

Pine Mountain Lake Association - Marina Solar Project

12495 CASSARETTO CT., GROVELAND, CA 95231

PROJECT CONTACTS:

EXCITE ENERGY VINCE BOWLES OWNER / EE (916) 844-6232 VINCE@EXCITEENERGY.COM	EXCITE ENERGY HEATH KIRIN OWNER / EE (916) 400-1197 HEATH@EXCITEENERGY.COM	PINE MOUNTAIN LAKE ASSOCIATION KEN SPENCER CONTROLLER (209) 962-8606 CONTROLLER@PINEMOUNTAINLAKE.COM
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SCOPE OF WORK:

THE PROJECT CONSISTS OF INSTALLING A 33.1KW PHOTOVOLTAIC SYSTEM AT THE PINE MOUNTAIN LAKE ASSOCIATION MARINA BUILDING.

DURING DAYLIGHT HOURS THE PHOTOVOLTAIC SYSTEM WILL PROVIDE ELECTRICITY IN PARALLEL WITH THE LOCAL UTILITY.

ALL EQUIPMENT WILL BE INSTALLED AS REQUIRED BY APPLICABLE CODES AND THE LOCAL AUTHORITY HAVING JURISDICTION.

VALUATION: \$141,419.00

(69) Q CELLS Q.PEAK DUO XL-G10 480W PHOTOVOLTAIC MODULES (COMPLIANT WITH CA RULE 21, UL62109-1, UL 1761, AND IEEE 1567)

(4) SMA SUNNYBOY 7.7-1SP-US-41 INVERTERS (COMPLIANT WITH CA RULE 21, UL 1741 SA, IEEE 1547, AND RULE 14H)

PG&E METER # 1006926505

SHEET INDEX:

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APPLICABLE CODES:

CALIFORNIA ELECTRICAL CODE, 2019
CALIFORNIA BUILDING CODE, 2019
CALIFORNIA FIRE CODE, 2019
CALIFORNIA ENERGY CODE, 2019

VICINITY MAP:



EXCITE ENERGY, LLC 4970 ROBERT J MATHEWS PKWY SUITE 160 EL DORADO HILLS, CA 95762 (916) 400-1197 CSLB #1018541 C10 CONTRACTOR	REFERENCE DRAWINGS		REVISIONS							PINE MOUNTAIN LAKE ASSOCIATION SOLAR PROJECT MARINA COVER SHEET	
	NO.	TITLE	NO.	DATE	DESCRIPTION	BY	CHK.	APP.			
									DWG. NO. 1018-01-101 REV 0		
	EXCITE ENERGY CLIENT NO: 1018										
	(FORMATTED 11"x17") SCALE: NONE		0	02/16/2022	ISSUED FOR PERMIT	JVB	HRK	JVB			

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V																																																												
GENERAL NOTES: 1. ALL MATERIALS AND INSTALLATIONS SHALL BE DONE IN ACCORDANCE WITH THE 2019 CALIFORNIA ELECTRICAL CODE (CEC) AS WELL AS ANY APPLICABLE CODES AND STANDARDS REQUIRED BY THE AUTHORITY HAVING JURISDICTION (AHJ). 2. COLOR CODING OF POWER CABLES SHALL TO BE AS FOLLOWS : SINGLE PHASE: HOT - BLACK NEUTRAL - WHITE GROUND - GREEN THREE PHASE (120/208V): PHASE A - BLACK PHASE B - RED PHASE C - BLUE NEUTRAL - WHITE GROUND - GREEN THREE PHASE (277/480V): PHASE A - BROWN PHASE B - ORANGE PHASE C - YELLOW NEUTRAL - GRAY GROUND - GREEN 3. LOW VOLTAGE CABLES SHALL HAVE A TEMPERATURE RATING OF 90°C. 4. WIRING FOR LOW VOLTAGE POWER AND CONTROL CIRCUITS SHALL BE TYPE THWN-2 OR XHHW-2. 5. ALL INDIVIDUALLY INSULATED NEUTRAL CONDUCTORS SHALL HAVE WHITE OR GRAY INSULATION AS NOTED ABOVE AND SHALL BE PERMANENTLY IDENTIFIED AS A NEUTRAL CONDUCTOR BY SHRINK-WRAPPING OR TAPING THE EXPOSED INSULATION AT EACH END AND AT EVERY OTHER POINT WHERE THE CONDUCTOR IS ACCESSIBLE AS NOTED IN NEC ARTICLE 200.6. INDIVIDUALLY INSULATED GROUNDING CONDUCTORS SHALL HAVE GREEN INSULATION. 6. ALL WIRING ENTERING FIELD JUNCTION BOXES SHALL BE FORMED, BUNDLED, AND ZIP-TIED IN A NEAT AND ORDERLY FASHION AND LOOPED WHERE POSSIBLE TO ALLOW SUFFICIENT LENGTH FOR RELOCATION FROM ITS DESIGNED TERMINATION POINT TO ANY OTHER TERMINAL WITHIN THE ENCLOSURE. 7. ALL SPARE WIRING NOT DESIGNATED TO TERMINATE ON SPARE TERMINALS SHALL BE FORMED, BUNDLED, AND TAGGED SPARE AND BE OF SUFFICIENT LENGTH TO REACH ANY TERMINAL WITHIN THE ENCLOSURE. 8. ALL WIRING TERMINATIONS SHALL BE IDENTIFIED USING PERMANENT WIRE MARKERS WITH IDENTIFICATION CORRESPONDING TO THAT ON SCHEMATICS, LOOPS, AND WIRING DIAGRAMS. 9. AFTER INSTALLATION, ELECTRICAL CONTRACTOR SHALL PERFORM MEGGER TESTS FOR ALL POWER CABLES AND CONTINUITY TESTS OF ALL CONTROL, AND INSTRUMENTATION CONDUCTORS TO ENSURE CORRECT CABLE CONNECTION. TESTS SHALL BE DOCUMENTED AND PROVIDED TO THE OWNER OR OWNER'S REPRESENTATIVE. 10. LENGTHS OF CABLES SHOWN ON PROJECT DRAWINGS ARE ESTIMATES. ELECTRICAL CONTRACTOR SHALL DETERMINE ACTUAL LENGTHS AND PART NUMBERS PRIOR TO ORDERING AND CUTTING CABLES. 11. ELECTRICAL CONTRACTOR SHALL KEEP WORKING COPIES OF AS-BUILT DRAWINGS FOR SUBMITTAL TO THE OWNER AT THE COMPLETION OF THE PROJECT.																																																																																	
CONDUIT NOTES: 1. ALL CONDUIT AND FITTINGS SHALL BE UL LISTED FOR THE INTENDED USE. 2. ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL ALL RACEWAYS AND BULK MATERIALS. 3. ALL ABOVEGROUND CONDUIT SHALL BE EMT. ALL BELOWGROUND CONDUIT SHALL BE SCHEDULE 40 RIGID PVC UNLESS OTHERWISE NOTED ON PROJECT DRAWINGS. 4. REFER TO PLAN DRAWINGS AND ONE LINES FOR CONDUIT SIZES. THE MINIMUM SIZE FOR ALL CONDUIT SYSTEMS SHALL BE 3/4". 5. CONDUIT DRAINS SHALL BE INSTALLED AT ALL LOW POINTS IN CONDUIT SYSTEMS. 6. CRC ZINC-IT (OR APPROVED EQUIVALENT) SHALL BE APPLIED TO COVER ALL WRENCH MARKS AND BREAKS IN GALVANIZED COATINGS TO INHIBIT OXIDATION. 7. ALL SPARE CONDUITS SHALL BE CAPPED OR SEALED TO PREVENT INGRESS OF WATER AND DEBRIS. 8. ALL CONDUIT SUPPORT COMPONENTS SUCH AS BOLTS, NUTS, WASHERS, CLAMPS, THREADED RODS ETC., SHALL BE HOT-DIPPED GALVANIZED STEEL OR CADMIUM PLATED. 9. CONDUIT AND CABLE ROUTING SHOWN ON PLAN DRAWINGS ARE APPROXIMATE. MINOR DEVIATIONS FROM PLAN DRAWINGS, AS REQUIRED BY FIELD CONDITIONS, SHALL BE PERMISSIBLE. COORDINATION WITH THE OWNER'S REPRESENTATIVE OR ENGINEER IS REQUIRED FOR MAJOR DEVIATIONS. 10. ALL WIRE AND CABLES SHALL BE PULLED INTO THEIR RESPECTIVE CONDUITS USING A WIRE PULLING LUBRICANT. 11. SUFFICIENT WIRE SHALL BE LEFT AT ALL OUTLETS FOR CONNECTING FIXTURES AND DEVICES. 12. UNLESS OTHERWISE NOTED ON PROJECT DRAWINGS, UNDERGROUND CONDUIT SHALL BE BURIED TO A MINIMUM OF 18" DEEP TO THE TOP OF CONDUIT WITH 2" OF SAND ABOVE AND BELOW. A WARNING TAPE SHALL BE INSTALLED 12" ABOVE THE CONDUIT FOR THE FULL LENGTH. 13. CONDUIT USED FOR TRANSITION FROM BELOW-GRADE TO ABOVE SHALL EXTEND A MINIMUM OF 6" CONDUIT ABOVE FINAL GRADE. 14. NO INACCESSIBLE BOXES, ENCLOSURES, OR SPLICES SHALL BE INSTALLED.																																																																																	
<table><tr><td rowspan="5"> SOLARNORCAL, LLC 4970 ROBERT J MATHEWS PKWY SUITE 160 EL DORADO HILLS, CA 95762 (916) 400-1197 CSLB #1018541 C10 CONTRACTOR </td><td colspan="2">REFERENCE DRAWINGS</td><td colspan="6">REVISIONS</td><td colspan="3" rowspan="4">  PINE MOUNTAIN LAKE ASSOCIATION SOLAR PROJECT ELECTRICAL NOTES </td></tr><tr><td>NO.</td><td>TITLE</td><td>NO.</td><td>DATE</td><td>DESCRIPTION</td><td>BY</td><td>CHK.</td><td>APP.</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td colspan="2">SOLARNORCAL CLIENT NO: 1018</td><td></td><td></td><td></td><td></td><td></td><td></td><td>DWG. NO.</td><td>1018-01-104</td><td>REV 0</td></tr><tr><td></td><td colspan="2">(FORMATTED 11"x17") SCALE: NONE</td><td>0</td><td>01/29/2021</td><td>ISSUED FOR PERMIT</td><td>JVB</td><td>HRK</td><td>JVB</td><td></td><td></td><td></td></tr></table>																						SOLARNORCAL, LLC 4970 ROBERT J MATHEWS PKWY SUITE 160 EL DORADO HILLS, CA 95762 (916) 400-1197 CSLB #1018541 C10 CONTRACTOR	REFERENCE DRAWINGS		REVISIONS						 PINE MOUNTAIN LAKE ASSOCIATION SOLAR PROJECT ELECTRICAL NOTES			NO.	TITLE	NO.	DATE	DESCRIPTION	BY	CHK.	APP.																		SOLARNORCAL CLIENT NO: 1018								DWG. NO.	1018-01-104	REV 0		(FORMATTED 11"x17") SCALE: NONE		0	01/29/2021	ISSUED FOR PERMIT	JVB	HRK	JVB			
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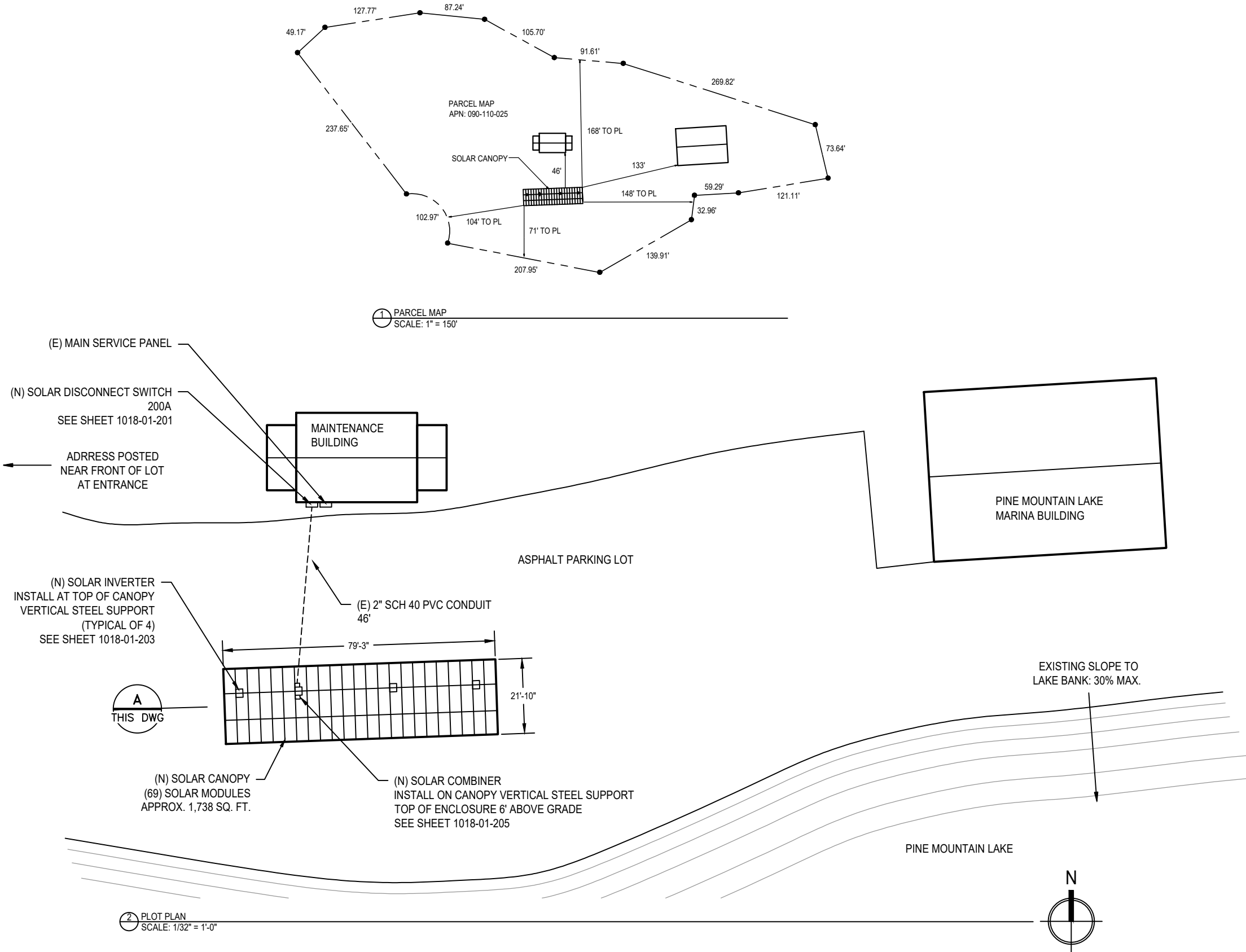
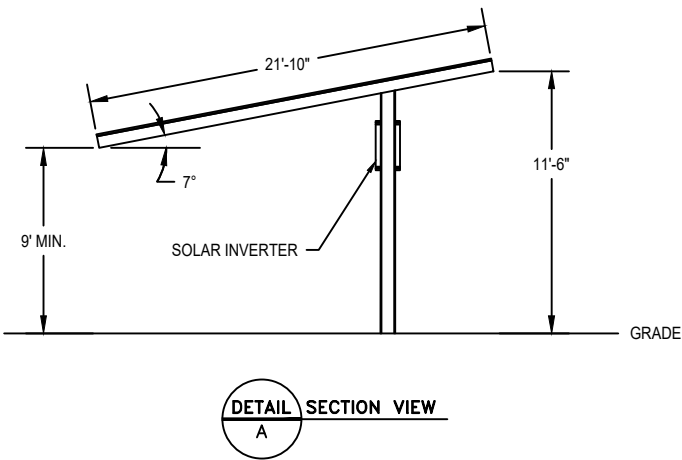


NOTES:

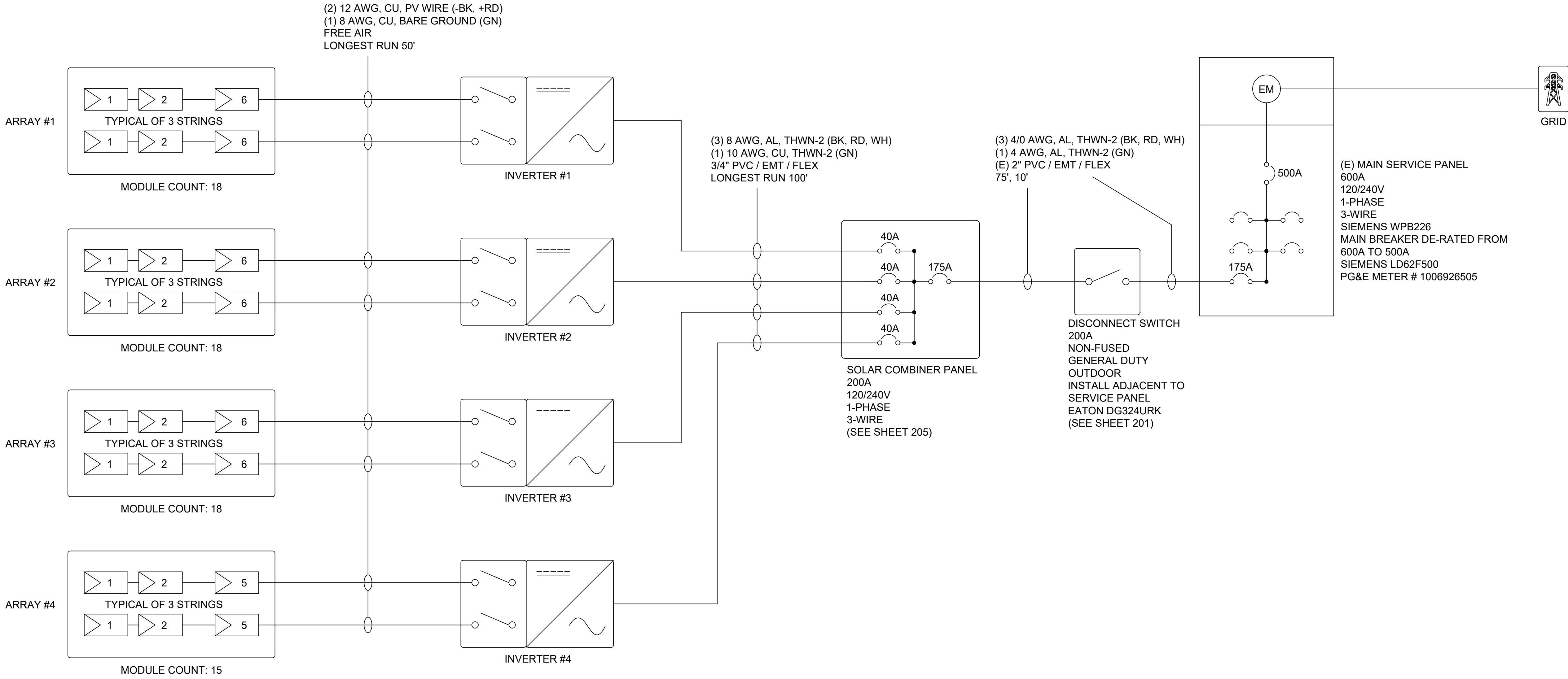
1. THERE SHALL BE NO CHANGES TO THE EXISTING GRADE OR NEW GRADING
2. APPROXIMATELY 6 CUBIC YARDS OF SOIL WILL BE REMOVED FOR THE INSTALLATION OF THE SOLAR CANOPY FOOTINGS

CUSTOMER AND LOT INFORMATION:

CUSTOMER NAME: PINE MOUNTAIN LAKE ASSOCIATION
ADDRESS: 12495 CASSARETTO COURT, GROVELAND, CA 95231
OWNER PHONE #: KEN SPENCER, (209) 962-8606
APPLICANT PHONE NUMBER: PHILIP HUTH, (916) 807-4259
APN: 090-110-025-000
PROPERTY ELEVATION: 2,572'
LOT SIZE: 3.2 ACRES



EXCITE ENERGY, LLC 4970 ROBERT J MATHEWS PKWY SUITE 160 EL DORADO HILLS, CA 95762 (916) 400-1197 CSLB #1018541 C10 CONTRACTOR	REFERENCE DRAWINGS		REVISIONS							 ExciteEnergy PINE MOUNTAIN LAKE ASSOCIATION SOLAR PROJECT MARINA PLOT PLAN	
	NO.	TITLE	NO.	DATE	DESCRIPTION	BY	CHK.	APP.			
									DWG. NO. 1018-01-106		
											REV
											0
	EXCITE ENERGY CLIENT NO: 1018										
	(FORMATTED 11"x17") SCALE: AS NOTED		0	02/16/2022	ISSUED FOR PERMIT	JVB	HRK	JVB			



(SEE SHEET 202)

MODULE SPECIFICATIONS	
(69) Q CELLS Q.PEAK DUO XL-G10.D 480W	
STC RATING	480 W
PTC RATING	447.1 W
VOLTAGE AT MPP	44.54 V
CURRENT AT MPP	10.66 A
OPEN CIRCUIT VOLTAGE	53.61 V
SHORT CIRCUIT CURRENT	11.26 A

(SEE SHEET 203)

INVERTER SPECIFICATIONS	
(4) SMA SUNNY BOY 7.7-1TP-US-41	
MAX DC INPUT POWER (STC)	10.9 KW
MAX INPUT VOLTAGE	600 V
MAX AC OUTPUT POWER	7.7 KW
AC OUTPUT VOLTAGE (NOMINAL)	240 V
MAX CONTINUOUS OUTPUT CURRENT	32 A

VOLTAGE DROP CALCULATIONS

CIRCUIT	LENGTH	AMPS	VOLTAGE	V DROP	% DROP
INVERTER TO COMBINER	100'	32 A	240 VAC	8.2 VAC	3.4 %
COMBINER TO DISCONNECT SWITCH	75'	128 A	240 VAC	0.8 VAC	0.4 %
DISCONNECT SWITCH TO SERVICE PANEL	10'	128 A	240 VAC	0.2 VAC	0.1 %

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	NO.	TITLE	NO.	DATE	DESCRIPTION	BY	CHK.	APP.			
									DWG. NO. 1018-01-111 REV 0		
	EXCITE ENERGY CLIENT NO: 1018										
	(FORMATTED 11"x17") SCALE: NONE		0	2/16/2022	ISSUED FOR PERMIT	JVB	HRK	JVB			

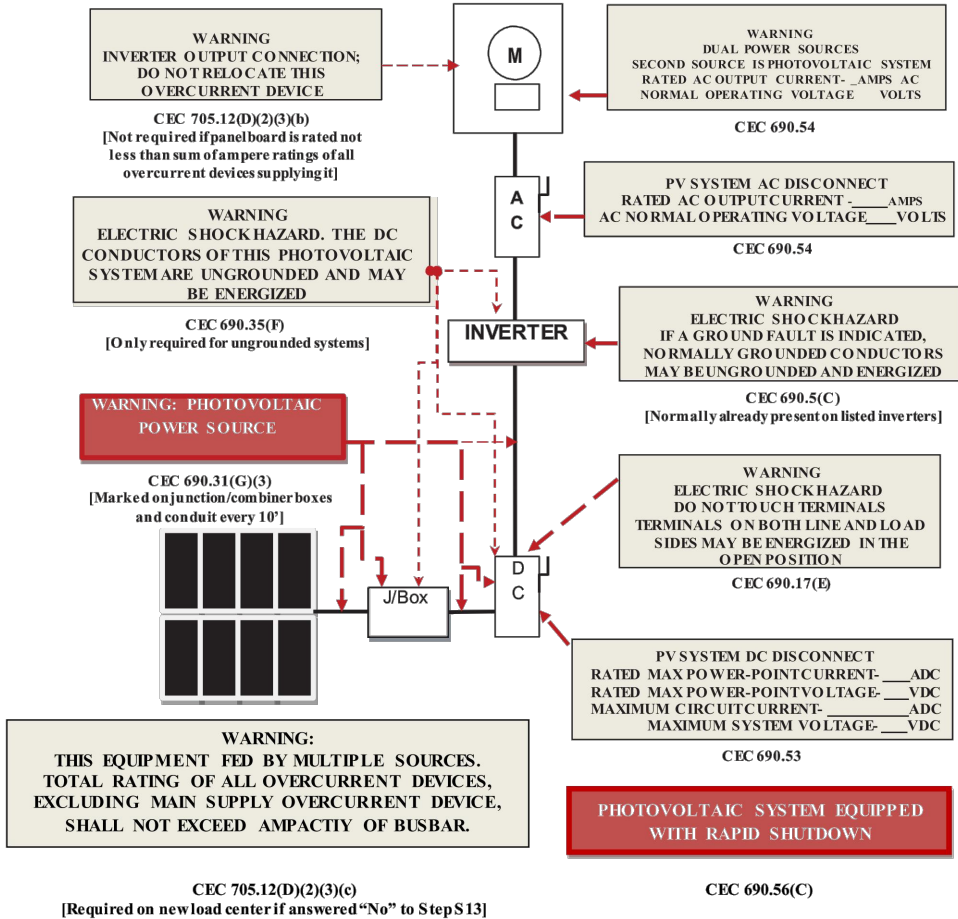
PV LABEL SIGNAGE

- * RED BACKGROUND
- * WHITE LETTERS
- * MINIMUM 3/8" LETTER HEIGHT
- * ALL CAPITAL LETTERS
- * ARIAL OR SIMILAR FONT, NON-BOLD
- * MATERIAL SUITABLE FOR THE ENVIRONMENT (A DURABLE ADHESIVE IS ACCEPTABLE)

Solar PV Standard Plan — Simplified
Central/String Inverter Systems for One- and Two-Family Dwellings

Markings

CEC Articles 690 and 705 and CA Residential Code Section R324 require the following labels or markings be installed at these components of the photovoltaic system:



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	NO.	TITLE	NO.	DATE	DESCRIPTION	BY	CHK.	APP.			
	SOLARNORCAL CLIENT NO: 1018										
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Safety Switches



120/240 Vac General-Duty, Non-Fusible, Single-Throw



All general-duty safety switches are individually packaged.

Note: For "J" fusing on General Duty 30-200A use Heavy Duty switch no modification available

For "J" fusing on General Duty 400-600A, field modification required

400A, reposition loadside fuse block to accept 'J' fuse.

600A, fuse kit adapter for 'J' fusing included with switch. For adaptation to "R" and "T" fusing see accessory page 5.

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	NO.	TITLE	NO.	DATE	DESCRIPTION	BY	CHK.	APP.		
										PINE MOUNTAIN LAKE ASSOCIATION SOLAR PROJECT
	SOLARNORCAL CLIENT NO: 1018									200A DISCONNECT DATASHEET
	(FORMATTED 11"x17") SCALE: NONE		0	01/29/2021	ISSUED FOR PERMIT	JVB	HRK	JVB	DWG. NO.	1018-01-201



Q.peak DUO L-G6
405-425

ENDURING HIGH
PERFORMANCE



- LOW ELECTRICITY GENERATION COSTS**
Higher yield per surface area, lower BOS costs, higher power classes, and an efficiency rate of up to 20.1%.
- INNOVATIVE ALL-WEATHER TECHNOLOGY**
Optimal yields, whatever the weather with excellent low-light and temperature behaviour.
- ENDURING HIGH PERFORMANCE**
Long-term yield security with Anti LID Technology, Anti PID Technology¹, Hot-Spot Protect and Traceable Quality Tra.Q™.
- EXTREME WEATHER RATING**
High-tech aluminium alloy frame, certified for high snow (5400Pa) and wind loads (2400Pa).
- A RELIABLE INVESTMENT**
Inclusive 12-year product warranty and 25-year linear performance warranty².
- STATE OF THE ART MODULE TECHNOLOGY**
Q.ANTUM DUO combines cutting edge cell separation and innovative wiring with Q.ANTUM Technology.

¹ A PT test conditions according to IEC TS 62804-1:2015, method B (-1500V, 168h)
² See data sheet on rear for further information.

THE IDEAL SOLUTION FOR:

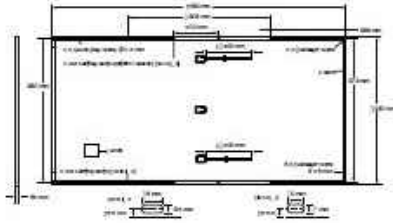
- Rooftop arrays on commercial/industrial buildings
- Ground-mounted solar power plants

Engineered In Germany



MECHANICAL SPECIFICATION

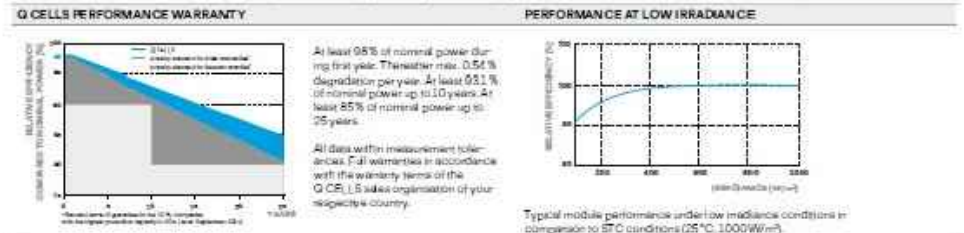
Format	2090mm × 1030mm × 35mm (including frame)
Weight	24.5kg
Front Cover	3.2mm thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Anodized aluminium
Cell	6 × 24 monocrystalline Q.ANTUM solar half cells
Junction box	53x103mm × 30-60mm × 15-16mm Protection class IP67, with bypass diodes
Cable	4mm ² Solar cable, (+) >1400mm, (-) >1400mm
Connector	Solid MC4, Hanwha Q CELLS SHOC4, Amphenol LITX, Renhe Qy-6, Tongling TL-CableD1S, JMT-HY JM6D; IP68 or Friends PV2c, IP67



ELECTRICAL CHARACTERISTICS

POWER CLASS		405	410	415	420	425	
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE +5W / -0W)							
Minimum	Power at MPP	P _{MPP} [W]	405	410	415	420	425
	Short Circuit Current	I _{sc} [A]	10.65	10.70	10.74	10.79	10.83
	Open Circuit Voltage	V _{oc} [V]	48.14	48.38	48.63	48.88	49.13
	Current at MPP	I _{mp} [A]	10.14	10.18	10.23	10.27	10.32
	Voltage at MPP	V _{mp} [V]	39.95	40.27	40.58	40.89	41.20
	Efficiency ²	η [%]	≥18.9	≥19.1	≥19.4	≥19.6	≥19.8
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT ³							
Minimum	Power at MPP	P _{MPP} [W]	393.1	396.9	398.6	399.4	399.1
	Short Circuit Current	I _{sc} [A]	8.98	9.02	9.05	9.09	9.13
	Open Circuit Voltage	V _{oc} [V]	45.38	45.62	45.86	46.09	46.33
	Current at MPP	I _{mp} [A]	7.98	8.01	8.05	8.09	8.12
	Voltage at MPP	V _{mp} [V]	37.99	38.29	38.59	38.88	39.17

¹Measurement tolerance P_{MPP} ±3%, I_{sc}, V_{oc} ±5% at STC: 1000W/m², 25±2°C, AM 1.5 according to IEC 60904-3 • 180W/m²/NMOT, spectrum AM 1.5



TEMPERATURE COEFFICIENTS

Temperature Coefficient of I _{sc}	α [%/K]	+0.04	Temperature Coefficient of V _{oc}	β [%/K]	-0.27
Temperature Coefficient of P _{MPP}	γ [%/K]	-0.36	Nominal Module Operating Temperature	NMOT [°C]	43±3

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage	V _{sys} [V]	1000 (IEC) / 1000 (UL)	PV module classification	Class II
Maximum Reverse Current	I _r [A]	20	Fire Rating based on ANSI / UL 1703	C / TYPE 2
Max. Design Load, Push / Pull	[Pa]	3600 / 1600	Permitted Module Temperature in Continuous Duty	-40°C ~ +85°C
Max. Test Load, Push / Pull	[Pa]	5400 / 2400		

QUALIFICATIONS AND CERTIFICATES

IEC 61215:2016, IEC 61730:2016
This data sheet complies with (EN) EN 50338

PACKAGING INFORMATION

Number of Modules per Pallet	30
Number of Pallets per Trailer (24 ft)	24
Number of Pallets per 40' HD-Container (26 ft)	22
Pallet Dimensions (L × W × H)	2191 × 1130 × 1200mm
Pallet Weight	788kg

Note: Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of the product.

Hanwha Q CELLS GmbH
Sonnensallee 17-21, 05706 Jüterbog-Waldsiedl, Germany | TEL: +49 (0)3494 66 99-23444 | FAX: +49 (0)3494 66 99-23300 | EMAIL: sales@q-cells.com | WEB: www.q-cells.com

Engineered in Germany



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PINE MOUNTAIN LAKE ASSOCIATION
SOLAR PROJECT

MODULE DATASHEET

SUNNY BOY
3.0-US / 3.8-US / 5.0-US / 6.0-US / 7.0-US / 7.7-US



SB3.0-1SP-US-41 / SB3.8-1SP-US-41 / SB5.0-1SP-US-41 / SB6.0-1SP-US-41 / SB7.0-1TP-US-41 / SB7.7-1TP-US-41
SB7.0-1SP-US-41 / SB7.7-1SP-US-41 / SB3.0-1TP-US-41 / SB3.8-1TP-US-41 / SB5.0-1TP-US-41 / SB6.0-1TP-US-41 / SB7.0-1TP-US-41 / SB7.7-1TP-US-41

Value-Added Improvements - Superior integration with SMA's MLPE Power+ Solution - World's first Secure Power Supply* now offers up to 2,000 W - Full grid management capabilities ensure a utility-compliant solution for any market	Reduced Labor - New Installation Assistant with direct access via smartphone minimizes time in the field - Advanced communication interface with fewer components creates 50% faster setup and commissioning	Unmatched Flexibility - SMA's proprietary OptiTrac™ Global Peak technology mitigates shade with ease - Multiple independent MPPTs accommodate hundreds of stringing possibilities	Trouble-Free Servicing - Two-part enclosure concept allows for simple, expedited servicing - Equipped with SMA Smart Connected, a proactive service solution that is integrated into Sunny Portal
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SUNNY BOY 3.0-US / 3.8-US / 5.0-US / 6.0-US / 7.0-US / 7.7-US

Reduce costs across your entire residential business model

The residential PV market is changing rapidly. Your bottom line matters more than ever—so we've designed a superior residential solution to help you decrease costs at every stage of your business operations. The Sunny Boy 3.0-US/3.8-US/5.0-US/6.0-US/7.0-US/7.7-US join the SMA lineup of field-proven solar technology backed by the world's #1 service team, along with a wealth of improvements. Simple design, improved stocking and ordering, value-driven sales support and streamlined installation are just some of the ways that SMA helps your business operate more efficiently. And, Sunny Boy's superior integration with the innovative Power+ Solution means installers have even more flexibility in addressing their toughest challenges. Finally, SMA Smart Connected will automatically detect errors and initiate the repair and replacement process so that installers can reduce service calls and save time and money.

www.SMA-America.com

Technical data	Sunny Boy 6.0-US		Sunny Boy 7.0-US		Sunny Boy 7.7-US	
	208 V	240 V	208 V	240 V	208 V	240 V
Input (DC)						
Max. PV power	9600 Wp		9940 Wp		10905 Wp	
Max. DC Voltage			600 V			
Rated MPP Voltage range	220 – 480 V		245 - 480 V		270 - 480 V	
MPPT operating voltage range			100 – 550 V			
Min. DC voltage / start voltage			100 V / 125 V			
Max. operating input current per MPPT			10 A			
Max. short circuit current per MPPT			18 A			
Number of MPPT tracker / string per MPPT tracker			3 / 1			
Output (AC)						
AC nominal power	5200 W	6000 W	6660 W	7000 W	6660 W	7680 W
Max. AC apparent power	5200 VA	6000 VA	6660 VA	7000 VA	6660 VA	7680 VA
Nominal voltage / adjustable	208 V / ●	240 V / ●	208 V / ●	240 V / ●	208 V / ●	240 V / ●
AC voltage range	183 – 229 V	211 – 264 V	183 – 229 V	211 – 264 V	183 – 229 V	211 – 264 V
AC grid frequency			60 Hz / 50 Hz			
Max. output current	25.0 A	25.0 A	32.0 A	29.2 A	32.0 A	32.0 A
Power factor (cos φ)			1			
Output phases / line connections			1 / 2			
Harmonics			< 4 %			
Efficiency						
Max. efficiency	97.3 %	97.7 %	97.3 %	97.9 %	97.3 %	97.5 %
CEC efficiency	96.7 %	96.9 %	96.4 %	96.8 %	96.4 %	96.8 %
Protection devices						
DC disconnect device / DC reverse polarity protection			● / ●			
Ground fault monitoring / Grid monitoring			●			
AC short circuit protection			●			
All-pole sensitive residual current monitoring unit (RCMU)			●			
Arc fault circuit interrupter (AFCI)			●			
Protection class / overvoltage category			I / IV			
General data						
Dimensions (W / H / D) in mm (in)			535 x 730 x 198 (21.1 x 28.5 x 7.8)			
Packaging Dimensions (W / H / D) in mm (in)			600 x 800 x 300 (23.6 x 31.5 x 11.8)			
Weight / packaging weight			26 kg (57 lb) / 30 kg (66 lb)			
Temperature range: operating / non-operating			-25°C ...+60°C / -40°C ...+60°C			
Environmental protection rating			NEMA 3R			
Noise emission (typical)	39 dB(A)				45 dB(A)	
Internal power consumption at night			< 5 W			
Topology / Cooling concept	Transformerless / Convection				Transformerless / Fan	
Features						
Ethernet ports			2			
Secure Power Supply			●*			
Display (2 x 16 characters)			●			
2.4 GHz WLAN / External WLAN antenna			●/○			
Cellular (4G / 3G) / Revenue Grade Meter			○/○**			
Warranty: 10 / 15 / 20 years			●/○/○			
Certificates and approvals			UL 1741, UL 1741 SA incl. CA Rule 21 RSD, UL 1998, UL 1699B Ed. 1, IEEE1547, FCC Part 15 (Class A & B), CAN/CSA V22.2 107.1-1, HECO Rule 14H, PV Rapid Shutdown System Equipment			
● Standard features ○ Optional features — Not available						
NOTE: US inverters ship with gray lids. Data at nominal conditions * Not compatible with the SunSpec Rapid Shutdown functionality **Standard in SBX.X-1TP-US-41						
Type designation	SB6.0-1SP-US-41 / SB6.0-1TP-US-41		SB7.0-1SP-US-41 / SB7.0-1TP-US-41		SB7.7-1SP-US-41 / SB7.7-1TP-US-41	

POWER+ SOLUTION

The SMA Power+ Solution combines legendary SMA inverter performance and intelligent DC module-level electronics in one cost-effective, comprehensive package. This means that you can achieve maximum solar power production for your customers while also realizing significant installation savings.

NEW! This rapid shutdown solution fulfills UL 1741, NEC 2014, and NEC 2017 requirements and is compatible with the power line-based SunSpec Rapid Shutdown communication signal over DC wires, making it the most simple and cost-effective rapid shutdown solution on the market.

Visit www.SMA-America.com for more information.



EXCITE ENERGY, LLC 4970 ROBERT J MATHEWS PKWY SUITE 160 EL DORADO HILLS, CA 95762 (916) 400-1197 CSLB #1018541 C10 CONTRACTOR	REFERENCE DRAWINGS		REVISIONS						 ExciteEnergy
	NO.	TITLE	NO.	DATE	DESCRIPTION	BY	CHK.	APP.	
	EXCITE ENERGY CLIENT NO: 1018								DWG. NO. 1018-01-203
(FORMATTED 11"x17") SCALE: NONE		0	02/16/2021	ISSUED FOR PERMIT	JVB	HRK	JVB	REV 0	

Loadcenters and Circuit Breakers

Type BR Loadcenters and Circuit Breakers

1.2

Product Selection

Single-Phase—Plug-on Neutral—Main Circuit Breaker Loadcenters—10/25 kAIC

1



Single-Phase Three-Wire— 120/240 Vac—Insulated/Bondable Split Neutral

Main Breaker Type	Main Amp Rating	Maximum Number 1-Inch (25.4 mm) Spaces	Maximum Number 1-Inch (25.4 mm) Poles	Enclosure Type	Box Size	Wire Size Range Cu/Al 60 °C or 75 °C for Main Breaker	Loadcenter Catalog Number with Combination 1 or NEMA Type 3R Cover ①②
BR 10 kAIC	100	10	20	Indoor	X0	#4–1/0 2	BRP10B100
		10	20	Outdoor	B2R		BR1020B100RF ③④⑦
		12	24	Indoor	X1		BRP12B100
		12	24	Outdoor	B2R		BR1224B100R ③⑦
		16	32	Indoor	X2		BRP16B100
		16	24	Outdoor	C1R		BR1624B100R ③⑦
		20	24	Outdoor	C3R		BR2024B100R ③⑦
		20	40	Indoor	X3		BRP20B100
		30	60	Indoor	X5		BRP30B100
	125	16	32	Indoor	X2	#4–2/0	BRP16B125
20		40	Indoor	X3	BRP20B125		
20		24	Outdoor	C3R	BR2024B125R ③⑦		
30		60	Indoor	X5	BRP30B125		
BRH ⑧ 22 kAIC	100	12	24	Indoor	X1	#4–1/0	BRP12H100
		20	40	Indoor	X3		BRP20H100
CSR ⑧ 25 kAIC	150	8	16	Outdoor	C3R	#2–300 kcmil	BR816B150RF ③④⑦
		16	32	Indoor	X4		BRP12B150
		20	40	Indoor	X4		BRP20B150
		20	30	Outdoor	D1R		BR2030B150R ③⑦
		24	48	Indoor	X6		BRP24B150
		20	40	Outdoor	D1R		BR2040B150R ③⑦
		30	60	Indoor	X6		BRP30B150
		200	8	16	Outdoor		C3R
	16		32	Indoor	X4	BRP16B200	
	20		40	Outdoor	D1R	BR2040B200R ③⑦	
	20		40	Indoor	X5	BRP20B200	
	24		48	Indoor	X6	BRP24B200	
	30		60	Indoor	X6	BRP30B200	
	30		60	Indoor	X6	BRP30B200G	
	30		40	Outdoor	G1R	BR3040B200R ③⑦	
	40		80	Indoor	X8	BRP40B200	
	40		40	Outdoor	L1R	BR4040B200R ③⑦	
	60		120	Indoor	X10	BRP60B200	
	60		120	Outdoor	L3R	BR60120B200R ③⑦	

- Notes**
- ① Combination style covers may be used in surface or flush applications.
 - ② All main circuit breaker loadcenters are listed for use as service entrance equipment and are shipped with neutral bonding screw preattached. The maximum rating of the panel is the main circuit breaker rating when used as service entrance equipment. Ground bar kits priced separately. See **Page V1-T1-72**.
 - ③ Includes through-feed lugs for both phase and neutral conductors.
 - ④ Rainproof panels are furnished with hub closure plates. For rainproof hubs, refer to **Page V1-T1-71**.
 - ⑤ 22 kAIC series combination rating is obtained when Types BD, BR, BQ, BQC and ETN01 10 kAIC branch breakers are used in series with Type BRH main breaker.
 - ⑥ 25 kAIC series combination rating is obtained when Types BD, BR, BQ, BQC and ETN01 10 kAIC branch circuit breakers are used in series with Type CSR main breaker.
 - ⑦ These styles will be replaced in 2019 with new plug-on neutral style loadcenter.

SOLARNORCAL, LLC 4970 ROBERT J MATHEWS PKWY SUITE 160 EL DORADO HILLS, CA 95762 (916) 400-1197 CSLB #1018541 C10 CONTRACTOR	REFERENCE DRAWINGS		REVISIONS							 PINE MOUNTAIN LAKE ASSOCIATION SOLAR PROJECT COMBINER PANEL DATASHEET	
	NO.	TITLE	NO.	DATE	DESCRIPTION	BY	CHK.	APP.			
									DWG. NO. 1018-01-205		REV 0
	SOLARNORCAL CLIENT NO: 1018										
	(FORMATTED 11"x17") SCALE: NONE		0	01/29/2021	ISSUED FOR PERMIT	JVB	HRK	JVB			