

Initial Application Date: _____

Application # _____

CU# _____

COUNTY OF HARNETT RESIDENTIAL LAND USE APPLICATION

Central Permitting 108 E. Front Street, Lillington, NC 27546 Phone: (910) 893-7525 ext:2 Fax: (910) 893-2793 www.harnett.org/permits

****A RECORDED SURVEY MAP, RECORDED DEED (OR OFFER TO PURCHASE) & SITE PLAN ARE REQUIRED WHEN SUBMITTING A LAND USE APPLICATION****

LANDOWNER: Tilley, Joshua & Maranda Mailing Address: 15 Cameron Pines Avenue SANFORD, NC 27332
City: Sanford State: NC Zip: 27332 Contact No: 848-299-7056 Email: jtilley@gmail.com

APPLICANT*: Chris Yarbrough (NC Solar Now, Inc.) Mailing Address: 3401-101 Atlantic Ave
City: Raleigh State: NC Zip: 27604 Contact No: 919-833-9096 Email: permitting@ncsolarnow.com

*Please fill out applicant information if different than landowner

CONTACT NAME APPLYING IN OFFICE: Chris Yarbrough Phone # 919-833-9096

PROPERTY LOCATION: Subdivision: _____ Lot #: _____ Lot Size: _____

State Road # _____ State Road Name: _____ Map Book & Page: _____ / _____

Parcel: _____ PIN: _____

Zoning: _____ Flood Zone: _____ Watershed: _____ Deed Book & Page: _____ / _____ Power Company*: CEMC

*New structures with Progress Energy as service provider need to supply premise number _____ from Progress Energy.

PROPOSED USE:

- SFD: (Size _____x_____) # Bedrooms:___ # Baths:___ Basement(w/wo bath):___ Garage:___ Deck:___ Crawl Space:___ Slab:___ Slab:___
(Is the bonus room finished? () yes () no w/ a closet? () yes () no (if yes add in with # bedrooms) Monolithic
- Mod: (Size _____x_____) # Bedrooms___ # Baths___ Basement (w/wo bath)___ Garage:___ Site Built Deck:___ On Frame___ Off Frame___
(Is the second floor finished? () yes () no Any other site built additions? () yes () no
- Manufactured Home: ___SW ___DW ___TW (Size _____x_____) # Bedrooms:___ Garage:___(site built?___) Deck:___(site built?___)
- Duplex: (Size _____x_____) No. Buildings:_____ No. Bedrooms Per Unit:_____
- Home Occupation: # Rooms:_____ Use:_____ Hours of Operation:_____ #Employees:_____
- Addition/Accessory/Other: (Size _____x_____) Use: Roof-Mounted Solar PV Array (approx. 500 sq. ft.) Closets in addition? () yes () no

Water Supply: _____ County _____ Existing Well _____ New Well (# of dwellings using well _____) ***Must have operable water before final**

Sewage Supply: _____ New Septic Tank (Complete Checklist) _____ Existing Septic Tank (Complete Checklist) _____ County Sewer

Does owner of this tract of land, own land that contains a manufactured home within five hundred feet (500') of tract listed above? () yes () no

Does the property contain any easements whether underground or overhead () yes () no

Structures (existing or proposed): Single family dwellings: ¹_____ Manufactured Homes:_____ Other (specify):_____

Required Residential Property Line Setbacks:

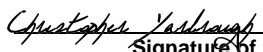
Front	Minimum _____	Actual _____
Rear	_____	_____
Closest Side	_____	_____
Sidestreet/corner lot	_____	_____
Nearest Building on same lot	_____	_____

Comments: Array will be flush mounted to the existing roof, therefore setbacks and footprint will be unaffected.

SPECIFIC DIRECTIONS TO THE PROPERTY FROM LILLINGTON: _____

Attached Separately

If permits are granted I agree to conform to all ordinances and laws of the State of North Carolina regulating such work and the specifications of plans submitted. I hereby state that foregoing statements are accurate and correct to the best of my knowledge. Permit subject to revocation if false information is provided.

DocuSigned by:

Signature of Owner or Owner's Agent

7/23/18
Date

7CE289D454F8441...

*****It is the owner/applicants responsibility to provide the county with any applicable information about the subject property, including but not limited to: boundary information, house location, underground or overhead easements, etc. The county or its employees are not responsible for any incorrect or missing information that is contained within these applications.*****

****This application expires 6 months from the initial date if permits have not been issued****

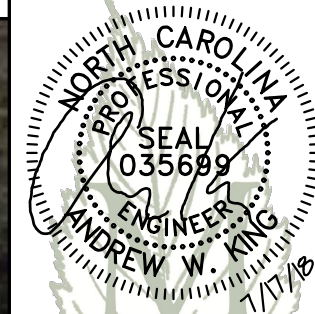
VICINITY MAP



PROPERTY MAP



ENGINEER:



MODEL ENERGY

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

JOB TITLE:

NEW SOLAR PV SYSTEM
10.08 kW DC INPUT
10.00 kW AC EXPORT

Maranda Tilley
15 Cameron Pines Avenue
SANFORD, NC 27332

CLIENT:



ISSUED FOR:

DATE:

PERMIT

7/16/18

PROJECT
INFORMATION

PV1.1

CONSTRUCTION NOTES

- ALL WORK AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST NATIONAL, STATE, AND LOCAL CODES AND ORDINANCES
- FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS, BEST PRACTICES, AND SPECIFICATIONS
- WIRES SHALL BE RATED AND LABELED "SUNLIGHT RESISTANT" WHERE EXPOSED TO AMBIENT CONDITIONS
- THE PHOTOVOLTAIC SYSTEM SHALL NOT EXCEED 600 VOLTS OR 800 AMPS
- 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
- WHERE APPLICABLE, GROUNDING ELECTRODE CONDUCTOR TO BE CONTINUOUS. GROUNDING CRIMPS TO BE IRREVERSIBLE
- GROUNDING DC PHOTOVOLTAIC ARRAYS SHALL BE PROVIDED WITH DC GROUND-FAULT PROTECTION THAT MEETS THE REQUIREMENTS OF NEC SECTION 690.5. UNGROUNDED DC PHOTOVOLTAIC ARRAYS SHALL COMPLY WITH NEC SECTION 690.35
- 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.
- PHOTOVOLTAIC SYSTEMS SHALL BE PERMANENTLY MARKED AT VARIOUS EQUIPMENT LOCATIONS TO IDENTIFY THAT A PHOTOVOLTAIC SYSTEM IS INSTALLED AND THAT VARIOUS DANGERS ARE PRESENT.
- EACH PHOTOVOLTAIC SYSTEM DISCONNECTING MEANS SHALL BE PERMANENTLY MARKED TO IDENTIFY IT AS A PHOTOVOLTAIC SYSTEM DISCONNECT
- 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
- A PERMANENT LABEL FOR THE DIRECT-CURRENT PHOTOVOLTAIC POWER SOURCE SHALL BE PROVIDED BY THE INSTALLED AT THE DC DISCONNECT MEANS
- 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.
- 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.
- ALL MODULE GROUND CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH NEC SECTION 690.4 (C)

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
P _{NOM}	NOMINAL POWER
PV	PHOTOVOLTAIC
PVC	POLYVINYL CHLORIDE
SN	SOLAR NOON
STC	STANDARD TEST CONDITIONS
TYP	TYPICAL
V	VOLT
V _{MP}	VOLTAGE AT MAXIMUM POWER
V _{oc}	OPEN-CIRCUIT VOLTAGE
W	WATT

CODE REFERENCES

2017 NATIONAL ELECTRIC CODE
2012 NORTH CAROLINA BUILDING CODE
2012 NORTH CAROLINA RESIDENTIAL CODE
2012 NORTH CAROLINA FIRE CODE

SHEET INDEX

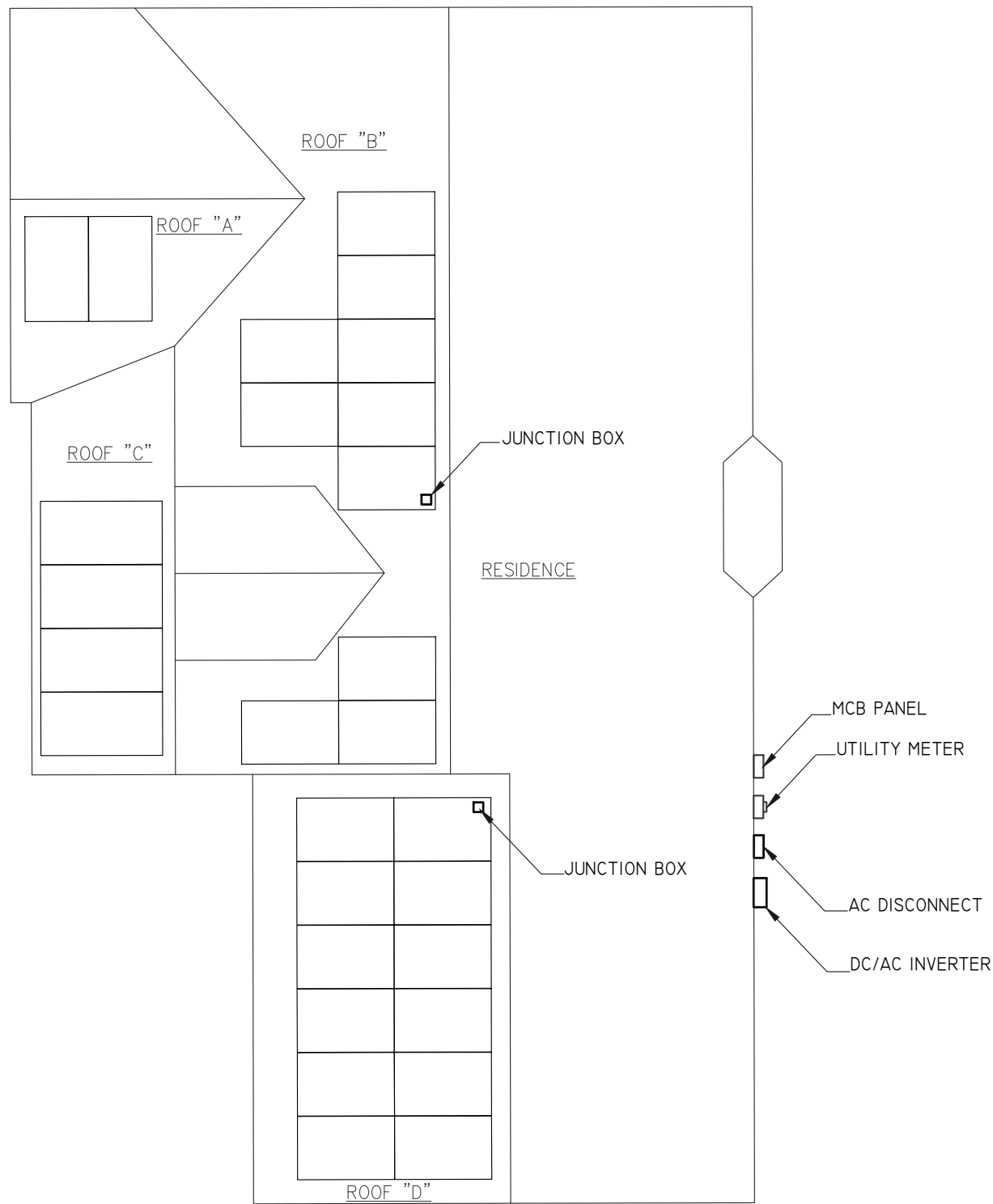
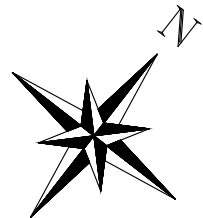
PV1.1 - PROJECT INFORMATION
PV2.1 - SITE & STRUCTURAL INFORMATION
PV2.2 - SITE & STRUCTURAL INFORMATION
PV3.1 - ELECTRICAL INFORMATION
PV4.1 - EQUIPMENT LABELS

SITE CONDITIONS

ASCE 7-10 WIND SPEED - 115 MPH
EXPOSURE CATEGORY - B
RISK CATEGORY - II

LEGEND

	DISCONNECT SWITCH
	FUSE
	CIRCUIT BREAKER
	EQUIP. GROUND




ROOF MOUNT & FASTENER	
ROOF MOUNT:	
MAKE	SOLAR ROOF HOOK
MODEL	L-FOOT
MATERIAL	ALUMINUM
FASTENER	
MAKE	SOLAR ROOF HOOK
MODEL	QUICKBOLT
MATERIAL	304 SS
SIZE	5/16-18 X 7"
GENERAL	
WEIGHT	1 LBS
FASTENERS PER MOUNT	1 PER MOUNT
MAX. PULL-OUT FORCE	960 LBS.
SAFETY FACTOR	2.0
DESIGN PULL-OUT FORCE	480 LBS.

PV MODULES	
MAKE	TRINA
MODEL	TSM-DDI4A (II) PERC MONO
WIDTH	39.1"
LENGTH	77"
THICKNESS	1.57"
WEIGHT	57.3 LBS

MOUNTING RAILS	
MAKE	UNIRAC
MODEL	SM STANDARD
MATERIAL	ALUMINUM
WEIGHT	1.25 LBS./FT.
SPACING	34 IN.

STATEMENT OF STRUCTURAL COMPLIANCE

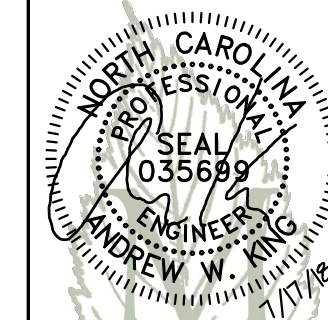
THE EXISTING ROOF STRUCTURE HAS BEEN DESIGNED TO SUPPORT THE ADDITIONAL LOADS OF THE PURPOSED PV SYSTEM. IN ADDITION, THE RACKING AND FASTENING SYSTEM SHALL BE CAPABLE OF SECURING THE SYSTEM TO THE STRUCTURE UNDER DESIGN CONDITIONS WHEN INSTALLED PROPERLY AND IN ACCORDANCE WITH THE RACKING AND FASTENING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

SIGNED: 

NAME: ANDREW W. KING, PE

TITLE: PROFESSIONAL ENGINEER

ENGINEER:



MODEL ENERGY

300 FAYETTEVILLE ST.
#1430
RALEIGH, NC 27602
919-274-9905
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10.08 kW DC INPUT
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Maranda Tilley
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CLIENT:



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SITE & STRUCTURAL
INFORMATION

PV2.1

ROOF "A" SUMMARY	
STRUCTURE:	
TYPE	RAFTERS
MATERIAL	SOUTHERN PINE #2
SIZE	2" X 8"
SPACING	16" o.c.
EFF. SPAN	10'-6"
PITCH	8 / 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 "B" SUMMARY	
STRUCTURE:	
TYPE	RAFTERS
MATERIAL	SOUTHERN PINE #2
SIZE	2" X 8"
SPACING	16" o.c.
EFF. SPAN	14'-8"
PITCH	3 / 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 "C" SUMMARY	
STRUCTURE:	
TYPE	RAFTERS
MATERIAL	SOUTHERN PINE #2
SIZE	2" X 8"
SPACING	16" o.c.
EFF. SPAN	7'-15"
PITCH	3 / 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 "D" SUMMARY	
STRUCTURE:	
TYPE	WOOD TRUSSES
MATERIAL	SOUTHERN PINE #2
SIZE	2" X 4"
SPACING	24" o.c.
EFF. SPAN	11'-6"
PITCH	10 / 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 "A" ARRAY SUMMARY	
# MODULES	2
MOD. ATT. MID	2
MOD. ATT. END	4
ROOF MOUNTS	7
RAIL LENGTH	16 FT.
ARRAY AREA	36 SQFT.
ARRAY WEIGHT	102 LBS.
AZIMUTH @ SN	224°
TILT ANGLE	33°

ROOF "B" ARRAY SUMMARY	
# MODULES	10
MOD. ATT. MID	12
MOD. ATT. END	16
ROOF MOUNTS	34
RAIL LENGTH	72 FT.
ARRAY AREA	177 SQFT.
ARRAY WEIGHT	498 LBS.
AZIMUTH @ SN	224°
TILT ANGLE	13°

ROOF "C" ARRAY SUMMARY	
# MODULES	4
MOD. ATT. MID	6
MOD. ATT. END	4
ROOF MOUNTS	12
RAIL LENGTH	30 FT.
ARRAY AREA	71 SQFT.
ARRAY WEIGHT	201 LBS.
AZIMUTH @ SN	224°
TILT ANGLE	13°

ROOF "D" ARRAY SUMMARY	
# MODULES	12
MOD. ATT. MID	20
MOD. ATT. END	8
ROOF MOUNTS	34
RAIL LENGTH	85 FT.
ARRAY AREA	212 SQFT.
ARRAY WEIGHT	569 LBS.
AZIMUTH @ SN	224°
TILT ANGLE	39°

ROOF "A" LOADING	
DEAD LOAD:	
ROOFING	3.9 LBS./SQFT.
PV ARRAY	2.7 LBS./SQFT.
TOTAL	6.6 LBS./SQFT.
WIND LOAD:	
UPLIFT ZONE 1	-24.6 LBS./SQFT.
UPLIFT ZONE 2	-29 LBS./SQFT.
UPLIFT ZONE 3	-29 LBS./SQFT.
DOWNWARD	23 LBS./SQFT.
FASTENER LOAD:	
UPLIFT ZONE 1	-400 LBS.
UPLIFT ZONE 2	-314 LBS.
UPLIFT ZONE 3	-157 LBS.
DOWNWARD	118 LBS.

ROOF "B" LOADING	
DEAD LOAD:	
ROOFING	3.9 LBS./SQFT.
PV ARRAY	2.7 LBS./SQFT.
TOTAL	6.6 LBS./SQFT.
WIND LOAD:	
UPLIFT ZONE 1	-23 LBS./SQFT.
UPLIFT ZONE 2	-38 LBS./SQFT.
UPLIFT ZONE 3	-57.1 LBS./SQFT.
DOWNWARD	13.6 LBS./SQFT.
FASTENER LOAD:	
UPLIFT ZONE 1	-332 LBS.
UPLIFT ZONE 2	-274 LBS.
UPLIFT ZONE 3	-206 LBS.
DOWNWARD	71 LBS.

ROOF "C" LOADING	
DEAD LOAD:	
ROOFING	3.9 LBS./SQFT.
PV ARRAY	2.7 LBS./SQFT.
TOTAL	6.6 LBS./SQFT.
WIND LOAD:	
UPLIFT ZONE 1	-23 LBS./SQFT.
UPLIFT ZONE 2	-38 LBS./SQFT.
UPLIFT ZONE 3	-57.1 LBS./SQFT.
DOWNWARD	13.6 LBS./SQFT.
FASTENER LOAD:	
UPLIFT ZONE 1	-332 LBS.
UPLIFT ZONE 2	-274 LBS.
UPLIFT ZONE 3	-206 LBS.
DOWNWARD	80 LBS.

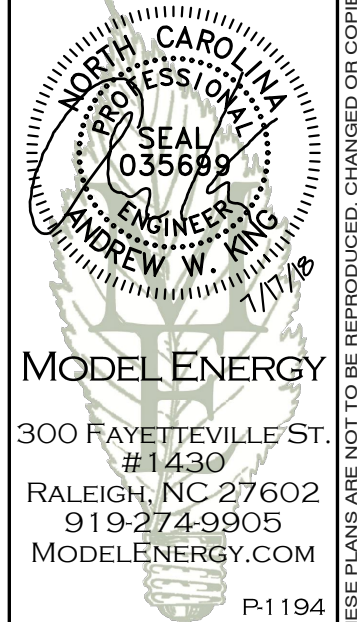
ROOF "D" LOADING	
DEAD LOAD:	
ROOFING	3.9 LBS./SQFT.
PV ARRAY	2.7 LBS./SQFT.
TOTAL	6.6 LBS./SQFT.
WIND LOAD:	
UPLIFT ZONE 1	-24.6 LBS./SQFT.
UPLIFT ZONE 2	-29 LBS./SQFT.
UPLIFT ZONE 3	-29 LBS./SQFT.
DOWNWARD	23 LBS./SQFT.
FASTENER LOAD:	
UPLIFT ZONE 1	-400 LBS.
UPLIFT ZONE 2	-314 LBS.
UPLIFT ZONE 3	-157 LBS.
DOWNWARD	143 LBS.

ROOF "A" ZONES:	
ALL ZONES	MAX. OVERHANG = 12"
ZONE 1	MAX. FASTENER SPAN ZONE 1 = 64"
ZONE 2	MAX. FASTENER SPAN ZONE 2 = 48"
ZONE 3	MAX. FASTENER SPAN ZONE 3 = 16"

ROOFS "B" & "D" ZONES:	
ALL ZONES	MAX. OVERHANG = 12"
ZONE 1	MAX. FASTENER SPAN ZONE 1 = 64"
ZONE 2	MAX. FASTENER SPAN ZONE 2 = 32"
ZONE 3	MAX. FASTENER SPAN ZONE 3 = 16"

ROOF "D" ZONES:	
ALL ZONES	MAX. OVERHANG = 16"
ZONE 1	MAX. FASTENER SPAN ZONE 1 = 72"
ZONE 2	MAX. FASTENER SPAN ZONE 2 = 48"
ZONE 3	MAX. FASTENER SPAN ZONE 3 = 24"

ENGINEER:



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STRUCTURAL INFORMATION

PV2.2

PV MODULES	
MAKE	TRINA
MODEL	TSM-DDI4A (II) PERC MONO
TECHNOLOGY	MONOCRYST.
NOM. POWER (P _{nom})	360 WATTS
NOM. VOLT. (V _{mp})	38.9 VOLTS
O.C. VOLT. (V _{oc})	47.2 VOLTS
MAX. SYS. VOLT.	1000 V (UL)
TEMP. COEF. (V _{oc})	-0.137 %/°C
NOM. CURR. (I _{mp})	9.26 AMPS
S.C. CURR. (I _{sc})	9.79 AMPS
MAX. SERIES FUSE	20 AMPS

MODULE OPTIMIZER	
MAKE	SOLAREGE
MODEL	P400
DC INPUT:	
NOM. POWER	400 WATTS
VOLT. RANGE	8-80
MAX. CURR.	10.0 AMPS
DC OUTPUT:	
NOM. POWER	400 WATTS
MAX. VOLT.	60 VOLTS
MAX. CURR.	15 AMPS
MIN. STRING	8 OPTIMIZERS
MAX. STRING	25 OPTIMIZERS
MAX. POWER	5700 WATTS

JUNCTION BOX	
MAKE	SOLADECK
MODEL	0783-3R
PRO. RATING	NEMA 3R
VOLT. RATING	600 VOLTS
AMP RATING	120 AMPS
UL LISTING	UL 50

TAG	CURRENT CARRYING CONDUCTORS				GROUNDING CONDUCTORS				CONDUIT/RACEWAY				NOTES
	QTY.	SIZE	MATERIAL	INSULATION	QTY.	SIZE	MATERIAL	INSULATION	QTY.	SIZE	MATERIAL	LOCATION	
C1	2	10 AWG	COPPER	PV WIRE	1	6 AWG	COPPER	BARE	-	-	-	FREE AIR	1
C2	2	10 AWG	COPPER	THWN-2	1	10 AWG	COPPER	THWN-2	1	1/2"	ROMEX/EMT	INT/EXT	2,4
C3	3	6 AWG	COPPER	THWN	1	10 AWG	COPPER	THWN	1	3/4"	ROMEX/EMT	INT/EXT	2,4
C4	3	6 AWG	COPPER	THWN	-	-	-	-	1	3/4"	ROMEX/EMT	INT/EXT	2,4
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

DC/AC INVERTER	
MAKE	SOLAREGE
MODEL	SEI0000H-US
TECHNOLOGY	TRANSFORMER-LESS
DC INPUT:	
MAX. POWER	15500 WATTS
VOLT. RANGE	380-480 VOLTS
NOM. VOLT.	400 VOLTS
MAX. CURRENT	27 AMPS
STRING INPUTS	3 STRINGS
AC OUTPUT:	
NOM. POWER	10000 WATTS
NOM. VOLT.	240 VOLTS
MAX. POWER	10000 WATTS
MAX. CURR.	42 AMPS
GFP (Y/N)	YES
GFCI (Y/N)	YES
AFCI (Y/N)	YES
DC DISC. (Y/N)	YES
RAPID SHUTDOWN	YES
FUSE RATING	15 AMPS
PROTECT. RATING	NEMA 3R

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)	YES
FUSE RATING	60 AMPS

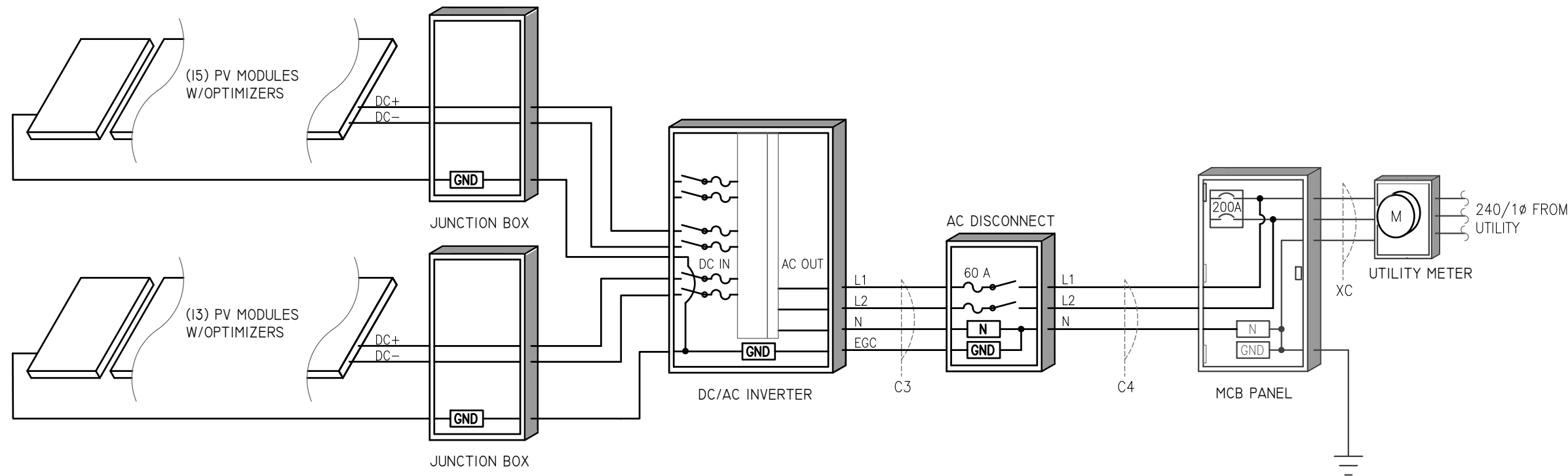
NOTES:

- LOAD-BREAK RATED
- VISIBLE OPEN
- LOCKABLE IN OPEN POSITION
- INSTALL ADJACENT TO METER
- SERVICE RATED
- PROVIDE NEUTRAL/GROUND BONDING JUMPER

MCB PANEL/SERVICE DISCONNECT (EXISTING)	
MAKE	EATON/ CUTLER-HAMMER
MODEL	MBE4040B200BTS
ENCL. RATING	NEMA 3R
VOLT. RATING	240 VOLTS
BUS RATING	200 AMPS
UL LIST. (Y/N)	YES
MAIN BREAKER (Y/N)	YES
BREAKER RATING	200 AMPS

NOTES:

- BACK-FEED SOLAR OUTPUT VIA SUPPLY SIDE TAP INSIDE OF MCB PANEL.



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ELECTRICAL INFORMATION

PV3.1

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PHOTOVOLTAIC ARRAY AC DISCONNECT
 MAXIMUM OPERATING AC VOLTAGE: 240V
 MAXIMUM OPERATING CURRENT: 42 AMPS

PLACE ON COVER OF AC DISCONNECT SWITCH

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

PLACE ON JUNCTION BOX

WARNING!
 PHOTOVOLTAIC POWER SOURCE

PLACE ON DC CONDUIT

WARNING!
ELECTRIC SHOCK HAZARD!
DO NOT TOUCH TERMINALS!
 DUAL POWER SOURCE. PHOTOVOLTAIC
 SYSTEM IS SECONDARY POWER SOURCE.
 TERMINALS ON BOTH THE LINE AND LOAD SIDES
 MAY BE ENERGIZED IN THE OPEN POSITION.

PLACE ON MCB PANEL

WARNING!
INVERTER OUTPUT CONNECTION:
DO NOT RELOCATE THIS OVER-CURRENT DEVICE

LABEL FOR PV INPUT BREAKER

**PHOTOVOLTAIC SYSTEM EQUIPPED
 WITH RAPID SHUTDOWN**

RAPID SHUTDOWN LABEL

WARNING!
**ELECTRIC SHOCK HAZARD. THE DC
 CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM
 ARE UNGROUNDED AND MAY BE ENERGIZED.**

PLACE ON JUNCTION BOXES, COMBINER BOXES, DISCONNECTS AND
 EQUIPMENT THAT ARE CONNECTED TO UNGROUNDED CIRCUITS.

WARNING!
ELECTRIC SHOCK HAZARD!
DO NOT TOUCH TERMINALS!
 TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED
 IN THE OPEN POSITION. THE DC CONDUCTORS OF THIS
 PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE
 ENERGIZED.

PHOTOVOLTAIC POWER SOURCE
 OPERATING AC VOLTAGE: 240V
 MAX OPERATING AC OUTPUT CURRENT: 42 AMPS

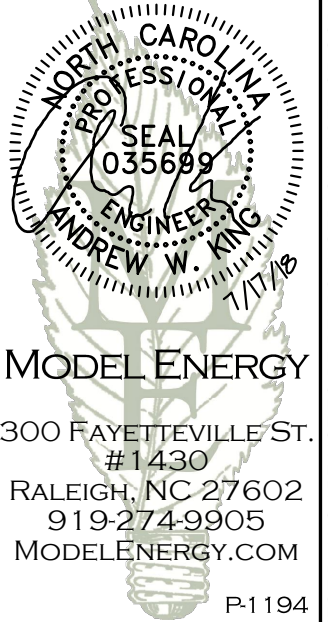
PHOTOVOLTAIC ARRAY DC DISCONNECT
 OPERATING DC VOLTAGE: 380 VOLTS
 OPERATING CURRENT: 26.5 AMPS
 MAX SYSTEM VOLTAGE: 480 VOLTS
 SHORT-CIRCUIT CURRENT: 30 AMPS

PLACE ON THE COVER OF INVERTER/DC DISCONNECT SWITCH

EQUIPMENT LABEL NOTES

- LABELS SHALL HAVE A RED BACKGROUND COLOR WITH WHITE LETTERING, TEXT SHALL BE IN ALL CAPITAL LETTERS AND NOT BE BOLD FONT
- LABEL MATERIAL SHALL BE SUITABLE FOR THE EQUIPMENT ENVIRONMENT
- CONDUIT SHALL BE MARKED WITH REQUIRED LABEL EVERY 10 FEET

ENGINEER:



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

JOB TITLE:

NEW SOLAR PV SYSTEM
10.08 kW DC INPUT
10.00 kW AC EXPORT
Maranda Tilley
15 Cameron Pines Avenue
SANFORD, NC 27332

CLIENT:



ISSUED FOR:	DATE:
PERMIT	7/16/18

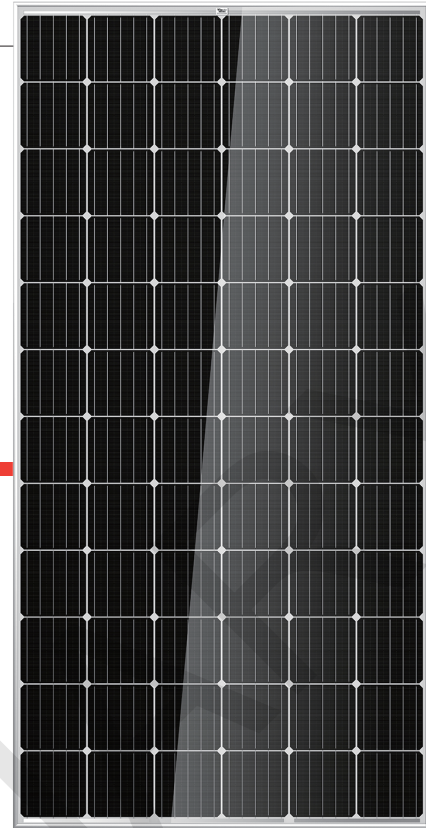
EQUIPMENT LABELS

PV4.1

THE

TALLMAX^M PLUS⁺

FRAMED 72-CELL MODULE(1500V)



72 CELL
MONOCRYSTALLINE MODULE

340-375W
POWER OUTPUT RANGE

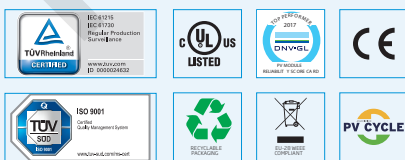
19.3%
MAXIMUM EFFICIENCY

0~+5W
POSITIVE POWER TOLERANCE

Founded in 1997, Trina Solar is the world's leading comprehensive solutions provider for solar energy. We believe close cooperation with our partners is critical to success. Trina Solar now distributes its PV products to over 60 countries all over the world. Trina is able to provide exceptional service to each customer in each market and supplement our innovative, reliable products with the backing of Trina as a strong, bankable partner. We are committed to building strategic, mutually beneficial collaboration with installers, developers, distributors and other partners.

Comprehensive Products And System Certificates

IEC61215/IEC61730/UL1703/IEC61701/IEC62716
 ISO 9001: Quality Management System
 ISO 14001: Environmental Management System
 ISO14064: Greenhouse gases Emissions Verification
 OHSAS 18001: Occupation Health and Safety Management System



Ideal for large scale installations

- Reduce BOS cost by connecting more modules in a string
- 1500V UL/1500V IEC certified



Maximize limited space with top-end efficiency

- Up to 193 W/m² power density
- Low thermal coefficients for greater energy production at high operating temperatures



Highly reliable due to stringent quality control

- Over 30 in-house tests (UV, TC, HF, and many more)
- In-house testing goes well beyond certification requirements
- 100% EL double inspection

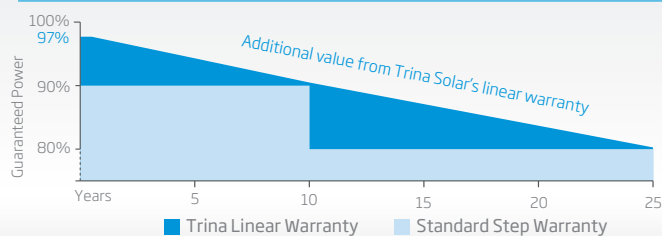


Certified to withstand the most challenging environmental conditions

- 2400 Pa wind load
- 5400 Pa snow load

LINEAR PERFORMANCE WARRANTY

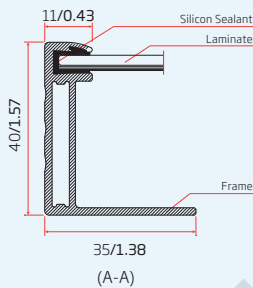
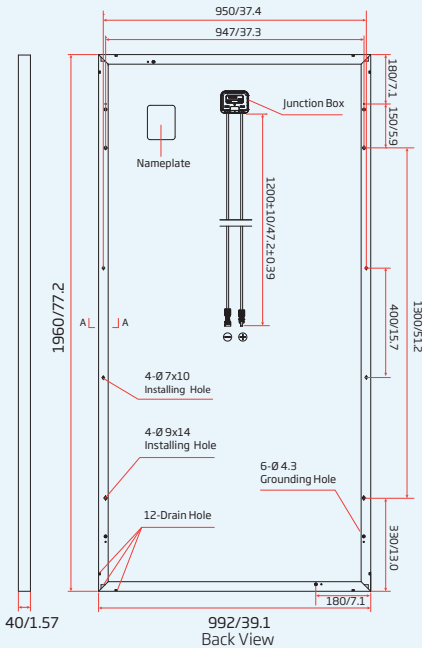
10 Year Product Warranty · 25 Year Linear Power Warranty



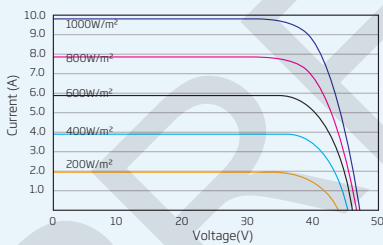
PRODUCTS POWER RANGE

TSM-DE14A(II) STD MONO 340-350W
 TSM-DE14A(II) PERC MONO 355-375W

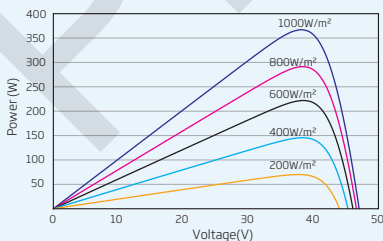
DIMENSIONS OF PV MODULE(mm/inches)



I-V CURVES OF PV MODULE(365W)



P-V CURVES OF PV MODULE(365W)



ELECTRICAL DATA (STC)

Peak Power Watts- P_{MAX} (Wp)*	340	345	350	355	360	365	370	375
Power Output Tolerance- P_{MAX} (W)	0 ~ +5							
Maximum Power Voltage- V_{MPP} (V)	38.2	38.5	38.7	38.8	39.0	39.3	39.7	40.0
Maximum Power Current- I_{MPP} (A)	8.90	8.96	9.04	9.14	9.24	9.30	9.33	9.37
Open Circuit Voltage- V_{OC} (V)	46.2	46.7	47.0	47.4	47.7	48.0	48.3	48.5
Short Circuit Current- I_{SC} (A)	9.50	9.55	9.60	9.65	9.70	9.77	9.83	9.88
Module Efficiency η_m (%)	17.5	17.7	18.0	18.3	18.5	18.8	19.0	19.3

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5.
 *Measuring tolerance: ±3%.

ELECTRICAL DATA (NOCT)

Maximum Power- P_{MAX} (Wp)	253	257	261	264	268	272	276	279
Maximum Power Voltage- V_{MPP} (V)	35.4	35.7	35.9	36.0	36.2	36.4	36.8	37.1
Maximum Power Current- I_{MPP} (A)	7.15	7.20	7.26	7.34	7.42	7.47	7.50	7.53
Open Circuit Voltage- V_{OC} (V)	42.9	43.4	43.7	44.1	44.3	44.6	44.9	45.1
Short Circuit Current- I_{SC} (A)	7.67	7.71	7.75	7.79	7.83	7.89	7.94	7.98

NOCT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s.

MECHANICAL DATA

Solar Cells	Monocrystalline 156.75 × 156.75 mm (6 inches)
Cell Orientation	72 cells (6 × 12)
Module Dimensions	1960 × 992 × 40 mm (77.2 × 39.1 × 1.57 inches)
Weight	26.0 kg (57.3 lb) with 4.0 mm glass; 22.5 kg (49.6 lb) with 3.2 mm
Glass	glass 4.0 mm (0.16 inches) for PERC Mono; 3.2 mm (0.13 inches) for Std Mono, High Transmission, AR Coated Tempered Glass
Backsheet	White
Frame	Silver Anodized Aluminium Alloy
J-Box	IP 67 or IP 68 rated
Cables	Photovoltaic Technology Cable 4.0mm ² (0.006 inches ²), 1200 mm (47.2 inches)
Connector	Trina TS4
Fire Type	Type 1 or Type 2

TEMPERATURE RATINGS

NOCT (Nominal Operating Cell Temperature)	44°C (±2°C)
Temperature Coefficient of P_{MAX}	-0.39%/°C
Temperature Coefficient of V_{OC}	-0.29%/°C
Temperature Coefficient of I_{SC}	0.05%/°C

MAXIMUM RATINGS

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC (IEC) 1500V DC (UL)
Max Series Fuse Rating	15A (Power ≤ 350W) 20A (Power ≥ 355W)

(DO NOT connect Fuse in Combiner Box with two or more strings in parallel connection)

WARRANTY

10 year Product Workmanship Warranty
25 year Linear Power Warranty

(Please refer to product warranty for details)

PACKAGING CONFIGURATION

Modules per box: 27 pieces
Modules per 40' container: 648 pieces



Single Phase Inverters

for North America

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



INVERTERS

Optimized installation with HD-Wave technology

- Specifically designed to work with power optimizers
- Record-breaking efficiency
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014 and 2017, per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Extremely small
- High reliability without any electrolytic capacitors
- Built-in module-level monitoring
- Outdoor and indoor installation
- Optional: Revenue grade data, ANSI C12.20 Class 0.5 (0.5% accuracy)





Single Phase Inverters for North America

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

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

⁽¹⁾ For other regional settings please contact SolarEdge support

⁽²⁾ Revenue grade inverter P/N: SExxxxH-US000NNC2

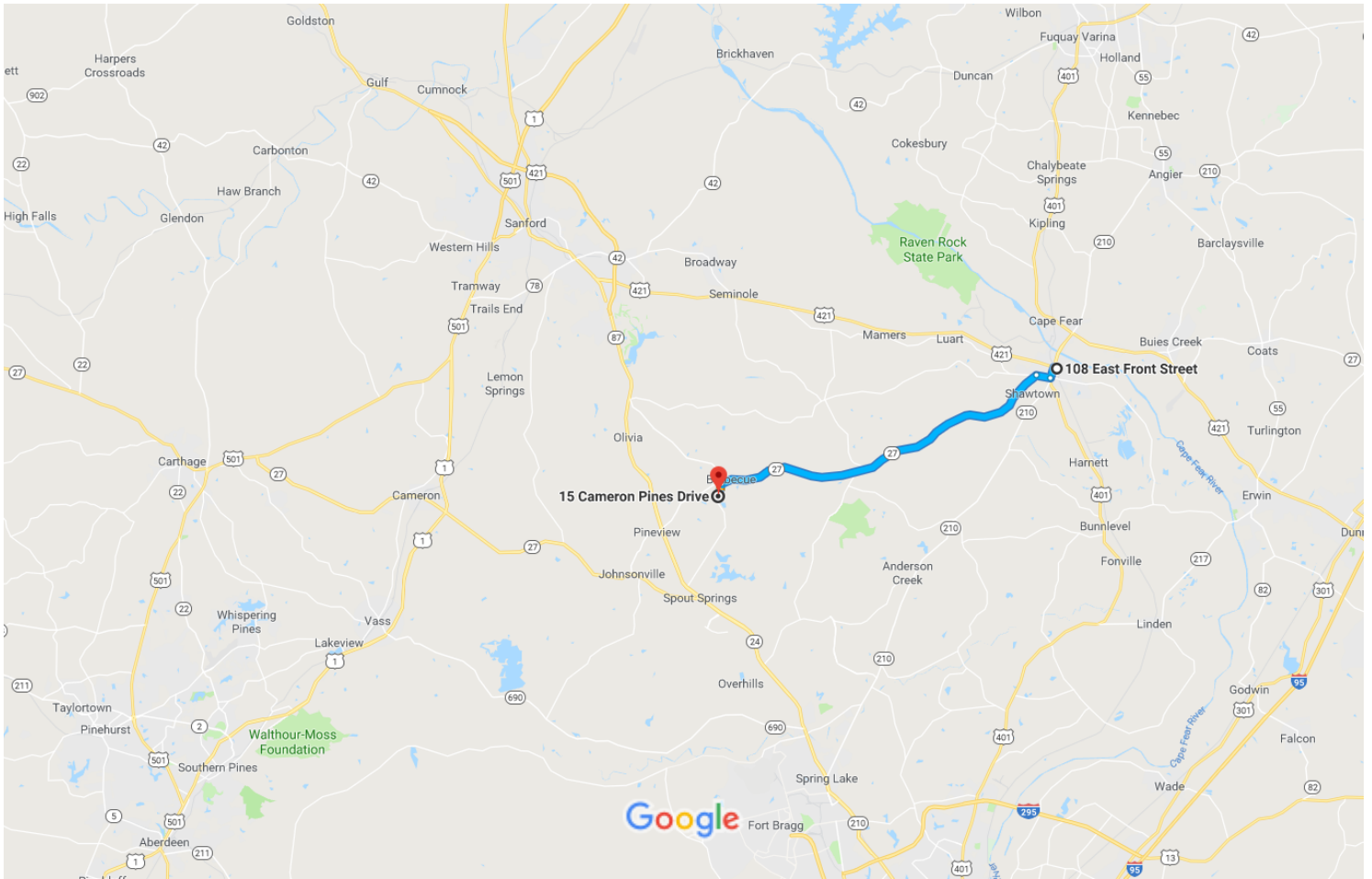
⁽³⁾ For power de-rating information refer to: <https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf>

⁽⁴⁾ -40 version P/N: SExxxxH-US000NNU4





108 E Front St, Lillington, NC 27546 to 15 Cameron Pines Drive, Sanford, NC 27332 Drive 15.4 miles, 20 min



Map data ©2018 Google 2 mi

108 E Front St

Lillington, NC 27546

- ↑ 1. Head west on E Front St toward S 1st St 0.1 mi

 - ↶ 2. Turn left onto S Main St 0.4 mi

 - ↷ 3. Turn right onto W Old Rd 0.6 mi

 - ↶ 4. Turn left onto NC-27 W 13.8 mi

 - ↶ 5. Turn left onto Buffalo Lake Rd 0.5 mi

 - ↶ 6. Turn left onto Cameron Pines Dr 144 ft
- i Destination will be on the left

15 Cameron Pines Drive