ROOF DESCRIPTION:

(ROOF #1)
MODULES - 09
ROOF TILT - 30.3°
ROOF AZIMUTH - 234°
TRUSSES SIZE - 2"X4" @ 24 O.C.

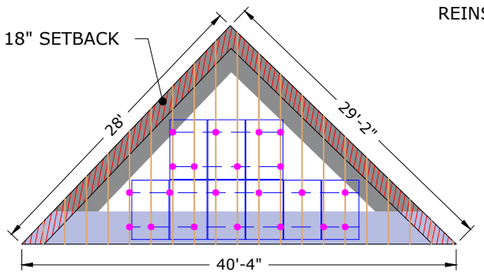
(ROOF #2)
MODULES - 10
ROOF TILT - 30.3°
ROOF AZIMUTH - 144°
TRUSSES SIZE - 2"X4" @ 24 O.C.

(ROOF #3)
MODULES -09
ROOF TILT - 30.3°
ROOF AZIMUTH - 234°
TRUSSES SIZE - 2"X4" @ 24 O.C.

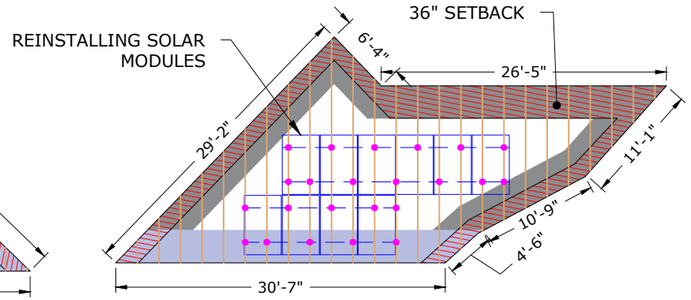
(ROOF #4)
MODULES -14
ROOF TILT - 30.3°
ROOF AZIMUTH - 144°
TRUSSES SIZE - 2"X4" @ 24 O.C.

(ROOF #5)
MODULES -18
ROOF TILT - 30.3°
ROOF AZIMUTH - 234°
TRUSSES SIZE - 2"X4" @ 24 O.C.

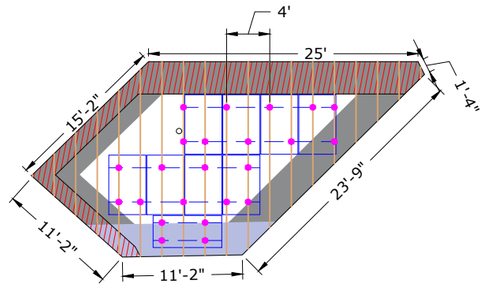
WIND LOAD INFORMATION:
THIS SYSTEM HAS BEEN DESIGN TO MEET THE REQUIREMENTS OF THE 8TH EDITION OF THE FLORIDA BUILDING CODE AND USED THE FOLLOWING DESIGN PARAMETERS:
ULTIMATE WIND SPEED: 120 MPH
EXPOSURE CATEGORY: C
RISK CATEGORY: II
MEAN ROOF HEIGHT: 30FT
ROOF SLOPE: 27°-45°



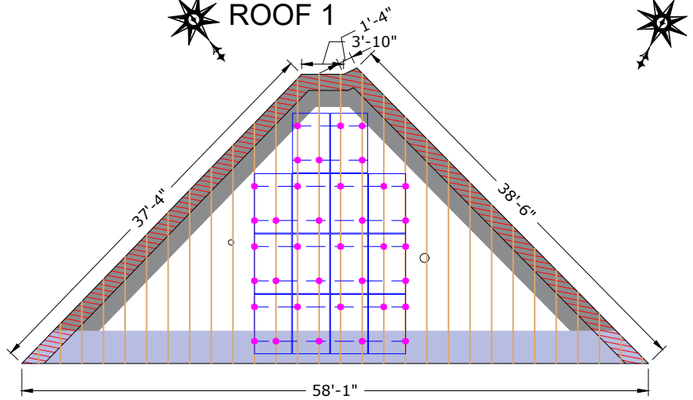
ROOF 1



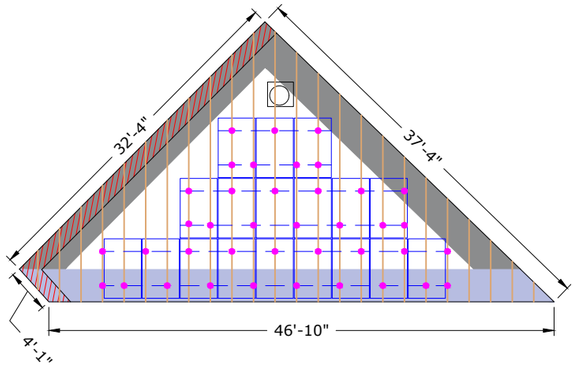
ROOF 2



ROOF 3



ROOF 4



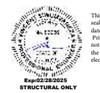
ROOF 5

Columbia County Building Department
Plans Reviewed for Code Compliance
State of Florida

LEGENDS
- FIRE SETBACK
- VENT, ATTIC FAN (ROOF OBSTRUCTION)
- PV ROOF ATTACHMENT
- COUPLING
- RAFTERS / TRUSSES
- WIND ZONE I
- WIND ZONE II
- WIND ZONE III

SYNERGY
SYNERGY SOLLAR
8595 103RD ST,
32210 JACKSONVILLE,
FLORIDA, USA
CONTACT: 3609100892
EMAIL:ANDREI@SYNERGYSOLAR.US

Signature with Seal



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LAKE CITY, FL 32055

REVISIONS	DESCRIPTION	DATE
REV	ENGG.	

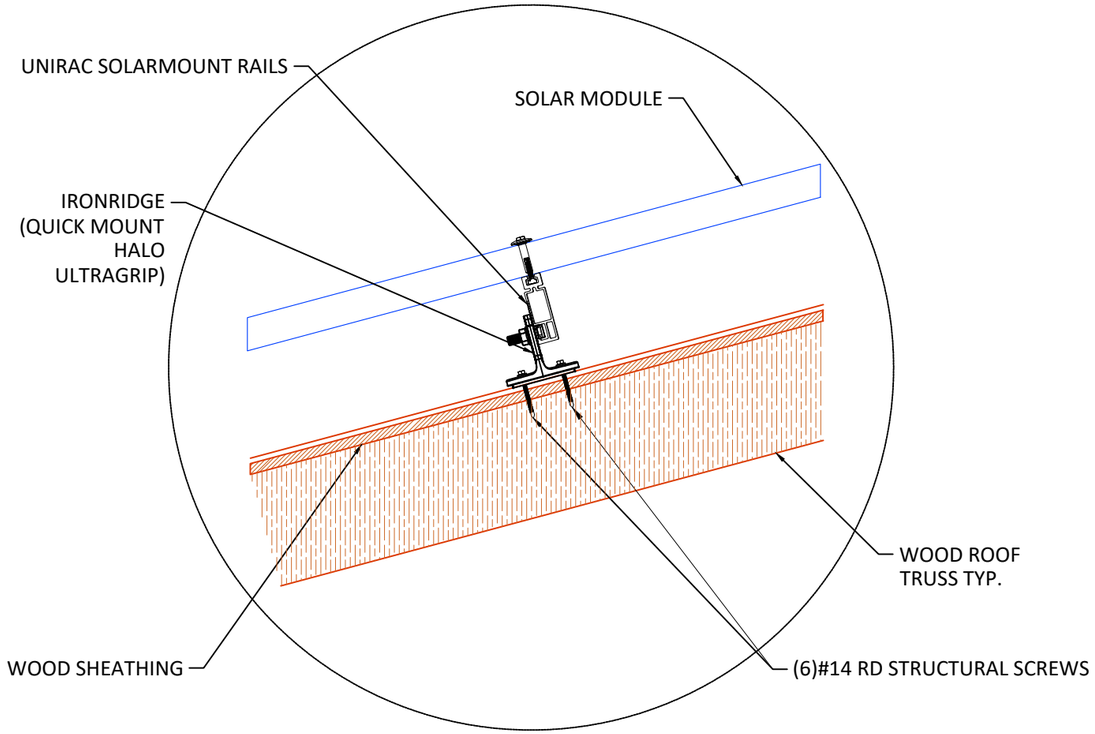
PERMIT DEVELOPER	
DATE	06/03/2024
DESIGNER	OAC
REVIEWER	

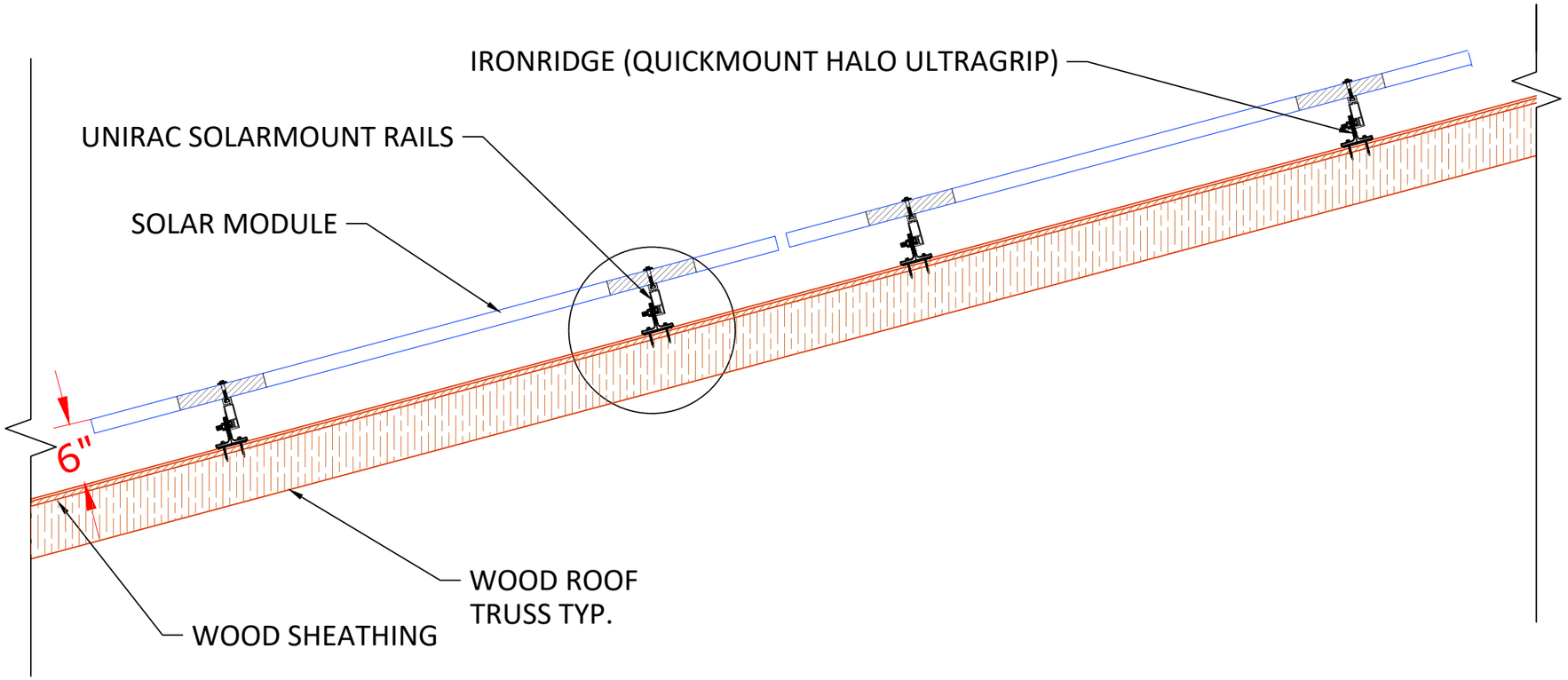
SHEET NAME
ARRAY LAYOUT

SHEET NUMBER
PV-04

PHOTOVOLTAIC MODULE GENERAL NOTES:

1. APPLICABLE CODE: 2023 FLORIDA BUILDING CODE 8th ED. & ASCE 7-22 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES
2. BOLT DIAMETER AND EMBEDMENT LENGTHS ARE DESIGNED PER NDS(2012) REQUIREMENTS. ALL BOLT CAPACITIES ARE BASED ON A DOUG-FIR#2 WOOD ROOF TRUSS AS EMBEDMENT MATERIAL.
3. ALL WIND DESIGN CRITERIA AND PARAMETERS ARE FOR HIP AND GABLE RESIDENTIAL ROOFS, CONSIDERING FROM A 4° TO A MAXIMUM 27° (1/12 TO A MAXIMUM 6/12 PITCH) ROOF IN SCHEDULE. ALL RESIDENTIAL ROOFS SHALL NOT EXCEED 15'-0" MEAN ROOF HEIGHT.
4. ROOF SEALANTS SHALL CONFIRM TO ASTM C920 AND ASTM 6511.
5. THIS SHEET REFLECTS STRUCTURAL CONNECTIONS ONLY. REFER TO MANUFACTURERS' MANUAL FOR ALL ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND SOLAR SPECS.
6. ALL ALUMINUM COMPONENTS SHALL BE ANODIZED ALUMINUM 6105-T5 UNLESS
7. LAG BOLTS SHALL BE ASTM A276 STAINLESS STEEL UNLESS OTHERWISE NOTED.
8. ALL RAILING AND MODULES SHALL BE INSTALLED PER MANUFACTURERS' INSTRUCTIONS.
9. I CERTIFY THAT THE INSTALLATION OF THE MODULES IS IN COMPLIANCE WITH FBC:BUILDING CHAPTER 16 AND FRC:RESIDENTIAL CHAPTER 3. BUILDING STRUCTURE WILL SAFELY ACCOMMODATE CALCULATED WIND LATERAL AND UPLIFT FORCES, AND EQUIPMENT DEAD LOADS.





SYNERGY SOLLAR
8595 103RD ST,
32210 JACKSONVILLE,
FLORIDA, USA
CONTACT: 3609100892
EMAIL:ANDREI@SYNERGYSOLAR.US

Signature with Seal

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Exp:02/28/2025
STRUCTURAL ONLY

EDWIN GONZALEZ

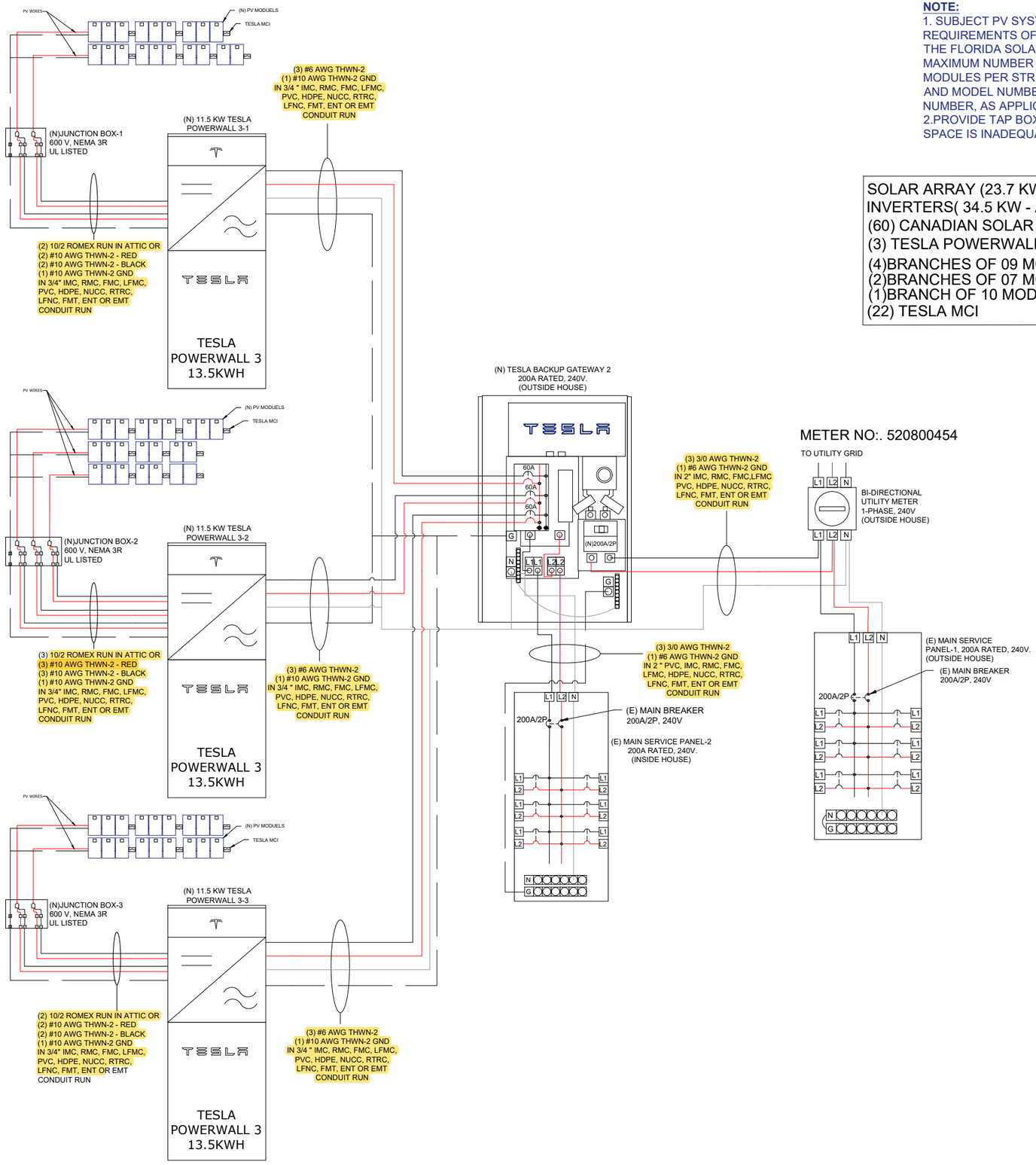
299 CYPRESS COVE DR,
LAKE CITY, FL 32055

REVISIONS			
REV	ENGG.	DESCRIPTION	DATE

PERMIT DEVELOPER	
DATE	06/03/2024
DESIGNER	OAC
REVIEWER	

SHEET NAME
STRUCTURAL ATTACHMENT DETAILS

SHEET NUMBER
PV-05



NOTE:

1. SUBJECT PV SYSTEMS HAS BEEN DESIGNED TO MEET THE REQUIREMENTS OF THE NEC 2020, NFPA 70 AND THOSE SET FORTH BY THE FLORIDA SOLAR ENERGY CENTER CERTIFICATION, INCLUDING MAXIMUM NUMBER OF MODULE STRINGS, MAXIMUM NUMBER OF MODULES PER STRING, MAXIMUM OUTPUT, MODULE MANUFACTURER AND MODEL NUMBER, INVERTER MANUFACTURER AND MODEL NUMBER, AS APPLICABLE.
2. PROVIDE TAP BOX IN COMPLIANCE WITH 312.8 IF PANEL GUTTER SPACE IS INADEQUATE.

SOLAR ARRAY (23.7 KW-DC STC)
INVERTERS(34.5 KW - AC RATING OF SYSTEM)
(60) CANADIAN SOLAR CS3N-395MS (395W) SOLAR MODULES
(3) TESLA POWERWALL 3 (13.5 KW INVERTERS)
(4)BRANCHES OF 09 MODULES
(2)BRANCHES OF 07 MODULES
(1)BRANCH OF 10 MODULES
(22) TESLA MCI

SYNERGY SOLLAR
8595 103RD ST,
32210 JACKSONVILLE,
FLORIDA, USA
CONTACT: 3609100892
EMAIL:ANDREI@SYNERGYSOLAR.US

Signature with Seal

EDWIN GONZALEZ

299 CYPRESS COVE DR,
LAKE CITY, FL 32055

REVISIONS	DESCRIPTION	DATE
REV	ENGG	

PERMIT DEVELOPER	
DATE	06/03/2024
DESIGNER	OAC
REVIEWER	

SHEET NAME
ELECTRICAL
LINE DIAGRAM

SHEET NUMBER
PV-06

ELECTRICAL CALCULATIONS:

1. CURRENT CARRYING CONDUCTOR

(A) BEFORE INVERTER-1, 2, 3
AMBIENT TEMPERATURE = 34°C
CONDUIT INSTALLED AT MINIMUM DISTANCE OF 7/8 INCHES ABOVE ROOF .....NEC 310.15(B)(2)
TEMPERATURE DERATE FACTOR - 0.96 ...NEC 310.15(B)(1)
GROUPING FACTOR - 0.8...NEC 310.15(C)(1)

CONDUCTOR AMPACITY
= (MODULE ISC) x 1.56 / A.T.F / G.F ...NEC 690.8(B)
= [(11.44x 1.56] / 0.96 / 0.8
= 23.24 A
SELECTED CONDUCTOR - #10 THWN-2 ...NEC 310.16

(B) AFTER INVERETR 1,2&3
TEMPERATURE DERATE FACTOR - 0.96
GROUPING FACTOR - 1

CONDUCTOR AMPACITY
=(TOTAL INV O/P CURRENT) x 1.25 / 0.96 / 1 ...NEC 690.8(B)
=[(48) x 1.25] /0.96 / 1
=62.5 A
SELECTED CONDUCTOR - #6 THWN-2 ...NEC 310.16

2. PV OVER CURRENT PROTECTION ..NEC 690.9(B)

=TOTAL INVERTER O/P CURRENT x 1.25
=(48) x 1.25 = 60 A
SELECTED OCPD = 60A

SELECTED EQUIPMENT GROUND CONDUCTOR (EGC) = #10 THWN-2 ... NEC 250.122

ELECTRICAL NOTES

1. ALL EQUIPMENT TO BE LISTED BY UL OR OTHER NRTL, AND LABELED FOR ITS APPLICATION.
2. ALL CONDUCTORS SHALL BE COPPER, RATED FOR 600 V AND 90 DEGREE C WET ENVIRONMENT.THE TERMINALS ARE RATED FOR 75 DEGREE C.
3. CONDUCTOR TERMINATION AND SPLICING AS PER NEC 110.14
4. WIRING, CONDUIT, AND RACEWAYS MOUNTED ON ROOFTOPS SHALL BE ROUTED DIRECTLY TO, AND LOCATED AS CLOSE AS POSSIBLE TO THE NEAREST RIDGE, HIP, OR VALLEY.
5. WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26.
6. DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS. CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS AND ACCESSORIES TO FULFILL APPLICABLE CODES AND STANDARDS.
7. WHERE SIZES OF JUNCTION BOXES, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY.
8. ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.
9. MODULE GROUNDING CLIPS TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER THE GROUNDING CLIP MANUFACTURER'S INSTRUCTION.
10. MODULE SUPPORT RAIL TO BE BONDED TO CONTINUOUS COPPER G.E.C. VIA WEEB LUG OR ILSCO GBL-4DBT LAY-IN LUG.
11. THE POLARITY OF THE GROUNDED CONDUCTORS IS NEGATIVE .
12. UTILITY HAS 24-HR UNRESTRICTED ACCESS TO ALL PHOTOVOLTAIC SYSTEM COMPONENTS LOCATED AT THE SERVICE ENTRANCE.
13. MODULES CONFORM TO AND ARE LISTED UNDER UL 1703.
14. RACKING CONFORMS TO AND IS LISTED UNDER UL 2703.
15. CONDUCTORS EXPOSED TO SUNLIGHT SHALL BE LISTED AS SUNLIGHT RESISTANT PER NEC ARTICLE 300.6 (C) (1) AND ARTICLE 310.10 (D).
16. CONDUCTORS EXPOSED TO WET LOCATIONS SHALL BE SUITABLE FOR USE IN WET LOCATIONS PER NEC ARTICLE 310.10 (C).

MODULE SPECIFICATION	
MODEL NO.	CANADIAN SOLAR CS3N-395MS (395W) SOLAR MODULES
PEAK POWER	395
RATED VOLTAGE (Vmpp)	37.0 V
RATED CURRENT (Impp)	10.68 A
OPEN CIRCUIT VOLTAGE (Voc)	44.3 V
SHORT CIRCUIT CURRENT (Isc)	11.44 A

INVERTER + BATTERY SPECIFICATIONS	
MANUFACTURER	TESLA INVERTER
MODEL NO.	11.5 KW TESLA POWERWALL 3
MAX DC INPUT VOLTAGE	600 V
MAX OUTPUT POWER	11.5 KW
NOMINAL AC OUTPUT VOLTAGE	240 V
NOMINAL AC OUTPUT CURRENT	48 A
NOMINAL BATTERY ENERGY	13.5 KWH

SYNERGY SOLLAR
8595 103RD ST,
32210 JACKSONVILLE,
FLORIDA, USA
CONTACT: 3609100892
EMAIL:ANDREI@SYNERGYSOLAR.US

Signature with Seal

EDWIN GONZALEZ

299 CYPRESS COVE DR,
LAKE CITY, FL 32055

REVISIONS	DESCRIPTION	DATE
REV	ENGG.	

PERMIT DEVELOPER	
DATE	06/03/2024
DESIGNER	OAC
REVIEWER	

SHEET NAME
WIRING CALCULATIONS

SHEET NUMBER
PV-07

⚠ WARNING

ELECTRIC SHOCK HAZARD

TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

LABEL LOCATION:
AC DISCONNECT, POINT OF INTERCONNECTION, COMBINER PANEL
(PER CODE: NEC 706.15(C)(4) and NEC 690.13(B))

SOLAR PV DC CIRCUIT

LABEL LOCATION:
CONDUIT RUNWAY
(PER CODE: NEC 690.31(O)(2))

PHOTOVOLTAIC POWER SOURCE

LABEL LOCATION:
CONDUIT RUNWAY
(PER CODE: NEC 690.31(D)(2))

⚠WARNING DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

LABEL LOCATION:
MAIN SERVICE DISCONNECT
(NEC 705.12(C) & NEC 690.59)

ADHESIVE FASTENED SIGNS:

PHOTOVOLTAIC SYSTEM AC DISCONNECT

RATED AC OPERATING CURRENT: 48.00
AC NOMINAL OPERATING VOLTAGE 240

LABEL LOCATION:
AC DISCONNECT, INVERTER
(PER CODE: NEC 690.54)

⚠ WARNING

POWER SOURCE OUTPUT CONNECTION. DO NOT RELOCATE THIS OVERCURRENT DEVICE.

LABEL LOCATION:
POINT OF INTERCONNECTION, MAIN SERVICE DISCONNECT
(PER CODE: NEC 705.12 (B)(3)(2))
[Not required if panelboard is rated not less than sum of ampere ratings of all overcurrent devices supplying it]

RATED AC OPERATING CURRENT
MAX RATED AC OPERATING CURRENT
RATED AC OPERATING VOLTAGE
MAX RATED AC OPERATING VOLTAGE
RATED SHORT CIRCUIT CURRENT
MAXIMUM SYSTEM VOLTAGE

LABEL LOCATION:
COMBINER PANEL, AC DISCONNECT
(PER CODE: NEC 690.52)

PHOTOVOLTAIC SYSTEM EQUIPPED WITH RAPID SHUTDOWN

LABEL LOCATION:
AC DISCONNECT, DC DISCONNECT, POINT OF INTERCONNECTION
(PER CODE: NEC 690.56(C)(3))

⚠ WARNING

INVERTER OUTPUT CONNECTION DO NOT RELOCATE THIS OVERCURRENT DEVICE

EMERGENCY CONTACT
662-765-2486

LABEL LOCATION : BATTERY

⚠CAUTION

TRI POWER SOURCES

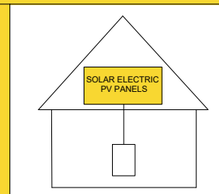
SECOND SOURCE IS PV SYSTEM
THIRD SOURCE IS AC BATTERY

⚠ WARNING

DEDICATED SOLAR PANELS DO NOT CONNECT ANY OTHER LOADS

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUTDOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY



IFC 605.11.3.1(1) & 690.56(C)

SYNERGY SOLLAR
8595 103RD ST,
32210 JACKSONVILLE,
FLORIDA, USA
CONTACT: 3609100892
EMAIL:ANDREI@SYNERGYSOLAR.US

Signature with Seal

EDWIN GONZALEZ

299 CYPRESS COVE DR,
LAKE CITY, FL 32055

REVISIONS	DESCRIPTION	DATE
REV	ENGG.	

PERMIT DEVELOPER	
DATE	06/03/2024
DESIGNER	OAC
REVIEWER	

SHEET NAME
SYSTEM LABELING

SHEET NUMBER
PV-08

NEW

CanadianSolar

HiKuBlack Mono PERC

BLACK FRAME ON BLACK BACKSHEET

F23 Frame

380 W ~ 405 W

CS3N-380|385|390|395|400|405MS

MORE POWER

405 W — Module power up to 405 W
Module efficiency up to 19.9 %

Lower LCOE & BOS cost

Comprehensive LID / LeTID mitigation technology, up to 50% lower degradation

Better shading tolerance

MORE RELIABLE

Minimizes micro-crack impacts

Heavy snow load up to 8100 Pa, enhanced wind load up to 6000 Pa*

25 Years — **Industry Leading Product Warranty on Materials and Workmanship***

25 Years — **Linear Power Performance Warranty***

1st year power degradation no more than 2%
Subsequent annual power degradation no more than 0.55%

*Subject to the terms and conditions contained in the applicable Canadian Solar Limited Warranty Statement. Also this 25-year limited product warranty is available only for products installed and operating on residential rooftops in certain regions.

MANAGEMENT SYSTEM CERTIFICATES*

ISO 9001: 2015 / Quality management system
ISO 14001: 2015 / Standards for environmental management system
ISO 45001: 2018 / International standards for occupational health & safety

PRODUCT CERTIFICATES*

IEC 61215 / IEC 61730 / CE
FSEC (US Florida) / UL 61730 / IEC 61701 / IEC 62716

* The specific certificates applicable to different module types and markets will vary, and therefore not all of the certifications listed herein will simultaneously apply to the products you order or use. Please contact your local Canadian Solar sales representative to confirm the specific certificates available for your Product and applicable in the regions in which the products will be used.

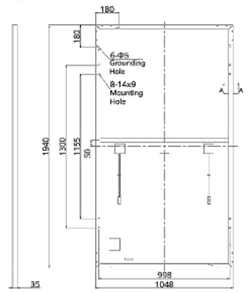
CSI SOLAR (USA) CO., LTD. is committed to providing high quality solar photovoltaic modules, solar energy and battery storage solutions to customers. The company was recognized as the No. 1 module supplier for quality and performance/price ratio in the IHS Module Customer Insight Survey. Over the past 20 years, it has successfully delivered over 63 GW of premium-quality solar modules across the world.

* For detailed information, please refer to Installation Manual.

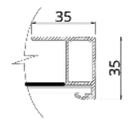
CSI SOLAR (USA) CO., LTD.
1350 Treat Blvd. Suite 500, Walnut Creek, CA 94598, USA | www.csisolar.com/na | service.ca@csisolar.com

ENGINEERING DRAWING (mm)

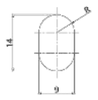
Rear View



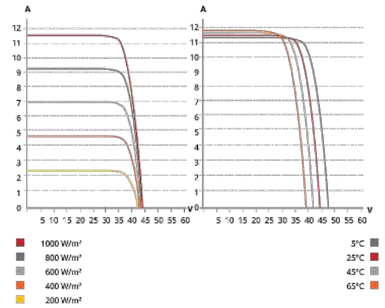
Frame Cross Section A - A



Mounting Hole



CS3N-400MS / I-V CURVES



ELECTRICAL DATA | STC*

CS3N	380MS	385MS	390MS	395MS	400MS	405MS
Nominal Max. Power (Pmax)	380 W	385 W	390 W	395 W	400 W	405 W
Opt. Operating Voltage (Vmp)	36.4 V	36.6 V	36.8 V	37.0 V	37.2 V	37.4 V
Opt. Operating Current (Imp)	10.44 A	10.52 A	10.60 A	10.68 A	10.76 A	10.83 A
Open Circuit Voltage (Voc)	43.7 V	43.9 V	44.1 V	44.3 V	44.5 V	44.7 V
Short Circuit Current (Isc)	11.26 A	11.32 A	11.38 A	11.44 A	11.50 A	11.56 A
Module Efficiency	18.7%	18.9%	19.2%	19.4%	19.7%	19.9%
Operating Temperature	-40°C ~ +85°C					
Max. System Voltage	1000V (UL)					
Module Fire Performance	TYPE 2 (UL 61730 1000V)					
Max. Series Fuse Rating	20 A					
Application Classification	Class A					
Power Tolerance	0 ~ + 10 W					

* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C.

ELECTRICAL DATA | NMOT*

CS3N	380MS	385MS	390MS	395MS	400MS	405MS
Nominal Max. Power (Pmax)	284 W	288 W	291 W	295 W	299 W	303 W
Opt. Operating Voltage (Vmp)	34.0 V	34.2 V	34.4 V	34.6 V	34.7 V	34.9 V
Opt. Operating Current (Imp)	8.35 A	8.42 A	8.48 A	8.54 A	8.60 A	8.66 A
Open Circuit Voltage (Voc)	41.2 V	41.4 V	41.6 V	41.8 V	41.9 V	42.1 V
Short Circuit Current (Isc)	9.08 A	9.13 A	9.18 A	9.23 A	9.28 A	9.33 A

* Under Nominal Module Operating Temperature (NMOT), irradiance of 800 W/m² spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s.

MECHANICAL DATA

Specification	Data
Cell Type	Mono-crystalline
Cell Arrangement	132 [2 X (11 X 6)]
Dimensions	1940 X 1048 X 35 mm (76.4 X 41.3 X 1.38 in)
Weight	23.4 kg (51.6 lbs)
Front Cover	3.2 mm tempered glass
Frame	Anodized aluminium alloy
J-Box	IP68, 3 bypass diodes
Cable	12 AWG (UL)
Cable Length (Including Connector)	Portrait: 400 mm (15.7 in) (+) / 280 mm (11.0 in) (-) (supply additional cable jumper: 2 lines/pallet); landscape: 1250 mm (49.2 in)*
Connector	T4 or MC4 series
Per Pallet	30 pieces
Per Container (40' HQ)	720 pieces

* For detailed information, please contact your local Canadian Solar sales and technical representatives.

TEMPERATURE CHARACTERISTICS

Specification	Data
Temperature Coefficient (Pmax)	-0.34 % / °C
Temperature Coefficient (Voc)	-0.26 % / °C
Temperature Coefficient (Isc)	0.05 % / °C
Nominal Module Operating Temperature	42 ± 3°C

PARTNER SECTION

* The specifications and key features contained in this datasheet may deviate slightly from our actual products due to the on-going innovation and product enhancement. CSI Solar Co., Ltd. reserves the right to make necessary adjustment to the information described herein at any time without further notice. Please be kindly advised that PV modules should be handled and installed by qualified people who have professional skills and please carefully read the safety and installation instructions before using our PV modules.

SYNERGY SOLLAR
8595 103RD ST,
32210 JACKSONVILLE,
FLORIDA, USA
CONTACT: 3609100892
EMAIL:ANDREI@SYNERGYSOLAR.US

Signature with Seal

EDWIN GONZALEZ

299 CYPRESS COVE DR,
LAKE CITY, FL 32055

REVISIONS

REV	ENGG.	DESCRIPTION	DATE

PERMIT DEVELOPER	
DATE	06/03/2024
DESIGNER	OAC
REVIEWER	

SHEET NAME
MODULE DATASHEET

SHEET NUMBER
PV-09

Powerwall 3

Power Everything

Powerwall 3 is a fully integrated solar and battery system, designed to accelerate the transition to sustainable energy. Customers can receive whole home backup, cost savings, and energy independence by producing and consuming their own energy while participating in grid services. Once installed, customers can manage their system using the Tesla App to customize system behavior to meet their energy goals.

Powerwall 3 achieves this by supporting up to 20 kW DC of solar and providing 11.5 kW AC of continuous power per unit. It has the ability to start heavy loads up to 185 A LRA, meaning a single unit can support the power needs of most homes. Powerwall 3 is designed for mass production, fast and efficient installations, easy system expansion, and simple connection to any electrical service.

Powerwall 3 Technical Specifications

System Technical Specifications	**Model Number**	1707000-xx-y
	Nominal Grid Voltage (Input & Output)	120/240 VAC
	Grid Type	Split phase
	Frequency	60 Hz
	Overcurrent Protection Device	Configurable up to 60 A
	Solar to Battery to Home/Grid Efficiency	89% [1,2]
	Solar to Home/Grid Efficiency	97.5% [3]
	Supported Islanding Devices	Backup Gateway 2, Backup Switch
	Connectivity	Wi-Fi (2.4 and 5 GHz), Dual-port switched Ethernet, Cellular (LTE/4G [4])
	Hardware Interface	Dry contact relay, Rapid Shutdown (RSD) certified switch and 2-pin connector, RS-485 for meters
	AC Metering	Revenue Grade (+/- 0.5%)
	Protections	Integrated arc fault circuit interrupter (AFCI), Isolation Monitor Interrupter (IMI), PV Rapid Shutdown (RSD) using Tesla Mid-Circuit Interrupters
	Customer Interface	Tesla Mobile App
	Warranty	10 years
Solar Technical Specifications	**Maximum Solar STC Input**	20 kW
	Withstand Voltage	600 V DC
	PV DC Input Voltage Range	60 — 550 V DC
	PV DC MPPT Voltage Range	150 — 480 V DC
	MPPTs	6
	Maximum Current per MPPT (I_{mp})	13 A [2]
	Maximum Short Circuit Current per MPPT (I_{sc})	15 A [2]
Battery Technical Specifications	**Nominal Battery Energy**	13.5 kWh AC [2]
	Maximum Continuous Discharge Power	11.5 kW AC
	Maximum Continuous Charge Power	5 kW AC
	Output Power Factor Rating	0 - 1 (Grid Code configurable)
	Maximum Continuous Current	48 A
	Maximum Output Fault Current	10 kA
	Load Start Capability (1 s)	185 A LRA
	Power Scalability	Up to 4 Powerwall 3 units supported

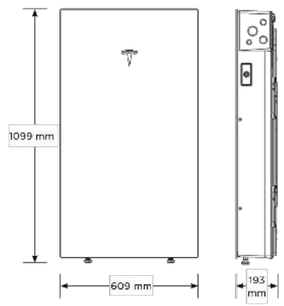
[1] Typical solar shifting use case.
[2] Values provided for 25°C (77°F), at beginning of life. 3.3 kW charge/discharge power.
[3] Tested using CEC weighted efficiency methodology.
[4] Cellular connectivity subject to network service coverage and signal strength.
[5] Where the DC input current exceeds the MPPT rating, a jumper can be used to combine two MPPTs into a single input to intake DC current up to 26 A I_{mp} / 30 A I_{sc}.

Powerwall 3 Technical Specifications

Environmental Specifications	**Operating Temperature**	-20°C to 50°C (-4°F to 122°F) [6]
	Operating Humidity (RH)	Up to 100%, condensing
	Storage Temperature	-20°C to 30°C (-4°F to 86°F), up to 95% RH, non-condensing, State of Energy (SOE): 25% initial
	Maximum Elevation	3000 m (9843 ft)
	Environment	Indoor and outdoor rated
	Enclosure Rating	NEMA 3R
	Ingress Rating	IPX7 (Battery & Power Electronics) IPX5 (Wiring Compartment)
	Pollution Rating	PD3
	Operating Noise @ 1 m	<50 db(A) typical <62 db(A) maximum

[6] Performance may be de-rated at operating temperatures above 40°C (104°F).

Compliance Information	**Certifications**	UL 1642, UL 1699B, UL 1741, UL 1741 SA, UL 1741 SB, UL 3741, UL 1973, UL 1998, UL 9540, IEEE 1547-2018, IEEE 1547.1, UN 38.3
	Grid Connection	United States
	Emissions	FCC Part 15 Class B
	Environmental	RoHS Directive 2011/65/EU
	Seismic	AC156, IEEE 693-2005 (high)
	Fire Testing	Meets the unit level performance criteria of UL 9540A
Mechanical Specifications	**Dimensions**	1099 x 609 x 193 mm (43.25 x 24 x 7.6 in)
	Weight	130 kg (287 lb)
	Mounting Options	Floor or wall mount



SYNERGY SOLLAR
8595 103RD ST,
32210 JACKSONVILLE,
FLORIDA, USA
CONTACT: 3609100892
EMAIL:ANDREI@SYNERGYSOLAR.US

Signature with Seal

EDWIN GONZALEZ

299 CYPRESS COVE DR,
LAKE CITY, FL 32055

REVISIONS	DESCRIPTION	DATE
REV	ENGG.	

PERMIT DEVELOPER	
DATE	06/03/2024
DESIGNER	OAC
REVIEWER	

SHEET NAME
INVERTER DATASHEET

SHEET NUMBER
PV-10

POWERWALL

Backup Gateway 2

The Backup Gateway 2 for Tesla Powerwall provides energy management and monitoring for solar self-consumption, time-based control, and backup.

The Backup Gateway 2 controls connection to the grid, automatically detecting outages and providing a seamless transition to backup power. When equipped with a main circuit breaker, the Backup Gateway 2 can be installed at the service entrance. When the optional internal panelboard is installed, the Backup Gateway 2 can also function as a load center.

The Backup Gateway 2 communicates directly with Powerwall, allowing you to monitor energy use and manage backup energy reserves from any mobile device with the Tesla app.

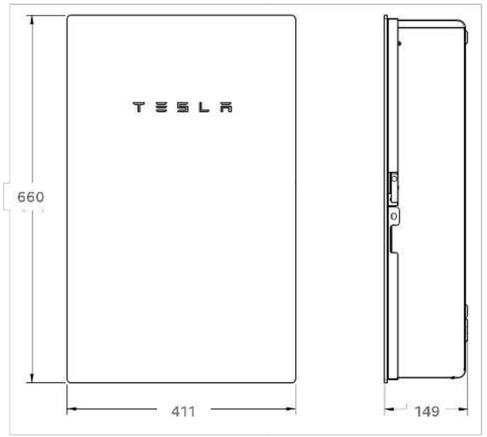
PERFORMANCE SPECIFICATIONS

AC Voltage (Nominal)	120/240V
Feed-in Type	Split Phase
Grid Frequency	60 Hz
Current Rating	200 A
Maximum Input Short Circuit Current	10 kA[1]
Overcurrent Protection Device	100-200A; Service Entrance Rated[1]
Overvoltage Category	Category IV
AC Meter	Revenue accurate (+/- 0.2 %)
Primary Connectivity	Ethernet, Wi-Fi
Secondary Connectivity	Cellular (3G, LTE/4G)[2]
User Interface	Tesla App
Operating Modes	Support for solar self-consumption, time-based control, and backup
Backup Transition	Automatic disconnect for seamless backup
Modularity	Supports up to 10 AC-coupled Powerwalls
Optional Internal Panelboard	200A 6-space / 12 circuit Eaton BR Circuit Breakers
Warranty	10 years

[1] When protected by Class J fuses, Backup Gateway 2 is suitable for use in circuits capable of delivering not more than 22kA symmetrical amperes.
[2] The customer is expected to provide internet connectivity for Backup Gateway 2; cellular should not be used as the primary mode of connectivity. Cellular connectivity subject to network operator service coverage and signal strength.

MECHANICAL SPECIFICATIONS

Dimensions	660 mm x 411 mm x 149 mm (26 in x 16 in x 6 in)
Weight	20.4 kg (45 lb)
Mounting options	Wall mount, Semi-flush mount



COMPLIANCE INFORMATION

Certifications	UL 67, UL 869A, UL 916, UL 1741 PCS CSA 22.2 0.19, CSA 22.2 205
Emissions	FCC Part 15, ICES 003

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-20ºC to 50ºC (-4ºF to 122ºF)
Operating Humidity (RH)	Up to 100%, condensing
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Type	NEMA 3R

SYNERGY SOLLAR
8595 103RD ST,
32210 JACKSONVILLE,
FLORIDA, USA
CONTACT: 3609100892
EMAIL:ANDREI@SYNERGYSOLAR.US

Signature with Seal

EDWIN GONZALEZ

299 CYPRESS COVE DR,
LAKE CITY, FL 32055

REVISIONS	DATE	DESCRIPTION	ENGG.	REV

PERMIT DEVELOPER	
DATE	06/03/2024
DESIGNER	OAC
REVIEWER	

SHEET NAME
GATEWAY DATASHEET

SHEET NUMBER
PV-11

Solar Shutdown Device Technical Specifications

The Solar Shutdown Device is a Mid-Circuit Interrupter (MCI) and is part of the PV system rapid shutdown (RSD) function in accordance with Article 690 of the applicable NEC. When paired with Powerwall 3, solar array shutdown is initiated by any loss of AC power.

Electrical Specifications

Model	MCI-1	MCI-2
Nominal Input DC Current Rating (I_{MP})	12 A	13 A
Maximum Input Short Circuit Current (I_{SC})	19 A	17 A
Maximum System Voltage (PVHCS)	600 V DC	1000 V DC [7]

[7] Maximum System Voltage is limited by Powerwall to 600 V DC.

RSD Module Performance

Maximum Number of Devices per String	5	5
Control	Power Line Excitation	Power Line Excitation
Passive State	Normally Open	Normally Open
Maximum Power Consumption	7 W	7 W
Warranty	25 years	25 years

Environmental Specifications

Operating Temperature	-40°C to 50°C (-40°F to 122°F)	-45°C to 70°C (-49°F to 158°F)
Storage Temperature	-30°C to 70°C (-22°F to 158°F)	-30°C to 70°C (-22°F to 158°F)
Enclosure Rating	NEMA 4X / IP65	NEMA 4X / IP65

Mechanical Specifications

Electrical Connections	MC4 Connector	MC4 Connector
Housing	Plastic	Plastic
Dimensions	125 x 150 x 22 mm (5 x 6 x 1 in)	173 x 45 x 22 mm (6.8 x 1.8 x 1 in)
Weight	350 g (0.77 lb)	120 g (0.26 lb)
Mounting Options	ZEP Home Run Clip M4 Screw (#10) M8 Bolt (5/16") Nail / Wood screw	Wire Clip

Compliance Information

Certifications	UL 1741 PVRSE, UL 3741, PVRSA (Photovoltaic Rapid Shutdown Array)
RSD Initiation Method	External System Shutdown Switch or Powerwall 3 Enable Switch

UL 3741 PV Hazard Control (and PVRSA) Compatibility

The following categories of solar module meet the UL 3741 PVHCS listing when installed with Powerwall 3 and Solar Shutdown Devices.

Tesla Solar Roof	PV Hazard Control System: BIPV compliance document
Tesla or Hanwha (Q.Peak Duo BLK or BLK-G6+) Modules certified for use with ZEP racking	PV Hazard Control System: ZS PVHCS compliance document
Other module and racking combinations	PV Hazard Control System: Generic PV Array compliance document

SYNERGY SOLLAR
8595 103RD ST,
32210 JACKSONVILLE,
FLORIDA, USA
CONTACT: 3609100892
EMAIL:ANDREI@SYNERGYSOLAR.US

Signature with Seal

EDWIN GONZALEZ

299 CYPRESS COVE DR,
LAKE CITY, FL 32055

REVISIONS	DESCRIPTION	DATE
REV		
ENGG.		

PERMIT DEVELOPER	
DATE	06/03/2024
DESIGNER	OAC
REVIEWER	

SHEET NAME
TESLA MCI DATASHEET

SHEET NUMBER
PV-12