MICHAH SIEGAL
NEW GRID-INTERACTIVE PHOTOVOLTAIC SYSTEM WITH BATTERY
DC SYSTEM SIZE (8.925 KW)

SYSTEM DETAILS

DESCRIPTION	NEW GRID-INTERACTIVE PHOTOVOLTAIC SYSTEM WITH BATTERY STORAGE
DC RATING OF SYSTEM	SYSTEM SIZE : 8.925 KW DC STC
AC RATING OF SYSTEM	8.064 KW
AC OUTPUT CURRENT	33.6 A
NO. OF MODULES	(21) SUNPOWER SPR-M425-H-AC SOLAR MODULES
NO. OF INVERTERS	(21) SUNPOWER TYPE H IQ7HS MICROINVERTERS
ARRAY STRINGING	(3) BRANCHES OF 07 MODULES

SITE DETAILS

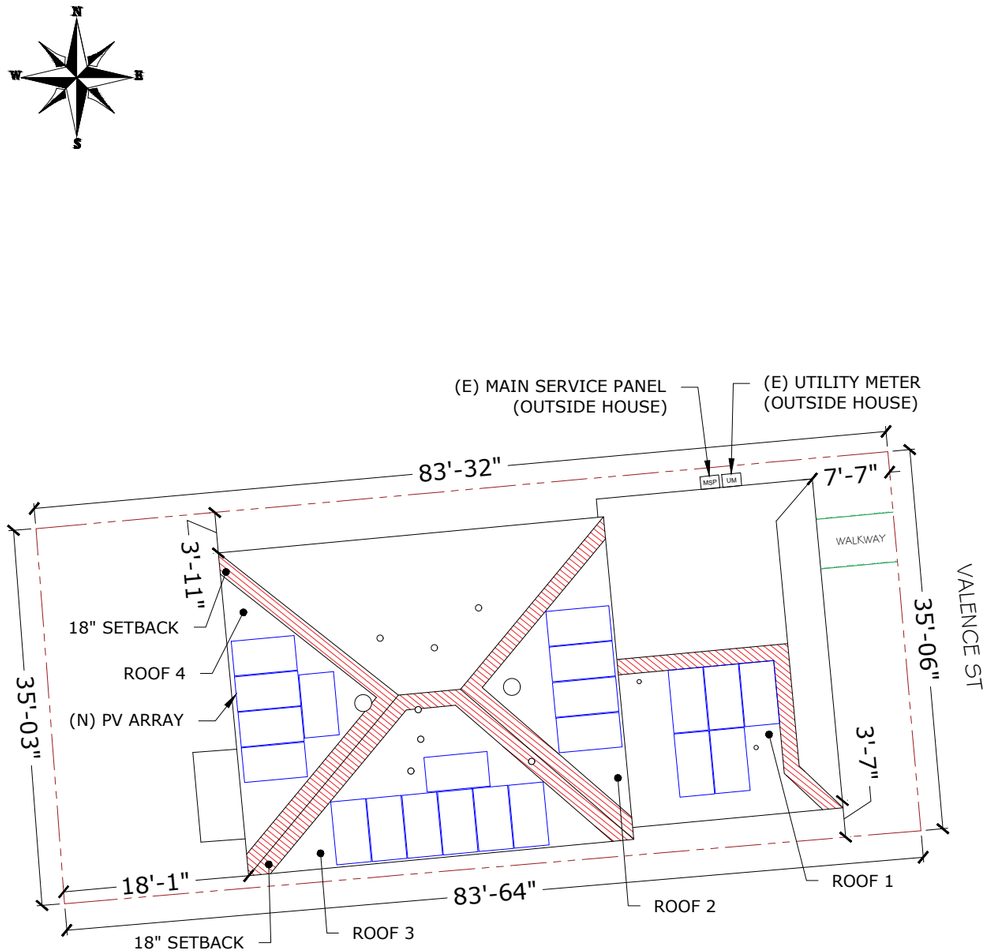
ASHRAE EXTREME LOW	-5°C
ASHRAE 2% HIGH	33°C
GROUND SNOW LOAD	0 PSF
WIND SPEED	144MPH (ASCE 7-10)
RISK CATEGORY	II
WIND EXPOSURE CATEGORY	B
UTILITY	ENTERGY

GOVERNING CODES

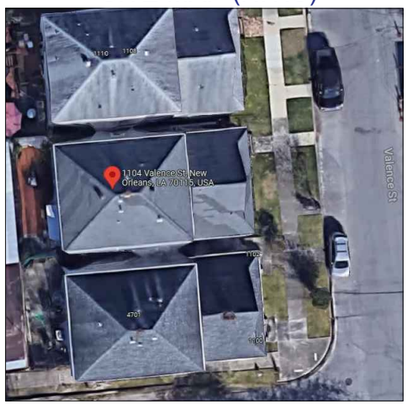
INTERNATIONAL RESIDENTIAL CODE 2015 (IRC) 2015
INTERNATIONAL BUILDING CODE 2015 (IBC) 2015
INTERNATIONAL FIRE CODE 2015 (IFC) 2015
NATIONAL ELECTRIC CODE, NEC 2014 CODE BOOK

SHEET INDEX

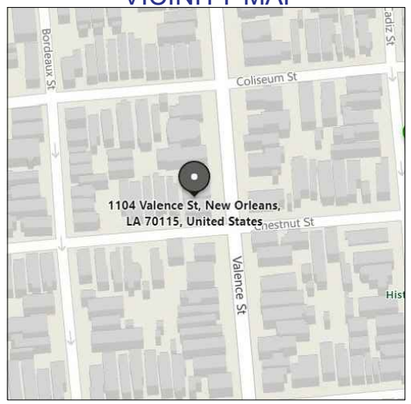
SHEET NO.	SHEET NAME
A - 00	SITE MAP & VICINITY MAP
S - 01	ROOF PLAN & MODULES
S - 02	ARRAY LAYOUT
S - 03	STRUCTURAL ATTACHMENT DETAIL
E - 01	SINGLE LINE DIAGRAM
E - 02	WIRING CALCULATIONS
E - 03	SYSTEM LABELING
L - 01	MICROINVERTER LAYOUT
L - 02	PV CIRCUIT
DS - 01	MODULE & INVERTER DATASHEET
DS - 02	GATEWAY DATASHEET
DS - 03	BATTERY DATASHEET
DS - 04	ATTACHMENT & RACKING DATASHEET



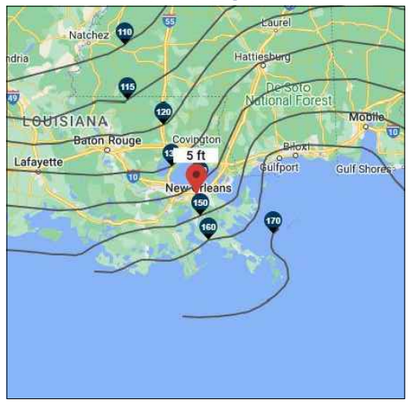
SITE MAP (N.T.S)



VICINITY MAP



WIND FLOW MAP



SUNPOWER
by South Coast Solar
ADD : 2605 RIDGELAKE DR,
METAIRIE, LA 70002, USA
USAPHONE: 504-688-4044
FAX: 504-617-6868

Signature with Seal
STATE OF LOUISIANA
PAUL K. ZACHER
License No. 39685
EXP. 09/30/2023
PROFESSIONAL ENGINEER

FOR EXISTING STRUCTURE ONLY

MICHAH SIEGAL

1104 VALENCE ST, NEW ORLEANS, LA 70115

REVISIONS

REV	ENGG.	DESCRIPTION	DATE

PERMIT DEVELOPER	
DATE	08/25/2022
DESIGNER	OHW
REVIEWER	

SHEET NAME
SITE MAP & VICINITY MAP

SHEET NUMBER
A-00

MODULE TYPE, DIMENSIONS & WEIGHT

NUMBER OF MODULES = 21 MODULES
MODULE TYPE = SUNPOWER SPR-M425-H-AC SOLAR MODULES
WEIGHT = 48.06 LBS / 21.8 KG.
MODULE DIMENSIONS = 73.7"X40.6" = 20.78 SF

NUMBER OF INVERTER = 21 MICROINVERTERS
INVERTER TYPE = SUNPOWER TYPE H IQ7HS MICROINVERTERS
AC SYSTEM SIZE: 8.064 KW
DC SYSTEM SIZE: 8.925 KW

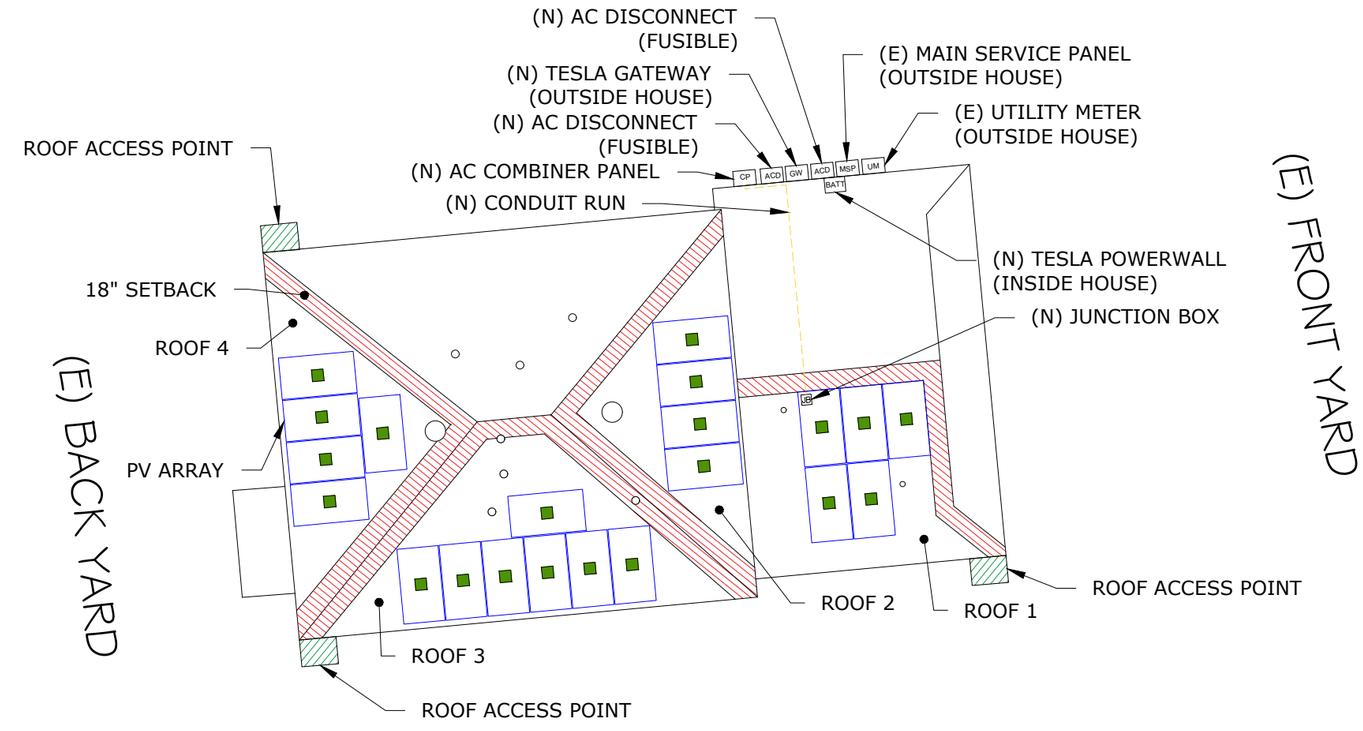
GENERAL INSTALLATION PLAN NOTES:

1) ROOF ATTACHMENTS TO RAFTER SHALL BE INSTALLED AS SHOWN IN SHEET S-01 AND AS FOLLOWS FOR EACH WIND ZONE:.

WIND ZONE 1: MAX SPAN 6'-0" O.C.
WIND ZONE 2: MAX SPAN 4'-0" O.C.
WIND ZONE 3: MAX SPAN 2'-0" O.C.

2) EXISTING RESIDENTIAL BUILDING IS AN ASPHALT SHINGLE ROOF WITH MEAN ROOF HEIGHT 15 FT AND 2"X4" WOOD ROOF RAFTER SPACED 24" O.C.
CONTRACTOR TO FIELD VERIFY AND SHALL REPORT TO THE ENGINEER IF ANY DISCREPANCIES EXIST BETWEEN PLANS AND IN FIELD CONDITIONS.

I CERTIFY THAT THE INSTALLATION OF THE MODULES IS IN COMPLIANCE WITH IBC: BUILDING CHAPTER 16.BUILDING STRUCTURE WILL SAFELY ACCOMMODATE LATERAL AND UPLIFT WIND LOADS, AND EQUIPMENT DEAD LOADS. *



LEGENDS

- UM - UTILITY METER
- MSP - MAIN SERVICE PANEL
- M - METER MAIN COMBO
- JB - JUNCTION BOX
- ACD - AC DISCONNECT
- GW - GATEWAY
- CLP - CRITICAL LOAD PANEL
- CP - COMBINER PANEL
- BATT - BATTERY
- - FIRE SETBACK
- - MICROINVERTER
- - VENT, ATTIC FAN (ROOF OBSTRUCTION)
- - CONDUIT
- - TRENCHING

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REVISIONS	DESCRIPTION	DATE
REV ENGG.		

PERMIT DEVELOPER	
DATE	08/25/2022
DESIGNER	OHW
REVIEWER	

SHEET NAME
ROOF PLAN & MODULES

SHEET NUMBER
S-01

ROOF DESCRIPTION:

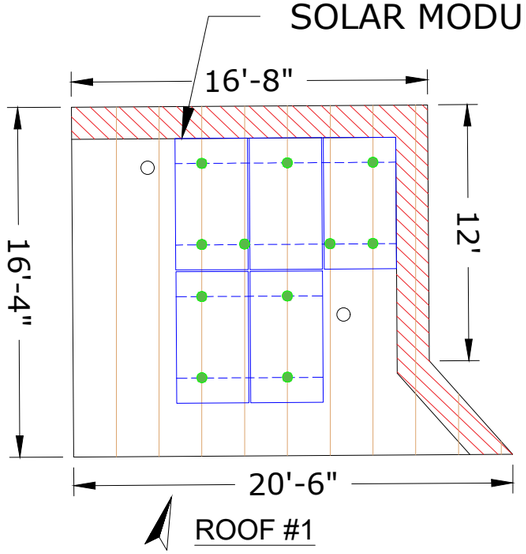
(ROOF #1)
MODULES - 5
ROOF TILT - 32°
ROOF AZIMUTH - 175°
RAFTER SIZE - 2"X4" @ 24" O.C.

(ROOF #2)
MODULES - 4
ROOF TILT - 32°
ROOF AZIMUTH - 85°
RAFTER SIZE - 2"X4" @ 24" O.C.

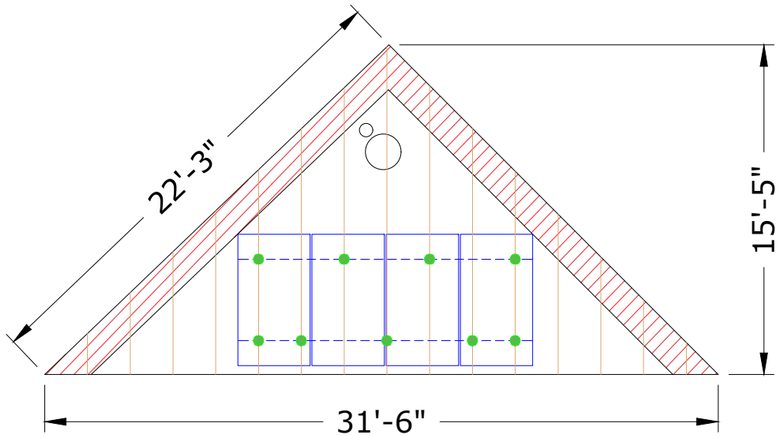
(ROOF #3)
MODULES -7
ROOF TILT - 32°
ROOF AZIMUTH - 175°
RAFTER SIZE - 2"X4" @ 24" O.C.

(ROOF #4)
MODULES -5
ROOF TILT - 32°
ROOF AZIMUTH - 265°
RAFTER SIZE - 2"X4" @ 24" O.C.

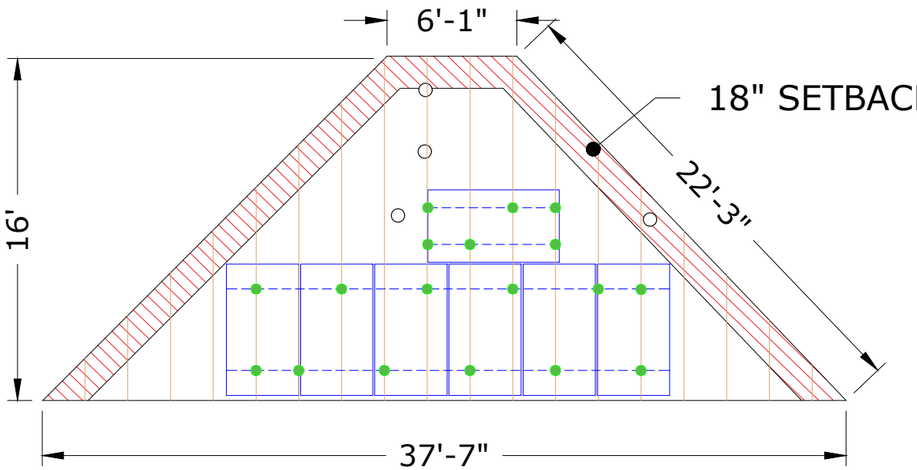
SOLAR MODULE



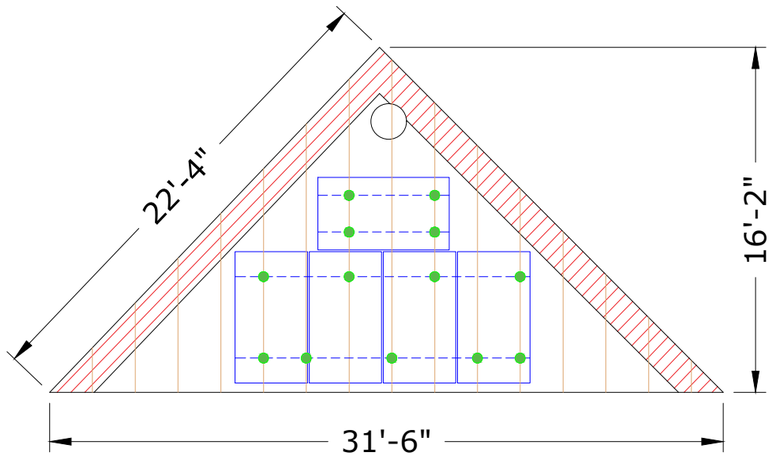
ROOF #1



ROOF #2



ROOF #3



ROOF #4

LEGENDS
- FIRE SETBACK
- VENT, ATTIC FAN (ROOF OBSTRUCTION)
- PV ROOF ATTACHMENT
- RAILS
- RAFTERS / TRUSSES

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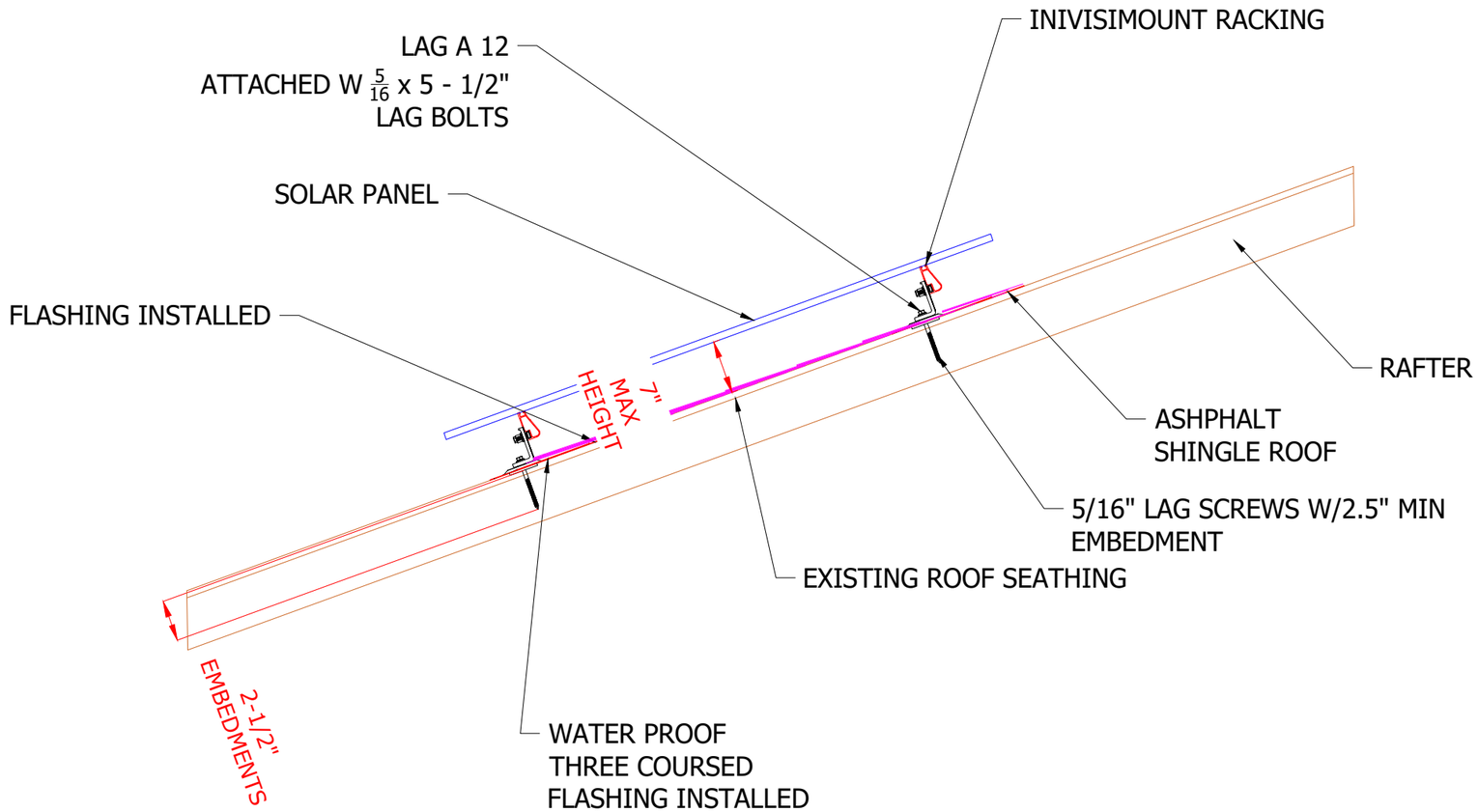
REVISIONS	DATE	DESCRIPTION	REV/ ENGG.

PERMIT DEVELOPER	
DATE	08/25/2022
DESIGNER	OHW
REVIEWER	

SHEET NAME
ARRAY LAYOUT

SHEET NUMBER
S-02



LAG BOLT/SCREWS OF A RELATIVELY SMALL, 5/16 INCH DIAMETER BY 3 INCHES LONG CAN BE EMBEDDED IN THE TOP, 2X4 CHORD OF A SIMPLE SPAN MEMBER RAFTER A MINIMUM EMBEDMENT OF 2-1/2"INCHES IS REQUIRED (TYP TYPE RACKING)

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MICHAH SIEGAL

1104 VALENCE ST, NEW ORLEANS, LA 70115

REVISIONS	DATE	DESCRIPTION	ENGG.	REV

PERMIT DEVELOPER	
DATE	08/25/2022
DESIGNER	OHW
REVIEWER	

SHEET NAME
STRUCTURAL ATTACHMENT DETAILS

SHEET NUMBER
S-03

CONDUIT SCHEDULE

SR. NO.	DESCRIPTION	CONDUIT SIZE
1	(3) #10 AWG THWN-2 (L1) ,(3) #10 AWG THWN-2 (L2) ,(1) #10 AWG THWN-2 (G)	IN 3/4" CONDUIT RUN
2	(3) #8 AWG THWN-2 (L1,L2,N), (1) #10 AWG THWN-2 (G)	IN 3/4" CONDUIT RUN
3	(3) #8 AWG THWN-2 (L1,L2,N), (1) #10 AWG THWN-2 (G)	IN 3/4" CONDUIT RUN
4	(3) #10 AWG THWN-2 (L1,L2,N), (1) #10 AWG THWN-2 (G)	IN 3/4" CONDUIT RUN
5	(3) #3/0 AWG THWN-2 (L1,L2,N), (1) #6 AWG THWN-2 (G)	IN 2" CONDUIT RUN
6	(3) #3/0 AWG THWN-2 (L1,L2,N)	IN 2" CONDUIT RUN

NOTE:
CONDUIT RUN- EMT,IMC, PVC, RMC, FMC, LFMC, OR EQUIVALENT AS PER NEC.

INVERTER SPECIFICATIONS	
MANUFACTURER	SUNPOWER
MODEL NO.	SUNPOWER TYPE H IQ7HS
MAX DC INPUT VOLTAGE	59 V
MAX OUTPUT POWER	384 VA
NOMINAL AC OUTPUT VOLTAGE	240 A
NOMINAL AC OUTPUT CURRENT	1.60 A

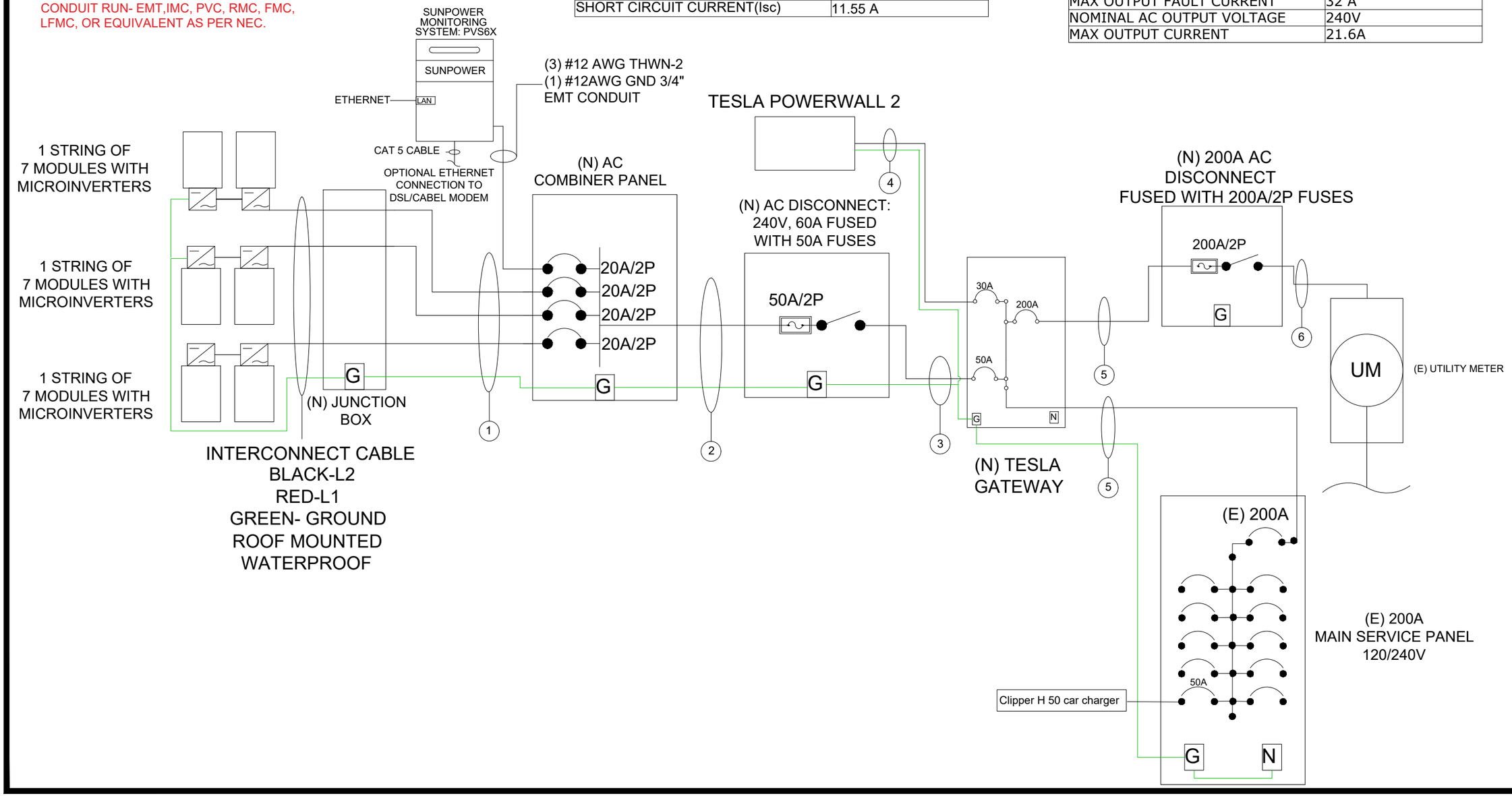
MODULE SPECIFICATIONS	
MODEL NO.	SUNPOWER SPR-M425-H-AC
PEAK POWER	425 W
RATED VOLTAGE (Vmpp)	39.8 V
RATED CURRENT(Impp)	10.68 A
OPEN CIRCUIT VOLTAGE(Voc)	48.10 V
SHORT CIRCUIT CURRENT(Isc)	11.55 A

NOTE:
1. SUBJECT PV SYSTEMS HAS BEEN DESIGNED TO MEET THE REQUIREMENTS OF THE NEC 2014, AND INCLUDING MAXIMUM NUMBER OF MODULE STRINGS, MAXIMUM NUMBER OF MODULES PER STRING, MAXIMUM OUTPUT, MODULE MANUFACTURER AND MODEL NUMBER, INVERTER MANUFACTURER AND MODEL NUMBER, AS APPLICABLE.
2. PROVIDE TAP BOX IN COMPLIANCE WITH 312.8 IF PANEL GUTTER SPACE IS INADEQUATE.

SOLAR ARRAY (8.925 KW-DC STC)

(21) SUNPOWER SPR-M425-H-AC MODULES
(3) BRANCHES OF 07 MODULES

BATTERY SPECIFICATIONS	
MODEL NO.	TESLA POWER WALL 2
USABLE ENERGY	13.5 KWH
MAX OUTPUT FAULT CURRENT	32 A
NOMINAL AC OUTPUT VOLTAGE	240V
MAX OUTPUT CURRENT	21.6A



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REVISIONS

REV	ENGG.	DESCRIPTION	DATE

PERMIT DEVELOPER	
DATE	08/25/2022
DESIGNER	OHW
REVIEWER	

SHEET NAME
SINGLE LINE DIAGRAM

SHEET NUMBER
E-01

ELECTRICAL CALCULATIONS:

1. CURRENT CARRYING CONDUCTOR

(A) BEFORE IQ COMBINER PANEL

AMBIENT TEMPERATURE - (33+22)°C= 55°C ...NEC 310.15(B)(3)(c)
TEMPERATURE DERATE FACTOR - 0.76 ...NEC 310.15(B)(2)(a)
GROUPING FACTOR -0.8...NEC 310.15(B)(3)(a)

CONDUCTOR AMPACITY
= (INV O/P CURRENT) x 1.25 / A.T.F / G.F ...NEC 690.8(B)
= [(7x 1.6) x 1.25] / 0.76 / 0.8
= 23.03 A
SELECTED CONDUCTOR - #10 THWN-2 ...NEC 310.15(B)(16)

(B) AFTER IQ COMBINER PANEL

TEMPERATURE DERATE FACTOR - 0.96
GROUPING FACTOR - 1

CONDUCTOR AMPACITY
= (TOTAL INV O/P CURRENT) x 1.25 / 0.96 / 1 ...NEC 690.8(B)
= [(21x 1.6) x 1.25] / 0.96 / 1
= 43.75 A
SELECTED CONDUCTOR - #8 THWN-2 ...NEC 310.15(B)(16)

2. PV OVER CURRENT PROTECTION ..NEC 690.9(B)

= TOTAL INVERTER O/P CURRENT x 1.25
= (21 x 1.6) x 1.25 = 42 A
SELECTED OCPD = 50 A

(B) TESLA POWERWALL

TEMPERATURE DERATE FACTOR - 0.96
GROUPING FACTOR - 1

CONDUCTOR AMPACITY
= (TESLA O/P CURRENT) x 1.25 / 0.96 / 1 ...NEC 690.8(B)
= [(21.6 x 1.25] / 0.96 / 1
= 28.125 A
SELECTED CONDUCTOR - #10 THWN-2 ...NEC 310.15(B)(16)

ELECTRICAL NOTES

1. ALL EQUIPMENT TO BE LISTED BY UL OR OTHER NRTL, AND LABELED FOR ITS APPLICATION.
2. ALL CONDUCTORS SHALL BE COPPER, RATED FOR 600 V AND 90 DEGREE C WET ENVIRONMENT.THE TERMINALS ARE RATED FOR 75 DEGREE C.
3. CONDUCTOR TERMINATION AND SPLICING AS PER NEC 110.14
4. WIRING, CONDUIT, AND RACEWAYS MOUNTED ON ROOFTOPS SHALL BE ROUTED DIRECTLY TO, AND LOCATED AS CLOSE AS POSSIBLE TO THE NEAREST RIDGE, HIP, OR VALLEY.
5. WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26.
6. DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS. CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS AND ACCESSORIES TO FULFILL APPLICABLE CODES AND STANDARDS.
7. WHERE SIZES OF JUNCTION BOXES, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY.
8. ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.
9. MODULE GROUNDING CLIPS TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER THE GROUNDING CLIP MANUFACTURER'S INSTRUCTION.
10. MODULE SUPPORT RAIL TO BE BONDED TO CONTINUOUS COPPER G.E.C. VIA WEEB LUG OR ILSCO GBL-4DBT LAY-IN LUG.
11. THE POLARITY OF THE GROUNDED CONDUCTORS IS NEGATIVE .
12. UTILITY HAS 24-HR UNRESTRICTED ACCESS TO ALL PHOTOVOLTAIC SYSTEM COMPONENTS LOCATED AT THE SERVICE ENTRANCE.
13. MODULES CONFORM TO AND ARE LISTED UNDER UL 1703.
14. RACKING CONFORMS TO AND IS LISTED UNDER UL 2703.
15. CONDUCTORS EXPOSED TO SUNLIGHT SHALL BE LISTED AS SUNLIGHT RESISTANT PER NEC ARTICLE 300.6 (C) (1) AND ARTICLE 310.10 (D).
16. CONDUCTORS EXPOSED TO WET LOCATIONS SHALL BE SUITABLE FOR USE IN WET LOCATIONS PER NEC ARTICLE 310.10 (C).

SUNPOWER
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MICHAH SIEGAL

1104 VALENCE ST, NEW ORLEANS, LA 70115

REVISIONS	DATE	DESCRIPTION	ENGG.	REV

PERMIT DEVELOPER	
DATE	08/25/2022
DESIGNER	OHW
REVIEWER	

SHEET NAME
WIRING CALCULATIONS

SHEET NUMBER
E-02

MULTIPLE POWER SOURCES ARE CONNECTED TO THIS PANEL.

LABEL 1: NEC 705.12(B)(3). AT MAIN PANEL & METER.

1

PV SYSTEM DISCONNECT

RATED AC OPERTING CURRENT: 33.6 A
NOMINAL AC OPERATING VOLTAGE: 240 V

LABEL 2: NEC 690.13(B), NEC690.54. AT PV DISCONNECT. NO HAZARD ON LOAD SIDE

2

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

LABEL 3: NEC 690.56(C) 3. ON BUILDINGS WITH BOTH UTILITY SERVICE AND A PHOTOVOLTAIC SYSTEM. SET UP ON DISCONNECT OR WITHIN 3 FT.

3

! WARNING !
PV BRANCH CIRCUIT OUTPUT CONNECTION:

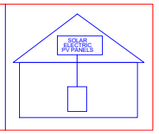
DO NOT RELOCATE THIS OVERCURRENT DEVICE

LABEL 4: NEC 705.12(B)(2)(3)(b). AT COMBINER AND/OR MAIN PANEL. .

4

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

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



LABEL 5: NEC 690.56(C) 1(a). ON BUILDINGS WITH BOTH UTILITY SERVICE AND A PHOTOVOLTAIC SYSTEM. SET UP ON DISCONNECT OR WITHIN 3 FT.

5

MULTIPLE POWER SOURCES ARE CONNECTED TO THIS PANEL.
PHOTOVOLTAIC SYSTEM PARAMETERS
PV MODULES IN THIS SYSTEM 21@SUNPOWER SPR-M425-H-AC MAX CURRENT PER MODULE@ 240V 1.6A SUNPOWER TYPE H IQ7HS
INSTALLER: SUNPOWER BY SOUTH COAST SOLAR
METAIRIE, LA (504)529-7869 WWW.SOUTHCOASTSOLAR.COM

LABEL 6: VARIATION OF NEC 705.12(B)(3). At COMBINER PANEL.

6

! WARNING !
THIS EQUIPMENT IS FED BY MULTIPLE SOURCES. TOTAL RATING OF ALL OVERCURRENT DEVICES EXCLUDING MAIN SUPPLY OVERCURRENT DEVICE SHALL NOT EXCEED AMPACITY OF BUSBAR.

LABEL 7: NEC 2014 705.12(B)(2)(3)(c)

7

MULTIPLE POWER SOURCES ARE CONNECTED TO THIS PANEL.
PHOTOVOLTAIC SYSTEM PARAMETERS
PV MODULES IN THIS SYSTEM 21@SUNPOWER SPR-M425-H-AC MAX CURRENT PER MODULE@ 240V 1.6A SUNPOWER TYPE H IQ7HS
INSTALLER: SUNPOWER BY SOUTH COAST SOLAR
COLUMBIA, SC (803)254-0294 WWW.SOUTHCOASTSOLAR.COM

CAUTION
TRI POWER SOURCES
SECOND SOURCE IS AC BATTERY
THIRD SOURCE IS PV SYSTEM
FCDLABELS.COM 20-022

LABEL LOCATION:
BATTERY

SUNPOWER
by South Coast Solar
ADD : 2605 RIDGELAKE DR,
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FAX: 504-617-6868

Signature with Seal

MICHAH SIEGAL

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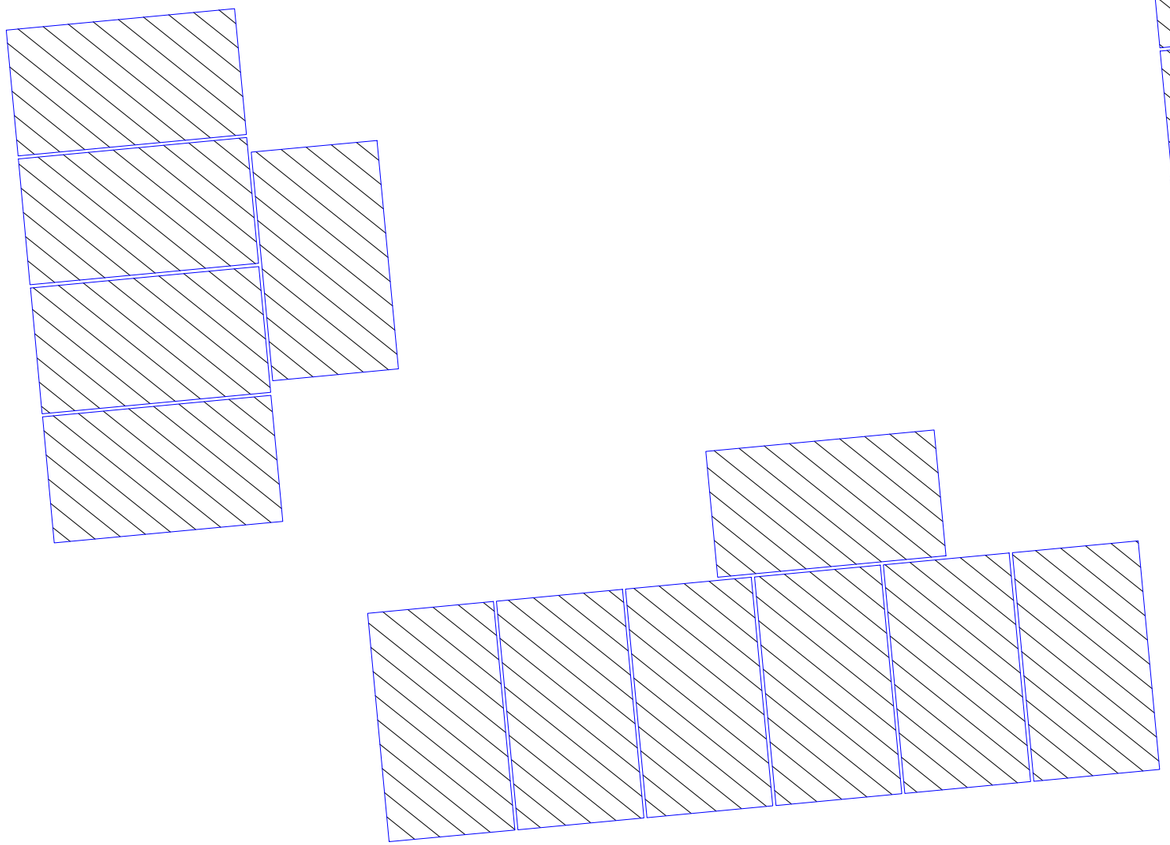
REVISIONS	DESCRIPTION	DATE
REV		
ENGG.		

PERMIT DEVELOPER	
DATE	08/25/2022
DESIGNER	OHW
REVIEWER	

SHEET NAME
SYSTEM LABELING

SHEET NUMBER
E-03

MICROINVERTER LAYOUT



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Signature with Seal

MICHAH SIEGAL

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REVISIONS	DATE	DESCRIPTION	ENGG.	REV

PERMIT DEVELOPER	
DATE	08/25/2022
DESIGNER	OHW
REVIEWER	

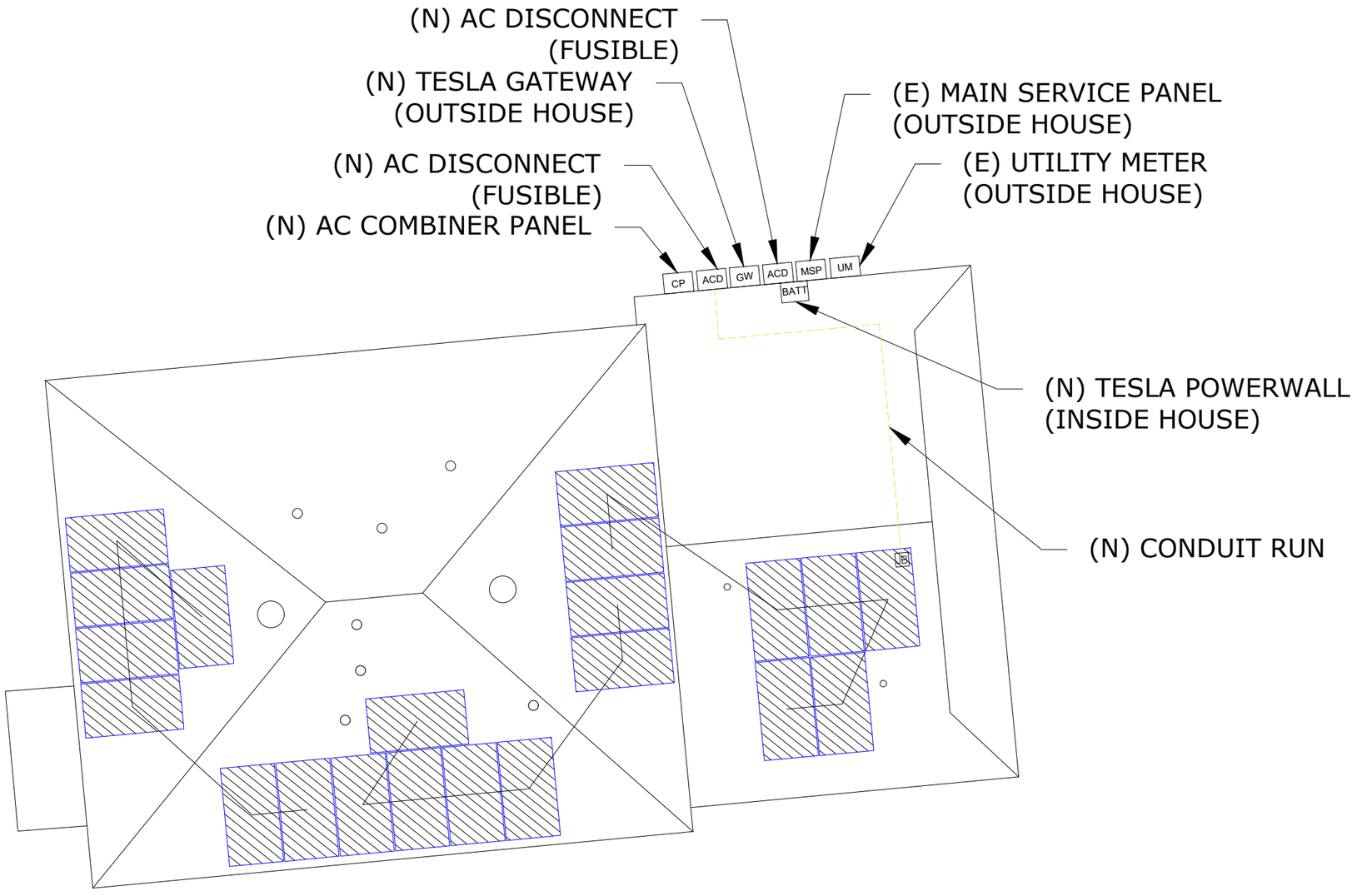
SHEET NAME

MICROINVERTER LAYOUT

SHEET NUMBER

L-01

PV CIRCUIT



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REVISIONS	DESCRIPTION	DATE
REV	ENGG.	

PERMIT DEVELOPER	
DATE	08/25/2022
DESIGNER	OHW
REVIEWER	

SHEET NAME

PV CIRCUIT

SHEET NUMBER

L-02

M SERIES

SUNPOWER®

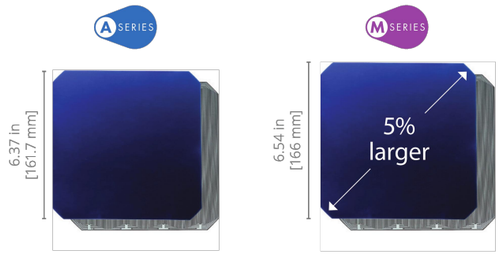
420-440W Residential AC Module

SunPower® Maxeon® Technology

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

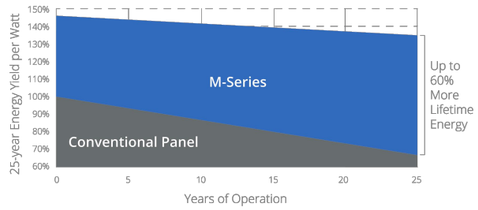
Highest Power AC Density Available.

The patented, solid-copper foundation Maxeon Gen 6 cell is over 5% larger than prior generations, delivering the highest efficiency AC solar panel available.[1]



Highest Lifetime Energy and Savings

Designed to deliver 60% more energy over 25 years in real-world conditions like partial shade and high temperatures.[2]



Best Reliability, Best Warranty

With more than 42.6 million and 15 GW 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.

Part of the SunPower Equinox® Solar System

- Compatible with mySunPower™ monitoring
- Seamless aesthetics

Factory-integrated Microinverter

- Highest-power integrated AC module in solar
- Engineered and calibrated by SunPower for SunPower AC modules

M-Series: M440 | M435 | M430 | M425 | M420 SunPower® Residential AC Module

AC Electrical Data		
Inverter Model: Type H (Enphase IQ7HS)	@240 VAC	@208 VAC
Max. Continuous Output Power (VA)	384	369
Nom. (L–L) Voltage/Range[3] (V)	240 / 211–264	208 / 183–229
Max. Continuous Output Current (Arms)	1.60	1.77
Max. Units per 20 A (L–L) Branch Circuit[4]	10	9
CEC Weighted Efficiency	97.0%	96.5%
Nom. Frequency	60 Hz	
Extended Frequency Range	47–68 Hz	
AC Short Circuit Fault Current Over 3 Cycles	4.82 A rms	
Overvoltage Class AC Port	III	
AC Port Backfeed Current	18 mA	
Power Factor Setting	1.0	
Power Factor (adjustable)	0.85 (inductive) / 0.85 (capacitive)	

DC Power Data	SPR-M440-H-AC	SPR-M435-H-AC	SPR-M430-H-AC	SPR-M425-H-AC	SPR-M420-H-AC
Nom. Power[6] (Pnom) W	440	435	430	425	420
Power Tolerance	+5/–0%				
Module Efficiency	22.8%	22.5%	22.3%	22.0%	21.7%
Temp. Coef. (Power)	–0.29% / °C				
Shade Tolerance	Integrated module-level max. 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. Test Load[8]	Wind: 125 psf, 6000 Pa, 611 kg/m² back Snow: 187 psf, 9000 Pa, 917 kg/m² front
Max. Design Load	Wind: 75 psf, 3600 Pa, 367 kg/m² back Snow: 125 psf, 6000 Pa, 611 kg/m² front
Impact Resistance	1 inch (25 mm) diameter hail at 52 mph (23 m/s)

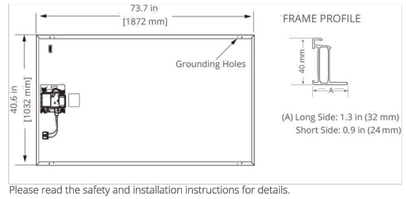
Mechanical Data	
Solar Cells	66 Maxeon Gen 6
Front Glass	High-transmission tempered glass with anti-reflective coating
Environmental Rating	Outdoor rated
Frame	Class 1 black anodized (highest AAMA rating)
Weight	48 lb (21.8 kg)
Recommended Max. Module Spacing	1.3 in. (33 mm)

Warranties, Certifications, and Compliance	
Warranties	• 25-year limited power warranty • 25-year limited product warranty
Certifications and Compliance	• UL 1741 / IEEE-1547 • UL 1741 AC Module (Type 2 fire rated) • UL 61730 • 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)[5] (includes Volt/Var and Reactive Power Priority) • UL Listed PV Rapid Shutdown Equipment[7] 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 AC module Q Cables and accessories (UL 6703 and UL 2238)[7]: • Rated for load break disconnect
PID Test	1000 V: IEC 62804

Packaging Configuration	
Modules per pallet	25
Packaging box dimensions	75.4 × 42.2 × 48.0 in. (1915 × 1072 × 1220 mm)
Pallet gross weight	1300.7 lb (590 kg)
Pallets per container	32
Net weight per container	41,623 lb (18,880 kg)

1 Based on datasheet review of websites of top 20 manufacturers per Wood Mackenzie US PV Leaderboard Q3 2021.
2 Maxeon 435 W, 22.5% efficient, compared to a Conventional Panel on same-sized arrays (260 W, 16% efficient, approx. 1.6 m²), 7.9% more energy per watt (based on PVSyst pan files for avg. US climate), 0.5%/yr slower degradation rate (Jordan, et. al. "Robust PV Degradation Methodology and Application."PVSC 2018).
3 Voltage range can be extended beyond nominal if required by the utility.
4 Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.
5 Factory set to IEEE 1547a-2014 default settings. CA Rule 21 default settings profile set during commissioning.
6 Standard Test Conditions (1000 W/m² irradiance, AM 1.5, 25°C). All DC voltage is fully contained within the module.
7 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.
8 Please read the safety and installation instructions for more information regarding load ratings and mounting configurations.

See www.sunpower.com/company for more reference information.
Specifications included in this datasheet are subject to change without notice.



Please read the safety and installation instructions for details.

UL LISTED E478330 AC MODULE (SIO), SUPPORT UTILITY INTERACTIVE PV RAPID SHUTDOWN EQUIPMENT
Module Fire Performance: Type 2

539973 RevB
January 2022

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REVISIONS	DATE	DESCRIPTION	ENGG.	REV

PERMIT DEVELOPER	
DATE	08/25/2022
DESIGNER	OHW
REVIEWER	

SHEET NAME
MODULE & INVERTER DATASHEET

SHEET NUMBER
DS-01

POWERWALL
Backup Gateway 2

The Backup Gateway 2 for Tesla Powerwall provides energy management and monitoring for solar self-consumption, time-based control, and backup.

The Backup Gateway 2 controls connection to the grid, automatically detecting outages and providing a seamless transition to backup power. When equipped with a main circuit breaker, the Backup Gateway 2 can be installed at the service entrance. When the optional internal panelboard is installed, the Backup Gateway 2 can also function as a load center.

The Backup Gateway 2 communicates directly with Powerwall, allowing you to monitor energy use and manage backup energy reserves from any mobile device with the Tesla app.

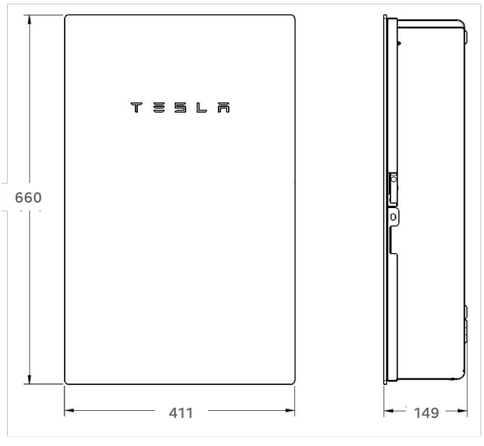
PERFORMANCE SPECIFICATIONS

AC Voltage (Nominal)	120/240V
Feed-In Type	Split Phase
Grid Frequency	60 Hz
Current Rating	200 A
Maximum Input Short Circuit Current	10 kA[1]
Overcurrent Protection Device	100-200A; Service Entrance Rated[1]
Overvoltage Category	Category IV
AC Meter	Revenue accurate (+/– 0.2 %)
Primary Connectivity	Ethernet, Wi-Fi
Secondary Connectivity	Cellular (3G, LTE/4G)[2]
User Interface	Tesla App
Operating Modes	Support for solar self-consumption, time-based control, and backup
Backup Transition	Automatic disconnect for seamless backup
Modularity	Supports up to 10 AC-coupled Powerwalls
Optional Internal Panelboard	200A 6-space / 12 circuit Eaton BR Circuit Breakers
Warranty	10 years

[1] When protected by Class J fuses, Backup Gateway 2 is suitable for use in circuits capable of delivering not more than 22kA symmetrical amperes.
[2] The customer is expected to provide internet connectivity for Backup Gateway 2; cellular should not be used as the primary mode of connectivity. Cellular connectivity subject to network operator service coverage and signal strength.

MECHANICAL SPECIFICATIONS

Dimensions	660 mm x 411 mm x 149 mm (26 in x 16 in x 6 in)
Weight	20.4 kg (45 lb)
Mounting options	Wall mount, Semi-flush mount



COMPLIANCE INFORMATION

Certifications	UL 67, UL 869A, UL 916, UL 1741 PCS CSA 22.2 0.19, CSA 22.2 205
Emissions	FCC Part 15, ICES 003

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-20°C to 50°C (-4°F to 122°F)
Operating Humidity (RH)	Up to 100%, condensing
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Type	NEMA 3R

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REVISIONS	DESCRIPTION	DATE
REV		
ENGG.		

PERMIT DEVELOPER	
DATE	08/25/2022
DESIGNER	OHW
REVIEWER	

SHEET NAME
GATEWAY DATASHEET

SHEET NUMBER
DS-02

POWERWALL

Tesla Powerwall is a fully-integrated AC battery system for residential or light commercial use. Its rechargeable lithium-ion battery pack provides energy storage for solar self-consumption, time-based control, and backup.

Powerwall's electrical interface provides a simple connection to any home or building. Its revolutionary compact design achieves market-leading energy density and is easy to install, enabling owners to quickly realize the benefits of reliable, clean power.

PERFORMANCE SPECIFICATIONS

AC Voltage (Nominal)	120/240 V
Feed-in Type	Split Phase
Grid Frequency	60 Hz
Total Energy	14 kWh
Usable Energy	13.5 kWh
Real Power, max continuous	5 kW (charge and discharge)
Real Power, peak (10 s, off-grid/backup)	7 kW (charge and discharge)
Apparent Power, max continuous	5.8 kVA (charge and discharge)
Apparent Power, peak (10 s, off-grid/backup)	7.2 kVA (charge and discharge)
Maximum Supply Fault Current	10 kA
Maximum Output Fault Current	32 A
Overcurrent Protection Device	30 A
Imbalance for Split-Phase Loads	100%
Power Factor Output Range	+/– 1.0 adjustable
Power Factor Range (full-rated power)	+/– 0.85
Internal Battery DC Voltage	50 V
Round Trip Efficiency[1,3]	90%
Warranty	10 years

[1]Values provided for 25°C (77°F), 3.3 kW charge/discharge power.
[2]In Backup mode, grid charge power is limited to 3.3 kW.
[3]AC to battery to AC, at beginning of life.

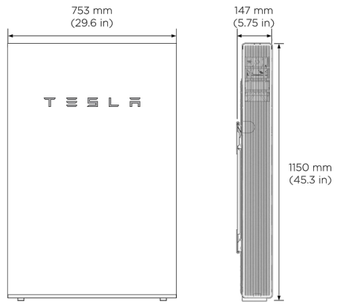
COMPLIANCE INFORMATION

Certifications	UL 1642, UL 1741, UL 1973, UL 9540, IEEE 1547, UN 38.3
Grid Connection	Worldwide Compatibility
Emissions	FCC Part 15 Class B, ICES 003
Environmental	RoHS Directive 2011/65/EU
Seismic	AC156, IEEE 693-2005 (high)

MECHANICAL SPECIFICATIONS

Dimensions[1]	1150 mm x 755 mm x 147 mm (45.3 in x 29.6 in x 5.75 in)
Weight[1]	114 kg (251.3 lbs)
Mounting options	Floor or wall mount

[1]Dimensions and weight differ slightly if manufactured before March 2019. Contact Tesla for additional information.

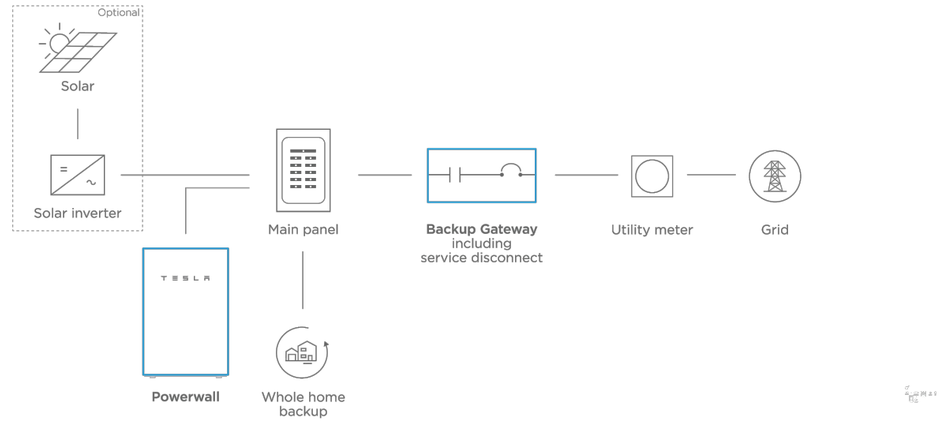


ENVIRONMENTAL SPECIFICATIONS

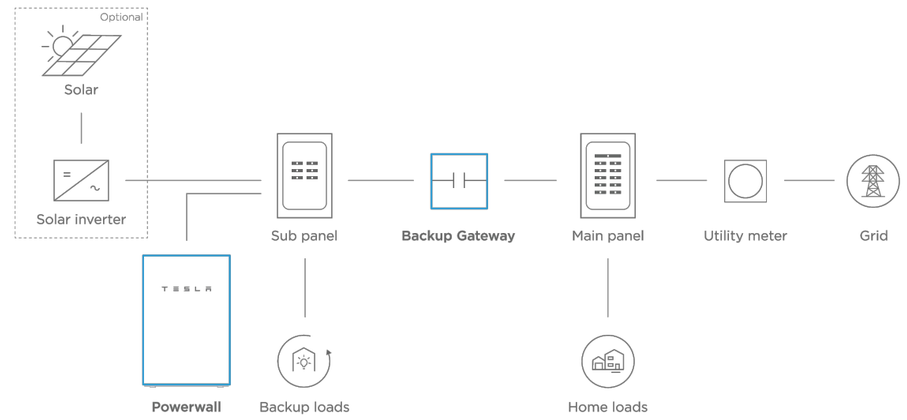
Operating Temperature	–20°C to 50°C (–4°F to 122°F)
Recommended Temperature	0°C to 30°C (32°F to 86°F)
Operating Humidity (RH)	Up to 100%, condensing
Storage Conditions	–20°C to 30°C (–4°F to 86°F) Up to 95% RH, non-condensing State of Energy (SoE): 25% initial
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Type	NEMA 3R
Ingress Rating	IP67 (Battery & Power Electronics) IP56 (Wiring Compartment)
Wet Location Rating	Yes
Noise Level @ 1m	< 40 dBA at 30°C (86°F)

TYPICAL SYSTEM LAYOUTS

WHOLE HOME BACKUP



PARTIAL HOME BACKUP



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REVISIONS	DATE	DESCRIPTION	ENGG.	REV

PERMIT DEVELOPER	
DATE	08/25/2022
DESIGNER	OHW
REVIEWER	

SHEET NAME
BATTERY DATASHEET

SHEET NUMBER
DS-03

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 consistent, 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 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

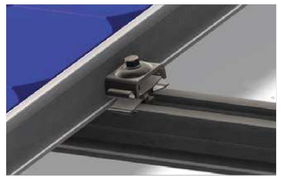
Datasheet

SUNPOWER®

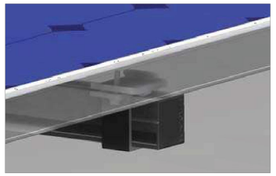
SunPower® InvisiMount™ | Residential Mounting System

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 (LRFD)	• 3000 Pa uplift • 6000 Pa downforce

InvisiMount Warranties And Certifications

Warranties	• 25-year product warranty • 5-year finish warranty
Certifications	• UL 2703 Listed • Class A Fire Rated

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 RevC

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SHEET NAME
ATTACHMENT AND RACKING DATASHEET

SHEET NUMBER
DS-04