FLUSH MOUNT
DISCLAIMER

This manual describes proper installation procedures and provides necessary standards required for product reliability. Warranty details are available on 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 that the installation is completed by a licensed solar professional. All electrical installation and procedures should be conducted by a licensed and bonded electrician or solar contractor. Routine maintenance of a module or panel shall not involve breaking or disturbing the bonding path of the system.
• 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 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.
• Comply with all applicable fire codes including, but not limited to, keeping walkways clear and avoiding obstacles.
• Ensure provided information is accurate. Issues resulting from inaccurate information are the installer’s responsibility.
• Validate foundation parameters prior to installation, as a local geotechnical report may be required to assess ground conditions. We recommend consulting with a local engineer familiar with local regulations and build site requirements, including soil conditions, terrain and load criteria. All parameters may impact foundation requirements.
• 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.
• Ensure provided information is accurate. Issues resulting from inaccurate information are the installers’ responsibility.
• 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. If corrosion is found, replace affected components 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 microinverters and power optimizers.
• Review module manufacturer’s documentation to ensure compatibility and compliance with warranty terms and conditions.

© 2018 IRONRIDGE, INC. VERSION 1.60
RATINGS

UL 2703 LISTED

ETL US
#5003320
#5003807

Intertek

• Max Overcurrent Protective Device (OCPD) Rating: 25A
• Max Module Size: 24ft²
• Module Orientation: Portrait or Landscape
• Allowable Design Load Rating: meets minimum requirements of the standard (10 PSF downward, 5 PSF upward, 5 PSF lateral). Actual system structural capacity is defined by PE stamped certification letters.

CLASS A SYSTEM FIRE RATING PER UL 1703

• Any Roof Slope with Module Types 1, 2, and 3
• Any module-to-roof gap is permitted, with no perimeter guarding required. This rating is applicable with any third-party attachment.
• Class A rated PV systems can be installed on Class A, B, and C roofs without affecting the roof fire rating.

WATER SEAL RATINGS: UL 441 & TAS 100-95 (FLASHFOOT2)

• Tested and evaluated without sealant.
• Any roofing manufacturer approved sealant is allowed. Ratings applicable for roof slopes between 2:12 and 12:12

STRUCTURAL CERTIFICATION

• Designed and Certified for Compliance with the International Building Code & ASCE/SEI-7

MARKINGS

Product markings are located on the 3/8" flange hex nut or Grounding Lug bolt head.
CHECKLIST

PRE-INSTALLATION
☐ Verify module compatibility. See Page 9 for info.

TOOLS REQUIRED
☐ Cordless Drill (non-impact)
☐ Impact Driver (for lag bolts)
☐ Torque Wrench (0-250 in-lbs)
☐ 5/16" Socket
☐ 7/16" Socket
☐ 1/2" Socket
☐ String Line

TORQUE VALUES
☐ FlashFoot2 Lag Bolts (7/16" Socket): Fully seat
☐ Bonded Splice Screws (5/16" Socket): 20 in-lbs
☐ Grounding Lug Nuts (7/16" Socket): 80 in-lbs
☐ Grounding Lug Terminal Screws (7/16 Socket): 20 in-lbs
☐ Universal Fastening Object (7/16" Socket): 80 in-lbs
☐ Expansion Joint Nuts (7/16" Socket): 80 in-lbs
☐ Flush Standoffs (1/2" Socket): 140 in-lbs
☐ Microinverter Kit Nuts (7/16" Socket): 80 in-lbs
☐ Frameless Module Kit Nuts (7/16" Socket): 80 in-lbs
☐ 3/8" Bonding Hardware Kit Nuts (7/16" Socket): 250 in-lbs

If using previous version of: FlashFoot, Integrated Grounding Mid Clamps, Grounding Lug, End Clamps, and Expansion Joints please refer to Alternate Components Addendum (Version 1.20).
1. ATTACH BASES

Install roof attachments. Mount Slotted L-Feet, FlashFoot2, or other compatible roof attachment per manufacturer's instructions.

- IronRidge's all-in-one FlashFoot2 roof attachment is for pitched, composition shingle roofs. Refer to Page 7 or provided manual.

- Tested or evaluated third-party roof attachments:
  - Anchor Products - U-Anchor
  - S-5! Standing Seam Metal Roof Clamps - Certification of metal roof clamps includes bonding to both painted and galvalume metal roofs. Tighten clamp set screws to 130-150 in-lbs (≥ 24 gauge) or 160-180 in-lbs (22 gauge) roofs. Tighten S-5! M10 bolt to 240 in-lbs or S-5! Mini M8 bolt to 156 in-lbs.
  - EcoFasten Green Fasten GF-1 Anchors
  - QuickMount PV Roof Mounts and Tile Hooks - Tile Hook attaches to XR Rail using 3/8" Bonding Hardware Kit torqued to 250 in-lbs.
  - Quickscrews Solar Roof Hooks, E jot Aluminum Roof Hooks, Unirac Creotec Tile Hooks, or Solarhooks - Attach to XR Rails with L-Foot or 3/8" Bonding Hardware Kit torqued to 250 in-lbs.

- Refer to Page 7 for installing Standoffs

2. PLACE RAILS

A. CONNECT SPLICES

Use Bonded Splices, when needed, to join multiple sections of rail. Insert Bonded Splice 6" into first rail and secure with two self-drilling screws, spacing them approximately 1" apart and tightening to 20 in-lbs. Slide second rail over Bonded Splice and secure with two more self-drilling screws.

- Rows exceeding 100 feet of rail must use Expansion Joints.
- For XR10 and XR100 rails, insert screws along the provided lines.
- Refer to Structural Certification letters for rail splice location requirements.
- Screws can be inserted on front or back of rails.

B. PREPARE HARDWARE

Slide square-headed bolts into side-facing rail slot. Space out bolts to match attachment spacing.

- Tape ends of rail, to keep bolts from sliding out while moving.
- If using t-bolts, carry hardware onto roof and proceed.

C. ATTACH RAILS

Drop rail with hardware into roof attachment. Level rail at desired height, then torque to 250 in-lbs.

- Rail can face either upslope or downslope on roof.
3. SECURE LUGS

Insert T-bolt in top rail slot and torque hex nut to **80 in-lbs**. Install a minimum 10 AWG solid copper or stranded grounding wire. Torque terminal screw to **20 in-lbs**.

- Ground Lugs are only needed on one rail per continuous row of modules, regardless of row length (unless frameless modules are being used, see Page 8).
- If using Enphase microinverters, Grounding Lugs may not be needed. See Page 8 for more information.
- Grounding Lugs can be installed anywhere along the rail and in either orientation shown.
- Grounding Lugs are intended for use with one solid or stranded copper wire, conductor size 10-4AWG.

4. SECURE MODULES

A. SECURE FIRST END

Place first module in position on rails, a minimum of 1” from rail ends. Snap Stopper Sleeves onto UFO. Fasten module to rail using the UFO, ensuring that the UFO is hooked over the top of the module. Torque to **80 in-lbs**.

- Ensure rails are square before placing modules.
- Hold Stopper Sleeves on end while torquing to prevent rotation.

B. SECURE NEXT MODULES

Place UFO into each rail, placing them flush against first module. Slide second module against UFO. Torque to **80 in-lbs**. Repeat for each following module.

- When reinstalling UFO, move modules a minimum of 1/16” so UFOs are in contact with a new section of module frame.
- If using Wire Clips, refer to Page 7.

C. SECURE LAST END

Place last module in position on rails, a minimum of 1” from rail ends. Snap Stopper Sleeves onto UFO. Secure UFO Clamps on rails, ensuring they are hooked over top of module. Torque to **80 in-lbs**.

- Hold Stopper Sleeves on end while torquing to prevent rotation.
- Repeat all steps for each following row of modules.
GROUNDING STRAP EXPANSION JOINT

Grounding Strap Expansion Joints are required for thermal expansion of rows exceeding 100 feet of rail.

Insert Internal Splice into first rail and secure with screw. Assemble and secure Grounding Strap 3/8" from rail end. Slide second rail over Internal Splice leaving 1" gap between rails. Attach other end of Grounding Strap with hardware, and torque hex nuts to 80 in-lbs.

- Second Bonded Splice screw is not used with Expansion Joints.
- Do not install module over top of expansion joint location.

*Grounding Lugs and Wire are not required in systems using certain Enphase microinverters.
FLASHFOOT2

Locate roof rafters and mark locations on roof. Drill 1/4” pilot holes and backfill with approved sealant. Slide flashing between 1st and 2nd course of shingles, ensuring flashing doesn't overhang the downhill shingle. Line up with pilot hole and insert supplied lag bolt with washer through flashing. Fully seat lag bolt. Place Cap onto flashing in desired orientation for E/W or N/S rails and rotate 180 degrees until it locks into place.

Rail can be installed on either side of FlashFoot2 Cap.

END CAPS

End Caps add a completed look and keep debris and pests from collecting inside rail.

Firmly press End Cap onto rail end.

End Caps come in sets of left and right. Check that the proper amount of each has been provided.

WIRE CLIPS

Wire Clips offer a simple wire management solution.

Firmly press Wire Clip into top rail slot. Run electrical wire through open clip. Snap closed once all wires have been placed.

FLUSH STANDOFFS

Attach Standoffs to roof locations with lag bolts (not included). Place flashing over Standoff. Attach L-Foot on Standoff washer with hardware. Torque to 140 in-lbs.
MICROINVERTER KITS

Use IronRidge’s Microinverter Kit to bond compatible microinverters and power optimizers to the racking system.

Insert Microinverter Kit T-bolt into top rail slot. Place compatible microinverter or power optimizer into position and tighten hex nut to 80 in-lbs.

COMPATIBLE PRODUCTS

Enphase
M250-72, M250-60, M215-60, C250-72, S230, S280, IQ 6, IQ 6 PLUS, Q Aggregator

Darfon
MIG240, MIG300, G320, G640

Solar Edge
P300, P320, P370, P400, P405, P600, P700, P730, P800p, P800s

SYSTEMS USING ENPHASE MICROINVERTERS

IronRidge systems using approved Enphase products eliminate the need for lay-in lugs and field installed equipment grounding conductors (EGC). This solution meets the requirements of UL 2703 for bonding and grounding and is included in this listing.

The following Enphase products are included in this listing: Microinverters M250-72, M250-60, M215-60, C250-72, and Engage cables ETXX-240, ETXX-208, ETXX-277.

- A minimum of two inverters mounted to the same rail and connected to the same Engage cable are required.
- The microinverters must be used with a maximum 20 A branch rated overcurrent protection device (OCPD).

FRAMELESS MODULE KITS

Insert Frameless Kit T-bolt in top rail slot. Place star washer over T-bolt, allowing it to rest on top of rail. Secure module clamps with a hex nut and torque to 80 in-lbs.

- Tested or evaluated module clamps:
  - Sunforson silver or black SFS-UTMC-200(B) mid and SFS-UTEC-200(B) end clamps.
  - Sunpreme silver or black mid and end clamps with part numbers 7500105X where "X" is 1, 5, 6 or 7.
  - IronRidge silver or black mid and end clamps with part numbers FMLS-XC-001-Y where "X" is E or M and "Y" is B or blank.

- Follow module manufacturer’s installation instructions to install the module clamps.
- Frameless modules require using a Grounding Lug on every rail.
- For Sunpreme Modules Only: If required to use slide prevention hardware, see Module Slide Prevention Addendum (Version 1.10).
The Flush Mount System may be used to ground and/or mount a PV module complying with UL 1703 only when the specific module has been evaluated for grounding and/or mounting in compliance with the included instructions. Unless otherwise noted, “xxx” refers to the module power rating and both black and silver frames are included in the certification.

<table>
<thead>
<tr>
<th>MAKE</th>
<th>MODELS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Astronergy Solar</td>
<td>Modules with 35, 40, or 45mm frames and model identifier aaSM66yyPzz-xxx; where “aa” is CH or A; “yy” is either 10 or 12; and “zz” is blank or (BL). Frameless modules with model identifier CHSM6610P(DG)-xxx.</td>
</tr>
<tr>
<td>Axitec</td>
<td>Modules with 35 or 40mm frames and model identifier AC-xxxY/aa-ZZ; where “Y” is P, L, or M; “aa” is either 60 or 72; and “ZZ” is blank or BL.</td>
</tr>
<tr>
<td>Canadian Solar</td>
<td>Modules with 35 and 40mm frames and model identifier CSbY-xxxZ; where “b” can be 1, 3, or 6; “Y” can be K, P, U, V, or X; and “Z” can be M, P, AG, MS, PX, M-SD, P-AG, P-FG or P-SD, MS-AG, MS-FG, or MS-SD. Frameless modules with model identifier CSbY-xxx-FG; where “b” can be 3 or 6; “Y” can be K, X, or P; and “Z” can be M-FG or P-FG.</td>
</tr>
<tr>
<td>ET Solar</td>
<td>Modules with 35, 40, or 50mm frames and model identifier ET-Y6ZZxxxAA; where “Y” is P, L, or M; “ZZ” is 60 or 72; and “AA” is either 6 or 72.</td>
</tr>
<tr>
<td>Flex</td>
<td>Modules with 35, 40, or 50mm frames and model identifier FXS-xxxYY-ZZ; where “xxx” is the module power rating; “YY” is BB or BC; and “ZZ” is MAA1B, MAA1W, MAB1W, SAA1B, SAA1W, SAC1B, SAC1W, SAD1W, SBA1B, SBA1W, SBC1B, or SBC1W.</td>
</tr>
<tr>
<td>GCL</td>
<td>Modules with 35 and 40mm frames and model identifier GCL-a6/YY xxx; where “a” can be M or P; and “YY” can be 60, 72, or 72H.</td>
</tr>
<tr>
<td>GigaWatt Solar</td>
<td>Modules with 40mm frames and model identifier GWxxxYY; where “YY” is either PB or MB.</td>
</tr>
<tr>
<td>Hanwha Solar</td>
<td>Modules with 40, 45, or 50mm frames and model identifier HSLaaP6-YY-1-xxxZ; where “aa” is either 60 or 72; “YY” is PA or PB; and “Z” is blank or B.</td>
</tr>
<tr>
<td>Heliene</td>
<td>Modules with 40mm frames and model identifier YYZZxxx; where “YY” is 36, 60, 72, or 96; and “ZZ” is M, P, or MBLK.</td>
</tr>
<tr>
<td>Hyundai</td>
<td>Modules with 40, 45, and 50mm frames and model identifier HiS-YxxxZZ; where “Y” can be M or S; and “ZZ” can be MI, MF, MG, SG, RI, RG(BF), RG(BK), TI, or TG.</td>
</tr>
<tr>
<td>Itek</td>
<td>Modules with 40 or 50mm frames and model identifier IT-xxy-YY; where “YY” is blank, HE, or SE, or SE72.</td>
</tr>
<tr>
<td>JA Solar</td>
<td>Modules with 35, 40, and 45mm frames and model identifier JAYYzz-xxzz/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, 60, 72, 60S01 or 72S01; and “aa” can be MP, SI, SC, PR, RE, 3BB, 4BB, 5BB, 5BB.</td>
</tr>
<tr>
<td>Jinko</td>
<td>Modules with 40mm frames and model identifier JKMYxxxZZ-aa; where “Y” is blank or S; “ZZ” is P, PP, M; and “aa” is 60, 60B, 60-J4, 60b-J4, 60(Plus), 60-V, 72, or 72-V. Frameless modules with model identifier JKMMxxxPP-DV.</td>
</tr>
<tr>
<td>Kyocera</td>
<td>Modules with 46mm frames and model identifier KYxxxZZ-aa; where “Y” is D or U; “ZZ” is blank, GX, or SX; and “AA” is either LPU, LFU, LPU, LPS, LPB, LFB, LFB2, LPB2, 3AC, 3BC, 3FC, 4AC, 4BC, 4FC, 4UC, 5AC, 5BC, 5FC, 5UC, 6BC, 6FC, 8BC, 8BC, 6MCA, or 6MPA.</td>
</tr>
<tr>
<td>LG</td>
<td>Modules with 35, 40, and 46mm frames and model identifier LGXZYYZbb; where “Y” is A, E, N, Q, S; &quot;a&quot; is 1 or 2; &quot;Z&quot; is C, K, T, or W; and &quot;bb&quot; is A3, A5, B3, G3, G4, or K4.</td>
</tr>
<tr>
<td>Longi</td>
<td>Modules with 40mm frames and model identifier LR6-YY-xxxM; where &quot;YY&quot; can be 60, 72, or 72HV.</td>
</tr>
<tr>
<td>Mission Solar</td>
<td>Modules with 40mm frames and model identifier MSExxZZaa; where “ZZ” can be MM, SE, SO or SQ; and “aa” can be 1J, 4J, 4S, 5K, 5T, 6J, 6S, or 6W.</td>
</tr>
</tbody>
</table>
### Module Compatibility

<table>
<thead>
<tr>
<th>MAKE</th>
<th>Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitsubishi</td>
<td>Modules with 46mm frames and model identifier PV-MYYxxxZZ; where &quot;YY&quot; is LE or JE; and &quot;ZZ&quot; is either HD, HD2, or FB.</td>
</tr>
<tr>
<td>Motech</td>
<td>IM and XS series modules with 40, 45, or 50mm frames.</td>
</tr>
<tr>
<td>Neo Solar Power</td>
<td>Modules with 35mm frames and model identifier D6YxxxZZaa; where &quot;Y&quot; can be M or P; &quot;ZZ&quot; can be B3A, B4A, E3A, E4A, H3A, H4A; and &quot;aa&quot; can be blank, (TF), ME or ME (TF).</td>
</tr>
<tr>
<td>Panasonic</td>
<td>Modules with 35 or 40mm frames and model identifier VBNxxxxYYzz; where &quot;YY&quot; is SA or KA; and &quot;zz&quot; is 01, 02, 03, 04, 06, 06B, 11, 11B, 15, 15B, 16, 16B, 17, or 18.</td>
</tr>
<tr>
<td>Phono Solar</td>
<td>Modules with 35, 40, or 45mm frames and model identifier PSxxxx-YZZ/A; where &quot;Y&quot; is M or P; &quot;ZZ&quot; is 20 or 24; and &quot;A&quot; is F, T or U.</td>
</tr>
<tr>
<td>Prism Solar</td>
<td>Frameless modules with model identifier BiYY-xxxBSTC; where &quot;YY&quot; is 48 or 60.</td>
</tr>
<tr>
<td>REC Solar</td>
<td>Modules with 30, 38 and 45mm frames and model identifier RECxxxYYZZ; where &quot;YY&quot; is M, PE, TP, or TP2S; and &quot;ZZ&quot; is blank, BLK, SLV, or 72.</td>
</tr>
<tr>
<td>Renesola</td>
<td>Modules with 35, 40 or 50mm frames and model identifier JCxxxy-ZZ; where &quot;Y&quot; is F, M or S; and &quot;ZZ&quot; is Ab, Ab-b, Abh, Abh-b, Abv, Abv-b, Bb, Bb-b, Bbh, Bbh-b, Bbv, Bbv-b, Db, or Db-b.</td>
</tr>
<tr>
<td>Renogy</td>
<td>Modules with 40 or 50mm frames and model identifier RNG-xxxY; where &quot;Y&quot; is D or P.</td>
</tr>
<tr>
<td>S-Energy</td>
<td>Modules with 40mm frames and model identifier SNxxxY-ZZ; where &quot;Y&quot; is M or P; and &quot;ZZ&quot; is 10, or 15.</td>
</tr>
<tr>
<td>Seraphim Energy Group</td>
<td>Modules with 40mm frames and model identifier SEG-6YY-xxxZZ; where &quot;YY&quot; can be MA, MB, PA, PB; and &quot;ZZ&quot; can be BB, WB, or WW.</td>
</tr>
<tr>
<td>Seraphim USA</td>
<td>Modules with 40 and 50mm frames and model identifier SRP-xxx-6YY; where &quot;YY&quot; can be MA, MB, PA, PB, QA-XX-XX, and QB-XX-XX.</td>
</tr>
<tr>
<td>Sharp</td>
<td>Modules with 35 or 40mm frames and model identifier NUYYxxx; where &quot;YY&quot; is SA or SC.</td>
</tr>
<tr>
<td>Silfab</td>
<td>Modules with 38mm frames and model identifier SYY-Z-xxx; where &quot;YY&quot; is SA or LA; SG or LG; and &quot;Z&quot; is M, P, or X.</td>
</tr>
<tr>
<td>Solaria</td>
<td>Modules with 40mm frames and model identifier PowerXT xxxY-ZZ; where &quot;Y&quot; can be R or C; and &quot;ZZ&quot; is BX, BY, PX, PZ, WX or WZ.</td>
</tr>
<tr>
<td>SolarTech</td>
<td>Modules with 42mm frames and model identifier STU-xxxYY; where &quot;YY&quot; can be PERC or HJT.</td>
</tr>
<tr>
<td>SolarWorld</td>
<td>Sunmodule Plus, Protect, XL, Bisun, Bisun XL, may be followed by mono, poly or duo and/or black or bk; modules with 31, 33 or 46mm frames and model identifier SW-xxx.</td>
</tr>
<tr>
<td>Stion</td>
<td>Thin film modules with 35mm frames and model identifier STO-xxx or STO-xxxA. Thin film frameless modules with model identifier STL-xxx or STL-xxxA.</td>
</tr>
<tr>
<td>SunEdison</td>
<td>Modules with 35, 40, or 50mm frames and model identifier SE-YxxxZABCDE; where &quot;Y&quot; is B, F, H, P, R, or Z; &quot;Z&quot; is 0 or 4; &quot;A&quot; is B, C, D, E, H, I, J, K, L, M, or N; &quot;B&quot; is B or W; &quot;C&quot; is A or C; &quot;D&quot; is 3, 7, 8, or 9; and &quot;E&quot; is 0, 1 or 2.</td>
</tr>
<tr>
<td>Suniva</td>
<td>Modules with 35, 38, 40, 46, or 50mm frames and model identifiers OPTxxx-AA-B-YYY-Z or MVXxxx-AA-B-YYY-Z; where &quot;AA&quot; is either 60 or 72; &quot;B&quot; is either 4 or 5; &quot;YYY&quot; is either 100,101,700,1B0, or 1B1; and &quot;Z&quot; is blank or B.</td>
</tr>
<tr>
<td>Sunpower</td>
<td>Modules with model identifier Ab-xxx-YY and standard (G3) or InvisiMount (G5) 46mm frame; where &quot;A&quot; is either E, P or X; &quot;b&quot; can be 17, 18, 19, 20, 21, or 22; and &quot;YY&quot; can be blank, NE, BLK, COM, C-AC, D-AC, BLK-C-AC, or BLK-D-AC.</td>
</tr>
<tr>
<td>Sunpreme</td>
<td>Frameless modules with model identifier GXB-xxxYY; where &quot;YY&quot; is blank or SL.</td>
</tr>
<tr>
<td>Suntech</td>
<td>Vd, Vern, Wdb, Wde, and Wd series modules with 35, 40, or 50mm frames.</td>
</tr>
<tr>
<td>Trina</td>
<td>Modules with 35, 40 or 46mm frames and model identifier TSM-yyyyYZZ; where &quot;YY&quot; is PA05, PC05, PD05, PA14, PC14, PD14, PE14, or DD05; and &quot;ZZ&quot; is blank, A, A.05, A.08, A.10, A.18,.05,.08,.10,.18,.08D,.18D, 0.82, A.082(II), .002,.00S, 05S, 08S, A(I), A.08(II), A.05(II), A.10(II), or A.18(II). Frameless modules with model identifier TSM-yyyyY; and &quot;YY&quot; is either PEG5, PEG5.07, PEG14, DEG5(II), DEG5.07(II), or DEG14(II).</td>
</tr>
<tr>
<td>Winaico</td>
<td>Modules with 35 or 40mm frames and model identifier Wsy-xxxz6; where &quot;y&quot; is either P or T; and &quot;zz&quot; is either M or P.</td>
</tr>
<tr>
<td>Yingli</td>
<td>Panda, YGE, and YGE-U series modules with 35, 40, or 50 mm frames.</td>
</tr>
</tbody>
</table>