

BUILDING CODES: 2017 NEC, AND 2018 NORTH CAROLINA RESIDENTIAL CODE



LANNING, MICHAEL PV SYSTEM
55 GAMACHE LN.
LILLINGTON, NC, 27546
JURISDICTION: HARNETT COUNTY
UTILITY: CENTRAL ELECTRIC MEMBERSHIP COOPERATIVE

GENERAL INFORMATION

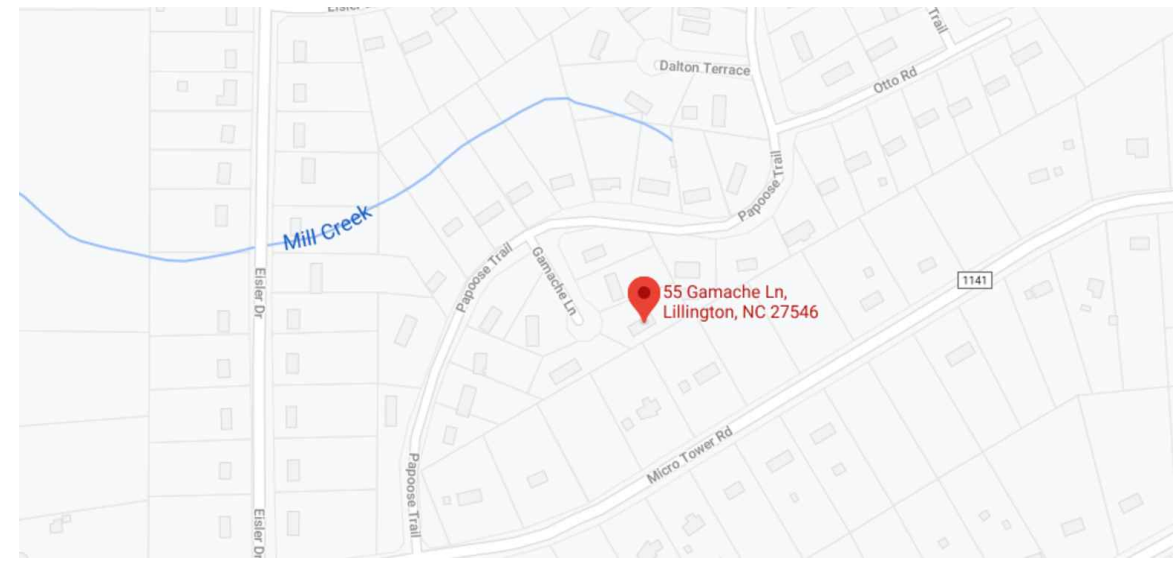
SYSTEM SIZE: 12.240 kW-DC-STC
 10.000 kW-AC
 ROOF PITCHED: 18 DEGREES
 INVERTER: (1) SOLAREEDGE SE10000H-US W/ P340 OPTIMIZERS
 MODULES: (36) SILFAB SIL-340 NL
 STRINGS: (3)x12 MODULE SERIES STRINGS
 ELECTRICAL SERVICE RATING: 200A
 PV SYSTEM OVERCURRENT RATING: 60A
 PV SYSTEM DISCONNECT SWITCH: EATON DG222URB (60A / 2P)
 ROOF TYPE: COMP
 ROOF FRAMING: MANUFACTURED/ENGINEERED TRUSS
 RACKING: EVEREST
 ATTACHMENT METHOD: MIN. 5/16" x 3 1/2 LAG SCREWS EA. STANDOFF

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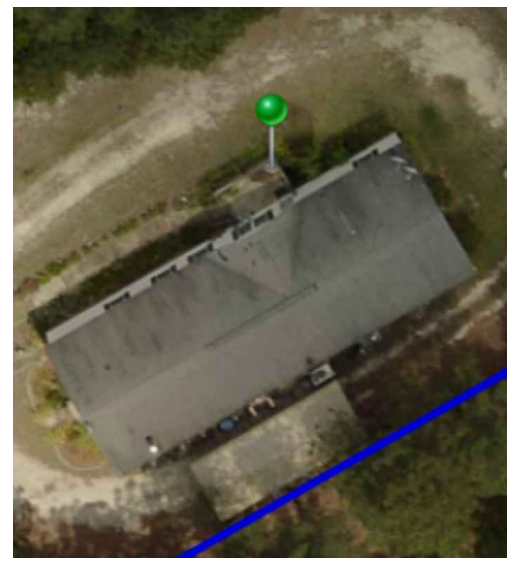
VICINITY MAP

SCALE: NTS



AERIAL MAP

SCALE: NTS



NOTES

EQUIPMENT LOCATION

- ALL EQUIPMENT SHALL MEET MINIMUM SETBACKS AS REQUIRED BY NEC 110.26.
- WIRING SYSTEMS INSTALLED IN DIRECT SUNLIGHT MUST BE RATED FOR EXPECTED OPERATING TEMPERATURE AS SPECIFIED BY NEC 690.31(A),(C) AND NEC TABLES 310.15(B)(2)(A) AND 310.15(B)(3)(C).
- JUNCTION AND PULL BOXES PERMITTED INSTALLED UNDER PV MODULES ACCORDING TO NEC 690.34.
- ADDITIONAL AC DISCONNECT(S) SHALL BE PROVIDED WHERE THE INVERTER IS NOT WITHIN SIGHT OF THE AC SERVICING DISCONNECT.
- ALL EQUIPMENT SHALL BE INSTALLED ACCESSIBLE TO QUALIFIED PERSONNEL ACCORDING TO NEC APPLICABLE CODES.
- ALL COMPONENTS ARE LISTED FOR THEIR PURPOSE AND RATED FOR OUTDOOR USAGE WHEN APPROPRIATE.

WIRING & CONDUIT NOTES

- ALL CONDUITS AND WIRE WILL BE LISTED AND APPROVED FOR THEIR PURPOSE. CONDUIT AND WIRE SPECIFICATIONS ARE BASED ON MINIMUM CODE REQUIREMENTS AND ARE NOT MEANT TO LIMIT UP-SIZING.
- CONDUCTORS SIZED ACCORDING TO NEC 690.8, NEC 690.7.
- DC WIRING LIMITED TO MODULE FOOTPRINT. MICRO INVERTER WIRING SYSTEMS SHALL BE LOCATED AND SECURED UNDER THE ARRAY WITH SUITABLE WIRING CLIPS.
- AC CONDUCTORS COLORED OR MARKED AS FOLLOWS: PHASE A OR L1- BLACK, PHASE B OR L-2 RED, OR OTHER CONVENTION IF THREE PHASE, PHASE C OR L3-BLUE, YELLOW, ORANGE, OR OTHER CONVENTION NEUTRAL- WHITE OR GREY IN 4-WIRE DELTA CONNECTED SYSTEMS THE PHASE WITH THE HIGHER VOLTAGE TO BE MARKED ORANGE NEC 110.15.

GENERAL NOTES

- MODULES ARE LISTED UNDER UL 1703 AND CONFORM TO THE STANDARDS.
- INVERTERS ARE LISTED UNDER UL 1741 AND CONFORM TO THE STANDARDS.
- DRAWINGS ARE DIAGRAMMATIC, INDICATING GENERAL ARRANGEMENT OF THE PV SYSTEM AND THE ACTUAL SITE CONDITION MIGHT VARY.
- WORKING CLEARANCES AROUND THE NEW PV ELECTRICAL EQUIPMENT WILL BE MAINTAINED IN ACCORDANCE WITH NEC 110.26.
- ALL GROUND WIRING CONNECTED TO THE MAIN SERVICE GROUNDING IN MAIN SERVICE PANEL/SERVICE COMPONENT.
- ALL CONDUCTORS SHALL BE 600V, 75° C STANDARD COPPER UNLESS OTHERWISE NOTED.
- WHEN REQUIRED, A LADDER SHALL BE IN PLACE FOR INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS.
- THE SYSTEM WILL NOT BE INTERCONNECTED BY THE CONTRACTOR UNTIL APPROVAL FROM THE LOCAL JURISDICTION AND/OR THE UTILITY.
- ROOF ACCESS POINT SHALL BE LOCATED IN AREAS THAT DO NOT REQUIRE THE PLACEMENT OF GROUND LADDERS OVER OPENINGS SUCH AS WINDOWS WHERE THE ACCESS POINT DOES NOT CONFLICT WITH OVERHEAD OBSTRUCTIONS SUCH AS TREES, WIRES OR SIGNS.
- PV ARRAY COMBINER/JUNCTION BOX PROVIDES TRANSITION FROM ARRAY WIRING TO CONDUIT WIRING.

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 (877) 997-7652

LANNING, MICHAEL RESIDENCE
 55 GAMACHE LN, LILLINGTON, NC, 27546
 LAT:35.318159, LON:-79.003292
 TSP-60522

(36) SILFAB SIL-340 NL
 (1) SOLAREEDGE SE10000H-US
 12.240 kW DC SYSTEM SIZE
 10.000 kW AC SYSTEM SIZE

DATE: 12/28/2020
 REV:A
 DRAWN BY: DH

COVER PAGE
PV 1



PROJECT NOTES

1. UTILITY SHALL HAVE 24HR UNRESTRICTED ACCESS TO ALL PHOTOVOLTAIC COMPONENTS LOCATED AT SES EQUIPMENT
2. NO LOCKED GATES, DOGS, ETC SHALL IMPEDE ACCESS TO SES EQUIPMENT
3. WORKSPACE IN FRONT OF AC ELECTRICAL SYSTEM COMPONENTS SHALL BE IN ACCORDANCE WITH UTILITY AND NEC REQUIREMENTS.
4. STATEWIDE UNIFORM REQUIREMENTS OF INSPECTION PROCEDURES FOR SOLAR PHOTOVOLTAIC SYSTEMS INSTALLED ON RESIDENTIAL ROOFTOPS.

GAMACHE LN,

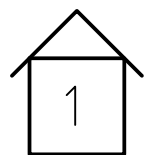
FRONT OF RESIDENCE

DRIVEWAY

PROPERTY BOUNDARY TYP.

UTILITY AC DISCONNECT
UTILITY PV METER
INVERTER

NOTE: NO GATES - NO FENCES



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(36) SILFAB SIL-340 NL
(1) SOLAREEDGE SE10000H-US
12.240 kW DC SYSTEM SIZE
10.000 kW AC SYSTEM SIZE

SCALE:0.004515
DATE: 12/28/2020
REV:A
DRAWN BY: DH

SITE PLAN
PV 2

ARRAY

AR-01

QUANTITY: 36

MOUNTING TYPE: FLUSH

ARRAY TILT: 18°

AZIMUTH: 146°

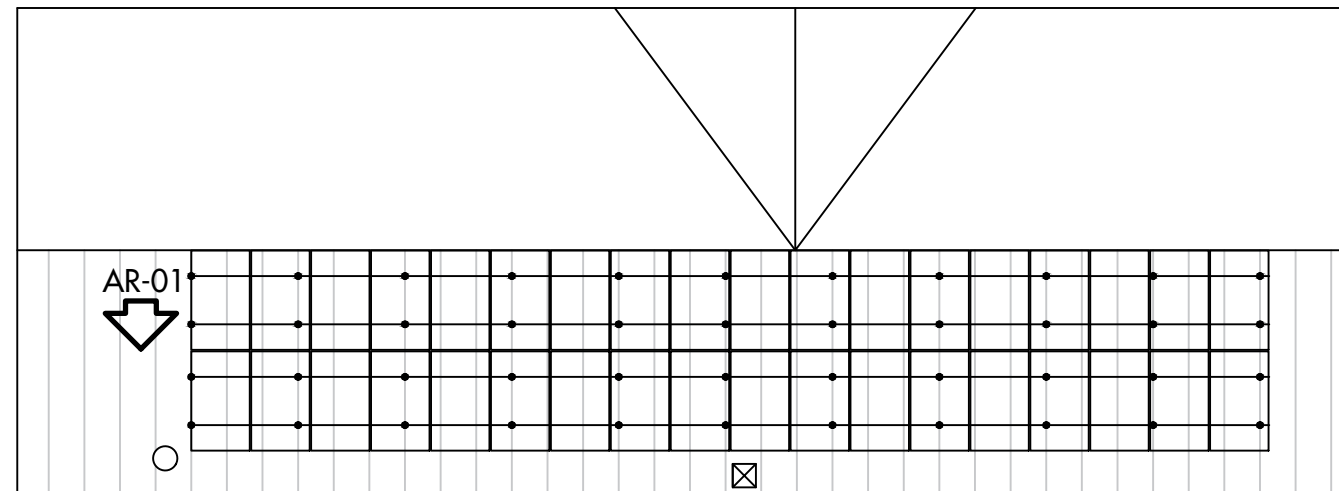
ATTACHMENT SPACING: 6'

ROOF TYPE: COMP



NOTES

- ROOF VENTS, SKYLIGHTS, WILL NOT BE COVERED UPON PV INSTALLATION
- TOTAL ROOF AREA = 2042 SQ-FT
- TOTAL ARRAY AREA = 658.97 SQ-FT
- ARRAY COVERAGE = 32.27%



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(1) SOLAREEDGE SE10000H-US
12.240 kW DC SYSTEM SIZE
10.000 kW AC SYSTEM SIZE

SCALE: 0.007731
DATE: 12/28/2020
REV:A
DRAWN BY: DH

PV LAYOUT
PV 3

MODULE & RACKING INFORMATION

MODULE: SILFAB SIL-340 NL
MODULE WEIGHT: 42.99 LBS
MODULE DIMENSIONS: 66.9" x 39.4" x 1.5"
RACKING/RAIL: QUICKBOLT / EVEREST

ROOF & FRAMING INFORMATION

MATERIAL: COMP
RAFTER/TRUSS SIZE: 2" x 4"
RAFTER/TRUSS SPACING: 2'

ARRAY INFORMATION:

ARRAY 01: 36 MODULES
UPLIFT CALCULATION:
PANEL GROUP AREA: = MODULE AREA: 18.30
SQ.FT * MODULE QTY. 36 = 658.97 SQ.FT

TOTAL UPLIFT: = PANEL GROUP AREA: 658.97
SQ. FT. * WIND LOAD 30 PSF =
TOTAL LOAD 19768.95 LBS.

POINT LOAD CALCULATION:
ARRAY WEIGHT: MODULE WEIGHT (42.99
+3.5) * MODULE QTY. 36 = 1673.64 LBS / 44
MOUNTING POINTS = 38.04 LBS. PER
MOUNTING POINT

PULLOUT STRENGTH CALCULATION:

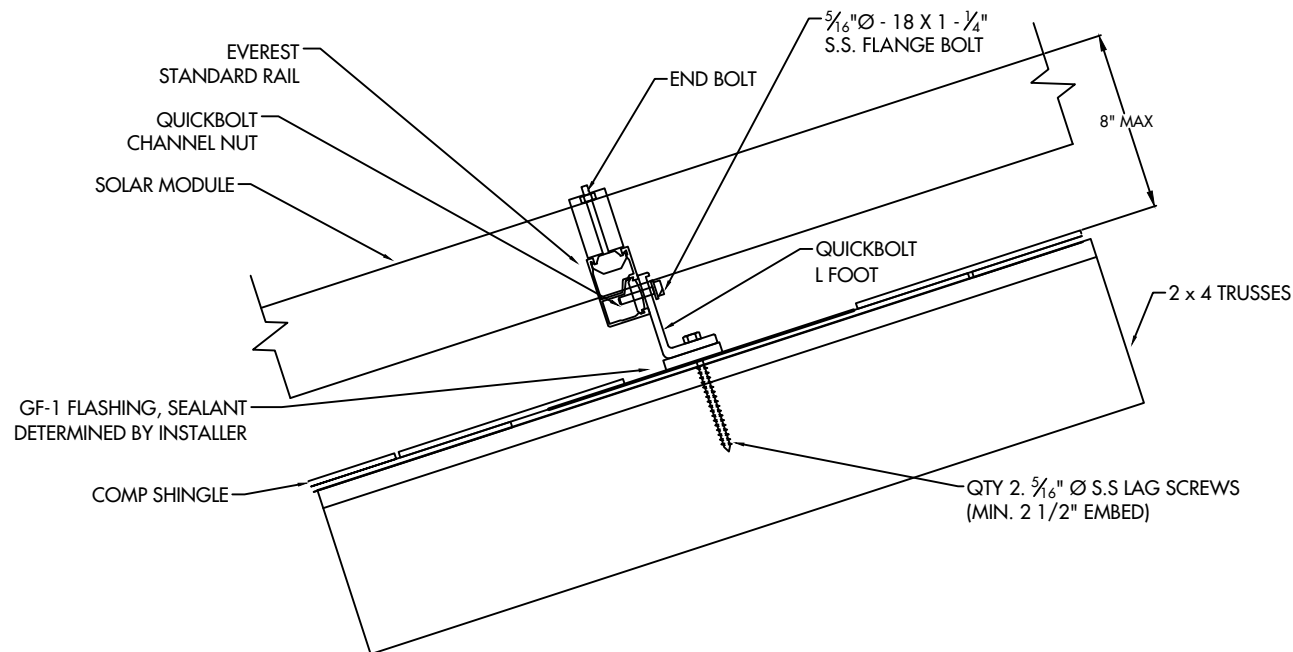
CONNECTOR TYPE: 5/16" LAG SCREW
(EMBED MIN. 2.5")
PULLOUT STRENGTH: = OF MOUNTING
POINTS: 44 * 2.5 (EMBED DEPTH) * 210 LBS =
23100.00 LBS.

DISTRIBUTED LOAD CALCULATION:

ARRAY WEIGHT: 1673.64 LBS. / MODULE
GROUP AREA: 658.97 SQ. FT. = 2.54 PSF

MODULE & RACKING WEIGHT:

(MODULE WEIGHT + 3.5LBS) * MODULE QTY.
(46.49 LBS)*36 = 1673.64 LBS



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12.240 kW DC SYSTEM SIZE
10.000 kW AC SYSTEM SIZE

DATE: 12/28/2020
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DETAILS
PV 4

PV MODULE

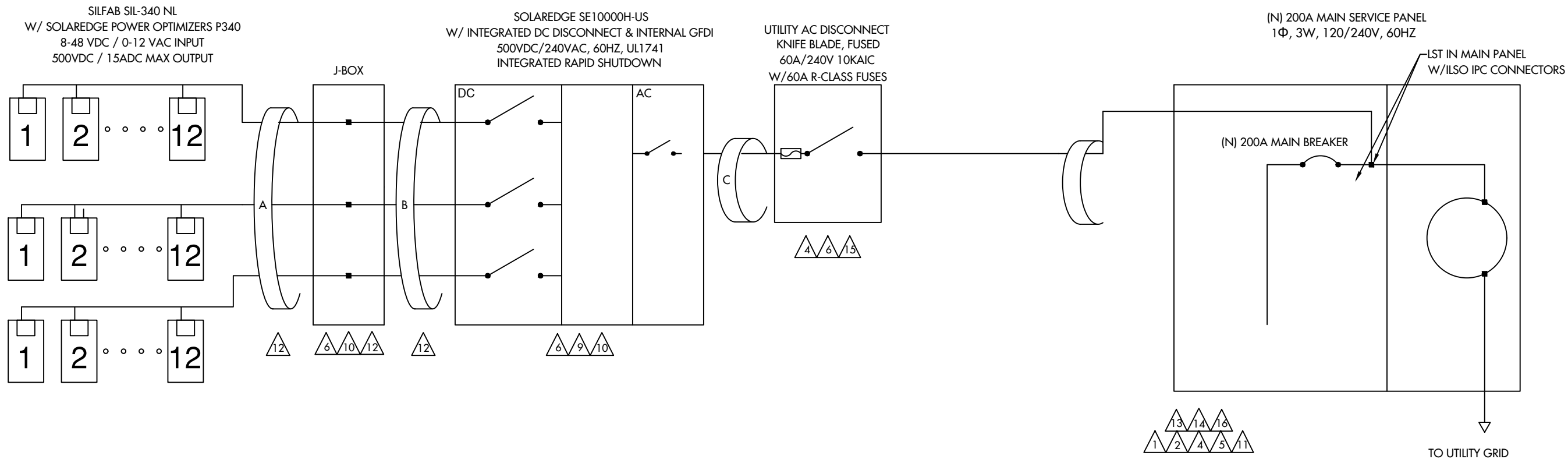
SILFAB SIL-340 NL
 ISC = 10.5 ADC
 VOC = 40.9 VDC
 IMP = 10.1 ADC
 VMP = 33.7 VDC
 TVOC = -0.31% / °C

WIRE SCHEDULE

- A - (6) #10 AWG-CU PV WIRE (HR)
 - (1) #10 AWG-CU BARE COPPER WIRE (GND)
 IN FREE AIR
- B - (6) #10 AWG-CU THWN-2 WIRE (HR)
 - (1) #10 AWG-CU THWN-2 WIRE (GND)
 3/4" EMT
- C - (3) #6 AWG-CU THWN-2 WIRE (HR)
 - (1) #8 AWG-CU THWN-2 WIRE (GND)
 3/4" EMT

MAIN SERVICE PANEL

BUS RATING	=	200A
MAX. CURRENT RATING	=	240A (200A X 1.2)
SOLAR BREAKER	=	60A
MAIN BREAKER	=	200A
TOTAL	=	260A



WIRE SIZE CALCULATIONS

TEMP CORRECTION FACTOR: 0.87 (109° AMBIENT)
 ROOF TOP TEMP CORRECTION FACTOR: 1 (109°)
 (2" ABOVE ROOFTOP / 0° TEMP ADDERS - AS OCCURS)
 (TEMP DATA TAKEN FROM ASHRAE 2% AVG HIGH TEMP)

DC WIRING
 CONDUIT FILL FACTOR = 0.8
 OPTIMIZER MAX. CURRENT = 18.75ADC (15A X 1.25)
 #10 - AWG CU. AMPACITY = 45.10A (55A X 1.0 X 0.87) FREE AIR
 #10 - AWG CU. AMPACITY = 32A (40A X 1 X 0.8) ROOFTOP CONDUIT

AC WIRING
 CONDUIT FILL FACTOR = 1 (3) CONDUCTORS
 MAX. INVERTER CURRENT = 42A (PER INVERTER SPECS)
 MIN. INVERTER OCP = 52.5A (42A X 1.25)
 INVERTER OCP = 60A
 #6 - AWG CU AMPACITY = 65.25A (75A X 1.0 X 0.87)



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 10.000 kW AC SYSTEM SIZE

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ONE LINE
PV 5

PV MODULE

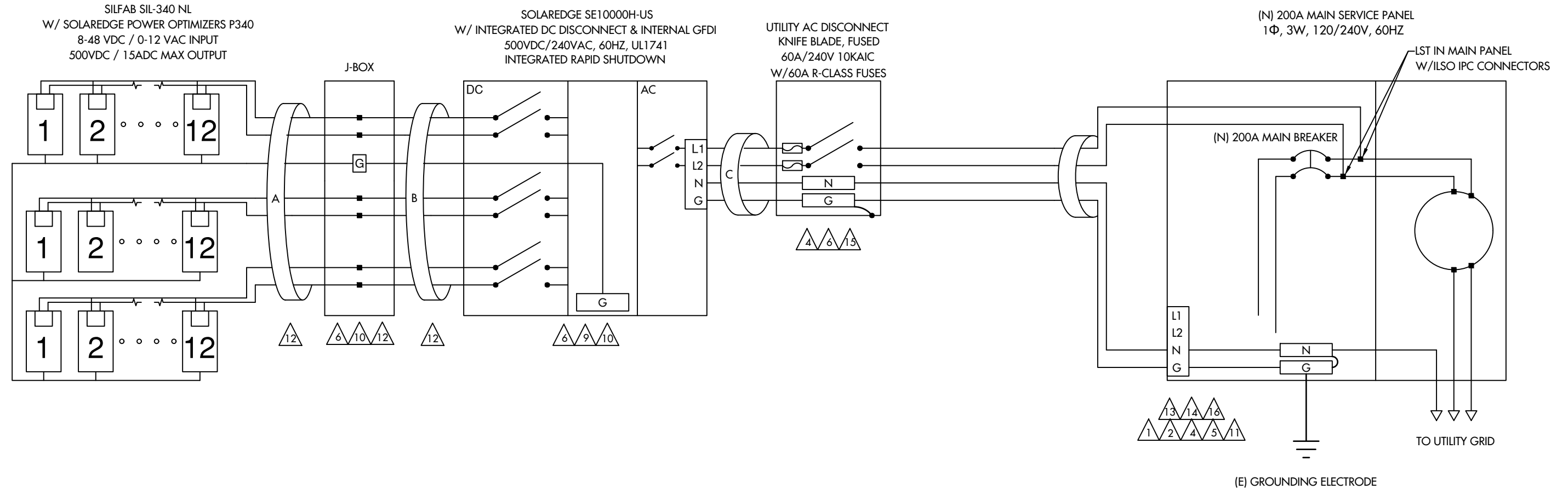
SILFAB SIL-340 NL
 ISC = 10.5 ADC
 VOC = 40.9 VDC
 IMP = 10.1 ADC
 VMP = 33.7 VDC
 TVOC = -0.31% / °C

WIRE SCHEDULE

- A - (6) #10 AWG-CU PV WIRE (HR)
 - (1) #10 AWG-CU BARE COPPER WIRE (GND)
 IN FREE AIR
- B - (6) #10 AWG-CU THWN-2 WIRE (HR)
 - (1) #10 AWG-CU THWN-2 WIRE (GND)
 3/4" EMT
- C - (3) #6 AWG-CU THWN-2 WIRE (HR)
 - (1) #8 AWG-CU THWN-2 WIRE (GND)
 3/4" EMT

MAIN SERVICE PANEL

BUS RATING	=	200A
MAX. CURRENT RATING	=	240A (200A X 1.2)
SOLAR BREAKER	=	60A
MAIN BREAKER	=	200A
TOTAL	=	260A



WIRE SIZE CALCULATIONS

TEMP CORRECTION FACTOR: 0.87 (109° AMBIENT)
 ROOF TOP TEMP CORRECTION FACTOR: 1 (109°)
 (2" ABOVE ROOFTOP / 0° TEMP ADDERS - AS OCCURS)
 (TEMP DATA TAKEN FROM ASHRAE 2% AVG HIGH TEMP)

DC WIRING
 CONDUIT FILL FACTOR = 0.8
 OPTIMIZER MAX. CURRENT = 18.75ADC (15A X 1.25)
 #10 - AWG CU. AMPACITY = 45.10A (55A X 1.0 X 0.87) FREE AIR
 #10 - AWG CU. AMPACITY = 32A (40A X 1 X 0.8) ROOFTOP
 CONDUIT

AC WIRING
 CONDUIT FILL FACTOR = 1 (3) CONDUCTORS
 MAX. INVERTER CURRENT = 42A (PER INVERTER SPECS)
 MIN. INVERTER OCP = 52.5A (42A X 1.25)
 INVERTER OCP = 60A
 #6 - AWG CU AMPACITY = 65.25A (75A X 1.0 X 0.87)



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 10.000 kW AC SYSTEM SIZE

DATE: 12/28/2020
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THREE LINE
PV 6

1 **CAUTION**
PHOTOVOLTAIC SYSTEM CIRCUIT IS BACKFED
LOCATION: BACKFED BREAKER
CODE REF: NEC 705.12(4)

2 **WARNING**
INVERTER OUTPUT CONNECTION:
DO NOT RELOCATE THIS
OVERCURRENT DEVICE
LOCATION: BACKFED BREAKER
CODE REF: 2017 NEC 705.12(2)(3)(b)

3 **WARNING**
A GENERATION SOURCE IS CONNECTED TO THE SUPPLY
(UTILITY) SIDE OF THE MAIN SERVICE DISCONNECT. FOLLOW
THE PROPER LOCK-OUT/TAG-OUT PROCEDURES TO ENSURE
THE PHOTOVOLTAIC SYSTEM UTILITY DISCONNECT SWITCH IS
OPENED PRIOR TO PERFORMING WORK ON THIS DEVICE
LOCATION: (IF APPLICABLE)
SUPPLY SIDE TAP
LOAD PANEL
CODE REF: UTILITY

4 **PHOTOVOLTAIC AC DISCONNECT**
RATED AC OPERATING CURRENT: 42AAC
NOMINAL OPERATING AC VOLTAGE: 240VAC
LOCATION: MAIN PANEL
AC DISCONNECT(S)
CODE REF: NEC 690.54

5 **RAPID SHUTDOWN
SWITCH FOR
SOLAR PV SYSTEM**
LOCATION: MAIN PANEL (EXTERIOR)
PV BREAKER (INTERIOR)
CODE REF: NEC 690.56(C)(3)

6 **WARNING**
ELECTRICAL SHOCK HAZARD
TERMINALS ON BOTH LINE AND
LOAD SIDES MAY BE ENERGIZED
IN THE OPEN POSITION
LOCATION: COMBINER PANEL
AC DISCONNECT
JUNCTION BOX
INVERTER(S)
CODE REF: NEC 690.13(B)

7 **PHOTOVOLTAIC
SYSTEM METER**
LOCATION: DEDICATED KWH METER
CODE REF: NEC 690.4(B) UTILITY

8 **WARNING**
PHOTOVOLTAIC SYSTEM
COMBINER PANEL
DO NOT ADD LOADS
LOCATION: AC COMBINER PANEL
CODE REF: NEC 690.13(B)

9 **MAXIMUM VOLTAGE: 480VDC**
MAXIMUM CIRCUIT CURRENT: 15.0ADC
**MAX. RATED OUTPUT CURRENT
OF THE CHARGE CONTROLLER
OR DC-TO-DC- CONVERTER
(IF INSTALLED) 15.0ADC**
LOCATION: DC DISCONNECT
INVERTER
CODE REF: UTILITY

10 **WARNING**
ELECTRICAL SHOCK HAZARD
TERMINALS ON BOTH LINE AND
LOAD SIDES MAY BE ENERGIZED
IN THE OPEN POSITION
DC VOLTAGE IS ALWAYS PRESENT
WHEN SOLAR MODULES ARE
EXPOSED TO SUNLIGHT
LOCATION: DC DISCONNECT, COMBINE BOX
CODE REF: NEC 690.13(B)

11 **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.
LOCATION: MAIN SERVICE (OUTSIDE COVER)
CODE REF: NEC 690.12
NEC 690.56(C)(1)(a)
YELLOW STICKER

12 **WARNING PHOTOVOLTAIC POWER SOURCE**
LOCATION: DC CONDUIT
JUNCTION BOX
NO MORE THAN 10FT
CODE REF: NEC 690.31(G)(3)
NEC 690.31(G)(4)
REFLECTIVE AND WEATHER RESISTANT

LABEL REQUIRES CAPITALIZED LETTERS WITH A MINIMUM HEIGHT OF 3/8 INCH, WHITE LETTERS ON RED BACKGROUND
LABELS SHALL BE PLACED ON INTERIOR AND EXTERIOR DC CONDUIT, RACEWAYS, ENCLOSURES, AND CABLE ASSEMBLIES
EVERY 10 FEET, WITHIN 1 FOOT OF TURNS OR BENDS AND WITHIN 1 FOOT ABOVE AND BELOW PENETRATIONS OF
ROOF/CEILING ASSEMBLIES, WALLS OR BARRIERS.

13 **CAUTION**
DUAL POWER SOURCE
SECOND SOURCE IS
PHOTOVOLTAIC
LOCATION: SERVICE METER
MAIN PANEL
CODE REF: UTILITY

14 **WARNING**
INVERTER OUTPUT CONNECTION
DO NOT RELOCATE THIS
OVERCURRENT DEVICE
LOCATION: (IF APPLICABLE)
SERVICE PANEL
CODE REF: NEC 705.12(7)

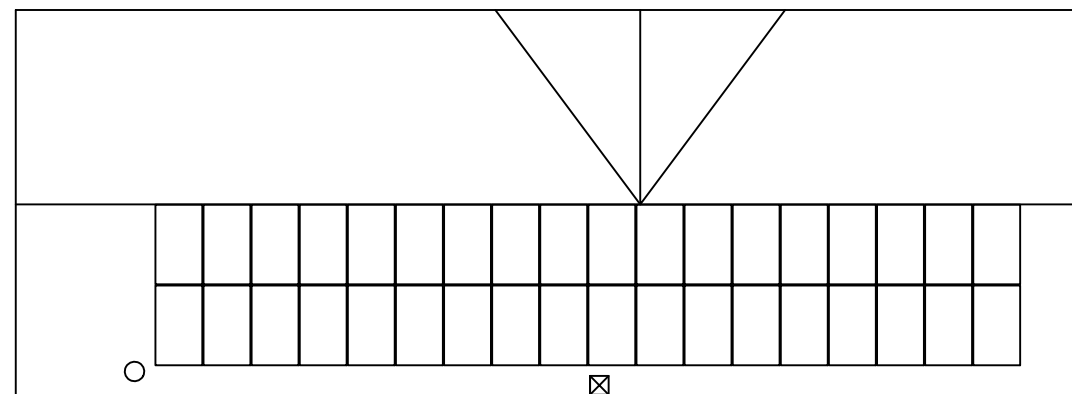
15 **PHOTOVOLTAIC SYSTEM
UTILITY DISCONNECT SYSTEM**
LOCATION: AC DISCONNECT
CODE REF: UTILITY

16 **PV SOLAR BREAKER**
DO NOT RELOCATE THIS
OVERCURRENT DEVICE
LOCATION: MAIN PANEL (EXTERIOR)
PV BREAKER (INTERIOR)
CODE REF: NEC 705.12(B)(2)(3)(B)



CAUTION

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



UTILITY AC DISCONNECT
UTILITY PV METER
INVERTER

DIRECTORY PLAQUE IN
ACCORDANCE WITH
NEC690.56(A)(B), 705.10



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12.240 kW DC SYSTEM SIZE
10.000 kW AC SYSTEM SIZE

DATE: 12/28/2020
REV:A
DRAWN BY: DH

PLACARD
PV 8

Single Phase Inverter with HD-Wave Technology

for North America

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

12-25 YEAR WARRANTY



INVERTERS

Single Phase Inverter with HD-Wave Technology for North America

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

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
APPLICABLE TO INVERTERS WITH PART NUMBER	SEXXXXH-XXXXXX4							
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							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	600ka 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.

Single Phase Inverter with HD-Wave Technology for North America

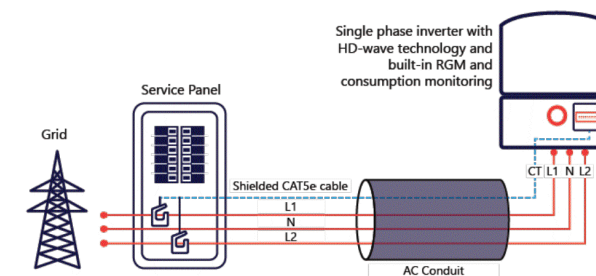
SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US

MODEL NUMBER	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
ADDITIONAL FEATURES								
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)							
Revenue Grade Metering, ANSI C12.20	Optional ⁽¹⁾							
Consumption metering								
Inverter Commissioning	With the SetApp mobile application using Built-in Wi-Fi Access Point for Local Connection							
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 (H)							
Emissions	FCC Part 15 Class B							
INSTALLATION SPECIFICATIONS								
AC Output Conduit Size / AWG Range	1" Maximum / 14-6 AWG			1" Maximum / 14-4 AWG				
DC Input Conduit Size / # of Strings / AWG Range	1" Maximum / 1-2 strings / 14-6 AWG			1" Maximum / 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				
Weight with Safety Switch	22 / 10	25.1 / 11.4	26.2 / 11.9	38.8 / 17.6				
Noise	< 25			< 50				
Cooling	Natural Convection							
Operating Temperature Range	-40 to +140 / -40 to +60 ⁽¹⁾							°F / °C
Protection Rating	NEMA 4X (Inverter with Safety Switch)							

⁽¹⁾ Inverter with Revenue Grade Meter P/N: SExxxxH-US000BNC4; Inverter with Revenue Grade Production and Consumption Meter P/N: SExxxxH-US000BN4. For consumption metering, current transformers should be ordered separately: SEACT0750-200NA-20 or SEACT0750-400NA-20, 20 units per box.
⁽²⁾ Full power up to at least 50°C / 122°F; for power de-rating information refer to: <https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf>

How to Enable Consumption Monitoring

By simply wiring current transformers through the inverter's existing AC conduits and connecting them to the service panel, homeowners will gain full insight into their household energy usage helping them to avoid high electricity bills.



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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 and 2017, 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)

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TSP-60522

(36) SILFAB SIL-340 NL
(1) SOLAREGE SE10000H-US
12.240 kW DC SYSTEM SIZE
10.000 kW AC SYSTEM SIZE

DATE: 12/28/2020
REV:A
DRAWN BY: DH


EQUIPMENT SPECIFICATIONS
PV 9

This authorizes the application of the Certification Mark(s) shown below to the models described in the Product(s) Covered section when made in accordance with the conditions set forth in the Certification Agreement and Listing Report. This authorization also applies to multiple listee model(s) identified on the correlation page of the Listing Report.

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Applicant: SolarEdge Technologies Ltd Address: 1 HaMada Street Herzeliya 4673335	Manufacturer: Celestica Romania Address: 88 Soseaua Borsului, Bors, Bihor county, 417075
Country: Israel Contact: Mr. Oren Bachar or Mr. Meir Adest	Country: Romania Contact: Renata Bodan
Phone: +972 9 957 6620 #293 or +972 9 957 6620 #131	Phone: +40-359-403-661
FAX: 972 9 957 6591 Email: OREB.B@SOLAREEDGE.COM MEIR.A@SOLAREEDGE.COM	FAX: +40-722-964-215 Email: rbodan@celestica.com

Party Authorized To Apply Mark: Same as Manufacturer
Report Issuing Office: Cortland NY 13045

Control Number: 4004590 **Authorized by:** 
Ulla-Pia Johansson-Nilsson
for Dean Davidson, Certification Manager



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Intertek Testing Services NA Inc.
545 East Algonquin Road, Arlington Heights, IL 60005
Telephone 800-345-3851 or 847-439-5667 Fax 312-283-1672

Standard(s): Inverters, Converters, Controllers And Interconnection System Equipment For Use With Distributed Energy Resources [UL 1741:2010 Ed.2(Supplement SA)+R:07Sep2016] Power Conversion Equipment [CSA C22.2#107.1:2016 Ed.4]. UL SUBJECT 1699B Issued: 2013/01/14 Ed: 2 Outline of Investigation for Photovoltaic (PV) DC ARC-Fault Circuit Protection
Product: Grid support Utility Interactive Inverter - Non Isolated Photovoltaic Inverter with MPPT function and Rapid
Brand Name: SolarEdge
Models: SE3000H-US, SE3800H-US, SE5000H-US, SE6000H-US, SE7600H-US, SE10000H-US and SE11400H-US


HEG

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Applicant: SolarEdge Technologies Ltd Address: 1 HaMada Street Herzeliya 4673335	Manufacturer: Jabil Circuit (Guangzhou) LTD Address: DEV EAST DISTRICT 128 JUN CHENG RD GUANGZHOU, GUANGDONG 510530 China
Country: Israel Contact: Mr. Oren Bachar or Mr. Meir Adest	Country: China Contact: Elaine Ouyang
Phone: +972 9 957 6620 #293 or +972 9 957 6620 #131	Phone: 020-2805-4025/ 135-7023-5852
FAX: 972 9 957 6591 Email: OREB.B@SOLAREEDGE.COM MEIR.A@SOLAREEDGE.COM	FAX: N/A Email: Elaine.ouyang@jabil.com

Party Authorized To Apply Mark: Same as Manufacturer
Report Issuing Office: Cortland NY 13045

Control Number: 4004590 **Authorized by:** 
Ulla-Pia Johansson-Nilsson
for Dean Davidson, Certification Manager



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Brand Name: SolarEdge
Models: SE3000H-US, SE3800H-US, SE5000H-US, SE6000H-US, SE7600H-US, SE10000H-US and SE11400H-US

HEG



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(1) SOLAREEDGE SE10000H-US
12.240 kW DC SYSTEM SIZE
10.000 kW AC SYSTEM SIZE

DATE: 12/28/2020
REV:A
DRAWN BY: DH

EQUIPMENT
SPECIFICATIONS
PV 10

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



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		Vdc	
Maximum Short Circuit Current (Isc)	11			10.1	11.75	11		14	Adc	
Maximum Efficiency	99.5									
Weighted Efficiency	98.8							98.6		%
Overtolerance Category	II									
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREEDGE INVERTER)										
Maximum Output Current					15					Adc
Maximum Output Voltage	60					85			Vdc	
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREEDGE INVERTER OR SOLAREEDGE 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.

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 DRAWN BY: DH

EQUIPMENT SPECIFICATIONS
PV 11



TITAN

SOLAR PANEL

60 Cell Monocrystalline PV Module



CHUBB
* Chubb provides error and omission insurance to Silfab Solar Inc.

SIL-340 NL
POWERED BY
SILFAB SOLAR



INDUSTRY LEADING WARRANTY

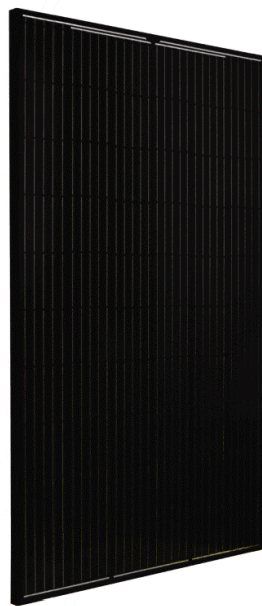
The Titan Solar Panel is manufactured by Silfab Solar and includes an industry leading 25-year product workmanship and 30-year performance warranty.

MAXIMUM ENERGY OUTPUT

Leveraging over 35+ years of worldwide experience in the solar industry, Silfab is dedicated to superior manufacturing processes and innovations such as Bifacial and Back Contact technologies, to ensure our partners, such as Titan Solar have the latest in solar innovation.

NORTH AMERICAN QUALITY

Silfab is the leading automated solar module manufacturer in North America. Utilizing premium quality materials and strict quality control management to deliver the highest efficiency, premium quality PV modules 100% made in North America.



BAA / ARRA COMPLIANT

Panels are designed and manufactured to meet Buy American Act Compliance. The US State Department, US Military and FAA have all utilized Silfab panels in their solar installations.

LIGHT AND DURABLE

Engineered to accommodate high wind load conditions for test loads validated up to 4000Pa uplift. The light-weight frame is exclusively designed for wide-ranging racking compatibility and durability.

QUALITY MATTERS

Total automation ensures strict quality controls during the entire manufacturing process at ISO certified facilities.

DOMESTIC PRODUCTION

Silfab Solar manufactures PV modules in two automated locations within North America. Our 500+ North American team is ready to help Titan Solar win the hearts and minds of customers, providing customer service and product delivery that is direct, efficient and local.

AESTHETICALLY PLEASING

All black sleek design, ideal for high-profile residential or commercial applications.

PID RESISTANT

PID Resistant due to advanced cell technology and material selection. In accordance to IEC 62804-1.

Electrical Specifications	SIL-340 NL mono PERC			
Test Conditions		STC		NOCT
Module Power (Pmax)	Wp	340		241
Maximum power voltage (Vpmax)	V	33.7		30.4
Maximum power current (Ipmax)	A	10.1		7.9
Open circuit voltage (Voc)	V	40.9		37.1
Short circuit current (Isc)	A	10.5		8.3
Module efficiency	%	20.0		17.7
Maximum system voltage (VDC)	V		1000	
Series fuse rating	A		20	
Power Tolerance	Wp		+/-3%	
Measurement conditions: STC 1000 W/m ² • AM 1.5 • Temperature 25 °C • NOCT 800 W/m ² • AM 1.5 • Measurement uncertainty ≤ 3% • Sun simulator calibration reference modules from Fraunhofer Institute. Electrical characteristics may vary by ±5% and power by +/-3%.				
Temperature Ratings	SIL-340 NL mono PERC			
Temperature Coefficient Isc		0.064 %/°C		
Temperature Coefficient Voc		-0.28 %/°C		
Temperature Coefficient Pmax		-0.36 %/°C		
NOCT (± 2°C)		46 °C		
Operating temperature		-40/+85 °C		
Mechanical Properties and Components	SIL-340 NL mono PERC			
Module weight		41 ± 0.4 lbs		
Dimensions (H x L x D)		66.9 in x 39.4 in x 1.5 in		
Maximum surface load (wind/snow)*		83.5/112.8 lb/ft ²		
Hail impact resistance		ø 1 in at 51.6 mph		
Cells		60 - Si mono PERC - 5 busbar, 6.25 x 6.25 Inch		
Glass		0.126 in high transmittance, tempered, DSM anti-reflective coating		
Cables and connectors (refer to installation manual)		47.2 in, ø 0.22 in, MC4 from Staubli		
Backsheet		High durability, superior hydrolysis and UV resistance, multi-layer dielectric film, fluorine-free PV backsheet		
Frame		Anodized Aluminum (Black)		
Bypass diodes		3 diodes-30SQ045T (45V max DC blocking voltage, 30A max forward rectified current)		
Junction Box		UL 3730 Certified, IEC 62790 Certified, IP67 rated		
Warranties	SIL-340 NL mono PERC			
Module product workmanship warranty		25 years**		
		30 years		
Linear power performance guarantee		≥ 97.1% end 1 st year	≥ 91.6% end 12 th year	≥ 85.1% end 25 th year ≥ 82.6% end 30 th year
Certifications	SIL-340 NL mono PERC			
Product		ULC ORD C1703, UL1703, CEC listed***, UL 61215-1/-1-1/-2, UL 61730-1/-2, IEC 61215-1/-1-1/-2***, IEC 61730-1/-2***, CSA C22.2#61730-1/-2***, IEC 62716 Ammonia Corrosion; IEC61701:2011 Salt Mist Corrosion Certified, UL Fire Rating: Type 2		
		ISO9001:2015		
Factory		Modules Per Pallet: 26 Pallets Per Truck: 36 Modules Per Truck: 936		

*Warning. Read the Safety and Installation Manual for mounting specifications and before handling, installing and operating modules.
 **12 year extendable to 25 years subject to registration and conditions outlined under "Warranty" at www.silfabsolar.com.
 ***September 2020 expected completion date.
 PAN files generated from 3rd party performance data are available for download at: www.silfabsolar.com/downloads

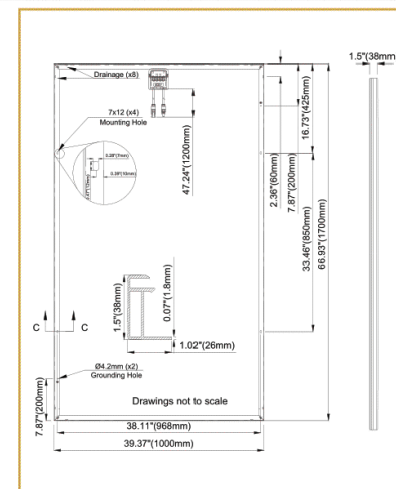


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10.000 kW AC SYSTEM SIZE

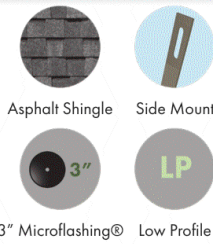
DATE: 12/28/2020
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DRAWN BY: DH

EQUIPMENT
SPECIFICATIONS
PV 12



Patent #8448407

LOW PROFILE QUICKBOLT
With 3" Microflashing® | Fixed Height



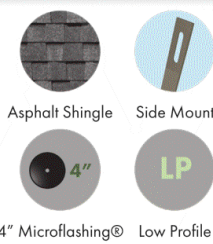
PN#	BOX QTY
17664	5.25" Bolts (10)
17666	Bolts + 3" Microflashing® (10ea.)
17667SS	Bolts + 3" Microflashing® + SS L-Foot + Nuts (25ea.)

First & only Microflashing® in the industry
Stainless Steel L-Foot
Fastest installation in the industry
UL Certified



Patent #8448407

LOW PROFILE QUICKBOLT
With 4" Microflashing® | Fixed Height



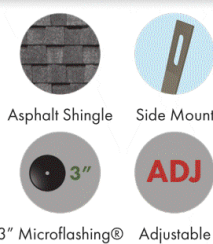
PN#	BOX QTY
17664	5.25" Bolts (10)
17720	Bolts + 4" Microflashing® (10ea.)
17721SS	Bolts + 4" Microflashing® + SS L-Foot + Nuts (20ea.)

First & only Microflashing® in the industry
Stainless Steel L-Foot
4" Microflashing® provides more coverage
Fastest installation in the industry
UL Certified



Patent #8448407

7" QUICKBOLT
With 3" Microflashing® | Adjustable



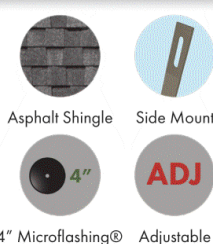
PN#	BOX QTY
17670	7" Bolts (10)
17671	Bolts + 3" Microflashing® (10ea.)
17672SS	Bolts (20) + 3" Microflashing® (20) + SS L-Foot (20) + Nuts (40)

First & only Microflashing® in the industry
Stainless Steel L-Foot
UL Certified



Patent #8448407

7" QUICKBOLT
With 4" Microflashing® | Adjustable



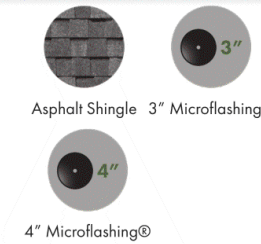
PN#	BOX QTY
17670	7" Bolts (10)
17723	Bolts + 4" Microflashing® (10ea.)
17724SS	Bolts (15) + 4" Microflashing® (15) + SS L-Foot (15) + Nuts (30)

First & only Microflashing® in the industry
Stainless Steel L-Foot
4" Microflashing® provides more coverage
UL Certified



Patent #8448407

3" & 4" MICROFLASHING®
For QuickBOLT



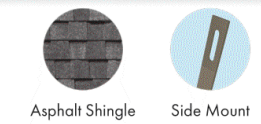
PN#	BOX QTY
17669	3" Microflashing® (10)
17659	4" Microflashing® (40)

First & only Microflashing® in the industry
Original Microflashing® design
EPDM on bottom, Stainless Steel on top
Compresses to composite shingle roof
Leak-proof seal
UL Certified



Patent #8448407

LOW PROFILE & OFFSET L-FOOT
For QuickBOLT



PN#	BOX QTY
15891SS	SS L-Foot (10)
15894SS	SS L-Foot (10)

Stainless Steel
Rail slot for adjustability when connecting T-Bolts



Patent #8448407

QUICK RATCHET CONDUIT CLAMP
For QuickBOLT Mounting Kits



PN#	BOX QTY	SCREW SIZE
16255	10 Clamps	N/A

For running conduit
Attaches directly to any QuickBOLT Mounting Kit
Offers flexibility in bundling cables/wires



Patent #8448407

L-FOOT MOUNTING KIT
Fixed Height | Black Galva Flashing



PN#	BOX QTY	SCREW SIZE
17713	20 Flashing + L-Foot	5/16" x 4"

Stainless Steel L-Foot mounting system
Stronger than Aluminum Flashing



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SEPERMITTING@TITANSOLARPOWER.COM
(877) 997-7652

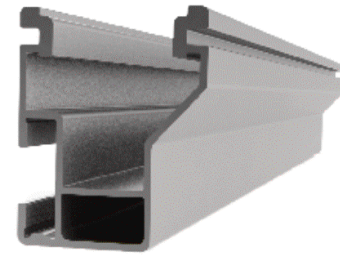
LANNING, MICHAEL RESIDENCE
55 GAMACHE LN, LILLINGTON, NC, 27546
LAT:35.318159, LON:-79.003292
TSP-60522

(36) SILFAB SIL-340 NL
(1) SOLAREEDGE SE10000H-US
12.240 kW DC SYSTEM SIZE
10.000 kW AC SYSTEM SIZE

DATE: 12/28/2020
REV:A
DRAWN BY: DH

EQUIPMENT
SPECIFICATIONS
PV 13

CrossRail 48-X

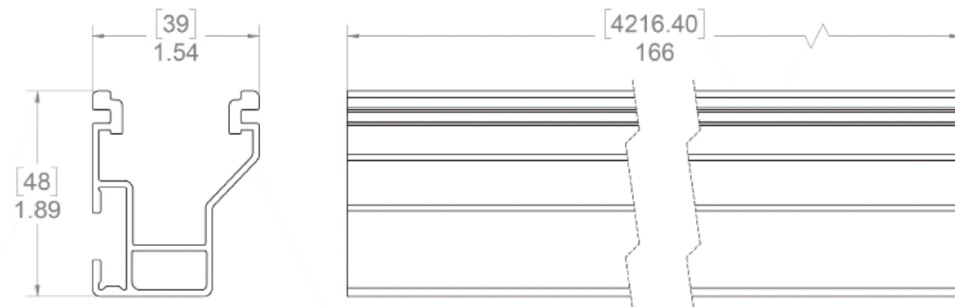


Mechanical Properties

CrossRail 48-X	
Material	6000 Series Aluminum
Ultimate Tensile Strength	37.7 ksi (260 MPa)
Yield Strength	34.8 ksi (240 MPa)
Weight	0.56 lbs/ft (0.833 kg/m)
Finish	Mill or Dark Anodized

Section Properties

CrossRail 48-X	
Sx	0.1980 in ³ (3.261 cm ³)
Sy	0.1510 in ³ (2.507 cm ³)
A (X-Section)	0.4650 in ² (3.013 cm ²)



Dimensions in [mm] Inches

Notes:

- ▶ Structural values and span charts determined in accordance with Aluminum Design Manual and ASCE 7-10
- ▶ UL2703 Listed System for Fire and Bonding

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