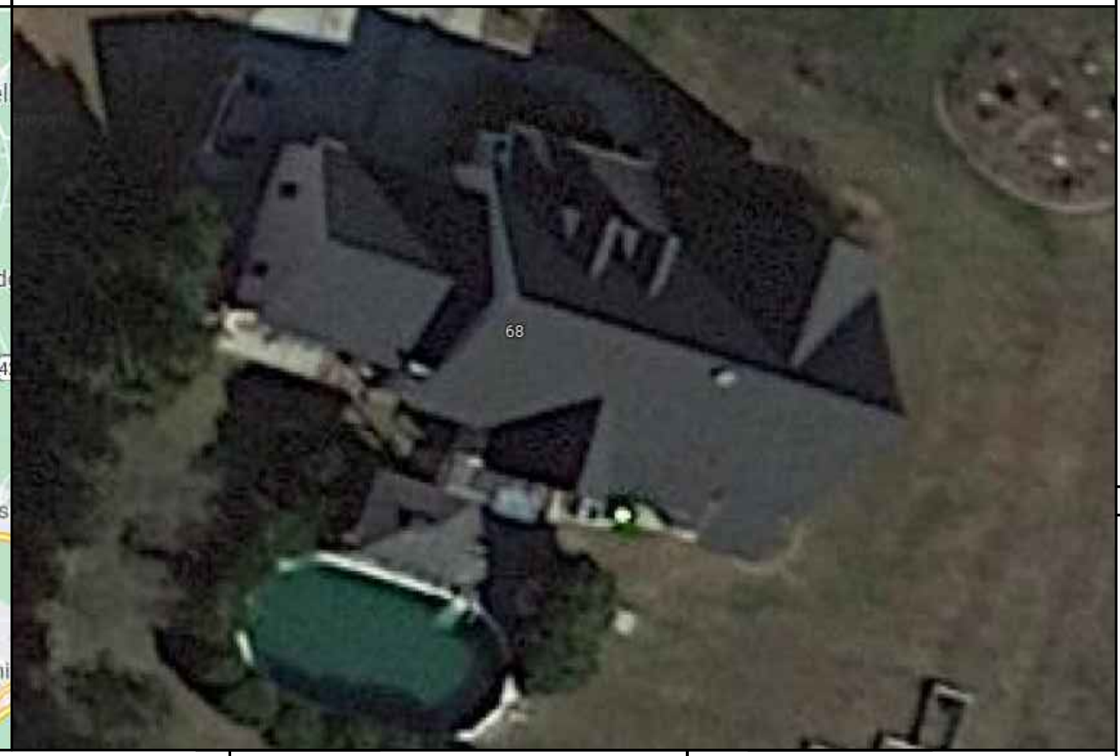
VICINITY MAP

PROPERTY MAP



CONSTRUCTION NOTES

1. ALL WORK AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST NATIONAL, STATE, AND LOCAL CODES AND ORDINANCES
2. FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS, BEST PRACTICES, AND SPECIFICATIONS
3. WIRES SHALL BE RATED AND LABELED "SUNLIGHT RESISTANT" WHERE EXPOSED TO AMBIENT CONDITIONS
4. THE PHOTOVOLTAIC SYSTEM SHALL NOT EXCEED 600 VOLTS OR 800 AMPS
5. EACH ELECTRICAL APPLIANCE SHALL BE PROVIDED WITH A NAMEPLATE GIVING THE IDENTIFYING NAME AND THE RATING IN VOLTS AND AMPERES, OR VOLTS AND WATTS. IF THE APPLIANCE IS TO BE USED ON A SPECIFIC FREQUENCY OR FREQUENCIES, IT SHALL BE SO MARKED. WHERE MOTOR OVERLOAD PROTECTION EXTERNAL TO THE APPLIANCES IS REQUIRED, THE APPLIANCE SHALL BE SO MARKED
6. WHERE APPLICABLE, GROUNDING ELECTRODE CONDUCTOR TO BE CONTINUOUS. GROUNDING CRIMPS TO BE IRREVERSIBLE
7. IN ONE- AND TWO-FAMILY DWELLINGS, LIVE PARTS IN PHOTOVOLTAIC SOURCE CIRCUITS AND PHOTOVOLTAIC OUTPUT CIRCUITS OVER 150 VOLTS TO GROUND, SHALL ONLY BE ACCESSIBLE TO QUALIFIED PERSONS WHILE ENERGIZED.
8. PHOTOVOLTAIC SYSTEMS SHALL BE PERMANENTLY MARKED AT VARIOUS EQUIPMENT LOCATIONS TO IDENTIFY THAT A PHOTOVOLTAIC SYSTEM IS INSTALLED AND THAT VARIOUS DANGERS ARE PRESENT.
9. EACH PHOTOVOLTAIC SYSTEM DISCONNECTING MEANS SHALL BE PERMANENTLY MARKED TO IDENTIFY IT AS A PHOTOVOLTAIC SYSTEM DISCONNECT
10. WHERE ALL TERMINALS OF A DISCONNECTING MEANS MAY BE ENERGIZED IN THE OPEN POSITION, A WARNING SIGN SHALL BE MOUNTED ON OR ADJACENT TO THE DISCONNECT
11. A PERMANENT LABEL FOR THE DIRECT-CURRENT PHOTOVOLTAIC POWER SOURCE SHALL BE PROVIDED BY THE INSTALLED AT THE DC DISCONNECT MEANS
12. A PERMANENT PLAQUE OR DIRECTORY, DENOTING ALL ELECTRIC POWER SOURCES SERVING THE PREMISES, SHALL BE INSTALLED AT EACH SERVICE EQUIPMENT LOCATION AND AT LOCATIONS OF ALL POWER PRODUCTION SOURCES.
13. A PERMANENT PLAQUE OR DIRECTORY SHALL BE PROVIDED DENOTING THE LOCATIONS OF THE SERVICE DISCONNECT MEANS AND THE PHOTOVOLTAIC SYSTEM DISCONNECT MEANS IF THEY ARE NOT LOCATED AT THE SAME LOCATION.
14. ALL MODULE GROUND CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH NEC SECTION 690.4 (C)

NOTICE TO CONTRACTOR
All construction must comply with current NC Building Codes and is subject to field inspection and verification.
APPROVED
Limited building only review
Permit holder responsible for full compliance with the code
07/19/2022
Harnett COUNTY NORTH CAROLINA

ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
DC	DIRECT CURRENT
EGC	EQUIPMENT GROUNDING CONDUCTOR
EMT	ELECTRICAL METAL TUBING
GALV	GALVANIZED
GEC	GROUNDING ELECTRODE CONDUCTOR
GND	GROUND
I	CURRENT
IMP	CURRENT AT MAXIMUM POWER
ISC	SHORT-CIRCUIT CURRENT
KVA	KILOVOLT AMPERE
KW	KILOWATT
MAX	MAXIMUM
MIN	MINIMUM
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUG ONLY
NOM	NOMINAL
NTS	NOT TO SCALE
PNOM	NOMINAL POWER
PV	PHOTOVOLTAIC
PVC	POLYVINYL CHLORIDE
SN	SOLAR NOON
STC	STANDARD TEST CONDITIONS
TYP	TYPICAL
V	VOLT
VMP	VOLTAGE AT MAXIMUM POWER
VOC	OPEN-CIRCUIT VOLTAGE
W	WATT

CODE REFERENCES

2017 NATIONAL ELECTRIC CODE
2018 NORTH CAROLINA BUILDING CODE
2018 NORTH CAROLINA RESIDENTIAL CODE
2018 NORTH CAROLINA FIRE CODE

SHEET INDEX

UTILITY COMPANY

DUKE ENERGY PROGRESS

SITE CONDITIONS

ASCE 7-10 WIND SPEED - 116 MPH
EXPOSURE CATEGORY - B
RISK CATEGORY - II

LEGEND

DISCONNECT SWITCH
FUSE
CIRCUIT BREAKER
GND EQUIP. GROUND

ENGINEER:

NORTH CAROLINA PROFESSIONAL SEAL 035699 ENGINEER ANDREW W. KING 5/3/22

MODEL ENERGY
300 FAYETTEVILLE ST.
#1430
RALEIGH, NC 27602
919-274-9905
MODELENERGY.COM
P-1194

JOB TITLE:

NEW SOLAR PV SYSTEM
14.6 kW DC INPUT
11.4 kW AC EXPORT

Bullock Residence
68 Woodfield Ct,
Fuquay-Varina, NC 27526

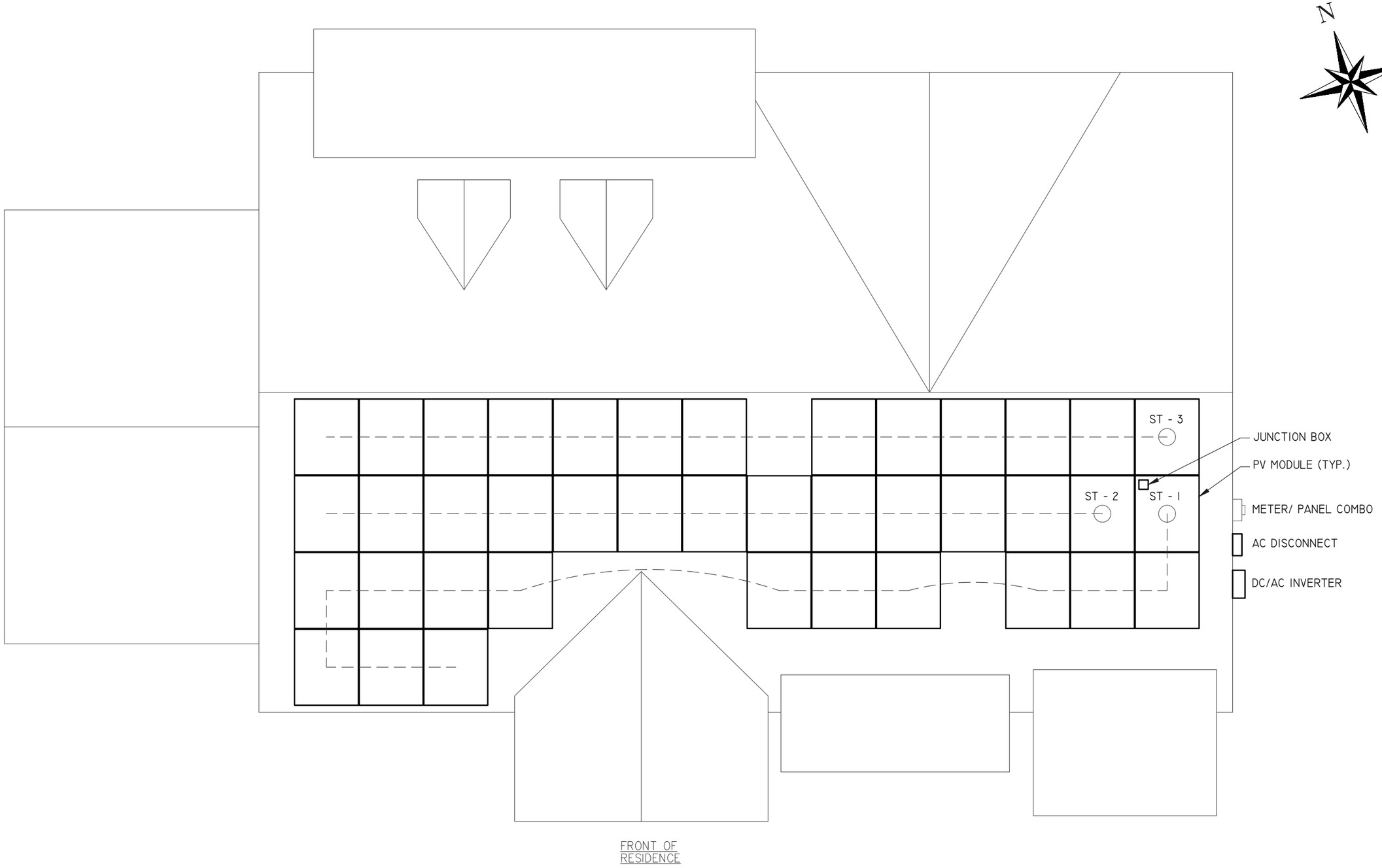
CLIENT:

READY SOLAR

ISSUED FOR:	DATE:
CONSTRUCTION	05/03/22

PROJECT INFORMATION

PV1.1



NOTE: PROVIDE ADDITIONAL JUNCTION BOXED AS REQUIRED TO COMBINE MODULES ON DIFFERENT ARRAYS INTO A SINGLE STRING

1 SITE PLAN
SCALE: 3/16" = 1' -0"

ENGINEER:

NORTH CAROLINA PROFESSIONAL SEAL 035699 ENGINEER ANDREW W. KING 5/3/22

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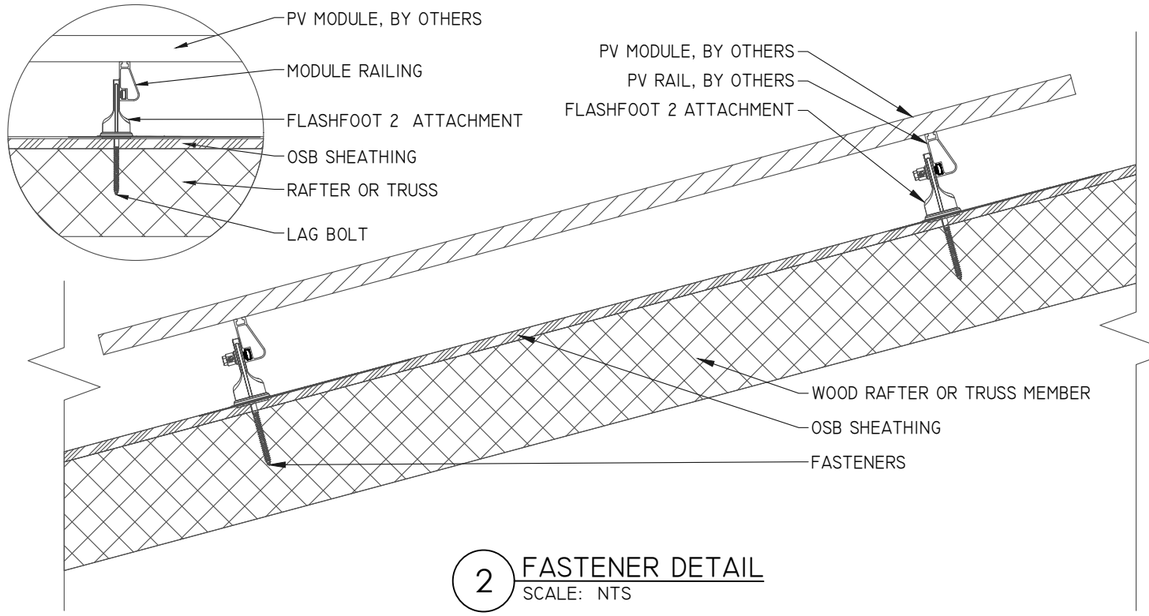
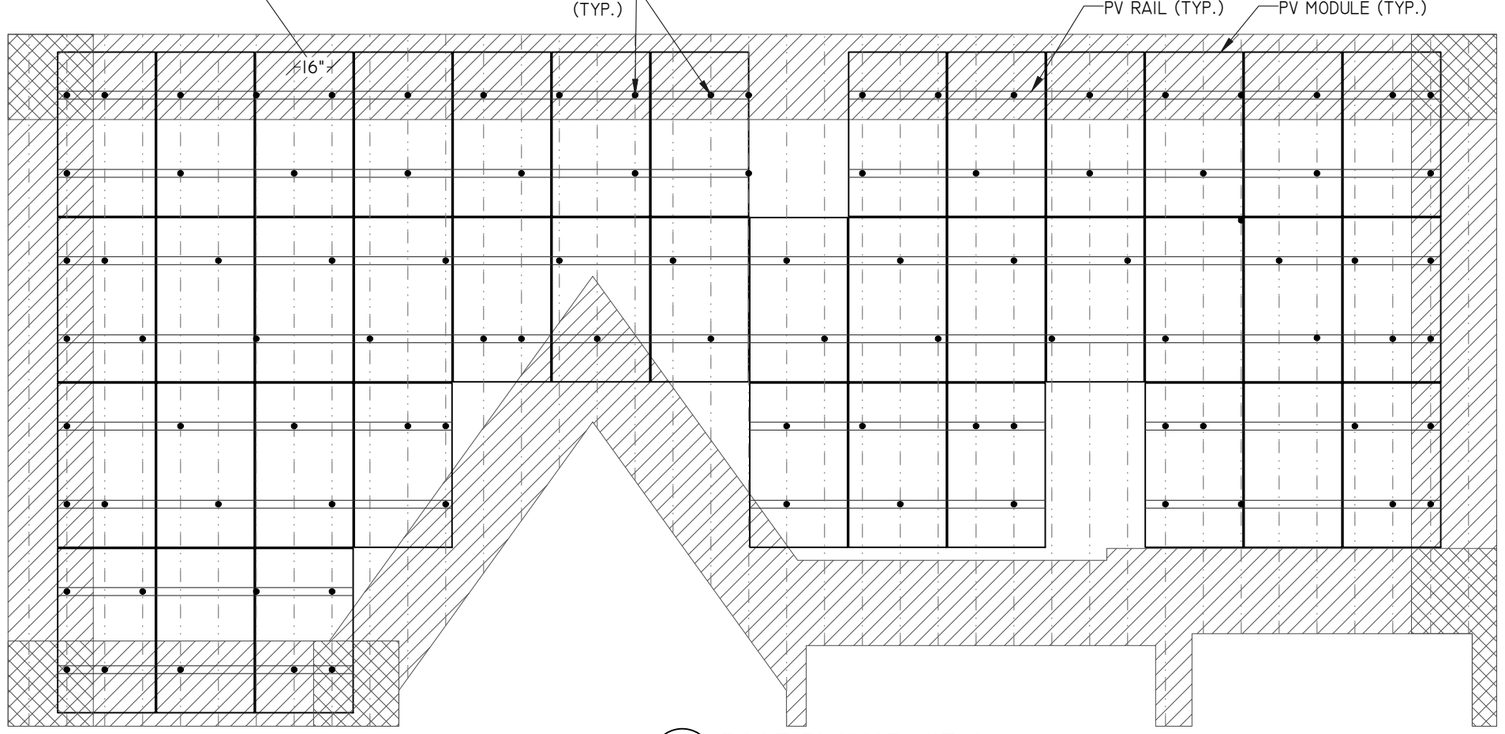
SITE INFORMATION

PV2.1



2 FASTENER DETAIL
SCALE: NTS



1 ROOF PLANAR VIEW
SCALE: 3/16" = 1' -0"

ARRAY SUMMARY	
# MODULES	40
# ROOF MOUNTS	97
RAIL LENGTH	283 FT.
ARRAY AREA	795 SQFT.
ARRAY WEIGHT	2082 LBS.
AZIMUTH @ SN	198°
TILT ANGLE	45°

MOUNTING RAILS	
MAKE	IRONRIDGE
MODEL	XR100
MATERIAL	ALUMINUM
WEIGHT	1.25 LBS/SQFT
SPACING	34''

ROOF ZONES:

ALL ZONES	MAX. RAIL OVERHANG =	12''
☐ ZONE 1	MAX. FASTENER SPAN ZONE 1 =	48''
▨ ZONE 2	MAX. FASTENER SPAN ZONE 2 =	32''
▩ ZONE 3	MAX. FASTENER SPAN ZONE 3 =	16''

PV MODULES	
MAKE	URECO
MODEL	FAM365E7G-BB
WIDTH	41.3''
LENGTH	69.4''
THICKNESS	1.4''
WEIGHT	43 LBS

STATEMENT OF STRUCTURAL COMPLIANCE

THE EXISTING ROOF STRUCTURE HAS BEEN DESIGNED TO SUPPORT THE ADDITIONAL LOADS OF THE PURPOSED PV SYSTEM. IN ADDITION, THE RACKING AND FASTENING SYSTEM SHALL BE CAPABLE OF SECURING THE SYSTEM TO THE STRUCTURE UNDER DESIGN CONDITIONS WHEN INSTALLED PROPERLY AND IN ACCORDANCE WITH THE RACKING AND FASTENING ARRANGEMENT DETAILED WITHIN THESE DRAWINGS.

SIGNED:

NAME: ANDREW W. KING, PE

TITLE: PROFESSIONAL ENGINEER

ROOF MOUNT & FASTENER	
ROOF MOUNT:	
MAKE	IRONRIDGE
MODEL	FLASHFOOT2
MATERIAL	ALUMINUM
FASTENER	
MAKE	GENERIC
MODEL	LAG BOLT
MATERIAL	304 SS
SIZE	5/16" X 4"
GENERAL	
WEIGHT	1 LBS
FASTENERS PER MOUNT	1 PER MOUNT
MAX. PULL-OUT FORCE	800 LBS.
SAFETY FACTOR	2
DESIGN PULL-OUT FORCE	400 LBS.

- LAG BOLT EMBEDDED WITH 2.5" OF THREAD IN WOOD RAFTER OR TRUSSES MEMBER

ROOF SUMMARY	
STRUCTURE:	
TYPE	RAFTER
MATERIAL	SOUTHERN PINE #2
SIZE	2" X 8"
SPACING	16''
EFF. SPAN	17'-0"
PITCH	12/12
DENSITY	30 LBS./CU.FT.
DECKING:	
TYPE	OSB
MATERIAL	WOOD COMPOSITE
THICKNESS	7/16
WEIGHT	1.6 LBS./SQFT.
ROOFING:	
TYPE	ARCH SHINGLE
MATERIAL	ASPHALT
WEIGHT	2.3 LBS./SQFT.

ROOF LOADING	
GROUND SNOW LOAD:	15 LBS./SQFT.
LIVE LOAD:	20 LBS./SQFT.
DEAD LOAD:	
ROOFING	3.9 LBS./SQFT.
PV ARRAY	2.5 LBS./SQFT.
TOTAL	6.4 LBS./SQFT.
WIND LOAD:	
UPLIFT ZONE 1	-26.9 LBS/SQFT
UPLIFT ZONE 2	-32.4 LBS/SQFT
UPLIFT ZONE 3	-32.4 LBS/SQFT
DOWNWARD	24.7 LBS/SQFT
FASTENER LOAD:	
UPLIFT ZONE 1	-311 LBS
UPLIFT ZONE 2	-250 LBS
UPLIFT ZONE 3	-125 LBS
DOWNWARD	286 LBS

ENGINEER:

NORTH CAROLINA PROFESSIONAL SEAL 035699 ENGINEER ANDREW W. KING
5/3/22

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STRUCTURAL INFORMATION

PV3.1

PV MODULES	
MAKE	URECO
MODEL	FAM365E7G-BB
TECHNOLOGY	MONO-CRYST.
NOM. POWER (Pnom)	365 WATTS
NOM. VOLT. (Vmp)	34.20 VOLTS
O.C. VOLT. (Voc)	40.70 VOLTS
MAX. SYS. VOLT.	1000 V (UL)
TEMP. COEF. (Vtc)	-0.27 %/°C
NOM. CURR. (Imp)	10.68 Amps
S.C. CURR. (Isc)	11.43 Amps
MAX. SERIES FUSE	20 Amps

MODULE OPTIMIZER	
MAKE	SOLAREDGE
MODEL	P401
DC INPUT:	
RATED POWER	400 WATTS
VOLT. RANGE	8 - 60
MAX. SCC	11.75 AMPS
MAX. DC INPUT CURRENT	11.75 AMPS
DC OUTPUT:	
MAX. CURRENT	15 AMPS
MAX. VOLT.	60 VOLTS
MAX. SYSTEM VOLT.	1000 VOLTS
MIN. STRING	8 OPTIMIZERS
MAX. STRING	25 OPTIMIZERS
MAX. POWER	
INVERTERS: SE3000H-SE6000H	5700 WATTS
INVERTERS: SE7600H-SE11400H	6000 WATTS

DC/AC INVERTER	
MAKE	SOLAREDGE
MODEL	SE11400H-US
TECHNOLOGY	TRANS-LESS
DC INPUT:	
MAX. POWER	17650 WATTS
MAX. VOLT	480 VOLTS
NOM. VOLT.	400 VOLTS
MAX. CURRENT	30.5 AMPS
MAX. SCC	45 AMPS
STRINGS INPUTS	3 STRINGS
AC OUTPUT:	
RATED POWER	11400 WATTS
MAX. POWER	11400 WATTS
NOM. VOLT.	240 VOLTS
MAX. CURR.	47.5 AMPS
GFP (Y/N)	YES
RPP (Y/N)	YES
GFCI (Y/N)	YES
AFCI (Y/N)	YES
DC DISC. (Y/N)	YES
RAPID SHUTDOWN	AUTOMATIC
FUSE RATING	15 AMPS
PROTECT. RATING	NEMA 4X

CONDUCTOR SCHEDULE

TAG	CURRENT CARRYING CONDUCTORS				GROUNDING CONDUCTORS				CONDUIT/RACEWAY				NOTES
	QTY.	SIZE	MATERIAL	INSULATION	QTY.	SIZE	MATERIAL	INSULATION	QTY.	SIZE	MATERIAL	LOCATION	
C1	6	10 AWG	COPPER	PV WIRE	1	6 AWG	COPPER	BARE WIRE	-	-	-	FREE AIR	1
C2	6	10 AWG	COPPER	THWN-2	1	10 AWG	COPPER	THWN-2	1	3/4"	FMC/EMT/MC	EXT/INT	2,4
C3	3	6 AWG	COPPER	THWN	1	10 AWG	COPPER	THWN	1	1"	NOTE 5	EXTERIOR	2,4,5
XC	-	-	-	-	-	-	-	-	-	-	-	-	3

NOTES:

1. MANUFACTURER PROVIDED, UL LISTED WIRING HARNESS FOR USE ON EXPOSED ROOFS
2. CONDUIT SIZE SHOWN IS CODE MINIMUM. LARGER SIZES ARE ALLOWED
3. EXISTING CONDUCTORS, FIELD VERIFY
4. EQUIPMENT TERMINAL RATING SHALL BE A MINIMUM OF 75°C AT BOTH END OF CONDUCTOR
5. PVC, EMT, ROMEX, LFNMC & FMC ARE ACCEPTABLE WHEN USED IN ACCORDANCE WITH ARTICLES 330, 334, 348, 350, 352, 356, & 358 OF THE 2017 NEC

JUNCTION BOX	
MAKE	SOLADECK
MODEL	0799-5B
PRO. RATING	NEMA 3R
VOLT. RATING	1000 VOLTS
AMP RATING (DC)	180 AMPS
UL LISTING	UL 50

NOTES:

- PROVIDE ADDITIONAL JUNCTION BOXED AS REQUIRED TO COMBINE MODULES ON DIFFERENT ARRAYS INTO A SINGLE STRING

AC DISCONNECT	
MAKE	GENERIC
MODEL	N/A
ENCL. RATING	NEMA 3R
VOLT. RATING	240 VOLTS
AMP RATING	60 AMPS
UL LIST. (Y/N)	YES
FUSED (Y/N)	NO
FUSE RATING	N/A

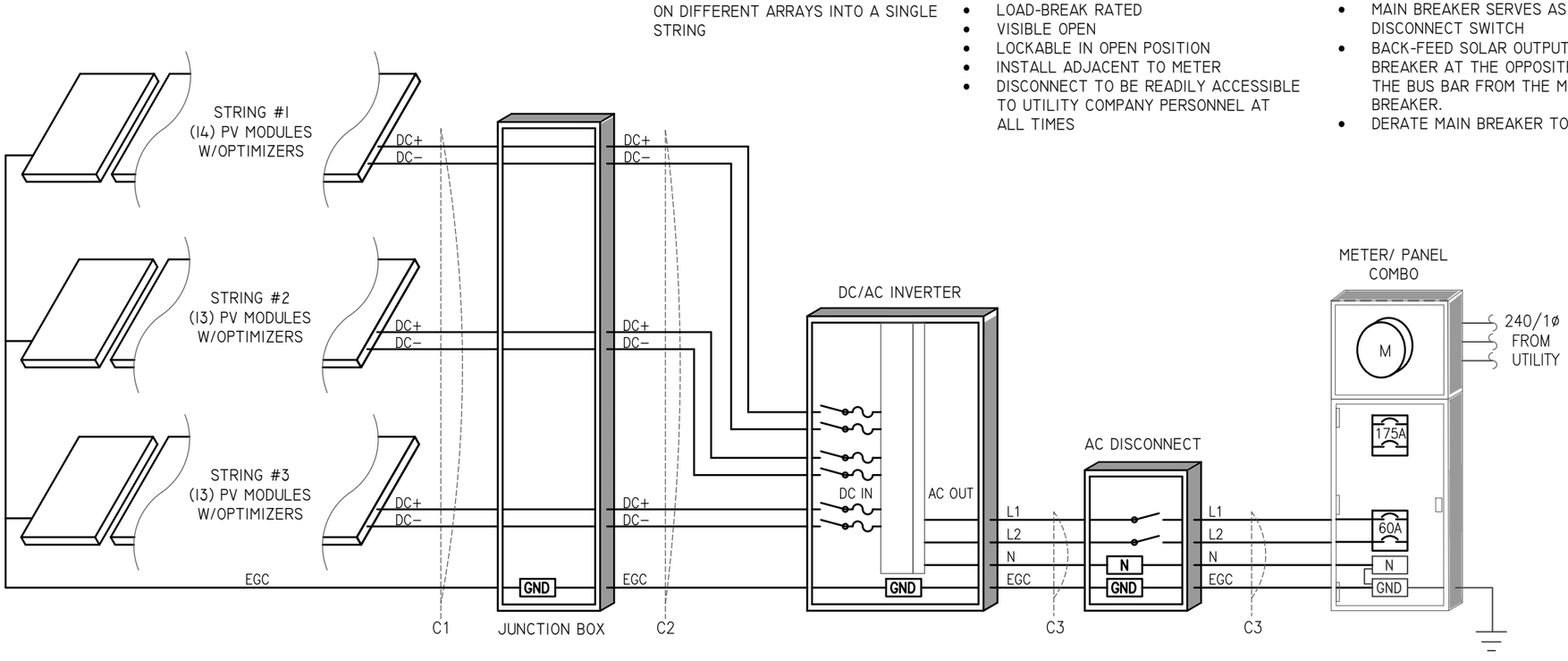
NOTES:

- LOAD-BREAK RATED
- VISIBLE OPEN
- LOCKABLE IN OPEN POSITION
- INSTALL ADJACENT TO METER
- DISCONNECT TO BE READILY ACCESSIBLE TO UTILITY COMPANY PERSONNEL AT ALL TIMES

METER/PANEL COMBO (EXISTING)	
MAKE	N/A
MODEL	N/A
ENCL. RATING	NEMA 3R
VOLT. RATING	240 VOLTS
BUS RATING	200 AMPS
UL LIST. (Y/N)	YES
MAIN BREAKER (Y/N)	YES
BREAKER RATING	175 AMPS

NOTES:

- MAIN BREAKER SERVES AS SERVICE DISCONNECT SWITCH
- BACK-FEED SOLAR OUTPUT VIA (1) 60A BREAKER AT THE OPPOSITE END OF THE BUS BAR FROM THE MAIN BREAKER.
- DERATE MAIN BREAKER TO 175A



1 PV SYSTEM ELECTRICAL WIRING SCHEMATIC
SCALE: NTS

ENGINEER:

NORTH CAROLINA PROFESSIONAL SEAL 035699 ENGINEER ANDREW W. KING 5/3/22

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ELECTRICAL INFORMATION

PV4.1

URECO

EN

PEACH

FAM_E7G-BB / 120 cells
345W - 365 W
Mono-Crystalline PV Module

URE Peach module uses URE state-of -the art cell cutting technology, and advanced module manufacturing experiences.

Key Features

- Positive power tolerance
  +0 ~ +5 watt
- 100% EL inline inspection
  Better module reliability
- Withstand heavy loading
  front load 5400 Pa & rear load 2400 Pa
- Design for 1000 VDC
  Reduce the system BOS effectively
- Excellent low light performance
  3.5% relative eff. Reduction at low (200W/m²)

For more information, please visit us at ***www.urecorp.com***

URECO

EN

Electrical Data

Model - STC		FAM345E7G-BB	FAM350E7G-BB	FAM355E7G-BB	FAM360E7G-BB	FAM365E7G-BB
Maximum Rating Power (Pmax)	[W]	345	350	355	360	365
Module Efficiency	[%]	18.68	18.95	19.22	19.50	19.77
Open Circuit Voltage (Voc)	[V]	39.90	40.10	40.30	40.50	40.70
Maximum Power Voltage	[V]	33.40	33.60	33.80	34.00	34.20
Short Circuit Current (Isc)	[A]	11.13	11.19	11.26	11.35	11.43
Maximum Power Current	[A]	10.33	10.42	10.51	10.59	10.68

*Standard Test Condition (STC): Cell Temperature 25 °C, Irradiance 1000 W/m², AM 1.5
*Values without tolerance are typical numbers.Measurement tolerance: ± 3%

Mechanical Data

Item	Specification
Dimensions	1762 mm (L)[1] x 1048 mm (W)[1] x 35 mm (D)[2] / 69.37˝(L)[1] x 41.26˝(W)[1] x 1.38˝(D)[2]
Weight	19.6 kg / 43.21 lbs
Solar Cell	Mono / 83 mm x 166mm
Front Glass	White toughened safety glass, 3.2mm thickness
Frame	Black anodized aluminum profile
Junction Box	IP ≥67, 3 diodes
Connectors Type	MC4 Compatible
Cable	500mm (cable length can be customized), 4mm²
Packaging Configuration	31 pcs Per Pallet, 806 pcs per 40′ HQ container

[1] : With assembly tolerance of ± 2 mm [± 0.08˝]
[2] : With assembly tolerance of ± 0.8 mm [± 0.03˝]

Operating Conditions

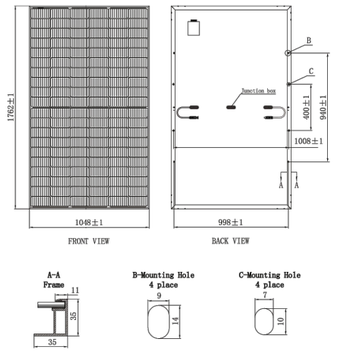
Item	Specification
Mechanical Load	5400 Pa
Maximum System Voltage	1000 VDC
Series Fuse Rating	20 A
Operating Temperature	-40 to 85 °C

Temperature Characteristics

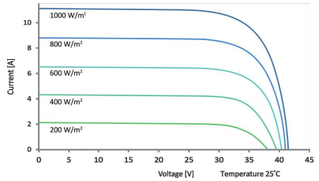
Item	Specification
Nominal Module Operating Temperature	45 °C ± 2°C
Temperature Coefficient of Isc	0.048 % / °C
Temperature Coefficient of Voc	-0.27 % / °C
Temperature Coefficient of Pmax	-0.35 % / °C

*Nominal module operating temperature (NMOT): Air mass AM 1.5, irradiance 800W/m², temperature 20°C, windspeed 1 m/s.
*Reduction in efficiency from 1000W/m² to 200W/m² at 25°C: 3.5 ± 2%.

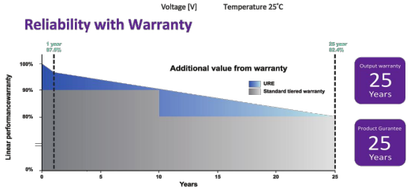
Engineering Drawing (mm)



Dependence on Irradiance



Reliability with Warranty



For more information, please visit us at ***www.urecorp.com***

United Renewable Energy Co., Ltd.

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Fax : +886-3-578-1255

URECO_US_Peach_FAM_E7G_V1_3.2_35mm_BS_EN_210520

WARNING: PHOTOVOLTAIC POWER SOURCE

NEC 690.31 (G)(3)&(4)
PLACE ON ALL JUNCTION BOXES, EXPOSED RACEWAYS, AND OTHER WIRING METHODS EVERY 10' AND ON EVERY SECTION SEPARATED BY ENCLOSURES, WALLS, PARTITIONS, CEILINGS, OR FLOORS.

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

NEC 690.56 (C)(3)
PLACE ON RAPID SHUTDOWN SWITCH OR EQUIPMENT WITH INTEGRATED RAPID SHUTDOWN *REFLECTIVE*

⚠WARNING

FED BY MULTIPLE POWER SOURCES

TOTAL RATING OF ALL OVERCURRENT DEVICES EXCLUDING UTILITY OVERCURRENT DEVICE SHALL NOT EXCEED AMPACITY OF BUSBAR

NEC 705.12 (B)(2)(3)(c)
PLACE ADJACENT TO BACK-FED BREAKER

EQUIPMENT LABEL NOTES

1. LABELS SHOWN ARE 1/2 THEIR ACTUAL REQUIRED SIZE.
2. LABEL MATERIAL SHALL BE SUITABLE FOR THE EQUIPMENT ENVIRONMENT.
3. CONDUIT SHALL BE MARKED WITH REQUIRED LABEL EVERY 10 FEET.

DIRECT CURRENT PHOTOVOLTAIC POWER SOURCE

MAXIMUM VOLTAGE	600 VDC
MAX CIR. CURRENT	45 AMPS

NEC 690.53
PLACE ON ALL DC DISCONNECTING MEANS

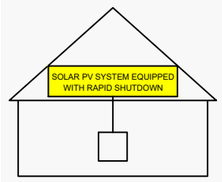
PHOTOVOLTAIC POWER SOURCE

OPERATING AC VOLT.	240 VAC
MAXIMUM OPERATING AC OUTPUT CURRENT	48 AMPS

NEC 690.54
PLACE ON INTERCONNECTION DISCONNECTING MEANS

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



NEC 690.56 (C)(1)(a)
PLACE WITHIN 3FT OF SERVICE DISCONNECTING MEANS TO WHICH THE PV SYSTEMS ARE CONNECTED AND SHALL INDICATE THE LOCATIONS OF RAPID SHUTDOWN SWITCHES

PV SYSTEM DISCONNECT

NEC 690.13 (B)
PLACE ON PV SYSTEM DISCONNECTING MEANS.

⚠WARNING

DUAL POWER SUPPLY

SOURCES: UTILITY GRID AND PV SOLAR ELECTRIC SYSTEM

NEC 705.12 (B)(3)
PLACE ON ALL EQUIPMENT THAT IS SUPPLIED BY BOTH POWER SOURCES

⚠WARNING

ELECTRIC SHOCK HAZARD

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

NEC 690.13 (B)
PLACE ON PV SYSTEM DISCONNECTING MEANS.

⚠WARNING

POWER SOURCE OUTPUT CONNECTION DO NOT RELOCATE THIS OVERCURRENT DEVICE

NEC 705.12 (B)(2)(3)(b)
PLACE ADJACENT TO BACK-FED BREAKER

ENGINEER:

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LABELS, DETAILS & SPECS

PV5.1

Power Optimizer

For North America

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

POWER OPTIMIZER

PV power optimization at the module-level

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

solaredge.com

solaredge

Power Optimizer

For North America

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

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

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

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

(6) For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf
(7) It is not allowed to mix P405/P485/P505 with P320/P340/P370/P400/P401 in one string
(8) A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement
(9) For 208V grid: it is allowed to install up to 7,200W per string when the maximum power difference between each string is 1,000W
(10) For 277/480V grid: it is allowed to install up to 15,000W per string when the maximum power difference between each string is 2,000W

Intertek RoHS

ENGINEER:

NORTH CAROLINA PROFESSIONAL SEAL 035699 ENGINEER ANDREW W. KING 5/3/22

MODEL ENERGY
300 FAYETTEVILLE ST.
#1430
RALEIGH, NC 27602
919-274-9905
MODELENERGY.COM
P-1194

JOB TITLE:

NEW SOLAR PV SYSTEM
14.6 kW DC INPUT
11.4 kW AC EXPORT

Bullock Residence
68 Woodfield Ct,
Fuquay-Varina, NC 27526

CLIENT:

READY SOLAR

ISSUED FOR:	DATE:
CONSTRUCTION	05/03/22

EQUIPMENT SPEC SHEETS

PV5.2

Single Phase Inverter with HD-Wave Technology

for North America

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

INVERTERS

12-25 YEAR WARRANTY

Optimized installation with HD-Wave technology

- Specifically designed to work with power optimizers
- Record-breaking 99% weighted efficiency
- Quick and easy inverter commissioning directly from a smartphone using the SolarEdge SetApp
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014, NEC 2017 and NEC 2020 per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Small, lightweight, and easy to install both outdoors or indoors
- Built-in module-level monitoring
- Optional: Faster installations with built-in consumption metering (1% accuracy) and production revenue grade metering (0.5% accuracy, ANSI C12.20)

solaredge.com

solaredge

Single Phase Inverter with HD-Wave Technology

for North America

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

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
APPLICABLE TO INVERTERS WITH PART NUMBER	SEXXXXH-XXXXXBXX4							
OUTPUT								
Rated AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
Maximum AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓	Vac
AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)	-	✓	-	✓	-	-	✓	Vac
AC Frequency (Nominal)	59.3 - 60 - 60.5(1)							Hz
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5	A
Maximum Continuous Output Current @208V	-	16	-	24	-	-	48.5	A
Power Factor	1, Adjustable - 0.85 to 0.85							
GFDI Threshold	1							A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes							
INPUT								
Maximum DC Power @240V	4650	5900	7750	9300	11800	15500	17650	W
Maximum DC Power @208V	-	5100	-	7750	-	-	15500	W
Transformer-less, Ungrounded	Yes							
Maximum Input Voltage	480							Vdc
Nominal DC Input Voltage	380				400			Vdc
Maximum Input Current @240V(2)	8.5	10.5	13.5	16.5	20	27	30.5	Adc
Maximum Input Current @208V(2)	-	9	-	13.5	-	-	27	Adc
Max. Input Short Circuit Current	45							Adc
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600kΩ Sensitivity							
Maximum Inverter Efficiency	99	99.2						%
CEC Weighted Efficiency	99						99 @ 240V 98.5 @ 208V	%
Nighttime Power Consumption	< 2.5							W

(1) For other regional settings please contact SolarEdge support
(2) A higher current source may be used; the inverter will limit its input current to the values stated

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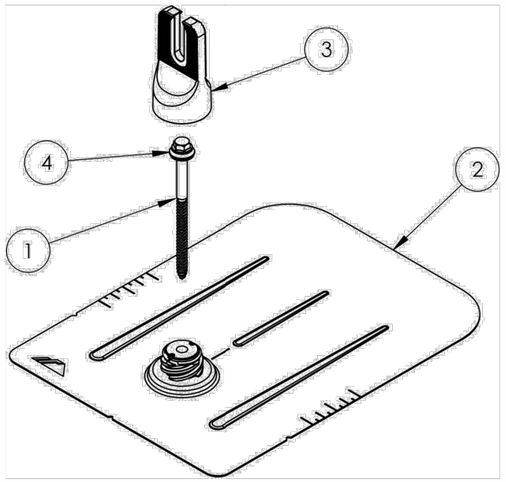
EQUIPMENT SPEC SHEETS

PV5.3

Cut Sheet

IRONRIDGE

FlashFoot2

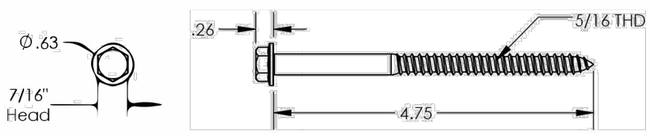


ITEM NO.	DESCRIPTION
1	BOLT LAG 5/16 X 4.75"
2	ASSY, FLASHING
3	ASSY, CAP
4	WASHER, EPDM BACKED

FLASHFOOT 2

Part Number	Description
FF2-01-M1	FLASHFOOT2, MILL
FF2-01-B1	FLASHFOOT2, BLACK

1) Bolt, Lag 5/16 x 4.75

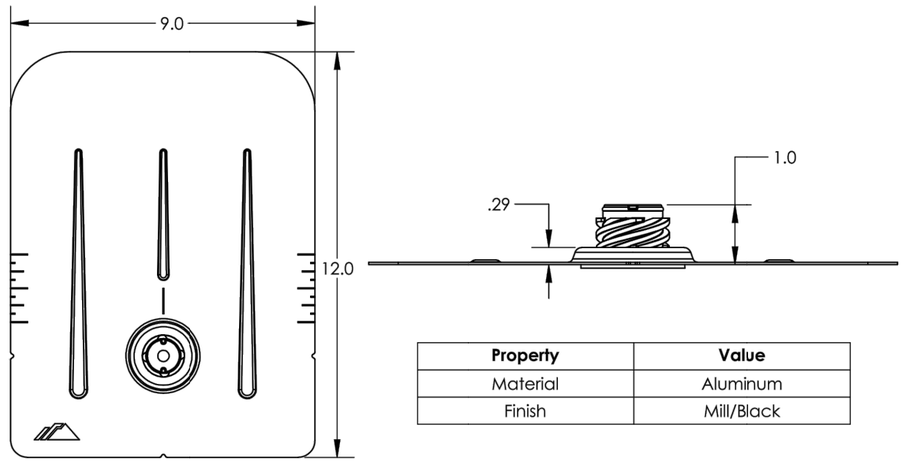


Property	Value
Material	300 Series Stainless Steel
Finish	Clear

v1.21

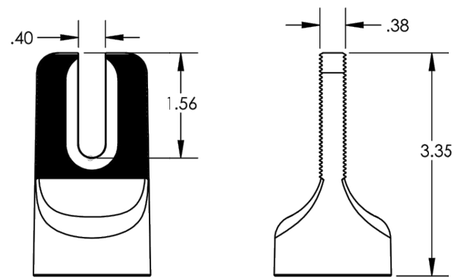
Cut Sheet

2) Assy, Flashing



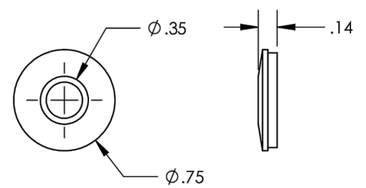
Property	Value
Material	Aluminum
Finish	Mill/Black

3) Assy, Cap



Property	Value
Material	Aluminum
Finish	Mill/Black

4) Washer, EPDM Backed



Property	Value
Material	300 Series Stainless Steel
Finish	Clear

v1.21

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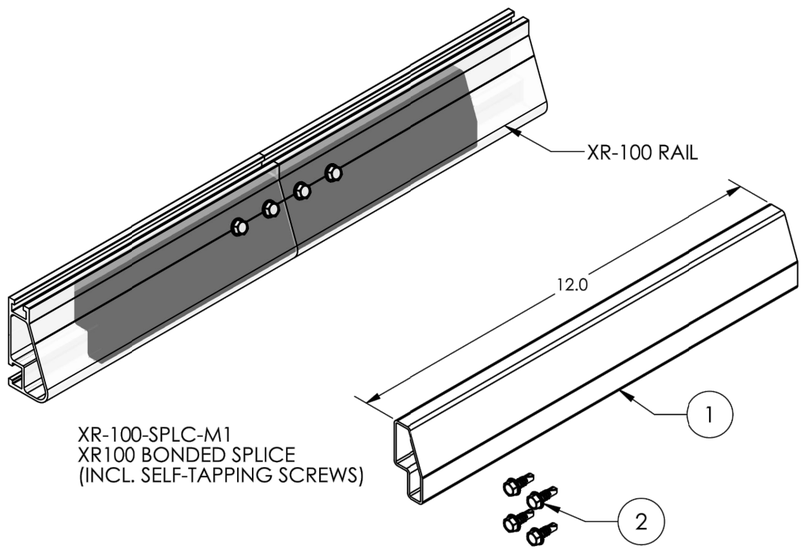
EQUIPMENT
SPEC SHEETS

PV5.4

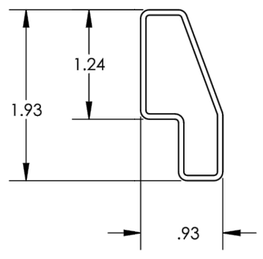
Cut Sheet

IRONRIDGE

XR100 Bonded Splice

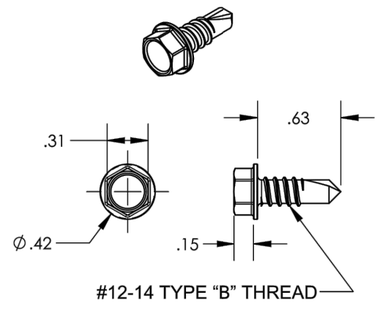


1) Splice, XR100, Mill 12" long



Property	Value
Material	6000 Series Aluminum
Finish	Mill

2) Screw, Self Drilling



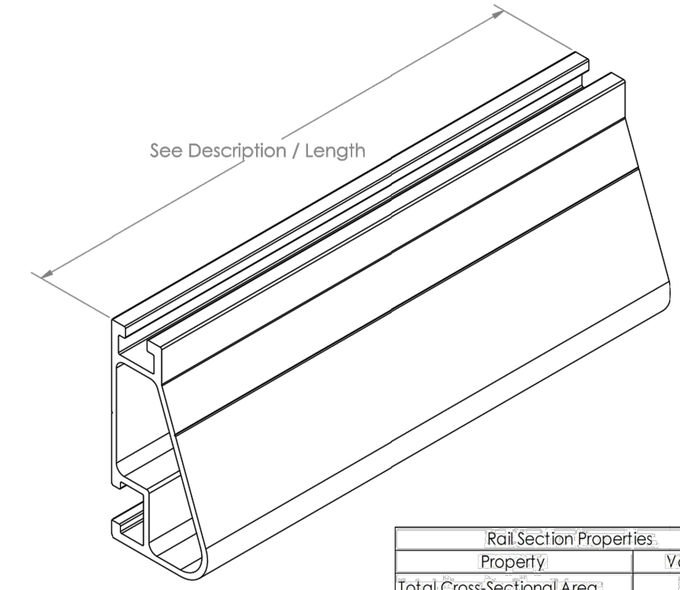
Property	Value
Material	300 Series Stainless Steel
Finish	Clear

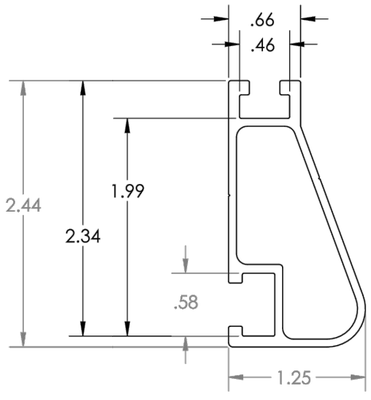
v1.0

Cut Sheet

IRONRIDGE

XR100 Rail





Rail Section Properties	
Property	Value
Total Cross-Sectional Area	0.582 in^2
Section Modulus (X-axis)	0.297 in^3
Moment of Inertia (X-axis)	0.390 in^4
Moment of Inertia (Y-axis)	0.085 in^4
Torsional Constant	0.214 in^3
Polar Moment of Inertia	0.126 in^4

APPROVED MATERIALS:
6005-T6, 6005A-T61, 6105-T5, 6N01-T6
(34,000 PSI YIELD STRENGTH MINIMUM)

Clear Part Number	Black Part Number	Description / Length	Material	Weight
XR-100-132A	XR-100-132B	XR100, Rail 132" (11 Feet)	6000-Series Aluminum	7.50 lbs.
XR-100-168A	XR-100-168B	XR100, Rail 168" (14 Feet)		9.55 lbs.
XR-100-204A	XR-100-204B	XR100, Rail 204" (17 Feet)		11.60 lbs.

v1.1

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EQUIPMENT SPEC SHEETS

PV5.5