ROOF MOUNT INSTALLATION OF
8.100 KW DC PHOTOVOLTAIC SYSTEM

PROJECT DATA

PROJECT ADDRESS	335 GWENDOLYN WAY, FUQUAY-VARINA, NC 27526		
OWNER	MAI LEE		
SCOPE	8.100 KW DC		5.800 KW AC
	20	JA SOLAR 405W Modules JAM54S31-405/MR/1500V	
	20	ENPHASE IQ8PLUS-72-2-US	
ELECTRICAL INFORMATION	EXISTING		1ϕ, 3W, 120/240V
	MAIN SERVICE PANEL BUSBAR RATING		200A
	MAIN SERVICE BREAKER RATING		N/A
BUILDING INFORMATION:	TWO STORY BUILDING		
	CONSTRUCTION TYPE: V-B		
	OCCUPANCY: R		
	ROOF TYPE	COMPOSITION SHINGLE	
	TRUSSES	2"X4" @ 24" O.C	
RACKING INFORMATION	PEGASUS RACKING		
AHJ	HARNETT COUNTY		
APN	0651399039.000		
LOT AREA	2.2 ACRES		
LIVING AREA	3,299 SQFT		

CODE REFERENCES

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

2018 (IBC) INTERNATIONAL BUILDING CODE
2018 (IMC) INTERNATIONAL MECHANICAL CODE
2018 (IPC) INTERNATIONAL PLUMBING CODE
2018 (IFC) INTERNATIONAL FIRE CODE
2018 (IRC) INTERNATIONAL RESIDENTIAL CODE
2020 (NEC) NATIONAL ELECTRIC CODE

ALL OTHER ORDINANCE ADOPTED BY THE LOCAL GOVERNING AGENCIES

GENERAL NOTES

1. ALL ELECTRICAL MATERIALS SHALL BE NEW AND LISTED BY RECOGNIZED ELECTRICAL TESTING LABORATORY CUSTOM MADE EQUIPMENT SHALL HAVE COMPLETE TEST DATA SUBMITTED BY THE MANUFACTURER ATTESTING TO ITS SAFETY
2. OUTDOOR EQUIPMENT SHALL BE AT LEAST NEMA 3R RATED
3. ALL METALLIC EQUIPMENT SHALL BE GROUNDED
4. ALL SPECIFIC WIRING IS BASED ON THE USE OF COPPER.
5.CONTRACTOR SHALL OBTAIN ELECTRICAL PERMITS PRIOR TO INSTALLATION AND SHALL COORDINATE ALL INSPECTIONS, TESTING COMMISSIONING AND ACCEPTANCE WITH THE CLIENT, UTILITY CO. AND CITY INSPECTORS AS NEEDED.
6.THE ELECTRICAL CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS OF SERVICE POINTS AND SERVICE SIZES WITH THE SERVING UTILITY COMPANY AND COMPLY WITH ALL UTILITY COMPANIES REQUIREMENTS. IF THE SOLAR BACK FED BREAKER IS OVER THE BUSS SIZE 20% LIMIT, CONTRACTOR SHALL INCLUDE THE COST TO REPLACE MAIN BREAKER OR ENLARGE MAIN CAPACITY.
7. DRAWINGS ARE DIAGRAMMATIC ONLY, ROUTING OF RACEWAYS SHALL BE OPTION OF THE CONTRACTOR UNLESS OTHERWISE NOTED AND SHALL BE COORDINATED WITH OTHER TRADES.
8. IF THE ROOF MATERIAL OR ROOF STRUCTURE NOT ADEQUATE FOR PV INSTALLATION, CALL ENGINEER PRIOR TO INSTALL. THE CONTRACTOR IS RESPONSIBLE TO VERIFY THAT THE ROOF IS CAPABLE OF WITHSTANDING THE EXTRA WEIGHT.
9. IF THE DISTANCES FOR CABLE RUNS ARE DIFFERENT THAN SHOWN, THE CONTRACTOR SHALL NOTIFY THE ELECTRICAL ENGINEER TO VALIDATE THE WIRE SIZE. FINAL DRAWINGS WILL BE RED-LINED AND UPDATED AS APPROPRIATE.
10. WHENEVER A DISCREPANCY IN QUALITY OF EQUIPMENT ARISES ON THE DRAWING OR SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL AND SERVICES REQUIRED BY THE STRICTEST CONDITIONS NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS TO ENSURE COMPLETE COMPLIANCE AND LONGEVITY OF THE OPERABLE SYSTEM REQUIRED BY THE ARCHITECT/ENGINEERS.

PHOTOVOLTAIC NOTES

1. ROOFTOP MOUNTED PHOTOVOLTAIC PANELS AND MODULES SHALL BE TESTED, LISTED AND IDENTIFIED UL 1703.
2. SOLAR SYSTEM SHALL NOT COVER ANY PLUMBING OR MECHANICAL VENTS
3. MODULES AND SUPPORT STRUCTURES SHALL BE GROUNDED.
4. SOLAR INVERTER MUST HAVE A MANUFACTURE INSTALLED DISCONNECTING MEANS THAT PREVENTS PARALLEL FEEDING UTILITY LINES DURING POWER OUTAGE.
5. REMOVAL OF AN INTERACTIVE INVERTER OR OTHER EQUIPMENT SHALL NOT DISCONNECT THE BONDING CONNECTION BETWEEN THE GROUNDING ELECTRODE CONDUCTOR AND THE PHOTOVOLTAIC SOURCE AND/OR OUTPUT CIRCUIT GROUNDED CONDUCTORS.
6. ALL PV MODULES AND ASSOCIATED EQUIPMENT AND WIRING SHALL BE PROTECTED FROM ANY PHYSICAL DAMAGE.
7. 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.
8 .INVERTER IS EQUIPPED W/ INTEGRATED GFCI, THUS PROVIDING GROUND FAULT PROTECTION
9. ALL CONDUCTORS SHALL BE COPPER AND 90 DEG RATED
10. ALL ELECTRICAL EQUIPMENT SHALL BE LISTED BY A RECOGNIZED ELECTRICAL TESTING LABORATORY OR APPROVED BY THE DEPARTMENT.
11. THE OUTPUT OF A UTILITY INTERACTIVE-INVERTER SHALL BE PERMITTED TO BE CONNECTED TO THE SUPPLY SIDE OF THE SERVICE DISCONNECTING MEANS AS PER 230.82(6)
12. PER ART 250.92. NON-CURRENT CARRYING METAL PARTS OF EQUIPMENT SHALL BE EFFECTIVELY BONDED TOGETHER. BOND BOTH ENDS OF RACEWAYS

NORTH CAROLINA PROFESSIONAL SEAL 027540 Barrett Crook ENGINEER BARRETT C. CROOK

Exp. Date: 12/31/2025
Date Certified and Signed: 06/23/2025

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Engineerinc.io,
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Burbank, CA 915020
(310) 928-0938
new@engineerinc.io

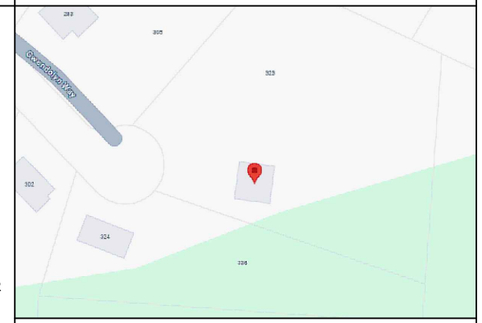
NOTICE TO CONTRACTOR: All construction must comply with current NC Building Codes and is subject to field inspection and verification. APPROVED Limited building only review. Permit holder responsible for full compliance with the code. 07/01/2025 Harnett COUNTY NORTH CAROLINA

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of North Carolina. License No. PE# 027540 , Expiration Date: 12/31/2025

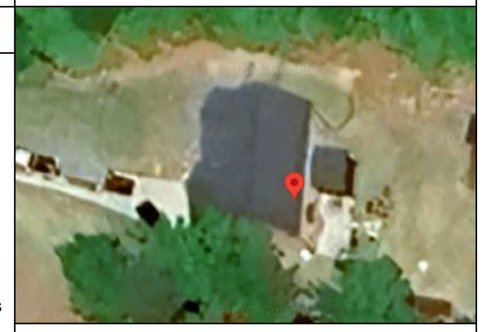
UNIT INDEX

MSP	Main Service Panel	SSP	Service Sub Panel		Micro Inverter / Optimizer
UM	Utility Meter	PV	PV Load Center		Solar Module
PM	Production Meter	PVS6	Sunpower PV Supervisor		36" Setback
IM	Itron Meter	IQ	IQ Combiner Box		18" Setback
INV	Inverter	J/B	Junction Box		EMT / FMT / PVC / RMC type conduit/ Romex NM Cable/ FNMT (Fluid non-metalic tube)
ACD	AC Disconnect	EV	EV Outlet		
RSC	Rapid Shutdown Controller	BB	Battery Backup		
RSB	Rapid Shutdown Box	AT	Auto Transformer		
VLLD	Visible Lockable Labeled Disconnect	SEM	Solar Edge Meter Enclosure		
		DP	Distribution Panel		

VICINITY MAP



SATELLITE VIEW



SHEET INDEX

COVER PAGE

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INTER SOLAR CAD

CONTRACTOR

Lifetime Energy

E-mail:
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Phone Number:
435-757-5844

lifetime energy

PV SYSTEM DC SIZE 8.100KW
PV SYSTEM AC SIZE 5.800KW

MAI LEE
335 GWENDOLYN WAY,
FUQUAY-VARINA, NC 27526

JUNE 20, 2025	0
AS INDICATED	
PV SYSTEM	

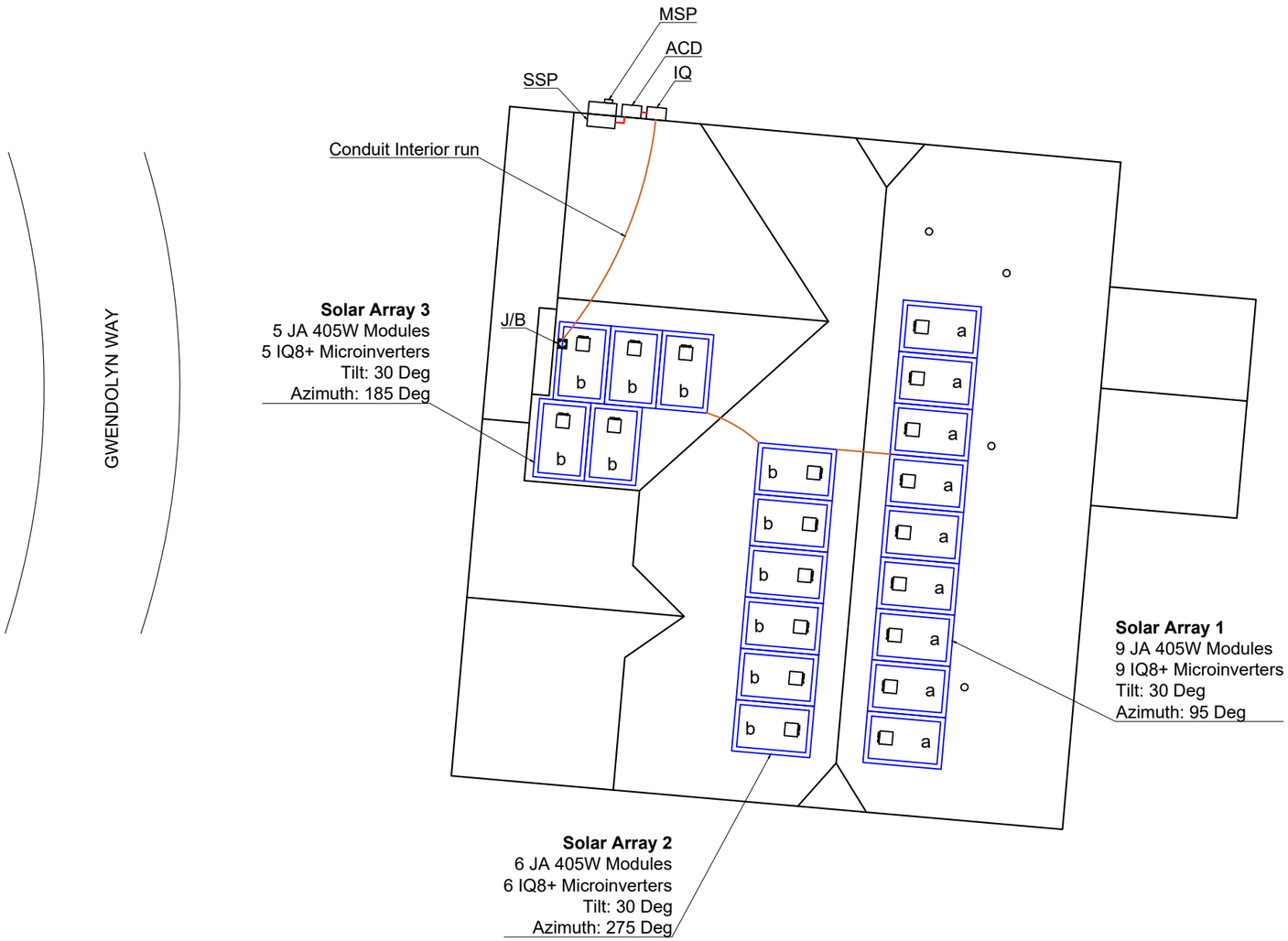
PHOTOVOLTAIC SYSTEM 8.100 KW DC	
20	JA SOLAR 405W Modules JAM54S31-405/MR/1500V
20	Enphase Energy Microinverters (IQ8PLUS-72-2-US)

ROOF AREA CALCULATIONS
FIRE SPRINKLERS - NO
TOTAL ROOF AREA (SQ.FT.) - 2305
SOLAR AREA (SQ.FT.) - 420
% OF COVERED AREA - 18.2%

36" Setback

18" Setback

BETWEEN ARRAYS AND FROM JUNCTION BOX TO PV EQUIPMENT FMT TYPE CONDUIT WILL RUN THROUGH ATTIC AT MIN 18" FROM ROOF DECKING



N 0°
W 270° E 90°
S 180°

SCALE
1" = 10'

ROOF PLAN

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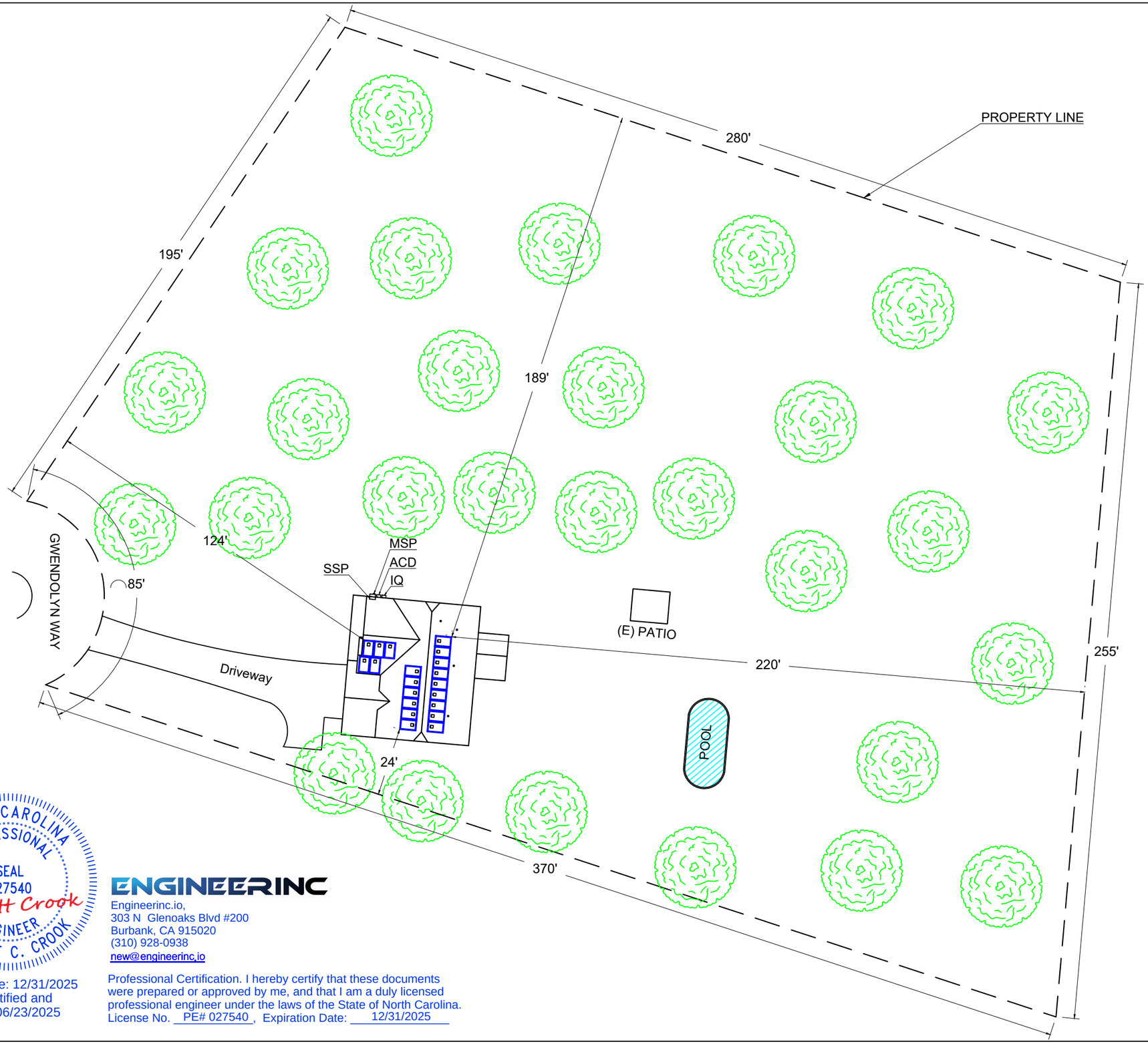
JUNE 20, 2025	1
AS INDICATED	
PV SYSTEM	



SITE PLAN

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PV SYSTEM DC SIZE 8.100KW

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MAI LEE
335 GWENDOLYN WAY,
FUQUAY-VARINA, NC 27526

JUNE 20, 2025	1.1
AS INDICATED	
PV SYSTEM	

N 0° · W 270° · E 90° · S 180°

SCALE
1" = 35'

NORTH CAROLINA PROFESSIONAL SEAL 027540 Barrett Crook ENGINEER BARRETT C. CROOK

Exp. Date: 12/31/2025
Date Certified and
Signed: 06/23/2025

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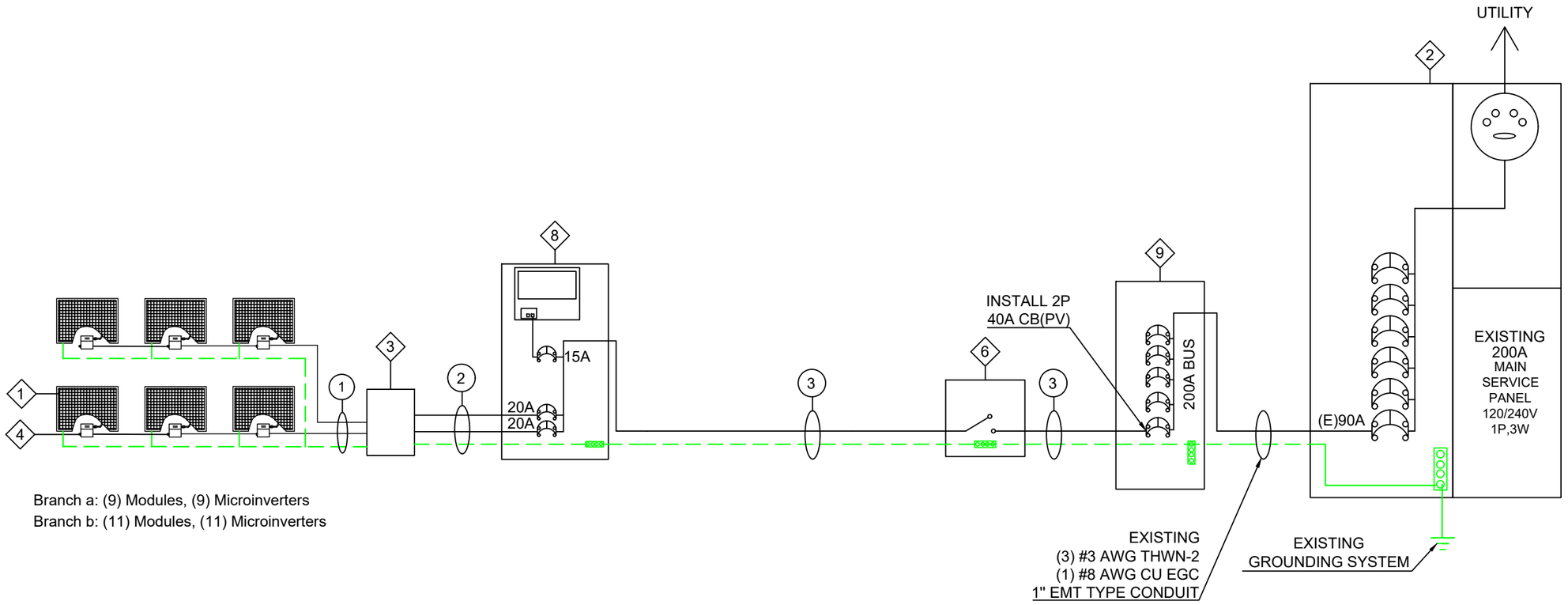
new@engineerinc.io

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of North Carolina. License No. PE# 027540, Expiration Date: 12/31/2025

#	ITEM	DESCRIPTION			QTY
1	PV MODULE	JA SOLAR Modules 405W	Isc = 13.87A	Voc = 37.23V	20
		JAM54S31-405/MR/1500V	Imp = 12.98A	Vmp = 31.21V	
2	EXISTING MAIN SERVICE PANEL	MAIN SERVICE PANEL & UTILITY METER	BUSBAR RATING	200A	1
			BREAKER RATING	N/A	-
3	PVC JUNCTION BOX	4"x4"x2" UL LISTED WATER TIGHT NEMA TYPE 3			1
4	INVERTER	Enphase Energy Microinverters (IQ8PLUS-72-2-US)			20
		PEAK PWR TRACKING VOLTAGE		29-45 V	
		CEC EFFICIENCY		97.0 %	
		PROTECTION RATING:		NEMA 6	
		MAXIMUM INPUT CURRENT		15.0 A	
		MAXIMUM OUTPUT CURRENT		1.21 A	
		MAXIMUM INPUT POWER		235-440 W	
		MAXIMUM CONTINUOUS OUTPUT POWER		290 W	

#	ITEM	DESCRIPTION		QTY
8	IQ COMBINER	ENPHASE IQ COMBINER BOX WITH ENPHASE IQ GATEWAY 120/240V, NEMA 3R MODEL# X-IQ-AM1-240-(4/4C)		1
		IQ GATEWAY INFORMATION	15A PV 2-POLE C/B (2)#14 AWG THWN-2 (L1+L2) (1)#14 AWG-NEUTRAL	
		INSTALL 15A PV 2-POLE C/B	-	
		INSTALL 20A PV 2-POLE C/B	2	
6	AC DISCONNECT	NON FUSED AC DISCONNECT LOCKABLE, BLADE TYPE, NEMA 3R, 120/240V	60A	1
9	EXISTING SERVICE SUB PANEL	SERVICE SUB PANEL 120/240V 1P/3W	200A	1



Branch a: (9) Modules, (9) Microinverters
Branch b: (11) Modules, (11) Microinverters

FOR WIRE SIZE CALCULATIONS PLEASE SEE PAGE #3

SINGLE LINE DIAGRAM

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CONTRACTOR

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PV SYSTEM DC SIZE 8.100KW
PV SYSTEM AC SIZE 5.800KW

MAI LEE
335 GWENDOLYN WAY,
FUQUAY-VARINA, NC 27526

JUNE 20, 2025
AS INDICATED
PV SYSTEM

WIRE CHART

1	**FROM PV MODULES TO JBOX**	
	(4)	#12 AWG Q-CABLE, PV WIRE
	(1)	#6 AWG BARE CU EGC

WIRE CHART

2	**FROM JBOX TO IQ COMBINER BOX**			
	(4)	#12 AWG THWN-2		
	(1)	#10 AWG CU EGC, 3/4" FMT TYPE CONDUIT		
	INVERTER OUTPUT MAX CURRENT			1.21
	COEFFICIENT			1.25
	ADJST. FACTOR (4 thru 6 WIRES)			0.8
	RACEWAY HEIGHT FROM THE ROOF DECKING			18"
	TEMP. DERATE FACTOR (TEMP - 39 + 17 = 56C)			0.71
	BRANCH CIRCUITS			2
	a		b	
	9		11	
	BRANCH CIRCUIT CURRENT a: 9		BREAKER SIZE PER BRANCH CRCT	
	9 * 1.21 * 1.25	13.6A	20A	
	BRANCH CIRCUIT CURRENT b: 11		BREAKER SIZE PER BRANCH CRCT	
	11 * 1.21 * 1.25	16.6A	20A	
	ADJUSTED CONDUCTOR AMPACITY			
	16.6 / 0.71 / 0.8			29.2A

WIRE CHART

3	**FROM IQ COMBINER BOX TO SERVICE SUB PANEL**			
	(3)	#8 AWG THWN-2		
	(1)	#10 AWG CU EGC, 3/4" EMT TYPE CONDUIT		
	NUMBER OF MICROINVERTERS			20
	MAXIMUM INVERTER OUTPUT CURRENT			1.21
	CONSIDER CONTINUOUS COEFFICIENT			1.25
	CONSIDER CONTINUOUS (A)		20 * 1.21 * 1.25	30.3
	WALL TEMPERATURE FACTOR			0.91
	TEMPERATURE ADJUSTMENT (A)		20 * 1.21 * 1.25 / 0.91	33.2

QTY	OUTPUT CALCULATIONS		
20	IQ8PLUS-72-2-US (CEC)	97%	
20	JAM54S31-405/MR/1500V	405W	
	Pmax (PTC Rating)	378.3W	
PV SYSTEM MAX DC OUTPUT	20 * 405	8.100KW	
PV SYSTEM MAX AC OUTPUT	20 * 290	5.800KW	

SERVICE SUB PANEL RATING	
BUSBAR RATING	200A
CONTROLLER BREAKER	90A
PV BACKFEED BREAKER SIZE	40A
120% RULE:	
MAX ALLOWED FEED	240A
90A"CB" + 40A "SOLAR" = 130A ≤ 240A MAX	

WIRE SIZE CALCULATIONS

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JUNE 20, 2025
AS INDICATED
PV SYSTEM

3

WARNING DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

NEC 705.12(D)(3) & NEC 690.59

WARNING DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

NEC 705.10(C) & NEC 690.59

CAUTION
PHOTOVOLTAIC SYSTEM CIRCUIT IS BACKFED

NEC 705.12(D)(3)(4) & NEC 690.59

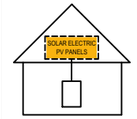
PHOTOVOLTAIC AC DISCONNECT

RATED AC OUTPUT CURRENT:	24.2 A
NOMINAL OPERATING AC VOLTAGE:	240 Vac

NEC 690.54

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

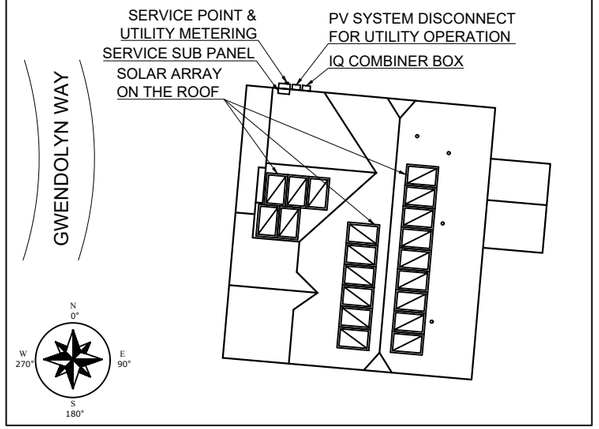
TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUTDOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN ARRAY



NEC 690.56(C)

CAUTION

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



NEC 705.10(B) & NEC 690.56(B)

Permanent directory or plaque providing location of service disconnecting means and photovoltaic system disconnecting means, if not located at the same location. (Plaques shall be metal or plastic, with engraved or machine printed letters, or electro-photo plating, in a contrasting color to the plaque. Plaques shall be permanently attached to the equipment or in the required location using an approved method that is suitable to withstand the environment to which it is exposed. Plaques and signage shall meet legibility, defacement, exposure and adhesion requirements of Underwriters Laboratories marking and labeling system 969(UL969).
Plaques will have red background & white lettering.

NEC 690.13(B) Each PV system disconnecting means shall plainly indicate whether in the open (off) or closed (on) position and be permanently marked “PV SYSTEM DISCONNECT” or equivalent. Additional markings shall be permitted based upon the specific system configuration. For PV system disconnecting means where the line and load terminals may be energized in the open position, the device shall be marked with the following words or equivalent: “Terminals on the line and load sides may be energized in the open position.”
NEC 690.15(B) An isolating device shall be rated to open the maximum circuit current under load or be marked “Do Not Disconnect Under Load” or “Not for Current Interrupting.”
NEC 690.31(B)(1) PV system circuit conductors shall be identified at all termination, connection, and splice points by color coding, marking tape, tagging, or other approved means. Conductors relying on other than color coding for polarity identification shall be identified by an approved permanent marking means such as labeling, sleeving or shrink-tubing that is suitable for the conductor size.
NEC 690.31(D)(2) Unless located and arranged so the purpose is evident, the following wiring methods and enclosures that contain PV system dc circuit conductors shall be marked with the wording PHOTOVOLTAIC POWER SOURCE or SOLAR PV DC CIRCUIT by means of permanently affixed labels or other approved permanent marking: (1) Exposed raceways, cable trays, and other wiring methods (2) Covers or enclosures of pull boxes and junction boxes (3) Conduit bodies in which any of the available conduit openings are unused.
The labels or markings shall be visible after installation. All letters shall be capitalized and shall be a minimum height of 9.5 mm (3⁄8 in.) in white on a red background. Labels shall appear on every section of the wiring system that is separated by enclosures, walls, partitions, ceilings, or floors. Spacing between labels or markings, or between a label and a marking, shall not be more than 3 m (10ft). Labels required by this section shall be suitable for the environment where they are installed.
NEC 690.31(E) Solidly grounded bipolar PV systems shall be clearly marked with a permanent, legible warning notice indicating that the disconnection of the grounded conductor(s) may result in overvoltage on the equipment.
NEC 690.33(D)(2) Interruption of Circuit. Connectors shall be a type that requires the use of a tool to open and marked “Do Not Disconnect Under Load” or “Not for Current Interrupting.

NEC 690.52 Alternating-current modules shall be marked with identification of terminals or leads and with identification of the following ratings.
NEC 690.53 A permanent readily visible label indicating the highest maximum dc voltage in a PV system, calculated in accordance with 690.7, shall be provided by the installer at one of the following locations: (1) Dc PV system disconnecting means (2) PV system electronic power conversion equipment (3) Distribution equipment associated with the PV system.
NEC 690.54 All interactive system(s) points of interconnection with other sources shall be marked as an accessible location at the disconnecting means as a power source and with the rated ac output current and the nominal operating ac voltage.
NEC 690.55 The PV system output circuit conductors shall be marked to indicate polarity where connected to energy storage systems.
NEC 692.56 A fuel cell system that stores electrical energy shall require the following warning sign, or equivalent, at the location of the service disconnecting means of the premises:
WARNING FUEL CELL POWER SYSTEM CONTAINS ELECTRICAL ENERGY STORAGE DEVICES.
NEC 690.56(B) Plaques or directories shall be installed in accordance with 705.10 and 712.10.
NEC 690.56(C) The type of PV system is shown in figure 690.56 (C).
NEC 690.56(C)(2) A rapid shutdown initiation device shall have a label located on or no more than 1 m (3 ft) from the initiation device that includes the following wording: RAPID SHUTDOWN FOR SOLAR PV SYSTEM The label shall be reflective, with all letters capitalized and having a minimum height of 9.5 mm (3⁄8 in.), in white on red background.

CODE REQUIRED SIGNAGE

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INTER SOLAR CAD

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PV SYSTEM AC SIZE 5.800KW

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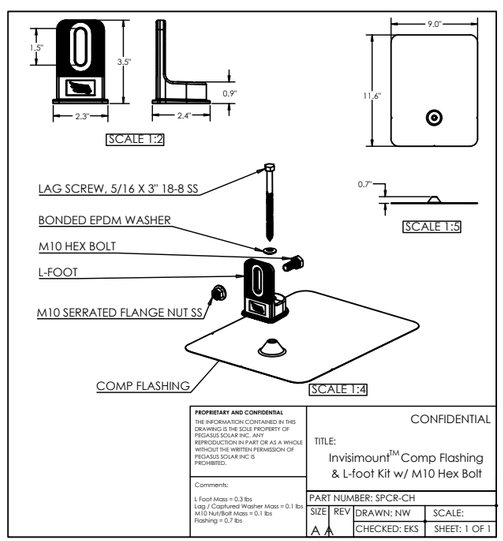
JUNE 20, 2025	4
AS INDICATED	
PV SYSTEM	

	ROOF PITCH	ROOFING LAYERS	ROOFING TYPE	RACKING TYPE	ATTACHMENT TYPE	FRAMING TYPE	FRAMING SIZE	PENETRATION PATTERN	MAX PENETRATION SPACING
Roof	30°	1 Layer	Comp Shingle	Pegasus	Pegasus	Truss	2"X4" @ 24" O.C	Staggered	48"

WIND SPEED	120 MPH	EXPOSURE	C	ASCE 7-16	ROOF SHEATHED WITH 1/2" PLYWOOD AND UPPER SURFACE IS FACED WITH FELT PAPER
SNOW LOAD	15 PSF	LAG BOLTS	5/16" X 3"	MIN 2.5" EMBEDMENT	MOUNTS AND MOUNTING HARDWARE WILL BE SEALED WITH CHEM LINK SEALANT OR EQUIVALENT.

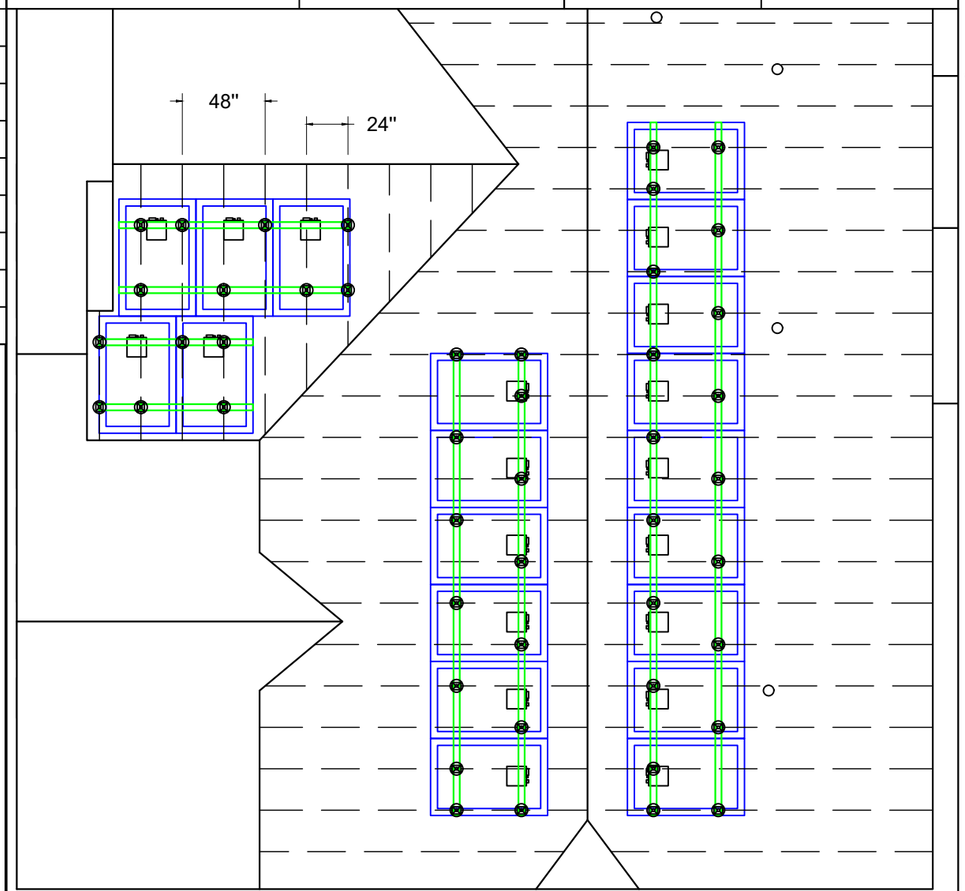
WEIGHT LOAD CALCULATION

MODULE WEIGHT (LBS)	47.4
# OF MODULES	20
TOTAL MODULE WEIGHT (LBS)	948
RACK WEIGHT (LBS)	190
MICROINVERTER WEIGHT (LBS)	48
TOTAL SYSTEM WEIGHT (LBS)	1185
# OF STANDOFFS	47
LOADING PER STANDOFF (LBS)	25.2
TOTAL MODULE AREA (SQ.FT.)	420
LOADING (PSF)	2.82
TOTAL ROOF AREA (Sq. FT)	2305
% OF COVERED AREA	18.2
PV MODULE MODEL #	JAM54S31-405/MR/1500V

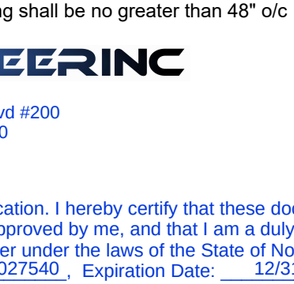


INDEX

RACKING RAIL			
ATTACHMENT			
ROOF FRAMING			

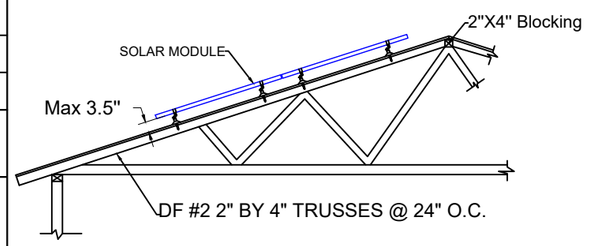


STRUCTURAL STAMP



Exp. Date: 12/31/2025
Date Certified and Signed: 06/23/2025

ROOF FRAMING DETAIL



Mount spacing shall be no greater than 48" o/c

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(310) 928-0938
new@engineerinc.io

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of North Carolina. License No. PE# 027540, Expiration Date: 12/31/2025

ATTACHMENT LAYOUT

Designed By: Intersolar CAD
www.intersolarcad.com

INTER SOLAR CAD design & engineering

CONTRACTOR

Lifetime Energy

E-mail:
Permitting@lifetimenrg.com
Phone Number:
435-757-5844

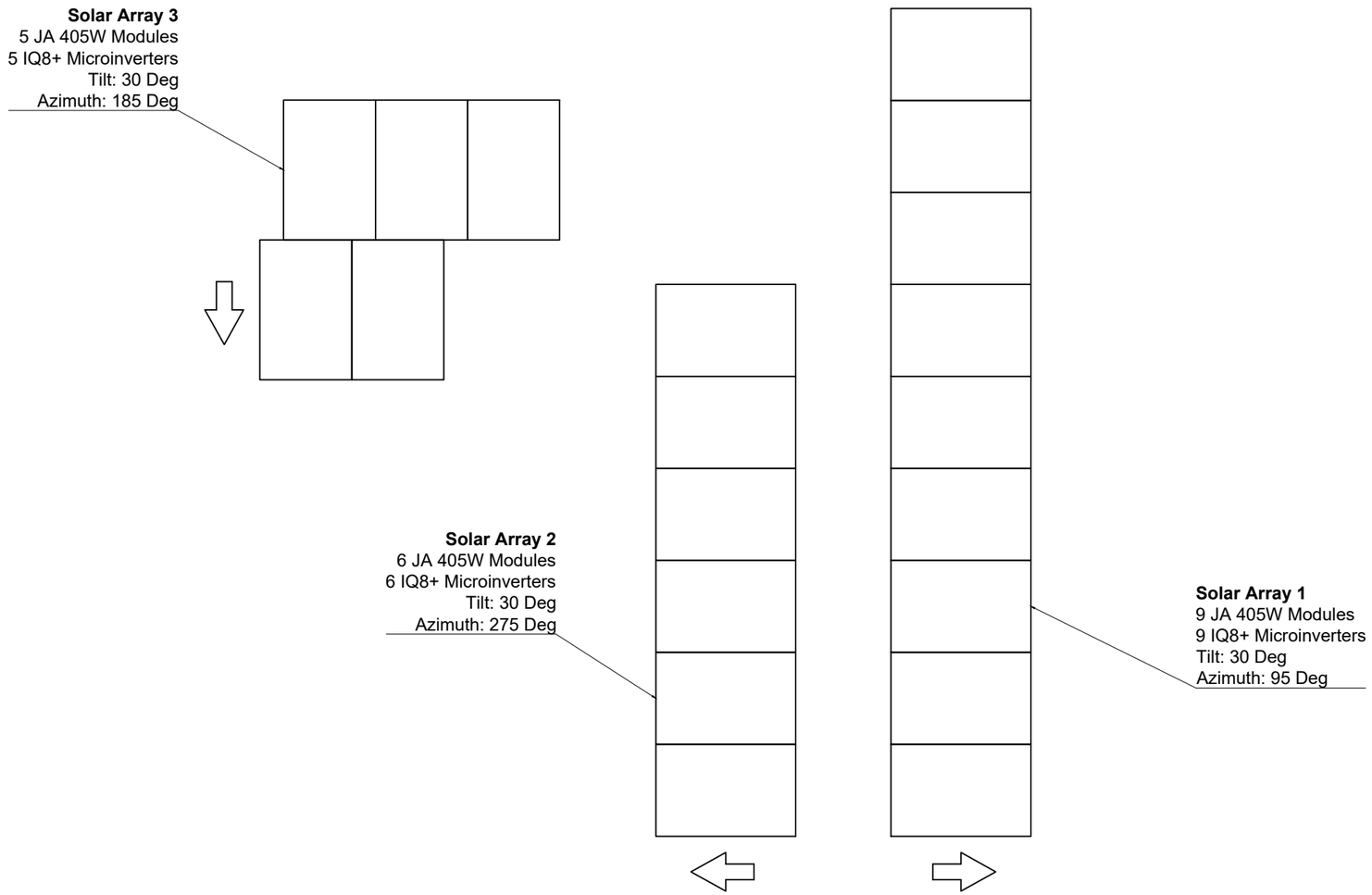
lifetime energy

PV SYSTEM DC SIZE 8.100KW
PV SYSTEM AC SIZE 5.800KW

MAI LEE
335 GWENDOLYN WAY,
FUQUAY-VARINA, NC 27526

JUNE 20, 2025	5
AS INDICATED	
PV SYSTEM	

PHOTOVOLTAIC SYSTEM	8.100 KW DC
20	JA SOLAR 405W Modules (JAM54S31-405/MR/1500V)
20	Enphase Energy Microinverters (IQ8PLUS-72-2-US)



[FOR INSTALLER USE ONLY]

MODULE MAP

Designed By: Intersolar CAD
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PV SYSTEM DC SIZE 8.100KW
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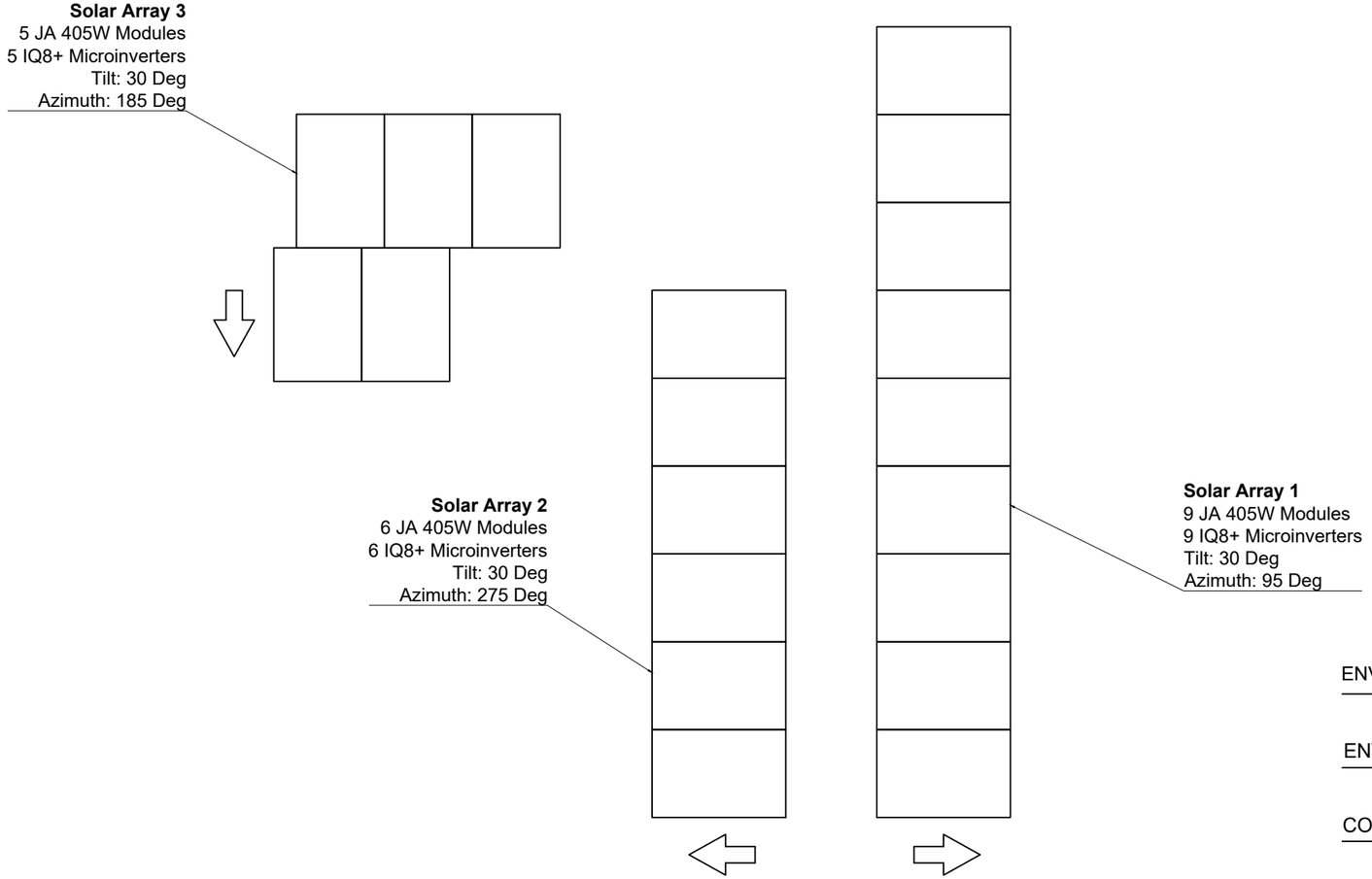
JUNE 20, 2025	6
AS INDICATED	
PV SYSTEM	

PHOTOVOLTAIC SYSTEM 8.100 KW DC	
20	JA SOLAR 405W Modules (JAM54S31-405/MR/1500V)
20	Enphase Energy Microinverters (IQ8PLUS-72-2-US)

INVERTER



ENVOY SERIAL #:

ENVOY LOCATION:

COMMUNICATION LEVEL:

ETHERNET BRIDGE INSTALLED:

NOTES:

[FOR INSTALLER USE ONLY]

INVERTER MAP

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JUNE 20, 2025	7
AS INDICATED	
PV SYSTEM	

Introduction

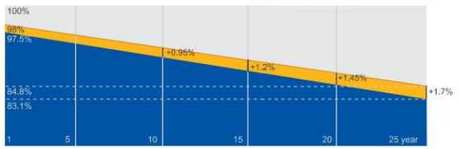
Assembled with 11BB PERC cells, the half-cell configuration of the modules offers the advantages of higher power output, better temperature-dependent performance, reduced shading effect on the energy generation, lower risk of hot spot, as well as enhanced tolerance for mechanical loading.

- Higher output power
- Lower LCOE
- Less shading and lower resistive loss
- Better mechanical loading tolerance

Superior Warranty

- 12-year product warranty
- 25-year linear power output warranty

0.55% Annual Degradation Over 25 years



New linear power warranty ■ Standard module linear power warranty

Comprehensive Certificates

- IEC 61215, IEC 61730
- ISO 9001: 2015 Quality management systems
- ISO 14001: 2015 Environmental management systems
- ISO 45001: 2018 Occupational health and safety management systems

JA SOLAR

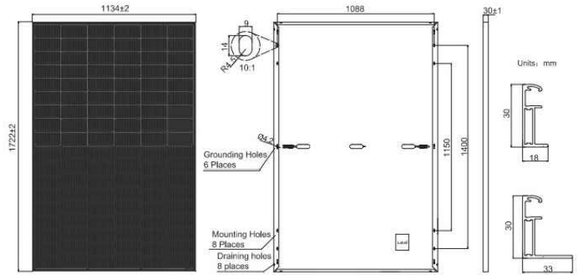
www.jasolar.com

Specifications subject to technical changes and tests.
JA Solar reserves the right of final interpretation.
Shanghai JA Solar Technology Co., Ltd.

JA SOLAR

JAM54S31 380-405/MR/1500V Series

MECHANICAL DIAGRAMS



Remark: customized frame color and cable length available upon request

SPECIFICATIONS

Cell	Mono
Weight	19.5kg or 21.5kg
Dimensions	1722±2mm×1134±2mm×30±1mm
Cable Cross Section Size	4mm² (IEC) , 12 AWG(UL)
No. of cells	108(6x18)
Junction Box	IP68, 3 diodes
Connector	Stäubli MC4-EVO2 QC Solar QC 4.10-35
Cable Length (Including Connector)	Portrait: 300mm(+)/400mm(-); Landscape: 1200mm(+)/1200mm(-)
Country of Manufacturer	China/Vietnam
Front Glass	2.8mm or 3.2mm

ELECTRICAL PARAMETERS AT STC

TYPE	JAM54S31 -380/MR/1500V	JAM54S31 -385/MR/1500V	JAM54S31 -390/MR/1500V	JAM54S31 -395/MR/1500V	JAM54S31 -400/MR/1500V	JAM54S31 -405/MR/1500V
Rated Maximum Power(Pmax) [W]	380	385	390	395	400	405
Open Circuit Voltage(Voc) [V]	36.58	36.71	36.85	36.98	37.07	37.23
Maximum Power Voltage(Vmp) [V]	30.28	30.46	30.64	30.84	31.01	31.21
Short Circuit Current(Isc) [A]	13.44	13.52	13.61	13.70	13.79	13.87
Maximum Power Current(Imp) [A]	12.55	12.64	12.73	12.81	12.90	12.98
Module Efficiency [%]	19.5	19.7	20.0	20.2	20.5	20.7
Power Tolerance	0~+5W					
Temperature Coefficient of Isc(α_Isc)	+0.045%/°C					
Temperature Coefficient of Voc(β_Voc)	-0.275%/°C					
Temperature Coefficient of Pmax(γ_Pmp)	-0.350%/°C					
STC	Irradiance 1000W/m², cell temperature 25°C, AM1.5G					

Remark: Electrical data in this catalog do not refer to a single module and they are not part of the offer.They only serve for comparison among different module types.
Measurement tolerance at STC: Pmax ±3%, Voc±3% and Isc ±4%.

ELECTRICAL PARAMETERS AT NOCT

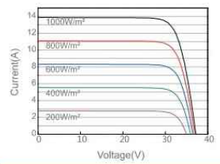
TYPE	JAM54S31 -380/MR/1500V	JAM54S31 -385/MR/1500V	JAM54S31 -390/MR/1500V	JAM54S31 -395/MR/1500V	JAM54S31 -400/MR/1500V	JAM54S31 -405/MR/1500V
Rated Max Power(Pmax) [W]	286	290	294	298	302	306
Open Circuit Voltage(Voc) [V]	34.36	34.49	34.62	34.75	34.88	35.12
Max Power Voltage(Vmp) [V]	28.51	28.68	28.87	29.08	29.26	29.47
Short Circuit Current(Isc) [A]	10.75	10.82	10.89	10.96	11.03	11.10
Max Power Current(Imp) [A]	10.03	10.11	10.18	10.25	10.32	10.38
NOCT	Irradiance 800W/m², ambient temperature 20°C,wind speed 1m/s, AM1.5G					

OPERATING CONDITIONS

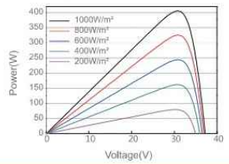
Maximum System Voltage	1500V DC(IEC)
Operating Temperature	-40°C~+85°C
Maximum Series Fuse Rating	25A
Maximum Static Load,Front* Maximum Static Load,Back*	3600Pa，1.5 1600Pa，1.5
NOCT	45±2°C
Safety Class	Class Ⅱ
Fire Safety Class	Class C

CHARACTERISTICS

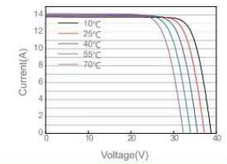
Current-Voltage Curve JAM54S31-405/MR/1500V



Power-Voltage Curve JAM54S31-405/MR/1500V



Current-Voltage Curve JAM54S31-405/MR/1500V



Premium Cells, Premium Modules

Version No. : Global_EN_20220329A

MODULE DATA SHEET

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design & engineering
INTER SOLAR CAD

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JUNE 20, 2025	D1
AS INDICATED	
PV SYSTEM	

ENPHASE.

DATA SHEET

IQ8 and IQ8+ Microinverters

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

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

Enphase 25 year limited warranty

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

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

UL CERTIFIED SAFETY

IQ8 Series Microinverters are UL listed as PV Rapid Shutdown Equipment and conform with various regulations, when installed according to manufacturer's instructions.

*Only when installed with IQ System Controller 2, meets UL 1741.
**IQ8 and IQ8Plus support split-phase, 240V installations only.

Easy to install

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

High productivity and reliability

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

Microgrid-forming

- Complies with the latest advanced grid support**
- Remote automatic updates for the latest grid requirements
- Configurable to support a wide range of grid profiles
- Meets CA Rule 21 (UL 1741-SA) and IEEE 1547:2018 (UL 1741-SB 3rd Ed.)

Note:

IQ8 Microinverters cannot be mixed together with previous generations of Enphase microinverters (IQ7 Series, IQ6 Series, etc) in the same system.

IQ8 and IQ8+ Microinverters

INPUT DATA (DC)		IQ8-60-2-US	IQ8PLUS-72-2-US
Commonly used module pairings[1]	W	235 – 350	235 – 440
Module compatibility		60-cell / 120 half-cell	54-cell / 108 half-cell, 60-cell / 120 half-cell, 66-cell / 132 half-cell and 72-cell / 144 half-cell
MPPT voltage range	V	27 – 37	27 – 45
Operating range	V	16 – 48	16 – 58
Min. / Max. start voltage	V	22 / 48	22 / 58
Max. input DC voltage	V	50	60
Max. continuous input DC current	A	10	12
Max. input DC short-circuit current	A	25	
Max. module I_{sc}	A	20	
Overvoltage class DC port		II	
DC port backfeed current	mA	0	
PV array configuration		1 x 1 Ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit	
OUTPUT DATA (AC)		**IQ8-60-2-US**	**IQ8PLUS-72-2-US**
Peak output power	VA	245	300
Max. continuous output power	VA	240	290
Nominal (L-L) voltage / range[2]	V	240 / 211 – 264	
Max. continuous output current	A	1.0	1.21
Nominal frequency	Hz	60	
Extended frequency range	Hz	47 – 68	
AC short circuit fault current over 3 cycles	Arms	2	
Max. units per 20 A (L-L) branch circuit[3]		16	13
Total harmonic distortion		<5%	
Overvoltage class AC port		III	
AC port backfeed current	mA	30	
Power factor setting		1.0	
Grid-tied power factor (adjustable)		0.85 leading – 0.85 lagging	
Peak efficiency	%	97.7	
CEC weighted efficiency	%	97	
Night-time power consumption	mW	60	
MECHANICAL DATA			
Ambient temperature range		-40°C to +60°C (-40°F to +140°F)	
Relative humidity range		4% to 100% (condensing)	
DC Connector type		MC4	
Dimensions (H x W x D)		212 mm (8.3") x 175 mm (6.9") x 30.2 mm (1.2")	
Weight		1.08 kg (2.38 lbs)	
Cooling		Natural convection – no fans	
Approved for wet locations		Yes	
Pollution degree		PD3	
Enclosure		Class II double-insulated, corrosion resistant polymeric enclosure	
Environ. category / UV exposure rating		NEMA Type 6 / outdoor	
COMPLIANCE			
Certifications		CA Rule 21 (UL 1741-SA), UL 62109-1, IEEE 1547:2018 (UL 1741-SB 3rd Ed.), FCC Part 15 Class B, ICES-0003 Class B, CAN / CSA-C22.2 NO. 107.1-01 This product is UL Listed as PV Rapid Shutdown Equipment and conforms with NEC 2014, NEC 2017, and NEC 2020 section 690.12 and C22.1-2018 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according to manufacturer's instructions.	

(1) Pairing PV modules with wattage above the limit may result in additional clipping losses. See the compatibility calculator at https://link.enphase.com/module-compatibility.
(2) Nominal voltage range can be extended beyond nominal if required by the utility. (3) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

IQ8SP-12A-DS-0067-03-EN-US-2022-12-27

INVERTER DATA SHEET

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INTER SOLAR CAD

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PV SYSTEM AC SIZE 5.800KW

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JUNE 20, 2025
AS INDICATED
PV SYSTEM

D2

Data Sheet
Enphase Networking

Enphase IQ Combiner 4/4C

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

X-IQ-AM1-240-4C

X-IQ-AM1-240-4

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

Smart

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

Simple

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

Reliable

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

UL LISTED

To learn more about Enphase offerings, visit **enphase.com**

ENPHASE.

Enphase IQ Combiner 4/4C

MODEL NUMBER	
IQ Combiner 4 (X-IQ-AM1-240-4)	IQ Combiner 4 with Enphase IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and consumption monitoring (+/- 2.5%). Includes a silver solar shield to match the IQ Battery system and IQ System Controller 2 and to deflect heat.
IQ Combiner 4C (X-IQ-AM1-240-4C)	IQ Combiner 4C with Enphase IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and consumption monitoring (+/- 2.5%). Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05), a plug-and-play industrial-grade cell modem for systems up to 60 microinverters. (Available in the US, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in the installation area.) Includes a silver solar shield to match the IQ Battery and IQ System Controller and to deflect heat.
ACCESSORIES AND REPLACEMENT PARTS	(not included, order separately)
Ensemble Communications Kit COMMS-CELLMODEM-M1-06 CELLMODEM-M1-06-SP-05 CELLMODEM-M1-06-AT-05	- Includes COMMS-KIT-01 and CELLMODEM-M1-06-SP-05 with 5-year Sprint data plan for Ensemble sites - 4G based LTE-M1 cellular modem with 5-year Sprint data plan - 4G based LTE-M1 cellular modem with 5-year AT&T data plan
Circuit Breakers BRK-10A-2-240V BRK-15A-2-240V BRK-20A-2P-240V BRK-15A-2P-240V-B BRK-20A-2P-240V-B	Supports Eaton BR210, BR215, BR220, BR230, BR240, BR250, and BR260 circuit breakers. Circuit breaker, 2 pole, 10A, Eaton BR210 Circuit breaker, 2 pole, 15A, Eaton BR215 Circuit breaker, 2 pole, 20A, Eaton BR220 Circuit breaker, 2 pole, 15A, Eaton BR215B with hold down kit support Circuit breaker, 2 pole, 20A, Eaton BR220B with hold down kit support
EPLC-01	Power line carrier (communication bridge pair), quantity - one pair
XA-SOLARSHIELD-ES	Replacement solar shield for IQ Combiner 4/4C
XA-PLUG-120-3	Accessory receptacle for Power Line Carrier in IQ Combiner 4/4C (required for EPLC-01)
XA-ENV-PCBA-3	Replacement IQ Gateway printed circuit board (PCB) for Combiner 4/4C
X-IQ-NA-HD-125A	Hold down kit for Eaton circuit breaker with screws.
ELECTRICAL SPECIFICATIONS	
Rating	Continuous duty
System voltage	120/240 VAC, 60 Hz
Eaton BR series busbar rating	125 A
Max. continuous current rating	65 A
Max. continuous current rating (input from PV/storage)	64 A
Max. fuse/circuit rating (output)	90 A
Branch circuits (solar and/or storage)	Up to four 2-pole Eaton BR series Distributed Generation (DG) breakers only (not included)
Max. total branch circuit breaker rating (input)	80A of distributed generation / 95A with IQ Gateway breaker included
Production metering CT	200 A solid core pre-installed and wired to IQ Gateway
Consumption monitoring CT (CT-200-SPLIT)	A pair of 200 A split core current transformers
MECHANICAL DATA	
Dimensions (WxHxD)	37.5 x 49.5 x 16.8 cm (14.75" x 19.5" x 6.63"). Height is 21.06" (53.5 cm) with mounting brackets.
Weight	7.5 kg (16.5 lbs)
Ambient temperature range	-40° C to +46° C (-40° to 115° F)
Cooling	Natural convection, plus heat shield
Enclosure environmental rating	Outdoor, NRTL-certified, NEMA type 3R, polycarbonate construction
Wire sizes	• 20 A to 50 A breaker inputs: 14 to 4 AWG copper conductors • 60 A breaker branch input: 4 to 1/0 AWG copper conductors • Main lug combined output: 10 to 2/0 AWG copper conductors • Neutral and ground: 14 to 1/0 copper conductors Always follow local code requirements for conductor sizing.
Altitude	To 2000 meters (6,560 feet)
INTERNET CONNECTION OPTIONS	
Integrated Wi-Fi	802.11b/g/n
Cellular	CELLMODEM-M1-06-SP-05, CELLMODEM-M1-06-AT-05 (4G based LTE-M1 cellular modem). Note that an Enphase Mobile Connect cellular modem is required for all Ensemble installations.
Ethernet	Optional, 802.3, Cat5E (or Cat 6) UTP Ethernet cable (not included)
COMPLIANCE	
Compliance, IQ Combiner	UL 1741, CAN/CSA C22.2 No. 107.1, 47 CFR, Part 15, Class B, ICES 003 Production metering: ANSI C12.20 accuracy class 0.5 (PV production) Consumption metering: accuracy class 2.5
Compliance, IQ Gateway	UL 60601-1/CANCSA 22.2 No. 61010-1

To learn more about Enphase offerings, visit **enphase.com**

ENPHASE.

IQ COMBINER BOX DATA SHEET

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JUNE 20, 2025	D3
AS INDICATED	
PV SYSTEM	

PEGASUS SOLAR™
A Better Day on the Job

RAIL SYSTEM

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

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

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.

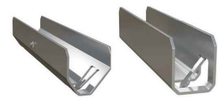
Watertight for Life
Secured on industry-leading Pegasus Mounts, for composite shingle and tile roofs. Backed by a 25-year warranty.

PEGASUS SOLAR™

RAIL SYSTEM

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 ½" 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

C SA® US

FREE
PEGASUS SOLAR
Design Tool
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				
	160				
	190				
15	140				
	160				
	190				
30	160				
	190				
45	190				
70	190				
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.

Pegasus Solar Inc | 506 West Ohio Avenue, Richmond, CA 94804 | T: 510.210.3797 | **www.pegasussolar.com**

RACKING DATA SHEET

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MAI LEE
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FUQUAY-VARINA, NC 27526

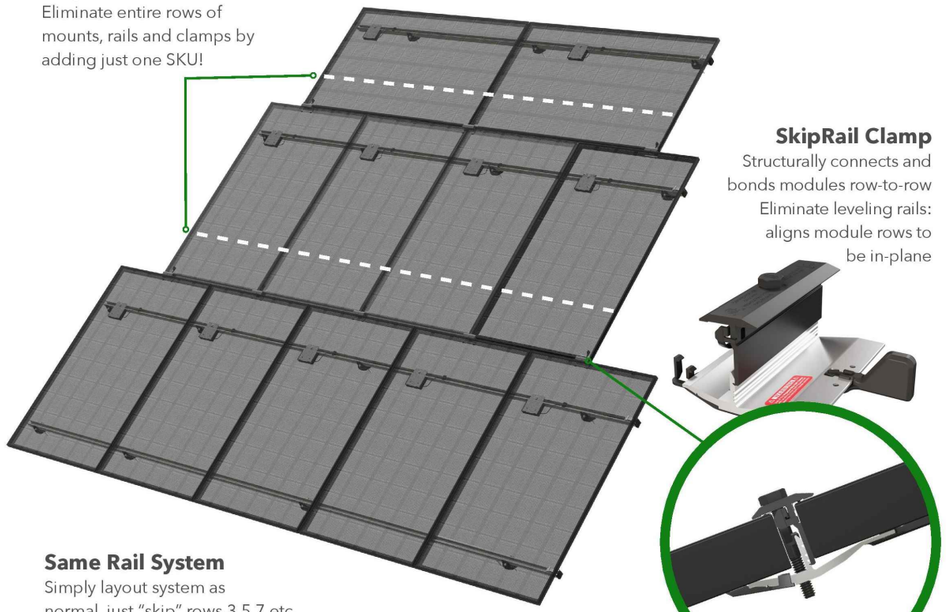
JUNE 20, 2025
AS INDICATED
PV SYSTEM

D4

PEGASUS

SK•PRAIL

Skip Rows!
Eliminate entire rows of mounts, rails and clamps by adding just one SKU!



SkipRail Clamp
Structurally connects and bonds modules row-to-row
Eliminate leveling rails: aligns module rows to be in-plane

Same Rail System
Simply layout system as normal, just "skip" rows 3,5,7,etc. of attachments, rails, and clamps

A Revolution in Solar Installations

Lower your costs and provide your crews a faster system by eliminating entire rows of mounts, rails and clamps with just one SKU.

Dramatically Lower Costs
25% fewer rails and clamps
15% fewer roof penetrations
3500 lbs less per MW to ship, warehouse, pack, and load

Recruit the Best Crews
Less work = happier crews
300 lbs less per week to haul
Faster install
Auto-levels modules

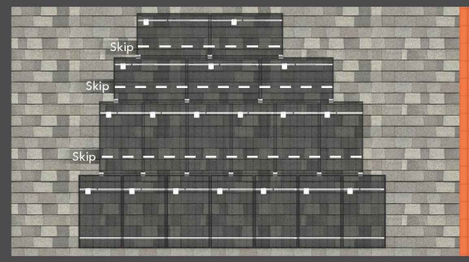
Easy to Implement
Minimal to no training
Same layout as standard rail
Same open-channel wire management

Universal to Any Roof
Comp, Tile, Metal, other.
Low slow, steep slopes
Easily work around roof obstructions
Mixed portrait / landscape

Pegasus Solar Inc | 506 West Ohio Avenue, Richmond, CA 94804 | **www.pegasussolar.com**

PEGASUS SK•PRAIL

SkipRail SAVINGS | 18% fewer attachments • 32% fewer feet of rails
22% fewer pounds to ship & warehouse

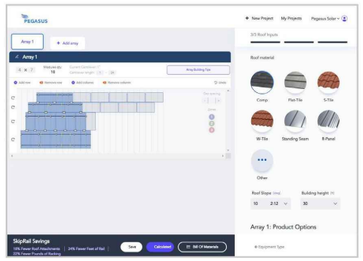


Example of Comp Roof Array

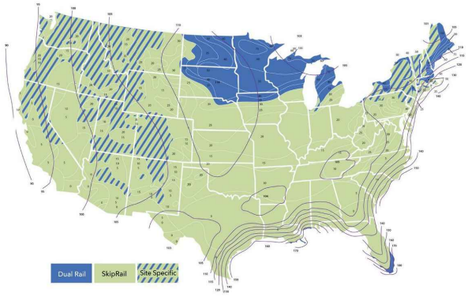
SkipRail SAVINGS | 21% fewer attachments • 30% fewer feet of rails
21% fewer pounds to ship & warehouse

Example of Tile Roof Array

Free Design Tool:
pegasussolar.com/portal



Where SkipRail Works



Specifications	SkipRail Kits	
SKU	PSR-SRC	PSR-SRCK
Type	Floating Clamp	Extra support with Kickstand
Finish	Black	
PV module frames	30, 32, 35, 40mm	
Certifications	ASCE 7-16, IBC, CBC, UL2703	
Applicable Roof Types	Any	
Compatible Rail Systems	Pegasus Rail System	
Kit Contents	Pegasus SkipRail Clamp	Pegasus SkipRail Clamp with Kickstand
Kit Quantity	20	30

SCAN FOR VIDEO

SCAN FOR FREE TRIAL

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RACKING DATA SHEET

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Phone Number:
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PV SYSTEM AC SIZE 5.800KW

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PEGASUS SOLAR™

A BETTER DAY ON THE JOB

COMP MOUNT

WATERTIGHT FOR LIFE

Pegasus Solar's Comp Mount is 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

Superior Waterproofing
Tested to AC286 without sealant 0.9" elevated water seal

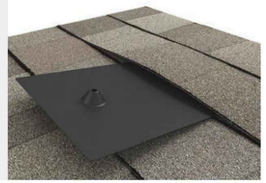
Code Compliant
Fully IBC/CBC Code Compliant
Exceeds ASCE 7-10 Standards

All-In-One Kit Packaging
Flashings, L-feet and SS lags with bonded EPDM washers are included in each 24-pack

COMP MOUNT

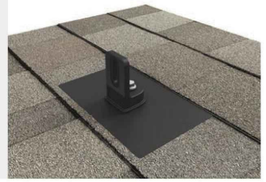
1. Drill pilot hole in center of rafter.

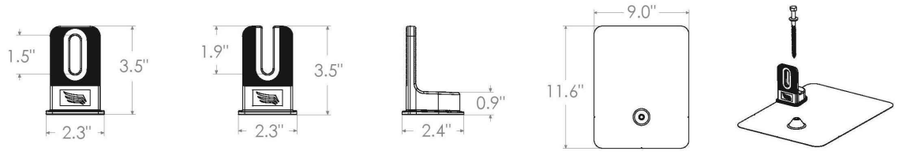
2. Optional: Apply a "U-shape" of sealant to underside of flashing and position under 2nd shingle course, cone over pilot hole.



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

4. Drive lag to required embedment. Attach rail per rail manufacturer's instructions.





Specifications	Comp Mount Install Kit		
SKU	PSCR-C0	PSCR-U0	SPCR-CH
L-foot Type	Closed Slot	Open Slot	Closed Slot
Kit Contents	L-Foot, Flashing, 5/16" SS Lag w/ EPDM washer	L-Foot, Flashing, 5/16" SS Lag w/ EPDM washer	L-Foot, Flashing, 5/16" SS Lag w/ EPDM washer, M10 Hex Bolt
Finish	Black (L-foot and Flashing)		
Roof Type	Composition Shingle		
Certifications	IBC, ASCE/SEI 7-10, AC286		
Install Application	Railed Systems		
Compatible Rail	All		
Flashing Material	Painted Galvalume Plus		
L-Foot Material	Aluminum		
Kit Quantity	24		
Boxes Per Pallet	72		

Pegasus Solar Inc • 100 West Ohio Avenue, Richmond, CA 94804 • T: 510.730.1343 • **www.pegasussolar.com**

ATTACHMENT DATA SHEET

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design & engineering
INTER SOLAR CAD

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Phone Number:
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QAI LABORATORIES
CERTIFICATION TESTING INSPECTION

8385 White Oak Avenue
Rancho Cucamonga, CA 91730
909.483.0250 ph. | 909.483.0336 fx.

CLIENT: **Pegasus Solar Inc.**
911 Bern Court, Suite 110
San Jose, CA 95112

Report No: RJ6493P-1	Issue Date: September 14, 2018

SUBJECT: Rain Test on Solar Panel Tile Sleds.

SAMPLE ID: Two each, PEGASUS SOLAR™ Tile Sleds.

SAMPLING DETAIL: Test samples were submitted to the laboratory directly by the client. No special sampling conditions or sample preparation were observed by QAI.

DATE OF RECEIPT: The samples were received at QAI Laboratories on September 6, 2018.

TESTING PERIOD: September 13, 2018.

AUTHORIZATION: QAI Test Proposal 18MB08312 dated August 31, 2018 signed by Peter Wilke of Pegasus Solar Inc. on September 4, 2018.

TEST REQUESTED: Rain Test per Section 4.1 of ICC ES *Acceptance Criteria for Roof Flashing for Pipe Penetrations*, AC286, Approved October 2012.

TEST RESULTS: Test results are provided on page 2 of this report.

STATEMENT OF CONFORMITY: The PEGASUS SOLAR™ tile sleds ***Passed*** the test and demonstrated compliance with Section 4.1 of ICC-ES *Acceptance Criteria for Roof Flashing for Pipe Penetrations*, AC286, Approved October 2012.

Tested By

Nathan Juarez
Test Technician

Signed for and on behalf of QAI Laboratories Inc.

Larry Burmer
Physical Lab Supervisor

RACKING CERTIFICATE

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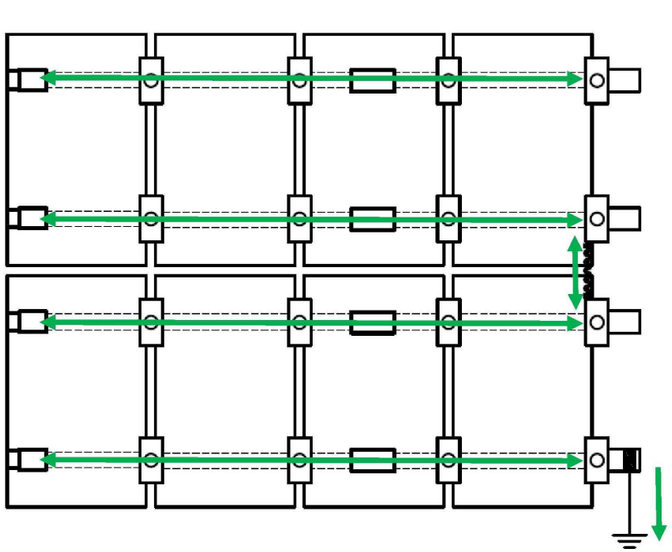
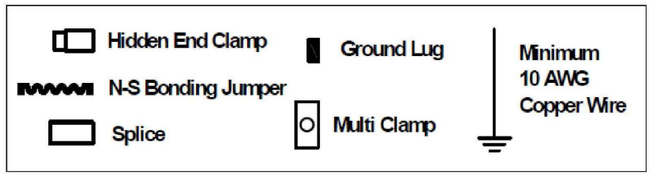
Pegasus Rail System - Bond Path to Ground

Ground Lug & N-S Bonding Jumper





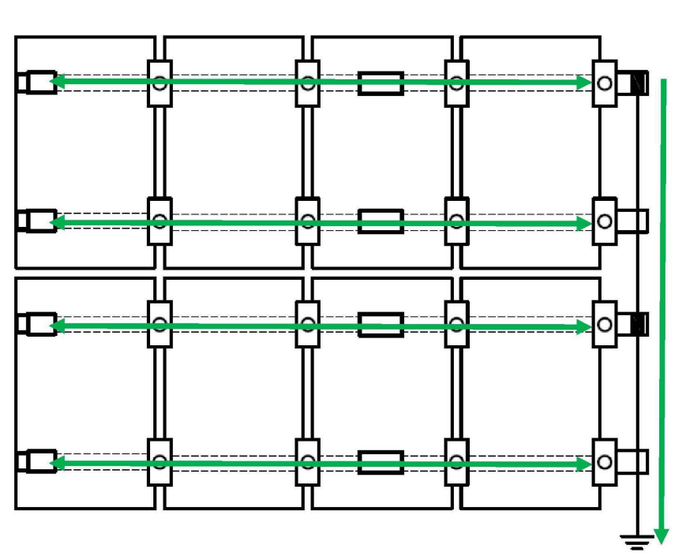
Multi-Clamps bond adjacent PV modules to one another and to the Rail. The Splice provides a bond connection between two Rail sections, including when a 1" thermal gap is utilized. The N-S Bonding Jumper will provide a bonding path between rows of PV modules, so that one Ground Lug per array is necessary for earth ground. If a thermal break is left between two sections or Rail, the Multi-Clamps will provide a bond path across the two Rails through the PV module frame.

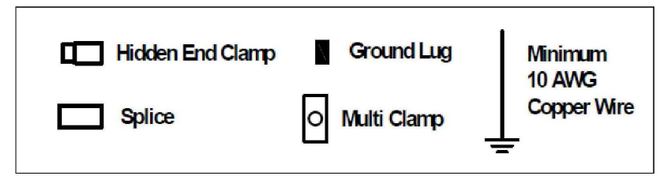
The N-S Bonding Jumper may only be used with the Pegasus Rail System, and is not certified for use with any other mounting system.

If the N-S Bonding Jumper needs to be removed during maintenance, a second N-S Bonding Jumper shall first be installed on the opposite end of the row or PV modules, or the array should be disconnected from A/C power.

Pegasus Rail System - Bond Path to Ground

Ground Lug for each PV Module Row





Multi-Clamps bond adjacent PV modules to one another and to the Rail. The Splice provides a bond connection between two Rail sections, including when a 1" thermal gap is utilized. One Ground Lug is required per row of PV Modules, with a final earth ground connection at the terminal end of the ground wire. If a thermal break is left between two sections or Rail, the Multi-Clamps will provide a bond path across the two Rails through the PV module frame.

GROUNDING SPECS

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