Prepared by:
Solar PV Permit
www.solarpvpermit.com
info@solarpvpermit.com

PROJECT DESCRIPTION

THIS ROOF-MOUNTED PHOTOVOLTAIC (PV) SYSTEM IS TO BE INSTALLED AT THE SINGLE FAMILY RESIDENTIAL IN **STAMFORD,CONNECTICUT.**
THE ENERGY PRODUCED BY THE PV SYSTEM SHALL BE INTERCONNECTED WITH THE UTILITY GRID THROUGH THE EXISTING ON-SITE ELECTRICAL EQUIPMENT VIA A BACK-FED BREAKER IN THE MAIN SERVICE PANEL.

GENERAL NOTES

1. LOCAL UTILITY PROVIDER SHALL BE NOTIFIED PRIOR TO USE AND ACTIVATION OF ANY SOLAR PHOTOVOLTAIC INSTALLATION.

2. ALL PANELS, SWITCHES, ETC. SHALL HAVE SUFFICIENT GUTTER SPACE AND LUGS IN COMPLIANCE TO UL REQUIREMENTS TO ACCOMMODATE CONDUCTORS SHOWN

3.WHERE WIRE SIZES ARE INDICATED ON PLANS FOR INDIVIDUAL CIRCUITS, THE WIRE SIZE INDICATED SHALL APPLY TO THE COMPLETE CIRCUIT, UNLESS OTHERWISE NOTED.

4.NO SHEET METAL OR TECH SCREWS SHALL BE USED TO GROUND DISCONNECT ENCLOSURE WITH TIN-PLATED ALUMINUM LUGS; PROPER GROUNDING/GROUND BAR KITS SHOULD BE USED.

5.DRAWINGS AND DIAGRAMMIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED. FOLLOW DRAWING AND LAYOUT WORK AND CHECK DRAWINGS OR OTHER TRADES RELATING TO WORK TO VERIFY SPACE IN WHICH WORK WILL BE INSTALLED. MAINTAIN HEADROOM AND MINIMUM CODE REQUIRED WORKING CLEARANCES AT ALL TIMES.

6.ALL EXTERIOR CONDUIT, FITTINGS, AND BOXES SHALL BE WITH RAIN TIGHT AND APPROVED FOR USE IN WET LOCATIONS.(NEC 314.15A).

7.ADEQUATE SPACING ARE MAINTAINED BETWEEN ANY PLUMBING VENTS EXTENDING THROUGH THE ROOF AND THE UNDERSIDE OF THE PHOTOVOLTAIC PANELS.

8.ALL ELECTRICAL MATERIAL SHALL BE LISTED BY "UL" FOR THE TYPE OF APPLICATION AND "UL" LABEL SHALL APPEAR ON ALL ELECTRICAL EQUIPMENT.

9.ALL CONDUITS AND EQUIPMENT SHALL BE PAINTED TO MATCH THE EXISTING BACKGROUND MATERIAL COLOR OF THEIR LOCATION.

10.SEPARATION DISTANCE MEASUREMENT FROM BOTTOM OF PANEL TO TOP OF ROOF COVERING SHALL BE MINIMUM 4".

11.WIRING METHOD SHALL BE EMT ABOVE GROUND MOUNTED IN CONCEALED SPACES (UNLESS APPROVED OTHERWISE) AND SCHEDULE- 40 PVC FOR BELOW GROUND INSTALLATION UNLESS NOTED OTHERWISE.

12.AN OSHA APPROVED LADDER PROVIDING ACCESS TO ALL PORTIONS OF THE ARRAY SHALL BE SECURED IN PRIOR TO REQUESTING INSPECTION.

11.SMOKE ALARMS AND CARBON MONOXIDE DETECTORS WILL MEET THE NECESSARY REQUIREMENTS PER CRC R314, R315

12.UTILITY COMPANY WILL BE NOTIFIED PRIOR TO ACTIVATION OF THE SOLAR PV SYSTEM.

13.ALL EXTERIOR CONDUIT PAINTED TO MATCH EXTERIOR SURFACE. (IF APPLICABLE)

14.BACK-FED BREAKER MUST BE AT THE OPPOSITE END OF BUS BAR FROM THE MAIN BREAKER OR MAIN LUG SUPPLYING CURRENT FROM THE UTILITIES.

15.ALL CONDUCTORS EXPOSED TO SUNLIGHT ARE LISTED AS SUNLIGHT RESISTANT.

16.PLUMBING AND OR MECHANICAL VENT SHALL NOT BE COVERED, OBSTRUCTED OR RE-ROUTED AROUND SOLAR MODULES.

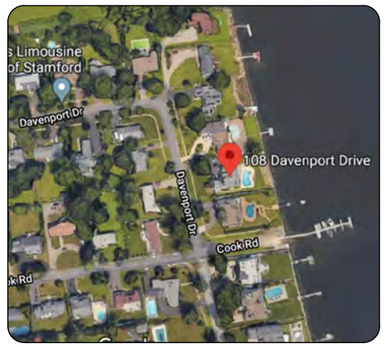
17.ROOF MOUNTED PHOTOVOLTAIC PANELS AND MODULES SHALL BE TESTED, LISTED AND IDENTIFIED IN ACCORDANCE WITH UL1703.

18.THE WORKING CLEARANCE AROUND THE EXISTING ELECTRICAL EQUIPMENT AS WELL AS THE NEW ELECTRICAL EQUIPMENT WILL BE MAINTAINED

VICINITY MAP

AERIAL VIEW

SITE VIEW



GOVERNING CODES

ALL MODULES AND RAIL ARE LISTED BY UNDERWRITERS LABORATORIES FOR ELECTRICAL AND FIRE SAFETY(CLASS A FIRE RATING)

NOTE:
1) NO DISCHARGE OF ANY POLLUTANTS TO ANY STORM DRAIN SYSTEM.

2) UL 1703 FOR MODULES & UL 1741 FOR INVERTERS PER CITY SOLAR REQUIREMENTS.

THIS PROJECT SHALL COMPLY WITH THE :
2018 STATE BUILDING CODE
2018 INTERNATIONAL PLUMBING CODE
2018 INTERNATIONAL RESIDENTIAL CODE
2018 INTERNATIONAL ENERGY CODE
2018 INTERNATIONAL MECHANICAL CODE
2018 INTERNATIONAL FIRE CODE
2017 NATIONAL ELECTRICAL CODE AND
ORDINANCES OF CITY AND OR COUNTY OF STAMFORD

SCOPE OF WORK

SYSTEM SIZE:
15.894 KW AC
17.420 KW DC

ROOF MOUNT PV SOLAR
ROOF TYPE: ASPHALT SHINGLE

2 X 8 @ 16" O.C. RAFTERS

ARRAY/ROOF PITCH: 20°
AZIMUTH: 90,180°,270°
TWO STORIES HOUSE

MODULES :
(52) SUNPOWER,
SPR-X21-335-BLK-E-AC

MICRO-INVERTERS :
(52) ENPHASE,Q7XS-96-ACM-US
(INTEGRATED WITH MODULES)

MAIN PANEL/BUS-BAR: (E)200A
MAIN BREAKER : (E)200A

PV RAIL:
SUNPOWER,INVISMOUNT
PV MOUNT:
QUICKMOUNT, L-MOUNT

INDEX SHEET

CONTRACTOR

PUREPOINT ENERGY, LLC
22 SOUTH SMITH ST,
NORWALK, CT 06855
PHONE: (203) 642-4105

STATE LICENSE# : HIC. 0625434

EXPIRATION DATE : 11/30/2020

STAMP/ SIGNATURE :

PUREPOINT ENERGY
Solar Performance That Shines

OWNER / ADDRESS

[redacted]
STAMFORD, CT 06902

OCCUPANCY R3 /
TYPE 5 STRU.
APN#: [redacted]

SYSTEM SIZE

15.894 KW-AC
17.420 KW-DC

MODULES :
(52)SunPower,SPR-X21-335-BLK-E-AC

MICRO-INVERTERS :
(52)Enphase, IQ7XS-96-ACM-US

DATE: 07/15/20

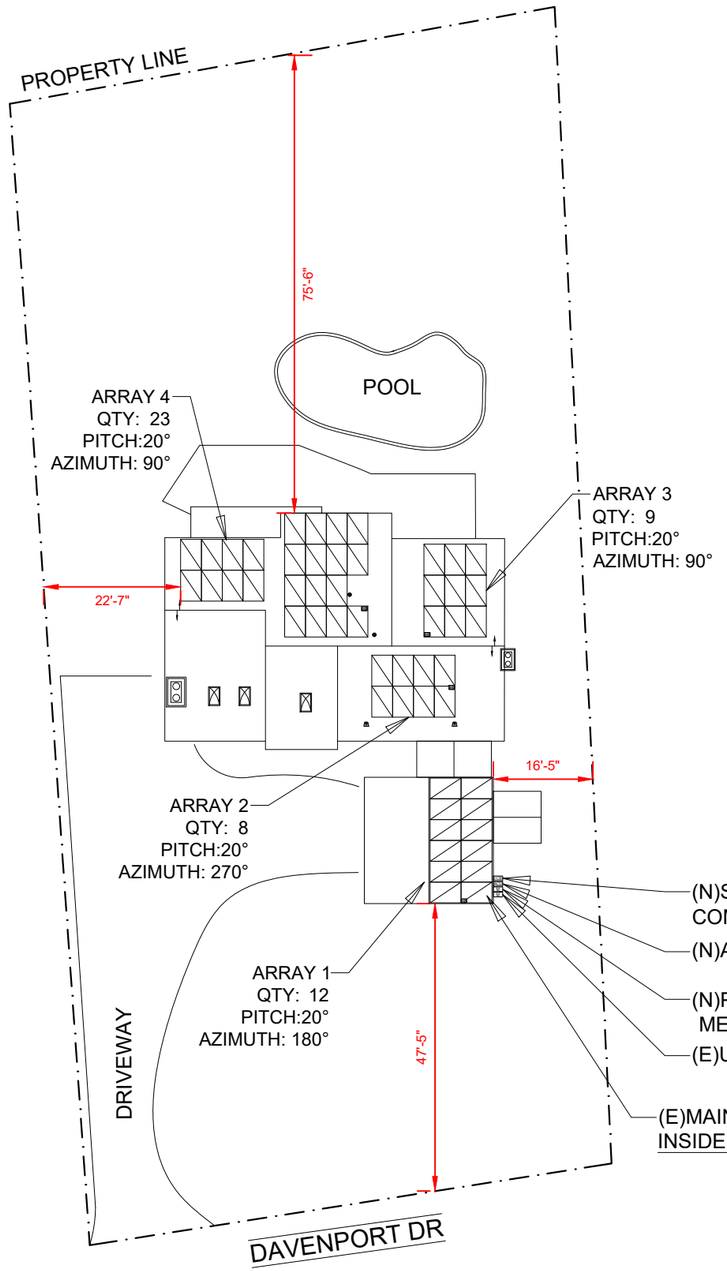
REVISION :

PAGE INFORMATION

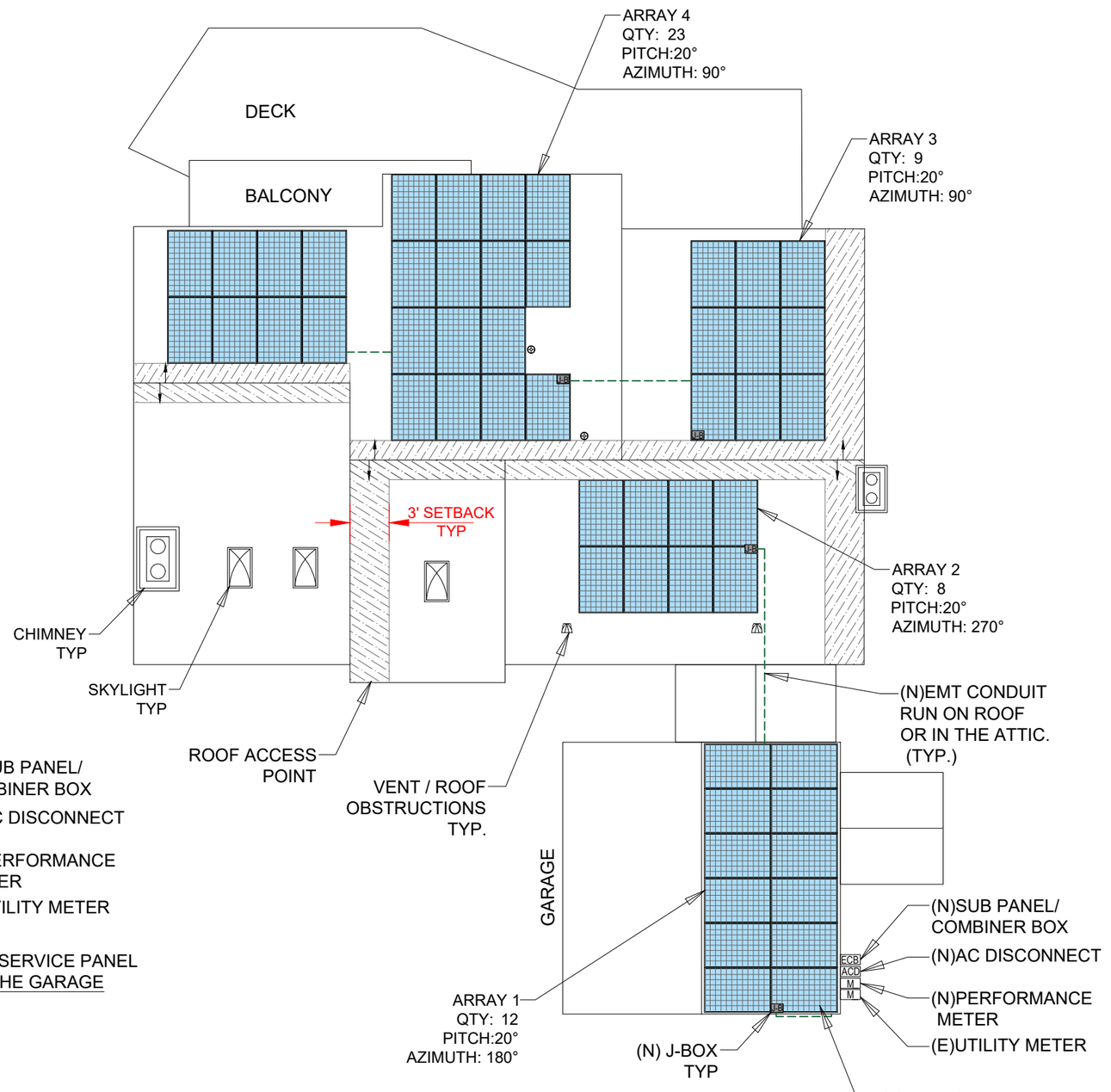
TITLE:
COVER PAGE

PV-01

DISCLAIMER: If any Errors, Discrepancies or Omissions appear in these drawings, specifications or other contract documents; The Owner or General Contractor shall notify the Designer, in writing, of such error or omission. In the event that the Owner or General Contractor falis to give such notice, before construction and/or fabrication of the work, the Owner or General Contractor will be held responsible to the result of any errors, discrepancies or omissions and the cost of rectifying them.



SITE PLAN : SCALE: 1"=25'-0"



ROOF PLAN : SCALE: 1"=10'-0

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DATE: 07/15/20

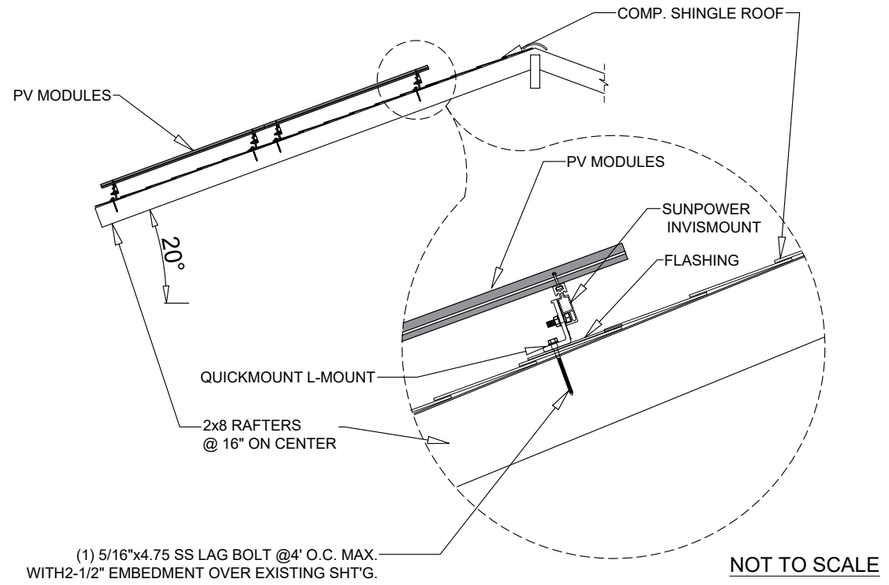
REVISION :

PAGE INFORMATION

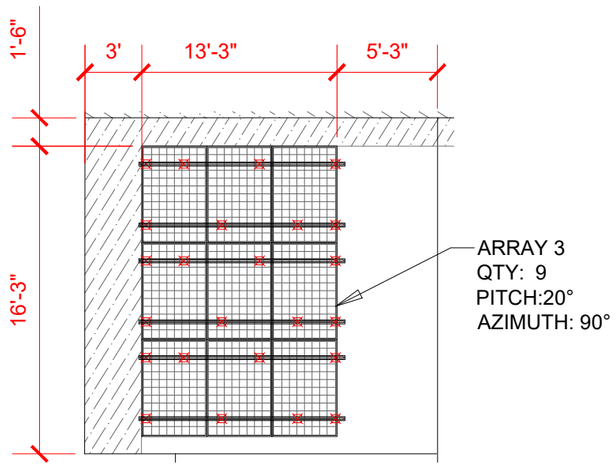
TITLE:
PLOT PLAN / ROOF PLAN

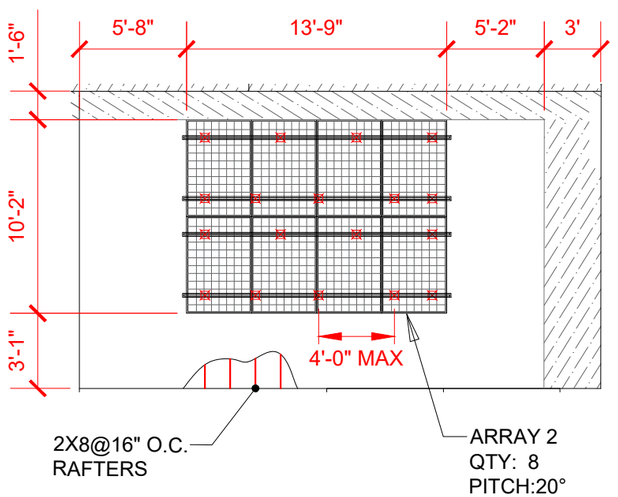
PV-02

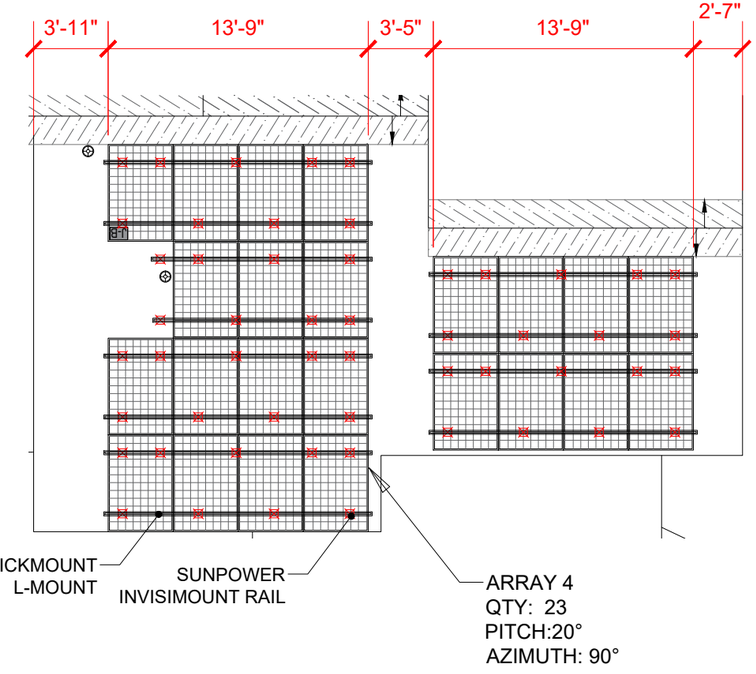
SYSTEM WEIGHT / MODULE INFO			
DESCRIPTION	QTY	WEIGHT / UNIT (lbs)	TOTAL WEIGHT (lbs)
MODULE	52	42.9	2230.8
OPTIMIZER/ MICRO-INV.	52	1.4	72.8
RAIL	356ft	0.7	249.2
STANDOFF	119	1	119
TOTAL SYSTEM WEIGHT			2671.8
TOTAL MODULES AREA= 936ft²			
LOADING WEIGHT PER ft² = 2.9lbs			
LOADING WEIGHT PER STANDOFF = 26.2lbs			

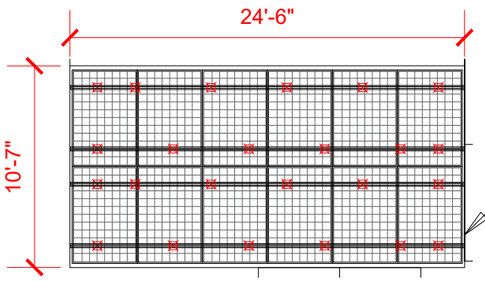


NOT TO SCALE









ARRAY LAYOUT TYP

SCALE: 1/8"=1'-0

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TYPE 5 STRU.
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MICRO-INVERTERS :
(52)Enphase, IQ7XS-96-ACM-US

DATE: 07/15/20

REVISION :

PAGE INFORMATION

TITLE:
ROOF LAYOUT
RAFTER SIDE VIEW

PV-03

WIRE TAG#	MAX AMPS X NEC MULT= DESIGN AMPS	BREAKER SIZE AMPS	WIRE TYPE	EGC / GRND.SIZE	WIRE RATING IN 90° X TEMP DERATE X CONDUCTOR DERATE = DERATE WIRE	TERMINAL 60°C RATING	CONDUIT SIZE CONDUIT FILL
①	15.72 x 1.25 =19.65A	20A	(2) #10 PV WIRE	(1)#6 THWN-2 BARE COPPER EGC	40 x 0.65 x 1.0 =26.0 >=19.7	30> =19.7	OPEN AIR
②	15.72 x 1.25 =19.65A	20A	(10) #8 THWN-2	(1)#8 THWN-2 EGC	55 x 0.65 x 0.7 =25.0 >=19.7	40> =19.7	1 1/4" EMT FILL: 0.4026 , 27%
③	68.12 x 1.25 =85.15A	90A	(2) #2 THWN-2	(1)#6 THWN-2 EGC	130 x 0.91 x 1.0 =118.3 >=85.2	95> =85.2	1" EMT FILL: 0.2832 , 33%

BRANCH 1 :
(12)SUNPOWER,SPR-X21-335-BLK-E-AC
W/ INTEGRATED ENPHASE,Q7XS-96-ACM-US
MICRO INVERTER OUTPUT: **1.31A**
12 X 1.31A X1.25% =19.72A=20A BREAKER

BRANCH 2 :
(10)SUNPOWER,SPR-X21-335-BLK-E-AC
W/ INTEGRATED ENPHASE,Q7XS-96-ACM-US
MICRO INVERTER OUTPUT: **1.31A**
10 X 1.31A X1.25% =16.37A=20A BREAKER

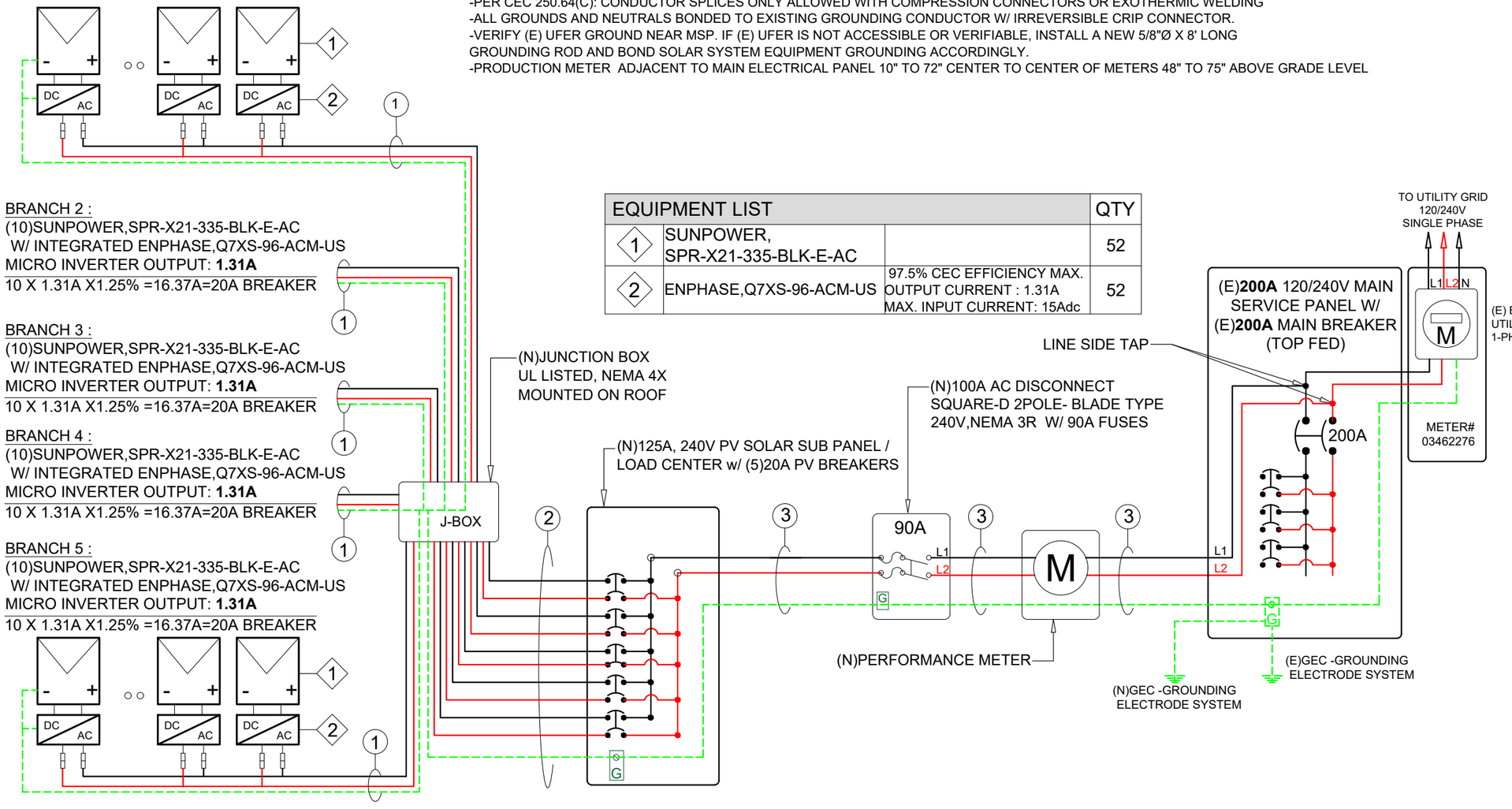
BRANCH 3 :
(10)SUNPOWER,SPR-X21-335-BLK-E-AC
W/ INTEGRATED ENPHASE,Q7XS-96-ACM-US
MICRO INVERTER OUTPUT: **1.31A**
10 X 1.31A X1.25% =16.37A=20A BREAKER

BRANCH 4 :
(10)SUNPOWER,SPR-X21-335-BLK-E-AC
W/ INTEGRATED ENPHASE,Q7XS-96-ACM-US
MICRO INVERTER OUTPUT: **1.31A**
10 X 1.31A X1.25% =16.37A=20A BREAKER

BRANCH 5 :
(10)SUNPOWER,SPR-X21-335-BLK-E-AC
W/ INTEGRATED ENPHASE,Q7XS-96-ACM-US
MICRO INVERTER OUTPUT: **1.31A**
10 X 1.31A X1.25% =16.37A=20A BREAKER

NOTES:
-SOLID BARE E.G.C. (FREE-AIR) MOUNTED UNDER ARRAY
-PER NEC 250.120(C): WHERE CONDUCTORS & GROUND WIRE ARE RUN EXPOSED ON ROOF FROM ARRAY TO J-BOX, CONDUCTORS & BARE GROUND WIRE SHALL BE CONCEALED INSTALL IN CONDUIT
-PER NEC ARTICLE 690.35 INVERTER GROUND FAULT PROTECTION PROVIDED
-ALL GROUNDS AND NEUTRALS BONDED TO EXISTING GROUNDING CONDUCTOR W/ IRREVERSIBLE CRIP CONNECTOR.
-BACKFED BREAKERS MUST BE LOCATED @ OPPOSITE END OF BUS BAR FROM MAIN BREAKER OR MAIN LUG ON GRID SIDE. WHEN A BACKFED BREAKER IS THE METHOD OF UNTILITY INTERCONNECTION, BREAKER SHALL NOT READ 'LINE OR LOAD'.
-PER CEC 250.64(C): CONDUCTOR SPLICES ONLY ALLOWED WITH COMPRESSION CONNECTORS OR EXOTHERMIC WELDING
-ALL GROUNDS AND NEUTRALS BONDED TO EXISTING GROUNDING CONDUCTOR W/ IRREVERSIBLE CRIP CONNECTOR.
-VERIFY (E) UFER GROUND NEAR MSP. IF (E) UFER IS NOT ACCESSIBLE OR VERIFIABLE, INSTALL A NEW 5/8"Ø X 8' LONG GROUNDING ROD AND BOND SOLAR SYSTEM EQUIPMENT GROUNDING ACCORDINGLY.
-PRODUCTION METER ADJACENT TO MAIN ELECTRICAL PANEL 10" TO 72" CENTER TO CENTER OF METERS 48" TO 75" ABOVE GRADE LEVEL

EQUIPMENT LIST			QTY
1	SUNPOWER, SPR-X21-335-BLK-E-AC		52
2	ENPHASE,Q7XS-96-ACM-US	97.5% CEC EFFICIENCY MAX. OUTPUT CURRENT : 1.31A MAX. INPUT CURRENT: 15Adc	52



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TYPE 5 STRU.
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15.894 KW-AC
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(52)Enphase, IQ7XS-96-ACM-US

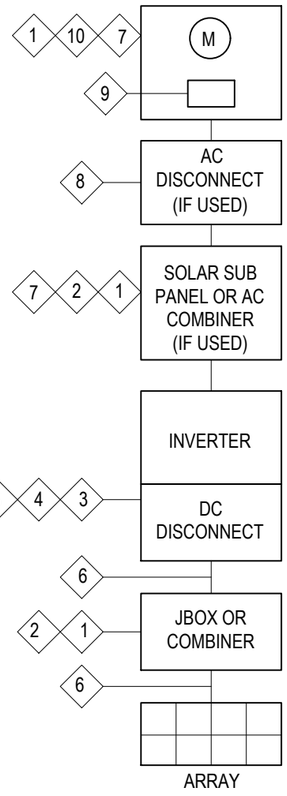
DATE: 07/15/20

REVISION :

PAGE INFORMATION

TITLE:
ELECTRICAL DIAGRAM

PV-04



6 WARNING: PHOTOVOLTAIC POWER SOURCE

REFLECTIVE STICKER, 690.31(G)(3)(4)

7 **⚠WARNING**
DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

ORANGE WARNING AREA, 705.12(B)(3)

8 PHOTOVOLTAIC AC DISCONNECT

RATED AC OUTPUT CURRENT 68.1A

NOMINAL OPERATING AC VOLTAGE 240V

690.13(B), 690.54

9 **⚠WARNING**
POWER SOURCE OUTPUT CONNECTION. DO NOT RELOCATE THIS OVERCURRENT DEVICE.

ORANGE WARNING AREA, 705.12(B)(2)(3)(b)

1 **⚠WARNING**
ELECTRICAL SHOCK HAZARD

TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

ORANGE WARNING AREA, 690.13(B)

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

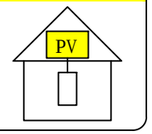
ORANGE WARNING AREA, 110.27(C)

RAPID SHUTDOWN SWITCH FOR SOLAR SYSTEM

REFLECTIVE STICKER, 690.56(C)(2)

10 **SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN**

TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUTDOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY



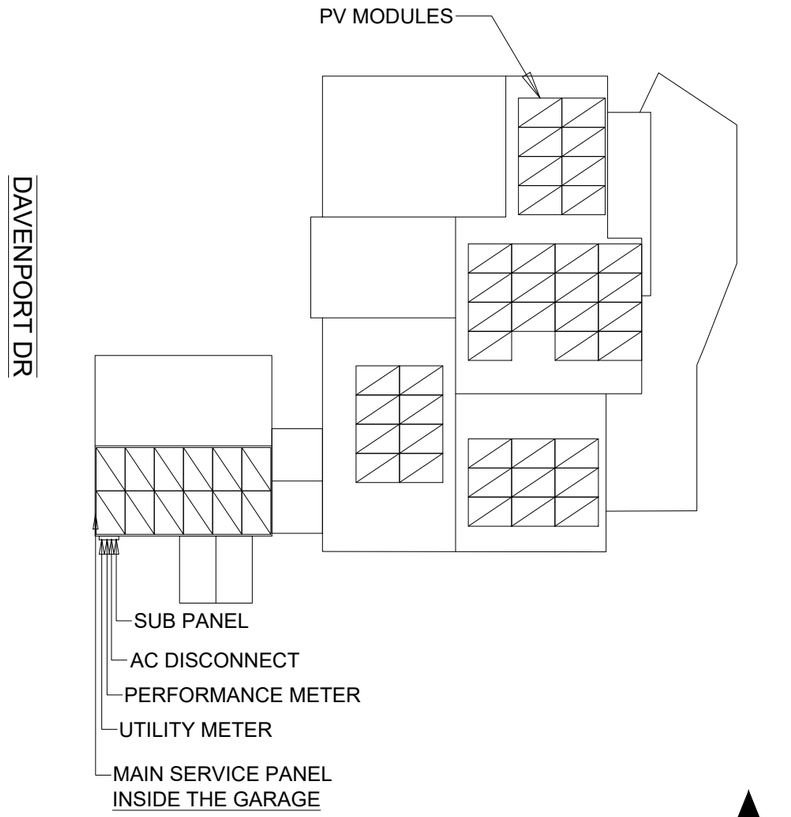
The title "SOLAR PV SYSTEM IS EQUIPPED WITH RAPID SHUTDOWN" shall utilize capitalized characters with a minimum height of 9.5 mm (3⁄8 in.) in black on yellow background and the remaining characters shall be capitalized with a minimum height of 4.8 mm (3⁄16 in.) in black on white background. 690.56(C)(1)(a)

NOTES
1. ARTICLES 690 AND 705 MARKINGS SHOWN HEREON
2. ALL MARKINGS SHALL CONSIST OF THE FOLLOWING:
A. UV RESISTANT SIGN MATERIAL WITH ENGRAVED OR MACHINE PRINTED LETTERS OR ELECTRO-PLATING
B. RED BACKGROUND COLOR WITH WHITE TEXT AND LINE WORK UON
C. ARIAL FONT
3. ALL SIGNS SHALL BE SIZED APPROPRIATELY AND PLACED IN THE LOCATIONS SPECIFIED.
4. SIGNS SHALL BE ATTACHED TO THE SERVICE EQUIPMENT USING PERMANENT ADHESIVE, POP-RIVETS, OR SCREWS

MIN.6"X8" PLACARD SHALL BE IN RED COLOR WITH PRINTED IN WHITE TO GO ON MAIN SERVICE PANEL CEC 705.10

CAUTION

POWER TO THIS BUILDING IS ALSO SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECT(S) LOCATED AS SHOWN.
DANGEROUS VOLTAGE MAY BE PRESENT AT ALL TIMES.



"WARNING"
PHOTOVOLTAIC ARRAY
DISCONNECTION OF NEUTRAL OR GROUNDED CONDUCTORS MAY RESULT IN OVERVOLTAGE ON ARRAY OR INVERTER

PLAQUE SHALL BE ATTACHED TO THE SERVICE EQUIPMENT WITH POP-RIVETS OR SCREWS.

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(52)Enphase, IQ7XS-96-ACM-US

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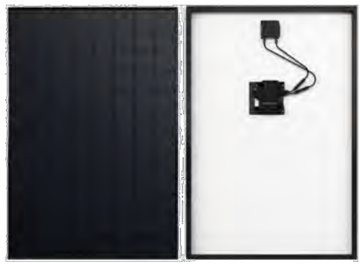
REVISION :

PAGE INFORMATION

TITLE:
WARNING LABELS

PV-05

SUNPOWER®



X-Series: X21-350-BLK | X21-335-BLK | X20-327-BLK

SunPower® Residential AC Module

Built specifically for use with the SunPower Equinox™ system, the only fully integrated solution designed, engineered and warranted by one manufacturer.

Maximum Power. Minimalist Design.

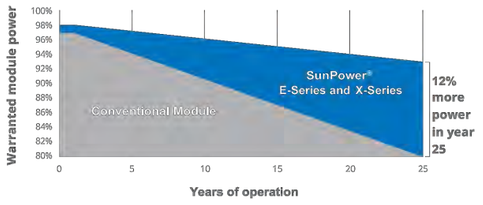
Industry-leading efficiency means more power and savings per available space. With fewer modules required and hidden microinverters, less is truly more.

Highest Lifetime Energy and Savings.

Designed to deliver 60% more energy over 25 years in real-world conditions like partial shade and high temperatures.[1]

Best Reliability. Best Warranty.

With more than 25 million modules deployed around the world, SunPower technology is proven to last. That's why we stand behind our module and microinverter with the industry's best 25-year Combined Power and Product Warranty, including the highest Power Warranty in solar.



Fundamentally Different. And Better.

The SunPower® Maxeon® Solar Cell

- Enables highest-efficiency modules available.[2]
- Unmatched reliability.[3]
- Patented solid metal foundation prevents breakage and corrosion

Factory-integrated Microinverter

- Simpler, faster installation
- Integrated wire management, rapid shutdown
- Engineered and calibrated by SunPower for SunPower modules

X-Series: X21-350-BLK | X21-335-BLK | X20-327-BLK SunPower® Residential AC Module

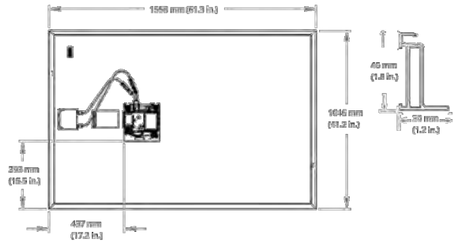
AC Electrical Data		
Inverter Model: Enphase IQ 7XS (IQ7XS-96-ACM-US)	@240 VAC	@208 VAC
Peak Output Power	320 VA	320 VA
Max. Continuous Output Power	315 VA	315 VA
Nom. (L–L) Voltage/Range[2] (V)	240 / 211–264	208 / 183–229
Max. Continuous Output Current (A)	1.31	1.51
Max. Units per 20 A (LL) Branch Circuit[3]	12 (single phase)	10 (two pole) wye
CEC Weighted Efficiency	97.5%	97.0%
Nom. Frequency	60 Hz	
Extended Frequency Range	47–68 Hz	
AC Short Circuit Fault Current Over 3 Cycles	5.8 A rms	
Overvoltage Class AC Port	III	
AC Port Backfeed Current	18 mA	
Power Factor Setting	1.0	
Power Factor (adjustable)	0.7 lead. / 0.7 lag.	
No active phase balancing for three-phase installations		

DC Power Data	X21-350-BLK-E-AC	X21-335-BLK-E-AC	X20-327-BLK-E-AC
Nom. Power[5] (Pnom)	350 W	335 W	327 W
Power Tol.	+5/–0%	+5/–0%	+5/–0%
Module Efficiency	21.5%	21.0%	20.4%
Temp. Coef. (Power)	–0.29%/°C	–0.29%/°C	–0.29%/°C
Shade Tol.	• Three bypass diodes • Integrated module-level maximum power point tracking		

Tested Operating Conditions	
Operating Temp.	–40°F to +185°F (–40°C to +85°C)
Max. Ambient Temp.	122°F (50°C)
Max. Load	Wind: 62 psf, 3000 Pa, 305 kg/m² front & back Snow: 125 psf, 6000 Pa, 611 kg/m² front
Impact Resistance	1 inch (25 mm) diameter hail at 52 mph (23 m/s)

Mechanical Data	
Solar Cells	96 Monocrystalline Maxeon Gen III
Front Glass	High-transmission tempered glass with anti-reflective coating
Environmental Rating	Outdoor rated
Frame	Class 1 black anodized (highest AAMA rating)
Weight	42.9 lbs (18.5 kg)
Recommended Max. Module Spacing	1.3 in. (33 mm)

Warranties, Certifications, and Compliance	
Warranties	• 25-year limited power warranty • 25-year limited product warranty
Certifications and Compliance	• UL 1703 • UL 1741 / IEEE-1547 • UL 1741 AC Module (Type 2 fire rated) • UL 62109-1 / IEC 62109-2 • FCC Part 15 Class B • ICES-0003 Class B • CAN/CSA-C22.2 NO. 107.1-01 • CA Rule 21 (UL 1741 SA)[4] (Includes Volt/Var and Reactive Power Priority) • UL Listed PV Rapid Shutdown Equipment[6] Enables installation in accordance with: • NEC 690.6 (AC module) • NEC 690.12 Rapid Shutdown (inside and outside the array) • NEC 690.15 AC Connectors, 690.33(A)–(E)(1) When used with InvisiMount racking and InvisiMount accessories (UL 2703): • Module grounding and bonding through InvisiMount • Class A fire rated When used with AC module Q Cables and accessories (UL 6703 and UL 2238)[6]: • Rated for load break disconnect
PID Test	Potential-induced degradation free



1 SunPower 360 W compared to a conventional module on same-sized arrays (260 W, 16% efficient, approx. 1.6 m²), 4% more energy per watt (based on third-party module characterization and PVSim), 0.75%/yr slower degradation (Campeau, Z. et al. "SunPower Module Degradation Rate," SunPower white paper, 2013).
2 Based on search of datasheet values from websites of top 10 manufacturers per IHS, as of January 2017.
3 #1 rank in "Fraunhofer PV Durability Initiative for Solar Modules: Part 3." PVTech Power Magazine, 2015. Campeau, Z. et al. "SunPower Module Degradation Rate," SunPower white paper, 2013.
4 Factory set to 1547a-2014 default settings. CA Rule 21 default settings profile set during commissioning. See the Equinox Installation Guide #518101 for more information.
5 Standard Test Conditions (1000 W/m² irradiance, AM 1.5, 25°C). NREL calibration standard: SOMS current, LACCS FF and voltage. All DC voltage is fully contained within the module.
6 This product is UL Listed as PVRSE and conforms with NEC 2014 and NEC 2017 690.12; and C22.1-2015 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors; when installed according to manufacturer's instructions.

See www.sunpower.com/facts for more reference information.

For more details, see extended datasheet www.sunpower.com/datasheets Specifications included in this datasheet are subject to change without notice.

UL LISTED Module Fire Performance: Type 2

SUNPOWER®

Please read the Safety and Installation Instructions for details.

531946 RevA

CONTRACTOR

PUREPOINT ENERGY, LLC
22 SOUTH SMITH ST,
NORWALK, CT 06855
PHONE: (203) 642-4105

STATE LICENSE# : HIC. 0625434

EXPIRATION DATE : 11/30/2020

STAMP/ SIGNATURE :

PUREPOINT ENERGY
Solar Performance That Shines

OWNER / ADDRESS

[redacted]
STAMFORD, CT 06902

OCCUPANCY R3 /
TYPE 5 STRU.
APN#: [redacted]

SYSTEM SIZE

15.894 KW-AC
17.420 KW-DC

MODULES :
(52)SunPower,SPR-X21-335-BLK-E-AC

MICRO-INVERTERS :
(52)Enphase, IQ7XS-96-ACM-US

DATE: 07/15/20

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PV-06

SunPower® InvisiMount™ | Residential Mounting System

Simple and Fast Installation

- Integrated module-to-rail grounding
- Pre-assembled mid and end clamps
- Levitating mid clamp for easy placement
- Mid clamp width facilitates even module spacing
- Simple, pre-drilled rail splice
- UL 2703 Listed integrated grounding

Flexible Design

- Addresses nearly all sloped residential roofs
- Design in landscape and portrait
- Rails enable easy obstacle management

Customer-Preferred Aesthetics

- #1 module and #1 mounting aesthetics
- Best-in-class system aesthetics
- Premium, low-profile design
- Black anodized components
- Hidden mid clamps and end clamps hardware, and capped, flush rails

Part of Superior System

- Built for use with SunPower DC and AC modules
- Best-in-class system reliability and aesthetics
- Combine with SunPower modules and monitoring app

Elegant Simplicity

SunPower® InvisiMount™ is a SunPower-designed rail-based mounting system. The InvisiMount system addresses residential sloped roofs and combines faster installation time, design flexibility, and superior aesthetics. The InvisiMount product was specifically envisioned and engineered to pair with SunPower modules. The resulting system-level approach will amplify the aesthetic and installation benefits for both homeowners and installers.

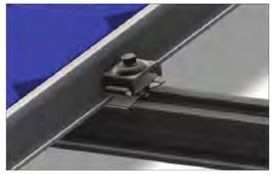
sunpower.com

SUNPOWER

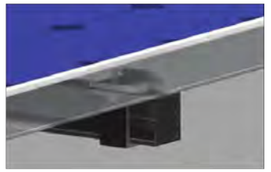
SunPower® InvisiMount™ | Residential Mounting System

InvisiMount Component Images

Module* / Mid Clamp and Rail



Module* / End Clamp and Rail



Mid Clamp

End Clamp

Rail & Rail Splice

Ground Lug Assembly

End Cap

InvisiMount Component Details

Component	Material	Weight
Mid Clamp	Black oxide stainless steel AISI 304	63 g (2.2 oz)
End Clamp	Black anodized aluminum alloy 6063-T6	110 g (3.88 oz)
Rail	Black anodized aluminum alloy 6005-T6	830 g/m (9 oz/ft)
Rail Splice	Aluminum alloy 6005-T5	830 g/m (9 oz/ft)
Ground Lug Assembly	304 stainless (A2-70 bolt; tin-plated copper lug)	106.5 g/m (3.75 oz)
End Cap	Black acetal (POM) copolymer	10.4 g (0.37 oz)

Roof Attachment Hardware Supported by InvisiMount System Design Tool

Application	• Composition Shingle Rafter Attachment • Composition Shingle Roof Decking Attachment • Curved and Flat Tile Roof Attachment • Universal Interface for Other Roof Attachments

InvisiMount Operating Conditions

Temperature	–40° C to 90° C (–40° F to 194° F)
Max. Load	2400 Pa uplift 5400 Pa downforce

InvisiMount Warranties And Certifications

Warranties	25-year product warranty 5-year finish warranty
Certifications	UL 2703 Listed Class A fire rating when distance between roof surface and bottom of SunPower module frame is ≤ 3.5"

Roof Attachment Hardware Warranties

Refer to roof attachment hardware manufacturer's documentation

*Module frame that is compatible with the InvisiMount system required for hardware interoperability.

sunpower.com
Document #509506 Rev B

SUNPOWER

CONTRACTOR

PUREPOINT ENERGY, LLC
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NORWALK, CT 06855
PHONE: (203) 642-4105

STATE LICENSE# : HIC. 0625434

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PUREPOINT ENERGY
Solar Performance That Shines

OWNER / ADDRESS

[redacted]
STAMFORD, CT 06902

OCCUPANCY R3 /
TYPE 5 STRU.
APN#: [redacted]

SYSTEM SIZE

15.894 KW-AC
17.420 KW-DC

MODULES :
(52)SunPower,SPR-X21-335-BLK-E-AC

MICRO-INVERTERS :
(52)Enphase, IQ7XS-96-ACM-US

DATE: 07/15/20

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PV-07

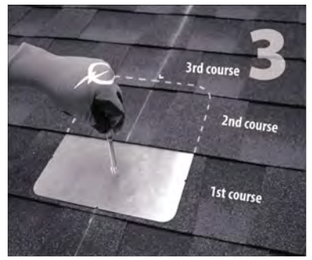
L-Mount Installation Instructions

Installation Tools Required: tape measure, roofing bar, chalk line, stud finder, caulking gun, sealant compatible with roofing materials, drill with 7/32" or 1/8" bit, drill or impact gun with 1/2" socket.

WARNING: Quick Mount PV products are NOT designed for and should NOT be used to anchor fall protection equipment.

Locate, choose, and mark centers of rafters to be mounted. Select the courses of shingles where mounts will be placed.

Carefully lift composition roof shingle with roofing bar, just above placement of mount. Remove nails as required and backfill holes with aproved sealant. See "Proper Flashing Placement" on next page.

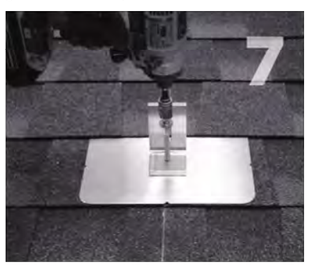


Insert flashing between 1st and 2nd course. Slide up so top edge of flashing is at least ¾" higher than the butt-edge of the 3rd course and lower flashing edge is above the butt-edge of 1st course. Mark center for drilling.

If attaching with lag bolt use a 7⁄32" bit (Lag). Use a ⅛" bit (ST) for attaching with the structural screw. Drill pilot hole into roof and rafter, taking care to drill square to the roof. Do not use mount as a drill guide. Drill a 2" deep hole into rafter.

Clean off any sawdust, and fill hole with sealant compatible with roofing materials.

Place L-foot onto elevated flute and rotate L-foot to desired orientation.



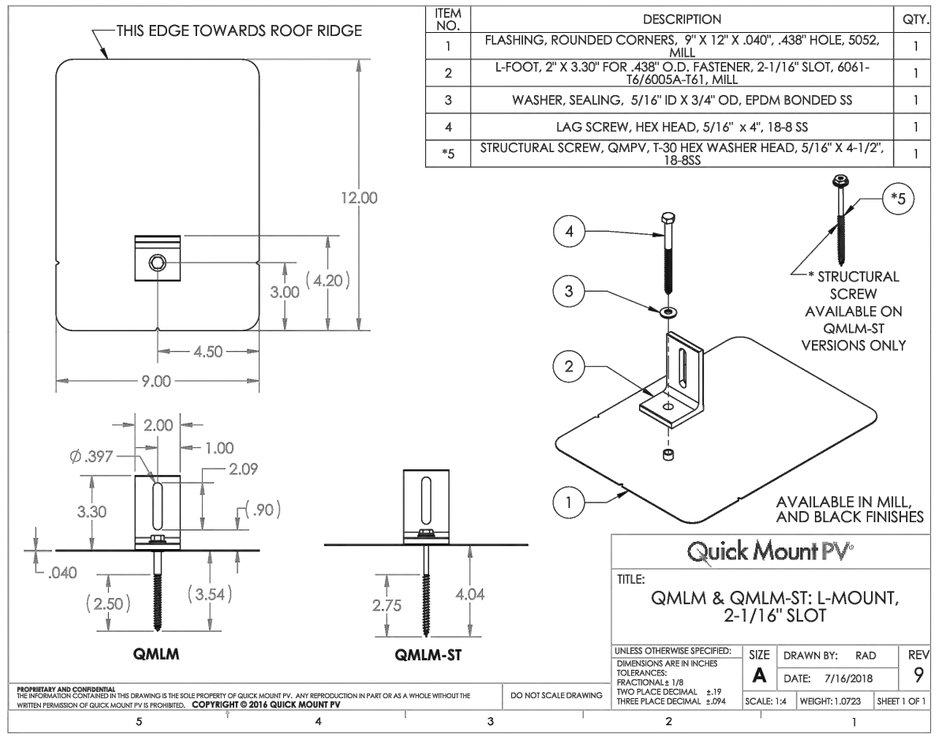
Prepare lag bolt or structural screw with sealing washer. Using a ½-inch socket on an impact gun, drive prepared lag bolt through L-foot until L-foot can no longer easily rotate. **DO NOT over-torque.** NOTE: Structural screw can be driven with T-30 hex head bit.

You are now ready for the rack of your choice. Follow all the directions of the rack manufacturer as well as the module manufacturer. NOTE: Make sure top of L-Foot makes solid contact with racking.

All roofing manufacturers' written instructions must also be followed by anyone modifying a roof system. Consult the roof manufacturer's specs and instructions prior to working on the roof.

L-Mount | QMLM / QMLM-ST

Elevated Water Seal Technology®



ITEM NO.	DESCRIPTION	QTY.
1	FLASHING, ROUNDED CORNERS, 9" X 12" X .040", .438" HOLE, 5052, MILL	1
2	L-FOOT, 2" X 3.30" FOR .438" O.D. FASTENER, 2-1/16" SLOT, 6061-T6/6005A-T61, MILL	1
3	WASHER, SEALING, 5/16" ID X 3/4" OD, EPDM BONDED SS	1
4	LAG SCREW, HEX HEAD, 5/16" x 4", 18-8 SS	1
*5	STRUCTURAL SCREW, QMPV, T-30 HEX WASHER HEAD, 5/16" X 4-1/2", 18-8SS	1

Quick Mount PV
RESPECT THE ROOF

DISCLAIMER: If any Errors, Discrepancies or Omissions appear in these drawings, specifications or other contract documents; The Owner or General Contractor shall notify the Designer, in writing, of such error or omission. In the event that the Owner or General Contractor falis to give such notice, before construction and/or fabrication of the work, the Owner or General Contractor will be held responsible to the result of any errors, discrepancies or omissions and the cost of rectifying them.

CONTRACTOR

PUREPOINT ENERGY, LLC
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NORWALK, CT 06855
PHONE: (203) 642-4105

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PUREPOINT ENERGY
Solar Performance That Shines

OWNER / ADDRESS

[redacted]
STAMFORD, CT 06902

OCCUPANCY R3 /
TYPE 5 STRU.
APN#: [redacted]

SYSTEM SIZE

15.894 KW-AC
17.420 KW-DC

MODULES :
(52)SunPower,SPR-X21-335-BLK-E-AC

MICRO-INVERTERS :
(52)Enphase, IQ7XS-96-ACM-US

DATE: 07/15/20

REVISION :

PAGE INFORMATION

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SPECS

PV-08

CERTIFICATE OF COMPLIANCE

Certificate Number 20170112-E486080
Report Reference E486080-20160830
Issue Date 2017-JANUARY-12

Issued to: ENPHASE ENERGY INC
1420 N McDowell Blvd
Petaluma CA 94954-6515

This is to certify that representative samples of DISTRIBUTED GENERATION WIRING SYSTEMS AND HARNESSES

Photovoltaic Wiring Harness. Models 840-00387 or Q-12-10-240, 840-00388 or Q-12-17-240, 840-00389 or Q-12-20-200, 840-00800 or Q-DCC-7, 840-00386 or Q-DCC-5, 840-00385 or Q-DCC-2.

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL Subject 9703 - Outline of Investigation for Distributed Generation Wiring Harnesses

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.

Bruce Mahrenholz, Director North American Certification Program
UL LLC

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Page 1 of 1

CERTIFICATE OF COMPLIANCE

Certificate Number 20161025-E466981
Report Reference E466981-20140903
Issue Date 2016-OCTOBER-25

Issued to: SUNPOWER CORP
77 RIO ROBLES
SAN JOSE CA 95134-1859

This is to certify that representative samples of MOUNTING SYSTEMS, MOUNTING DEVICES, CLAMPING DEVICES AND GROUND LUGS FOR USE WITH PHOTOVOLTAIC MODULES AND PANELS

InvisiMount Mounting and Bonding Systems for use with Photovoltaic Modules, consisting of the following components: L-Foot, Rail, Rail Splice, Mid Clamp, Ground Lug Assembly, End Clamp, SolarEdge P400 Microinverter Backplate, Row Clip

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 2703, the Standard for Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for use with Flat-Plate Photovoltaic Modules and Panels

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.

Bruce Mahrenholz, Director North American Certification Program
UL LLC

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NORWALK, CT 06855
PHONE: (203) 642-4105

STATE LICENSE# : HIC. 0625434

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PUREPOINT ENERGY
Solar Performance That Shines

OWNER / ADDRESS

[redacted]
STAMFORD, CT 06902

OCCUPANCY R3 /
TYPE 5 STRU.
APN#: [redacted]

SYSTEM SIZE

15.894 KW-AC
17.420 KW-DC

MODULES :
(52)SunPower,SPR-X21-335-BLK-E-AC

MICRO-INVERTERS :
(52)Enphase, IQ7XS-96-ACM-US

DATE: 07/15/20

REVISION :

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PV-09

CERTIFICATE OF COMPLIANCE

Certificate Number	20180829-E341165
Report Reference	E341165-20171030
Issue Date	2018-August-29

Issued to: Enphase Energy Inc.
1420 N. McDowell Blvd. Petaluma, CA 94954-6515

This is to certify that representative samples of Photovolic Grid Support Utility Interactive Inverter with Rapid Shutdown Functionality

Model IQ7XS-96, may be followed by -B, followed by -ACM, may be followed by -US

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety:
UL 1741, Standard for Safety for Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources, UL 1741, Second Edition, dated January 28, 2010. Including the requirements in UL 1741 Supplement SA, sections as noted in the Technical considerations.
IEEE 1547, IEEE Standard for Interconnecting Distributed Resources with Electric Power Systems.
IEEE 1547.1, IEEE Standard for Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems.
UL 62109-1, Safety of Converters for Use in Photovoltaic Power Systems - Part 1: General Requirements.
IEC 62109-2, Safety of Power Converters for use in Photovoltaic Power Systems - Part 2: Particular Requirements for Inverters.
CSA C22.2 No. 107.1-01, General Use Power Supplies.

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.

Bruce Mahrenholz, Director North American Certification Program
UL LLC

CERTIFICATE OF COMPLIANCE

Certificate Number	20180829-E341165
Report Reference	E341165-20171030
Issue Date	2018-August-29

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Standards for Safety:

UL 1741, Standard for Safety for Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources, UL 1741, Second Edition, dated January 28, 2010. Including the requirements in UL 1741 Supplement SA, sections as noted in the Technical considerations.

IEEE 1547, IEEE Standard for Interconnecting Distributed Resources with Electric Power Systems.
IEEE 1547.1, IEEE Standard for Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems.

UL 62109-1, Safety of Converters for Use in Photovoltaic Power Systems - Part 1: General Requirements; IEC 62109-2, Safety of Power Converters for use in Photovoltaic Power Systems - Part 2: Particular Requirements for Inverters.

CSA C22.2 No. 107.1-01, General Use Power Supplies.

Bruce Mahrenholz, Director North American Certification Program
UL LLC

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(52)Enphase, IQ7XS-96-ACM-US

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