PUBLIC NOTICE

A special meeting of the Historic Preservation Commission is set for February 12, 2020 at 7:00 p.m. in the First Floor Community Room at the River Forest Village Hall, 400 Park Avenue.

The agenda is as follows:

I. Call to Order

II. Public Testimony

III. Approval of Meeting Minutes – January 16, 2020

IV. Consideration of Certificate of Appropriateness Application – 755 William – Solar Panels

V. Discussion of Additional Ways to Protect Significant Properties

VI. Other Business

VII. Adjournment

VILLAGE OF RIVER FOREST HISTORIC PRESERVATION COMMISSION MEETING MINUTES

January 16, 2020

A meeting of the Historic Preservation Commission was held on January 16, 2020 at 7:00 p.m. in the First Floor Community Room at the River Forest Village Hall, 400 Park Avenue.

I. CALL TO ORDER/ROLL CALL

The meeting was called to order at 7:03 p.m. Upon roll call, the following persons were:

Present: Chairman Franek, Commissioners Graham-White, Forehand and Prestes

Absent: Commissioners Raino-Ogden and Pritz

Also Present: Assistant to the Village Administrator Jon Pape

II. PUBLIC TESTIMONY

No public testimony was heard.

III. APPROVAL OF MEETING MINUTES – DECEMBER 5, 2019

Chairman Franek provided corrections to the minutes as they related to his conversations with Landmarks Illinois.

A MOTION was made by Commissioner Prestes and SECONDED by Commissioner Graham-White to approve the meeting minutes for December 5, 2019 as amended.

AYES: Chairman Franek, Commissioners Graham-White, Forehand and Prestes.

NAYS: None.

Motion Passes.

IV. DISCUSSION OF ADDITIONAL WAYS TO PROTECT SIGNIFICANT PROPERTIES

Chairman Franek commented about utilizing curriculum in the local schools as a way of encouraging community education on architecture and history in River Forest. Commissioner Graham-White commented that she felt it was appropriate for students of all the grades.

Commissioner Graham-White commented that the housing market tends to peak during the spring months and it may be a good time to reach out to relators regarding education on historic preservation in River Forest.

Commissioner Raino-Ogden arrived at 7:11 p.m.

V. OTHER BUSINESS

The Commission discussed that the Village had received a Certificate of Appropriateness application for solar panels at 755 William. In order to hear this application at a Commission meeting, the Commission agreed to set a special meeting in order to accommodate that timeline, within the 30-day requirement of the ordinance.

The Commission briefly discussed the Women's Club with no updates on its status.

VI. ADJOURNMENT

A MOTION was made by Commissioner Raino-Ogden and SECONDED by Commissioner Graham-White to adjourn the January 16, 2020 meeting of the Historic Preservation Commission at 7:21 p.m.

AYES: Chairman Franek, Commissioners Graham-White, Raino-Ogden, Forehand and Prestes.

NAYS: None.

Motion Passes.

Respectfully submitted:

_____
Jonathan Pape
Assistant to the Village Administrator

Approved:

_____ _____
David Franek, Chairman Date
Historic Preservation Commission

AERIAL VIEW

STREET VIEW

SHEET INDEX	
PAGE NUMBER	**PAGE TITLE**
PV01	TITLE PAGE
PV02	SITE PLAN
PV03	ONE LINE & ELECTRICAL
PV04	ARRAY & STRINGING DETAIL
PV05	LABEL PLAN
SPECS	SPECSHEETS AND DOCUMENTS

APPLICABLE CODES

2014 COOK COUNTY ELECTRIC CODE (CCEC)
2015 INTERNATIONAL FIRE CODE (IFC)
2015 INTERNATIONAL BUILDING CODE (IBC)
2015 INTERNATIONAL RESIDENTIAL CODE (IRC)

OCCUPANCY & CONSTRUCTION TYPE

OCCUPANCY - R3
CONSTRUCTION - V-B

NABCEP CERTIFIED

Set Reviewed By:

PV-041115-011207

GENERAL NOTES

A. ALL WORK SHALL COMPLY WITH STATE AND LOCAL CODES.
B. DRAWINGS HAVE BEEN DETAILED ACCORDING TO UL LISTING REQUIREMENTS.
C. PRIOR TO COMMENCMENT OF WORK CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND NOTIFY DBM OF ANY INCONSISTENCIES.
D. ALL EQUIPMENT SHALL BE INSTALLED AS SHOWN.
E. WARNINGS PER CCEC 690 AND IBC.
F. WIRING SHALL NOT BE INSTALLED WITHIN 10 INCHES OF ROOF DECKING EXCEPT WHERE DIRECTLY BELOW PV EQUIPMENT

SCOPE OF WORK

DC System Size: 8.125 kW

Asphalt/Comp shingle roof pitch: 6/12

Anchored on 32 inch centers using UL listed racking system

UV resistant cable ties (not zip ties) used for permanent wire management in accordance with (CCEC 110.2,1110.3(A-B), 300.4)

Junction boxes mounted flush w/racking

DESIGN CRITERIA

WIND SPEED: 120 MPH

EXPOSURE CATEGORY: C

SYSTEM SUMMARY

MODULE: (25) PANASONIC VBHN325KA03 325W PV Module
OPTIMIZER: (25) SOLAREDGE P400 DC Optimizers
INVERTER: (1) SOLAREDGE SE7600H-US String Inverter 240VAC
RACKING: ECOFASTEN Rock-it 3.0 Roof Mounted PV System

Kapital Electric
renewable energy specialists

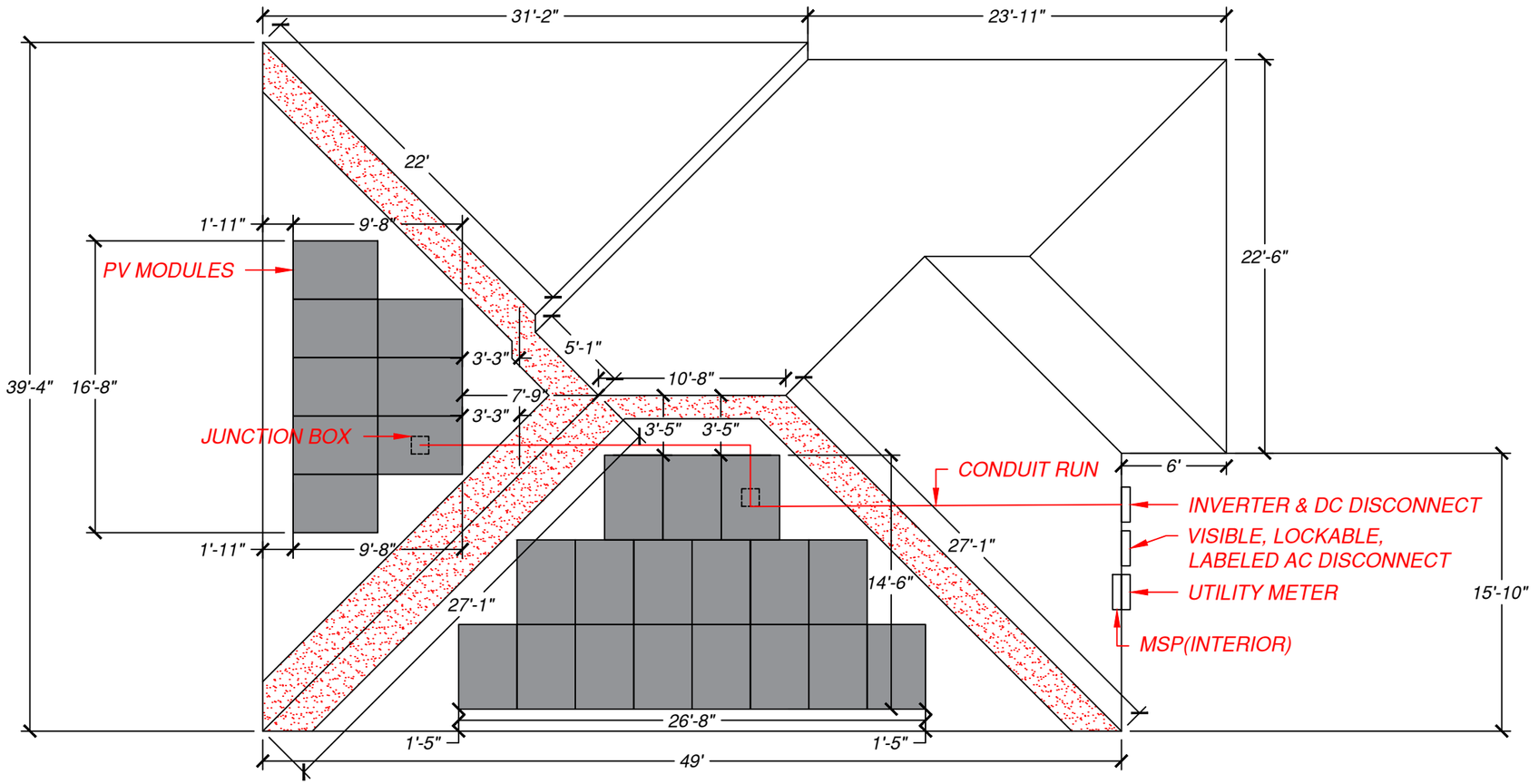
1240 Mark Street
Bensenville, IL 60106
(855) 527-4825
WWW.Kapitalelectric.com

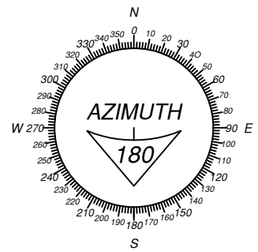
SITE INFORMATION:
Manning, Lydia
755 William St,
River Forest, IL 40305
DC SYSTEM SIZE:
8.125kW

DBM DESIGN

DBM SOLAR DESIGN AND CONSULTING COMPANY, LLC
P: (801) 690-4873
E: SUPPORT@DBMSOLAR.COM
WWW.DBMSOLAR.COM

DESIGNED BY: J. Fairchild
DATE: 10/15/2019
PROJECT #: 2019-KAPITAL
SHEET NAME: COVER PAGE
PAGE #: PV01
REVISION: 0





**AC DISCONNECT LOCATED 10' OR LESS FROM UTILITY METER*

**PV Modules cannot be installed over vents

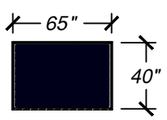
TOTAL ROOF AREA = 2046ft^2

TOTAL ARRAY AREA = 402.75ft^2

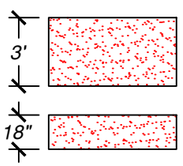
AMOUNT OF ROOF USED = 19.7%

SITE INDEX

PHOTOVOLTAIC MODULES



FIRE CODE SETBACKS



ARRAY DETAIL				
	A	B	C	D
AZIMUTH	270°	180°		
TILT ANGLE	26.5°	26.5°		
MODULE COUNT	8	17		
ROOF SUPPORTS	Rafter = 2X8 @ 16" O.C.			

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DESIGNED BY: J. Fairchild

DATE: 10/15/2019

PROJECT #: 2019-KAPITAL

SHEET NAME: PROPERTY DETAIL

PAGE #: PV02

REVISION: 0

PV MODULE SPECIFICATIONS	
MANUFACTURER	Panasonic
MODEL	VBHN325KA03
MAX POWER-POINT CURRENT (Imp)	5.50A
MAX POWER-POINT VOLTAGE (Vmp)	59.2 V
OPEN CIRCUIT VOLTAGE (Voc)	70.9 V
SHORT CIRCUIT CURRENT (Isc)	5.94 A
MAX SERIES FUSE (OCPD)	15 A
MAX POWER (Pmax)	325 W
MAX VOLTAGE (Vdc)	600 V

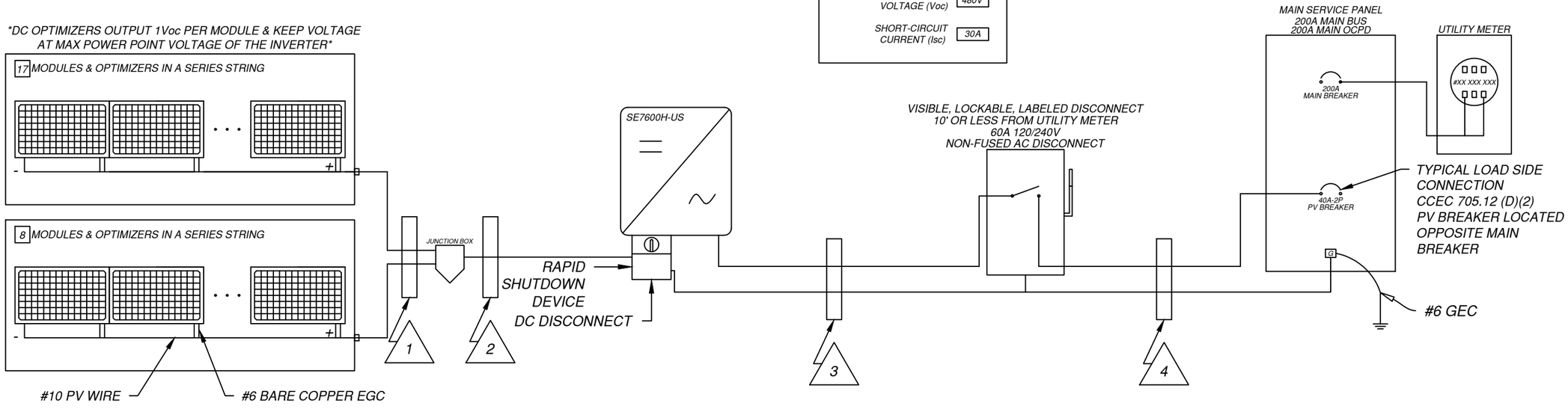
INVERTER SPECIFICATIONS	
MANUFACTURER	SolarEdge
MODEL	SE7600H-US (240V)
MAX DC INPUT VOLTAGE	480 V
MAX OUTPUT POWER	7600 W
NOMINAL AC OUTPUT VOLTAGE	240 V
NOMINAL AC OUTPUT CURRENT	32 A
MAX FUSE (OCPD)	40 A

PHOTOVOLTAIC AC OUTPUT LABEL	
AC OUTPUT CURRENT	32A
NOMINAL AC VOLTAGE	240V

DC DISCONNECT CALCS	
RATED MAX POWER POINT CURRENT (Imp)	20A
MAXIMUM POWER POINT VOLTAGE (Vmp)	400V
MAXIMUM SYSTEM VOLTAGE (Voc)	480V
SHORT-CIRCUIT CURRENT (Isc)	30A

PV LOAD CALCULATIONS
200A RATED MAIN PANEL 200A * 120% = 240A 240A - 200A = 40A (MAIN BUS ALLOWABLE SOLAR) 40A AVAILABLE FOR PV 705.12(D)(2)

DC OPTIMIZERS OUTPUT 1Voc PER MODULE & KEEP VOLTAGE AT MAX POWER POINT VOLTAGE OF THE INVERTER



ELECTRICAL NOTES
A. ALL COMPONENTS SHALL COMPLY WITH CCEC AS AMENDED.
B. PHASE CONDUCTORS SHALL BE IDENTIFIED
C. ALL WIRES SHALL BE PROVIDED WITH STRAIN RELIEF UPON ENTRY INTO BOXES, REFER TO MANUFACTURERS INSTALLATION MANUAL FOR REQUIRED TORQUE VALUES
D. THE DC GEC, IF USED, SHALL BE CONTINUOUS FROM THE INVERTER GROUND BUS TO THE MAIN SERVICE GROUNDING ELECTRODE SYSTEM
E. ATTACHMENT TO GROUND ELECTRODE SHALL USE IRREVERSIBLE CLAMP.
F. ALL EXPOSED METAL PARTS SHALL BE GROUNDED USING TIN PLATED COPPER LAY IN LUGS OR GROUNDING CLIPS LISTED FOR THE PURPOSE
G. MIN #10 BARE COPPER EGC AT SOURCE CIRCUITS SHALL BE ROUTED SECURELY TO MOUNTING HARDWARE THAT PROTECTS FROM PHYSICAL DAMAGE
H. #6 FOR AREAS THAT MAY BE SUBJECT TO DAMAGE
I. BOTH ENDS OF ALL METALLIC CONDUIT SHALL BE BONDED PER CCEC 250
J. INTERCONNECTION PER CCEC 690
K. ALL WIRES WILL BE RATED AT THHN/THWN-2

INTEGRATED ARC FAULT PROTECTION AND RAPID SHUTDOWN FOR NEC 2014 AND 2017, 690.11 AND 690.12

- All Exposed PV rooftop conductors that are not located under the array modules, shall be installed in a listed raceway, and shall include listed junction boxes at both ends of the raceway to transition from exposed conductors to the listed raceways. In Accordance with CCEC 690.31(A) & (B)**
- DC Conduit must be marked in accordance with CCEC 690.31. Labeling must be every 10' and must comply with CCEC 690.31. See PV05 for Label plan
- ALL DC Conductors must be protected with metal conduit

CONDUCTOR SCHEDULE WITH CCEC ELECTRICAL CALCULATIONS

ID	DESCRIPTION	CONDUCTOR	CONDUIT	NO. OF CNDRS. IN CNDT.	RATED AMPS	EGC	TEMP. CORR. FACTOR	FILL ADJ. FACTOR	CONT. CURRENT	MAX. CURRENT	BASE AMPACITY	DERATED AMPACITY	WIRE RUN DISTANCE
1	DC CIRCUIT: SERIES STRING OUTPUT TO JUNCTION BOX	10 AWG PV WIRE	FREE AIR	N/A	15A	#6 BARE COPPER	0.96(34°C)	N/A	15A	18.75A	35A	33.6A	20ft
2	DC CIRCUIT (TRANSITIONED): JUNCTION BOX TO INVERTER	10 AWG THWN-2 COPPER	3/4" DIA EMT	4	15A	10 AWG THWN-2 COPPER	0.96(34°C)	0.8	15A	18.75A	35A	26.88A	20ft
3	INVERTER TO AC DISCONNECT	8 AWG THWN-2 COPPER	3/4" DIA RMC	3	32A	10 AWG THWN-2 COPPER	0.96(34°C)	1.0	32A	40A	50A	48A	5ft
4	AC DISCONNECT TO POINT OF INTERCONNECTION	8 AWG THWN-2 COPPER	3/4" DIA RMC	3	32A	10 AWG THWN-2 COPPER	0.96(34°C)	1.0	32A	40A	50A	48A	5ft

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SITE INFORMATION:
Manning, Lydia
755 William St,
River Forest, IL 40305
DC SYSTEM SIZE:
8.125kW

DBM DESIGN
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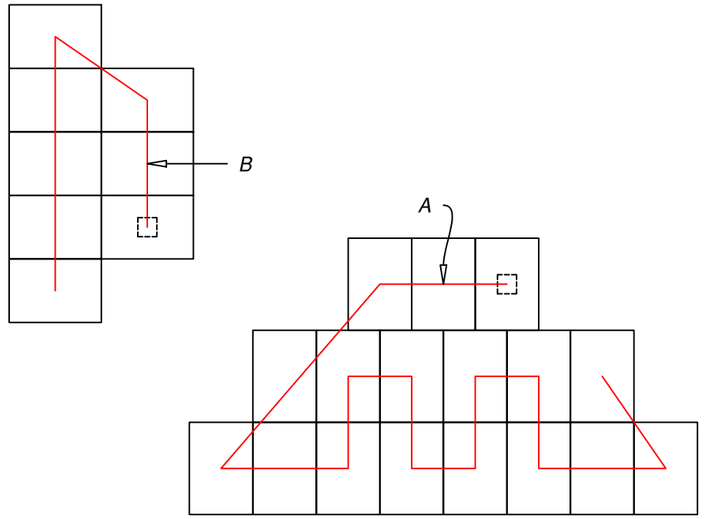
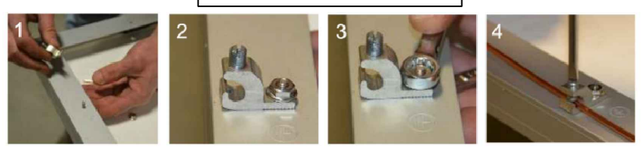
DESIGNED BY: J. Fairchild
DATE: 10/15/2019
PROJECT #: 2019-KAPITAL
SHEET NAME: 1LD/ ELECTRICAL DETAIL
PAGE #: PV03
REVISION: 0

Photovoltaic Array String Detail
(17) Modules String A
(8) Modules String B

STRINGING DETAIL



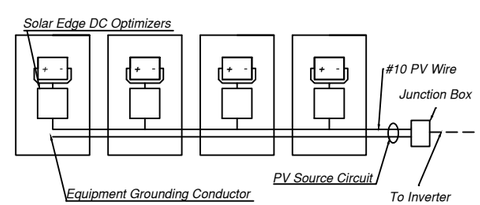
GROUNDING DETAIL



Necessary Components:

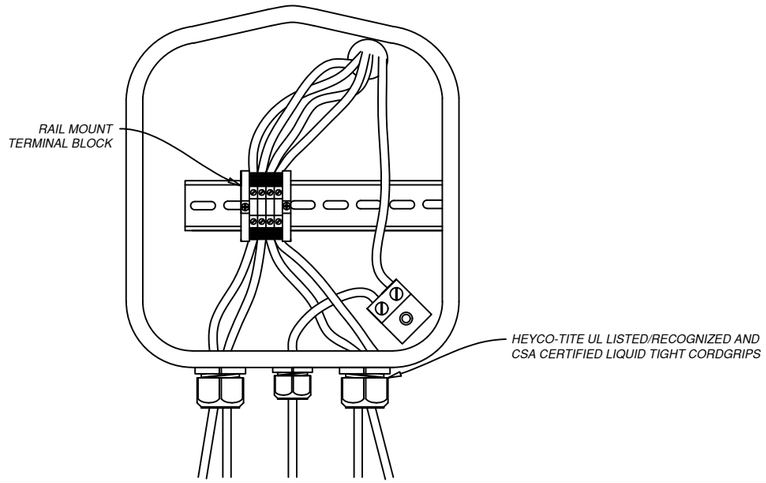
- One of the following ground lugs (or any UL 2703 compliant ground lug):
  - Burndy CL50-1TN Ground Lug (UL 2703 - E3514343 / UL 467 - E9999)
  - ILSCO SGB-4 Ground Lug (UL 2703 - E354420 / UL 467 - E34440)
  - ILSCO GBL-4DBT (UL 2703 - E354420 / UL 467 - E34440)
  - ILSCO GBL-4DBTH (UL 2703 - E354420 / UL 467 - E34440)
  - ILSCO GBL-4SS (UL 2703 - E354420 / UL 467 - E34440)

Diagram: Grid-Tied System w/ Optimizers

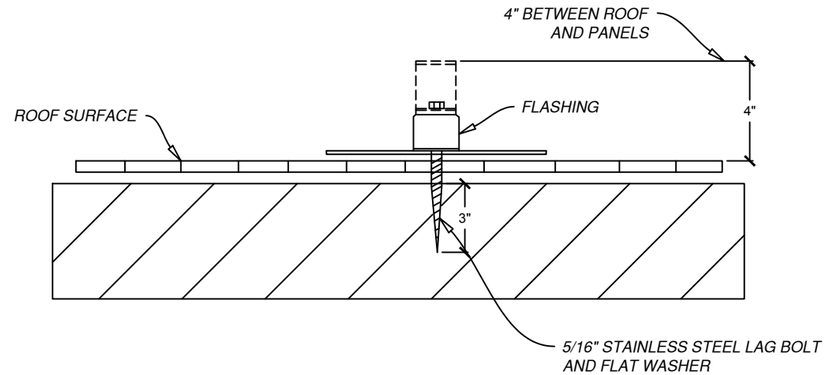


**See Attached Data Sheets For More Information*

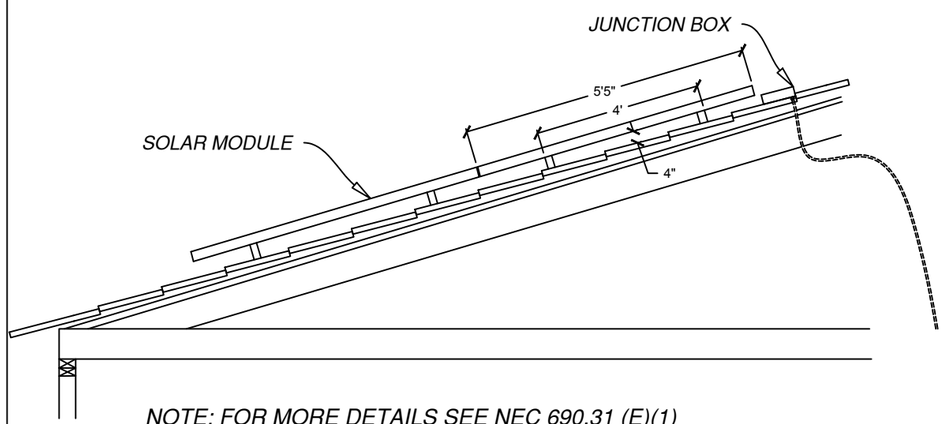
JUNCTION BOX DETAIL



ATTACHMENT DETAIL



PV ATTIC DETAIL



NOTE: FOR MORE DETAILS SEE NEC 690.31 (E)(1)

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DESIGNED BY:	J. Fairchild
DATE:	10/15/2019
PROJECT #	2019-KAPITAL
SHEET NAME:	ARRAY/STRINGING DETAIL
PAGE #	PV04
REVISION:	0

3"

WARNING
ELECTRIC SHOCK HAZARD
DO NOT TOUCH TERMINALS
TERMINALS ON BOTH LINE AND
LOAD SIDE MAY BE ENERGIZED
IN THE OPEN POSITION

LOCATION: (1) COMBINER BOX (2) JUNCTION BOX
(3) BREAKER PANEL (4) DISCONNECT SWITCH
(5) INVERTER (IF USED)

A

4.5"

WARNING: PHOTOVOLTAIC
POWER SOURCE

LOCATION: DC CONDUIT
(REFLECTIVE CONDUIT LABEL)
PER NEC 690.31(B)(1-4)

B

DC DISCONNECT CALCS

RATED MAX POWER POINT CURRENT (Imp)	20A
MAXIMUM POWER POINT VOLTAGE (Vmp)	400V
MAXIMUM SYSTEM VOLTAGE (Voc)	480V
SHORT-CIRCUIT CURRENT (Isc)	30A

LOCATION: STRING INVERTER (IF USED)

C

4.5"

CAUTION
PHOTOVOLTAIC SYSTEM CIRCUIT IS BACKFED

LOCATION: (1) MAIN SERVICE

D

4.5"

WARNING DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

LOCATION: MAIN SERVICE

E

4.5"

PHOTOVOLTAIC AC DISCONNECT

MAXIMUM AC OPERATING CURRENT:	32A
NOMINAL AC OPERATING VOLTAGE:	240V

MAIN SERVICE & ALL BACK FED PANEL BOARDS

F

4.5"

WARNING
DO NOT ADD ADDITIONAL CIRCUITS TO PANEL

LOCATION: (1) MAIN SERVICE
(2) AC COMBINER PANEL

G

4.5"

WARNING:
INVERTER OUTPUT CONNECTION
DO NOT RELOCATE SOLAR BREAKER

LOCATION: (1) MAIN SERVICE
(2) AC COMBINER PANEL
(3) ALL BACKFED PANELS

H

LABEL NOTES

A. RED BACKGROUND
B. WHITE LETTERING
C. MINIMUM 3/8" LETTER HEIGHT
D. ALL CAPITAL LETTERS
E. NON BOLD
F. MATERIAL SUITABLE FOR ENVIRONMENT
G. SIGNS MUST BE REFLECTIVE
H. SIGNS MUST NOT BE HAND WRITTEN

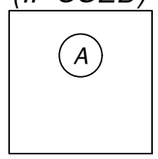
"PHOTOVOLTAIC SYSTEM EQUIPPED
WITH RAPID SHUTDOWN"

I

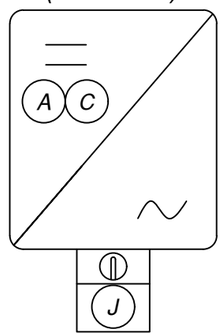
"RAPID SHUTDOWN
SWITCH FOR SOLAR PV SYSTEM"

J

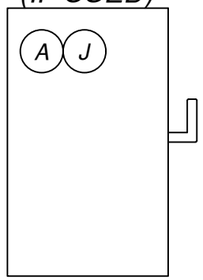
JUNCTION BOX (IF USED)



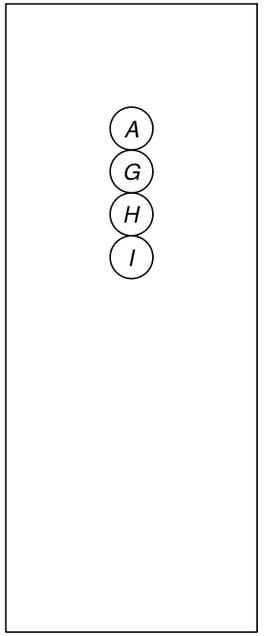
STRING INVERTER (IF USED)



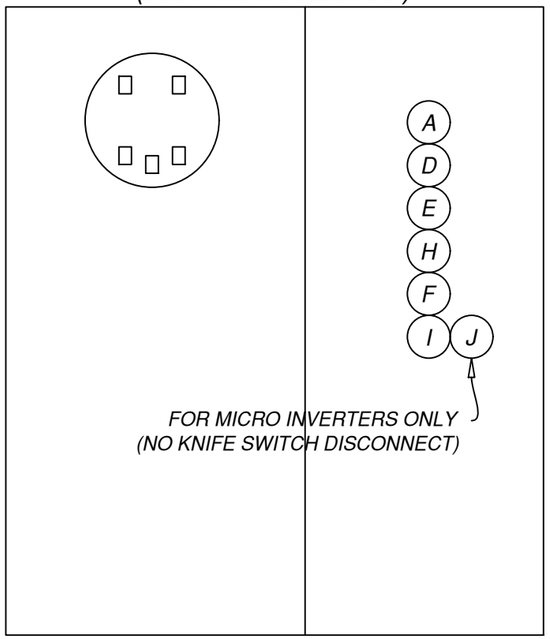
AC DISCONNECT (IF USED)



PV SUB PANEL (IF USED)



MAIN SERVICE PANEL
FOR ILLUSTRATION ONLY
(NOT ACTUAL MSP)



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DESIGNED BY: J. Fairchild

DATE: 10/15/2019

PROJECT # 2019-KAPITAL

SHEET NAME: LABEL PLAN

PAGE # PV05

REVISION: 0

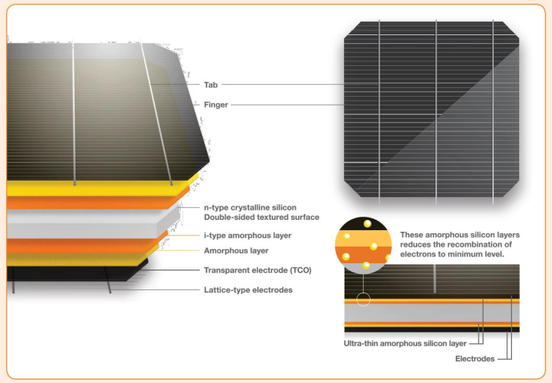
SOLAR MODULE SPECSHEET

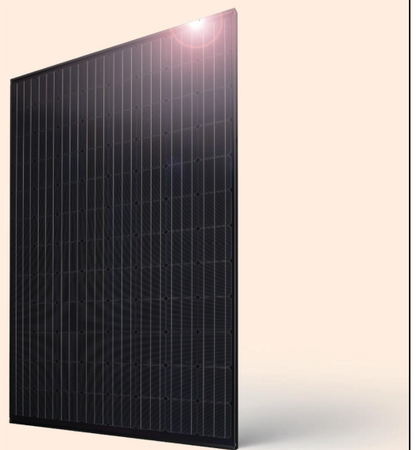
HIT® Photovoltaic Module

Panasonic

N325K / N320K

Panasonic's unique heterojunction technology uses ultra-thin amorphous silicon layers. These thin dual layers reduce losses, resulting in higher energy output than conventional panels.





Panasonic HIT® Black is the brand new all-black module which features high efficiency 19.4%, industry leading temperature coefficient of -0.258% /ºC and a sleek design. Powerful and aesthetically designed to make your roof look great.

TOP PERFORMER 2018 DNV·GL PV MODULE RELIABILITY SCORECARD

Our competitive advantages

High Efficiency at High Temperatures
As temperature increases, HIT® continues to perform at high levels due to the industry leading temperature coefficient of -0.258% /ºC. No other module even comes close to our temperature characteristics. That means more energy throughout the day.

25 Year Product and Performance Warranty**
Industry leading 25 year product workmanship and performance warranty is backed by a century old company- Panasonic. Power output is guaranteed to 90.76% after 25 years, far greater than other companies.

Quality and Reliability
Panasonic's vertical integration, 21 years of experience manufacturing HIT® and 20 internal tests beyond those mandated by current standards provides extreme quality assurance.

Higher Efficiency 19.4%
Enables higher power output and greater energy yields. HIT® provides maximum production for your limited roof space.

Low Degradation
HIT "N-type" cells result in extremely Low Light Induced Degradation (LID) and zero Potential Induced Degradation (PID) which supports reliability and longevity. This technology reduces annual degradation to 0.26% compare to 0.70% in conventional panels, guaranteeing more power for the long haul.

Enhanced Frame Design
A new 40mm frame increases durability and strength, being able to handle loads of up to 5400Pa. Also, the water drainage system gives rain water and snow melt a place to go, reducing water stains and soiling. Less dirt on the module means more sunlight getting through to generate power.

HIT® Photovoltaic Module

Panasonic

N325K / N320K

ELECTRICAL SPECIFICATIONS

Model	VBHN325KA03	VBHN320KA03
Rated Power (Pmax)[1]	325W	320W
Maximum Power Voltage (Vpm)	59.2V	58.7V
Maximum Power Current (Ipm)	5.50A	5.46A
Open Circuit Voltage (Voc)	70.9V	70.5V
Short Circuit Current (Isc)	5.94A	5.89A
Temperature Coefficient (Pmax)	-0.258%/°C	-0.258%/°C
Temperature Coefficient (Voc)	-0.17V/°C	-0.16V/°C
Temperature Coefficient (Isc)	3.27mA/°C	3.21mA/°C
NOCT	44.0°C	44.0°C
CEC PTC Rating (Tentative)	302.4	297.6
Cell Efficiency	21.8%	21.5%
Module Efficiency	19.4%	19.1%
Watts per Ft.²	18.03W	17.8W
Maximum System Voltage	600V	600V
Series Fuse Rating	15A	15A
Warranted Tolerance (-/+)	+10%/-0%*	+10%/-0%*

MECHANICAL SPECIFICATIONS

Model	VBHN325KA03, VBHN320KA03
Internal Bypass Diodes	4 Bypass Diodes
Module Area	18.02 Ft.² [1.67m²]
Weight	41.89 Lbs [19kg]
Dimensions LxWxH	62.6 x 41.5 x 1.6 [1590x1053x40mm]
Cable Length +Male/-Female	40.2/40.2 in. [1020/1020 mm]
Cable Size / Type	No. 12 AWG / PV Cable
Connector Type[2]	Multi-Contact® Type IV (MC4™)
Static Wind / Snow Load	112 PSF (5400Pa)****
Pallet Dimensions LxWxH	65.3x43.7x48.5 in. (USA) 63.7x42.2x46.4 in. (Malaysia)
Quantity per Pallet / Pallet Weight	24 pcs./1049 Lbs. [476 kg]
Quantity per 40' Container	672 pcs.
Quantity per 20' Container	288 pcs.

Operating Conditions & Safety Ratings

Model	VBHN325KA03, VBHN320KA03
Operating Temperature	-40°F to 185°F (-40°C to 85°C)
Hail Safety Impact Velocity	1" hailstone (25mm) at 52 mph (23m/s)
Safety & Rating Certifications	UL 1703, cUL Certified by UL LLC. CEC, FSEC, ISO9001
UL 1703 Fire Classification	Type 2
Limited Warranty	25** Yrs Workmanship and Power Output (Linear)***
Manufacturing Locations	USA and Malaysia

NOTE: Standard Test Conditions: Air mass 1.5; irradiance = 1000W/m²; cell temp. 25°C

* Maximum power at delivery. For guarantee conditions, please check our guarantee document.

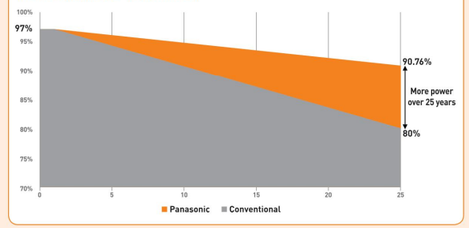
** Installation need to be registered through our website **www.panasonicusahitwarranty.com** within 60 days in order to receive twenty-five (25) year Product workmanship. Otherwise, Product Workmanship will be only fifteen (15) years.

*** 1st year 97%, after 2nd year 0.26% annual degradation to year 25.

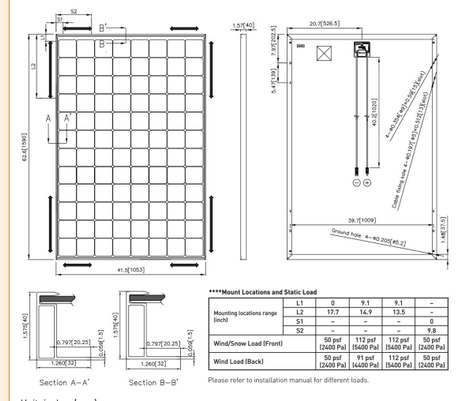
[1] STC: Cell temp. 25°C, AM1.5, 1000W/m²
[2] Safety locking clip (PV-SSH4) is not supplied with the module.

NOTE: Specifications and information above may change without notice.

PERFORMANCE WARRANTY



DIMENSIONS



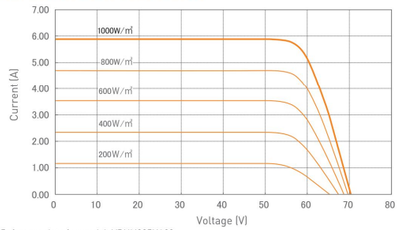
Unit: inches (mm)

****Mount Locations and Static Load

	L1	0	9.1	9.1	-
Mounting locations range (inch)	L2	17.7	16.9	13.5	-
	S1	-	-	-	0
	S2	-	-	-	9.8
Wind/Snow Load (Front)		50 psf [2400 Pa]	112 psf [5400 Pa]	112 psf [5400 Pa]	50 psf [2400 Pa]
Wind Load (Back)		50 psf [2400 Pa]	91 psf [4400 Pa]	112 psf [5400 Pa]	50 psf [2400 Pa]

Please refer to installation manual for different loads.

DEPENDENCE ON IRRADIANCE



Reference data for model: VBHN325KA03
(Cell temperature: 25°C)

⚠ CAUTION! Please read the installation manual carefully before using the products.

Used electrical and electronic products must not be mixed with general household waste. For proper treatment, recovery and recycling of old products, please take them to applicable collection points in accordance with your national legislation.

Panasonic

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RS17494DS_3.14.19

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SITE INFORMATION:
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755 William St,
River Forest, IL 40305

DC SYSTEM SIZE:
8.125kW

DBM DESIGN
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INVERTER SPECSHEET

INVERTERS

Single Phase Inverter with HD-Wave Technology

for North America

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

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	3/4" minimum / 14-6 AWG					3/4" minimum /14-4 AWG		
DC Input Conduit Size / # of Strings / AWG Range	3/4" minimum / 1-2 strings / 14-6 AWG					3/4" minimum / 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	-40 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-US000NNC2
[4] For power de-rating information refer to: https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf
[5] -40 version P/N: SExxxxH-US000NNU4

RoHS

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OPTIMIZER SPECSHEET

Power Optimizer

For North America

P320 / P340 / P370 / P400 / P405 / 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

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Power Optimizer

For North America

P320 / P340 / P370 / P400 / P405 / 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)	P405 (for thin film modules)	P505 (for higher current modules)	
INPUT							
Rated Input DC Power[1]	320	340	370	400	405	505	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	48		60	80	125[2]	83[2]	Vdc
MPPT Operating Range	8 - 48		8 - 60	8 - 80	12.5 - 105	12.5 - 83	Vdc
Maximum Short Circuit Current (Isc)	11			10.1		14	Adc
Maximum DC Input Current	13.75			12.63		17.5	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						
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)	128 x 152 x 28 / 5 x 5.97 x 1.1			128 x 152 x 36 / 5 x 5.97 x 1.42	128 x 152 x 50 / 5 x 5.97 x 1.96	128 x 152 x 59 / 5 x 5.97 x 2.32	mm / in
Weight (including cables)	630 / 1.4			750 / 1.7	845 / 1.9	1064 / 2.3	gr / lb
Input Connector	MC4[3]						
Output Wire Type / Connector	Double Insulated; MC4						
Output Wire Length	0.95 / 3.0		1.2 / 3.9				m / ft
Input Wire Length	0.16 / 0.52						m / ft
Operating Temperature Range	-40 - +85 / -40 - +185						°C / °F
Protection Rating	IP68 / NEMA6P						
Relative Humidity	0 - 100						%

[1] Rated STC power of the module. Module of up to +5% power tolerance allowed
[2] NEC 2017 requires max input voltage be not more than 80V
[3] For other connector types please contact SolarEdge

PV System Design Using a SolarEdge Inverter[4][5]		Single Phase HD-Wave	Single phase	Three Phase 208V	Three Phase 480V	
Minimum String Length (Power Optimizers)	P320, P340, P370, P400	8		10	18	
	P405 / P505	6		8	14	
Maximum String Length (Power Optimizers)		25		25	50[6]	
Maximum Power per String		5700 (6000 with SE7600-US - SE11400-US)	5250	6000[7]	12750[8]	W
Parallel Strings of Different Lengths or Orientations		Yes				

[4] For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf
[5] It is not allowed to mix P405/P505 with P320/P340/P370/P400 in one string
[6] A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement
[7] For SE14.4KUS/SE43.2KUS: It is allowed to install up to 6,500W per string when 3 strings are connected to the inverter (3 strings per unit for SE43.2KUS) and when the maximum power difference between the strings is up to 1,000W
[8] For SE30KUS/SE33.3KUS/SE66.6KUS/SE100KUS: It is allowed to install up to 15,000W per string when 3 strings are connected to the inverter (3 strings per unit for SE66.6KUS/SE100KUS) and when the maximum power difference between the strings is up to 2,000W

CE RoHS

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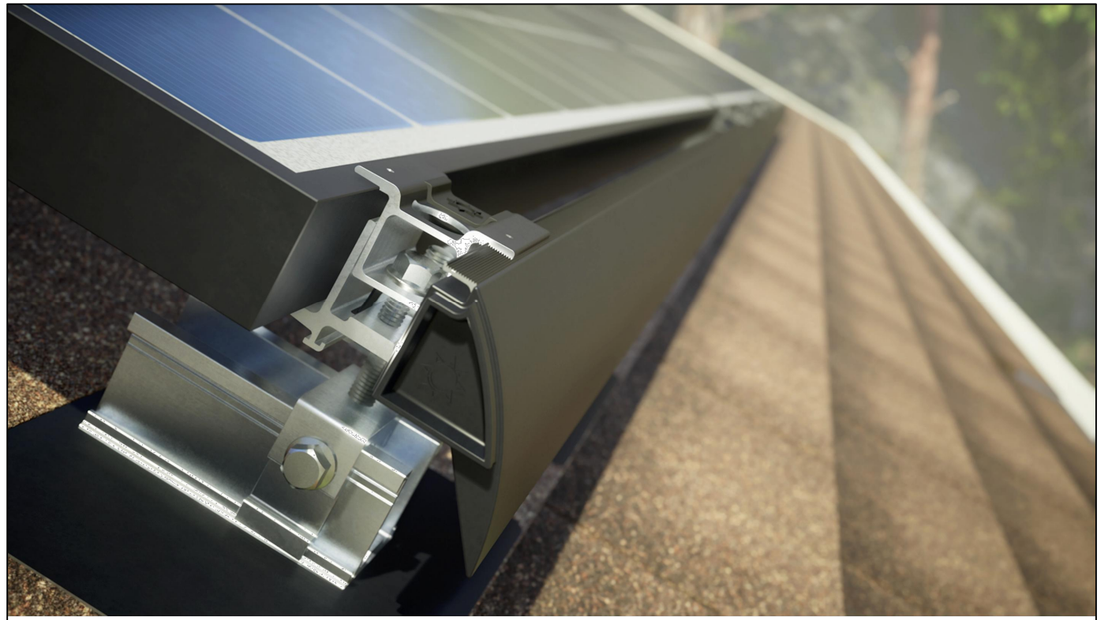
RACKING SPECSHEET



ROCK-IT SYSTEM 3.0

RAIL-FREE RACKING

UTILIZES ECOFASTEN SOLAR'S PATENTED TECHNOLOGY

EcoFasten Solar®

ROCK-IT SYSTEM 3.0

SYSTEM SPECIFICATIONS

Max No. of Panels	300 Modules per ground lug	Materials	300 Series Stainless, 6000 Series Aluminum
Max System Voltage	1000VDC	Coating	Black Andodization/Mill Finish
Class A Fire Rating	With UL1703 Type 1 Rated Modules	Lug Specifications	Burndy CL50-1TN Ground Lug (UL Listing #KDER E9999)
Leveling Range	3-4″	Ground Wire Per above Lug spec.	14 AWG- 4 AWG Copper Ground Wire
Rock-It Slide Comp Range Rock-It Slide Tile	3″ 7″	Max Module Size	64.96″(1650mm) x 39.05″(992mm) x 2″(50mm)
Min/Max Roof Slope	1/2:12/12:12	Max Downforce/Uplift Rating	45 PSF
Max Anchor Spacing (35mm/40mm) Max Anchor Spacing (32mm)	72″ 48″	Rock-It Mount Load Rating	547lbs with Single 5/16″ Lag 3.0 Safety Factor
Skirt Box QTY	6 units	Slide Fastening Hole	5/16″ diameter
Mount Box QTY Rock-It Slide Box QTY	12 units 50 units	Module Cantilever	Maximum cantilever is 1/3 bracket spacing
Coupling Box QTY	12 units	Warranty	20 Year Material and Workman-ship

Codes: National Electric Code, ANSI/NFPA 70, NEC 250, NEC 690, IRC, IBC

Standards: UL 2703: First Edition, UL 1703

FEATURES

- New and improved design
- Fastest, easiest to level system on the market
- Integrated electrical bonding
- SIMPLE- only 5 components
- North-South adjustability
- Only one tool required (1/2″ deep well socket)
- Vertical adjustment of 3″-4″

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