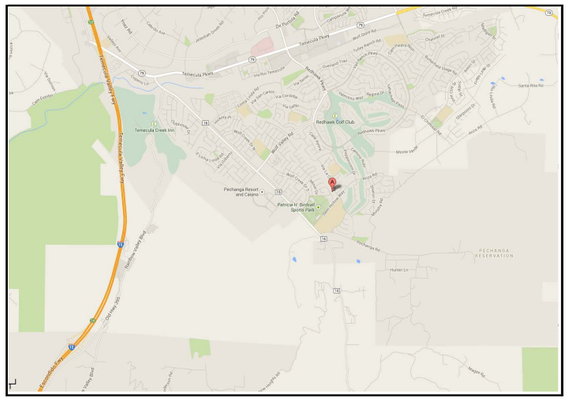
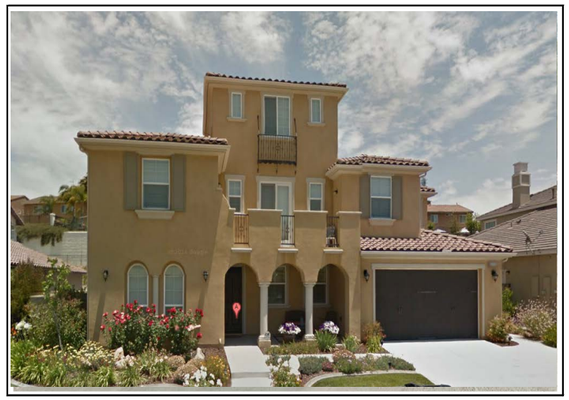
FERNANDEZ RESIDENCE
8.3 kW SOLAR PHOTOVOLTAIC SYSTEM





PROJECT SCOPE:

1. The installation consists of (30) 275 Watt solar photovoltaic modules Roof mounted and connected to (30)micro inverter(S) and related electrical switchgear as required by applicable codes and the by the utility company.
TOTAL SIZE: 8250W

2. The system will be interconnected and will be operated in parallel with the utility electrical grid per the requirements of the utility and applicable codes.

REGISTERED PROFESSIONAL ENGINEER
LOYD W. MARTIN
No. C58724
Exp. 3-31-15
CIVIL
STATE OF CALIFORNIA

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APPLICABLE CODES:

2013 CALIFORNIA BUILDING CODE (CBC)/2012 INTERNATIONAL BUILDING CODE (IBC)
2013 CALIFORNA ELECTIRICAL CODE (CEC)/2011 NATIONAL ELECTRICAL ELECTRICAL CODE (NEC)
2013 CALIFORNIA FIRE CODE (CFC)/2012 INTERNATIONAL FIRE CODE (IFC)
2013 CALIFORNIA MECHANICAL CODE (CMC)/2012 UNIFORM MECHANICAL CODE (UMC)
2013 CALIFORNIA PLUMBING CODE (CPC)/2012 UNIFORM PLUMBING CODE (UPC)
2013 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS
2012 NATIOAL FIRE PROTECTION ASSOCIATION (NFPA) 101-LIFE SAFETY CODE
2008 SOLAR PHOTOVOLTAIC INSTALLATION GUIDELINE (CAL. FIRE)

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8.3 kW DC Photovoltaic System

TERESA & CRAIG FERNANDEZ RESIDENCE
46324 DURANGO DR. TEMECULA CA 92592
(310) 402-8652

ELECTRICAL NOTES

- SCE will be notified prior to use and activation of any solar installation. System will be commissioned by owner per utility interconnection agreement.
- Proper access and working clearance around existing and proposed electrical equipment will be provided as per section 110.26 CEC.
- Alternate power source placard shall be plastic, engraved in a contrasting color to the plaque. This plaque will be attached by pop rivits or screws or other approved method. If exposed to sunlight, it shall be UV resistant.
- Where metallic conduit containing DC conductors is used inside the building, it shall be identified as "Caution: High Voltage DC Circuit" every 5 feet.
- All plaques and signage req. by 2010 CEC will be installed as req.
- Signage and Labeling Specifications shall be: Red background with white lettering for caution signage and black background with white lettering for informational signage. 3/8" letter heights, all capital letters, Arial or similar font, weather resistant material (i.e. engraved plastic).
- A DC disconnecting means shall be installed at a readily accessible location either outside of a building or structure or inside nearest the point of entrance of the system conductors as per section 690-14 of the CEC.
- Height of AC or DC disconnects shall not Exceed 6'-7" per CEC
- The Grounding Electrode Conductor shall be protected from physical damage between the grounding electrode and the panel (or inverter) if smaller than #6 copper wire per CEC. The Grounding Electrode Conductor will be continuous, except for splices, or joints at busbars within listed equipment.

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GENERAL NOTES:

- LISTED PRODUCTS: PHOTOVOLTAIC SOLAR MODULES UL 1703 -INVERTERS UL 1741
- Photovoltaic modules are to be considered non-combustible.
- All exterior conduit is to be painted to match the building in which the conduit is attached.
- ALL MODULE AND RACKING GROUNDING LUGS SHALL BE UL 467 APPROVED (ILSCO GBL-4DBT)
- No sheet metal or tech screws shall be used to ground disconnect enclosure with tin-plated aluminum lugs; proper grounding/ground bar kits will be used
- FERROUS METAL RACEWAYS ENCLOSING GEC CONDUCTORS SHALL BE ELECTRICALLY CONTINUOUS OR BONDED IN ACCORDANCE WITH ART 250.64(E).)
- “Local utility provider shall be notified prior to use and activation of any solar photovoltaic installation.
- The contractor shall provide a written letter to the building inspector stating that all inaccessible structural connections have been installed in conformation with the requirements of the approved plans.
- Applications for which no permit is issued within 180 days following the date of application shall automatically e
- A Ladder shall be in place for inspections in compliance with Cal OSHA Regulations

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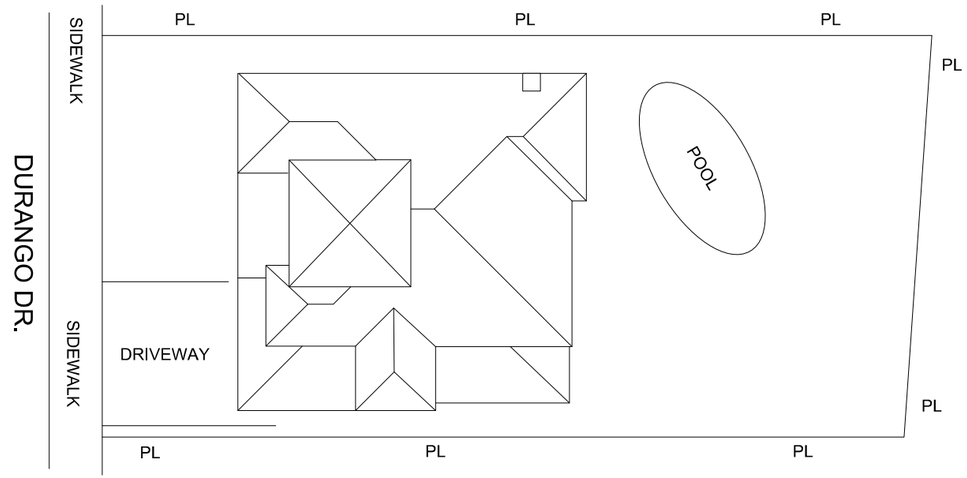
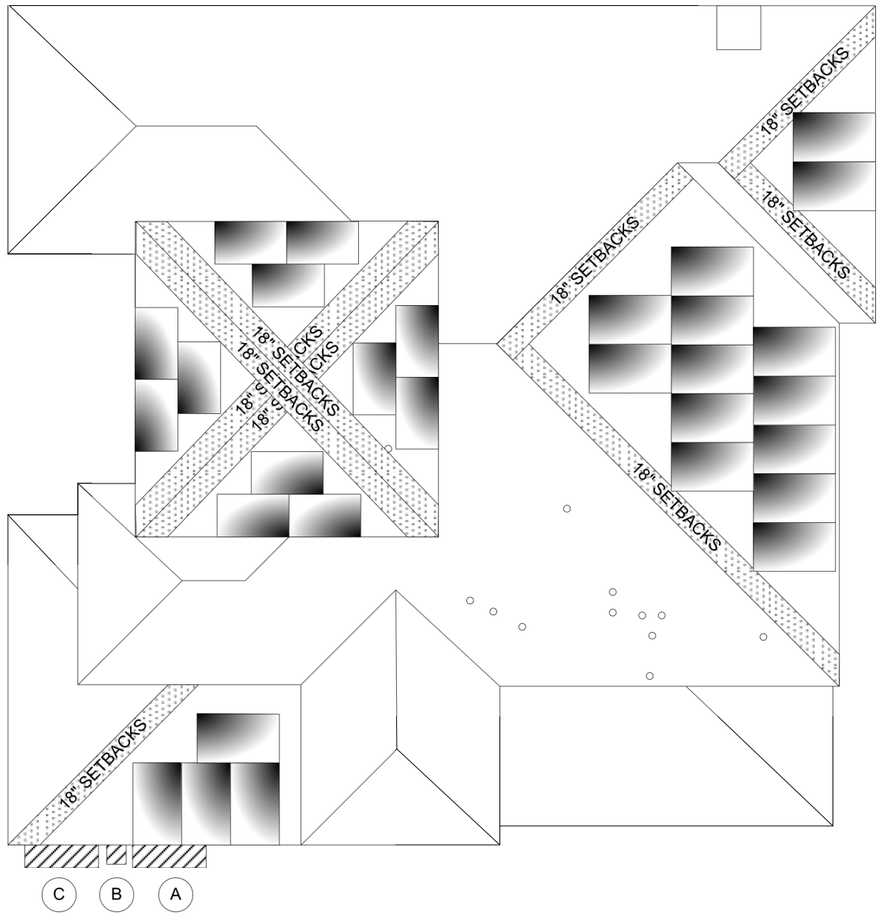
SITEPLAN





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A	SUB-PANEL
B	UTILITY AC DISCONNECT
C	MAIN SERVICE PANEL

OCCUPANCY:	SFD
CONSTRUCTION TYPE:	VB
ROOF FOOTPRINT SQFT:	3500 sq.ft.
AREA SQ FT:	541 sq.ft.
NO STORIES:	2

NOTES:
-ALL ELECTICAL EQUIPMENT SHALL BE A MINIMUM 3 FEET FROM GAS METER
-NO ATTACHMENT WITHIN 6" OF TRUSS PLATE

Location of (30) 275W ModulesRoof Mount Total Area: 541 ft2 APPROX 15% of TTRA

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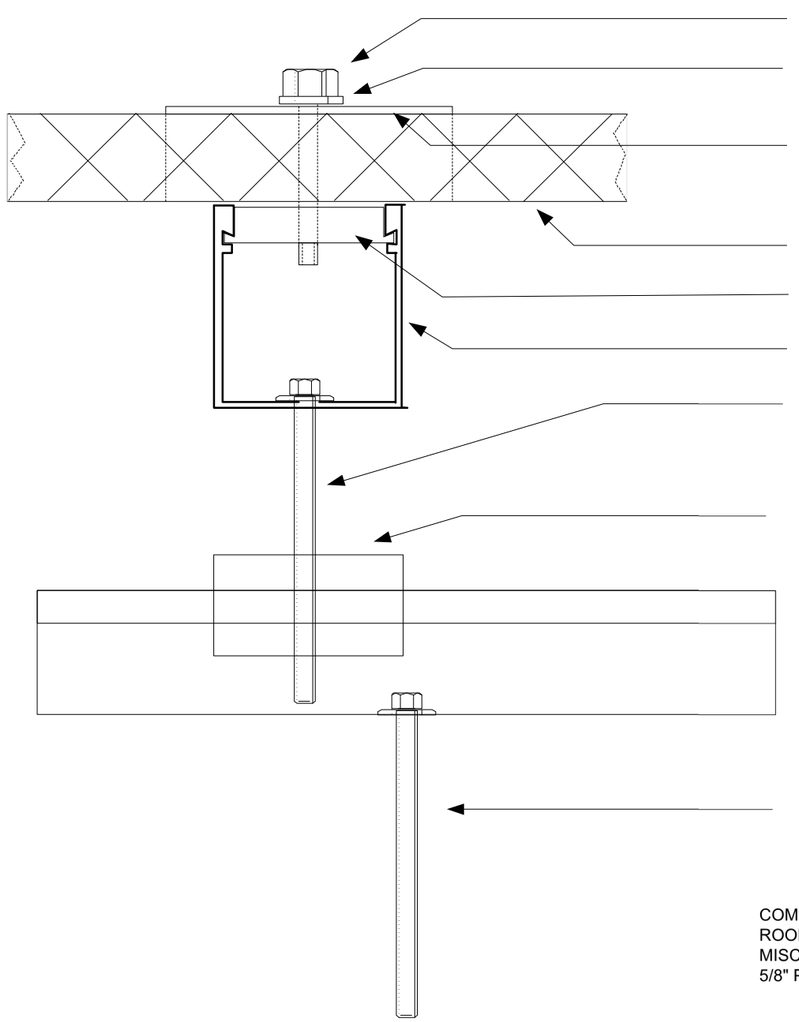
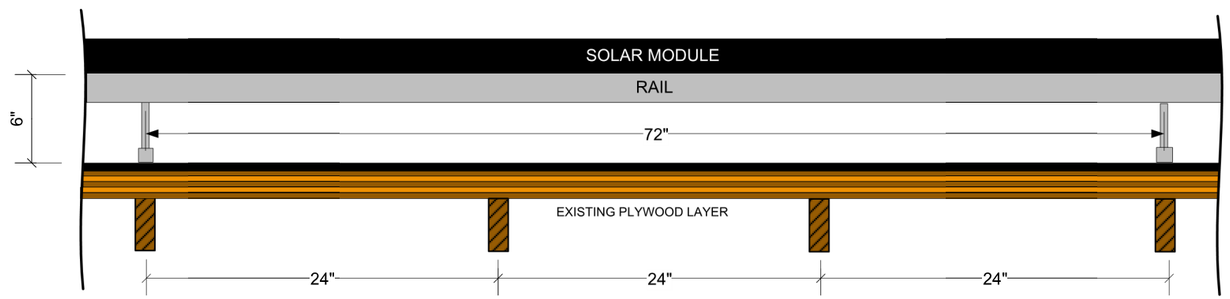
ATTACHMENT DETAIL



COMP SHINGLE	4.0 LBS/SqFT
ROOFING PAPER	2.8 LBS/SqFT
MISC	1.5 LBS/SqFT
5/8" PLYWOOD	1.9 LBS/SqFT
	10.2 LBS/SqFT

SOLAR PV < 16 LBS/SqFT
ROOF STRUCTURE RATED AT 30 LBS/SqFT

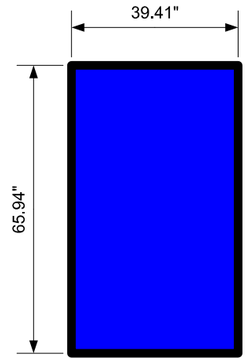


NOTE: 2" X 4" , 24"O.C. TRUSS FRAMING WITH SPANS BETWEEN SUPPORTS <10'
NOTE: ROOF PITCH = 23 DEGREES
(All stanchions minimum 6" from nailing plate

1. Pro Solar Fast Jack Racking System, or equal
2. Flush Mounted
3. Sized for wind loads up to 120 mph

STRUCTURAL SPECIFICATION:

MODULE WEIGHT	46.7	LBS
MODULE QUANTITY	30	
SUM: MODULE WEIGHT	1,401	LBS
SUM: MOUNTS AND RAIL	215	LBS
TOTAL INSTALLATION WEIGHT	1,616	LBS
INSTALLATION AREA	541	SqFT
DISTRIBUTED LOAD	2.98	LBS/SqFT



MODULE SPECIFICATION:

BRAND/TYPE	Solar World 275 Mono		ADDITIONAL NOTES:
# OF MODULES	30		MODULE (TCvOC=0.35%/C)
VOC	39.4	VDC	
Voperational	43.8	VDC	
ISC	9.6	AMPS	
Ioperational	8.9	AMPS	
SIZE OF MODULE	39.41(in.) WIDE X 65.94(in.) TALL X 1.22(in.) THICK		

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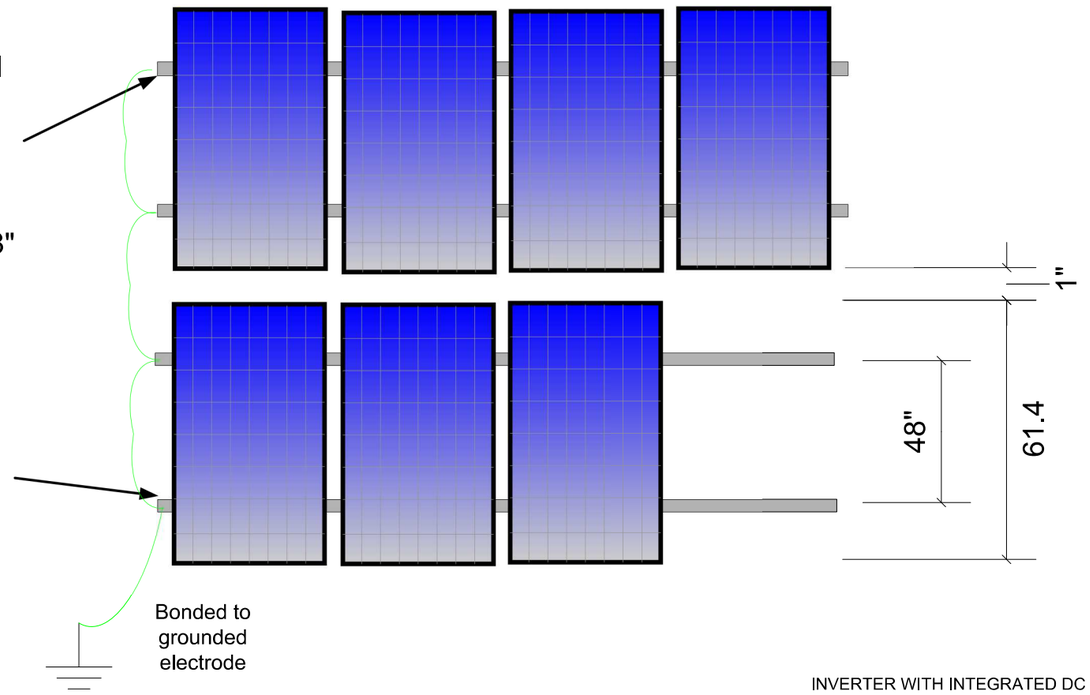
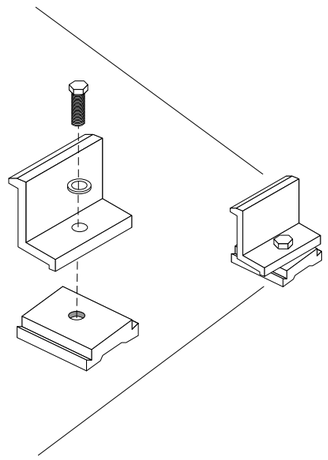
MISCELLANEOUS DETAIL

PV panels attached to support channel with Rail Intermodule Clamps between each module (see cut sheet for engineering specs) and Rail End Clamps at the end of every row. Support channels will be spliced on-end with R-136 Rail Splice Kits. Two support channels laid approx 48" apart

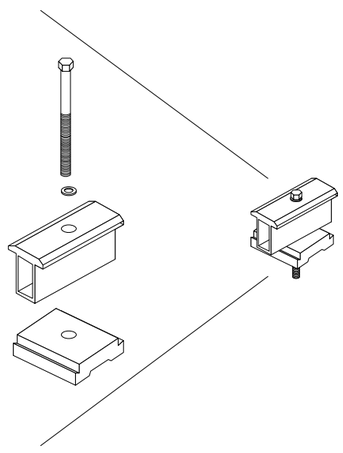
Face-on View of PV Array, *Typical of One*

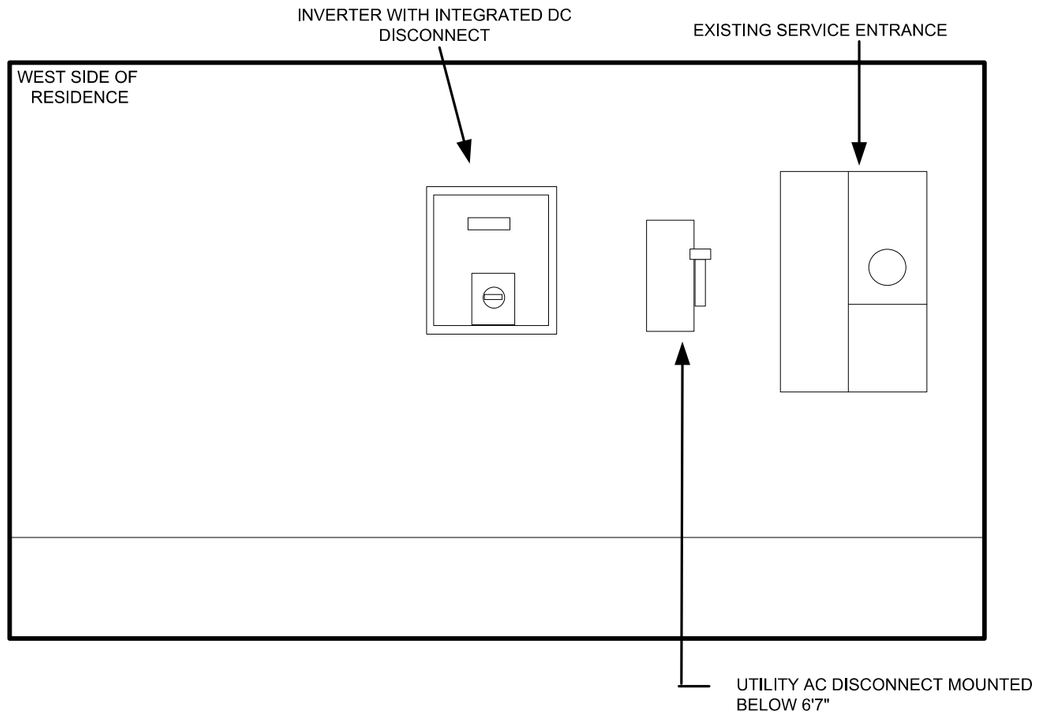


END CLAMP



MID CLAMP





NOTE: DRAWING IS FOR ILLUSTRATION PURPOSES ONLY, ACTUAL EQUIPMENT PLACEMENT MAY VARY SLIGHTLY

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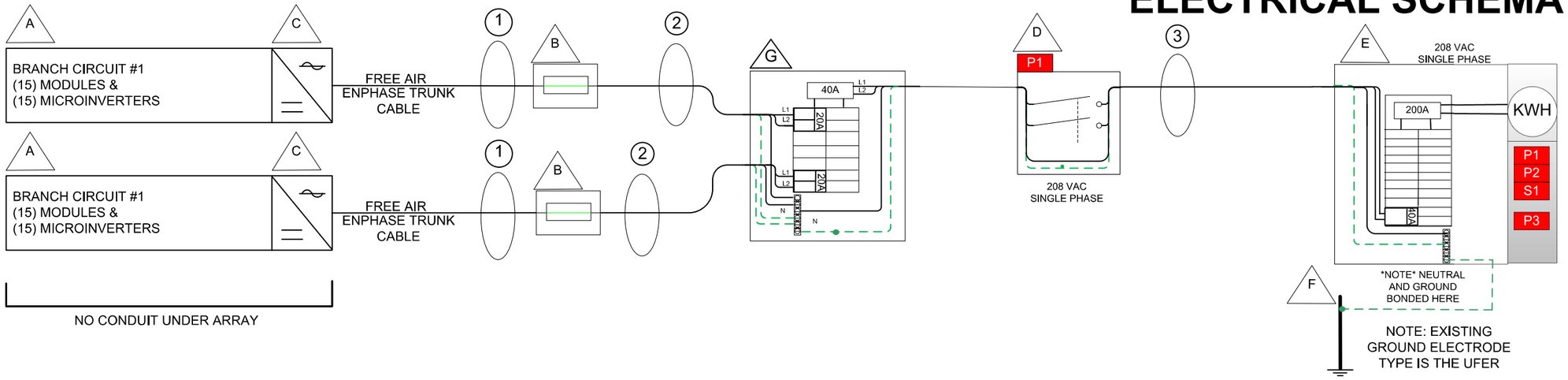
ELECTRICAL SCHEMATIC



Array	1																
Wire Run	Amps (*Imp*)	Amps (*Isc*)	Fuse or Breaker Amps	Voltage Min	Voltage Max	DC/ AC	One-Way Dist	Design Vdrop (≤)	Current Carrying Qty	Current Carrying # in Parallel	Current Carrying AWG	Grounding Conductors Qty	Grounding Conductors EGC AWG	Grounding Conductors Qty	Grounding Conductors GEC AWG	Worst Case Vdrop	Minimum Conduit
Module to Micro Inverter (15 Mods)	15	18.75	20.00	398.8	465	DC	20	2%	4	1	10	1	6	0	8	0.19%	Free-Air
Micro Inverter to Sub Panel (15 Mods)	15	18.75	20.00	398.8	465	DC	50	2%	4	1	10	1	8	0	8	0.47%	1/2"
Sub Panel to AC Disconnect (30 Mods)	30	37.5	40.00	240		AC	5	1%	3	1	8	1	8	1	8	0.10%	3/4"
AC Disconnect to Main Panel (30 Mods)	30	37.5	40.00	240		AC	5	1%	3	1	8	1	8	1	8	0.10%	3/4"

Total DC Voltage Drop	0.66%
Total AC Voltage Drop	0.30%

Average Ambient Temperature	98 °F	37 °C
Minimum Historical Temperature	10 °F	-12 °C
Min Conduit Distance to Roof	2"	2"
Temperature Adder (F°) 310.15(B)(2)c	40 °F	4 °C
Max Expected Module/Free-Air Temp	138 °F	59 °C
Max Expected Conduit/THWN-2 Temp	138 °F	59 °C

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EQUIPMENT SCHEDULE:	
A	Solar World 275 Mono
B	JUNCTION BOX
C	Enphase M250-60-2LL-S22/S23
	RATED FOR: 9.8 A
	MAX POWER: 300 W
	CEC EFFICIENCY: 96.50%
	MAX AC OUTPUT: 1 A
	(@125% NEC): 1.25 A

WIRE AND CONDUIT LEDEND: *(TYPICAL OF ONE)*	
D	60A UNFUSED AC DISCONNECT SWITCH UL LISTED
E	200A SERVICE (1)200A BUSS BARS WITH 200A MAIN CB
F	EXISTING HOUSE UFFER
G	Cutler Hammer, 240V/100A 12 space/24 Circuit NEMA 3R Loadcenter
1	CONDUCTORS ARE (4) #10 AWG USE-2 IN FREE AIR UNDER ARRAY AND GROUND IS #6 AWG BARE COPPER
2	CONDUCTORS ARE (4) #USE-2 AWG THWN-2 (FROM ROOF J-BOX, WALL TO INVERTER) IN YES EMT CONDUIT OR YES FMC
3	CONDUCTORS ARE (3) #8 AWG THWN-2 IN ¾ EMT CONDUIT (IN WALL BETWEEN COMPONENTS) OR #8-3 NM
4	BOND #6 AWG BARE COPPER WITH IRREVERSIBLE SPLICE OR LISTED ACORN CLAMP CONNECTION TO UFFER/GROUNDING ELECTRODE
5	CONDUCTORS ARE (2) #14 AWG THWN-2 IN ¾ EMT CONDUIT (IN WALL BETWEEN COMPONENTS) OR #14-2 NM
6	CAT 5 ETHERNET DATA CABLE

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PLACARDS

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P1

INTERACTIVE PHOTOVOLTAIC
POWER CONNECTED

RATED AC OUTPUT CURRENT 30A
NOMINAL AC VOLTAGE 240VAC

PLACARD LOCATED AT MAIN PER
NEC 690.64 B

P2

PHOTOVOLTAIC GENERATOR
AC DISCONNECT FOR UTILITY OPERATION

OPERATING CURRENT 30A
OPERATING VOLTAGE 240VAC

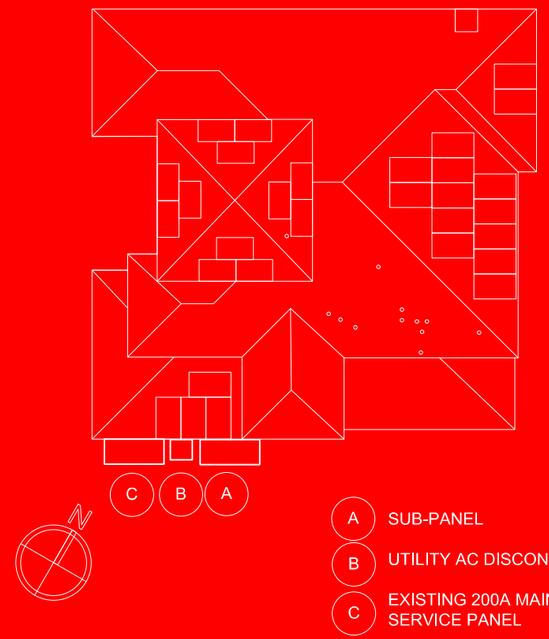
PLACARD LOCATED ON AC DISCO PER NEC 690.14 C 2 AND 690.54

P3

WARNING: INVERTER OUTPUT
CONNECTION.
DO NOT RELOCATE INVERTER
CIRCUIT BREAKERS

P4

CAUTION
SOLAR ELECTRIC SYSTEM CONNECTED AND
ENERGIZED



PLACARD LOCATED AT MAIN PER NEC 705.10

S1

SOLAR
BACKFED CIRCUIT BREAKER

STICKER LOCATED NEXT TO P.O.C. CIRCUIT BREAKER INSIDE MAIN SERVICE PANEL
AND/OR LOADCENTER

-ALTERNATE POWER SOURCE PLACARD SHALL BE PLASTIC, ENGRAVED IN A CONTRASTING COLOR TO THE PLAQUE. THIS PLAQUE WILL BE ATTACHED BY POP RIVETS OR SCREWS OR OTHER APPROVED METHOD. IF EXPOSED TO SUNLIGHT, IT SHALL BE UV RESISTANT.
- WHERE METALLIC CONDUIT CONTAINING DC CONDUCTORS IS USED INSIDE THE BUILDING, IT SHALL BE IDENTIFIED AS "CAUTION: HIGH VOLTAGE DC CIRCUIT" EVERY 5 FEET.
- ALL PLAQUES AND SIGNAGE REQ. BY 2013 CEC WILL BE INSTALLED AS REQ.
-SIGNAGE AND LABELING SPECIFICATIONS SHALL BE: RED BACKGROUND WITH WHITE LETTERING FOR CAUTION SIGNAGE AND BLACK BACKGROUND WITH WHITE LETTERING FOR INFORMATIONAL SIGNAGE. 3/8" LETTER HEIGHTS, ALL CAPITAL LETTERS, ARIAL OR SIMILAR FONT, WEATHER RESISTANT MATERIAL (I.E. ENGRAVED PLASTIC).
- PERMANENT LABELS SHALL BE PROVIDED. NO SHARPIE MARKER WILL BE ALLOWED WITHIN
MAIN SERVICE PANEL OR SUBPANEL

A LADDER SHALL BE IN PLACE FOR INSPECTION IN COMPLIANCE WITH CAL-OSHA REGULATIONS.
- THIS SYSTEM IS AN UTILITY INTERACTIVE SYSTEM WITH NO STORAGE BATTERIES.
- THE SOLAR PV INSTALLATION SHALL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS.
GROUNDING ELECTRODE CONDUCTORS SHALL BE NO LESS THAN #8AWG AND NO GREATER THAN #6AWG COPPER AND BONDED TO THE EXISTING GROUNDING ELECTRODE TO PROVIDE FOR A COMPLETE SYSTEM.
- EACH MODULE WILL BE GROUNDED USING THE SUPPLIED CONNECTIONS POINTS IDENTIFIED ON THE MODULE AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- EXPOSED NON-CURRENT CARRYING METAL PARTS OF MODULE FRAMES, EQUIPMENTS, AND CONDUCTOR ENCLOSURES SHALL BE GROUNDED IN ACCORDANCE WITH 250.134 OR 250.136 (A) REGARDLESS OF VOLTAG
-UTILITY WILL BE NOTIFIED PRIOR TO USE AND ACTIVATION OF ANY SOLAR INSTALLATION. SYSTEM WILL BE COMMISSIONED BY OWNER PER UTILITY INTERCONNECTION AGREEMENT.
- PROPER ACCESS AND WORKING CLEARANCE AROUND EXISTING AND PROPOSED ELECTRICAL EQUIPMENT WILL BE PROVIDED AS PER SECTION 110.26 CEC.

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V I N C I & A S S O C I A T E S

Structural Engineers

CLIENT:
Professional Solar Products, Inc.
1551 S. Rose Ave., Oxnard, CA 93033
Tel: 805-486-4700

Subject: **Static load test results for the following:**

Mounting System	Maximum Frame Length* (in.)	Maximum Frame Width* (in.)	Load (lbs/ft²)	Equivalent Wind Speed (mph)**
RoofTrac ®	65	40	50	125

TEST SETUP (as shown in attached drawing detail): Three modules, as specified above, were bolted to 136"x1.5"x2.5" Professional Solar Products (PSP) patented RoofTrac® support rails using an assembly of 5/16" Stainless Steel (SS) bolts, SS lock washers and proprietary PSP aluminum clamps and inserts. The RoofTrac® support rail was attached to the PSP RoofTrac® structural attachment device with 3/8" SS hardware at four attachment points. The setup was attached to 2"x6" wooden rafters using 5/16" x 3-1/2" SS lag bolts. The attachment spans consisted of 48" front to rear with structural attachments spaced 72" on center.

TEST PROCEDURE (as shown in attached drawing detail): The test set up was top loaded to 50 lb/ft². The setup remained loaded for an approximate period of 30 minutes. The maximum deflection and any signs of permanent deformation were recorded. The test setup was then inverted and loaded to simulate the uplift condition. The test set up was re-loaded to 50 lb/ft². The setup remained loaded for an approximate period of 30 minutes. The maximum deflection and any signs of permanent deformation were recorded.

TEST RESULTS:
The maximum top load deflection was recorded at 0.313", with no permanent deformation.
The maximum uplift deflection was recorded at 0.250", with no permanent deformation.

This document certifies the RoofTrac® mounting system used with the modules, as specified above, withstands a 50 lb/ft² static pressure load, equivalent to a wind speed of approximately 125 mph**. The mounting system performed as expected.

Sincerely,

James R. Vinci, S.E.

This engineering report verifies that Vinci & Associates has provided independent observation for load testing as described in this report. The results of this load test reflect actual deflection values and are generally accepted as the industry standard for testing module mounting systems. Vinci & Associates does not field check installations or verify that the mounting system is installed as described in this engineering report.

To assist the building inspector in verifying the authenticity of this proprietary mounting system, a permanent adhesion silver reflective "RoofTrac®" label, as shown, is placed on at least one of the main support rails or permanently stamped with "**Professional Solar Prod. Pat. 6,360,491**" on the underside of rail.

Professional Solar Products, Inc. RoofTrac Pat. 6,360,491

Structural attachment: Lag bolt attachment should be installed using the proper pilot hole for optimum strength. A 5/16" lag bolt requires a 3/16" pilot hole. It is the responsibility of the installer to insure a proper attachment is made to the structural member of the roof. Failure to securely attach to the roof structure may result in damage to equipment, personal injury or property damage.

This office does not express an opinion as to the load bearing characteristics of the structure the mounting system/modules are being installed on.

ICC accredited laboratory tested structural attachments manufactured by Professional Solar Products (including, but not limited to FastJack® , TileTrac®, and FoamJack®) can be interchanged with this system.

Check with local building department or AHJ for site specific requirements.
*Modules measuring within stated specifications and tested to UL1703, or equivalent, are included in this engineering
**Wind loading values relative to defined load values using wind load exposure (125 mph for 5/12 roof pitch or less; 100 mph for greater than 5/12 roof pitch) and gust factor coefficient "exposure C" as defined in the 2009(IBC) /2010(CBC)
***Module tested: 64.6" x 39.4" x 1.7" (sln)
****Est. snow load rating of 25 lb/ft² based on 2.0 safety factor

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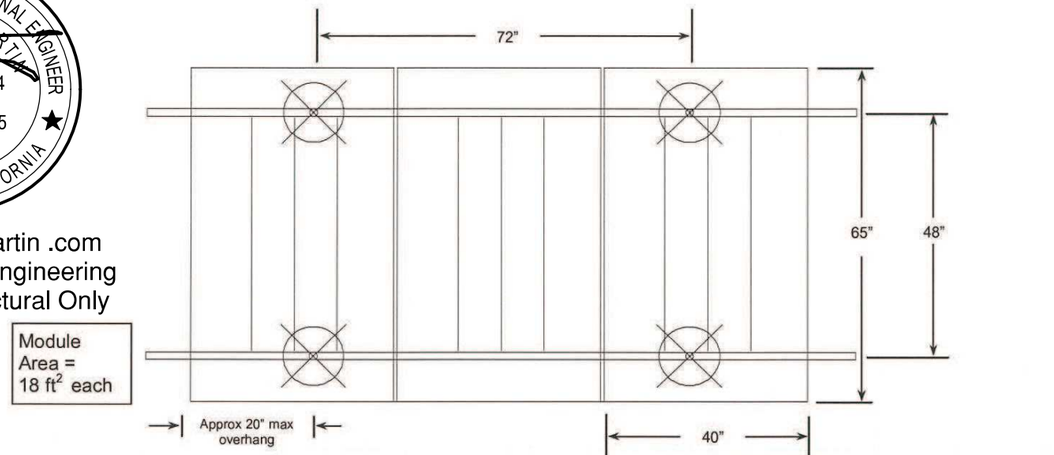
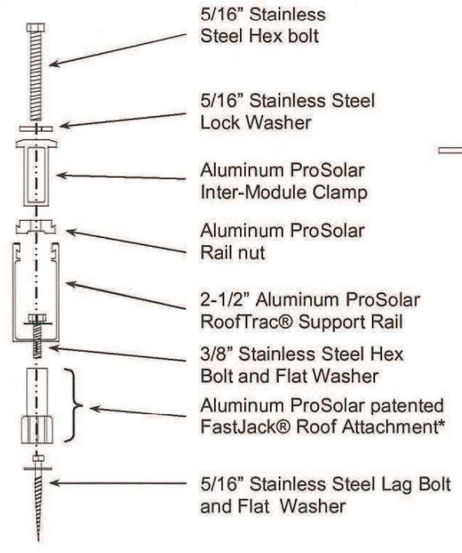
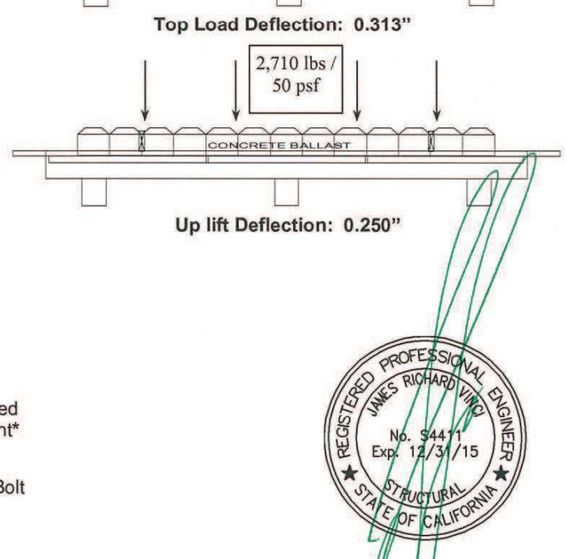


Module Area = 18 ft² each

Total module (45 lbs ea.) and rail (12 lbs ea.) weight:	159	lbs
Number of attachments:	4	ea
Weight / attachment point:	40	lbs
Area:	54	ft²
Distributed weight:	2.95	lb/ ft²





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*Lab tested structural attachments manufactured by Professional Solar Products (including FastJack® , TileTrac®, and FoamJack®) can be interchanged with this system.

Professional Solar Products RoofTrac® Patent# 6,360,491
Photovoltaic mounting system

RoofTrac®
Solar Modules
Static load test illustration

Enphase® **Microinverters**

Enphase® **M250**

The **Enphase® M250 Microinverter** delivers increased energy harvest and reduces design and installation complexity with its all-AC approach. With the M250, the DC circuit is isolated and insulated from ground, so **no Ground Electrode Conductor (GEC) is required for the microinverter.** This further simplifies installation, enhances safety, and saves on labor and materials costs.

The Enphase M250 integrates seamlessly with the Engage® Cable, the Envoy® Communications Gateway™, and Enlighten®, Enphase's monitoring and analysis software.

PRODUCTIVE

- Optimized for higher-power modules
- Maximizes energy production
- Minimizes impact of shading, dust, and debris

SIMPLE

- No GEC needed for microinverter
- No DC design or string calculation required
- Easy installation with Engage Cable

RELIABLE

- 4th-generation product
- More than 1 million hours of testing and 3 million units shipped
- Industry-leading warranty, up to 25 years

[e] enphase® ENERGY

C US

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Enphase® **M250** Microinverter // DATA

INPUT DATA (DC)	**M250-60-2LL-S22/S23/S24**	
Recommended input power (STC)	210 - 300 W	
Maximum input DC voltage	48 V	
Peak power tracking voltage	27 V - 39 V	
Operating range	16 V - 48 V	
Min/Max start voltage	22 V / 48 V	
Max DC short circuit current	15 A	
Max input current	9.8 A	
OUTPUT DATA (AC)	**@208 VAC**	**@240 VAC**
Peak output power	250 W	250 W
Rated (continuous) output power	240 W	240 W
Nominal output current	1.15 A (A rms at nominal duration)	1.0 A (A rms at nominal duration)
Nominal voltage/range	208 V / 183-229 V	240 V / 211-264 V
Nominal frequency/range	60.0 / 57-61 Hz	60.0 / 57-61 Hz
Extended frequency range*	57-62.5 Hz	57-62.5 Hz
Power factor	>0.95	>0.95
Maximum units per 20 A branch circuit	24 (three phase)	16 (single phase)
Maximum output fault current	850 mA rms for 6 cycles	850 mA rms for 6 cycles
EFFICIENCY		
CEC weighted efficiency, 240 VAC	96.5%	
CEC weighted efficiency, 208 VAC	96.0%	
Peak inverter efficiency	96.5%	
Static MPPT efficiency (weighted, reference EN50530)	99.4 %	
Night time power consumption	65 mW max	
MECHANICAL DATA		
Ambient temperature range	-40°C to +65°C	
Operating temperature range (internal)	-40°C to +85°C	
Dimensions (WxHxD)	171 mm x 173 mm x 30 mm (without mounting bracket)	
Weight	2.0 kg	
Cooling	Natural convection - No fans	
Enclosure environmental rating	Outdoor - NEMA 6	
FEATURES		
Compatibility	Compatible with 60-cell PV modules.	
Communication	Power line	
Integrated ground	The DC circuit meets the requirements for ungrounded PV arrays in NEC 690.35. Equipment ground is provided in the Engage Cable. No additional GEC or ground is required.	
Monitoring	Free lifetime monitoring via Enlighten software	
Compliance	UL1741/IEEE1547, FCC Part 15 Class B, CAN/CSA-C22.2 NO. 0-M91, 0.4-04, and 107.1-01	

* Frequency ranges can be extended beyond nominal if required by the utility

To learn more about Enphase Microinverter technology, visit **enphase.com**

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Sunmodule® Plus
SW 275 MONO

SOLARWORLD
REAL VALUE

TUV Power controlled:
Lowest measuring tolerance in industry

Every component is tested to meet
3 times IEC requirements

Designed to withstand heavy
accumulations of snow and ice

Sunmodule Plus:
Positive performance tolerance

25-year linear performance warranty
and 10-year product warranty

Glass with anti-reflective coating

World-class quality
Fully-automated production lines and seamless monitoring of the process and material ensure the quality that the company sets as its benchmark for its sites worldwide.

SolarWorld Plus-Sorting
Plus-Sorting guarantees highest system efficiency. SolarWorld only delivers modules that have greater than or equal to the nameplate rated power.

25-year linear performance guarantee and extension of product warranty to 10 years
SolarWorld guarantees a maximum performance digression of 0.7% p.a. in the course of 25 years, a significant added value compared to the two-phase warranties common in the industry. In addition, SolarWorld is offering a product warranty, which has been extended to 10 years.*

*in accordance with the applicable SolarWorld Limited Warranty at purchase.
www.solarworld.com/warranty

- Qualified, IEC 61215
- Safety tested, IEC 61730
- Periodic Inspection
- Blowing sand resistant
- Ammonia resistance tested
- Periodic Inspection
- Power Controlled

PERFORMANCE TESTED
SALT MIST RESISTANT
PHOTOVOLTAIC PRODUCT

UL 1703

ISO 9001
ISO 14001
Certified

MADE IN USA OF US
AND IMPORTED PARTS

solarworld.com

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SOLARWORLD
REAL VALUE

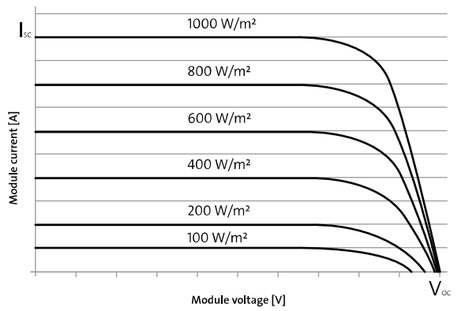
PERFORMANCE UNDER STANDARD TEST CONDITIONS (STC)*

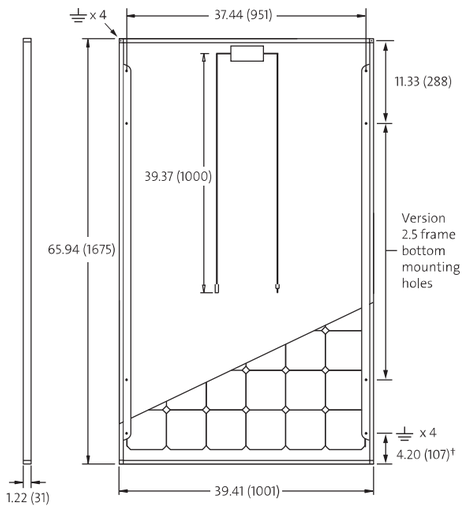
Maximum power	P_{max}	275 Wp
Open circuit voltage	V_{oc}	39.4 V
Maximum power point voltage	V_{mpp}	31.0 V
Short circuit current	I_{sc}	9.58 A
Maximum power point current	I_{mpp}	8.94 A
Module efficiency	η_m	16.40 %

*STC: 1000 W/m², 25°C, AM 1.5
1) Measuring tolerance (P_{max}) traceable to TUV Rheinland: +/- 2% (TUV Power Controlled).

THERMAL CHARACTERISTICS

NOCT	46 °C
TC I_{sc}	0.04 %/°C
TC V_{oc}	-0.30 %/°C
TC P_{mpp}	-0.41 %/°C
Operating temperature	-40°C to 85°C





PERFORMANCE AT 800 W/m², NOCT, AM 1.5

Maximum power	P_{max}	205.0 Wp
Open circuit voltage	V_{oc}	36.1 V
Maximum power point voltage	V_{mpp}	28.4 V
Short circuit current	I_{sc}	7.75 A
Maximum power point current	I_{mpp}	7.22 A

Minor reduction in efficiency under partial load conditions at 25°C: at 200 W/m², 100% (+/-2%) of the STC efficiency (1000 W/m²) is achieved.

COMPONENT MATERIALS

Cells per module	60
Cell type	Mono crystalline
Cell dimensions	6.14 in x 6.14 in (156 mm x 156 mm)
Front	Tempered glass (EN 12150)
Frame	Clear anodized aluminum
Weight	39.5 lbs (17.9 kg)

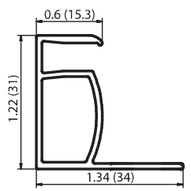
SYSTEM INTEGRATION PARAMETERS

Maximum system voltage SC II / NEC		1000 V
Maximum reverse current		16 A
Number of bypass diodes		3
*Design Loads**	*Two rail system*	113 psf downward 64 psf upward
*Design Loads**	*Three rail system*	170 psf downward 71 psf upward
*Design Loads**	*Edge mounting*	30 psf downward 30 psf upward

* Please refer to the Sunmodule installation instructions for the details associated with these load cases.

ADDITIONAL DATA

Power sorting[1]	-0 Wp / +5 Wp
J-Box	IP65
Module leads	PV wire per UL4703 with H4 connectors
Module type (UL 1703)	1
Glass	Low iron tempered with ARC



VERSION 2.5 FRAME
- Compatible with both "Top-Down" and "Bottom" mounting methods
- ⏚ Grounding Locations:
  - 4 corners of the frame
  - 4 locations along the length of the module in the extended flange†

All units provided are imperial. SI units provided in parentheses.
SolarWorld AG reserves the right to make specification changes without notice.

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