

PHOTOVOLTAIC ROOF MOUNT SYSTEM

SR.#

PROJECT INFORMATION

CODE AND STANDARDS

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
- ALL OTHER ORDINANCE ADOPTED BY THE LOCAL GOVERNING AGENCIES

SITE NOTES / OSHA REGULATION

1. A LADDER SHALL BE IN PLACE FOR INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS.
2. THE SOLAR PV INSTALLATION SHALL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS.
3. ROOFTOP MOUNTED PHOTOVOLTAIC PANELS AND MODULES SHALL BE TESTED, LISTED AND IDENTIFIED BY RECOGNIZED ELECTRICAL TESTING LABORATORY.
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, THE PHOTOVOLTAIC SOURCE AND 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.

SOLAR CONTRACTOR

1. MODULE CERTIFICATIONS INCLUDE UL1703, IEC61646, IEC61370.
2. IF APPLICABLE, MODULE GROUNDING LUGS MUST BE INSTALLED AT THE MARKED GROUNDING LUG HOLES PER THE MANUFACTURERS INSTALLATION REQUIREMENTS.
3. AS INDICATED BY DESIGN, OTHER NRTL LISTED MODULE GROUNDING DEVICES MAY BE USED IN PLACE OF STANDARD GROUNDING LUGS AS SHOWN IN MANUFACTURER DOCUMENTATION AND APPROVED BY THE AHJ.
4. ALL MICROINVERTERS, PHOTOVOLTAIC MODULES, AC COMBINERS, DC-AC CONVERTERS AND SOURCE CIRCUIT COMBINERS INTENDED FOR USE IN A PHOTOVOLTAIC POWER SYSTEM WILL BE IDENTIFIED AND LISTED FOR THE APPLICATION PER NEC690.4(B).
5. ALL SIGNAGE TO BE INSTALLED IN ACCORDANCE WITH LOCAL BUILDING CODE.
6. TERMINALS AND LUGS WILL BE TIGHTENED TO MANUFACTURER TORQUE SPECIFICATIONS (WHEN PROVIDED) IN ACCORDANCE WITH NEC CODE 110.14(D) ON ALL ELECTRICAL CONNECTIONS.
7. MAX DC VOLTAGE CALCULATED USING MANUFACTURER PROVIDED TEMP COEFFICIENT FOR VOC UNLESS NOT AVAILABLE.

1	PV MODULES	33 x SOLARIA POWERX-390R
2	INVERTER	02 x Tesla Inverter 7.6 kW
3	ROOF TYPE	ASPHALT SHINGLES
4	RACKING	PSR-B84 RAILS (BLACK)
5	MOUNTING TYPE	COMP MOUNT FLASHING (BLACK)
6	DC SIZE	12.87 KW
7	AC SIZE	15.2 KVA



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PROJECT INFORMATION

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2	PV2	SITE LAYOUT
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Customer Information:

Kathryn Elizabeth Lassek
3185 Raynor McLamb Road
Linden NC 28356

Customer Signature:

Sheet Name:

Drawing Index

JOB NUMBER:

23-201-RL

Date:

05/01/2023

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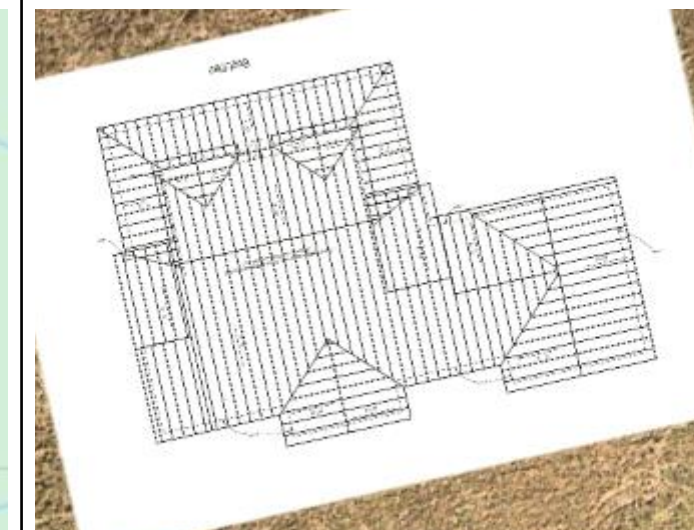
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17" X 22"

Sheet Number:

PV1



DESIGN CRITERIA
WIND SPEED: 135 MPH
GROUND SNOW LOAD: 10 PSF
WIND EXPOSURE FACTOR: B

UTILITY COMPANY:
SOUTH RIVER EMC
PERMIT ISSUER (AHJ):
HARNETT COUNTY

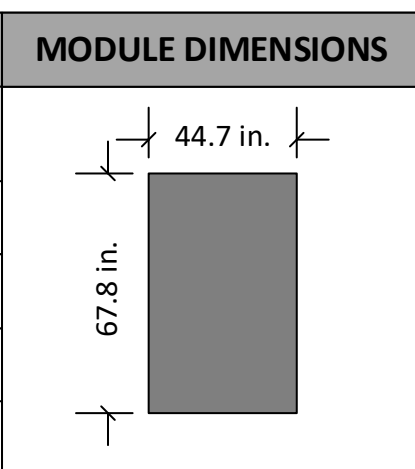
SCOPE OF WORK
INSTALLATION OF UTILITY
INTERACTIVE PHOTOVOLTAIC
SOLAR SYSTEM.

VICINITY MAP

TOP VIEW OF THE BUILDING

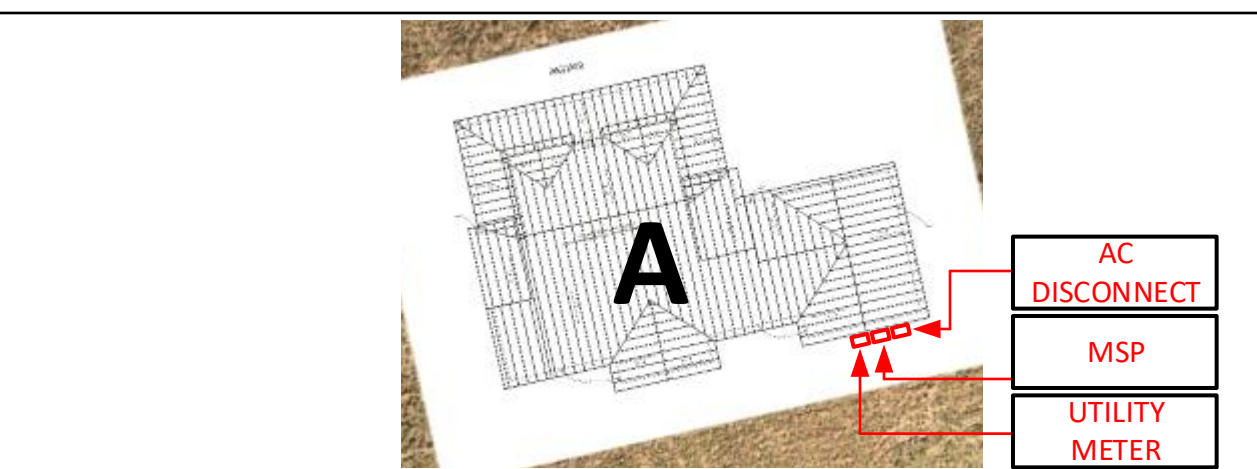


ROOF DESCRIPTION			
ROOF	PITCH	AZIMUTH	NO. OF MODULES
A	34°	167°	33



Vent

- No vents will be covered by PV modules during the installation.



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SYSTEM DETAILS

NUMBER OF PANELS : 33
 PANELS MODEL : SOLARIA POWERX-390R
 DC SIZE : 12.87 kW
 AC SIZE : 15.2 kVA

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Site Layout

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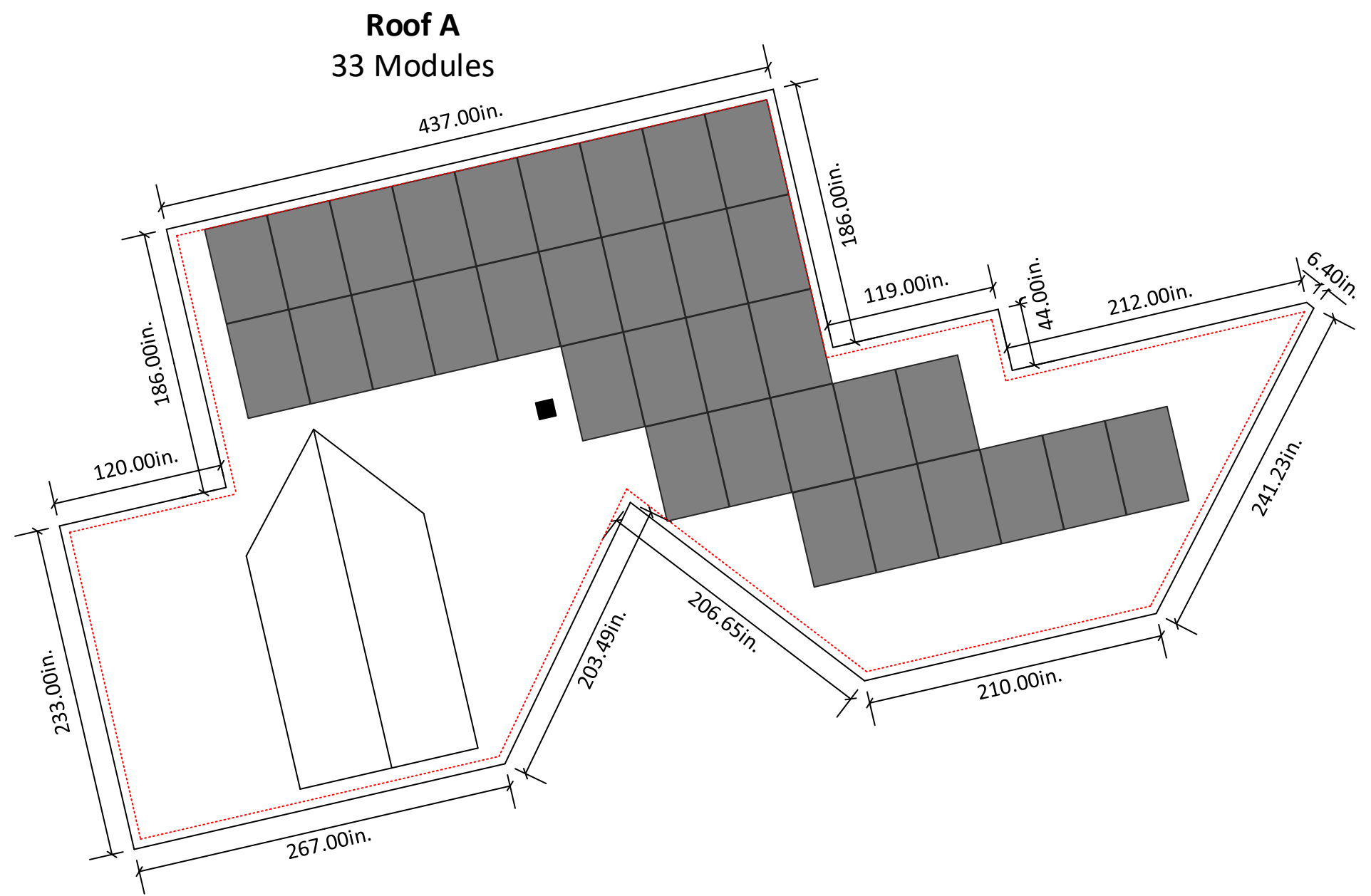
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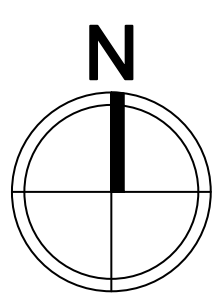
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PV2

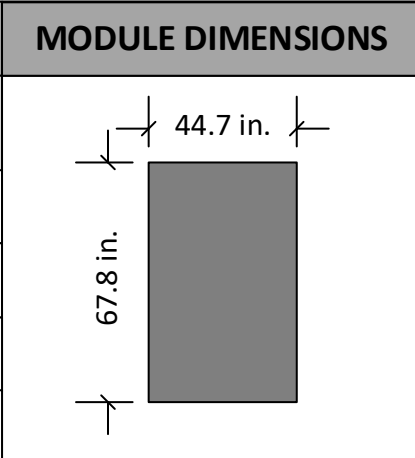


6in setback from sides of the roof

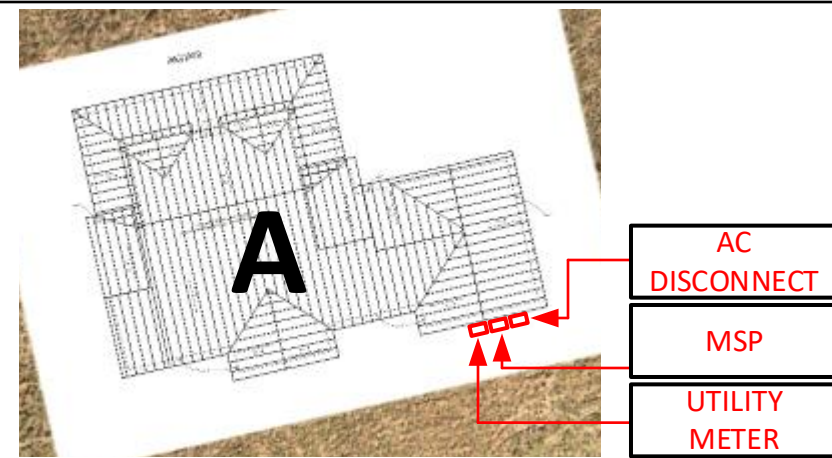
SITE LAYOUT
SCALE: 1/8" - 1'



ROOF DESCRIPTION			
ROOF	PITCH	AZIMUTH	NO. OF MODULES
A	34°	167°	33



STRING LAYOUT					
TESLA 7.6KW - A			TESLA 7.6KW - B		
Strings #	No. of Modules	Color	Strings #	No. of Modules	Color
String 1	09	Blue	String 3	09	Green
String 2	09	Orange	String 4	06	Purple



Tesla MCI (Mid Circuit Interrupter)



SYSTEM DETAILS

NUMBER OF PANELS : 33
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String Mapping

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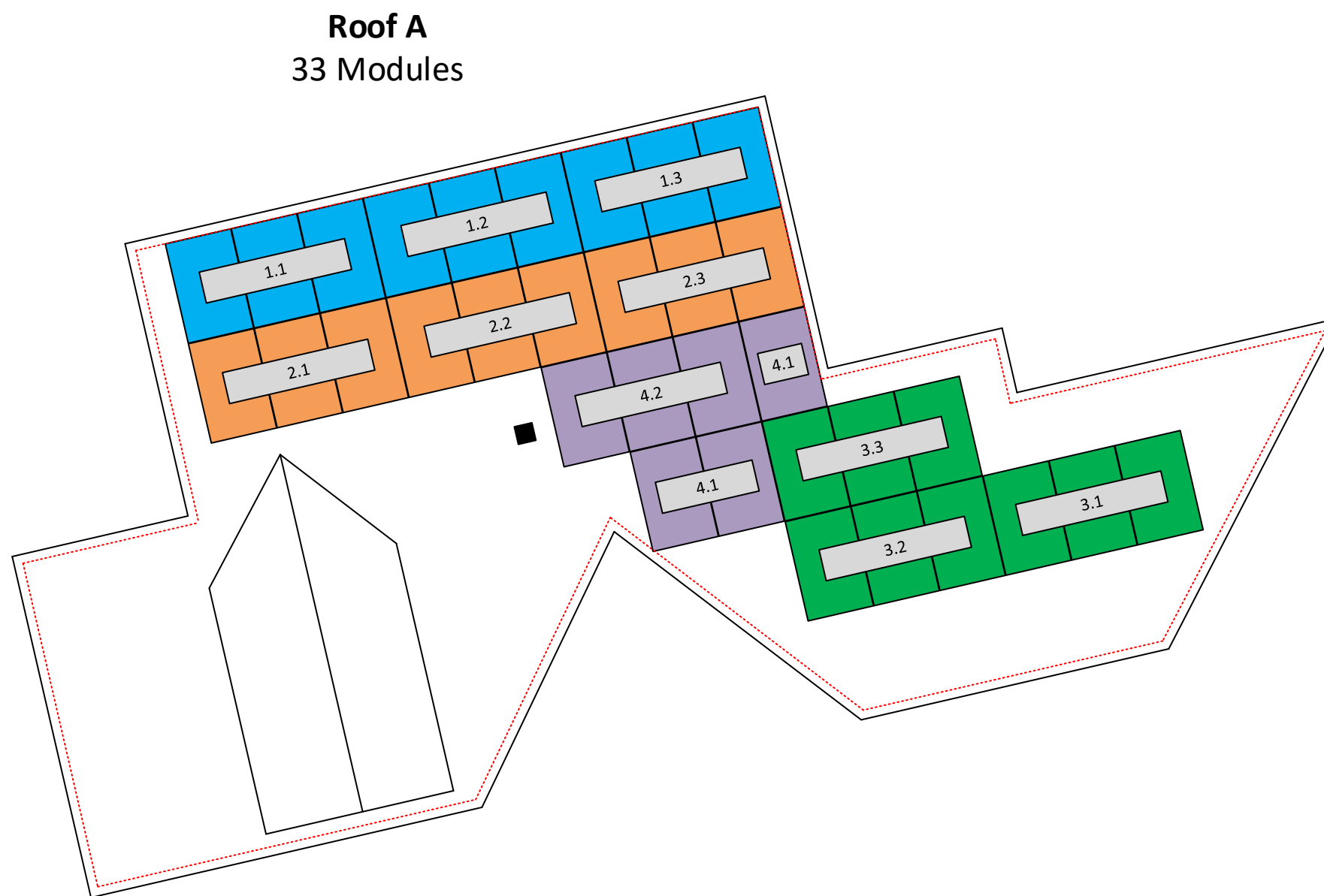
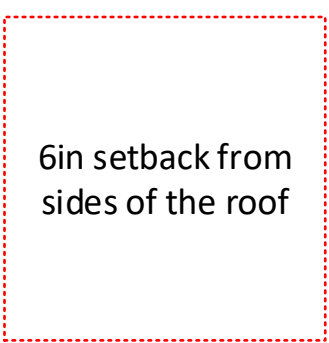
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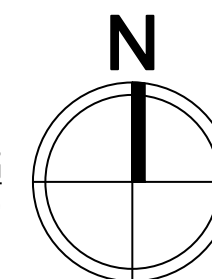
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PV3



STRING MAPPING
 SCALE: 1/8" - 1'



STRING CALCULATION

String #	No of Modules	Estimated Power	I _{max}	I _{mp}	V _{oc}	V _{mpp}
1	09	3,510 W	19.85 Adc	12.73 Adc	332.1Vdc	550 Vdc
2	09	3,510 W	19.85 Adc	12.73 Adc	332.1Vdc	550 Vdc
3	09	3,510 W	19.85 Adc	12.73 Adc	332.1Vdc	550 Vdc
4	06	2,340 W	19.85 Adc	12.73 Adc	221.4Vdc	550 Vdc

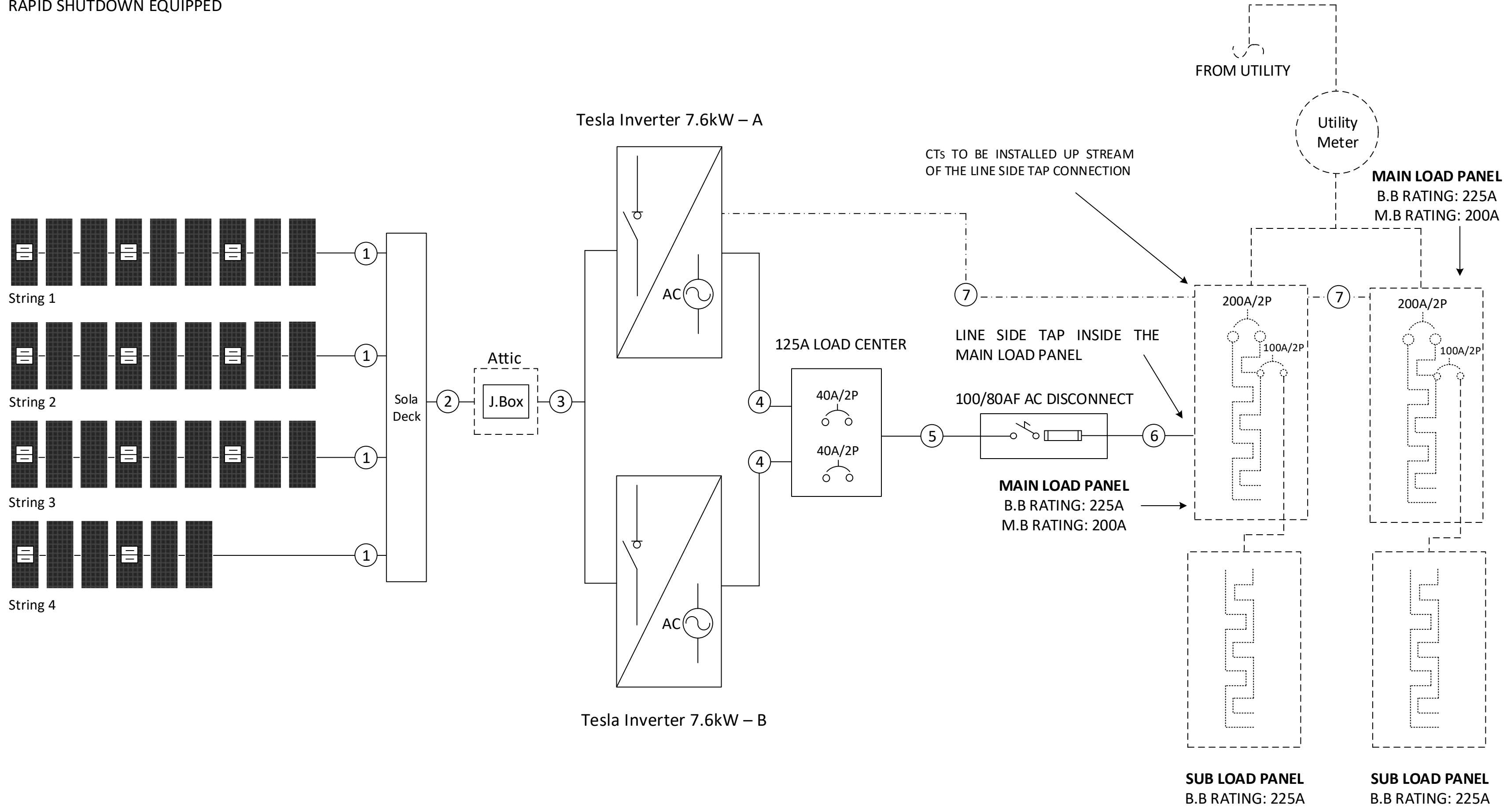
NEC Code (2020) and UL Standard References

Rapid Shut Down	NEC 690.12 (A-D), UL1741	Grounding	NEC Article 250.30(A)
Disconnecting Means	NEC 690.13	Conduit Fill	NEC Table C.9, 310.15(B)(3)(a)
Feeder Sizing	NEC Table 310, 15(B)(16, 17)	Interconnection	NEC 705.12
Over current Protection	NEC 690.9		



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33 X SOLARIA POWERX-390R
390W
TESLA MCI-2 (Mid Circuit Interrupter)
RAPID SHUTDOWN EQUIPPED



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Electrical One Line Diagram

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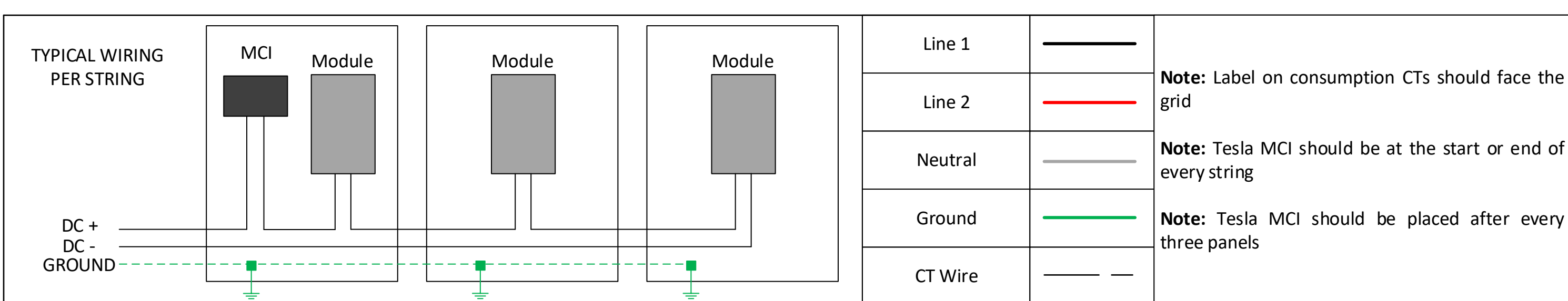
PV4

- System Size: 12,870W DC
- (33) SOLARIA POWERX-390R
- (11) TESLA MCI-2 (Mid Circuit Interrupter)
- (02) 1538000-45-y: Tesla Solar Inverter 7.6kW
- Inverter Output: 32A max @ 240 VAC (each)
- 15.2 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 Mid Circuit Interrupter, refer to Mid Circuit Interrupter and 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.

Sr.No	#Wire	Conduit Size	Ground Wire	Amperage
1	2 x #10 PV		#10 Bare CU	19.85
2	4 x #10 MC Cable			19.85
3	8 x #10 THHN Cu	3/4" EMT	#10 Green	19.85
4	3 x #8 THHN Cu	3/4" EMT	#10 Green	40
5	3 x #4 THHN Cu	1.25" EMT	#8 Green	80
6	3 x #4 THHN Cu	1.25" EMT		80
7	Shielded, twisted pair with drain wire			





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Detailed Electrical Diagram

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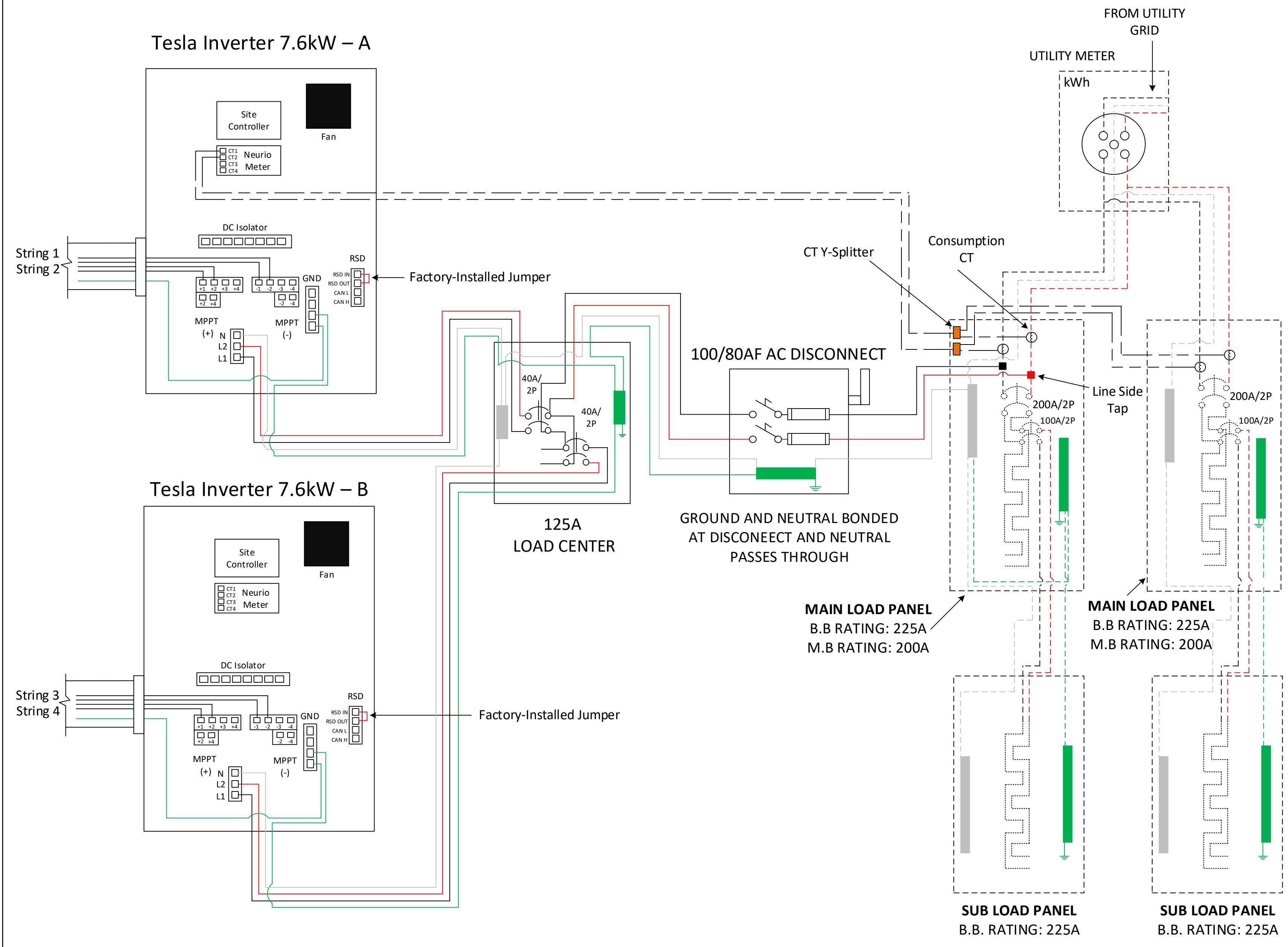
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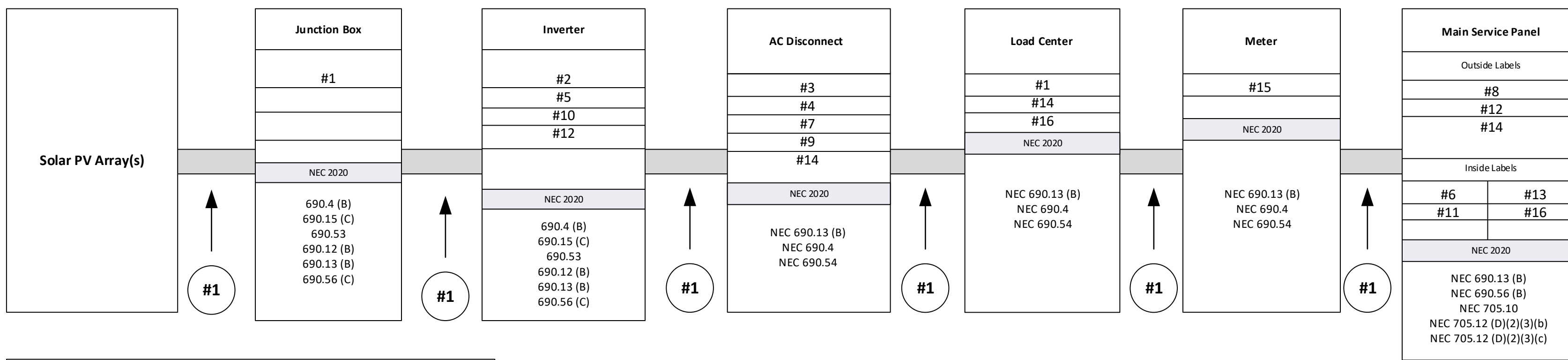
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PV5





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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 DC CONDUIT, RACEWAYS, ENCLOSURES, CABLE ASSEMBLIES, DC 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 DC 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

#1 WARNING: PHOTOVOLTAIC POWER SOURCE

#2 PHOTOVOLTAIC
DC DISCONNECT

#3 PHOTOVOLTAIC
AC DISCONNECT

#4 RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

#5 MAXIMUM VOLTAGE 550Vdc
MAXIMUM CIRCUIT CURRENT 19.85Adc
MAX. RATED OUTPUT CURRENT OF THE CHARGE CONTOLLER OR DC-TO-DC CONVERTER IF INSTALLED

#6 PHOTOVOLTVIC POWER SOURCE
OPERATING AC VOLTAGE 240 V
MAXIMUN OPERATING AC OUTPUT CURRENT 80 A

#7 AC DISCONNECT PHOTOVOLTAIC SYSTEM POWER SOURCE
RATED AC OUTPUT CURRENT 80
NOMINAL OPERATING AC VOLTAGE 240

#8 SOLAR AC DISCONNECT LOCATED AT SOUTH-EAST SIDE WALL OF THE HOUSE BESIDE THE UTILITY METER

#9 SERVICE DISCONNECT LOCATED INSIDE THE MAIN LOAD PANEL

#10 WARNING
BIPOLAR PHOTOVOLTAIC ARRAY
DISCONNECT OF NUETRAL GROUNDED CONDUCTOR MAT RESULT IN OVERVOLTAGE ON ARRAY OR INVERTER

#11 WARNING
THIS EQUIPMENT FED BY MULTIPLE SOURCES.TOTAL RARTING OF ALL OVERCURRENT DEVICES,EXCLUDING MAIN SUPPLY OVERCURRENT DEVICE,SHALL NOT EXCEED AMPACITY OF BUSBAR

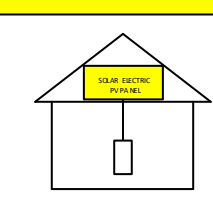
#12 WARNING
DUAL POWER SUPPLY SOURCES: UTILITY GRID AND PV SOLAR ELECTRIC SYSTEM

#13 WARNING
TURN OFF PHOTOVOLTAIC AC DISCONNECT PRIOR TO WORKIN INSIDRE PANEL

#14 WARNING
ELECTRIC SHOCK HAZARD
TERMIONAL OM THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

#15 WARNING
THIS SERVICE METER IS ALSO SERVED BY A PHOTOVOLTAIC SYSTEM

#16 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



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PV Labels

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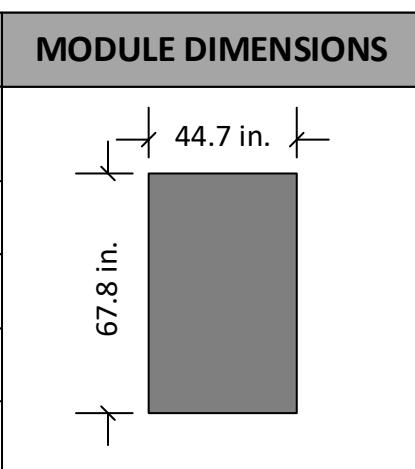
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PV6



ROOF DESCRIPTION			
ROOF	PITCH	AZIMUTH	NO. OF MODULES
A	34°	167°	33



Rails and Splices : PSR-B84 (BLACK)

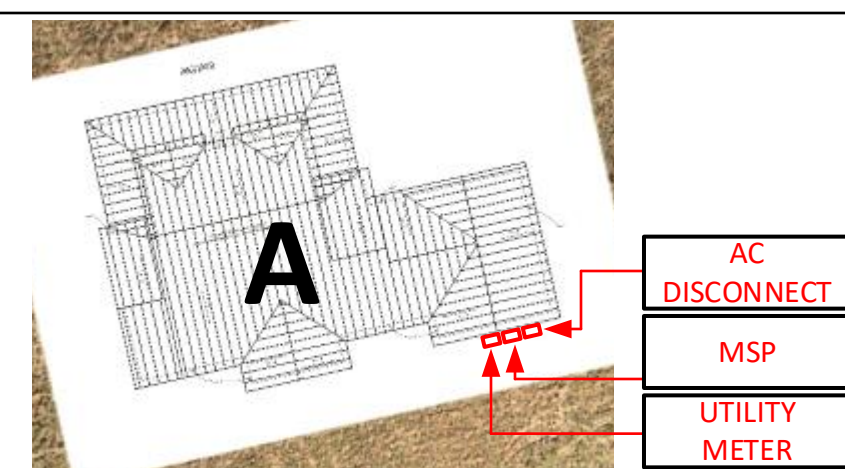
Rafter Spacing : 24 in

Attachment Span: 4ft

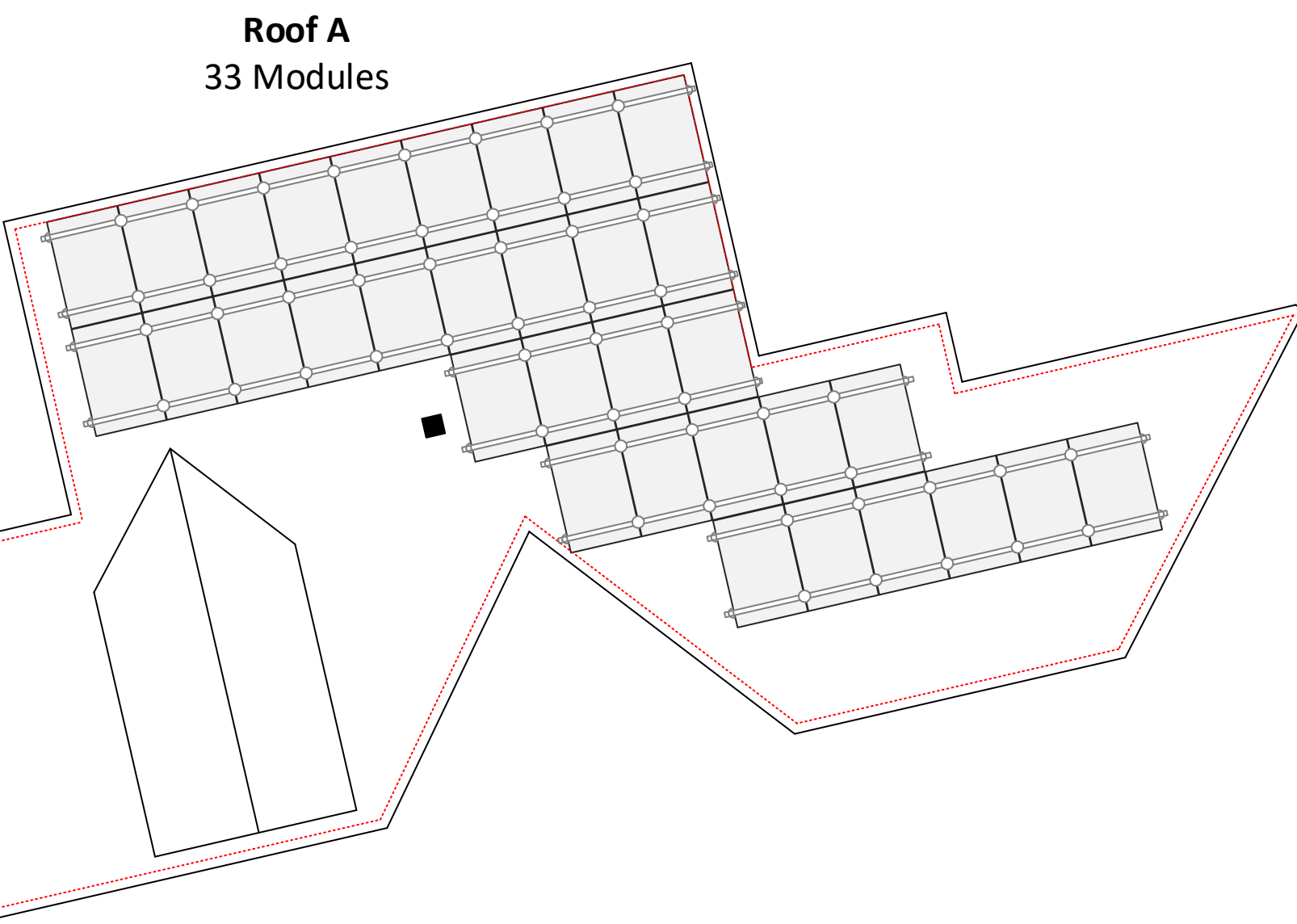
Roof Attachment : Pegasus Comp Mount

There is one layer of shingles
Roofing material is asphalt shingles

The roof is located in 135mph wind zone



PV LABELS		
Sr No	Code	Qty
01	02-314	11
02	03-301	02
03	03-302	01
04	02-316	01
05	03-308	02
06	03-390	01
07	03-306	01
08	8M-001	01
09	8M-002	01
10	05-103	02
11	05-108	01
12	05-211	03
13	05-372	01
14	05-215	03
15	07-359	01
16	07-111	02



- RAILS AND MOUNTING SYSTEM**
- 40 x PSR-B84: Pegasus Rail, Black, 84" (7 Feet)
 - 30 x PSR-SPL: Pegasus - Bonded, Structural Splice
 - 56 x PSR-MCB: Pegasus - Multiclamp, Mid/End, 30 to 40 mm, Black
 - 20 x PSR-HEC: Pegasus - Hidden End Clamp
 - 11 x PSR-MLP: Pegasus - MLPE Mount
 - 09 x PSR-LUG: Pegasus - Grounding Lug
 - 50 x PSR-WMC: Pegasus - Wire Management Clip
 - 06 x PSR-CBG: Pegasus - Cable Grip
 - 20 x PSR-CAP: Pegasus - End Cap
 - 66 x PSCR-UBBDT: Pegasus Comp Mount - Open Slot, Black L Foot, Black Flashing, Dovetail 3/8" T-Bolt
 - 66 x Heyco Wire Clips

- SOLAR MODULES**
- 33 x SOLARIA POWERX-390R
- INVERTER & SUPPORTING ITEMS**
- 02 x 1538000-45-y: Tesla Solar Inverter 7.6kW
 - 11 x MCI-2: Tesla MCI-2 (Mid Circuit Interrupter)
 - 02 x 1622277-xx-y: (2) Neurio W2 CTs
 - 01 x 1622289-xx-y: Neurio W2 CT extension wires (11ft)
 - 02 x 1622286-xx-y: Neurio W2 CT Y-Splitter
- ELECTRICAL ITEMS**
- 02 x IPCS 4002: Line/Load Side Hot Taps (#4/0 main - #2-10 tap)
 - 01 x HOM816L125PRB: Combiner Sub Panel (Sq D HOMELINE) 125A MLO/4-8 space minimum (NEMA 3R)
 - 02 x HOM240: SQ D HOM 40/2
 - 01 x D223NRB: 250volt/100amp/2pole fusible disconnect (NEMA 3R)
 - 02 x SQUARE D FRNR80: 250volt/80amp fuses
 - 500 ft x #10 PV WIRE BLK (Cu)
 - 01 x EZSLR JB-1.2: SolaDeck



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Bill of Material

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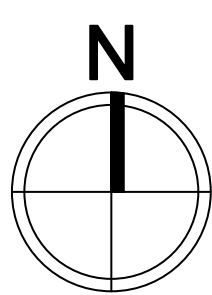
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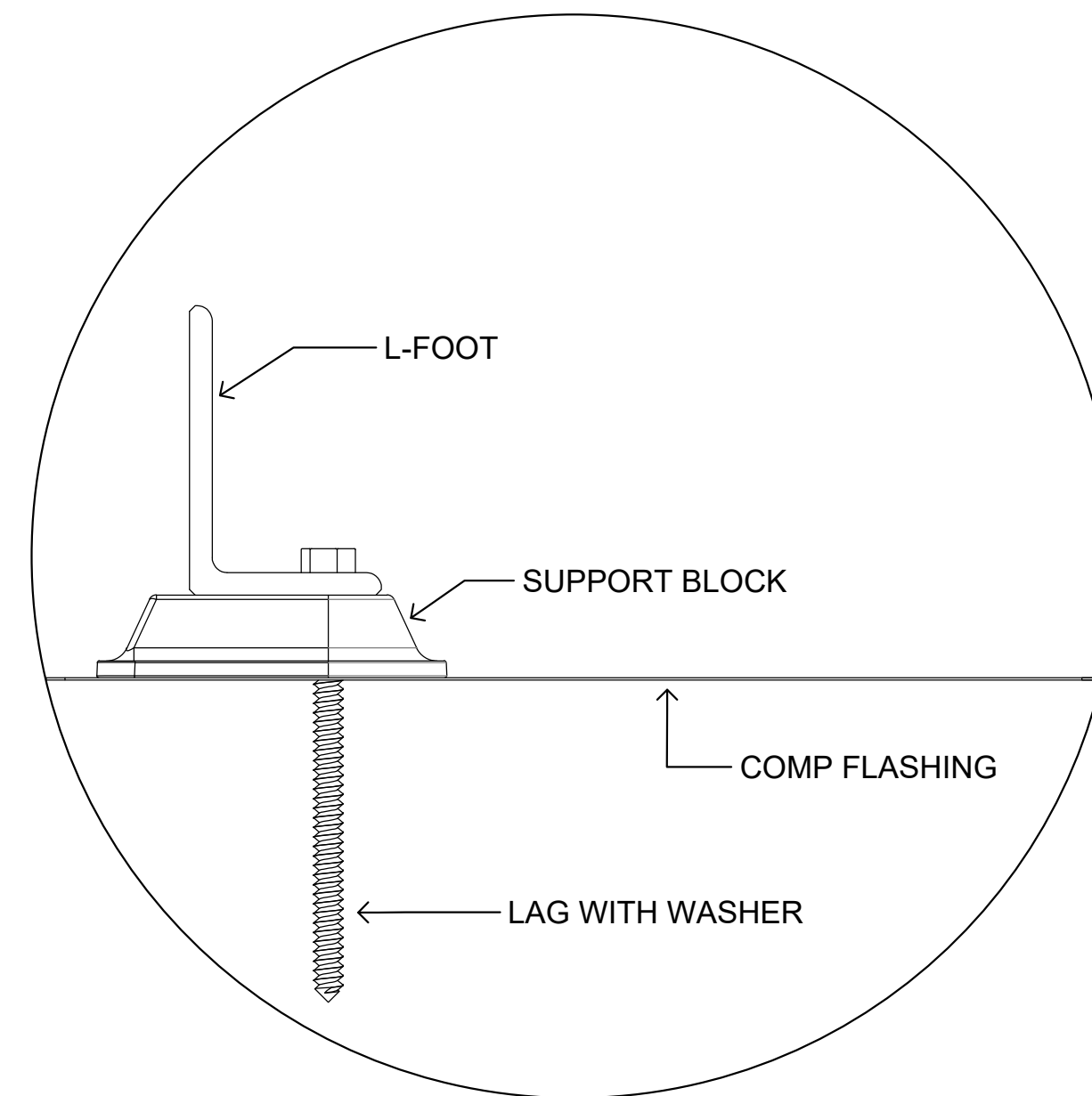
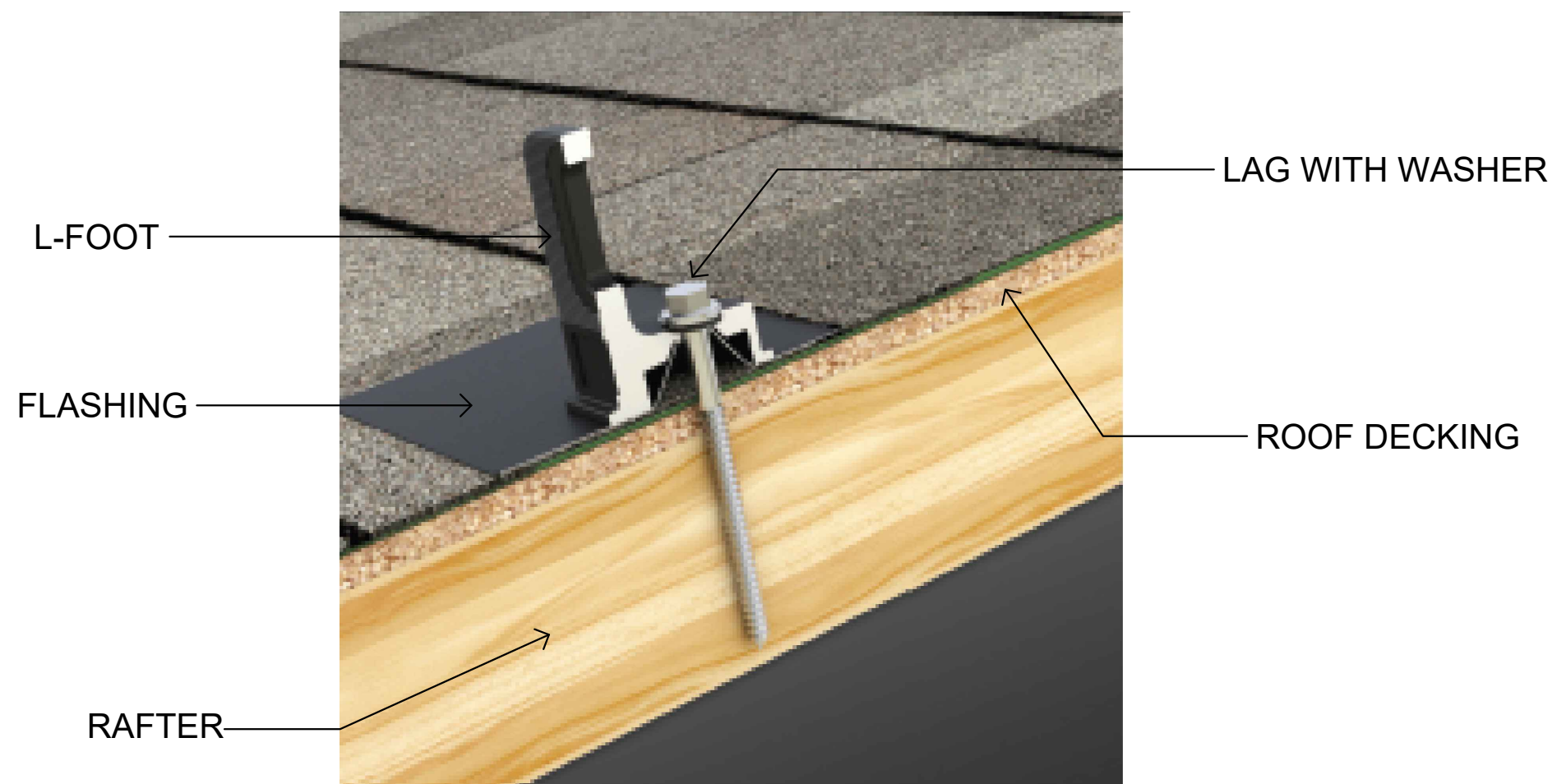
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PV7

6in setback from
sides of the roof

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





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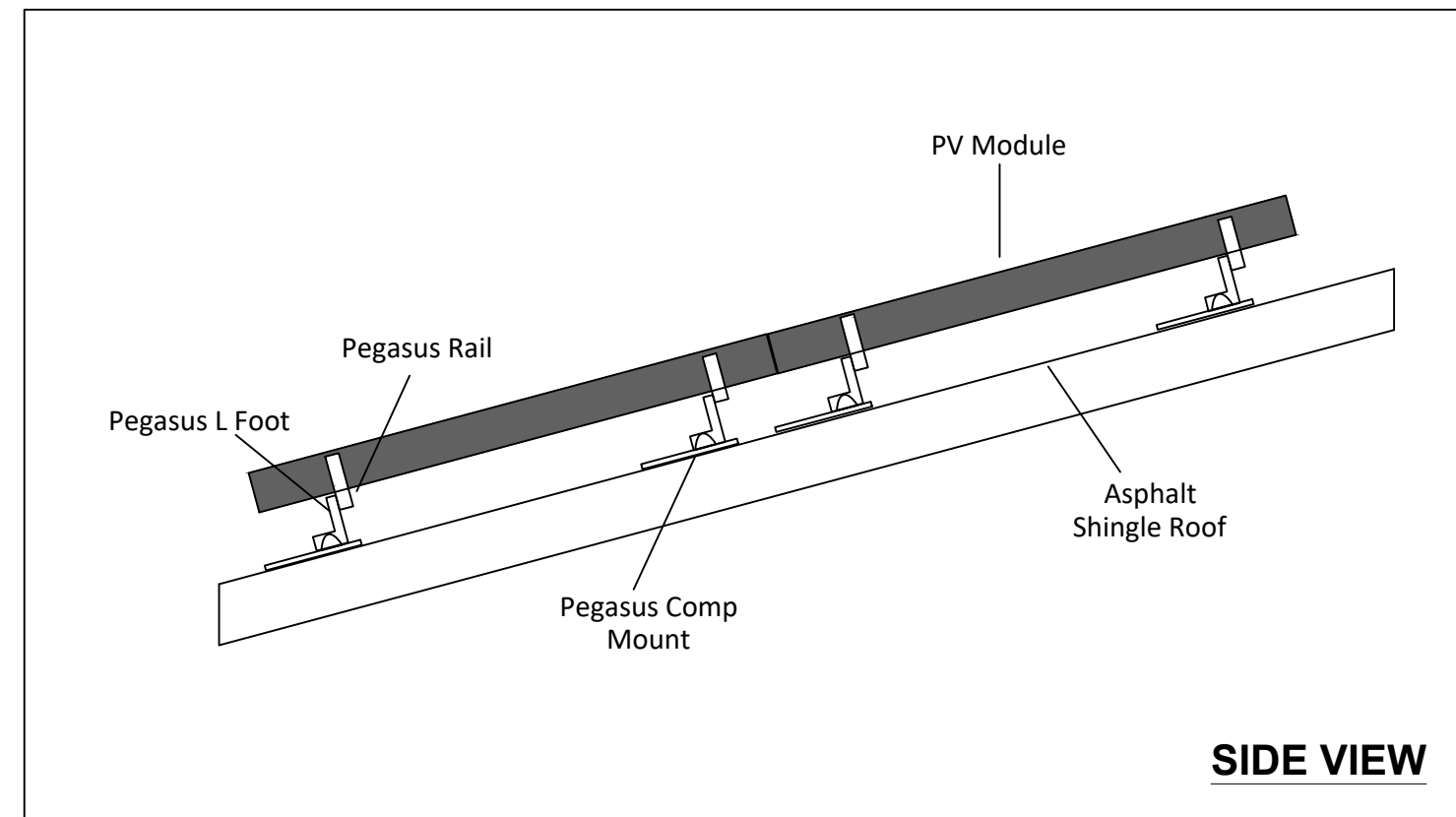
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PV8

Multi-Clamp	Hidden End Clamp	MLPE Mount	Dovetail T-Bolt	Ground Lug	Cable Grip
Torque Value 100 in-lbs.	Torque Value 135 in-lbs.	Torque Value 135 in-lbs.	Torque Value 300 in-lbs.	Torque Value 135 in-lbs.	Torque Value 135 in-lbs.



PV Dead Load	
Roof A	<p>PV System Dead Load (Panel + Racking weight) / PV System Area (33 panels x 48.7 lbs./panel + 15 ft. of racking x 1.17 lb.ft.) / (33 panels x 5.65' x 3.72') = 2.73 psf</p>



Solaria PowerX-400R Performance Series

Achieving over 20.5% efficiency, Solaria PowerX Performance solar panels feature Solaria's core cell cutting technology, offering higher-power and attractive black-on-black aesthetics compared to conventional solar panels. Solaria has been the market leader in cut-cell technologies for over a decade. With a comprehensive 25-year warranty, PowerX delivers the latest in power and reliability for homeowners.



High Efficiency, High Power

At 400 watts and 20.5% efficiency, Solaria PowerX solar panels are one of the highest power residential panels available.



High Quality and Reliability

State-of-the-art cell cutting technology and advanced panel construction ensure that PowerX panels are highly reliable and designed to far exceed the industry-leading 25-year warranty.



All Black Aesthetics

Compared to conventional panels, Solaria PowerX panels have a more uniform all-black appearance.



Best System Value

Solaria PowerX solar panels produce more power per square meter area. This reduces installation costs due to fewer balance of system components.



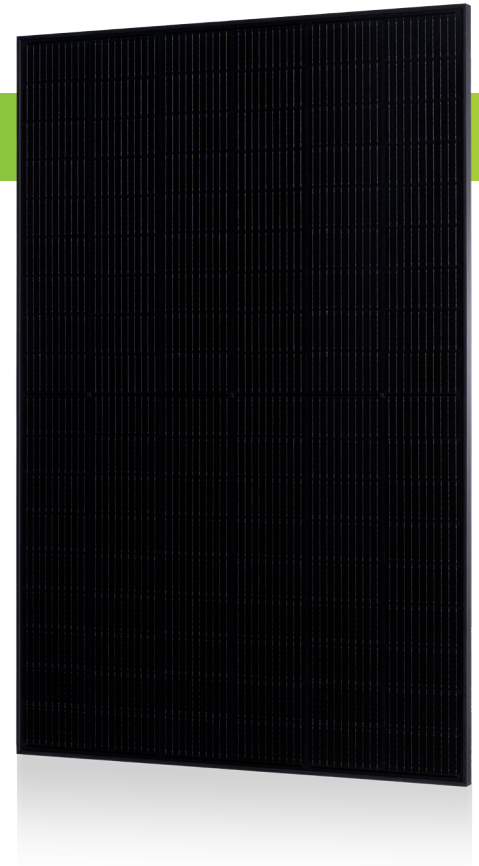
Improved Shading Tolerance

Sub-strings are interconnected in parallel, which dramatically lowers the shading losses and boosts energy yield.



Low Light Performance

PowerX maintains high efficiency at low irradiance further ensuring maximum energy yield.



About Solaria

Established in 2000, The Solaria Corporation has created one of the industry's most respected IP portfolios, with over 250 issued and pending patents in PV solar cell and module technology. Headquartered in California, Solaria has developed a technology platform that unlocks the potential of solar energy.

Performance at STC (1000W/m², 25° C, AM 1.5)

Solaria PowerX-		390R	395R	400R
Max Power (P _{max})	[W]	390	395	400
Efficiency	[%]	20.0	20.2	20.5
Open Circuit Voltage (V _{oc})	[V]	36.9	37.1	37.3
Short Circuit Current (I _{sc})	[A]	13.52	13.60	13.68
Max Power Voltage (V _{mp})	[V]	30.6	30.8	31.0
Max Power Current (I _{mp})	[A]	12.73	12.82	12.9
Power Tolerance	[%]	-0/+3	-0/+3	-0/+3

Performance at NOCT (800W/m², 20° C Amb, Wind 1 m/s, AM 1.5)

Max Power (P _{max})	[W]	290	293	297
Open Circuit Voltage (V _{oc})	[V]	34.3	34.5	34.7
Short Circuit Current (I _{sc})	[A]	11.01	11.10	11.13
Max Power Voltage (V _{mp})	[V]	28.50	28.60	28.76
Max Power Current (I _{mp})	[A]	10.20	10.26	10.32

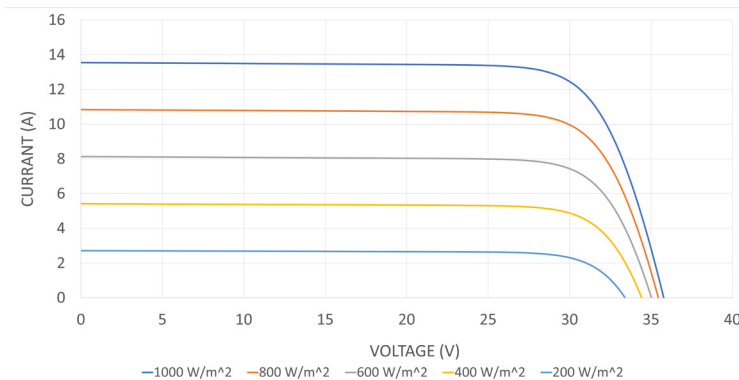
Temperature Characteristics

NOCT	[°C]	45 +/-2
Temp. Coeff. of P _{max}	[% / °C]	-0.36
Temp. Coeff. of V _{oc}	[% / °C]	-0.28
Temp. Coeff. of I _{sc}	[% / °C]	0.048

Design Parameters

Operating temperature	[°C]	-40 to +85
Max System Voltage	[V]	1000
Max Fuse Rating	[A]	25
Bypass Diodes	[#]	3

IV Curves vs. Irradiance (400W Panel)



Mechanical Characteristics

Cell Type	Monocrystalline Silicon
Dimensions (L x W x H)	67.8" x 44.7" x 1.4"
	1723mm x 1134mm x 35mm
Weight	22.1 kg / 48.7 lbs
Glass Type / Thickness	AR Coated, Tempered / 3.2mm
Frame Type	Black Anodized Aluminum
Cable Type / Length	12 AWG PV Wire (UL) / 1100mm
Connector Type	MC4
Junction Box	IP68 / 3 diodes
Front Load	5400 Pa / 113 psf*
Rear Load	2400 Pa / 50 psf*

* Refer to Solaria Installation Manual for details

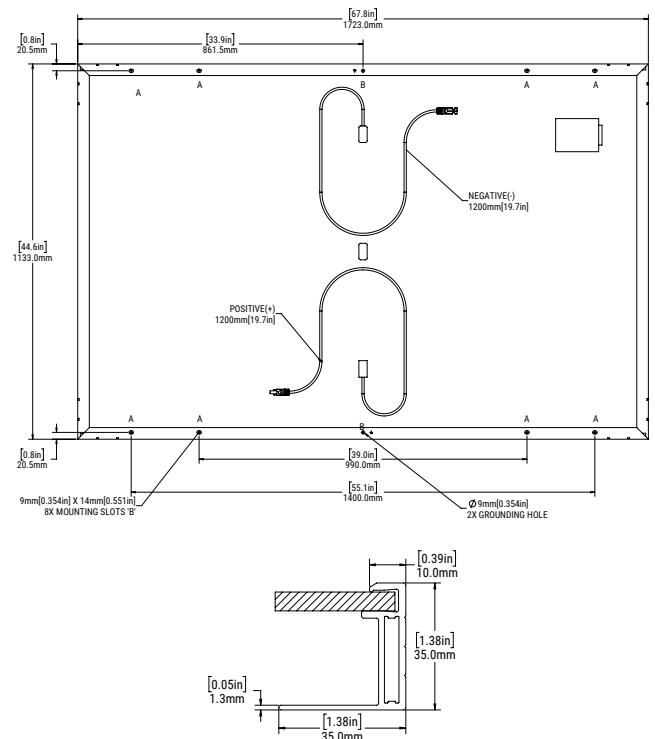
Certifications / Warranty

Certifications	UL 61730 / IEC 61215 / IEC 61730
Fire Type (UL 1703)	2
Power, Parts & Labor Warranty	25 years*

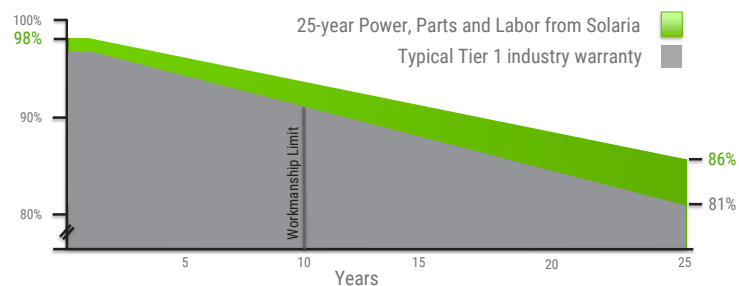
* Warranty details at www.solaria.com

Packaging

Stacking Method	Vertical / Palletized
Panels/ Pallet	31
Pallet Dims (L x W x H)	69.3" x 44.3" x 49.3"
	1760mm x 1125mm x 1253mm
Pallet Weight	745 kg / 1642 lbs
Pallets / 40-ft Container	26
Panels / 40-ft Container	806



Comprehensive 25-Year Warranty



Tesla Solar Inverter with Solar Shutdown Device

Tesla Solar Inverter completes the Tesla home solar system, converting DC power from solar to AC power for home consumption. Tesla's renowned expertise in power electronics has been combined with robust safety features and a simple installation process to produce an outstanding solar inverter that is compatible with both Solar Roof and traditional solar panels. Once installed, homeowners use the Tesla mobile app to manage their solar system and monitor energy consumption, resulting in a truly unique ecosystem experience.

KEY FEATURES

- Built on Powerwall technology for exceptional efficiency and reliability
- Wi-Fi, Ethernet, and cellular connectivity with easy over-the-air updates
- Designed to integrate with Tesla Powerwall and Tesla App
- 0.5% revenue-grade metering for Solar Renewable Energy Credit (SREC) programs included
- 3.8 kW and 7.6 kW models available



March 5, 2023

Tesla Solar Inverter Technical Specifications

Electrical Specifications: Output (AC)	Model Number	1534000-xx-y	1538000-xx-y
	Output (AC)	3.8 kW	7.6 kW
	Nominal Power	3,800 W	7,600 W
	Maximum Apparent Power	3,328 VA at 208 V 3,840 VA at 240 V	6,656 VA at 208 V 7,680 VA at 240 V
	Maximum Continuous Current	16 A	32 A
	Breaker (Overcurrent Protection)	20 A	40 A
	Nominal Power Factor	1 - 0.9 (leading / lagging)	
	THD (at Nominal Power)	<5%	

Electrical Specifications: Input (DC)	MPPT	2	4
	Input Connectors per MPPT	1-2	1-2-1-2
	Maximum Input Voltage	600 VDC	
	DC Input Voltage Range	60 - 550 VDC	
	DC MPPT Voltage Range	60 - 480 VDC ¹	
	Maximum Current per MPPT (I_{MP})	13 A ²	
	Maximum Short Circuit Current per MPPT (I_{SC})	17 A ²	

¹ Maximum current.

² Where the DC input current exceeds an MPPT rating, jumpers can be used to allow a single MPPT to intake additional DC current up to 26 A I_{MP} / 34 A I_{SC} .

Performance Specifications	Peak Efficiency	98% at 208 V 98.1% at 240 V	98.4% at 208 V 98.6% at 240 V
	CEC Efficiency	97.5% at 208 V 97.5% at 240 V	97.5% at 208 V 98.0% at 240 V
	Allowable DC/AC Ratio	1.7	
	Customer Interface	Tesla Mobile App	
	Internet Connectivity	Wi-Fi (2.4 GHz, 802.11 b/g/n), Ethernet ³ , Cellular (LTE/4G) ⁴	
	Factory-Installed Revenue Grade Meter	Revenue Accurate (+/- 0.5%) ³	
	AC Remote Metering Support	Wi-Fi (2.4 GHz, 802.11 b/g/n), RS-485	
	Protections	Integrated arc fault circuit interrupter (AFCI), Rapid Shutdown	
	Supported Grid Types	60 Hz, 240 V Split Phase 60 Hz, 208 V Wye	

³ Applicable to Tesla Solar Inverter with Site Controller (1538000-45-y) only.

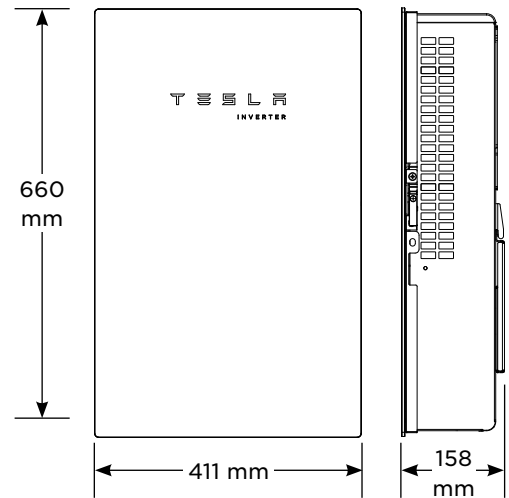
⁴ Cellular connectivity subject to network operator service coverage and signal strength.

Tesla Solar Inverter Technical Specifications

Mechanical Specifications

Dimensions

660 mm x 411 mm x 158 mm (26 in x 16 in x 6 in)



Weight

52 lb⁵

Mounting Options

Wall mount (bracket)

⁵ Door and bracket can be removed for a mounting weight of 37 lb.

Environmental Specifications

Operating Temperature

-30°C to 45°C (-22°F to 113°F)⁶

Operating Humidity (RH)

Up to 100%, condensing

Storage Temperature

-30°C to 70°C (-22°F to 158°F)

Maximum Elevation

3000 m (9843 ft)

Environment

Indoor and outdoor rated

Enclosure Rating

Type 3R

Ingress Rating

IP55 (Wiring compartment)

Pollution Rating

PD2 for power electronics and terminal wiring compartment, PD3 for all other components

Operating Noise @ 1 m

< 40 db(A) nominal, < 50 db(A) maximum

⁶ For the 7.6 kW Tesla Solar Inverter, performance may be de-rated to 6.2 kW at 240 V or 5.37 kW at 208 V when operating at temperatures greater than 45°C.

Compliance Information

Grid Certifications

UL 1741, UL 1741 SA, UL 1741 SB, IEEE 1547-2018, IEEE 1547.1

Safety Certifications

UL 1741 PVRSS, UL 1699B, UL 1998 (US), UL 3741

Emissions

EN 61000-6-3 (Residential), FCC 47CFR15.109 (a)

Solar Shutdown Device 1 Technical Specifications

The Solar Shutdown Device is a Mid-Circuit Interrupter (MCI) and is part of the PV system rapid shutdown (RSD) function in accordance with Article 690 of the applicable NEC. When paired with Tesla Solar Inverter, solar array shutdown is initiated by any loss of AC power.

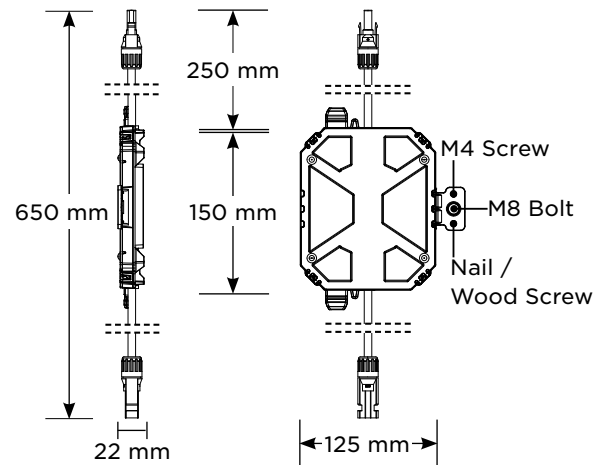
Electrical Specifications	Nominal Input DC Current Rating (I_{MP})	12 A
	Maximum Input Short Circuit Current (I_{SC})	19 A
	Maximum System Voltage (PVHCS)	600 V DC

RSD Module Performance	Maximum Number of Devices per String	5
	Control	Power Line Excitation
	Passive State	Normally Open
	Maximum Power Consumption	7 W
	Warranty	25 years

Environmental Specifications	Ambient Temperature	-40°C to 50°C (-40°F to 122°F)
	Storage Temperature	-30°C to 70°C (-22°F to 158°F)
	Enclosure Rating	NEMA 4X / IP65

Compliance Information	Certifications	UL 1741 PVRSE, UL 3741, PVRSA (Photovoltaic Rapid Shutdown Array)
	RSD Initiation Method	PV System AC Breaker or Switch
	Compatible Equipment	See Compatibility Table below

Mechanical Specifications	Model Number	MCI-1
	Electrical Connections	MC4 Connector
	Housing	Plastic
	Dimensions	125 mm x 150 mm x 22 mm (5 in x 6 in x 1 in)
	Weight	350 g (0.77 lb)
	Mounting Options	ZEP Home Run Clip
		M4 Screw (#10) M8 Bolt (5/16") Nail / Wood screw



UL 3741 PV Hazard Control (and PVRSA) Compatibility

Tesla Solar Roof and Tesla/Zep ZS Arrays using the following modules are certified to UL 3741 and UL 1741 PVRSA when installed with Tesla Solar Inverter and Solar Shutdown Devices. See [Tesla Solar Inverter Rapid Shutdown: Module Selection Based on PV Hazard Control System Listing](#) for guidance on installing Tesla Solar Inverter and Solar Shutdown Devices with other modules.

Brand	Model	Required Solar Shutdown Devices
Tesla	Solar Roof V3	1 Solar Shutdown Device per 10 modules
Tesla	Tesla TxxxS (where xxx = 405 to 450 W, increments of 5)	1 Solar Shutdown Device per 3 modules ⁷
Tesla	Tesla TxxxH (where xxx = 395 to 415 W, increments of 5)	1 Solar Shutdown Device per 3 modules
Hanwha	Q.PEAK DUO BLK-G5 or Q.PEAK DUO BLK-G6+	1 Solar Shutdown Device per 3 modules

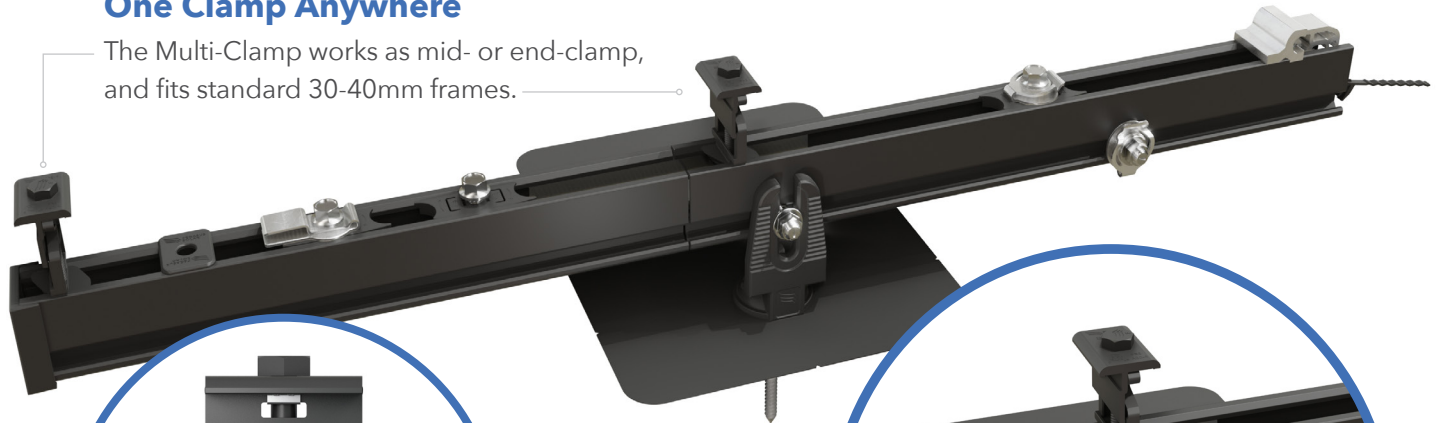
⁷ **Exception:** Tesla solar modules installed in locations where the max Voc for three modules at low design temperatures exceeds 165 V shall be limited to two modules between Solar Shutdown Devices.

One Clamp Anywhere

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

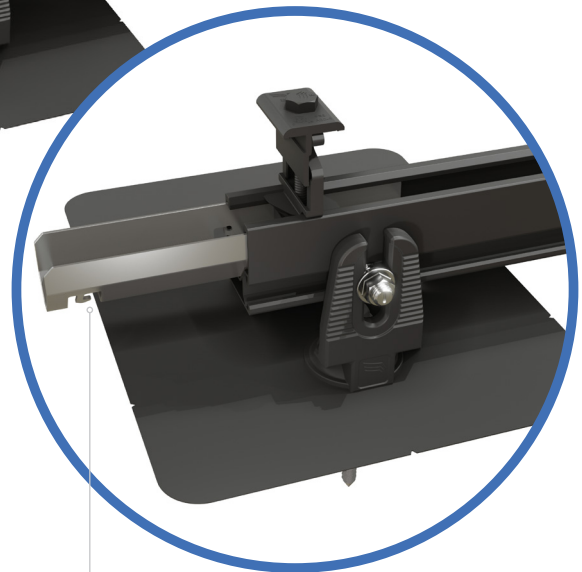
Instant Bonding

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



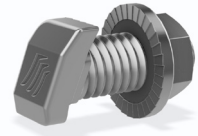
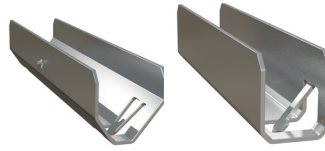
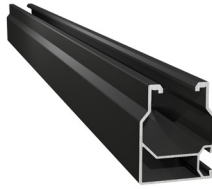
Premium Aesthetics

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

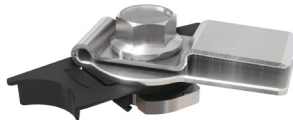
Offers premium edge appearance.
Preinstalled pull-tab grips rail edge, allowing easy, one-hand installation.
Tucks away for reuse.

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

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	

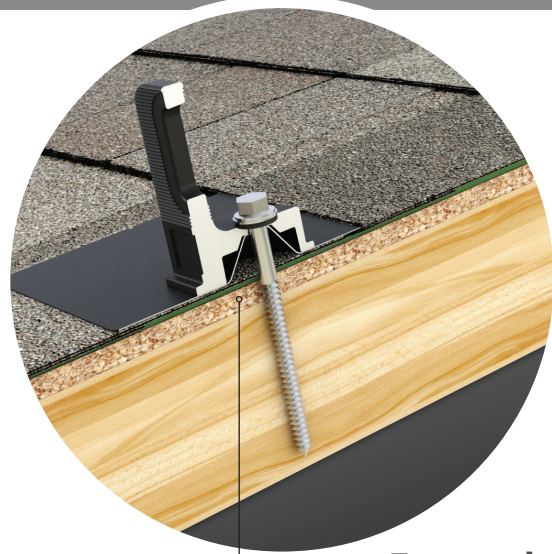
For reference only. Spans above are calculated using ASCE 7-16 for a Gable Roof, Exposure Category B, 7-20deg roof angle, 30ft mean roof height with non-exposed modules. For PE certified span tables, visit www.pegasussolar.com/spans.

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

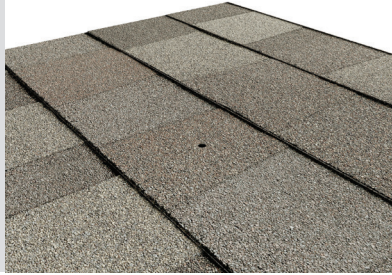


All-In-One Kit Packaging

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

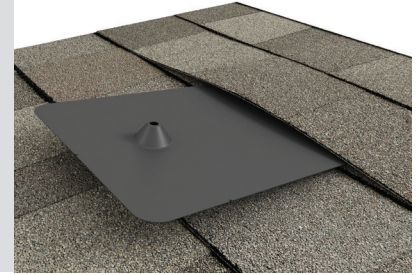
1

Drill pilot hole in the center of the rafter.



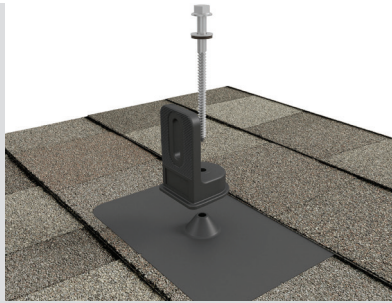
2

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



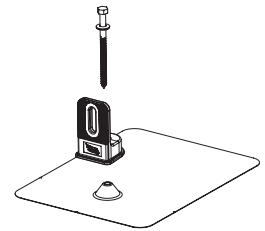
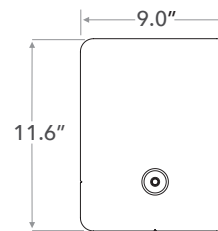
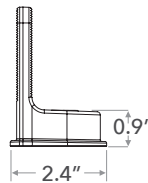
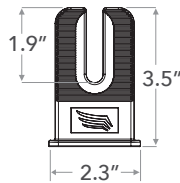
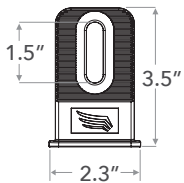
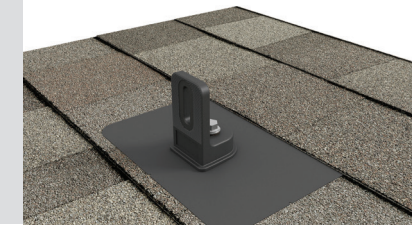
3

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

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



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, heavy duty, fusible, 100A, 3 wire, 3 poles, 100hp, 600VAC/DC, Type 1

H363

Product availability : Stock - Normally stocked in distribution facility

Price* : 1,188.00 USD

Main

Product	Single Throw Safety Switch
Duty Rating	Heavy duty
Device Application	Heavy application
Disconnect Type	Fusible disconnect
Factory Installed Neutral	None
Phase	3 phase
Number of Poles	3
Current Rating	100 A
Voltage Rating	600 V AC/DC
Enclosure Rating	NEMA 1 steel
Motor power hp	25 hp at 480 V AC 50-60 Hz for 3 phase motors 60 hp at 480 V AC 50-60 Hz for 3 phase motors 30 hp at 600 V AC 50-60 Hz for 3 phase motors 100 hp at 600 V AC 50-60 Hz for 3 phase motors 50 hp at 600 V DC

Complementary

Short Circuit Current Rating	10 kA H or K 200 kA R or J
Fuse type	H or K R or J
Mounting Type	Surface
Electrical Connection	Lugs
Wiring configuration	3-wire
Wire Size	AWG 12...AWG 1/0 aluminium AWG 14...AWG 1/0 copper
Tightening torque	50 lbf.in (5.65 N.m) (AWG 1...AWG 3/0) 45 lbf.in (5.08 N.m) (AWG 6...AWG 4) 40 lbf.in (4.52 N.m) 0.01 in ² (8.367 mm ²) (AWG 8) 35 lbf.in (3.95 N.m) 0.00...0.01 in ² (2.06...5.261 mm ²) (AWG 14...AWG 10)
Depth	6.38 in (162.05 mm)
Width	10.25 in (260.35 mm)
Height	21.25 in (539.75 mm)
Net Weight	19.84 lb(US) (9 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 00008-H&HU SW,2&3P,N1,30-200A

Discount Schedule DE1

GTIN 785901482253

Returnability Yes

Country of origin US

Packing Units

Unit Type of Package 1 PCE

Number of Units in Package 1 1

Package 1 Height 7.30 in (18.542 cm)

Package 1 Width 10.70 in (27.178 cm)

Package 1 Length 23.30 in (59.182 cm)

Package 1 Weight 17.04 lb(US) (7.729 kg)

Unit Type of Package 2 PAL

Number of Units in Package 2 40

Package 2 Height 41.50 in (105.41 cm)

Package 2 Width 40.00 in (101.6 cm)

Package 2 Length 48.00 in (121.92 cm)

Package 2 Weight 722.00 lb(US) (327.493 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

REACH Regulation [REACH Declaration](#)

REACH free of SVHC Yes

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

Mercury free Yes

China RoHS Regulation [China RoHS declaration](#)
Product out of China RoHS scope. Substance declaration for your information.

RoHS exemption information Yes

Environmental Disclosure [Product Environmental Profile](#)

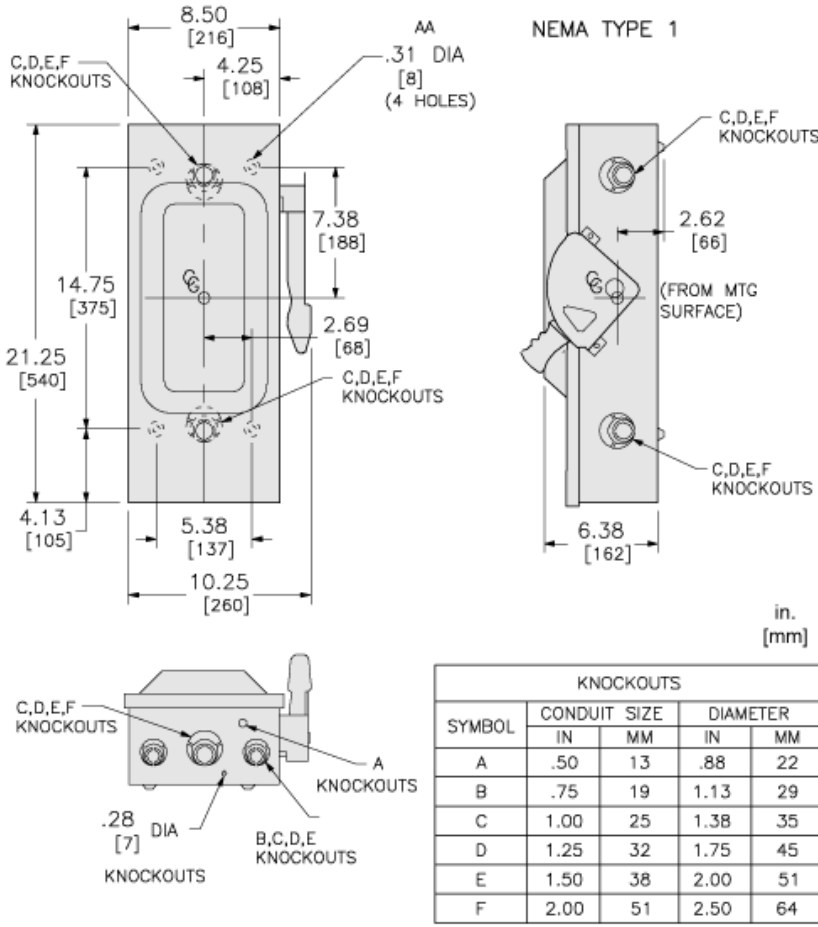
WEEE The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins.

PVC free Yes

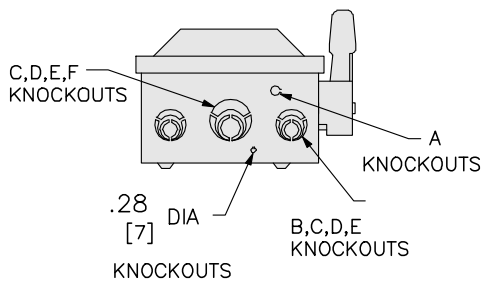
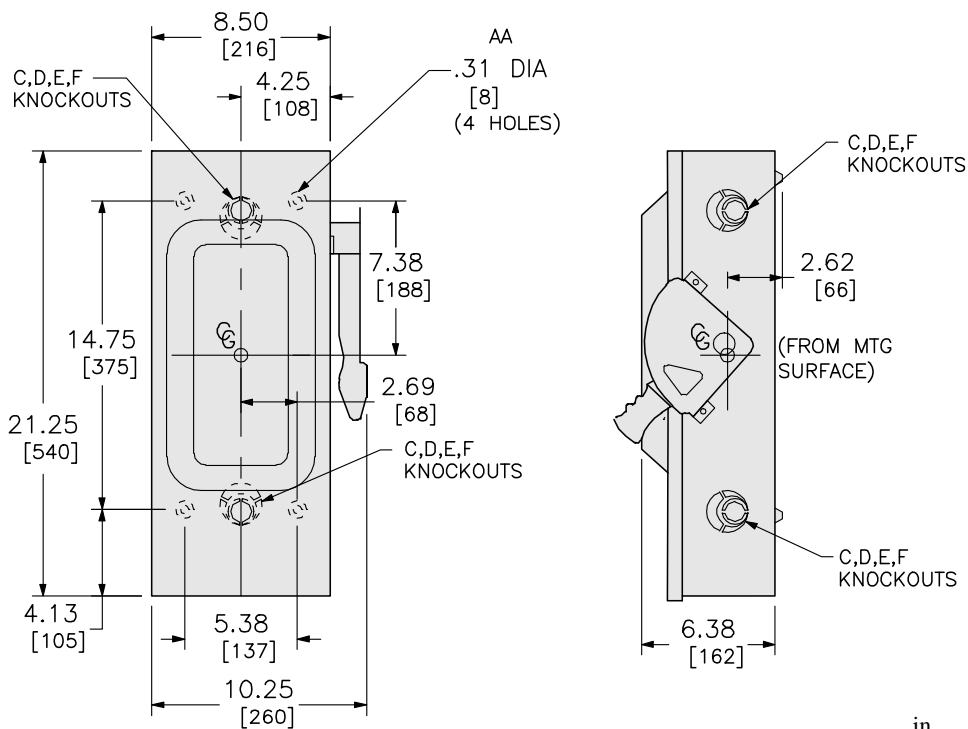
Contractual warranty

Warranty 18 months

Approximate Dimensions



Dimensions

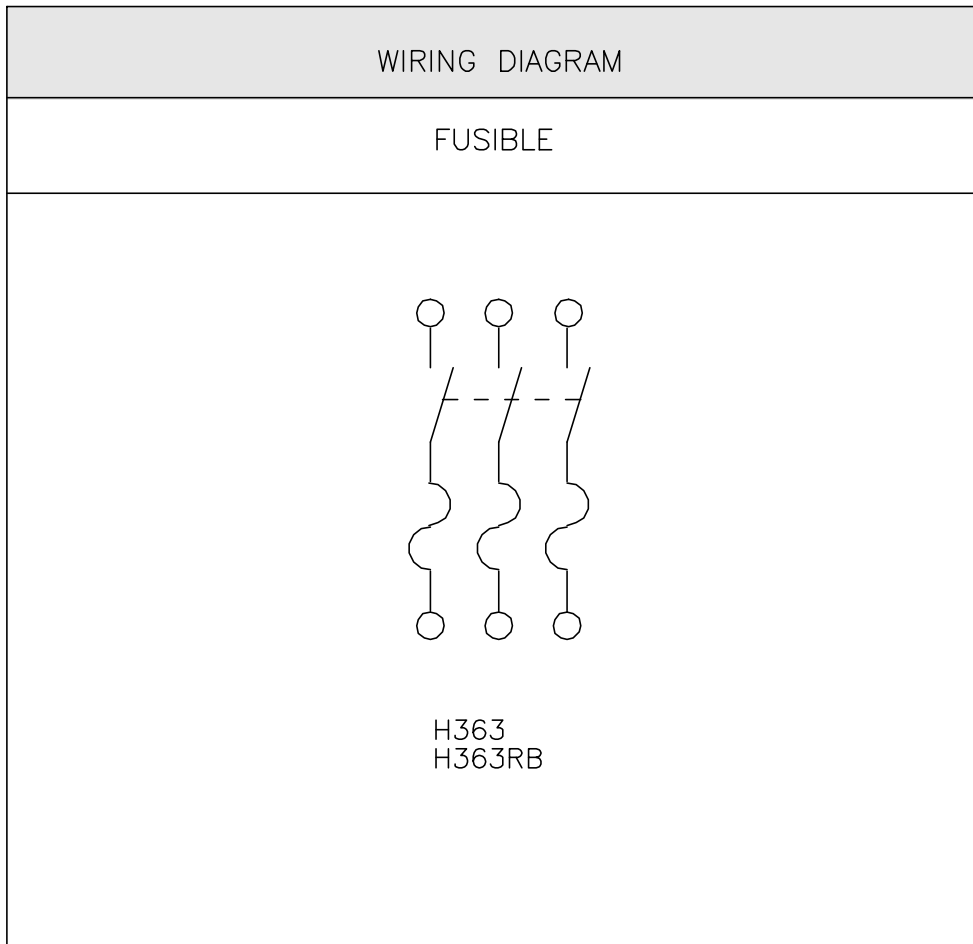


NEMA TYPE 1 in.
[mm]

KNOCKOUTS				
SYMBOL	CONDUIT SIZE		DIAMETER	
	IN	MM	IN	MM
A	.50	13	.88	22
B	.75	19	1.13	29
C	1.00	25	1.38	35
D	1.25	32	1.75	45
E	1.50	38	2.00	51
F	2.00	51	2.50	64

ALL DIMENSIONS ARE APPROXIMATE.
 REFER TO TECHNICAL DRAWINGS AND DOCUMENTATION FOR COMPLETE INFORMATION.

Wiring Diagram



TERMINAL LUGS ‡			
AMPERES	MAX. WIRE	MIN. WIRE	TYPE
100	#1/0 AWG	#12 AWG	AL
	#1/0 AWG	#14 AWG	CU

‡ LUGS SUITABLE FOR 60°C OR 75°C COPPER OR ALUMINUM CONDUCTORS.

Recommended replacement(s)

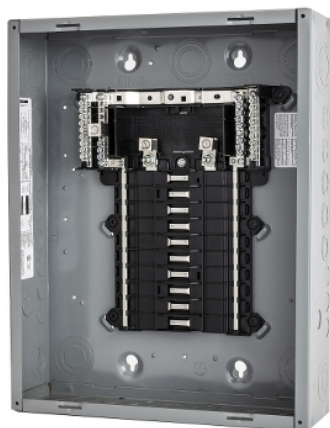
Product data sheet

Characteristics

QO112L125PG

QO LoadCenter, PoN, main lugs, 125 A, 1 PH,
12 SP, NEMA1, gndbar

Product availability: Stock - Normally stocked in distribution facility



Main

Product	Load Center
Marketing Trade Name	QO
Provided equipment	Grounding bar

Complementary

Load Center Type	Main lugs
Line Rated Current	125 A
Number of spaces	12
Short Circuit Current Rating	65 kA
Maximum Number of Single Pole Circuits	12
Maximum Number of Tandem Breakers	12
Number of Phases	1 phase
Box number	6
Height	455.17 mm (17.92 in)
Width	361.95 mm (14.25 in)
Depth	95.25 mm (3.75 in)

Environment

Enclosure Rating	NEMA 1
Ambient air temperature for operation	23 °F (-5 °C) 104 °F (40 °C)

Ordering and shipping details

Category	10003 - QO PON 1PH LC,12-60 CKT, ML N1
Discount Schedule	DE3A
GTIN	00785901588382
Package weight(Lbs)	0.45 kg (1 lb(US))
Returnability	Yes
Country of origin	US

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