	Goldi America modules with 30 mm frames GADYYT-xxxZZ Where “YY” can be 54 or 72; and “ZZ” can be BT or WT
Grape Solar	Grape modules with 35 mm frames GS-M120-xxx-FAB1
GreenWatts Solar	GreenWatts modules with 30 and 35mm frames HSYY-A-xxx-ZZ Where “YY” can be 54, 60, 66, 72 or 78; “A” can be blank or F; and “ZZ” can be MN or BOB
Hanersun	Hanersun modules with 30 mm frames HN18N-54HTxxxW
Hansol	Hansol modules with 30, 35 and 40 mm frames HSxxxYY-zz Where “S” can be A or S; “YY” can be AA, AB, AD, AE, PB, PD, PE, TB, TD, UB, UD, UE, XA, XD or ZB; and “zz” can be AH2, AN1, AN3, AN4, CGEA0, CGFA0, DGEA0, HH2, HV1, JH2, GNEA0, NGEA0 or NNEA0
Hanwha Solar	Hanwha Solar modules with 40 mm frames HSLaaP6-YY-1-xxxZ Where “aa” can be either 60 or 72; “YY” can be PA or PB; and “Z” can be blank or B

MANUFACTURER	LIST OF UL 2703 APPROVED PV MODULES*
Heliene	Heliene modules with 35 and 40 mm frames YYZZxxxA Where "YY" can be 36, 60, 72, 96, 108, 120, 132, 144 or 156; "ZZ" can be HC, M, P, or MBLK; and "A" can be blank, HomePV, Bifacial, M10-SL, M10-SL-BLK, M10 TPC SL, M10 Bifacial, M10 SL-Bifacial, M10 TPC SL Bifacial, M10 NTYP SL or M10 NTYP SL Bifacial
Hounen Solar	Hounen Solar modules with 30 and 35 mm frames HNM7-YYY-xxx/Z Where "YYY" can be SHDB144 or UHLDD144; and "Z" can be M or N
HT-SAAE	HT-SAAE modules with 30, 35 and 40 mm frames HTyy-aaaZ-xxx Where "yy" can be 60, 66, 72 or 78, "aaa" can be 18, 156 or 166, "Z" can be M, P, M-C, P-C, M(S), M(VS), M(V), P(V), M(V)-C, P(V)-C, X, X(ND)-F or X+(ND)-F
Hyperion Solar (Runergy)	Hyperion or Runergy modules with 30 and 35 mm frames HY-DHzzzAC-xxxB Where "zzz" can be 96, 108, 132 or 144; "A" can be N or P; "C" can be 8, 11 or 11B; and "B" can be blank or B
Hyundai	Hyundai modules with 30, 32, 33, 35 and 40 mm frames HiY-SxxxZZ Where "Y" can be A, D, N or S; "S" can be M, S or T; and "ZZ" can be GI, HG, HI, KI, MI, MF, MG, NI, NF(BK), NJ, OJ, PI, RI, RG, RG(BF), RG(BK), SG, TI, TG, YH(BK) or XG(BK)
Illuminate USA	Illuminate USA Modules with 30 and 35 mm frames IL5-72HBD-xxxM
Imperial Star	Imperial Star Modules with 35 mm frames ISY7-zzzAAA-xxx/M Where "Y" can be M or N; "zzz" can be SHSB or UHSB; and "AAA" can be 108, 144 or 156
Indepwr Solar	Indepwr Solar modules with 35 mm frames iPWR-M10-xxyyy-xxxW Where "xx" can be 54, 60 or 72; and "yyy" can be BX2D or BX2S
Itek	Itek Modules with 40 mm frames IT-xxx-YY Where "YY" can be blank, HE, or SE, or SE72

MANUFACTURER	LIST OF UL 2703 APPROVED PV MODULES*
JA Solar	JA Solar modules with 30, 35 and 40 mm frames JAyyzz-bbww-xxx/aa Where "yy" can be M, P, M6 or P6; "zz" can be blank, (K), (L), (R), (V), (BK), (FA), (TG), (FA)(R), (L)(BK), (L)(TG), (R)(BK), (R)(TG), (V)(BK), (BK)(TG), or (L)(BK)(TG); "bb" can be 48, 54, 60, 66, 72 or 78; "ww" can be D09, D10, D20, D30, D40, D41, D42, D45, S01, S02, S03, S06, S09, S10, S12, S17, S20, S30 or S31; and "aa" can be BP, LB, MB, MB-US, MR, SI, SC, PR, 3BB, 4BB, 4BB/RE, 5BB
Jakson Solar	Jakson Solar modules with 35mm frames JH-xxxYY Where "YY" can be BB or BT
Jinko	Jinko modules with 30, 35 and 40 mm frames JKMYxxxZZ-aa Where "Y" can either be blank or S; "ZZ" can be M, N, P, or PP; and "aa" can be blank, 54HL4-B, 60, 60B, 60H, 60L, 60BL, 60HL, 60HB, 60HBL, 6HBL-EP, 60-J4, 60B-J4, 60B-EP, 60(Plus), 60-V, 60-MX, 6RL3, 6RL3-B, 6TL3-B, 66HL4M-BDV, 7RL3-V, 7RL3-TV, 72, 72B, 72-J4, 72B-J4, 72(Plus), 72-V, 72H-V, 72L-V, 72HL-V, 72HBL-V, 72HL4-V, 72HL4-BDV, 72HL4-TV, 72-MX, 72H-BDVP, 72HL-TV, 72HL-V-MX3 or 72HL4-BDX
Jolywood Solar	Jolywood Solar modules with 30mm frames JW-HDYYN-ZZ-xxx Where "YY" can be 96, 108, 132 or 144; and "ZZ" can be blank, R0 or R2
KB Solar	KB Solar modules with 35 mm frames KBS-xxx-Mono-YY Where "YY" can be blank or BF
Kyocera	Kyocera Modules KYxxxZZ-AA Where "Y" can be D or U; "ZZ" can be blank, GX, or SX; and "AA" can be LPU, LFU, UPU, LPS, LPB, LFB, LFBS, LFB2, LPB2, 3AC, 3BC, 3FC, 4AC, 4BC, 4FC, 4UC, 5AC, 5BC, 5FC, 5UC, 6BC, 6FC, 8BC, 6MCA, or 6MPA
LA Solar	LA Solar modules with 35 mm frames LSxxxYY Where "YY" can be BF, BL, BLA, HC or ST
LG	LG modules with 35 and 40 mm frames LGxxxYaZ-bb Where "Y" can be A, E, M, N, Q, S; "a" can be A, 1, 2 or 3 "Z" can be C, K, T, or W; and "bb" can be A3, A5, A6, B3, B6, E6, E6.AW5, G3, G4, J5, K4, L5, N5, V5, V6

MANUFACTURER	LIST OF UL 2703 APPROVED PV MODULES*
Longi	Longi modules with 30, 35 and 40 mm frames LRa-YYZZ-xxxM Where “a” can be 4, 5, 6, 7 or 8; “YY” can be blank, 54, 60, 66, or 72; and “ZZ” can be blank, BK, BP, HV, PB, PE, PH, HBD, HGD, HIB, HIH, HPB, HPH, HIBD, HABB, HABD or HGBB
Magnus Green Solar	Magnus Green Solar modules with 35 mm frames MGS-xxxW-yyy-M10 Where “yyy” can be M54H, M60H or M72H
Maxeon	Maxeon modules with 35, 40 and 46 mm frames SPR-AAAY-xxx-zzz Where “AAA” can be MAX, P or X; “Y” can be 3, 5, 6, 7, 21 or 22; and “zzz” can be blank, R, BLK, BLK-R, COM or UPP
Meyer Burger	Meyer Burger Modules with 35 mm frames Meyer Burger Black, White or Glass
Mission Solar (mSolar)	Mission Solar modules with 30, 33, 35 and 40 mm frames YYYbb-xxxZZaa Where “YYY” can be MSI, MSE, MSH, MSN, MSX, TXI or TXS; “bb” can be blank, 6, 10 or 60A; “ZZ” can be blank, HN, HT, MM, SE, SO, SQ , SR, SX, TS, 108, 120 or 144; and “aa” can be blank, 0B, 2B, BB, BW, 1J, 4G, 4J, 4S, 4T, 5K, 5R, 5T, 60, 6J, 6S, 6W, 6Z, 8K, 8T, 9R, 9S or 9Z
Mitrex	Mitrex modules with 30 and 40 mm frames Mxxx-XYZ Where “X” can be A, B, I or L; “Y” can be 1 or 3; and “Z” can be F or H
Mitsubishi	Mitsubishi modules PV-MYYxxxZZ Where “YY” can be LE or JE; and “ZZ” can be either HD, HD2, or FB
Motech	IM and XS series modules with 40 mm frames
Navitas	Navitas Modules with 30 and 35 mm frames NSZ-AAA-xxx-yyy Where “Z” can be G or M; “AAA” can be blank or BFT144-M10; and “yyy” can be blank, 120, 132 or 144
Next Energy Alliance	Next Energy Alliance modules with 35 and 40 mm frames yyNEA-xxxZZ where “yy” can be blank or US; “ZZ” can be M, MB or M-60

MANUFACTURER	LIST OF UL 2703 APPROVED PV MODULES*
NE Solar	NE Solar modules with 30, 35 and 40 mm frames NESExxx-zzAAX-yy Where "zz" can be 54, 60 or 72; "AA" can be MH or TH; "X" can be blank or B; and "yy" can be M6 or M10
Neo Solar Power	Neo Solar Power modules with 35 mm frames D6YxxxZZaa Where "Y" can be M or P; "ZZ" can be B3A, B4A, E3A, E4A, H3A, H4A; and "aa" can be blank, (TF), ME or ME (TF)
Optivolt	Optivolt modules with 35 mm frames OPT10M-xxxW
Panasonic (HIT)	Panasonic modules with 35 and 40 mm frames VBHNxxxYYzzA Where "YY" can be either KA, RA, SA or ZA; "zz" can be either 01, 02, 03, 04, 06, 06B, 11, 11B, 15, 15B, 16, 16B, 17, or 18; and "A" can be blank E, G or N
Panasonic (EverVolt)	Panasonic modules with 30 mm frames EVPVxxxA Where "A" can be blank or H, K, HK, HK2 or PK
Peimar	Peimar modules with 35 and 40 mm frames AbxxxYzz Where "A" can be S or DR; "b" can be G, M, P or 10H; "Y" can be M, MB or P; and "zz" can be blank, (BF), or (FB)
Philadelphia Solar	Philadelphia modules with 30, 35 and 40 mm frames PS-YzzAA-xxxW Where "Y" can be M, MNB, MNG or P; "zz" can be 60, 72, 108, 132, 144 or 156; "AA" can be blank, (BF), (HC), (HCBF) or (HCBF)-GG; and "W" can be blank or W
Phono Solar	Phono Solar modules with 30, 35 and 40 mm frames PSxxxY-ZZ/A Where "Y" can be M, M1, MH, M1H, M4, M4H, M5GF, M5GFH, M6, M6H, M8, M8H, M8GF, M8GFH or P; "ZZ" can be 18, 20, 24 or 26; and "A" can be F, RNH, T, TH, THB, TNH, U, UH, UHB, VH, VHB or VNHB
Prism Solar	Prism Solar modules with 35 mm frames PST-xxxW-M72Y Where "Y" can be H, HB or HBI

MANUFACTURER	LIST OF UL 2703 APPROVED PV MODULES*
Q CELLS	Q CELLS Modules with 30, 32, 35, 40 mm frames aaYY-ZZ-xxx where “aa” can be Q. or B.; “YY” can be PLUS, PRO, PEAK, LINE PRO, LINE PLUS, PLUS DUO, PEAK DUO or TRON; and “ZZ” can be G3, G3.1, G4, G4.1, L-G2, L-G2.3, L-G3, L-G3.1, L-G3y, L-G4, L-G4.2, L-G4y, LG4.2/TAA, BFR-G3, BLK-G3, BFR-G3.1, BLK-G3.1, BFR-G4, BFR-G4.1, BFR G4.3, BLK-G4.1, G4/SC, G4.1/SC, G4.1/TAA, G4.1/MAX, BFR G4.1/TAA, BFR G4.1/MAX, BLK G4.1/TAA, BLK G4.1/SC, EC-G4.4, G5, G5/SC, G5/TS, BLK-G5, BLK-G5/SC, BLK-G5/TS, L-G5, L-G5.1, L-G5.2, L-G5.2/H, L-G5.3, G6, G6/SC, G6/TS, G6+/TS, G6+, BLK-G6, L-G6, L-G6.1, L-G6.2, L-G6.3, L-G6.3/BFG, G7, BLK-G6+, BLK-G6+/AC, BLK-G6+/HL, BLK-G6+/SC, BLK-G6/TS, BLK-G6+/TS, BLK-G7, G7.2, G8, BLK-G8, G8+, BLK-G8+ L-G7, L-G7.1, L-G7.2, L-G7.3, L-G8, L-G8.1, L-G8.2, L-G8.3, L-G8.3/BFF, L-G8.3/BFG, L-G8.3/BGT, M-G2+, BLK M-G2+, BLK M-G2.C+, BLK M-G2.F+, BLK M-G2.H+, BLK M-G2+/AC, BLK M-G2.C1+/AC, BLK M-G2.F1+/AC, BLK M-G2.H1+/AC, ML-G9, BLK ML-G9, ML-G9+, BLK ML-G9+, BLK-G10, BLK-G10+, BLK G10+/AC, BLK-G10+/HL, ML-G10, BLK ML-G10, ML-G10+, BLK ML-G10+, ML-G10.a, BLK ML-G10.a, ML-G10.a+, BLK ML-G10.a+, BLK ML-G10.B+, BLK ML-G10.C+, BLK ML-G10.C1+/AC, BLK ML-G10 +/t, BLK ML-G10+/TS, XL-G2.3/BFG, XL-G9, XL-G9.2, XL-G9.3, XL-G9.3/BFG, XL-G10.2, XL-G10.3, XL-G10.c, XL-G10.d, XL-G10.d/BFG, XL-G10.3/BFG, XL-G11.2, XL-G11.3, XL-G11.3/BFG or XL-G11S.3/BFG
Rayzon Solar	Rayzon Solar modules with 35 and 40 mm frames RSYxxxAAZZ Where “Y” can be blank or B; “AA” can be blank, 132 or 144; and “ZZ” can be TGC or WC
Recom	Recom modules with 35 and 40 mm frames RCM-xxx-6yy Where “yy” can be MA, MB, ME or MF
REC Solar	REC modules with 30 and 38 mm frames RECxxxYYZZ Where “YY” can be AA, M, NP, NP2, NP3, PE, PE72, TP, TP2, TP2M, TP2SM, TP2S, TP3M or TP4; and “ZZ” can be blank, Black, BLK, BLK2, SLV, 72, Pro M, Pure, Pure-R, Pure-RX, Pure-RX-DC or Pure 2

MANUFACTURER	LIST OF UL 2703 APPROVED PV MODULES*
Renesola	ReneSola modules with 30, 35 and 40 mm frames AAxxxY-ZZ Where “AA” can be SPM(SLP), JC or RS6; “Y” can be blank, F, M, S or NBG; and “ZZ” can be blank, Ab, Ab-b, Abh, Abh-b, Abv, Abv-b, Bb, Bb-b, Bbh, Bbh-b, Bbv, Bbv-b, Db, Db-b, 24/Bb or E3
Renogy	Renogy Modules with 35 and 40 mm frames RZZ-xxxY-AAA Where “ZZ” can be NG or SP; “Y” can be D or P; and “AAA” can be blank, 144, BB-108, BB-120 or BK-120
Risen	Risen Modules with 30, 35 and 40 mm frames RSMyy-a-xxxZZ Where “yy” can be 60, 72, 110, 120, 132 or 144; “a” can be 6, 7 or 8; and “ZZ” can be M, P or BMDG
Saatvik	Saatvik Modules with 35 mm frames SGExxx-YYYZZZ Where “YYY” can be 108 or 144; and “ZZZ” can be MHC, MBHC or MHCB
S-Energy	S-Energy modules with 35 and 40 mm frames SABB-CCYYY-xxxZ Where “A” can be C, D, L or N; “BB” can be blank, 20, 25, 40 or 45; “CC” can be blank, 60 or 72; “YYY” can be blank, BDE, MAE, MAI, MBE, MBI, MCE or MCI; and “Z” can be V, M-10, P-10 or P-15
SEG Solar	SEG Solar with 30, 35 and 40 mm frames SEG-aYY-xxx-ZZ Where “a” can be blank, 6 or B; “YY” can be blank, MA, MB, PA, or PB; and “ZZ” can be blank, BB, BG, BW, HV, WB, WW, BMB, BMA-HV, BMA-BG, BMA-TB, BMB-TB, BMB-HV, BMD-BG, BMD-HV, BMB-BG, BTA-BG, BTB-BG, BTC-BG, BTD-BG, BTZ-BG, BMD-TB or BMZ-BG
Seraphim	Seraphim modules with 30, 33, 35 and 40 mm frames SRP-xxx-YYY-ZZ Where “xxx” is the module power rating; and “YYY” can be BMA, BMB, BMD, BTA, BTC, BTD, BTE, 6MA, 6MB, 6PA, 6PB, 6QA-XX-XX, and 6QB-XX-XX; ZZ is blank, BB, BG or HV
Sharp	Sharp modules with 35 and 40 mm frames NUYYxxx Where YY can be SA or SC

MANUFACTURER	LIST OF UL 2703 APPROVED PV MODULES*
Shinsung E&G	Shinsung Modules with 35 mm frames SSVxxx-144MH
Silfab	Silfab Modules with 35 and 38 mm frames SYY-Z-xxxAb Where "YY" can be IL, SA, LA, SG or LG; "Z" can be blank, M, P, or X; "A" can be blank, B, H, M, N, Q or X; and "b" can be A, C, C+, D, G, K, L, M, M+, N, T, U or X
Sinotec	Sinotec Modules with 30 and 35 mm frames STS-xxxP-aabb Where "aa" can be 54 or 72; and "bb" can be BB, DB or DD
Sirius PV	Sirius PV Modules with 35 mm frames ELNSMzzM-HC-yy-xxx Where "zz" can be 48, 54 or 72; and "yy" can be blank, BF, N or N-SNRN
Solar4America	Solar4America modules with 30, 35 and 40 mm frames S4Axxx-YYzzAA Where "YY" can be 60, 72, 108 or 144; "zz" can be MH5, MH10, TH10 or TH16; and "AA" can be blank or BB, BW, SW or STT
Solarever	Solarever modules with 30, 35 mm frames SE-zzz*yy-xxxM-aaa Where "zzz" can be 166 or 182; "yy" can be 83, 91 or 105; and "aaa" can be 108, 96-BD, 120-BH, 144 or 144N
Solaria	Solaria modules with 35 and 40 mm frames PowerA-xxxY-ZZ Where "A" can be X or XT, "Y" can be R or C; and "ZZ" can be blank, AC, BD, BX, BY, PD, PL, PM, PM-AC, PX, PZ, WX, WZ or 4T
Solarcity (Tesla)	Solarcity modules with 40 mm frames SCxxxYY Where "YY" can be blank, B1 or B2
SolarSpace	SolarSpace modules with 30 and 35mm frames SSB-yyzzz-xxxA Where "B" can be 8 or A; "yy" can be 48, 54, 66 or 72; "zzz" can be HD, HDB or HSB; and "A" can be M or N
SolarTech	SolarTech modules with 40 mm frames AAA-xxxYY Where "AAA" can be PERCB-B, PERCB-W, HJTB-B, HJTB-W or STU; "YY" can be blank, PERC or HJT

MANUFACTURER	LIST OF UL 2703 APPROVED PV MODULES*
SolarWorld AG	SolarWorld Sunmodule Plus, Protect, Bisun, XL, Bisun XL, may be followed by mono, poly, duo, black, bk, or clear; modules with 31 and 33 mm frames SW-xxx
SolarWorld Americas	SolarWorld Sunmodule Plus, Protect, Bisun, XL, Bisun XL, may be followed by mono, poly, duo, black, bk, or clear; modules with 33 mm frames SWA-xxx
Sonali	Sonali Modules with 35 and 40 mm frames SS-M-xxx-yyy Where “M” can be blank or M; and “yyy” can be blank, 108M-B or W-M60H M10
Star Solar	Star Solar modules with 35 mm frames Star-xxxW-YYY-ZZZ Where “YYY” can be M60H or M60HB; and “ZZZ” can be blank or M10
Stion	Stion Thin film modules with 35 mm frames STO-xxx or STO-xxxA
SunEdison	SunEdison Modules with 35 and 40 mm frames SE-YxxxZABCDE Where “Y” can be B, F, H, P, R, or Z; “Z” can be 0 or 4; “A” can be B,C,D,E,H,I,-J,K,L,M, or N ; “B” can be B or W; “C” can be A or C; “D” can be 3, 7, 8, or 9; and “E” can be 0, 1 or 2
Sungold	Sungold Modules with 35 mm frames SG-xxxWM
Suniva	Suniva modules with 35, 38 and 40 mm frames OPTxxx-AA-B-YYY-Z MVXxxx-AA-B-YYY-Z Where “AA” is either 60 or 72; “B” is either 4 or 5; “YYY” is either 100,101,700,1B0, or 1B1; and “Z” is blank or B
Sunket	Sunket modules with 35 mm frames SKTxxxM10-144S1
Sunmac Solar	Sunmac modules with 30 and 35 mm frames SMxxxMaaaZZ-YY Where “aaa” can be 660, 754 or 772; “ZZ” can be NH or SH; and “YY” can be BB or TB

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Sunpower	Sunpower standard (G3 or G4) or InvisiMount (G5) 35, 40 and 46 mm frames SPR-Zb-xxx-YY Where "Z" can be A, E, M, P or X; b can be blank, 17, 18, 19, 20, 21, or 22; and YY can be blank, BLK, COM, C-AC, D-AC, E-AC, BLK-E-AC, G-AC, BLK-G-AC, H-AC, BLK-H-AC, BLK-C-AC, or BLK-D-AC
Sunpro	Sunpro Modules with 30 and 35 mm frames SPDGxxx-NyyyM10 Where "yyy" can be 108 or 144
Sunspark	Sunspark modules with 30, 35 and 40 mm frames SYYBB-xxxZ-A Where "YY" can be G, MX or ST; "BB" can be blank, 7F54M(H) or 7G72M(H); and "Z" can be blank, M, MB, M3, M3B, P or W; and "A" can be blank, 60 or 72
Suntech	Suntech Modules with 35 and 40 mm frames STPxxxy-zz/aa Where "y" is blank or S; and "zz" can be 20, 24, A60, A72U, B60 or B72; and "aa" can be Vd, Vem, Vfw, Vfh, Vnh, Wdb, Wde, Wd, Wfhb or Wnhb
Talesun	Talesun modules with 30, 35 and 40 mm frames TAByZZaa-xxx-b Where "A" can be D, M or P; "B" can be 3, 6, 7 or 9; "y" can be blank, F, G, H, I or L; "ZZ" can be 48, 54, 60, 66, 72 or 78; "aa" can be M, M(H), or P; and "b" can be blank, B, T, or (H)
Tata Power Renewable Energy	TP Solar Ltd modules with 30mm frames TPxxxZZZ Where "ZZZ" can be HG10B or VG12R16NB
Tesla	Tesla modules with 40 mm frames TZZxxxY Where "ZZ" can be blank or SP; and "Y" can be blank, H or S
Thornova	Thornova Modules with 30 and 35 mm frames TS-YYZZ(xxx)-X Where "YY" can be BB, BBT, BG, BGT, BW or BWT; "ZZ" can be 48, 54, 60, 66 or 72; and "X" can be blank, G11, G12R or X
Topco Solar	Topco Solar modules with 30mm frames TPM7-SH108-xxx/M

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Trina	Trina Modules with 30, 35 and 40 mm frames TSM-xxxYYZZ Where "YY" can be DD05, DD06, DD14, DE14, DE15, DE15V, DEG15, DE-G15VC, DE18M, DEG18MC, DE09, DE19, DEG19C.20, DE06X, PA05, PC05, PD05, PD06, PA14, PC14, PD14, PE14, PE15, NE19RC, NED19RC, NEG19RC, NE09RC, NEG9RH, NE09RH.05 or NFG19RC ; and "ZZ" can be blank, .05, .05(II), .08, .08(II), .10, .18, .08D, .18D, 0.82, .002, .00S, 05S, 08S, .20, .20(II), .25, A, A.05, A.08, A.10, A.18, (II), A(II), A.05(II), A.08(II), A.082(II), A.10(II), A.18(II), C.05, C.07, C.05(II), C.07(II), H, H(II), H.05(II), H.08(II), HC.20(II), HC.20(II), M, M(II), M.05(II), MC.20(II)
Universal	Universal Solar Modules with 35 mm frames UNI-xxx-yyyZZZ-aa Where "yyy" can be 108, 120 or 144; "ZZZ" can be M, MH, BMH; and "aa" can be blank, BB or DG
URE	URE modules with 30 and 35 mm frames DyZxxxaa Where "D" can be D or F; "y" can be A, B, 6 or 7; "Z" can be F, K, L or M; and "aa" can be B7G, B8G, BFG, BFG-BB, C8G, DFG-BB, H3A, H4A, H8A, L4A, E7G-BB, E8G, E8G-BB, MFG, MFG-BB or M7G-BB
Vikram	Vikram solar modules with 30, 35 and 40 mm frames XVSyy.ZZ.AAA.bb Where "X" can be blank, Hypersol, Paradea, Prexos or Somera; "yy" can be M, P, MBB, MDH, MDHT, MH, MS, MHBB, or PBB; "ZZ" can be 54, 60, 72 or 78; "AAA" is the module power rating; and "bb" can be 03, 04 or 05
VSUN	VSUN modules with 30, 35 and 40 mm frames VSUNxxxA-YYz-aa Where "A" can be blank or N; "YY" can be 60, 72, 96, 108, 120, 132, 144 or 156; "z" can be M, P, MH, PH, BMH, BMHR or BMHS; and "aa" can be blank, BB, BW, DG, DG-BB or DG-BT
Waaree	Waaree modules with 30, 35 and 40 mm frames AA-yy-xxx Where "AA" canbe WS, Bi or BiN; and "yy" can be blank, M, MB, MD, MDI, MDIB, 08, 21, 33, 55, 57 or 66

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Winaico	Winaico modules with 35 and 40 mm frames Wsy-xxxZa Where “y” can be either P or T; “Z” can be either M, P, or MX; and “a” can be blank or 6
Yingli	Yingli modules with 30, 35 and 40 mm frames YLxxxZ-yy Where “Z” can be D or P; “yy” can be blank, 29b, 30b, 34d, 35b, 36b, 37e 1/2, 37e 1500V 1/2, 40d, 49e 1/2 or 49e 1500V 1/2
Yotta	Yotta modules with 30 and 35 mm frames YSM-Bxxx-ZZ-72-1 Where “ZZ” can be 06 or 10
Zeus	Zeus Solar Modules with 40 mm frames ZxxxM-HB
ZN Shine	ZN Shine modules with 30 and 35 mm frames ZXMY-AAA-xxx/M Where “Y” can be 6, 7 or 8; “AAA” can be 72, NH120, NH144, NHDB144, NHLDD144, SH108, SH144, SHDB120, SHDB144, SHLDD120, SHLDD144, TP120, TPLDD120, UH108, UHLDD108 or UHLDD144; and “M” can be M or N

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