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

LOUWS, STEPHEN PV SYSTEM
124 LAHINCH DR.
FUQUAY-VARINA, NC, 27526
JURISDICTION: HARNETT COUNTY
UTILITY:DUKE PROGRESS NC

GENERAL INFORMATION

SYSTEM SIZE:	6.390 kW-DC-STC
	5.000 kW-AC
ROOF PITCHED:	30 DEGREES
INVERTER:	(1) SOLAREDGE SE5000H-US W/ P370 OPTIMIZERS
MODULES:	(18) LG355N1K-B6
STRINGS:	(2)x9 MODULE SERIES STRINGS
ELECTRICAL SERVICE RATING:	200A
PV SYSTEM OVERCURRENT RATING:	30A
PV SYSTEM DISCONNECT SWITCH:	EATON DG221URB (30A / 2P)
ROOF TYPE:	COMP
ROOF FRAMING:	MANUFACTURED/ENGINEERED TRUSS
RACKING:	EVEREST
ATTACHMENT METHOD:	MIN. 5/16" x 3 ½ LAG SCREWS EA. STANDOFF

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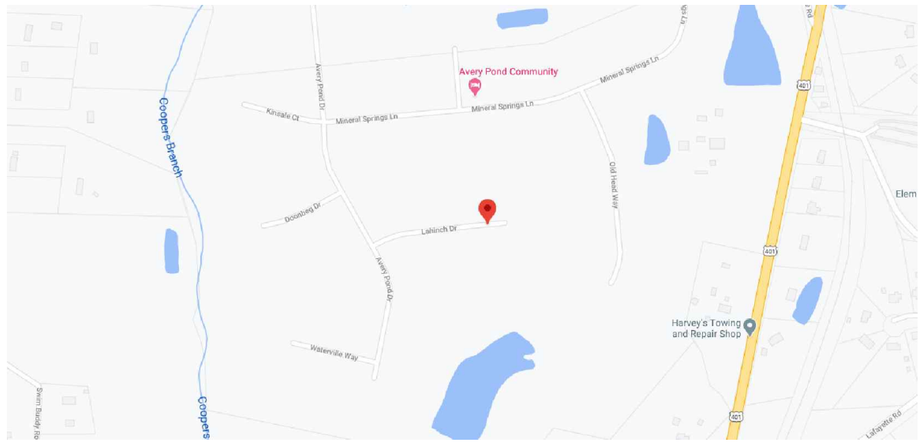
VICINITY MAP

SCALE: NTS



AERIAL MAP

SCALE: NTS

AERIAL IMAGERY
NOT AVAILABLE

NOTES

EQUIPMENT LOCATION

1. ALL EQUIPMENT SHALL MEET MINIMUM SETBACKS AS REQUIRED BY NEC 110.26.
2. WIRING SYSTEMS INSTALLED IN DIRECT SUNLIGHT MUST BE RATED FOR EXPECTED OPERATING TEMPERATURE AS SPECIFIED BY NEC690.31(A),(C) AND NEC TABLES 310.15(B)(2)(A) AND 310.15(B)(3)(C).
3. JUNCTION AND PULL BOXES PERMITTED INSTALLED UNDER PV MODULES ACCORDING TO NEC 690.34.
4. ADDITIONAL AC DISCONNECT(S) SHALL BE PROVIDED WHERE THE INVERTER IS NOT WITHIN SIGHT OF THE AC SERVICING DISCONNECT.
5. ALL EQUIPMENT SHALL BE INSTALLED ACCESSIBLE TO QUALIFIED PERSONNEL ACCORDING TO NEC APPLICABLE CODES.
6. ALL COMPONENTS ARE LISTED FOR THEIR PURPOSE AND RATED FOR OUTDOOR USAGE WHEN APPROPRIATE.

WIRING & CONDUIT NOTES

1. 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.
2. CONDUCTORS SIZED ACCORDING TO NEC 690.8, NEC 690.7.
3. DC WIRING LIMITED TO MODULE FOOTPRINT. MICRO INVERTER WIRING SYSTEMS SHALL BE LOCATED AND SECURED UNDER THE ARRAY WITH SUITABLE WIRING CLIPS.
4. 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

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

TITAN SOLAR POWER
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LOUWS, STEPHEN RESIDENCE
124 LAHINCH DR, FUQUAY-VARINA, NC, 27526
LAT:35.494695, LON:-78.819863
TSP-69987

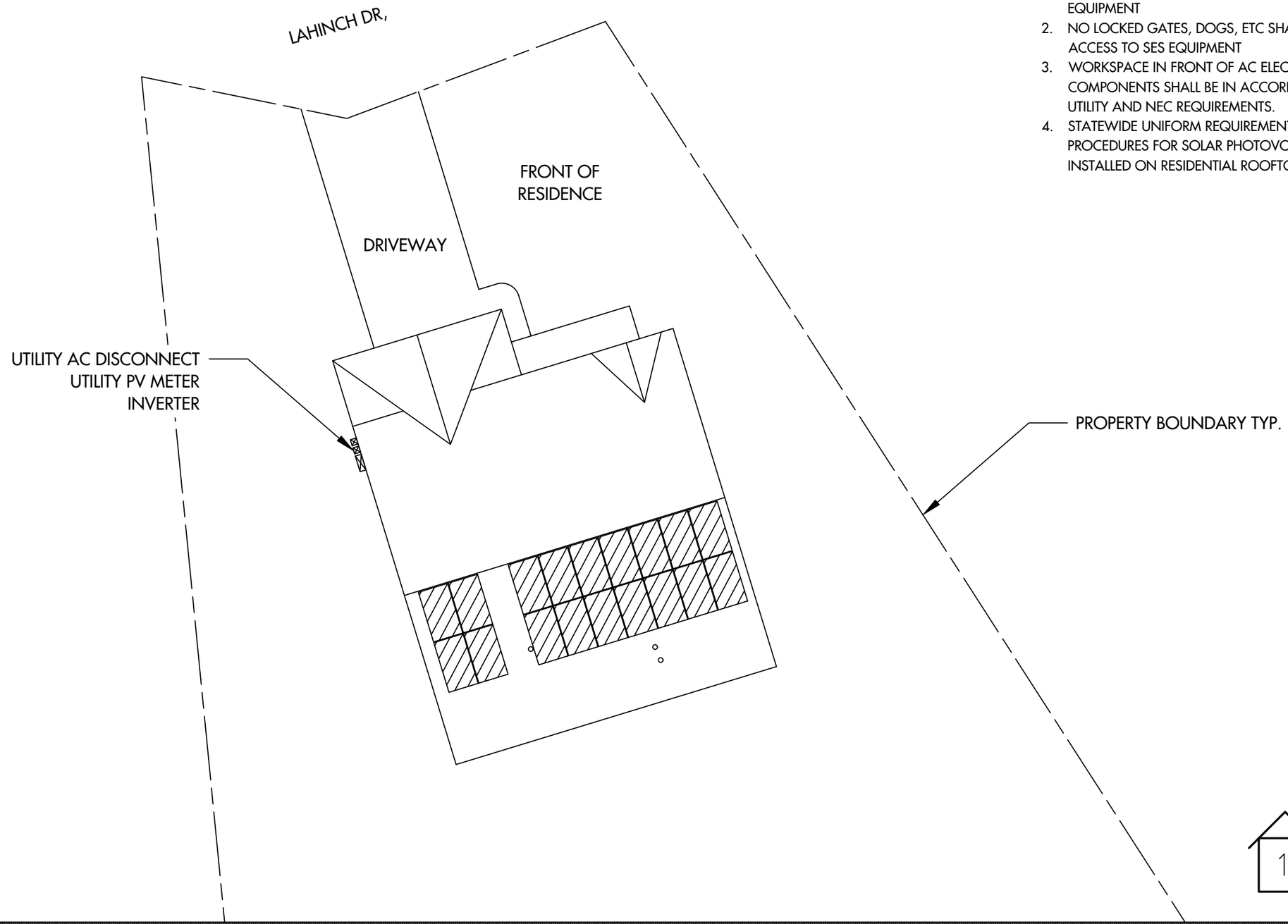
(18) LG355N1K-B6
(1) SOLAREDGE SE5000H-US
6.390 kW DC SYSTEM SIZE
5.000 kW AC SYSTEM SIZE

DATE: 3/30/2021
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.



NOTE: NO GATES - NO FENCES

1

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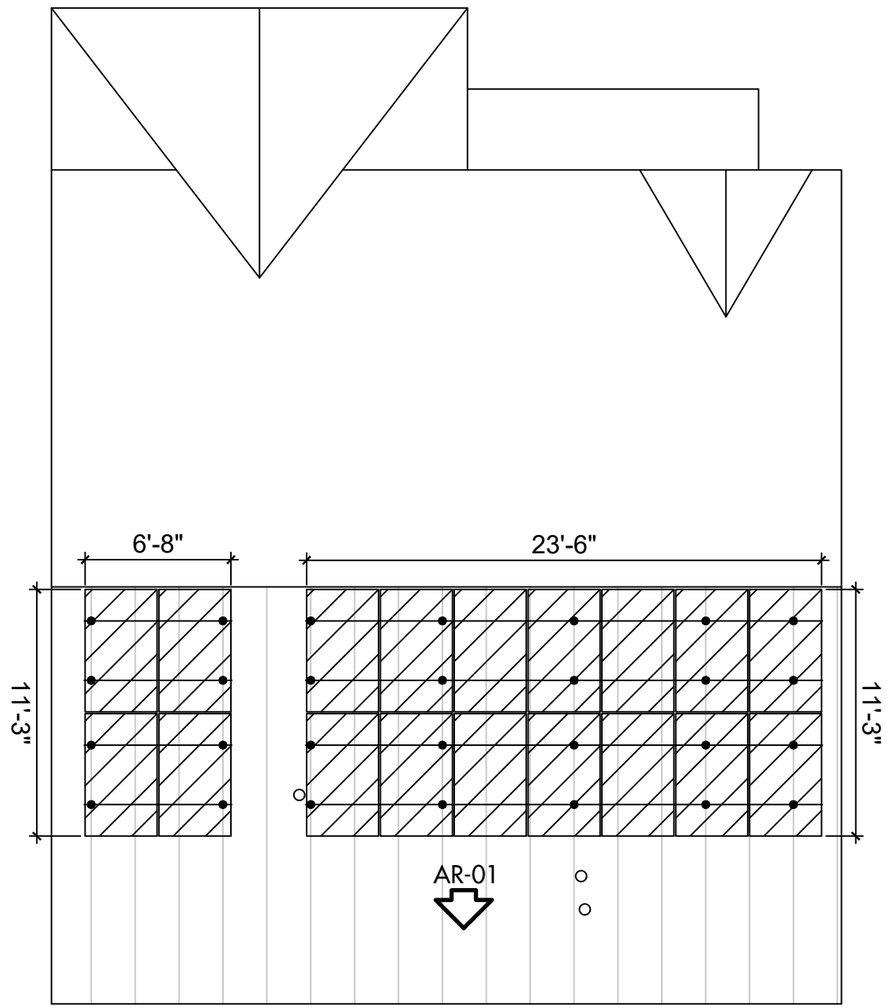
(1) SOLAREDGE SE5000H-US
6.390 kW DC SYSTEM SIZE
5.000 kW AC SYSTEM SIZE

SCALE:0.007259
DATE: 3/30/2021
REV:A
DRAWN BY: DH

SITE PLAN
PV 2

ARRAY
AR-01
QUANTITY: 18
MOUNTING TYPE: FLUSH
ARRAY TILT: 30°
AZIMUTH: 163°
ATTACHMENT SPACING: 6'
ROOF TYPE: COMP



NOTES
- ROOF VENTS, SKYLIGHTS, WILL NOT BE COVERED UPON PV INSTALLATION
- TOTAL ROOF AREA = 1557 SQ-FT
- TOTAL ARRAY AREA = 351.06 SQ-FT
- ARRAY COVERAGE = 22.55%

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(18) LG355N1K-B6
(1) SOLAREDGE SE5000H-US
6.390 kW DC SYSTEM SIZE
5.000 kW AC SYSTEM SIZE

SCALE: 0.012068
DATE: 3/30/2021
REV:A
DRAWN BY: DH

PV LAYOUT
PV 3

MODULE & RACKING INFORMATION
MODULE: LG355N1K-B6
MODULE WEIGHT: 41 LBS
MODULE DIMENSIONS: 68.5" x 41" x1.5"
RACKING/RAIL: QUICKBOLT / EVEREST

ROOF & FRAMING INFORMATION
MATERIAL: COMP
RAFTER/TRUSS SIZE: 2" x 4"
RAFTER/TRUSS SPACING: 2'

ARRAY INFORMATION:

ARRAY 01: 18 MODULES
UPLIFT CALCULATION:
PANEL GROUP AREA: = MODULE AREA: 19.50 SQ.FT * MODULE QTY. 18 = 351.06 SQ.FT

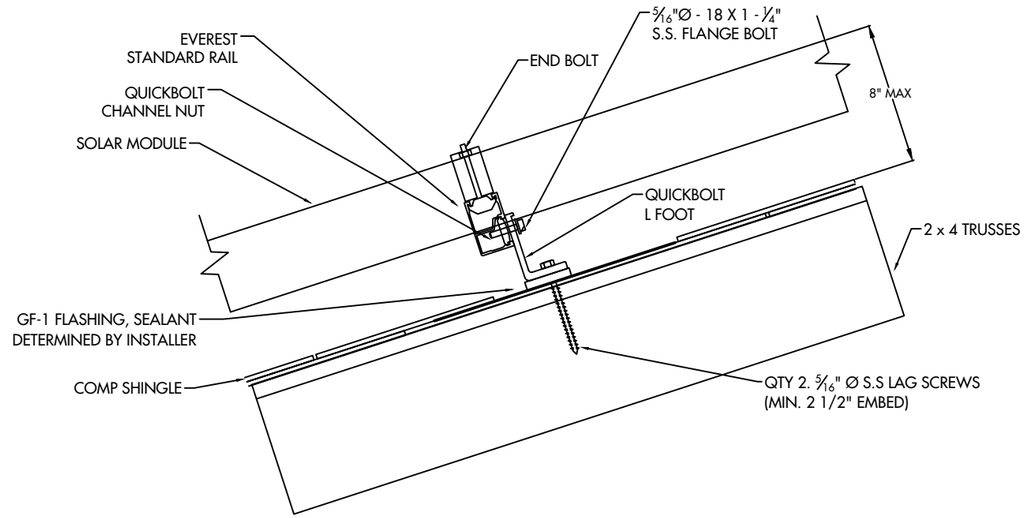
TOTAL UPLIFT: = PANEL GROUP AREA:351.06 SQ. FT. * WIND LOAD 30 PSF = TOTAL LOAD 10531.88 LBS.

POINT LOAD CALCULATION:
ARRAY WEIGHT: MODULE WEIGHT (41 +3.5) * MODULE QTY.18 = 801.00 LBS / 28 MOUNTING POINTS = 28.61 LBS. PER MOUNTING POINT

PULLOUT STRENGTH CALCULATION:
CONNECTOR TYPE: 5/16" LAG SCREW (EMBED MIN. 2.5")
PULLOUT STRENGTH: = OF MOUNTING POINTS: 28 * 2.5 (EMBED DEPTH) * 210 LBS = 14700.00 LBS.

DISTRIBUTED LOAD CALCULATION:
ARRAY WEIGHT: 801.00 LBS. / MODULE GROUP AREA: 351.06 SQ. FT. = 2.28 PSF

MODULE & RACKING WEIGHT:
(MODULE WEIGHT + 3.5LBS) * MODULE QTY.
(44.5 LBS)*18 = 801.00 LBS



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6.390 kW DC SYSTEM SIZE
5.000 kW AC SYSTEM SIZE

DATE: 3/30/2021
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DETAILS
PV 4

PV MODULE

LG355N1K-B6

W	=	355W
ISC	=	10.72 ADC
VOC	=	41.5 VDC
IMP	=	10.15 ADC
VMP	=	35 VDC
TVOC	=	-0.26% / °C

WIRE SCHEDULE

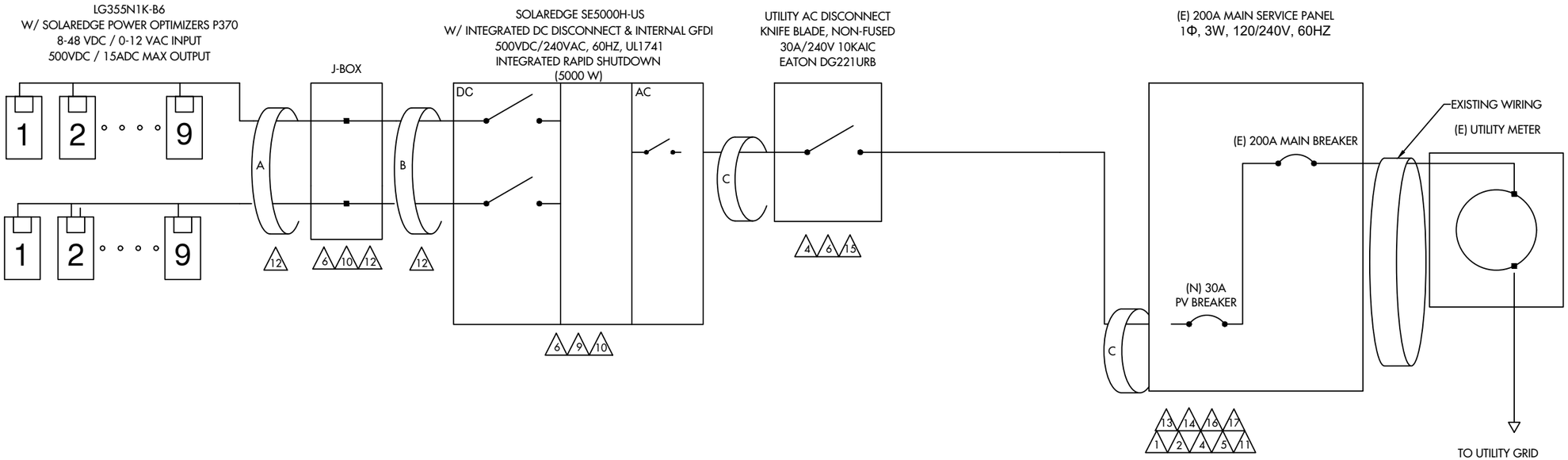
A - (4) #10 AWG-CU PV WIRE (HR)
- (1) #10 AWG-CU BARE COPPER WIRE (GND) IN FREE AIR

B - (4) #10 AWG-CU THWN-2 WIRE (HR)
- (1) #10 AWG-CU THWN-2 WIRE (GND) 3/4" EMT

C - (3) #8 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	=	30A
MAIN BREAKER	=	200A
TOTAL	=	230A



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	=	21A (PER INVERTER SPECS)
MIN. INVERTER OCP	=	26.25A (21A X 1.25)
INVERTER OCP	=	30A
#8 - AWG CU AMPACITY	=	47.85A (55A X 1.0 X 0.87)

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(1) SOLAREDGE SE5000H-US
6.390 kW DC SYSTEM SIZE
5.000 kW AC SYSTEM SIZE

DATE: 3/30/2021
REV:A
DRAWN BY: DH

ONE LINE
PV 5

PV MODULE

LG355N1K-B6

W	=	355W
ISC	=	10.72 ADC
VOC	=	41.5 VDC
IMP	=	10.15 ADC
VMP	=	35 VDC
TVOC	=	-0.26% / °C

WIRE SCHEDULE

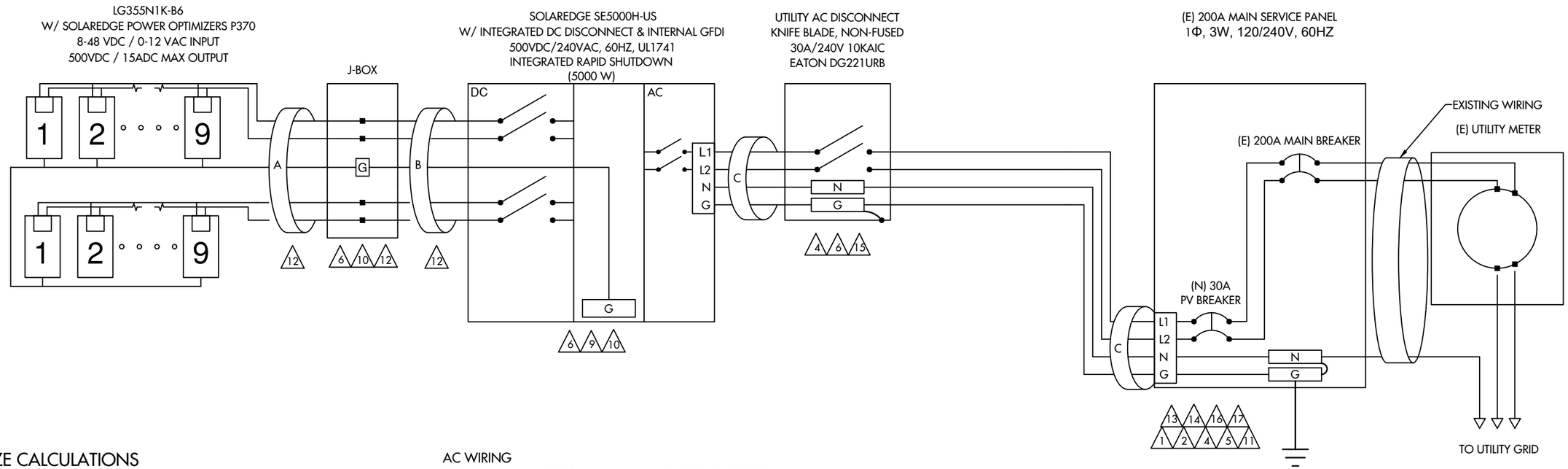
A - (4) #10 AWG-CU PV WIRE (HR)
- (1) #10 AWG-CU BARE COPPER WIRE (GND) IN FREE AIR

B - (4) #10 AWG-CU THWN-2 WIRE (HR)
- (1) #10 AWG-CU THWN-2 WIRE (GND) 3/4" EMT

C - (3) #8 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	=	30A
MAIN BREAKER	=	200A
TOTAL	=	230A



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	=	21A (PER INVERTER SPECS)
MIN. INVERTER OCP	=	26.25A (21A X 1.25)
INVERTER OCP	=	30A
#8 - AWG CU AMPACITY	=	47.85A (55A X 1.0 X 0.87)

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(1) SOLAREDGE SE5000H-US
6.390 kW DC SYSTEM SIZE
5.000 kW AC SYSTEM SIZE

DATE: 3/30/2021
REV:A
DRAWN BY: DH

THREE LINE
PV 6

1

⚠ CAUTION
PHOTOVOLTAIC SYSTEM CIRCUIT IS BACKFED

LOCATION: BACKFED BREAKER
CODE REF: NEC 705.12(4)

2

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

INVERTER OUTPUT CURRENT DEVICE. DO NOT RELOCATE THIS OVERCURRENT DEVICE.

LOCATION: BACKFED BREAKER
CODE REF: 2017 NEC 705.12(2)(3)(b)

3

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

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: 21AAC
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
ELECTRICAL SHOCK HAZARD
TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

PHOTOVOLTAIC 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

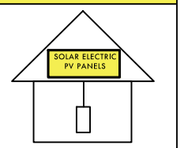
DC VOLTAGE IS ALWAYS PRESENT WHEN SOLAR MODULES ARE EXPOSED TO SUNLIGHT

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)

17

⚠ WARNING
TURN OFF PHOTOVOLTAIC AC DISCONNECT PRIOR TO WORKING INSIDE PANEL

LOCATION: MAIN PANEL:(EXTERIOR)
CODE REF: OSHA 1910.145

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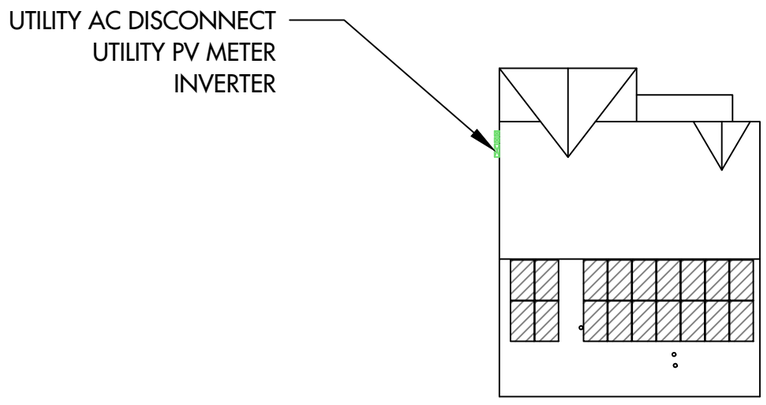
6.390 kW DC SYSTEM SIZE
5.000 kW AC SYSTEM SIZE

DATE: 3/30/2021
REV:A
DRAWN BY: DH

LABELS
PV 7

CAUTION

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



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

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6.390 kW DC SYSTEM SIZE
5.000 kW AC SYSTEM SIZE

DATE: 3/30/2021
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

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 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)

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

Single Phase Inverter with HD-Wave Technology for North America

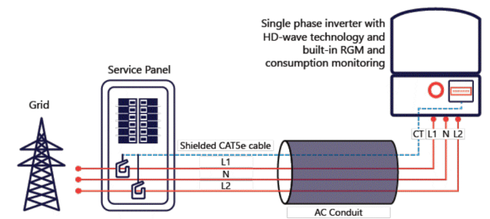
SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/ SE7600H-US / SE10000H-US / SE11400H-US

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[3]							
Consumption metering	Optional[3]							
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 (HI)							
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		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							
Operating Temperature Range	-40 to +140 / -40 to +60[4]							°F / °C
Protection Rating	NEMA 4X (Inverter with Safety Switch)							

[3] Inverter with Revenue Grade Meter P/N: SExxxxH-US000BNC4; Inverter with Revenue Grade Production and Consumption Meter P/N: SExxxxH-US000BNI4 . For consumption metering, current transformers should be ordered separately: SEACT0750-200NA-20 or SEACT0750-400NA-20. 20 units per box.
[4] 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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TSP-69987

(18) LG355N1K-B6
(1) SOLAREDGE SE5000H-US
6.390 kW DC SYSTEM SIZE
5.000 kW AC SYSTEM SIZE

DATE: 3/30/2021
REV:A
DRAWN BY: DH

EQUIPMENT SPECIFICATIONS
PV 9

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Total Quality. Assured.

AUTHORIZATION TO MARK

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.

This document is the property of Intertek Testing Services and is not transferable. The certification mark(s) may be applied only at the location of the Party Authorized To Apply Mark.

Applicant:	SolarEdge Technologies Ltd	**Manufacturer:**	Celestica Romania
Address:	1 HaMada Street Herzeliya 4673335	**Address:**	88 Soseaua Borsului, Bors, Bihor county, 417075
Country:	Israel	**Country:**	Romania
Contact:	Mr. Oren Bachar or Mr. Meir Adest	**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	**FAX:**	+40-722-964-215
Email:	OREB.B@SOLAREDGE.COM MEIR.A@SOLAREDGE.COM	**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

C ETL LISTED US
Intertek

This document supersedes all previous Authorizations to Mark for the noted Report Number.

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

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Applicant:	SolarEdge Technologies Ltd	**Manufacturer:**	Jabil Circuit (Guangzhou) LTD
Address:	1 HaMada Street Herzeliya 4673335	**Address:**	DEV EAST DISTRICT 128 JUN CHENG RD GUANGZHOU, GUANGDONG 510530
Country:	Israel	**Country:**	China
Contact:	Mr. Oren Bachar or Mr. Meir Adest	**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	**FAX:**	N/A
Email:	OREB.B@SOLAREDGE.COM MEIR.A@SOLAREDGE.COM	**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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ATM for Report 102144760CRT-001e Page 1 of 2 ATM Issued: 10-Oct-2017
ED 16.3.15 (20-Apr-17) Mandatory

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(1) SOLAREDGE SE5000H-US
6.390 kW DC SYSTEM SIZE
5.000 kW AC SYSTEM SIZE

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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

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

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(18) LG355N1K-B6
(1) SOLAREDGE SE5000H-US
6.390 kW DC SYSTEM SIZE
5.000 kW AC SYSTEM SIZE

DATE: 3/30/2021
REV:A
DRAWN BY: DH

EQUIPMENT SPECIFICATIONS
PV 11

LG NeON®2 Black

The LG NeON® 2 Black is one of the most powerful and versatile modules on the market today, combining LG's Cello technology and monocrystalline N-type solar cells with a stunning black design. The LG NeON® 2 Black includes a 25-year product and 90.1% performance warranty for higher performance and reliability.

FEATURES

Enhanced Performance Warranty
LG NeON®2 Black comes with an enhanced performance warranty. After 25 years of use, the LG NeON®2 Black is guaranteed to provide at least 90.1% of initial performance.

Industry-Leading Product Warranty
LG offers an industry-leading 25 year product warranty on the NeON®2 Black.

Reliable Quality
LG NeON®2 Black offers reliable and proven quality through rigorous testing.

Sleek Rooftop Design
The LG NeON®2 Black is designed to make the entire module look black, providing a sleek, modern design that blends in seamlessly with the rooftop.

LG355N1K-B6

60cell

About LG Electronics
LG is transforming today's solar landscape, offering high-efficiency solar panels for customers who demand high performance, reliability and consistently strong energy yield from a brand they can trust. LG's modules feature high power outputs, outstanding durability, appealing aesthetics and high-efficiency technology.

Life's Good

LG NeON®2 Black

Preliminary

LG355N1K-B6

General Data

Cell Properties (Material / Type)	Monocrystalline / N-type
Cell Maker	LG
Cell Configuration	60 Cells (6 x 10)
Number of Busbars	12 EA
Module Dimensions (L x W x H)	1,740 x 1,042 x 40mm
Weight	18.6 kg
Glass (Material)	Tempered Glass with AR coating
Backsheet (Color)	Black
Frame (Material)	Anodized Aluminium
Junction Box (Protection Degree)	IP 68 with 3 Bypass Diodes
Cables (Length)	1,100 mm x 2 EA
Connector (Type / Maker)	MC4 / MC

Certifications and Warranty

Certifications	IEC 61215-1 / -1-1 / 2:2016, IEC 61730-1 / 2:2016, UL 61730-1:2017, UL 61730-2:2017
	ISO 9001, ISO 14001, ISO 50001
	OHSAS 18001
Salt Mist Corrosion Test	IEC 61701 : 2011 Severity 6
Ammonia Corrosion Test	IEC 62716 : 2013
Module Fire Performance	Type 2 (UL 61730)
Fire Rating	Class C (UL 790)
Solar Module Product Warranty	25 Years
Solar Module Output Warranty	Linear Warranty*

* 1) First years : 98%, 2) After 1st year : -0.33%/year, 3) 90.1% for 25 years

Temperature Characteristics

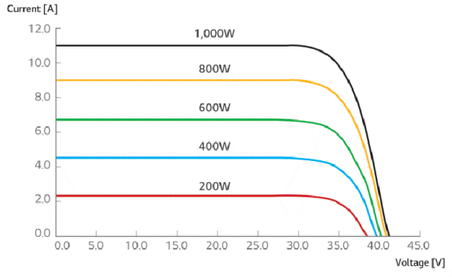
NMOT*	[°C]	42 ± 3
Pmax	[%/°C]	-0.35
Voc	[%/°C]	-0.26
Isc	[%/°C]	0.03

* NMOT (Nominal Module Operating Temperature)
: Irradiance 800W/m², Ambient temperature 20°C, Wind speed 1m/s, Spectrum AM 1.5

Electrical Properties (NMOT)

Model		LG355N1K-B6
Maximum Power (Pmax)	[W]	266
MPP Voltage (Vmpp)	[V]	32.9
MPP Current (Impp)	[A]	8.10
Open Circuit Voltage (Voc)	[V]	39.1
Short Circuit Current (Isc)	[A]	8.61

I-V Curves



Electrical Properties (STC*)

Model		LG355N1K-B6
Maximum Power (Pmax)	[W]	355
MPP Voltage (Vmpp)	[V]	35.0
MPP Current (Impp)	[A]	10.15
Open Circuit Voltage (Voc, ± 5%)	[V]	41.5
Short Circuit Current (Isc, ± 5%)	[A]	10.72
Module Efficiency	[%]	19.6
Power Tolerance	[%]	0 ~ +3

* STC (Standard Test Condition)
: Irradiance 1,000 W/m², Cell temperature 25°C, AM 1.5, Measure tolerance of Pmax : ±3%

Operating Conditions

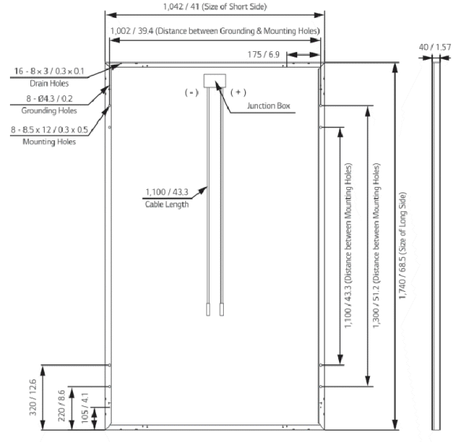
Operating Temperature	[°C]	-40 ~ +85
Maximum System Voltage	[V]	1,000
Maximum Series Fuse Rating	[A]	20
Mechanical Test Load* (Front)	[Pa]	5,400
Mechanical Test Load* (Rear)	[Pa]	4,000

* Based on IEC 61215-2 : 2016 (Test Load = Design Load x Safety Factor(1.5))
※ Mechanical Test Loads 6,000 Pa / 5,400 Pa based on IEC 61215 : 2005

Packaging Configuration

Number of Modules Per Pallet	[EA]	25
Number of Modules Per 40ft HQ Container	[EA]	650
Packaging Box Dimensions (L x W x H)	[mm]	1,790 x 1,120 x 1,213
Packaging Box Gross Weight	[kg]	500

Dimensions (mm/inch)



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Energy Business Division
LG Twin Towers, 128 Yeoui-daero, Yeongdeungpo-gu, Seoul 07336, Korea
www.lg-solar.com

Life's Good

Product specifications are subject to change without notice.

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EQUIPMENT SPECIFICATIONS
PV 12

LOW PROFILE **QUICKBOLT**
With 3" Microflashing® | Fixed Height

Asphalt Shingle · Side Mount · 3" Microflashing® · Low Profile

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

Asphalt Shingle · Side Mount · 4" Microflashing® · Low Profile

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

Asphalt Shingle · Side Mount · 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

Asphalt Shingle · Side Mount · 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

Asphalt Shingle · 3" Microflashing® · 4" Microflashing®

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

Asphalt Shingle · Side Mount

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

Stainless Steel
Rail slot for adjustability when connecting T-Bolts

QUICK RATCHET CONDUIT CLAMP
For QuickBOLT Mounting Kits

Asphalt Shingle

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

L-FOOT MOUNTING KIT
Fixed Height | Black Galva Flashing

Asphalt Shingle · Side Mount · Screw Kits

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

Stainless Steel L-Foot mounting system
Stronger than Aluminim Flashing

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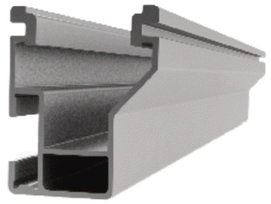
EQUIPMENT SPECIFICATIONS
PV 13

CrossRail 48-X

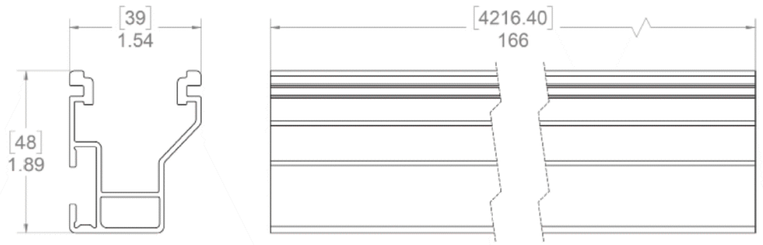


Mechanical Properties

	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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124 LAHINCH DR, FUQUAY-VARINA, NC, 27526
LAT:35.494695, LON:-78.819863
TSP-69987

(18) LG355N1K-B6
(1) SOLAREDGE SE5000H-US
6.390 kW DC SYSTEM SIZE
5.000 kW AC SYSTEM SIZE

DATE: 3/30/2021
REV:A
DRAWN BY: DH

EQUIPMENT SPECIFICATIONS
PV 14