15 MODULES-ROOF MOUNTED - 6.000 KW DC, 4.350 KW AC 833 NORTHWEST WILSON STREET, LAKE CITY, FL 32055

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SUNERGY SOLAR LLC

7625 LITTLE RD. SUITE 200A, NEW PORT RICHEY, FL 34654

REVISIONS		
DESCRIPTION	DATE	REV
INITIAL DESIGN	07/12/2023	



FL Lic. No. 73222

PROJECT NAME & ADDRESS

833 NORTHWEST WILSON STREET, LAKE CITY, FL 32055

DRAWN BY **ESR**

SHEET NAME

COVER SHEET

SHEET SIZE **ANSI B**

11" X 17" SHEET NUMBER

G001

PROJECT DATA

PROJECT 833 NORTHWEST WILSON

ADDRESS

LAKE CITY, FL 32055

OWNER: JEROME LÓVE

DESIGNER: ESR

SCOPE: 6.000 KW DC ROOF MOUNT

SOLAR PV SYSTEM WITH

15 HYUNDAI SOLAR HiS-S400YH(BK)

400W PV MODULES WITH 15 ENPHASE IQ8PLUS-72-2-US

MICROINVERTERS

AUTHORITIES HAVING JURISDICTION:

BUILDING: COLUMBIA COUNTY ZONING: COLUMBIA COUNTY

UTILITY: FPL

SHEET INDEX

G001 **COVER SHEET** E001

S001 **ROOF PLAN AND MODULES**

STRUCTURAL DETAIL S002

E003 **ELECTRICAL LINE DIAGRAM**

E005 LABELS

PD001+ **EQUIPMENT SPECIFICATIONS** **GENERAL NOTES**

- THE SOLAR PV SYSTEM WILL BE INSTALLED IN ACCORDANCE WITH ARTICLE 690 OF THE NEC 2017
- THE UTILITY INTERCONNECTION APPLICATION MUST BE APPROVED AND PV SYSTEM INSPECTED PRIOR TO PARALLEL
- ALL CONDUCTORS OF A CIRCUIT, INCLUDING THE EGC, MUST BE INSTALLED IN THE SAME RACEWAY, OR CABLE, OR OTHERWISE RUN WITH THE PV ARRAY CIRCUIT CONDUCTORS WHEN THEY LEAVE THE VICINITY OF THE PV ARRAY.
- WHERE METALLIC CONDUIT CONTAINING DC CONDUCTORS IS USED INSIDE THE BUILDING. IT SHALL BE IDENTIFIED AS "CAUTION: SOLAR CIRCUIT" EVERY 10FT.
- HEIGHT OF THE AC DISCONNECT SHALL NOT EXCEED 6'-7" PER NEC CODE 240.24.

1. ALL COMPONENTS ARE UL LISTED AND NEC CERTIFIED, WHERE WARRANTED

- A GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH NEC 690.47 AND 250.50 THROUGH 60 AND 250-166 SHALL BE PROVIDED. PER NEC GROUNDING ELECTRODE SYSTEM OF EXISTING BUILDING MAY BE USED AND BONDED TO THE SERVICE ENTRANCE. IF EXISTING SYSTEM IS INACCESSIBLE OR INADEQUATE A SUPPLEMENTAL GROUNDING ELECTRODE WILL BE USED AT THE INVERTER LOCATION CONSISTING OF A UL LISTED 8 FT. GROUND ROD WITH ACORN CLAMP. GROUNDING ELECTRODE CONDUCTORS SHALL BE NO LESS THAN #8 AWG AND NO LARGER THAN #6 AWG COPPER AND BONDED TO THE EXISTING GROUNDING ELECTRODE TO PROVIDE FOR A COMPLETE SYSTEM.
- PHOTOVOLTAIC MODULES ARE TO BE CONSIDERED NON-COMBUSTIBLE
- PHOTOVOLTAIC INSTALLATION WILL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS.
- 10. ALL WIRING MUST BE PROPERLY SUPPORTED BY DEVICES OR MECHANICAL MEANS DESIGNED AND LISTED FOR SUCH USE. WIRING MUST BE PERMANENTLY AND COMPLETELY HELD OFF THE ROOF SURFACE.
- ALL SIGNAGE TO BE PLACED IN ACCORDANCE WITH THE LOCAL BUILDING CODE. IF EXPOSED TO SUNLIGHT, IT SHALL BE UV RESISTANT, ALL PLAQUES AND SIGNAGE WILL BE INSTALLED AS REQUIRED BY THE NEC AND AHJ.
- 12. INVERTER(S) USED IN UNGROUNDED SYSTEM SHALL BE UL 1741 LISTED.
- 13. THE INSTALLATION OF EQUIPMENT AND ALL ASSOCIATED WIRING AND INTERCONNECTION SHALL BE PERFORMED ONLY BY QUALIFIED PERSONS [NEC 690.4(C)]
- 14. ALL OUTDOOR EQUIPMENT SHALL BE NEMA 3R RATED (OR BETTER), INCLUDING ALL ROOF MOUNTED TRANSITION BOXES AND
- 15. ALL EQUIPMENT SHALL BE PROPERLY GROUNDED AND BONDED IN ACCORDANCE WITH NEC ARTICLE 250.
- 16. SYSTEM GROUNDING SHALL BE IN ACCORDANCE WITH NEC 690.41
- 17. PV SYSTEM CIRCUITS INSTALLED ON OR IN BUILDINGS SHALL INCLUDE A RAPID SHUTDOWN FUNCTION IN ACCORDANCE WITH NEC 690.12
- 18. DISCONNECTING MEANS SHALL BE LOCATED IN A VISIBLE, READILY ACCESSIBLE LOCATION WITHIN THE PV SYSTEM EQUIPMENT OR A MAXIMUM OF 10 FEET AWAY FROM THE SYSTEM [NEC 690.13(A)]
- 19. ALL WIRING METHODS SHALL BE IN ACCORDANCE WITH NEC 690.31
- 20. WORK CLEARANCES AROUND ELECTRICAL EQUIPMENT WILL BE MAINTAINED PER NEC 110.26(A)(1), 110.26(A)(2) AND 110.26(A)(3)
- 21. ROOFTOP MOUNTED PHOTOVOLTAIC PANELS AND MODULES SHALL BE TESTED, LISTED & IDENTIFIED IN ACCORDANCE WITH
- 22. ELECTRICAL CONTRACTOR TO PROVIDE CONDUIT EXPANSION JOINTS AND ANCHOR CONDUIT RUNS AS REQUIRED PER NEC.
- 23. IN ACCORDANCE WITH 2021 IFC 1205.5, 2018 IFC 1204.4, AND 2015 IFC 605.11.2 A CLEAR, BRUSH-FREE AREA OF 10 FEET(3048 MM) SHALL BE REQUIRED FOR GROUND-MOUNTED PHOTOVOLTAIC ARRAYS.
- 24. PANEL LAYOUT ORIENTATION IS SUBJECT TO CHANGE ON DESIGNED MOUNTING PLANES.

SITE PLAN

E002 **ELECTRICAL PLAN**

E004 WIRING CALCULATIONS

E006 **PLACARD**

SIGNATURE



HOUSE PHOTO

VICINITY MAP

Points

833 NW Wilson St, Lake City, FL 32055,

United States

10

CODE REFERENCES

PROJECT TO COMPLY WITH THE FOLLOWING:

FLORIDA RESIDENTIAL CODE, 7TH EDITION 2020 (FRC) FLORIDA PLUMBING CODE, 7TH EDITION 2020 (FPC) FLORIDA BUILDING CODE, 7TH EDITION 2020 EDITION (FBC) FLORIDA MECHANICAL CODE, 7TH EDITION 2020 (FMC) 2017 NATIONAL ELECTRICAL CODE FLORIDA FIRE PREVENTION CODE, 7TH EDITION 2020

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DATE	REV	
07/12/2023		
	DATE	



FL Lic. No. 73222

PROJECT NAME & ADDRESS

JEROME LOVE RESIDENCE

833 NORTHWEST WILSON STREET, LAKE CITY, FL 32055

DRAWN BY **ESR**

SHEET NAME

SITE PLAN

SHEET SIZE ANSI B

11" X 17"

SHEET NUMBER

E001

SITE PLAN SCALE: 1/16" = 1'-0" E001

MODULE TYPE, DIMENSIONS & WEIGHT

NUMBER OF MODULES = 15 MODULES MODULE TYPE = HYUNDAI SOLAR HIS-S400YH(BK) 400W MONO MODULES MODULE WEIGHT = 46.51 LBS / 21.1KG. MODULE DIMENSIONS = 75.74" x 40.86" = 21.49 SF



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	the sea Grimer croies of instruction in a factor of the season of the se				
ROOF TYPE	ROOF TYPE ASPHALT SHINGLE				
ROOF	# OF MODULES	ROOF PITCH	AZIMUTH	TRUSS SIZE	TRUSS SPACING
#1	12	16°	184°	2"X4"	24"
#2	3	16°	274°	2"X4"	24"

ARRAY AREA & ROOF AREA CALC'S			
TOTAL PV ARRAY AREA (SQ. FT.)	TOTAL ROOF AREA (Sq. Ft.)	ROOF AREA COVERED BY ARRAY (%)	
322.35	1587.42	20	



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SHEET NAME

ROOF PLAN AND MODULES

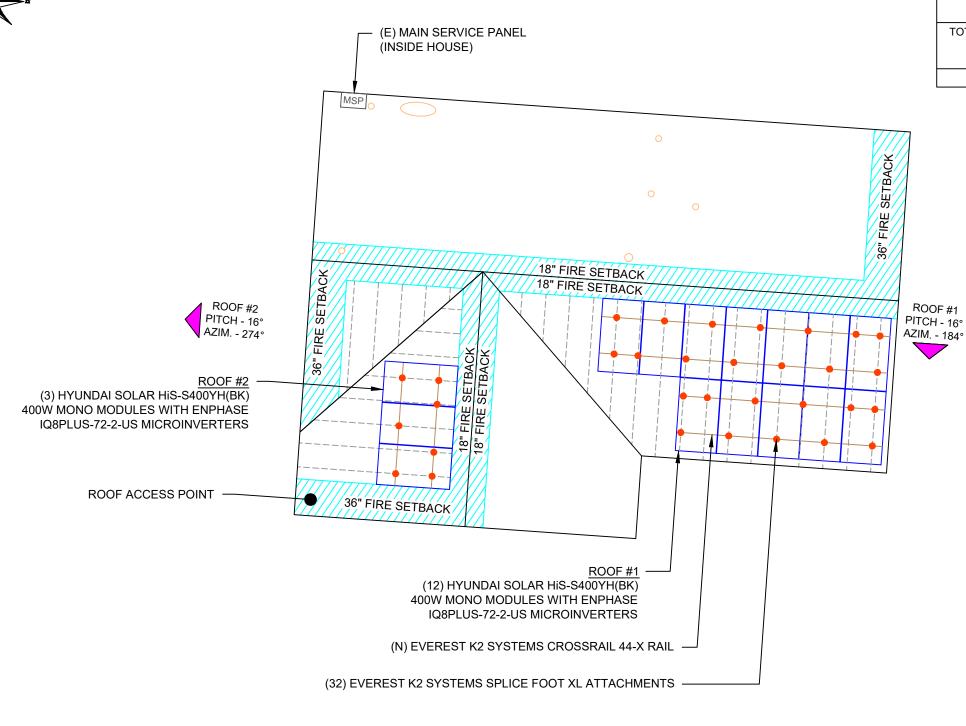
SHEET SIZE

ANSI B 11" X 17"

SHEET NUMBER S001

(ROOF OBSTRUCTION) - ROOF ATTACHMENT - MAIN SERVICE PANEL - - TRUSS

- VENT, ATTIC FAN



40.86" 75.

HYUNDAI SOLAR HiS-S400YH(BK) 400W MODULES

LEGEND

ROOF PLAN AND MODULES

S001

SCALE: 1/8" = 1'-0"

CIRCUIT #1 CIRCUIT #2 NOTE MINIM **ABOV**



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TE : CONDUIT INSTALLED AT IIMUM DISTANCE OF 7/8 INCHES		BILL	The seal. Printed copies of this document are not considered signed and sealed OF MATE supplemental by the sealed on any electronic copies.
OVE ROOF	EQUIPMENT	QTY	DESCRIPTION
OVE NOO!	SOLAR PV MODULES	15	HYUNDAI SOLAR HIS-S400YH(BK) 400W MODULE
	MICRO INVERTERS	15	ENPHASE IQ8PLUS-72-2-US MICROINVERTERS
	SOLADECK	1	SOLADECK
	RAIL	8	EVEREST K2 SYSTEMS CROSSRAIL 44-X RAIL
	SPLICES	4	SPLICES
(N) VISIBLE, LOCKABLE,	MID MODULE CLAMPS	24	MID MODULE CLAMPS
(N) VISIBLE, LOCKABLE,	END CLAMPS	12	END CLAMPS / STOPPER SLEEVE

EVEREST K2 SYSTEMS SPLICE FOOT XL ATTACHMENTS

07/12/2023 INITIAL DESIGN

REVISIONS

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SUNERGY SOLAR LLC 7625 LITTLE RD. SUITE 200A, NEW PORT RICHEY, FL 34654



FL Lic. No. 73222 7/13/2023

PROJECT NAME & ADDRESS

JEROME LOVE RESIDENCE

833 NORTHWEST WILSON STREET, LAKE CITY, FL 32055

DRAWN BY **ESR**

SHEET NAME

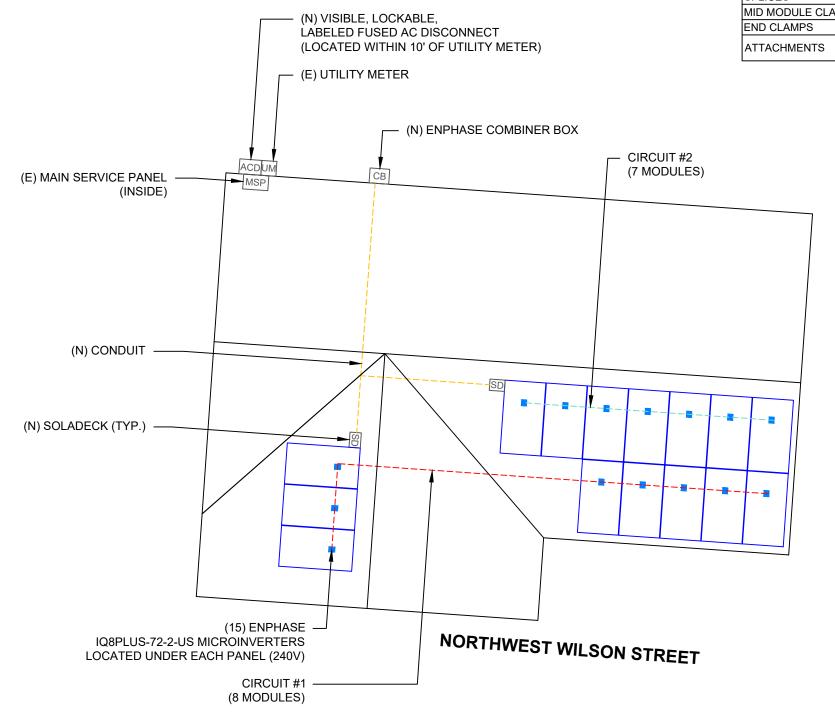
ELECTRICAL PLAN

SHEET SIZE

ANSI B 11" X 17"

SHEET NUMBER

E002



LEGEND

ACD

UM

MSP

- COMBINER BOX

- AC DISCONNECT

- UTILITY METER - MAIN SERVICE PANEL

- TRUSS - CONDUIT

SD - SOLADECK

- VENT, ATTIC FAN

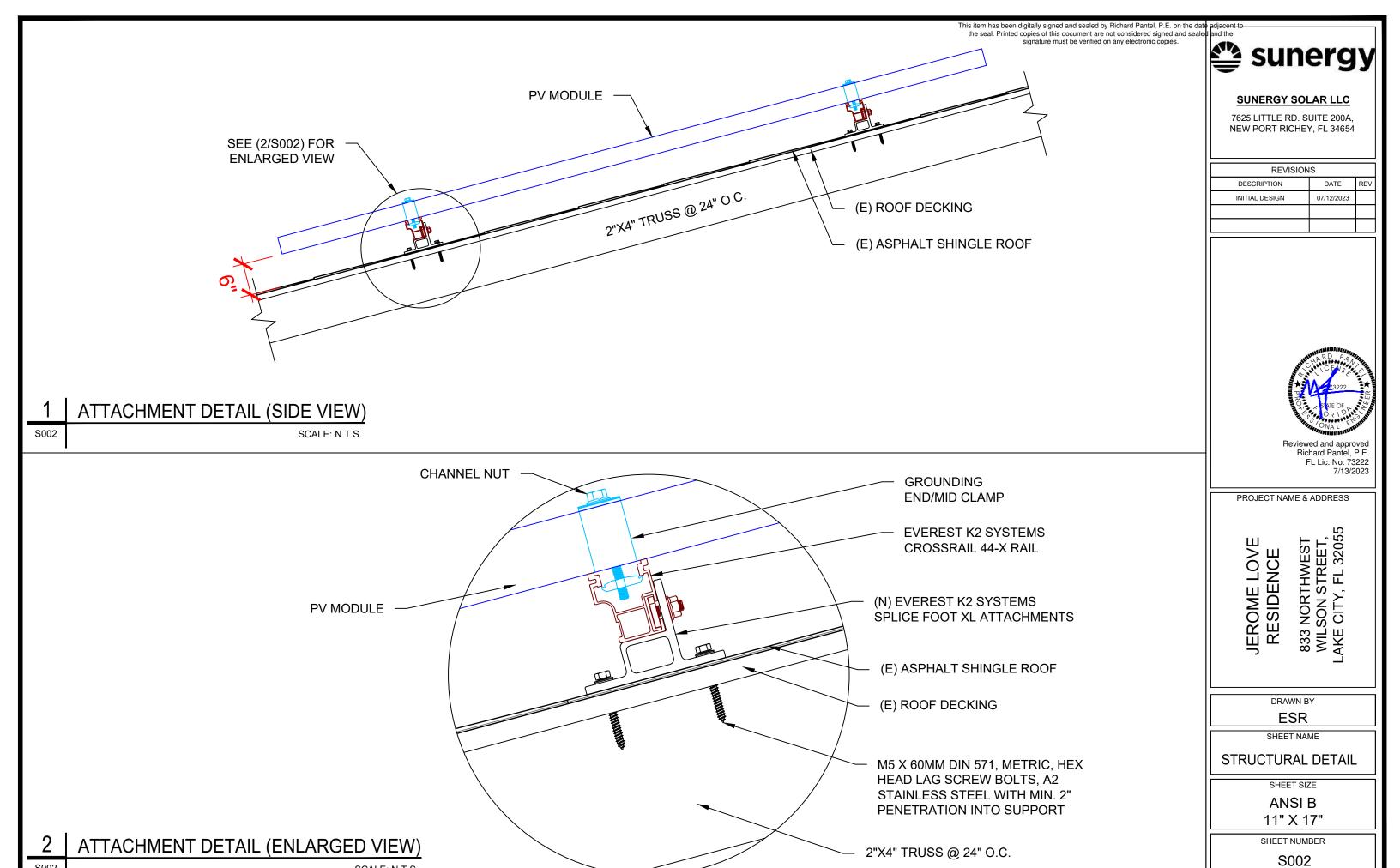
(ROOF OBSTRUCTION)

- ROOF ATTACHMENT

ELECTRICAL PLAN

E002

SCALE: 1/8" = 1'-0"



S002

SCALE: N.T.S.

15) HYUNDAI SOLAR HIS-S400YH(BK) 400W MONO MODULES WITH (15) ENPHASE IQ8PLUS-72-2-US MICROINVERTERS LOCATED UNDER EACH PANEL (240V)

__

BRANCH

TERMINATOR

E003

(ET-TERM)

- 1) BRANCH CIRCUIT OF 08 MODULES AND
- (1) BRANCH CIRCUIT OF 07 MODULES ARE CONNECTED IN PARALLEL

(15) HYUNDAI SOLAR HIS-S400YH(BK)

BRANCH #1

BRANCH #2

ENPHASE IQ8PLUS-72-2-US

LOCATED UNDER EACH PANEL (240V)

MICROINVERTERS

0 0 0

400W MODULES

=

INTERCONNECTION NOTES:

- 1. INTERCONNECTION SIZING, LIMITATIONS AND COMPLIANCE DETERMINED IN ACCORDANCE WITH [NEC 705.12], AND [NEC 690.59]. 2. GROUND FAULT PROTECTION IN ACCORDANCE WITH [NEC 215.9],
- 3. ALL EQUIPMENT TO BE RATED FOR BACKFEEDING.
- 4. PV BREAKER TO BE POSITIONED AT THE OPPOSITE END OF THE BUSBAR RELATIVE TO THE MAIN BREAKER.

DISCONNECT NOTES:

1. DISCONNECTING SWITCHES SHALL BE WIRED SUCH THAT WHEN THE SWITCH IS OPENED THE CONDUCTORS REMAINING LIVE ARE CONNECTED TO THE TERMINALS MARKED "LINE SIDE" (TYPICALLY THE UPPER TERMINALS)

2. AC DISCONNECT MUST BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH 3. DISCONNECT MEANS AND THEIR LOCATION SHALL BE IN ACCORDANCE WITH [NEC 225.31] AND [NEC 225.32].

RACKING NOTE:

BOND EVERY OTHER RAIL WITH #6 BARE COPPER

ENPHASE IQ COMBINER X-IQ-AM1-240-4/4C 120/240VAC,

1¢, 3W 125A RATED BUS BAR,

NEMA 3R SOLAR LOADS ONLY

UL 1741 COMPLIANT

TO UTILITY GRID

M

BI-DIRECTIONAL UTILITY METER 120/240V, 1¢, 3-W

—L2

CONDUIT

SIZE

CONDUIT TYPE

This item has been digitally signed and sealed by Richard Pantel, P.E. on the date the seal. Printed copies of this document are not considered signed and sealed signature must be verified on any electronic copies. 1. PV GROUNDING ELECTRODE SYSTEM NEEDS TO BE INSTALLED IN ACCORDANCE

2. PV INVERTER IS UNGROUNDED, TRANSFORMER-LESS TYPE.

SUPPLY SIDE CONNECTION

REF 2017 NEC 230.82(6)/705.12(A)

- 3. DC GEC AND AC EGC TO REMAIN UNSPLICED, OR SPLICED TO EXISTING
- 4. ANY EXISTING WIRING INVOLVED WITH PV SYSTEM CONNECTION THAT IS FOUND TO BE INADEQUATE PER CODE SHALL BE CORRECTED PRIOR TO FINAL
- 5. SOLADECK QUANTITIES, AND PLACEMENT SUBJECT TO CHANGE IN THE FIELD - SOLADECK DEPICTED ON ELECTRICAL DIAGRAM REPRESENT WIRE TYPE TRANSITIONS
- 6. AC DISCONNECT NOTED IN EQUIPMENT SCHEDULE OPTIONAL IF OTHER AC DISCONNECTING MEANS IS LOCATED WITHIN 10' OF SERVICE DISCONNECT 7. RACEWAYS AND CABLES EXPOSED TO SUNLIGHT ON ROOFTOPS SHOULD BE INSTALLED MORE THAN 7/8" ABOVE THE ROOF USING CONDUIT SUPPORTS.

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SUNERGY SOLAR LLC

7625 LITTLE RD. SUITE 200A, NEW PORT RICHEY, FL 34654

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PROJECT NAME & ADDRESS

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833 NORTHWEST WILSON STREET, LAKE CITY, FL 32055

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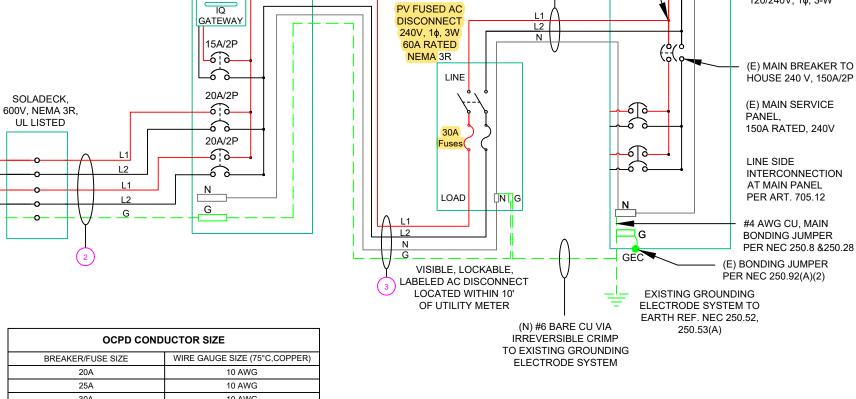
SHEET NAME

ELECTRICAL LINE DIAGRAM

SHEET SIZE ANSI B

11" X 17"

SHEET NUMBER E003



(4)

CU#12AWG -

(1) CU #6AWG -

30A 10 AWG 35A 8 AWG 40A 8 AWG 45A 8 AWG 50A 8 AWG 60A 6 AWG 70A 4 AWG A08 4 AWG 90A 3 AWG 100A 3 AWG 110A 2 AWG 125A 1 AWG 150A 1/0 AWG 175A 2/0 AWG 200A

ELECTRICAL LINE DIAGRAM SCALE: NTS

CU#10AWG THWN-2 L1 &L2 #12/2 ROMEX IN ENT OR LFMC IN ATTIC 3/4" CU,THWN-2 GND ATTIC (1) CU #10AWG -THWN-2 OR THHN L1 &L2 (2) CU #10AWG -EMT, LFMC OR PVC (1) CU #10AWG -CU,THWN-2 OR THHN N 3/4" (1) CU #10AWG CU,THWN-2 OR THHN GND (2) CU #6AWG -THWN-2 OR THHN L1 &L2 3/4" EMT, LFMC OR PVC (1) CU #6AWG -CU,THWN-2 OR THHN N

CONDUCTOR INFORMATION

L1 & L2 NO NEUTRAL)

BARE COPPER IN FREE AIR

NOTE: "CONDUIT SIZE IS MINIMUM REQUIRED PER NEC300.17. CONTRACTOR MAY UPSIZE AS NEEDED"

1		
INVERTER SPECIFICATIONS		
MANUFACTURER / MODEL #	ENPHASE IQ8PLUS-72-2-US MICROINVERTERS	
MIN/MAX DC VOLT RATING	30V MIN/ 58V MAX	
MAX INPUT POWER	235W-440W	
NOMINAL AC VOLTAGE RATING	240V/ 211-264V	
MAX AC CURRENT	1.21A	
MAX MODULES PER CIRCUIT	13 (SINGLE PHASE)	
MAX OUTPUT POWER	290 VA	

FULL LOAD

AMPS "FLA"

3.47

9.58

18.15

NEUTRAL SIZE

N/A

N/A

N/A

CU #10 AWG

CU #6 AWG

SIZE (A)

20

30

(A)

10.59

12.10

22.€9

GROUND SIZE

CU #10 AWG

CU #10 AWG

BARE COPPER #6 AWG CU #12 AWG

BARE COPPER #6 AWG CU #12 AWG

VOLTAGE

(V)

240

240

CIRCIUT DESTINATION

SCLADECK

SCLADECK

COMBINER BOX

AC DISCONNECT

SOLAR M	ODULE SPECIFICATIONS
MANUFACTURER / MODEL #	HYUNDAI SOLAR HIS-S400YH(BK) 400W MODULE
VMP	37.7V
IMP	10.61A
VOC	45.3V
ISC	11.25A
TEMP. COEFF. VOC	-0.26%/°C
MODULE DIMENSION	75.74"L x 40.86"W x 1.37"D (In Inch)
· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·

CONDUCTOR

SIZE

CL #10 AWG

CU #10 AWG

CU #6 AWG

AMPACITY

25

€5

AC CALCULATIONS

PASS

PASS

PASS

AMPACITY AMBIENT

CHECK #1 | TEMP. (°C)

37

37

TOTAL CC

CONDUCTORS

IN RACEWAY

90°C

AMPACITY (A)

40

		ally signed and sealed by Richard Pantel, P.E. on the date
AMBIENT TEMPERATURE SPER	eal. Printed copi	es of this document are not considered signed and seale nature must be verified on any electronic copies.
RECORD LOW TEMP	-5°°	nature must be vermed on any electronic copies.
AMBIENT TEMP (HIGH TEMP 2%)	37°	
MODULE TEMPERATURE COEFFICIENT OF Voc	-0.26%/°C	

PERCENT OF		NUMBER OF CURRENT
	VALUES	CARRYING CONDUCTORS IN EMT
	.80	4-6
	.70	7-9
	.50	10-20

DERATION FACTOR DERATION FACTOR

FOR AMBIENT

310.15(B)(2)(a)

0.91

0.91

0.91

	1 21(02)(1) 01	THOMBER OF CONTRET
VALUES		CARRYING CONDUCTORS IN EMT
	.80	4-6
.70		7-9
	.50	10-20

90°C

27.3

29.12

68.25

PASS

PASS

PASS

FOR CONDUCTORS | AMPACITY | AMPACITY

TEMPERATURE NEC | PER RACEWAY NEC | DERATED | CHECK #2

310.15(B)(3)(a)

0.8

CONDUCTO

RESISTANCE

(OHM/KFT)

1.24

0.491

Circuit 1 Voltage Drop

Circuit 2 Voltage Drop

VOLTAGE

DROP AT

FLA (%)

0.23

0.200

0.094

0.037

0.631

0.561

CONDUIT CONDUIT

FILL (%)

∉N/A

19,79362

SIZE

N/A

N/A

3/4" ENT

3/4" EMT

3/4" EMT 28.53659

FEEDER

LENGTH

(FEET)

20

5

REVISIONS				
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Richard Pantel, P.E. FL Lic. No. 73222 7/13/2023

833 NORTHWEST WILSON STREET, LAKE CITY, FL 32055

PROJECT NAME & ADDRESS

RESIDENCE **JEROME**

> DRAWN BY **ESR**

SHEET NAME

WIRING CALCULATIONS

SHEET SIZE

ANSIB 11" X 17"

SHEET NUMBER

E004

ELECTRICAL NOTES

CIRCUIT ORIGIN

CIRCUIT 1

CIRCUIT 2

SOLADECK

COMBINER BOX

AC DISCONNECT

- ALL EQUIPMENT TO BE LISTED BY UL OR OTHER NRTL, AND LABELED FOR ITS APPLICATION.
- ALL CONDUCTORS SHALL BE COPPER, RATED FOR 600 V AND 90 DEGREE C WET ENVIRONMENT.
- 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.
- WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26.
- DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS. CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS AND ACCESSORIES TO FULFILL APPLICABLE CODES AND STANDARDS.
- WHERE SIZES OF SOLADECK, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY.
- ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.
- MODULE GROUNDING CLIPS TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER THE GROUNDING CLIP MANUFACTURER'S INSTRUCTION.
- MODULE SUPPORT RAIL TO BE BONDED TO CONTINUOUS COPPER G.E.C. VIA WEEB LUG OR ILSCO GBL-4DBT LAY-IN LUG.
- TEMPERATURE RATINGS OF ALL CONDUCTORS, TERMINATIONS, BREAKERS, OR OTHER DEVICES ASSOCIATED WITH THE SOLAR PV SYSTEM SHALL BE RATED FOR AT LEAST 75 DEGREE C.
- 11. CONDUIT INSTALLED AT MINIMUM DISTANCE OF 7/8 INCHES ABOVE ROOFNEC 310.15(B)(3)(C)

CAUTION: AUTHORIZED SOLAR PERSONNEL ONLY!

LABEL-1: LABEL LOCATION: AC DISCONNECT

⚠ WARNING

ELECTRICAL SHOCK HAZARD

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

LABEL- 2: LABEL LOCATION: AC DISCONNECT COMBINER MAIN SERVICE PANEL SUBPANEL

MAIN SERVICE DISCONNECT CODE REF: NEC 690.13(B)

LABEL- 3: LABEL LOCATION: UTILITY METER MAIN SERVICE PANEL SUBPANEI

CODE REF: NEC 705.12(C) & NEC 690.59

⚠ WARNING

TURN OFF PHOTOVOLTAIC AC DISCONNECT PRIOR TO WORKING INSIDE PANEL

LABEL-4:

LABEL LOCATION:

MAIN SERVICE PANEL

SUBPANEL

MAIN SERVICE DISCONNECT

MAIN SERVICE DISCONNECT

COMBINE

CODE REF: NEC 110.27(C) & OSHA 1910.145 (f) (7)



PHOTOVOLTAIC SYSTEM CIRCUIT IS
BACKFEED

LABEL- 5: <u>LABEL LOCATION:</u> MAIN SERVICE PANEL (ONLY IF SOLAR IS BACK-FED) SUBPANEL (ONLY IF SOLAR IS BACK-FED) CODE REF: NEC 705.12(B)(3-4) & NEC 690.59



POWER SOURCE OUTPUT CONNECTION. DO NOT RELOCATE THIS OVERCURRENT DEVICE

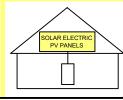
LABEL- 6: <u>LABEL LOCATION:</u> MAIN SERVICE PANEL (ONLY IF SOLAR IS BACK-FED) SUBPANEL (ONLY IF SOLAR IS BACK-FED) CODE REF: NEC 705.12(B)(3)(2)

THIS EQUIPMENT FED BY
MULTIPLE SOURCES. TOTAL
RATING OF ALL OVERCURRENT
DEVICES EXCLUDING MAIN
SUPPLY OVERCURRENT DEVICE
SHALL NOT EXCEED AMPACITY
OF BUSBAR.

LABEL- 7: <u>LABEL LOCATION:</u> MAIN SERVICE PANEL (ONLY IF SOLAR IS BACK-FED) SUBPANEL (ONLY IF SOLAR IS BACK-FED) CODE REF: NEC 705.12(B)(3)(2)

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



LABEL - 8: LABEL LOCATION: AC DISCONNECT

CODE REF: FFPC 11.12.1.1.1.1 & NEC 690.56(C)

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

LABEL- 9:

LABEL LOCATION:
AC DISCONNECT
CODE REF: NEC 690.56(C)(2)

PHOTOVOLTAIC

AC DISCONNECT

LABEL-10: LABEL LOCATION: AC DISCONNECT CODE REF: NEC 690.13(B)

PHOTOVOLTAIC AC DISCONNECT

NOMINAL OPERATING AC VOLATGE

RATED AC OUTPUT CURRENT

18.15 A

240 V

LABEL - 11:

LABEL LOCATION:
MAIN SERVICE PANEL
SUBPANEL
AC DISCONNECT
CODE REF: NEC 690.54

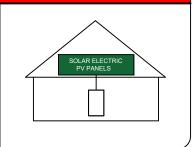
MAIN PHOTOVOLTAIC SYSTEM DISCONNECT

LABEL- 12: LABEL LOCATION:

MAIN SERVICE DISCONNECT (ONLY IF MAIN SERVICE DISCONNECT IS PRESENT)
CODE REF: NEC 690.13(B)

EMERGENCY RESPONDER: THIS SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

TURN RAPID SHUTDOWN SWITCH TO THE 'OFF' POSITION TO SHUTDOWN ENTIRE PV SYSTEM



THE LABEL SHALL BE REFLECTIVE, WITH ALL LETTERS CAPITALIZED AND HAVING A MINIMUM HEIGHT OF 3/8 IN. (9.5 MM), IN WHITE ON A RED BACKGROUND.

LABEL- 13
LABEL LOCATION:
AC DISCONNECT

CODE REF:NFPA 1 (11.12.2.1.1.1.1)

- THE RAPID SHUTDOWN LABEL SHALL BE LOCATED ON OR NO MORE
 THAN 3 FT (1 M) FROM THE SERVICE DISCONNECTING MEANS
- 2. (HEIGHT OF LABEL IS 3/8 IN. (9.5 MM), IN WHITE ON A RED BACKGROUND)

NOTES:

1.THE MATERIAL USED FOR THE PHOTOVOLTAIC SYSTEM LABELS SHALL BE REFLECTIVE, WEATHER RESISTANT, AND CONSTRUCTED OF DURABLE ADHESIVE MATERIAL OR ANOTHER APPROVED MATERIAL SUITABLE FOR THE ENVIRONMENT IN COMPLIANCE WITH NFPA 1-11.12.

2. FONT, TEXT HEIGHT, CAPITALIZATION, FONT COLOR(S), BACKGROUND COLOR(S), DIAGRAM COLOR(S)AND CONTEXT OF PHOTOVOLTAIC SYSTEMS LABELS SHALL COMPLY WITH NFPA 1-11.12 AND NEC 2017 690.56 AS APPLICABLE FOR THE PHOTOVOLTAIC SYSTEM TO BE INSTALLED.

This item has been digitally signed and sealed by Richard Pantel, P.E. on the date the seal. Printed copies of this document are not considered signed and sealed and the

SUNERGY SOLAR LLC

EMERGENCY CONTACT

(727) 375-9375

LABEL- 14

LABEL LOCATION:

MAIN SERVICE DISCONNECT

CODE REF: NFPA 1 (11.12.2.1.5)

sunergy

SUNERGY SOLAR LLC

7625 LITTLE RD. SUITE 200A, NEW PORT RICHEY, FL 34654

REVISIONS					
DESCRIPTION	DATE	REV			
INITIAL DESIGN	07/12/2023				



Richard Pantel, P.E. FL Lic. No. 73222 7/13/2023

PROJECT NAME & ADDRESS

JEROME LOVE RESIDENCE 833 NORTHWEST WILSON STREET, LAKE CITY, FL 32055

DRAWN BY

SHEET NAME

LABELS

SHEET SIZE

ANSI B 11" X 17"

SHEET NUMBER

E005



7625 LITTLE RD. SUITE 200A, NEW PORT RICHEY, FL 34654

REVISIONS					
DESCRIPTION	DATE	REV			
INITIAL DESIGN	07/12/2023				



Reviewed and approved FL Lic. No. 73222

PROJECT NAME & ADDRESS

833 NORTHWEST WILSON STREET, LAKE CITY, FL 32055 JEROME LOVE RESIDENCE

> DRAWN BY **ESR**

SHEET NAME

PLACARD

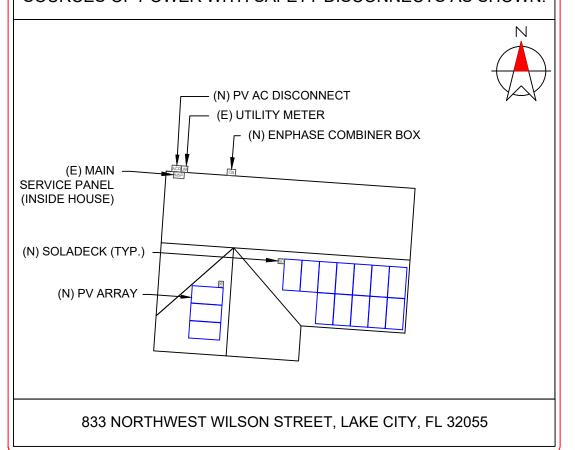
SHEET SIZE ANSI B

11" X 17"

SHEET NUMBER E006

CAUTION

POWER TO THIS BUILDING IS ALSO SUPPLIED FROM MULTIPLE SOURCES OF POWER WITH SAFETY DISCONNECTS AS SHOWN:



DIRECTORY

PERMANENT PLAQUE OR DIRECTORY PROVIDING THE LOCATION OF THE SERVICE DISCONNECTING MEANS AND THE PHOTOVOLTAIC SYSTEM.

(ALL PLAQUES AND SIGNAGE WILL BE INSTALLED AS OUTLINED WITHIN: NEC 690.56(B)&(C), [NEC 705.10]) PER FFPC 11.12.2.1.4

LABELING NOTES:

- 1. LABELS CALLED OUT ACCORDING TO ALL COMMON CONFIGURATIONS. ELECTRICIAN TO DETERMINE EXACT REQUIREMENTS IN THE FIELD PER CURRENT NEC AND LOCAL CODES AND MAKE APPROPRIATE ADJUSTMENTS.
- 2. LABELING REQUIREMENTS BASED ON THE 2017 NATIONAL ELECTRIC CODE, OSHA STANDARD 19010.145, ANSI Z535.
- 3. MATERIAL BASED ON THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
- 4. LABELS TO BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED [NEC 110.21]
- 5. LABELS TO BE A MINIMUM LETTER HEIGHT OF 3/8", WHITE ON RED BACKGROUND; REFLECTIVE, AND PERMANENTLY

AFFIXED FFPC 11.12.2.1.1.2



Dual Black Max

HiS-S400YH(BK)

HiS-S405YH(BK) HiS-S410YH(BK)

HiS-S385YH(BK) HiS-S390YH(BK) HiS-S395YH(BK)





132

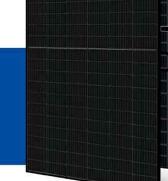


Generation In Low Light



Saves BOS Costs

All black Module For Sleek Design (Black Meshed T-Back sheet)





Maximized Power

Increased total power output through capturing light from both the front and back of Bifacial solar modules, Back side power gain up to 25% of the front output depending on PV system design.



Mechanical Strength

Tempered glass and reinforced frame design withstand rigorous weather conditions such as heavy snow(5,400Pa) and strong wind(4,000Pa).

Hyundai's Warranty Provisions



25-Year Product Warranty Materials and workmanship



- · 25-Year Performance Warranty
- Initial year: 98,0%
- · Linear warranty after second year: with 0.54%p annual degradation, 85.0% is guaranteed up to 25 years

Half-Cut & Multi-Wire Technology

Improved current flow with half-cut technology and 9 thin wiring technology allows high module efficiency of up to 20.5%. It also reduces power generation loss due to micro-cracks.



UL / VDE Test Labs

Hyundai's R&D center is an accredited test laboratory of both UL and VDE.



Reliable Warranty

Anti-LID / PID

Both LID(Light Induced Degradation) and

PID(Potential Induced Degradation) are

significantly reduced to ensure higher

Global brand with powerful financial strength provide reliable 25-year warranty

About Hyundai Energy Solutions

Established in 1972, Hyundai Heavy Industries Group is one of the most trusted names in the heavy industries sector and is a Fortune 500 company. As a global leader and innovator, Hyundai Heavy Industries is committed to building a future growth engine by developing and investing heavily in the field of renewable energy.

As a core energy business entity of HHI, Hyundai Energy Solutions has strong pride in providing high-quality PV products to more than 3,000 customers worldwide.

Certification



UL61730 certified by UL, Type 1 (for Fire Class A)

HYUNDAI

Printed Date: 03/2022(final)

Electrical Characteristics

		The state of the s					
					400	405	410
Nominal Output (Pmpp)	W	385	390	395	400	405	410
Open Circuit Voltage (Voc)	V	44.5	44.8	45.0	45.3	45.6	45.9
Short Circuit Current (Isc)	A	11.04	11.11	11.18	11.25	11.33	11.40
Voltage at Pmax (Vmpp)	V	37.1	37.3	37.5	37.7	37.9	38.1
Current at Pmax (Impp)	A	10.40	10.47	10.54	10.61	10.69	10.76
Module Efficiency	%	19.3	19.5	19.8	20.0	20.3	20.5
Cell Type		Mono crystalline, 9busbar					
Maximum System Voltage	V	1,500					
Temperature Coefficient of Pmax	%/K	-0.347					
Temperature Coefficient of Voc	%/K	-0.268					
Temperature Coefficient of Isc	%/K	+0.032					

*All data at STC (Measurement tolerances Pmpp $\pm 3\%$; Isc.; Voc $\pm 3\%$). Above data may be changed without prior notice.

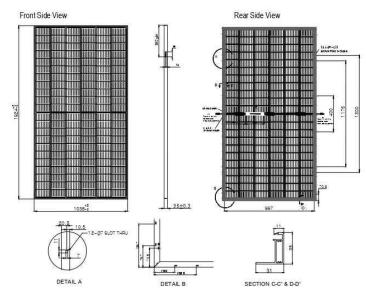
Mono-Crystalline Type(HiS-S YH(BK

Additional Power Gain from rear sid	e						
5%	W	399	404	410	415	425	431
15%	W	437	443	449	454	466	472
25%	W	475	482	488	494	506	513

Mechanical Characteristics

Dimensions	1,038 mm (W) x 1,924 mm (L) x 35 mm(H)			
Weight	Approx. 21.1 kg			
Solar Cells	132 half cut bifacial cells (2 parallel x 66 half cells in series)			
Output Cables	Cable : 1,200mm / 4mm² Connector : MC4 genuine connector			
Junction Box	IP68, weatherproof, IEC certified (UL listed)			
Bypass Diodes	3 bypass diodes to prevent power decrease by partial shade			
Construction	Front : 3.2mm, High Transmission, AR Coated Tempered Glass Encapsulant : EVA Back Sheet : Black Meshed Transparent Backsheet			
Frame	Anodized aluminum alloy type 6063			

Module Diagram (unit : mm)

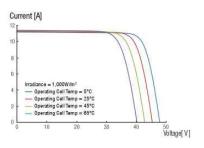


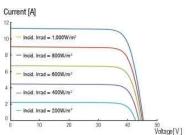
Installation Safety Guide

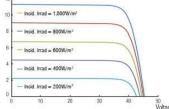
- · Only qualified personnel should install or perform maintenance.
- Be aware of dangerous high DC voltage.
- Do not damage or scratch the rear surface of the module.
- · Do not handle or install modules when they are wet.

Nominal Operating Cell Temperature	45.5°C ± 2
Operating Temperature	-40°C - +85°C
Maximum System Voltage	DC 1,500V
Maximum Reverse Current	20A
Maximum Test Load	Front 5,400 Pa (113psf) Rear 4,000 Pa (84psf)

I-V Curves











SUNERGY SOLAR LLC

7625 LITTLE RD. SUITE 200A, NEW PORT RICHEY, FL 34654

REVISIONS					
DESCRIPTION DATE R					
INITIAL DESIGN	07/12/2023				



Richard Pantel, P.E. FL Lic. No. 73222

PROJECT NAME & ADDRESS

833 NORTHWEST WILSON STREET, LAKE CITY, FL 32055 JEROME LOVE RESIDENCE

> DRAWN BY **ESR**

SHEET NAME **MODULE** DATASHEET

SHEET SIZE

ANSI B 11" X 17"

SHEET NUMBER

PD001

7625 LITTLE RD. SUITE 200A, NEW PORT RICHEY, FL 34654

REVISIONS					
DESCRIPTION	DATE	REV			
INITIAL DESIGN	07/12/2023				



Reviewed and approved Richard Pantel, P.E. FL Lic. No. 73222

PROJECT NAME & ADDRESS

JEROME LOVE RESIDENCE

833 NORTHWEST WILSON STREET, LAKE CITY, FL 32055

DRAWN BY **ESR**

SHEET NAME

MICROINVERTER DATASHEET

SHEET SIZE

ANSI B 11" X 17"

SHEET NUMBER

PD002



IQ8 and IQ8+ Microinverters

Our newest IQ8 Microinverters are the industry's first microgrid-forming, softwaredefined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC) which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built in advanced 55nm technology with high speed digital logic and has super-fast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.



€ ENPHASE

Part of the Enphase Energy System, IQ8 Series Microinverters integrate with the Enphase IQ Battery, Enphase IQ Gateway, and the Enphase App monitoring and analysis software.



Connect PV modules quickly and easily to IQ8 Series Microinverters using the included Q-DCC-2 adapter cable with plug-n-play MC4 connectors. various regulations, when installed according to manufacturer's instructions.

IQ8 Series Microinverters are UL Listed as PV Rapid Shut Down Equipment and conform with

IQ8 Series Microinverters redefine reliability

leading limited warranty of up to 25 years.

standards with more than one million cumulative

hours of power-on testing, enabling an industry-

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IQ8SP-DS-0002-01-EN-US-2022-03-17

Easy to install

- · Lightweight and compact with plug-n-play connectors
- · Power Line Communication (PLC) between components
- · Faster installation with simple two-wire cabling

High productivity and reliability

- · Produce power even when the grid is down*
- More than one million cumulative hours of testing
- Class II double-insulated enclosure
- · Optimized for the latest highpowered PV modules

Microgrid-forming

- · Complies with the latest advanced grid support**
- Remote automatic updates for the latest grid requirements
- · Configurable to support a wide range of grid profiles
- Meets CA Rule 21 (UL 1741-SA) requirements
- * Only when installed with IQ System Controller 2, meets UL 1741.
- ** IQ8 and IQ8Plus supports split phase, 240V installations only.

IQ8 and IQ8+ Microinverters

INPUT DATA (DC)		108-60-2-US	IQBPLUS-72-2-US	
Commonly used module pairings ¹	W	235 - 350	235 - 440	
Module compatibility		60-cell/120 half-cell	60-cell/120 half-cell, 66-cell/132 half-cell and 72-cell/144 half-cell	
MPPT voltage range	٧	27 - 37	29 - 45	
Operating range	V	25 - 48	25 - 58	
Min/max start voltage	٧	30/48	30 / 58	
Max input DC voltage	V	50	60	
Max DC current ² [module lsc]	Α		15	
Overvoltage class DC port			I	
DC port backfeed current	mA		0	
PV array configuration		1x1 Ungrounded array; No additional DC side protect	ction required; AC side protection requires max 20A per branch circuit	
OUTPUT DATA (AC)		108-60-2-US	IQ8PLUS-72-2-US	
Peak output power	VA	245	300	
Max continuous output power	VA	240	290	
Nominal (L-L) voltage/range ³	٧	240 / 211 - 264		

OUTPUT DATA (AC)		IQ8-60-2-US	IQ8PLUS-72-2-US	
Peak output power	VA	245	300	
Max continuous output power	VA	240	290	
Nominal (L-L) voltage/range ³	V		240 / 211 - 264	
Max continuous output current	А	1.0	1.21	
Nominal frequency	Hz		60	
Extended frequency range	Hz		50 - 68	
AC short circuit fault current over 3 cycles	Arms	2		
Max units per 20 A (L-L) branch circ	uit ⁴	16	13	
Total harmonic distortion			<5%	
Overvoltage class AC port			Ш	
AC port backfeed current	mA		30	
Power factor setting			1.0	
Grid-tied power factor (adjustable)		0.0	35 leading – 0.85 lagging	
Peak efficiency	%	97.5	97.6	
CEC weighted efficiency	%	97	97	
Night-time power consumption	mW	60		

riight time perior consumption	NESS.
MECHANICAL DATA	
Ambient temperature range	-40°C to +60°C (-40°F to +140°F)
Relative humidity range	4% to 100% (condensing)
DC Connector type	MC4
Dimensions (HxWxD)	212 mm (8.3") x 175 mm (6.9") x 30.2 mm (1.2")
Weight	1.08 kg (2.38 lbs)
Cooling	Natural convection - no fans
Approved for wet locations	Yes
Pollution degree	PD3
Enclosure	Class II double-insulated, corrosion resistant polymeric enclosure
Environ. category / UV exposure rating	NEMA Type 6 / outdoor

Pollution degree	PD3
Enclosure	Class II double-insulated, corrosion resistant polymeric enclosure
Environ. category / UV exposure rating	NEMA Type 6 / outdoor
COMPLIANCE	
	CA Rule 21 (UL 1741-SA), UL 62109-1, UL1741/IEEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO.107.1-01
Certifications	This product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC 2014, NEC 2017, and NEC 2020 section 690.12 and C22.1-2018 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according to manufacturer's instructions.

(1) No enforced DC/AC ratio. See the compatibility calculator at https://link.enphase.com/module-compatibility (2) Maximum continuous input DC current is 10.6A (3) Nominal voltage range can be extended beyond nominal if required by the utility. (4) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

IQ8SP-DS-0002-01-EN-US-2022-03-17

ENPHASE

Enphase IQ Combiner 4/4C

X-IQ-AM1-240-4 X-IQ-AM1-240-4C



The Enphase IQ Combiner 4/4C with Enphase IQ Gateway and integrated LTE-M1 cell modem (included only with IQ Combiner 4C) consolidates interconnection equipment into a single enclosure and streamlines IQ microinverters and storage installations by providing a consistent, pre-wired solution for residential applications. It offers up to four 2-pole input circuits and Eaton BR series busbar assembly.

Smart

- · Includes IQ Gateway for communication and control
- Includes Enphase Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05), included only with IQ
- · Includes solar shield to match Enphase IQ Battery aesthetics and deflect heat
- · Flexible networking supports Wi-Fi, Ethernet, or cellular
- · Optional AC receptacle available for PLC bridge
- · Provides production metering and consumption monitoring

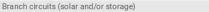
Simple

- · Centered mounting brackets support single
- · Supports bottom, back and side conduit entry
- · Up to four 2-pole branch circuits for 240 VAC plug-in breakers (not included)
- · 80A total PV or storage branch circuits

Reliable

- · Durable NRTL-certified NEMA type 3R enclosure
- · Five-vear limited warranty
- · Two years labor reimbursement program coverage included for both the IQ Combiner SKU's
- UL listed





Max. total branch circuit breaker rating (input) Production metering CT

Max. continuous current rating (input from PV/storage)

Enphase IQ Combiner 4/4C

ACCESSORIES AND REPLACEMENT PARTS

MODEL NUMBER

IQ Combiner 4 (X-IQ-AM1-240-4)

IQ Combiner 4C (X-IQ-AM1-240-4C)

COMMS-CELLMODEM-M1-06

CELLMODEM-M1-06-SP-05

CELLMODEM-M1-06-AT-05

Circuit Breakers

EPLC-01

Rating System voltage

BRK-10A-2-240V

BRK-15A-2-240V

BRK-20A-2P-240V BRK-15A-2P-240V-B

BRK-20A-2P-240V-B

XA-SOLARSHIELD-ES

XA-PLUG-120-3

XA-ENV-PCBA-3

X-IQ-NA-HD-125A

ELECTRICAL SPECIFICATIONS

Eaton BR series busbar rating

Max, fuse/circuit rating (output)

Consumption monitoring CT (CT-200-SPLIT) MECHANICAL DATA

Dimensions (WxHxD) 37.5 x 49.5 x 16.8 cm (14.75" x 19.5" x 6.63"). Height is 21.06" (53.5 cm) with mounting brackets. 7.5 kg (16.5 lbs) Weight

-40° C to +46° C (-40° to 115° F) Ambient temperature range Cooling Natural convection, plus heat shield Enclosure environmental rating Outdoor, NRTL-certified, NEMA type 3R, polycarbonate construction

Wire sizes · 20 A to 50 A breaker inputs: 14 to 4 AWG copper conductors 60 A breaker branch input: 4 to 1/0 AWG copper conductors · Main lug combined output: 10 to 2/0 AWG copper conductors Neutral and ground: 14 to 1/0 copper conductors

Always follow local code requirements for conductor sizing To 2000 meters (6,560 feet)

INTERNET CONNECTION OPTIONS Integrated Wi-Fi

802.11b/g/n CELLMODEM-M1-06-SP-05, CELLMODEM-M1-06-AT-05 (4G based LTE-M1 cellular modem). Note that an Enphase Cellular Mobile Connect cellular modem is required for all Ensemble installations. Ethernet Optional, 802.3, Cat5E (or Cat 6) UTP Ethernet cable (not included)

COMPLIANCE

UL 1741, CAN/CSA C22.2 No. 107.1, 47 CFR, Part 15, Class B, ICES 003 Compliance, IQ Combiner Consumption metering: accuracy class 2.5 UL 60601-1/CANCSA 22.2 No. 61010-1 Compliance, IQ Gateway

To learn more about Enphase offerings, visit enphase.com

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IQ System Controller 2 and to deflect heat.

(not included, order separately)

Circuit breaker, 2 pole, 10A, Eaton BR210

Circuit breaker, 2 pole, 15A, Eaton BR215

Circuit breaker, 2 pole, 20A, Eaton BR220

Replacement solar shield for IQ Combiner 4/4C

Hold down kit for Eaton circuit breaker with screws.

Continuous duty

125 A

65 A 64 A

90 A

120/240 VAC 60 Hz

IQ Combiner 4 with Enphase IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI

C12.20 +/- 0.5%) and consumption monitoring (+/- 2.5%). Includes a silver solar shield to match the IQ Battery system and

the installation area.) Includes a silver solar shield to match the IQ Battery and IQ System Controller and to deflect heat.

- Includes COMMS-KIT-01 and CELLMODEM-M1-06-SP-05 with 5-year Sprint data plan for

Supports Eaton BR210, BR215, BR220, BR230, BR240, BR250, and BR260 circuit breakers

Accessory receptacle for Power Line Carrier in IQ Combiner 4/4C (required for EPLC-01)

Up to four 2-pole Eaton BR series Distributed Generation (DG) breakers only (not included)

-4G based LTE-M1 cellular modem with 5-year Sprint data plan

- 4G based LTE-M1 cellular modem with 5-year AT&T data plan

Circuit breaker, 2 pole, 15A, Eaton BR215B with hold down kit support

Circuit breaker, 2 pole, 20A, Eaton BR220B with hold down kit support

Replacement IQ Gateway printed circuit board (PCB) for Combiner 4/4C

80A of distributed generation / 95A with IQ Gateway breaker included

200 A solid core pre-installed and wired to IQ Gateway

A pair of 200 A split core current transformers

Power line carrier (communication bridge pair), quantity - one pair

IQ Combiner 4C with Enphase IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI~C12.20~+/-~0.5%)~and~consumption~monitoring~(+/-~2.5%).~Includes~Enphase~Mobile~Connect~cellular~modem~(CELLMODEM-M1-06-SP-05),~a~plug-and-play~industrial-grade~cell~modem~for~systems~up~to~60~microinverters.(Available in the US, Canada, Mexico, Puerto Rico, and the US Virgin Islands, where there is adequate cellular service in

This item has been digitally signed and sealed by Richard Pantel, P.E. on the dat signature must be verified on any electronic copies.

🖴 sunergy

SUNERGY SOLAR LLC

7625 LITTLE RD. SUITE 200A, NEW PORT RICHEY, FL 34654

REVISIONS		
DESCRIPTION	DATE	REV
INITIAL DESIGN	07/12/2023	



FL Lic. No. 73222

PROJECT NAME & ADDRESS

JEROME LOVE RESIDENCE

833 NORTHWEST WILSON STREET, LAKE CITY, FL 32055

DRAWN BY **ESR**

SHEET NAME **COMBINER BOX** DATASHEET

SHEET SIZE

ANSI B 11" X 17"

SHEET NUMBER

PD003



7625 LITTLE RD. SUITE 200A, NEW PORT RICHEY, FL 34654

REVISIONS		
DESCRIPTION	DATE	REV
INITIAL DESIGN	07/12/2023	



Richard Pantel, P.E. FL Lic. No. 73222

833 NORTHWEST WILSON STREET, LAKE CITY, FL 32055

PROJECT NAME & ADDRESS

JEROME LOVE RESIDENCE

DRAWN BY **ESR**

SHEET NAME **ATTACHMENT** DATASHEET

> SHEET SIZE ANSI B

11" X 17"

SHEET NUMBER PD004

We support PV systems
Formerly Everest Solar Systems



Splice Foot XL

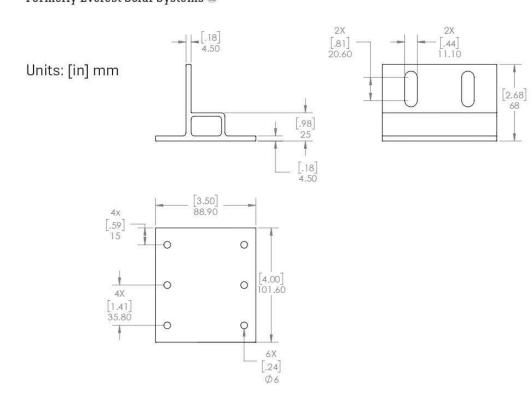
TECHNICAL SHEET

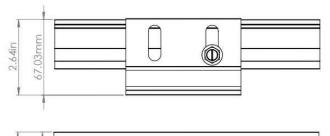
We support PV systems Formerly Everest Solar Systems

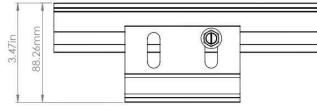
Item Number	Description	Part Number
1	Splice Foot XL	4000162 Splice Foot XL Kit, Mill
2	K2 EverSeal	
3	M5 x 60 lag screws	
4	T-Bolt & Hex Nut Set	

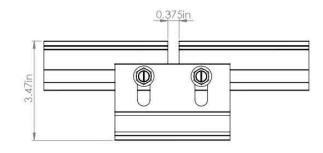
Technical Data

	Splice Foot XL
Roof Type	Composition shingle
Material	Aluminum with stainless steel hardware
Finish	Mill
Roof Connection	M5 x 60 lag screws
Code Compliance	UL 2703
Compatibility	CrossRail 44-X, 48-X, 48-XL, 80









k2-systems.com

k2-systems.com



7625 LITTLE RD. SUITE 200A, NEW PORT RICHEY, FL 34654

==:::::::::::::::::::::::::::::::::::::		
REVISIONS		
DESCRIPTION	DATE	REV
INITIAL DESIGN	07/12/2023	



Richard Pantel, P.E. FL Lic. No. 73222

PROJECT NAME & ADDRESS

JEROME LOVE RESIDENCE

DRAWN BY **ESR**

SHEET NAME **RACKING**

DATASHEET SHEET SIZE

ANSI B 11" X 17"

SHEET NUMBER PD005

We support PV systems Formerly Everest Solar Systems

CROSSRAIL 44-X



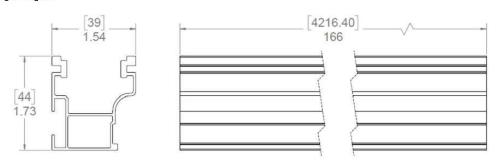
Mechanical Properties

	CrossRail 44-X
Material	
Material	6000 Series Aluminum
Ultimate Tensile Strength	37.7 ksi (260 MPa)
Yield Strength	34.8 ksi [240 MPa]
Weight	0.47 lbs/ft (0.699 kg/m)
Finish	Mill or Dark Anodized

Sectional Properties

	CrossRail 44-X
Sx	0.1490 in3 (0.3785 cm3)
Sy	0.1450 in3 (0.3683 cm3)
A (X-Section)	0.4050 in2 (1.0287 cm2

Units: [mm] in



Notes:

- Structural values and span charts determined in accordance with Aluminum Design Manual and ASCE 7-16
- UL2703 Listed System for Fire and Bonding

CrossRail System

TECHNICAL SHEET

We support PV systems Formerly Everest Solar Systems

Item Number	Description	Part Number
1	CrossRail 44-X (shown) all CR profiles applicable	4000019 (166" mill), 4000020 (166" dark) , 4000021 (180" mill), 4000022 (180" dark)
2	CrossRail Mid Clamp	4000601-H (mill), 4000602-H (dark)
3	CrossRail (Standard) End Clamp	4000429 (mill), 4000430 (dark)
4	Yeti Hidden End Clamp for CR	4000050-Н
5	CrossRail 44-X Rail Connector (shown) CR 48-X, 48-XL Rail Connector available	4000051 (mill), 4000052 (dark)
6	L-Foot Slotted Set	4000630 (mill), 4000631 (dark)
7	Everest Ground Lug	4000006-Н
8	CrossRail 44-X End Cap (shown) CrossRail 48-X, 48-XL and 80 available	4000067

k2-systems.com

k2-systems.com

Basic Features

- Stamped Seamless Construction
- 18 Gauge Galvanized Steel
- Powder Coated Surfaces
- · Flashes into the roof deck
- 3 Roof deck knockouts .5", .75", 1"
- 5 Centering dimples for entry/exit fittings or conduit
- 2 Position Ground lug installed
- Mounting Hardware Included



SolaDeck Model SD 0783



SolaDeck UL50 Type 3R Enclosures

Available Models: Model SD 0783 - (3" fixed Din Rail) Model SD 0786 - (6" slotted Din Rail)

SolaDeck UL 1741 Combiner/Enclosures

Models SD 0783-41 and SD 0786-41 are labeled and ETL listed UL STD 1741 according to the UL STD 1741 for photovoltaic combiner enclosures.

Max Rated - 600VDC, 120AMPS

Model SD 0783-41 3" Fixed Din Rail fastened using Norlock System **Typical System Configuration

- 4- Din Rail Mounted Fuse Holders 600VDC 30 AMP
- 1- Power Distribution Block 600VDC 175AMP
- 1- Bus Bar with UL lug

Model SD 0786-41 6" Slotted Din Rail fastened using steel studs

**Typical System Configuration

For product information call 1(866) 367-7782

- 4- Din Rail Mounted Fuse Holders 600VDC 30 AMP
- 4- Din Rail Mounted Terminal Blocks Bus Bars with UL lug

added in the field must be UL listed or recognized and meet 600 VDC 30 AMP 110C for fuse holders, 600V 50 AMP 90C for rail mounted terminal blocks and 600 V 175 AMP 90C for Power Distribution Blocks. Use Copper Wire Conductors.



conduit or fittings, base is center dimpled for fitting locations.





Model SD 0786-41, wired with Din Rail mounted fuse holders. terminal blocks and bus bars.

This item has been digitally signed and sealed by Richard Pantel. P.E. on the dat the seal. Printed copies of this document are not considered signed and seal signature must be verified on any electronic copies.



SUNERGY SOLAR LLC

7625 LITTLE RD. SUITE 200A, NEW PORT RICHEY, FL 34654

REVISIONS		
DESCRIPTION	DATE	REV
INITIAL DESIGN	07/12/2023	



Richard Pantel, P.E.

FL Lic. No. 73222

PROJECT NAME & ADDRESS

833 NORTHWEST WILSON STREET, LAKE CITY, FL 32055 JEROME LOVE RESIDENCE

> DRAWN BY **ESR**

SHEET NAME **SOLADECK DATASHEET**

SHEET SIZE

ANSI B 11" X 17"

SHEET NUMBER

PD006

**Fuse holders and terminal blocks