

ROCKIT®

UL 3741 PV HAZARD CONTROL

ADDENDUM GUIDE

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QuickMount // IRONRIDGE

Clicking the page name will take you to that page

TABLE OF CONTENTS	PAGE 01
FEATURES & BENEFITS	PAGE 02
DISCLAIMER	PAGE 03
RATINGS	PAGE 04
APPROVED TESLA EQUIPMENT	PAGE 05
APPROVED SOLIS EQUIPMENT	PAGE 07
NEC INTRODUCTION	PAGE 08
INSTALLATION	PAGE 09
COMPATIBLE MODULES	PAGE 14

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ROCKIT

The RockIt system conforms to UL 2703 and UL 3741 and is the industry's premier railless PV racking system for composition shingle, tile, and metal pitched and flat rooftops. Designed in conjunction with installers, Rocklt quickly & easily installs with a single tool. It features an easy-to-position mount alignment and a top-down leveling system. RockIt 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.
- 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 or 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 provided information is accurate. Issues resulting from inaccurate information are the installer's 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. Any components showing signs of corrosion or damage that compromise safety shall 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. Installers shall refer to the Rocklt System installation manual for complete installation instructions.
- Rocklt components shall not be used as scaffolding, a roof jack, or any form of an anchoring point for roof personnel.
- Ensure that the roof is in good condition prior to installing any QuickMount or IronRidge components.





RATINGS

Max PVHCS System Voltage	1000 VDC
Certification	Conforms To Ansi/UI Std 3741 Standard For Safety Photovoltaic Hazard Control System
List of approved PV Hazard Control Equipment or components evaluated at 1000V	ROCKIT ATTACHMENTS & COMPONENTS Refer to RockIt Installation Guide for installation methods and list of approved components and roof attachments for Composition Shingle, Metal, Tile and Low Slope Roofs.
NOTE: Rocklt was evaluated up to 1000 Vdc. However, per NEC 690.7, PV system DC circuits on one- or two family dwellings are limited to 600 Vdc maximum. PV system DC	ELECTRICAL BALANCE OF SYSTEM COMPONENTS PV Connectors (UL 6703 Listed) shall be compatible and approved for the application PV Wire (UL 4703 Listed)
circuits on other types of buildings are limited to 1000 Vdc maximum.	 • Mantis Side Clip and Mid Clip (UL 1565) • JayBox (UL 1741) • EZ Solar GripClip and GripClip Homerun (UL 1565)
Requirements for PV arrays addressed in UL 3741 are intended for compliance with the National Electrical Code (NEC), NFPA 70, 2017 and later editions and their requirements for controlling electrical shock hazards inside	 •Wiley ACC-FPV and ACC-FPV180 Wire Clips (UL 1565 Listed) •Heyco Sunrunner Wire Clips (UL 1565 Listed) •PV Modules with Max Module Size 30.5 sqft, (refer to Page 14 for approved module list)
the array boundary as addressed in NEC section 690.12(B) (2), Rapid Shutdown of PV Systems on Buildings and with the Canadian Electrical Code (CE Code) C22.1. The inverters and power conversion systems listed within this PVHCS install addendum additionally comply with the 30V in 30 seconds requirements outside the PV array as required in 690.12 (B)(1).	LISTED CONDUIT (ALL SIZES APPLY) • Electrical Metallic Tubing (EMT) (UL 797 Listed) • Rigid Metal Conduit (RMC) (UL 6 Listed) • Intermediate Metal Conduit (IMC) (UL 1242 Listed) • Flexible Metal Conduit (UL 1 Listed) • Liquid Flexible Metal Conduit (UL 360 Listed) • Schedule 40/80 Rigid PVC Conduit (UL 651 Listed) • Listed Conduit Fittings and Grounding Components PV HAZARD CONTROL EQUIPMENT
	Tesla - Page 5, 6 Solis - Page 7 COMMERCIAL INVERTERS See IronRidge/QuickMount Systems Commercial Inverter Appendix

MARKINGS:



5003807, 5033614

CONFORMS TO UL STD 3741







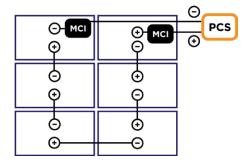
UL 3741 LISTED SYSTEM PV HAZARD CONTROL EQUIPMENT APPROVED TESLA EQUIPMENT WITH MAX SYSTEM VOLTAGE 600V - MCI-1

PHOTOVOLTAIC RAPID	POWER CONVERSION SYSTEM (PCS)		
SHUTDOWN EQUIPMENT (PVRSE)	PV INVERTER (PVI)	ENERGY STORAGE SYSTEMS	
Tesla MCI-1	7.6 kW (1538000)	Powerwall+ (1850000)	
Max Voltage = 600V, Max Imp = 13A, Max Isc = 19A	3.8 kW (1534000)	Powerwall 3 (1707000)	

IMPORTANT: Refer to the applicable Tesla Inverter or Powerwall Installation Manual for specific instructions, including MCI-1 mounting, clearances, ratings, compatible connectors, and rapid shutdown initiation methods. MCI-1 installation configurations shown below are specific to the QuickMount Rockit UL 3741 Listing and supersede MCI-1 configurations shown in the Tesla installation manuals. If using the MCI-2, please refer to and follow Tesla's UL 3741 Listing and installation instructions.

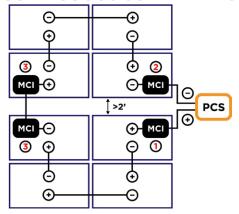
View Tesla Installation Manual

CONTIGUOUS ARRAYS



Where one or more PV strings are connected within a single contiguous array as shown in the figure, Tesla MCI-1s shall at a minimum be installed at both the positive and negative ends of each string between the last module and the homerun to the PCS. If there are multiple arrays each shall be equipped with MCI-1s as shown in the figure.

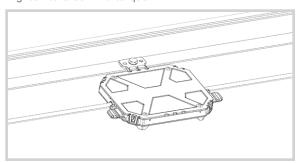
NON-CONTIGUOUS SUB-ARRAYS

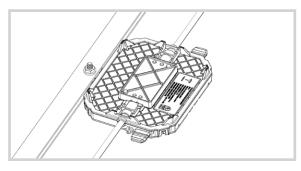


Where any string is connected across non-contiguous sub-arrays separated by more than 2' (see example figure), MCI-1s shall be installed as follows:

- 1. At the positive end of the string between the last module and the PCS homerun.
- 2. At the negative end of the string between the last module and the PCS homerun.
- 3. At both ends of the connection between sub-arrays.

Install MCI-1 in same configuration as shown below with the markings facing the roof. Mount the MCI-1 to the module frame mounting holes using a 1/4"-20 stainless steel bolt (1/2" - 1" length) and serrated flange nut. Tighten to a 80 in-lb torque.









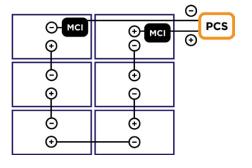
UL 3741 LISTED SYSTEM PV HAZARD CONTROL EQUIPMENT APPROVED TESLA EQUIPMENT WITH MAX SYSTEM VOLTAGE 600V - MCI-2

PHOTOVOLTAIC RAPID	POWER CONVERSION SYSTEM (PCS)		
SHUTDOWN EQUIPMENT (PVRSE)	PV INVERTER (PVI)	ENERGY STORAGE SYSTEMS	
Tesla MCI-2* Max Device Voltage 165V	3.8 kW (1534000)	Powerwall+ (1850000)	
Max System Voltage 600V			
*Always Four Rule - must install four MCI-2s per series string. Review Tesla MCI-2 technical documents for ratings and installation methods.	7.6 kW (1538000)	Powerwall 3 (1707000)	

IMPORTANT: Refer to the applicable Tesla Inverter or Powerwall Installation Manual for specific instructions, including MCI-2 mounting, clearances, ratings, compatible connectors, and rapid shutdown initiation methods. MCI-1 installation configurations shown below are specific to the QuickMount Rocklt UL 3741 Listing and supersede MCI-2 configurations shown in the Tesla installation manuals.

View Tesla Installation Manual

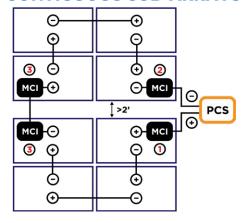
CONTIGUOUS ARRAYS



Where one or more PV strings are connected within a single contiguous array as shown in the figure, Tesla MCI-2s shall at a minimum be installed at both the positive and negative ends of each string between the last module and the homerun to the PCS. Two more MCI-2s are required anywhere within the string, but suggested to be placed between near ends of each string as shown in figure above.

MCI-2s are not allowed to be plugged directly into each other due torisk of damaging the connectors from rotating them.

NON-CONTIGUOUS SUB-ARRAYS



Where any string is connected across noncontiguous sub-arrays separated by more than 2' (see example figure), MCI-2s shall be installed as follows:

- 1. At the positive end of the string between the last module and the PCS homerun.
- 2. At the negative end of the string between the last module and the PCS homerun.
- 3. At both ends of the connection between sub-arrays.

MULTIPLE SUB-ARRAYS

Avoid cases where a string is split over more than 2 sub-arrays. If this cannot be avoided, please use Tesla's 165V inside-the-array PVHCS listing.

NOTE: Use the approved wire management devices on page 4 to mount the MCI-2 to the module frame and support the MCI-2 at the wire leads. See Tesla MCI-2 Installation instructions for more details.





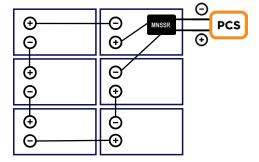
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UL 3741 LISTED SYSTEM PV HAZARD CONTROL EQUIPMENT APPROVED SOLIS EQUIPMENT WITH MAX SYSTEM VOLTAGE 600V:

PHOTOVOLTAIC RAPID SHUTDOWN EQUIPMENT	POWER CONVERSION SYSTEM (PCS)		
(PVRSE)	SOLIS 4G GRID-TIED INVERTER WITH INTEGRATED APSMART PLC TRANSMITTER*	SOLIS HV HOME ENERGY STORAGE INVERTER WITH INTEGRATED APSMART PLC TRANSMITTER*	
	3.6 kW (Solis-1P3.6K-4G-US)	3.8kW (S6-EH1P3.8K-H-US)	
Midnite Solar MNSSR-600S	5 kW (Solis-1P5K-4G-US)	5kW (S6-EH1P5K-H-US)	
Max Voltage = 600V	6 kW (Solis-1P6K-4G-US)	7.6kW (S6-EH1P7.6K-H-US)	
Max. Imp = 10A	7.6 kW (Solis-1P7.6K-4G-US)	9.9kW (S6-EH1P9.9K-H-US)	
Max. Isc = 12A	10 kW (Solis-1P10K-4G-US)	10kW (S6-EH1P10K-H-US)	
		11.4kW (S6-EH1P11.4K-H-US) *When ordering, add -APST to end of model name	

IMPORTANT: Refer to the applicable <u>Solis</u> and Midnite Installation Manuals for specific instructions, including MNSSR mounting, clearances, ratings, compatible connectors, and rapid shutdown initiation methods.

PVRSE INSTALLATION INSTRUCTIONS



Where one or more PV strings are connected within a single contiguous array as shown in the figure, the positive and negative ends of each string shall be connected to the MNSSR. The leads of each MNSSR get connected to the PCS. If there are multiple arrays, then each array each shall be equipped with an MNSSR as shown in the figure.

NOTE: MNSSR products shall be mounted the module frame. Refer to the Midnite Solar installation manual for additional instructions.

UNDERSTANDING UL 3741 AND NEC 690.12

2020/2023 NEC 690.12(B)(2) Controlling Conductors Within the Array Boundary

The Rocklt Photovoltaic Hazard Control System (PVHCS) is a UL 3741 Listed system that complies with NEC 690.12(B)(2), when installed by qualified persons per the installation procedures outlined in the Rocklt System Installation Manual and this Addendum. Please refer to the following pages of this addendum for various example cases of system designs that comply with 690.12(B)(2).

2020/2023 NEC 690.12 Background

2020 NEC690.12 Rapid Shutdown of PV Systems on Buildings requires that all PV arrays installed on or in buildings shall include rapid shutdown functions to reduce shock hazard for Fire Fighters (FF) in accordance with 690.12(A) through (D):

(A) Controlled Conductors

- (1) PV system DC circuits
- (2) Inverter output circuits originating from inverters located within array boundary

(B) Controlled Limits

- (1) Outside Array Boundary: ≤30V within 30 seconds
- (2) Inside Array Boundary The PV System shall comply with one of the following:
 - (1) Listed PV Hazard Control System (UL 3741)
 - (2) ≤80V within 30 seconds after rapid shutdown initiation
 - (3) PV array without exposed wiring methods or conductive parts (NEC 2020 only)

(C) Initiation Devices

Initiation device(s) shall initiate the rapid shutdown function of the PV system

(D) NEC 2020 - Equipment

Equipment that performs rapid shutdown functions other than initiation devices, such as listed disconnect switches, circuit breakers, or control switches.

(D) NEC 2023 - Building with Rapid Shutdown

Buildings with PV systems shall have a permanent label located at each service equipment location to which the PV systems are connected or at an approved readily visible location and shall indicate the location of rapid shutdown initiation devices.

- P NEC 690.2 defines the array as a mechanically and electrically integrated grouping of modules with support structure, including any attached system components such as inverter (s) or dc-to-dc converter(s) and attached associated wiring.
- P NEC 690.12(B) defines the array boundary as 1ft from array in all directions. This indicates that the array boundary can extend 1 ft from the edge of the Rocklt racking or module.





INTRODUCTION TO UL 3741 & NEC 690.12 INSTALLATION METHODS

The following case studies are provided by IronRidge to show examples of installation configurations that comply with NEC 690.12(B), however compliance is not limited to these examples.

Case 1: UL 3741 Listed System, Single Arrays, - Page 8

Case 2: UL 3741 Listed System, Contiguous Sub-Array – Page 9

Case 3: UL 3741 Listed System, Multiple Arrays - Page 10

The simplest installation method to comply with NEC690.12(B) is to utilize the Rocklt UL 3741 system with a single array (Case 1). Installations where sub-arrays can be included within a 1-ft array boundary, or 2-ft total, can be considered a contiguous array (Case 2). With multiple arrays, and more than a 2-ft gap between them, see Case 3.

All inverter and/or energy storage input circuits (DC) outside of the PV array boundary will require the use of Photovoltaic Rapid Shutdown Equipment (PVRSE) to de-energize circuits leaving the array per 690.12(B)(1) after initiation (DC disconnect, AC breaker or AC disconnect).

Inverter and/or energy storage output circuits (AC) are outside of the array boundary and meet the 690.12(B) (1) requirement after initiation (AC breaker or AC disconnect).

Case studies and NEC guidance have not been verified by Intertek.

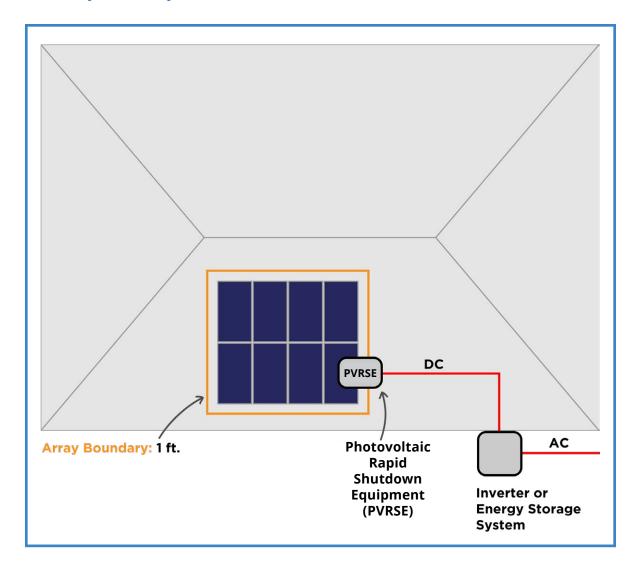
UL 3741 LISTED SYSTEM:

CASE 1 SINGLE ARRAY

Single arrays comply with NEC 690.12(B)(2)(1)

Outside Array Boundary: ≤ 30V within 30 Seconds

Inside Array Boundary: ≤ 600V Residential, 1000V Commercial



CASE 1: MAINTAINING NEC COMPLIANCE FOR SINGLE ARRAYS.

Single arrays require the use of a PVRSE as shown in the figure above to control the conductors outside of the array boundary.

IMPORTANT: Review electrical equipment page(s) for specific approved PVRSE(s) and install methods.

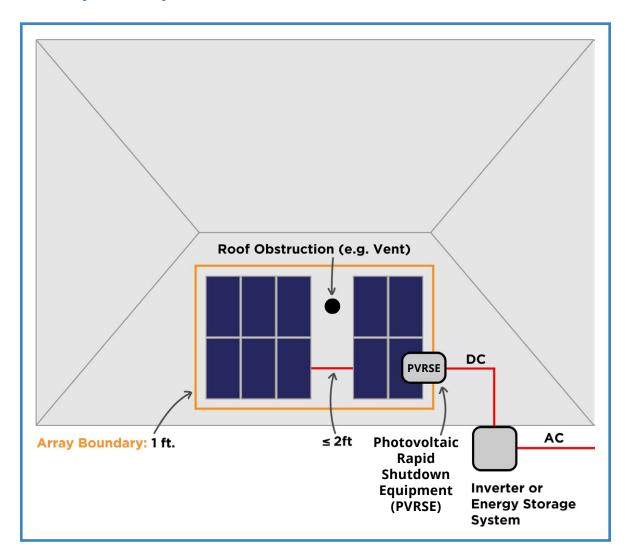
UL 3741 LISTED SYSTEM:

CASE 2 CONTIGUOUS SUB-ARRAY

Sub-array(s) within the same array boundary (\leq 2ft) are considered contiguous and comply with NEC 690.12(B)(2)(1)

Outside Array Boundary: ≤ 30V within 30 Seconds

Inside Array Boundary: ≤ 600V Residential, 1000V Commercial



CASE 2: MAINTAINING NEC COMPLIANCE WITH SUB-ARRAY(S) WITHIN ARRAY BOUNDARY.

Multiple arrays with maximum 2 ft. spacing between array and sub-array result in a contiguous single array boundary and will require the use of a PVRSE as shown above to control conductors outside of the array boundary.

IMPORTANT: Review electrical equipment page(s) for specific approved PVRSE(s) and install methods.

PAGE 11



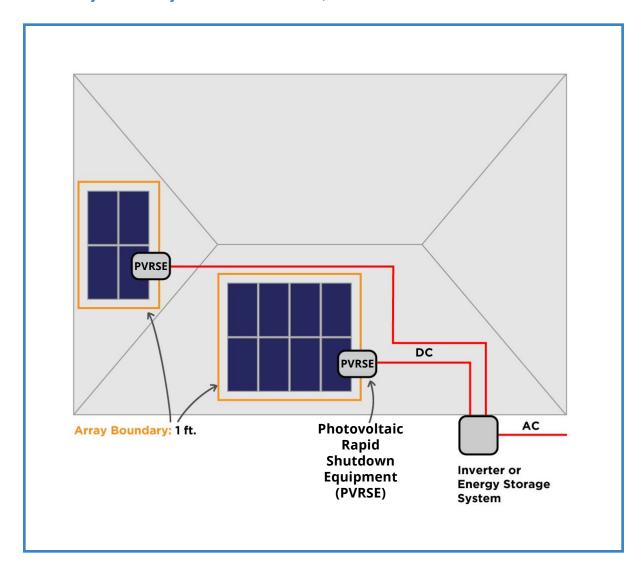
UL 3741 LISTED SYSTEM:

CASE 3 MULTIPLE ARRAYS

Multiple arrays with multiple strings comply with NEC 690.12(B)(2)(1)

Outside Array Boundary: ≤ 30V within 30 Seconds

Inside Array Boundary: ≤ 600V Residential, 1000V Commercial



CASE 3: MAINTAINING NEC COMPLIANCE WITH MULTIPLE ARRAYS.

In multiple arrays with multiple strings, each string will require a PVRSE. When a string is split across non-contiguous (>2ft) sub-arrays, a PVRSE must be installed on both ends of the connection between sub-arrays as shown

IMPORTANT: Review electrical equipment page(s) for specific approved PVRSE(s) and install methods.





UL 3741 LISTED SYSTEM:

WIRE MANAGEMENT GUIDELINES

The Rocklt wire positioning devices noted in the list of approved PVHCS equipment on <u>page 2</u> were evaluated and approved for providing wire positioning to prevent potential Fire Fighter (FF) interactions.

Proper wire management is critical for UL 3741 compliance and requires that all wires be routed in a manner that prevents exposure to potential FF interactions, such as routing wires under modules or through approved listed raceway for wires running between arrays.

When running wires north/south or east/west under a module, attach the approved wire clips to the frame flange and secure wires to the wire management clips, as shown below. All wires must remain underneath the module after installation. There shall be no visibly exposed wires after installation of modules.

Any wires running to subarrays or other components that cannot be covered by a module shall be installed in approved electrical raceways such as the Listed Conduit types shown on page 2.



UL 3741 APPROVED MODULE LIST

The Rocklt System has been tested and evaluated to UL 3741 and UL 2703. See approved modules 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 3741 APPROVED PV MODULES		
Module MFG	Module Model Description		
	Adani modules with 30 or 40 mm frames		
Adani	ASB-Y-ZZZ-AAA		
Adani	where "S" can be blank or S; "Y" can be 7 or G12R; "ZZZ" can be blank or 132;		
	and "AAA" is the power rating		
	AIONRISE modules with 35 and 40 mm frames		
Aionrise	AlONyyG1-xxx		
	Where "yy" can be 60 or 72		
	Aptos modules with 35 and 40 mm frames		
Aptos	DNA-yy-zzaa-xxx		
Solar	Where "yy" can be 108, 120 or 144; "zz" can be BF, BFN, MF or MFN; and "aa"		
	can be 10 or 26		
	Auxin modules with 35 and 40 mm frames		
Auxin	AXNCMzAxxxB		
AUAIII	Where "C" can be 6, 10 or G1; "z" can be blank, 610 or 612; and "A" can be		
	blank or M; and "B" can be blank, A, B, C or W		
	Axitec Modules with 30 and 35 mm frames		
Axitec	AC-xxxY/ZZb		
Axilec	Where "Y" can be MH, MBT or TGB; "ZZ" can be 108, 120, or 144; "b" can be		
	BB, TS, US, V or VB		
Bluesun	Bluesun modules with 35 mm frames		
Solar	BSMxxxY-AAA		
Join	Where "Y" can be M or M10; and "AAA" can be 54HPH or 60HPH		
	Boviet modules with 33 or 35 mm frames		
	BVMZZyyM-xxxAAA		
Boviet	Where "ZZ" can be 66, 76 or 86; "yy" can be 10, 11 or 12; and "AAA" can be H,		
	H-HC, H-HC-BF, L-H-HC-BF, L-H and L-H-HC, R-H-HC-BF, S-H-HC-BF		
	and S-H-HC		
BYD	BYD modules with 35 mm frames		
	BYDxxxMLTK-36		



	A	
	1	
	7	

MANUFACTURER	LIST OF UL 3741 APPROVED PV MODULES		
Canadian Solar	Canadian Solar modules with 30, 35 and 40 mm frames CSbY-xxxZ Where "b" can be 1, 3, 6, 6.1 or 6.2; "Y" can be L, N, R, U, W, Y, -48TM, -54TM		
	or -66TM; and "Z" can be blank, H, M,MS, MS-HL or T		
	CertainTeed modules with 30, 35 and 40 mm frames		
CertainTeed	CTBBxxxHCyy-AA		
	Where "BB" can be blank, M10 or TC; "yy" can be 11 or 12, and "AA" can be 06, 08 or 09		
	Crossroads Solar modules with 40 mm frames		
Crossroads Solar	Crossroads Solar xxx		
001111	CSUN modules with 40 mm frames		
CSUN	CSUNxxx-72MM5BB		
	Dehui modules with 35 mm frames		
Dehui	DH-MYYYZ-xxx		
	Where "YYY" can be 760, 772, 860, or 872; and "Z" can be B or W		
	Emmvee modules with 35 mm frames		
Emmvee	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		
	ET Solar modules with 35 and 40 mm frames		
ET Solar	ET-MZZZxxxAA		
	Where "ZZZ" can be 660BH, 672, 672BH, 754BH, 766BH, 772BH; and "AA"		
	can be TB, TW, WB or WW Freedom Forever modules with 35 mm frames		
Freedom	FF-MPa-BBB-xxx		
Forever	Where "a" can be blank or 1		
	Freevolt modules with 35 mm frames		
Freevolt	ECP-PVGRAF-144HC-xxx		
001	GCL modules with 35 mm frames		
GCL	GCL-M3/72DH		
	GreenWatts modules with 30 and 35mm frames		
GreenWatts	HSYY-A-xxx-ZZ		
Solar	Where "YY" can be 54, 60, 66, 72 or 78; "A" can be blank or F; and "ZZ" can be		
	MN or BOB		
	Goldi modules with 35 mm frames		
Goldi	GS10-Byyy-zz-xxx		
	Where "yyy" can be 108 or 144; and "zz" can be GF or TF		

MANUFACTURER	LIST OF UL 3741 APPROVED PV MODULES	
Grape Solar Grape Modules with 35 mm frames		
Grape Goldi	GS-M120-xxx-FAB1	
	Hansol modules with 35 and 40 mm frames	
Hansol	HSxxxYY-HH2	
	Where "YY" can be UB or UD	
Heliene modules with 35 and 40 mm frames		
Helione	YYZZXXXA	
Heliene	Where "YY" can be 96, 108, 120, 132, 144 or 156; "ZZ" can be HC or M; and	
	"A" can be blank, Bifacial, M10-SL, M10 TPC SL, M10-SL-BLK, M10 Bifacial,	
	M10 SL-Bifacial, M10 NTYP SL or M10 NTYP SL Bifacial HT-SAAE modules with 35 mm frames	
	HTyy-aaaZ-xxx	
HT-SAAE	Where "yy" can be 60, 66, 72 or 78, "aaa" can be 18 or 166: and "Z" can be M	
	or X	
	Hyundai modules with 32, 35 and 40 mm frames	
	HiY-SxxxZZ	
Hyundai	Where "Y" can be A or S; "S" can be M or S; and "ZZ" can be HG, OJ, PI, TI,	
	YH(BK) or XG(BK)	
	JA Solar modules with 30, 35 and 40 mm frames	
JA Solar	JAMzzbb-xxx/MR	
	Where "zz" can be 54, 66, 72 or 78; "bb" can be S10, S20, S30 or S31	
	Jakson Solar modules with 35mm frames	
Jakson Solar	JH-xxxYY	
	Where "YY" can be BB or BT	
	Jinko modules with 35 and 40 mm frames	
Jinko	JKMxxxZ-aa	
Onno	Where "Z" can be M or N; "aa" can be 54HL4-B, 6RL3-B, 6TL3-B, 72HBL-V,	
	72HL4-V, 72HL4-TV, 7RL3-V or 7RL3-TV	
	KB Solar modules with 35 mm frames	
KB Solar	KBS-xxx-Mono-YY	
	Where "YY" can be blank or BF	
I A Oalan	LA Solar modules with 35 mm frames	
LA Solar	LSxxxYY	
	Where "YY" can be BF, BL, BLA, HC or ST	
	LG modules with 35 and 40 mm frames LGxxxYaZ-bb	
LG	Where "Y" can be A, M, N or Q; "a" can be A, 1, 2 or 3 "Z" can be C, K, T, or W;	
	and "bb" can be A6, B6, E6, E6.AW5, L5, N5, V6	
	and 55 can 56 AU, 50, EU, EU.AVVJ, EJ, NJ, VU	

MANUFACTURER	LIST OF UL 3741 APPROVED PV MODULES		
	Longi modules with 30 and 35 mm frames		
Longi	LRa-YYZZ-xxxM		
	Where "a" can be 4 or 5; "YY" can be 54, 60, 66, or 72; and "ZZ" can be HPB or		
	HPH		
Magnus	Magnus Green Solar modules with 35 mm frames		
Green Solar	MGS-xxxW-yyy-M10		
	Where "yyy" can be M54H, M60H or M72H		
	Maxeon modules with 35, 40 and 46 mm frames		
Maxeon	SPR-AAAY-xxx-zzz		
	Where "AAA" can be X or MAX; "Y" can be 3, 5, 6, 7, 21 or 22; and "zzz" can		
	be blank, R, BLK, BLK-R or COM		
Meyer Burger	Meyer Burger Block or White		
	Meyer Burger Black or White Mission Solar modules with 30, 35 and 40 mm frames		
	YYYbb-xxxZZaa		
Mission Solar	Where "YYY" can be MSE, MSI, MSN, MSX, TXI or TXS; "bb" can be blank, 6		
(mSolar)	or 10; "ZZ" can be blank, HN, HT, SQ, SX, 108, 120 or 144; and "aa" can be		
	blank, 0B, 2B, BB, BW, 4G, 4T, 5K, 5R, 5T, 6J, 6S, 6W, 6Z, 9R, 9S or 9Z		
	Mitrex modules with 30 and 40 mm frames		
Mitrex	Mxxx-XYZ		
muox	Where "X" can be A, B, I or L; "Y" can be 1 or 3; and "Z" can be F or H		
	Navitas Modules with 35 mm frames		
Navitas	NSMxxx-yyy		
	Where "yyy" can be 120, 132 or 144		
	NE Solar modules with 30 and 35 mm frames		
NE Solar	NESExxx-zzMH-yy		
	Where "zz" can be 54, 60 or 72; and "yy" can be M6 or M10		
Nee Color Dower	NE Solar modules with 35 mm frames		
Neo Solar Power	D6MxxxE4A		
Panasonic	Panasonic modules with 30 mm frames		
(EverVolt)	EVPVxxxA		
(Lvei voit)	Where "A" can be blank or H, K, HK, HK2 or PK		
	Philadelphia modules with 30, 35 and 40 mm frames		
Philadelphia	PS-YzzAA-xxxW		
Solar	Where "Y" can be M, MNB, or P; "zz" can be 60, 72, 108, 132, 144 or 156; "AA"		
	can be blank, (BF), (HC) or (HCBF); and "W" can be blank or W		



MANUFACTURER

Phono Solar

SEG Solar

LIST OF UL 3741 APPROVED PV MODULES

Where "Y" can be M, M1, MH, M4, M4H, M6, M6H, M8, or M8H; "ZZ" can be

	18, 20 or 24; and "A" can be TH, THB, UH, UHB or VHB		
	Prism Solar modules with 35 mm frames		
Prism Solar	PST-xxxW-M72Y		
	Where "Y" can be H, HB or HBI		
	Q CELLS Modules with 30, 32, 35, 40 mm frames		
	Q.YY-ZZ-xxx		
	where "YY" can be PEAK DUO or Tron; and "ZZ" can be M-G2+, BLK M-G2+,		
O CELLO	BLK M-G2.H+, BLK M-G2+/AC, BLK M-G2.H1+/AC, L-G7.3, BLK-G6+/HL,		
Q CELLS	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 +/t, BLK ML-G10+/		
	TS, XL-G10.2, XL-G10.3, XL-G10.c, XL-G10.d, XL-G11.2 or XL-G11.3		
	Rayzon Solar modules with 35 and 40 mm frames		
Rayzon Solar	RSYxxxWC		
	Where "Y" can be blank or B		
	REC modules with 30 and 38 mm frames		
REC Solar	RECxxxYYZZ		
TILO Solai	Where "YY" can be AA, NP2, NP3, TP3M or TP4; and "ZZ" can be blank, 72,		
	Black, Pure, Pure-R, Pure-RX or Pure 2		
	Renogy Modules with 35 and 40 mm frames		
Renogy	RYY-xxxD-AAA		
nenogy	Where "YY" can be NG or SP; "AAA" can be blank, 144, BB-108, BB-120 or		
	BK-120		
	Saatvik Modules with 35 mm frames		
Saatvik	SGExxx-YYYZZZ		
	Where "YYY" can be 108 or 144; and "ZZZ" can be MHC, MBHC or MHCB		
	S-Energy modules with 35 and 40 mm frames		
S-Energy	SABB-CCYYY-xxxV		
	Where "A" can be C, L or N; "BB" can be 20, 40 or 45; "CC" can be blank, 60 or		

72; "YYY" can be blank MAE, MAI, MBE, MBI, MCE or MCI

Where "ZZ" can be BMA, BMB, BMD; and "AA" can be HV or TB

SEG Solar with 35 mm frames

SEG-xxxZZ-AA

Phono Solar modules with 30, 35 and 40 mm frames

PSxxxY-ZZ/A

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MANUFACTURER	LIST OF UL 3741 APPROVED PV MODULES
Seraphim USA	Seraphim modules with 35 mm frames
	SRP-xxx-YYY-HV
	Where "YYY" can be BMA or BMD
Shinsung E&G	Shinsung Modules with 35 mm frames
	SSVxxx-144MH
	Silfab Modules with 35 and 38 mm frames
Silfab	SIL-xxxYY
	YY" can be BG, BK, BL, HC, HC+, HL, HM, HN, NL, NU, NX, QD, QM, XL, XM
	or XM+ Sinotec Modules with 30 and 35 mm frames
Sinotec	STS-xxxP-aabb
Sinolec	Where "aa" can be 54 or 72; and "bb" can be BB, DB or DD
	Sirius PV Modules with 35 mm frames
Sirius PV	ELNSMzzM-HC-yy-xxx
Ollido I V	Where "zz" can be 54 or 72; and "yy" can be blank or BF
	Solar4America modules with 30, 35 and 40 mm frames
0.1	S4Axxx-YYzzAA
Solar4America	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 modules with 30, 35 mm frames
Solarever	SE-zzz*yy-xxxM-aaa
Solalevel	Where "zzz" can be 166 or 182; "yy" can be 83, 91 or 105; and "aaa" can be 96-
	BD, 108, 120-BH, 144 or 144N
	Solaria modules with 35 mm frames
Solaria	PowerA-xxxY-ZZ
	Where "A" can be X or XT, "Y" can be R; and "ZZ" can be PL or 4T
SolarSpace	SolarSpace modules with 30 mm frames
	SS8-54HSB-xxxM
SolarTech	SolarTech modules with 40 mm frames
	AAA-xxx Where "AAA" can be PERCB-B, PERCB-W, HJTB-B, HJTB-W
	Sonali Modules with 35 and 40 mm frames
Sonali	SS-M-xxx-yyy
Jonan	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





MANUFACTURER	LIST OF UL 3741 APPROVED PV MODULES	
Sungold	Sungold Modules with 35 mm frames SG-xxxWM	
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	
Sunpower	Sunpower standard (G3 or G4) or InvisiMount (G5) 35, 40 or 46 mm frames SPR-Z-xxx-YY Where "Z" can be A, M or P19; "YY" can be COM, BLK-G-AC, H-AC or BLK-H-AC	
Sunspark	Sunspark modules with 40 mm frames SST-xxxZ-A Where "Z" can be M3 or M3B; and "A" can be 60 or 72	
Suntech	Suntech Modules with 35 and 40 mm frames STPxxxS-zz/aa Where "zz" can be 24, A60, A72U, B60 or B72; and "aa" can be Vfh, Vfw, Vnh, Wfhb or Wnhb	
Talesun	Talesun modules with 30, 35 and 40 mm frames TPByZZaa-xxx Where "B" can be 6 or 7; "y" can be blank, F, G or L; "ZZ" can be 54, 60 or 72; "aa" can be M or M(H)	
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 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	
Trina	Trina Modules with 30 and 35 mm frames TSM-xxxYYZZ Where "YY" can be DE15V, DE18M, DE09, DE19, DE06X, NE09RC, NE09RH.05 or NE19RC; and "ZZ" can be blank, .05, .05(II), C.05, C.05(II), C.07, C.07(II), (II), .08(II), 19	

MANUFACTURER	LIST OF UL 3741 APPROVED PV MODULES
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 or BB
	URE modules with 35 mm frames
	DyZxxxaa
URE	Where "D" can be D or F, "y" can be A, B or 6; "Z" can be F, K or M; and "aa"
	can be C8G, DFG-BB, H4A, E7G-BB, E8G, E8G-BB, MFG, MFG-BB or M7G-
	BB
	Vikram solar modules with 35 mm frames
Vikram	XVSyy.ZZ.AAA.05
VIRIGIII	Where "X" can be Prexos or Somera; "yy" can be MDHT, MH or MHBB; "ZZ"
	can be 54, 60 or 72; "AAA" is the module power rating
	Waaree modules with 35 mm frames
Waaree	XXYYxxx
	Where "XX" can be Bi or WS; and "YY" can be MDI, MDIB, 33 or 57
	VSUN modules with 30, 35 and 40 mm frames
VSUN	VSUNxxxA-YYz-aa
V 3014	Where "A" can be blank or N; "YY" can be 60, 72, 108, 120, 132, 144; "z" can
	be M, MH or BMH; and "aa" can be blank, BB, BW, or DG"
	Yingli modules with 30 and 35 mm frames
Yingli	YLxxxD-yy
	Where "yy" can be 34d, 37e 1/2, 37e 1500V 1/2, 40d, 49e 1/2 or 49e 1500V 1/2
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,
	SH108, SH144, SHDB120, SHDB144 or TP120









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IronRidge®, an Enstall® company, designs and manufactures structural hardware for residential and commercial solar systems. For almost 30 years, we have worked closely with solar professionals to build strong, simple, and cost-effective products. The QuickMount brand family of products are manufactured and sold by IronRidge.