A ladder shall be in place for inspection in compliance with all local jurisdictional requirements and when applicable the work shall be open and accessible for inspector. All electrical enclosure dead fronts, covers, doors, etc. shall be openable for inspection requirements.

Driveway and place by the contractor as per applicable utility or AHJ approval.

The placement of a utility PV production meter shall be provided by the contractor as per utility or AHJ approval.

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Copyright notice


All applicable equipment to be UL listed or listed by other standards or nationally recognized organization.

When applicable a smoke detector, approved and listed by the local jurisdiction if the installed array and associated equipment does not comply with the approved building plans. Additional fees may also apply.

The placement of a utility PV production meter shall be provided and placed by the contractor as per applicable utility or AHJ requirements.

When applicable, a ladder shall be in place for inspection in compliance with all local regulations.

When applicable, no electrical and closure (dead fronts, covers, doors, etc.) shall be open and accessible for inspections. When trench and roof inspections are required, work shall be open and accessible for inspector.

General project & jurisdictional notes

1. A ladder shall be in place for inspection in compliance with all local regulations.
2. Finding local jurisdictional requirements and where applicable all electrical enclosure, dead fronts, covers, doors, etc. shall be open and accessible for inspection. When trench and roof inspections are required, work shall be open and accessible for inspector.

Jurisdictional & listing requirements

1. When applicable a smoke detector, approved and listed by the national fire alarm and reporting code NFPA 72 shall be verified as functional or installed in all applicable code required locations.
2. All applicable equipment to be UL listed or listed by other standards or nationally recognized organization.
3. Full scope of work shall comply with all applicable codes listed in governing codes section. All manufacturers' listings, installation instructions and specifications and jurisdictional requirements.
4. Revised plans will be required to be resubmitted to the local jurisdiction if the installed array and associated equipment does not comply with the approved building plans. Additional fees may also apply.
5. The placement of a utility PV production meter shall be provided and placed by the contractor as per applicable utility or AHJ requirements.

Copyright notice

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Copyright notice
GENERAL NOTES:*  
PROPER ACCESS AND WORKING CLEARANCE AROUND EXISTING AND PROPOSED ELECTRICAL EQUIPMENT WILL BE PROVIDED AS PER SECTIONS NEC 110.23A.

PV SYSTEM COMPONENTS; INCLUDING BUT NOT LIMITED TO, MODULES, INVERTERS AND SOURCE CIRCUIT COMBINERS ARE IDENTIFIED AND LISTED FOR USE IN PV SYSTEMS IN COMPLIANCE WITH NEC 690.4 AND 690.6 AND ALL UL, IEC, IEEE CLASSIFICATIONS AS REQUIRED.

RAPID SHUTDOWN NOTES:*  
PV SYSTEM CIRCUITS INSTALLED ON OR IN BUILDING SHALL INCLUDE A RAPID SHUTDOWN FUNCTION THAT CONTROLS SPECIFIC PV CONDUCTORS IN ACCORDANCE WITH 2023 NEC 690.12(A)-(D)

EQUIPMENT LOCATIONS & ELECTRICAL NOTES:*  
JUNCTION AND PULL BOXES ARE PERMITTED TO BE INSTALLED UNDER PV MODULES IN COMPLIANCE WITH NEC 690.34.

ADDITIONAL AC DISCONNECT(S) SHALL BE PROVIDED WHERE THE INVERTER IS NOT WITHIN SIGHT OF THE AC SERVICING DISCONNECT. 2023 NEC 690.15(A)

ALL EQUIPMENT SHALL BE INSTALLED ACCESSIBLE TO QUALIFIED PERSONNEL IN COMPLIANCE WITH NEC APPLICABLE CODES.

ALL COMPONENTS ARE LISTED FOR THEIR INTENDED PURPOSE AND RATED FOR OUTDOOR USAGE WHEN APPLICABLE.

STRUCTURAL AND INSTALLATION NOTES:*  
RACKING SYSTEM & PV PANELS MOUNTED ON A ROOFTOP SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 1703 AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER INSTALLATION INSTRUCTIONS.

ALL PV RACKING ATTACHMENT POINTS SHALL NOT EXCEED THE PRE-ENGINEERED MAX SPANS OUTLINED BY THE RACKING MANUFACTURER ENGINEER OF RECORD.

GROUNDING NOTES:*  
IN UNGROUNDED SYSTEMS ONLY THE DC CONDUCTORS ARE UNGROUNDED AND REQUIRE AN EQUIPMENT GROUNDING CONDUCTOR. ALL METAL ELECTRICAL EQUIPMENT AND STRUCTURAL COMPONENTS BONDED TO GROUND, IN COMPLIANCE WITH NEC 250.134 AND NEC 250.136(A).

PV EQUIPMENT INCLUDING MODULE FRAMES AND OTHER METAL PARTS SHALL BE GROUNDED IN COMPLIANCE WITH NEC 690.43 AND MINIMUM GROUND CONDUCTORS SIZED IN ACCORDANCE WITH NEC TABLE 250.122.

CONDUCTIVE PARTS OF MODULE FRAMES, MODULE RACKING, AND ENCLOSURES SHALL BE GROUNDED IN ACCORDANCE WITH NEC 250.134 AND NEC 250.136(A).

UL2703 APPROVED MODULE AND RACK GROUNDING SHALL BE USED AND INSTALLED PER MANUFACTURER'S INSTALLATION MANUAL. IF UL2703 APPROVED GROUNDING IS NOT USED, MODULE GROUNDING LUGS MUST BE INSTALLED AT THE SPECIFIED GROUNDED LUG HOLES PER THE MANUFACTURER'S INSTALLATION REQUIREMENTS.

THE GROUNDING CONNECTION TO A MODULE SHALL BE ARRANGED SUCH THAT THE REMOVAL OF A MODULE DOES NOT INTERRUPT A GROUNDING CONDUCTOR TO ANOTHER MODULE.

THE GROUNDING ELECTRODE SYSTEM COMPLIES WITH NEC 690.47 AND NEC 250.50 THROUGH NEC 250.106. IF EXISTING SYSTEM IS INACCESSIBLE OR INADEQUATE, A GROUNDING ELECTRODE SYSTEM WILL BE PROVIDED IN COMPLIANCE WITH NEC 250, NEC 690.47 AND 690.11.

PV SYSTEMS SHALL BE PROVIDED WITH DC GROUND-FAULT PROTECTION 2023 NEC 690.41(B)

INTERCONNECTION / POC NOTES:*  
ALL LOAD-SIDE INTERCONNECTIONS ARE IN COMPLIANCE WITH 2023 NEC 705.12(B)

THE TOTAL RATING OF ALL OCPD IN SOLAR LOAD CENTER SHALL NOT EXCEED THE RATED AMPACITY OF THE BUS BAR EXCLUDING THE OCPD PROTECTING THE BUSBAR IN COMPLIANCE WITH NEC 705.12(B)(2)(b)(i)

ALL FEEDER TAP (LOAD SIDE) INTERCONNECTIONS ARE IN COMPLIANCE WITH 2023 NEC 705.12(B)(2)(b)(i)

THE PV SYSTEM BACK-FEED BREAKER SHALL BE INSTALLED ON THE OPPOSITE END OF THE BUS BAR AND IT SHALL ALSO BE SIZED APPROPRIATELY AS PER 2023 NEC 705.12(B)(2)(b)(ii)

SUPPLY SIDE TAP INTERCONNECTIONS ARE IN COMPLIANCE WITH NEC 705.12(A) WITH SERVICE ENTRANCE CONDUCTORS IN COMPLIANCE WITH NEC 230.42

BACKFEEDING BREAKER FOR INVERTER OUTPUT IS EXEMPT FROM ADDITIONAL FASTENING 2023 NEC 705.12(B)(5)

MICROINVERTER BRANCH CIRCUITS SHALL BE CONNECTED TO A SINGLE OCPD IN ACCORDANCE WITH THEIR INSTALLATION INSTRUCTIONS AND NEC 690.9

DISCONNECTS AND OCPD NOTES:*  
ALL DISCONNECTING SWITCHES WILL BE CONFIGURED SO THAT ALL ENERGIZED CONDUCTORS WHEN DISCONNECT IS OPEN SHALL BE ON THE TERMINALS MARKED, “LINE SIDE” (TYPICALLY THE UPPER TERMINALS)

ALL AC DISCONNECTS SHALL BE LABELED, LOCKABLE, OF VISIBLE BREAK TYPE SWITCH WITH EXTERNAL HANDLE AND ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL.

AC DISCONNECTS SHALL BE A "KNIFE BLADE" TYPE DISCONNECT. IF EXTERIOR, RATED TO NEMA 3R OR BETTER PER NEC 110.28

ADDITIONAL AC DISCONNECTS SHALL BE PROVIDED WHERE THE INVERTER IS NOT ADJACENT TO THE UTILITY AC DISCONNECT, OR NOT WITHIN SIGHT OF THE UTILITY AC DISCONNECT. 2023 NEC 690.15(A)

BOTH POSITIVE AND NEGATIVE PV CONDUCTORS REMAIN UNGROUNDED. THEREFORE, BOTH SHALL REMAIN OPEN WHERE A DISCONNECT IS REQUIRED IN COMPLIANCE WITH 2023 NEC 690.15(B)

ALL OCPD RATINGS AND TYPES SPECIFIED SHALL BE IN COMPLIANCE WITH NEC 690.8, 690.9, 705.12 AND 240.

BOTH POSITIVE AND NEGATIVE DC PV CONDUCTORS ARE CALCULATED ON CIRCUITS AS DIRECTED BY MANUFACTURER AND FIELD VERIFY INVERTER MANUFACTURERS MAX VOLTAGE DROP REQUIREMENTS AND DETERMINE THE TOTAL VOLTAGE DROP WITHIN CIRCUITS AS DIRECTED BY MANUFACTURER AND COMPLY WITH SUCH LIMITATIONS AND REQUIREMENTS, TYPICALLY 2% FROM INVERTER TO PO/PDC, AND 3% FROM INVERTER TO UTILITY TRANSFORMER.

WATERPROOFING:*  
ALL NEW ROOF TOP PENETRATIONS SHALL BE SEALED AND MADE WEATHER TIGHT WITH APPROVED CHEMICAL SEALANT AND FLASHINGS WHERE REQUIRED PER CODE AND GENERAL BUILDING AND ROOFING WORKMANSHIP STANDARDS BY A LICENSED CONTRACTOR.

ALL EXTERIOR ELECTRICAL EQUIPMENT, SHALL BE NEMA 3R OR BETTER RATED. ALL EXTERIOR CONDUIT AND CONNECTORS SHALL BE RATED FOR WET LOCATIONS.

*ALL NOTES ARE AS APPLICABLE TO THIS PROJECT. DISREGARD ANY NOTES THAT DO NOT APPLY TO THIS PROJECT.
GROUND MOUNT SETBACKS & AHJ NOTES

ALL GROUND MOUNTED STRUCTURES SHALL COMPLY WITH STATE AND LOCAL AHJ REQUIRED SETBACKS TO SEPTIC OR WASTEWATER SYSTEM COMPONENTS, LEACH FIELDS, PROPERTY LINES, ROADS, HIGHWAYS, RIGHT OF WAYS, SIDEWALKS, DRIVEWAYS, OTHER STRUCTURES, WATER WAYS, EASEMENTS, UTILITIES, TREES, FENCES AND FLOOD ZONES.

NOTE: ALL ELECTRICAL LAYOUT DETAILS ON SHEET E-100
NOTE: ALL ELECTRICAL LAYOUT DETAILS ON SHEET E-100

A CLEAR, BRUSH-FREE AREA OF 10 FEET (3048 MM) SHALL BE REQUIRED FOR GROUND MOUNTED PHOTOVOLTAIC ARRAYS PER IFC 605.11.2

SCALE: 1/8" = 1'0" @ SHEET SIZE A3

QTY 24 REC400NP3 Black MODULES QTY 1 SolarEdge SE10000H-US EnergyHub INVERTER

ValleySolar
340 Riverside Dr
Florence, MA 01062
(413) 584-8844

Douglas, Damon
530 W Pelham Rd Pole 102
Shutesbury, MA 01072
03/10/2023
SUBMIT FOR PERMIT
ALL PIPE SHALL BE GALVANIZED NOMINAL SCHEDULE 40 ASTM A53 GR B, STEEL PIPE
ALL FITTINGS SHALL BE TORQUED TO MANUFACTURER SPEC'S
ALL FITTINGS/HARDWARE SHALL BE ALUMINUM OR GALVANIZED

CANTILEVER, 40% OF MAX E-W PER SPACING
MAX SPAN 162"

CANTILEVER, 40% OF MAX E-W PER SPACING
MAX SPAN 162"

TOP OF RAIL CONNECTOR

78"

CROSS PIPE LENGTH

PER QTY OF MODULES

GROUND SCREW

ARRAY AZIMUTH: 180 DEGREES
ARRAY TILT: 25 DEGREES

<table>
<thead>
<tr>
<th>Panel</th>
<th>Layout Designation</th>
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</thead>
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<tr>
<td>6L</td>
<td>X X X X X X X</td>
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<tr>
<td>5L</td>
<td>X X X X X X</td>
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<tr>
<td>4L</td>
<td>X X X X X</td>
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<tr>
<td>3L</td>
<td>X X X X</td>
</tr>
<tr>
<td>2L</td>
<td>X X X</td>
</tr>
<tr>
<td>1L</td>
<td>X X X</td>
</tr>
</tbody>
</table>

Maximum Overall Height 96.25" MAX

Leading Edge Height 24"

Positive North Slope

Negative North Slope

QTY 24 REC400NP3 Black MODULES QTY 1 SolarEdge SE10000H-US EnergyHub INVERTER

1. SF RAIl
2. RAIL MOUNTING HARDWARE
3. COLUMN CAP
4. DIAGONAL WIND BRACE (WHEN NEEDED)
5. WIND BRACE COLUMN CONNECTOR (WHEN NEEDED)
6. HORIZONTAL BEAM
7. SUPPORT COLUMN
8. SOLAR MODULE END CLAMP
9. SOLAR MODULE M ID CLAMP
10. GROUND LUG

2.5" SCH 40 HDG CONTINUOUS FLIGHT HELICAL PILE

CLAMP ATTACHMENT

201314A
340 Riverside Dr
Florence, MA 01062
(413) 584-8844

9.600
Douglas, Damon
530 W Pelham Rd Pole 102
Shutesbury, MA 01072

03/10/2023

SUBMIT FOR PERMIT
INSTALLATION REQUIREMENTS:

1. THE MINIMUM AVERAGE INSTALLATION TORQUE REQUIRED TO OBTAIN THE REQUIRED INDICATED CAPACITIES AND THE MINIMUM INSTALLATION DEPTH SHOWN ON THE PLANS SHALL BE SATISFIED PRIOR TO TERMINATION OF THE INSTALLATION. THE INSTALLATION TORQUE SHALL BE AN AVERAGE OF THE INSTALLATION TORQUES INDICATED DURING THE LAST 1 FOOT OF INSTALLATION.

2. THE TORSIONAL STRENGTH RATING OF THE TORQUE ANCHOR SHALL NOT BE EXCEEDED DURING THE INSTALLATION. IF THE TORSIONAL STRENGTH LIMIT OF THE ANCHOR HAS BEEN REACHED, BUT THEAnchor HAS NOT REACHED THE TARGET DEPTH, PERFORM THE FOLLOWING:

   2.1. IF THE TORSIONAL STRENGTH LIMIT IS ACHIEVED PRIOR TO REACHING THE TARGET DEPTH, THE INSTALLATION MAY BE ACCEPTABLE IF REVIEWED AND APPROVED BY THE ENGINEER.

   2.2. THE INSTALLER MAY REMOVE THE TORQUE ANCHOR AND INSTALL A NEW ONE WITH SMALLER DIAMETER HELICAL PLATE.

   2.3. IF USING A CONTINUOUS FLIGHT PILE, PRE-DRILL THE PILE LOCATION WITH A 3-1/2" ROCK AUGER OR 3-5/8" ROCK DRILL AS NEEDED.

3. IF THE TARGET DEPTH IS ACHIEVED, BUT THE TORSIONAL REQUIREMENT HAS NOT BEEN MET THE INSTALLER MAY DO ONE OF THE FOLLOWING:

   3.1. INSTALL THE TORQUE ANCHOR DEEPER TO OBTAIN THE REQUIRED CAPACITY.

   3.2. REMOVE THE TORQUE ANCHOR AND INSTALL A NEW ONE WITH A LARGER DIAMETER HELICAL PLATE OR ONE WITH MULTIPLE HELICAL PLATES.

   3.3. REDUCE THE LOAD CAPACITY ON THE INDIVIDUAL TORQUE ANCHOR BY PROVIDING ADDITIONAL TORQUE ANCHORS AT A REDUCED SPACING.

SPECIFICATION REQUIREMENTS:

THE FOLLOWING MATERIAL SPECIFICATION REQUIREMENTS PERTAIN TO THE FABRICATION OF THE SOLAR FOUNDATIONS USA GROUND MOUNT SOLAR SUPPORT STRUCTURE AS INDICATED ON THESE DRAWINGS.

1. SOLAR FOUNDATION ALUMINUM RAILS SHALL CONFORM TO ASTM B221.

2. STRUCTURAL STEEL TUBING SHALL BE ASTM A500 HIGH YIELD (60 KSI).

3. STEEL PIPE FOR PILES SHALL CONFORM TO ASTM A500 GRADE C.

4. STEEL PIPE EXTENSIONS SHALL BE ASTM A500 GRADE A.

5. STEEL PIPE FOR DIAGONAL BRACING SHALL BE ASTM A53 GRADE A.

6. FABRICATED STEEL PLATE FOR COLUMN CAP ASSEMBLIES, BRACING CLAMPS, ETC. SHALL BE ASTM A36 OR A533.

7. STEEL BOLTS FOR CAP FASTENERS SHALL CONFORM TO SAE J429 GRADE 5. ALL OTHER BOLTS SHALL CONFORM TO SAE J429 GRADE 5 OR BETTER.

8. USING STEEL SPACERS SHALL CONFORM TO ASTM F844 AND NUTS FOR STEEL CONNECTIONS SHALL CONFORM TO ASTM A563 GRADE A.

9. ALL FIELD WELDING SHALL CONFORM TO AWS D1.1/D1.1M-STRUCTURAL WELDING CODE REQUIREMENTS.

10. ALL STEEL SHALL BE HOT-DIP GALVANIZED PER ASTM A123 OR A153 AFTER ALL FABRICATION HAS BEEN COMPLETED.
### PV MODULE #1 SPECIFICATIONS

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>REC 400NPc Black</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model/Number</td>
<td>47-70</td>
</tr>
<tr>
<td>Dimensions</td>
<td>74.8 x 40.9 x 1.2</td>
</tr>
<tr>
<td>Weight</td>
<td>44 lbs</td>
</tr>
<tr>
<td>Peak Power (W)</td>
<td>37.6 Ws</td>
</tr>
<tr>
<td>(Stc (20°C))</td>
<td></td>
</tr>
<tr>
<td>Voc (Open-Circuit Voltage)</td>
<td>35.2 V</td>
</tr>
<tr>
<td>Isc (Short-Circuit Current)</td>
<td>11.39 A</td>
</tr>
<tr>
<td>Fill Factor</td>
<td>0.76</td>
</tr>
<tr>
<td>Temp. (Nominal Power)</td>
<td>65°F</td>
</tr>
<tr>
<td>Series Fuse Rating</td>
<td>25 Amps</td>
</tr>
<tr>
<td>Temp. Corrected Voc</td>
<td>50.4 V</td>
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### DC COMBINER / DISCONNECT #1

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>IMO</th>
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</thead>
<tbody>
<tr>
<td>Model/Number</td>
<td>S122PE64R</td>
</tr>
<tr>
<td>DC Input</td>
<td>12 Array</td>
</tr>
<tr>
<td>Series/Fuse Rating</td>
<td>25 Amps</td>
</tr>
<tr>
<td>Max DC Input Voltage</td>
<td>480 V</td>
</tr>
<tr>
<td>Max DC Input Current</td>
<td>480 A</td>
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</table>

### STRING INVERTER #1 SPECIFICATIONS

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>SolarEdge</th>
</tr>
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<tbody>
<tr>
<td>Model/Number</td>
<td>SE10000H-US EnergyHub</td>
</tr>
<tr>
<td>Nominal Power Rating</td>
<td>10000 W</td>
</tr>
<tr>
<td>Inverters</td>
<td>1</td>
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### DC/DC OPTIMIZER (IF APPL.)

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>SolarEdge Technologies</th>
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<tbody>
<tr>
<td>Model/Number</td>
<td>5440 Single-Hd (240V)</td>
</tr>
<tr>
<td>Weight</td>
<td>1.5 lbs</td>
</tr>
<tr>
<td>Rated Input</td>
<td>15 V</td>
</tr>
<tr>
<td>Max Output Voltage</td>
<td>60 V</td>
</tr>
<tr>
<td>Max Input Voltage</td>
<td>60 V</td>
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### BATTERY SPECIFICATIONS (IF APPL.)

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<thead>
<tr>
<th>Manufacturer</th>
<th>BAT-10kIP</th>
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<tbody>
<tr>
<td>Model/Number</td>
<td>24 V</td>
</tr>
<tr>
<td>Quantity</td>
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<tr>
<td>Weight</td>
<td>267 lbs</td>
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<tr>
<td>Dimensions</td>
<td>31.1 x 46.4 x 9.84</td>
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<tr>
<td>Total Energy</td>
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<tr>
<td>Max Voltage</td>
<td>450 V</td>
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<tr>
<td>Max Continuous Output Power</td>
<td>5.00 kW</td>
</tr>
<tr>
<td>Max Continuous Output Current</td>
<td>14.3 A</td>
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### DC COMBINER / DISCONNECT #2 (IF APPL.)

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<th>Manufacturer</th>
<th>IMO</th>
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<tbody>
<tr>
<td>Model/Number</td>
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<tr>
<td>DC Input</td>
<td>12 Array</td>
</tr>
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<td>25 Amps</td>
</tr>
<tr>
<td>Max DC Input Voltage</td>
<td>480 V</td>
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<tr>
<td>Max DC Input Current</td>
<td>480 A</td>
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### STRING INVERTER #2 SPECIFICATIONS (IF APPL.)

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<tr>
<th>Manufacturer</th>
<th>SolarEdge</th>
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</thead>
<tbody>
<tr>
<td>Model/Number</td>
<td>SE10000H-US EnergyHub</td>
</tr>
<tr>
<td>Nominal Power Rating</td>
<td>10000 W</td>
</tr>
<tr>
<td>Inverters</td>
<td>1</td>
</tr>
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### AC DISCONNECT #1 (IF APPL.)

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<thead>
<tr>
<th>Manufacturer</th>
<th>Eaton</th>
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<tbody>
<tr>
<td>Model/Number</td>
<td>DG322URB</td>
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<tr>
<td>Disconnect Device Type</td>
<td>Non-Fusible Disconnect</td>
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<tr>
<td>Rated Operational Voltage</td>
<td>240 V</td>
</tr>
<tr>
<td>Rated Current</td>
<td>40 A</td>
</tr>
<tr>
<td>Number of Poles</td>
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</tr>
<tr>
<td>Fuse Rating</td>
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<tr>
<td>Total Input Current</td>
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### DC Disconnect #2 (IF APPL.)

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>SolarEdge Technologies</th>
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<tbody>
<tr>
<td>Model/Number</td>
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<td>Max Output Voltage</td>
<td>60 V</td>
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<tr>
<td>Max Input Voltage</td>
<td>60 V</td>
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### AC SUB-PANEL #1 (IF APPL.)

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Eaton</th>
</tr>
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<tbody>
<tr>
<td>Model/Number</td>
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<td>Disconnect Device Type</td>
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<td>Number of Poles</td>
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<tr>
<td>Fuse Rating</td>
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<td>Total Input Current</td>
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### MAIN SERVICE PANEL (IF APPL.)

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<tbody>
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<td>DG322URB</td>
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<tr>
<td>Disconnect Device Type</td>
<td>Non-Fusible Disconnect</td>
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<tr>
<td>Rated Operational Voltage</td>
<td>240 V</td>
</tr>
<tr>
<td>Rated Current</td>
<td>40 A</td>
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</tr>
<tr>
<td>Fuse Rating</td>
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<tr>
<td>Total Input Current</td>
<td>42 A</td>
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### AC SUB-PANEL #2 (IF APPL.)

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<th>Manufacturer</th>
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<tbody>
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<tr>
<td>Disconnect Device Type</td>
<td>Non-Fusible Disconnect</td>
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<tr>
<td>Rated Operational Voltage</td>
<td>240 V</td>
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<tr>
<td>Rated Current</td>
<td>40 A</td>
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</tr>
<tr>
<td>Fuse Rating</td>
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</tr>
<tr>
<td>Total Input Current</td>
<td>42 A</td>
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### AC COMBINER #1 (SOLAR LOAD CENTER)

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<th>SolarEdge</th>
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<tbody>
<tr>
<td>Model/Number</td>
<td>SE10000H-US EnergyHub</td>
</tr>
<tr>
<td>Rated Operational Voltage</td>
<td>10000 W</td>
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</tr>
<tr>
<td>Number of Poles</td>
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<tr>
<td>Main Breaker Size</td>
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<tr>
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</table>

### AC COMBINER #2 (SOLAR LOAD CENTER)

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>SolarEdge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model/Number</td>
<td>SE10000H-US EnergyHub</td>
</tr>
<tr>
<td>Rated Operational Voltage</td>
<td>10000 W</td>
</tr>
<tr>
<td>Rated Current</td>
<td>10000 A</td>
</tr>
<tr>
<td>Number of Poles</td>
<td>3</td>
</tr>
<tr>
<td>Main Breaker Size</td>
<td>1000 A</td>
</tr>
<tr>
<td>Total Input Current</td>
<td>10000 A</td>
</tr>
<tr>
<td>Number of Branch Circuits</td>
<td>3</td>
</tr>
</tbody>
</table>

### PV SYSTEM MAXIMUM VOLTAGE (_MODULE VdcMAX)

<table>
<thead>
<tr>
<th>Data Source</th>
<th>SolarACBS.org/About/Publications/Publications/Expedited-Permit/Map</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme Min. Temp (°C)</td>
<td>-20</td>
</tr>
<tr>
<td>Corrected Temperature (°C)</td>
<td>-45</td>
</tr>
<tr>
<td>Min. In. Temp (°C)</td>
<td>-0.26</td>
</tr>
<tr>
<td>Correction Factor (COP/°C x 100)</td>
<td>0.12 * 1</td>
</tr>
<tr>
<td>Corrected Min. Temp (°C)</td>
<td>1.12</td>
</tr>
<tr>
<td>Module Vdc (V)</td>
<td>45</td>
</tr>
<tr>
<td>Min. In. Temp (°C)</td>
<td>50.4</td>
</tr>
</tbody>
</table>

### SUBMIT FOR PERMIT

[Image]
### WIRE AND CONDUCTOR NOTES

1. Any conductor length under 50’ does not require voltage drop calculations.
2. Because we are unable to determine the exact path the installer will run conductors, worst case scenarios, rounding up sizes of conductors that are desired questionable to prevent issues related to using conductors that are improperly sized.
3. Wiring methods in these calculations don’t exceed 3000 volts.
4. CEmino 310.15(B)(20) (as applicable) where two different amperages apply to adjacent portions of a circuit, the higher amperage shall be permitted to be used beyond the point of transition, a distance equal to 1/2” to 3” (1.5 to 3 Meters) or 10% of the circuit length figured at the higher amperage, whichever is less, when less than 10” to 12” or 10% of the circuit length, the lesser amperage may be used.

### DC WIRE AND CONDUCTOR SIZING CHART [SEE SHEET E-003 FOR THREE LINE DIAGRAM]

<table>
<thead>
<tr>
<th>TAG</th>
<th>CIRCUIT ORIGIN</th>
<th>CIRCUIT DESTINATION</th>
<th>CONDUCTOR SPECIFICATIONS</th>
<th>REQUIRED CONDUCTOR AMPERITY</th>
<th>CONDUCTOR TEMPERATURE DERATING</th>
<th>CONDUCT FILL DERATING</th>
<th>CORRECTED AMPACITY CALCULATION</th>
<th>AMPACITY CHECK</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC1</td>
<td>PV MODULE</td>
<td>DC/DC CONVERTER</td>
<td>(1) CU 75 AWG 65</td>
<td>1.25 x 42.0</td>
<td>EXT WALL 35 0/35 0.96</td>
<td>3 1.0</td>
<td>55 0.94 1.0 61.1</td>
<td>61.1</td>
</tr>
<tr>
<td>DC2</td>
<td>DC/DC CONVERTER</td>
<td>DC DISCONNECT</td>
<td>(1) CU 75 AWG 65</td>
<td>1.25 x 42.0</td>
<td>EXT WALL 35 0/35 0.96</td>
<td>3 1.0</td>
<td>55 0.94 1.0 61.1</td>
<td>61.1</td>
</tr>
<tr>
<td>DC3</td>
<td>DC DISCONNECT</td>
<td>INVETER</td>
<td>(1) CU 75 AWG 65</td>
<td>1.25 x 42.0</td>
<td>EXT WALL 35 0/35 0.96</td>
<td>3 1.0</td>
<td>55 0.94 1.0 61.1</td>
<td>61.1</td>
</tr>
</tbody>
</table>

### AC WIRE AND CONDUCTOR FILLERATE CHART [SEE SHEET E-003 FOR THREE LINE DIAGRAM]

<table>
<thead>
<tr>
<th>TAG</th>
<th>CIRCUIT ORIGIN</th>
<th>CIRCUIT DESTINATION</th>
<th>CONDUCTOR SPECIFICATIONS</th>
<th>REQUIRED CONDUCTOR AMPERITY</th>
<th>CONDUCTOR TEMPERATURE DERATING</th>
<th>CONDUCT FILL DERATING</th>
<th>CORRECTED AMPACITY CALCULATION</th>
<th>AMPACITY CHECK</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC1</td>
<td>INVERTER</td>
<td>AC DISCONNECT</td>
<td>(1) CU 75 AWG 65</td>
<td>1.25 x 42.0</td>
<td>EXT WALL 35 0/35 0.96</td>
<td>3 1.0</td>
<td>55 0.94 1.0 61.1</td>
<td>61.1</td>
</tr>
<tr>
<td>AC2</td>
<td>BACKUP INTERFACE</td>
<td>BACKUP INTERFACE</td>
<td>(1) CU 75 AWG 65</td>
<td>1.25 x 42.0</td>
<td>EXT WALL 35 0/35 0.96</td>
<td>3 1.0</td>
<td>55 0.94 1.0 61.1</td>
<td>61.1</td>
</tr>
</tbody>
</table>

### VOLTAGE DROP CALCULATIONS

%VD = (0.2 x DISTANCE x Imp x DC or AC RESISTANCE) / Vmp

**DC**

- **RUN**: 1.22% DC
- **WORST CASE V-DROP**: 1.22% DC
- **TOTAL**: 1.22% DC
NOTE: BATTERY INSTALLED IN 4x4 CLOSET IN ACCORDANCE WITH NFPA 855 2023
1 CONDUIT, RACEWAY, J-BOX, AND PULL BOXES

WARNING: PHOTOVOLTAIC POWER SOURCE

1. PLACE ON CONDUIT AND/OR RACEWAYS EVERY 12’ (3.6)’
   12’ FROM ENDS, 12’ ABOVE AND BELOW PENETRATIONS.
2. CODE REFERENCE: NEC 680.30.[G]
3. MINIMUM OF 1/2” X 5/32”
4. FONT: 3/8” AND 8 WIDTH FACTOR.
5. REFLECTIVE WHITE LETTERS ON A RED BACKGROUND.

2 DC CONNECTORS

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

1. PLACED ON SINGLE CONNECTORS AND IN ANY EQUIPMENT THAT STAYS ENERGIZED IN THE OFF POSITION FROM THE PV SUPPLY.
2. CODE REFERENCE: NEC 660.13(B)
3. MINIMUM OF 3/16” X 20”
4. FONT: 3/8”
5. WARNING LABEL IS WHITE AND ORANGE

3 INVERTER(S)

WARNING: THE DISconnection of the GROUNDed CONnuctorS MAY RESULT in OVERVOLTAGE on the EQUIPMENT

1. MINIMUM OF 3/16” X 10 1/2”
2. FONT: 3/8”
3. WARNING LABEL IS WHITE AND ORANGE

4 NON-LOAD BREAK DC COMBINER / J-BOX

DO NOT OPEN UNDER LOAD

1. CODE REFERENCE: NEC 680.13(C)
2. USE ON NON-LOAD-BREAK RATED DISCONNECTORS.
3. MINIMUM OF 3/4”
4. FONT: 3/8” AND 8 WIDTH FACTOR.
5. WHITE LETTERS ON A RED BACKGROUND.

DO NOT DISCONNECT UNDER LOAD

5 DC COMBINER BOX

WARNING: ARC FLASH HAZARD APPROPRIATE PPE REQUIRED

1. VERIFY WHICH PLACARD IS REQUIRED WITH AH.
2. MINIMUM OF 3/4”
3. FONT: 3/8” AND 8.54 FACTOR
4. WARNING LABEL IS WHITE AND ORANGE
5. DATA COLLECTED FROM A-BUILT INTO PRIOR TO INSTALLED.

6 SWITCHBOARDS

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

1. ONLY FOR UNGROUNDED SYSTEMS.
2. PLACED ON ALL ENCLOSURES WITH UNGROUNDED CIRCUITS OR DEVICES WHICH ARE ENERGIZED AND MAY BE EXPOSED DURING SERVICE.
3. MINIMUM OF 3/16” X 10 1/2”
4. FONT: 3/8”
5. WARNING LABEL IS WHITE AND ORANGE

7 MAIN SERVICE PANEL

AC AND DC DISCONNECTS

8 AC AND DC DISCONNECTS

1. PLACE ALL AC AND DC DISCONNECTS
2. CODE REFERENCE: NEC 680.31(B)
3. MINIMUM OF 1” X 1/2”
4. FONT: 3/8”
5. WHITE LETTERS ON A RED BACKGROUND.

9 J-BOX, DC COMBINER, AND DC DISCONNECT

9 INVERTER(S)

Rapid Sh1DowN swiTch

1. A rapid Sh1DowN sw1ch shall have a label located on or no more than 15’ (4.6m) from the switch that includes the following:

Rapid Sh1DowN swiTch FOR PHOTOVOLTAIC

2. THE WARNING SH1DOWN swiTch label shall be reflective with all letters capitalized and having a minimum height of 0.5 mm (0.020"") in white on red background.

Code abbreviations:

NATURAL ELECTRICAL CODE (NEC)
INTERNATIONAL BUILDING CODE (IBC)
INTERNATIONAL RESIDENTIAL CODE (IRC)
INTERNATIONAL FIRE CODE (IFC)
UNION WELDING LABORATORY (UWL)

1. COMBINATION PLACARDS MAY BE USED IN PLACE OF MULTIPLE PLACARDS FOR THE SAME DEVICE. ALL INFORMATION FROM THE MULTIPLE PLACARDS MUST BE PRESENT.
2. BOLD LETTERS WITH YELLOW BACKGROUND MAY BE USED IN PLACE OF THE STANDARD WHITE LETTERS WITH RED BACKGROUND WITH APH APPROVAL.
3. ALL INTERIOR AND EXTERIOR OF CONDUIT, ENCLOSURES, RACQUARDS, CABLE ASSEMBLY, JUNCTION BOXES, COMBINED BONES AND DISCONNECTS ARE MARKED (NEC 680.31(E), NEC 690.13 & 690.13[A]).
4. THE MARRINS ON THE CONDUIT, RACQUARDS, AND CABLE ASSEMBLIES ARE EVERY 20 FEET, IN ONE FOOT ABOVE AND BELOW ALL FREEIZATIONS OF ROOF CEILING ASSEMBLIES, WALLS AND BARRIERS, (IFC 600.13(A) 680.13(C)).
5. WHERE PV CIRCUITS ARE EMBEDDED IN BUILD-UP, LAMINATE OR MEMBRANE ROOFING MATERIALS IN ROOF AREAS NOT COVERED BY MODULAR AND ASSOCIATED EQUIPMENT, THE LOCATION OF CIRCUITS SHALL BE CLARIFIED MARRINS.
6. REQUIRED LABELS SHALL BE PERMANENT AND SUITABLE FOR THE ENVIRONMENT. MATERIALS USED FOR MARKING MUST BE WEATHER RESISTANT. UL STANDARD IS RECOMMENDED TO DETERMINE WEATHER RESISTANCE. UL LISTING OF MARKINGS IS NOT REQUIRED. SEE UL LABELING SYSTEM 690 (UL 690).
7. MARKING CONTENT AND FORMAT.
6. 1. ARIAL, OR SIMILAR FONT, NON-BOLD.
7. maximum 1/8” LETTER HEIGHT FOR READERS. 
8. minimum 1/16” LETTER HEIGHT FOR DATA.
9. CONTRASTING BACKGROUND AND LETTERING.
10. ALL CAPITAL LETTERS.
11. CONTRASTING SPACE BETWEEN ROWS OF TEXT.
12. USE OF PLACARDS ARE APPROXIMATELY MAY BE REDUCED AND / OR INCREASED TO AN APPROVED MANUFACTURER'S PRODUCT.

ENGINEERING STAMP (if appl)
**REC N-PEAK 3 BLACK SERIES**

**PREMIUM FULL BLACK MONO N-TYPE SOLAR PANELS**

### General Data

- **Cell type:** N-Peak (N-type cells)
- **Glass:** 3.2 mm tempered glass with reflective surface treatment
- **Backsheet:** High resistant polymer (black)
- **Frame:** Anodized aluminum (black) with silver support bars
- ** Junction box:** In compliance with IEC 61724
- **Cable:** Underwriters Laboratories (UL) 4721

### ELECTRICAL DATA

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Output (Pmax) [W]</td>
<td>395</td>
</tr>
<tr>
<td>Work Current (Imax) [A]</td>
<td>14.12</td>
</tr>
<tr>
<td>Nominal Power Voltage (Vmp) [V]</td>
<td>47.2</td>
</tr>
<tr>
<td>Short Circuit Current (Isc) [A]</td>
<td>5.65</td>
</tr>
<tr>
<td>Open Circuit Voltage (Voc) [V]</td>
<td>146.4</td>
</tr>
<tr>
<td>System Voltage (V)</td>
<td>10.60</td>
</tr>
<tr>
<td>Efficiency [%]</td>
<td>19.8</td>
</tr>
</tbody>
</table>

### CERTIFICATIONS (PENDING)


### Dimensions

- **Panel:** 78.6 x 480 x 2.0 [in] (74.7 x 40.2 [in])
- **Weight:** 19.8 [lbs]

### Warranty

- **Standard:** 25 years
- **REC-ProTrust:** 35 years

### INSTALLATION

- **Power Output:** 400 [WP]
- **Temperature:** -40°C to 85°C
- **Maximum system voltage:** 1020 V
- **Maximum power:** 472 [W]
- **Maximum reverse current:** 1.5 [A]
- **Maximum system voltage:** 1020 V
- **Maximum power:** 472 [W]
- **Maximum reverse current:** 1.5 [A]

### Module Ratings

- **Warranty:** 25 years
- **Powers:** 472 [W]
- **Efficiency:** 19.8%

**MORE OF THE MOST TRUSTED TECHNOLOGY**

**NEGLECTED綜理自责**

**PROUD TO BE INNOVATIVE**

**400 WP POWER**

**25 YEAR WARRANTY**

**SOLARS MOST TRUSTED**

**REC GROUP**

Headquartered in Norway with operational headquarters in Singapore, REC also has regional hubs in North America, Europe, and Asia-Pacific.

**Product Specifications**

- **Cable:** 12 AWG (UL 4721, IEC 61724)
- **Frame:** Anodized aluminum (black)
- **Junction box:** In compliance with IEC 61724

**Power in Year**

- **L1:** 92 [kW]
- **L2:** 98 [kW]
- **L3:** 98 [kW]
- **L4:** 98 [kW]
- **L5:** 92 [kW]

**Product Warranty (yrs):**

- **Installed by an REC dealer:** 25 yrs

**System Size**

- **Panels per truck:** 22
- **Panels per pallet:** 480

**DELIVERY INFORMATION**

- **Pallets per 40’/40’HQ container:** 762 (124 pallets)
- **Pallets per 53’ truck:** 220

**LOW LIGHT BEHAVIOUR**

- **Typical low irradiance performance of module at STC:**
  - **Irradiance (W/m²):** 900
  - **Power:** 25 [W]
  - **Temperature:** 25°C

**Module Efficiency (%):**

- **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.**

[Ref: PM-DS1104 Rev-A]

Specifications subject to change without notice.

**www.recgroup.com**

**P-602**
Single Phase Energy Hub Inverter with Prism Technology

For North America

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 ac fault protection and rapid shutdown for NEC 2014, NEC 017 and NEC 2020, per article 690.11 and 690.12
- Embedded revenue grade production data, ANSI C12.20 Class 0.5

solaredge.com
### INVERTER CUT SHEET

**/ Single Phase Energy Hub Inverter with Prism Technology**

For North America


<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported Battery Form</td>
<td>Lead Acid Battery, UL 487 Prime™</td>
<td>Lead Acid Battery, UL 487 Prime™</td>
<td>Lead Acid Battery, UL 487 Prime™</td>
<td>Lead Acid Battery, UL 487 Prime™</td>
<td>Lead Acid Battery, UL 487 Prime™</td>
<td>Lead Acid Battery, UL 487 Prime™</td>
<td>A/UNIT</td>
</tr>
<tr>
<td>Number of Batteries per Inverter</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>BATTERIES</td>
</tr>
<tr>
<td>Nominal Capacity</td>
<td>300</td>
<td>380</td>
<td>600</td>
<td>7600</td>
<td>10000</td>
<td>11400</td>
<td>VA</td>
</tr>
<tr>
<td>Peak Power</td>
<td>360</td>
<td>396</td>
<td>624</td>
<td>7776</td>
<td>10980</td>
<td>12012</td>
<td>VA</td>
</tr>
<tr>
<td>Max Input Current</td>
<td>400</td>
<td>410</td>
<td>450</td>
<td>5952</td>
<td>7425</td>
<td>8496</td>
<td>A</td>
</tr>
</tbody>
</table>

**SMART ENERGY CAPABILITIES**

- **Off-grid Storage:**
  - Battery level monitoring and reporting (up to 11 months of data)
  - Energy management (up to 11 months of data)
  - Real-time energy monitoring (up to 11 months of data)
- **Smart Grid Integration:**
  - Remote control and monitoring
- **Cloud Storage:**
  - Data can be accessed remotely

**ADDITIONAL FEATURES**

- **Backup Power:**
  - Battery level monitoring and reporting (up to 11 months of data)
- **Remote Control:**
  - Battery level monitoring and reporting (up to 11 months of data)
- **Integrated AC, DC, and Communication connectors:**
  - Battery level monitoring and reporting (up to 11 months of data)
- **Inverter Communication:**
  - With the SunPower® mobile application using built-in Wi-Fi Access Point for local connection
- **SolarEdge Inverter Displacement (PV and Battery):**
  - Battery level monitoring and reporting (up to 11 months of data)

**STANDARD COMPLIANCE**

- **Safety:**
  - UL 487, UL 3141, IEC 62109, CEC Class II, GL (Canadian Standards Association), UL 1741, UL 2271, UL 1741 S, UL 472, UL 4703, UL 4704, CE, TUV, CSA, IEC 61724
  - Grid code compliant
  - Grid code compliant
  - Grid code compliant
  - Grid code compliant
  - Grid code compliant
  - Grid code compliant

**INSTALLATION SPECIFICATIONS**

- **Output and DC Output Current Range / DC Voltage Range:**
  - 300-3800 VA
  - 480-520 V
- **DC Input PV and Battery Conductive Area / DC Voltage Range:**
  - 300-3800 VA
  - 480-520 V
- **Dimensions with Connection Unit (L x W x D):**
  - 17.7 x 42 x 170 mm
  - 17.7 x 42 x 170 mm
- **Weight with Connection Unit:**
  - 5.6 lb
  - 5.6 lb

**Electrical Ratings**

- **Input Current (A):**
  - 400 A
- **Output Power (W):**
  - 360 W
- **Rated Efficiency (%):**
  - 97.0%
- **Input Power Factor:**
  - 0.66
- **Input Voltage (V):**
  - 480 V
- **Input Frequency (Hz):**
  - 60 Hz
- **Input Phase:**
  - 3
- **Input Current (A):**
  - 400 A

**Environmental Ratings**

- **Temperature Range:**
  - 32°F to 104°F
- **Humidity:**
  - 95% RH non-condensing

**CAUTION:**

- (1) The part numbers listed above only support the Single Phase model. The part numbers listed above support both Single Phase and LG R400 Prime before as the LG R400 Prime before.

**NOTICE:**

- (2) The part numbers listed above only support the Single Phase model. The part numbers listed above support both Single Phase and LG R400 Prime before.

**INFORMATION:**

- (4) The part numbers listed above only support the Single Phase model. The part numbers listed above support both Single Phase and LG R400 Prime before.

**SPECIFICATIONS:**

- (5) The part numbers listed above only support the Single Phase model. The part numbers listed above support both Single Phase and LG R400 Prime before.

**WARNING:**

- (6) The part numbers listed above only support the Single Phase model. The part numbers listed above support both Single Phase and LG R400 Prime before.

**REV:**

- (7) The part numbers listed above only support the Single Phase model. The part numbers listed above support both Single Phase and LG R400 Prime before.

**DATE:**

- (8) The part numbers listed above only support the Single Phase model. The part numbers listed above support both Single Phase and LG R400 Prime before.

**SUBMIT FOR PERMIT:**

- (9) The part numbers listed above only support the Single Phase model. The part numbers listed above support both Single Phase and LG R400 Prime before.

**EQUIP. CUT SHEETS**

- (10) The part numbers listed above only support the Single Phase model. The part numbers listed above support both Single Phase and LG R400 Prime before.

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**Power Optimizer**

**S440, S500**

**PV power optimization at the module level**

- Specifically designed to work with SolarEdge residential inverters
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch loss, from manufacturing to partial shading
- Faster installations with simplified cable management and easy assembly using a single bolt

*Functionally subject to inverter model and firmware version*

---

**Power Optimizer**

**S440, S500**

**Input**

<table>
<thead>
<tr>
<th>Feature</th>
<th>S440</th>
<th>S500</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum AC Input Power</td>
<td>440</td>
<td>500</td>
<td>kW</td>
</tr>
<tr>
<td>Nominal DC Input Voltage (Max)</td>
<td>900</td>
<td>1000</td>
<td>V</td>
</tr>
<tr>
<td>Maximum Input Power</td>
<td>440</td>
<td>500</td>
<td>kW</td>
</tr>
<tr>
<td>Maximum Input Current</td>
<td>440</td>
<td>500</td>
<td>A</td>
</tr>
<tr>
<td>Nominal DC Input Voltage (Min)</td>
<td>180</td>
<td>200</td>
<td>V</td>
</tr>
<tr>
<td>Nominal DC Input Voltage (Max)</td>
<td>525</td>
<td>600</td>
<td>V</td>
</tr>
</tbody>
</table>

**Output during operation**

<table>
<thead>
<tr>
<th>Feature</th>
<th>S440</th>
<th>S500</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Output Power</td>
<td>440</td>
<td>500</td>
<td>kW</td>
</tr>
<tr>
<td>Maximum Output Current</td>
<td>440</td>
<td>500</td>
<td>A</td>
</tr>
<tr>
<td>Nominal Output Voltage</td>
<td>340</td>
<td>400</td>
<td>V</td>
</tr>
<tr>
<td>Nominal Output Current</td>
<td>440</td>
<td>500</td>
<td>A</td>
</tr>
</tbody>
</table>

**Output during standby (power optimizer disconnected from inverter or inverter off)**

- The power optimizer is designed to maintain the power characteristics listed above even when disconnected from the inverter.

**Standards compliance**

- UL983
- CE
- EN50725
- IEC61724
- TUV

**Installation specifications**

<table>
<thead>
<tr>
<th>Feature</th>
<th>S440</th>
<th>S500</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum ambient operating temperature</td>
<td>-20</td>
<td>-25</td>
<td>°C</td>
</tr>
<tr>
<td>Maximum ambient operating temperature</td>
<td>40</td>
<td>40</td>
<td>°C</td>
</tr>
<tr>
<td>Minimum ambient storage temperature</td>
<td>-20</td>
<td>-25</td>
<td>°C</td>
</tr>
<tr>
<td>Maximum ambient storage temperature</td>
<td>60</td>
<td>60</td>
<td>°C</td>
</tr>
<tr>
<td>Dimensions (L x W x H)</td>
<td>143 x 143 x 49</td>
<td>143 x 143 x 49</td>
<td>mm</td>
</tr>
<tr>
<td>Net weight</td>
<td>2.8</td>
<td>3.2</td>
<td>kg</td>
</tr>
</tbody>
</table>

**PV System Design Using a SolarEdge Inverter**

<table>
<thead>
<tr>
<th>PV System Design</th>
<th>Single Phase</th>
<th>Single Phase</th>
<th>Three Phase</th>
<th>Three Phase for 277/480V grid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modules x Power (Watts)</td>
<td>440</td>
<td>500</td>
<td>720</td>
<td>840</td>
</tr>
<tr>
<td>Modules x Power (Watts)</td>
<td>440</td>
<td>500</td>
<td>720</td>
<td>840</td>
</tr>
<tr>
<td>Modules x Power (Watts)</td>
<td>440</td>
<td>500</td>
<td>720</td>
<td>840</td>
</tr>
<tr>
<td>Modules x Power (Watts)</td>
<td>440</td>
<td>500</td>
<td>720</td>
<td>840</td>
</tr>
</tbody>
</table>

*For the design calculations, modules are considered ideal in terms of power output, even when the power output is less than the maximum input power.*

---

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SolarEdge Energy Bank
10kWh Battery
For North America

Optimized for SolarEdge Energy Hub Inverters(1)

- Maximized system performance, gaining more energy to store and use for on-grid and backup power applications
- Integrates with the complete SolarEdge residential offering, providing a single point of contact for warranty, support, training, and simplified logistics & operations
- DC coupled battery featuring superior overall system efficiency, from PV to battery to grid
- Scalable solution for increased power and capacity with multiple SolarEdge inverters and batteries

Solar, storage, EV charging, and smart devices all monitored and managed by a single app to optimize solar production, consumption and backup power
- Wireless communication to the inverter, reducing wiring, labor and installation faults
- Simple plug and play installation, with automatic SetApp-based configuration
- Includes multiple safety features for battery protection

### BATTERY SPECIFICATION

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery Energy</td>
<td>10 kWh</td>
</tr>
<tr>
<td>Continuous Output Power</td>
<td>5kW</td>
</tr>
<tr>
<td>Home output (5 – 10 minutes)</td>
<td>7kW</td>
</tr>
<tr>
<td>Home output (1 – 5 minutes)</td>
<td>9kW</td>
</tr>
<tr>
<td>Max Output Power</td>
<td>10kW</td>
</tr>
<tr>
<td>Voltage Range</td>
<td>248 – 988V</td>
</tr>
<tr>
<td>Temperature rating</td>
<td>-20°C to +60°C</td>
</tr>
<tr>
<td>Temperature range (range)</td>
<td>90%</td>
</tr>
<tr>
<td>Usable storage (5 – 10 minutes)</td>
<td>8kW</td>
</tr>
</tbody>
</table>

**Standard Compliance**

- UL 1940
- UL 1741
- UL 473

**Mechanical Specifications**

- Dimensions: 166 x 61 x 37 cm
- Weight: 200 kg
- Mounting: Outdoor or indoor use
- Temperature: -20°C to +60°C
- Humidity: 90%
- Voltage: 248 – 988V
- Power: 7kW
- A grade: 95% efficiency
- Cooling: Natural convection
- Power: 2000 W

Additional notes:

1. The SolarEdge Energy Bank is designed for use with a compatible Energy Hub for auto-shutdown. The customer may require an updated Energy Bank firmware to achieve this behavior.
2. This product may be used with other inverters, but it is recommended for use with a compatible SolarEdge inverter.
3. The inverter must be compatible with the PowerPlus 25kW.“
4. The unit must be mounted in a suitable location with a minimum clearance of 30 cm from the ground.
5. A separate installation key is required for each installation key that requires a separate key.
6. For warranty claims, please refer to the SolarEdge Energy Bank warranty policy.
7. For installation, refer to the installation manual provided with each unit.
8. For additional information or to purchase, please contact your local SolarEdge dealer.
9. For service and support, please contact your local SolarEdge dealer.

---

SolarEdge Energy Bank Battery - Accessories (purchased separately)

<table>
<thead>
<tr>
<th>Accessory</th>
<th>PN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wall mount kit</td>
<td>BAT-WMK-10K</td>
</tr>
<tr>
<td>Battery charging cable (10 kVA)</td>
<td>BAT-CBL-10K</td>
</tr>
<tr>
<td>Battery charging cable (25 kVA)</td>
<td>BAT-CBL-25K</td>
</tr>
</tbody>
</table>

---

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Rotary Actuator Switch -
Lockable Off in Plastic Enclosure

- Rotary Actuator Switch
- Lockable Off - Safe-Lock
- Self-Extinguishing Plastic Enclosure
- M25 Cable Gland Entry Option
- NEMA Type 3R
- IP66

<table>
<thead>
<tr>
<th>DC21A RATED 7-3</th>
<th>DC21B RATED 7-3</th>
<th>Poles in Series</th>
<th>No. of Brinegs</th>
<th>Current (A)</th>
<th>Weight (Kg/pce.)</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>18A 16A 5A 5A</td>
<td>15A 15A 5A 5A</td>
<td>2</td>
<td>2</td>
<td>1000V</td>
<td>0.43</td>
<td>SI16 PEL64R 2</td>
</tr>
<tr>
<td>25A 20A 11A 11A</td>
<td>25A 20A 11A 11A</td>
<td>2</td>
<td>2</td>
<td>1000V</td>
<td>0.43</td>
<td>SI25 PEL64R 2</td>
</tr>
<tr>
<td>32A 25A 13A 13A</td>
<td>32A 25A 13A 13A</td>
<td>2</td>
<td>2</td>
<td>1000V</td>
<td>0.43</td>
<td>SI32 PEL64R 2</td>
</tr>
<tr>
<td>40A 30A 20A 20A</td>
<td>40A 30A 20A 20A</td>
<td>2</td>
<td>2</td>
<td>1000V</td>
<td>0.43</td>
<td>SI40 PEL64R 2</td>
</tr>
<tr>
<td>55A 45A 30A 30A</td>
<td>55A 45A 30A 30A</td>
<td>2</td>
<td>2</td>
<td>750V</td>
<td>0.43</td>
<td>SI55 PEL64R 2</td>
</tr>
<tr>
<td>29A 29A 9A 9A</td>
<td>29A 29A 9A 9A</td>
<td>2</td>
<td>2</td>
<td>600V</td>
<td>0.43</td>
<td>SI16 PEL64R 2H</td>
</tr>
<tr>
<td>45A 45A 11A 11A</td>
<td>45A 45A 11A 11A</td>
<td>2</td>
<td>2</td>
<td>600V</td>
<td>0.43</td>
<td>SI25 PEL64R 2H</td>
</tr>
<tr>
<td>50A 50A 13A 13A</td>
<td>50A 50A 13A 13A</td>
<td>2</td>
<td>2</td>
<td>600V</td>
<td>0.43</td>
<td>SI32 PEL64R 2H</td>
</tr>
<tr>
<td>64A 64A 20A 20A</td>
<td>64A 64A 20A 20A</td>
<td>2</td>
<td>2</td>
<td>600V</td>
<td>0.43</td>
<td>SI40 PEL64R 2H</td>
</tr>
<tr>
<td>80A 80A 25A 25A</td>
<td>80A 80A 25A 25A</td>
<td>2</td>
<td>2</td>
<td>600V</td>
<td>0.43</td>
<td>SI55 PEL64R 2H</td>
</tr>
<tr>
<td>16A 16A 9A 9A</td>
<td>16A 16A 9A 9A</td>
<td>2</td>
<td>2</td>
<td>600V</td>
<td>0.43</td>
<td>SI16 PEL64R 4</td>
</tr>
<tr>
<td>25A 25A 11A 11A</td>
<td>25A 25A 11A 11A</td>
<td>2</td>
<td>2</td>
<td>600V</td>
<td>0.43</td>
<td>SI25 PEL64R 4</td>
</tr>
<tr>
<td>32A 32A 13A 13A</td>
<td>32A 32A 13A 13A</td>
<td>2</td>
<td>2</td>
<td>600V</td>
<td>0.43</td>
<td>SI32 PEL64R 4</td>
</tr>
<tr>
<td>40A 40A 20A 20A</td>
<td>40A 40A 20A 20A</td>
<td>2</td>
<td>2</td>
<td>600V</td>
<td>0.43</td>
<td>SI40 PEL64R 4</td>
</tr>
<tr>
<td>55A 55A 25A 25A</td>
<td>55A 55A 25A 25A</td>
<td>2</td>
<td>2</td>
<td>600V</td>
<td>0.43</td>
<td>SI55 PEL64R 4</td>
</tr>
<tr>
<td>16A 16A 9A 9A</td>
<td>16A 16A 9A 9A</td>
<td>2</td>
<td>3</td>
<td>600V</td>
<td>0.43</td>
<td>SI16 PEL64R 8</td>
</tr>
<tr>
<td>25A 25A 11A 11A</td>
<td>25A 25A 11A 11A</td>
<td>2</td>
<td>3</td>
<td>600V</td>
<td>0.43</td>
<td>SI25 PEL64R 8</td>
</tr>
<tr>
<td>32A 32A 13A 13A</td>
<td>32A 32A 13A 13A</td>
<td>2</td>
<td>3</td>
<td>600V</td>
<td>0.43</td>
<td>SI32 PEL64R 8</td>
</tr>
<tr>
<td>16A 16A 9A 9A</td>
<td>16A 16A 9A 9A</td>
<td>2</td>
<td>4</td>
<td>600V</td>
<td>0.43</td>
<td>SI16 PEL64R 8S</td>
</tr>
<tr>
<td>25A 25A 11A 11A</td>
<td>25A 25A 11A 11A</td>
<td>2</td>
<td>4</td>
<td>600V</td>
<td>0.43</td>
<td>SI25 PEL64R 8S</td>
</tr>
<tr>
<td>32A 32A 13A 13A</td>
<td>32A 32A 13A 13A</td>
<td>2</td>
<td>4</td>
<td>600V</td>
<td>0.43</td>
<td>SI32 PEL64R 8S</td>
</tr>
</tbody>
</table>

Specifications are subject to change without notice.

4T / 4B configuration also available. For rating refer to 4S configuration. (See page 17)
Eaton DG322URB

Catalog Number: DG322URB

Eaton general duty non-fusible safety switch, single-throw, 60 A, NEMA 3R, Rainproof, Painted galvanized steel. Three-pole. Three-wire, 240V

General specifications

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Catalog Number</th>
<th>UPC</th>
<th>Product Length/Depth</th>
<th>Product Height</th>
<th>Product Width</th>
<th>Product Weight</th>
<th>Warranty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eaton general duty non-fusible safety switch</td>
<td>DG322URB</td>
<td>752113144313</td>
<td>7.38 in</td>
<td>14.19 in</td>
<td>8.69 in</td>
<td>9 lb</td>
<td>Eaton Selling Policy 25-000, one (1) year UL Listed from the date of installation of the Product or eighteen (18) months from the date of shipment of the Product, whichever occurs first.</td>
</tr>
</tbody>
</table>

UL Listed

WARNING! Switch is not approved for service entrance unless a neutral kit is installed.

Eaton Corporation plc
Eaton House
30 Pembroke Road
Dublin 4, Ireland
Eaton.com
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Eaton.com/socialmedia

Valley Solar
21134A
340 Riverside Dr
Florence, MA 01062
(413) 584-8844

Douglas, Damon
530 W Pelham Rd Pole 102
Shutesbury, MA 01072

03/10/2023

SUBMIT FOR PERMIT
## Backup Interface for North America

**Model:** BI-EUSGN-01 / BI-NUSGN-01

<table>
<thead>
<tr>
<th>INPUT FROM GRID</th>
<th>BI-EUSGN-01</th>
<th>BI-NUSGN-01</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Current Input</td>
<td>200</td>
<td>A</td>
</tr>
<tr>
<td>AC Output Voltage Range</td>
<td>240</td>
<td>240</td>
</tr>
<tr>
<td>AC Frequency (Nominal)</td>
<td>50</td>
<td>120</td>
</tr>
<tr>
<td>AC Frequency Range</td>
<td>50 - 60</td>
<td>50 - 60</td>
</tr>
<tr>
<td>Maximum Inverter Input Power Available</td>
<td>200</td>
<td>A</td>
</tr>
<tr>
<td>Service Side AC Main Circuit Breaker Rated Current</td>
<td>200</td>
<td>A</td>
</tr>
<tr>
<td>Service Side AC Main Circuit Breaker Interrupt Current</td>
<td>16</td>
<td>N/A</td>
</tr>
<tr>
<td>Grid Connection Suitable Time</td>
<td>120</td>
<td>120</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OUTPUT TO MAIN DISTRIBUTION PANEL</th>
<th>BI-EUSGN-01</th>
<th>BI-NUSGN-01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum AC Current Output</td>
<td>200</td>
<td>A</td>
</tr>
<tr>
<td>AC Output Voltage Range</td>
<td>240</td>
<td>240</td>
</tr>
<tr>
<td>AC Frequency (Nominal)</td>
<td>50</td>
<td>120</td>
</tr>
<tr>
<td>AC Frequency Range</td>
<td>50 - 60</td>
<td>50 - 60</td>
</tr>
<tr>
<td>Available Power to Main Distribution Panel</td>
<td>200</td>
<td>A</td>
</tr>
<tr>
<td>AC Output Voltage Range (nominal)</td>
<td>120</td>
<td>V</td>
</tr>
<tr>
<td>AC Frequency Range (nominal)</td>
<td>50 - 60</td>
<td>50 - 60</td>
</tr>
<tr>
<td>AC Frequency Range (nominal)</td>
<td>50 - 60</td>
<td>50 - 60</td>
</tr>
</tbody>
</table>

**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

**Package:**

- 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

**Additional Features**

- Suitable for use with service equipment
- For main only
- Communication: RS485
- Emergency Power for Inverter (Fault-Proof): 1%
- Maximum Inverter Input Power Available: 200

**Generator Capacity**

- Maximum Continuous Input Power: 200
- Maximum Output Power: 120
- Dry Contact Switch Voltage Rating: 250VDC
- Dry Contact Switch Current Rating: 100A
- Short Stops Switch: Yes

---

[1] Requires supporting inverter software

[2] Requires supporting inverter firmware
# Backup Interface for North America

**BI-EUSGN-01 / BI-NUSGN-01**

## STANDARD COMPLIANCE

<table>
<thead>
<tr>
<th></th>
<th>BI-EUSGN-01</th>
<th>BI-NUSGN-01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety</td>
<td>UL1741, CSA-C22.2 No. 107</td>
<td>UL1741, N.A.</td>
</tr>
<tr>
<td>Installation</td>
<td>N.A.</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

## INSTALLATION SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>BI-EUSGN-01</th>
<th>BI-NUSGN-01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported Inverters</td>
<td>Single phase energy hub inverter with Prim technology</td>
<td>Single phase energy hub inverter with Prim technology</td>
</tr>
<tr>
<td>AC Inverter Combustible Size / AWG Range</td>
<td>5 incombustible / 6 / 11 AWG</td>
<td>5 incombustible / 6 / 11 AWG</td>
</tr>
<tr>
<td>AC Inverter Combustible Size / AWG Range</td>
<td>7 combustible / 6 / 11 AWG</td>
<td>7 combustible / 6 / 11 AWG</td>
</tr>
<tr>
<td>Communication Combustible Size / AWG Range</td>
<td>5 in combustible / 6 / 11 AWG</td>
<td>5 in combustible / 6 / 11 AWG</td>
</tr>
<tr>
<td>Weight</td>
<td>11 / 15</td>
<td>11 / 15</td>
</tr>
<tr>
<td>Cooling</td>
<td>Fan- late replaceable</td>
<td>Fan- late replaceable</td>
</tr>
<tr>
<td>Noise</td>
<td>010</td>
<td>010</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>−20°C to 60°C / −4°C to 90°C</td>
<td>−20°C to 60°C / −4°C to 90°C</td>
</tr>
<tr>
<td>Protection Rating</td>
<td>NEMA, 320, IP64</td>
<td>NEMA, 320, IP64</td>
</tr>
<tr>
<td>Dimensions (Width x Depth x Height)</td>
<td>43.50 x 16.80 x 8.042 / 42.5 x 8.042 x 7.892</td>
<td>43.50 x 16.80 x 8.042 / 42.5 x 8.042 x 7.892</td>
</tr>
</tbody>
</table>

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The SFUSA® Ground Mount system is the optimal solution for residential and light commercial solar projects. By custom designing and manufacturing components in-house, Solar Foundations’ structure fits and functions together seamlessly, installs in far less time and with greater strength. The highest quality materials such as high-grade steel fully galvanized in accordance with ASTM standards and high-strength aluminum alloys for our panel support rails are utilized for long-term durability. Designed to withstand high snow and wind areas, the UL 2703 classified system has an expected lifespan that exceeds multiple panel lifecycles. Thus, Solar Foundations’ product maximizes the residual investment of your ground mount structure.

**Features**

- Allows for mounting panels in four-, five- or six-high in landscape orientation and can be adapted to custom configurations
- Durable design enables any wind speed and snow load
- 0° to 40° tilt with multiple inter-row spacing options
- Compatible with a wide range of modules
- Pile verification report available after the installation has been completed
- 25-year guarantee against failure

Solar Foundations’ patented rail design offers a simple connection detail between the panel support rail and the horizontal support beams. The patented telescopic design of the SFUSA Wind Brace allows quick and easily adaptable length changes to match installation conditions where significant adjustability is required.

A two-man crew can typically install up to about a 25kW residential structure in a single day.

SFUSA has developed processes and equipment that permits the installation of our patent pending ground screws in any soil conditions including solid rock.

Our foundations feature wider spans between support columns and stronger members. We engineered our system to obtain a better balance between all of the system components, resulting in less ground penetrations, a lower installed cost and has allowed us to offer further cost optimizations and array configurations that are not typically available in the industry.

**Adaptable Ground Screw Fixed Tilt System**

**Features**

- Allows for mounting panels in four-, five- or six-high in landscape orientation and can be adapted to custom configurations
- Durable design enables any wind speed and snow load
- 0° to 40° tilt with multiple inter-row spacing options
- Compatible with a wide range of modules
- Pile verification report available after the installation has been completed
- 25-year guarantee against failure

Solar Foundations’ patented rail design offers a simple connection detail between the panel support rail and the horizontal support beams.
Let us simplify your ground mount structure process.

**Custom**

SFUSA® has the ability to come up with creative structures and products outside of our standard systems for unique situations.

**Fixed Tilt 4 Landscape**

**Fixed Tilt 5 Landscape**

**Fixed Tilt 6 Landscape**

### Materials
- Hot-dipped galvanized steel, aluminum, stainless-steel mounting hardware

### Tilt Angle
- 0° - 40°

### Module Orientation
- Landscape

### Finishes
- Galvanized

### Foundation Options
- Ground Screw - All soils including rock drilling

### Grounding
- Integrated or WEEB Bonding

### Maximum Grade of Terrain
- 15°

### Design Services
- Signed & sealed structural drawings

### Certifications
- UL 2703

### Warranty
- 25 years

### Installation Services
- Material, foundations, racking

---

**We’re more than just a racking company.**

**Substructure Assembly**

- **Horizontal Support Beam**
- **Diagonal Wind Brace and Insert**
- **Diagonal Wind Brace Column Connector**
- **Column Caps**

We provide maximum support for our structure by utilizing high yield strength hollow structural steel sections on our racking systems. Our patented telescopic design allows quick and easily adaptable length changes to match installation conditions. SolarFoundations’ hot-dipped galvanized custom Wind Brace Column Connectors fasten the Diagonal Wind Brace to a vertical column. Our unique design allows a straightforward connection to the horizontal steel support beam.

**Racking Assembly**

- **Ground Mount Rail**
- **Module End Clamp**
- **Module Mid Clamp**
- **Grounding**

Solar Foundations’ patented rail design offers a simple connection detail between the panel support rail and the horizontal support beams, allowing 6 modules per column in landscape orientation. Our end clamp design securely fastens the top and bottom edges of a column of solar panels to the SF Rail. The mid clamp fastens two adjoining solar panels in a column of solar panels to the SF Rail. Our sleek design with multiple serrations increases the holding power of the modules to our SF Rails. Our UL 2703 Certification encompasses the rail to beam and beam to pile connections, permitting the use of a single grounding lug for the entire racking system.

**Contact us at info@solarfoundationsusa.com or (855) 738-7200.**

---

**RACKING & RAIL CUT SHEET**

Valley Solar

950 River Road

Florence, MA 01062

(413) 584-8844

**9.600 kW PHOTOVOLTAIC PLANS**

**Valley Solar**

340 Riverside Dr

Northampton, MA 01060

(413) 584-8844

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Additional Options for SFUSA Ground Mount Structures

Solar Foundations USA offers a number of beneficial add-ons for the SFUSA Ground Mount System. These features include equipment support columns for mounting electrical equipment, black panel mounting hardware for a sleek appearance, micro-inverter mounting hardware for a secure and simple connection and torque limiters to maintain precise control when mounting solar panels to our structures.

**Rail Section Properties**

<table>
<thead>
<tr>
<th>Axis X-X</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>I (Moment of Inertia)</td>
<td>1.272 in^4</td>
</tr>
<tr>
<td>S (Section Modulus)</td>
<td>0.802 in^3</td>
</tr>
<tr>
<td>R (Radius of Gyration)</td>
<td>1.152 in</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Axis Y-Y</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>I (Moment of Inertia)</td>
<td>0.416 in^4</td>
</tr>
<tr>
<td>S (Section Modulus)</td>
<td>0.270 in^3</td>
</tr>
<tr>
<td>R (Radius of Gyration)</td>
<td>0.664 in</td>
</tr>
</tbody>
</table>

| Area       | 0.947 in^2 |
| Weight     | 1.085 lb/ft |

### Panel Descriptions

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Part Number</th>
<th>Description &amp; Length</th>
<th>Panel Width</th>
<th>Typical Configuration</th>
<th>Material</th>
<th>Weight</th>
<th>Patent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>R162</td>
<td>SFUSA Ground Mount Rail, 162&quot;</td>
<td>38.58&quot; – 39.41&quot;</td>
<td>4 Panels High in Landscape</td>
<td>Aluminum 6060A – T61</td>
<td>15.3 lbs</td>
<td>Patent No. 8,776,454</td>
</tr>
<tr>
<td>2</td>
<td>R171</td>
<td>SFUSA Ground Mount Rail, 171&quot;</td>
<td>38.42&quot; – 41.20&quot;</td>
<td>5 Panels High in Landscape</td>
<td>Aluminum 6060A – T61</td>
<td>16.1 lbs</td>
<td>Patent No. 9,249,994</td>
</tr>
<tr>
<td>3</td>
<td>R202</td>
<td>SFUSA Ground Mount Rail, 202&quot;</td>
<td>38.58&quot; – 39.41&quot;</td>
<td>5 Panels High in Landscape</td>
<td>Aluminum 6060A – T61</td>
<td>19.0 lbs</td>
<td>Patent No. 9,660,569</td>
</tr>
<tr>
<td>4</td>
<td>R212</td>
<td>SFUSA Ground Mount Rail, 212&quot;</td>
<td>38.42&quot; – 41.20&quot;</td>
<td>6 Panels High in Landscape</td>
<td>Aluminum 6060A – T61</td>
<td>20.0 lbs</td>
<td>Patent No. 8,776,454</td>
</tr>
<tr>
<td>5</td>
<td>R242</td>
<td>SFUSA Ground Mount Rail, 242&quot;</td>
<td>38.58&quot; – 39.41&quot;</td>
<td>6 Panels High in Landscape</td>
<td>Aluminum 6060A – T61</td>
<td>22.8 lbs</td>
<td>Patent No. 9,249,994</td>
</tr>
<tr>
<td>6</td>
<td>R254</td>
<td>SFUSA Ground Mount Rail, 254&quot;</td>
<td>38.42&quot; – 41.20&quot;</td>
<td>6 Panels High in Landscape</td>
<td>Aluminum 6060A – T61</td>
<td>23.9 lbs</td>
<td>Patent No. 9,660,569</td>
</tr>
<tr>
<td>7</td>
<td>R288</td>
<td>SFUSA Ground Mount Rail, 288&quot;</td>
<td>38.42&quot; – 41.20&quot;</td>
<td>Custom</td>
<td>Aluminum 6060A – T61</td>
<td>27.1 lbs</td>
<td>Patent No. 8,776,454</td>
</tr>
</tbody>
</table>
Solar Foundations provides an optional ground screw designed to support the typical weight of electrical equipment. This additional ground screw is placed adjacent to a north column main support to reduce the span between columns. This permits UNISTRUT® (or similar channel) to span between the columns.

Every ESC includes a set of U-bolt mounting hardware that has the correct 2½” ID of the posts to mount the UNISTRUT® (or similar channel) to the support.
- (8) 2½” ESC U-Bolt (⅜"x4¼" Long)
- (17) ⅜” Hex Nut, HDG
- (17) ⅜” Washer, HDG

$265.00 - $290.00 each
Prices and product availability are subject to change without notice.

The Micro-Inverter Mounting kit is used to attach a micro inverter to a SFUSA Ground Mount Rail, providing a secure and simple connection. The T-Head style bolts permits installation and removal at any time without the need to remove solar panels.

The inverter mounting hardware includes:
- SFUSA T-Head Bolts, 0.75” Long (1/4-20, 18-8 Stainless)
- K-Lock Nuts (1/4-20, 18-8 Stainless)
- ¼” Oversized Washers (0.05” Thick x 1.0” OD, 18-8 Stainless)

*$73.00 for a pack of 100
Prices and product availability are subject to change without notice.

Solar Foundations’ End Clamps and Mid Clamps are available in a Black Anodized finish along with our stainless-steel K-Lock Nuts available in a Black Oxide finish for protection against corrosion and sleek appearance.
- Our black anodized end clamps accommodate a comprehensive range of frame heights from 30 to 47 mm
- Solar Foundations’ black panel hardware is extremely resistant to fading in high UV environments and offers long-lasting resistance to abrasion

Black End Clamp w/ Black K-Lock Nut adds $1.30/unit
Black Mid Clamp w/ Black K-Lock Nut adds $1.15/unit
Prices and product availability are subject to change without notice.

Solar Foundations’ custom Inline Preset Torque Limiter improves productivity and efficiency while maintaining precise torque control when mounting solar panels to our structures. Our preset click-type torque limiter ensures that the solar panel mounting fasteners and SFUSA rail holdowns are tightened to the correct specifications.
- Compatible with any standard 1/2-inch chuck cordless drill
- Utilizes 3/8-inch drive sockets with retaining pin thru hole
- An audible ‘click’ indicates that the preset 120 in-lbs of torque has been reached
- Custom torque settings are available in thrange of 30 to 180 in-lbs
- Slip-resistant drive adaptor
- Compact design helps maintain drill balance

$145.00 each
Prices and product availability are subject to change without notice.

Solar Foundations’ black panel hardware is extremely resistant to fading in high UV environments and offers long-lasting resistance to abrasion.

Our black anodized end clamps accommodate a comprehensive range of frame heights from 30 to 47 mm

Solar Foundations' black panel hardware is extremely resistant to fading in high UV environments and offers long-lasting resistance to abrasion.