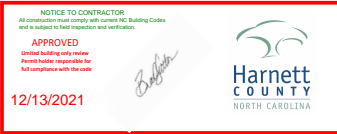


BUILDING CODES: 2017 NEC, AND 2018 NORTH CAROLINA RESIDENTIAL CODE

QUINTANILLA, ESMERELDA PV SYSTEM
135 BELLINI DRIVE.
ANGIER, NC, 27501
JURISDICTION: TOWN OF ANGIER
UTILITY:DUKE ENERGY NC



GENERAL INFORMATION

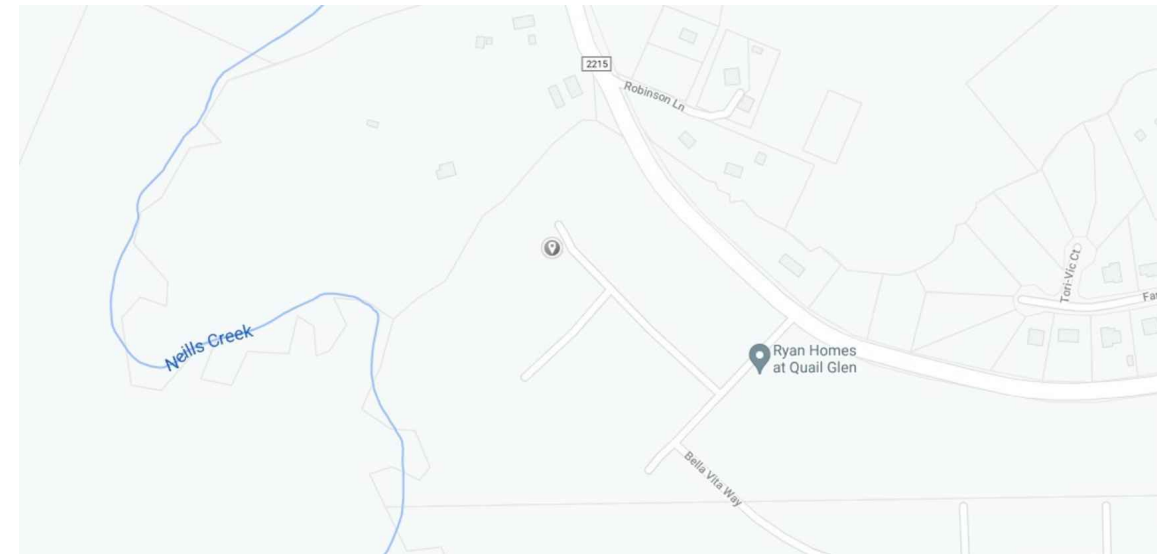
SYSTEM SIZE: 4.970 kW-DC-STC
 3.800 kW-AC
 ROOF PITCHED: 33 DEGREES
 INVERTER: (1) SOLAREEDGE SE3800H-US W/ P370 OPTIMIZERS
 MODULES: (14) LG355N1K-B6
 STRINGS: (1)x14 MODULE SERIES STRING
 ELECTRICAL SERVICE RATING: 200A
 PV SYSTEM OVERCURRENT RATING: 20A
 PV SYSTEM DISCONNECT SWITCH: EATON DG221URB (30A / 2P)
 ROOF TYPE: COMP
 ROOF FRAMING: MANUFACTURED/ENGINEERED TRUSS
 RACKING: EVEREST
 ATTACHMENT METHOD: MIN. 5/16" x 3 1/2 LAG SCREWS EA. STANDOFF

TABLE OF CONTENTS

REQUIRED INFORMATION	SHEET NAME	SHEET NUMBER
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MODULE AND EQUIPMENT LAYOUT	SITE PLAN	PV2
LOCATION & QUANTITY OF PACKING & STANDOFFS	PV LAYOUT	PV 3
RACKING LOAD & UPLIFT CALCULATIONS	PV LAYOUT	PV 3
ROOF ATTACHMENT DETAILS	DETAILS	PV 4
ELECTRICAL 1 LINE DIAGRAM	ONE LINE	PV 5
ELECTRICAL 3 LINE DIAGRAM	THREE LINE	PV 6
OCF & WIRE SIZING CALCULATIONS	1 & 3 LINE	PV 5 & 6
ARRAY & INVERTER ELECTRICAL SPECIFICATIONS	1 & 3 LINE	PV 5 & 6
EQUIPMENT SPECIFICATIONS	1 & 3 LINE	PV 5 & 6
LABEL NOTES	LABELS	PV 7
PV EQUIPMENT LABELING DETAIL	LABELS	PV 7
DIRECTORY LABEL	PLACARD	PV-8
PV EQUIPMENT SPECIFICATIONS	EQUIPMENT SPEC.	PV 9 - 16
DATA SHEETS & ADDITIONAL INFORMATION	SUPPLEMENTAL MATERIAL	

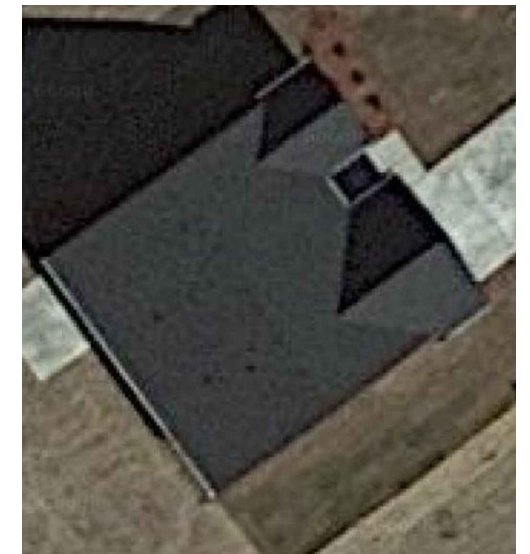
VICINITY MAP

SCALE: NTS



AERIAL MAP

SCALE: NTS



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
 10345 NATIONS FORD RD SUITE W, CHARLOTTE, NC 28273
 SEPERMITTING@TITANSOLARPOWER.COM
 (877) 997-7652

QUINTANILLA, ESMERELDA RESIDENCE
 135 BELLINI DRIVE, ANGIER, NC, 27501
 LAT:35.507104, LON:-78.739181
 TSP-85867

(14) LG355N1K-B6
 (1) SOLAREEDGE SE3800H-US
 4.970 kW DC SYSTEM SIZE
 3.800 kW AC SYSTEM SIZE

DATE: 6/29/2021
 REV:A
 DRAWN BY: JJ

COVER PAGE
PV 1



PROPERTY BOUNDARY TYP.

FRONT OF RESIDENCE

BELLINI DRIVE

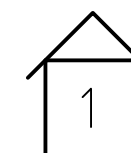
DRIVEWAY

MAIN SERVICE PANEL
UTILITY AC DISCONNECT
UTILITY PV METER
INVERTER

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



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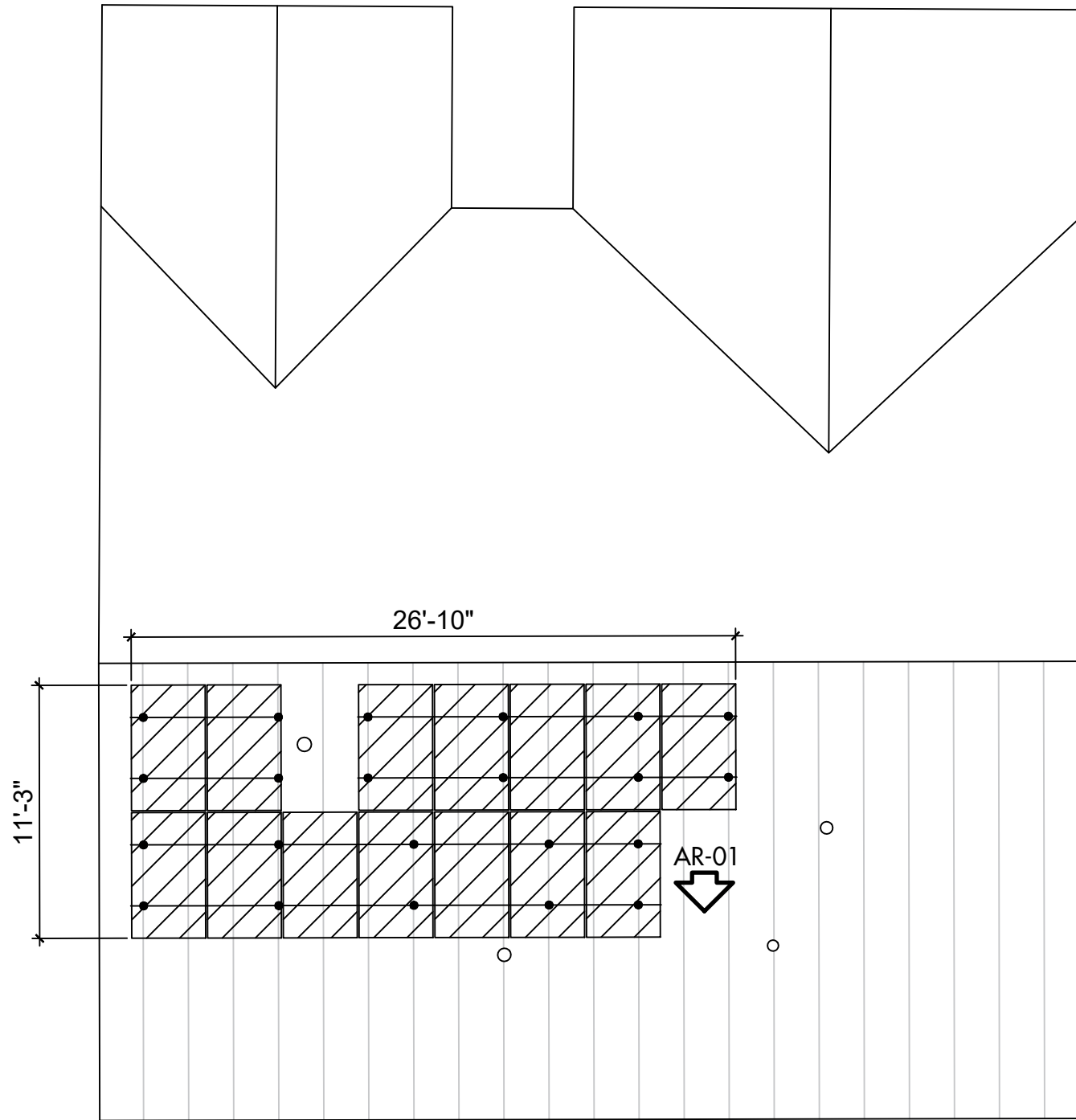
QUINTANILLA, ESMERELDA RESIDENCE
135 BELLINI DRIVE, ANGIER, NC, 27501
LAT:35.507104, LON:-78.739181
TSP-85867

(14) LG355N1K-B6
(1) SOLAREEDGE SE3800H-US
4.970 kW DC SYSTEM SIZE
3.800 kW AC SYSTEM SIZE

SCALE:0.007326
DATE: 6/29/2021
REV:A
DRAWN BY: JJ

SITE PLAN
PV 2

ARRAY
 AR-01
 QUANTITY: 14
 MOUNTING TYPE: FLUSH
 ARRAY TILT: 33°
 AZIMUTH: 234°
 ATTACHMENT SPACING: 6'
 ROOF TYPE: COMP



- NOTES**
- ROOF VENTS, SKYLIGHTS, WILL NOT BE COVERED UPON PV INSTALLATION
 - TOTAL ROOF AREA = 2110 SQ-FT
 - TOTAL ARRAY AREA = 273.05 SQ-FT
 - ARRAY COVERAGE = 12.94%



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 LAT:35.507104, LON:-78.739181
 TSP-85867

(14) LG355N1K-B6
 (1) SOLAREEDGE SE3800H-US
 4.970 kW DC SYSTEM SIZE
 3.800 kW AC SYSTEM SIZE

SCALE: 0.012165
 DATE: 6/29/2021
 REV:A
 DRAWN BY: JJ

PV LAYOUT
PV 3

MODULE & RACKING INFORMATION

MODULE: LG355N1K-B6
MODULE WEIGHT: 41 LBS
MODULE DIMENSIONS: 68.5" x 41" x 1.5"
RACKING/RAIL: QUICKBOLT / EVEREST

ROOF & FRAMING INFORMATION

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

Units: [in] mm

ARRAY INFORMATION:

ARRAY 01: 14 MODULES

UPLIFT CALCULATION:

PANEL GROUP AREA: = MODULE AREA: 19.50
SQ.FT * MODULE QTY. 14 = 273.05 SQ.FT

TOTAL UPLIFT: = PANEL GROUP AREA: 273.05
SQ. FT. * WIND LOAD 30 PSF =
TOTAL LOAD 8191.46 LBS.

POINT LOAD CALCULATION:

ARRAY WEIGHT: MODULE WEIGHT (41 +3.5)
* MODULE QTY. 14 = 623.00 LBS / 22
MOUNTING POINTS = 28.32 LBS. PER
MOUNTING POINT

PULLOUT STRENGTH CALCULATION:

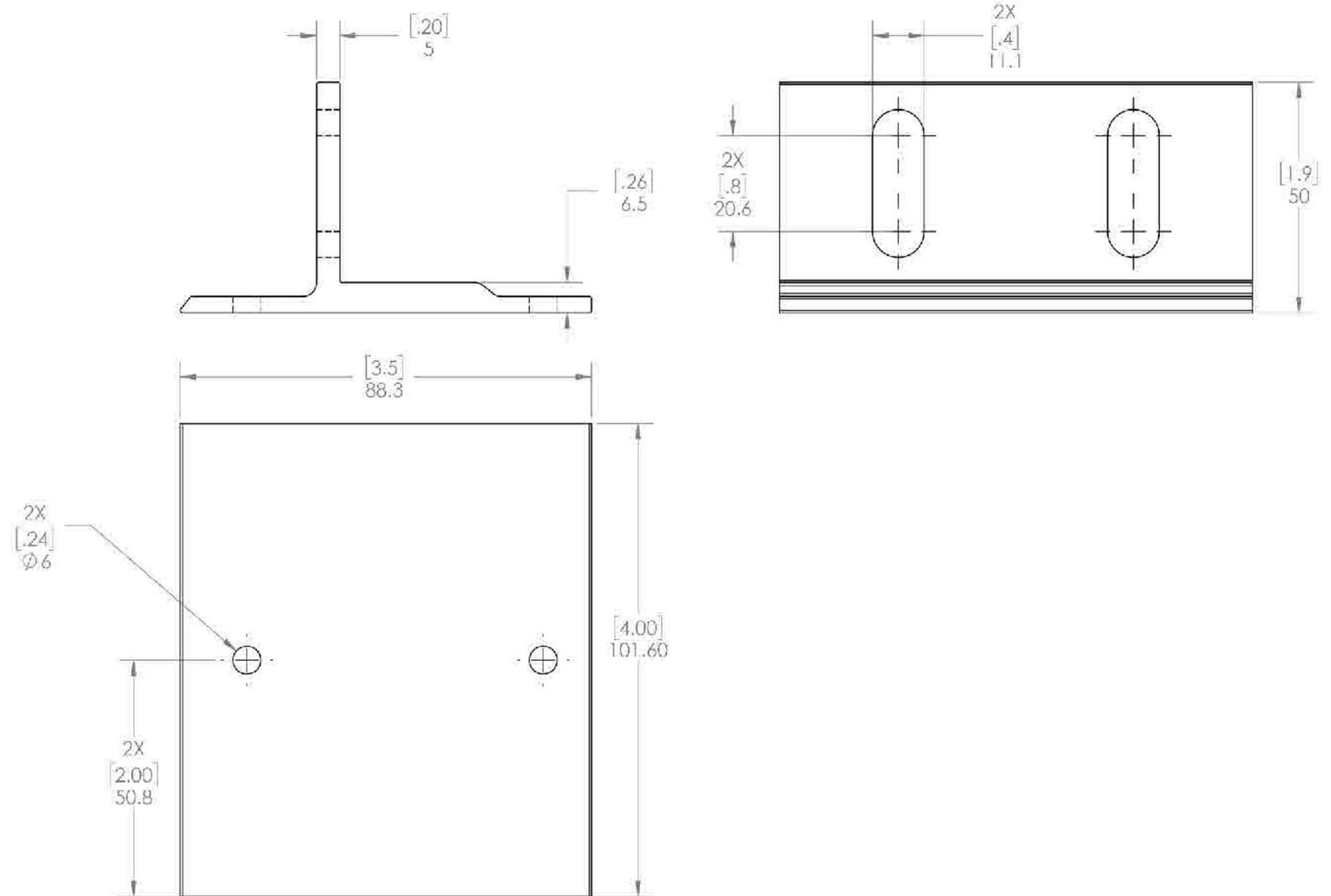
CONNECTOR TYPE: 5/16" LAG SCREW
(EMBED MIN. 2.5")
PULLOUT STRENGTH: = OF MOUNTING
POINTS: 22 * 2.5 (EMBED DEPTH) * 210 LBS =
11550.00 LBS.

DISTRIBUTED LOAD CALCULATION:

ARRAY WEIGHT: 623.00 LBS. / MODULE
GROUP AREA: 273.05 SQ. FT. = 2.28 PSF

MODULE & RACKING WEIGHT:

(MODULE WEIGHT + 3.5LBS) * MODULE QTY.
(44.5 LBS)*14 = 623.00 LBS



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LAT:35.507104, LON:-78.739181
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(14) LG355N1K-B6
(1) SOLAREEDGE SE3800H-US
4.970 kW DC SYSTEM SIZE
3.800 kW AC SYSTEM SIZE

DATE: 6/29/2021
REV:A
DRAWN BY: JJ

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 - (2) #10 AWG-CU PV WIRE (HR)
 - (1) #10 AWG-CU BARE COPPER WIRE (GND)
 IN FREE AIR

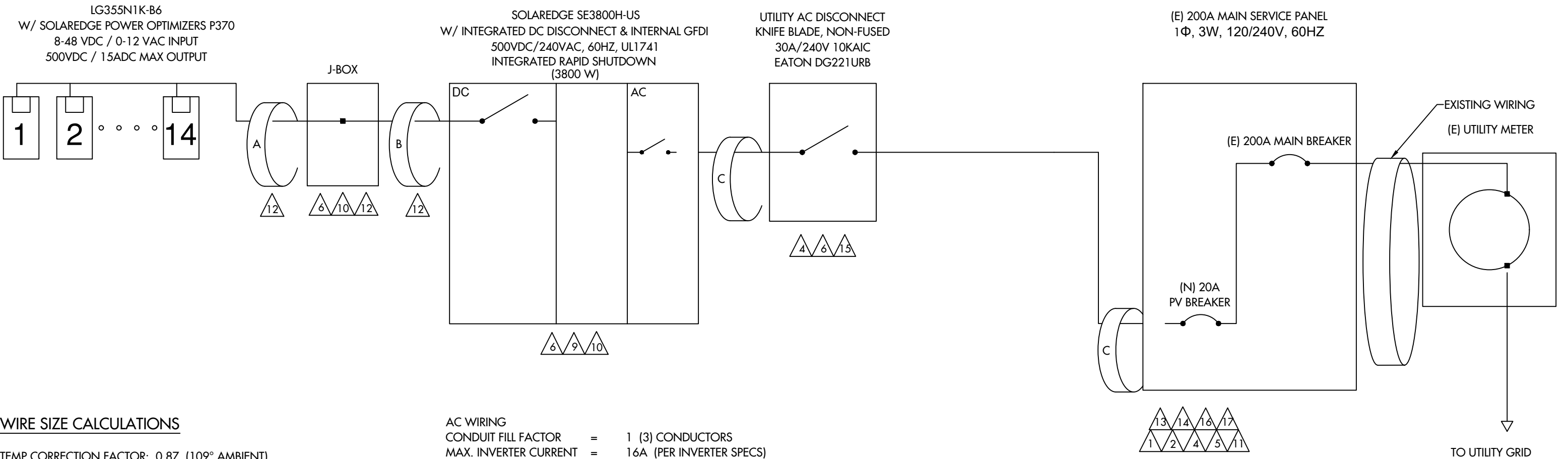
B - (2) #10 AWG-CU THWN-2 WIRE (HR)
 - (1) #10 AWG-CU THWN-2 WIRE (GND)
 3/4" EMT

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 = 20A
 MAIN BREAKER = 200A
 TOTAL = 220A



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 = 1
 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 = 40A (40A X 1 X 1) ROOFTOP CONDUIT

AC WIRING
 CONDUIT FILL FACTOR = 1 (3) CONDUCTORS
 MAX. INVERTER CURRENT = 16A (PER INVERTER SPECS)
 MIN. INVERTER OCP = 20A (16A X 1.25)
 INVERTER OCP = 20A
 #8 - AWG CU AMPACITY = 47.85A (55A X 1.0 X 0.87)



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 135 BELLINI DRIVE, ANGIER, NC, 27501
 LAT:35.507104, LON:-78.739181
 TSP-85867

(14) LG355N1K-B6
 (1) SOLAREGE SE3800H-US
 4.970 kW DC SYSTEM SIZE
 3.800 kW AC SYSTEM SIZE

DATE: 6/29/2021
 REV:A
 DRAWN BY: JJ

ONE LINE
PV 5

PV MODULE

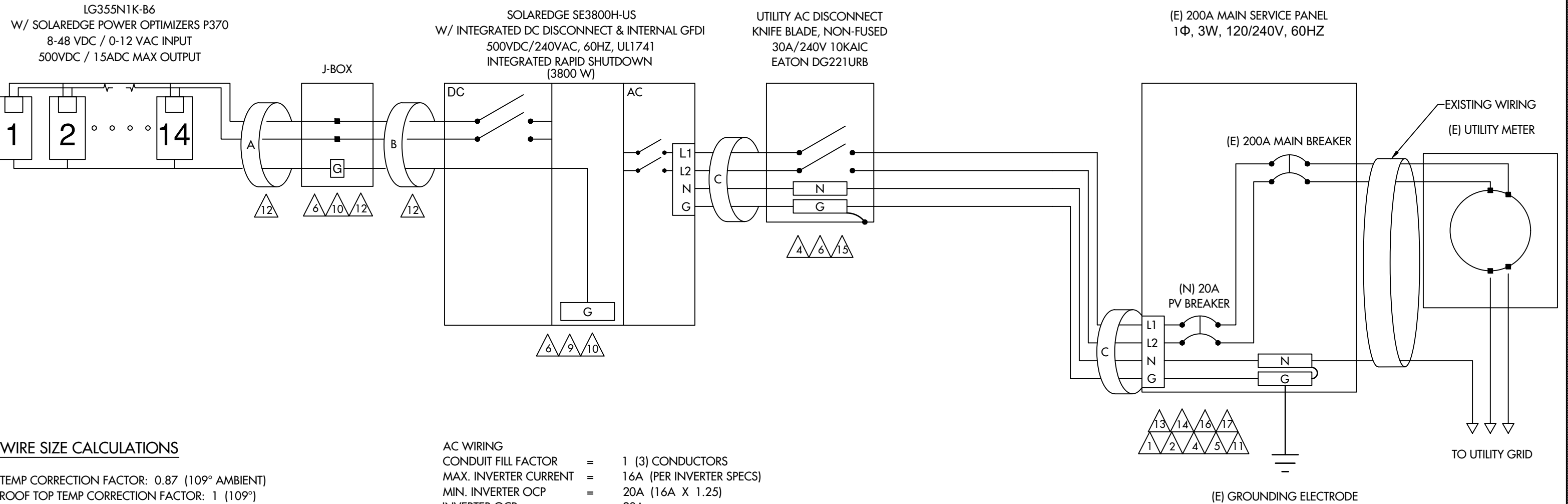
LG355N1K-B6
 W = 355W
 ISC = 10.72 ADC
 VOC = 41.5 VDC
 IMP = 10.15 ADC
 VMP = 35 VDC
 TVOC = -0.26% / °C

WIRE SCHEDULE

A - (2) #10 AWG-CU PV WIRE (HR)
 - (1) #10 AWG-CU BARE COPPER WIRE (GND)
 IN FREE AIR
 B - (2) #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 = 20A
 MAIN BREAKER = 200A
 TOTAL = 220A



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)

AC WIRING
 CONDUIT FILL FACTOR = 1 (3) CONDUCTORS
 MAX. INVERTER CURRENT = 16A (PER INVERTER SPECS)
 MIN. INVERTER OCP = 20A (16A X 1.25)
 INVERTER OCP = 20A
 #8 - AWG CU AMPACITY = 47.85A (55A X 1.0 X 0.87)

DC WIRING
 CONDUIT FILL FACTOR = 1
 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 = 40A (40A X 1 X 1) ROOFTOP CONDUIT



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(14) LG355N1K-B6
 (1) SOLAREEDGE SE3800H-US
 4.970 kW DC SYSTEM SIZE
 3.800 kW AC SYSTEM SIZE

DATE: 6/29/2021
 REV:A
 DRAWN BY: JJ

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: 16AAC
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.
SOLAR ELECTRIC
PV PANELS
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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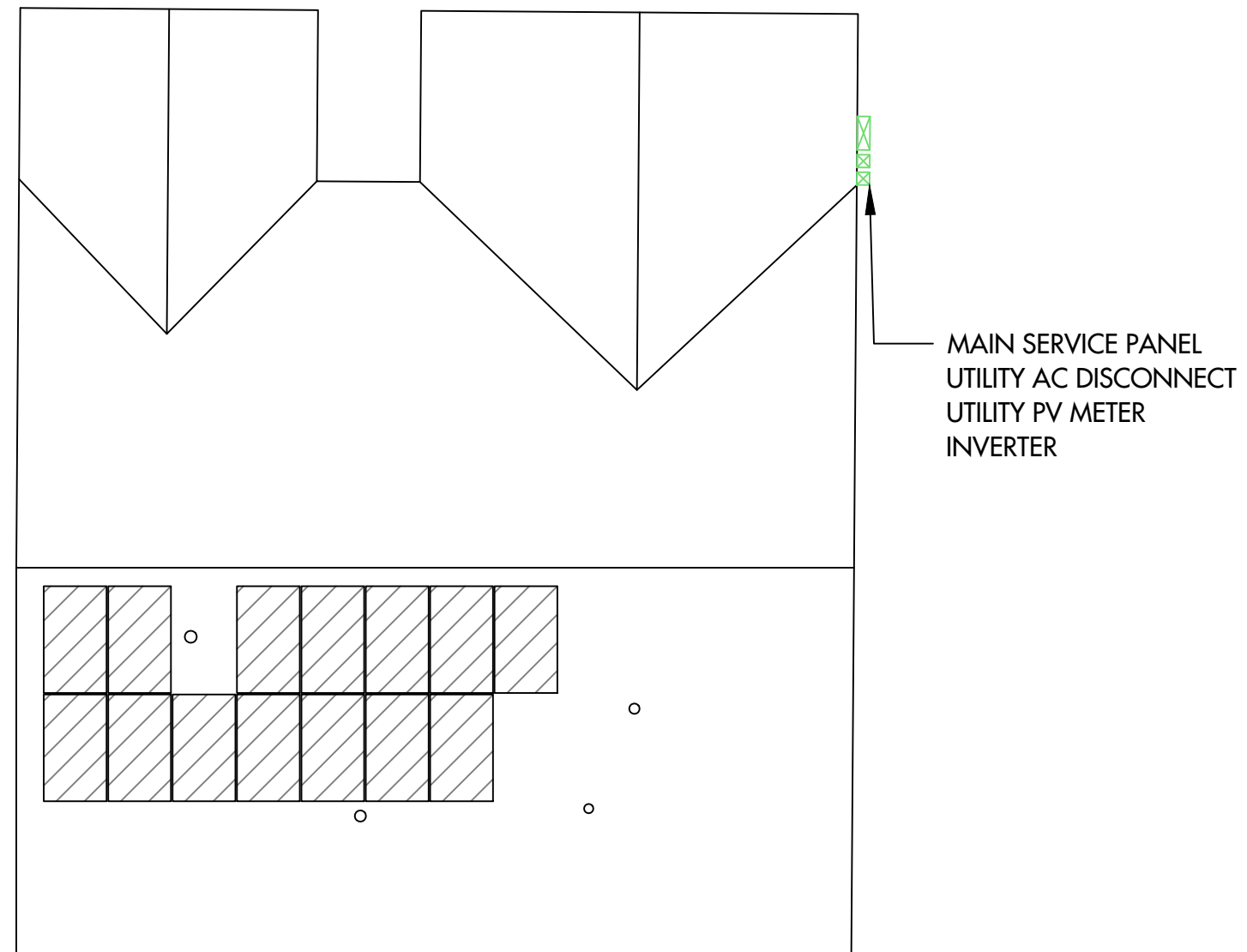
(14) LG355N1K-B6
(1) SOLAREEDGE SE3800H-US
4.970 kW DC SYSTEM SIZE
3.800 kW AC SYSTEM SIZE

DATE: 6/29/2021
REV:A
DRAWN BY: JJ

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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(14) LG355N1K-B6
(1) SOLAREEDGE SE3800H-US
4.970 kW DC SYSTEM SIZE
3.800 kW AC SYSTEM SIZE

DATE: 6/29/2021
REV:A
DRAWN BY: JJ

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

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



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-XXXXXXBXX4							
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	600k Ω 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

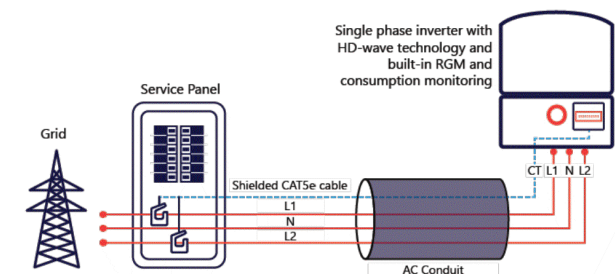
SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US

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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TSP-85867

(14) LG355N1K-B6
(1) SOLAREGE SE3800H-US
4.970 kW DC SYSTEM SIZE
3.800 kW AC SYSTEM SIZE

DATE: 6/29/2021
REV:A
DRAWN BY: JJ


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	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@SOLAREEDGE.COM MEIR.A@SOLAREEDGE.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



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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	Manufacturer: Jabil Circuit (Guangzhou) LTD
Address: 1 HaMada Street Herzeliya 4673335	Address: DEV EAST DISTRICT 128 JUN CHENG RD GUANGZHOU, GUANGDONG 510530 China
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@SOLAREEDGE.COM MEIR.A@SOLAREEDGE.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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(14) LG355N1K-B6
(1) SOLAREEDGE SE3800H-US
4.970 kW DC SYSTEM SIZE
3.800 kW AC SYSTEM SIZE

DATE: 6/29/2021
REV:A
DRAWN BY: JJ

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		12.5 - 105	
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 SOLAREGE INVERTER)										
Maximum Output Current					15					Adc
Maximum Output Voltage	60					85			Vdc	
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREGE INVERTER OR SOLAREGE 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 P485-4NMDMFM. 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 2,000W 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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 LAT:35.507104, LON:-78.739181
 TSP-85867

(14) LG355N1K-B6
 (1) SOLAREGE SE3800H-US
 4.970 kW DC SYSTEM SIZE
 3.800 kW AC SYSTEM SIZE

DATE: 6/29/2021
 REV:A
 DRAWN BY: JJ

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.

LG355N1K-B6

FEATURES

90.1%
in year 25

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.

25
YEARS
WARRANTY

Industry-Leading Product Warranty

LG offers an industry-leading 25 year product warranty on the NeON[®]2 Black.



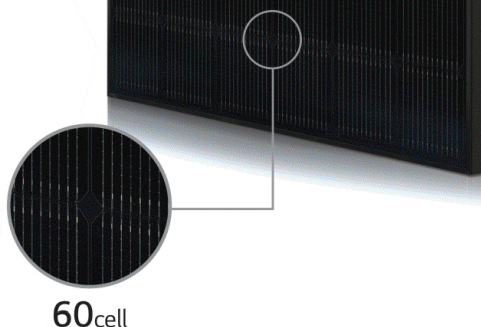
Reliable Quality

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.



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.



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

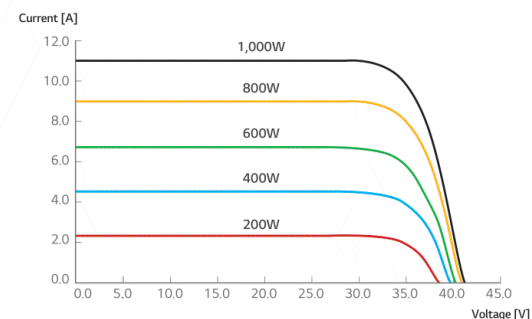
NMOT*	[°C]	42 ± 3
Pmax	[%/°C]	-0.35
Voc	[%/°C]	-0.26
Isc	[%/°C]	0.03

* 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

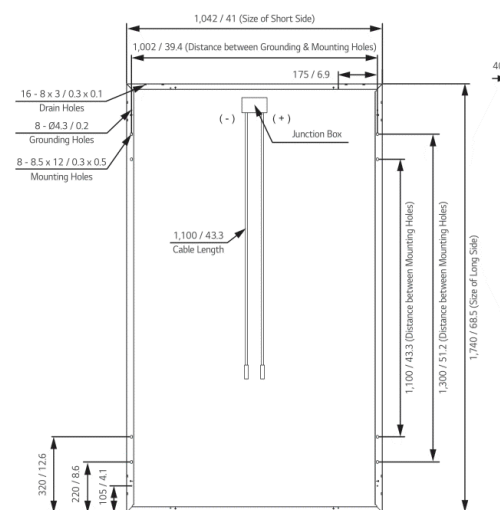
Operating Temperature	[°C]	-40 ~ +85
Maximum System Voltage	[V]	1,000
Maximum Series Fuse Rating	[A]	20
Mechanical Test Load* (Front)	[Pa]	5,400
Mechanical Test Load* (Rear)	[Pa]	4,000

* 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
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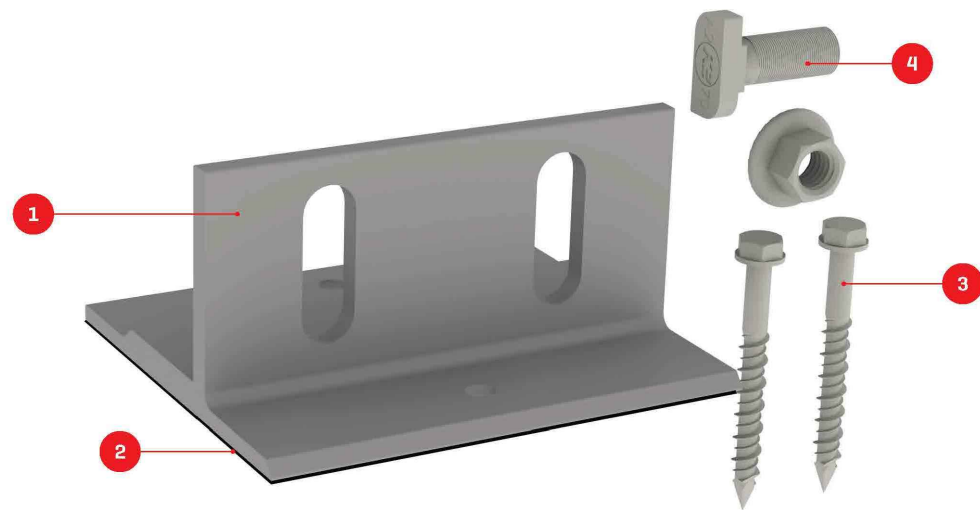
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EQUIPMENT
SPECIFICATIONS
PV 12

We support PV systems
Formerly Everest Solar Systems



Splice Foot X

TECHNICAL SHEET

Item Number	Description	Part Number
1	Splice Foot X	4000113 Splice Foot X Kit, Mill
2	K2 Solar Seal Butyl Pad	
3	M5 x 60 lag screws	
4	T-Bolt & Hex Nut Set	

Technical Data

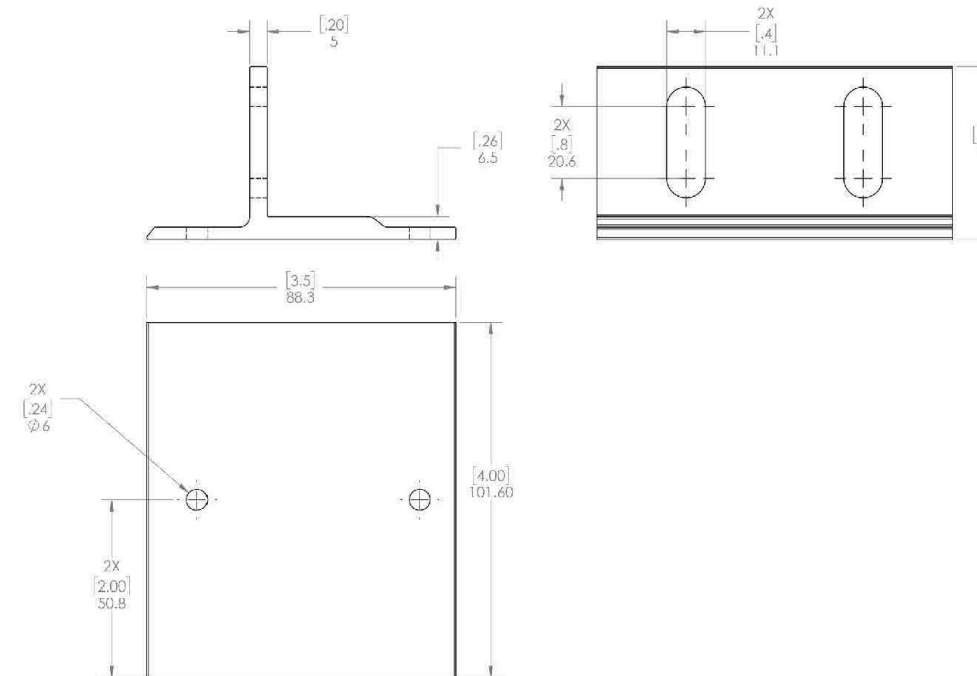
	Splice Foot X
Roof Type	Composition shingle
Material	Aluminum with stainless steel hardware
Finish	Mill
Roof Connection	M5 x 60 lag screws
Code Compliance	UL 2703
Compatibility	CrossRail 44-X, 48-X, 48-XL, 80

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We support PV systems
Formerly Everest Solar Systems



Units: [in] mm



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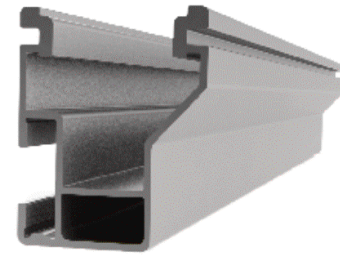
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EQUIPMENT
SPECIFICATIONS
PV 13

CrossRail 48-X

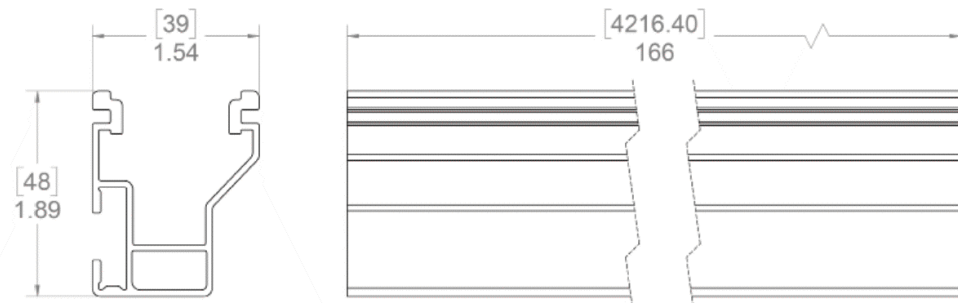


Mechanical Properties

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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 135 BELLINI DRIVE, ANGIER, NC, 27501
 LAT:35.507104, LON:-78.739181
 TSP-85867

(14) LG355N1K-B6
 (1) SOLAREEDGE SE3800H-US
 4.970 kW DC SYSTEM SIZE
 3.800 kW AC SYSTEM SIZE

DATE: 6/29/2021
 REV:A
 DRAWN BY: JJ

EQUIPMENT
 SPECIFICATIONS
PV 14