



FRAME MLPE MOUNT

INSTALLATION GUIDE

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FRAME MLPE MOUNT

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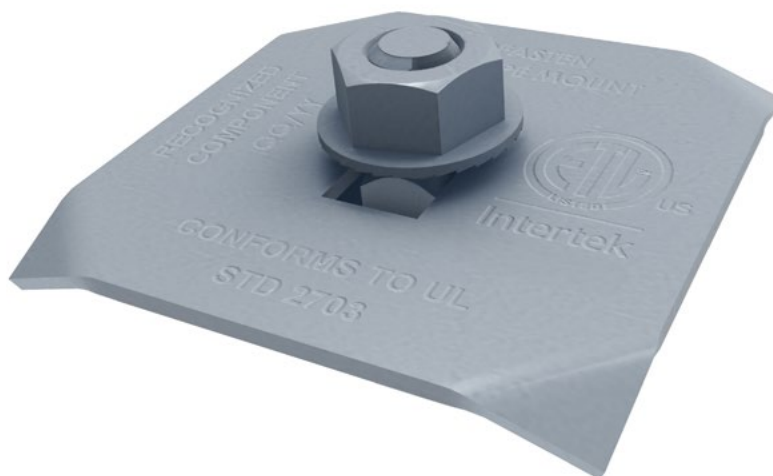
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FRAME MLPE MOUNT

The Frame MLPE Mount is used to mount module level power electronics (MLPE) to standard PV module frames. The Frame MLPE Mount provides a mounting option for the MLPE device to the module frame with any PV Racking system. The Frame MLPE Mount is used to mount and bond an MLPE to a PV module that complies with UL 1703 or UL 61730 when used with a MLPE and PV module that has been evaluated for bonding and/or mounting in compliance with the instructions provided.

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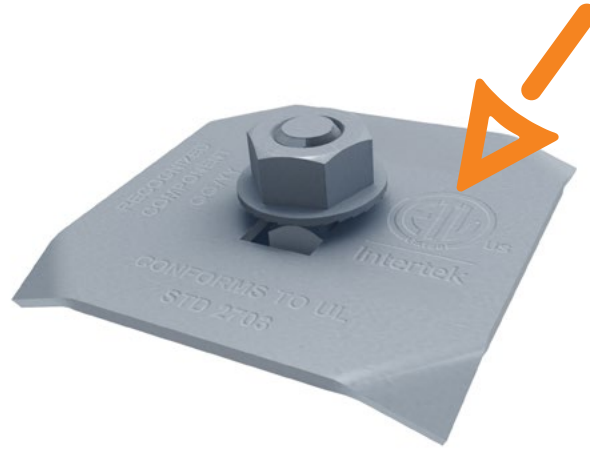
MARKINGS:

RECOGNIZED COMPONENT



Intertek

5017913
5032513



Max System Voltage	1500 V
Max Fuse Rating	40A
Certification	Conforms to UL STD 2703
Warranty	25 Year Material and Workmanship
Module Orientation	Portrait or Landscape
Multiple use Rated Components (Position Independent)	Frame MLPE Mount
Torque Value	144 in-lbs

INSTALLER RESPONSIBILITIES

The Frame MLPE Mount bonds the Module Level Power Electronic device with a 300 series stainless steel bonding plate. The module frame must be grounded by a UL 2703 racking system. The system is to be installed in accordance with the latest National Electrical Code, ANSI/NFPA 70. Any local electrical codes must be adhered in addition to the national electrical codes.

Installer must review module and any third-party manufacturer’s documentation for compatibility and compliance with warranty terms and conditions.

Periodic reinspection of components shall be performed to verify that there is no corrosion detrimental to system strength and electrical conductivity, no loose bolts, and/or other variables that could compromise array safety. Any corroded or damaged components shall be immediately replaced.

RATINGS

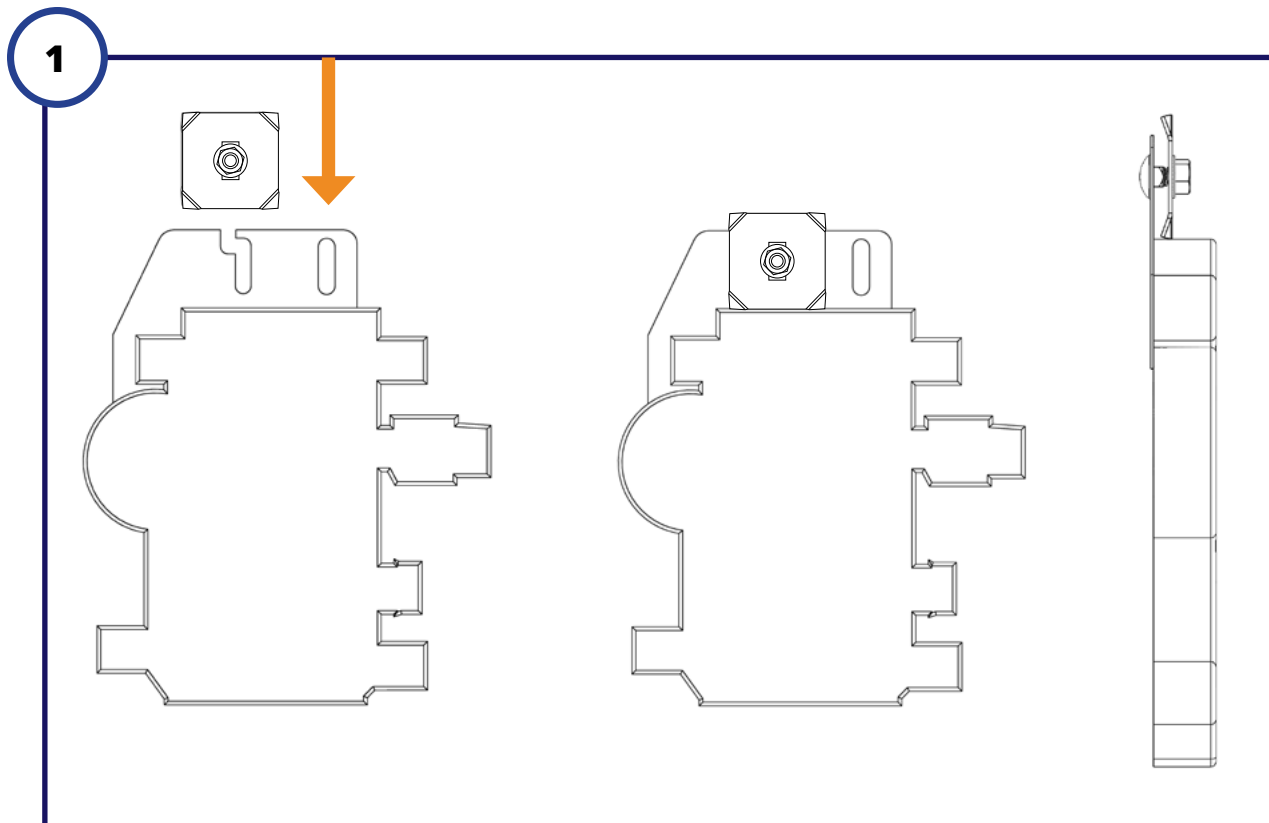
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INSTALLING THE FRAME MLPE MOUNT



- 1 Insert the Frame MLPE Mount into the flange of the micro inverter/power optimizer with the bolt facing away from the panel.
- 2 Slide the micro inverter/power optimizer and the Frame MLPE Mount towards the panel

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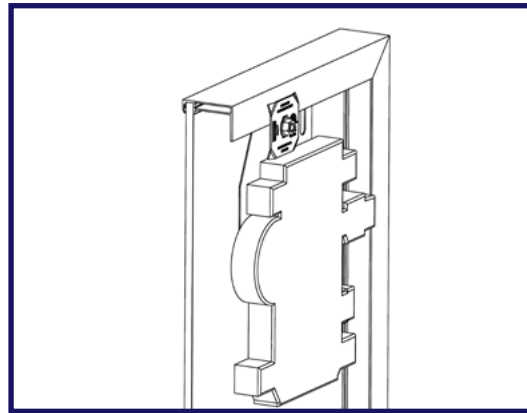
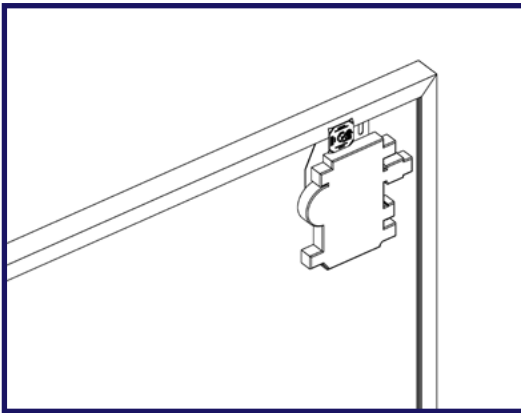


INSTALLING THE FRAME MLPE MOUNT

2A

LANDSCAPE MODULES

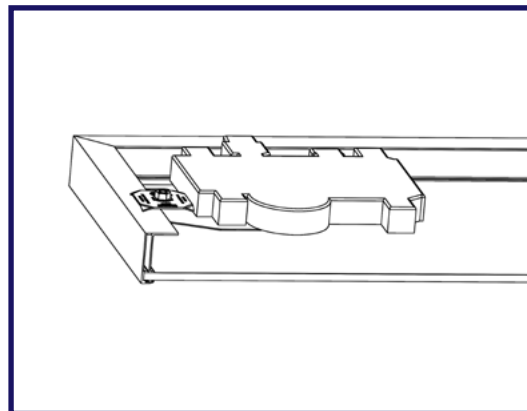
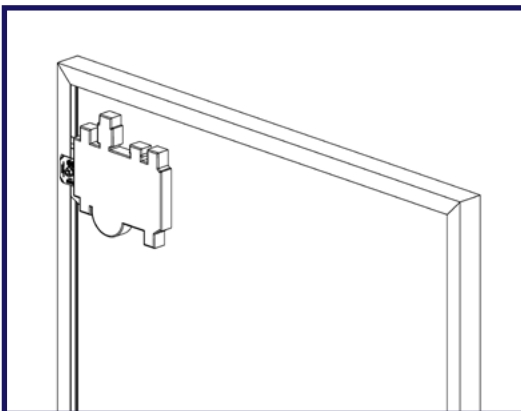
Slide the micro-inverter/power optimizer and the Frame MLPE Mount on to the top-right corner on the short side of the module frame. The flange of the micro inverter should be behind the module frame and the Frame MLPE Mount on the outer part of the module frame.



2B

PORTRAIT MODULES

Slide the micro-inverter/power optimizer and the Frame MLPE Mount on to the top-left corner on the long side of the module frame. The flange of the micro inverter should be behind the module frame and the Frame MLPE Mount on the outer part of the module frame.



INSTALLATION

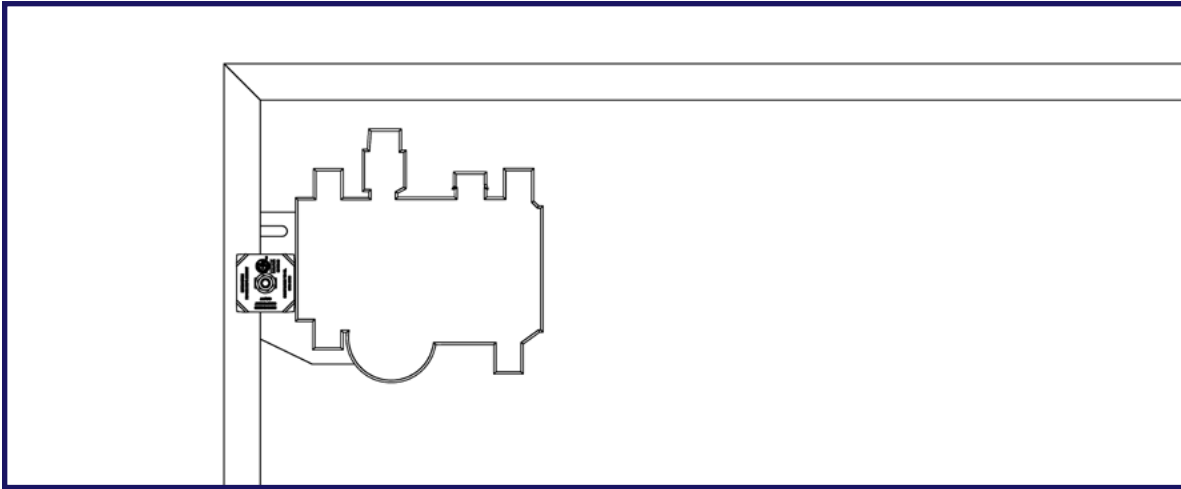
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INSTALLING THE FRAME MLPE MOUNT



- 3** Tighten the bolt to 144 in-lbs to clamp the Frame MLPE Mount and micro-inverter/ power optimizer to the module frame.

COMPATIBILITY

THE FRAME MLPE MOUNT IS COMPATIBLE WITH THE FOLLOWING MLPE DEVICES:

Duracell	D350-M1, D350-M1A-xxx, D400-M1A-xxx, Where "xxx" can be blank, 208A or 240A
Enphase	M250-72, 250-60, M215-60, C250-72, S230, S280, IQ 6, IQ 6+, IQ7, IQ 7A, IQ 7+, IQ7 PD, IQ 7X, Q Aggregator; IQ8-60, IQ8PLUS-72, IQ8A-72, IQ8AC-72, IQ8H-3P-72, IQ8H-208-72, IQ8H-240-72, IQ8HC-72, IQ8M-72, IQ8MC-72, IQ8P-72, IQ8P-3P-72, IQ8X-80; may be followed by -2-US, -E-US, -M-US, or M-DOM US
Hoymiles	HMA-xxxYY-ZZ where "A" can be blank or S, xxx can be 300, 350, 400, 450, 500, 600, 700, 800; "YY" can be NT, 1T, 2T, 4T; and "ZZ" can be blank, NA or 208-NA
Lunar Energy	Maximizer 10-005220 or 10-00522D

NEP	NEP Microinverters BDM-xxx-yyy Where "xxx" can be 300, 300X2, 350, 400; and "yyy" can be blank, 208A or 240A NEP Rapid Shutdown PVG-1, PVG-2, PVG-3, PVG-4
SMA	RoofCommKit-P2-US, TS4-R Module Retrofit Kits (TS4-R-S, TS4-R-O, TS4-R-F)
Solar Edge	C651U, C652U, M1600, P300, P320, P340, P370, P400, P401, P405, P485, P505, P600, P700, P730, P750, P800p, P800s, P801, P850, P860, P950, P960, P1100, P1101, S440, S500, S500B, S650B, S1200, S1201, U650 and U650B
Tigo	Tigo Access Point (TAP) TS4-R-X (where X can be F, M, O, or S) TS4-R-X-DUO (where X can be M, O, or S) TS4-A-X (where X can be F, 2F, O, O-DUO, or S)

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UL 2703 CERTIFIED MODULES

The Frame MLPE Mount is a UL 2703 Recognized product used to mount and electrically bond module level power electronics (MLPE) that have been tested and/or evaluated for use in combination with UL 1703 or UL 61730 Listed Modules and 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. " "

MANUFACTURER	LIST OF UL 2703 APPROVED MODULES
<p>Adani</p>	<p>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</p>
<p>AIONRISE</p>	<p>Aionrise modules with 35 and 40 mm frames AIONyyG1-xxx Where "yy" can be 60 or 72</p>
<p>Amerisolar</p>	<p>Amerisolar modules with 35, 40 and 50 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</p>
<p>Aptos Solar</p>	<p>Aptos modules with 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 or W-DG</p>
<p>Astronergy Solar</p>	<p>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</p>
<p>ASUN</p>	<p>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</p>
<p>Auxin</p>	<p>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</p>



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MANUFACTURER	LIST OF UL 2703 APPROVED MODULES
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 or R-H-HC-BF
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
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

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Dehui	Dehui modules with 30, 35 and 40 mm frames DH-MYYYY-xxx Where "YYY" can be 760, 772, 860, 872; and "Z" can be B, F or W
Ecosolargy	Ecosolargy modules with 35, 40 and 50 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-YYYYxxxAA 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, 40 and 50 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
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

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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
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
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, 45 and 50 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
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
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-DHzzzA8-xxxB Where "zzz" can be 108 or 144; "A" can be N or P; 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, 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

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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
Itek	Itek Modules with 40 and 50 mm frames IT-xxx-YY Where "YY" can be blank, HE, or SE, or SE72
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-HDYNN-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 with 46 mm 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

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MANUFACTURER	LIST OF UL 2703 APPROVED MODULES
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, 40 and 46 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
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 blank, 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 with 46 mm frames 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, 45 and 50 mm frames

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Navitas	Navitas Modules with 35 mm frames NSMxxx-yyy Where “yyy” can be 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
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)
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 or 24; and “A” can be F, 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

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MANUFACTURER	LIST OF UL 2703 APPROVED MODULES
Q CELLS	<p>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</p>
Rayzon Solar	<p>Rayzon Solar modules with 35 and 40 mm frames RSYxxxAAZZ Where “Y” can be blank or B; “AA” can be blank or 144; and “ZZ” can be TGC or WC</p>
Recom	<p>Recom modules with 35 and 40 mm frames RCM-xxx-6yy Where “yy” can be MA, MB, ME or MF</p>
REC Solar	<p>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 or Pure 2</p>
Renesola	<p>ReneSola modules with 35, 40 and 50 mm frames AAxxxY-ZZ Where “AA” can be SPM(SLP) or JC; “Y” can be blank, F, M or S; 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, or 24/Bb</p>

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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 Energy Group	Seraphim modules with 30, 35, 40 and 50 mm frames SRP-xxx-YYY-ZZ Where "xxx" is the module power rating; and "YYY" can be BMA, BMD, 6MA, 6MB, 6PA, 6PB, 6QA-XX-XX, and 6QB-XX-XX; ZZ is blank, BB, BG or HV
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
Shinsung E&G	Shinsung Modules with 35 mm frames SSVxxx-144MH

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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 54 or 72; and "yy" can be blank, BF or N
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 SS8-yyzzz-xxxA Where "yy" can be 54 or 72; "zzz" can be HD, HDB or HSB; and "A" can be M or N
SolarTech	SolarTech modules with 40 and 42 mm frames AAA-xxxYY Where "AAA" can be PERCB-B, PERCB-W, HJT B-B, HJT B-W or STU; "YY" can be blank, PERC or HJT

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SolarWorld AG	SolarWorld Sunmodule Plus, Protect, Bisun, XL, Bisun XL, may be followed by mono, poly, duo, black, bk, or clear; modules with 31, 33 and 46 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-xxxYYY-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, 40 and 50 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, 40, 46 and 50 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, 40 and 50 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, Wfhh 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 TPxxxHG10B
Tesla	Tesla modules with 40 mm frames TxxxY Where "Y" can be 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 54, 60 or 72; and "X" can be blank, G11 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, NE09RH.05 or NFG19RC ; and "ZZ" can be blank, .05, .05(II), .08, .08(II), .10, .18, .08D, .18D, 0.82, .002, .005, 05S, 08S, .20, .20(II), 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 DyZxxxxaa 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, 66, 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 35 and 40 mm frames AAyy-xxx Where "AA" can be WS or Bi; and "yy" can be blank, M, MB, MD, MDI, MDIB, 33, 55, 57 or 66
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

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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 40mm 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, UHLDD108 or UHLDD144; and "M" can be M or N

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Under the PanelClaw brand and Enstall's corporate umbrella, EcoFasten has established a reputation as one of the industry's leading innovators by providing expert solutions for mounting solar PV on any roof. EcoFasten's broad portfolio of solar rooftop mounting systems and attachments stems from the direct needs of solar PV installers. EcoFasten takes pride in providing the right solution for every application.



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