THE TOWN OF
McCORDSVILLE

Next Stop McCordsville

McCORDSVILLE BOARD OF ZONING APPEALS
VARIANCE APPLICATION

Zoning Ordinance Section 10.03

Applicant Information

Name: Kevin Verkamp

Current Address: 7718 N Michigan Rd
(Number) (Street)

Indianapolis IN 46268
(City) (State) (Zip)

Phone No.: 317-779-0000 E-mail Address: kevin@grnesolar.com

Property Owner Information (the "owner" does not include tenants or contract buyers)

Name: Steven Smith

Current Address: 9986 North Wind River Run
(Number) (Street)

McCordsville IN 46055
(City) (State) (Zip)

Phone No.: 740-501-0196 E-mail Address: stevensmithmd@att.net

Property Information

Current Address: 9986 North Wind River Run
(Number) (Street)

Subdivision Name (if applicable): Highland Springs

OR General Location (if no address has been assigned, please provide a street corner, subdivision lot number, or attach a legal description)

Administrative Officer Use Only:

Existing Zoning: _____

Future Land Use: _____

Date Application Filed: _____

Docket No.: _____

Present Use of Property: Residential

Size of the Lot/Parcel in Question: 170x224

Are there any restrictions, laws, covenants, variances, special exceptions, or appeals filed in connection with this property that would relate or affect its use for the specific purpose of this application? If yes, please list date and docket number, decision rendered and pertinent explanation:

Variance Information

Describe the variance requested: Homeowner is requesting permission to have GRNE-Nelnet, LLC install roof-mounted solar panels on the south and east roof planes.

Development Standards Variance Requested:

- ☐ Building Height
- ☐ Building Setback
- ☐ Lot Coverage
- ☐ Lot Width
- ☐ Lot Area
- ☐ Parking
- ☐ Loading
- ☐ Entrance / Drive
- ☐ Sight Visibility
- ☐ Fence and Wall
- ☐ Landscaping
- ☐ Buffering and Screening
- ☐ Exterior Lighting
- ☐ Sign
- ☒ Other (please specify): Solar panels

Describe reasons supporting the variance requested: The homeowner wishes to decrease his carbon footprint by producing electricity for use at his home.

Development Standards Variance Criteria

The McCordsville Zoning Ordinance establishes specific design criteria that must be met in order for a variance to be approved. Please answer each question below and if the response is "NO", please describe why the variance requested does not meet the required criteria.

Will the variance provide safe conditions that will not be injurious to the public health, safety, morals, and general welfare of the community?

☒ YES ☐ NO, Please Explain (attach additional pages as necessary): _____

_____

_____

Will the use and value of the area adjacent to the property included in the variance not be affected in a substantially adverse manner?

☒ YES ☐ NO, Please Explain (attach additional pages as necessary): _____

_____

_____

Will the strict application of the terms of this Ordinance result in a practical difficulty in the use of the property? This situation shall not be self-imposed, nor be based on a perceived reduction of, or restriction on, economic gain.

☒ YES ☐ NO, Please Explain (attach additional pages as necessary): _____

_____

_____

Applicant's Signature

The information included in and with this application is completely true and correct to the best of my knowledge and belief.

DocuSigned by:
Kevin VerKamp
(Applicant's Signature) 10/28/2022 (Date)

Owner's Signature (the "owner" does not include tenants or contract buyers)

I authorize the filing of this application and will allow the Town staff to enter this property for the purpose of analyzing this request. Further, I will allow a public notice sign to be placed and remain on the property until the processing of the request is complete.

DocuSigned by:
Steven Smith
(Owner's Signature) 10/28/2022 (Date)

_____ _____
(Owner's Signature) (Date)

STEVEN SMITH - 13.770kW DC, 11.400kW AC, 16kWh ENERGY STORAGE SYSTEM

SHEET CATALOG

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S-02	STRUCTURAL DETAIL
E-01	SINGLE LINE DIAGRAM
E-02	ELECTRICAL CALCULATION
PL-01	WARNING PLACARDS
SS	SPEC SHEET(S)

SCOPE OF WORK

GENERAL SYSTEM INFORMATION:
SYSTEM SIZE:
13770W DC, 11400W AC
MODULES:
(34)REC SOLAR REC405AA PURE 405W
INVERTER:
(1)SOLAREDGE TECHNOLOGIES SE11400H-US ENERGY HUB INVERTER (240V)
OPTIMIZER:
(34)SOLAREDGE S440 POWER OPTIMIZER
BATTERY:
(1)LG RESU16H PRIME 16kWh
(1)SOLAREDGE SMART EV CHARGER

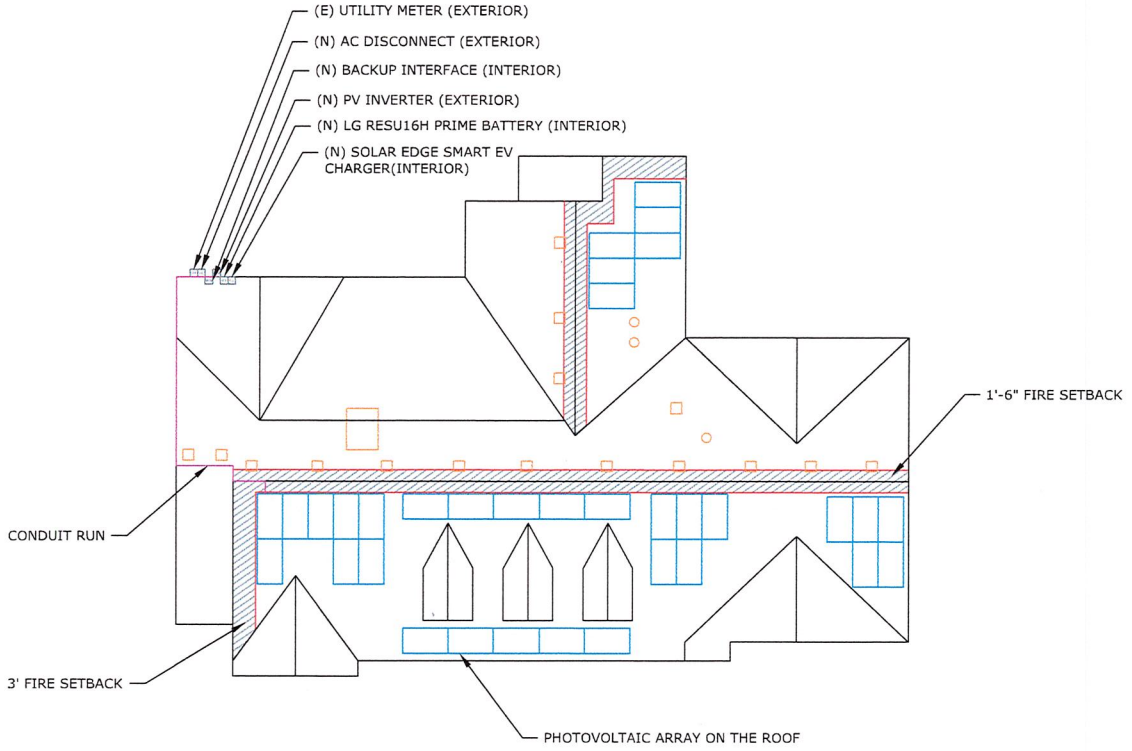
APPLICABLE CODES

- ELECTRIC CODE:NEC 2017
- FIRE CODE:IFC 2018
- BUILDING CODE:IBC 2018
- RESIDENTIAL CODE:IRC 2018

GENERAL NOTES

1.MODULES ARE LISTED UNDER UL 61730 AND CONFORM TO THE STANDARDS.
2.INVERTERS ARE LISTED UNDER UL 1741 AND CONFORM TO THE STANDARDS.
3.DRAWINGS ARE DIAGRAMMATIC, INDICATING GENERAL ARRANGEMENT OF THE PV SYSTEM AND THE ACTUAL SITE CONDITION MIGHT VARY.
4.WORKING CLEARANCES AROUND THE NEW PV ELECTRICAL EQUIPMENT WILL BE MAINTAINED IN ACCORDANCE WITH CCEC 110.26.
5.ALL GROUND WIRING CONNECTED TO THE MAIN SERVICE GROUNDING IN MAIN SERVICE PANEL/ SERVICE EQUIPMENT.
6.ALL CONDUCTORS SHALL BE 600V, 75°C STANDARD COPPER UNLESS OTHERWISE NOTED.
7.WHEN REQUIRED, A LADDER SHALL BE IN PLACE FOR INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS.
8.THE SYSTEM WILL NOT BE INTERCONNECTED BY THE CONTRACTOR UNTIL APPROVAL FROM THE LOCAL JURISDICTION AND/OR THE UTILITY.
9.ROOF ACCESS POINT SHALL BE LOCATED IN AREAS THAT DO NOT REQUIRE THE PLACEMENT OF GROUND LADDERS OVER OPENINGS SUCH AS WINDOWS OR DOORS, AND LOCATED AT STRONG POINTS OF BUILDING CONSTRUCTION WHERE THE ACCESS POINT DOES NOT CONFLICT WITH OVERHEAD OBSTRUCTIONS SUCH AS TREES, WIRES OR SIGNS.
10.PV ARRAY COMBINER/JUNCTION BOX PROVIDES TRANSITION FROM ARRAY WIRING TO CONDUIT WIRING

SITE PLAN LAYOUT



SCALE:1/16" = 1'-0"

ENGINEERING SCOPE OF WORK

1. ILLUMINE INDUSTRIES INC. HAS ONLY PROVIDED DRAFTING SERVICES FOR THE PERMIT DRAWINGS. NO ACTUAL ENGINEERING WORK, ENGINEERING REVIEW OR ENGINEERING APPROVAL HAS BEEN CONDUCTED BY ILLUMINE INDUSTRIES INC UNLESS NOTED OTHERWISE.
2. WHEN A PROFESSIONAL ENGINEER APPROVES AND SEALS THE DESIGN FOR COMPONENTS OF THEIR RESPECTIVE DISCIPLINE (STRUCTURAL/ELECTRICAL) SHOWN ON THESE PERMIT DRAWINGS, HE/SHE:
   a. TAKES FULL DIRECT CONTROL OF THE ENGINEERED DESIGN
   b. IS GIVEN ACCESS TO PERSONALLY SUPERVISE AND RECTIFY ANY ASPECT OF THE ENGINEERED DESIGN
   c. HAS FULLY ACCEPTED RESPONSIBILITY FOR THE ENGINEERED DESIGN

VICINITY MAP

GRNE SOLAR
230 N Hicks Pl, Palatine, IL 60067
www.grnesolar.com

CERTIFIED
PV Installation Professional
#PV-042217-015509
ERIC PETERMAN
CEO, GRNE Solar
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CUSTOMER INFORMATION

NAME:STEVEN SMITH

ADDRESS:9986 NORTH WIND RIVER RUN, MCCORDSVILLE, IN 46055

39.927168, -85.920164
APN: 300-114-112-179-000-018

AHJ:IN - COUNTY HANCOCK

UTILITY:NINE STAR CONNECT

PRN NUMBER:GRN-66406

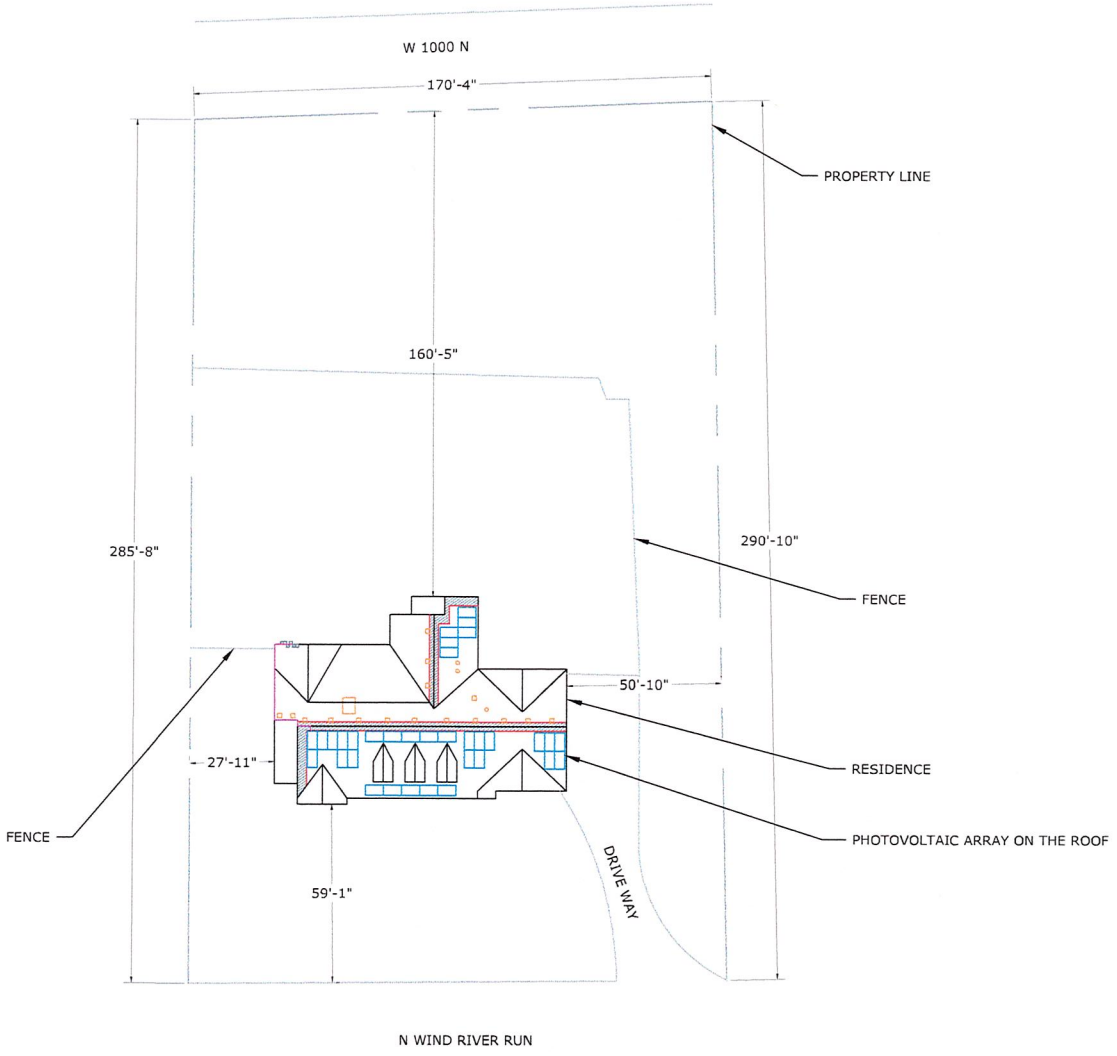
ILLUMINE

COVER PAGE-1

DRAFTED BY: R.KUMAR QC'ED BY:S.KISHORE	PAPER SIZE:17X11
SCALE:AS NOTED	REV:B
DATE:10/21/22	T-01

STEVEN SMITH - 13.770kW DC, 11.400kW AC, 16kWh ENERGY STORAGE SYSTEM

SITE PLAN LAYOUT



SCALE:1"=40'-0"

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COVER PAGE-2

DRAFTED BY: R.KUMAR QC'ED BY:S.KISHORE	PAPER SIZE:17X11
SCALE:AS NOTED	REV:B
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INSTALLATION NOTES

1.STRUCTURAL ROOF MEMBER LOCATIONS ARE ESTIMATED AND SHOULD BE LOCATED AND VERIFIED BY THE CONTRACTOR WHEN LAG BOLT PENETRATION OR MECHANICAL ATTACHMENT TO THE STRUCTURE IS REQUIRED.
2.ROOFTOP PENETRATIONS FOR SOLAR RACKING WILL BE COMPLETED AND SEALED WITH APPROVED SEALANT PER CODE BY A LICENSED CONTRACTOR.
3.LAGS MUST HAVE A MINIMUM 2.5" THREAD EMBEDMENT INTO THE STRUCTURAL MEMBER.
4.ALL PV RACKING ATTACHMENTS SHALL BE STAGGERED BY ROW BETWEEN THE ROOF FRAMING MEMBERS AS NECESSARY.
5.ROOF MOUNTED STANDARD RAIL REQUIRES ONE THERMAL EXPANSION GAP FOR EVERY RUN OF RAIL GREATER THAN 40'.
6.ALL CONDUCTORS AND CONDUITS ON THE ROOF SHALL BE MINIMUM 7/8" ABOVE THE ROOF SURFACE (INCLUDING CABLES UNDERNEATH MODULES AND RACKING).
7.THE PV INSTALLATION SHALL NOT OBSTRUCT ANY PLUMBING, MECHANICAL OR BUILDING ROOF VENTS.

ROOF ACCESS PATHWAYS AND SETBACKS:

1204.2.1 SOLAR PHOTOVOLTAIC SYSTEMS FOR GROUP R-3BUILDINGS.SOLAR PHOTOVOLTAIC SYSTEMS FOR GROUP R-3 BUILDINGS SHALL COMPLY WITH SECTIONS 1204.2.1.1 THROUGH 1204.2.1.3.

EXCEPTIONS:

1.THESE REQUIREMENTS SHALL NOT APPLY TO STRUCTURES DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE INTERNATIONAL RESIDENTIAL CODE.
2.THESE REQUIREMENTS SHALL NOT APPLY TO ROOFS WITH SLOPES OF 2 UNITS VERTICAL IN 12 UNITS HORIZONTAL OR LESS.

1204.2.1.1 PATHWAYS TO RIDGE. NOT FEWER THAN TWO 36-INCH-WIDE (914 MM) PATHWAYS ON SEPARATE ROOF PLANES,FROM LOWEST ROOF EDGE TO RIDGE, SHALL BE PROVIDED ON ALL BUILDINGS. NOT FEWER THAN ONE PATHWAY SHALL BE PROVIDED ON THE STREET OR DRIVEWAY SIDE OF THE ROOF. FOR EACH ROOF PLANE WITH A PHOTOVOLTAIC ARRAY, NOT FEWER THAN ONE 36-INCH-WIDE (914 MM) PATHWAY FROM LOWEST ROOF EDGE TO RIDGE SHALL BE PROVIDED ON THE SAME ROOF PLANE AS THE PHOTOVOLTAIC ARRAY, ON AN ADJACENT ROOF PLANE OR STRADDLING THE SAME AND ADJACENT ROOF PLANES

1204.2.1.2 SETBACKS AT RIDGE.FOR PHOTOVOLTAIC ARRAYS OCCUPYING 33 PERCENT OR LESS OF THE PLAN VIEW TOTAL ROOF AREA,
A SETBACK OF NOT LESS THAN 18 INCHES (457 MM)WIDE IS REQUIRED ON BOTH SIDES OF A HORIZONTAL RIDGE. FOR PHOTOVOLTAIC ARRAYS OCCUPYING MORE THAN 33 PERCENT OF THE PLAN VIEW TOTAL ROOF AREA, A SETBACK OF NOT LESS THAN 36 INCHES (457 MM) WIDE IS REQUIRED ON BOTH SIDES OF A HORIZONTAL RIDGE.

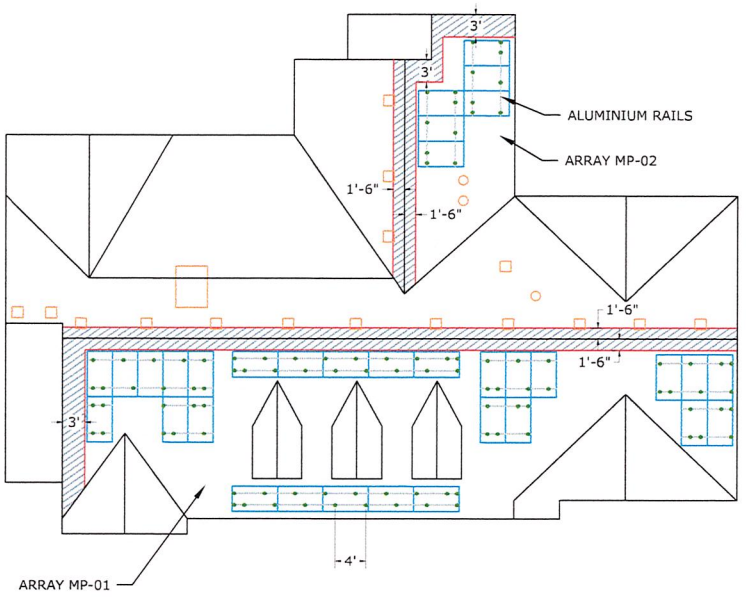
1204.2.2 EMERGENCY ESCAPE AND RESCUE OPENINGS. PANELS AND MODULES INSTALLED ON GROUP R-3 BUILDINGS SHALL NOT BE PLACED ON THE PORTION OF A ROOF THAT IS BELOW AN EMERGENCY ESCAPE AND RESCUE OPENING. A PATHWAY OF NOT LESS THAN 36 INCHES (914 MM) WIDE SHALL BE PROVIDED TO THE EMERGENCY ESCAPE AND RESCUE OPENING

1204.2.1.3 ALTERNATIVE SETBACKS AT RIDGE. WHERE AN AUTOMATIC SPRINKLER SYSTEM IS INSTALLED WITHIN THE DWELLING IN ACCORDANCE WITH SECTION 903.3.1.3, SETBACKS AT THE RIDGE SHALL CONFORM TO ONE OF THE FOLLOWING:
1.FOR PHOTOVOLTAIC ARRAYS OCCUPYING 66 PERCENT OR LESS OF THE PLAN VIEW TOTAL ROOF AREA, A SETBACK OF NOT LESS THAN 18 INCHES (457 MM) WIDE IS REQUIRED ON BOTH SIDES OF A HORIZONTAL RIDGE.
2.FOR PHOTOVOLTAIC ARRAYS OCCUPYING MORE THAN 66 PERCENT OF THE PLAN VIEW TOTAL ROOF AREA, A SETBACK OF NOT LESS THAN 36 INCHES (914 MM) WIDE IS REQUIRED ON BOTH SIDES OF A HORIZONTAL RIDGE

SITE INFORMATION - WIND SPEED: 115 MPH AND SNOW LOAD: 30 PSF

SR. NO	AZIMUTH	PITCH	NO. OF MODULES	ARRAY AREA (SQ. FT.)	ROOF TYPE	ATTACHMENT	FRAME TYPE	ROOF EXPOSURE	FRAME SIZE	FRAME SPACING	MAX RAIL SPAN	OVER HANG
MP-01	180°	40°	28	557.7	COMPOSITION SHINGLE	NANOMOUNT DECKING	RAFTERS	ATTIC	2 X 4	1'-4"	4'-0"	1'-6"
MP-02	90°	40°	6	119.5	COMPOSITION SHINGLE	NANOMOUNT DECKING	RAFTERS	ATTIC	2 X 4	1'-4"	4'-0"	1'-6"

NOTE:PENETRATIONS ARE STAGGERED



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AERIAL VIEW

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AHJ:IN - COUNTY HANCOCK

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ILLUMINE i

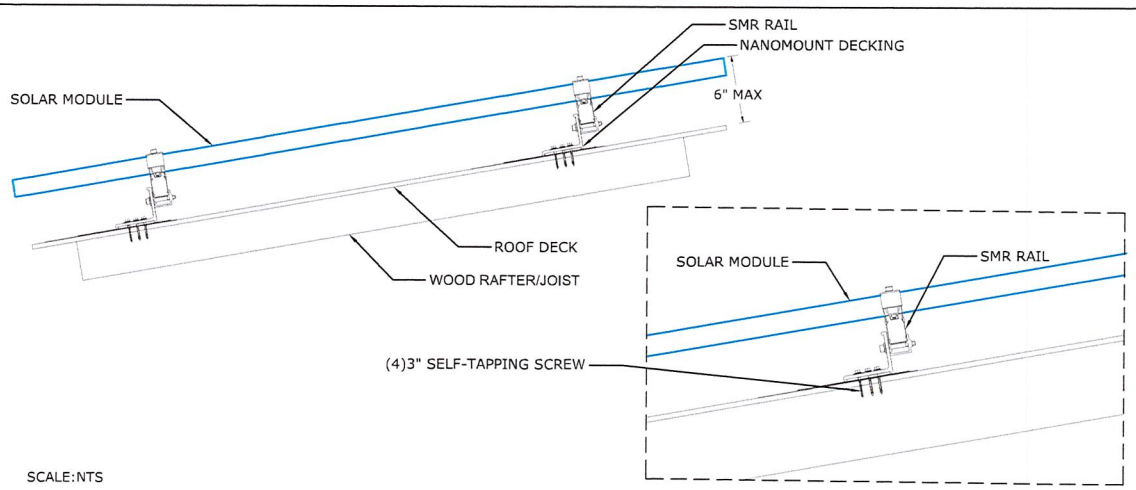
MOUNTING DETAIL

DRAFTED BY: R.KUMAR QC'ED BY:S.KISHORE	PAPER SIZE:17X11
SCALE:AS NOTED	REV:B
DATE:10/21/22	S-01

DEAD LOAD CALCULATIONS

BOM	QUANTITY	LBS/UNIT	TOTAL WEIGHT (LBS)
MODULES	34	43.21	1469.14
MID-CLAMP	46	0.1375	6.33
END-CLAMP	44	0.2425	10.67
RAIL LENGTH	228	0.5625	128.25
SPLICE BAR	6	0.5625	3.38
NANOMOUNT DECKING	100	0.45	45.00
TOTAL WEIGHT OF THE SYSTEM (LBS)			1662.76
TOTAL ARRAY AREA ON THE ROOF (SQ. FT.)			677.17
WEIGHT PER SQ. FT.(LBS)			2.46
WEIGHT PER PENETRATION (LBS)			16.63

ATTACHMENT DETAIL-NANOMOUNT DECKING



SCALE:NTS

MODULES DATA

REC SOLAR REC405AA PURE 405W	
MODULE DIMS	71.7"x40"x1.2"
LAG SCREWS	(4)3" SELF-TAPPING SCREW

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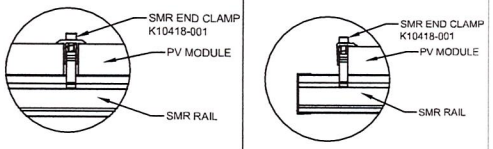
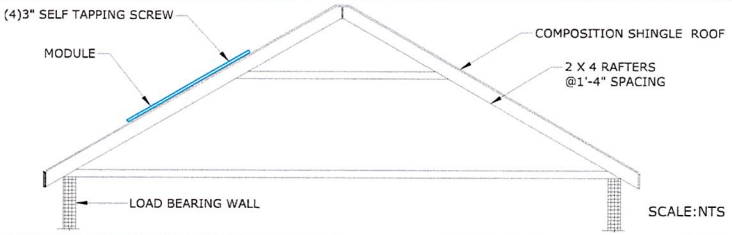
MID-CLAMP AND END-CLAMP ANATOMY



ROOF FRAMING DETAILS



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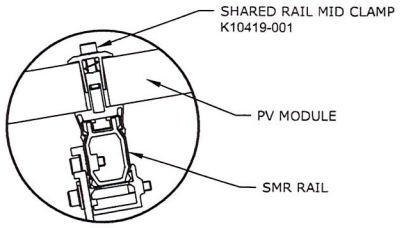
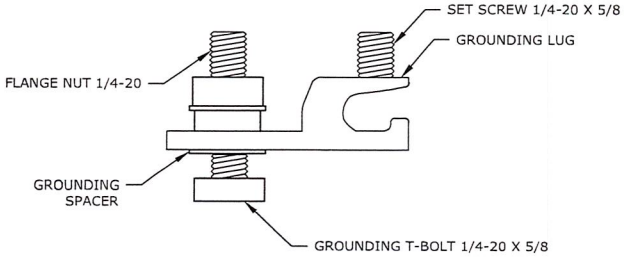
GROUNDING DETAILS

MODULE TO MODULE & MODULE TO RAIL



GROUNDING MID-CLAMP
SCALE: NTS

GROUNDING LUG



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STRUCTURAL DETAIL

DRAFTED BY: R.KUMAR QC'ED BY:S.KISHORE	PAPER SIZE:17X11
SCALE:AS NOTED	REV:B
DATE:10/21/22	S-02

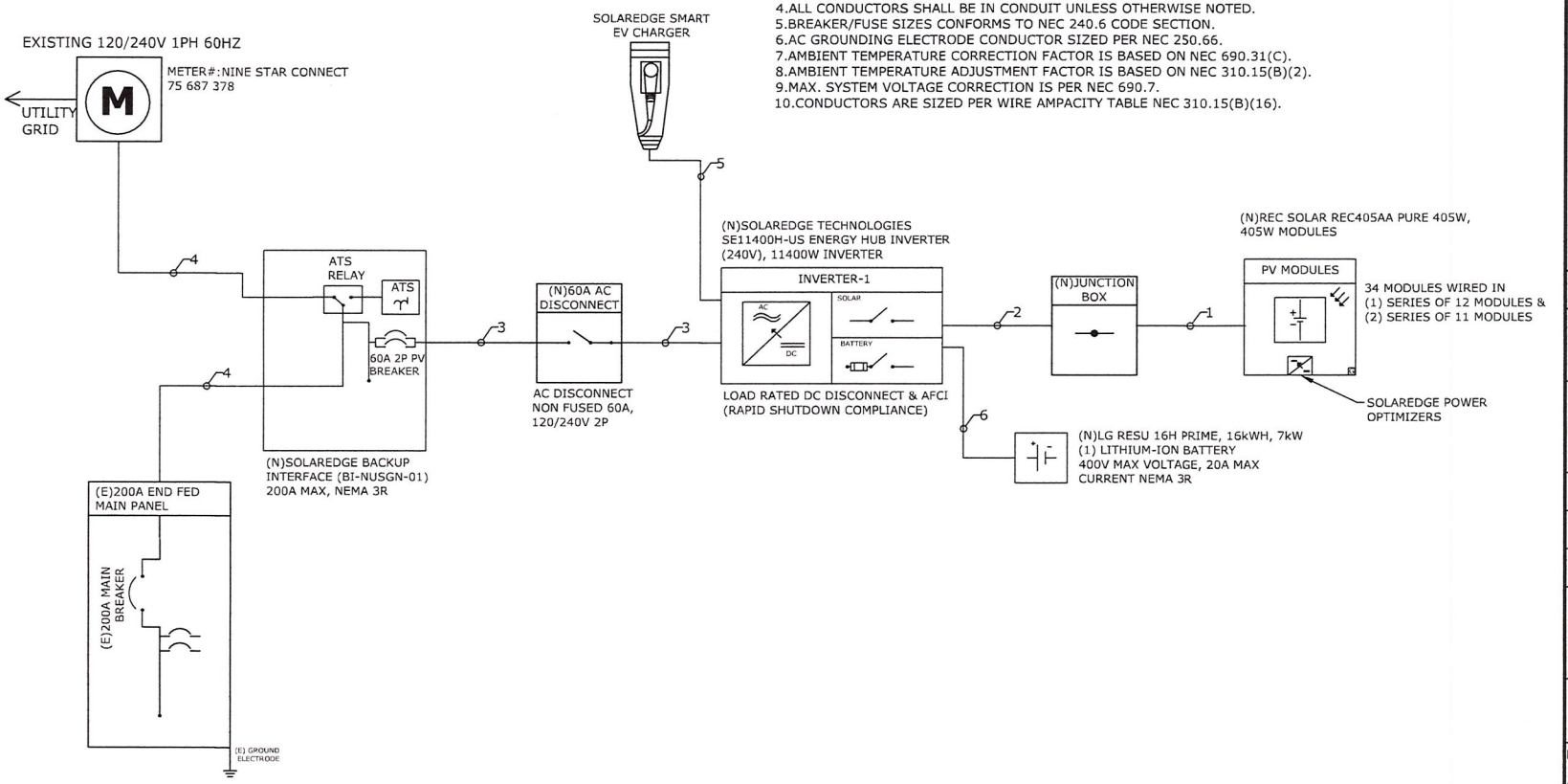
SINGLE LINE DIAGRAM: DC SYSTEM SIZE - 13770W, AC SYSTEM SIZE - 11400W, 16kWh ENERGY STORAGE SYSTEM

INVERTER SPECIFICATIONS	
MODEL	SOLAREDGE TECHNOLOGIES SE11400H-US ENERGY HUB INVERTER (240V)
POWER RATING	11400W
MAX OUTPUT CURRENT	47.5A
CEC WEIGHTED EFFICIENCY	99%
MAX INPUT CURRENT	31A
MAX DC VOLTAGE	480V

MODULE SPECIFICATION	
MODEL	REC SOLAR REC405AA PURE 405W
MODULE POWER @ STC	405W
OPEN CIRCUIT VOLTAGE:**Voc**	48.9V
MAX POWER VOLTAGE:**Vmp**	42.4V
SHORT CIRCUIT VOLTAGE:**Isc**	10.30A
MAX POWER CURRENT:**Imp**	9.56A

OPTIMIZER CHARACTERISTICS	
MODEL	**S440**
MIN INPUT VOLTAGE	8 VDC
MAX INPUT VOLTAGE	60 VDC
MAX INPUT CURRENT	14.5 ADC
MAX OUTPUT CURRENT	15 ADC

SYSTEM CHARACTERISTICS	
DC SYSTEM SIZE	13770W
INVERTER STRING VOLTAGE:**Vmp**	380V
MAX INVERTER SYSTEM VOLTAGE: **Voc**	480V
MAX SHORT CIRCUIT CURRENT	15A
OPERATING CURRENT	36.24A



ELECTRICAL NOTES:
1. CONDUCTORS EXPOSED TO SUNLIGHT SHALL BE LISTED AS SUNLIGHT RESISTANT PER NEC 310.10(D).
2. CONDUCTORS EXPOSED TO WET LOCATIONS SHALL BE SUITABLE FOR USE IN WET LOCATIONS PER NEC 310.10(C).
3. MAXIMUM DC/AC VOLTAGE DROP SHALL BE NO MORE THAN 2%.
4. ALL CONDUCTORS SHALL BE IN CONDUIT UNLESS OTHERWISE NOTED.
5. BREAKER/FUSE SIZES CONFORMS TO NEC 240.6 CODE SECTION.
6. AC GROUNDING ELECTRODE CONDUCTOR SIZED PER NEC 250.66.
7. AMBIENT TEMPERATURE CORRECTION FACTOR IS BASED ON NEC 690.31(C).
8. AMBIENT TEMPERATURE ADJUSTMENT FACTOR IS BASED ON NEC 310.15(B)(2).
9. MAX. SYSTEM VOLTAGE CORRECTION IS PER NEC 690.7.
10. CONDUCTORS ARE SIZED PER WIRE AMPACITY TABLE NEC 310.15(B)(16).

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SINGLE LINE DIAGRAM

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ELECTRICAL CALCULATION

CONDUIT SCHEDULE

TAG ID	CONDUIT SIZE	CONDUCTOR	NEUTRAL	GROUND
1	NONE	(6) 10AWG PV WIRE	NONE	(1) 10AWG BARE COPPER
2	3/4"EMT	(6) 10AWG THHN/THWN-2	NONE	(1) 10AWG THHN/THWN-2
3	3/4"EMT	(2) 6AWG THHN/THWN-2	(1) 6AWG THHN/THWN-2	(1) 6AWG THHN/THWN-2
4	2"EMT	(2) 3/0AWG THHN/THWN-2	(1) 3/0AWG THHN/THWN-2	(1) 6AWG THHN/THWN-2
5	3/4"EMT	(2) 8AWG THHN/THWN-2	(1) 8AWG THHN/THWN-2	(1) 8AWG THHN/THWN-2
6	3/4"EMT	(2) 10AWG THHN/THWN-2	NONE	(1) 10AWG THHN/THWN-2
		2-WIRE 24 AWG SHIELDED TWISTED PAIR CABLE, 600V INSTALLED		

NOTE:
MAIN PANEL RATING:200A, MAIN BREAKER RATING:200A

OCPD CALCULATIONS:
INVERTER OVERCURRENT PROTECTION= INVERTER O/P I X CONTINUOUS LOAD(1.25)
=47.5x1.25=59.38A=>PV BREAKER = 60A

ELECTRICAL CALCULATIONS

DC WIRE SIZING CALCULATIONS BASED OF FOLLOWING EQUATIONS>>

- REQUIRED CONDUCTOR AMPACITY: 125% X Isc(A) X #OF PARALLEL STRINGS = MAX CURRENT PER 690.8(A)(1) X 125% = MAX CURRENT PER 690.8(B)(1)
- CORRECTED AMPACITY CALCULATIIONS: AMAPCITY X TEMPERATURE DERATE FACTOR X COUDUIT FILL DERATE = DERATED CONDUCTOR AMPACITY PER 690.8(B)(2)
- DERATE CONDUCTOR AMPACITY CHECK: MAX CURRENT PER 690.8(A)(1) < DERATED CONDUCTOR AMPACITY

AC WIRE SIZING CALCULATIONS BASED OF FOLLOWING EQUATIONS >>

- REQUIRED CONDUCTOR AMPACITY: INVERTER OUTPUT CURRENT X #OF INVERTERS = MAX CURRENT PER 690.8(A)(3) X 125% = MAX CURRENT PER 690.8(B)(1)
- CORRECTED AMPACITY CALCULATIONS: AMPACITY X TEMPERATURE DERATE FACTOR X CONDUIT FILL DERATE = DERATED CONDUCTOR AMPACITY PER 690.8(B)(2)
- DERATED CONDUCTOR AMPACITY CHECK: MAX CURRENT PER 690.8(A)(3) < DERATED CONDUCTOR AMPACITY

DC WIRE CALCULATIONS:- MATERIAL:COPPER & TEMPERATURE RATING:90°C

TAG ID	REQUIRED CONDUCTOR AMPACITY											CORRECTED AMPACITY CALCULATION							DERATED CONDUCTOR AMPACITY CHECK			
1	1	X	15	X	1	=	15	X	1.25	=	18.75A	40	X	0.58	X	1	=	23.20A	18.75A	<	23.20A
2	1	X	15	X	1	=	15	X	1.25	=	18.75A	40	X	0.71	X	0.8	=	22.72A	18.75A	<	22.72A

AC WIRE CALCULATIONS:- MATERIAL:COPPER & TEMPERATURE RATING:90°C

TAG ID	REQUIRED CONDUCTOR AMPACITY									CORRECTED AMPACITY CALCULATION							DERATED CONDUCTOR AMPACITY CHECK		
3	47.5	X	1	=	47.50	X	1.25	=	59.38A	75	X	0.87	X	1	=	65.25A	59.38A	<	65.25A

GRNE SOLAR
230 N Hicks Pl, Palatine, IL 60067
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CERTIFIED
PV Installation Professional
#PV-042217-015509
ERIC PETERMAN
CEO, GRNE Solar
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(312)859-3417

CUSTOMER INFORMATION

NAME:STEVEN SMITH

ADDRESS:9986 NORTH WIND RIVER RUN, MCCORDSVILLE, IN 46055

39.927168, -85.920164
APN: 300-114-112-179-000-018

AHJ:IN - COUNTY HANCOCK

UTILITY:NINE STAR CONNECT

PRN NUMBER:GRN-66406

ILLUMINE i

ELECTRICAL CALCULATION

DRAFTED BY: R.KUMAR QC'ED BY:S.KISHORE	PAPER SIZE:17X11
SCALE:AS NOTED	REV:B
DATE:10/21/22	E-02

WARNING PLACARD

⚠ WARNING

ELECTRIC SHOCK HAZARD

TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

DC VOLTAGE IS ALWAYS PRESENT WHEN SOLAR MODULES ARE EXPOSED TO SUNLIGHT

LABEL LOCATION
AC DISCONNECT,POINT OF INTERCONNECTION
PER CODE: NEC 690.13

WARNING:PHOTOVOLTAIC POWER SOURCE

LABEL LOCATION
CONDUIT, COMBINER BOX
PER CODE: NEC690.31(G)(3)

PHOTOVOLTAIC AC DISCONNECT

LABEL LOCATION
DISCONNECT, POINT OF INTERCONNECTION
PER CODE: NEC690.13(B)

INVERTER 1

MAXIMUM SYSTEM VOLTAGE(Voc)	480	V
MAXIMUM CIRCUIT CURRENT(Isc)	45	A
MAXIMUM RATED OUTPUT CURRENT OF THE CHARGE CONTROLLER OR DC-TO-DC CONVERTER(IF INSTALLED)	15	A

LABEL LOCATION
DC DISCONNECT
PER CODE: NEC690.53

PHOTOVOLTAIC SYSTEM AC DISCONNECT SWITCH
RATED AC OPERATING CURRENT 47.50 AMPS AC
AC NOMINAL OPERATING VOLTAGE 240 VAC

LABEL LOCATION
AC DISCONNECT , POINT OF INTERCONNECTION
[PER CODE: NEC 690.54]

WARNING
DUAL POWER SOURCE SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

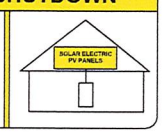
LABEL LOCATION
POINT OF INTERCONNECTION
PER CODE: NEC705.12(B)(3)

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

LABEL LOCATION
INVERTER
PER CODE: NEC 690.56(C)(3)

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

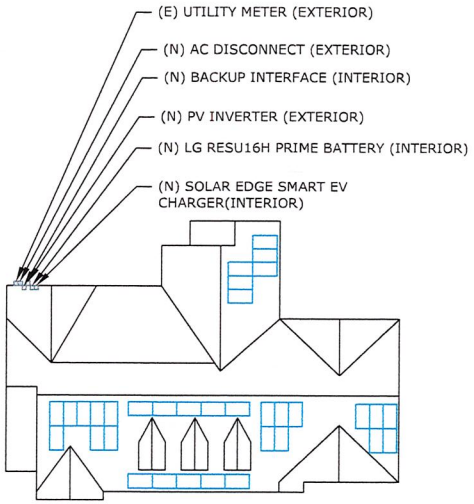
TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY



LABEL LOCATION
AC DISCONNECT,
POINT OF INTERCONNECTION
PER CODE: NEC690.56(C)(1)(a)

CAUTION:MULTIPLE SOURCES OF POWER ⚠

POWER TO THIS BUILDING IS ALSO SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECTS LOCATED AS SHOWN



9986 NORTH WIND RIVER RUN, MCCORDSVILLE, IN 46055

LABEL LOCATION
SERVICE PANEL
PER CODE: NEC 705.10

NOTES:
ALL PLACARDS SHALL BE OF WEATHER PROOF CONSTRUCTION, BACKGROUND ON ALL PLACARDS SHALL BE RED WITH WHITE LETTERING U.O.N.
PLACARD SHALL BE MOUNTED DIRECTLY ON THE EXISTING UTILITY ELECTRICAL SERVICE.
FASTENERS APPROVED BY THE LOCAL JURISDICTION

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WARNING PLACARDS

DRAFTED BY: R.KUMAR QC'ED BY:S.KISHORE	PAPER SIZE:17X11
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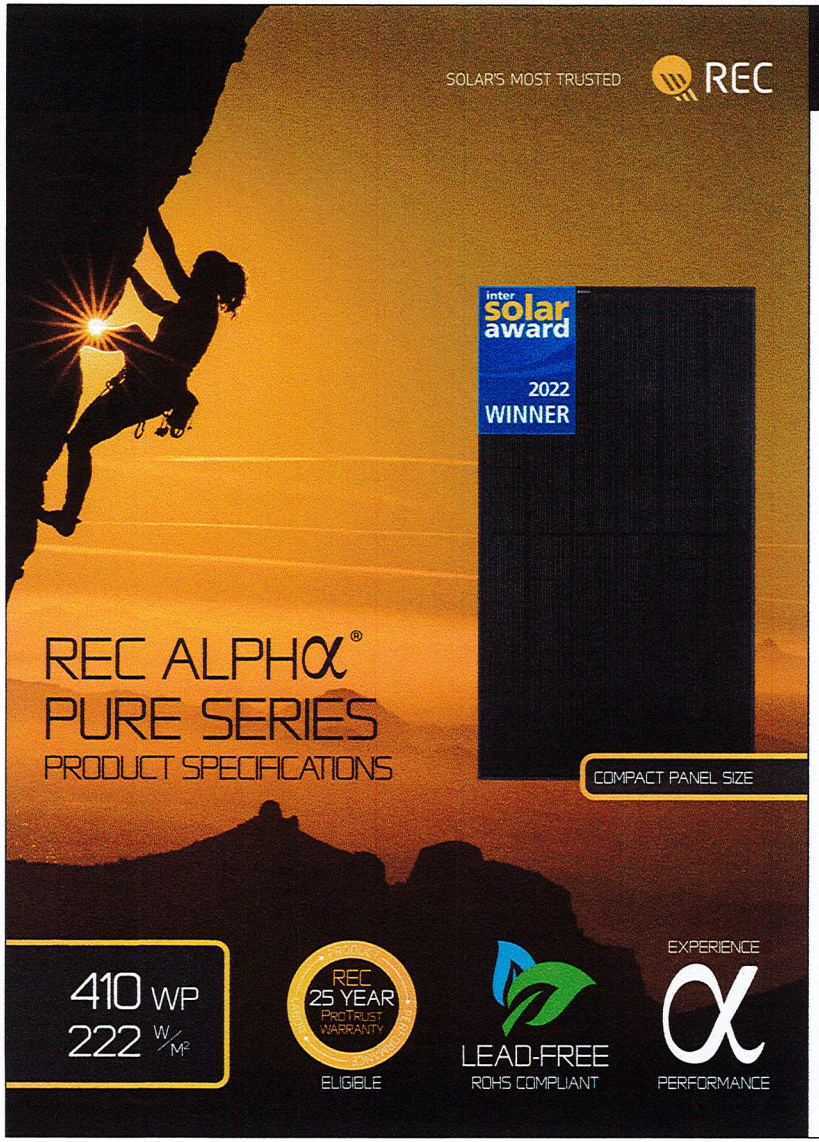
SPEC SHEET

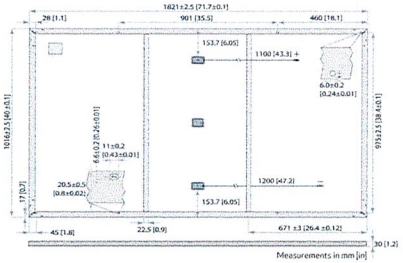


REC ALPHA PURE SERIES
PRODUCT SPECIFICATIONS

REC
SOLAR'S MOST TRUSTED

GENERAL DATA

Cell type:	132 half-cut REC heterojunction cells with lead-free, gapless technology, 6 strings of 22 cells in series
Glass:	3.2 mm solar glass with anti-reflective surface treatment in accordance with EN 12150
Backsheet:	Highly resistant polymer (black)
Frame:	Anodized aluminum (black)
Junction box:	3-part, 3 bypass diodes, lead-free IP68 rated, in accordance with IEC 62790
Connectors:	Stäubli MC4 PV-KBT4/KST4 (4 mm²) in accordance with IEC 62852, IP68 only when connected
Cable:	4 mm² solar cable, 1.1 m + 1.2 m in accordance with EN 50618
Dimensions:	1821 x 1016 x 30 mm (1.85 m²)
Weight:	20.5 kg
Origin:	Made in Singapore



Measurements in mm [in]

ELECTRICAL DATA — Product Code*: RECxxxAA Pure

STC	Power Output - P_{MAX} (Wp)	385	390	395	400	405	410
	Watt Class Sorting - (W)	0/+5	0/+5	0/+5	0/+5	0/+5	0/+5
	Nominal Power Voltage - V_{MPP} (V)	41.2	41.5	41.8	42.1	42.4	42.7
	Nominal Power Current - I_{MPP} (A)	9.35	9.40	9.45	9.51	9.56	9.61
	Open Circuit Voltage - V_{OC} (V)	48.5	48.6	48.7	48.8	48.9	49.0
	Short Circuit Current - I_{SC} (A)	10.18	10.22	10.25	10.28	10.30	10.35
	Power Density (W/m²)	208	211	214	216	219	222
	Panel Efficiency (%)	20.8	21.1	21.4	21.6	21.9	22.2
NMOT	Power Output - P_{MAX} (Wp)	293	297	301	305	309	312
	Nominal Power Voltage - V_{MPP} (V)	38.8	39.1	39.4	39.7	40.0	40.2
	Nominal Power Current - I_{MPP} (A)	7.55	7.59	7.63	7.68	7.72	7.76
	Open Circuit Voltage - V_{OC} (V)	45.7	45.8	45.9	46.0	46.1	46.2
	Short Circuit Current - I_{SC} (A)	8.16	8.20	8.24	8.28	8.32	8.36

Values at standard test conditions (STC: air mass AM 1.5, irradiance 1000 W/m², temperature 25°C), based on a production spread with a tolerance of P_{MAX}, V_{OC} & I_{SC} ±3% within one watt class. Nominal module operating temperature (NMOT: air mass AM 1.5, irradiance 800 W/m², temperature 20°C, windspeed 1 m/s). * Where xxx indicates the nominal power class (P_{MAX}) at STC above.

CERTIFICATIONS

IEC 61215:2016, IEC 61730:2016, UL 61730	
IEC 62804	PID
IEC 61701	Salt Mist
IEC 62716	Ammonia Resistance
ISO 11925-2	Ignitability (Class E)
IEC 62782	Dynamic Mechanical Load
IEC 61215-2:2016	Hailstone (35mm)
IEC 62321	Lead-free acc. to RoHS EU 863/2015
ISO 14001, ISO 9001, IEC 45001, IEC 62941	

TEMPERATURE RATINGS*

Nominal Module Operating Temperature:	44°C (±2°C)
Temperature coefficient of P_{MAX}:	-0.26 %/°C
Temperature coefficient of V_{OC}:	-0.24 %/°C
Temperature coefficient of I_{SC}:	0.04 %/°C

*The temperature coefficients stated are linear values

MAXIMUM RATINGS

Operational temperature:	-40...+85°C
Maximum system voltage:	1000 V
Maximum test load (front):	+7000 Pa (713 kg/m²)*
Maximum test load (rear):	-4000 Pa (407 kg/m²)*
Max series fuse rating:	25 A
Max reverse current:	25 A

*See installation manual for mounting instructions. Design load = Test load / 1.5 (safety factor)

WARRANTY

	Standard	REC ProTrust	
Installed by an REC Certified Solar Professional	No	Yes	Yes
System Size	All	<25 kW	25-500 kW
Product Warranty (yrs)	20	25	25
Power Warranty (yrs)	25	25	25
Labor Warranty (yrs)	0	25	10
Power in Year 1	98%	98%	98%
Annual Degradation	0.25%	0.25%	0.25%
Power in Year 25	92%	92%	92%

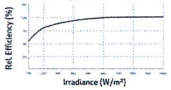
See warranty documents for details. Conditions apply

DELIVERY INFORMATION

Panels per pallet:	33
Panels per 40 ft GP/high cube container:	792 (24 pallets)
Panels per 13.6 m truck:	924 (28 pallets)
Panels per 53 ft truck:	891 (27 pallets)

LOW LIGHT BEHAVIOUR

Typical low irradiance performance of module at STC:



Founded in 1996, REC Group is an international pioneering solar energy company dedicated to empowering consumers with clean, affordable solar power. As Solar's Most Trusted, REC is committed to high quality, innovation, and a low carbon footprint in the solar materials and solar panels it manufactures. Headquartered in Norway with operational headquarters in Singapore, REC also has regional hubs in North America, Europe, and Asia-Pacific.

www.recgroup.com

Specifications subject to change without notice.

Ref: PM-05-12-06-Rev-G 04.22

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ILLUMINE

MODULE SPEC SHEET

DRAFTED BY: R.KUMAR QC'ED BY: S.KISHORE	PAPER SIZE: 17X11
SCALE: AS NOTED	REV: B
DATE: 10/21/22	SS-01

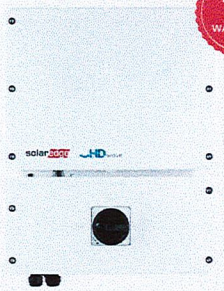
SPEC SHEET

Single Phase Energy Hub Inverter with Prism Technology

For North America

SE3000H-US / SE3800H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US[1]

HOME BACKUP



Optimized battery storage with HD-Wave technology

- Record-breaking 99% weighted efficiency with 200% DC oversizing
- Small, lightweight, and easy to install
- Modular design, future ready with optional upgrades to:
  - DC-coupled storage for full or partial home backup
  - Built-in consumption monitoring
  - Direct connection to the SolarEdge smart EV charger
- Multi-inverter, scalable storage solution
  - With enhanced battery power up to 10kW
- Integrated arc fault protection and rapid shutdown for NEC 2014, NEC 2017 and NEC 2020, per article 690.11 and 690.12
- Embedded revenue grade production data, ANSI C12.20 Class 0.5

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Single Phase Energy Hub Inverter with Prism Technology

For North America

SE3000H-US / SE3800H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US[1]

	SE3000H-US	SE3800H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	UNITS
OUTPUT - AC ON GRID							
Rated AC Power	3000	3800 @ 240V 3300 @ 208V	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	W
Maximum AC Power Output	3000	3800 @ 240V 3300 @ 208V	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	W
AC Frequency Range (min - nom - max)	59.3 - 60 - 60.5[5]						Hz
Maximum Continuous Output Current @ 240V	12.5	16	25	32	42	47.5	A
Maximum Continuous Output Current @ 208V	-	16	24	-	-	48.5	A
GFDI Threshold	1						A
Total Harmonic Distortion (THD)	<3						%
Power Factor	1, adjustable -0.85 to 0.85						
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes						
Charge Battery from AC (if allowed)	Yes						
Typical Nighttime Power Consumption	<2.5						W
OUTPUT - AC BACKUP[3]							
Rated AC Power in Backup Operation[4]	3000	3800 7600*	6000	7600 10300*	10000	10300	W
AC L-L Output Voltage Range in Backup	211 - 264						Vac
AC L-N Output Voltage Range in Backup	105 - 132						Vac
AC Frequency Range in Backup (min - nom - max)	55 - 60 - 65						Hz
Maximum Continuous Output Current in Backup Operation	12.5	16 32*	25	32 43*	42	43	A
GFDI	1						A
THD	<5						%
OUTPUT - SMART EV CHARGER AC							
Rated AC Power	9600						W
AC Output Voltage Range	211 - 264						Vac
On-Grid AC Frequency Range (min - nom - max)	59.3 - 60 - 60.5						Hz
Maximum Continuous Output Current @240V (grid, PV and battery)	40						Aac
INPUT - DC (PV AND BATTERY)							
Transformer-less, Ungrounded	Yes						
Max Input Voltage	480						Vdc
Nom DC Input Voltage	380						Vdc
Reverse-Polarity Protection	Yes						
Ground-Fault Isolation Detection	600kΩ Sensitivity						
INPUT - DC (PV)							
Maximum DC Power @ 240V	6000	7600 15200*	12000	15200 22800*	22000	22800	W
Maximum DC Power @ 208V	-	6600	10000	-	-	20000	W
Maximum Input Current[5] @ 240V	8.5	10.5 20*	16.5	20 31*	27	31	Adc
Maximum Input Current[5] @ 208V	-	9	13.5	-	-	27	Adc
Max. Input Short Circuit Current	45						Adc
Maximum Inverter Efficiency	99	99.2					%
CEC Weighted Efficiency	99					99 @ 240V 98.5 @ 208V	%
2-pole Disconnection	Yes						

* Supported with PN SExxxxH-USMMxxxxx or SExxxxH-USMNxxxxx

(1) These specifications apply to inverters with part numbers SExxxxH-USSMxxxxx or SExxxxH-USSNxxxxx and connection unit model number DCD-1PH-US-PxH-F-x

(2) For other regional settings please contact SolarEdge support

(3) Not designed for standalone applications and requires AC for commissioning. Backup functionality is only supported for 240V grid

(4) Rated AC power in Backup Operation are valid for installations with multiple inverters. For a single backup inverter operation, rated AC power in Backup is 90% of the value stated

(5) A higher current source may be used; the inverter will limit its input current to the values stated

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SPEC SHEET

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For North America

SE3000H-US / SE3800H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US[1]

	SE3000H-US	SE3800H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	UNITS
INPUT - DC (BATTERY)							
Supported Battery Types	SolarEdge Energy Bank, LG RESU Prime[6]						
Number of Batteries per Inverter	Up to 3 SolarEdge Energy Bank, up to 2 LG RESU Prime						
Continuous Power[7]	6000	7600	10000				W
Peak Power[8]	6000	7600	10000				W
Max Input Current	16	20	26.5				Adc
2-pole Disconnection	Yes						
SMART ENERGY CAPABILITIES							
Consumption Metering	Built - in[9]						
Backup & Battery Storage	With Backup Interface (purchased separately) for service up to 200A; Up to 3 inverters						
EV Charging	Direct connection to Smart EV charger						
ADDITIONAL FEATURES							
Supported Communication Interfaces	RS485, Ethernet, Cellular[9], Wi-Fi (optional),SolarEdge Energy Net (optional)						
Revenue Grade Metering, ANSI C12.20	Built - in[9]						
Integrated AC, DC and Communication Connection Unit	Yes						
Inverter Commissioning	With the SetApp mobile application using built-in Wi-Fi Access Point for local connection						
DC Voltage Rapid Shutdown (PV and Battery)	Yes, according to NEC 2014, NEC 2017 and NEC 2020 690.12						
STANDARD COMPLIANCE							
Safety	UL1741, UL1741 SA, UL1741 PCS, UL16998, UL1998, UL9540, CSA 22.2						
Grid Connection Standards	IEEE1547, Rule 21, Rule 14H						
Emissions	FCC part 15 class B						
INSTALLATION SPECIFICATIONS							
AC Output and EV AC Output Conduit Size / AWG Range	1" maximum / 14-4 AWG						
DC Input (PV and Battery) Conduit Size / AWG Range	1" maximum / 14-6 AWG						
Dimensions with Connection Unit (H x W x D)	17.7 x 14.6 x 6.8 / 450 x 370 x 174			17.7 x 14.6 x 6.8 / 450 x 370 x 174 17.7 x 14.6 x 6.8 / 450 x 370 x 174*	17.7 x 14.6 x 6.8 / 450 x 370 x 174		in / mm
Weight with Connection Unit	26 / 11.8			26 / 11.8 30.2 / 13.7*	30.2 / 13.7		lb / kg
Noise	< 25	< 25 < 50*	< 25	< 50			dBA
Cooling	Natural Convection						
Operating Temperature Range	-40 to +140 / -40 to +60[10]						°F / °C
Protection Rating	NEMA 4						

(6) The part numbers SExxxxH-USxxbxxxx only support the SolarEdge Energy Bank. The part numbers SExxxxH-USxxNxxxx support both SolarEdge Energy Bank and LG RESU Prime batteries. Requires supporting inverter firmware

(7) Discharge power is limited up to the inverter rated AC power for on-grid and backup applications

(8) For consumption metering current transformers should be ordered separately: SECT-SPL-225A-T-20 or SEACT0750-400NA-20 units per box. Revenue grade metering is only for production metering

(9) Information concerning the Data Plan's terms & conditions is available in the following link: https://www.solaredge.com/sites/default/files/se-communication-plan-terms-and-conditions-eng.pdf

(10) Full power up to at least 50°C / 122°F; for power de-rating information refer to: https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf

RoHS

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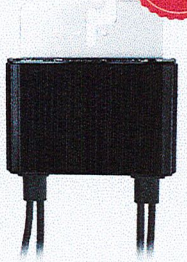
SPEC SHEET

Power Optimizer
For Residential Installations

S440, S500

25 YEAR WARRANTY



POWER OPTIMIZER

Enabling PV power optimization at the module level

- Specifically designed to work with SolarEdge residential inverters
- Detects abnormal PV connector behavior, preventing potential safety issues*
- Module-level voltage shutdown for installer and firefighter safety
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch loss, from manufacturing tolerance to partial shading
- Faster installations with simplified cable management and easy assembly using a single bolt
- Flexible system design for maximum space utilization
- Compatible with bifacial PV modules

* Functionality subject to inverter model and firmware version

solaredge.com

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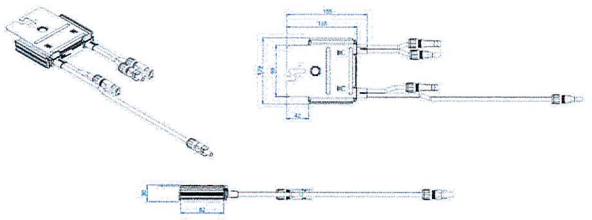
Power Optimizer
For Residential Installations
S440, S500

	S440	S500	UNIT
Rated Input DC Power(1)	440	500	W
Absolute Maximum Input Voltage (Voc)	60		Vdc
MPPT Operating Range	8 - 60		Vdc
Maximum Short Circuit Current (Isc) of Connected PV Module	14.5	15	Adc
Maximum Efficiency	99.5		%
Weighted Efficiency	98.6		%
Overvoltage Category	II		
OUTPUT DURING OPERATION			
Maximum Output Current	15		Adc
Maximum Output Voltage	60		Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM INVERTER OR INVERTER OFF)			
Safety Output Voltage per Power Optimizer	1		Vdc
STANDARD COMPLIANCE			
EMC	FCC Part 15 Class B, IEC61000-6-2, IEC61000-6-3, CISPR11, EN-55011		
Safety	IEC62109-1 (class II safety), UL1741		
Material	UL94 V-0, UV Resistant		
RoHS	Yes		
Fire Safety	VDE-AR-E 2100-712:2013-05		
INSTALLATION SPECIFICATIONS			
Maximum Allowed System Voltage	1000		Vdc
Dimensions (W x L x H)	129 x 155 x 30		mm
Weight (including cables)	655 / 1.5		gr / lb
Input Connector	MC4(2)		
Input Wire Length	0.1		m
Output Connector	MC4		
Output Wire Length	(+) 2.3, (-) 0.10		m
Operating Temperature Range(3)	-40 to +85		°C
Protection Rating	IP68 / NEMA6P		
Relative Humidity	0 - 100		%

(1) Rated power of the module at STC will not exceed the Power Optimizer Rated Input DC Power. Modules with up to +5% power tolerance are allowed
(2) For other connector types please contact SolarEdge
(3) For ambient temperature above +70°C / +158°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		Single Phase HD-Wave	Three Phase	Three Phase for 277/480V Grid	
Minimum String Length (Power Optimizers)	S440, S500	8	16	18	
Maximum String Length (Power Optimizers)		25	50		
Maximum Nominal Power per String(4)		5700	11250(5)	12750(6)	W
Parallel Strings of Different Lengths or Orientations		Yes			

(4) If the inverters rated AC power ≤ maximum nominal power per string, then the maximum power per string will be able to reach up to the inverters maximum input DC power Refer to: https://www.solaredge.com/sites/default/files/se-power-optimizer-single-string-design-application-note.pdf
(5) For the 230/400V grid: it is allowed to install up to 13,500W per string when the maximum power difference between each string is 2,000W
(6) For the 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
(7) It is not allowed to mix S-series and P-series Power Optimizers in new installations



CE RoHS

GRNE SOLAR
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CERTIFIED
PV Installation Professional
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CUSTOMER INFORMATION

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39.927168, -85.920164
APN: 300-114-112-179-000-018

AHJ:IN - COUNTY HANCOCK

UTILITY:NINE STAR CONNECT

PRN NUMBER:GRN-66406

ILLUMINE i

OPTIMIZER SPEC SHEET

DRAFTED BY: R.KUMAR QC'ED BY:S.KISHORE	PAPER SIZE:17X11
SCALE:AS NOTED	REV:B
DATE:10/21/22	SS-04

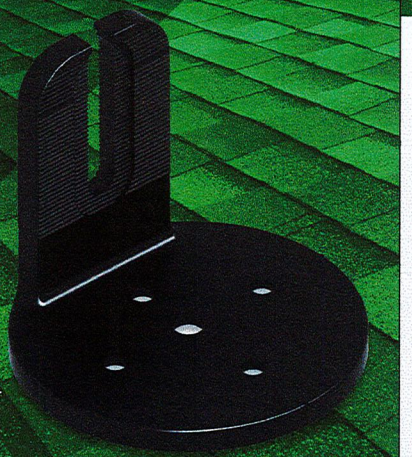
SPEC SHEET

SUNMODO

SOLAR'S FASTEST ATTACHMENT

NanoMount®

Rafter or Deck Mount



Damaging roof shingles used to be one of a solar installers' worst challenges.

Now, the easy, affordable solution is NanoMount®, SunModo's patented solar mounting innovation.

The mount eliminates the need for lifting shingles and dramatically reduces the installation time.

The NanoMount® Advantage

- ✓ The fastest roof attachment in solar.
- ✓ Versatile mounting options including direct-to-decking.
- ✓ Eliminates the need to lift shingles and prevents damage to shingles.
- ✓ High-Velocity Hurricane Zone Approved - Passed TAS 100 (a) Wind-Driven Rain Test.
- ✓ All materials are compatible with asphalt shingles and single-ply roof membranes.

Key Features of NanoMount®

SUNMODO

5 levels of protection against water penetration

Technical Data

Application	Residential roof coverings, commercial single-ply roof membranes
Material	High grade aluminum, 304 stainless steel hardware
Finish	Black powder coating
Roof Attachment	Rafter and decking
Structural integrity	IBC and IRC Compliant
Warranty	25 years

SunModo, Corp. Vancouver, WA., USA • www.sunmodo.com • 360.844.0048 • info@sunmodo.com

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ILLUMINE

MOUNT SPEC SHEET

DRAFTED BY: R.KUMAR QC'ED BY:S.KISHORE	PAPER SIZE:17X11
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SPEC SHEET

SUNMODO

POP-ON TECHNOLOGY LETS YOU HEAR WHEN IT IS RIGHT

SMR Pitched Roof System

SunModo introduces the SMR Pitched Roof System, the best value pitched roof mounting system on the market.

With fast and easy Pop-On Clamps and L-Foot adaptors, professional installers can mount, adjust, and secure PV panels with a single tool.

Whether rafter or deck, portrait or landscape, the SMR System is the ideal solution for your solar installation. Save money on materials and installation time.

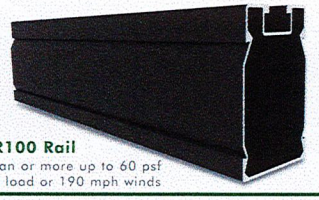
The SMR System Advantage

- ✓ The best value, best performing rail system on the market
- ✓ Lag-to-Panel single tool installation
- ✓ Pop-On universal clamps make installation fast, reliable and flexible
- ✓ A full range of roof attachments to meet every need
- ✓ Fastest install and lowest cost

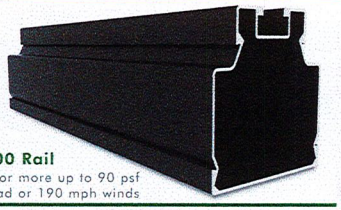
Key Features of the SMR System

SUNMODO

The SMR System represents a huge leap in racking technology. Optimized design makes the SMR Rails not only the lightest but also the strongest rails on the market. One tool assembly and Pop-On technology allow fast and worry-free installation. The cost and performance cannot be beaten.



SMR100 Rail
4' span or more up to 60 psf snow load or 190 mph winds



SMR200 Rail
4' span or more up to 90 psf snow load or 190 mph winds

Clamps & Grounding

Mid Clamp
The Bonding Pop-On Universal Mid Clamps accommodate PV module frame heights ranging from 30mm to 50mm. The fastest installing Mid Clamps on the market.

L Foot Adaptor
Fast and easy Pop-On L-Foot Adaptor speeds installation and eliminates old-fashioned T-Bolts. Install fast with full confidence in every attachment.

End Clamp
End Clamps are adjustable for different module frame heights and provide fast and secure attachment of modules.

Rail Splice
Fully structural bonding splice with fast and easy single bolt installation

Shared Rail Mid/End Clamp
Easily adapt racking to Shared Rail install. Uses the same Pop-On technology to provide fast and easy install.

Grounding Lug
The Lug provides proper grounding of the PV System

Technical Data

Application	Pitched Roof
Roof Type	Composition shingle, Metal and Tile
Material	High grade aluminum and 304 stainless steel hardware
PV Modules	Compatible with all common module types
Module Orientation	Portrait and landscape
Roof Attachment	Rafter and decking
Structural Integrity	IBC compliant, stamped engineering letters available
Certificate	UL 2703 listed by ETL
Warranty	25 years

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ILLUMINE

RAIL SPEC SHEET

DRAFTED BY: R.KUMAR QC'ED BY:S.KISHORE	PAPER SIZE:17X11
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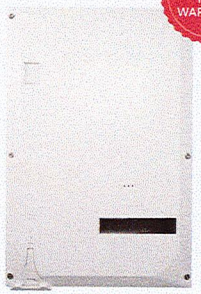
SPEC SHEET

Backup Interface
for North America

BI-EUSGN-01 / BI-NUSGN-01



STOREDGE®

Backup Interface for Flexible Backup

- Automatically provides backup power to home loads in the event of grid interruption
- Full flexibility in which loads to backup - the entire home or selected loads
- Scalable solution to support higher power & higher capacity(*)
- Built-in Auto Transformer and Energy Meter for easier and faster installation
- Seamless integration with the Energy Hub Inverter with Prism Technology to manage and monitor both PV generation and energy storage
- Generator connection support(*)

(*) Requires supporting inverter firmware

solaredge.com

solaredge

Backup Interface for North America

BI-EUSGN-01 / BI-NUSGN-01

	BI-EUSGN-01	BI-NUSGN-01	
INPUT FROM GRID			
AC Current Input	200		A
AC Output Voltage (Nominal)	240		Vac
AC Output Voltage Range	211 - 264		Vac
AC Frequency (Nominal)	60		Hz
AC Frequency Range	59.3 - 60.5		Hz
Microgrid Interconnection Device Rated Current	200		A
Service Side AC Main Circuit Breaker Rated Current	200	N/A	A
Service Side AC Main Circuit Breaker Interrupt Current	10k	N/A	A
Grid Disconnection Switchover Time	<100		ms
OUTPUT TO MAIN DISTRIBUTION PANEL			
Maximum AC Current Output	200		A
AC L-L Output Voltage (Nominal)	240		Vac
AC L-L Output Voltage Range	211 - 264		Vac
AC Frequency (Nominal)	60		Hz
AC Frequency Range	59.3 - 60.5		Hz
Maximum Inverters AC Current Output in Backup Operation	78		A
Imbalance Compensation in Backup Operation	5000		W
AC L-N Output Voltage in Backup (Nominal)	120		V
AC L-N Output Voltage Range in Backup	105 - 132		V
AC Frequency Range in Backup	55 - 65		Hz
INPUT FROM INVERTER			
Number of Inverter Inputs	3		#
Rated AC Power	7,600		W
Maximum Continuous Input Current @ 240V	32		A
Rated AC Power in Continuous Backup Operation	6,100		W
Maximum Continuous Input Current in Backup Operation	26		A
Peak AC Power (<10 sec) in Backup Operation	7,000		W
Peak AC Current (<10 sec) in Backup Operation	30		A
Inverter Input AC Circuit Breaker	40		A
Upgradability	Up to 3 X 63A CB(1)		
GENERATOR(2)			
Maximum Rated AC Power	15,000		W
Maximum Continuous Input Current	63		Adc
Dry Contact Switch Voltage Rating	250/30		Vac/Vdc
Dry Contact Switch Current Rating	5		A
2-wire Start Switch	Yes		
ADDITIONAL FEATURES			
Installation Type	Suitable for use as service equipment	For main lug only	
Number of Communication Inputs	2		
Communication	RS485		
Energy Meter (for Import/Export)	1% accuracy		
Manual Control Over Microgrid Interconnection Device	Yes		

(1) Each 40A CB supports up to one 7.6kW inverter, with each 63A CB supporting one 10kW and one 11.4kW inverter. The CB upgrade kit is available with the following part numbers: for 40A CB, CB-UPG-40-01; for 63A, CB CB-UPG-63-01
(2) Requires supporting inverter firmware

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AHJ:IN - COUNTY HANCOCK

UTILITY:NINE STAR CONNECT

PRN NUMBER:GRN-66406

ILLUMINE

BUI SPEC SHEET

DRAFTED BY: R.KUMAR QC'ED BY:S.KISHORE	PAPER SIZE:17X11
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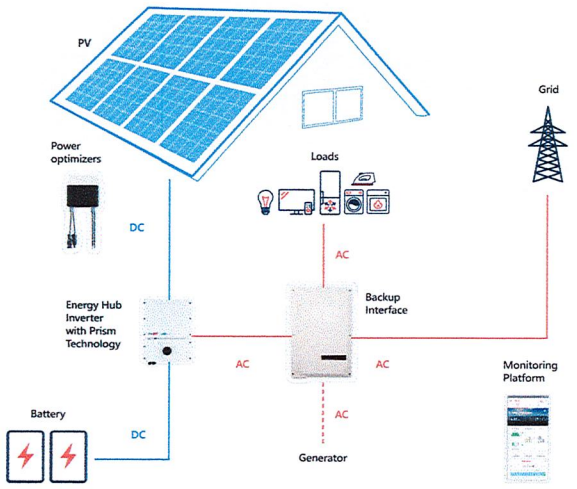
DATE:10/21/22	SS-07

SPEC SHEET

/ Backup Interface for North America

BI-EUSGN-01 / BI-NUSGN-01

	BI-EUSGN-01	BI-NUSGN-01	
STANDARD COMPLIANCE			
Safety	UL1741, CSA 22.2 NO. 107		
	UL869A	N/A	
Emissions	FCC part 15 class B		
INSTALLATION SPECIFICATIONS			
Supported Inverters	StorEdge single phase inverter, Single phase Energy Hub inverter with Prism technology		
AC From Grid Conduit Size / AWG Range	2" conduits / #0 - 4/0 AWG		
AC Inverter Conduit Size / AWG Range	1" conduit / 14 - 4 AWG		
AC Generator Input Conduit Size / AWG Range	1" conduit / 8 - 3 AWG		
Communication Conduit Size / AWG Range	3/4" / 24 - 10 AWG		
Weight	73 / 33		lb / Kg
Cooling	Fan (user replaceable)		
Noise	< 50		dBA
Operating Temeprature Range	-40 to +122 / -40 to +50		°F / °C
Protection Rating	NEMA 3R, IP44		
Dimensions (HxWxD)	20.59 x 13.88 x 8.62 / 523.5 x 352.5 x 219		in / mm



CE FC

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BUI SPEC SHEET

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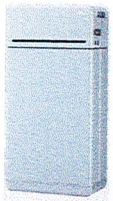
SPEC SHEET

Specification



RESU16H PRIME

Usable Energy (DoD 100%) [kWh]		16
Power (Rated/Peak) [kW]		7.7/11
Voltage [V]		350~450
Round-trip Efficiency [%]		≥ 96
Storage Power Consumption [W]		≤ 0.1
Dimension [W x H x D, inch]		19.6 x 42.8 x 11.6
Weight [lb]	Total	352
	Module	286 (143 x 2EA)
	Control Unit	55
	Connect Plate	11
Installation Type		Floor-standing
Scalability		Up to 2 units (32kWh / 14kW)
Operational Temperature [°F]		-4~122
Ingress Rating		IP55
Warranty		70% @ 10 years (Global)
Communication		CAN / RS485
Certification	Cell	UL 1642
	Product	CE/FCC/ROHS/EC62619/ UL1973/IEC62477

RESU10H PRIME

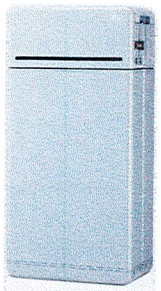
Usable Energy (DoD 100%) [kWh]		9.6
Power (Rated/Peak) [kW]		5/7
Voltage [V]		350~450
Round-trip Efficiency [%]		≥ 96
Storage Power Consumption [W]		≤ 0.1
Dimension [W x H x D, inch]		19.6 x 33.1 x 11.6
Weight [lb]	Total	246
	Module	180 (90 x 2EA)
	Control Unit	55
	Connect Plate	11
Installation Type		Floor-standing & Wall-mounted
Scalability		Up to 2 units (19 kWh / 10 kW)
Operational Temperature [°F]		-4~122
Ingress Rating		IP55
Warranty		70% @ 10 years (Global)
Communication		CAN / RS485
Certification	Cell	UL 1642
	Product	CE/FCC/ROHS/EC62619/ UL1973/IEC62477

*Compatible Inverters: SMA, Solaredge, SUNGROW, GOODWE, Solis
**Values provided for 77°F

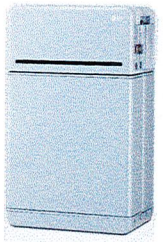
LG Home Battery RESU
www.lghomebattery.com

Be Prepared with RESU PRIME

Power your home during outages and reduce the amount of energy used during expensive peak hours with RESUhome batteries.



RESU16H PRIME



RESU10H PRIME

LG Energy Solution

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ILLUMINE

BATTERY SPEC SHEET

DRAFTED BY: R.KUMAR QC'ED BY:S.KISHORE	PAPER SIZE:17X11
SCALE:AS NOTED	REV:B
DATE:10/21/22	SS-09

SPEC SHEET

Smart EV Charger

For North America

SMART ENERGY

Smart EV Charging with SolarEdge

- Wi-Fi enabled, level 2 charging station, with up to 40A (9.6kW) charging power
- Control and monitoring via app - including remote operations, smart scheduling and charging history
- Industry-leading 5-year warranty[1]
- Rated for indoor or outdoor use
- Plug-in unit, easily modified to support hardwired installations[2]
- Suitable for use with or without a SolarEdge PV system

Optimized charging, when connected to a SolarEdge inverter[3]:

- Charges EV with up to 100% renewable energy by using excess-solar mode[4]
- Synchronizes with the full SolarEdge ecosystem (PV, home backup, and smart home devices), all managed by a single mobile app
- Faster charging with the unique Solar Boost mode, utilizing both grid and available PV simultaneously[3]

(1) For additional information regarding the EV charging cable warranty terms please refer to: https://www.solaredge.com/warranty
(2) Hardwired installation by professional installer only
(3) Supports AC connection to Energy Hub and HD-Wave inverters only. A dedicated solar boost kit (SE-EV-KIT-V3UPG-01) is required for connection to standard HD-Wave inverters
(4) SolarEdge import/export meter and communication connectivity with the SolarEdge inverter are required for controlled excess solar charging

solaredge.com

solaredge

Smart EV Charger

For North America

EV CHARGER SPECIFICATIONS		
Charging Mode	AC Level 2	
Rated AC Power Output	9.6	kW
Maximum Continuous Output Current @240Vac	40[1]	A
Nominal AC Output Voltage @240Vac	240[2]	Vac
Nominal AC Frequency	60	Hz
Ground Fault Detection Threshold	5	mA
Supported Communication Interfaces	Wi-Fi (built-in antenna included)[3], Ethernet, RS485 and Cellular (optional)[4]	
CABLE SPECIFICATIONS		
EV Connector	SAE J1772-2009	
Length	25 / 7.6	ft / m
Weight	12.5 / 5.7	lb / kg
FEATURES SUPPORTED WITH COMPATIBLE SOLAREDGE INVERTERS		
Smart Energy Management	Smart schedules, excess solar charging[5], solar boost mode	
ADDITIONAL FEATURES		
Status LEDs, Fault Indicator	Yes	
Unplugging Detection	Yes, current termination according to SAE J1772	
Ground Connection Monitoring	Yes, continuous	
Monitoring and Control	Installer commissioning via SetApp Homeowner configuration, controls and monitoring via mySolarEdge mobile app	
STANDARD COMPLIANCE		
EMC	FCC Part 15 Class B	
Safety	UL2594, UL2231-1, UL2231-2, NEC Article 625 compliant , CSA C22.2#280	
Energy Star™	Certified - SE-EV-SA-US-40	
INSTALLATION SPECIFICATIONS		
AC input	NEMA 6-50 / NEMA 14-50 / Hardwired	
Dimensions (H x W x D)	12 x 7.3 x 6 / 309 x 190 x 154	in / mm
Weight	6.3 / 2.85	lb / kg
Protection Rating (connected to EV or with dust cap)	NEMA 3R	
Operating Temperature Range	-22 to +122 / -30 to +50	F / °C

(1) Additional available settings: 16A, 24A, 32A and 40A
(2) Connected to L1, L2, G; No need for neutral
(3) To extend Wi-Fi communication, use optional Wi-Fi antenna. For antenna specification refer to: https://www.solaredge.com/sites/default/files/se-wifi-zigbee-wireless-antenna-datasheet-na.pdf
(4) Optional cellular kit can be ordered
(5) When Smart EV Charger is connected to the inverter, an import/export meter is required for controlled excess solar charging

ORDERING INFORMATION	
Product Number	Description
SE-EV-SA-KIT-LJ40N	Smart EV Charger- including cable and holder. NEMA 14-50 AC plug
SE-EV-SA-KIT-LJ40P	Smart EV Charger- including cable and holder. NEMA 6-50 AC plug
SE-EV-KIT-2SJ40-2	Replacement EV charging cable
SE-EV-HLD-T1-V2	Replacement cable holder

RoHS

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ILLUMINE

EV CHARGER SPEC SHEET

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