Inspection Checklist

Address:	Approval ID:	AHJ:	Scope of work:
		Yucca Valley, CA	PV Residential Roof Mount 11.200KW, 32 modules & 1 inverter

Interconnection at Main Service Panel		Pass
Single Phase Grid Voltage: INPUT Volts	240 V	☐
System Point of Interconnection Compliance Method At Main Service Panel: 705.12 (B) (2) (3) (b), 120% Rule Where two sources, one a primary power source and the other another power source, are located at opposite ends of a busbar that contains loads, the sum of 125 percent of the power source(s) output circuit current and the rating of the overcurrent device protecting the busbar shall not exceed 120 percent of the ampacity of the busbar.		☐
Backfeed breakers are at opposite load ends of the panel.		☐

Main Service Panel Equipment		Pass
Main Breaker Ampere Rating Size: INPUT AMP	200 AMP	☐
Main Bus Ampere Rating Size: INPUT AMP	200 AMP	☐
Utility Service Rating: INPUT	200	☐
The equipment is connected either directly to the main service panel or in a Supply Side Connection.		☐
If grounding electrode is rod, pipe or plate, then supplemental electrode is properly installed. Exception: If a single rod, pipe, or plate grounding electrode has a resistance to earth of 25 ohms or less, the supplemental electrode shall not be required.		☐
EGC is installed ensuring continuity to all system components and finally to grounding electrode.		☐

Equipment Point of Interconnection	Pass
All power production inverter outputs have the same point of connection.	☐
Connected equipment is within line of sight and closer than 10ft to the point of interconnection or a disconnect/isolation means are installed.	☐
There is no existing Utility interactive power production source connected to the home's electric service. - Only the utility interactive power production sources and/or photovoltaic modules specified on this inspection checklist list are present on site.	☐
DC and AC conductors are copper, Class B or Class C, and THWN-2, NM or PV Wire, or they are a jacketed multiconductor cable assembly listed and identified for the application.	☐
All power terminals are rated to 75°C or greater, labeled for use with Copper Class B or Class C wires, and accept minimum 8 AWG wire.	☐
Conductors are properly terminated and wired according to the code.	☐
Where Equipment Grounding Conductors (EGC) are not routed with circuit conductors, EGC is a minimum of 6 AWG or it's protected from physical damage	☐
There is a minimum of 3' working clearance, according to the code, for all components that may require service.	☐

Inverter		Pass
Inverter architecture:	String Inverter with DC-DC Converters	☐
EGC Wire Size Inverter 1: INPUT	10 AWG	☐
Overcurrent Protective Device rating: Inverter 1	60 AMP	☐
AC Wire size Inverter 1: INPUT	6 AWG	☐
Maximum number of THWN-2 conductors in an PV inverter AC output circuit raceway, excluding any equipment grounding conductors.	4	☐
Inverter 1 model number: INPUT	SE7600H-US [240V]	☐
Inverter 1 manufacturer: INPUT	SolarEdge Technologies Ltd.	☐
Maximum number of THWN-2 DC conductors in raceway, excluding any equipment grounding conductors.	4 wires	☐
Maximum number of DC PV wire or USE-2 conductors in raceway, excluding any equipment grounding conductors.	0 wires	☐
Minimum DC Wire Gauge (THWN-2 Wire):	12 AWG	☐
DC strings EGC is a minimum of 10 AWG		☐
Presence of Rapid Shutdown switch label per Fire Bulletin		☐

Installation Details	Pass
Conduit sizing to be confirmed at time of inspection. Contractor to provide conduit fill calculations where requested by inspector	☐

Roof and PV Array		Pass
Racking system model number is on list of approved modules to 2703 for grounding and bonding.		☐
Attachment points of the mounting system be staggered: INPUT	No	☐
Maximum spacing in inches between adjacent attachment points of the mounting system INPUT	48"	☐
Roof penetration sealant method has been installed per the manufacturers instructions.		☐
The roof structure appears to be structurally sound, without signs of alterations or significant structural deterioration or sagging.		☐
Quantity and spacing of structural attachments match the installation instructions per manufacturer.		☐
Array conductors are secured and supported. Installed so as not to damage the cable, at intervals not exceeding 1.4 m (4.6 ft) and within 300 mm (12 in.) of every cable entry into enclosures such as outlet boxes, junction boxes, cabinets, or fittings.		☐
Module 1 model number: INPUT	LR4-60HPB-350M	☐
Module 1 manufacturer: INPUT	LONGi Green Energy Technology Co., Ltd.	☐
Module 1 quantity: INPUT	32	☐
Method of rapid shutdown compliance Inside the Array	AC module, microinverter,	☐

Roof and PV Array		Pass
	or DCDC converter installed on each module andlisted for UL 1741 or UL 3741 as PVRSS or PVRSE used to comply with requirements for Rapid Shutdown.	
All rooftop conduits are mounted at least 7/8” above the roof surface.		☐
All PV Source Circuit conductors installed without raceway are listed as PV Wire or USE-2.		☐

Roof and PV Array 1		Pass
Plane 1 Roof Covering: INPUT	Clay and concrete tile	☐
The height of the modules, from roof 1 surface to the module backsheet, does not exceed 10"		☐

Roof and PV Array 2		Pass
Plane 2 Roof Covering: INPUT	Clay and concrete tile	☐
The height of the modules, from roof 2 surface to the module backsheet, does not exceed 10"		☐

Roof and PV Array 3		Pass
Plane 3 Roof Covering: INPUT	Clay and concrete tile	☐
The height of the modules, from roof 3 surface to the module backsheet, does not exceed 10"		☐

Roof and PV Array 4		Pass
Plane 4 Roof Covering: INPUT	Clay and concrete tile	☐
The height of the modules, from roof 4 surface to the module backsheet, does not exceed 10"		☐

Roof and PV Array 5		Pass
Plane 5 Roof Covering: INPUT	Clay and concrete tile	☐
The height of the modules, from roof 5 surface to the module backsheet, does not exceed 10"		☐

Fire		Pass
% of the Roof with a Solar Array INPUT	24.49%	☐
Fire Pathways, venting and access in accordance with INPUT	Less Than 33/66	☐
Disconnecting Means are in compliance with the SolarAPP Fire Bulletin		☐
Signage, Placards, Directories and Markings in accordance with the SolarAPP Fire Bulletin		☐
Maximum AC operating current in labels	31.73 A	☐
Maximum AC operating voltage in labels	240 V	☐

Corrections

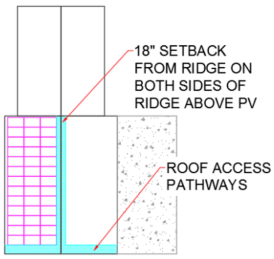
FIRE SAFETY CODE REQUIREMENTS

Does the home have sprinkler systems?	No
% of Roof Area covered with PV = Total Array Area/Total Roof Area: ({C17}/{I102}) = {C15}	24.49%

Roof Access and Ventilation Diagrams

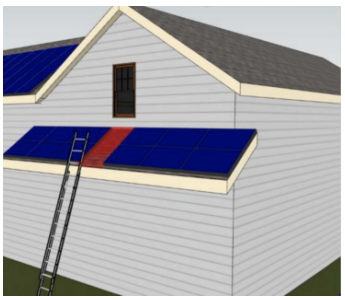
Ridge Setbacks

PV Less Than 33% Roof Area (66% for homes with sprinkler systems)



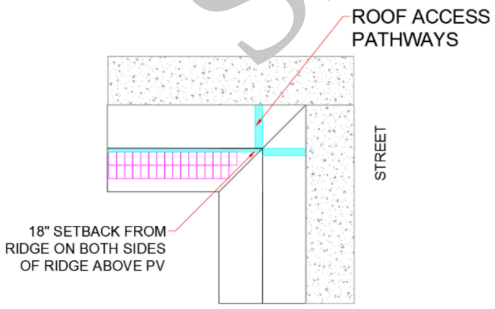
Emergency Escape & Rescue Opening

Minimum 3' Emergency Escape Pathway

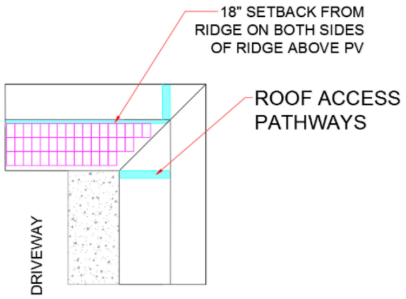


Hips and Valley Setbacks

PV Less Than 33% Roof Area - Street Access (66% for homes with sprinkler systems)



PV Less Than 33% Roof Area - Driveway Access (66% for homes with sprinkler systems)



SolarAPP Fire Bulletin

Disconnecting Means

PV System

PV system disconnecting means shall be provided in accordance with the 2017 National Electrical Code® (NEC), NFPA 70®. [690.13]

A Rapid Shutdown switch shall be provided at a readily accessible location outside the building in accordance with the 2017 National Electrical Code® (NEC), NFPA 70.® [690.12(C)]

Signs, Placards, Directories, and Markings Guidance

General

All labeling shall comply with Section 324 of the 2021 International Residential Code and Articles 690 and 705 of the 2017 National Electrical Code® (NEC), NFPA 70

All labeling shall comply with [NEC 110.21 (B)]

Rapid Shutdown Label

A label shall be installed not greater than 3ft from the electric utility service location that includes the location of all identified Rapid Shutdown switches if not at the same location. [IRC 324]

The label shall indicate which type of Rapid Shutdown system is installed, and include a simple diagram with sections in red designating areas that are not controlled by the rapid shutdown switch. [NEC 690.56(C)(1)]

Buildings with more than one rapid shutdown type:
A detailed plan view diagram showing each PV system and a dotted line around areas that remain energized after the rapid shutdown switch is operated. [NEC 690.56(C)(2)]

Rapid Shutdown Label (continued)

Rapid Shutdown (PV Hazard Control) switch:
This switch shall have a label not greater than 3 feet from the switch that states the following: RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM" [NEC 690.56(C)(3)]

Roof Access, Egress, and Ventilation

SolarAPP Fire Bulletin

General

Access and minimum spacing shall be provided for access to specific areas of the roof, emergency egress from the roof and opportunities for smoke ventilation in accordance with the 2021 International Residential Code [IRC 324.6]

References

Ridge Setbacks - [IRC R324.6.2]

Sprinklered Occupancies - [IRC R324.6.2.1]

Pathways - [IRC 324.6.1]

Emergency escape and rescue openings - [IRC R324.6.3]

Exceptions

Detached, non-inhabitable structures [IRC R324.6 Ex. 1]

Low-slope roofs with pitch of less than or equal to 2:12; this exception may not be valid depending on the jurisdiction. [IRC R324.6 Ex. 3]

BIPV systems listed in accordance with Section 690.12(B)(2) of NFPA 70, where the removal or cutting away of portions of the BIPV system during fire-fighting operations has been determined to not expose a fire fighter to electrical shock hazards. [IRC R324.6 Ex. 4]

Carbon Monoxide and Smoke Detectors

SolarAPP Fire Bulletin

Guidance

Carbon Monoxide and smoke detectors shall be provided in accordance with the code or an Affidavit has been provided by the customer. 2021 International Residential Code. [R314, R315]

Guidance (continued)

Rooms and areas within dwelling units, basements and attached garages in which ESS are installed shall be protected by smoke alarms in accordance to the code. A heat detector, listed and interconnected to the smoke alarms, shall be installed in locations within dweling units and attached garages where smoke alarms cannot be installed based on their listing. 2021 International Residential Code. [R314, R315]

Fire Classification

SolarAPP Fire Bulletin

PV System

Rooftop-mounted PV systems shall have the same fire classification as the roof assembly required in 2021 International Residential Code. [R902.4; R324.4.2]

Building-integrated photovoltaic products installed as the roof covering shall be tested, listed, and labeled for fire classification. [IRC 902.3]

Building-integrated photovoltaic products installed as the roof covering shall comply with the minimum requirements for fire classiciation set by the jurisdiction. [IRC 902.1]

Product Certifications

SolarAPP Fire Bulletin

PV System

PV panels and modules shall be listed and labeled to UL 1703 and/or both UL 61730-1 and UL 61730-2 [NEC 690.4(B)][IRC R324.3.1]

Inverters shall be listed and labeled to UL 1741 [NEC 690.4(B)][IRC R324.3.1]

Hazard Control System

Hazard control system shall be listed and labeled to UL 3741 [NEC 90.7; 110.3(C); 690.4(B) 690.12(D)]

Signs, Placards, Directories, and Markings

Service Disconnect

SOLAR PV SYSTEM IS EQUIPPED WITH RAPID SHUTDOWN	
TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN CONDUCTORS OUTSIDE THE ARRAY. CONDUCTORS IN ARRAY REMAIN ENERGIZED IN SUNLIGHT	SIMPLE DIAGRAM HERE

Location:
Location: No more than 1 m (3 ft) away from the service disconnecting means. [NEC 690.56(C)(1)(a)]

RSD Initiation Device

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

Location:
Rapid shutdown initiation device. [NEC 690.56(C)(3)]

Point of Interconnection

WARNING:
EQUPMENT FED BY MULTIPLE SOURCES LOCATION OF DISCONNECTING MEANS

(LAYOUT OR DESCRIPTION)

Location:
At each service equipment location and at the location(s) of the system disconnect(s) for all electric power production sources capable of being interconnected." [NEC 705.10]

WARNING:
DUAL POWER SOURCE SECOND SOURCE IS PV SYSTEM

Location:
Electrical Equipment containing overcurrent devices in circuits supplying power to a busbar or conductor supplied
from multiple sources [NEC 705.12(B)(3)]

WARNING:
POWER SOURCE OUTPUT CONNECTION -
DO NOT RELOCATE THIS OVERCURRENT DEVICE

Location:
At back-feed breaker if using 120% rule (if applicable) [NEC 705.12(B)(2)(3)(b)]

WARNING:
THIS EQUIPMENT FED BY MULTIPLE SOURCES.
TOTAL RATING OF ALL OVERCURRENT DEVICES
EXCLUDING MAIN SUPPLY OVERCURRENT DEVICE,
SHALL NOT EXCEED AMPACITY OF BUSBAR

Location:
At distribution equipment adjacent to the back-fed breaker from the power source when using this "sum of breakers" code compliance rule. [NEC 705.12(B)(2)(3)(c)]

PHOTOVOLTAIC POINT OF INTERCONNECTION

MAXIMUM AC OPERATING CURRENT:

MAXIMUM AC OPERATIONG VOLTAGE:

Location:
All interactive system(s) points of interconnection. [NEC 690.54]

Signs, Placards, Directories, and Markings

DC Circuit Raceways and Enclosures

PHOTOVOLTAIC POWER SOURCE

Location:
DC Circuit Raceways and Enclosures, conduit, and combiner/junction boxes. [NEC 690.31(G)(3)]

PV System Disconnect

WARNING:
ELECTRIC SHOCK HAZARD TERMINALS ON LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

Location:
DC Disconnecting Means where terminals on both line and load side may remain energized. Example language or equivalent. [NEC 690.13(B)]

PV SYSTEM DISCONNECT

Location:
Each PV System Disconnect (May be AC or DC) [NEC 690.13(B)]

DC String Inverters Equipment Disconnects

WARNING:
ELECTRIC SHOCK HAZARD TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

Location:
Each PV system disconnecting means where line and load may be energized in the open position. [NEC 690.13(B)]

PHOTOVOLTAIC DC DISCONNECT

Location:
Location: Each PV system disconnecting means. [NEC 690.13(B)]

Maximum Voltage: _____

Maximum Circuit Current: _____

Maximum rated output current of the charge controller or dc-to-dc converter (if installed): _____

Location:
At each DC PV system disconnecting means. [NEC 690.53]

FIRE SAFETY CODE REQUIREMENTS

Roof Access and Ventilation Diagrams

Fire Safety

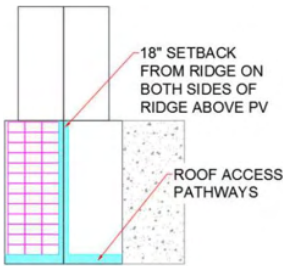
The following setbacks will be applicable to your PV system if either of the following statements are true:

Your PV Array coverage is less than 66% of the Roof Area and you have a sprinkler system.

Your PV Array coverage is less than 33% of the Roof Area and you do not have a sprinkler system.

Ridge Setbacks

PV Less Than 33% Roof Area (66% for homes with sprinkler systems) [IRC R324.6.2]

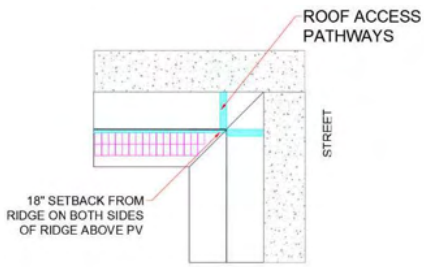


Emergency Escape & Rescue Opening

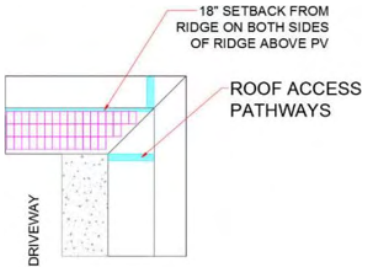
Minimum 3' Emergency Escape Pathway [IRC R324.6.2.2]

Hips and Valley Setbacks

PV Less Than 33% Roof Area - Street Access (66% for homes with sprinkler systems) [IRC R324.6.1]



PV Less Than 33% Roof Area - Driveway Access (66% for homes with sprinkler systems) [IRC R324.6.1]



FIRE SAFETY CODE REQUIREMENTS

Roof Access and Ventilation Diagrams

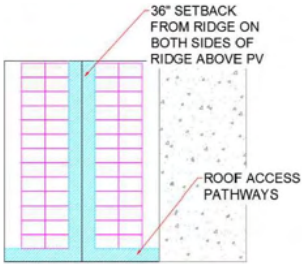
The following setbacks will be applicable to your PV system if either of the following statements are true:

Your PV Array coverage is greater than 66% of the Roof Area and you have a sprinkler system.

Your PV Array coverage is greater than 33% of the Roof Area and you do not have a sprinkler system.

Ridge Setbacks

PV More Than 33% Roof Area (66% for homes with sprinkler systems) [IRC R324.6.2.1]

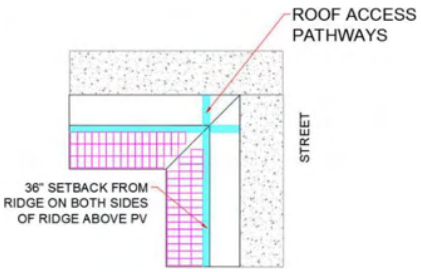


Emergency Escape & Rescue Opening

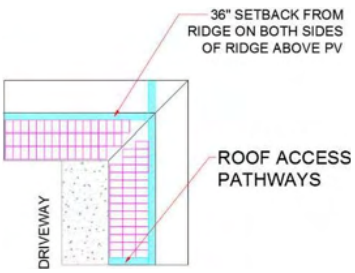
Minimum 3' Emergency Escape Pathway [IRC R324.6.3]

Hips and Valley Setbacks

PV More Than 33% Roof Area - Street Access (66% for homes with sprinkler systems) [IRC R324.6.1]



PV More Than 33% Roof Area - Driveway Access (66% for homes with sprinkler systems) [IRC R324.6.1]



INPUTS

Permit Details [80.19(H) ; R105.3]

GENERAL

Project Information

Project Title	
Address	
AHJ	
Project Type	*PV*
Scope of Work	*PV Residential Roof Mount 11.200KW, 32 modules & 1 inverter*
PV System Size AC (kW):	*7.616 kW*
Confirm you have reviewed SolarAPP eligibility:	*Yes*

Contractor Information

Installation Applicability and Compliance

All work will comply with the 2017 National Electrical Code® (NFPA 70), the International Code Council 2021 I-Codes, Minimum Design Loads and Associated Criteria for Buildings and Other Structures (ASCE/SEI 7-16), UL Standards, Manufacturer's instructions, and Municipal requirements.

State License

Type	*state*
Number	*1029644*

City Business License	
Type	*city*
Number	*37087*

FIRE

Does the home have sprinkler systems? INPUT	*No*
What is the total array area? ({I20} —› (({CEC:L})*({I11})= {C16})) square meters ({C16}) * (10.764) = {C17} square feet	*609.67 sqft*
The total roof area: INPUT	*2489 sqft*
% of Roof Area covered with PV = Total Array Area/Total Roof Area: ({C17}/{I102}) = {C15}	*24.49%*
See INPUT Fire Setback Diagram attached.	*Less Than 33/66*

STRUCTURAL DETAILS

General

The weight of the PV system in lbs/sq ft: INPUT	*2.77 psf*
The ground snow load is INPUT	*0 lb/sqft*
Proposed maximum spacing in inches between adjacent attachment points of the mounting system INPUT	*48"*

Will attachment points of the mounting system be staggered? INPUT	*No*
The number of roof surfaces at different slopes and/or orientations that will be used for installation are: INPUT. Note: 1 means all roofs used have the same orientation.	*5*
Type of mounting for the PV system	*Flush mount*

Mounting Planes

Mounting Plane Type 1	
The maximum height of the module above the roof surface is INPUT inches	*5"*
The current roof covering is INPUT	*Clay and concrete tile*
The pitch of the roof surface is INPUT	*5/12*

Mounting Plane Type 2	
The maximum height of the module above the roof surface is INPUT inches	*5"*
The current roof covering is INPUT	*Clay and concrete tile*
The pitch of the roof surface is INPUT	*5/12*

Mounting Plane Type 3	
The maximum height of the module above the roof surface is INPUT inches	*5"*
The current roof covering is INPUT	*Clay and concrete tile*
The pitch of the roof surface is INPUT	*5/12*

Mounting Plane Type 4	
The maximum height of the module above the roof surface is INPUT inches	*5"*
The current roof covering is INPUT	*Clay and concrete tile*
The pitch of the roof surface is INPUT	*5/12*

Mounting Plane Type 5	
The maximum height of the module above the roof surface is INPUT inches	*5"*
The current roof covering is INPUT	*Clay and concrete tile*
The pitch of the roof surface is INPUT	*5/12*

Wind Speed

Is the solar module and mounting system rated by the manufacturer to withstand the upward force of the local wind speed and evenly distribute load into the supporting structure at the proposed maximum spacing, and confirmed in UL 1703 or 61730 (Part 1 & 2), and 2703 listings?	*Yes, 110 MPH*

Roof Condition

Does the roof structure appear to be structurally sound, without signs of alterations or significant structural deterioration or sagging? YES	*Yes*

ELECTRICAL DETAILS

Equipment

Architecture type used for all inverters in this project:	*String Inverter with DC-DC Converters*

Inverter 1

Inverter 1 Model Number: INPUT	*SE7600H-US [240V]*
Datasheet for Inverter 1 [90.7 ; 110.3(C) ; R106.1]: See attached.	*1622137111425-I9-SE7600_SPEC_SHEET.pdf*
Inverter 1 Manufacturer: INPUT	*SolarEdge Technologies Ltd.*
Is Inverter 1 UL 1741 listed? [110.3(C) ; 690.4(B) ; R324.3.1] YES	*Yes*

Modules

Module 1 Model Number: INPUT	*LR4-60HPB-350M*
Datasheet for Module 1 [90.7 ; 110.3(C) ; R106.1]: See attached.	*1627401243434-I12-LONG_SOLAR_LR4_60HPB_350M.pdf*
Module 1 Manufacturer: INPUT	*LONGi Green Energy Technology Co., Ltd.*
Is Module 1 UL 1703 or UL 61730 (Part 1 & 2) listed? [110.3(C) ; 690.4(B) ; R324.3.1] YES	*Yes*
Module 1 quantity: INPUT	*32*
Module open circuit voltage with record low temperature correction	*42.98 V*
Module short circuit current with average high temperature correction	*11.24 A*

Racking System 1/Flashing	
Racking System 1 Model Number: INPUT	*UNIRAC SOLARMOUNT LIGHT RAIL*
Datasheet for Racking System 1 [90.7 ; 110.3(C) ; R106.1](ensure your datasheet has the list of approved modules to 2703 for grounding and bonding): See attached.	*1625151942184-I15-UNIRAC_ROOFMOUNT_RM10.pdf*
Racking System 1 Manufacturer: INPUT	*unirac*
Is Racking System 1 UL 2703 listed for grounding and bonding with the PV module models specified in this SolarAPP project? [90.7 ; 110.3(C) ; 690.43(A)]: YES	*Yes*
The combination of modules and racking system shall have the same fire classification as the roof assembly. R324.4.2: YES	*Yes*
Name/description of roof penetration sealant method to be used.	*Geocell + Mechanical Flashing*
You have agreed to install the flashing per the manufacturers instructions for the means of accomplishing weather proofing: YES.	*Yes*

Rapid Shutdown
The AC module, microinverter, or DCDC converter installed on each module is listed for UL 1741 or UL 3741 as PVRSS or PVRSE and used to comply with requirements for Rapid Shutdown both inside and outside the array.[690.12(B)(2)(2)]

Site Conditions

Ambient Dry Bulb Extreme Record Low Temperature (°C) [690.7(A)]: INPUT	*1 °C*
Ambient Dry Bulb Average High Temperature (°C): INPUT	*42 °C*
Single Phase Grid Voltage	*240 V*

Installation Details

Is there an existing Utility interactive power production source connected to the home's electric service? NO	*No*
Are DC and AC conductors copper, Class B or Class C, and THWN-2, NM, USE-2, PV Wire, or jacketed multiconductor cable assembly listed and identified for the application? [690.8(B) ; 310.15(A) and (B)]: YES	*Yes*
NM cable is used for inverter output circuits and installed in locations and uses according to the Code [334.10]	*No*
Are all rooftop conduits mounted at least 7/8" above the roof surface.[310.15(B)(3)(c)]:[310.15(B)(2)]	*Yes*
Are all PV Source Circuit conductors installed without raceway listed as PV Wire or USE-2?: [690.31(C)][690.31(C)(1)]	*Yes*
Are all power terminals rated to 75°C, labeled for use with Copper Class B or Class C wires, and accept minimum 8 AWG wire?[110.14]	*Yes*
Where Equipment Grounding Conductors (EGC) are not routed with circuit conductors, EGC is a minimum of 6 AWG or it is protected from physical damage [250.120(C)]	*Yes*
DC strings EGC is a minimum of 10 AWG	*Yes*
Module voltage and current DC specifications fall within allowable range of connected equipment: YES	*Yes*
All ancillary equipment is listed for the application, rated equal to or greater than the connected overcurrent device and installed per the manufacturer's instructions. Documentation shall be provided upon request.	*Yes*

String Inverter with DC-DC Converters [690.7(B)]

Maximum PV Source Circuit Voltage	
Does the quantity of series connected DC-DC converters exceed the manufacturers instructions to ensure a maximum string voltage of 600V? NO	*No*
Max quantity modules in DC series string: INPUT	*16 modules*
Datasheet for DCDC converter See attached.	*1622137736049-I70-SE_OPTIMIZER_DATA_SHEET.pdf*

PV Source Circuit

See Table 6 for selection of the minimum DC wire size.

Input maximum number of current carrying PV Wire or USE-2 conductors in raceway INPUT	*0*
Input maximum number of current carrying THWN-2 conductors in raceway INPUT	*4*
The minimum DC THWN-2 wire size is based on the Table 6below.	*12AWG*

Table 6

Current Carrying Conductors (CCC) in raceway	Site Average High Temperature	2 series strings in parallel	Single series string
<=3 CCC	=< 35	10 AWG	12 AWG
	=< 40	10 AWG	12 AWG
	=< 45	10 AWG	12 AWG
	=< 50	10 AWG	12 AWG
4 - 6 CCC	=< [illegible]	10 AWG	12 AWG
	=< 40	8 AWG	12 AWG
	=< 45	8 AWG	12 AWG
	=< [illegible]	8 AWG	12 AWG
7 - 9 CCC	=< 35	8 AWG	12 AWG
	=< 40	8 AWG	12 AWG
	=< 45	8 AWG	12 AWG
	=< 50	8 AWG	12 AWG

[Table 310.15(B)(3)(a) ; Table 310.15(B)(2)(b) ; Table 310.15(B)(16) ; 690.8(A)(1) ; 690.8(B)]

Inverter Output Circuit

See Table 3 below for selection of minimum Inverter output wire size and inverter output overcurrent protection size.

Inverter 1: Inverter Continuous Output Current = Power / Site Voltage: (I18 —› INV:CEC:K:["Maximum Continuous Output Power at Unity Power Factor"]) W / C14 V = C5 A	*31.73 A*

Inverter Output Circuit

Table 3

Table 3

Continuous Output Current	12.5	16.5	20.5	24.5	28.5	32.5	36.5	40.5	48.5	56.5	64.5	72.5	80.5	88.5	100.5	120.5	140.5	160.5
OCPD amperage size	15	20	25	30	35	40	45	50	60	70	80	90	100	110	125	150	175	200
AWG wire size for <=3 CCC in raceway	12	12	10	10	8	8	8	8	6	4	4	3	3	2	1	1/0	2/0	3/0
AWG wire size for 4 - 6 CCC in raceway	12	12	10	10	8	8	8	8	6	4	4	3	3	2	1	1/0	2/0	3/0
AWG wire size for 7 - 9 CCC in raceway	12	12	10	10	8	8	8	6	6	4	4	3	3	2	1	2/0	3/0	4/0
NM wire	12	12	10	10	8	8	6	6	4	4	3	2	1	1	1/0	N/A	N/A	N/A

[240.4(D); Table 310.15(B)(3)(a) ; Table 310.15(B)(2)(b) ; Table 310.15(B)(16) ; 690.8; 690.9; 705.30]

Inverter 1 - See Table 3 for the minimum Overcurrent Protection Device rating.[690.9(A) ; 690.9(B)]	*40 AMP*
Inverter 1 Overcurrent Protection Device rating [NEC 690.9(A); 690.9(B)]	*60 A*
Input maximum number of AC current carrying THWN-2 conductors in raceway: INPUT	*4*
Inverter 1 - See Table 3for selection of the AC wire size in raceway	*6AWG*

Grounding & Bonding

See Table 5 for selection of Equipment Grounding Conductor wire gauge.

Inverter 1 - Equipment Grounding Conductor (EGC) based on overcurrent protective device:	*10 AWG*

Table 5

Table 5

OCPD rating (amperes)	EGC wire gauge (AWG)
=< 15	14
=< 20	12
=< 30	10
=< 40	10
=< 60	10
=< 100	8
=< 200	6

[Table 250.122]

String Inverter with DC-DC Converters

Maximum PV Source Circuit Voltage	
DC-DC converter Manufacturer:	*Solaredge*
DC-DC converter Model Number:	*P401*
Module open circuit voltage is below the DC-DC converter maximum DC input voltage. The maximum DC input voltage for the equipment in question is	*60 V*
Module short circuit current is below the DC-DC converter maximum DC input current. The maximum DC input current for the equipment in question is	*11.75 A*

PV Source Circuit	
PV module series strings from solar arrays to the PV inverter are combined in parallel	*No*

New Panelboard for Relocated Loads

Will a new subpanel be installed with existing loads relocated into the new subpanel?	*No*

Equipment Point of Interconnection

Point of Connection	
125% of the sum of power production sources continous output current.	*40 A*

At the time of inspection, it will be verified that if connected equipment is NOT within line of sight or closer than 10ft to the point of interconnection, disconnect or isolation means are installed.[NEC 690.15 (A)]

Point of Connection at Subpanel

Existing Subpanel	
Will power production inverter outputs be connected directly to an existing subpanel? ___ (I75) ____	*No*

Point of Connection at Main Panel

System Point of Interconnection Compliance Method at MSP	
INPUT	*705.12 (B) (2) (3) (b)*

Main Service Panel Equipment	
Main Bus Ampere Rating: INPUT AMP	*200 A*
Main Breaker/Service Disconnect Ampere Rating: INPUT AMP	*200 A*

Since no connection was indicated at a subpanel or at a subpanel feeder, power production sources are connected either directly to the main service panel or in a Supply Side Connection.

Point of Connection

Main Service Panel Equipment	
What is the Utility service feed rated for? INPUT amp	*200 AMP*

Point of Connection at Subpanel Feeders

Load Side Tap	
Power production sources are connected to a subpanel feeder. A subpanel feeder connection, may be a connection directly to a conductor, or using lug terminations in equipment such as an Microgrid Interconnection Device (MID).	*No*

Electrical Work

Main Panel Upgrades and Main Breaker Derates	
A Main Panel Upgrade is being performed.	*No*
A Main Breaker Derate is being performed.	*No*

Interconnection at Main Service Panel

705.12 (B) (2) (3) (b), 120% rule

Where two sources, one a primary power source and the other another power source, are located at opposite ends of a busbar that contains loads, the sum of 125 percent of the power source(s) output circuit current and the rating of the overcurrent device protecting the busbar shall not exceed 120 percent of the ampacity of the busbar. Enter the service disconnect ampere rating ____(I39)__A Enter the main bus ampere rating _____(I38)_____A Enter the sum of power production source overcurrent protective device ampere rating ___C8_____A (calculated from architecture specific design section above) Since (I38*120%) - I39 >= C8, then YES Compatible with SolarAPP	*Yes*

WORKERS' COMP

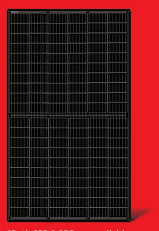
By applying for this permit, you represent and warrant that you have (and will have during the performance of the work) all valid approvals, certifications, and licenses required for the performance of the work for which this permit is issued, (ii) carry (and will carry during the performance of the work) all necessary insurance required by law or governmental authority in the jurisdiction and (iii) will comply with all applicable laws required in the performance of the work.

SolarAPP PV Eligibility 09/07/2021
System
New Rooftop Residential Retrofit PV Systems
Installed by contractor with all licenses required by jurisdiction
Electrical
Limited to 2017 NEC
600V Max per DC System Size
Single phase only
No Aluminum Wires
Must Use 600V rated PV wire (due to outer diameter > 0.24" (6.1mm))
Must use 90 deg C rated insulated wire
Max 2 DC strings in parallel
Max 9 current carrying conductors in a raceway
Inverter output circuit conductors must be THWN-2, or listed NM
Terminals must be rated to 75 deg C, labeled for use with Cu wires, and accept minimum 8 AWG wire
If using microinverter, 1 module per microinverter
Permitted to install on up to or equal to 400A Service
Permitted to install on up to or equal to 225A Service Disconnect
Permitted to install on up to or equal to 225A busbars
No existing PV or ESS
May install only 1 module type
May install up to 2 Inverters for String Inverters, up to 1 inverter type for Micro-inverters and AC modules Systems
Conduit may not be Schedule 80 PVC
Single Family Dwelling Only
Modules and Inverters must be listed on CEC
Rapid Shutdown cannot be satisfied using the method: No exposed wiring or conductive parts [690.12(B)(2)(3)]
No trenching allowed
All power production inverter outputs have the same point of connection
All equipment is assumed to be non-continuous rated
May install only 1 racking system type
Height of rooftop conduit > = 7/8"
Flat Plate PV Modules Only
Structural
Applicable International Residential Code
PV system + hardware weight is less than or equal to 4psf
No ground mounted systems
No carports or non-permanent structures
No wood shake or wood shingle roofing
Limit of 10" above the roof for pitched (>2/12) roof systems
No metal roof or low-slope roof in areas with > 15psf snow load
Fire
Applicable International Residential Code

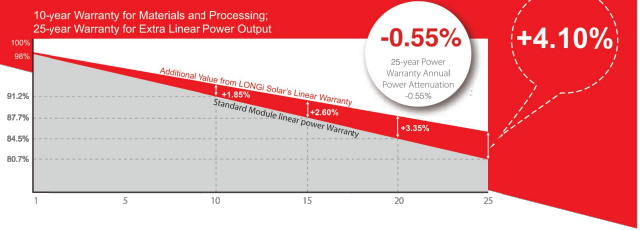
LR4-60HPB
345~365M

Hi-MO 4m
NEW

High Efficiency
Low LID Mono PERC with
Half-cut Technology



*Both 6EB & 9BB are available



Complete System and Product Certifications

IEC 61215, IEC61730, UL61730

ISO 9001:2008: SO Quality Management System

ISO 14001: 2004: ISO Environment Management System

TS62941: Guideline for module design qualification and type approval

OHSAS 18001: 2007 Occupational Health and Safety

* Specifications subject to technical changes and tests. LONGi Solar reserves the right of interpretation.

Positive power tolerance (0 ~ +5W) guaranteed

High module conversion efficiency (up to 20%)

Slower power degradation enabled by Low LID Mono PERC technology: first year <2%, 0.55% year 2-25

Solid PID resistance ensured by solar cell process optimization and careful module BOM selection

Reduced resistive loss with lower operating current

Higher energy yield with lower operating temperature

Reduced hot spot risk with optimized electrical design and lower operating current

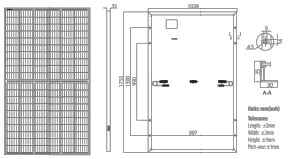
LONGi

Room 801, Tower 3, Lujiazui Financial Plaza, No.826 Century Avenue, Pudong Shanghai, 200120, China
Tel: +86-21-80162606 E-mail: module@longi-silicon.com Facebook: www.facebook.com/LONGi Solar

20200106-Draft

LR4-60HPB 345~365M

Design (mm)



Mechanical Parameters

Cell Orientation: 120 (6×20)
Junction Box: IP68, three diodes
Output Cable: 4mm², 300mm in length, length can be customized
Glass: Single glass 3.2mm coated tempered glass
Frame: Anodized aluminum alloy frame
Weight: 19.5kg
Dimension: 1755×1038×35mm
Packaging: 30pcs per pallet
180pcs per 20'GP
780pcs per 40'HC

Operating Parameters

Operational Temperature: -40℃ ~ +85℃
Power Output Tolerance: 0 ~ +5 W
Voc and Isc Tolerance: ±3%
Maximum System Voltage: DC1000V (IEC/UL)
Maximum Series Fuse Rating: 20A
Nominal Operating Cell Temperature: 45±2℃
Safety Class: Class II
Fire Rating: UL type 1 or 2

Electrical Characteristics

Tes: uncertainty for Pmax: ±3%

Model Number	LR4-60HPB-345M		LR4-60HPB-350M		LR4-60HPB-355M		LR4-60HPB-360M		LR4-60HPB-365M	
Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax/W)	345	255.6	350	259.3	355	263.0	360	266.7	365	270.4
Open Circuit Voltage (Voc/V)	40.2	37.5	40.4	37.7	40.6	37.9	40.8	38.1	41.0	38.3
Short Circuit Current (Isc/A)	11.06	8.92	11.16	8.99	11.25	9.06	11.33	9.13	11.41	9.20
Voltage at Maximum Power (Vmp/V)	34.2	31.6	34.4	31.8	34.6	32.0	34.8	32.1	35.0	32.3
Current at Maximum Power (Imp/A)	10.09	8.09	10.18	8.16	10.27	8.23	10.35	8.30	10.43	8.36
Module Efficiency(%)	18.9		19.2		19.5		19.8		20.0	

STC (Standard Testing Conditions): Irradiance 1000W/m², Cell Temperature 25℃, Spectra at AM1.5

NOCT (Nominal Operating Cell Temperature): Irradiance 800W/m², Ambient Temperature 20℃, Spectra at AM1.5, Wind at 1m/S

Temperature Ratings (STC)

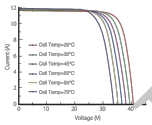
Temperature Coefficient of Isc	+0.057%/℃
Temperature Coefficient of Voc	-0.286%/℃
Temperature Coefficient of Pmax	-0.370%/℃

Mechanical Loading

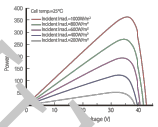
Front Side Maximum Static Loading	5400Pa
Rear Side Maximum Static Loading	2400Pa
Hailstone Test	25mm Hailstone at the speed of 23m/s

I-V Curve

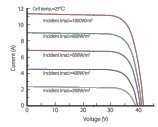
Current-Voltage Curve (LR4-60HPB-360M)



Power-Voltage Curve (LR4-60HPB-360M)



Current-Voltage Curve (LR4-60HPB-360M)



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Tel: +86-21-80162606 E-mail: module@longi-silicon.com Facebook: www.facebook.com/LONGi Solar

Note: Due to technical innovation, R&D and improvement, technical data above mentioned may be of modification accordingly. LONGi have the sole right to make such modification at anytime without further notice; Demanding party shall request for the latest datasheet for such as contract need, and make it a consisting and binding part of lawful documentation duly signed by both parties.

20200106-Draft

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ROOFMOUNT | RM10

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UNIRAC

BETTER SOLAR STARTS HERE

RM10 introduced the Power of Speed & Simplicity to the ballasted flat roof solar industry. The system consists of only two major components, minimizing installation time. Quickly design around roof obstacles and bond the system with just the turn of a wrench. Optional roof attachments, roof pads, and MLPE mount provide a complete solution UNIRAC's unmatched commercial project support makes construction easy, from permitting through installation, and **RM10** is supported by North America's largest distribution network. Plus, enjoy peace of mind with UNIRAC's industry-leading 25-year warranty.

FEWER PARTS • FASTER INSTALLATION

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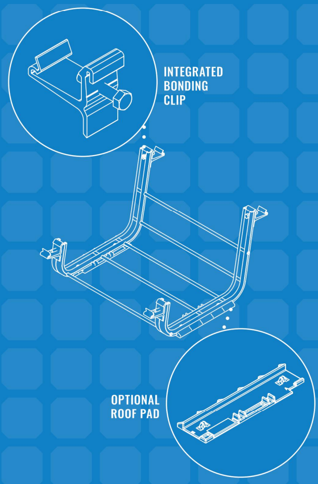
BETTER SOLAR STARTS HERE



SIMPLE DESIGN

TWO MAJOR COMPONENTS. ONE TOOL

RM10 supports most framed PV modules at 10 degree tilt. The component list consists of only two major components – a fully assembled ballast bay and a universal module clip. Our engineers specified a chemical locking hex bolt, providing a UL2703 certified grounding path from module to ballast bay, with just the turn of a wrench. RM is designed to conveniently work with off the shelf wire management products. A snap into place, membrane-friendly, rubber roof pad is also available as a low-cost option for roof protection.

AVAILABILITY

NATIONWIDE NETWORK

UNIRAC maintains the largest network of stocking distributors for our racking solutions. Our partners have distinguished their level of customer support, availability, and overall value, thereby providing the highest level of service to users of UNIRAC products. Count on our partners for fast and accurate delivery to meet your project needs. Visit unirac.com for a list of distributors.

AUTOMATED DESIGN TOOL

DESIGN PLATFORM AT YOUR SERVICE

Creating a bill of materials is just a few clicks away with **U-Builder**, a powerful online tool that streamlines the process of designing a code compliant solar mounting system. Save time by creating a user profile, and recall preferences and projects automatically when you log in. You will enjoy the ability to share projects with customers; there's no need to print results and send to a distributor, just click and share.

LISTED **UL2703**
BONDING & GROUNDING
MECHANICAL LOADING
SYSTEM FIRE CLASSIFICATION

UNIRAC CUSTOMER SERVICE MEANS THE HIGHEST LEVEL OF PRODUCT SUPPORT

UNMATCHED EXPERIENCE | CERTIFIED QUALITY | ENGINEERING EXCELLENCE | BANKABLE WARRANTY | DESIGN TOOLS | PERMIT DOCUMENTATION

TECHNICAL SUPPORT

UNIRAC's technical support team is dedicated to answering questions & addressing issues in real time. An online library of documents in[illegible]ding engineering reports, stamped letters and tech[illegible] sheets greatly simplifies your permitting and project [illegible] process.

[illegible]TIFIED QUALITY PRO[illegible]DER

UN[illegible] the only PV mo[illegible]ing vendor with ISO certificat[illegible] 9001:20[illegible], 14001:2015 and OHSAS 18001:2007, [illegible]s we deliver the highest standards for fit, form, and fu[illegible]ion. These certifications demonstrate our excelle[illegible] and commitment to first class business practices.

BANKABLE WARRANTY

Don't leave your project to chance, UNIRAC has the financial strength to back our products and reduce your risk. Have peace of mind knowing you are receiving products of exceptional quality. **ROOF**MOUNT is covered by a twenty five (25) year limited product warranty.

PROTECT YOUR [illegible]ON WITH [illegible]TY RACKI[illegible] SOLUTIONS BACKED BY ENGINEERING EXCELLENCE AND A SUPERIOR SUPPLY CHAIN

PUB2019SEP04- PR[illegible]

Power Optimizer

For North America

P320 / P340 / P370 / P400 / P401 / P405 / P485 / P505

POWER OPTIMIZER

PV power optimization at the module-level

- Specifically designed to work with SolarEdge inverters
- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch losses, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Fast installation with a single bolt
- Next generation maintenance with module-level monitoring
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- Module-level voltage shutdown for installer and firefighter safety

solaredge.com

solaredge

Power Optimizer

For North America

P320 / P340 / P370 / P400 / P401 / P405 / P485 / P505

Optimizer model (typical module compatibility)	P320 (for 60-cell modules)	P340 (for high-power 60-cell modules)	P370 (for higher-power 60 and 72-cell modules)	P400 (for 72 & 96-cell modules)	P401 (for high power 60 and 72 cell modules)	P405 (for high-voltage modules)	P485 (for high-voltage modules)	P505 (for higher current modules)	
INPUT									
Rated Input DC Power(1)	320	340	370		400	405	485	505	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	48		60	80	60	125(2)		83(2)	Vdc
MPPT Operating Range	8 - 48		8 - 60	8 - 80	8-60	12.5 - 105		12.5 - 83	Vdc
Maximum Short Circuit Current (Isc)	11			10.1	11.75	11		14	Adc
Maximum Efficiency	99.5								%
Weighted Efficiency	98.8							98.6	%
Overvoltage Category	II								
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREDGE INVERTER)									
Maximum Output Current	15								Adc
Maximum Output Voltage	60					85			Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREDGE INVERTER OR SOLAREDGE INVERTER OFF)									
Safety Output Voltage per Power Optimizer	1 ± 0.1								Vdc
STANDARD COMPLIANCE									
EMC	FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3								
Safety	IEC62109-1 (class II safety), UL1741								
Material	UL94 V-0 , UV Resistant								
RoHS	Yes								
INSTALLATION SPECIFICATIONS									
Maximum Allowed System Voltage	1000								Vdc
Compatible inverters	All SolarEdge Single Phase and Three Phase inverters								
Dimensions (W x L x H)	129 x 153 x 27.5 / 5.1 x 6 x 1.1			129 x 153 x 33.5 / 5.1 x 6 x 1.3	129 x 153 x 29.5 /5.1 x 6 x 1.16	129 x 159 x 49.5 / 5.1 x 6.3 x 1.9		129 x 162 x 59 / 5.1 x 6.4 x 2.3	mm / in
Weight (including cables)	630 / 1.4			750 / 1.7	655 / 1.5	845 / 1.9		1064 / 2.3	gr / lb
Input Connector	MC4(3)						Single or dual MC4(3)(4)	MC4(3)	
Input Wire Length	0.16 / 0.52								m / ft
Output Wire Type / Connector	Double Insulated / MC4								
Output Wire Length	0.9 / 2.95		1.2 / 3.9						m / ft
Operating Temperature Range(5)	-40 - +85 / -40 - +185								°C / °F
Protection Rating	IP68 / NEMA6P								
Relative Humidity	0 - 100								%

(1) Rated power of the module at STC will not exceed the optimizer "Rated Input DC Power". Modules with up to +5% power tolerance are allowed
(2) NEC 2017 requires max input voltage be not more than 80V
(3) For other connector types please contact SolarEdge
(4) For dual version for parallel connection of two modules use P485-4NMDMRM. In the case of an odd number of PV modules in one string, installing one P485 dual version power optimizer connected to one PV module. When connecting a single module seal the unused input connectors with the supplied pair of seals.
(5) For ambient temperature above +85°C / +185°F power de-rating is applied. Refer to Power Optimizers Temperature De-Rating Technical Note for more details.

PV System Design Using a SolarEdge Inverter(6)(7)		Single Phase HD-Wave	Single phase	Three Phase for 208V grid	Three Phase for 277/480V grid	
Minimum String Length (Power Optimizers)	P320, P340, P370, P400, P401	8		10	18	
	P405, P485, P505	6		8	14	
Maximum String Length (Power Optimizers)		25		25	50(8)	
Maximum Power per String		5700 with SE7600-...-SE11400-	5250	6000(9)	12750(10)	W
Parallel Strings of Different Length or Orientations		Yes				

(6) For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf
(7) It is not allowed to mix P405/P485 with P320/P340/P370/P400/P401 in one string.
(8) A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement
(9) For 208V grid: it is allowed to install up to 6,000W per string when the maximum power difference between each string is 1,000W
(10) For 277/480V grid: it is allowed to install up to 15,000W per string when the maximum power difference between each string is 2,000W

Intertek RoHS

Single Phase Inverter with HD-Wave Technology

for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US

INVERTERS

12-25 YEAR WARRANTY

Optimized installation with HD-Wave technology

- Specifically designed to work with power optimizers
- Record breaking efficiency
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014 and 2017, per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Extremely small
- Built-in module-level monitoring
- Outdoor and indoor installation
- Optional: Revenue grade data, ANSI C12.20 Class 0.5 (0.5% accuracy)

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Single Phase Inverter with HD-Wave Technology for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/ SE7600H-US / SE10000H-US / SE11400H-US

	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
OUTPUT								
Rated AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
Maximum AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓	Vac
AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)	-	✓	-	✓	-	-	✓	Vac
AC Frequency (Nominal)	59.3 - 60 - 60.5[1]							Hz
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5	A
Maximum Continuous Output Current @208V	-	16	-	24	-	-	48.5	A
GFDI Threshold	1							A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes							
INPUT								
Maximum DC Power @240V	4650	5900	7750	9300	11800	15500	17650	W
Maximum DC Power @208V	-	5100	-	7750	-	-	15500	W
Transformer-less, Ungrounded	Yes							
Maximum Input Voltage	480							Vdc
Nominal DC Input Voltage	380				400			Vdc
Maximum Input Current @240V[2]	8.5	10.5	13.5	16.5	20	27	30.5	Adc
Maximum Input Current @208V[2]	-	9	-	13.5	-	-	27	Adc
Max. Input Short Circuit Current	45							Adc
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600kΩ Sensitivity							
Maximum Inverter Efficiency	99	99.2						%
CEC Weighted Efficiency	99						99 @ 240V 98.5 @ 208V	%
Nighttime Power Consumption	< 2.5							W
ADDITIONAL FEATURES								
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)							
Revenue Grade Data, ANSI C12.20	Optional[3]							
Rapid Shutdown - NEC 2014 and 2017 690.12	Automatic Rapid Shutdown upon AC Grid Disconnect							
STANDARD COMPLIANCE								
Safety	UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07							
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (HI)							
Emissions	FCC Part 15 Class B							
INSTALLATION SPECIFICATIONS								
AC Output Conduit Size / AWG Range	1" Maximum / 14-6 AWG					1" Maximum /14-4 AWG		
DC Input Conduit Size / # of Strings / AWG Range	1" Maximum / 1-2 strings / 14-6 AWG					1" Maximum / 1-3 strings / 14-6 AWG		
Dimensions with Safety Switch (HxWxD)	17.7 x 14.6 x 6.8 / 450 x 370 x 174					21.3 x 14.6 x 7.3 / 540 x 370 x 185		in / mm
Weight with Safety Switch	22 / 10		25.1 / 11.4	26.2 / 11.9		38.8 / 17.6		lb / kg
Noise	< 25				< 50			dBA
Cooling	Natural Convection							
Operating Temperature Range	-13 to +140 / -25 to +60[4] (-40°F / -40°C option)[5]							°F / °C
Protection Rating	NEMA 4X (Inverter with Safety Switch)							

[1] For other regional settings please contact SolarEdge support
[2] A higher current source may be used; the inverter will limit its input current to the values stated
[3] Revenue grade inverter P/N: SExxxxH-US000BNU4
[4] For power de-rating information refer to https://www.solaredge.com/sites/default/files/temperature-derating-note-na.pdf
[5] -40 version P/N: SExxxxH-US000NNU4

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Subject: ETL Evaluation of SolarEdge Products to NEC 2017 Rapid Shutdown Requirements

To, whom it may concern

This letter represents the testing results of the below listed products to the requirements contained in the following standards:

National Electric Code, 2017. Section 690.12 requirement for rapid shutdown.

UL 1741, UL 1741 CRD for rapid shutdown

The evaluation was done on the PV Rapid Shutdown System (PVRSS), and covers installations consisting of optimizers and inverters with part numbers listed below.

The testing done has verified that controlled conductors are limited to:

- Not more than 30 volts and 240 voltamperes within 30 seconds of rapid shutdown initiation outside the array.
- Not more than 80 volts and 240 voltamperes within 30 seconds of rapid shutdown initiation inside the array.

The rapid shutdown initiation is performed by either disconnecting the AC feed to the inverter, or – if the inverter DC Safety switch is readily accessible – by turning off the DC Safety switch.

Applicable products:

- Power optimizers:
  - PB followed by 001 to 350; followed by -AOB or -TFI.
    OP followed by 001 to 500; followed by -LV, -MV, -IV or -EV.
    P followed by 001 to 850.
    SP followed by 001 to 350.
    *When optimizers are connected to 2 or more modules in series, the max input voltage may exceed 80V. Following the implementation of the NEC 2017 rapid shutdown value of 80V max inside of the array at the beginning of 2019 , modules exceeding this combined input max voltage will be required to use optimizers with parallel inputs.

- 1-ph Inverters:

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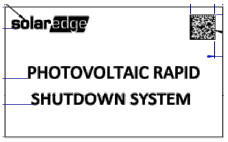
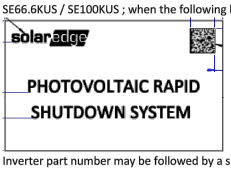
  - SE3000A-US / SE3800A-US / SE5000A-US / SE6000A-US / SE7600A-US / SE10000A-US / SE11400A-US / SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US when the following label is labeled on the side of the inverter:



Inverter part number may be followed by a suffix

- 3-ph Inverters:
  - SE9KUS / SE10KUS / SE14.4KUS / SE20KUS / SE30KUS / SE33.3KUS /SE43.2KUS / SE66.6KUS / SE100KUS ; when the following label is labeled on the side of the inverter:



Inverter part number may be followed by a suffix

If there are any questions regarding the results contained in this report, or any of the other services offered by Intertek, please do not hesitate to contact the undersigned.