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May 31, 2022

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Irvine, CA 92614

Scott
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Digitally signed by Scott Wyssling, PE
DN: C=US, S=Utah, L=Alpine, O=Wyssling
Consulting, OU=Owner, CN="Scott Wyssling, PE",
E=swyssling@wysslingconsulting.com
Reason: I am the author of this document
Location: your signing location here
Date: 2022.06.01 00:01:14-06'00'
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Re: Engineering Services
Larson Residence
2018 Southwest Fallon Lane, Lake City, FL
3.300 kW System

To Whom It May Concern:

We have received information regarding solar panel installation on the roof of the above referenced structure. Our evaluation of the structure is to verify the existing capacity of the roof system and its ability to support the additional loads imposed by the proposed solar system.

A. Site Assessment Information

1. Site visit documentation identifying attic information including size and spacing of framing for the existing roof structure.
2. Design drawings of the proposed system including a site plan, roof plan and connection details for the solar panels. This information will be utilized for approval and construction of the proposed system.

B. Description of Structure:

Roof Framing: Prefabricated wood trusses at 24" on center. All truss members are constructed of 2x4 dimensional lumber.
Roof Material: Metal Roofing
Roof Slope: 20 degrees
Attic Access: Accessible
Foundation: Permanent

C. Loading Criteria Used

- **Dead Load**
 - Existing Roofing and framing = 7 psf
 - New Solar Panels and Racking = 3 psf
 - TOTAL = 10 PSF
- **Live Load** = 20 psf (reducible) – 0 psf at locations of solar panels
- **Ground Snow Load** = 0 psf
- **Wind Load** based on ASCE 7-16
 - Ultimate Wind Speed = 118 mph (based on Risk Category II)
 - Exposure Category C

Analysis performed of the existing roof structure utilizing the above loading criteria is in accordance with the FBC 2020, 7th Edition, including provisions allowing existing structures to not require strengthening if the new loads do not exceed existing design loads by 105% for gravity elements and 110% for seismic elements. This analysis indicates that the existing framing will support the additional panel loading without damage, if installed correctly.

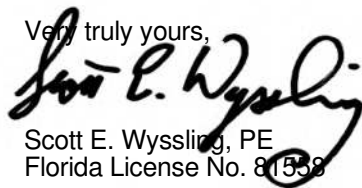
D. Solar Panel Anchorage

1. The solar panels shall be mounted in accordance with the most recent S-5! installation manual. If during solar panel installation, the roof framing members appear unstable or deflect non-uniformly, our office should be notified before proceeding with the installation.
2. System will be attached to the metal roofing material utilizing the patented S-5! Connection. Installation of the connections shall be in accordance with the manufacturer's recommendations.
3. Considering the wind speed, roof slopes, size and spacing of framing members, and condition of the roof, the panel supports shall be placed no greater than 72" on center.
4. Panel supports connections shall be staggered to distribute load to adjacent framing members.

Based on the above evaluation, this office certifies that with the racking and mounting specified, the existing roof system will adequately support the additional loading imposed by the solar system. This evaluation is in conformance with the FBC 2020, 7th Edition, current industry standards, and is based on information supplied to us at the time of this report.

Should you have any questions regarding the above or if you require further information do not hesitate to contact me.

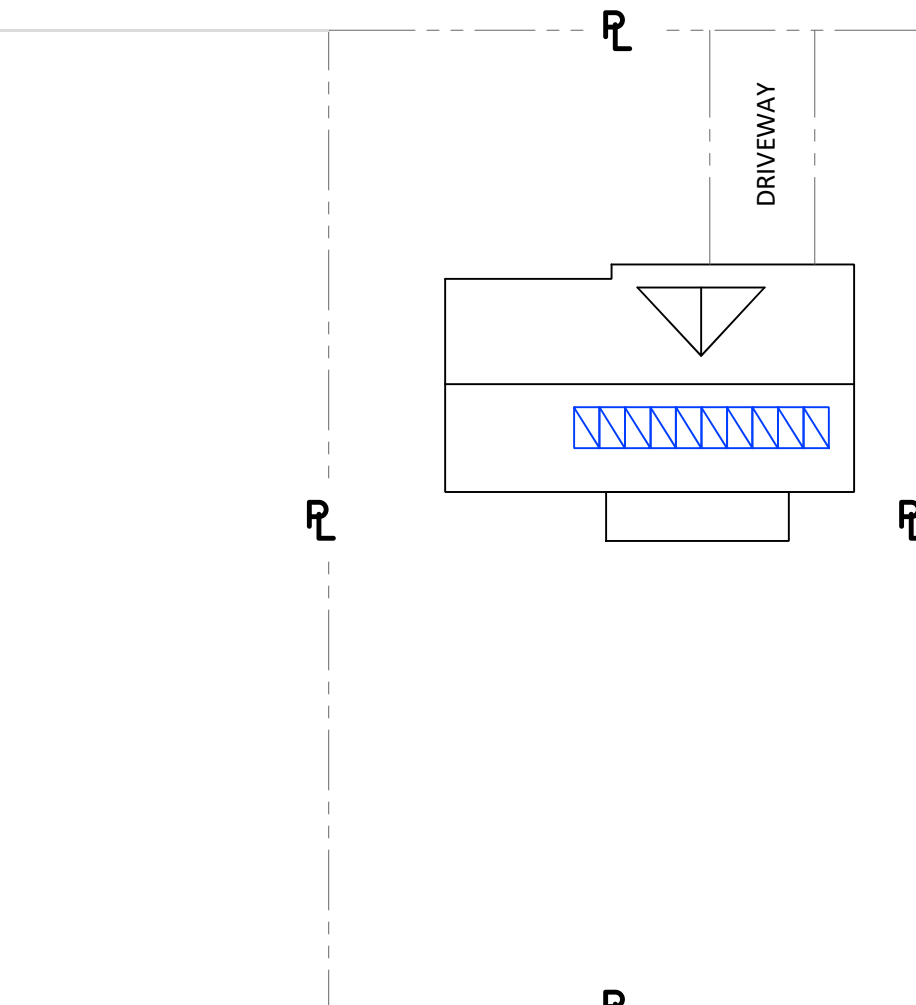
Very truly yours,


Scott E. Wyssling, PE
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76 N Meadowbrook Drive Alpine UT 84004
Florida License # RY34912

THIS PLAN HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY SCOTT WYSSLING, PE USING A DIGITAL SIGNATURE AND DATE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES

PARCEL MAP GPS COORDINATES (30.172028,-82.66613) SW FALLON LN  PROJECT APN:		GOVERNING CODES APPLICABLE BUILDING CODES: 2018 INTERNATIONAL BUILDING CODE 2018 INTERNATIONAL RESIDENTIAL CODE 2018 INTERNATIONAL FIRE CODE 2017 NATIONAL ELECTRIC CODE 2020 FLORIDA BUILDING CODE 2020 FLORIDA RESIDENTIAL CODE BUILDING OCCUPANCY: R-3 RISK CATEGORY: II ASCE 7-16 WIND SPEED: 118 EXPOSURE CATEGORY: Exposure C SNOW LOAD: 0 SNOW EXPOSURE: N/A CONSTRUCTION TYPE: IIIA		DESIGN CRITERIA		PROJECT LOCATION  SHEET INDEX <table><tr><th>SHEET NUMBER</th><th>SHEET TITLE</th></tr><tr><td>PV-001</td><td>COVER SHEET</td></tr><tr><td>N-001</td><td>GENERAL NOTES</td></tr><tr><td>PV-100R</td><td>PV ARRAY LAYOUT</td></tr><tr><td>S-100</td><td>RACKING LAYOUT</td></tr><tr><td>S-200</td><td>SECTION ELEVATION</td></tr><tr><td>S-201</td><td>ATTACHMENT DETAILS</td></tr><tr><td>E-001</td><td>EQUIP. CALCULATION</td></tr><tr><td>E-002</td><td>WIRE AND COND. 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GENERAL NOTES:*

PROPER ACCESS AND WORKING CLEARANCE AROUND EXISTING AND PROPOSED ELECTRICAL EQUIPMENT WILL BE PROVIDED AS PER SECTION *NEC 110.26*.

PV SYSTEM COMPONENTS; INCLUDING BUT NOT LIMITED TO, MODULES, INVERTERS AND SOURCE CIRCUIT COMBINERS ARE IDENTIFIED AND LISTED FOR USE IN PV SYSTEMS IN COMPLIANCE WITH *NEC 690.4 AND 690.6* AND *ALL UL, IEC, IEEE* CLASSIFICATIONS AS REQUIREMENTS.

RAPID SHUTDOWN NOTES:*

PV SYSTEM CIRCUITS INSTALLED ON OR IN BUILDIDNG SHALL INCLUDE A **RAPID SHUTDOWN FUNCTION** THAT CONTROLS SPECIFIC PV CONDUCTORS IN ACCORDANCE WITH *2017 NEC 690.12(A)-(D)*

EQUIPMENT LOCATIONS & ELECTRICAL NOTES:*

JUNCTION AND PULL BOXES ARE PERMITTED TO BE INSTALLED UNDER PV MODULES IN COMPLIANCE WITH *NEC 690.34*.

ADDITIONAL AC DISCONNECT(S) SHALL BE PROVIDED WHERE THE INVERTER IS NOT WITHIN SIGHT OF THE AC SERVICING DISCONNECT. *2017 NEC 690.15(A)*

ALL EQUIPMENT SHALL BE INSTALLED **ACCESSIBLE TO QUALIFIED PERSONNEL** IN COMPLIANCE WITH *NEC* APPLICABLE CODES.

ALL COMPONENTS ARE **LISTED FOR THEIR INTENDED PURPOSE AND RATED FOR OUTDOOR USAGE** WHEN APPLICABLE.

STRUCTURAL AND INSTALLATION NOTES:*

RACKING SYSTEM & PV PANELS MOUNTED ON A ROOFTOP SHALL BE LISTED AND LABELED IN ACCORDANCE WITH *UL 1703* AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER INSTALLATION INSTRUCTIONS.

ALL PV RACKING ATTACHMENT POINTS SHALL NOT EXCEED THE PRE-ENGINEERED **MAX SPANS** OUTLINED BY THE RACKING MANUFACTURES ENGINEER OF RECORD.

GROUNDING NOTES:*

IN **UNGROUNDED SYSTEMS** ONLY THE DC CONDUCTORS ARE UNGROUNDED AND REQUIRE AN EQUIPMENT GROUNDING CONDUCTOR. ALL METAL ELECTRICAL EQUIPMENT AND STRUCTURAL COMPONENTS BONDED TO

GROUND, IN COMPLIANCE WITH *NEC 250.134* AND *NEC 250.136(A)*.

PV EQUIPMENT INCLUDING **MODULE FRAMES AND OTHER METAL PARTS SHALL BE GROUNDED** IN COMPLIANCE WITH *NEC 690.43* AND MINIMUM GROUND CONDUCTORS SIZED IN ACCORDANCE WITH *NEC TABLE 250.122*.

CONDUCTIVE PARTS OF MODULE FRAMES, MODULE RACKING, AND ENCLOSURES SHALL BE GROUNDED IN COMPLIANCE WITH *NEC 250.134 AND NEC 250.136(A)*.

UL2703 APPROVED **MODULE AND RACK GROUNDING** SHALL BE USED AND INSTALLED PER MANUFACTURER'S INSTALLATION MANUAL. IF *UL2703* APPROVED GROUNDING IS NOT USED, MODULE GROUNDING LUGS MUST BE INSTALLED AT THE SPECIFIED GROUNDING LUG HOLES PER THE MANUFACTURER'S INSTALLATION REQUIREMENTS.

THE GROUNDING CONNECTION TO A MODULE SHALL BE ARRANGED SUCH THAT THE REMOVAL OF A MODULE DOES NOT INTERRUPT A GROUNDING CONDUCTOR TO ANOTHER MODULE.

THE GROUNDING ELECTRODE SYSTEM COMPLIES WITH *NEC 690.47* AND *NEC 250.50* THROUGH *NEC 250.106*. IF EXISTING SYSTEM IS INACCESSIBLE OR INADEQUATE, A GROUNDING ELECTRODE SYSTEM WILL BE PROVIDED IN COMPLIANCE WITH *NEC 250, NEC 690.47* AND *AHJ*.

PV SYSTEMS SHALL BE PROVIDED WITH **DC GROUND-FAULT PROTECTION** *2017 NEC 690.41(B)*

INTERCONNECTION / POC NOTES:*

ALL LOAD-SIDE INTERCONNECTIONS ARE IN COMPLIANCE WITH *2017 NEC 705.12(B)*

THE TOTAL RATING OF ALL OCPD IN SOLAR LOAD CENTERS SHALL NOT EXCEED THE RATED AMPACITY OF THE BUSBAR EXCLUDING THE OCPD PROTECTING THE BUSBAR IN COMPLIANCE WITH *NEC 705.12(B)(2)(3)(c)*

ALL FEEDER TAP (LOAD SIDE) INTERCONNECTIONS ARE IN COMPLIANCE WITH *2017 NEC 705.12(B)(2)(1)*

THE PV SYSTEM BACK-FEED BREAKER SHALL BE INSTALLED ON THE OPPOSITE END OF THE BUS BAR AND IT SHALL ALSO BE SIZED APPROPRIATELY AS PER *2017 NEC 705.12(B)(2)(3)(b)*

SUPPLY SIDE TAP INTERCONNECTIONS ARE IN COMPLIANCE WITH *NEC 705.12(A)* WITH SERVICE ENTRANCE CONDUCTORS IN COMPLIANCE WITH *NEC 230.42*

BACKFEEDING BREAKER FOR INVERTER OUTPUT IS EXEMPT FROM ADDITIONAL FASTENING *2017 NEC 705.12(B)(5)*

MICROINVERTER BRANCH CIRCUITS SHALL BE CONNECTED TO A SINGLE OCPD IN ACCORDANCE WITH THEIR INSTALLATION INSTRUCTIONS AND *NEC 690.9*

DISCONNECTS AND OCPD NOTES:*

ALL DISCONNECTING SWITCHES WILL BE CONFIGURED SO THAT ALL ENERGIZED CONDUCTORS WHEN DISCONNECT IS OPEN SHALL BE ON THE TERMINALS MARKED, “LINE SIDE” (TYPICALLY THE UPPER TERMINALS)

ALL AC DISCONNECTS SHALL BE LABELED, LOCKABLE, OF VISIBLE BREAK TYPE SWITCH WITH EXTERNAL HANDLE AND ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL.

AC DISCONNECTS SHALL BE A “KNIFE BLADE” TYPE DISCONNECT. IF EXTERIOR, RATED TO NEMA 3R OR BETTER PER *NEC 110.28*

ADDITIONAL AC DISCONNECTS SHALL BE PROVIDED WHERE THE INVERTER IS NOT ADJACENT TO THE UTILITY AC DISCONNECT, OR NOT WIHTIN SIGHT OF THE UTILITY AC DISCONNECT. *2017 NEC 690.15(A)*

BOTH POSITIVE AND NEGATIVE PV CONDUCTORS REMAIN UNGROUNDED. THEREFORE, BOTH SHALL REMAIN OPEN WHERE A DISCONNECT IS REQUIRED IN COMPLIANCE WITH *2017 NEC 690.15(D)*

ALL OCPD RATINGS AND TYPES SPECIFIED SHALL BE IN COMPLIANCE WITH *NEC 690.8, 690.9, 705.12* AND *240*.

BOTH POSITIVE AND NEGATIVE DC PV CONDUCTORS ARE UNGROUNDED; BOTH REQUIRE OVERCURRENT PROTECTION IN COMPLIANCE WITH *NEC 690.9*

ARC FAULT (AFCI) DC CIRCUIT PROTECTION IS REQUIRED FOR ALL PV SYSTEMS ON OR PENETRATING A BUILDING WITH A MAXIMUM SYSTEM VOLTAGE OF 80 VOLTS OR GREATER. ALL DC PV CIRCUITS INSTALLED IN OR ON BUILDINGS WILL BE ARC-FAULT CIRCUIT PROTECTED IN COMPLIANCE WITH *NEC 690.11, UL1699B* AND SHALL BE LISTED AND LABELED IN ACCORDANCE WITH *UL 1699 (B)*.

WIRING & CONDUIT NOTES:*

ALL CONDUIT AND CONDUCTORS SHALL BE APPROVED FOR THEIR INTENDED PURPOSE INCLUDING WET LOCATIONS AND EXPOSED TO SUNLIGHT. CONDUIT AND CONDUCTOR SIZE SPECIFICATIONS ARE BASED ON THE MINIMUM CODE REQUIREMENTS AND ARE NOT LIMITED TO UP SIZING.

ALL CONDUCTORS SHALL BE SIZED IN COMPLIANCE WITH *NEC 690.8, NEC 690.7*.

ALL CONDUCTORS SHALL BE DERATED AS APPLICABLE TO THEIR RESPECTIVE ENVIRONMENT INCLUDING DIRECT

SUNLIGHT IN ACCORDANCE WITH *2017 NEC 310.15(B)(3)(4)(c)*

EXPOSED UNGROUNDED DC PV SOURCE AND OUTPUT CIRCUITS SHALL USE CONDUCTORS LISTED AND IDENTIFIED AS PHOTOVOLTAIC (PV) WIRE IN COMPLIANCE *2017 NEC 690.31(C)(1)*. PV MODULES WIRE LEADS SHALL BE LISTED FOR USE WITH UNGROUNDED SYSTEMS IN COMPLIANCE WITH *2017 NEC 690.4(B)*

PV WIRE BLACK WIRE MAY BE FIELD-MARKED WHITE IN COMPLIANCE WITH *NEC 200.6 (A)(6)*.

PV MODULE CONDUCTORS LOCATED UNDER ARRAYS WILL BE SECURED IN A WORKMANLIKE MANNER IN COMPLIANCE WITH *NEC 110.12*.

VOLTAGE DROP CALCULATIONS IN THIS PLAN SET ARE CALCULATED ON CIRCUITS 50’ IN LENGTH OR LONGER, THE TOTAL VOLTAGE DROP FROM INVERTER TO POINT OF CONNECTION OR UTILITY TRANSFORMER ARE NOT CALCULATED. ELECTRICAL CONTRACTOR MUST EVALUATE AND FIELD VERIFY INVERTER MANUFACTURES MAX VOLTAGE DROP REQUIREMENTS AND DETERMINE THE TOTAL VOLTAGE DROP WITHIN CIRCUITS AS DIRECTED BY MANUFACTURER AND COMPLY WITH SUCH LIMITATIONS AND REQUIREMENTS, (TYPICALLY 2% FROM INVERTER TO POI/POC, AND 3% FROM INVERTER TO UTILITY TRANSFORMER.)

WATERPROOFING:*

ALL NEW **ROOFTOP PENETRATIONS** SHALL BE SEALED AND MADE WEATHER TIGHT WITH APPROVED CHEMICAL SEALANT AND FLASHINGS WHERE REQUIRED PER CODE AND GENERAL BUILDING AND ROOFING WORKMANSHIP STANDARDS BY A LICENSED CONTRACTOR.

ALL EXTERIOR ELECTRICAL EQUIPMENT, SHALL BE NEMA 3R OR BETTER RATED. ALL EXTERIOR CONDUIT AND CONNECTORS SHALL BE RATED FOR WET LOCATIONS.

*ALL NOTES ARE AS APPLICABLE TO THIS PROJECT. DISREGARD ANY NOTES THAT DO NOT APPLY TO THIS PROJECT.



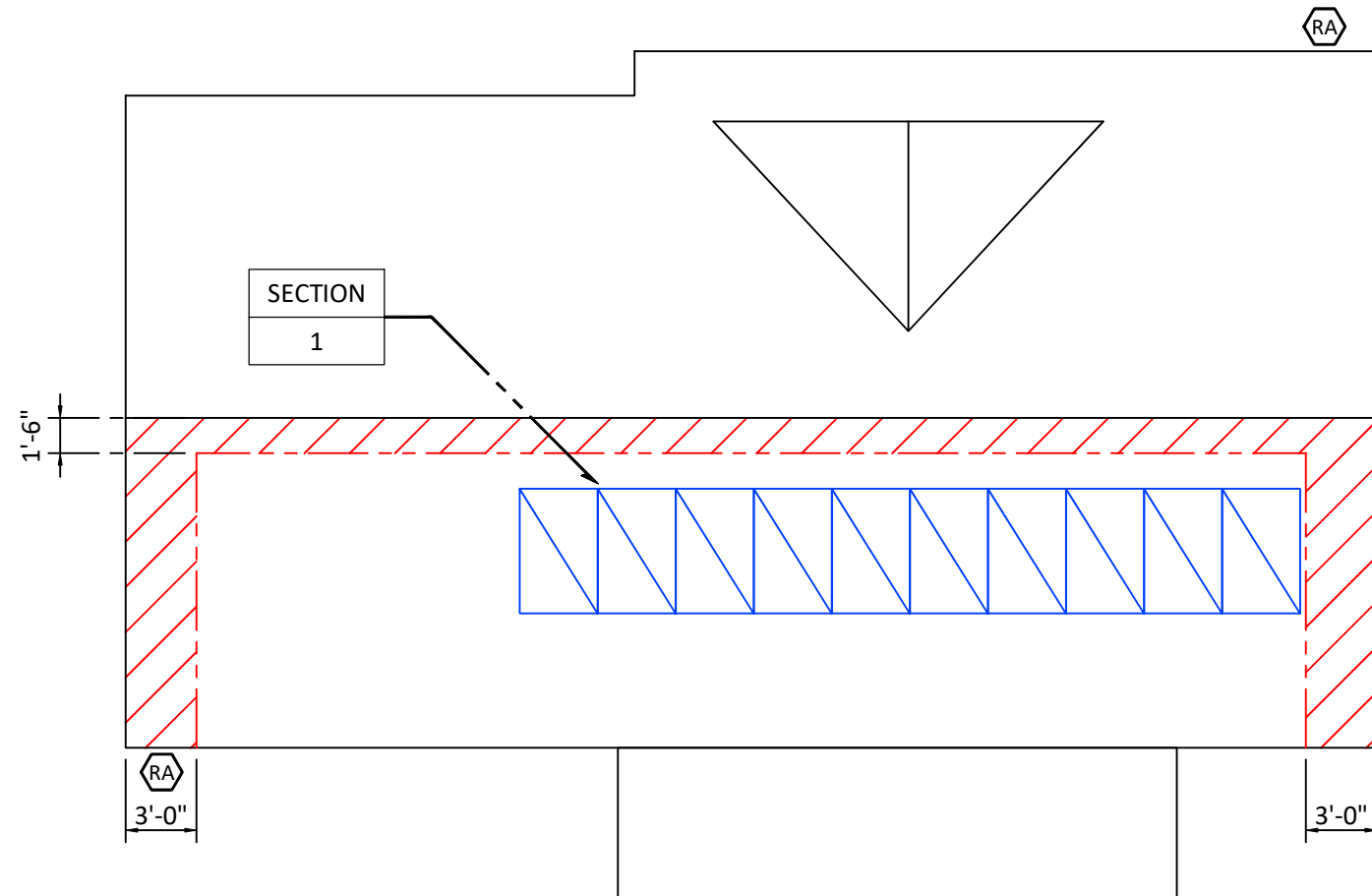
Wyssling Consulting, PLLC
76 N Meadowbrook Drive Alpine UT 84004
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Signed 5/31/2022

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3:300 kW PHOTOVOLTAIC PLANS	REV	DATE	RELEASE	GENERAL NOTES
		05/31/2022	SUBMIT FOR PERMIT	
N-001				
Daybreak Install LLC				
CVC56966				
2100 N Main St Ste. 212				
Fort Worth, TX 76164				
(817) 501-4922				
NAME Larson, Carrie				
ADDRESS 2018 SW Fallon Ln				
ADDRESS Lake City, FL 32025				
APN				



NOTE: ALL ELECTRICAL LAYOUT DETAILS ON SHEET E-100

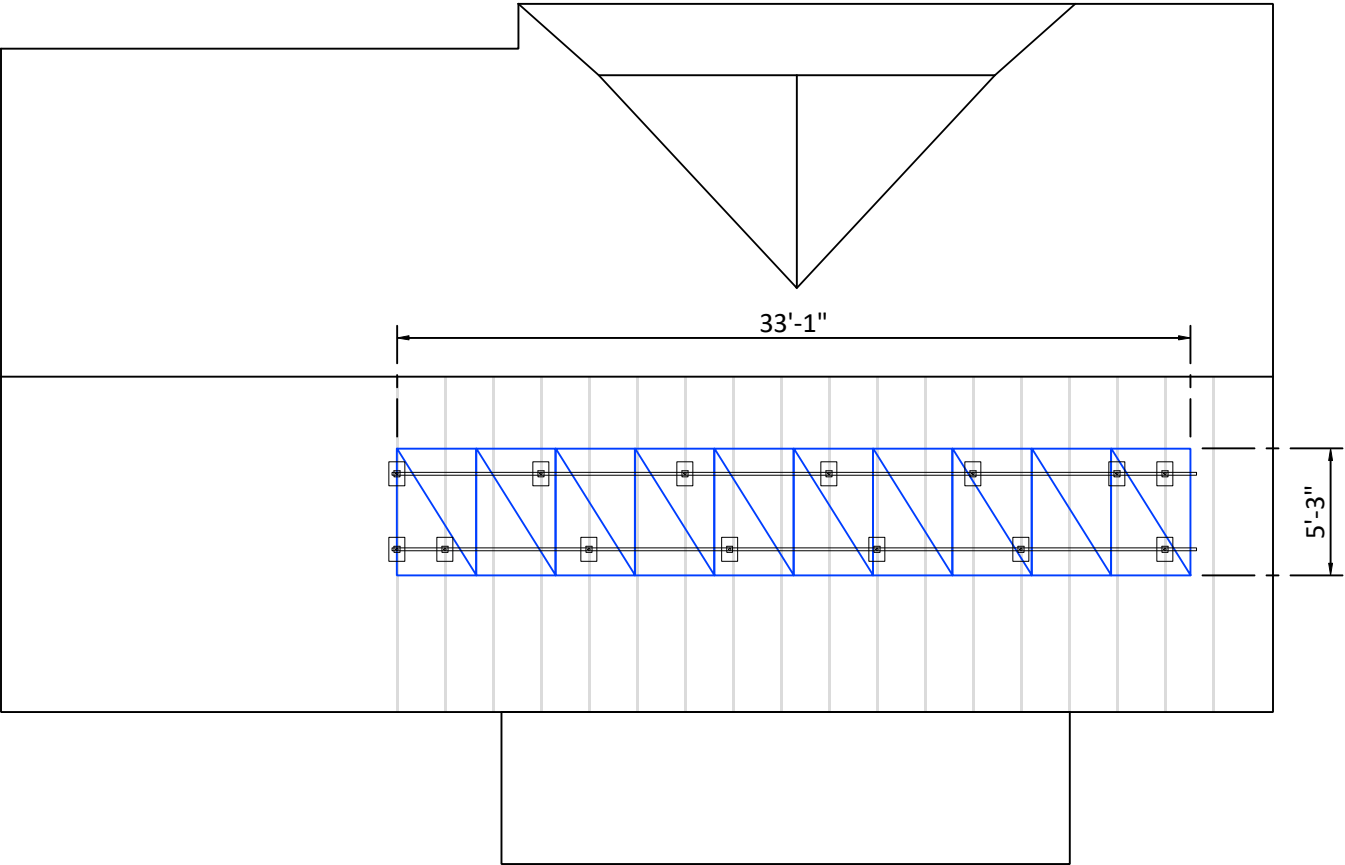


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SCALE: 1/8" = 1'0" @ SHEET SIZE A3





QTY 10 PEIMAR SM330M (BF) MODULES QTY 1 SolarEdge SE3000H-US (240V) INVERTER

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* EXISTING ROOF DIMENSIONS ARE APPROX. CONFIRM ALL DIMENSIONS SHOWN

SCALE: 1/8" = 1'0" @ SHEET SIZE A3

SHEET NOTES

- A. FOR MANUFACTURED PLATED WOOD TRUSSES AT SLOPES OF FLAT TO 6:12, THE HORIZONTAL ANCHOR SPACING SHALL NOT EXCEED 6'-0" AND ANCHORS IN ADJACENT ROWS SHALL BE STAGGERED. UNLESS NOTED OTHERWISE PER RACKING MANUFACTURER CERTIFIED ENGINEERED PRODUCT AND LOCAL REQUIREMENTS.
- B. ANCHORS ARE ALSO KNOWN AS "STAND-OFFS," "MOUNTS," OR "STANCHIONS." HORIZONTAL ANCHOR SPACING IS ALSO KNOWN AS "CROSS-SLOPE" OR "EAST-WEST" ANCHOR SPACING. MAXIMUM HORIZONTAL ANCHOR SPACING SHOWN IN DETAIL. UNLESS NOTED OTHERWISE PER RACKING MANUFACTURER CERTIFIED ENGINEERED PRODUCT AND LOCAL REQUIREMENTS. SEE "TABLE OF DIMENSIONS" EACH SECTION DETAILED FOR HORIZONTAL ANCHOR SPACING.
- C. SEE SHEET S-200 FOR SPECIFIC RACKING COMPONENT MANUFACTURERS.

PV RACKING LEGEND

ROOF RACKING RAIL
ROOF RACKING RAIL SPLICE
ROOF RACKING STANCHION W/ RETRO FIT FLASHING
SECTION 1
PV ARRAY TAG SECTION # MODULE GROUP
* DETAILS IN TOP VIEW

EXISTING ROOF CONSTRUCTION

COMPONENT	TYPE
ROOF STRUCTURAL CONSTRUCTION	Pre-Eng Roof Trusses 24" O.C.
FRAMING INFO	2"x4" @ 24" MAX OC
ROOFING COVERING	Trapezoidal Metal
RACKING MAX PSF	2.87 PSF

RACKING BILL OF MATERIALS (BOM)

COMPONENT	QTY	MODEL	LENGTH
PV RAIL 1			
PV RAIL SPLICE 1			
PV RAIL 2			
PV RAIL SPLICE 2			
RAIL TO ROOF ATTACHMENT			



Daybreak Install LLC
CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
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3.300 kW PHOTOVOLTAIC PLANS

NAME Larson, Carrie
ADDRESS 2018 SW Fallon Ln
ADDRESS Lake City, FL 32025
APN

REV 05/31/2022 SUBMIT FOR PERMIT

RELEASE

RACKING LAYOUT

S-100

1	MANUF TRUSS / TRUSS - PORTRAIT	SCALE: NTS	2	MANUF TRUSS / TRUSS - LANDSCAPE	SCALE: NTS	SHEET NOTES																																																																																							
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MID CLAMP 3/8" HEX FLANGE NUT IRONRIDGE RAIL 6mm X 25mm HEX HEAD SCREWS PROTEA BRACKET (E) TRAPEZOIDAL METAL ROOF OSB SHEATHING/ DECKING PROTEA BRACKET SHEET METAL SCREWS AND STANCHION ARE ENGINEERED TO PENETRATE SHEET METAL ROOF ONLY (E)FRAMING MEMBER			STAGGER STANCHIONS WHERE POSSIBLE. SEE SHEET "S-100" FOR: HORIZONTAL ANCHOR SPAN SPACING. (E) FRAMING TYPICAL SPACING VARIES 2/3" OF TOTAL SPAN MAX 1/3" OF TOTAL SPAN MAX RAIL MANUFACTURER RAIL SPLICE KIT SEE "S-100 / TABLE OF COMPONENTS" * MODULES SHOWN PORTRAIT IN EXAMPLE			1. A MINIMUM OF (1) 5/16" DIAMETER LAG SCREWS WITH 2.5" EMBEDMENT INTO THE RAFTER USED, OR THE ANCHOR FASTENER MUST MEET THE MANUFACTURER'S ENGINEERING. 2. ADHERE TO RACKING MANUFACTURERS INSTALLATION INSTRUCTIONS PERTAINING TO CANTILEVER.														
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EXTENSION OF RAIL RAIL OR STRUT CONNECTIONS TO MEET WEIGHT REQ. OF EQUIPMENT ROOF TOP CONDUIT DCB AND/OR DC 1/3 CANT. MAX 2" COMPONENT + 2" FROM SIDE OF MODULE																				
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Daybreak Install LLC	CVC56966	3.300 kW PHOTOVOLTAIC PLANS	NAME	Larson, Carrie	ATTACHMENT DETAILS
	2100 N Main St Ste. 212	ADDRESS	2018 SW Fallon Ln		
	Fort Worth, TX 76164	ADDRESS	Lake City, FL 32025		
	(817) 501-4922	APN			

Wysling Consulting, PLLC
76 N Meadowbrook Drive Alpine UT 84004
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PV MODULE #1 SPECIFICATIONS		
MANUFACTURER	PEIMAR	
MODEL NUMBER	SM330M (BF)	
WEIGHT	41.01	lbs
DIMENSIONS	65.55 x 39.45 x 1.57	L" x W" x D"/THICK
PEAK POWER @ STC (Pmax)	330	WATTS
Voc (OPEN-CIRCUIT VOLTAGE)	41.91	VOLTS DC
Vmp (MAX-POWER VOLTAGE)	34.35	VOLTS DC
isc (SHORT-CIRCUIT CURRENT)	10.18	AMPS
imp (OPERATING CURRENT)	9.61	AMPS
MFR. Voc TEMP COEFFICIENT	-0.28	%/K
MAX SERIES FUSE RATING	20.0	AMPS
TEMP. CORRECTED Voc	45.26	VOLTS DC

DC/DC OPTIMIZER (IF APPL.)		
MANUFACTURER	SolarEdge Technologies	
MODEL NUMBER	P370 Single (240V)	
WEIGHT	1.5	lbs
RATED OUTPUT isc	15	AMPS
MAX OUTPUT VOLTAGE	60	VOLTS
MAX INPUT VOLTAGE Voc	60	VOLTS

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PV SYSTEM MAXIMUM VOLTAGE (MODULE Voc _{MAX})									
DATA SOURCE		SOLARABCS.ORG/ABOUT/PUBLICATIONS/REPORTS/ EXPEDITED-PERMIT/MAP/							
EXTREME MIN. TEMP. [°C]	STC TEMPERATURE [°C]	CORRECTED TEMPERATURE	MFR. P _{MAX} TEMP COEFFICIENT [-0.05%/C] * 100	FORMULA	CORRECTED TEMP. COEFFICIENT	MODULE Voc [VDC]	TEMPERATURE CORRECTED OPEN CIRCUIT VOLTAGE		
-5	-	25	=	-30	*	-0.28%	=	0.08	+ 1
						1.08	*	41.91	=
									45.26

DC COMBINER / DISCONNECT #1	
MANUFACTURER	
MODEL NUMBER	
OCPD (DISCONNECT TYPE)	
WEIGHT	lbs
NEMA RATING	
LOCATION OF COMPONENT	
DC INPUT	
SERIES FUSE RATING FOR PV MODULES	AMPS (OCPD)
QUANTITY OF PV SOURCE CIRCUITS	QTY
MAX PV MODULE Voc	VOLTS DC
MAX # OF MODULES IN CIRCUIT	QTY
MAX ALLOWED INPUT VOLTAGE	VOLTS DC
MAX INPUT FUSE/BREAKER RATING	AMPS
DC OUTPUT	
MAX CIRCUIT OUTPUT CURRENT	AMPS
MAX CONT. OUTPUT CURRENT	AMPS

DC COMBINER / DISCONNECT #2 (IF APPL.)	
MANUFACTURER	
MODEL NUMBER	
OCPD (DISCONNECT TYPE)	
WEIGHT	lbs
NEMA RATING	
LOCATION OF COMPONENT	
DC INPUT	
SERIES FUSE RATING FOR PV MODULES	AMPS (OCPD)
QUANTITY OF PV SOURCE CIRCUITS	QTY
MAX PV MODULE Voc	VOLTS DC
MAX # OF MODULES IN CIRCUIT	QTY
MAX ALLOWED INPUT VOLTAGE	VOLTS DC
MAX INPUT FUSE/BREAKER RATING	AMPS
DC OUTPUT	
MAX CIRCUIT OUTPUT CURRENT	AMPS
MAX CONT. OUTPUT CURRENT	AMPS

DC COMBINER / DISCONNECT #3 (IF APPL.)	
MANUFACTURER	
MODEL NUMBER	
OCPD (DISCONNECT TYPE)	
WEIGHT	lbs
NEMA RATING	
LOCATION OF COMPONENT	
DC INPUT	
SERIES FUSE RATING FOR PV MODULES	AMPS (OCPD)
QUANTITY OF PV SOURCE CIRCUITS	QTY
MAX PV MODULE Voc	VOLTS DC
MAX # OF MODULES IN CIRCUIT	QTY
MAX ALLOWED INPUT VOLTAGE	VOLTS DC
MAX INPUT FUSE/BREAKER RATING	AMPS
DC OUTPUT	
MAX CIRCUIT OUTPUT CURRENT	AMPS
MAX CONT. OUTPUT CURRENT	AMPS

STRING INVERTER #1 SPECIFICATIONS		
MANUFACTURER	SolarEdge	
MODEL NUMBER	SE3000H-US (240V)	
QUANTITY	1	INVERTER(S)
NOMINAL POWER RATING	3000	WATT AC
WEIGHT	17.2	lbs.
DC INPUT		
Max INPUT DC VOLTAGE	480	VOLTS DC
Min. MPPT VOLTAGE RANGE	380	VOLTS DC
Max. MPPT VOLTAGE RANGE	480	VOLTS DC
Max INPUT CURRENT	8.5	AMPS
MPPT QTY	N/A	
INTEGRATED DC DISCONNECT	Yes	COMPLY W/NEC 690.17
INTEGRATED AC DISCONNECT	NO	
AC OUTPUT		
NOMINAL VOLTAGE OUTPUT	240	VOLTS AC
MAX. AC APPARENT POWER	3000	WATTS
MAX OVERCURRENT PROTECTION (OCPD)	20	AMPS
MAX. OUTPUT CURRENT	12.5	AMPS - MAX

STRING INVERTER #2 SPECIFICATIONS (IF APPL.)		
MANUFACTURER		
MODEL NUMBER		
QUANTITY		INVERTER(S)
NOMINAL POWER RATING		WATT AC
WEIGHT		lbs.
DC INPUT		
Max INPUT DC VOLTAGE		VOLTS DC
Min. MPPT VOLTAGE RANGE		VOLTS DC
Max. MPPT VOLTAGE RANGE		VOLTS DC
Max INPUT CURRENT		AMPS
MPPT QTY		
INTEGRATED DC DISCONNECT		COMPLY W/NEC 690.17
INTEGRATED AC DISCONNECT		
AC OUTPUT		
NOMINAL VOLTAGE OUTPUT		VOLTS AC
MAX. AC APPARENT POWER		WATTS
MAX OVERCURRENT PROTECTION (OCPD)		AMPS
MAX. OUTPUT CURRENT		AMPS - MAX

AC COMBINER #1 (SOLAR LOAD CENTER)		
MANUFACTURER		
MODEL NUMBER		
RATED OPERATIONAL VOLTAGE		VOLTS
RATED CURRENT		AMPS
NUMBER OF POLES		P
NEMA RATING		
MAIN BREAKER SIZE		AMPS
TOTAL INPUT CURRENT		AMPS
NUMBER OF BRANCH CIRCUITS		CIRCUITS

AC COMBINER #2 (SOLAR LOAD CENTER)		
MANUFACTURER		
MODEL NUMBER		
RATED OPERATIONAL VOLTAGE		VOLTS
RATED CURRENT		AMPS
NUMBER OF POLES		P
NEMA RATING		
MAIN BREAKER SIZE		AMPS
TOTAL INPUT CURRENT		AMPS
NUMBER OF BRANCH CIRCUITS		CIRCUITS

AC DISCONNECT #1 (IF APPL.)		
MANUFACTURER	Eaton	
MODEL NUMBER	DG222NRB	
QUANTITY	1	AC DISCO.(S)
DISCONNECT DEVICE TYPE	Fusible	
RATED OPERATIONAL VOLTAGE	240	VOLTS
RATED CURRENT	60	AMPS
NUMBER OF POLES	2	P
NEMA RATING	3R	
FUSE RATING	20	AMPS
TOTAL INPUT CURRENT	12.5	AMPS

AC DISCONNECT #2 (IF APPL.)		
MANUFACTURER		
MODEL NUMBER		
QUANTITY		AC DISCO.(S)
DISCONNECT DEVICE TYPE		
RATED OPERATIONAL VOLTAGE		VOLTS
RATED CURRENT		AMPS
NUMBER OF POLES		P
NEMA RATING		
FUSE RATING		AMPS
TOTAL INPUT CURRENT		AMPS

AC SUB-PANEL #1 (IF APPL.)		
NEW OR EXISTING		
MAKE / MODEL		
TYPE OF PANEL		
NUMBER OF POLES		P
NEMA RATING		
BUSS BAR RATING		AMPS
SUB-PANEL MAIN BREAKER		AMPS
MAIN SERVICE PANEL P.O.C. BREAKER		AMPS
SUM OF EXISTING CIRCUIT BREAKERS		AMPS
MAX ALLOWABLE SOLAR CURRENT		AMPS
PV BACKFEED BREAKER #1		AMPS (Imax)
PV BACKFEED BREAKER #2		AMPS (Imax)
PV BACKFEED BREAKER #3		AMPS (Imax)
PV BACKFEED BREAKER #4		AMPS (Imax)

MAIN SERVICE PANEL (IF APPL.)		
NEW OR EXISTING	EXISTING	
ELECTRICAL SERVICE	120/240V Single Phase	
BUSS BAR RATED CURRENT	200	AMPS
MAIN BREAKER RATED CURRENT	200	AMPS
SUM OF EXISTING CIRCUIT BREAKERS		AMPS
MAX ALLOWABLE SOLAR CURRENT 100%	0	AMPS
MAX ALLOWABLE SOLAR CURRENT 120%	40	AMPS (Imax)
PV BACKFEED BREAKER #1		AMPS (Imax)
PV BACKFEED BREAKER #2		AMPS (Imax)
PV BACKFEED BREAKER #3		AMPS (Imax)
PV BACKFEED BREAKER #4		AMPS (Imax)
ALT. ENERGY BACKFEED BREAKER (IF APPL.)		AMPS (Imax)

3:300 kW PHOTOVOLTAIC PLANS	RELEASE		EQUIP. CALCULATIONS
	DATE	SUBMIT FOR PERMIT	
	05/31/2022		
E-001	REV	NAME	ADDRESS
3:300 kW PHOTOVOLTAIC PLANS	CVC56966	Larson, Carrie	2018 SW Fallon Ln
Daybreak Install LLC	2100 N Main St Ste. 212	Fort Worth, TX 76164	(817) 501-4922
Daybreak Install LLC	2100 N Main St Ste. 212	Fort Worth, TX 76164	(817) 501-4922
Daybreak Install LLC	2100 N Main St Ste. 212	Fort Worth, TX 76164	(817) 501-4922



WIRE AND CONDUCTOR NOTES

1. ANY CONDUCTOR LENGTH UNDER 50' DOESN'T REQUIRE VOLTAGE DROP CALCULATIONS

2. BECAUSE WE ARE UNABLE TO DETERMINE THE EXACT PATH THE INSTALLER WILL RUN CONDUCTORS; WORST CASE SCENARIOS, ROUNDING UP SIZES OF CONDUCTORS THAT ARE DEEMED QUESTIONABLE TO PREVENT ISSUES RELATED TO USING CONDUCTORS THAT ARE IMPROPERLY SIZED.

3. WIRING METHODS IN THESE CALCULATIONS DON'T EXCEED 1000 VOLTS

4. CEC/NEC 310.15(A)(2) (AS APPLICABLE) WHERE TWO DIFFERENT AMPACITIES APPLY TO ADJACENT PORTIONS OF A CIRCUIT, THE HIGHER AMPACITY SHALL BE PERMITTED TO BE USED BEYOND THE POINT OF TRANSITION, A DISTANCE EQUAL TO 10'-0" (3 METERS) OR 10% OF THE CIRCUIT LENGTH FIGURED AT THE HIGHER AMPACITY, WHICHEVER IS LESS. WHEN LESS THAN 10'-0" OR 10% OF THE CIRCUIT LENGTH; THE LESSER AMPACITY MAY BE USED.

WIRE COLOR CODING (2017) NEC SECTIONS 250.119 & 200.6

PV DC WIRING

EQUIPMENT GROUND

GREEN OR BARE, OR GREEN/YELLOW

UNGROUND CONDUCTOR(S). TYPICALLY POSITIVE

ANY COLOR OTHER THAN GREEN OR WHITE/GRAY

CONVENTION IS RED FOR GROUNDED SYSTEMS

RED (+) AND BLACK (-) FOR UNGROUNDED SYSTEMS

AC WIRING

EQUIPMENT GROUND

GREEN OR BARE, OR GREEN/YELLOW

GROUNDED CONDUCTOR (NEUTRAL)

WHITE OR GRAY

UNGROUND CONDUCTOR(S) HOT: L1 AND L2

ANY COLOR OTHER THAN GREEN OR WHITE/GRAY ALLOWED.

CONVENTION IS L1 BLACK

CONVENTION IS L2 RED

DC WIRE AND CONDUIT SIZING CHART [SEE SHEET E-003 FOR THREE LINE DIAGRAM]

TAG	CIRCUIT ORIGIN	CIRCUIT DESTINATION	CONDUCTOR SPECIFICATIONS				REQUIRED CONDUCTOR AMPACITY							CONDUCTOR TEMPERATURE DERATING						CONDUIT FILL DERATING		CORRECTED AMPACITY CALCULATION						AMPACITY CHECK					
			QTY IN PARALLEL & MATERIAL	TEMP RATING (°C)	TRADE SIZE	AMPACITY @ 30°C PER 310.16	Isc (AMPS) OR COMPONENT (AMPS)	X	#OF COMBINED PARALLEL STRINGS	X	MAX CURRENT 690.8 (A)(1)	X	CONT. OPERATION 690.8 (B)(1)	=	REQUIRED AMPACITY	CIRCUIT ENVIRONMENT	AMBIENT TEMP. (°C)	HGT. ABOVE ROOF (in)	TEMP. ADDER PER 310.15 (B)(2)(c)	OPERAT. TEMP. (°C)	AMPACITY CORRECTION 310.15 (B)(2)(a)	# OF UNGRND. COND.	AMPACITY CORRECTION 310.15 (B)(3)(a)	COND. AMPACITY	X	TEMP. DERATING	X	CONDUIT FILL DERATING	=	CORRECTED AMPACITY	REQUIRED AMPACITY	≤	CORRECTED AMPACITY
DC1	PV MODULE	DC/DC CONVERTER	(1) CU	90	#12 AWG	30	10.18	X	1	X	1.25	X	1.25	=	15.91	ROOFTOP	35	>7/8"	0	35	0.96	2	N/A	30	X	0.96	X	1.0	=	28.8	15.91	≤	28.8
DC2	DC/DC CONVERTER	JUNCTION BOX	(1) CU	90	#10 AWG	40	15	X	1	X	1	X	1.25	=	18.75	ROOFTOP	35	>7/8"	0	35	0.96	2	N/A	40	X	0.96	X	1.0	=	38.4	18.75	≤	38.4
DC3	JUNCTION BOX	INVERTER	(1) CU	90	#10 AWG	40	15	X	1	X	1	X	1.25	=	18.75	ROOFTOP	35	>7/8"	0	35	0.96	2	1.0	40	X	0.96	X	1.0	=	38.4	18.75	≤	38.4
DC4								X		X		X		=										X		X		=			≤		
DC5								X		X		X		=										X		X		=			≤		
DC6								X		X		X		=										X		X		=			≤		
DC7								X		X		X		=										X		X		=			≤		
DC8								X		X		X		=										X		X		=			≤		

SCOTT E WYSSLING

PE

No. 81551

STATE OF FLORIDA

PROFESSIONAL ENGINEER

Wyssling Consulting, PLLC

76 N Meadowbrook Drive Alpine UT 84004

Florida License # RY34912

Signed 5/31/2022

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AC WIRE AND CONDUIT FILL DERATE CHART [SEE SHEET E-003 FOR THREE LINE DIAGRAM]

TAG	CIRCUIT ORIGIN	CIRCUIT DESTINATION	CONDUCTOR SPECIFICATIONS				REQUIRED CONDUCTOR AMPACITY				CONDUCTOR TEMPERATURE DERATING						CONDUIT FILL DERATING		CORRECTED AMPACITY CALCULATION						AMPACITY CHECK					
			QTY IN PARALLEL & MATERIAL	TEMP RATING (°C)	TRADE SIZE	AMPACITY @ 30°C PER 310.16	CONT. OPERATION 690.8 (B)(1)	X	MAX INV. OUTPUT CURRENT (AMPS) OR COMPONENT (AMPS)	=	REQUIRED AMPACITY	CIRCUIT ENVIRONMENT	AMBIENT TEMP. (°C)	HGT. ABOVE ROOF (in)	TEMP. ADDER PER 310.15 (B)(2)(c)	OPERAT. TEMP. (°C)	AMPACITY CORRECTION 310.15 (B)(2)(a)	# OF UNGRND. COND.	AMPACITY CORRECTION 310.15 (B)(3)(a)	COND. AMPACITY	X	TEMP. DERATING	X	CONDUIT FILL DERATING	=	CORRECTED AMPACITY	REQUIRED AMPACITY	≤	CORRECTED AMPACITY	
AC1	INVERTER	AC DISCONNECT	(1) CU	75	#10 AWG	35	1.25	X		12.5	=	15.6	EXT WALL	35	N/A	0	35	0.94	3	1.0	35	X	0.94	X	1.0	=	32.9	15.6	≤	32.9
AC2	AC DISCONNECT	EXISTING SERVICE PANEL	(1) CU	75	#6 AWG	65	1.25	X		12.5	=	15.6	EXT WALL	35	N/A	0	35	0.94	3	1.0	65	X	0.94	X	1.0	=	61.1	15.6	≤	61.1
AC3								X			=											X		X		=			≤	
AC4								X			=											X		X		=			≤	
AC5								X			=											X		X		=			≤	
AC6								X			=											X		X		=			≤	
AC7								X			=											X		X		=			≤	
AC8								X			=											X		X		=			≤	
AC9								X			=											X		X		=			≤	
AC10								X			=											X		X		=			≤	

SCOTT E WYSSLING

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3.300 kW PHOTOVOLTAIC PLANS

CVC56966

Daybreak Install LLC

2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

NAME
Larson, Carrie

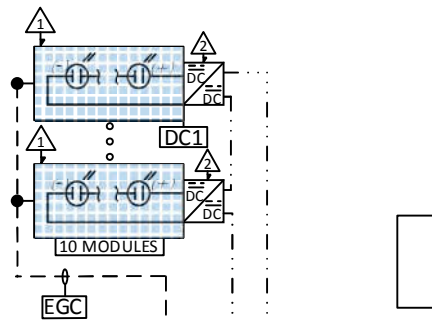
ADDRESS
2018 SW Fallon Ln

ADDRESS
Lake City, FL 32025

APN

E-002

WIRE AND COND. CALCS.

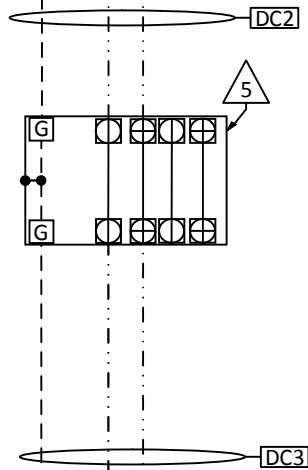


MODULE NAMEPLATE
RATING 330W



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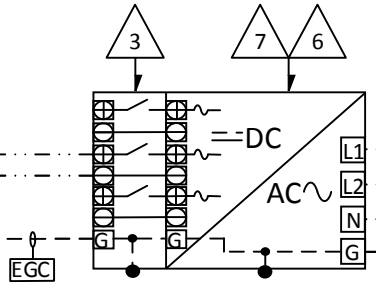


NOTE: IF POINT OF INTERCONNECTION IS SUPPLY SIDE, PV DISCONNECT SHALL HAVE N-G BOND INSTALLED. LOAD SIDE INTERCONNECTION SHALL NOT HAVE N-G BOND.

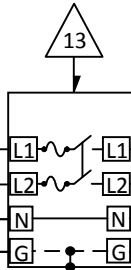
NOTE: AC DISCONNECT SUITABLE FOR SERVICE EQUIPMENT PER NEC 230.66 LOCATED WITHIN 10 FEET OF TAP

AC DISCONNECT NAMEPLATE
RATING 60A/240V
FUSE RATING 20A

INVERTER NAMEPLATE
RATING 3000W/240V



AC1



AC2

EGC



EQUIPMENT TABLE

TAG	QTY	COMPONENT	
1	10	PV MODULES	PEIMAR SM330M (BF)
2	10	DC/DC OPTIMIZER	P370 Single (240V)
3	1	DC DISCONNECT	INTEGRATED IN INV
4	0	DC COMBINER BOX	
5	1	JUNCTION BOX	Generic NEMA 4 JUNCTION BOX
6	N/A	RAPID SHUTDOWN	INTEGRATED IN INV & OPT
7	1	AC/DC INVERTER	SolarEdge SE3000H-US (240V)
8	0	AC/DC INVERTER W/ INTE AC DISC	
9	0	AC DISCONNECT (INDEPENDENT)	
10	0	SOLAR LOAD CENTER	
11	0	PROD/GEN METER	
12	0	SUB PANEL	
13	1	AC DISCONNECT (FUSIBLE)	Eaton DG222NRB
14			
15	1	EXISTING MAIN SERVICE PANEL	200A BUS/200A MB
16	1	EXISTING UTILITY METER	120/240V - 1Ø
17	0	BATTERY	
18			

NOTE: EQUIP TAGS MAY NOT BE IN SEQUENTIAL ORDER, N/A USED SEE SHEET E-001 FOR ADDITIONAL ELECTRICAL SPECIFICATIONS

STRING

1

MODULE QTY

10

INVERTER

INV 1

BACK-FEED SOLAR BREAKER:

N/A

CONDUCTOR TABLE

TAG	QTY*	SIZE	TYPE	GROUND	SIZE	TYPE
DC1	2	#12 AWG	PV Wire	#6 AWG	N/A	Open Air
DC2	3	#10 AWG	PV Wire	#6 AWG	N/A	Open Air
DC3	3	#10 AWG	THWN-2	#6 AWG	3/4 inch	EMT
DC4						
DC5						
DC6						
DC7						
DC8						
AC1	4	#10 AWG	THWN-2	#6 AWG	3/4 inch	EMT
AC2	4	#6 AWG	THWN-2	#6 AWG	1 inch	EMT
AC3						
AC4						
AC5						
AC6						
AC7						
AC8						
AC9						
AC10						

CONDUIT TABLE

LEGEND

DC#	DC CONDUCTOR TAG	EQUIPMENT TAG
AC#	AC CONDUCTOR TAG	GROUND CONDUCTOR TAG

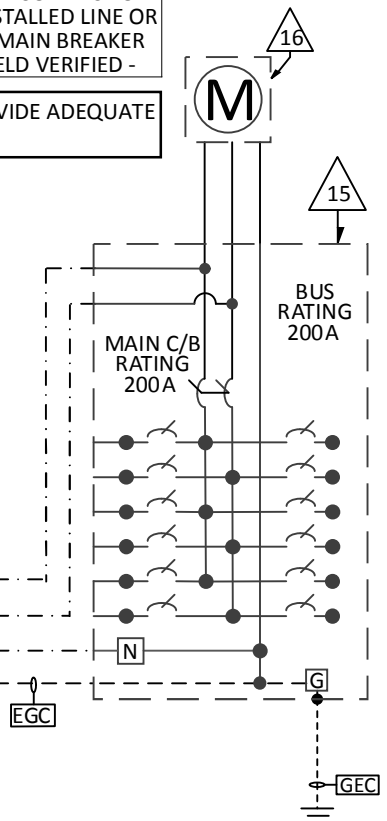
ELECTRICAL NOTES

- UNGROUND PV SYSTEMS:
- INVERTERS, MODULES, AND DC COMPONENTS MUST BE LISTED FOR USE IN UNGROUNDED SYSTEMS, TYPICALLY TRANSFORMER-LESS (TL)
 - OCPD'S WHERE NECESSARY MUST HAVE DISCONNECTING MEANS.
 - PV SOURCE CIRCUITS MUST BE EITHER PV WIRE AND LISTED FOR WET LOCATIONS OR JACKETED MULTI-CONDUCTOR CABLES INSTALLED IN RACEWAY.
 - THE AC SIDE IS STILL GROUNDED ON THE NEUTRAL CONDUCTOR.
 - REQUIRE EQUIPMENT GROUNDING BUT DOES NOT HAVE SYSTEM GROUNDING; NO DC CURRENT-CARRYING CONDUCTOR IS CONNECTED TO GROUND. THESE CONDUCTORS ARE COLOR CODED DIFFERENTLY THAN GROUNDED PV SYSTEMS.
- AC/DC ELECTRICAL NOTES:
- ALL OVERCURRENT PROTECTION DEVICES (OCPDs) MUST BE RATED FOR 600 VOLTS ON THE DC / PV POWER SIDE OF THE INVERTER.
 - EXTERIOR ENCLOSURES TO BE NEMA TYPE 3R OR BETTER.
 - ALL CONDUIT AND CONDUIT CONNECTIONS SHALL BE RATED FOR WET AND DAMP LOCATIONS WHEN APPLICABLE.
- INTERCONNECTION NOTES:
- 705.12(B)(4) CIRCUIT BREAKERS MUST BE SUITABLE FOR BACKFEEDING. NEC INFORMATIONAL NOTE: FUSED DISCONNECTS, UNLESS OTHERWISE MARKED, ARE SUITABLE FOR BACKFEEDING.
 - 690.13(F)(2) DEVICES MARKED WITH "LINE" AND "LOAD" SHALL NOT BE PERMITTED FOR BACKFEED OR REVERSE CURRENT
 - 705.12(B)(5) CIRCUIT BREAKERS BACK FEED FROM UTILITY INTERACTIVE INVERTERS (ANTI-ISLANDING, UL 1741 CERTIFIED)
 - NO CENTER-FED MAIN BREAKER. PANEL CONFIGURED PER NEC 705.12(A) OR (B)

* INCLUDES GROUND & CURRENT CARRYING CONDUCTORS

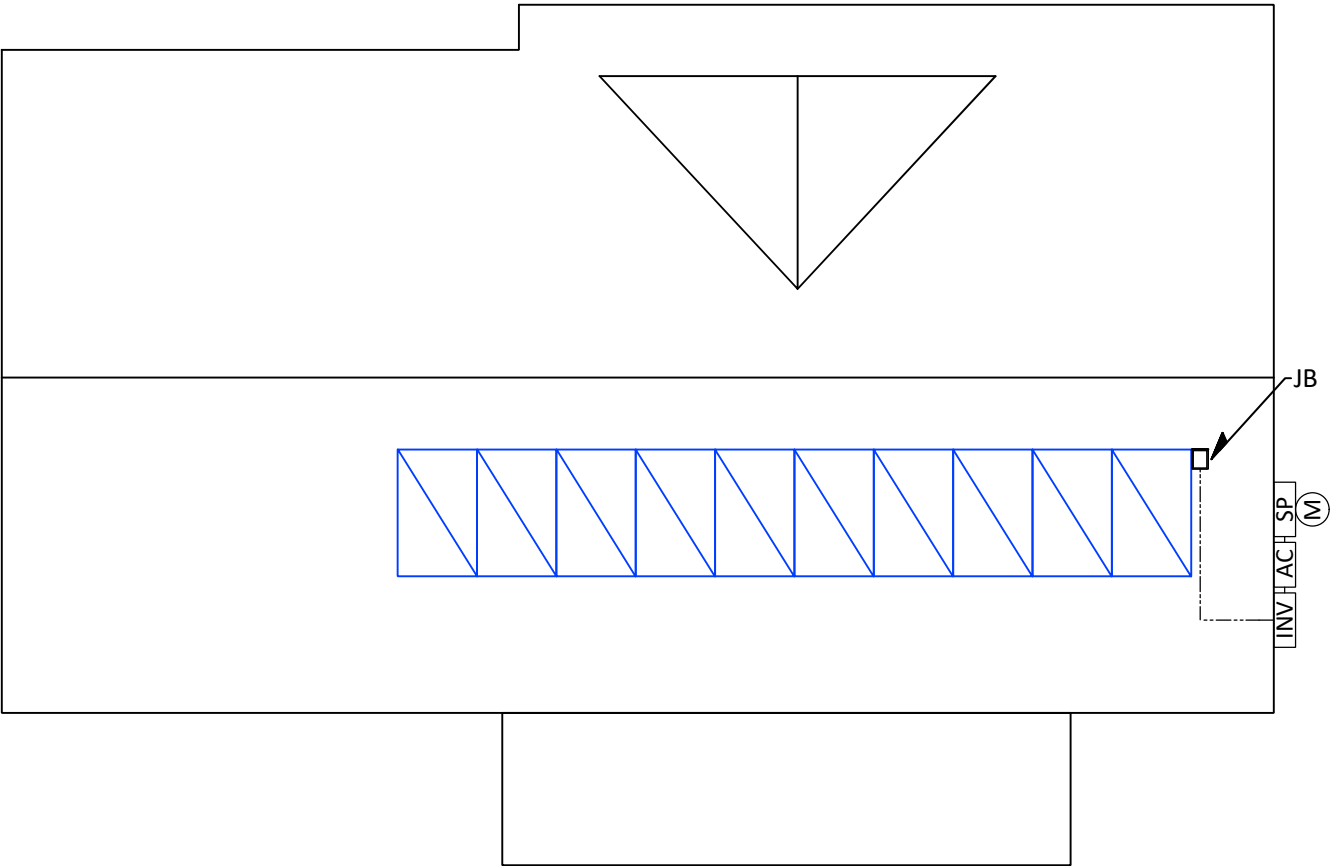
NOTE: POINT OF CONNECTION TAP MAY BE INSTALLED LINE OR LOAD OF THE MAIN BREAKER - SHALL BE FIELD VERIFIED -

NOTE:THE EXISTING ELECTRICAL PANEL SHALL PROVIDE ADEQUATE GUTTER SPACE TO ALLOW TAPS PER NEC 312.8



Daybreak Install LLC	3.300 kW PHOTOVOLTAIC PLANS				REV	DATE	RELEASE
	CVC56966	2100 N Main St Ste. 212	Fort Worth, TX 76164	(817) 501-4922		05/31/2022	SUBMIT FOR PERMIT
				NAME	Larson, Carrie	E-003	
				ADDRESS	2018 SW Fallon Ln		
				ADDRESS	Lake City, FL 32025		
				APN		THREE LINE DIAGRAM	





QTY 10 PEIMAR SM330M (BF) MODULES QTY 1 SolarEdge SE3000H-US (240V) INVERTER

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- ### EQUIPMENT GROUNDING

 - METAL PV MODULE FRAMES MUST BE CONNECTED TO THE EGC (EQUIPMENT GROUNDING CONDUCTOR).
 - WEEBS MAY BE USED IN LIEU OF MODULE GROUND CLAMPS OR LUGS, WITH APPROVAL OF AHJ AND RACKING MFG. WEEBS ARE ONE TIME USE ONLY. SEE "we-llc.com" FOR RACKING SPECIFIC WEEB, INSTALL INSTRUCTIONS, AND UL 2703 CERT.
 - FOR "LAY-IN" LUG MODULE GROUNDING; CORRECT HARDWARE OF PROPER METAL MATERIAL TO AVOID CORROSION MUST BE USED. TYPICALLY DIRECT BURIAL RATED, TINNED, OR STAINLESS STEEL. GROUNDING LUGS MUST BE ATTACHED AT MARKED LOCATION ON EACH MODULE.
 - THE EGC (EQUIPMENT GROUNDING CONDUCTOR) IS USED TO BOND ALL NON-CURRENT CARRYING CONDUCTORS AND EXPOSED METAL PARTS THAT MIGHT COME INTO CONTACT WITH CURRENT-CARRYING CONDUCTORS, INCLUDING THE FOLLOWING:
 - PV MODULES FRAMES, ARRAY MOUNTING RACKING; THE METAL CHASSIS OF EQUIPMENT SUCH AS INVERTERS, DISCONNECTS, METERS, JUNCTION BOXES AND COMBINER BOXES; AND METAL CONDUIT HOLDING CIRCUITS > 250 VOLTS TO GROUND PER NEC 250.97
 - THE GEC (GROUNDING ELECTRODE CONDUCTOR) IS THE CONDUCTOR USED TO CONNECT THE GE OR GE SYSTEM TO THE SYSTEM GC, TO THE EGC, OR TO BOTH.
 - THE GE (GROUNDING ELECTRODE) IS A CONDUCTING OBJECT, OFTEN A ROD, RING, OR PLATE ESTABLISHING A DIRECT CONNECTION TO EARTH. THE AC SYSTEM GROUND IS EXISTING, USUALLY AT THE EXISTING MAIN PANEL AND/OR UTILITY METER. THE GROUND CAN ONLY OCCUR IN ONE PLACE AND MUST NOT BE DUPLICATED IN SUB-PANELS OR ANYWHERE ELSE ON AC SIDE.

ELECTRICAL SYMBOL LEGEND

[CB] DC COMBINER BOX	[ATF] AUTO TRANSFORMER
[DCB] DC DISCONNECTING COMBINER BOX	[SLC] SOLAR LOAD CENTER
[DC] DC DISCONNECT	[ACC] AC COMBINER
[INV#] DC/AC STRING INVERTER	[BATT] BATTERY
[CLP] CRITICAL LOADS PANEL	[AC] AC DISCONNECT
[RSD] RAPID SHUTDOWN	[SP] SERVICE PANEL
[SUB] SUB-PANEL	[P] PERFORMANCE METER
[EB] EMERGENCY BATTERY DISCONNECT	[M] UTILITY METER
[RS] EMERGENCY RSD SWITCH	[XFMR] TRANSFORMER
[CBD] CIRCUIT BREAKER DISCONNECT	[JB] JUNCTION BOX
	[ATS] AUTO TRANSFER SWITCH
	[STS] SMART TRANSFER SWITCH
	[TGW] TESLA GATEWAY
	[TPW] TESLA POWERWALL
	[GEN] GENERATOR
	[] EXISTING EQUIPMENT

SECTION	PV ARRAY TAG
1	SECTION #
	MODULE GROUP

PV AC DISCONNECT LOCATED ON ACCESSIBLE EXTERIOR WALL WITH EXTERNAL HANDLE VISIBLE, LOCKABLE & LABELED WITHIN 10 FEET OF THE METER.



Wyssling Consulting, PLLC
76 N Meadowbrook Drive Alpine UT 84004
Florida License # RY34912
Signed 5/31/2022

SCALE: 1/8"= 1'0" @ SHEET SIZE A3

3:300 kW PHOTOVOLTAIC PLANS	REV	DATE	RELEASE
		05/31/2022	SUBMIT FOR PERMIT
	NAME Larson, Carrie		
	ADDRESS 2018 SW Fallon Ln		
E-100	ADDRESS Lake City, FL 32025		
	APN		
	ELECTRICAL LAYOUT		

Daybreak Install LLC

CVC56966

2100 N Main St Ste. 212

Fort Worth, TX 76164

(817) 501-4922

1	CONDUIT, RACEWAY, J-BOX, AND PULL BOXES	SCALE: 1/2" = 1'-0"	2	DC DISCONNECTS	SCALE: 1/4" = 1'-0"	3	INVERTER(S)	SCALE: 1/4" = 1'-0"	SHEET NOTES
WARNING: PHOTOVOLTAIC POWER SOURCE 1. PLACE ON CONDUIT AND/OR RACEWAYS EVERY 10' (60"), 12" FROM BENDS, 12" ABOVE AND BELOW PENETRATIONS. 2. CODE REFERENCE: NEC 690.31(G)(3) 3. MINIMUM OF 1 1/8" x 5 3/4" 4. FONT: 3/8" AND .8 WIDTH FACTOR. 5. REFLECTIVE WHITE LETTERS ON A RED BACKGROUND.			⚠ WARNING ELECTRICAL SHOCK HAZARD TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENGERGIZED IN THE OPEN POSITION 1. PLACED ON DC DISCONNECT(S) AND ON ANY EQUIPMENT THAT STAYS ENERGIZED IN THE OFF POSITION FROM THE PV SUPPLY. 2. CODE REFERENCE: NEC 690.13(B) 3. MINIMUM OF 3 1/2" x 10" 4. FONT: 3/8" 5. WARNING LABEL IS WHITE AND ORANGE			⚠ WARNING THE DISCONNECTION OF THE GROUNDED CONDUCTOR(S) MAY RESULT IN OVERVOLTAGE ON THE EQUIPMENT 1. MINIMUM OF 3 1/2" x 10 1/2" 2. FONT: 3/8" 3. WARNING LABEL IS WHITE AND ORANGE			CODE ABBREVIATIONS: NATIONAL ELECTRICAL CODE (NEC) INTERNATIONAL BUILDING CODE (IBC) INTERNATIONAL RESIDENTIAL CODE (IRC) INTERNATIONAL FIRE CODE (IFC) UNDERWRITERS LABORATORY (UL) 1. COMBINATION PLACARDS MAY BE USED IN PLACE OF MULTIPLE PLACARDS FOR THE SAME DEVICE. ALL INFORMATION FROM THE MULTIPLE PLACARDS MUST BE PRESENT. 2. BLACK LETTERS WITH YELLOW BACKGROUND MAY BE USED IN PLACE OF THE STANDARD WHITE LETTERS WITH RED BACKGROUND WITH AHJ APPROVAL. 3. ALL INTERIOR AND EXTERIOR DC CONDUIT, ENCLOSURES, RACEWAYS, CABLE ASSEMBLIES, JUNCTION BOXES, COMBINER BOXES AND DISCONNECTS ARE MARKED. (NEC 690.31[G], NEC 690.13 & 690.53) 4. THE MARKINGS ON THE CONDUITS, RACEWAYS AND CABLE ASSEMBLIES ARE EVERY 10 FEET, WITHIN ONE FOOT OF ALL TURNS OR BENDS AND WITHIN ONE FOOT ABOVE AND BELOW ALL PENETRATIONS OF ROOF/CEILING ASSEMBLIES, WALLS AND BARRIERS. (IFC 605.11.1.4, NEC 690.31[G][3]) 5. WHERE PV CIRCUITS ARE EMBEDDED IN BUILT-UP, LAMINATE OR MEMBRANE ROOFING MATERIALS IN ROOF AREAS NOT COVERED BY PV MODULES AND ASSOCIATED EQUIPMENT, THE LOCATION OF CIRCUITS SHALL BE CLEARLY MARKED. 6. REQUIRED LABELS SHALL BE PERMANENT AND SUITABLE FOR THE ENVIRONMENT. MATERIALS USED FOR MARKING MUST BE WEATHER RESISTANT. UL STANDARD IS RECOMMENDED TO DETERMINE WEATHER RATING. UL LISTING OF MARKINGS IS NOT REQUIRED. SEE UL LABELING SYSTEM 969 (UL 969) 7. MARKING CONTENT AND FORMAT: 7.1. ARIAL OR SIMILAR FONT, NON-BOLD. 7.2. MINIMUM 3/8" LETTER HEIGHT FOR HEADERS. 7.3. MINIMUM 1/16" LETTER HEIGHT FOR DATA 7.4. CONTRASTING BACKGROUND AND LETTERING. 7.5. ALL CAPITAL LETTERS. 7.6. CONTRASTING SPACE BETWEEN ROWS OF TEXT 7.7. DIMENSIONS OF PLACARDS ARE APPROXIMATE. MAY BE REDUCED AND / OR INCREASED TO UL APPROVED MANUFACTURED PRODUCT
4	NON-LOAD BREAK DC COMBINER / J-BOX	SCALE: 1/2" = 1'-0"	5	DC COMBINER BOX	SCALE: 1/2" = 1'-0"	6	SWITCHBOARDS	SCALE: 1/2" = 1'-0"	3-300 kW PHOTOVOLTAIC PLANS ENGINEERING STAMP (if appl.) 3-300 kW PHOTOVOLTAIC PLANS NAME Larson, Carrie ADDRESS 2018 SW Fallon Ln ADDRESS Lake City, FL 32025 APN CVC56966 2100 N Main St Ste. 212 Fort Worth, TX 76164 (817) 501-4922 Daybreak Install LLC Wysssling Consulting, PLLC 76 N Meadowbrook Drive Alpine UT 84004 Florida License # RY34912 Signed 5/31/2022
DO NOT OPEN UNDER LOAD 1. CODE REFERENCE: NEC 690.13(C) 2. USE ON NON-LOAD BREAK RATED DISCONNECTION. 3. MINIMUM OF 1" x 6" 4. FONT: 3/8" AND .8 WIDTH FACTOR 5. WHITE LETTERS ON A RED BACKGROUND. DO NOT DISCONNECT UNDER LOAD			DC COMBINER BOX COMBINER # 1 1. USE PLACARD "COMBINER # 1" WHEN MORE THAN 1 DC COMBINER IS USED. NUMBER ACCORDING TO THREE LINE DIAGRAM AND CALCULATIONS. 2. MINIMUM OF 1" x 4" 3. FONT: 3/8" AND .75 TO .8 WIDTH FACTOR 4. WHITE LETTERS ON A RED BACKGROUND.			⚠ WARNING ARC FLASH HAZARD APPROPRIATE PPE REQUIRED FAILURE TO COMPLY CAN RESULT IN DEATH OR INJURY REFER TO NFPA 70E 1. VERIFY WHICH PLACARD IS REQUIRED WITH AHJ. 2. MINIMUM OF 1" x 4" 3. FONT: 3/8" AND .8 WIDTH FACTOR 4. WARNING LABEL IS WHITE AND ORANGE 5. DATA COLLECTED FROM AS-BUILT INFO, PRIOR TO PTO, BY OTHERS.			
7	MAIN SERVICE PANEL	SCALE: 1/4" = 1'-0"	8	AC AND DC DISCONNECTS	SCALE: 1/4" = 1'-0"	9	J-BOX, DC COMBINER, AND DC DISCONNECT	SCALE: 1/4" = 1'-0"	
1. LOCATE NO MORE THAN 1 m FROM THE SERVICE DISCONNT MEANS TO WHICH THE PV SYSTEMS ARE CONNECTED AND SHALL INDICATE THE LOCATION OF ALL IDENTIFIED RAPID SHUTDOWN SWITCHES IF NOT AT THE SAME LOCATION. SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY. SOLAR ELECTRIC PV PANELS 2. CODE REFERENCE: NEC 690.56(C)(1)(a) 3. TITLE: MIN. 3/8" BLACK CHARACTERS ON YELLOW BACKGROUND, REMAINING CHARACTERS MIN. 3/16" IN BLACK ON WHITE BACKGROUND.			AC DISCONNECT # 1 DC DISCONNECT # 1 USE PLACARD "[AC][DC] DISCONNECT # 1" WHEN MORE THAN ONE DISCONNECT IS USED. NUMBER ACCORDING TO THREE LINE DIAGRAM AND CALCULATIONS. PHOTOVOLTAIC DC DISCONNECT PHOTOVOLTAIC AC DISCONNECT 1. PLACE ON ALL AC AND DC DISCONNECTS 2. CODE REFERENCE: NEC 690.13(B) 3. MINIMUM OF 1" x 10 1/2" 4. FONT: 3/8" 5. WHITE LETTERS ON A RED BACKGROUND.			⚠ WARNING ELECTRICAL SHOCK HAZARD TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENGERGIZED IN THE OPEN POSITION DC VOLTAGE IS ALWAYS PRESENT WHEN SOLAR MODULES ARE EXPOSED TO SUNLIGHT 1. ONLY FOR UNGROUNDED SYSTEMS. 2. PLACED ON ALL ENCLOSURES WITH UNGROUNDED CIRCUITS OR DEVICES WHICH ARE ENERGIZED AND MAY BE EXPOSED DURING SERVICE. 3. MINIMUM OF 3" x 10 1/2" 4. FONT: 3/8" 5. WARNING LABEL IS WHITE AND ORANGE			
10	INVERTER(S)	SCALE: 1/2" = 1'-0"	11	RAPID SHUTDOWN SWITCH	SCALE: 1/4" = 1'-0"				
INVERTER # 1 1. USE PLACARD "INVERTER # 1" WHEN MORE THAN 1 INVERTER IS USED. NUMBER ACCORDING TO THREE LINE DIAGRAM AND CALCULATIONS. 2. MINIMUM OF 1" x 4" 3. FONT: 3/8" 4. WHITE LETTERS ON A RED BACKGROUND.			1. A RAPID SHUTDOWN SWITCH SHALL HAVE A LABEL LOCATED ON OR NO MORE THAN 1M (3 FT) FROM THE SWITCH THAT INCLUDES THE FOLLOWING: RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM 2. 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.			THIS PLAN HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY SCOTT WYSSLING, PE USING A DIGITAL SIGNATURE AND DATE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES			
QTY 10 PEIMAR SM330M (BF) MODULES QTY 1 SolarEdge SE3000H-US (240V) INVERTER									

3.300 kW PHOTOVOLTAIC PLANS

NAME	Larson, Carrie
ADDRESS	2018 SW Fallon Ln
ADDRESS	Lake City, FL 32025
APN	

CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

Daybreak Install LLC

REV
DATE
05/31/2022
RELEASE
SUBMIT FOR PERMIT

STANDARD PLACARDS

P-001



Wyssling Consulting, PLLC
76 N Meadowbrook Drive Alpine UT 84004
Florida License # RY34912
Signed 5/31/2022



1		DC DISCONNECTS & DISCO. COMBINER		SCALE: 1/4" = 1'-0"		2	AC DISCONNECT, AC SUB-PANEL		SCALE: 1/4" = 1'-0"		3	UTILITY METER, SERVICE PANEL, SUB-PANEL		SCALE: 1/4" = 1'-0"		SHEET NOTES																																																																				
PV SYSTEM DC DISCONNECT MAXIMUM CIRCUIT CURRENT15.0 ADC MAXIMUM VOLTAGE480 VDC #1 PHOTOVOLTAIC SYSTEM DC DISCONNECT MAX. CIRCUIT CURRENT15.0 ADC MAXIMUM VOLTAGE480 VDC PV SYSTEM DC DISCONNECT MAXIMUM CIRCUIT CURRENTADC MAXIMUM VOLTAGEVDC #2 PHOTOVOLTAIC SYSTEM DC DISCONNECT MAX. CIRCUIT CURRENTADC MAXIMUM VOLTAGEVDC PV SYSTEM DC DISCONNECT MAXIMUM CIRCUIT CURRENTADC MAXIMUM VOLTAGEVDC #3 PHOTOVOLTAIC SYSTEM DC DISCONNECT MAX. CIRCUIT CURRENTADC MAXIMUM VOLTAGEVDC 1. PLACARD PLACED ON EACH DISCONNECT, IF MORE THAN ONE PRESENT. 2. VALUES MUST MATCH EQUIPMENT CALCULATIONS. SEE SHEET "E-001 / DC DISCONNECT [#]" 3. CODE REFERENCE: NEC 690.53 4. MINIMUM OF 2 1/2" x 8" OR 5" x 2 1/2" RESPECTIVELY. 5. FONT: 3/8" HEADER, 3/16" DATA 6. WHITE LETTERS ON A RED BACKGROUND. 7. IN SOME CASES TWO LABELS MAY BE REQUIRED. AN INVERTER WITH INTEGRATED DC DISCONNECT UTILIZING TWO MPPT TRACKERS; IF CONFIGURATION USES DIFFERENT MODULES.																	AC DISCONNECT #1 - INDEPENDENT/ SEPARATE PV SYSTEM AC DISCONNECT RATED AC OUTPUT CURRENT12.5 AMPS AC NORMAL OPERATING VOLTAGE240 VOLTS PHOTOVOLTAIC SYSTEM AC DISCONNECT RATED AC OUTPUT CURRENT12.5 AMPS AC NORMAL OPERATING VOLTAGE240 VOLTS STRING INVERTER #1 - INTEGRATED AC DISCONNECT PV SYSTEM AC DISCONNECT RATED AC OUTPUT CURRENT12.5 AMPS AC NORMAL OPERATING VOLTAGE240 VOLTS PHOTOVOLTAIC SYSTEM AC DISCONNECT RATED AC OUTPUT CURRENT12.5 AMPS AC NORMAL OPERATING VOLTAGE240 VOLTS STRING INVERTER #2 - INTEGRATED AC DISCONNECT PV SYSTEM AC DISCONNECT RATED AC OUTPUT CURRENTAMPS AC NORMAL OPERATING VOLTAGEVOLTS PHOTOVOLTAIC SYSTEM AC DISCONNECT RATED AC OUTPUT CURRENTAMPS AC NORMAL OPERATING VOLTAGEVOLTS AC SUB-PANEL #1 PV SYSTEM AC DISCONNECT RATED AC OUTPUT CURRENTAMPS AC NORMAL OPERATING VOLTAGEVOLTS PHOTOVOLTAIC SYSTEM AC DISCONNECT RATED AC OUTPUT CURRENTAMPS AC NORMAL OPERATING VOLTAGEVOLTS SOLAR LOAD CENTER PV SYSTEM AC DISCONNECT RATED AC OUTPUT CURRENTAMPS AC NORMAL OPERATING VOLTAGEVOLTS PHOTOVOLTAIC SYSTEM AC DISCONNECT RATED AC OUTPUT CURRENTAMPS AC NORMAL OPERATING VOLTAGEVOLTS 1. PLACARD PLACED ON EACH SOLAR SYSTEM DISCONNECTING COMPONENT. 2. VALUES MUST MATCH EQUIPMENT CALCULATIONS. SEE SHEET "E-001 / AC DISCONNECT [#]" 3. CODE REFERENCE: NEC 690.54 4. MINIMUM OF 1 1/2" x 8 1/2" OR 1 3/4" x 6 1/2" RESPECTIVELY. 5. FONT: 3/8" HEADER, 3/16" DATA 6. WHITE LETTERS ON A RED BACKGROUND.																	WARNING DUAL POWER SOURCES RATED AC OUTPUT CURRENT12.5 AMPS AC NORMAL OPERATING VOLTAGE240 VOLTS #1 BUILDING CONTAINS TWO SOURCES OF POWER: UTILITY, SOLAR PV UTILITY SERVICE DISCONNECT LOCATED BELOW. SOLAR PV SYSTEM DISCONNECT LOCATED [N/E/S/W] WALL OF BUILDING #2 BUILDING CONTAINS TWO SOURCES OF POWER: UTILITY, SOLAR PV UTILITY SERVICE DISCONNECT LOCATED BELOW. SOLAR PV SYSTEM DISCONNECT LOCATED [N/E/S/W] WALL OF BUILDING #3 1. (#1) PLACARD PLACED AT MAIN UTILITY SERVICE DISCONNECT/BREAKER AND PV SYSTEM SUPPLY BREAKER AT POINT OF INTERCONNECTION. (#2 & #3) PLACARD(S) REQUIRED WITH #1 PLACARD WHEN UTILITY SERVICE AND PV SYSTEM DISCONNECT(S) ARE NOT LOCATED NEXT TO EACH OTHER. MAP PLACARD REQUIRED AS SPECIFIED. 2. VALUES MUST MATCH EQUIPMENT CALCULATIONS. 2.1. VALUES WILL MATCH LOAD CENTER OR SUB-PANEL VALUES IF INSTALLED AFTER INVERTERS. IF AC CONNECTION TO SERVICE PANEL COMES FROM INVERTERS; SEE SHEET "E-001 / STRING INVERTER[#] SPECIFICATIONS". 2.1.1. INVERTERS ARE PARALLEL CONNECTIONS. 2.1.2. "RATED AC OUTPUT CURRENT" WILL BE THE SUM OF THE INVERTERS 2.1.3. "AC NORMAL OPERATING VOLTAGE" WILL BE THE NAME PLATE RATING OF THE INVERTER 3. CODE REFERENCE: NEC 690.54, NEC 705.12(B)(3) 4. MINIMUM OF 2" x 6 1/2" (#1), VARIES (#2 & #3) 5. FONT: 3/8" HEADER, 3/16" DATA (#1), 1/4" (#2 & #3) 6. WHITE LETTERS ON A RED BACKGROUND.																	CODE ABBREVIATIONS: NATIONAL ELECTRICAL CODE (NEC) INTERNATIONAL BUILDING CODE (IBC) INTERNATIONAL RESIDENTIAL CODE (IRC) INTERNATIONAL FIRE CODE (IFC) UNDERWRITERS LABORATORY (UL) 1. COMBINATION PLACARDS MAY BE USED IN PLACE OF MULTIPLE PLACARDS FOR THE SAME DEVICE. ALL INFORMATION FROM THE MULTIPLE PLACARDS MUST BE PRESENT. 2. BLACK LETTERS WITH YELLOW BACKGROUND MAY BE USED IN PLACE OF THE STANDARD WHITE LETTERS WITH RED BACKGROUND WITH AHJ APPROVAL. 3. ALL INTERIOR AND EXTERIOR DC CONDUIT, ENCLOSURES, RACEWAYS, CABLE ASSEMBLIES, JUNCTION BOXES, COMBINER BOXES AND DISCONNECTS ARE MARKED. (NEC 690.31[E][3], NEC 690.31[E][4] & 690.53) 4. REQUIRED LABELS SHALL BE PERMANENT AND SUITABLE FOR THE ENVIRONMENT. MATERIALS USED FOR MARKING MUST BE WEATHER RESISTANT. UL STANDARD IS RECOMMENDED TO DETERMINE WEATHER RATING. UL LISTING OF MARKINGS IS NOT REQUIRED. SEE UL LABELING SYSTEM 969 (UL 969) 5. MARKING CONTENT AND FORMAT: 5.1. ARIAL OR SIMILAR FONT, NON-BOLD. 5.2. MINIMUM 3/8" LETTER HEIGHT FOR HEADERS. 5.3. MINIMUM 1/16" LETTER HEIGHT FOR DATA 5.4. CONTRASTING BACKGROUND AND LETTERING. 5.5. ALL CAPITAL LETTERS. 5.6. CONTRASTING SPACE BETWEEN ROWS OF TEXT 5.7. DIMENSIONS OF PLACARDS ARE APPROXIMATE. MAY BE REDUCED AND / OR INCREASED TO UL APPROVED MANUFACTURED PRODUCT 6. ANSI Z535.4 PRODUCT SAFETY SIGNS AND LABELS: THIS INFORMATIONAL NOTE AND ITS REQUIREMENTS FOR PLACARDS MAY BE USED WITH PRIOR APPROVAL OF THE AHJ. MOST NOTABLE DIFFERENCES IS COLOR OF PLACARDS AND USE OF HAND WRITTEN VALUES WITH INDUSTRIAL MARKERS ON STANDARD PLACARDS WHERE THE VALUE MAY CHANGE AT A FUTURE DATE. I.E. ADDING MODULES AT A FUTURE DATE, OR STANDARD PLACARD MANUFACTURER INSTALLED ON ELECTRICAL COMPONENT. AHJ APPROVAL REQUIRED. (SEE NOTE #1 FOR INDIVIDUAL PLACARDS)																	3.300 kW PHOTOVOLTAIC PLANS NAMELarson, Carrie ADDRESS2018 SW Fallon Ln ADDRESSLake City, FL 32025 APN CVC56966 2100 N Main St Ste. 212 Fort Worth, TX 76164 (817) 501-4922 Daybreak Install LLC Wysssling Consulting, PLLC 76 N Meadowbrook Drive Alpine UT 84004 Florida License # RY34912 Signed 5/31/2022 PRIME CONTRACTOR / PERMIT APPLICANT SIGNER IS RESPONSIBLE FOR THE DESIGN AND SPECIFICATIONS OF THE PHOTOVOLTAIC SYSTEM INSTALLATION. PRIME CONTRACTOR / PERMIT APPLICANT SIGNER WILL BE RESPONSIBLE FOR COLLECTION OF EXISTING ONSITE INFORMATION REQUIREMENTS TO DESIGN, SPECIFY, AND INSTALL THE EXTERIOR MOUNTED PORTION OF THE PHOTOVOLTAIC SYSTEM DETAILED IN THIS DOCUMENT. ADVANCED SOLAR SOLUTIONS, INC IS RESPONSIBLE FOR APPLYING SUPPLIED INFORMATION INTO A SET OF PERMIT DRAWINGS. ANY CHANGES TO DRAWINGS ARE SUBJECT TO CONTRACT CONDITIONS BETWEEN THE CLIENT AND ADVANCED SOLAR SOLUTIONS, INC. IN ACCORDANCE WITH THE REQUIREMENTS OF THE AHJ.																
																	MAP PLACARD: MAIN SERVICE PANEL AND PV INVERTER (IF NOT SAME LOCATION) SCALE: 1/2" = 1'-0" (WITH COMBINED WARNING PLACARD IF REQUIRED. EXAMPLE: LADWP) CAUTION POWER TO THIS BUILDING IS SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECTS LOCATED AS SHOWN: SOLAR ARRAY ON ROOF TOP UTILITY METER & SERVICE PANEL AC DISCO INVERTER W/ DC DISCO WARNING ELECTRIC SHOCK HAZARD - DO NOT TOUCH TERMINALS TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION 1. PLACARD PLACED AT ELECTRICAL SERVICE AND AT THE PV INVERTER AND PV DISCONNECTS IF NOT AT THE SAME LOCATION. 2. MAP PLACARD PROVIDES A DIRECTORY OF THE SERVICE DISCONNECTING MEANS AND PHOTOVOLTAIC SYSTEM DISCONNECTION MEANS. 3. CODE REFERENCE: NEC 690.56(A)(B), 705.10 4. WHITE LETTERS ON A RED BACKGROUND. 5. MINIMUM OF 7 3/4" x 5" 6. FONT: 3/4" "CAUTION", 1/4" "WARNING", 3/16" HEADER, 1/8" DATA AND NOTES 7. PLACARD WILL BE PLACED ADJACENT TO THE MAIN SERVICE DISCONNECT IN A LOCATION CLEARLY VISIBLE FROM WHERE THE DISCONNECT IS OPERATED. (IFC 605.11.1.3)																	MAP PLACARD: MAIN SERVICE PANEL AND PV INVERTER (IF NOT SAME LOCATION) SCALE: 1/2" = 1'-0" CAUTION POWER TO THIS BUILDING IS SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECTS LOCATED AS SHOWN: SOLAR ARRAY ON ROOF TOP UTILITY METER & SERVICE PANEL AC DISCO INVERTER W/ DC DISCO 1. PLACARD PLACED AT ELECTRICAL SERVICE AND AT THE PV INVERTER AND PV DISCONNECTS IF NOT AT THE SAME LOCATION. 2. MAP PLACARD PROVIDES A DIRECTORY OF THE SERVICE DISCONNECTING MEANS AND PHOTOVOLTAIC SYSTEM DISCONNECTION MEANS. 3. CODE REFERENCE: NEC 690.56(A)(B), 705.10 4. WHITE LETTERS ON A RED BACKGROUND. 5. MINIMUM OF 6 1/2" x 6 1/2" 6. FONT: 3/4" "CAUTION", 1/4" HEADER, 1/8" DATA AND NOTES 7. PLACARD WILL BE PLACED ADJACENT TO THE MAIN SERVICE DISCONNECT IN A LOCATION CLEARLY VISIBLE FROM WHERE THE DISCONNECT IS OPERATED. (IFC 605.11.1.3)																																																		
3.300 kW PHOTOVOLTAIC PLANS NAMELarson, Carrie ADDRESS2018 SW Fallon Ln ADDRESSLake City, FL 32025 APN CVC56966 2100 N Main St Ste. 212 Fort Worth, TX 76164 (817) 501-4922 Daybreak Install LLC Wysssling Consulting, PLLC 76 N Meadowbrook Drive Alpine UT 84004 Florida License # RY34912 Signed 5/31/2022 PRIME CONTRACTOR / PERMIT APPLICANT SIGNER IS RESPONSIBLE FOR THE DESIGN AND SPECIFICATIONS OF THE PHOTOVOLTAIC SYSTEM INSTALLATION. PRIME CONTRACTOR / PERMIT APPLICANT SIGNER WILL BE RESPONSIBLE FOR COLLECTION OF EXISTING ONSITE INFORMATION REQUIREMENTS TO DESIGN, SPECIFY, AND INSTALL THE EXTERIOR MOUNTED PORTION OF THE PHOTOVOLTAIC SYSTEM DETAILED IN THIS DOCUMENT. ADVANCED SOLAR SOLUTIONS, INC IS RESPONSIBLE FOR APPLYING SUPPLIED INFORMATION INTO A SET OF PERMIT DRAWINGS. ANY CHANGES TO DRAWINGS ARE SUBJECT TO CONTRACT CONDITIONS BETWEEN THE CLIENT AND ADVANCED SOLAR SOLUTIONS, INC. IN ACCORDANCE WITH THE REQUIREMENTS OF THE AHJ.																																																																																				

1. PLACARD PLACED ON EACH SOLAR SYSTEM DISCONNECTING COMPONENT.

2. VALUES MUST MATCH EQUIPMENT CALCULATIONS. SEE SHEET "E-001 / AC DISCONNECT [#]"

3. CODE REFERENCE: NEC 690.54

4. MINIMUM OF 1 1/2" x 8 1/2" OR 1 3/4" x 6 1/2" RESPECTIVELY.

5. FONT: 3/8" HEADER, 3/16" DATA

6. WHITE LETTERS ON A RED BACKGROUND.





SM330M (BF)

60-CELL LINE



Peimar monocrystalline solar panels, produced using a combination of innovative production processes and advanced engineering techniques, provide custom ers with maximum output and super high performance.

This allows fewer panels to be used to generate more energy, ideal if space is restricted or environmental conditions are challenging. Modern design , using matching black cells and frames and a very long lifespan ensure this monocrystalline are a great option.

30 YEAR LINEAR POWER WARRANTY

20 YEAR PRODUCT WARRANTY

PERC TECHNOLOGY

MODULE FIRE PERFORMANCE: CLASS 1

ANTI-REFLECTIVE GLASS

QBE INSURANCE
Product Liability Insurance QBE

CELLS

60 CELLS
MONO 5BB / 9BB M3 | **PERC**

158.75x158.75mm / 6.25x6.25"

FRAME

COMPACT AND STURDY | 40mm

ANCHORABLE ALSO ON THE SHORT SIDE ⁽⁵⁾

ELECTRICAL CHARACTERISTICS (STC) ⁽¹⁾

Nominal Output (Pmax) ⁽²⁾
Sorting Tolerance
Voltage at Pmax (Vmp)
Current at Pmax (Imp)
Open Circuit Voltage (Voc) ⁽²⁾
Short Circuit Current (Isc) ⁽²⁾
Maximum System Voltage
Maximum Series Fuse Rating
Module Efficiency
Protection class against electric shock

SM330M (BF)

330 W
0/+5 W
34.35 V
9.61 A
41.91 V
10.18 A
1500 V
15 A
19.78%
Class II

MECHANICAL CHARACTERISTICS

Solar Cells 60 (6x10) M3 monocrystalline **PERC**
Solar Cells Size 158.75x158.75 mm / 6.25x6.25"
Front Cover 3.2 mm / 0.13" thick, low iron tempered glass
Back Cover TPT (Tedlar-PET-Tedlar)
Encapsulant EVA (Ethylene vinyl acetate)
Frame Anodized aluminium alloy, double wall
Frame finishing Black
Backsheet finishing White
Diodes 3 Bypass diodes serviceable
Junction Box IP67 rated
Connector MC4 or compatible connector
Cables Lenght 900 mm / 35.43"
Cables Section 4.0 mm² / 0,006 in²
Dimensions 1665x1002x40 mm / 65.55x39.45x1.57"
Weight 18.6 Kg / 41.01 lbs
Max Load (Test Load) - SF 5400 Pa - 1.5 ⁽³⁾

TEMPERATURE CHARACTERISTICS

NMOT ⁽⁴⁾ 45±2 °C
Temperature Coefficient of Pmax -0.37 %/°C
Temperature Coefficient of Voc -0.28 %/°C
Temperature Coefficient of Isc 0.042 %/°C
Operating Temperature -40 °C ~ +85°C

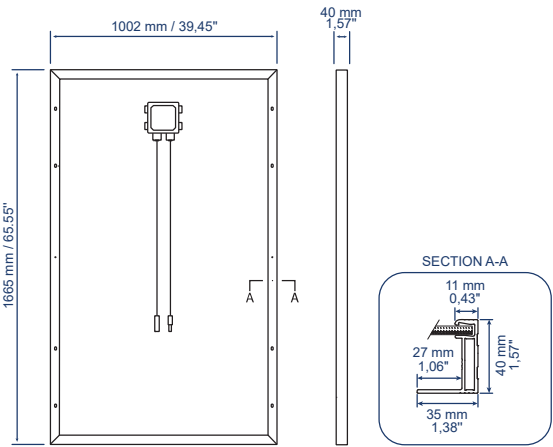
PACKAGING ⁽⁴⁾

Pallet dimensions 1720x1200x1210 mm / 67.72x47.24x47.64"
Pieces per pallet 27
Weight 535 Kg / 1179 lbs

CERTIFICATIONS

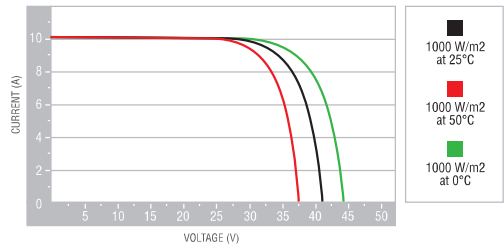
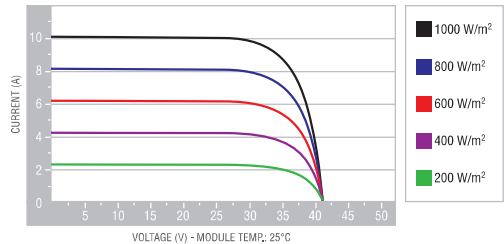
Fire Resistance Rating Class of reaction to fire: 1 (UNI 9177)
Fire Performance Rating Type 1 (UL 61730:2017)
Product Certificate UL 61730:2017

DIMENSIONS



1. STC: (Standard Test Condition) Irradiance 1000W/m²; Module Temperature 25°C; Air Mass 1.5
2. Pmax, Voc, Isc measurement tolerance: ±3%
3. NMOT: Nominal Module Operating Temperature: Irradiance 800W/m²; Air 20°C; Wind speed 1m/s

CURRENT/VOLTAGE CHARACTERISTICS



4. Pallets can be stacked up to two
5. Consult the installation manual for the relative mounting configurations

www.peimar.com



It is important to point out, that all technical specifications, information and figures contained in this datasheet are estimated values. Peimar reserves the right to change the technical specifications, information and figures contained in this document at any time without notice.

USA_2021_06_00



3.300 kW PHOTOVOLTAIC PLANS

CVC56966

Daybreak Install LLC

2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

NAME Larson, Carrie

ADDRESS 2018 SW Fallon Ln

ADDRESS Lake City, FL 32025

APN

REV 05/31/2022

DATE 05/31/2022

RELEASE SUBMIT FOR PERMIT

R-100

EQUIP. CUT SHEETS





Certificate of Compliance

Certificate: 80042800

Master Contract: 274817

Project: 80042800

Date Issued: 2020-11-03

Issued To: Peimar Inc
309 Fellowship Road, Suite 115
East Gate Center
Mount Laurel, New Jersey, 08054
United States

Attention: Stefano Caruso

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.



Issued by: Michael Hoffnagle
Michael Hoffnagle

PRODUCTS

CLASS 5311 10 - POWER SUPPLIES - Photovoltaic Modules and Panels
CLASS 5311 90 - POWER SUPPLIES - Photovoltaic Modules and Panels (Certified to U.S. Standards)



Certificate: 80042800
Project: 80042800

Master Contract: 274817
Date Issued: 2020-11-03

- Model SMXXXM Series, mono-crystalline silicon, 72 Cell, where xxx is the power output from 405 W to 340 W.

Model	Rated Max @ STC (Watts)	Voltage at Rated @ Max Power (V)	Current at Rated Max Power @ STC (A)	Open Circuit Voltage @ STC (A)	Short Circuit Current @ STC (A)
	(Pmax)	(Vmp)	(Imp)	(Voc)	(Isc)
SM405M	405	41.5	9.76	50.63	10.34
SM400M	400	41.3	9.69	50.39	10.26
SM395M	395	41.1	9.61	50.14	10.18
SM390M	390	40.9	9.54	49.9	10.1
SM385M	385	40.7	9.46	49.66	10.02
SM380M	380	40.5	9.39	49.41	9.94
SM375M	375	40.3	9.31	49.17	9.86
SM370M	370	40.1	9.24	48.92	9.78
SM365M	365	39.9	9.16	48.68	9.7
SM360M	360	39.7	9.09	48.44	9.62
SM355M	355	39.5	9.01	48.19	9.54
SM350M	350	39.3	8.94	47.95	9.46
SM345M	345	39.1	8.86	47.70	9.38
SM340M	340	38.9	8.79	47.46	9.3
Max Series Fuse Rating (A)	15				
Max System Voltage (V)	1500				
Fire Performance Rating	Type 1				

- Model SMXXXM Series, mono-crystalline silicon, 60 Cell, where xxx is the power output from 340 W to 290 W.

Model	Rated Max @ STC (Watts)	Voltage at Rated @ Max Power (V)	Current at Rated Max Power @ STC (A)	Open Circuit Voltage @ STC (A)	Short Circuit Current @ STC (A)
	(Pmax)	(Vmp)	(Imp)	(Voc)	(Isc)
SM340M	340	34.75	9.79	42.39	10.37
SM335M	335	34.55	9.7	42.16	10.27
SM330M	330	34.35	9.61	41.91	10.18
SM325M	325	34.15	9.52	41.67	10.08
SM320M	320	33.95	9.43	41.42	9.98

REV	DATE	RELEASE
	05/31/2022	SUBMIT FOR PERMIT
3.300 kW PHOTOVOLTAIC PLANS		
NAME	Larson, Carrie	R-101
ADDRESS	2018 SW Fallon Ln	
ADDRESS	Lake City, FL 32025	
APN		
CVC56966		
2100 N Main St Ste. 212		
Fort Worth, TX 76164		
(817) 501-4922		
Daybreak Install LLC		

EQUIP. CUT SHEETS



Certificate: 80042800
Project: 80042800

Master Contract: 274817
Date Issued: 2020-11-03

SM315M	315	33.75	9.34	41.18	9.89
SM305M	305	33.55	9.25	40.94	9.79
SM300M	300	33.35	9.16	40.70	9.69
SM295M	295	33.15	9.07	40.45	9.59
SM290M	290	32.95	8.98	40.21	9.50
Max Series Fuse Rating (A)	15				
Max System Voltage (V)	1500				
Fire Performance Rating	Type 1				

Design Load: 3600 Pa
Test Load: 5400 Pa

- Notes:
- Rated electrical characteristics are within +/-10% of measured values at Standard Test Conditions of 100 mW/cm2 irradiance, AM 1.5 spectrum, and 25°C.
 - 1500V maximum system voltage can only be used with 1500V rated components (Junction box, connector and cable)

APPLICABLE REQUIREMENTS

CAN/CSA-C22.2 No. 61730-1:19	Photovoltaic (PV) module safety qualification - Part 1: Requirements for construction
CAN/CSA-C22.2 No. 61730-2:19	Photovoltaic (PV) module safety qualification - Part 2: Requirements for testing
UL 61730-1:2017	Photovoltaic (PV) Module Safety Qualification - Part 1: Requirements for Construction
UL 61730-2:2017	Photovoltaic (PV) Module Safety Qualification - Part 2: Requirements for Testing

MARKINGS

- The manufacturer is required to apply the following markings:
- Products shall be marked with the markings specified by the particular product standard.
 - Products certified for Canada shall have all Caution and Warning markings in both English and French.
- Additional bilingual markings not covered by the product standard(s) may be required by the Authorities Having Jurisdiction. It is the responsibility of the manufacturer to provide and apply these additional markings, where applicable, in accordance with the requirements of those authorities.



Supplement to Certificate of Compliance

Certificate: 80042800 Master Contract: 274817

The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
80042800	2020-11-03	New Certification Evaluation of Peimar PV modules to UL61730 and CAN/CSA 61730 Standards from IEC CB Scheme. Additional models and components were added to the project. - CB Certificates for IEC 61730-1 and -2 are provided along with supporting IEC test reports - Gap testing only for UL ND - Fire testing will be carried over from UL1703 certification report.

Daybreak Install LLC

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EQUIP. CUT SHEETS



Single Phase Inverter with HD-Wave Technology

for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US



12-25
YEAR
WARRANTY

INVERTERS

Optimized installation with HD-Wave technology

- Specifically designed to work with power optimizers
- Record-breaking efficiency
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014 and 2017, per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Extremely small
- Built-in module-level monitoring
- Outdoor and indoor installation
- Optional: Revenue grade data, ANSI C12.20 Class 0.5 (0.5% accuracy)

solaredge.com



Single Phase Inverter with HD-Wave Technology for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US

	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
OUTPUT								
Rated AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
Maximum AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓	Vac
AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)	-	✓	-	✓	-	-	✓	Vac
AC Frequency (Nominal)	59.3 - 60 - 60.5 [®]							Hz
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5	A
Maximum Continuous Output Current @208V	-	16	-	24	-	-	48.5	A
GFDI Threshold	1							A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes							
INPUT								
Maximum DC Power @240V	4650	5900	7750	9300	11800	15500	17650	W
Maximum DC Power @208V	-	5100	-	7750	-	-	15500	W
Transformer-less, Ungrounded	Yes							
Maximum Input Voltage	480							Vdc
Nominal DC Input Voltage	380				400			Vdc
Maximum Input Current @240V ⁽²⁾	8.5	10.5	13.5	16.5	20	27	30.5	Adc
Maximum Input Current @208V ⁽²⁾	-	9	-	13.5	-	-	27	Adc
Max. Input Short Circuit Current	45							Adc
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600k Ω Sensitivity							
Maximum Inverter Efficiency	99	99.2						%
CEC Weighted Efficiency	99						99 @ 240V 98.5 @ 208V	%
Nighttime Power Consumption	< 2.5							W
ADDITIONAL FEATURES								
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)							
Revenue Grade Data, ANSI C12.20	Optional [®]							
Rapid Shutdown - NEC 2014 and 2017 690.12	Automatic Rapid Shutdown upon AC Grid Disconnect							
STANDARD COMPLIANCE								
Safety	UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07							
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (HI)							
Emissions	FCC Part 15 Class B							
INSTALLATION SPECIFICATIONS								
AC Output Conduit Size / AWG Range	3/4" minimum / 14-6 AWG					3/4" minimum /14-4 AWG		
DC Input Conduit Size / # of Strings / AWG Range	3/4" minimum / 1-2 strings / 14-6 AWG					3/4" minimum / 1-3 strings / 14-6 AWG		
Dimensions with Safety Switch (HxWxD)	17.7 x 14.6 x 6.8 / 450 x 370 x 174					21.3 x 14.6 x 7.3 / 540 x 370 x 185		in / mm
Weight with Safety Switch	22 / 10	25.1 / 11.4	26.2 / 11.9		38.8 / 17.6		lb / kg	
Noise	< 25				<50			dBA
Cooling	Natural Convection							
Operating Temperature Range	-40 to +140 / -25 to +60 [®] (-40°F / -40°C option) ⁽⁵⁾							°F / °C
Protection Rating	NEMA 4X (Inverter with Safety Switch)							

⁽¹⁾ For other regional settings please contact SolarEdge support
⁽²⁾ A higher current source may be used; the inverter will limit its input current to the values stated
⁽³⁾ Revenue grade inverter P/N: SExxxxH-US000NNC2
⁽⁴⁾ For power de-rating information refer to: <https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf>
⁽⁵⁾ -40 version P/N: SExxxxH-US000NNU4

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RoHS

3.300 kW PHOTOVOLTAIC PLANS

CVC56966

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R-103

EQUIP. CUT SHEETS



Power Optimizer

For North America

P320 / P340 / P370 / P400 / P401 / P405 / P485 / P505



POWER OPTIMIZER

PV power optimization at the module-level

- Specifically designed to work with SolarEdge inverters
- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch losses, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Fast installation with a single bolt
- Next generation maintenance with module-level monitoring
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- Module-level voltage shutdown for installer and firefighter safety

solaredge.com



Power Optimizer For North America

P320 / P340 / P370 / P400 / P401 / P405 / P485 / P505

Optimizer model (typical module compatibility)	P320 (for 60-cell modules)	P340 (for high-power 60-cell modules)	P370 (for higher-power 60 and 72-cell modules)	P400 (for 72 & 96-cell modules)	P401 (for high power 60 and 72 cell modules)	P405 (for high-voltage modules)	P485 (for high-voltage modules)	P505 (for higher current modules)	
INPUT									
Rated Input DC Power ⁽¹⁾	320	340	370	400	405	485	505	W	
Absolute Maximum Input Voltage (Voc at lowest temperature)	48		60	80	60	125 ⁽²⁾	83 ⁽²⁾	Vdc	
MPPT Operating Range	8 - 48		8 - 60	8 - 80	8-60	12.5 - 105	12.5 - 83	Vdc	
Maximum Short Circuit Current (Isc)		11		10.1	11.75	11	14	Adc	
Maximum DC Input Current		13.75		12.5	14.65	12.5	17.5	Adc	
Maximum Efficiency					99.5			%	
Weighted Efficiency					98.8		98.6	%	
Overvoltage Category					II				
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREEDGE INVERTER)									
Maximum Output Current				15				Adc	
Maximum Output Voltage			60				85	Vdc	
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREEDGE INVERTER OR SOLAREEDGE INVERTER OFF)									
Safety Output Voltage per Power Optimizer				1 ± 0.1				Vdc	
STANDARD COMPLIANCE									
EMC				FCC Part 15 Class B, IEC61000-6-2, IEC61000-6-3					
Safety				IEC62109-1 (Class II safety), UL1741					
Material				UL94 V-0, UV Resistant					
RoHS				Yes					
INSTALLATION SPECIFICATIONS									
Maximum Allowed System Voltage				1000				Vdc	
Compatible inverters				All SolarEdge Single Phase and Three Phase Inverters					
Dimensions (W x L x H)		129 x 153 x 27.5 / 5.1 x 6 x 1.1	129 x 153 x 33.5 / 5.1 x 6 x 1.3	129 x 153 x 29.5 / 5.1 x 6 x 1.16	129 x 159 x 49.5 / 5.1 x 6.3 x 1.9	129 x 162 x 59 / 5.1 x 6.4 x 2.3		mm / in	
Weight (including cables)		630 / 1.4	750 / 1.7	655 / 1.5	845 / 1.9	1064 / 2.3		gr / lb	
Input Connector				MC4 ⁽³⁾		Single or dual MC4 ⁽³⁾	MC4 ⁽³⁾		
Input Wire Length				0.16 / 0.52				m / ft	
Output Wire Type / Connector				Double Insulated / MC4					
Output Wire Length		0.9 / 2.95			1.2 / 3.9			m / ft	
Operating Temperature Range ⁽⁴⁾				-40 - +85 / -40 - +185				°C / °F	
Protection Rating				IP68 / NEMA6P					
Relative Humidity				0 - 100				%	

(1) Rated power of the module at STC will not exceed the optimizer "Rated Input DC Power". Modules with up to +5% power tolerance are allowed.
(2) NEC 2017 requires max input voltage be not more than 80V.
(3) For other connector types please contact SolarEdge.
(4) For dual version for parallel connection of two modules use P485-4WMC4MM. In the case of an odd number of PV modules in one string, installing one P485 dual version power optimizer connected to one PV module. When connecting a single module seal the unused input connectors with the supplied pair of seals.
(5) For ambient temperature above +85°C / +185°F power derating is applied. Refer to Power Optimizers Temperature Derating Technical Note for more details.

PV System Design Using a SolarEdge Inverter ⁽⁶⁾⁽⁷⁾	Single Phase HD-Wave	Single phase	Three Phase for 208V grid	Three Phase for 277/480V grid	
Minimum String Length (Power Optimizers)	P320, P340, P370, P400, P401 P405, P485, P505	8	10	18	
Maximum String Length (Power Optimizers)		6	8	14	
		25	25	50 ⁽⁸⁾	
Maximum Power per String		5700 (6000 with SE7600-US - SE11400-US)	5250	6000 ⁽⁹⁾	12750 ⁽¹⁰⁾ W
Parallel Strings of Different Lengths or Orientations		Yes			

(6) For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf
(7) It is not allowed to mix P405/P485/P505 with P320/P340/P370/P400/P401 in one string.
(8) A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement.
(9) For 208V grid, it is allowed to install up to 6,500W per string when the maximum power difference between each string is 1,000W.
(10) For 277/480V grid, it is allowed to install up to 15,000W per string when the maximum power difference between each string is 2,000W.



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REV

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RELEASE SUBMIT FOR PERMIT

R-104

EQUIP. CUT SHEETS

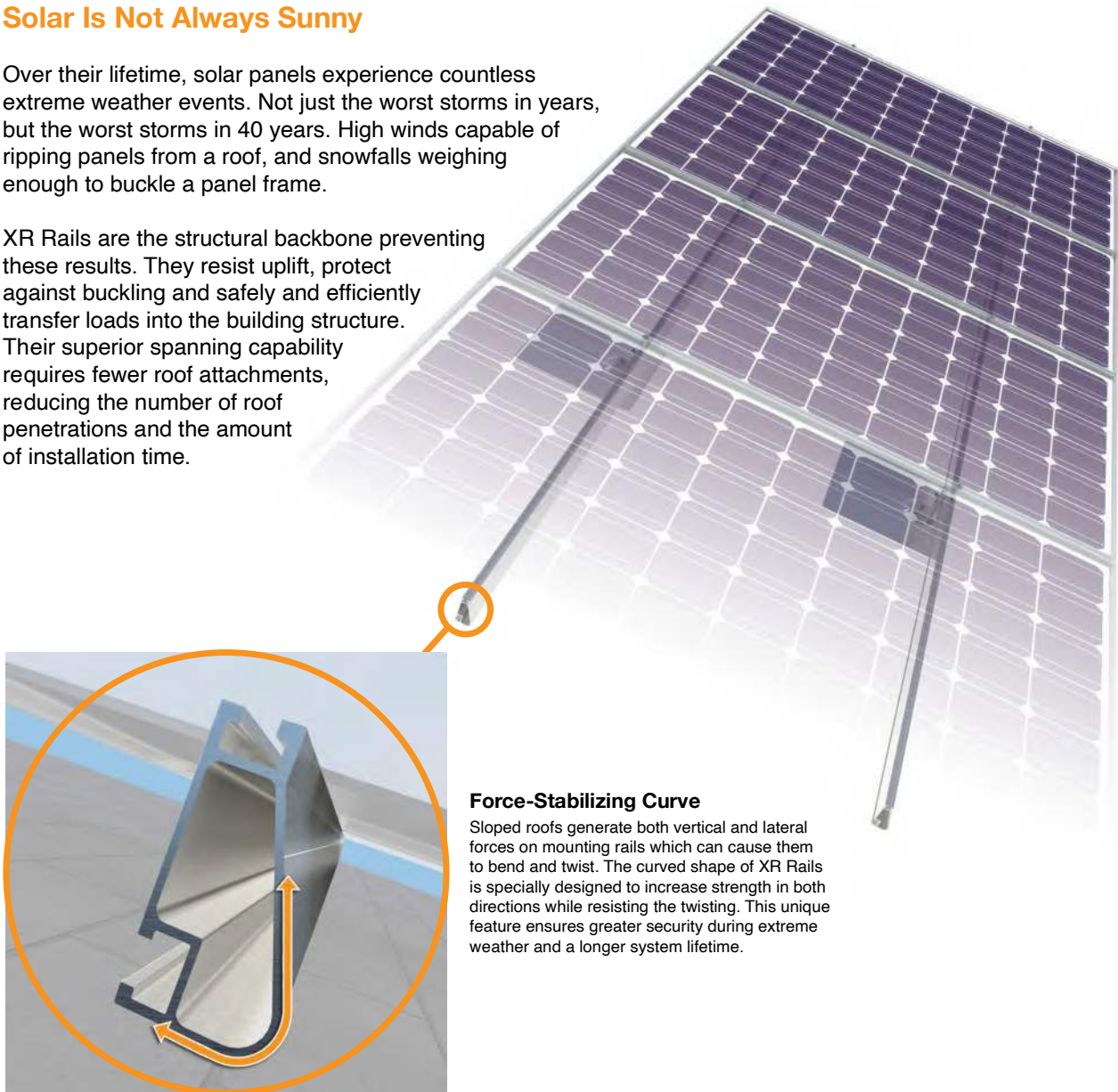


XR Rail Family

Solar Is Not Always Sunny

Over their lifetime, solar panels experience countless extreme weather events. Not just the worst storms in years, but the worst storms in 40 years. High winds capable of ripping panels from a roof, and snowfalls weighing enough to buckle a panel frame.

XR Rails are the structural backbone preventing these results. They resist uplift, protect against buckling and safely and efficiently transfer loads into the building structure. Their superior spanning capability requires fewer roof attachments, reducing the number of roof penetrations and the amount of installation time.



Force-Stabilizing Curve

Sloped roofs generate both vertical and lateral forces on mounting rails which can cause them to bend and twist. The curved shape of XR Rails is specially designed to increase strength in both directions while resisting the twisting. This unique feature ensures greater security during extreme weather and a longer system lifetime.

Compatible with Flat & Pitched Roofs



XR Rails are compatible with FlashFoot and other pitched roof attachments.



IronRidge offers a range of tilt leg options for flat roof mounting applications.

Corrosion-Resistant Materials

All XR Rails are made of 6000-series aluminum alloy, then protected with an anodized finish. Anodizing prevents surface and structural corrosion, while also providing a more attractive appearance.



XR Rail Family

The XR Rail Family offers the strength of a curved rail in three targeted sizes. Each size supports specific design loads, while minimizing material costs. Depending on your location, there is an XR Rail to match.



XR10

XR10 is a sleek, low-profile mounting rail, designed for regions with light or no snow. It achieves spans up to 6 feet, while remaining light and economical.

- 6' spanning capability
- Moderate load capability
- Clear & black anodized finish
- Internal splices available



XR100

XR100 is the ultimate residential mounting rail. It supports a range of wind and snow conditions, while also maximizing spans up to 10 feet.

- 10' spanning capability
- Heavy load capability
- Clear & black anodized finish
- Internal splices available



XR1000

XR1000 is a heavyweight among solar mounting rails. It's built to handle extreme climates and spans up to 12 feet for commercial applications.

- 12' spanning capability
- Extreme load capability
- Clear anodized finish
- Internal splices available

Rail Selection

The table below was prepared in compliance with applicable engineering codes and standards.* Values are based on the following criteria: ASCE 7-16, Gable Roof Flush Mount, Roof Zones 1 & 2e, Exposure B, Roof Slope of 8 to 20 degrees and Mean Building Height of 30 ft. Visit IronRidge.com for detailed certification letters.

Load		Rail Span					
Snow (PSF)	Wind (MPH)	4'	5' 4"	6'	8'	10'	12'
None	90	XR10		XR100		XR1000	
	120						
	140						
	160						
20	90						
	120						
	140						
	160						
30	90						
	160						
40	90						
	160						
80	160						
120	160						

*Table is meant to be a simplified span chart for conveying general rail capabilities. Use approved certification letters for actual design guidance.

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EQUIP. CUT SHEETS

R-105





Class A Fire Rating

Tech Brief

Background

All roofing products are tested and classified for their ability to resist fire.

Recently, these fire resistance standards were expanded to include solar equipment as part of the roof system. Specifically, this requires the modules, mounting hardware and roof covering to be tested together as a system to ensure they achieve the same fire rating as the original roof covering.

These new requirements are being adopted throughout the country in 2016.

IronRidge Certification

IronRidge was the first company to receive a Class A Fire Rating—the highest possible rating—from Intertek Group plc., a Nationally Recognized Testing Laboratory.

IronRidge Flush Mount and Tilt Mount Systems were tested on sloped and flat roofs in accordance with the new UL 1703 & UL 2703 test standards. The testing evaluated the system’s ability to resist flame spread, burning material and structural damage to the roof.

Refer to the table below to determine the requirements for achieving a Class A Fire Rating on your next project.

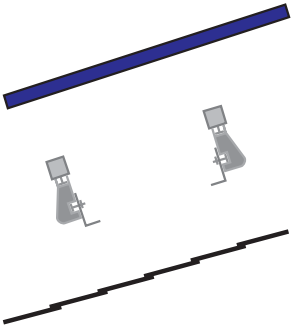
Fire Testing Process

Test Setup

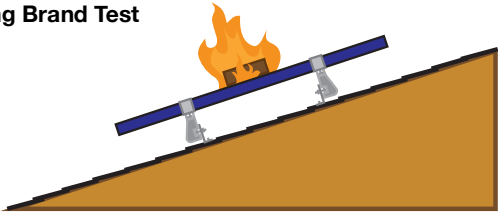
Solar Modules
Solar modules are given a Type classification based on their materials and construction.

Mounting System
Mounting is tested as part of a system that includes type-tested modules and fire-rated roof covering.

Roof Covering
Roof covering products are given a Fire Class Rating of A, B or C based on their tested fire resistance.

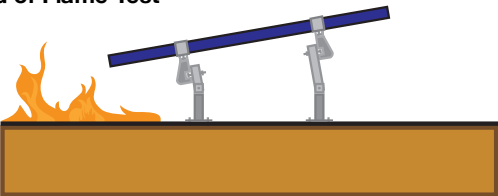


Burning Brand Test



A burning wooden block is placed on module as a fan blows at 12 mph. Flame cannot be seen on underside of roof within 90 minutes.

Spread of Flame Test



Flame at southern edge of roof is aimed up the roof as a fan blows at 12 mph. The flame cannot spread 6 feet or more in 10 minutes.

System	Roof Slope	Module	Fire Rating*
Flush Mount 	Any Slope	Type 1, 2, & 3	Class A
Tilt Mount 	≤ 6 Degrees	Type 1, 2, & 3	Class A

*Class A rated PV systems can be installed on Class A, B, and C roofs.

Frequently Asked Questions

What is a “module type”?

The new UL1703 standard introduces the concept of a PV module type, based on 4 construction parameters and 2 fire performance parameters. The purpose of this classification is to certify mounting systems without needing to test it with every module.

What roofing materials are covered?

All fire rated roofing materials are covered within this certification including composition shingle, clay and cement tile, metal, and membrane roofs.

What if I have a Class C roof, but the jurisdiction now requires Class A or B?

Generally, older roofs will typically be “grandfathered in”, and will not require re-roofing. However, if 50% or more of the roofing material is replaced for the solar installation the code requirement will be enforced.

Where is the new fire rating requirement code listed?

2012 IBC: 1509.7.2 Fire classification. Rooftop mounted photovoltaic systems shall have the same fire classification as the roof assembly required by Section 1505.

Where is a Class A Fire Rating required?

The general requirement for roofing systems in the IBC refers to a Class C fire rating. Class A or B is required for areas such as Wildland Urban Interface areas (WUI) and for very high fire severity areas. Many of these areas are found throughout the western United States. California has the most Class A and B roof fire rating requirements, due to wild fire concerns.

Are standard mid clamps covered?

Mid clamps and end clamps are considered part of the PV “system”, and are covered in the certification.

More Resources



Installation Manuals

Visit our website for manuals that include UL 2703 Listing and Fire Rating Classification.

Go to IronRidge.com

What attachments and flashings are deemed compatible with Class A?

Attachments and their respective flashings are not constituents of the rating at this time. All code-compliant flashing methods are acceptable from a fire rating standpoint.

What mounting height is acceptable?

UL fire testing was performed with a gap of 5”, which is considered worst case in the standard. Therefore, the rating is applicable to any module to roof gap.

Am I required to install skirting to meet the fire code?

No, IronRidge achieved a Class A fire rating without any additional racking components.

What determines Fire Classification?

Fire Classification refers to a fire-resistance rating system for roof covering materials based on their ability to withstand fire exposure.

Class A - effective against severe fire exposure
Class B - effective against moderate fire exposure
Class C - effective against light fire exposure

What if the roof covering is not Class A rated?

The IronRidge Class A rating will not diminish the fire rating of the roof, whether Class A, B, or C.

What tilts is the tilt mount system fire rated for?

The tilt mount system is rated for 1 degrees and up and any roof to module gap, or mounting height.

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R-106		

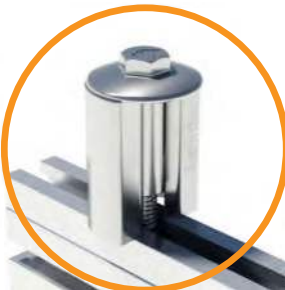




Simplified Grounding for Every Application

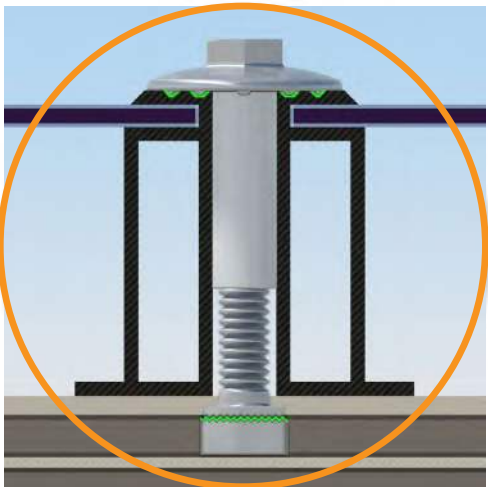
The UFO family of components eliminates the need for separate grounding hardware by bonding solar modules directly to IronRidge XR Rails. All system types that feature the UFO family—Flush Mount, Tilt Mount and Ground Mount—are fully listed to the UL 2703 standard.

UFO hardware forms secure electrical bonds with both the module and the rail, resulting in many parallel grounding paths throughout the system. This leads to safer and more reliable installations.



Stopper Sleeve

The Stopper Sleeve snaps onto the UFO, converting it into a bonded end clamp.



Universal Fastening Object (UFO)

The UFO securely bonds solar modules to XR Rails. It comes assembled and lubricated, and can fit a wide range of module heights.



Bonded Splice

Each Bonded Splice uses self-drilling screws to form a secure connection. No bonding strap needed.



Grounding Lug

A single Grounding Lug connects an entire row of PV modules to the grounding conductor.



Bonded Attachments

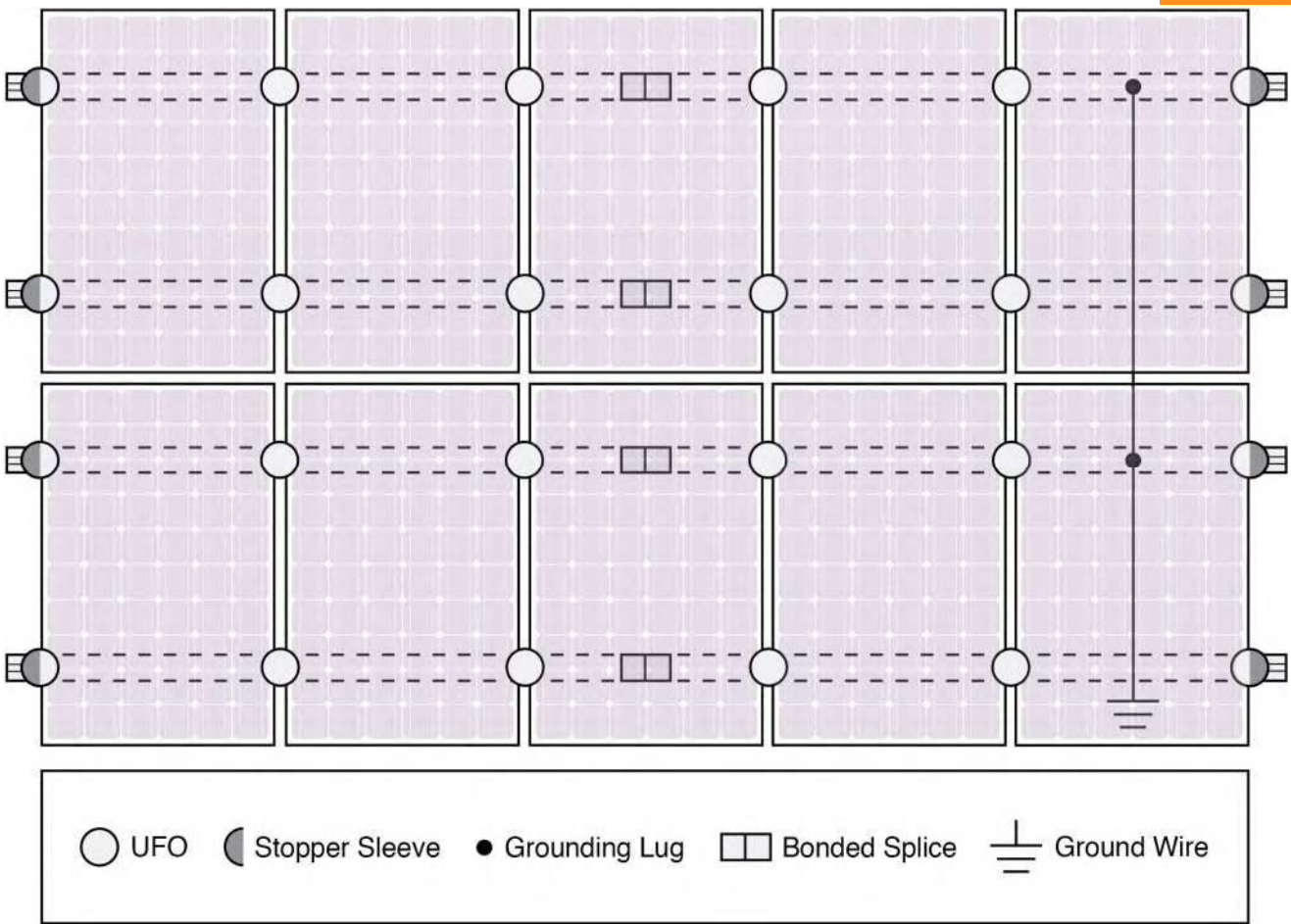
The bonding bolt attaches and bonds the L-foot to the rail. It is installed with the same socket as the rest of the system.

UFO Family of Components

Tech Brief

System Diagram

Tech Brief



⚠ Approved Enphase microinverters can provide equipment grounding of IronRidge systems, eliminating the need for grounding lugs and field installed equipment ground conductors (EGC). A minimum of two microinverters mounted to the same rail and connected to the same Engage cable is required. Refer to installation manuals for additional details.

UL Certification

The IronRidge Flush Mount, Tilt Mount, and Ground Mount Systems have been listed to UL 2703 by Intertek Group plc.

UL 2703 is the standard for evaluating solar mounting systems. It ensures these devices will maintain strong electrical and mechanical connections over an extended period of time in extreme outdoor environments.

Go to [IronRidge.com/UFO](https://www.ironridge.com/UFO)

Cross-System Compatibility			
Feature	Flush Mount	Tilt Mount	Ground Mount
XR Rails	✓	✓	XR1000 Only
UFO/Stopper	✓	✓	✓
Bonded Splice	✓	✓	N/A
Grounding Lugs	1 per Row	1 per Row	1 per Array
Microinverters & Power Optimizers	Enphase - M250-72, M250-60, M215-60, C250-72 Darfon - MIG240, MIG300, G320, G640 SolarEdge - P300, P320, P400, P405, P600, P700, P730		
Fire Rating	Class A	Class A	N/A
Modules	Tested or Evaluated with over 400 Framed Modules Refer to installation manuals for a detailed list.		

Daybreak Install LLC	3.300 kW PHOTOVOLTAIC PLANS		REV	DATE	RELEASE
	NAME	Larson, Carrie		05/31/2022	SUBMIT FOR PERMIT
	ADDRESS	2018 SW Fallon Ln			
	ADDRESS	Lake City, FL 32025			
		APN	R-107		
			EQUIP. CUT SHEETS		



S-5![®]

The Right Way!

ProteaBracket™

ProteaBracket™ is the most versatile standing seam metal roof attachment solution on the market, fitting most trapezoidal sheet profiles with and without intermediate insulation. It features an adjustable attachment base and multiple solar module attachment options (illustrated on back) to accommodate varying widths and heights. There are no messy sealants to apply and no chance for leaks; the ProteaBracket comes with factory-applied, adhesive rubber sealant to ensure quick installation and a weather-proof fit.

Installation is simple! The ProteaBracket is mounted directly onto the crown of the panel, straddling the profile. No surface preparation is necessary; simply wipe away excess oil and debris, align, and apply. Secure ProteaBracket through its pre-punched holes, using the hardened drill point S-5![®] screws.

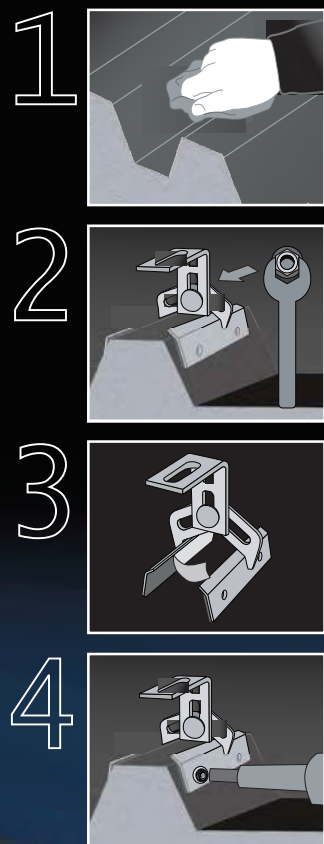
ProteaBracket is the perfect match for our S-5-PV Kit and spares you the hassle of cold-bridging! For a solar attachment solution that is both economical and easy to use, choose ProteaBracket.*

*When ProteaBracket is used in conjunction with the S-5-PV Kit, an additional nut is required during installation.

S-5![®] ProteaBracket™ is a versatile bracket that adjusts easily to most trapezoidal roof profiles.

ProteaBracket™

888-825-3432 | www.S-5.com



S-5![®]

The Right Way!

ProteaBracket™ is the perfect solar attachment solution for most trapezoidal exposed-fastened metal roof profiles! No messy sealants to apply. The factory-applied adhesive rubber sealant weather-proofs and makes installation easy!

Each ProteaBracket™ comes with a factory-applied, adhesive rubber sealant on the base. A structural A2 stainless steel bimetal attachment bracket, ProteaBracket is compatible with most common metal roofing materials. All four pre-punched holes must be used to achieve tested strength. Mounting hardware is furnished with the ProteaBracket. For design assistance, ask your distributor, or visit www.S-5.com for the independent lab test data that can be used for load-critical designs and applications. Also, please visit our website for more information including metallurgical compatibilities and specifications. S-5![®] holding strength is unmatched in the industry.

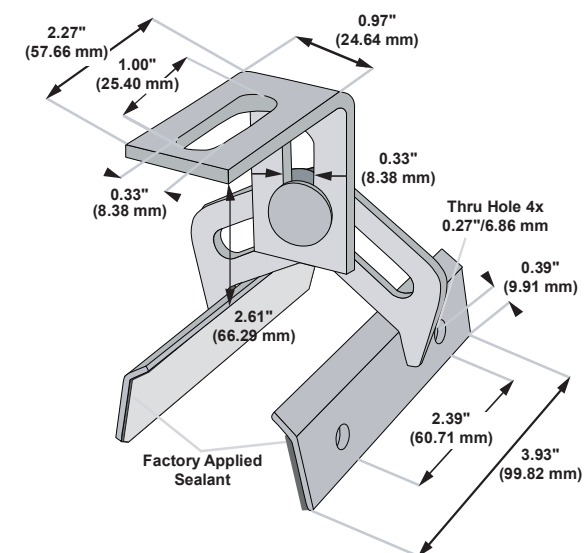
Multiple Attachment Options:

Side Rail Option

Top Rail Option

S-5-PV Kit Option

ProteaBracket™



Please note: All measurements are rounded to the second decimal place.

Example Applications



S-5-PV Kit demonstrated with a ProteaBracket on a trapezoidal profile.

Example Profile



S-5![®] Warning! Please use this product responsibly!

Products are protected by multiple U.S. and foreign patents. For published data regarding holding strength, bolt torque, patents, and trademarks, visit the S-5! website at www.S-5.com.

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Distributed by

REV	DATE	RELEASE
	05/31/2022	SUBMIT FOR PERMIT
3.300 kW PHOTOVOLTAIC PLANS		
NAME Larson, Carrie		
ADDRESS 2018 SW Fallon Ln		
ADDRESS Lake City, FL 32025		
APN		
R-108		
EQUIP. CUT SHEETS		

Daybreak Install LLC	CVC56966
2100 N Main St Ste. 212	
Fort Worth, TX 76164	
(817) 501-4922	





General Duty Cartridge Fuse Safety Switch

DG222NRB
UPC:782113144221

- Dimensions:
- Height: 7 IN
 - Length: 6.41 IN
 - Width: 8.4 IN

Weight:9 LB

Notes:Maximum hp ratings apply only when dual element fuses are used. 3-Phase hp rating shown is a grounded B phase rating, UL listed.

- Warranties:
- Eaton Selling Policy 25-000, one (1) year from the date of installation of the Product or eighteen (18) months from the date of shipment of the Product, whichever occurs first.

- Specifications:
- Type: General Duty/Cartridge Fuse
 - Amperage Rating: 60A
 - Enclosure: NEMA 3R
 - Enclosure Material: Painted galvanized steel
 - Fuse Class Provision: Class H fuses
 - Fuse Configuration: Fusible with neutral
 - Number Of Poles: Two-pole
 - Number Of Wires: Three-wire
 - Product Category: General Duty Safety Switch
 - Voltage Rating: 240V

- Supporting documents:
- Eatons Volume 2-Commercial Distribution
 - Eaton Specification Sheet - DG222NRB

- Certifications:
- UL Listed



pe.eaton.com

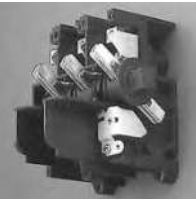
1.1 Switching Devices

Safety Switches

1

All general-duty switches above 100A and all heavy-duty switches incorporate these K-Series switch design features.

- Two points of contact provide a positive open and close, easier operation, and also help prevent contact burning for longer contact life



Visible Double-Break Rotary Blade Mechanism

- Protects against accidental contact with energized parts. Probe holes enable the user to test if the line side is energized without removing the shield. Not provided on general-duty switches, but available as a field kit or factory installed



Clear Line Shield



Clearly Visible Handle

- The position (ON or OFF) can be clearly seen from a distance and the length provides for easy operation



Triple Padlocking Capability

- Personnel safety feature because the large hasp can accommodate up to three 3/8-inch (9.5 mm) shank locks



Additional Locking Capability

- Cabinet door can be further padlocked at the top and bottom as applicable



Interlocking Mechanism

- Door cannot be opened when the handle is in the ON position. Front and side operable defeater mechanism provides for user access when necessary on single-throw switches



Tangential Knockouts

- An ample number are provided on the top, bottom and sides of both NEMA Types 1 and 3R enclosures through 200A



Bolt-On Hub Kits

- For switches in a NEMA Type 3R, 30–200A. Use a Myers type hub for all others

Standards and Certifications

- UL listed File No. E5239
- Meets UL 98 for enclosed switches and NEMA Std. KS-1



Seismic Qualifications

- General-duty switches exceed the requirements of Uniform Building Code (UBC) and California Code Title 24 OSP-0011-10, OSP-0012-10



 Daybreak Install LLC CVC56966 2100 N Main St Ste. 212 Fort Worth, TX 76164 (817) 501-4922	3.300 kW PHOTOVOLTAIC PLANS			REV	DATE	RELEASE
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