

12 x Sunpower 370 Watt PV Modules
AC Modules with Micro-Inverters

4 x Sunpower 370 Watt PV Modules
AC Modules with Micro-Inverters

ROOF MOUNTED PV ARRAYS

TRANSITION
TO THHN

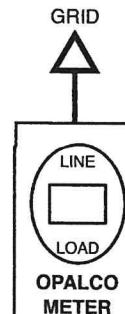
PV AC OUTPUT
JUNCTION BOX
LOCATED ON
ROOF

100A BUS
INVERTER
COMBINER PANEL

Proposed location on
south exterior wall at
ground level

200
200A BUS
MAIN PANEL IN
SOUTH
INTERIOR

Conduit & Wire Schedule						
#	Distance	Conduit	# of Conductors	Size	Type	Colors
1	~25'	n/a	2 + GR	#10 AWG	PV Wire	1-R, 1-W, 1-G
2	~100'	3/4" EMT	2 + GR	#10 AWG	THHN	1-R, 1-BK, 1-W, 1-G
3	~20'	3/4" EMT	3 + GR	#10 AWG	THHN	1-R, 1-BK, 1-W, 1-G
4	various	n/a	1	#3 AWG	USE-2	GREEN



MECH-PLUMB
20-0063

Grid-Tied
Photovoltaic
System

One-Line
Diagram

Date: 17 Apr 2020
Design By: JW
Drawn By: JF
Sheet: 1 of 1
Scale: N/A
Rev: 1

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INVERTER RATINGS

INVERTER MFG: SunPower
(Module Integrated Microinverter)

INVERTER MODEL: SPR-X22-370-E-AC

OUTPUT @ 240V (min/nom/max):
211/240/264V

OPERATING FREQUENCY (min/nom/max):
59.3/60.0/60.5 Hz

MAX CONTINUOUS OUTPUT CURRENT:
1.31A (@ 240VAC) per AC Module

DC/AC CEC CONVERSION EFF: 96.0%

MAX UNITS PER 20A BRANCH CIRCUIT: 12

SERVICE PANEL:

LOCATION: SOUTH
INTERIOR WALL

PANEL: MAIN

RATING: 120/240 V

FEED:

PNL TYPE:

FED FROM:

BUS AMP RATING: 200 A

SERVICE VOLTAGE: 240 V

MAIN OCPD RATING: 200 A

LOAD SIDE CONNECTION:

MAIN BREAKER = 200A

PV OCPD = 30A

TOTAL = 230A

BUS BAR RATING = 200 A

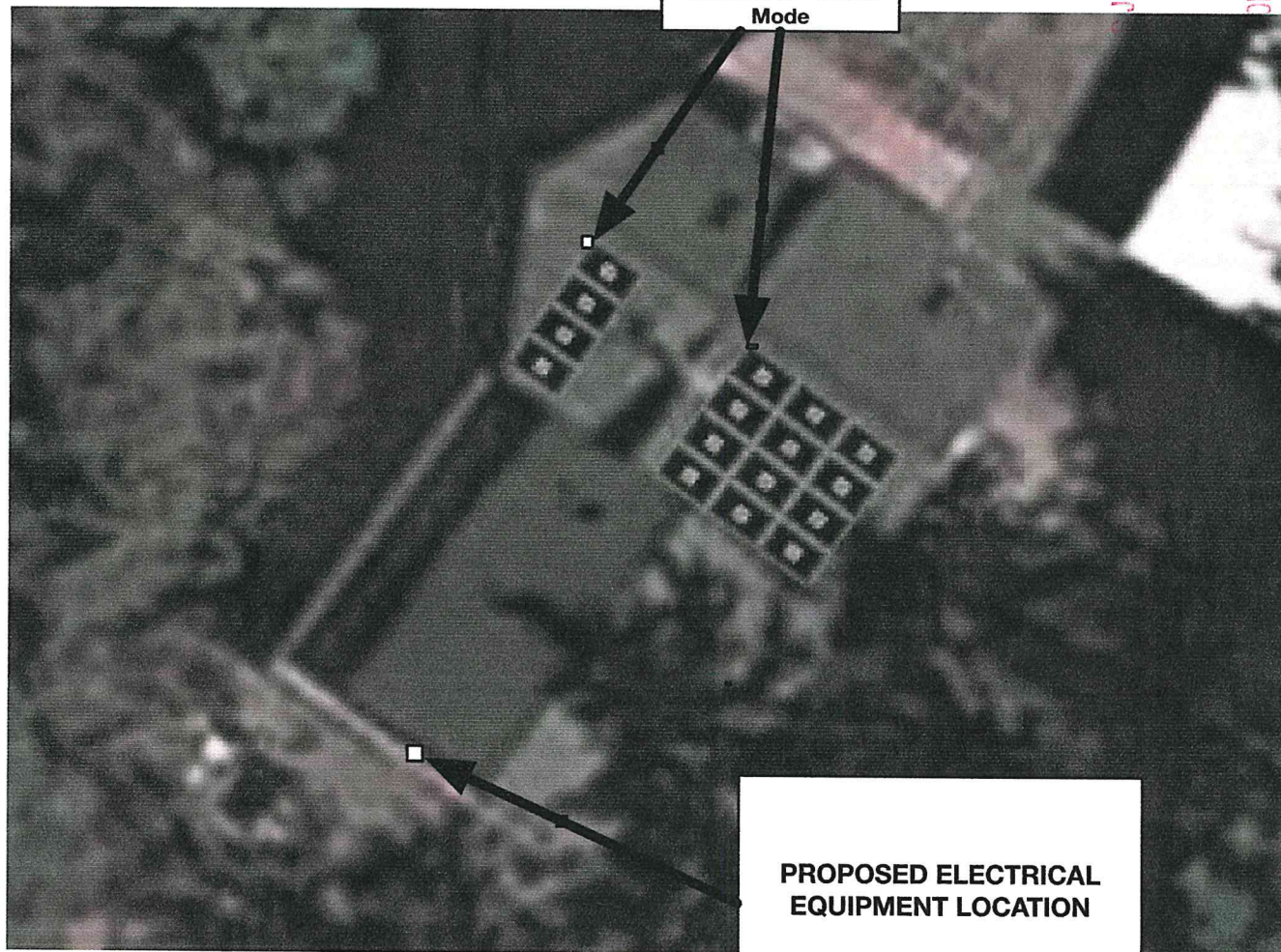
120% OF BUS BAR RATING = 240 A

TOTAL < 120% OF BUS RATING

DC & AC
GROUNDING
ELECTRODE

Rainshadow Solar &
Energy Solutions, Inc.
PO
Orcas, Washington
(360) :
www.rainshadows

SJC. DEPARTMENT OF
MAY 14 2020
COMMUNITY DEVELOPMENT



5.9 kW
PV ARRAY
16 SunPower 370W
Modules in Portrait
Mode

**PROPOSED ELECTRICAL
EQUIPMENT LOCATION**

The proposed location for the
the utility (lockable) AC
disconnect and PV production
meter is on the south facing
exterior wall at ground level

APPROVED

The owner is responsible for all errors or
omissions on plans. The Building Division
assumes no liability for errors or omissions.

B *Quinn M. Puga* Date: 05/29/2020

**SAN JUAN DEPARTMENT OF
COMMUNITY DEVELOPMENT**

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GRID-TIED
PHOTOVOLTAIC
SYSTEM

SITE PLAN

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SJC BUILDING DIVISION

Orcas Serendipity LLC (Tom Owens)

228 Stone Gate Lane

TPN: 271314011000

S.J.C. DEPARTMENT OF

MAY 14 2020

COMMUNITY DEVELOPMENT

App State

Click to restore the map extent and
layers visibility where you left off.

AC Electrical Data

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

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DC Power Data

	SPR-X22-370-E-AC	SPR-X22-360-E-AC
Nominal Power ¹ (P _{nom})	370 W	360 W
Power Tolerance	+5/-0%	+5/-0%
Module Efficiency ⁵	22.7%	22.1%
Temp. Coef. (Power)	-0.29%/°C	-0.29%/°C
Shade Tolerance	<ul style="list-style-type: none"> • Three bypass diodes • Integrated module-level maximum power point tracking 	

Tested Operating Conditions

Operating Temp.	-40°F to +140°F (-40°C to +60°C)
Max. Ambient Temp.	122°F (50°C)
Max. Load	Wind: 62 psf, 3000 Pa, 305 kg/m ² front & back Snow: 125 psf, 6000 Pa, 611 kg/m ² front
Impact Resistance	1 inch (25 mm) diameter hail at 52 mph (23 m/s)

Mechanical Data

Solar Cells	96 Monocrystalline Maxeon Gen III
Front Glass	High-transmission tempered glass with anti-reflective coating
Environmental Rating	Module: Outdoor rated Inverter: NEMA Type 6 Class II
Frame	Class 1 black anodized (highest AAMA rating)
Weight	42.9 lb (19.5 kg)
Recommended Max. Module Spacing	1.3 in. (33 mm)

1 SunPower 360 W compared to a conventional module on same-sized arrays (260 W, 16% efficient, approx. 1.6 m²). 4% more energy per watt (based on third-party module characterization and PVSim). 0.75%/yr slower degradation (Campeau, Z. et al. "SunPower Module Degradation Rate," SunPower white paper, 2013).

2 Based on search of datasheet values from websites of top 10 manufacturers per IHS, as of January 2017.

3 #1 rank in "Fraunhofer PV Durability Initiative for Solar Modules: Part 3," PV Tech Power Magazine, 2015. Campeau, Z. et al. "SunPower Module Degradation Rate," SunPower white paper, 2013.

4 Factory set to 1547a-2014 default settings. CA rule 21 (UL 1741 SA) requires inverter commissioning. See the Equinox Installation Guide #517-01 for more information.

5 Standard Test Conditions (1000 W/m² irradiance, AM 1.5, 25°C). NREL calibration standard; SOMS current, LACCS FF and voltage. All DC voltage is fully contained within the module.

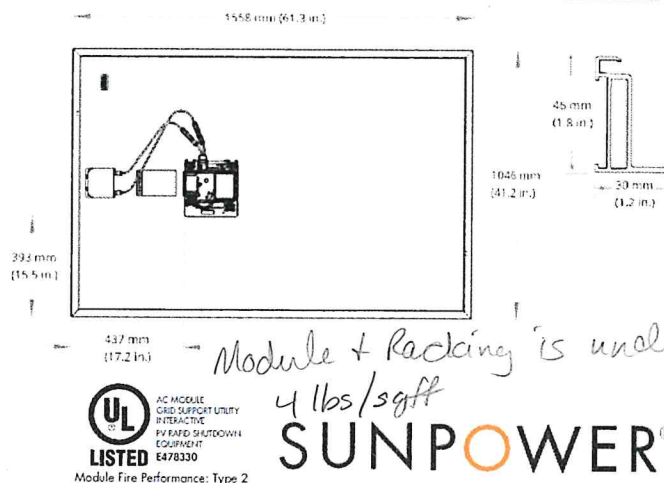
6 This product is UL Listed as PVRSE and conforms with NEC 2014 and NEC 2017 690.12; and C22.1-2015 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors; when installed according to manufacturer's instructions.

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

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Warranties, Certifications, and Compliance

Warranties	<ul style="list-style-type: none"> • 25-year limited power warranty • 25-year limited product warranty
Certifications and Compliance	<ul style="list-style-type: none"> • UL 1703 • UL 1741 / IEEE-1547 • UL 1741 AC Module (Type 2 fire rated) • UL 62109-1 / IEC 62109-2 • FCC Part 15 Class B • ICES-0003 Class B • CAN/CSA-C22.2 NO. 107.1-01 • CA Rule 21 (UL 1741 SA)⁶ (includes Volt/Var and Reactive Power Priority) • UL Listed PV Rapid Shutdown Equipment⁶ <p>Enables installation in accordance with:</p> <ul style="list-style-type: none"> • NEC 690.6 (AC module) • NEC 690.12 Rapid Shutdown (inside and outside the array) • NEC 690.15 AC Connectors, 690.33(A)-(E)(1) <p>When used with InvisiMount racking and InvisiMount accessories (UL 2703):</p> <ul style="list-style-type: none"> • Module grounding and bonding through InvisiMount • Class A fire rated <p>When used with AC module Q Cables and accessories (UL 6703 and UL 2238)⁶:</p> <ul style="list-style-type: none"> • Rated for load break disconnect
PiD Test	Potential-induced degradation free



Please read the Safety and Installation Instructions for details.

531945 RevA