



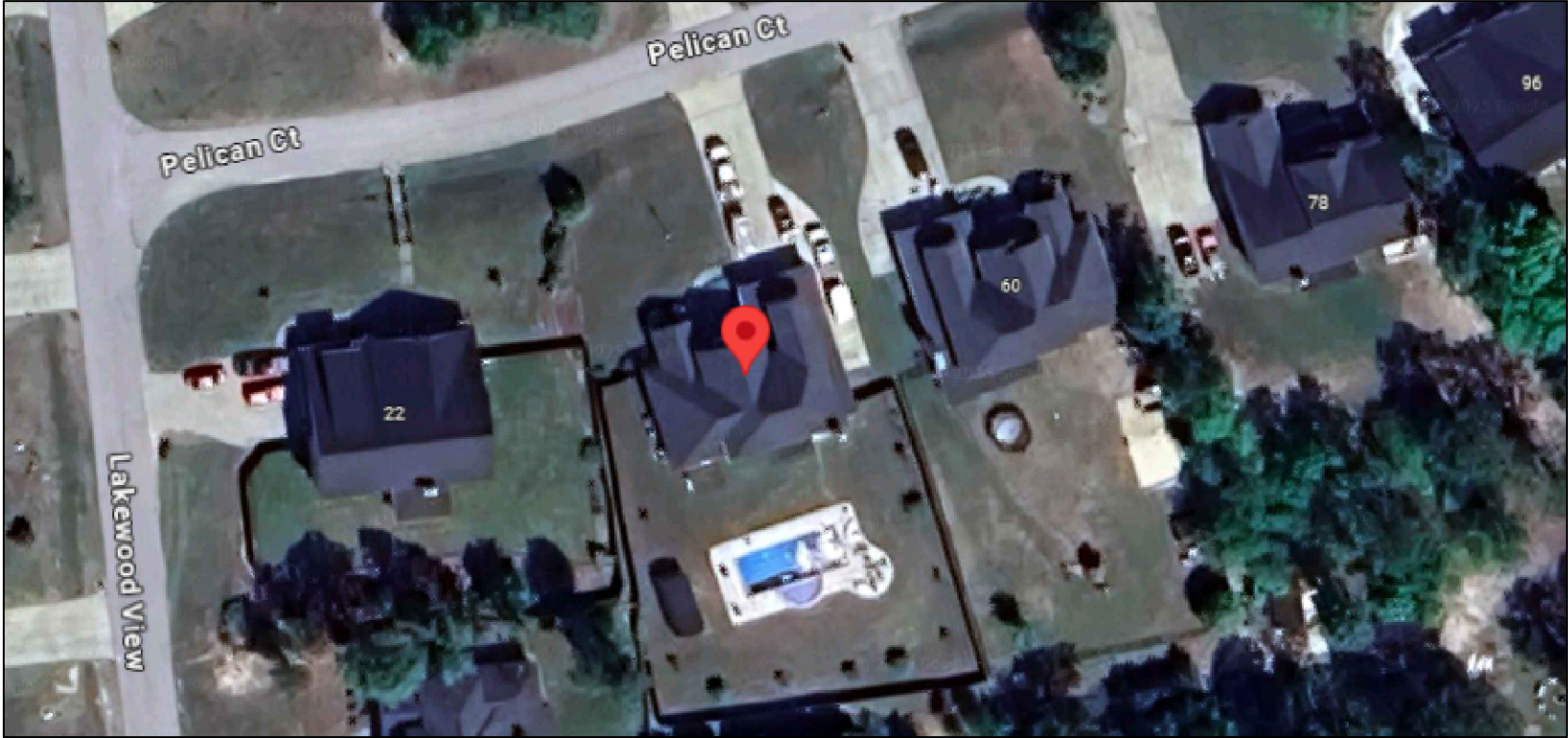
RESIDENTIAL ROOFTOP SOLAR PERMIT PACKAGE

David Nutt
42 Pelican Ct
Sanford, North Carolina 27332
9795713056



1403 N 630 E
Orem, Utah 84097
(800) 377-4480
BlueRavenSolar.com

SCOPE OF WORK
INSTALLATION OF ROOFTOP MOUNTED PHOTOVOLTAIC SOLAR SYSTEM



SHEET INDEX

- PV1 COVER SHEET
- PV2 SITE PLAN
- PV3 ROOF PLAN
- PV4 STRUCTURAL
- PV5 ELECTRICAL 3-LINE
- PV6 ELECTRICAL CALCULATIONS
- PV7 LABELS
- PV8 PLACARD
- SS SPEC SHEETS

CEC-AC SYSTEM SIZE: 10.529 kW AC

TYPICAL STRUCTURAL INFORMATION

ROOF MATERIAL: Comp Shingle
SHEATHING: OSB
FRAMING: Rafter
RACKING: PEGASUS RAIL
ROOF ATTACHMENT: PEGASUS INSTAFASH 2
TOTAL ATTACHMENTS: 57

NEW PV SYSTEM INFORMATION

DC SYSTEM SIZE: 11.44 kW DC
AC SYSTEM SIZE: 8.32 kW AC
MODULE TYPE: (26) JA Solar JAM54D41-440/MB
INVERTER TYPE: (26) Enphase IQ8MC-72-M-US

TOTAL PV DC SYSTEM SIZE
11.440 kW DC

TOTAL PV AC SYSTEM SIZE
8.320 kW AC

DESIGN CRITERIA

WIND SPEED: 115 mph
WIND EXPOSURE FACTOR: C
SEISMIC DESIGN CATEGORY: B
RISK CATEGORY: II
GROUND SNOW LOAD: 15 psf

WEATHER STATION DATA

WEATHER STATION: SEYMOUR-JOHNSON AFB
HIGH TEMP 2% AVG: 35°C
EXTREME MINIMUM TEMP: -10°C

APPLICABLE CODES

*2017 NATIONAL ELECTRIC CODE (NEC)
*2018 NORTH CAROLINA BUILDING CODE (NCBC)
*2018 NORTH CAROLINA RESIDENTIAL CODE (NCRC), 2018 NORTH CAROLINA PLUMBING CODE (NCPCL), AND ALL STATE AND LOCAL BUILDING, ELECTRICAL, AND PLUMBING CODES

GENERAL NOTES

Sealed For Existing Roof & Attachment Only

Digitally signed by John A. Calvert
Date: 2025.09.22 13:32:28 -06'00'

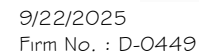
AHJ
Harnett County NC

UTILITY COMPANY
Central EMC

CUSTOMER NAME: David Nutt
PROJECT ID: 1441466
PV DC SYSTEM SIZE: 11.440 kW DC
PV AC SYSTEM SIZE: 8.320 kW AC
REVISIONS:
DRAWN BY: McKay Ashton
PLOT DATE: September 20, 2025
DRAWING TITLE: Cover Sheet
DRAWING NUMBER: PV1

42 Pelican Ct
Sanford, North Carolina 27332

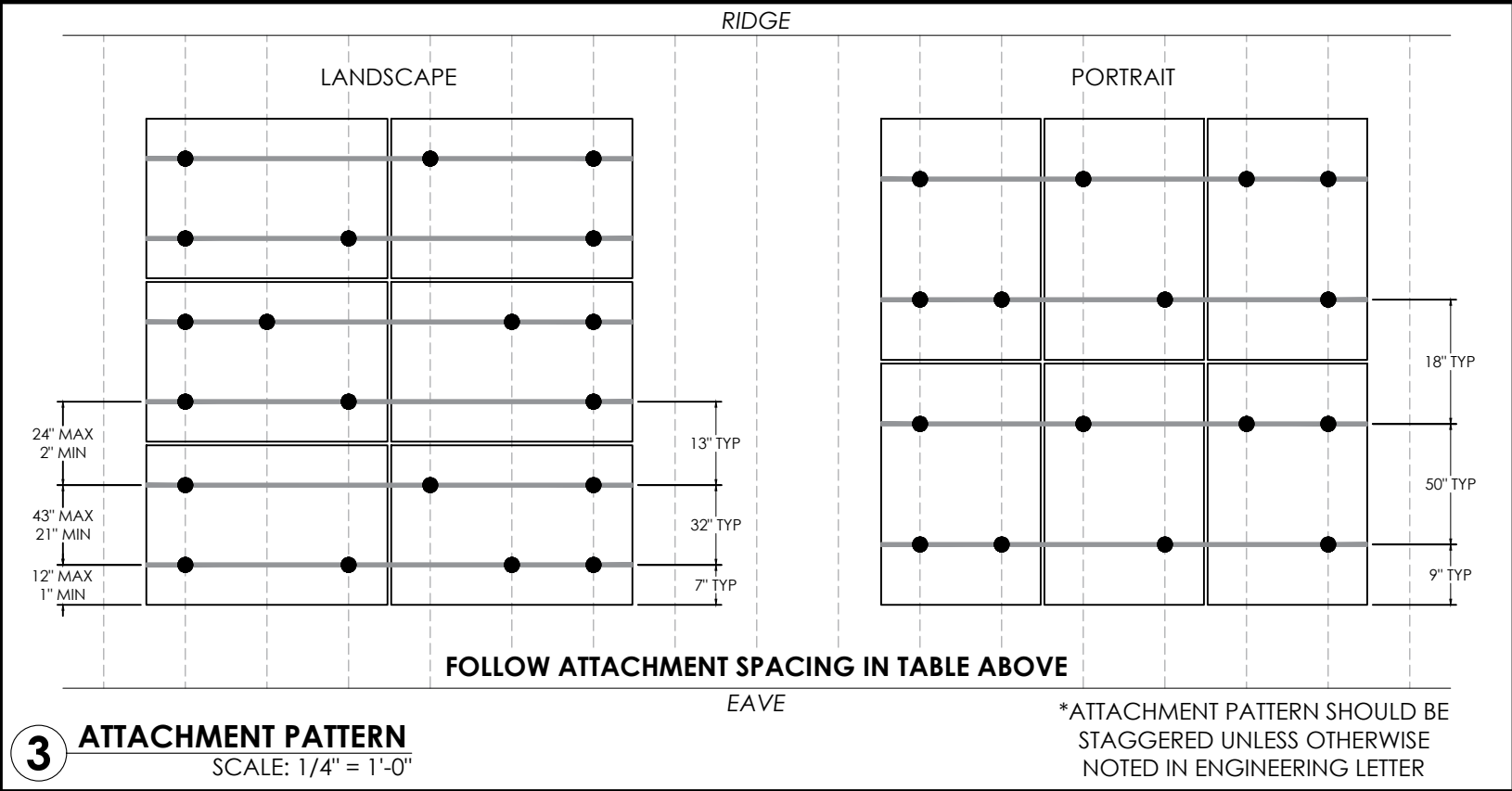
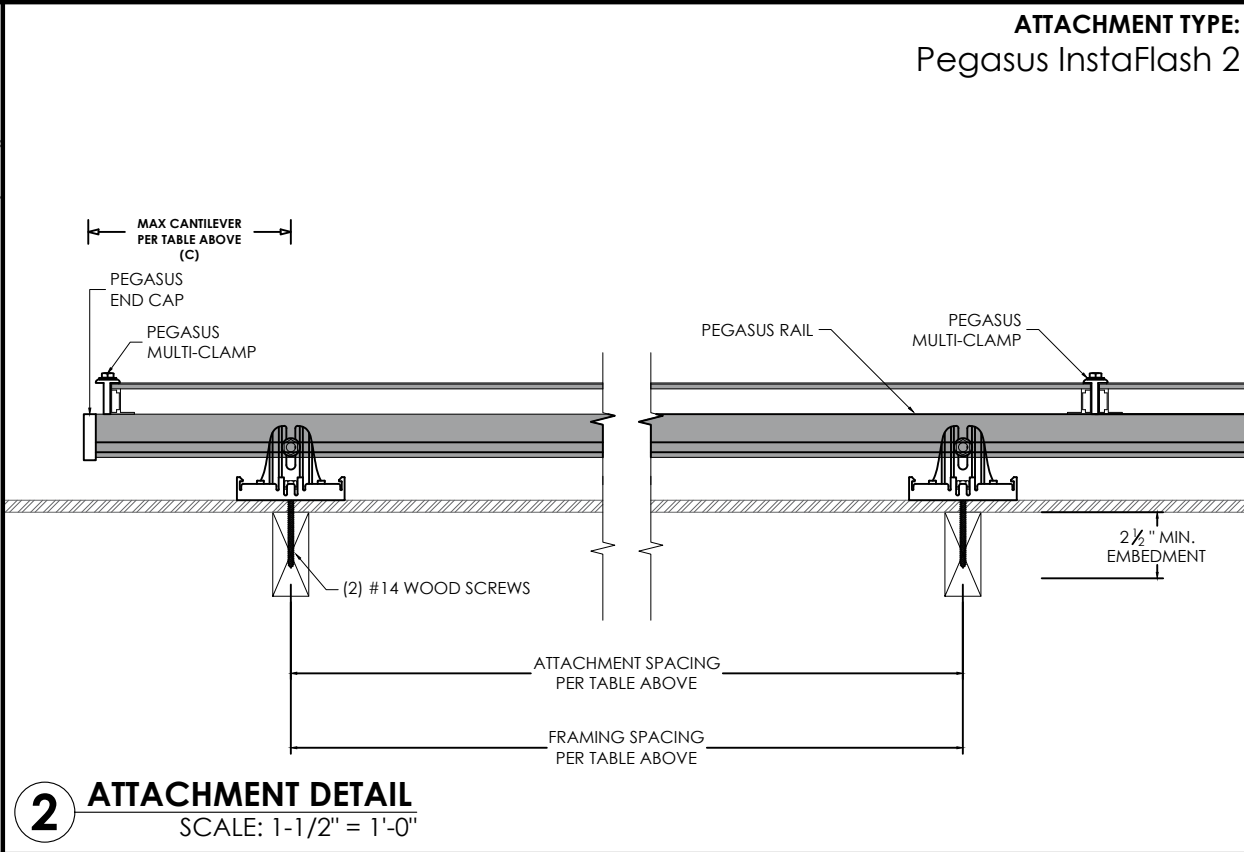
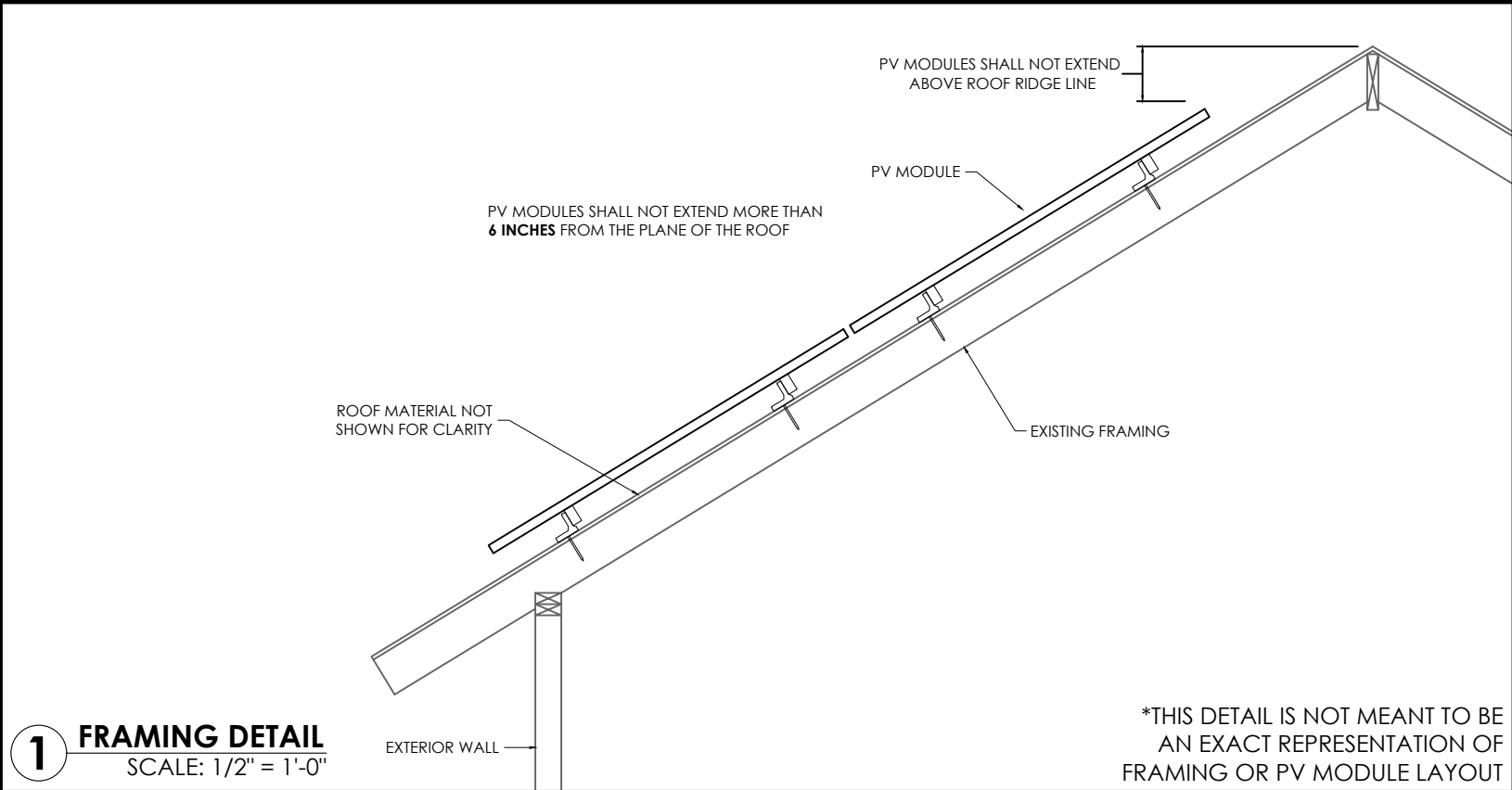
AHJ: Harnett County NC
UTILITY COMPANY: Central EMC



	PANEL COUNT	AZIMUTH (DEG)	PITCH (DEG)	TSRF (%)	AREA (ft²)	ROOF MATERIAL	SHEATHING TYPE	FRAMING TYPE	FRAMING SIZE AND SPACING	CEILING JOIST/ PURLINS SIZE AND SPACING	RACKING TYPE	ATTACHMENT TYPE	MAXIMUM ATTACHMENT SPACING (S)	MAXIMUM CANTILEVER (C)	PRIMARY PV ARRAY AREA (ft²)		546.59	PRIMARY ROOF AREA (ft²)		4779.89	PRIMARY ROOF COVERAGE (%)		11.44	* IF APPLICABLE		SECONDARY PV ARRAY AREA (ft²)		SECONDARY ROOF AREA (ft²)		SECONDARY ROOF COVERAGE (%)			
MP1	16	162	45	93	616	Comp Shingle	OSB	Rafter	2x8 @ 16 in OC	2x10 @ 16 in OC	PEGASUS RAIL	PEGASUS INSTAFLASH 2	64"L / 48"P	21"L / 16"P																			
MP2	7	252	45	80	466	Comp Shingle	OSB	Rafter	2x8 @ 16 in OC	2x10 @ 16 in OC	PEGASUS RAIL	PEGASUS INSTAFLASH 2	64"L / 48"P	21"L / 16"P																			
MP3	3	162	45	88	314	Comp Shingle	OSB	Rafter	2x8 @ 16 in OC	2x10 @ 16 in OC	PEGASUS RAIL	PEGASUS INSTAFLASH 2	64"L / 48"P	21"L / 16"P																			
MP4	0															TOTAL PV ARRAY WEIGHT (lbs)		1232.4	TOTAL PV ATTACHMENTS		57	POINT LOAD (lbs/att.)		21.6			1403 N 630 E		Orem, Utah 84097		(800) 377-4480		
MP5	0																										BlueRavenSolar.com						
MP6	0																																
MP7	0																																
MP8	0																																
MP9	0																																
MP10	0																																



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NOTES

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9/22/2025
Firm No. : D-0449

Seal: NORTH CAROLINA PROFESSIONAL SEAL 035433 ENGINEER JOHN A. CALVERT

Customer Name: David Nutt
42 Pelican Ct
Sanford, North Carolina 27332
AHJ: Harnett County NC
UTILITY COMPANY: Central EMC

PROJECT ID: 1441466

PV DC SYSTEM SIZE: 11.440 kW DC

PV AC SYSTEM SIZE: 8.320 kW AC

REVISIONS:

A	
B	
C	
D	

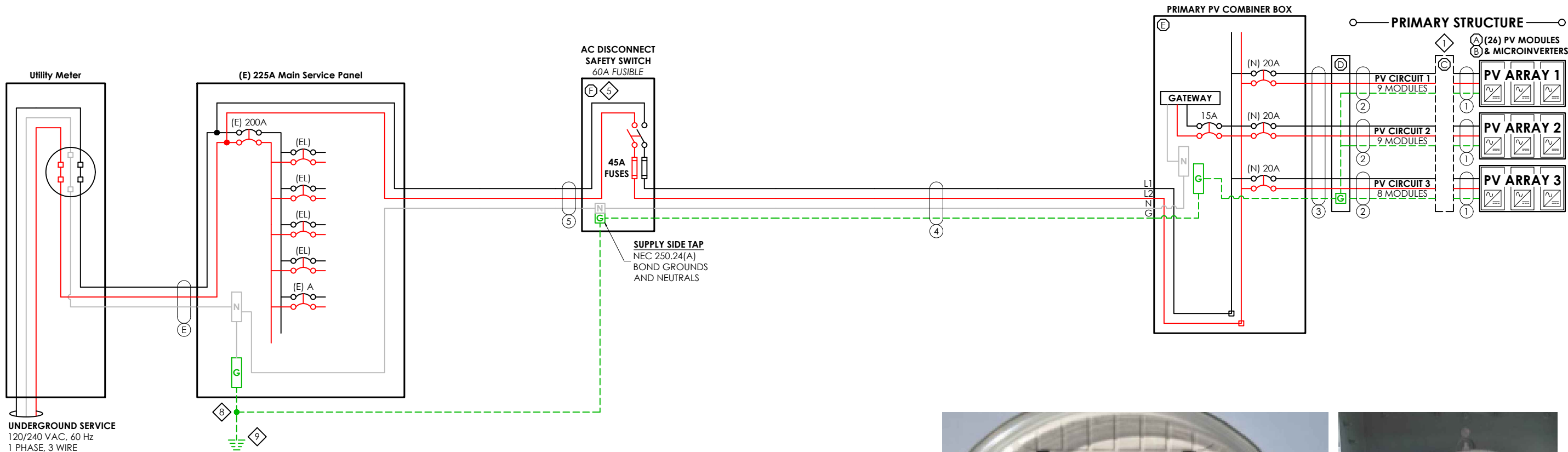
DRAWN BY: McKay Ashton

PLOT DATE: September 20, 2025

DRAWING TITLE: Structural

DRAWING NUMBER: PV4

5 L1 (1) 6 AWG THHN/THWN-2 CU BLACK L2 (1) 6 AWG THHN/THWN-2 CU RED N (1) 6 AWG THHN/THWN-2 CU WHITE 3/4 INCH EMT Exterior	4 L1 (1) 8 AWG THHN/THWN-2 CU BLACK L2 (1) 8 AWG THHN/THWN-2 CU RED N (1) 8 AWG THHN/THWN-2 CU WHITE G (1) 10 AWG THHN/THWN-2 CU GREEN 3/4 INCH EMT Exterior	3 L1 (3) 10 AWG THHN/THWN-2 CU BLACK L2 (3) 10 AWG THHN/THWN-2 CU RED G (1) 10 AWG THHN/THWN-2 CU GREEN 3/4 INCH EMT*	2 L1 (1) 10 AWG THHN/THWN-2 CU BLACK L2 (1) 10 AWG THHN/THWN-2 CU RED G (1) 10 AWG THHN/THWN-2 CU GREEN 3/4 INCH * *TYPE NM (ROMEX) OR UF CABLE IS PERMITTED FOR INTERIOR OR ATTIC RUNS AND SHALL BE USED WHEN ELECTRICAL CODE PERMITS	1 L1 (1) 12 AWG THHN/THWN-2 CU BLACK L2 (1) 12 AWG THHN/THWN-2 CU RED G (1) 6 AWG BARE, CU ENPHASE Q-CABLE, 2-WIRE, FREE AIR Exterior
--	--	--	---	---



INTERCONNECTION NOTES
Utility Meter Number: 159384615
Supply side Tap in MSP, Exterior POI.

LEGEND	
(E) EXISTING	(PV) PV BREAKER
(N) NEW	(FIB) FACTORY INSTALLED BREAKER
(EL) EXISTING LOADS	SPD SURGE PROTECTIVE DEVICE
(RL) RELOCATED LOADS	MI MECHANICAL INTERLOCK

EQUIPMENT NOTES	
1	FINAL CONFIGURATION OF PV CIRCUITS TO BE DECIDED BY INSTALLER. MUST COMPLY WITH MAX MICROINVERTERS PER CIRCUIT AS LISTED ON ATTACHED SPEC SHEET.
2	
3	
4	
5	
6	
7	
8	6 AWG SOLID COPPER GEC TO BE IRREVERSIBLY SPliced TO (E) GEC TO COMPLY WITH NEC 250.64(D)(1).
9	GROUNDING ELECTRODE SYSTEM SHALL BE IN ACCORDANCE WITH NEC 250.53.
10	
11	
12	

EQUIPMENT DESCRIPTIONS	
A	PV MODULE: JA Solar JAM54D41-440/MB, 440 W DC, UL 1703 / UL 61730 COMPLIANT
B	MICROINVERTER: ENPHASE IQ8MC-72-M-US, 320 W AC (0.320 kW), 1 PHASE, UL 1741 COMPLIANT
C	ROOFTOP JUNCTION BOX: EZ SOLAR JB-1.2 JUNCTION BOX
D	JUNCTION BOX: PVC 4 X 4 JUNCTION BOX
E	PV COMBINER BOX: ENPHASE COMBINER 5 (X-IQ-AM1-240-5)
F	SQUARE-D SAFETY SWITCH 60A, 2P, 240VAC, FUSIBLE (D222NRB)
G	
H	
I	
J	
K	
L	
M	
N	
O	
P	
Q	
R	
S	
T	



OTHER NOTES



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PV DC SYSTEM SIZE:
11.440 kW DC

PV AC SYSTEM SIZE:
8.320 kW AC

REVISIONS:

A	
B	
C	
D	

DRAWN BY:
McKay Ashton

PLOT DATE:
September 20, 2025

DRAWING TITLE:
Electrical
3-Line

DRAWING NUMBER:
PV5

ELECTRICAL INFORMATION	
UTILITY ELECTRICAL SYSTEM	
1-Phase, 3-Wire, 60Hz, 120/240V	
NEW PV SYSTEM	
1-Phase, 3-Wire, 60Hz, 120/240V	
AC SYSTEM SIZE	8.32kW AC
DC SYSTEM SIZE	11.44kW DC
PV MODULES	
QUANTITY	26
TYPE	JA Solar JAM54D41-440/MB
WATTAGE	440W DC
INVERTERS	
TYPE	Enphase IQ8MC-72-M-US
OUTPUT CURRENT	1.33A AC
NOMINAL VOLTAGE	240V AC
OUTPUT POWER	320W AC

PV BREAKER BACKFEED CALCULATIONS			
"120% RULE"			
(BUSBAR RATING * 120%) - OCPD RATING = AVAILABLE BACKFEED			
	MAIN SERVICE PANEL	SUBPANEL 1	SUBPANEL 2
BUSBAR RATING	225A	----A	----A
PANEL OCPD RATING	200A	----A	----A
AVAILABLE BACKFEED (120% RULE)	70A	##A	##A
PV BREAKER RATING	45A	45A	45A
*THESE CALCULATIONS ARE ONLY APPLICABLE IF PV INTERCONNECTION IS A LOAD SIDE BREAKER. *PV BREAKER MUST BE RATED LESS THAN OR EQUAL TO AVAILABLE BACKFEED FOR CODE COMPLIANCE*			

DESIGN LOCATION AND TEMPERATURES	
DATA SOURCE	ASHRAE Weather Station Data
STATE	North Carolina
CITY	Sanford
WEATHER STATION	SEYMOUR-JOHNSON AFB
HIGH TEMP 2% AVG	35°C
EXTREME MINIMUM TEMP	-10°C

WIRE SIZE SPECIFICATIONS										
	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
MINIMUM CONDUCTOR AMPACITY	14.96A AC	14.96A AC	14.96A AC	43.23A AC	43.23A AC	----A AC	----A AC	----A AC	----A AC	----A AC
CONDUCTOR MATERIAL	CU	CU	CU	CU	CU	---	---	---	---	---
CONDUCTOR TYPE	THHN/THWN-2	THHN/THWN-2	THHN/THWN-2	THHN/THWN-2	THHN/THWN-2	---	---	---	---	---
CONDUCTOR SIZE	12 AWG	10 AWG	10 AWG	8 AWG	6 AWG					
CONDUCTOR AMPACITY	30A	40A	40A	55A	75A	----A	----A	----A	----A	----A
AMBIENT TEMPERATURE ADJUSTMENT FACTOR	0.96	0.96	0.96	0.96	0.96	---	---	---	---	---
CONDUIT FILL ADJUSTMENT FACTOR	1	1	0.7	1	1	---	---	---	---	---
ADJUSTED CONDUCTOR AMPACITY	28.8A	38.4A	26.88A	52.8A	72A	----A	----A	----A	----A	----A
WIRE RUN DISTANCE (FT)	59	85	20	10	10	---	---	---	---	---
CALCULATED VOLTAGE DROP	0.64%	1.05%	0.25%	0.22%	0.14%	0%	0%	0%	0%	0%

PV CIRCUIT SPECIFICATIONS													
	PRIMARY STRUCTURE								DETACHED STRUCTURE				
	CIRCUIT 1	CIRCUIT 2	CIRCUIT 3	CIRCUIT 4	CIRCUIT 5	CIRCUIT 6	CIRCUIT 7	CIRCUIT 8	CIRCUIT 1	CIRCUIT 2	CIRCUIT 3	CIRCUIT 4	CIRCUIT 5
NUMBER OF MODULES PER CIRCUIT	9	9	8	0	0	0	0	0	0	0	0	0	0
RATED AC OUTPUT CURRENT (I _{out})	12.0A	12.0A	10.6A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A
MINIMUM AMPACITY (I _{out} x 125%)	15.0A	15.0A	13.3A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A	0.0A
OVERCURRENT PROTECTION RATING	20A	20A	20A	20A	20A	20A	20A	20A	20A	20A	20A	20A	20A
COMBINED AC OUTPUT CURRENT (C _{out})	34.6A								0.0A				
MINIMUM AMPACITY (C _{out} x 125%)	43.2A								0.0A				
COMBINED PV BREAKER RATING	45AA								0AA				

TOTAL PV VOLTAGE DROP	
	VOLTAGE DROP
WIRE TAG #1	0.64%
WIRE TAG #2	1.05%
WIRE TAG #3	0.25%
WIRE TAG #4	0.22%
WIRE TAG #5	0.14%
WIRE TAG #6	0%
TOTAL	2.300000%



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Harnett County NC

UTILITY COMPANY:
Central EMC

PROJECT ID:
1441466

PV DC SYSTEM SIZE:
11.440 kW DC

PV AC SYSTEM SIZE:
8.320 kW AC

REVISIONS:

A	
B	
C	
D	

DRAWN BY:
McKay Ashton

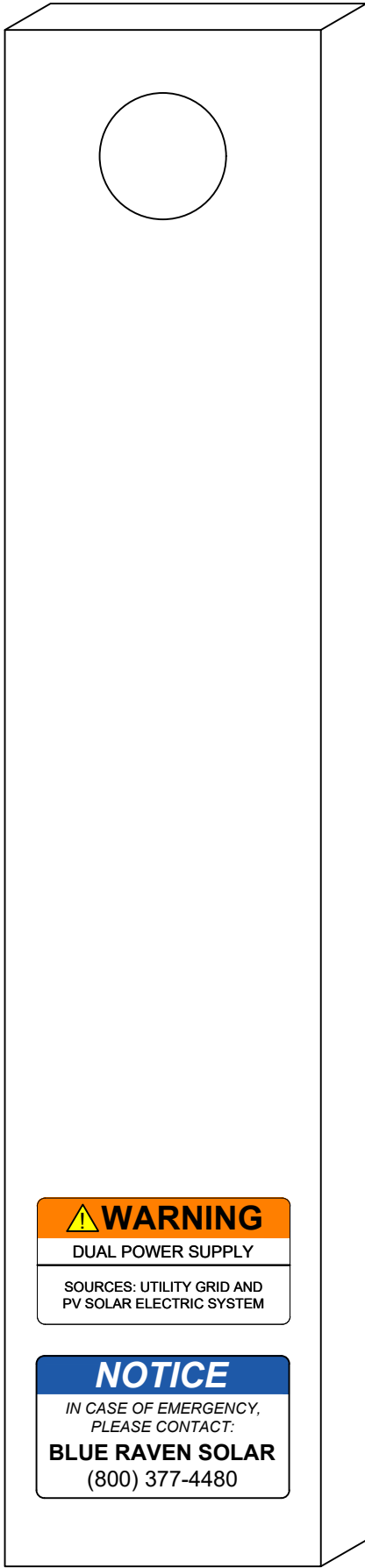
PLOT DATE:
September 20, 2025

DRAWING TITLE:
Electrical Calculations

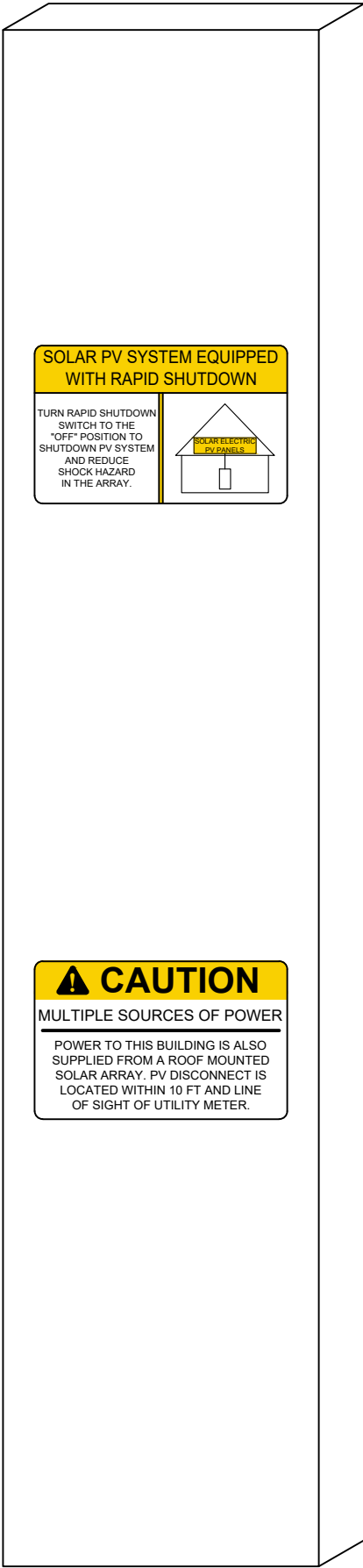
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PV6

WARNING LABELS

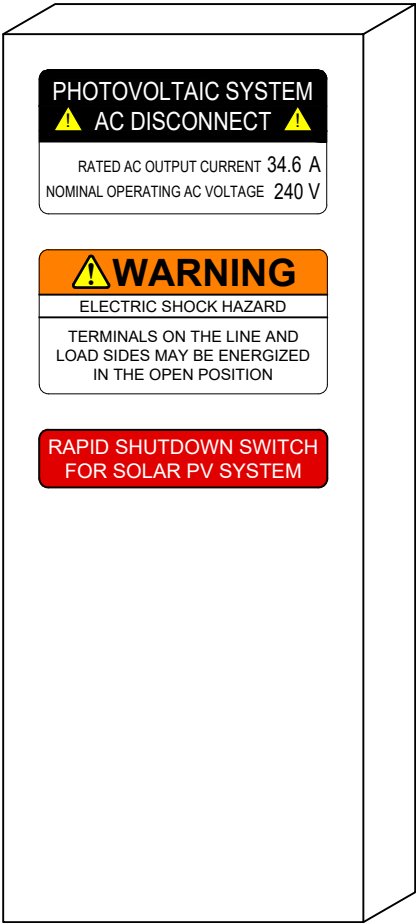
UTILITY METER



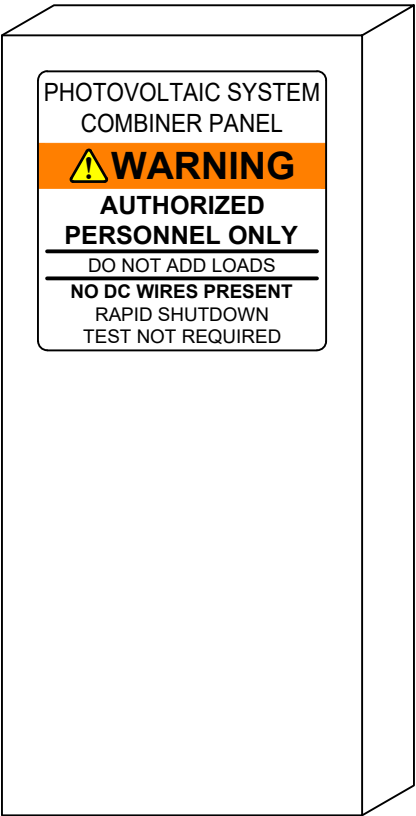
MAIN SERVICE PANEL



PV AC DISCONNECT



PV COMBINER BOX



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8.320 kW AC

REVISIONS:

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D

DRAWN BY:

McKay Ashton

PLOT DATE:

September 20, 2025

DRAWING TITLE:

Warning
Labels

DRAWING NUMBER:

PV7

Harvest the Sunshine

440W



JA SOLAR

JAM54D41 MB Black Module

n-type Double Glass Bifacial Modules

Premium Cells

n-
Bycium+
16BB

MBB Half-Cell
Technology

26%



Cell Conversion
Efficiency

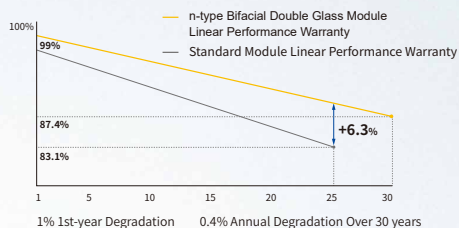
Premium Modules

Higher power
generation better LCOE

LID n-type with very
Lower LID

Better Temperature
Coefficient

Better low irradiance
response



25-year product
warranty

30-year linear power
output warranty

Comprehensive Certificates

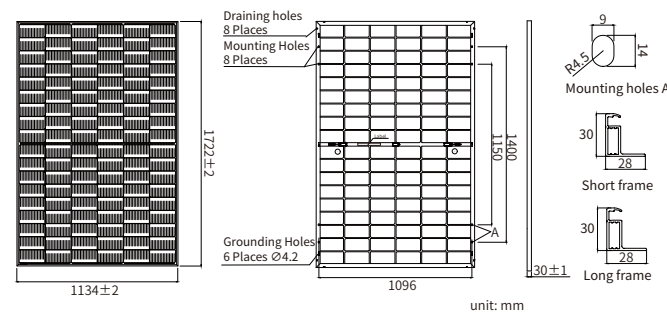
- IEC 61215, IEC 61730, UL 61215, UL 61730
- ISO 9001: 2015 Quality management systems
- ISO 14001: 2015 Environmental management systems
- ISO 45001: 2018 Occupational health and safety management systems
- IEC 62941: 2019 Terrestrial photovoltaic (PV) modules - Quality system for PV module manufacturing



DEEP BLUE 4.0 Pro

JAM54D41 MB n-type Double Glass Bifacial Modules

DEEP BLUE 4.0 Pro



MECHANICAL PARAMETERS

Cell	Mono
Weight	21.5kg
Dimensions	1722±2mm×1134±2mm×30±1mm
Cable Cross Section Size	4mm²(IEC), 12 AWG(UL)
No. of cells	108(6×18)
Junction Box	IP68, 3diodes
Connector	QC 4.10-351/ MC4-EVO2
Cable Length (Including Connector)	Portrait: 300mm(+)/400mm(-) Landscape: 1100mm(+)/1100mm(-)
Front Glass/Back Glass	1.6mm/1.6mm
Packaging Configuration	36pcs/Pallet, 864pcs/40HQ Container

Remark: customized frame color and cable length available upon request

ELECTRICAL PARAMETERS AT STC

TYPE	JAM54D41 415/MB	JAM54D41 420/MB	JAM54D41 425/MB	JAM54D41 435/MB	JAM54D41 435/MB	JAM54D41 440/MB
Rated Maximum Power(Pmax) [W]	415	420	425	435	435	440
Open Circuit Voltage (Voc) [V]	38.00	38.28	38.56	39.11	39.11	39.38
Maximum Power Voltage(Vmp) [V]	32.13	32.38	32.64	33.13	33.13	33.37
Short Circuit Current(Isc) [A]	13.60	13.65	13.70	13.80	13.80	13.85
Maximum Power Current(Imp) [A]	12.92	12.97	13.02	13.13	13.13	13.18
Module Efficiency [%]	21.3	21.5	21.8	22.3	22.3	22.5
Power Tolerance	±2%					
Temperature Coefficient of Isc(α _{Isc})	+0.045%/°C					
Temperature Coefficient of Voc (β _{Voc})	-0.250%/°C					
Temperature Coefficient of Pmax(γ _{Pmp})	-0.290%/°C					
STC	Irradiance 1000W/m², cell temperature 25°C, AM1.5G					

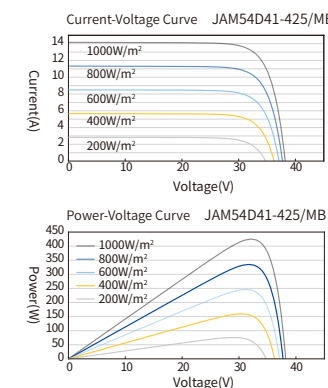
Remark: Electrical data in this catalog do not refer to a single module and they are not part of the offer.
They only serve for comparison among different module types.

ELECTRICAL CHARACTERISTICS WITH 10% SOLAR IRRADIATION RATIO

TYPE	JAM54D41 415/MB	JAM54D41 420/MB	JAM54D41 425/MB	JAM54D41 435/MB	JAM54D41 435/MB	JAM54D41 440/MB
Rated Max Power(Pmax) [W]	448	454	459	470	470	475
Open Circuit Voltage(Voc) [V]	38.00	38.28	38.56	39.11	39.11	39.38
Max Power Voltage(Vmp) [V]	32.13	32.38	32.64	33.13	33.13	33.37
Short Circuit Current(Isc) [A]	14.69	14.74	14.80	14.90	14.90	14.96
Max Power Current(Imp) [A]	13.95	14.01	14.06	14.18	14.18	14.24
Irradiation Ratio (rear/front)	10%					

* Bifaciality=Pmax, rear/Rated Pmax, front

CHARACTERISTICS



OPERATING CONDITIONS

Maximum System Voltage	1500V DC
Operating Temperature	-40°C~+85°C
Maximum Series Fuse Rating	30A
Maximum Static Load, Front	5400Pa(112 lb/ft²)
Maximum Static Load, Back	2400Pa(50 lb/ft²)
NOCT	45±2°C
Bifaciality*	80%±10%
Safety Class	Class II
Fire Performance	UL Type 38/Class C

JA SOLAR

Headquarters

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Specifications subject to technical changes and tests.
JA Solar reserves the right of final interpretation.

Version No.: Global-EN-20241018A

DRAWING NUMBER:

SS



DATA SHEET



IQ8MC Microinverter

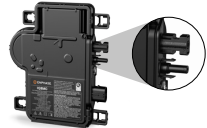
Our newest IQ8 Series Microinverters are the industry’s first microgrid-forming*, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC), which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built in advanced 55-nm 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.



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 the IQ8 Series Microinverters that have integrated MC4 connectors.



IQ8 Series Microinverters are UL Listed as PV rapid shutdown equipment and conforms with various regulations when installed according to the manufacturer's instructions.

*Meets UL 1741 only when installed with IQ System Controller 2 or 3.

IQ8MC Microinverter

INPUT DATA (DC)		UNITS	I08MC-72-M-US	
Commonly used module pairings ¹		W	260–460	
Module compatibility		—	To meet compatibility, PV modules must be within the following max. input DC voltage and max. module I _{sc} . Module compatibility can be checked at https://enphase.com/installers/microinverters/calculator .	
MPPT voltage range		V	25–45	
Operating range		V	18–58	
Min./Max. start voltage		V	22/58	
Max. input DC voltage		V	60	
Max. continuous operating DC current		A	14	
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		—	Ungrounded array; no additional DC side protection required; AC side protection requires max 20 A per branch circuit	
OUTPUT DATA (AC)		UNITS	I08MC-72-M-US @240 VAC	I08MC-72-M-US @208 VAC
Peak output power		VA	330	315
Max. continuous output power		VA	320	310
Nominal grid voltage (L-L)		V	240, split-phase (L-L), 180°	208, single-phase (L-L), 120°
Min./Max. grid voltage ²		V	211–264	183–229
Max. continuous output current		A	1.33	1.49
Nominal frequency		Hz	60	
Extended frequency range		Hz	47–68	
AC short circuit fault current over three cycles		Arms	2.70	
Max. units per 20 A (L-L) branch circuit ³		—	12	10
Total harmonic distortion		%	<5	
Overvoltage class AC port		—	III	
AC port backfeed current		mA	18	
Power factor setting		—	1.0	
Grid-tied power factor (adjustable)		—	0.85 leading ... 0.85 lagging	
Peak efficiency		%	97.4	97.2
CEC weighted efficiency		%	97.0	96.5
Nighttime power consumption		mW	33	25
MECHANICAL DATA		UNITS		
Ambient temperature range		–40°C to 65°C (–40°F to 149°F)		
Relative humidity range		4% to 100% (condensing)		
DC connector type		Stäubli MC4		
Dimensions (H × W × D); Weight		212 mm (8.3") × 175 mm (6.9") × 30.2 mm (1.2"); 1.1 kg (2.43 lbs)		
Cooling		Natural convection – no fans		
Approved for wet locations; Pollution degree		Yes; 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), 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, NEC 2020, and NEC 2023 section 690.12 and C22.1-2018 Rule 64-218 rapid shutdown of PV systems for AC and DC conductors when installed according to the manufacturer's instructions.			

(1) No enforced DC/AC ratio.
(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.



DRAWING NUMBER:

SS

Enphase Q Cable Accessories

The **Enphase Q Cable™** and accessories are part of the latest generation Enphase IQ System™. These accessories provide simplicity, reliability, and faster installation times.



Enphase Q Cable

- Two-wire, double-insulated Enphase Q Cable is 50% lighter than the previous generation Enphase cable
- New cable numbering and plug and play connectors speed up installation and simplify wire management
- Link connectors eliminate cable waste

Field-Wireable Connectors

- Easily connect Q cables on the roof without complex wiring
- Make connections from any open connector and center feed any section of cable within branch limits
- Available in male and female connector types

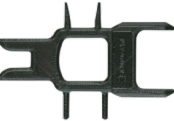
Enphase Q Cable Accessories

CONDUCTOR SPECIFICATIONS	
Certification	UL3003 (raw cable), UL 9703 (cable assemblies), DG cable
Flame test rating	FT4
Compliance	RoHS, OIL RES I, CE, UV Resistant, combined UL for Canada and United States
Conductor type	THHN/THWN-2 dry/wet
Disconnecting means	The AC and DC bulkhead connectors have been evaluated and approved by UL for use as the load-break disconnect required by NEC 690.

Q CABLE TYPES / ORDERING OPTIONS				
Connectorized Models	Size / Max Nominal Voltage	Connector Spacing	PV Module Orientation	Connector Count per Box
Q-12-10-240	12 AWG / 277 VAC	1.3 m (4.2 ft)	Portrait	240
Q-12-17-240	12 AWG / 277 VAC	2.0 m (6.5 ft)	Landscape (60-cell)	240
Q-12-20-200	12 AWG / 277 VAC	2.3 m (7.5 ft)	Landscape (72-cell)	200

ENPHASE Q CABLE ACCESSORIES		
Name	Model Number	Description
Raw Q Cable	Q-12-RAW-300	300 meters of 12 AWG cable with no connectors
Field-wireable connector (male)	Q-CONN-10M	Make connections from any open connector
Field-wireable connector (female)	Q-CONN-10F	Make connections from any Q Cable open connector
Cable Clip	Q-CLIP-100	Used to fasten cabling to the racking or to secure looped cabling
Disconnect tool	Q-DISC-10	Disconnect tool for Q Cable connectors, DC connectors, and AC module mount
Q Cable sealing caps (female)	Q-SEAL-10	One needed to cover each unused connector on the cabling
Terminator	Q-TERM-10	Terminator cap for unused cable ends
Enphase EN4 to MC4 adaptor ¹	ECA-EN4-S22	Connect PV module using MC4 connectors to IQ micros with EN4 (TE PV4-S SOLARLOK). 150mm/5.9" to MC4.
Enphase EN4 non-terminated adaptor ¹	ECA-EN4-FW	For field wiring of UL certified DC connectors. EN4 (TE PV4-S SOLARLOK) to non-terminated cable. 150mm/5.9"
Enphase EN4 to MC4 adaptor (long) ¹	ECA-EN4-S22-L	Longer adapter cable for EN4 (TE PV4-S SOLARLOK) to MC4. Use with split cell modules or PV modules with short DC cable. 600mm/23.6"
Replacement DC Adaptor (MC4)	Q-DCC-2	DC adaptor to MC4 (max voltage 100 VDC)
Replacement DC Adaptor (UTX)	Q-DCC-5	DC adaptor to UTX (max voltage 100 VDC)

1. Qualified per UL subject 9703.

	TERMINATOR Terminator cap for unused cable ends, sold in packs of ten (Q-TERM-10)		SEALING CAPS Sealing caps for unused aggregator and cable connections (Q-BA-CAP-10 and Q-SEAL-10)
	DISCONNECT TOOL Plan to use at least one per installation, sold in packs of ten (Q-DISC-10)		CABLE CLIP Used to fasten cabling to the racking or to secure looped cabling, sold in packs of one hundred (Q-CLIP-100)

To learn more about Enphase offerings, visit enphase.com

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2020-06-26

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DRAWING NUMBER:

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DATA SHEET



X-IQ-AM1-240-5
X-IQ-AM1-240-5C

IQ Combiner 5/5C

The IQ Combiner 5/5C consolidates interconnection equipment into a single enclosure and streamlines IQ Series Microinverters and IQ Gateway installation by providing a consistent, pre-wired solution for residential applications. IQ Combiner 5/5C uses wired control communication and is compatible with IQ System Controller 3/3G and IQ Battery 5P.

The IQ Combiner 5/5C, IQ Series Microinverters, IQ System Controller 3/3G, and IQ Battery 5P provide a complete grid-agnostic Enphase Energy System.



IQ Series Microinverters
The high-powered smart grid-ready IQ Series Microinverters (IQ6, IQ7, and IQ8 Series) simplify the installation process.



IQ System Controller 3/3G
Provides microgrid interconnection device (MID) functionality by automatically detecting grid failures and seamlessly transitioning the home energy system from grid power to backup power.



IQ Battery 5P
Fully integrated AC battery system. Includes six field-replaceable IQ8D-BAT Microinverters.



IQ Load Controller
Helps prioritize essential appliances during a grid outage to optimize energy consumption and prolong battery life.



5-year limited warranty



*For country-specific warranty information, see the <https://enphase.com/installers/resources/warranty> page.

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IQC-5-5C-DSH-00007-3.0-EN-US-2024-03-01

IQ Combiner 5/5C

MODEL NUMBER	
IQ Combiner 5 (X-IQ-AM1-240-5)	IQ Combiner 5 with IQ Gateway printed circuit board for integrated revenue-grade PV production metering (ANSIC12.20 ±0.5%), consumption monitoring (± 2.5%), and IQ Battery monitoring (±2.5%). Includes a silver solar shield to deflect heat.
IQ Combiner 5C (X-IQ-AM1-240-5C)	IQ Combiner 5C with IQ Gateway printed circuit board for integrated revenue-grade PV production metering (ANSI C12.20 ±0.5%), consumption monitoring (±2.5%) and IQ Battery monitoring (±2.5%). Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05) ¹ . Includes a silver solar shield to deflect heat.
WHAT'S IN THE BOX	
IQ Gateway printed circuit board	IQ Gateway is the platform for total energy management for comprehensive, remote maintenance, and management of the Enphase Energy System
Busbar	80 A busbar with support for 1 × IQ Gateway breaker and 4 × 20 A breaker for installing IQ Series Microinverters and IQ Battery 5P
IQ Gateway breaker	Circuit breaker, 2-pole, 10 A/15 A
Production CT	Pre-wired revenue-grade solid-core CT, accurate up to ±0.5%
Consumption CT	Two consumption metering clamp CTs, shipped with the box, accurate up to ±2.5%
IQ Battery CT	One battery metering clamp CT, shipped with the box, accurate up to ±2.5%
CTRL board	Control board for wired communication with IQ System Controller 3/3G and the IQ Battery 5P
Enphase Mobile Connect (only with IQ Combiner 5C)	4G-based LTE-M1 cellular modem (CELLMODEM-M1-06-SP-05) with a 5-year T-Mobile data plan
Accessories kit	Spare control headers for the COMMS-KIT-02 board
ACCESSORIES AND REPLACEMENT PARTS (NOT INCLUDED, ORDER SEPARATELY)	
CELLMODEM-M1-06-SP-05	4G-based LTE-M1 cellular modem with a 5-year T-Mobile data plan
CELLMODEM-M1-06-AT-05	4G-based LTE-M1 cellular modem with a 5-year AT&T data plan
Circuit breakers (off-the-shelf)	Supports Eaton BR2XX, Siemens Q2XX and GE/ABB THQL21XX Series circuit breakers (XX represents 10, 15, 20, 30, 40, 50, or 60). Also supports Eaton BR220B, BR230B, and BR240B circuit breakers compatible with the hold-down kit.
Circuit breakers (provided by Enphase)	BRK-10A-2-240V, BRK-15A-2-240V, BRK-20A-2P-240V, BRK-15A-2P-240V-B, and BRK-20A-2P-240V-B (more details in the "Accessories" section)
XA-SOLARSHIELD-ES	Replacement solar shield for IQ Combiner 5/5C
XA-ENV2-PCBA-5	IQ Gateway replacement printed circuit board (PCB) for IQ Combiner 5/5C
X-IQ-NA-HD-125A	Hold-down kit compatible with Eaton BR-B Series circuit breakers (with screws)
XA-COMMS2-PCBA-5	Replacement COMMS-KIT-02 printed circuit board (PCB) for IQ Combiner 5/5C
ELECTRICAL SPECIFICATIONS	
Rating	80 A
System voltage and frequency	120/240 VAC, 60 Hz
Busbar rating	125 A
Fault current rating	10 kAIC
Maximum continuous current rating (input from PV/storage)	64 A
Branch circuits (solar and/or storage)	Up to four 2-pole Eaton BR, Siemens Q, or GE/ABB THQL Series distributed generation (DG) breakers only (not included)
Maximum total branch circuit breaker rating (input)	80 A of distributed generation/95 A with IQ Gateway breaker included
IQ Gateway breaker	10 A or 15 A rating GE/Siemens/Eaton included
Production metering CT	200 A solid core pre-installed and wired to IQ Gateway
Consumption monitoring CT (CT-200-CLAMP)	A pair of 200 A clamp-style current transformers is included with the box
IQ Battery metering CT	200 A clamp-style current transformer for IQ Battery metering, included with the box

1. A plug-and-play industrial-grade cell modem for systems of up to 60 microinverters. Available in the United States, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in the installation area.



DRAWING NUMBER:

SS

IQC-5-5C-DSH-00007-3.0-EN-US-2024-03-01

MECHANICAL DATA	
Dimensions (W × H × D)	37.5 cm × 49.5 cm × 16.8 cm (14.75" × 19.5" × 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°F 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
Communication (in-premise connectivity)	Built-in CTRL board for wired communication with IQ Battery 5P and IQ System Controller 3/3G. Integrated power line communication for IQ Series Microinverters
Altitude	Up to 2,600 meters (8,530 feet)

COMMUNICATION INTERFACES	
Integrated Wi-Fi	802.11b/g/n (dual band 2.4 GHz/5 GHz), for connecting the Enphase Cloud through the internet
Wi-Fi range (recommended)	10 m (32.8 feet)
Bluetooth	BLE4.2, 10 m range to configure Wi-Fi SSID
Ethernet	Optional, 802.3, Cat5E (or Cat 6) UTP Ethernet cable (not included), for connecting to the Enphase Cloud through the internet
Cellular/Mobile Connect	CELLMODEM-M1-06-SP-05 or CELLMODEM-M1-06-AT-05 (included with IQ Combiner 5C)
Digital I/O	Digital input/output for grid operator control
USB 2.0	Mobile Connect, COMMS-KIT-01 for IQ Battery 3/3T/10/10T, COMMS-KIT-02 for IQ Battery 5P
Access point (AP) mode	For connection between the IQ Gateway and a mobile device running the Enphase Installer App
Metering ports	Up to two Consumption CTs, one IQ Battery CT, and one Production CT
Power line communication	90–110 kHz
Web API	See https://developer-v4.enphase.com
Local API	See guide for local API

COMPLIANCE	
IQ Combiner with IQ Gateway	
UL 1741, CAN/CSA C22.2 No. 107.1, Title 47 CFR, Part 15, Class B, ICES 003, NOM-208-SCFI-2016, UL 60601-1/CANCSA 22.2 No. 61010-1, IEEE 1547: 2018 (UL 1741-SB, 3rd Ed.), IEEE 2030.5/CSIP Compliant, Production metering: ANSI C12.20 accuracy class 0.5 (PV production)	

COMPATIBILITY		
PV	Microinverters	IQ6, IQ7, and IQ8 Series Microinverters
	IQ System Controller	EP200G101-M240US00
COMMS-KIT-01 ²	IQ System Controller 2	EP200G101-M240US01
	IQ Battery	ENCHARGE-3-1P-NA, ENCHARGE-10-1P-NA, ENCHARGE-3T-1P-NA, ENCHARGE-10T-1P-NA
COMMS-KIT-02 ³	IQ System Controller 3	SC200D111C240US01, SC200G111C240US01
	IQ Battery	IQBATTERY-5P-1P-NA

2. For information about IQ Combiner 5/5C compatibility with the 2nd-generation batteries, refer to the [compatibility matrix](#).

3. IQ Combiner 5/5C comes pre-equipped with COMMS-KIT-02.

Accessories



Mobile Connect

4G-based LTE-M1 cellular modem with a 5-year data plan
(CELLMODEM-M1-06-SP-05 for Sprint and CELLMODEM-M1-06-AT-05 for AT&T)



Circuit breakers

BRK-10A-2-240V Circuit breaker, 2-pole, 10 A, Eaton BR210
BRK-15A-2-240V Circuit breaker, 2-pole, 15 A, Eaton BR215
BRK-20A-2P-240V Circuit breaker, 2-pole, 20 A, Eaton BR220
BRK-15A-2P-240V-B Circuit breaker, 2-pole, 15 A, Eaton BR215B
with hold-down kit support
BRK-20A-2P-240V-B Circuit breaker, 2-pole, 20 A, Eaton BR220B with hold-down kit support



CT-200-SOLID

200 A revenue-grade solid core Production CT with <0.5% error rate (replacement SKU)



CT-200-CLAMP

200 A clamp-style consumption and battery metering CT with <2.5% error rate (replacement SKU)



IQ Gateway

The IQ Gateway delivers solar production and energy consumption data to Enphase Installer Portal monitoring and analysis software for comprehensive, remote maintenance, and management of Enphase systems.

With integrated production metering and optional consumption monitoring, the IQ Gateway is the platform for total energy management. It integrates with the IQ System Controller and IQ Battery.



IQ Series Microinverters
The high-powered smart grid-ready IQ Series Microinverters (IQ6, IQ7, and IQ8 Series) dramatically simplify the installation process.



IQ System Controller
Provides microgrid interconnect device (MID) functionality by automatically detecting grid failures and seamlessly transitioning the home energy system from grid power to backup power.



IQ Battery
All-in-one AC coupled storage system that is reliable, smart, simple, and safe. It provides backup capability and installers can quickly design the right system size to meet the needs of both new and retrofit solar customers.



IQ Load Controller
Helps prioritize essential appliances during a grid outage to optimize energy consumption and prolong battery life.

Smart

- Enables web-based monitoring and control
- Provides bidirectional communications for remote upgrades
- Supports power export limiting and zero-export applications

Simple

- Easy system configuration using Enphase Installer App
- Flexible networking with Wi-Fi, Ethernet, or cellular

Reliable

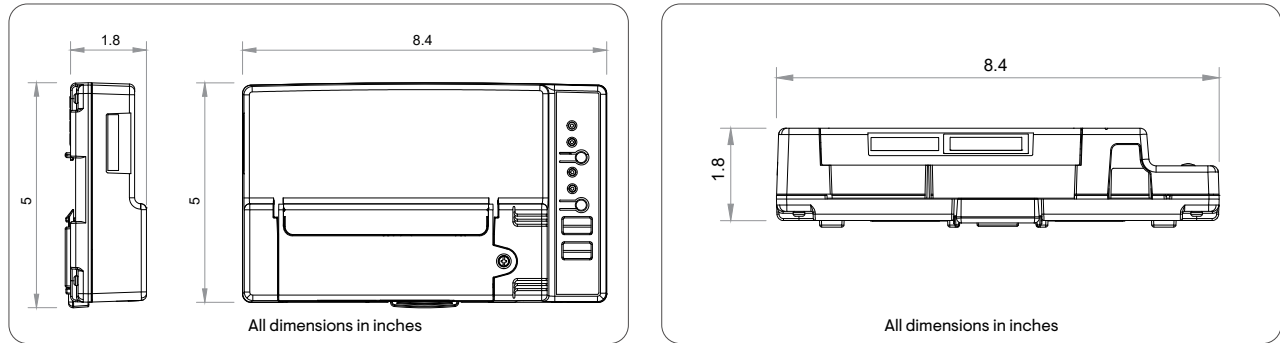
- Designed for installation indoors or outdoors in a NEMA 3R rated enclosure
- 5-year limited warranty
- ENV2-IQ-AM1-240 complies with IEEE® 1547:2018 (UL 1741-SB, 3rd Ed.)

IQ Gateway

MODEL NUMBER		ENV-IQ-AM1-240, ENV2-IQ-AM1-240
IQ Gateway ENV-IQ-AM1-240 ENV2-IQ-AM1-240 (IEEE® 1547:2018)	IQ Gateway integrates revenue grade PV production metering (ANSI C12.20 ±0.5%), consumption metering (±2.5%), and battery metering (±2.5%) with IQ Battery 5P. Includes one 200 A continuous rated Production Current Transformer (CT).	
ACCESSORIES - ORDER SEPARATELY		
Mobile Connect 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 - 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	
Consumption monitoring CT and IQ Battery 5P metering CT CT-200-SPLIT CT-200-CLAMP	Split-core and clamp style CTs with 2.5% accuracy enable whole home and IQ Battery 5P metering	
Communications Kit COMMS-KIT-01 COMMS-KIT-02	Installed at the IQ Gateway. For communications with IQ Battery and IQ System Controller. Includes USB cable for connection to IQ Gateway or IQ Combiner and allows wireless communication with IQ Battery and IQ System Controller.	
POWER REQUIREMENTS		
AC power requirements	120/240 V, 120/208Y V, or 127/220Y V. Three-wire. 60 Hz.	
IQ Gateway breaker	2-pole and maximum 20 A overcurrent protection required	
Typical power consumption	5 W	
CAPACITY		
Number of microinverters polled	Up to 300	
MECHANICAL AND ELECTRICAL DATA		
Dimensions (W × H × D)	21.3 cm × 12.6 cm × 4.5 cm (8.4 in × 5 in × 1.8 in)	
Weight	1.09 lb	
Ambient temperature range	-40°C to 65°C (-40°F to 149°F) [ENV-IQ-AM1-240] -40°C to 50°C (-40°F to 122°F) [ENV2-IQ-AM1-240] -40°C to 46°C (-40°F to 115°F) if installed in an enclosure	
Environmental rating	IP30. For installation indoors or in an NRTL-certified, NEMA type 3R or better-rated enclosure, if installing outdoors.	
Altitude	Up to 2,600 meters (8,530 feet)	
COMMUNICATION INTERFACES		
Integrated Wi-Fi	802.11b/g/n (2.4 GHz, 5 GHz), for connecting the Enphase Cloud via the internet.	
Wi-Fi range (recommended)	10 m	
Ethernet	Optional, 802.3, Cat5E (or Cat 6) UTP Ethernet cable (not included), for connecting to the Enphase Cloud via the internet.	
Mobile Connect	CELLMODEM-M1-06-SP-05, CELLMODEM-M1-06-AT-05 (to be purchased separately, mandatory for sites with IQ Battery)	
Digital I/O	Digital input/output for grid operator control	
USB 2.0	For Mobile Connect and Communications Kit	
Access point (AP) mode	For a connection between the IQ Gateway and a mobile device running the Enphase Installer App	
Metering ports	Up to two Consumption CTs, one Production CT, and one battery CT (for IQ Battery 5P)	
Power line communication (PLC)	90 kHz–110 kHz (Class B), to microinverters.	
Web API	Refer to https://developer-v4.enphase.com	
Local API	Refer to guide for local API	
LED indicators	From top to bottom: Cloud connectivity, Wi-Fi access point mode, PV production state, PLC communications state	
Configured via	Enphase Installer App and Enphase Installer Platform	



POWER PRODUCTION/EXPORT LIMITING VIA THE IQ GATEWAY'S DIGITAL IO	
Maximum relays read	4
Capabilities supported	Power production limiting (Production CT/s required), power export limiting (Production CT/s required and Consumption CT/s – Load with Solar configuration)
Minimum IQ Gateway version	v7.3.120
Cable configurations	18 AWG, UL-Std. 62, 600 V, 105°C, and minimum 0.03 inches average thickness
Signal voltage range	2.5 V–5 V (digital high), 0 V–1.9 V (digital low)
Terminal blocks	Five terminals, up to 0.002 in ²
Configuration via	Enphase Installer App, Enphase Installer Platform (site settings)
SCOPE OF DELIVERY	
Package dimensions (H × W × D)	6.3 in × 10.8 in × 3.9 in
Package weight	2.2 lb
Aluminium DIN rail	4.9 in
Current transformers (CTs)	One CT-200-SOLID included
COMPLIANCE	
Compliance	CA Rule 21 (UL 1741-SA), IEEE® 1547:2018 – UL 1741-SB, 3rd Ed.(ENV2-IQ-AM1-240), UL 61010-1 CAN/CSA C22.2 No. 61010-1 Title 47 CFR, Part 15, Class B, ICES 003 IEC/EN 61010-1:2010, EN50065-1, EN61000-4-5, EN61000-6-1, EN61000-6-2 Metering: ANSI C12.20 accuracy class 0.5 (PV production only)
COMPATABILITY	
IQ System Controller	SC200D111C240US01, SC200G111C240US01, EP200G101-M240US01, EP200G101-M240US00
IQ Battery	IQBATTERY-5P-1P-NA, ENCHARGE-3T-1P-NA, ENCHARGE-10T-1P-NA
Microinverter	IQ6, IQ7, and IQ8 Series Microinverters

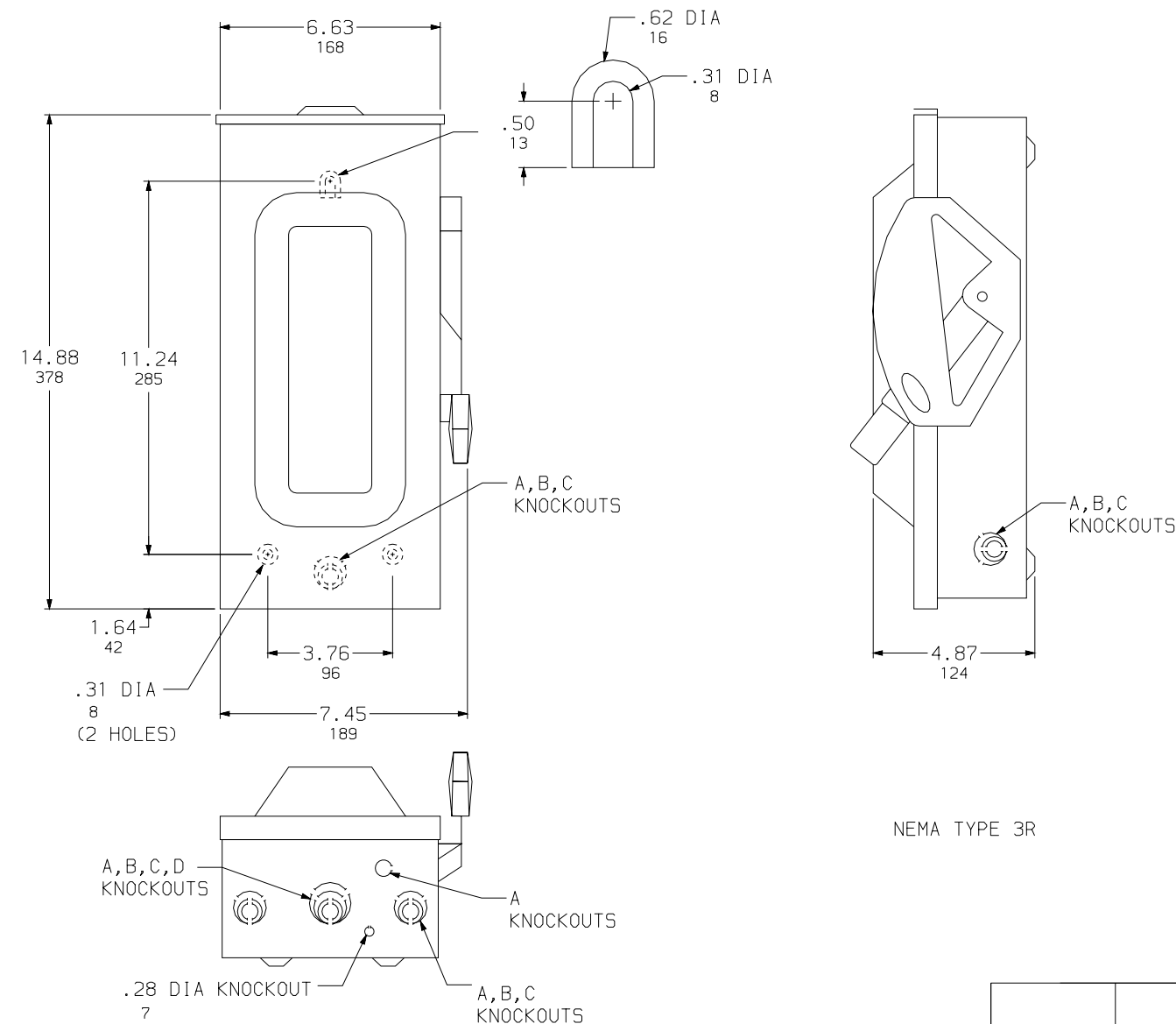


Accessories

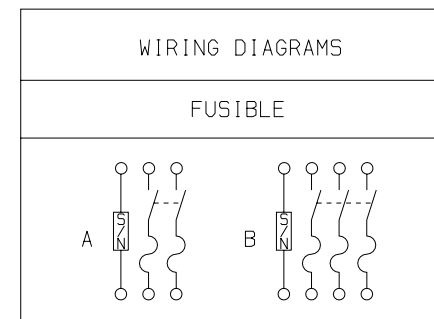
	Enphase Mobile Connect 4G-based LTE-M1 cellular modem with a 5-year data plan (CELLMODEM-M1-06-SP-05 for Sprint and CELLMODEM-M1-06-AT-05 for AT&T)		Circuit breakers BRK-10A-2-240V Circuit breaker, 2-pole, 10 A, Eaton BR210 BRK-15A-2-240V Circuit breaker, 2-pole, 15 A, Eaton BR215 BRK-20A-2P-240V Circuit breaker, 2-pole, 20 A, Eaton BR220 BRK-15A-2P-240V-B Circuit breaker, 2-pole, 15 A, Eaton BR215B with hold-down kit support BRK-20A-2P-240V-B Circuit breaker, 2-pole, 20 A, Eaton BR220B with hold-down kit support
	CT-200-SOLID 200 A revenue grade solid core Production CT with <0.5% error rate (replacement SKU)		CT-200-CLAMP 200 A clamp-style consumption and battery metering CT with <2.5% error rate (replacement SKU)

Revision history

REVISION	DATE	DESCRIPTION
DSH-00111-3.0	December 2023	Updated power requirement and added IG Gateway breaker values.
DSH-00111-2.0	August 2023	Updated temperature specification for ENV2-IQ-AM1-240.
DSH-00111-1.0	June 2023	Updated altitude and recommended maximum microinverters on a site.



NEMA TYPE 3R



TERMINAL LUGS ±			
AMPERES	MAX. WIRE	MIN. WIRE	TYPE
60	# 3 AWG	#14 AWG	CU OR AL

KNOCKOUTS				
SYMBOL	CONDUIT SIZE		DIAMETER	
	IN	MM	IN	MM
A	.50	13	.88	22
B	.75	19	1.13	29
C	1.00	25	1.38	35
D	1.25	32	1.75	45

DUAL DIMENSIONS: INCHES
MILLIMETERS

CATALOG NUMBER	VOLTAGE RATINGS	WIRING DIAG.	AMPERE RATING	HORSEPOWER RATINGS			
				240VAC			
				STD.		MAX.	
				1 Ø	3 Ø	1 Ø	3 Ø
D222NRB	240VAC	A	60	3	7.50 ●	10	15 ●
D322NRB	240VAC	B	60	3 ✱	7.50	10	15

NOTES:
FINISH - GRAY BAKED ENAMEL ELECTRODEPOSITED OVER CLEANED PHOSPHATIZED STEEL
UL LISTED - FILE E-2875
ALL NEUTRALS - INSULATED GROUNDABLE
SUITABLE FOR USE AS SERVICE EQUIPMENT
SHORT CIRCUIT RATINGS:
10,000 AMPERES WHEN USED WITH OR PROTECTED BY CLASS H OR K FUSES
100,000 AMPERES WHEN USED WITH OR PROTECTED BY CLASS R FUSES
TOP ON NEMA 3R ENCLOSURES HAVE PROVISIONS FOR MAXIMUM 2.50 BOLT-ON HUBS.
WHEN MOUNTING THESE SWITCHES, ALLOW 3.00 IN / 76 MM MIN. CLEARANCE
BETWEEN ENCLOSURES FOR OPENING OF SIDE HINGED DOOR.

✱USE OUTER SWITCHING POLES
●FOR CORNER GROUNDED DELTA SYSTEMS ONLY.
±LUGS SUITABLE FOR 60°C OR 75°C CONDUCTORS.

GENERAL DUTY SAFETY SWITCHES
VISIBLE BLADE TYPE
60 AMPERE
ENCLOSURE - NEMA TYPE 3R RAINPROOF

SQUARE D COMPANY

DWG. NO. 1863

JUNE 2000

REF DWG #1863

DRAWING NUMBER:

SS

A. System Specifications and Ratings

- Maximum Voltage: 1,000 Volts
- Maximum Current: **JB-1.2:** 80 Amps; **JB-1.XL:** 120 Amps
- Allowable Wire: 14 AWG – 6 AWG
- Spacing: Please maintain a spacing of at least ½” between uninsulated live parts and fittings for conduit, armored cable, and uninsulated live parts of opposite polarity.
- Enclosure Rating: Type 3R
- Roof Slope Range: 2.5 – 12:12
- Max Side Wall Fitting Size: 1”
- Max Floor Pass-Through Fitting Size: 1”
- Ambient Operating Conditions: (-35°C) - (+75°C)
- Compliance:
 - **JB-1.2:** UL1741, CSA C22.2 No. 290; **JB-1.XL:** UL1741, CSA C22.2 No. 290
 - Approved wire connectors: must conform to UL1741, CSA C22.2 No. 290
- System Marking: **Interek Symbol and File #5019942**
- Periodic Re-inspections: If re-inspections yield loose components, loose fasteners, or any corrosion between components, components that are found to be affected are to be replaced immediately.



Table 1: Typical Wire Size, Torque Loads and Ratings

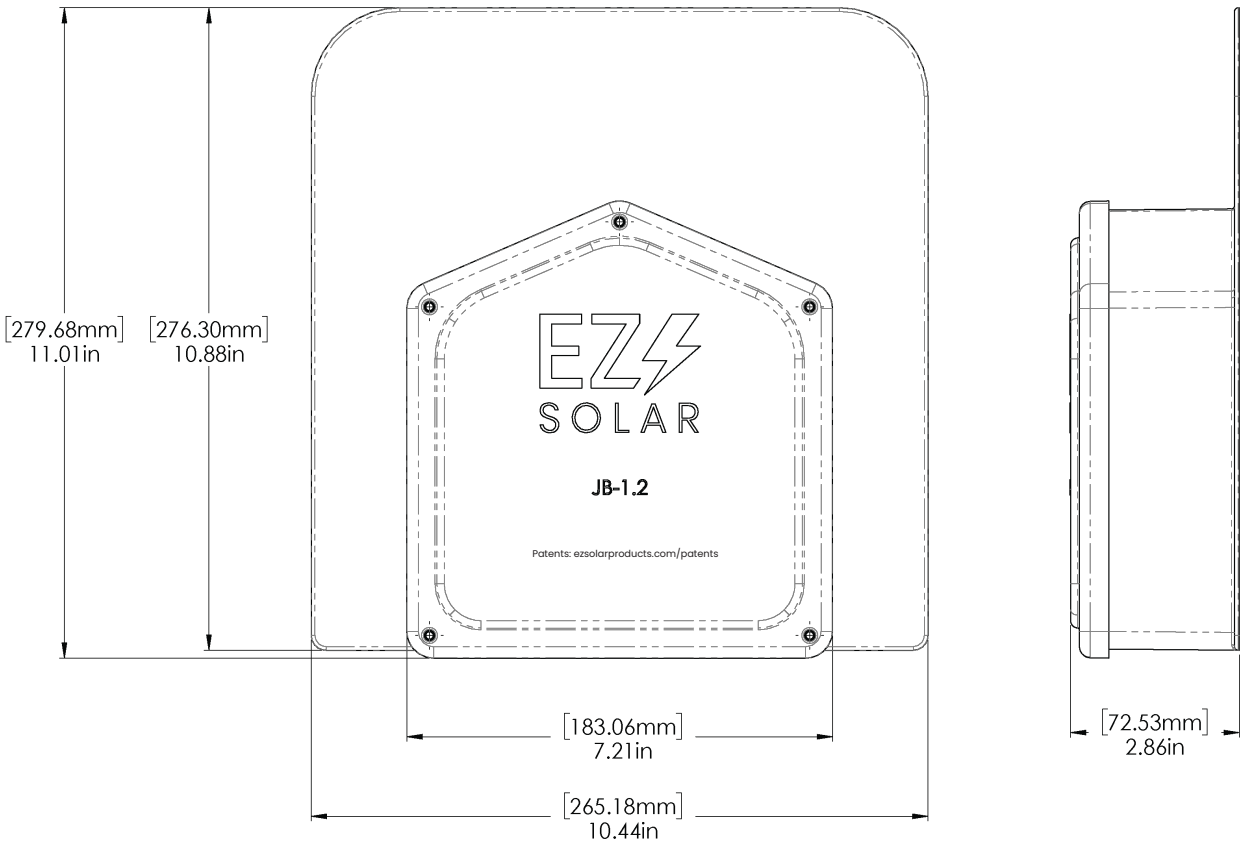
	1 Conductor	2 Conductor	Torque				
			Type	NM	Inch Lbs	Voltage	Current
ABB ZS6 terminal block	10-24 awg	16-24 awg	Sol/Str	0.5-0.7	6.2-8.85	600V	30 amp
ABB ZS10 terminal block	6-24 awg	12-20 awg	Sol/Str	1.0-1.6	8.85-14.16	600V	40 amp
ABB ZS16 terminal block	4-24 awg	10-20 awg	Sol/Str	1.6-2.4	14.6-21.24	600V	60 amp
ABB M6/8 terminal block	8-22 awg		Sol/Str	.08-1	8.85	600V	50 amp
Ideal 452 Red WING-NUT Wire Connector	8-18 awg		Sol/Str	Self-Torque	Self-Torque	600V	
Ideal 451 Yellow WING-NUT Wire Connector	10-18 awg		Sol/Str	Self-Torque	Self-Torque	600V	
Ideal, In-Sure Push-In Connector Part #39	10-14 awg		Sol/Str	Self-Torque	Self-Torque	600V	
WAGO, 2204-1201	10-20 awg	16-24 awg	Sol/Str	Self-Torque	Self-Torque	600V	30 amp
WAGO, 221-612	10-20 awg	10-24 awg	Sol/Str	Self-Torque	Self-Torque	600V	30 amp
Dottie DRC75	6-12 awg		Sol/Str	Snap-In	Snap-In		
ESP NG-53	4-6 awg		Sol/Str		45	2000V	
	10-14 awg		Sol/Str		35		
ESP NG-717	4-6 awg		Sol/Str		45	2000V	
	10-14 awg		Sol/Str		35		
Brumall 4-5,3	4-6 awg		Sol/Str		45	2000V	
	10-14 awg		Sol/Str		35		

Table 2: Minimum wire-bending space for conductors through a wall opposite terminals in mm (inches)

Wire size, AWG or kcmil (mm2)	Wires per terminal (pole)			
	1 mm (inch)	2 mm (inch)	3 mm (inch)	4 or More mm (inch)
14-10 (2.1-5.3)	Not Specified	-	-	-
8 (8.4)	38.1 (1-1/2)	-	-	-
6 (13.3)	50.8 (2)	-	-	-

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	JB-1.2 BODY	POLYCARBONATE WITH UV INHIBITORS	1
2	JB-1.2 LID	POLYCARBONATE WITH UV INHIBITORS	1
3	#10 X 1-1/4" PHILLIPS PAN HEAD SCREW		6
4	#8 X 3/4" PHILLIPS PAN HEAD SCREW		6

SIZE B	DWG. NO. JB-1.2	REV
SCALE: 1:2	WEIGHT: 1.45 LBS	SHEET 1 OF 3
TORQUE SPECIFICATION:		15-20 LBS
CERTIFICATION:		UL 1741, NEMA 3R CSA C22.2 NO. 290
WEIGHT:		1.45 LBS



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RIGID PVC CONDUIT FITTINGS

JB444 JUNCTION BOXES

ISSUE DATE:
DATE D'EMISSION: 2009 04 30

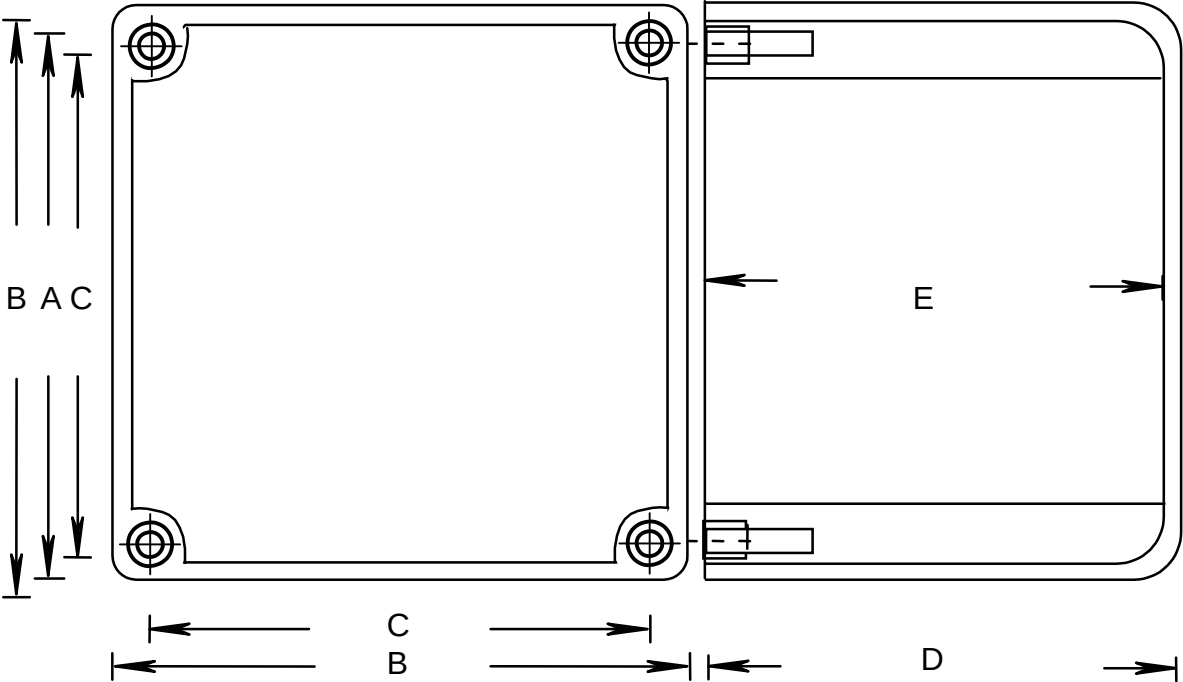
SUPERCEDES:
REPLACE: 2004 07 15

RIGID PVC CONDUIT FITTINGS

JB444 JUNCTION BOXES

ISSUE DATE:
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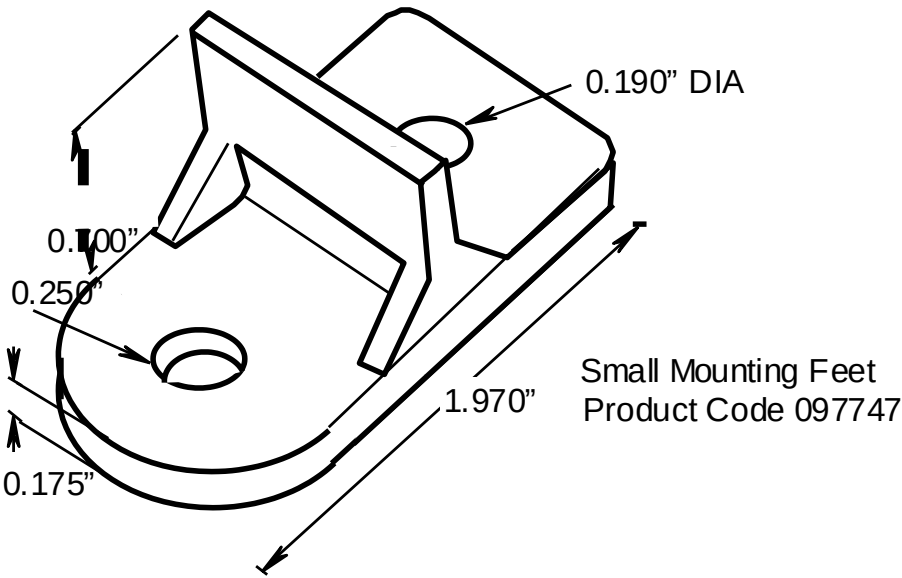
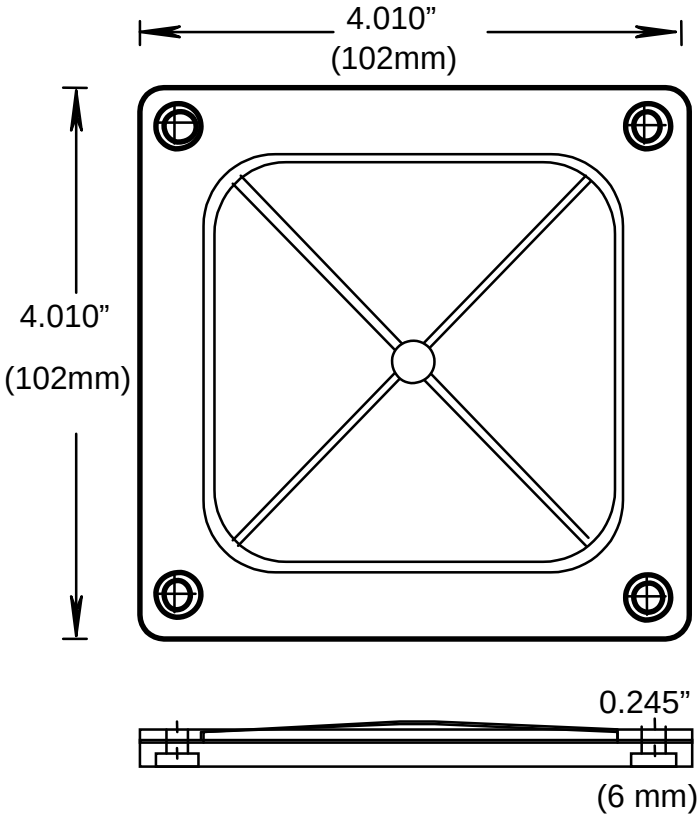
PRODUCT CODE	PART NUMBER	NOMINAL SIZE		A		B		C	
		(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)
076668	J444 STAHLIN	4	103	3.675	93	4.000	102	3.450	88
076259	AMJB444 ALLIED	4	103	3.675	93	4.000	102	3.450	88
077643*	2037-424T CANLET	4	103	3.675	93	4.000	102	3.450	88
077696	JB 444	4	103	4.000	101	4.395	112	3.950	101

PRODUCT CODE	PART NUMBER	NOMINAL SIZE		D		E		VOLUME	
		(in)	(mm)	(in)	(mm)	(in)	(mm)	(cu. In)	(cu. Cm)
076668	J444 STAHLIN	4	103	4.180	106.	3.850	98	51.5	844.6
076259	AMJB444 ALLIED	4	103	4.180	106	3.850	98	51.5	844.6
077643*	2037-424T CANLET	4	103	4.180	106	3.850	98	51.5	844.6
077696	JB 444	4	103	4.170	106	3.930	100	51.5	844.6

PRODUCT CODE	PART NUMBER	NOMINAL SIZE		GASKET CODE	INSERT CODE	SCREW CODE	M.FEET CODE
		(in)	(mm)				
076668	J444 STAHLIN	4	103		072538 (4)		
076259	AMJB444 ALLIED	4	103		072538 (4)		
077643*	2037-424T CANLET	4	103		072538 (4)		
077696	JB 444	4	103	097731	072538 (4) 072539 (2)	072522 (4) 072513 (2)	097747

* BOX WITH MOLDED MOUNTING FEET, INSERT ONLY; NO COVER, OR GASKET, UL LISTED 576J

COVER DIMENSIONS



Small Mounting Feet
Product Code 097747

Heyco®-Tite Liquid Tight Cordgrips for Enphase Q Cables

Straight-Thru, NPT Hubs with Integral Sealing Ring

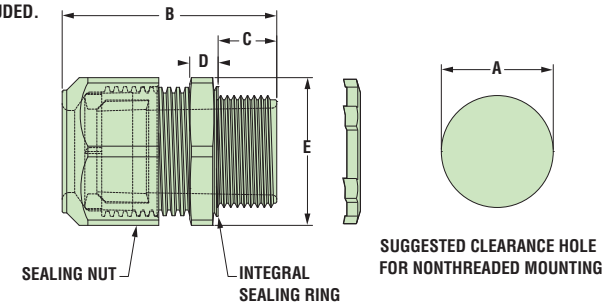
The Ultimate in Liquid Tight Strain Relief Protection

ALL NEW
PRODUCT!



GLAND CONFIGURATION			PART NO.	DESCRIPTION	UL/CSA or cULus	PART DIMENSIONS							
Type	Size	No.				A Clearance Hole Dia.	B Max. O.A. Length	C Thread Length	D Wrenching Nut Thickness	E Flat Size			
	mm.		Black			in.	mm.	in.	mm.	in.	mm.	in.	mm.
Oval Gland													
Q Cable	6,1 x 9,7	1	M3231GCZ	LTCG 1/2 6.1x9.7MM	UL/CSA	.875	22,2	1.70	43,2	.61	15,5	.21	5,3
Break-Thru Skinned Over Gland													
Q Cables plus Ground	6,1 x 9,7 3,3	2 1	M3234GDA-SM	SMCG 3/4 2-6.1x9.7MM 1-3.3MM	UL/CSA	1.040	26,4	2.00	50,8	.62	15,7	.25	6,4

Metal Locknuts INCLUDED.



Material	Nylon 6/6 with TPE Sealing Gland		
Certifications		Listed under Underwriters' Laboratories File E504900	
		CSA Certified by the Canadian Standards Association File 93876	
Flammability Rating	94V-2		
Temperature Range	Static -40°F (-40°C) to 239°F (115°C) Dynamic -4°F (-20°C) to 212°F (100°C)		
IP Rating	IP 68		

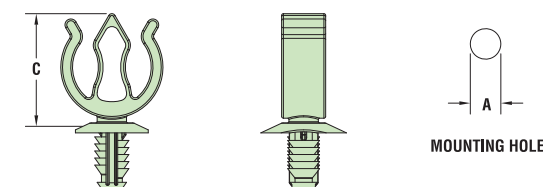
- Two new cordgrips now accommodate the Enphase Q Cable – M3231GCZ (1/2" NPT) and M3234GDA-SM (3/4" NPT).
- The 1/2" version provides liquid tight entry for one Enphase Q Cable – .24 x .38" (6,1 x 9,7 mm).
- The 3/4" version provides liquid tight entry for up to two Enphase Q Cables – .24 x .38" (6,1 x 9,7 mm) and an additional .130" (3,3 mm) dia. hole for a #8 solid grounding cable.
- The 3/4" version utilizes our skinned-over technology so any unused holes will retain a liquid tight seal.
- Rated for use with DG Cable.



Heyco® Helios® UVX Clip – Blind Mount

ALL NEW
PRODUCT!

PANEL THICKNESS RANGE		WIRE DIAMETER RANGE		PART NO.	DESCRIPTION	MOUNTING HOLE DIA.		OVERALL HEIGHT	
Minimum	Maximum	Minimum	Maximum			A		C	
in.	mm.	in.	mm.			in.	mm.	in.	mm.
1-2 Wires									
.028	0,7	.250	6,4	.23 (5,8 mm) - .32 (8,0 mm)	S6520 Helios UVX Clip 100 Pack S6560 Helios UVX Clip Bulk	.260	6,6	.96	24,4



Material	Nylon 6/6 with extended UV Capabilities		
Flammability Rating	94V-2		
Temperature Range	Dynamic -4°F (-20°C) to 185°F (85°C)		

- The jersey pine tree mounting style installs easily with superior holding power.
- UVX nylon protects from corrosion due to outdoor exposure.
- Installs into .260" (6,6 mm) mounting hole.
- Holds up to 2 cables between .230 - .315" (5,8 - 8,0 mm) each.
- Cables install with fingertip pressure.
- Molded from our robust UVX nylon 6/6 with extended UV capabilities for our Solar 20 Year Warranty.



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
FL Cert of Approval FL41396



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



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



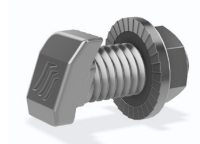
Pegasus Max Rail

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 1/2" socket.



Multi-Clamp

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



Hidden End Clamp

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



Ground Lug

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



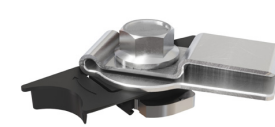
N-S Bonding Jumper

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



MLPE Mount

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



Cable Grip

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



Wire Clip

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



End Cap and Max End Cap

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

Certifications:

- UL 2703, Edition 1
- LTR-AE-001-2012
- ASCE 7-16 PE certified
- Class A fire rating for any slope roof
- FL Cert of Approval FL41396



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

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LOAD		SPAN				
SNOW (psf)	WIND (MPH)	32"	48"	72"	96"	120"
0	100					
	130					
10	140					
30	190					
50						
100						
120						

PEGASUS RAIL

PEGASUS MAX RAIL

For reference only. Spans above are calculated using 7-16 for a Gable Roof, Exposure Category B, 0-20deg 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 | www.pegasussolar.com



DRAWING NUMBER:

SS

Appendix A - Compatible PV Modules

Pegasus Rail System may be used to ground a PV module complying with UL 2703 only when the specific module has been evaluated for grounding and/or mounting in compliance with this installation manual. Unless otherwise specified, “xxx” refers to the power rating of the PV module. Both black & silver frames are included in the UL2703 listing.



Manufacturer	Model
Auxin	AXN6M612Txxx
Aptos	DNA-144-BF26-xxxW; DNA-144-MF26-xxxW; DNA-120-BF26-xxxW; DNA-120-MF26-xxxW; DNA-120-MF10-xxxW; DNA-120-BF10-xxxW; DNA-108-BF10-xxxW; DNA-108-MF10-xxxW; DNA-120MF23-xxxW
Axitec	AC-xxxM/156-60S; AC-xxxM/60S; AC-xxxMH/120S; AC-xxxMH/144S; AC-xxxMBT/108V; AC-xxxTGBl/108WB
Boviet	BVM6610M-xxx; BVM6610P-xxx
Canadian Solar	CS1 H-xxxMS; CS1 K-xxxMS; CS1Y-xxxMS; CS3K-xxxMS; CS3U-xxxMS; CS6K-xxxM; CS6K-xxxMS; CS6K-xxxP; CS6U-xxxM; CS6U-xxxP; CS6X-xxxM; CS6X-xxxP; BiHiKu CS3W-xxxMB-AG; CS3L-xxxMS; CS6R-xxxMS; CS3W-xxxPB-AG; CS3W-xxxP; CS3W-xxxMS; CS3L-xxxP; CS3L-xxxMS; CS3N-xxxMS; CS6W-xxxMB-AG; CS7NxxxMB-AG; CS6.1-54TM-xxxH; CS6.1-60TM-xxxH; CS6.2-48TM-xxxH
CertainTeed	CTxxxHC11-04; CTxxxM10-02; CTxxxM11-02; CTxxxM11-03; CTxxxHC00-04; CTxxxHC12-06; CTxxxHC11-06; CTM10440HC11-09
Chint Solar	CHSM6612M-xxx
Freedom Forever	FF-MP-BBB-xxx
Gstar	GSD7554T-xxxBT
Hansol	HSxxx TD-AN3
Heliene	Heliene20M xxx; Heliene36M xxx; Heliene36P xxx; Heliene60M xxx; Heliene60P xxx; Heliene72M Bifacial xxx; Heliene72P xxx; Heliene96M xxx Bifacial; Heliene96M xxx; Heliene 96P xxx; HSPE-144M M6 HC Bifacial xxx; HSPE 120M M6 HC Monofacial xxx; 144HC-M10-Bifacial; 460-144M-HC-M6; 156HC M10 NTYP SL Bifacial
Hyperion	HY-DH108P8B-xxx
Hyundai	HiD-SxxxRG(BK); HiS-MxxxRG; HiS-SxxxKl; HiS-SxxxRG; HiS-SxxxRG(BK); HiS-SxxxRl; HiS-SxxxTl; HIA-SxxxHl; HiS-SxxxXG(BK); HiN-SxxxXG(BK); HiS-SxxxY-H(BK); HiS-SxxxYH(BK); HiN-TxxxNF(BK)
Imperial Star	ISM7-SHDD108-xxx/M; ISM7-SHSB108-xxx/M
JA Solar	JAM72S01-xxx/PR; JAP72S01-xxx/SC; JAM72D20-xxx/MB; JAM54S30-xxx/LR; JAM72D30-xxx-MB-DS; JAM54S31 xxx-MR
Jinko	JKMxxxM-60; JKMxxxM-60B; JKMxxxM-60B L; JKMxxxM-60HBL; JKMxxxM-60HL; JKMxxxM-60L; JKMxxxM-60-V; JKMxxxM-72; JKMxxxM-72HL-V; JK-MxxxM-72H-V; JKMxxxM-72-V; JKMxxxP-60; JKMxxxPP-60; JKMxxxN-6RL3; JKMxxxM-6RL3-B; JKMxxxM-7RL3-TV; JKMxxxM-72HBL-V; JKMxxxN-54HL4-B
LG	LG N 1 K-G4; LGS 1 C-AS; LGxxxA 1 C-AS; LGxxxE1 C-AS; LGxxxE1 K-AS; LGxxxN 1 C-A3; LGxxxN 1 C-AS; LGxxxN 1 C-B3; LGxxxN 1 C-G3; LGxxxN 1 C-G4; LGxxxN1 C-VS; LGxxxN1C-Z4; LGxxxN1 K-AS; LGxxxN1 K-G4; LGxxxN1 K-VS; LGxxxN1 K-Z4; LGxxxN2T-AS; LGxxxN2W-AS; LGxxxN2W-G4; LGxxxN2W-VS; LGxxxN2W-LS; LGxxxO1CAS; LGxxxO1C-VS; LGxxxO1 K-AS; LGxxxO1 K-VS; LGxxxS1C-AS; LGxxxS1C-G4; LGxxxS2W-AS; LGxxxN1 K-LS; LGxxxNIC-NS; LGxxxM1 K-A6; LGxxxN1 K-B6; LGxxxO1C-A6; LGxxxOAC-A6; LGxxxOAK-A6; LGxxxM1C-A6; LGxxxN2W-E6; LGxxxN2T-E6; LGxxxN1 K-E6; LGxxxN3K-V6; LGxxxN1C-A6
Longi	LR6-60BP-xxx; LR6-60HPB-xxx; LR6-60HPH-xxx; LR6-60PB-xxx; LR6-60PE-xxx; LR6-60-xxx; LR4-60HPH-xxxM; LR4-HPB-xxxM; LR4-72HPH-xxxM; LR4-72HBD-xxxM; LRS-54HPH-xxxM; LR5-72HBD-xxxM; LR5-54HABB-xxxM; LR5-54HPB-xxxM; LR7-72HGD-xxxM; LR8-54HGBB-xxxM
Maxeon	SPR-MAX3-xxx-COM; SPR-MAX3-xxx-BLK; SPR-MAXS-xxx-COM; SPR-MAX6-xxx-COM; SPR-X21/22-xxx-COM; SPR-MAX3-XXX-BLK-R; SPR-MAX6-XXX-BLK
Meyer Burger	MB_B120AyB-xxx; MB_TG120ByB-xxx; MB_W120AyB-xxx
Mission Solar	MSE60Axxx; MSExxxSB 1 A; MSExxxSO6J; MSExxxSOSK; MSExxxSOST; MSExxxSO8K; MSExxxSO8T; MSExxxSO9S; MSExxxSX6S; MSExxxSX6W; MSExxxSXST; MSExxxSXSK; MSExxxSXSr; MSExxxSX6Z; MSExxxSX9R; MSExxxSX9Z; MSExxxSR9S; MSExxxSR8K; MSExxxSR8T; MSExxxHTOB; MSI10-xxx-HT4G; MSI10-xxxHT4T; MSI10-xxxHN4G; MSExxxHN0B
Mitrex	Mxxx-L3H; Mxxx-I3H; Mxxx-H1 H; Mxxx-B1 F; Mxxx-A1 F
mSolar	TXl10-xxx108BB
Panasonic	VBHNxxxKA01; VBHNxxxKA03; VBHNxxxSA16; VBHNxxxSA16B; VBHNxxxSA17; VBHNxxxSA17E; EVPVxxx; EVPVxxxK; EVPVxxxPK; EVPVxxxH; EVPVxxx-HK; EVPVxxxPK
Philadelphia Solar	PS-M60(BF)-xxx; PS-M72(BF)-xxx; PS-MNB144(HCBF)-xxxW; PS-MNB108(HCBF)-xxxW
Phono Solar	PSxxxM6-18/VHB; PSxxxM6H-18/VHB; PSxxxM8GFH-18/VNHB; PSxxxM8GFH-18/VNH; PSxxxL8GFH-16/QNH



Appendix A - Compatible PV Modules (cont.)

Pegasus Rail System may be used to ground a PV module complying with UL 2703 only when the specific module has been evaluated for grounding and/or mounting in compliance with this installation manual. Unless otherwise specified, “xxx” refers to the power rating of the PV module. Both black & silver frames are included in the UL2703 listing.



Manufacturer	Model
QCells	O.Peak 265; O.PEAK BLK-G3.1 xxx; O.PEAK BLK-G4.1 xxx; O.PEAK DUO BLK-G5 xxx; O.PEAK DUO BLK-G5/SC xxx; O.PEAK DUO BLK-G6+ xxx; 0 PEAK DUO G6+ xxx AC ENP 107+; 0 PEAl< DUO BLK G9+ xxx; O.PEAl< DUO L-GS.2 xxx; O.PEAK DUO L-GS.3 xxx; O.Peak Duo-GS xxx; O.PEAK DUO-GS/SC xxx; O.PEAK DUO-G7 xxx; O.PEAK G4.1 xxx; O.PEAK G4.1/ Max xxx; O.PEAK G4.1/SC xxx; O.PEAK G4.1/TAA xxx; O.PEAK L-G4.2 xxx; O.PLUS BFR G4.1 xxx; O.PLUS BFR-G4.1/TAA xxx; O.PLUS L-G4.1 xxx; O.PLUS L-G4.2 xxx; O.PLUS L-G4.2/TAA xxx; O.PRO BFR-G4.1 xxx; O.PEAK DUO L-G8.2 xxx; O.PEAK DUO BLK-G8 xxx; O.PEAK DUO BLK-G8+ xxx; O.PEAK DUO BLK ML G9 xxx; O.PEAK DUO BLK ML G9+ xxx; O.PEAK DUO BLK-G10 xxx; O.PEAK DUO BLK-G10+ xxx; O.Peak DUO ML-G10+; O.Peak DUO BLK ML-G10.a+; O.Peak Duo XL G10 xxxBFG; O.PEAK DUO-G10 xxx; O.PEAK DUO-G10+ xxx; O.PEAK DUO-G10.a xxx; O.PEAK DUO-G10.a+ xxx; O.PEAK DUO BLK -G10.a xxx; O.PEAK DUO BLK-G10.a+ xxx; O.PEAK DUO BLK ML-G10 xxx; O.PEAl< DUO ML-G10.a xxx; O.PEAl< DUO ML-G10.a+ xxx; O.PEAK DUO BLK ML-G10 xxx; O.PEAK DUO BLK ML-G10+ xxx; O.PEAK DUO BLK ML-G10.a xxx; O.Peak Duo ML-G10+/t xxx; O.TRON BLK M-G2+ xxx; O.TRON M-G2+ xxx; O.TRON XL-G2.3/ BFG; a.PEAK DUO XL-G11 S.3/BFG; O.PEAK DUO XL-G11.3/BFG; O.PEAK DUO XL-G11.3; a.PEAK DUO ML-G12S.3 / BFG; a.PEAK DUO ML-G12S.d / BFG; O.TRON BLK M-G2+/AC; a.PEAK DUO BLK ML-G10.a+; a.PEAK DUO BLK ML-G10+; O.PEAK DUO BLK ML-G10.B+; Q.PEAK DUO BLK ML-G10.C+; Q.TRON BLK M-G2.H+; Q.TRON BLK M-G2.H1+/AC
REC	RECxxxNP: RECxxxNP Black; RECxxxPE: RECxxxPE 72: RECxxxPE(BLK): RECxxxTP: RECxxxTP BLK: RECxxxTP2: RECxxxTP2 BLK: RECxxxTP2 BLK 02; RECxxxTP2 BLK2; RECxxxTP2M; RECxxxTP2S 72; RECxxxAA; RECxxxAA Pure; RECxxxAA Black; RECxxxAA 72; RECxxxAA PURE-R; RECxxxNP3 Black; RECxxxNP2 Black; RECxxxNP2; RECxxxAA Pure-RX; RECxxxAA Pure 2; RECxxxAA PRO L; RECxxxAA Pro M
S-Energy	SNxxxM-1 0; SNxxxM-10(B); SNxxxM-1 OT; SC20-60M B E-xxxM
SEG	SEG-xxx-BMA-HV; SEG-xxx-BMA-TB; SEG-xxx-BMA-BG; SEG-xxx-BMB-HV; SEG-xxx-BMA-BG; SEG-xxx-BMD-HV_; SEG-xxx-BMD-TB; SEG-xxx-BMB-BG; SEG-xxx-BMC-HV; SEG-xxx-BMC-TB: SEG-xxx-BMC-BG; SEG-xxx-BTD-BG; SEG-xxx-BTB-BG
Silfab	SILxxxBL: SILxxxNL; SLAxxxM; SLAxxxM: SLGxxxM; SSAxxxM; SIL-xxxNX; SIL-xxxHL; SIL-xxxNX; SIL-xxxBK: SIL-xxxHC; SIL-xxxHC+; SIL-xxxBG; SIL-xxxHN: SIL-xxxHM; SIL-520OM;; SIL-xxx-OD; SIL-xxx XM
Sirius	ELNSM54M-HC-xxxW
Sonali	SS-XXXW-M60 M10
Solar4America	S4Axxx-72MH5BB, S4Axxx-60MH5B B; S4Axxx-108MH10BB; S4Axxx-144MH10STT; S4Axxx-108TH10BB; S4Axxx-144TH10STT; S4Axxx-108TH16BB; S4Axxx-144TH16XXX
SolarEver	SE-182*91-xxxM-108N; SE-166*83-xxxM-144; SE-182*91-XXXM-108; SE-182*91-XXXM-144; SE-182*105-xxxM-96-BD
Solaria	PowerXT-xxxR-AC; PowerXT-xxxR-8D; PowerXT-xxxR-BX; PowerXT-xxxR-PD; PowerXT-xxxR-PX; PowerXT-xxxR-PM; PowerXT-xxxR-PL; PowerX-xxxR; PowerX-xxxR-4T
SunPower	SPR-Axxx-G-AC; SPR-E19-xxx; SPR-E19-xxx-D-AC; SPR-E20-xxx; SPR-E20-xxx-C-AC; SPR-E20-xxx-COM; SPR-E20-xxx-D-AC; SPR-E20-xxx-E-AC; SPR-X20-xxx-D-AC; SPR-X20-xxx-E-AC; SPR-X21-xxx; SPR-X21-xxx-BLK; SPR-X21-xxx-BLK-C-AC; SPR-X21-xxx-BLK-D-AC; SPR-X21-xxx-BLK-E-AC; SPR-X21-xxx-C-AC; SPR-X21-xxx-D-AC; SPR-X22-xxx; SPR-X22-xxx-C-AC; SPR-X22-xxx-COM; SPR-X22-xxx-D-AC; SPR-X22-xxx-D-AC; SPR-X22-xxx-E-AC; SPR-xxxE-WHT-D; SPR-xxxNE-WHT-D; SPR-Mxxx-HAC; SPR-Mxxx-BLK-H-AC
Talesun	TP6L60M; TP6L60M(H); TP7F60M; TP7F60M(H): TP7F54M; TP7F54M;TM7G54M-xxx; TM7G54M(BK)-xxx; TP7G54M-xxx; TM3G48M-xxx
Tesla	SC31582; SCxxx; SCxxxB1; SCxxxB2; T xxxS; T xxxH; SxxxH
Trina	TSM-xxxDD05A; TSM-xxxDD05A(II); TSM-xxxDD05A.05(II); TSM-xxxDD05A.08(II); TSM-xxxDD05A.18(11); TSM-xxxDD05H.05(II); TSM-xxxDD05H.08(II); TSM-xxxPA05.18; TSM-xxxPD05.05; TSM-xxxPD05.18; TSM-xxxPD14; TSM-xxxDD06M.05(II): TSM-DD06H.08(II); TSM-DD06H.05(II); TSM-DE09C.05; TSM-DE09.05; TSM-DE09.07; TSMDE09C. 07; TSM-DE06X05(II): TSM-DD06M 05(11)T; SM-DE15V(II); TSM-DE15M(II); TSM-DE15H(II); TSM-14H(II); TSM-DE09 08; TSM-NE09RC.05; TSM-NE09RH.05; TSM-NED19RC.20; TSM-NEG19RC.20; TSM-NE19RC
United Ren. Energy	D6MxxxH3A
URE Co.	FAMxxxES-BB; FAMxxxESG-BB, FBMxxxMFG-BB; FAKxxxCSG; FAKxxxESG; FAMxxxE7G-BB; FBMxxxMFG; FBMxxxM7G-BB
Vikram	VSMDH.66.xxx.05; VSMDH.72.xxx.05; VSMDH.78.xxx.05; VSMDH.72.xxx.05
VSun	VSUN-xxx-108B MH; VSUNxxx-120B MH; VSUNxxx-108M-BB; VSUNxxx-144BMH-DG; VSUNxxxN-108BMH; VSUNxxxN-108MH
Waaree	WSMDI-xxx
Winaico	WSP-xxxM6
Yingli	YLxxxD-306; YLxxxP-296
ZNShine	ZXM6-NH added 144; ZXM8-SP150; ZXM8-SP120; ZXM8-SPLDD120;ZXM6-NH144; ZXM6-NH132;ZXM6-NH120; ZXM7-SPLD144; ZXM6-NHLD120; ZXM6-NHLD132; ZXM7-SH108

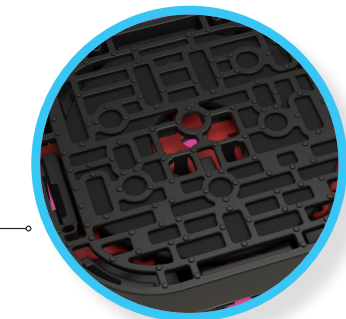




INSTAFLASH[®] 2

Rafter or Deck Attach!

- No pilot holes
- Pre-installed sealant
- No caulking, no ripping shingles



Pre-installed sealant

Before: Sealant contained by protective cage. No contact with hands or tools.



Install in any season

Install in 0 to 170° F weather, including rain and sleet. Watertight for life.

Instant, watertight seal

After: Non-hardening sealant automatically fills all gaps, overlays and butt joints.

The Ultimate Comp Roof Attachment

Simple to use. Works for rafter or deck attach. No caulking, no ripped shingles, no mess. Pre-installed sealant acts as a chemical flashing and fills all gaps, voids, and butt joints for an instant, watertight seal.



25-Year Warranty

Manufactured with advanced materials and coatings to outlast the roof itself



Code Compliant

Fully IBC/CBC Code Compliant
Exceeds ASCE 7-22 Standards
UL2703 Certified



Self-Healing

Proprietary non-hardening sealant will flex and reseal over years of thermal expansion and contraction



Larger Spans

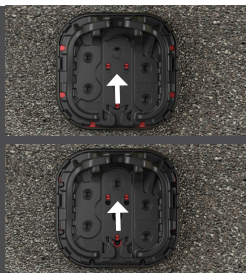
Extra-large L-foot and proprietary screws result in larger spans between mounts

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



INSTAFLASH[®] 2

1
Release Safety.



2
Install screw through center hole, and drive into roof until InstaFlash2 pushes through cage and seats onto the roof.



3
If screw hits rafter, drive second screw in hole above. Ensure screws are embedded at least 2.5" into rafter. Installation complete.



4
If first screw misses rafter, install second screw into the left or right screw holes over rafter.

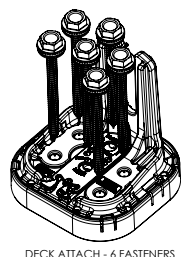
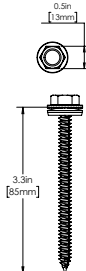
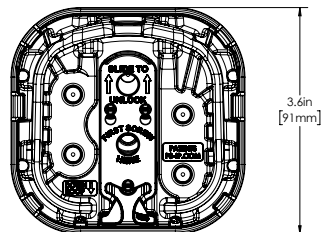
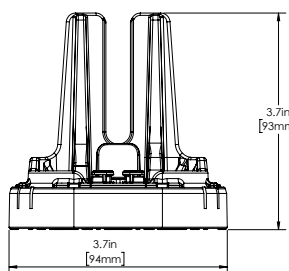


5
Continue until 2 screws are embedded at least 2.5" into rafter.

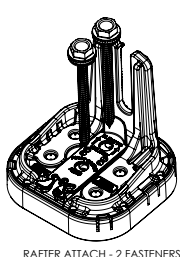


6
For deck attach, use 6 screws.

Note: Deck attach may reduce max span.



DECK ATTACH - 6 FASTENERS



RAFTER ATTACH - 2 FASTENERS

SPECIFICATIONS

INSTAFLASH KITS

	PIF2-B0	PIF2-BDT	PIF2-M0	PIF2-MDT
Finish	Black		Mill	
Kit Contents	Black InstaFlash2	Black InstaFlash2, Dovetail T-bolt	Mill InstaFlash2	Mill InstaFlash2, Dovetail T-bolt
Attachment Type	Rafter & Deck Attach			
Roof Fasteners	1/2" Socket Driven; PF-DRW85 (sold separately in boxes of 24)			
Roof Type	Sloped Roof: Composition Shingle, Rolled Asphalt Flat Roof: Modified Bitumen Roof, Built-Up Roof			
Flashing Type	Factory Installed Non-Drying, Non-Skinning Butyl Based Chemical Flashing			
Installation Temperature	0° F to 170° F			
Cure Time	Instantly Waterproof; Non-Hardening			
Service Temperature	-40° F to 195° F			
Certifications	IBC, ASCE/SEI 7-16 & 7-22, UL2703			
Install Application	Most Railed Systems			
Kit Quantity	24			
Boxes Per Pallet	36			

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SCAN FOR
INSTALLATION
VIDEO



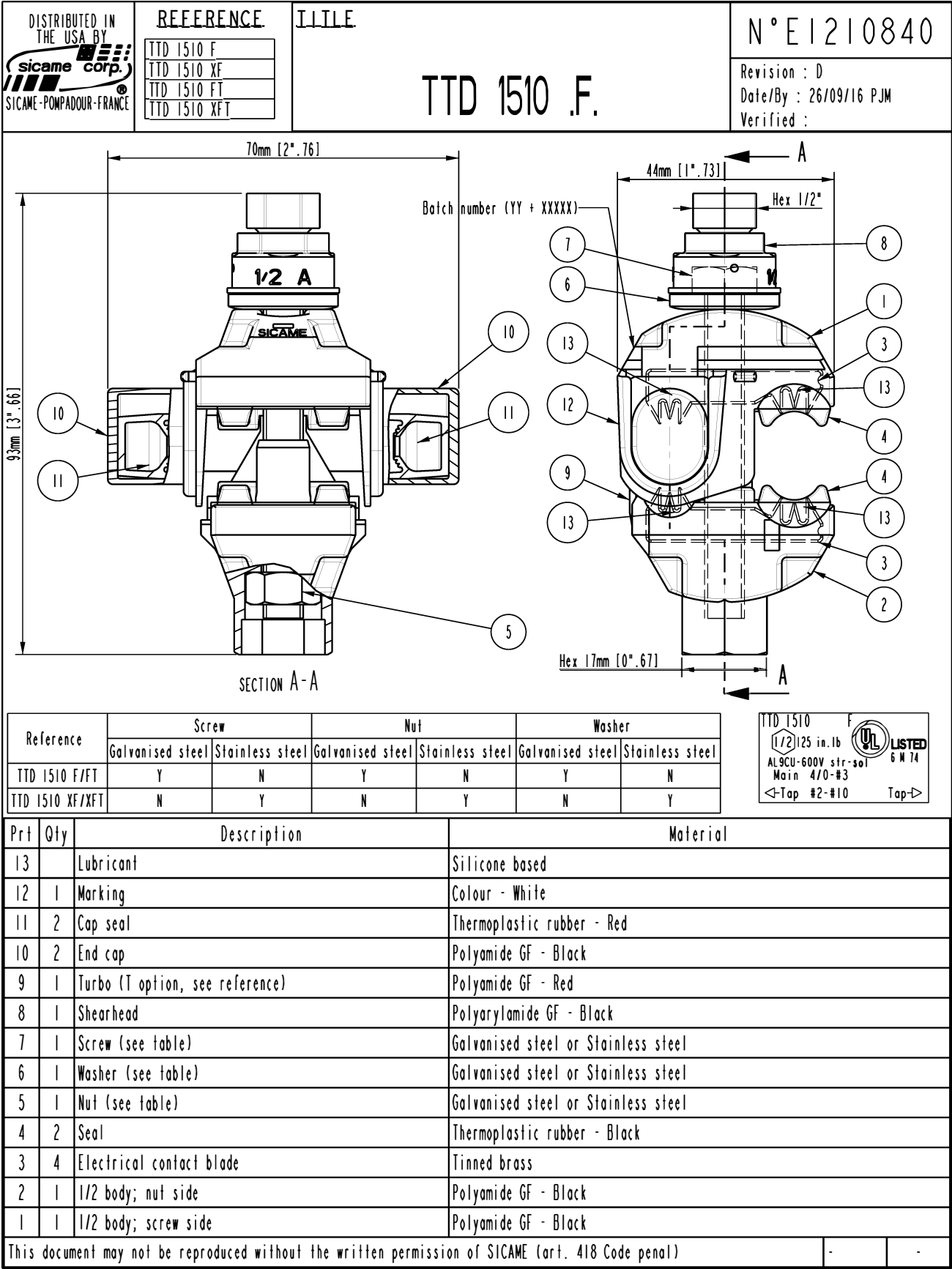
SCAN FOR
FREE TRIAL

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



DRAWING NUMBER:

SS



UL Product iQ®

Wire Connectors for Electric Utilities

COMPANY

SICAME
1 Av Basile Lachaud
Pompadour, 19230 France



E155510

Splicing wire connectors, Model(s): TTD0510 Catalog number may be followed by Suffix T, J, B, F, A or X. with the exception that "X", "A" and "T" option (stainless steel screws, different size for shear head HEX and loosening HEX and 'turbo' option) may only appears on the reference on the packaging.

Splicing wire connectors, Model(s): TTD0810 Catalog number may be followed by Suffix T, J, B, F, A or X. with the exception that "X", "A" and "T" option (stainless steel screws, different size for shear head HEX and loosening HEX and 'turbo' option) may only appears on the reference on the packaging.

Splicing wire connectors, Model(s): TTD1010 Catalog number may be followed by Suffix T, J, B, F, A or X. with the exception that "X", "A" and "T" option (stainless steel screws, different size for shear head HEX and loosening HEX and 'turbo' option) may only appears on the reference on the packaging.

Splicing wire connectors, Model(s): TTD1510 Catalog number may be followed by Suffix T, J, B, F, A or X. with the exception that "X", "A" and "T" option (stainless steel screws, different size for shear head HEX and loosening HEX and 'turbo' option) may only appears on the reference on the packaging.

Splicing wire connectors, Model(s): TTD1810 Catalog number may be followed by Suffix T, J, B, F, A or X. with the exception that "X", "A" and "T" option (stainless steel screws, different size for shear head HEX and loosening HEX and 'turbo' option) may only appears on the reference on the packaging.

Splicing wire connectors, Model(s): TTD2110 Catalog number may be followed by Suffix T, J, B, F, A or X. with the exception that "X", "A" and "T" option (stainless steel screws, different size for shear head HEX and loosening HEX and 'turbo' option) may only appears on the reference on the packaging.

Splicing wire connectors, Model(s): TTD2610 Catalog number may be followed by Suffix T, J, B, F, A or X. with the exception that "X", "A" and "T" option (stainless steel screws, different size for shear head HEX and loosening HEX and 'turbo' option) may only appears on the reference on the packaging.

Splicing wire connectors, Model(s): TTD2710 Catalog number may be followed by Suffix T, J, B, F, UNI, A or X. with the exception that "X", "A" and "T" option (stainless steel screws, different size for shear head HEX and loosening HEX and 'turbo' option) may only appears on the reference on the packaging.

* - May be followed by suffix B, J, T or X.

Last Updated on 2024-09-03

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