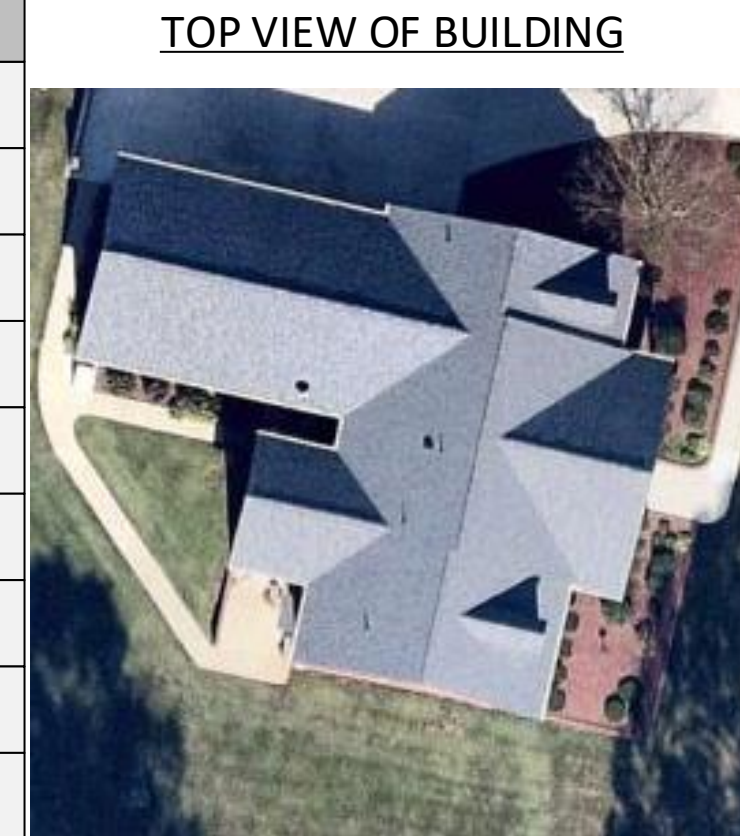


PROJECT DETAILS	
PV Modules	16 x Q.TRON BLK M-G2+ 425W
Microinverters	16 x IQ8PLUS-72-2-US
Roof Type	Asphalt Shingles
Racking	PSR-B84 Rails (Black)
Mounting Type	CompMount Flashing (Black)
DC SIZE	6.8 kW
AC SIZE	4.64 kVA

DRAWING INDEX			
Item	Drawing #	Rev	Description
1	2415DB00-0	A	Drawing Index
2	2415DB00-1	A	Site Layout
3	2415DB00-2	A	String Mapping
4	2415DB00-3	A	Electrical One Line Diagram
5	2415DB00-4	A	Detailed Electrical Wiring Schematic
6	2415DB00-5	A	PV Labels
7	2415DB00-6	A	Bill of Materials
8	2415DB00-7	A	PV Dead Load



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**Daniel Brown**  
1261 Rollins Mill Rd  
Holly Springs NC 27540

## PHOTOVOLTAIC NOTES

1. THE INSTALLATION OF SOLAR ARRAYS AND PHOTOVOLTAIC POWER SYSTEMS SHALL COMPLY WITH THE FOLLOWING CODES:

- 2020 NATIONAL ELECTRICAL CODE
- 2018 NORTH CAROLINA RESIDENTIAL CODE
- 2018 NORTH CAROLINA BUILDING CODE
- AS ADOPTED BY THE STATE OF NORTH CAROLINA
- ALL OTHER ORDINANCE ADOPTED BY THE LOCAL GOVERNING AGENCIES

2. ROOFTOP MOUNTED PHOTOVOLTAIC PANELS AND MODULES SHALL BE TESTED, LISTED AND IDENTIFIED BY RECOGNIZED ELECTRICAL TESTING LABORATORY.

3. SOLAR SYSTEM SHALL NOT COVER ANY PLUMBING OR MECHANICAL VENTS

4. MODULES AND SUPPORT STRUCTURES SHALL BE GROUNDED

5. SOLAR INVERTER SHALL BE LISTED TO UL1741

6. ALL CONDUCTORS SHALL BE COPPER AND SHOULD BE 75 AND 90 DEG RATED

7. REMOVAL OF AN INTERACTIVE INVERTER OR OTHER EQUIPMENT SHALL NOT DISCONNECT THE BONDING CONNECTION BETWEEN THE GROUNDING ELECTRODE CONDUCTOR AND THE PHOTOVOLTAIC SOURCE AND/OR OUTPUT CIRCUIT GROUNDED CONDUCTORS.

8. LIVE PARTS OF PV SOURCE CIRCUITS AND PV OUTPUT CIRCUITS OVER 150V TO GROUND SHALL NOT BE ACCESSIBLE TO OTHER THAN QUALIFIED PERSONS WHILE ENERGIZED.

9. ALL PV MODULES AND ASSOCIATED EQUIPMENT AND WIRING SHALL BE PROTECTED FROM PHYSICAL DAMAGE.



PV Installation  
Professional

Ali Buttar  
PVIP #031310-32

A 01/19/2024

Customer's Signature

JOB NUMBER

24-15-DB00

PROJECT STATUS

PERMITTING

SHEET

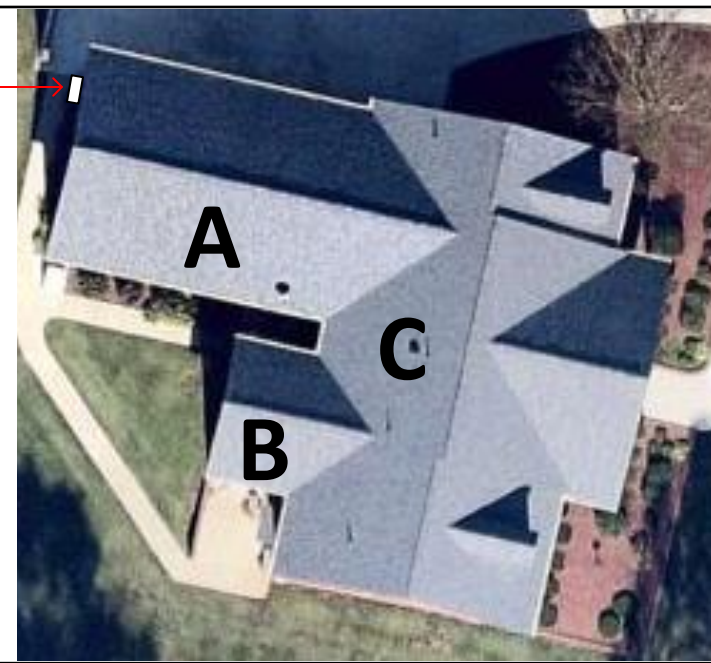
DRAWING INDEX

DB  
2415DB00-0

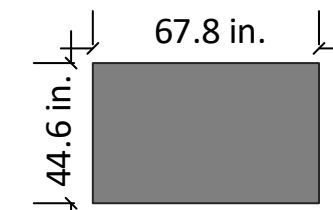
Roofs have one layer of shingles and roofing material is asphalt shingles.

The roof is located in 115mph wind zone

Utility Meter



Module Dimension



Roofs	Pitch	Azimuth
A	34°	192°
B	34°	192°
C	34°	282°



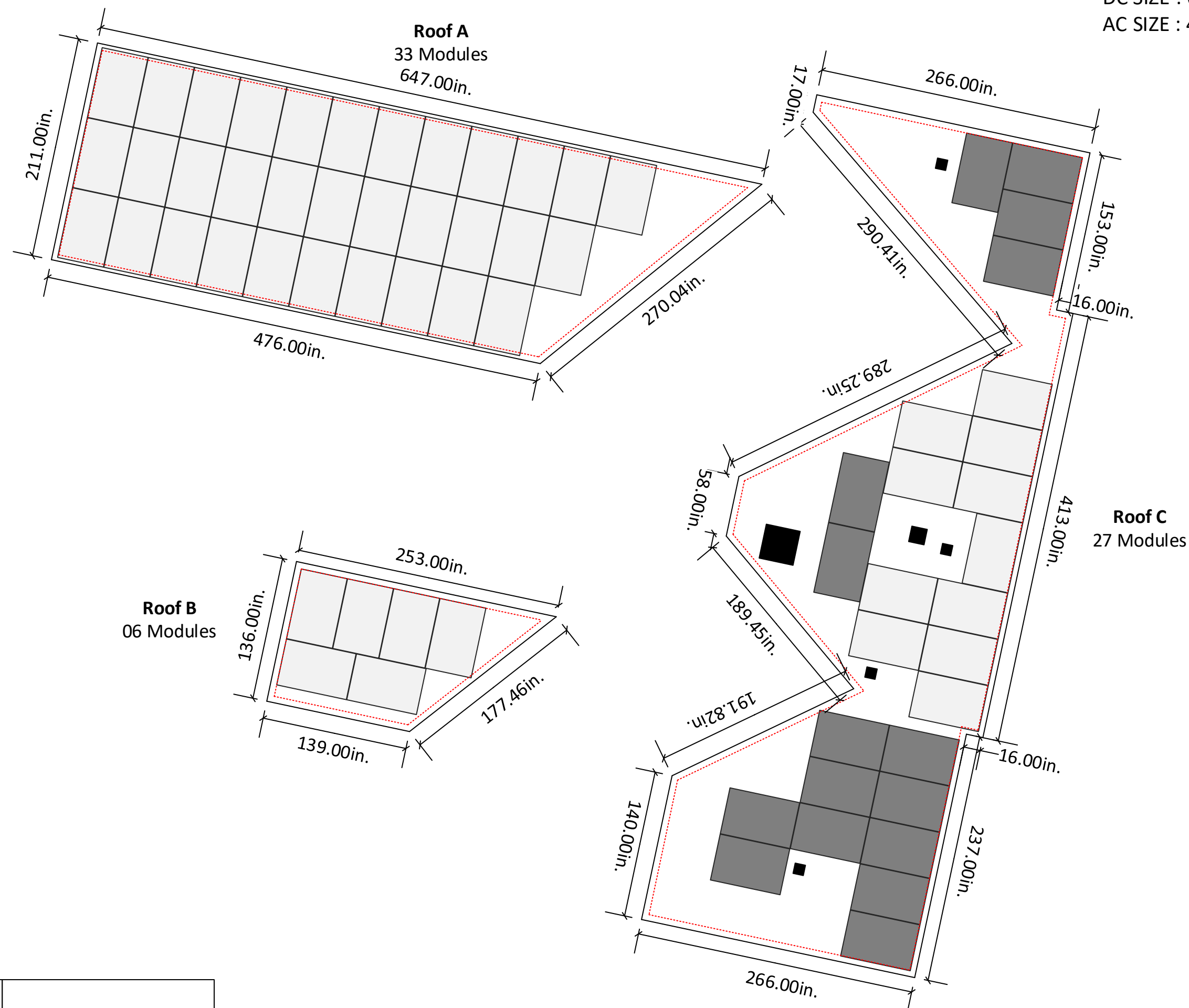
1600 Heritage Commerce Ct Ste 104, Wake Forest NC 27587  
 O: 919.948.6474  
 E: info@8msolar.com

**PRE-INSTALLED SYSTEM DETAILS**

NUMBER OF PANELS : 50  
 PANELS MODEL : SOLARIA PowerX-390R  
 DC SIZE : 19.5 KW  
 AC SIZE : 14.5 KVA

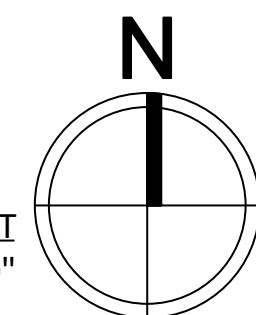
**SYSTEM DETAILS**

NUMBER OF PANELS : 16  
 PANELS MODEL : Q.TRON BLK M-G2+ 425W  
 DC SIZE : 6.8 KW  
 AC SIZE : 4.64 KVA



6" clearance from each side of the roof		Pre – Installed PV Panels
		New PV Panels

SITE LAYOUT  
 SCALE: 1/8" - 1' 0"



Daniel Brown  
 1261 Rollins Mill Rd  
 Holly Springs NC 27540



A 01/19/2024

Customer's Signature

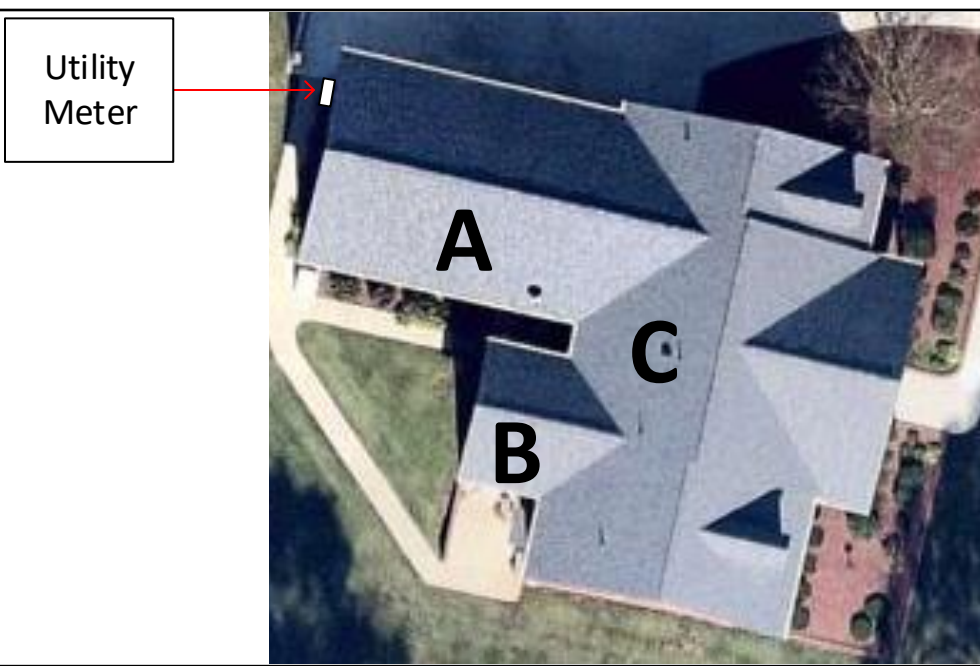
JOB NUMBER  
 24-15-DB00

PROJECT STATUS  
 PERMITTING

SHEET  
 SITE LAYOUT

DB  
 2415DB00-1

String Layout					
125A Load Center					
Strings #	No. of Modules	Color Code	Strings #	No. of Modules	Color Code
String 1	13		String 4	12	
String 2	13		String 5 (New-Installed)	10	
String 3	12		String 6 (New-Installed)	06	



Module Dimension		
	Pitch	Azimuth
Roofs		
A	34°	192°
B	34°	192°
C	34°	282°



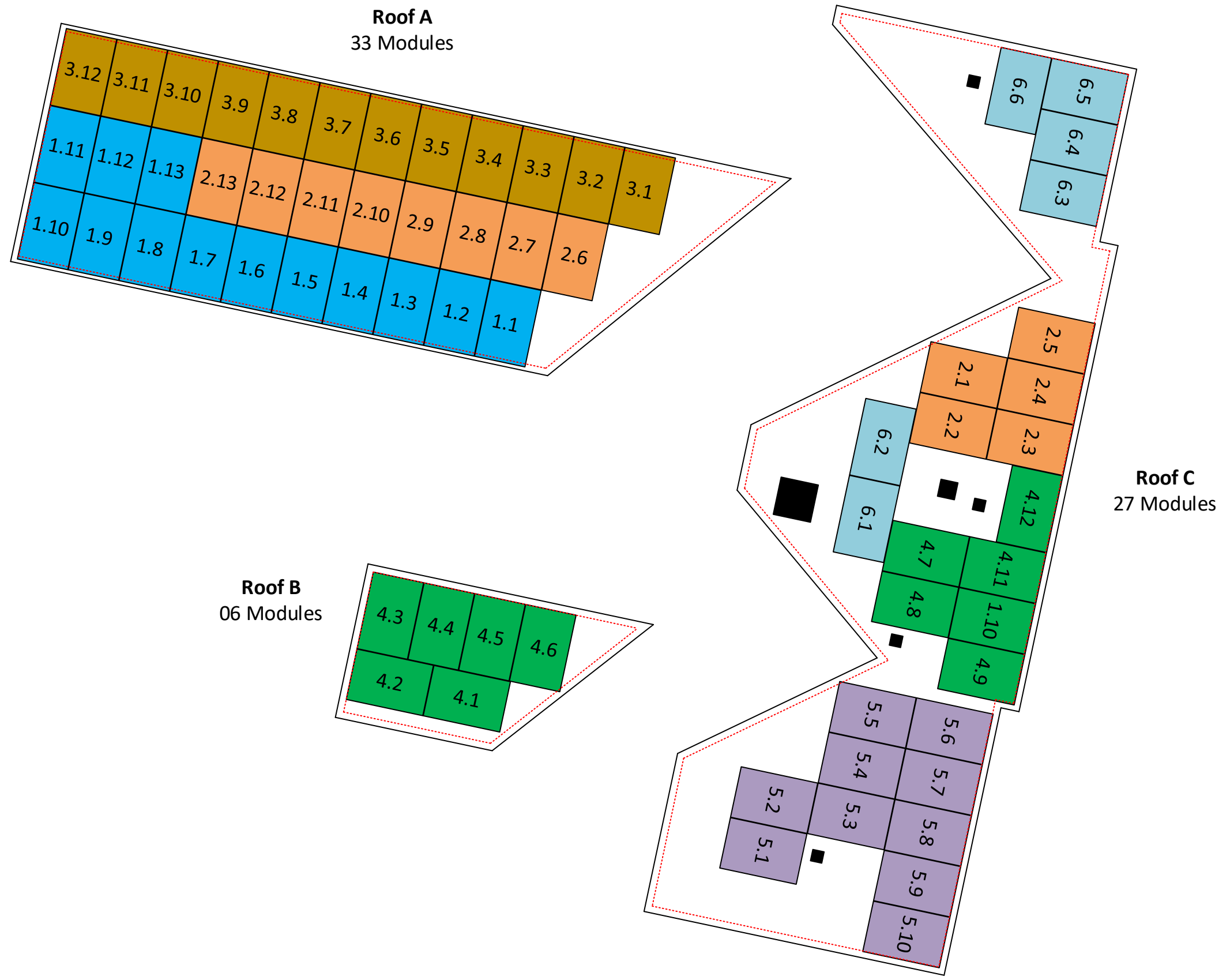
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 O: 919.948.6474  
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**PRE-INSTALLED SYSTEM DETAILS**

NUMBER OF PANELS : 50  
 PANELS MODEL : SOLARIA PowerX-390R  
 DC SIZE : 19.5 KW  
 AC SIZE : 14.5 KVA

**SYSTEM DETAILS**

NUMBER OF PANELS : 16  
 PANELS MODEL : Q.TRON BLK M-G2+ 425W  
 DC SIZE : 6.8 KW  
 AC SIZE : 4.64 KVA



6" clearance from each side of the roof

STRING MAPPING  
 SCALE: 1/8" - 1' 0"

Daniel Brown  
 1261 Rollins Mill Rd  
 Holly Springs NC 27540



A 01/19/2024

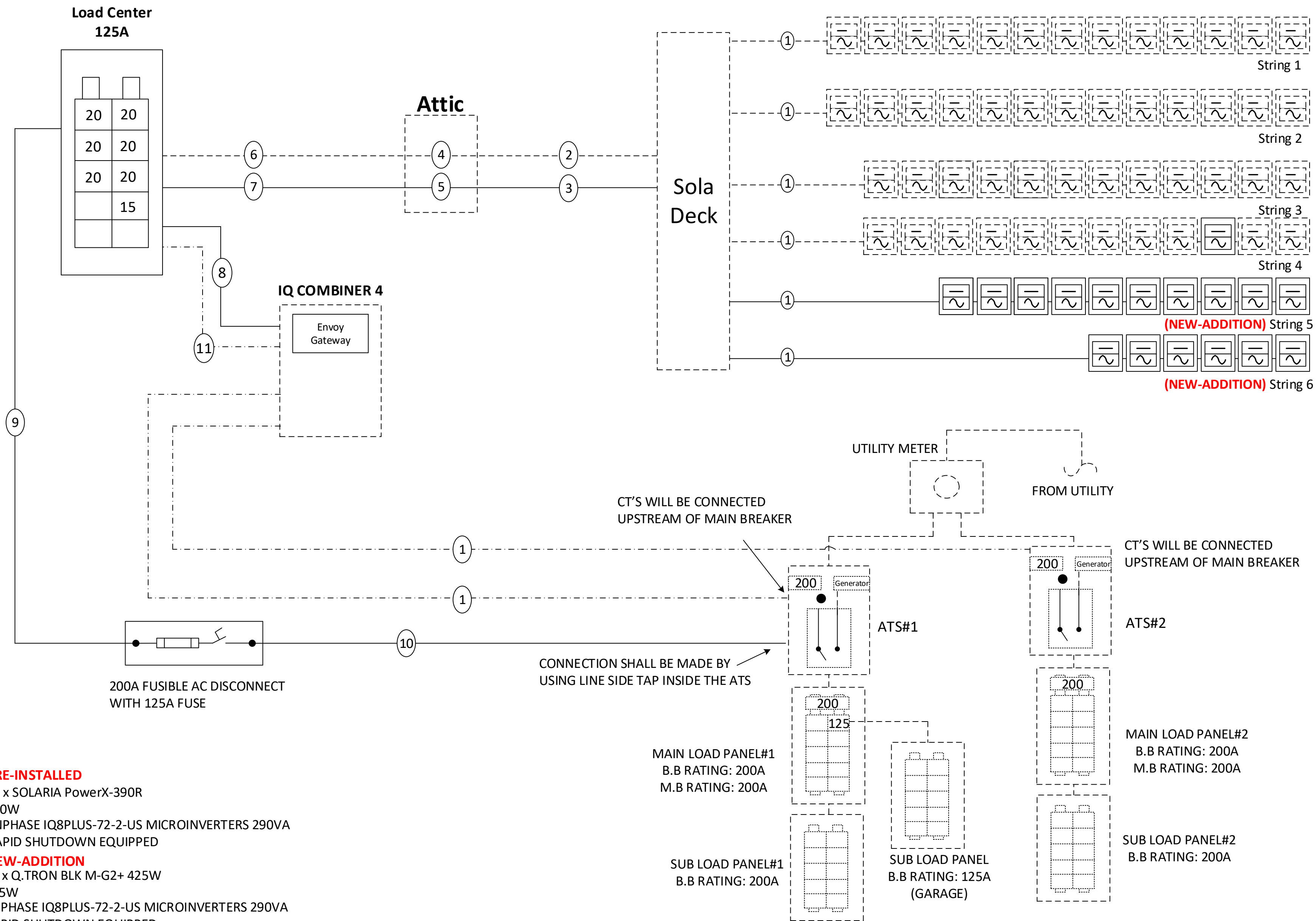
Customer's Signature

JOB NUMBER  
 24-15-DB00

PROJECT STATUS  
 PERMITTING

SHEET  
 STRING MAPPING

DB  
 2415DB00-2



- PRE-INSTALLED**
- 50 x SOLARIA PowerX-390R 390W
  - ENPHASE IQ8PLUS-72-2-US MICROINVERTERS 290VA RAPID SHUTDOWN EQUIPPED
- NEW-ADDITION**
- 16 x Q.TRON BLK M-G2+ 425W 425W
  - ENPHASE IQ8PLUS-72-2-US MICROINVERTERS 290VA RAPID SHUTDOWN EQUIPPED

**ELECTRICAL NOTES**

**NEW-ADDITION**

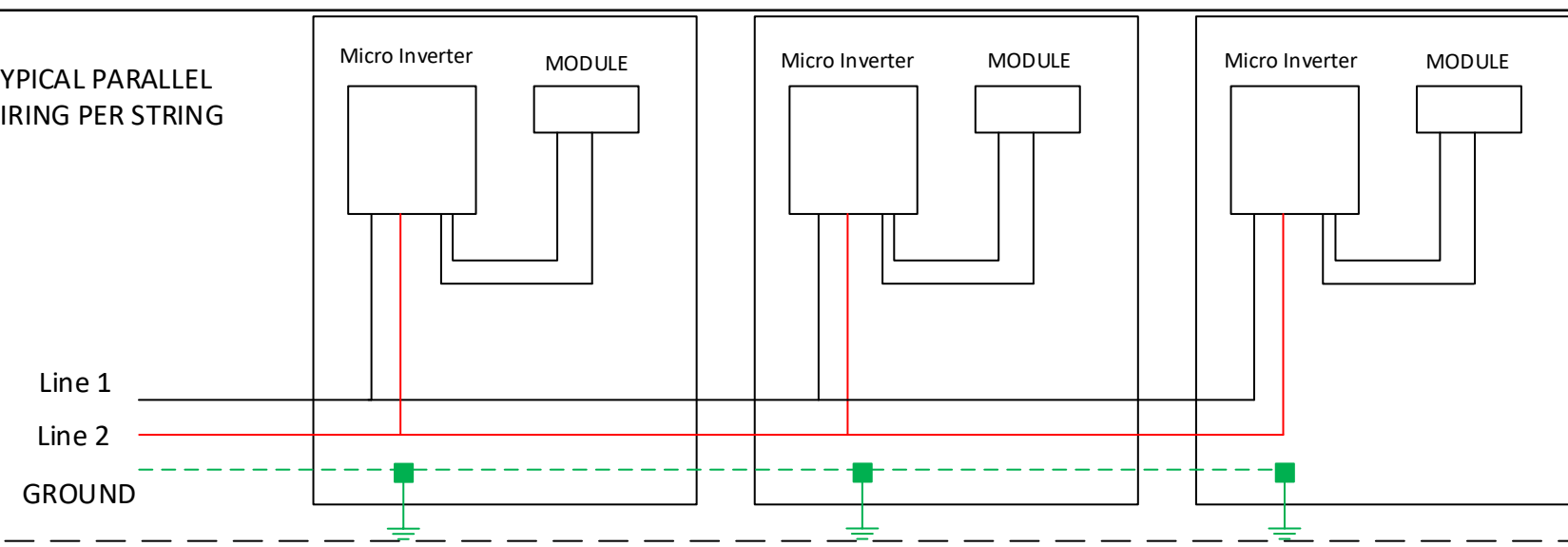
- System Size: 6,800W DC
- (16) Q.TRON BLK M-G2+ 425W
- (16) ENPHASE IQ8PLUS-72-2-US MICROINVERTERS
- Inverter Output: 1.21A max @ 240 VAC (each micro inverter)
- 290 VA AC output max (each micro inverter)
- 4.64 kVA AC output max

- Grounding will be done via Pegasus grounding lugs and mid-clamps to ensure the rail and panels are continuously grounded.
- Rapid Shutdown is included in the Micro Inverters, refer to Micro Inverter attached datasheets.
- The load center / disconnect will be visible, lockable accessible to utility linesmen and will be properly labelled as per NEC requirements. It will be located on the exterior wall of the building, next to the utility meter.

STRING 1:	STRING 2:	STRING 3:	STRING 4:	STRING 5:	STRING 6:
13 x 390W = 5,070W ea I max(1.21 x 1.25 x 13) = 19.66 AC V mpp = 240 AC Vrise (1.05+0.41 = 1.46) <= 2% V oc <= 30 VAC	13 x 390W = 5,070W ea I max(1.21 x 1.25 x 13) = 19.66 AC V mpp = 240 AC Vrise (1.30+0.41 = 1.71) <= 2% V oc <= 30 VAC	12 x 390W = 4,680W ea I max(1.21 x 1.25 x 13) = 18.15 AC V mpp = 240 AC Vrise (1.06+0.39 = 1.45) <= 2% V oc <= 30 VAC	12 x 390W = 4,680W ea I max(1.21 x 1.25 x 13) = 18.15 AC V mpp = 240 AC Vrise (1.37+0.52 = 1.89) <= 2% V oc <= 30 VAC	10 x 425W = 4,250W ea I max(1.21 x 1.25 x 10) = 15.12 AC V mpp = 240 AC Vrise (1.44+0.52 = 1.96) <= 2% V oc <= 30 VAC	06 x 425W = 2,550W ea I max(1.21 x 1.25 x 06) = 9.075 AC V mpp = 240 AC Vrise (1.32+0.52 = 1.84) <= 2% V oc <= 30 VAC

Sr.No	#Wire	Conduit Size	Ground Wire	Amperage
1	01 x #12 Q. Cable		#10 Bare CU	20A
2	4 x #10 MC Cable			20A
3	2 x #10 MC Cable			20A
4	8 x #10 THHN Cu	3/4" LFMC	#10 Green CU	20A
5	4 x #10 THHN Cu	3/4" LFMC	#10 Green CU	20A
6	8 x #10 THHN Cu	3/4" EMT	#10 Green CU	20A
7	4 x #10 THHN Cu	3/4" EMT	#10 Green CU	20A
8	3 x #10 THWN Cu	3/4" EMT	#10 Green CU	15
9	3 x #01 THHN Cu	1.25" PVC	#06 Green CU	120
10	3 x #01 THHN Cu	1.25" PVC		120
11	Lead Wire 18AWG, PVC Extruded	3/4" EMT		

TYPICAL PARALLEL WIRING PER STRING



Line 1	—
Line 2	—
Neutral	—
Ground	—
Communication Wire	---

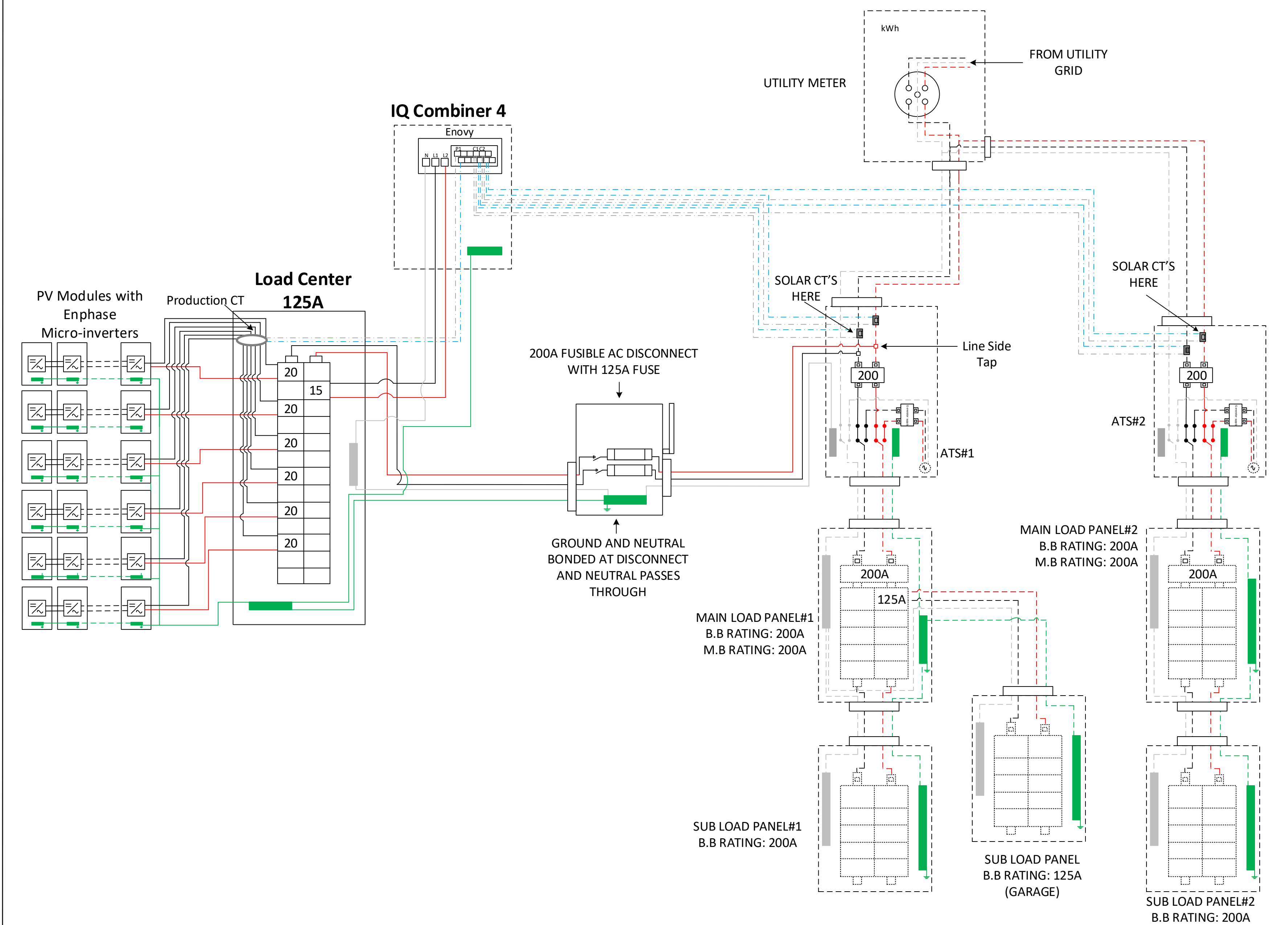
**Note:** Line 1 from all strings will be passed from the production CT

**Note:** The arrow on production CT's and consumption CT's must point towards the loads and away from the source.



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Daniel Brown  
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 Holly Springs NC 27540



A	01/19/2024

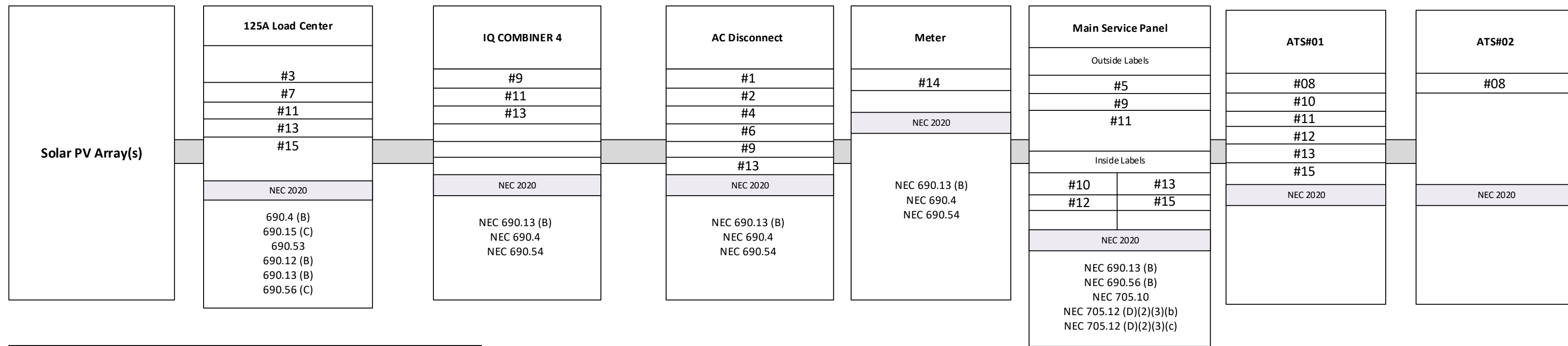
Customer's Signature

JOB NUMBER  
 24-15-DB00

PROJECT STATUS  
 PERMITTING

SHEET  
 DETAILED ELECTRICAL DIAGRAM

DB  
 2415DB00-4



## LABELING AND WARNING SIGNS: NEC 2020

### A. PURPOSE

PROVIDE EMERGENCY RESPONDERS WITH APPROPRIATE WARNING AND GUIDANCE WITH RESPECT TO ISOLATING THE SOLAR ELECTRIC SYSTEM. THIS CAN FACILITATE IDENTIFYING ENERGIZED ELECTRICAL LINES THAT CONNECT THE SOLAR PANELS TO THE INVERTER, AS SHOULD NOT BE CUT WHEN VENTING FOR SMOKE REMOVAL.

### B. MAIN SERVICE DISCONNECT:

1. RESIDENTIAL BUILDINGS- THE MARKING MAY BE PLACED WITHIN THE MAIN SERVICE DISCONNECT. THE MARKING SHALL BE PLACED ON THE OUTSIDE COVER IF THE MAIN SERVICE DISCONNECT IS OPERABLE WITH THE SERVICE PANEL CLOSED.
2. COMMERCIAL BUILDINGS- THE MARKINGS SHALL BE PLACED ADJACENT TO THE MAIN SERVICE DISCONNECT CLEARLY VISIBLE FROM THE LOCATION WHERE THE LEVER IS OPERATED

### 3. MARKINGS, VERBIAGE, FORMAT AND TYPE OF MATERIAL

- a. VERBIAGE: CAUTION; SOLAR ELECTRIC SYSTEM CONNECTED
- b. FORMAT:

- (1) WHITE LETTERING ON A RED BACKGROUND
- (2) MINIMUM 3/8 INCH LETTER HEIGHT
- (3) ALL LETTERS SHALL BE CAPITALIZED
- (4) ARIAL OR SIMILAR FONT, NON-BOLD

### c. MATERIAL:

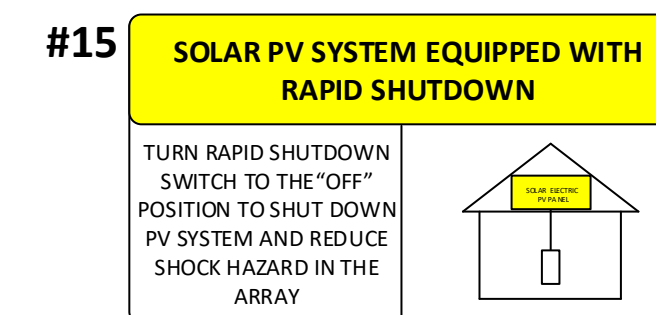
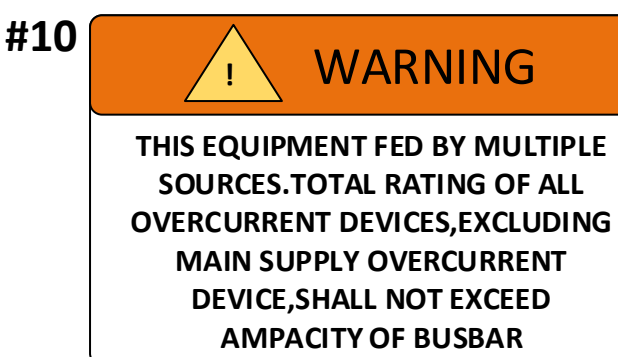
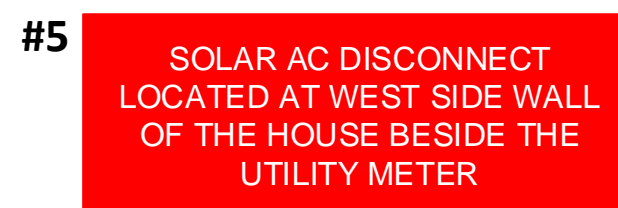
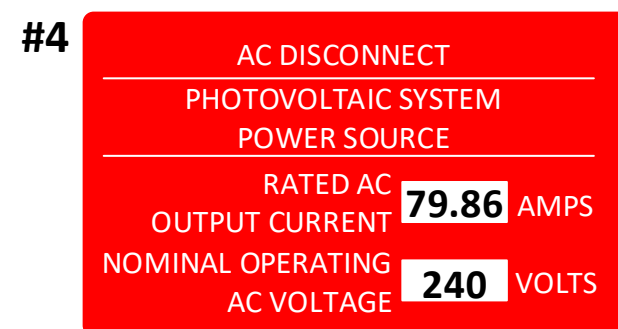
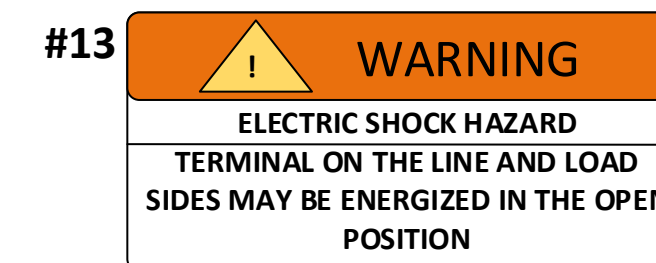
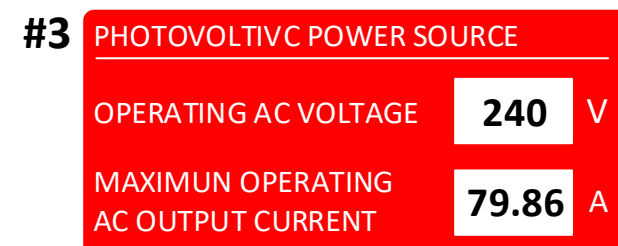
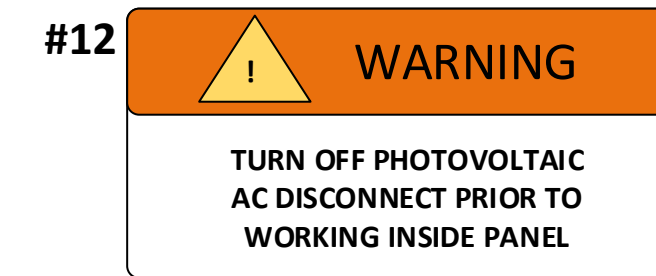
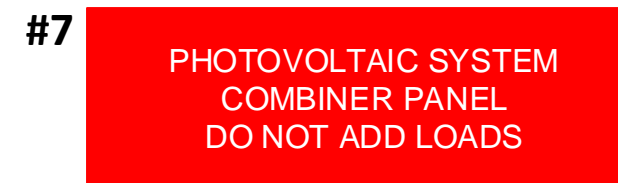
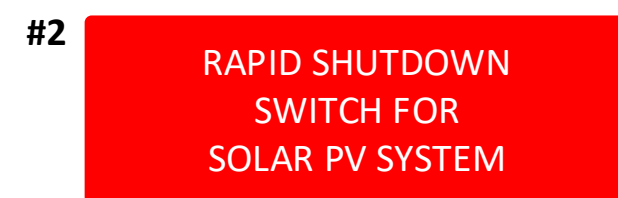
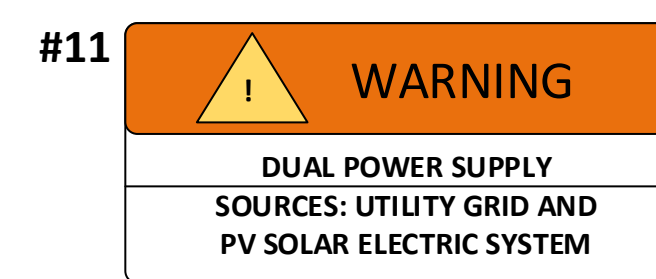
- (1) REFLECTIVE, WEATHER RESISTANT MATERIAL SUITABLE FOR THE ENVIRONMENT (USE UL-969) AS STANDARD FOR WEATHER RATING); DURABLE ADHESIVE MATERIALS MEET THIS REQUIREMENT.

### C. MARKING REQUIREMENTS ON CONDUIT, RACEWAYS, ENCLOSURES, CABLE ASSEMBLIES, COMBINERS AND JUNCTION BOXES;

#### 1. MARKING: PLACEMENT, VERBIAGE, FORMAT AND TYPE OF MATERIAL

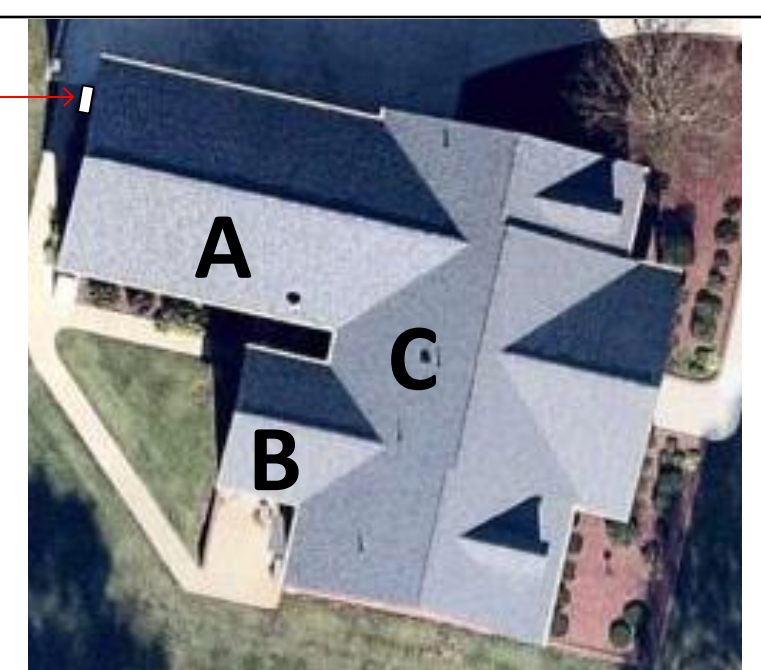
- a. PLACEMENT: MARKINGS SHALL BE PLACED EVERY 10 (TEN) FEET ON ALL INTERIOR AND EXTERIOR DC CONDUITS, RACEWAYS, ENCLOSURES AND CABLE ASSEMBLIES, AT TURNS ABOVE AND/OR BELOW PENETRATIONS, ALL COMBINERS AND JUNCTION BOXES.
- b. VERBIAGE: CAUTION SOLAR CIRCUIT
- c. THE FORMAT AND TYPE OF MATERIAL SHALL ADHERE TO SECTION B-3.B & C ABOVE

### D. INVERTERS ARE NOT REQUIRED TO HAVE CAUTION MARKINGS



Rails and Splices : PSR-B84 (BLACK)	Roof Attachment : Pegasus Comp Mount
Rafter Spacing : 24 in	There is one layer of shingles Roofing material is asphalt shingles
Attachment Span: 4ft	The roof is located in 115mph wind zone

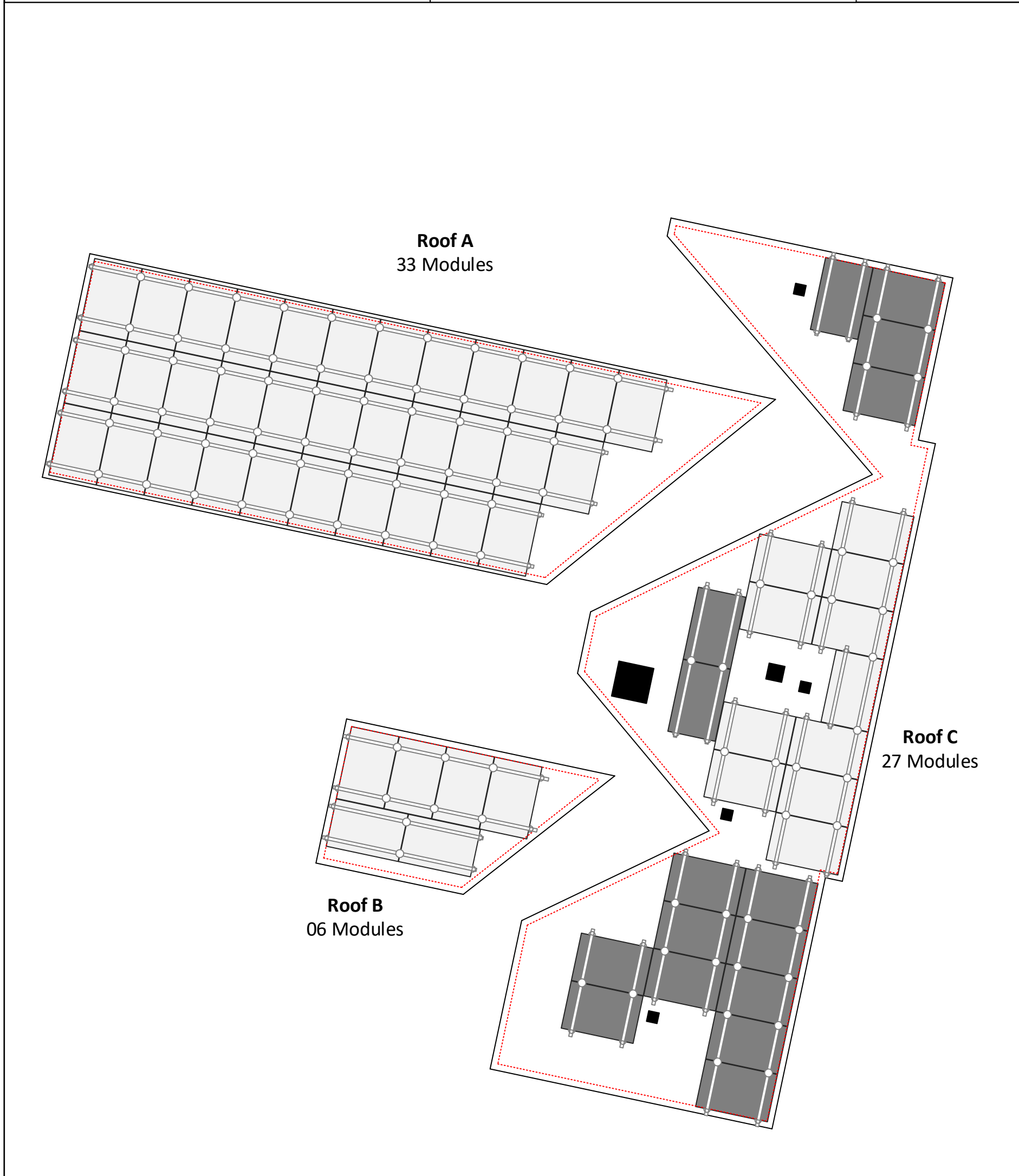
Utility Meter



Module Dimension		
	Roofs	Pitch
A	34°	192°
B	34°	192°
C	34°	282°



1600 Heritage Commerce Ct Ste 104, Wake Forest NC 27587  
O: 919.948.6474  
E: info@8msolar.com



PV LABELS		
Sr No	Code	Qty
01	03-302	01
02	02-316	01
03	03-390	01
04	03-306	01
05	8M-001	01
06	8M-002	01
07	03-355	01
08	8M-005	02
09	8M-003	03
10	05-108	02
11	05-211	04
12	05-372	02
13	05-215	05
14	07-359	01
15	07-111	03

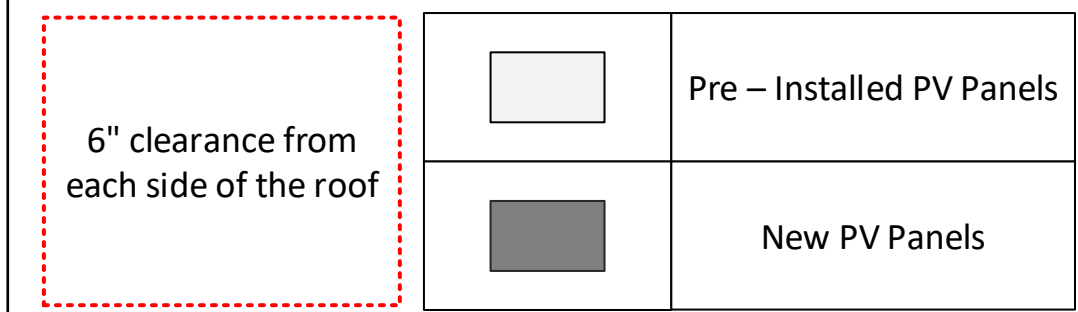
- 24 x PSR-B84: Pegasus Rail, Black, 84" (7 Feet)
- 12 x PSR-SPL: Pegasus - Bonded, Structural Splice
- 20 x PSR-MCB: Pegasus - Multiclamp, Mid/End, 30 to 40 mm, Black
- 24 x PSR-HEC: Pegasus - Hidden End Clamp
- 16 x PSR-MLP: Pegasus - MLPE Mount
- 10 x PSR-LUG: Pegasus - Grounding Lug
- 24 x PSR-WMC: Pegasus - Wire Management Clip
- 03 x PSR-CBG: Pegasus - Cable Grip
- 24 x PSR-CAP: Pegasus - End Cap
- 36 x PSCR-UBBDT: Pegasus Comp Mount - Open Slot, Black L Foot, Black Flashing, Dovetail 3/8" T-Bolt
- 32 x Heyco Wire Clips

- SOLAR MODULES**
- 16 x Q.TRON BLK M-G2+ 425W

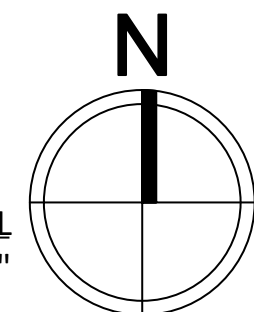
- INVERTER & SUPPORTING ITEMS**
- 16 x Enphase IQ8PLUS-72-2-US micro inverter

- ENPHASE CABLES AND ACCESSORIES**
- 18 x Q-12-10-240: Q Cable
  - 03 x Q-12-20-200: Q Cable
  - 01 x Q-12-RAW-300:Q Cable, 12 AWG (75ft)
  - 06 x Q-CONN-10M Male Field-wireable connector
  - 06 x Q-CONN-10F Female Field-wireable connector
  - 02 x Q-TERM-10: Terminator Cap
  - 03 x Q-SEAL-10: Female Sealing Cap
  - 01 x Q-CLIP-100: Q Cable rail mount cable management clip (Pack of 100)
  - 01 x Q-DISC-10: Disconnect tool

- ELECTRICAL ITEMS**
- 02 x IPCS 2540: Line/Load Side Hot Taps (#250 main - #4/0-6 tap) Large types
  - 01 x D224NRB: 250volt/200amp/2pole fusible disconnect (NEMA 3R)
  - 02 x FRNR125: 250volt/125amp fuses
  - HOM2040L125PRB: Load center, Homeline, 1 phase, 20 spaces, 40 circuits, 125A convertible main lugs, NEMA 3R
  - 06 x HOM220: SQ D HOM 20/2
  - 01 x HOM215: SQ D HOM 15/2
  - 01 x EZSLR JB-1.2: SolaDeck
  - 02 x PSCA-0MB0: Roof Flashing Conduit Supports



BILL OF MATERIAL  
SCALE: 1/8" - 1' 0"



Daniel Brown  
1261 Rollins Mill Rd  
Holly Springs NC 27540



A 01/19/2024

Customer's Signature

JOB NUMBER  
24-15-DB00

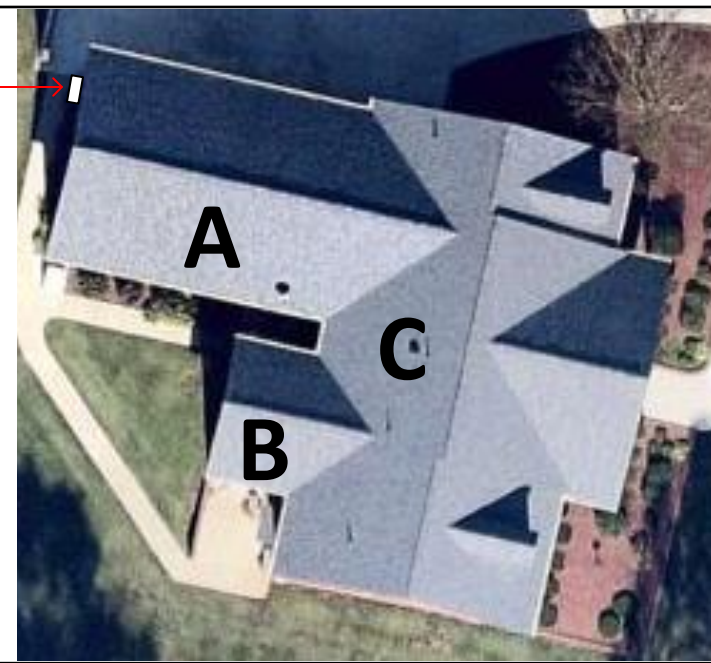
PROJECT STATUS  
PERMITTING

SHEET  
BILL OF MATERIAL

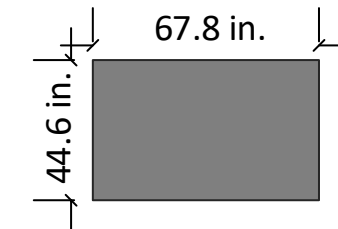
DB  
2415DB00-6

**PV System Dead Load**  
**(Panel + Racking weight) / PV System Area**  
 (No. of panels x Weight of panel(lbs.) +Length of racking(ft.) x 1.17 lb.ft) /  
 (No. of panels x Height x Width) = Total psf

Utility  
Meter



Module  
Dimension



Roofs	Pitch	Azimuth
A	34°	192°
B	34°	192°
C	34°	282°



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**Daniel Brown**  
 1261 Rollins Mill Rd  
 Holly Springs NC 27540

The roof is located in 115mph wind zone

There is one layer of shingles  
 Roofing material is asphalt shingles

**ROOF A**

**PV System Dead Load**  
**(Panel + Racking weight) / PV System Area**  
 (33 panels x 48.7 lbs./panel + 248 ft. of racking x 1.17 lb.ft) /  
 (33 panels x 5.65' x 3.72') = 2.73 psf

**ROOF B**

**PV System Dead Load**  
**(Panel + Racking weight) / PV System Area**  
 (06 panels x 48.7 lbs./panel + 53 ft. of racking x 1.17 lb.ft) /  
 (06 panels x 5.65' x 3.72') = 2.80 psf

**ROOF C**

**PV System Dead Load**  
**(Panel + Racking weight) / PV System Area**  
 (27 panels x 48.7 lbs./panel + 218 ft. of racking x 1.17 lb.ft) /  
 (27 panels x 5.65' x 3.72') = 2.76 psf



PV Installation  
Professional

Ali Buttar  
 PVIP #031310-32

A 01/19/2022

Customer's Signature

JOB NUMBER

24-15-DB00

PROJECT STATUS

PERMITTING

SHEET

PV DEAD LOAD

DB  
 2415DB00-7



# Q.TRON BLK M-G2+ SERIES



PRELIMINARY

410 - 430 Wp | 108 Cells  
22.4% Maximum Module Efficiency

MODEL Q.TRON BLK M-G2+



## High performance Qcells N-type solar cells

Q.ANTUM NEO Technology with optimized module layout boosts module efficiency up to 22.4%.



## A reliable investment

Inclusive 25-year product warranty and 25-year linear performance warranty<sup>1</sup>.



## Enduring high performance

Long-term yield security with Anti LeTID Technology, Anti PID Technology<sup>2</sup>, Hot-Spot Protect.



## Extreme weather rating

High-tech aluminium alloy frame, certified for high snow (5400 Pa) and wind loads (3600 Pa).



## Innovative all-weather technology

Optimal yields, whatever the weather with excellent low-light and temperature behaviour.



## The most thorough testing programme in the industry

Qcells is the first solar module manufacturer to pass the most comprehensive quality programme in the industry: The new "Quality Controlled PV" of the independent certification institute TÜV Rheinland.

<sup>1</sup> See data sheet on rear for further information.

<sup>2</sup> APT test conditions according to IEC/TS 62804-1:2015, method A (-1500 V, 96 h)

### The ideal solution for:



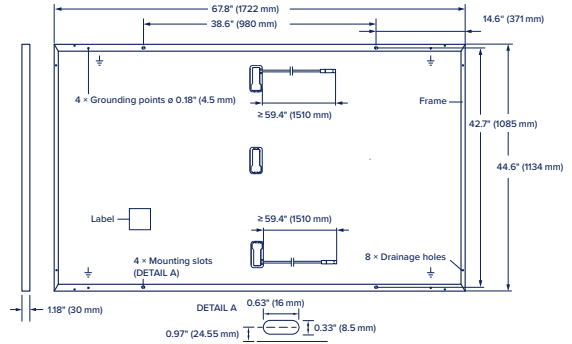
Rooftop arrays on residential buildings



# Q.TRON BLK M-G2+ SERIES

## Mechanical Specification

Format	67.8 in × 44.6 in × 1.18 in (including frame) (1722 mm × 1134 mm × 30 mm)
Weight	47.2 lbs (21.4 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodised aluminium
Cell	6 × 18 monocrystalline Q.ANTUM NEO solar half cells
Junction box	2.09-3.98 in × 1.26-2.36 in × 0.59-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), Protection class IP67, with bypass diodes
Cable	4 mm <sup>2</sup> Solar cable; (+) ≥ 59.4 in (1510 mm), (-) ≥ 59.4 in (1510 mm)
Connector	Stäubli MC4; IP68

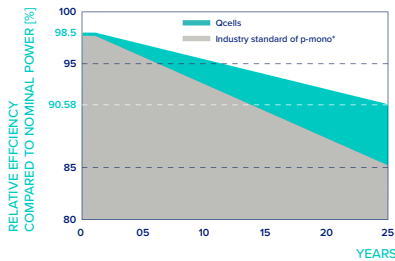


## Electrical Characteristics

POWER CLASS			410	415	420	425	430
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC <sup>1</sup> (POWER TOLERANCE +5W/-0W)							
Minimum	Power at MPP <sup>1</sup>	$P_{MPP}$ [W]	410	415	420	425	430
	Short Circuit Current <sup>1</sup>	$I_{SC}$ [A]	13.39	13.42	13.46	13.49	13.53
	Open Circuit Voltage <sup>1</sup>	$V_{OC}$ [V]	38.58	38.61	38.64	38.67	38.70
	Current at MPP	$I_{MPP}$ [A]	12.68	12.75	12.82	12.88	12.95
	Voltage at MPP	$V_{MPP}$ [V]	32.32	32.55	32.77	32.98	33.20
	Efficiency <sup>1</sup>	$\eta$ [%]	≥ 21.4	≥ 21.6	≥ 21.9	≥ 22.2	≥ 22.4
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT <sup>2</sup>							
Minimum	Power at MPP	$P_{MPP}$ [W]	310.0	313.8	317.6	321.4	325.2
	Short Circuit Current	$I_{SC}$ [A]	10.79	10.82	10.84	10.87	10.90
	Open Circuit Voltage	$V_{OC}$ [V]	36.61	36.63	36.66	36.69	36.71
	Current at MPP	$I_{MPP}$ [A]	9.97	10.03	10.09	10.15	10.21
	Voltage at MPP	$V_{MPP}$ [V]	31.09	31.29	31.48	31.66	31.85

<sup>1</sup>Measurement tolerances  $P_{MPP} \pm 3\%$ ;  $I_{SC}$ ;  $V_{OC} \pm 5\%$  at STC: 1000 W/m<sup>2</sup>, 25 ± 2°C, AM 1.5 according to IEC 60904-3 • <sup>2</sup>800 W/m<sup>2</sup>, NMOT, spectrum AM 1.5

## Qcells PERFORMANCE WARRANTY

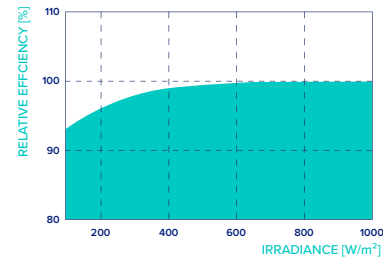


At least 98.5% of nominal power during first year. Thereafter max. 0.33% degradation per year. At least 95.53% of nominal power up to 10 years. At least 90.58% of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Qcells sales organisation of your respective country.

<sup>\*</sup>Standard terms of guarantee for the 5 PV companies with the highest production capacity in 2021 (February 2021)

## PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25°C, 1000 W/m<sup>2</sup>).

## TEMPERATURE COEFFICIENTS

Temperature Coefficient of $I_{SC}$	$\alpha$ [%/K]	+0.04	Temperature Coefficient of $V_{OC}$	$\beta$ [%/K]	-0.24
Temperature Coefficient of $P_{MPP}$	$\gamma$ [%/K]	-0.30	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	C / TYPE 2
Max. Design Load, Push/Pull <sup>3</sup>	[lbs/ft <sup>2</sup> ]	75 (3600 Pa)/50 (2400 Pa)	Permitted Module Temperature on Continuous Duty	-40°F up to +185°F (-40°C up to +85°C)
Max. Test Load, Push/Pull <sup>3</sup>	[lbs/ft <sup>2</sup> ]	113 (5400 Pa)/75 (3600 Pa)		

<sup>3</sup> See Installation Manual

## Qualifications and Certificates

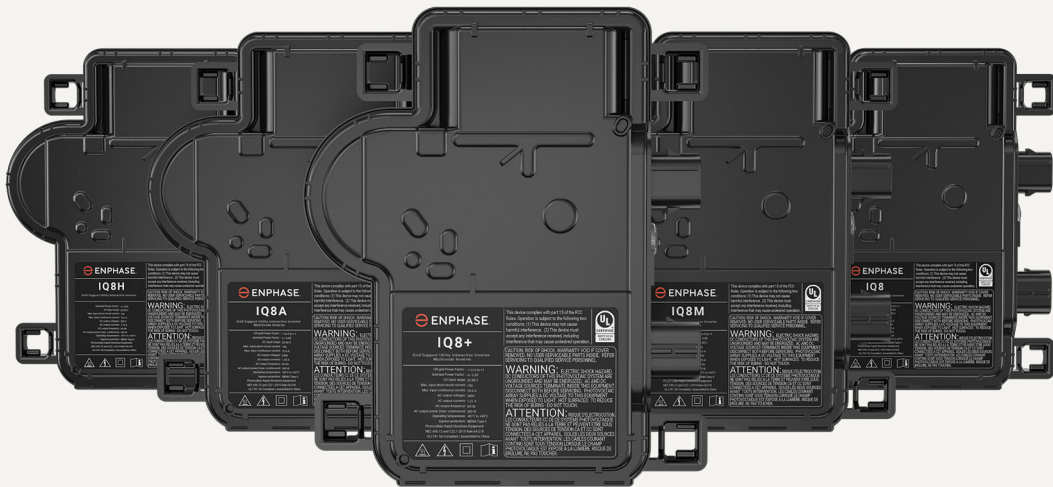
Quality Controlled PV - TÜV Rheinland; IEC 61215:2016; IEC 61730:2016. This data sheet complies with DIN EN 50380.



Qcells pursues minimizing paper output in consideration of the global environment.

Note: Installation instructions must be followed. Contact our technical service for further information on approved installation of this product. Hanwha Q CELLS America Inc. 400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL hqc-inquiry@qcells.com | WEB www.qcells.com

qcells



# IQ8 Series Microinverters

Our newest IQ8 Microinverters are the industry’s first microgrid-forming, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC) which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built in advanced 55nm technology with high speed digital logic and has super-fast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.



Part of the Enphase Energy System, IQ8 Series Microinverters integrate with the Enphase IQ Battery, Enphase IQ Gateway, and the Enphase App monitoring and analysis software.



IQ8 Series Microinverters redefine reliability standards with more than one million cumulative hours of power-on testing, enabling an industry-leading limited warranty of up to 25 years.



Connect PV modules quickly and easily to IQ8 Series Microinverters using the included Q-DCC-2 adapter cable with plug-n-play MC4 connectors.



IQ8 Series Microinverters are UL Listed as PV Rapid Shut Down Equipment and conform with various regulations, when installed according to manufacturer’s instructions.

## Easy to install

- Lightweight and compact with plug-n-play connectors
- Power Line Communication (PLC) between components
- Faster installation with simple two-wire cabling

## High productivity and reliability

- Produce power even when the grid is down\*
- More than one million cumulative hours of testing
- Class II double-insulated enclosure
- Optimized for the latest high-powered PV modules

## Microgrid-forming

- Complies with the latest advanced grid support\*\*
- Remote automatic updates for the latest grid requirements
- Configurable to support a wide range of grid profiles
- Meets CA Rule 21 (UL 1741-SA) requirements

\* Only when installed with IQ System Controller 2, meets UL 1741. IQ8H-208V operates only in grid-tied mode.  
 \*\* IQ8 Series Microinverters supports split phase, 240V. IQ8H-208 supports split phase, 208V only.

# IQ8 Series Microinverters

INPUT DATA (DC)		IQ8-60-2-US	IQ8PLUS-72-2-US	IQ8M-72-2-US	IQ8A-72-2-US	IQ8H-240-72-2-US	IQ8H-208-72-2-US <sup>1</sup>
Commonly used module pairings <sup>2</sup>	W	235 – 350	235 – 440	260 – 460	295 – 500	320 – 540+	295 – 500+
Module compatibility		60-cell/120 half-cell	60-cell/120 half-cell, 66-cell/132 half-cell and 72-cell/144 half-cell				
MPPT voltage range	V	27 – 37	29 – 45	33 – 45	36 – 45	38 – 45	38 – 45
Operating range	V	25 – 48	25 – 58				
Min/max start voltage	V	30 / 48	30 / 58				
Max input DC voltage	V	50	60				
Max DC current <sup>3</sup> [module Isc]	A	15					
Overvoltage class DC port		II					
DC port backfeed current	mA	0					
PV array configuration		1x1 Ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit					
OUTPUT DATA (AC)		IQ8-60-2-US	IQ8PLUS-72-2-US	IQ8M-72-2-US	IQ8A-72-2-US	IQ8H-240-72-2-US	IQ8H-208-72-2-US <sup>1</sup>
Peak output power	VA	245	300	330	366	384	366
Max continuous output power	VA	240	290	325	349	380	360
Nominal (L-L) voltage/range <sup>4</sup>	V	240 / 211 – 264					208 / 183 – 250
Max continuous output current	A	1.0	1.21	1.35	1.45	1.58	1.73
Nominal frequency	Hz	60					
Extended frequency range	Hz	50 – 68					
AC short circuit fault current over 3 cycles	Arms	2					4.4
Max units per 20 A (L-L) branch circuit <sup>5</sup>		16	13	11	11	10	9
Total harmonic distortion		<5%					
Overvoltage class AC port		III					
AC port backfeed current	mA	30					
Power factor setting		1.0					
Grid-tied power factor (adjustable)		0.85 leading – 0.85 lagging					
Peak efficiency	%	97.5	97.6	97.6	97.6	97.6	97.4
CEC weighted efficiency	%	97	97	97	97.5	97	97
Night-time power consumption	mW	60					
MECHANICAL DATA							
Ambient temperature range		-40°C to +60°C (-40°F to +140°F)					
Relative humidity range		4% to 100% (condensing)					
DC Connector type		MC4					
Dimensions (HxWxD)		212 mm (8.3") x 175 mm (6.9") x 30.2 mm (1.2")					
Weight		1.08 kg (2.38 lbs)					
Cooling		Natural convection – no fans					
Approved for wet locations		Yes					
Pollution degree		PD3					
Enclosure		Class II double-insulated, corrosion resistant polymeric enclosure					
Environ. category / UV exposure rating		NEMA Type 6 / outdoor					
COMPLIANCE							
Certifications		CA Rule 21 (UL 1741-SA), UL 62109-1, UL1741/IEEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01 This product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC 2014, NEC 2017, and NEC 2020 section 690.12 and C22.1-2018 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according to manufacturer's instructions.					

(1) The IQ8H-208 variant will be operating in grid-tied mode only at 208V AC. (2) No enforced DC/AC ratio. See the compatibility calculator at <https://link.enphase.com/module-compatibility> (3) Maximum continuous input DC current is 10.6A (4) Nominal voltage range can be extended beyond nominal if required by the utility. (5) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

# Enphase IQ Combiner 4/4C

X-IQ-AM1-240-4  
X-IQ-AM1-240-4C



The **Enphase IQ Combiner 4/4C** with Enphase IQ Gateway and integrated LTE-M1 cell modem (included only with IQ Combiner 4C) consolidates interconnection equipment into a single enclosure and streamlines IQ microinverters and storage installations by providing a consistent, pre-wired solution for residential applications. It offers up to four 2-pole input circuits and Eaton BR series busbar assembly.

## Smart

- Includes IQ Gateway for communication and control
- Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05), included only with IQ Combiner 4C
- Includes solar shield to match Enphase IQ Battery aesthetics and deflect heat
- Flexible networking supports Wi-Fi, Ethernet, or cellular
- Optional AC receptacle available for PLC bridge
- Provides production metering and consumption monitoring

## Simple

- Centered mounting brackets support single stud mounting
- Supports bottom, back and side conduit entry
- Up to four 2-pole branch circuits for 240 VAC plug-in breakers (not included)
- 80A total PV or storage branch circuits

## Reliable

- Durable NRTL-certified NEMA type 3R enclosure
- Five-year limited warranty
- Two years labor reimbursement program coverage included for both the IQ Combiner SKU's
- UL listed



To learn more about Enphase offerings, visit [enphase.com](https://enphase.com)

# Enphase IQ Combiner 4/4C

## MODEL NUMBER

IQ Combiner 4 (X-IQ-AM1-240-4)	IQ Combiner 4 with Enphase IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and consumption monitoring (+/- 2.5%). Includes a silver solar shield to match the IQ Battery system and IQ System Controller 2 and to deflect heat.
IQ Combiner 4C (X-IQ-AM1-240-4C)	IQ Combiner 4C with Enphase IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and consumption monitoring (+/- 2.5%). Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05), a plug-and-play industrial-grade cell modem for systems up to 60 microinverters. (Available in the US, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in the installation area.) Includes a silver solar shield to match the IQ Battery and IQ System Controller and to deflect heat.

## ACCESSORIES AND REPLACEMENT PARTS (not included, order separately)

Ensemble Communications Kit COMMS-CELLMODEM-M1-06 CELLMODEM-M1-06-SP-05 CELLMODEM-M1-06-AT-05	- Includes COMMS-KIT-01 and CELLMODEM-M1-06-SP-05 with 5-year Sprint data plan for Ensemble sites - 4G based LTE-M1 cellular modem with 5-year Sprint data plan - 4G based LTE-M1 cellular modem with 5-year AT&T data plan
Circuit Breakers BRK-10A-2-240V BRK-15A-2-240V BRK-20A-2P-240V BRK-15A-2P-240V-B BRK-20A-2P-240V-B	Supports Eaton BR210, BR215, BR220, BR230, BR240, BR250, and BR260 circuit breakers. Circuit breaker, 2 pole, 10A, Eaton BR210 Circuit breaker, 2 pole, 15A, Eaton BR215 Circuit breaker, 2 pole, 20A, Eaton BR220 Circuit breaker, 2 pole, 15A, Eaton BR215B with hold down kit support Circuit breaker, 2 pole, 20A, Eaton BR220B with hold down kit support
EPLC-01	Power line carrier (communication bridge pair), quantity - one pair
XA-SOLARSHIELD-ES	Replacement solar shield for IQ Combiner 4/4C
XA-PLUG-120-3	Accessory receptacle for Power Line Carrier in IQ Combiner 4/4C (required for EPLC-01)
XA-ENV-PCBA-3	Replacement IQ Gateway printed circuit board (PCB) for Combiner 4/4C
X-IQ-NA-HD-125A	Hold down kit for Eaton circuit breaker with screws.

## ELECTRICAL SPECIFICATIONS

Rating	Continuous duty
System voltage	120/240 VAC, 60 Hz
Eaton BR series busbar rating	125 A
Max. continuous current rating	65 A
Max. continuous current rating (input from PV/storage)	64 A
Max. fuse/circuit rating (output)	90 A
Branch circuits (solar and/or storage)	Up to four 2-pole Eaton BR series Distributed Generation (DG) breakers only (not included)
Max. total branch circuit breaker rating (input)	80A of distributed generation / 95A with IQ Gateway breaker included
Envoy breaker	10A or 15A rating GE/Siemens/Eaton included
Production metering CT	200 A solid core pre-installed and wired to IQ Gateway
Consumption monitoring CT (CT-200-SPLIT)	A pair of 200 A split core current transformers

## MECHANICAL DATA

Dimensions (WxHxD)	37.5 x 49.5 x 16.8 cm (14.75" x 19.5" x 6.63"). Height is 21.06" (53.5 cm) with mounting brackets.
Weight	7.5 kg (16.5 lbs)
Ambient temperature range	-40° C to +46° C (-40° to 115° F)
Cooling	Natural convection, plus heat shield
Enclosure environmental rating	Outdoor, NRTL-certified, NEMA type 3R, polycarbonate construction
Wire sizes	<ul style="list-style-type: none"><li>• 20 A to 50 A breaker inputs: 14 to 4 AWG copper conductors</li><li>• 60 A breaker branch input: 4 to 1/0 AWG copper conductors</li><li>• Main lug combined output: 10 to 2/0 AWG copper conductors</li><li>• Neutral and ground: 14 to 1/0 copper conductors</li></ul> Always follow local code requirements for conductor sizing.
Altitude	To 2000 meters (6,560 feet)

## INTERNET CONNECTION OPTIONS

Integrated Wi-Fi	802.11b/g/n
Cellular	CELLMODEM-M1-06-SP-05, CELLMODEM-M1-06-AT-05 (4G based LTE-M1 cellular modem). Note that an Enphase Mobile Connect cellular modem is required for all Ensemble installations.
Ethernet	Optional, 802.3, Cat5E (or Cat 6) UTP Ethernet cable (not included)

## COMPLIANCE

Compliance, IQ Combiner	UL 1741, CAN/CSA C22.2 No. 107.1, 47 CFR, Part 15, Class B, ICES 003 Production metering: ANSI C12.20 accuracy class 0.5 (PV production) Consumption metering: accuracy class 2.5
Compliance, IQ Gateway	UL 60601-1/CANCSA 22.2 No. 61010-1

To learn more about Enphase offerings, visit [enphase.com](https://enphase.com)



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# Rapid shutdown is built-in

The 2014 edition of the National Electrical Code (NEC 2014) added new rapid shutdown requirements for PV systems installed on buildings. Enphase Microinverters fully meet rapid shutdown requirements in the new code without the need to install any additional electrical equipment.

## What's new in NEC 2014?

NEC 2014, Section 690.12 applies to PV conductors over 10 feet from the PV array and requires that the conductors power down to 30 volts and 240 volt-amperes within 10 seconds of rapid shutdown initiation.

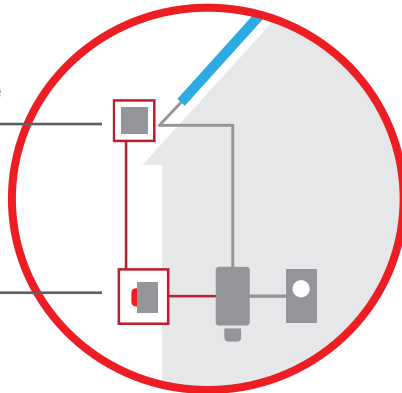
## String inverters require work arounds for rapid shutdown

### Work around.

Specialized Rapid Shutdown electrical box installed on the roof within 10 feet of array.

### Work around.

Shutoff switch that is easily accessible to first responders on the ground.



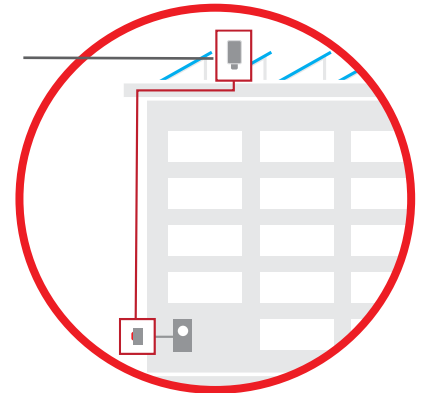
**Residential String Inverter**

### Work around.

Extra conduit in installation.

### Work around.

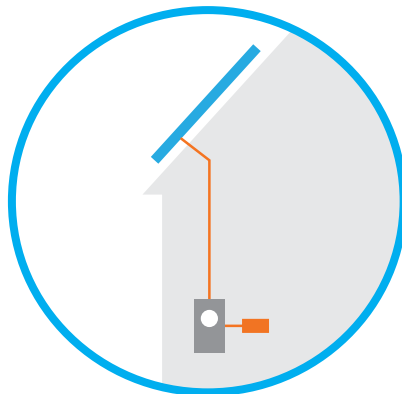
String inverter installed on roof, a hostile environment that string inverters are not built to live in.



**Commercial String Inverter**

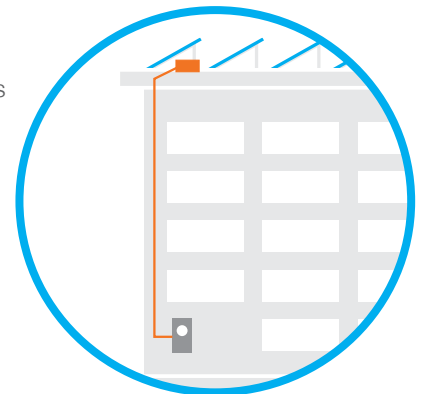
## Enphase comes standard with rapid shutdown capability

All Enphase microinverters, even those that were previously installed, inherently meet rapid shutdown requirements, no additional equipment or workarounds needed



**Residential Microinverter**

Enphase microinverters can safely shut down automatically, leaving only low-voltage DC electricity isolated to the PV module



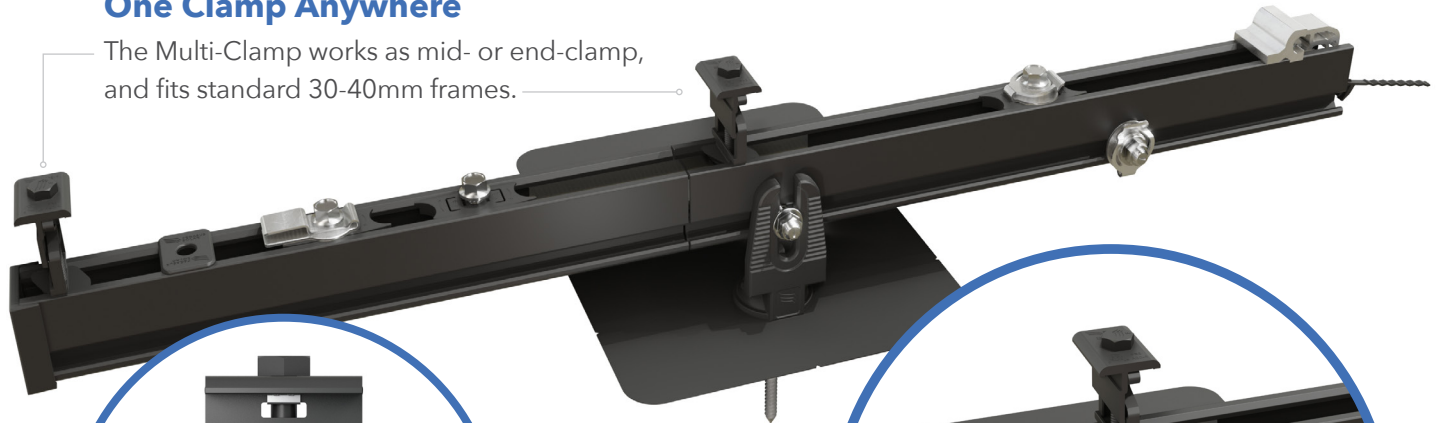
**Commercial Microinverter**

## One Clamp Anywhere

The Multi-Clamp works as mid- or end-clamp, and fits standard 30-40mm frames.

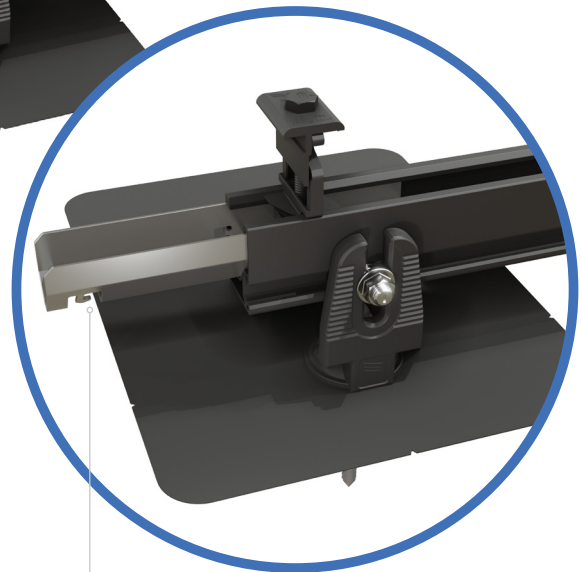
## Instant Bonding

The N-S Bonding Jumper bonds row to row with no tools.



## Lifetime Wire Management

Open rail channel holds and protects wires. Clamps won't pinch wires after tightening.



## Bonding Structural Splice

Connect rails instantly, without tools, interference or limitations.

## Next-Level Solar Mounting

A complete system for hassle-free rooftop installation, from watertight mounts to lifetime wire management.



### Simplicity

1/2" socket for everything.  
One clamp for mid or end.  
No tool splicing and bonding.  
Easy wire management.



### Code Compliant

UL 2703 listed  
LTR-AE-001-2012 listed  
Class A fire rating for any slope  
ASCE 7-16 PE Certified



### Premium Aesthetics

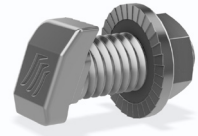
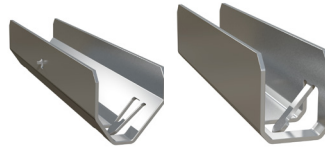
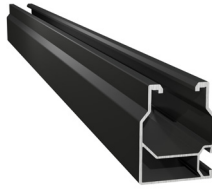
The narrowest panel gap available. Optional Hidden End Clamps and End Caps provide a flush look on the edge of the array.



### Watertight for Life

Secured on industry-leading Pegasus Mounts, for composite shingle and tile roofs. Backed by a 25-year warranty.





### Pegasus Rail

Available in 14' and 7' lengths for easy layout and shipping.  
Open-channel design holds MC4 connectors, PV wire and trunk cables.  
Black and Mill finish

### Pegasus Max Rail

Maximum-strength design.  
Meets specifications for high snow-load and hurricane zones.  
Black and Mill finish

### Splice and Max Splice

Installs by hand.  
Works over mounts.  
Structurally connects and bonds rails automatically; UL2703 listed as reusable.

### Dovetail T-bolt

Dovetail shape for extra strength.  
Uses 1/2" socket.



### Multi-Clamp

Fits 30-40mm PV frames, as mid- or end-clamp.  
Twist-locks into position; doesn't pinch wires in rail.  
Bonds modules to rail; UL2703 listed as reusable

### Hidden End Clamp

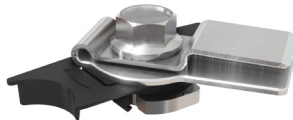
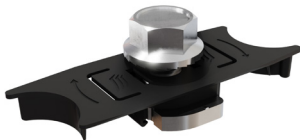
Offers premium edge appearance.  
Preinstalled pull-tab grips rail edge, allowing easy, one-hand installation.  
Tucks away for reuse.

### Ground Lug

Holds 6 or 8 AWG wire.  
Mounts on top or side of rail.  
Assembled on MLPE Mount.  
UL2703 listed as reusable.

### N-S Bonding Jumper

Installs by hand, eliminates row-to-row copper wire.  
UL2703 listed as reusable only with Pegasus Rail.



### MLPE Mount

Secures and bonds most micro-inverters and optimizers to rail.  
Connectors and wires easily route underneath after installation.  
UL2703 listed as reusable.

### Cable Grip

Secures four PV wires or two trunk cables.  
Stainless-steel backing provides durable grip.  
Eliminates sagging wires.

### Wire Clip

Hand operable.  
Holds wires in channel.  
Won't slip.

### End Cap and Max End Cap

Fits flush to PV module and hides raw or angled cuts.  
Hidden drain quickly clears water from rail.

#### Certifications:

- UL 2703, Edition 1
- LTR-AE-001-2012
- ASCE 7-16 PE certified
- Class A fire rating for any slope roof



Quickly calculate the most efficient layout, spans and materials needed to suit your job. Visit the Pegasus Customer Portal. [pegasussolar.com/portal](http://pegasussolar.com/portal)

LOAD		SPAN			
SNOW (PSF)	WIND (MPH)	32"	4'	6'	8'
0	120	PEGASUS RAIL			
	160	PEGASUS RAIL			PEGASUS MAX RAIL
	190	PEGASUS RAIL		PEGASUS MAX RAIL	
15	140	PEGASUS RAIL			PEGASUS MAX RAIL
	160	PEGASUS RAIL		PEGASUS MAX RAIL	
30	160	PEGASUS RAIL		PEGASUS MAX RAIL	
	190	PEGASUS RAIL		PEGASUS MAX RAIL	
45	190	PEGASUS RAIL		PEGASUS MAX RAIL	
70	190	PEGASUS RAIL		PEGASUS MAX RAIL	
110	190	PEGASUS RAIL		PEGASUS MAX RAIL	

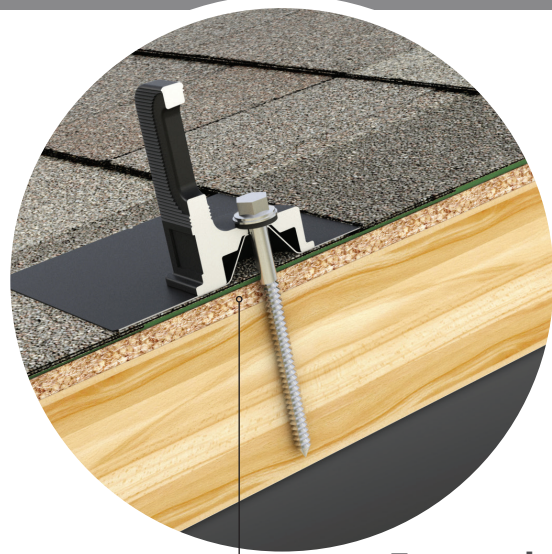
For reference only. Spans above are calculated using ASCE 7-16 for a Gable Roof, Exposure Category B, 7-20deg roof angle, 30ft mean roof height with non-exposed modules. For PE certified span tables, visit [www.pegasussolar.com/spans](http://www.pegasussolar.com/spans).

Patents pending. All rights reserved. ©2021 Pegasus Solar Inc.

# COMP MOUNT

## One-Piece Flashing with Elevated Cone

No press-fits or deck-level EPDM washers to fail



## Encapsulating Design

Raises the water seal 0.9" Above roof deck



## Simple 3-Piece Design Watertight For Life

Pegasus solar's comp mounts are a cost effective, high-quality option for rail installations on composition shingle roofs. Designed to last decades, the one-piece flashing with elevated cone means there is simply nothing to fail.



### 25-Year Warranty

Manufactured with advanced materials and coatings to outlast the roof itself



### Code Compliant

Fully IBC/CBC Code Compliant  
Exceeds ASCE 7-16 Standards



### Superior Waterproofing

Tested to AC286 without sealant  
Water seal elevated 0.9" above

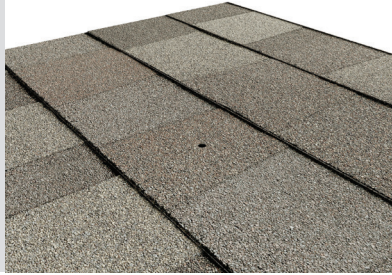


### All-In-One Kit Packaging

Flashings, L-Feet and SS lags with bonded EPDM washers are included in each 24-pack

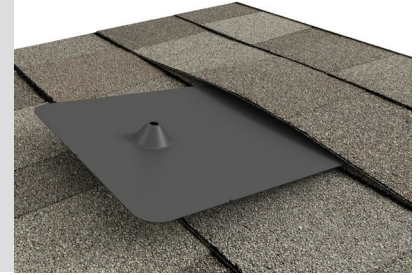
**1**

Drill pilot hole in the center of the rafter.



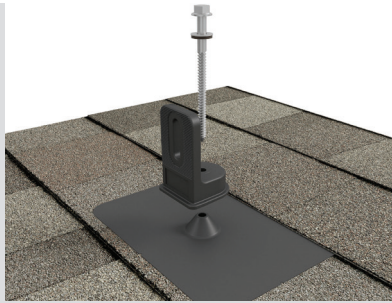
**2**

Optional: Apply a “u-shape” of sealant to the underside of the flashing and position under 2nd shingle course, cone over pilot hole.



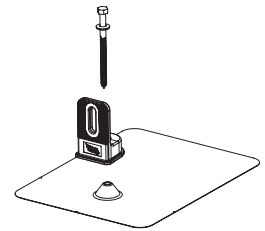
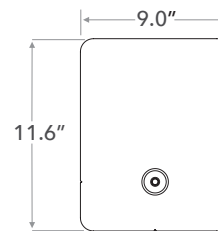
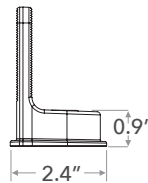
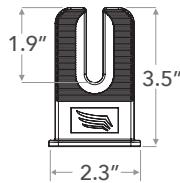
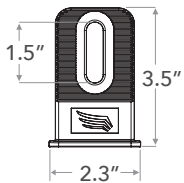
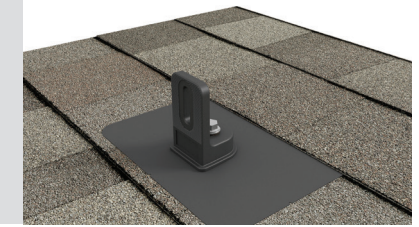
**3**

Place L-Foot over cone and install lag with washer through L-Foot.



**4**

Drive lag to required depth. Attach rail per rail manufacturer’s instructions.



SPECIFICATIONS	COMP MOUNT INSTALL KITS				
SKU	PSCR-CBB0	PSCR-UBB0	SPCR-CBBH	PSCR-CMM0	PSCR-UMM0
Finish	Black L-Foot And Black Flashing			Mill	
L-Foot Type	Closed Slot	Open Slot	Closed Slot	Closed Slot	Open Slot
Kit Contents	L-Foot, Flashing, 5/16" x 4 1/2" SS Lag with metalized EPDM washer	L-Foot, Flashing, 5/16" x 4 1/2" SS Lag with metalized EPDM washer and M10 Hex Bolt	L-Foot, Flashing, 5/16" x 4 1/2" SS Lag with metalized EPDM washer	L-Foot, Flashing, 5/16" x 4 1/2" SS Lag with metalized EPDM washer	L-Foot, Flashing, 5/16" x 4 1/2" SS Lag with metalized EPDM washer
Roof Type	Composition Shingle				
Certifications	IBC, ASCE/SEI 7-16, AC286				
Install Application	Railed Systems				
Compatible Rail	Most				
Kit Quantity	24				
Boxes per Pallet	72				

Protected under US Patent: 10,998,847. Additional patents pending. All rights reserved. ©2021 Pegasus

## COMP ACCESSORY MOUNT



### WATERTIGHT FOR LIFE

Pegasus Solar's Comp Accessory Mount secures conduit, a junction box, or other accessories on composition shingle roofs. Designed to last decades, the one-piece flashing with elevated cone means there is simply nothing to fail.



#### 25-year Warranty

Manufactured with advanced materials and coatings to outlast the roof itself



#### Superior Waterproofing

Tested to AC286 without sealant  
0.9" elevated water seal



#### Code Compliant

Securely holds conduit 1" above roof surface

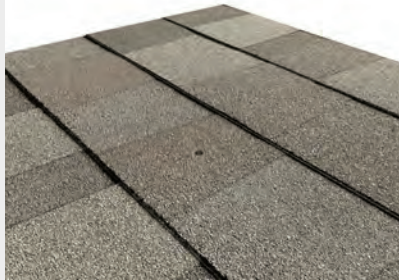


#### All-In-One Kit Packaging

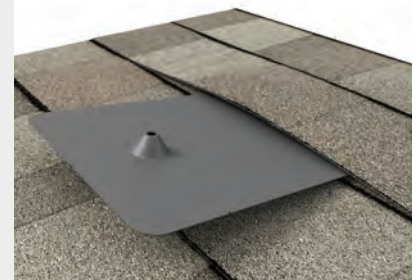
Flashings, Support Blocks, and SS lags with EPDM washers are included in each 12-pack

# COMP ACCESSORY MOUNT

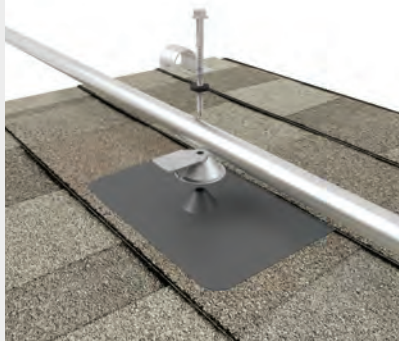
1. Drill pilot hole into roof decking.



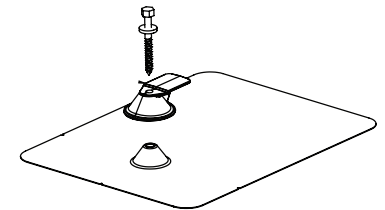
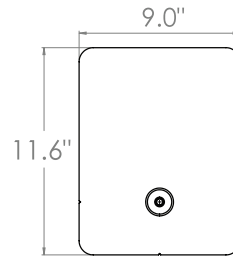
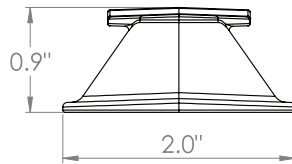
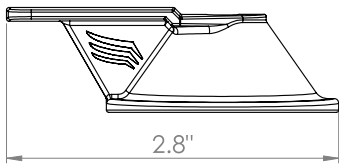
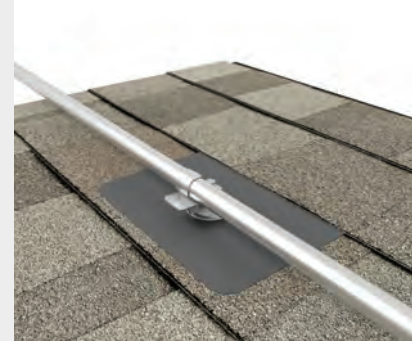
2. Optional: Apply a "U-shape" of sealant to underside of flashing and position under 2nd shingle course, cone over pilot hole.



3. Place support block over cone and install lag through one-hole strap and EPDM washer.



4. Drive lag into roof decking until secure.



Specifications	Comp Accessory Mount Kits	
SKU	PSCA-0MB0	PSCA-0MM0
Finish	Black Flashing, Mill Support Block	Mill Flashing, Mill Support Block
Kit Contents	Flashing, Support Block, 1/4" x 2.5" SS lag screw w/ EPDM washer	
Application	Conduit and Pegasus' J-box wing (P/N: PSUA-JM)	
Conduit Sizes	Up to 1 inch	
Roof Type	Composition Shingle	
Flashing Material	Painted Galvalume Plus	Galvalume Plus
Support Block Material	Aluminum	
Kit Quantity	12	
Boxes per Pallet	216	

Patents Pending. All rights reserved. © 2019 Pegasus Solar Inc.

# SolaDeck

PV ROOF-MOUNT ENCLOSURE

**INTRODUCED AT  
*SOLAR POWER 2007***



**UL50 Type 3R Enclosure • Stamped 18 gauge gal. steel • Powder coated finish  
• Weather tight**

## **Enclosure Includes:**

- Dual ground lug
- Universal DIN rail
- 1/2", 3/4" & 1" knockouts
- Wire strain relief clip
- Complete hardware package

## **PV Roof-Mount Combiner/Enclosure**

### **Benefits**

- The ability to prep the building is now possible
- Replaces several parts used today
- Provides professional looking install
- Saves time on install
- Allows for easy access
- Guaranteed seal to roof
- Low profile design

***For product information contact us at  
(866) 367-7782***

**[www.commdeck.com](http://www.commdeck.com)**



RSTC Enterprises, Inc  
2219 Heimstead Road  
Eau Claire, WI 54703  
1 (866) 367 - 7782



## **SolaDeck Part # 780**

### **Specifications:**

**18 Gauge Steel Base (1) and Cover (2)  
Pre Punched 7 holes in base (1) for roof deck  
Pre Punched 4 holes in base (1) and cover (2) for match  
Draw Process both parts  
Powder Coated to withstand 1000 hours Salt Spray (Primer Gray)  
High UV resistance  
15" x 15" flashing dimension  
Cavity dimension 8"W x 9" L x 2.5"D  
Approx. 162 Cubic inch equipment cavity  
Norloked steel base plate (3) to drawn base (2)  
Three knockout locations .5", .75" and 1"  
3" DIN rail installed  
Grounding Lug- Installed (In Equipment Cavity)  
Wire Strain Relief Clip –Installed (In Equipment Cavity)  
Hardware pack withstands 500 hours Salt Spray  
    7 - 2" Trusshead Screws  
    4 - .5" 8-32 thread cutting screws  
    4 - #10 Bonded Seal washers  
    1 – Foam closed Cell Seal  
ETL Listed UL50 Type 3R**

**Total Weight 6.9 pounds each**

### **Packaging:**

**Individually bagged and boxed  
Box dimension 15.5"w x 16" L x 3" D  
White Carton labeled with Cut out template  
Print One Color - Black**

**Master Cartons of 6 Units each  
Master Carton dimension 18.75"x16"x16.375"  
Master Carton Weight – 42 pounds  
18 Master Cartons per skid Approx 800 pounds with skid**

# Product data sheet

Specifications

SQUARE D

Green Premium™



Safety switch, general duty, fusible, 200A, 3 wire, 2 poles, 1 neutral, 60hp, 240VAC, Type 3R, bolt on hub provision

D224NRB

Product availability : Stock - Normally stocked in distribution facility

Price\* : 1,200.00 USD

## Main

Product	Single Throw Safety Switch
Duty Rating	General duty
Device Application	Residential
Disconnect Type	Fusible disconnect switch
Factory Installed Neutral	Neutral (factory installed)
Phase	3 phase
Number of Poles	2
Current Rating	200 A
Voltage Rating	240 V AC
Enclosure Rating NEMA	NEMA 3R
Maximum Horse Power Rating	15 hp 240 V at AC 60 Hz for 1 phase conforming to NEC 240.6 25 hp 240 V at AC 60 Hz for 3 phase conforming to NEC 240.6 60 hp 240 V at AC 60 Hz for 3 phase conforming to NEC 430.52

## Complementary

Short Circuit Current Rating	100 kA maximum depending on fuse H, K or R
Fuse type	H, K or R
Mounting Type	Surface
Electrical Connection	Lugs
Wiring configuration	3-wire
Wire Size	AWG 6...250 kcmil aluminium/copper
Tightening torque	275 lbf.in (31.07 N.m) (AWG 6...250 kcmil)
Depth	8.5 in (215.90 mm)
Width	19 in (482.60 mm)
Height	29.25 in (742.95 mm)
Net Weight	53.51 lb(US) (24.27 kg)

\* Price is "List Price" and may be subject to a trade discount – check with your local distributor or retailer for actual price.



## Environment

Certifications UL listed file E2875

## Ordering and shipping details

Category 00106-D & DU SW,NEMA3R, 30-200A

Discount Schedule DE1A

GTIN 785901460763

Nbr. of units in pkg. 1

Package weight(Lbs) 42.70 lb(US) (19.368 kg)

Returnability Yes

Country of origin US

## Packing Units

Unit Type of Package 1 PCE

Package 1 Height 8.50 in (21.59 cm)

Package 1 width 19.50 in (49.53 cm)

Package 1 Length 30.50 in (77.47 cm)

Unit Type of Package 2 PAL

Number of Units in Package 2 15

Package 2 Weight 670.00 lb(US) (303.907 kg)

Package 2 Height 45.00 in (114.3 cm)

Package 2 width 40.00 in (101.6 cm)

Package 2 Length 48.00 in (121.92 cm)

## Offer Sustainability

Sustainable offer status Green Premium product

California proposition 65 WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

REACH Regulation [REACH Declaration](#)

REACH free of SVHC Yes

EU RoHS Directive Compliant  
[EU RoHS Declaration](#)

Toxic heavy metal free Yes

Mercury free Yes

RoHS exemption information [Yes](#)

China RoHS Regulation [China RoHS declaration](#)  
Pro-active China RoHS declaration (out of China RoHS legal scope)

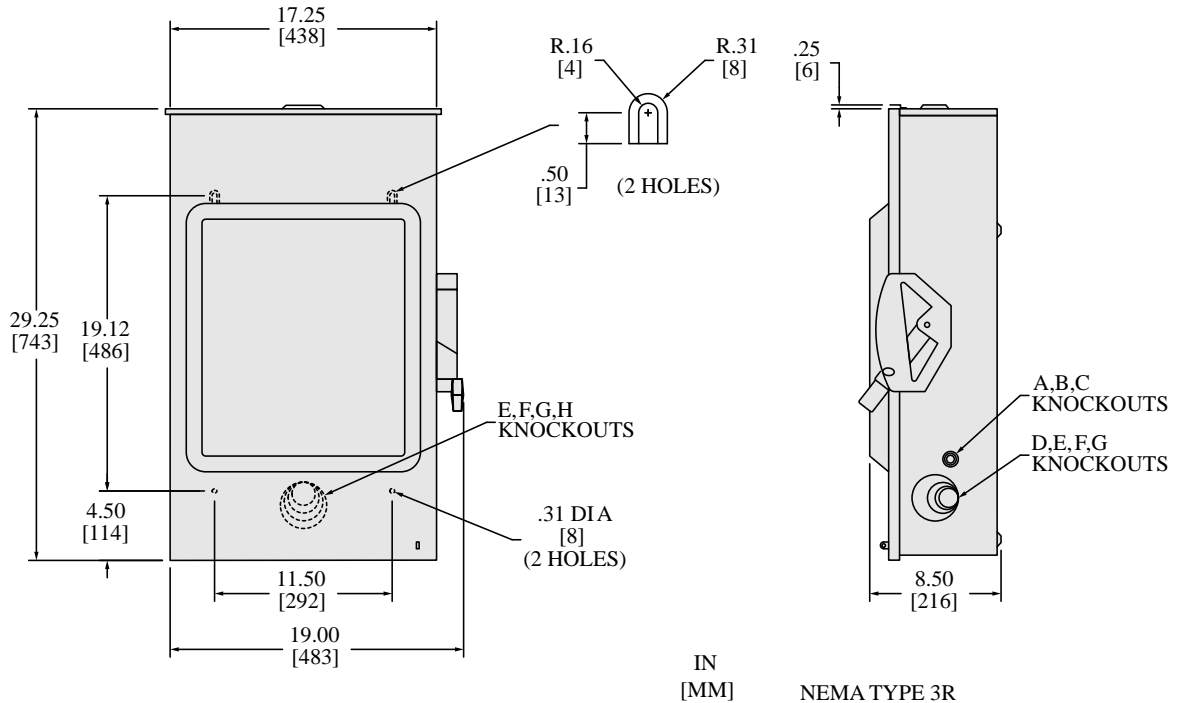
Environmental Disclosure [Product Environmental Profile](#)

PVC free Yes

## Contractual warranty

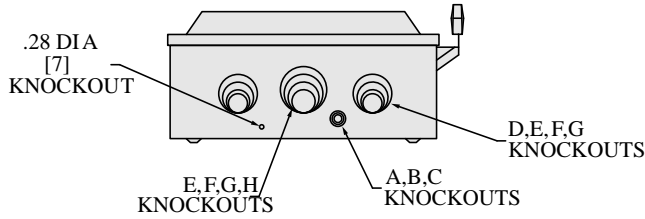
Warranty 18 months

**Dimensions**



IN  
[MM]

NEMA TYPE 3R



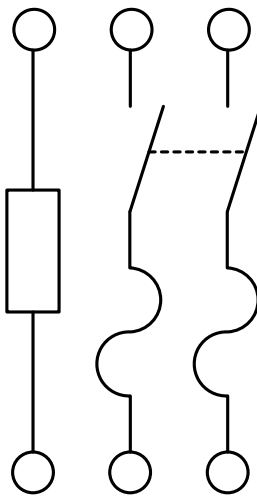
SYMBOL	KNOCKOUTS	
	CONDUIT SIZE	
	IN	MM
A	.50	13
B	.75	19
C	1.00	25
D	1.25	32
E	1.50	38
F	2.00	51
G	2.50	64
H	3.00	76

WHEN MOUNTING THESE SWITCHES, ALLOW 4.00 [102] MIN CLEARANCE BETWEEN ENCLOSURES FOR OPENING OF SIDE HINGED DOOR.

TOP OF NEMA TYPE 3R DEVICES HAVE PROVISIONS FOR MAXIMUM 2.50 [64] BOLT-ON HUB.

ALL DIMENSIONS ARE APPROXIMATE. REFER TO TECHNICAL DRAWINGS AND DOCUMENTATION.

## FUSIBLE



## D224NRB

# Product data sheet

Specifications

SQUARE D

Green Premium™



Load center, Homeline, 1 phase, 20 spaces, 40 circuits, 125A convertible main lugs, PoN, NEMA3R

HOM2040L125PRB

Product availability : Stock - Normally stocked in distribution facility

**Price\* : 413.64 USD**

## Main

Product Type	Load Center
Marketing Trade Name	Homeline
Load Center Type	PoN Convertible Mains (lugs)
Rated Current	125 A
Number of Spaces	20
Maximum Number of Single Pole Circuits	40
Enclosure Rating	NEMA 3R outdoor
Cover Type	Surface cover
Electrical Connection	Lugs

## Complementary

Max Short Circuit Current Rating	10 kA
Maximum Number of Tandem Breakers	20
Number of Phases	1 phase
Voltage Rating	120/240 V AC
Wire Size	AWG 6...AWG 2/0 aluminium AWG 6...AWG 1/0 copper
Ground Bar	Grounding bar (ordered separately)
Wiring Configuration	3-wire
Busbar Material	Tin plated aluminium busbar
Enclosure Material	Welded galvanized steel
Surface Finish	Baked enamel Gray
Box Number	4R
Bus Rated Current	125.0 A
Height	22.05 in (560 mm)
Width	14.76 in (375 mm)
Depth	4.53 in (115 mm)

\* Price is "List Price" and may be subject to a trade discount – check with your local distributor or retailer for actual price.

## Environment

Ambient Air Temperature for Operation 23 °F (-5 °C)  
104 °F (40 °C)

Product Certifications UL listed file E-6294

## Ordering and shipping details

Category 00145-HOM LC&CVR, 12-42CKT NEMA3R

Discount Schedule DE3C

GTIN 785901847557

Returnability Yes

Country of origin US

## Packing Units

Unit Type of Package 1 PCE

Number of Units in Package 1 1

Package 1 Height 5.10 in (12.954 cm)

Package 1 Width 15.50 in (39.37 cm)

Package 1 Length 24.00 in (60.96 cm)

Package 1 Weight 23.80 lb(US) (10.795 kg)

Unit Type of Package 2 PAL

Number of Units in Package 2 40

Package 2 Height 46.00 in (116.84 cm)

Package 2 Width 40.00 in (101.6 cm)

Package 2 Length 48.00 in (121.92 cm)

Package 2 Weight 982.00 lb(US) (445.427 kg)

## Offer Sustainability

Sustainable offer status Green Premium product

California proposition 65 WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

REACH Regulation [REACH Declaration](#)

EU RoHS Directive Compliant  
[EU RoHS Declaration](#)

Toxic heavy metal free Yes

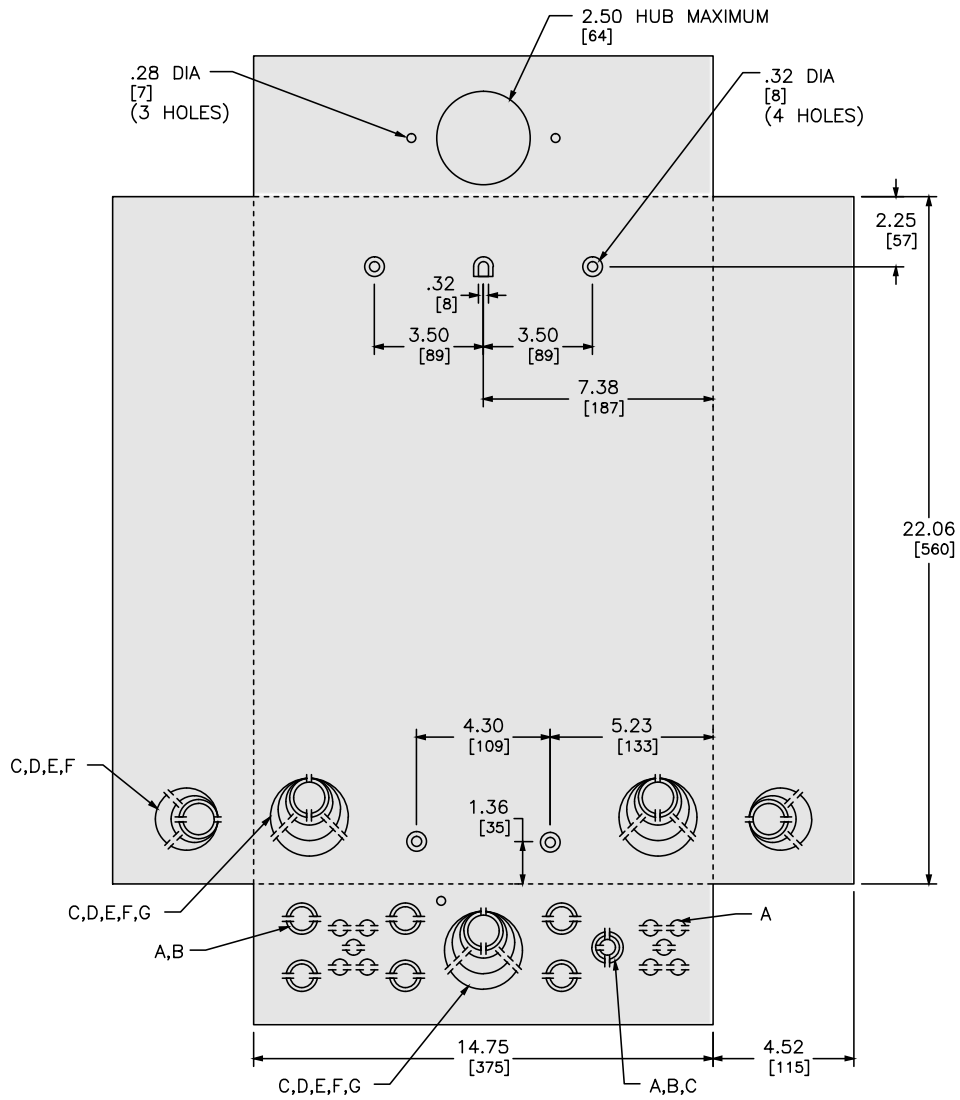
Mercury free Yes

China RoHS Regulation [China RoHS declaration](#)  
Pro-active China RoHS declaration (out of China RoHS legal scope)

RoHS exemption information Yes

Environmental Disclosure [Product Environmental Profile](#)

Dimensions

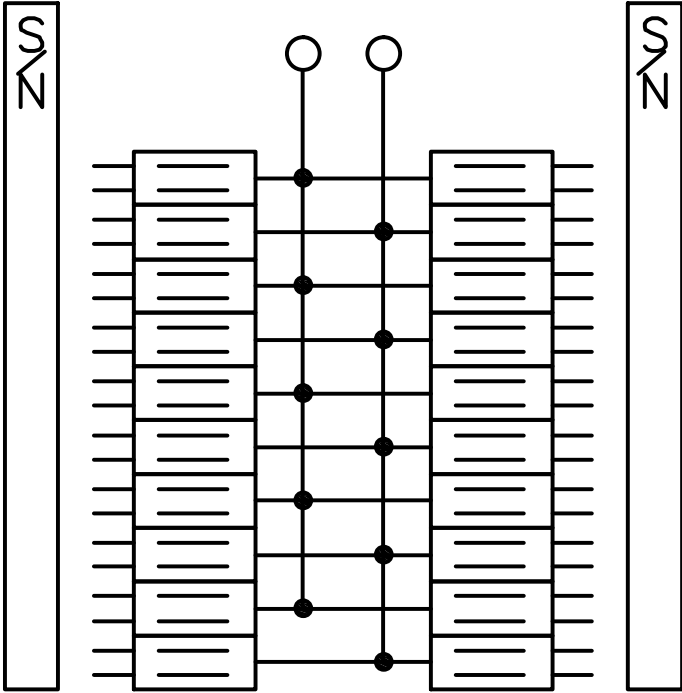


in.  
[mm]

KNOCKOUTS							
SYMBOL	A	B	C	D	E	F	G
IN	.50	.75	1.00	1.25	1.50	2.00	2.50
MM	13	19	25	32	38	51	64

Dimensions are approximate. Refer to technical documentation for additional detail.

Wiring Diagram



HOM2040L125PRB

Recommended replacement(s)