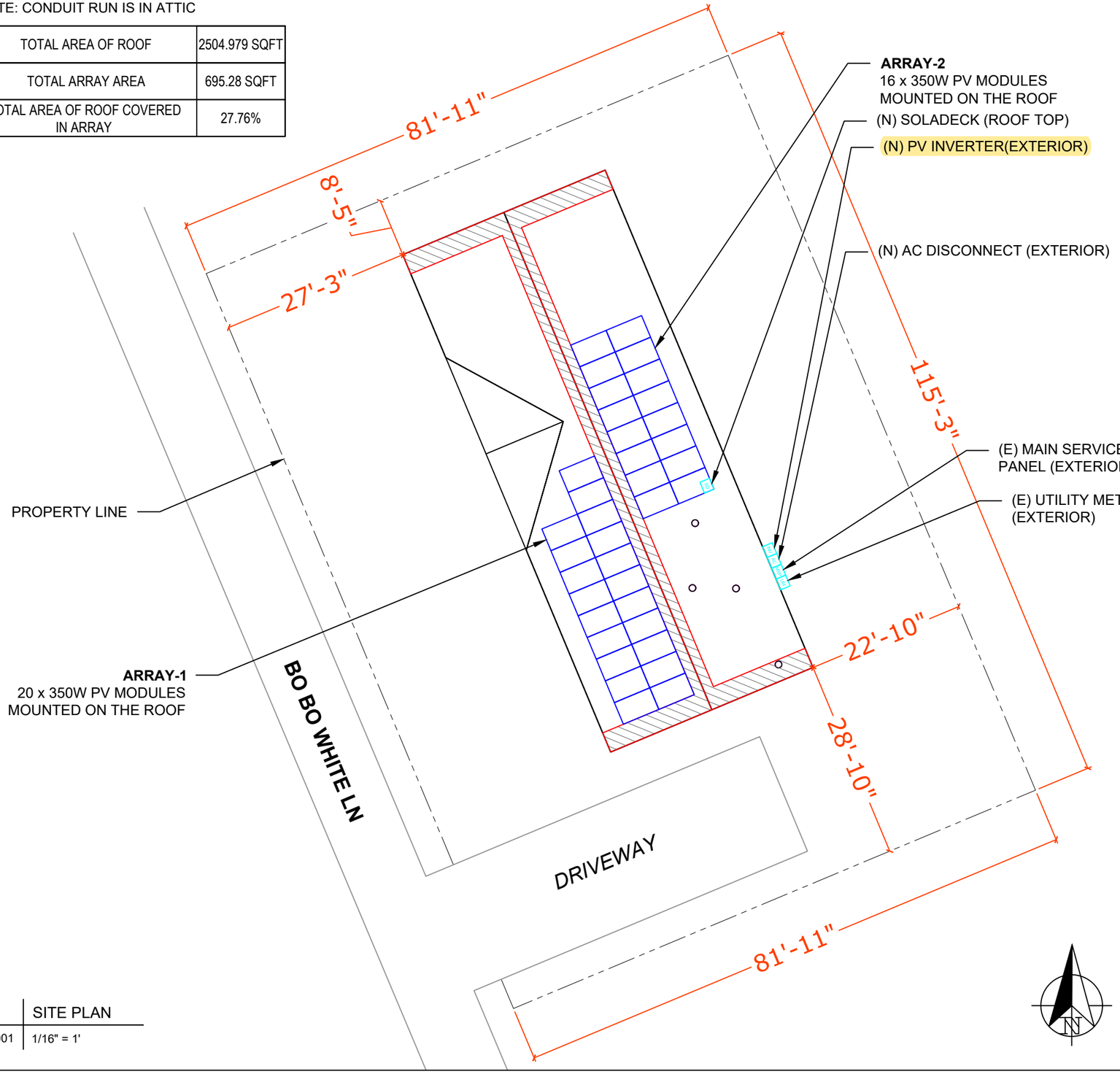
NOE AGUILAR - 12.600kW DC, 10.000kW AC

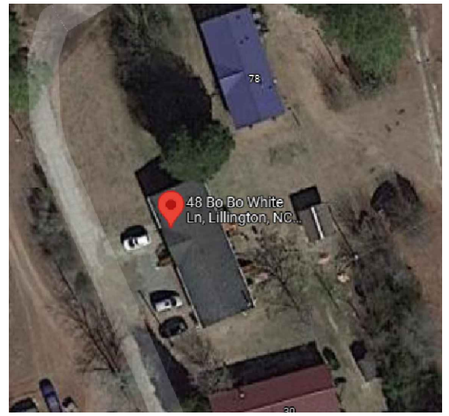
SITE PLAN

NOTE: CONDUIT RUN IS IN ATTIC

TOTAL AREA OF ROOF	2504.979 SQFT
TOTAL ARRAY AREA	695.28 SQFT
TOTAL AREA OF ROOF COVERED IN ARRAY	27.76%



A	SITE PLAN
S-001	1/16" = 1'



A1	AERIAL MAP
S-001	SCALE NTS

GENERAL INFORMATION

ELECTRIC CODE	NEC 2017
FIRE CODE	NCFC 2018
RESIDENTIAL CODE	NCRC 2018
BUILDING CODE	NCBC 2018
WIND SPEED	118 MPH
SNOW LOAD	10 PSF

INDEX

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S-003	STRUCTURAL DETAILS
E-001	SINGLE LINE DIAGRAM
E-002	WARING PLACARDS
SS	SPEC SHEET(S)

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SYSTEM INFORMATION

DC SYSTEM SIZE: 12.600 kW
AC SYSTEM SIZE: 10.000 kW
ANNUAL SOLAR OUPUT: 15864kWh/an
MODULES:
(36) Q CELLS Q.PEAK DUO-G6+ 350
INVERTER:
(1)SOLAREDGE SE10000H-US
OPTIMIZER DETAILS
(36) P370 SOLAR EDGE POWER OPTIMIZER

ENGINEER OF RECORD

CUSTOMER INFORMATION

NAME & ADDRESS:
NOE AGUILAR
48 BO BO WHITE LN, LILLINGTON, NC 27546

GPS: 35.3425154, -78.9448008
APN: 130528 0035

AHJ: NC-HARNETT COUNTY

UTILITY: SOUTH RIVER EMC

PROJECT NUMBER: ----

SITE PLAN

DESIGNER / CHECKED BY:
J.B. / J.B.

SCALING: AS NOTED	PAPER SIZE: 17"x11"	
DATE: 9/17/21	REV:A	S-001

GENERAL NOTES

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(A)(1).
5. ALL GROUND WIRING CONNECTED TO THE MAIN SERVICE GROUNDING IN MAIN SERVICE PANEL/ SERVICE EQUIPMENT.
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 OR DOORS, AND LOCATED AT STRONG POINTS OF BUILDING CONSTRUCTION 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

EQUIPMENT LOCATION:

11. ALL EQUIPMENT SHALL MEET MINIMUM SETBACKS AS REQUIRED BY NEC 110.26(A)(1).
12. 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).
13. JUNCTION AND PULL BOXES PERMITTED INSTALLED UNDER PV MODULES ACCORDING TO NEC 690.34.
14. ADDITIONAL AC DISCONNECT(S) SHALL BE PROVIDED WHERE THE INVERTER IS NOT WITHIN SIGHT OF THE AC SERVICING DISCONNECT.
15. ALL EQUIPMENT SHALL BE INSTALLED ACCESSIBLE TO QUALIFIED PERSONNEL ACCORDING TO NEC APPLICABLE CODES.
16. ALL COMPONENTS ARE LISTED FOR THEIR PURPOSE AND RATED FOR OUTDOOR USAGE WHEN APPROPRIATE.

STRUCTURAL NOTES:

17. RACKING SYSTEM & PV ARRAY WILL BE INSTALLED ACCORDING TO CODE-COMPLIANT INSTALLATION MANUAL. TOP CLAMPS REQUIRE A DESIGNATED SPACE BETWEEN MODULES, AND RAILS MUST ALSO EXTEND A MINIMUM DISTANCE BEYOND EITHER EDGE OF THE ARRAY/SUBARRAY, ACCORDING TO RAIL MANUFACTURER'S INSTRUCTIONS.
18. JUNCTION BOX WILL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. IF ROOF-PENETRATING TYPE, IT SHALL BE FLASHED & SEALED PER LOCAL REQUIREMENTS.
19. ROOFTOP PENETRATIONS FOR PV RACEWAY WILL BE COMPLETED AND SEALED WITH APPROVED CHEMICAL SEALANT PER CODE BY A LICENSED CONTRACTOR.
20. ALL PV RELATED ROOF ATTACHMENTS TO BE SPACED NO GREATER THAN THE SPAN DISTANCE SPECIFIED BY THE RACKING MANUFACTURER.
21. WHEN POSSIBLE, ALL PV RELATED RACKING ATTACHMENTS WILL BE STAGGERED AMONGST THE ROOF FRAMING MEMBERS.

WIRING & CONDUIT NOTES:

22. ALL CONDUIT 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.
23. CONDUCTORS SIZED ACCORDING TO NEC 690.8, NEC 690.7.
24. DC WIRING LIMITED TO MODULE FOOTPRINT. MICRO INVERTER WIRING SYSTEMS SHALL BE LOCATED AND SECURED UNDER THE ARRAY WITH SUITABLE WIRING CLIPS.
25. AC CONDUCTORS COLORED OR MARKED AS FOLLOWS: PHASE A OR L1- BLACK PHASE B OR L2- 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 HIGHER VOLTAGE TO BE MARKED ORANGE [NEC 110.15].

INTERCONNECTION NOTES:

26. LOAD-SIDE INTERCONNECTION SHALL BE IN ACCORDANCE WITH [NEC 690.64(B)]
27. THE SUM OF THE UTILITY OCPD AND INVERTER CONTINUOUS INPUT MAY NOT EXCEED 120% OF BUSBAR RATING [NEC 705.12(D)(2)(3)].
28. WHEN SUM OF THE PV SOURCES EQUALS >100% OF BUSBAR RATING, PV DEDICATED BACKFFED BREAKERS MUST BE LOCATED OPPOSITE END OF THE BUS FROM THE UTILITY SOURCE OCPD [NEC 705.12(D)(2)(3)].
29. AT MULTIPLE PV OUTPUT COMBINER PANEL, TOTAL RATING OF ALL OVER CURRENT DEVICES SHALL NOT EXCEED AMPACITY OF BUSBAR. HOWEVER, THE COMBINED OVER CURRENT DEVICE MAY BE EXCLUDED ACCORDING TO NEC 705.12(D)(2)(3)(C).
30. FEEDER TAP INTER CONNECTION (LOAD SIDE) ACCORDING TO NEC 705.12(D)(2)(1)SUPPLY SIDE TAP INTERCONNECTION ACCORDING TO NEC 705.12(A) WITH SERVICE ENTRANCE CONDUCTORS IN ACCORDANCE WITH NEC 230.42 BACK FEEDING BREAKER FOR UTILITY-INTERACTIVE INVERTER OUTPUT IS EXEMPT FROM ADDITIONAL FASTENING [NEC 705.12(D)(5)].

GROUNDING NOTES:

31. GROUNDING SYSTEM COMPONENTS SHALL BE LISTED FOR THEIR PURPOSE, AND GROUNDING DEVISES EXPOSED TO THE ELEMENTS SHALL BE RATED FOR SUCH USE.
32. PV EQUIPMENT SHALL BE GROUNDED ACCORDING TO NEC 690.43 AND MINIMUM NEC 250.122.
33. METAL PARTS OF MODULE FRAMES, MODULE RACKING, AND ENCLOSURES CONSIDERED GROUNDED IN ACCORD WITH 250.134 AND 250.136(A).
34. EQUIPMENT GROUNDING CONDUCTORS SHALL BE SIZED ACCORDING TO NEC 690.45 AND MICRO INVERTER MANUFACTURER'S INSTRUCTIONS.
35. EACH MODULE WILL BE GROUNDED USING WEEB GROUNDING CLIPS AS SHOWN IN MANUFACTURER DOCUMENTATION AND APPROVED BY THE AHJ. IF WEEBS ARE NOT USED, MODULE GROUNDING LUGS MUST BE INSTALLED AT THE SPECIFIED GROUNDING LUG HOLES PER THE MANUFACTURERS' INSTALLATION REQUIREMENTS.
36. THE GROUNDING CONNECTION TO A MODULE SHALL BE ARRANGED SUCH THAT THE REMOVAL OF A MODULE DOES NOT INTERRUPT A GROUNDING CONDUCTOR TO ANOTHER MODULE.
37. GROUNDING AND BONDING CONDUCTORS, IF INSULATED, SHALL BE COLORED GREEN OR MARKED GREEN IF #4 AWG OR LARGER [NEC 250.119]
38. THE GROUNDING ELECTRODE SYSTEM COMPLIES WITH NEC 690.47 AND NEC 250.50 THROUGH 250.106. IF EXISTING SYSTEM IS INACCESSIBLE, OR INADEQUATE, A GROUNDING ELECTRODE SYSTEM PROVIDED ACCORDING TO NEC 250,NEC 690.47 AND AHJ.
39. GROUND-FAULT DETECTION SHALL COMPLY WITH NEC 690.5 IN GENERAL AND NEC 690.5(A)(1) SPECIFICALLY.
40. DISCONNECTION AND OVER-CURRENT PROTECTION NOTES:
41. DISCONNECTING SWITCHES SHALL BE WIRED SUCH THAT WHEN THE SWITCH IS OPENED THE CONDUCTORS REMAINING ENERGIZED ARE CONNECTED TO THE TERMINALS MARKED "LINE SIDE" (TYPICALLY THE UPPER TERMINALS).
42. DISCONNECTS TO BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH
43. RAPID SHUTDOWN OF ENERGIZED CONDUCTORS BEYOND 10 FT OF PV ARRAY OR 5 FT INSIDE A BUILDING WITHIN 10 SECONDS. CONTROLLED CONDUCTORS ≤30V AND ≤240VA [NEC 690.12]. LOCATION OF LABEL ACCORDING TO AHJ.
44. ALL OCPD RATINGS AND TYPES SPECIFIED ACCORDING TO NEC 690.8,690.9 AND 240.
45. MICRO INVERTER BRANCHES CONNECTED TO A SINGLE BREAKER OR GROUPED FUSES IN ACCORDANCE WITH NEC 110.3(B). 2.6.7 IF REQUIRED BY AHJ, SYSTEM WILL INCLUDE ARC-FAULT CIRCUIT PROTECTION ACCORDING TO NEC 690.11 AND UL1699B.

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SYSTEM INFORMATION

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AC SYSTEM SIZE: 10.000 kW
ANNUAL SOLAR OUPUT: 15864kWh/an
MODULES:
(36) Q CELLS Q.PEAK DUO-G6+ 350
INVERTER:
(1)SOLAREDGE SE10000H-US
OPTIMIZER DETAILS
(36) P370 SOLAR EDGE POWER OPTIMIZER

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PROJECT NUMBER: ----

GENERAL NOTES

DESIGNER / CHECKED BY:
J.B. / J.B.

SCALING: AS NOTED	PAPER SIZE: 17"x11"	
DATE: 9/17/21	REV:A	G-001

MODULES DATA

Q CELLS Q.PEAK DUO-G6+ 350	
MODULE DIMS	68.5"x40.6"x1.3"
LAG SCREWS	5/16" X 3.5":2.5"MIN EMBEDMENT

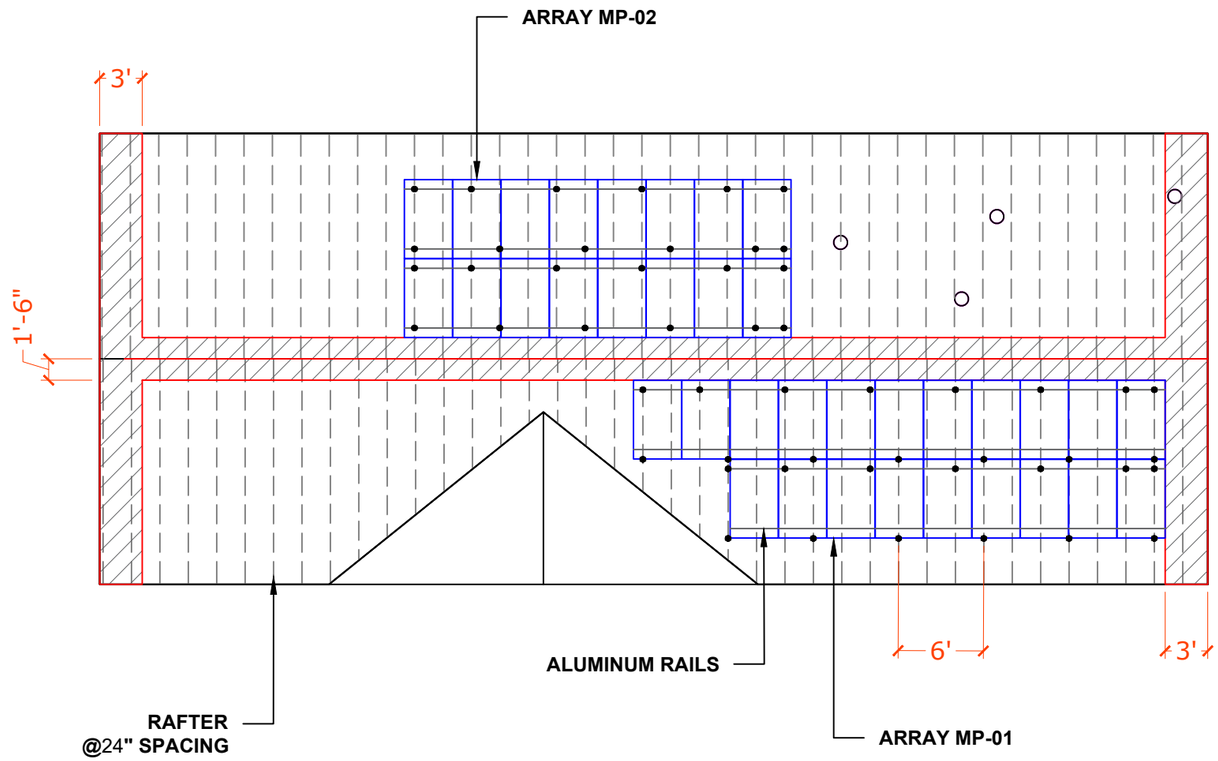
FIRE SETBACK

MINIMUM FIRE ACCESS PATHWAYS PER NCFC 2018
RIDGE TO ARRAY: 1'-6"
EAVE TO ARRAY : 3'-0"
HIP/VALLEY W/ ADJACENT ARRAY: 1'-6"
EACH SIDE HIP/VALLEY W/O ADJACENT ARRAY: 0'-0"

NOTE: INSTALLER TO VERIFY RAFTER SIZE, SPACING AND SLOPED SPANS, AND NOTIFY ANY DISCREPANCIES BEFORE PROCEEDING.

SITE INFORMATION

SR.NO	AZIMUTH	PITCH	NO. OF MODULES	ARRAY AREA (SQ. FT.)	ROOF TYPE	ATTACHMENT	ROOF EXPOSURE	FRAME TYPE	FRAME SIZE	FRAME SPACING	MAX RAIL SPAN	OVER HANG
MP-01	255°	14°	20	1027.18	COMPOSITION SHINGLE	SNAPNRACK ULTRA RAIL COMP KIT	ATTIC	RAFTERS	2X6	24"	6'-0"	2'-0"
MP-02	75°	10°	16	1210.13	COMPOSITION SHINGLE	SNAPNRACK ULTRA RAIL COMP KIT	ATTIC	RAFTERS	2X6	24"	6'-0"	2'-0"



B | MOUNTING DETAILS
S-002 | 3/32" = 1'

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SYSTEM INFORMATION

DC SYSTEM SIZE: 12.600 kW
AC SYSTEM SIZE: 10.000 kW
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UTILITY: SOUTH RIVER EMC

PROJECT NUMBER: ----

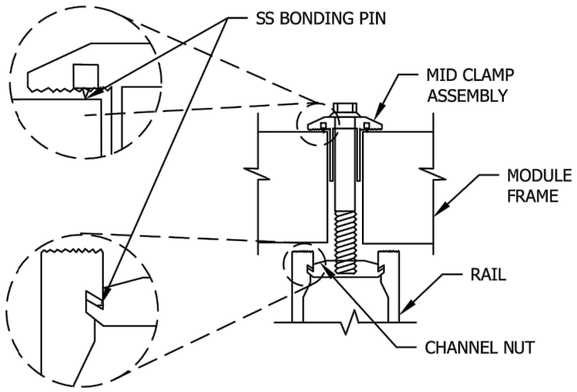
MOUNTING DETAILS

DESIGNER / CHECKED BY:
J.B. / J.B.

SCALING: AS NOTED	PAPER SIZE: 17"x11"	
DATE: 9/17/21	REV:A	S-002

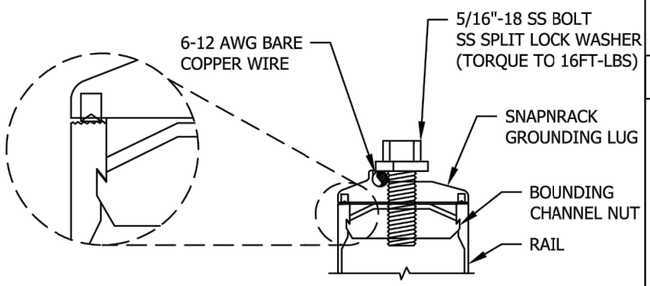
GROUNDING DETAILS

MODULE TO MODULE & MODULE TO RAIL



SNAPNRACK GROUNDING MID-CLAMP
SCALE: NTS

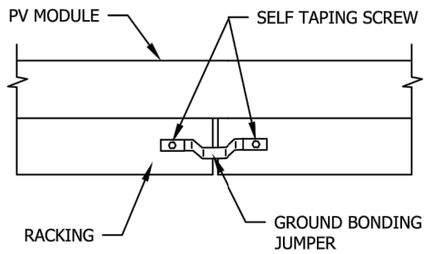
SNAPNRACK GROUNDING



NOTES:
- ALL HARDWARE IS INCLUDED FROM MANUFACTURER
- A MINIMUM OF ONE GROUND LUG IS TO BE INSTALLED ON EVERY CONTINUOUS ROW OF MODULES
- GROUNDING LUG MAY BE INSTALLED IN EITHER RAIL CHANNEL
- GROUNDING LUG MAY BE INSTALLED SO GROUND WIRE IS PARALLEL OR PERPENDICULAR TO RAIL
- ENSURE SPLIT LOCK WASHER IS INSTALLED ON TOP OF COPPER WIRE.

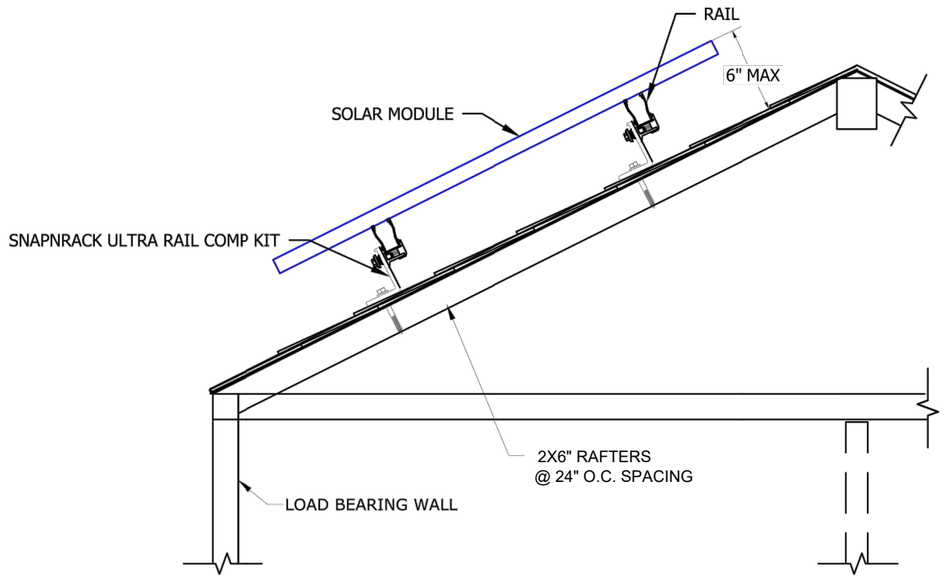
SCALE:NTS

RAIL TO RAIL

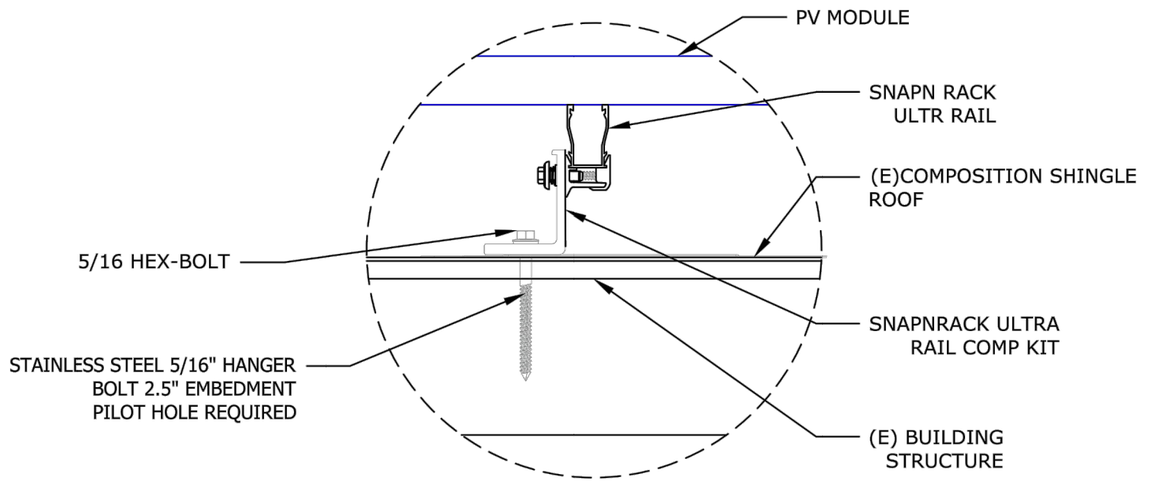


NTS REMOVAL OF ONE PIECE OF EQUIPMENT SHALL NOT DISCONNECT THE BONDING CONNECTION BETWEEN ANY OTHER PIECES.
SCALE:NTS

ROOF FRAMING DETAIL

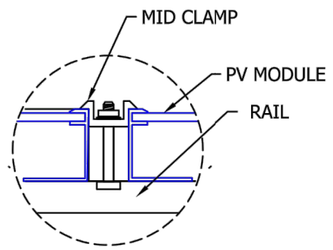


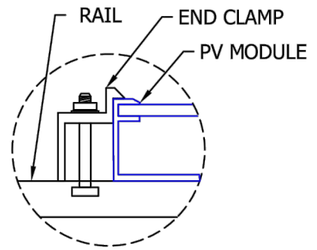
ATTACHMENT DETAIL-SNAPNRACK ULTRA RAIL COMP KIT



SCALE: NTS

MID-CLAMP & END CLAMP DETAIL





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SYSTEM INFORMATION

DC SYSTEM SIZE: 12.600 kW
AC SYSTEM SIZE: 10.000 kW
ANNUAL SOLAR OUPUT: 15864kWh/an
MODULES:
(36) Q CELLS Q.PEAK DUO-G6+ 350
INVERTER:
(1)SOLAREDGE SE10000H-US
OPTIMIZER DETAILS
(36) P370 SOLAR EDGE POWER OPTIMIZER

ENGINEER OF RECORD

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STRUCTURAL DETAILS

DESIGNER / CHECKED BY:
J.B. / J.B.

SCALING: AS NOTED	PAPER SIZE: 17"x11"	
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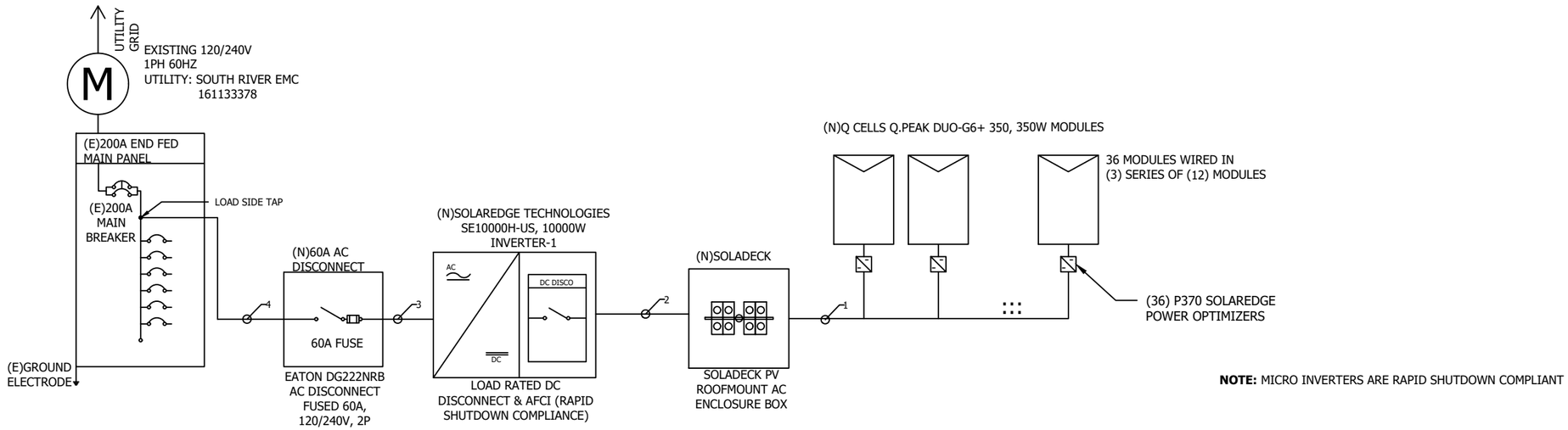

NOTE: MICRO INVERTERS ARE RAPID SHUTDOWN COMPLIANT

MODULE -1 SPECIFICATION	
MODEL	Q CELLS Q.PEAK DUO-G6+ 350
MODULE POWER @ STC	350W
OPEN CIRCUIT VOLTAGE:Voc	40.73V
MAX POWER VOLTAGE:Vmp	34.07V
SHOR CIRCUIT VOLTAGE:Isc	10.79A
MAX POWER CURRENT:Imp	10.27A

INVERTER-1 SPECIFICATIONS	
MODEL	SOLAREDGE SE10000H-US
POWER RATING	10000W
MAX OUPUT CURRENT	42A
CEC WEIGHTED EFFICIENCY	0.99
MAX INPUT CURRENT	27A
MAX DC VOLTAGE	480V

SYSTEM CHARACTERISTICS	
DC SYSTEM SIZE	12600 W
INVERTER STRING VOLTAGE	400V
MAX INVERTER SYSTEM VOLTAGE	480V
MAX SHORT CIRCUIT CURRENT	45A
OPERATING CURRENT	31.5A

CONDUIT SCHEDULE

TAG ID	CONDUIT SIZE	CONDUCTOR	NEUTRAL	GROUND
1	NONE	(6) 10 AWG PV WIRE	NONE	(1) 6 AWG BARE COPPER
2	3/4" EMT OR EQUIV	(6) 10 AWG THHN/THWN-2	NONE	(1) 10 AWG THHN/THWN-2
3	3/4" EMT OR EQUIV	(2) 6 AWG THHN/THWN-2	(1) 6 AWG THHN/THWN-2	(1) 10 AWG THHN/THWN-2
4	3/4" EMT OR EQUIV	(2) 6 AWG THHN/THWN-2	(1) 6 AWG THHN/THWN-2	(1) 10 AWG THHN/THWN-2

OPTIMIZER CHRACTERISTICS	
MODEL	**P370**
MIN INPUT VOLTAGE	8 VDC
MAX INPUT VOLTAGE	60 VDC
MAX INPUT CURRENT	11 ADC
MAX OUTPUT CURRENT	15 ADC

ELECTRICAL CALCULATION

DC WIRE CALCULATIONS:- MATERIAL:COPPER & TEMPERATURE RATING:90°C

TAG ID	REQUIRED CONDUCTOR AMPACITY									CORRECTED AMPACITY CALCULATION							TERMINAL RATING CHECK			DERATED CONDUCTOR AMPACITY CHECK		
1	1	X	15.00	X	1	X	1.25	=	18.75A	40	X	0.71	X	1	=	28.40A	18.75A	<	30A	18.75A	<	28.40A
2	1	X	15.00	X	1	X	1.25	=	18.75A	40	X	0.76	X	0.8	=	24.32A	18.75A	<	30A	18.75A	<	24.32A

AC WIRE CALCULATIONS:- MATERIAL:COPPER & TEMPERATURE RATING:90°C

TAG ID	REQUIRED CONDUCTOR AMPACITY									CORRECTED AMPACITY CALCULATION							TERMINAL RATING CHECK			DERATED CONDUCTOR AMPACITY CHECK		
3	42	X	1	=	42.00	X	1.25	=	52.5A	75	X	0.91	X	1	=	68.25A	52.5	<	65A	52.5	<	68.25A
4	42	X	1	=	42.00	X	1.25	=	52.5A	75	X	0.91	X	1	=	68.25A	52.5	<	65A	52.5	<	68.25A

OCPD CALCULATIONS:
MAIN PANEL RATING: 200A,
LOAD SIDE TAP:100% ALLOWABLE BACK FEED IS 200A
INVERTER OVERCURRENT PROTECTION=
INVERTER O/P I X CONTINUOUS LOAD(1.25)X
#OF INVERTERS =42X1.25X1=52.50A =< PV
BREAKER = 60A

ELECTRICAL NOTES:
1. MAXIMUM DC/AC VOLTAGE DROP SHALL BE NO MORE THAN 2%.
2. BREAKER/FUSE SIZES CONFORMS TO NEC 240.6 CODE SECTION.
3. AC GROUNDING ELECTRODE CONDUCTOR SIZED PER NEC 250.66.
4. AMBIENT TEMPERATURE CORRECTION FACTOR IS BASED ON NEC 690.31(A).
5. AMBIENT TEMPERATURE ADJUSTMENT FACTOR IS BASED ON NEC 310.15(B)(2)(C) AND 310.15(B)(2)(B)
6. AC SYSTEM VOLTAGE CORRECTION IS PER NEC 690.7(A)
7. CONDUCTORS ARE SIZED PER WIRE AMPACITY TABLE NEC 310.15(B)(16).
8. CONDUCTORS EXPOSED TO SUNLIGHT SHALL BE LISTED AS SUNLIGHT RESISTANT PER NEC 310.10(D).
9. CONDUCTORS EXPOSED TO WET LOCATIONS SHALL BE SUITABLE FOR USE IN WET LOCATIONS PER NEC 310.10(C).

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SINGLE LINE DIAGRAM

DESIGNER / CHECKED BY:
J.B. / J.B.

SCALING: AS NOTED	PAPER SIZE: 17"x11"	
DATE: 9/17/21	REV:A	E-001

WARNING PLACARDS

WARNING

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

LABEL LOCATION
DC DISCONNECT,INVERTER
[PER CODE: NEC 690.41)]
[To be used when inverter is ungrounded]

WARNING

ELECTRIC SHOCK HAZARD
DO NOT TOUCH TERMINALS
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

LABEL LOCATION
AC DISCONNECT,POINT OF INTERCONNECTION
[PER CODE: NEC 690.13(B)]

WARNING

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

LABEL LOCATION
AC DISCONNECT,POINT OF INTERCONNECTION
[PER CODE: NEC 690.13(B)]

WARNING-Electric Shock Hazard
No User Serviceable Parts inside
Contact authorized service provide for assistance

LABEL LOCATION
INVERTER, JUNCTION BOXES(ROOF),
AC DISCONNECT
[PER CODE: NEC 690.13]

WARNING:PHOTOVOLTAIC POWER SOURCE

LABEL LOCATION
CONDUIT, COMBINER BOX
[PER CODE: NEC690.31(G)(3)]

WARNING
DUAL POWER SOURCE SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

LABEL LOCATION
POINT OF INTERCONNECTION
[PER CODE: NEC705.12(D)(4)]

PHOTOVOLTAIC SYSTEM DC DISCONNECT

MAXIMUM VOLATAGE	480	VDC
MAXIMUM CIRCUIT CURRENT	45	ADC
MAX RATED OUTPUT CURRENT OF THE CHARGE CONTROLLER OR DC TO DC CONCERTER (IF INSTALLED)	15	ADC

LABEL LOCATION
DC DISCONNECT SWITCH, INVERTER
REF. CODE: NEC 690.14(C)(2), NEC 690.53

PHOTOVOLTAIC SYSTEM AC DISCONNECT SWITCH

RATED AC OPERATING CURRENT	42.00	AMPS AC
AC NOMINAL OPERATING VOLTAGE	240	VAC

LABEL LOCATION
AC DISCONNECT , POINT OF INTERCONNECTION
[PER CODE: NEC 690.54]

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

LABEL LOCATION
POINT OF INTERCONNECTION
(PER CODE: NEC 705.12(2)(b)
[Not Required if Panel board is rated not less than sum of ampere ratings of all overcurrent devices supplying it]

CAUTION: SOLAR CIRCUIT

LABEL LOCATION
MARKINGS PLACED ON ALL INTERIOR AND EXTERIOR DC CONDUIT, RACEWAYS, ENCLOSURES AND CABLE ASSEMBLES AT LEAST EVERY 10 FT, AT TURNS AND ABOVE/BELOW PENETRATIONS AND ALL COMBINER/JUNCTION BOXES.
(PER CODE: IFC605.11.1.4)

SOLAR DISCONNECT

LABEL LOCATION
DISCONNECT, POINT OF INTERCONNECTION
[PER CODE: NEC690.13(B)]

CAUTION: SOLAR ELECTRIC SYSTEM CONNECTED

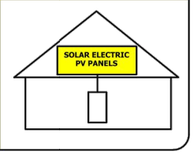
LABEL LOCATION
WEATHER RESISTANT MATERIAL, DURABLE ADHESDIVE, UL969 AS STANDARD TO WEATHER RATING (UL LISTING OF MARKINGS NOT REQUIRED), MIN ⅜" LETTER HEIGHT ARIAL OR SIMILAR FONT NON-BOLD,PLACED WITHIN THE MAIN SERVICE DISCONNECT,PLACED ON THE OUTSIDE OF THE COVER WHEN DISCONNECT IS OPERATED WITH THE SERVICE PANEL CLOSED.
(PWER CODE: NEC690.15 ,690.13(B))

RAPID SHUTDOWN SWITCH FOR SOLAR SYSTEM

LABEL LOCATION
INVERTER,POINT OF INTERCONNECTION
[PER CODE: NEC 690.56(C)(3)]

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



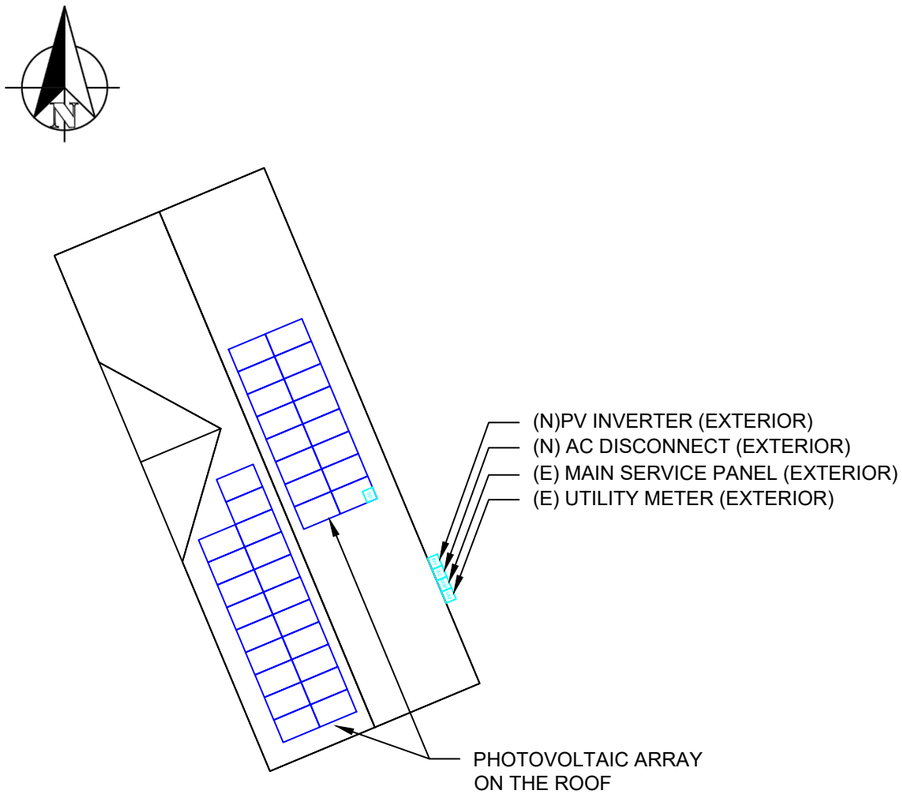
LABEL LOCATION
POINT OF INTERCONNECTION
(PER CODE: NEC690.56(C))

ALL PLACARDS SHALL BE OF WEATHER PROOF CONSTRUCTION, BACKGROUND ON ALL PLACARDS SHALL BE RED WITH WHITE LETTERING U.O.N.
PLACARD SHALL BE MOUNTED DIRECTLY ON THE EXISTING UTILITY ELECTRICAL SERVICE.FASTENERS APPROVED BY THE LOCAL JURISDICTION

NOTE:ALL SIGNAGE CANNOT BE HAND WRITTEN NEC 110.21

WARNING !

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



48 BO BO WHITE LN, LILLINGTON, NC 27546

SYSTEM UTILIZES MICRO-INVERTERS LOCATED UNDER SOLAR MODULE

Sustainable Energy & Lighting Solutions
Your future is brighter with us!

SYSTEM INFORMATION

DC SYSTEM SIZE: 12.600 kW
AC SYSTEM SIZE: 10.000 kW
ANNUAL SOLAR OUPUT: 15864kWh/an
MODULES:
(36) Q CELLS Q.PEAK DUO-G6+ 350
INVERTER:
(1)SOLAREDGE SE10000H-US
OPTIMIZER DETAILS
(36) P370 SOLAR EDGE POWER OPTIMIZER

ENGINEER OF RECORD

CUSTOMER INFORMATION

NAME & ADDRESS:
NOE AGUILAR
48 BO BO WHITE LN, LILLINGTON, NC 27546

GPS: 35.3425154, -78.9448008
APN: 130528 0035

AHJ: NC-HARNETT COUNTY

UTILITY: SOUTH RIVER EMC

PROJECT NUMBER: ----

WARNING PLACARDS

DESIGNER / CHECKED BY:
J.B. / J.B.

SCALING: AS NOTED	PAPER SIZE: 17"x11"	
DATE: 9/17/21	REV:A	E-003

powered by Q.ANTUM DUO

Q.PEAK DUO-G6+
340-355
ENDURING HIGH PERFORMANCE

EUPD RESEARCH TOP BRAND PV MODULES EUROPE 2020

Q CELLS Yield Security

ASSEMBLED IN THE USA

VDE Quality Tested www.VDEInfo.com ID. 40032587

25 YR Warranty Product & Performance

Q.ANTUM TECHNOLOGY: LOW LEVELIZED COST OF ELECTRICITY
Higher yield per surface area, lower BOS costs, higher power classes, and an efficiency rate of up to 20.1%.

INNOVATIVE ALL-WEATHER TECHNOLOGY
Optimal yields, whatever the weather with excellent low-light and temperature behavior.

ENDURING HIGH PERFORMANCE
Long-term yield security with Anti LID and Anti PID Technology[1], Hot-Spot Protect and Traceable Quality Tra.Q™.

EXTREME WEATHER RATING
High-tech aluminum alloy frame, certified for high snow (5400 Pa) and wind loads (4000 Pa).

A RELIABLE INVESTMENT
Inclusive 25-year product warranty and 25-year linear performance warranty[2].

STATE OF THE ART MODULE TECHNOLOGY
Q.ANTUM DUO combines cutting edge cell separation and innovative wiring with Q.ANTUM Technology.

[1] APT test conditions according to IEC/TS 62804-1:2015, method B (–1500 V, 168 h)
[2] See data sheet on rear for further information

THE IDEAL SOLUTION FOR:

Rooftop arrays on residential buildings

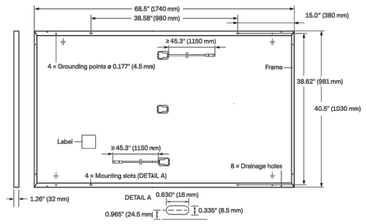
Rooftop arrays on commercial / industrial buildings

Engineered in Germany

Q CELLS

MECHANICAL SPECIFICATION

Format	68.5 × 40.6 × 1.26 in (including frame) (1740 × 1030 × 32 mm)
Weight	43.9 lbs (19.9 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodized aluminum
Cell	6 × 20 monocrystalline Q.ANTUM solar half cells
Junction Box	2.09-3.98 × 1.26-2.36 × 0.59-0.71 in (53-101 × 32-60 × 15-18 mm), Protection class IP67, with bypass diodes
Cable	4 mm² Solar cable; (+) ≥45.3 in (1150 mm), (–) ≥45.3 in (1150 mm)
Connector	Stäubli MC4; IP68

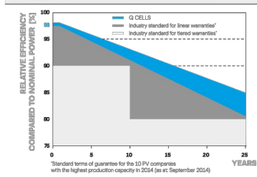


ELECTRICAL CHARACTERISTICS

POWER CLASS				340	345	350	355
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC[1] (POWER TOLERANCE +5 W / –0 W)							
Minimum	Power at MPP[1]	P_{MPP}	[W]	340	345	350	355
	Short Circuit Current[1]	I_{SC}	[A]	10.68	10.73	10.79	10.84
	Open Circuit Voltage[1]	V_{OC}	[V]	40.24	40.49	40.73	40.98
	Current at MPP	I_{MPP}	[A]	10.16	10.22	10.27	10.33
	Voltage at MPP	V_{MPP}	[V]	33.45	33.76	34.07	34.38
	Efficiency[1]	η	[%]	≥19.0	≥19.3	≥19.5	≥19.8
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT[2]							
Minimum	Power at MPP	P_{MPP}	[W]	254.5	258.2	261.9	265.7
	Short Circuit Current	I_{SC}	[A]	8.60	8.65	8.69	8.74
	Open Circuit Voltage	V_{OC}	[V]	37.94	38.17	38.41	38.65
	Current at MPP	I_{MPP}	[A]	8.00	8.04	8.09	8.13
	Voltage at MPP	V_{MPP}	[V]	31.81	32.10	32.40	32.69

[1] Measurement tolerances P_{MPP} ±3%; I_{SC}; V_{OC} ±5% at STC: 1000 W/m², 25±2 °C, AM 1.5 according to IEC 60904-3 • [2] 800 W/m², NMOT, spectrum AM 1.5

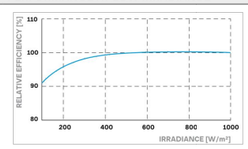
Q CELLS PERFORMANCE WARRANTY



At least 98% of nominal power during first year. Thereafter max. 0.54% degradation per year. At least 93.1% of nominal power up to 10 years. At least 85% of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Q CELLS sales organization of your respective country.

PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m²)

TEMPERATURE COEFFICIENTS							
Temperature Coefficient of I_{SC}	α	[%/K]	+0.04	Temperature Coefficient of V_{OC}	β	[%/K]	–0.27
Temperature Coefficient of P_{MPP}	γ	[%/K]	–0.36	Nominal Module Operating Temperature	NMOT	[°F]	109±5.4 (43±3 °C)

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage V_{SYS}	[V]	1000 (IEC) / 1000 (UL)	PV module classification	Class II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating based on ANSI / UL 61730	TYPE 2
Max. Design Load, Push / Pull[3]	[lbs / ft²]	75 (3600 Pa) / 55 (2667 Pa)	Permitted Module Temperature on Continuous Duty	–40 °F up to +185 °F (–40 °C up to +85 °C)
Max. Test Load, Push / Pull[3]	[lbs / ft²]	113 (5400 Pa) / 84 (4000 Pa)		

[3] See Installation Manual

QUALIFICATIONS AND CERTIFICATES

UL 1703, CE-compliant, VDE Quality Tested IEC 61215:2016, IEC 61730:2016, U.S. Patent No. 9,893,215 (solar cells)

PACKAGING INFORMATION

Horizontal packaging	70.1 in 1780 mm	42.5 in 1080 mm	47.6 in 1208 mm	1485 lbs 674 kg	28 pallets	26 pallets	32 modules
Vertical packaging	71.5 in 1815 mm	45.3 in 1150 mm	48.0 in 1220 mm	1505 lbs 683 kg	28 pallets	24 pallets	32 modules

Note: Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product. Q CELLS supplies solar modules in two different stacking methods, depending on the location of manufacture (modules are packed horizontally or vertically). You can find more detailed information in the document "Packaging and Transport Information", available from Q CELLS.

Hanwha Q CELLS America Inc.
400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA | **TEL** +1 949 748 59 96 | **EMAIL** inquiry@us.q-cells.com | **WEB** www.q-cells.us

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SYSTEM INFORMATION

DC SYSTEM SIZE: 12.600 kW
AC SYSTEM SIZE: 10.000 kW
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(1)SOLAREDGE SE10000H-US
OPTIMIZER DETAILS
(36) P370 SOLAR EDGE POWER OPTIMIZER

ENGINEER OF RECORD

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APN: 130528 0035

AHJ: NC-HARNETT COUNTY

UTILITY: SOUTH RIVER EMC

PROJECT NUMBER: ----

MODULE SPECSHEET

DESIGNER / CHECKED BY:
J.B. / J.B.

SCALING: AS NOTED	PAPER SIZE: 17"x11"	
DATE: 9/17/21	REV:A	SS-001

Single Phase Inverter with HD-Wave Technology

for North America

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

INVERTERS

12-25 YEAR WARRANTY

Optimized installation with HD-Wave technology

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

solaredge.com

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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

Sustainable Energy & Lighting Solutions
Your future is brighter with us!

SYSTEM INFORMATION

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OPTIMIZER DETAILS
(36) P370 SOLAR EDGE POWER OPTIMIZER

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INVERTER SPECSHEET

DESIGNER / CHECKED BY:
J.B. / J.B.

SCALING: AS NOTED	PAPER SIZE: 17"x11"	
DATE: 9/17/21	REV:A	SS-002

Power Optimizer

For North America

P370 / P400 / P401 / P485 / P505

25 YEAR WARRANTY

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

P370 / P400 / P401 / P485 / P505

Optimizer model (typical module compatibility)	P370 (for higher-power 60 and 72-cell modules)	P400 (for 72 & 96-cell modules)	P401 (for high power 60 and 72 cell modules)	P485 (for high-voltage modules)	P505 (for higher current modules)	
INPUT						
Rated Input DC Power(1)	370	400		485	505	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	60	80	60	125(2)	83(2)	Vdc
MPPT Operating Range	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					%
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						
Photovoltaic Rapid Shutdown System	NEC 2014, 2017 & 2020			NEC 2014, 2017 & 2020	NEC 2014, 2017 & 2020	
EMC	FCC Part 15 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 153 x 33.5 / 5.1 x 6 x 1.3	129 x 162 x 59 / 5.1 x 6.4 x 2.3	mm / in
Weight (including cables)	655 / 1.4	750 / 1.7	655 / 1.4	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, 0.9 / 2.95(4)	0.16 / 0.52	0.16 / 0.52, 0.9 / 2.95(4)	0.16 / 0.52	0.16 / 0.52	m / ft
Output Wire Type / Connector	Double Insulated / MC4					
Output Wire Length	1.2 / 3.9					m / ft
Operating Temperature Range(5)	-40 to +85 / -40 to +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)	P370, P400, P401	8		10	18	
	P485, P505	6		8	14	
Maximum String Length (Power Optimizers)		25		25	50	
Maximum Nominal Power per String		5700(8) (6000 with SE7600-US - SE11400-US)	5250(8)	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 P485/P505 with P370/P400/P401 in one string
(8) If the inverters rated AC power ≤ maximum nominal power per string, then the maximum power per string will be able to reach up to the inverters maximum input DC power. Refer to: https://www.solaredge.com/sites/default/files/se-power-optimizer-single-string-design-application-note.pdf
(9) For 208V grid: it is allowed to install up to 7,200W per string when the maximum power difference between each string is 1,000W
(10) For 277/480V grid: it is allowed to install up to 15,000W per string when the maximum power difference between each string is 2,000W

Intertek RoHS

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COMBINER SPECSHEET

DESIGNER / CHECKED BY:
J.B. / J.B.

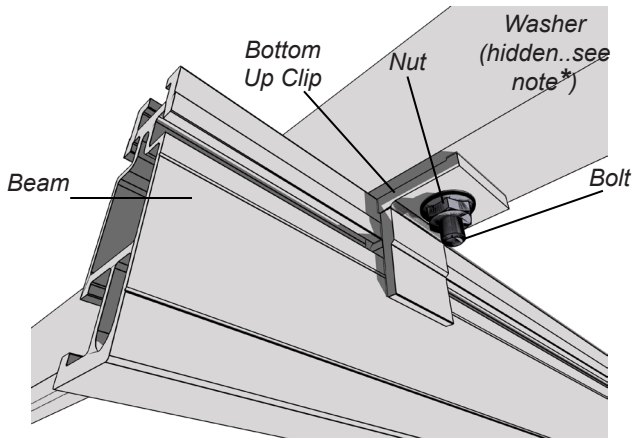
SCALING: AS NOTED	PAPER SIZE: 17"x11"	
DATE: 9/17/21	REV:A	SS-003

SolarMount Technical Datasheet

Pub 100602-1td V1.0 June 2010

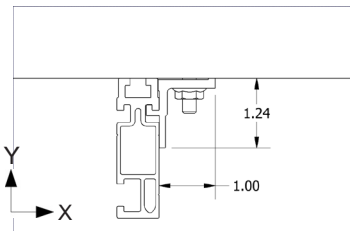
SolarMount Module Connection Hardware

SolarMount Bottom Up Module Clip
Part No. 321001, 321002



- **Bottom Up Clip material:** One of the following extruded aluminum alloys: 6005-T5, 6105-T5, 6061-T6
- **Ultimate tensile:** 38ksi, Yield: 35 ksi
- **Finish:** Clear Anodized
- **Bottom Up Clip weight:** ~0.031 lbs (14g)
- Allowable and design loads are valid when components are assembled with SolarMount series beams according to authorized UNIRAC documents
- Assemble with one ¼"-20 ASTM F593 bolt, one ¼"-20 ASTM F594 serrated flange nut, and one ¼" flat washer
- Use anti-seize and tighten to 10 ft-lbs of torque
- Resistance factors and safety factors are determined according to part 1 section 9 of the 2005 Aluminum Design Manual and third-party test results from an IAS accredited laboratory
- Module edge must be fully supported by the beam

* **NOTE ON WASHER:** Install washer on bolt head side of assembly. **DO NOT** install washer under serrated flange nut

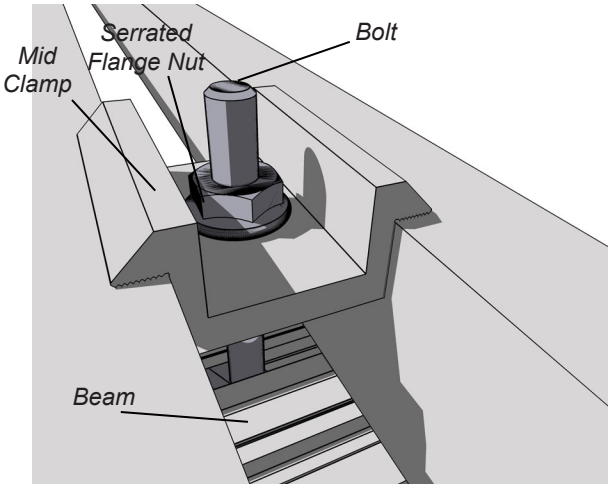


Applied Load Direction	Average Ultimate lbs (N)	Allowable Load lbs (N)	Safety Factor, FS	Design Load lbs (N)	Resistance Factor, Φ
Tension, Y+	1566 (6967)	686 (3052)	2.28	1038 (4615)	0.662
Transverse, X±	1128 (5019)	329 (1463)	3.43	497 (2213)	0.441
Sliding, Z±	66 (292)	27 (119)	2.44	41 (181)	0.619

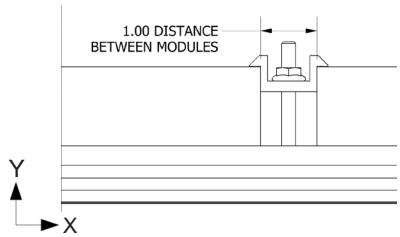
Dimensions specified in inches unless noted

SolarMount Mid Clamp

Part No. 320008, 320009, 320019, 320020, 320021, 320084, 320085, 320086, 320087, 320120, 320122



- **Mid clamp material:** One of the following extruded aluminum alloys: 6005-T5, 6105-T5, 6061-T6
- **Ultimate tensile:** 38ksi, Yield: 35 ksi
- **Finish:** Clear or Dark Anodized
- **Mid clamp weight:** 0.050 lbs (23g)
- Allowable and design loads are valid when components are assembled according to authorized UNIRAC documents
- Values represent the allowable and design load capacity of a single mid clamp assembly when used with a SolarMount series beam to retain a module in the direction indicated
- Assemble mid clamp with one Unirac ¼”-20 T-bolt and one ¼”-20 ASTM F594 serrated flange nut
- Use anti-seize and tighten to 10 ft-lbs of torque
- Resistance factors and safety factors are determined according to part 1 section 9 of the 2005 Aluminum Design Manual and third-party test results from an IAS accredited laboratory

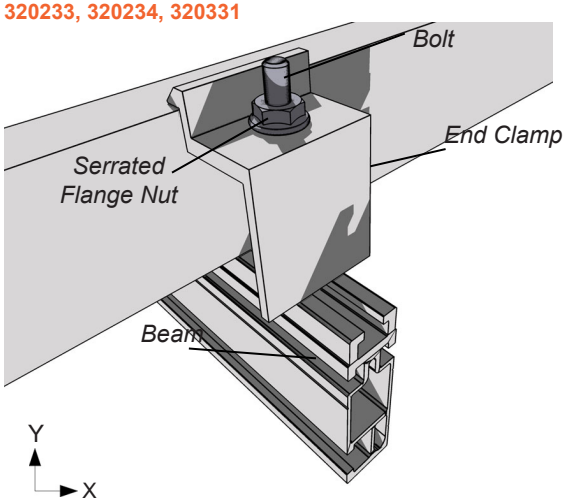


Applied Load Direction	Average Ultimate lbs (N)	Allowable Load lbs (N)	Safety Factor, FS	Design Load lbs (N)	Resistance Factor, Φ
Tension, Y+	2020 (8987)	891 (3963)	2.27	1348 (5994)	0.667
Transverse, Z±	520 (2313)	229 (1017)	2.27	346 (1539)	0.665
Sliding, X±	1194 (5312)	490 (2179)	2.44	741 (3295)	0.620

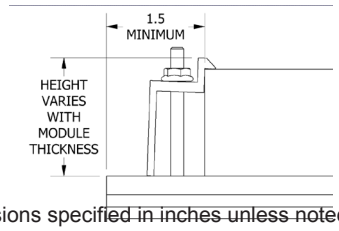
Dimensions specified in inches unless noted

SolarMount End Clamp

Part No. 320002, 320003, 320004, 320005, 320006, 320012, 320013, 320014, 320015, 320016, 320017, 320079, 320080, 320081, 320082, 320083, 320117, 320118, 320123, 320124, 320173, 320185, 320220, 320233, 320234, 320331



- **End clamp material:** One of the following extruded aluminum alloys: 6005-T5, 6105-T5, 6061-T6
- **Ultimate tensile:** 38ksi, Yield: 35 ksi
- **Finish:** Clear or Dark Anodized
- **End clamp weight:** varies based on height: ~0.058 lbs (26g)
- Allowable and design loads are valid when components are assembled according to authorized UNIRAC documents
- Values represent the allowable and design load capacity of a single end clamp assembly when used with a SolarMount series beam to retain a module in the direction indicated
- Assemble with one Unirac ¼”-20 T-bolt and one ¼”-20 ASTM F594 serrated flange nut
- Use anti-seize and tighten to 10 ft-lbs of torque
- Resistance factors and safety factors are determined according to part 1 section 9 of the 2005 Aluminum Design Manual and third-party test results from an IAS accredited laboratory
- Modules must be installed at least 1.5 in from either end of a beam

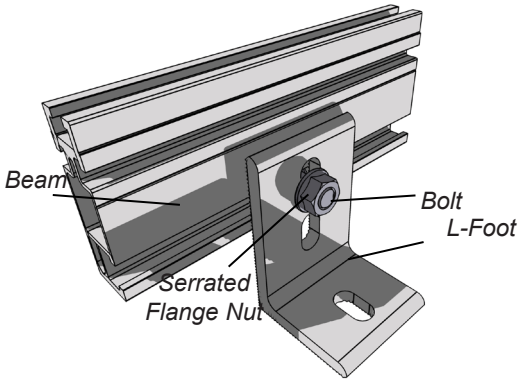


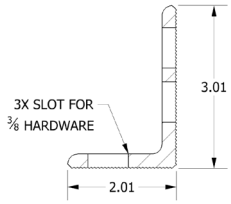
Applied Load Direction	Average Ultimate lbs (N)	Allowable Load lbs (N)	Safety Factor, FS	Design Loads lbs (N)	Resistance Factor, Φ
Tension, Y+	1321 (5876)	529 (2352)	2.50	800 (3557)	0.605
Transverse, Z±	63 (279)	14 (61)	4.58	21 (92)	0.330
Sliding, X±	142 (630)	52 (231)	2.72	79 (349)	0.555

Dimensions specified in inches unless noted

SolarMount Beam Connection Hardware

SolarMount L-Foot
Part No. 310065, 310066, 310067, 310068





Dimensions specified in inches unless noted

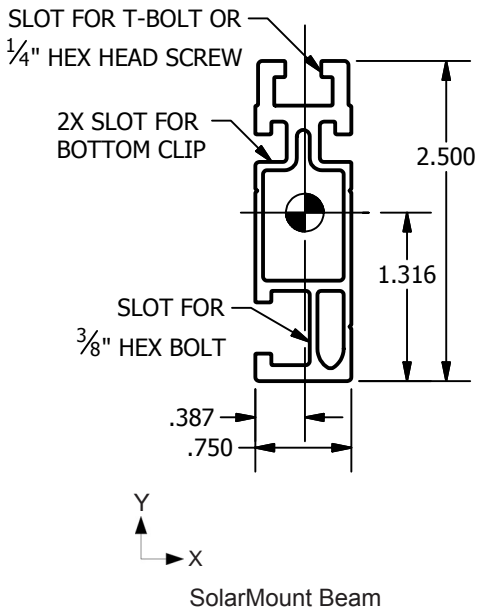
- **L-Foot material:** One of the following extruded aluminum alloys: 6005-T5, 6105-T5, 6061-T6
- **Ultimate tensile:** 38ksi, Yield: 35 ksi
- **Finish:** Clear or Dark Anodized
- **L-Foot weight:** varies based on height: ~0.215 lbs (98g)
- Allowable and design loads are valid when components are assembled with SolarMount series beams according to authorized UNIRAC documents
- **For the beam to L-Foot connection:**
  - Assemble with one ASTM F593 ⅜"-16 hex head screw and one ASTM F594 ⅜"serrated flange nut
  - Use anti-seize and tighten to 30 ft-lbs of torque
- Resistance factors and safety factors are determined according to part 1 section 9 of the 2005 Aluminum Design Manual and third-party test results from an IAS accredited laboratory

NOTE: Loads are given for the L-Foot to beam connection only; be sure to check load limits for standoff, lag screw, or other attachment method

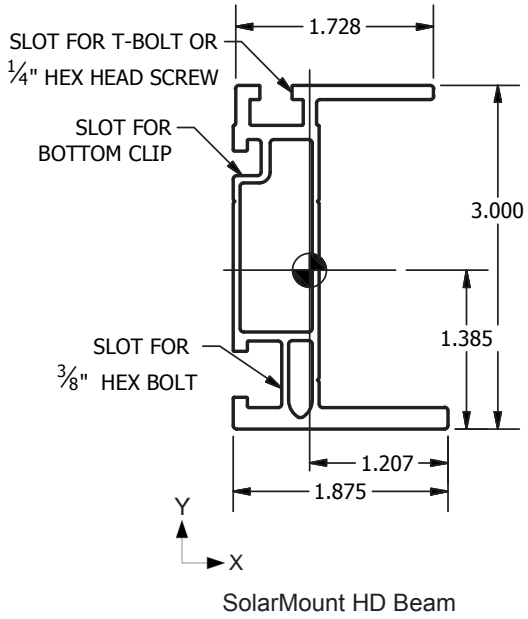
Applied Load Direction	Average Ultimate lbs (N)	Allowable Load lbs (N)	Safety Factor, FS	Design Load lbs (N)	Resistance Factor, Φ
Sliding, Z±	1766 (7856)	755 (3356)	2.34	1141 (5077)	0.646
Tension, Y+	1859 (8269)	707 (3144)	2.63	1069 (4755)	0.575
Compression, Y-	3258 (14492)	1325 (5893)	2.46	2004 (8913)	0.615
Traverse, X±	486 (2162)	213 (949)	2.28	323 (1436)	0.664

SolarMount Beams

Properties	Units	SolarMount	SolarMount HD
Beam Height	in	2.5	3.0
Approximate Weight (per linear ft)	plf	0.811	1.271
Total Cross Sectional Area	in^2	0.676	1.059
Section Modulus (X-Axis)	in^3	0.353	0.898
Section Modulus (Y-Axis)	in^3	0.113	0.221
Moment of Inertia (X-Axis)	in^4	0.464	1.450
Moment of Inertia (Y-Axis)	in^4	0.044	0.267
Radius of Gyration (X-Axis)	in	0.289	1.170
Radius of Gyration (Y-Axis)	in	0.254	0.502



SolarMount Beam



SolarMount HD Beam

Dimensions specified in inches unless noted

FLASH LOC

UNIRAC
BETTER SOLAR STARTS HERE

FLASHLOC is the ultimate attachment for composition shingle and rolled comp roofs. The all-in-one mount installs fast — no kneeling on hot roofs to install flashing, no prying or cutting shingles, no pulling nails. Simply drive the lag bolt and inject sealant into the base. **FLASH**LOC's patented TRIPLE SEAL technology preserves the roof and protects the penetration with a permanent pressure seal. Kitted with lag bolts, sealant, and hardware for maximum convenience. Don't just divert water, **LOC it out!**

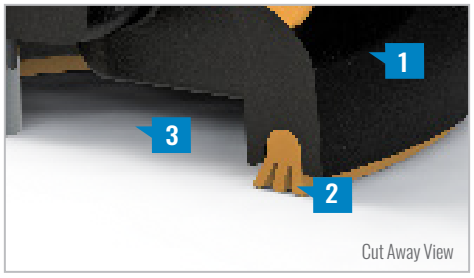
UNIRAC 25 YEAR FULL-SYSTEM WARRANTY

TESTED TO TAS-100
WIND DRIVEN RAIN TEST
AND UL441 RAIN TEST

JUNE2021_FLASHLOCCOMP_V2

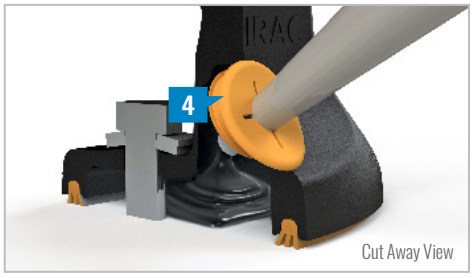
PROTECT THE ROOF

Install a high-strength waterproof attachment without lifting, prying or damaging shingles.



LOC OUT WATER

With an outer shield 1 contour-conforming gasket 2 and pressurized sealant chamber 3 the Triple Seal technology delivers a 100% waterproof connection.



HIGH-SPEED INSTALL

Simply drive lag bolt and inject sealant into the port 4 to create a permanent pressure seal.

FASTER INSTALLATION. 25-YEAR WARRANTY.

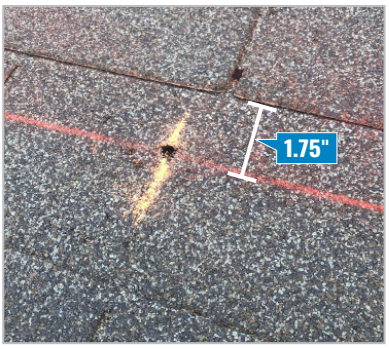
FOR QUESTIONS OR CUSTOMER SERVICE VISIT UNIRAC.COM OR CALL (505) 248-2702

FLASH LOC

INSTALLATION GUIDE

UNIRAC

BETTER SOLAR STARTS HERE



PRE-INSTALL

Snap chalk lines for attachment rows. On shingle roofs, snap lines 1-3/4" below upslope edge of shingle course. Locate rafters and mark attachment locations.

At each location, drill a 7/32" pilot hole. Clean roof surface of dirt, debris, snow, and ice. Next, BACKFILL ALL PILOT HOLES WITH SEALANT.

NOTE: Space mounts per racking system install specifications.

STEP 1: SECURE

Place **FLASH**LOC over pilot hole with lag on down-slope side. Align indicator marks on sides of mount with chalk line. Pass included lag bolt and sealing washer through **FLASH**LOC into pilot hole. Drive lag bolt until mount is held firmly in place.

NOTE: The EPDM in the sealing washer will expand beyond the edge of the metal washer when proper torque is applied.

STEP 2: SEAL

Insert tip of UNIRAC provided sealant into port. Inject until sealant exits both vents. Follow sealant manufacturer's instructions. Follow sealant manufacturer's cold weather application guidelines, if applicable.

Continue array installation, attaching rails to mounts with provided T-bolts.

NOTE: When **FLASH**LOC is installed over gap between shingle tabs or vertical joints, fill gap/joint with sealant between mount and upslope edge of shingle course.

USE ONLY UNIRAC APPROVED SEALANTS: Chemlink Duralink 50, Chemlink M-1, Geocel 4500, or Geocel S-4

FASTER INSTALLATION. 25-YEAR WARRANTY.

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