PHOTOVOLTAIC ROOF MOUNT SYSTEM

47 MODULES - SYSTEM SIZE STC (18.33 kW DC / 13.63 kW AC)

165 NATURES WAY, DUNN, NC 28334, USA (35.3737091, -78.5865554)

SYSTEM SUMMARY STC (18.33 kW DC / 13.63 kW AC)

STC DC: (47) 390W = 18.33 kW
STC AC: (47) 290W = 13.63 kW

- (47) JINKO SOLAR JKM390M-72HBL-V (390W) MODULES
- (47) ENPHASE IQ8PLUS-72-2-US (240V) MICROINVERTERS
- 3x BRANCHES OF 12 CONNECTED IN PARALLEL
- 1x BRANCH OF 11 CONNECTED IN PARALLEL

GOVERNING CODES

- 2018 NORTH CAROLINA STATE BUILDING CODE
- 2018 NORTH CAROLINA RESIDENTIAL CODE
- 2018 NORTH CAROLINA FIRE CODE
- 2017 NATIONAL ELECTRICAL CODE

GENERAL NOTES

1) ALL PANELS, SWITCHES, ETC. SHALL HAVE SUFFICIENT GUTTER SPACE AND LUGS IN COMPLIANCE WITH UL REQUIREMENTS TO ACCOMMODATE CONDUCTORS SHOWN.
2) THIS SYSTEM WILL NOT BE INTERCONNECTED UNTIL APPROVAL FROM THE LOCAL JURISDICTION AND UTILITY IS OBTAINED.
3) ALL EXTERIOR ELECTRICAL DEVICES AND EQUIPMENT INCLUDING THOSE THAT ARE EXPOSED TO OUTSIDE ENVIRONMENT SHALL BE WEATHERPROOF AND SHALL BE LISTED BY 'UL' FOR THE TYPE OF APPLICATION AND 'UL' LABEL SHALL APPEAR ON ALL ELECTRICAL EQUIPMENT.
4) WIRING METHOD SHALL BE EMT ABOVE GROUND MOUNTED IN CONCEALED SPACES (UNLESS APPROVED OTHERWISE) AND SCHEDULE-40 PVC FOR BELOW GROUND INSTALLATIONS UNLESS NOTED OTHERWISE.
5) AN OSHA APPROVED LADDER PROVIDING ACCESS TO ALL PORTIONS OF THE ARRAY SHALL BE SECURED IN PRIOR TO REQUESTING INSPECTION.
6) IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSTALL A SUPPLEMENTAL GROUNDING ELECTRODE CONDUCTOR IF NECESSARY.

SAFETY PLAN NOTES

- INSTALLERS SHALL DRAW IN DESIGNATED SAFETY AREA AROUND HOME.
- INSTALLERS SHALL UPDATE NAME, ADDRESS AND PHONE NUMBER OF NEAREST URGENT CARE FACILITY RELATIVE TO THE SITE BEFORE STARTING WORK.

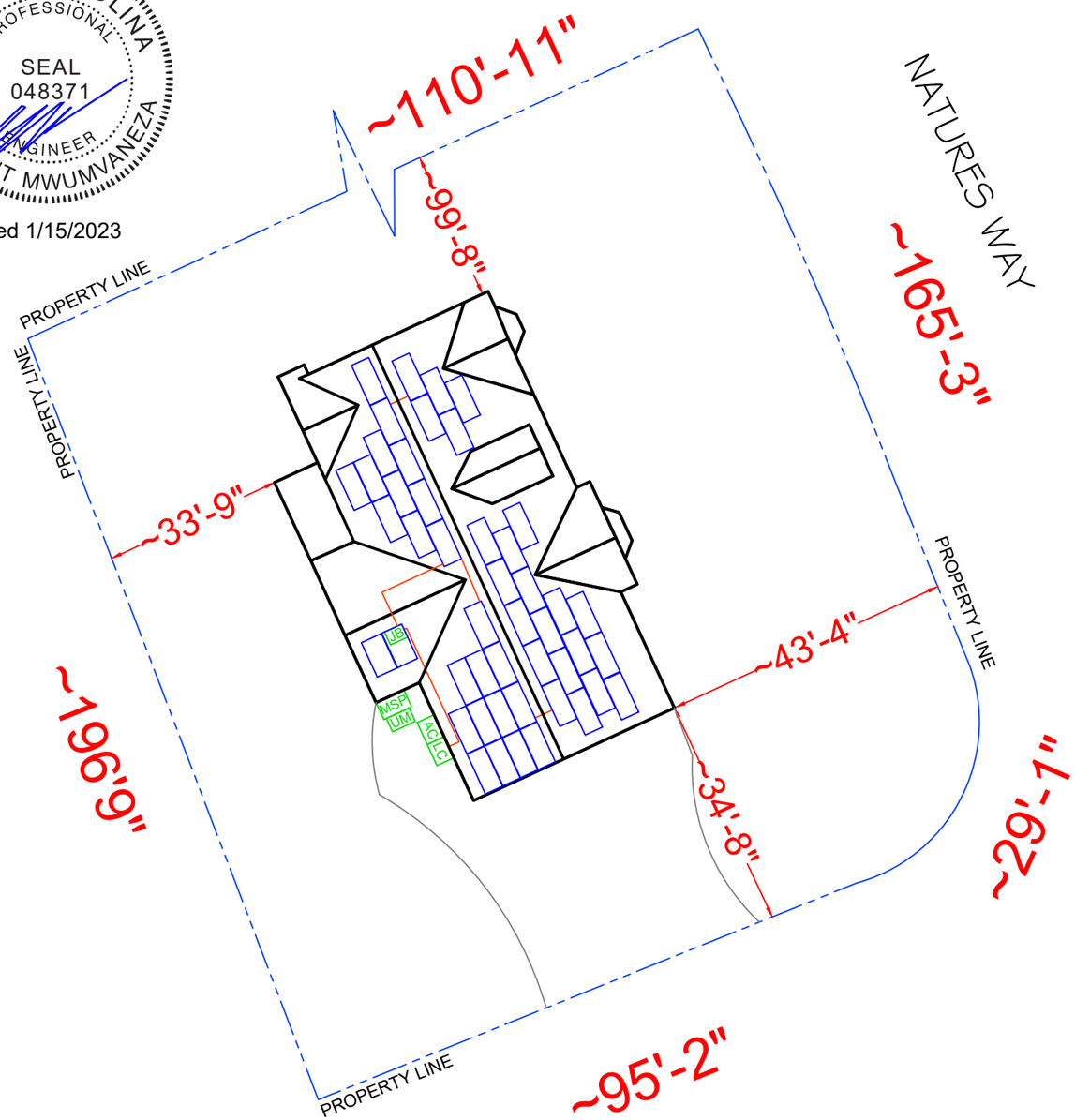
LOCATION OF NEAREST URGENT CARE FACILITY

(FOR INSTALLER USE ONLY)

- NAME:
- ADDRESS:
- PHONE NUMBER:

NORTH CAROLINA PROFESSIONAL SEAL 048371 ENGINEER VINCENT MWUMVANEZA

Signed 1/15/2023



SITE PLAN & SAFETY PLAN

SCALE: 3/64" = 1'0"

LEGEND

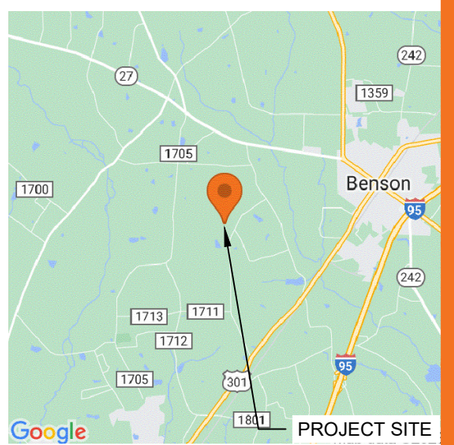
	PV MODULE		DIMENSIONS
	OPTIMIZER		PROPERTY LINE
	MICRO-INVERTER		CONDUIT
	ROOF ATTACHMENT		DRIVEWAY
MSP	MAIN SERVICE PANEL (EXISTING, 200A)	AC	AC DISCONNECT UNFUSED (NEW)
UM	UTILITY METER (EXISTING)	ACF	AC DISCONNECT FUSED (N/A)
PM	PRODUCTION METER (N/A)	JB	JUNCTION BOX (NEW)
BAT	BATTERY (N/A)	AT	AUTO TRANSFORMER (N/A)
INV	(0) INVERTER (N/A)	SUB	SUBPANEL (N/A)
LC	LOAD CENTER (COMBINER PANEL) (NEW)	DCD	DC DISCONNECT (N/A)
SM	SOLAREDGE METER (N/A)	DCC	DC COMBINER (N/A)
BLP	BACKUP LOAD PANEL (N/A)	EE	EXISTING EQUIPMENT

SHEET INDEX

AHJ: NORTH CAROLINA | HARNETT
UTILITY: DUKE ENERGY CAROLINAS, LLC

HOUSE PHOTO

SCALE: NTS



VICINITY MAP

SCALE: NTS

TOP TIER SOLAR SOLUTIONS

CONTRACTOR
NAME: TOP TIER SOLAR SOLUTIONS
ADDRESS: 1530 CENTER PARK DR, CHARLOTTE, NC, 28217,USA
PHONE: 855-997-1213
CONTRACTOR LICENSE# SC - CLG.123883
ELECTRICAL LICENSE#:NC - 87345
EMAIL #: bdunford@toptiersolarsolutions.com

REVISIONS

DESCRIPTION	DATE	REV

SIGNATURE & SEAL

HOMEOWNER INFO

JENNIFER IVEY
165 NATURES WAY, DUNN, NC
28334, USA

APN: 7549817
EMAIL: -
PHONE: -

SHEET NAME
COVER PAGE

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-1

MODULE AREA & WEIGHT CALCULATIONS

PANEL TYPES (COUNT, AREA, WEIGHT):
- (47x) JINKO SOLAR JKM390M-72HBL-V (390W) (79.06" x 39.45", 49.6 LBS)

MICRO-INVERTER TYPES (COUNT, WEIGHT):
- (47x) ENPHASE IQ8PLUS-72-2-US (240V) (2.38 LBS)

ATTACHMENT COUNT: 188
MOUNTING SYSTEM WEIGHT/MODULE: 1.5 LBS
TOTAL ROOF AREA: 3162 SF

TOTAL ARRAY AREA: (47) 79.1" x 39.5" = 1017.98 SF
TOTAL ARRAY WEIGHT: (47) 49.6 + (47) 2.4 + (47) 1.5 = 2514 LBS

WEIGHT AT EACH CONNECTION: 2514 LBS / 188 = 13.37 LBS
DISTRIBUTED LOAD: 2514 LBS / 1017.98 SF = 2.47 PSF
ROOF AREA COVERED BY ARRAY: 1018 SF / 3162 SF = 32.2%

BILL OF MATERIALS		
SOLAR PV MODULES	47	JINKO SOLAR JKM390M-72HBL-V (390W)
MICRO INVERTERS	47	ENPHASE IQ8PLUS-72-2-US (240V)
JUNCTION BOX (AC)	01	JUNCTION BOX 600V, NEMA 3R UL LISTED
LOAD CENTER (AC)	01	ENPAHSE IQ COMBINER 4 (X-IQ-AM1-240-4)
AC DISCONNECT	01	PV VISIBLE LOCKABLE LABELED DISCONNECT (100A UNFUSED 1PH 240VAC)
ATTACHMENTS	188	IRONRIDGE - SLOTTED L-FEET
RAIL	47	IRONRIDGE RESOURCES - XR10
RAIL SPLICES	24	RAIL SPLICES
MID CLAMPS	60	MID CLAMPS
END CLAMPS	68	END CLAMPS
GROUNDING LUG	17	GROUNDING LUG

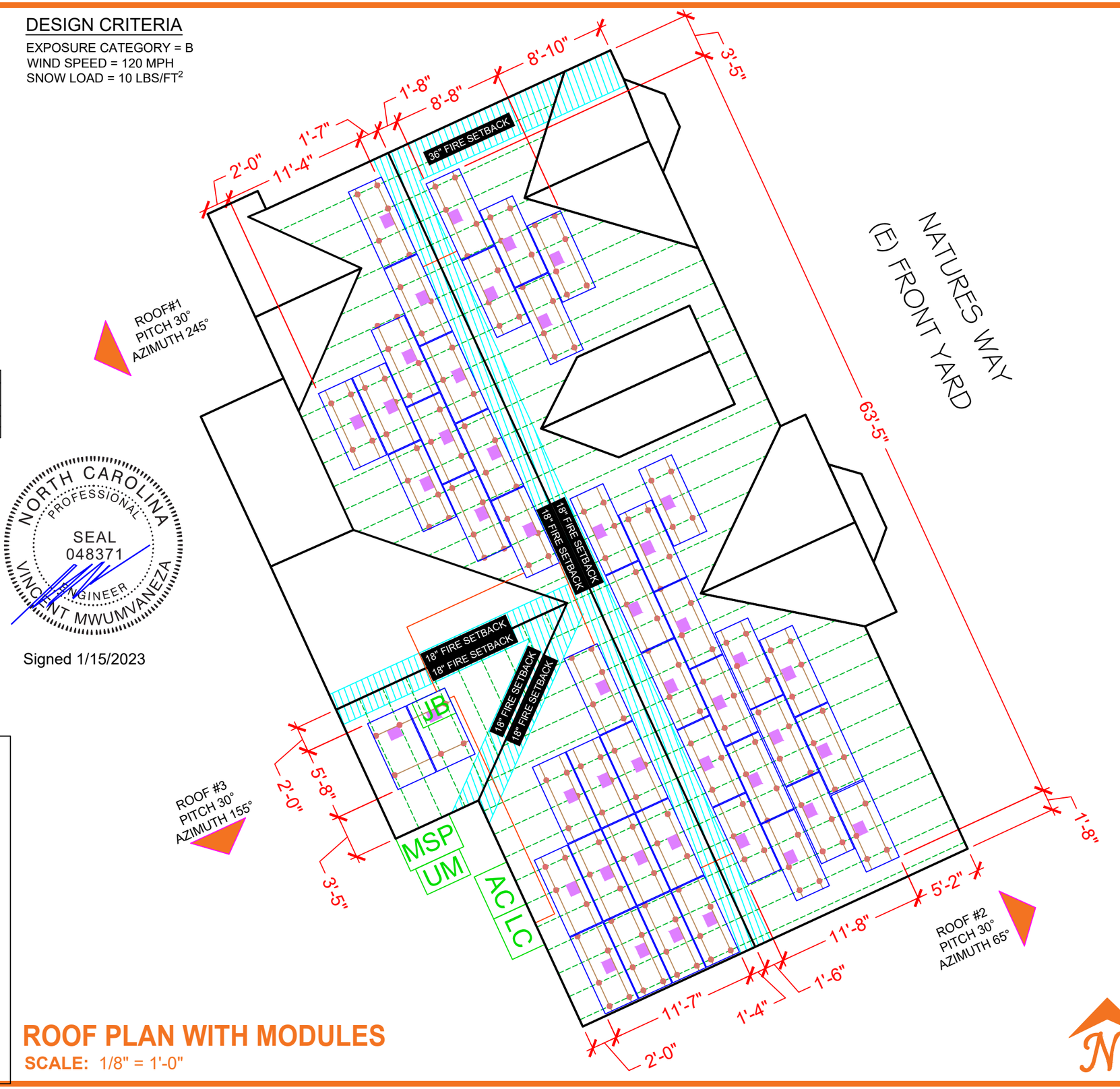
ROOF DESCRIPTION TABLE						
ROOF PLANE	TRUSSES SIZE	TRUSSES SPACING	ATTACHMENT SPACING	MODULE COUNT	ARRAY TILT	AZIMUTH
#1	2" x 4"	24" O.C.	48" O.C.	23	30°	245°
#2	2" x 4"	24" O.C.	48" O.C.	22	30°	65°
#3	2" x 4"	24" O.C.	48" O.C.	2	30°	155°

ROOF ACCESS POINT

- SHALL BE LOCATED IN AREAS THAT DO NOT REQUIRE THE PLACEMENT OF GROUND LADDERS OVER OPENINGS SUCH AS WINDOWS OR DOORS, AND LOCATED AT STRONG POINTS OF BUILDING CONSTRUCTION IN LOCATIONS WHERETHE ACCESS POINT DOES NOT CONFLICT WITH OVERHEAD OBSTRUCTIONS SUCH AS TREE LIMBS, WIRES OR SIGNS.

DESIGN CRITERIA

EXPOSURE CATEGORY = B
WIND SPEED = 120 MPH
SNOW LOAD = 10 LBS/FT^2



NORTH CAROLINA PROFESSIONAL SEAL 048371 ENGINEER VINCENT MWUMVANEZA

Signed 1/15/2023

LEGEND

	PV MODULE		DIMENSIONS
	OPTIMIZER		TRUSS
	MICRO-INVERTER		RAIL
	ROOF ATTACHMENT		CONDUIT
MSP	MAIN SERVICE PANEL (EXISTING, 200A)	AC	AC DISCONNECT UNFUSED (NEW)
UM	UTILITY METER (EXISTING)	ACF	AC DISCONNECT FUSED (N/A)
PM	PRODUCTION METER (N/A)	JB	JUNCTION BOX (NEW)
BAT	BATTERY (N/A)	AT	AUTO TRANSFORMER (N/A)
INV	(0) INVERTER (N/A)	SUB	SUBPANEL (N/A)
LC	LOAD CENTER (COMBINER PANEL) (NEW)	DCD	DC DISCONNECT (N/A)
SM	SOLAREDGE METER (N/A)	DCC	DC COMBINER (N/A)
BLP	BACKUP LOAD PANEL (N/A)	EE	EXISTING EQUIPMENT

ROOF PLAN WITH MODULES

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

TOP TIER SOLAR SOLUTIONS

CONTRACTOR
NAME: TOP TIER SOLAR SOLUTIONS
ADDRESS: 1530 CENTER PARK DR, CHARLOTTE, NC, 28217,USA
PHONE: 855-997-1213
CONTRACTOR LICENSE# SC - CLG.123883
ELECTRICAL LICENSE#:NC - 87345
EMAIL #: bdunford@toptiersolarsolutions.com

REVISIONS

DESCRIPTION	DATE	REV

SIGNATURE & SEAL

HOMEOWNER INFO

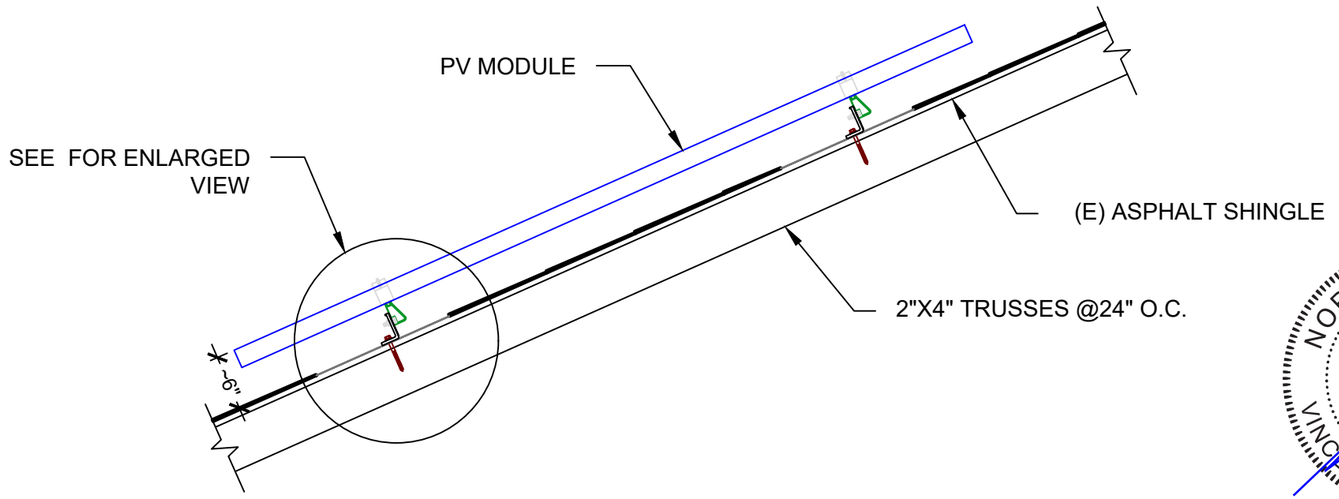
JENNIFER IVEY
165 NATURES WAY, DUNN, NC
28334, USA

APN: 7549817
EMAIL: -
PHONE: -

SHEET NAME
ROOF PLAN WITH MODULES

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-2

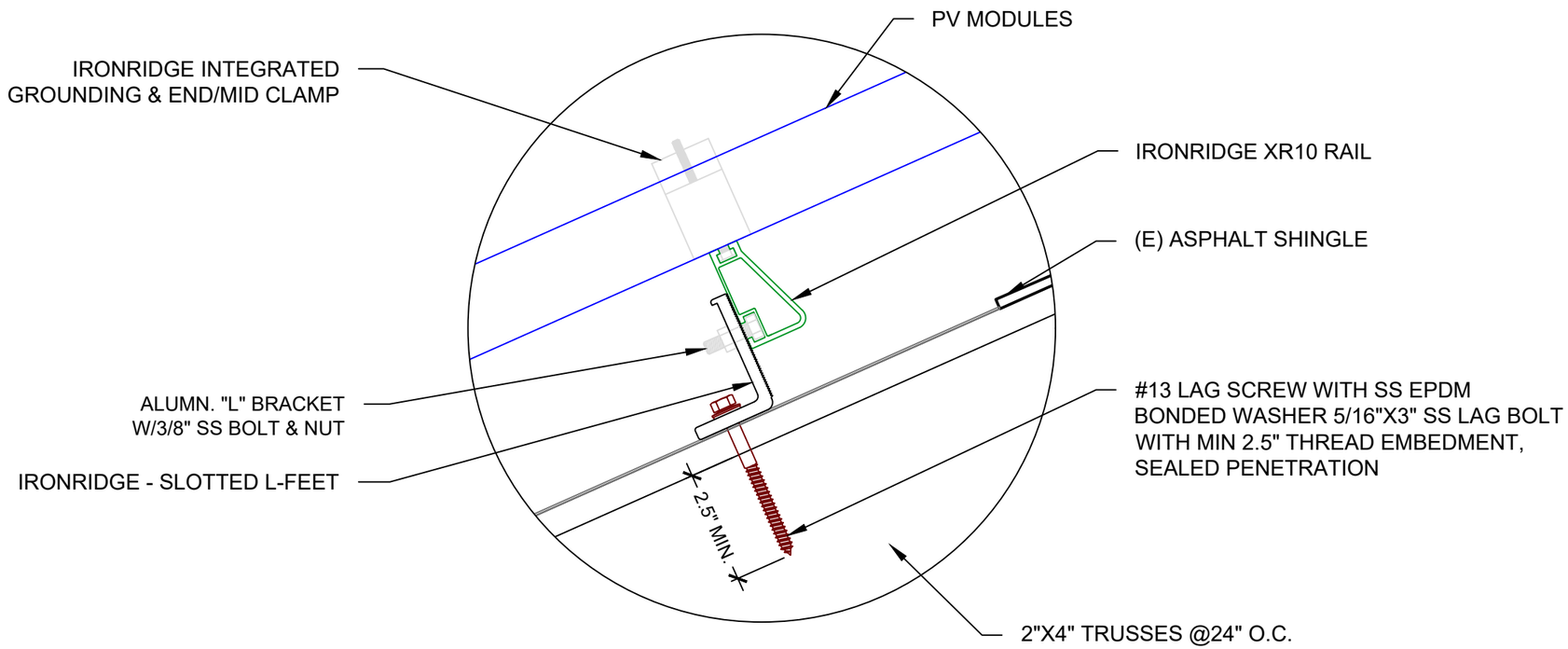


NORTH CAROLINA PROFESSIONAL SEAL 048371 ENGINEER VINCENT MWUMVANEZA

Signed 1/15/2023

ATTACHMENT DETAIL

SCALE: NTS



ATTACHMENT DETAIL (ENLARGED SECTION VIEW)

SCALE: NTS

TOP TIER SOLAR SOLUTIONS

CONTRACTOR

NAME: TOP TIER SOLAR SOLUTIONS

ADDRESS: 1530 CENTER PARK DR, CHARLOTTE, NC, 28217,USA

PHONE: 855-997-1213

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REVISIONS

DESCRIPTION	DATE	REV

SIGNATURE & SEAL

HOMEOWNER INFO

JENNIFER IVEY
165 NATURES WAY, DUNN, NC 28334, USA

APN: 7549817
EMAIL: -
PHONE: -

SHEET NAME

ATTACHMENT DETAIL

SHEET SIZE

ANSI B
11" X 17"

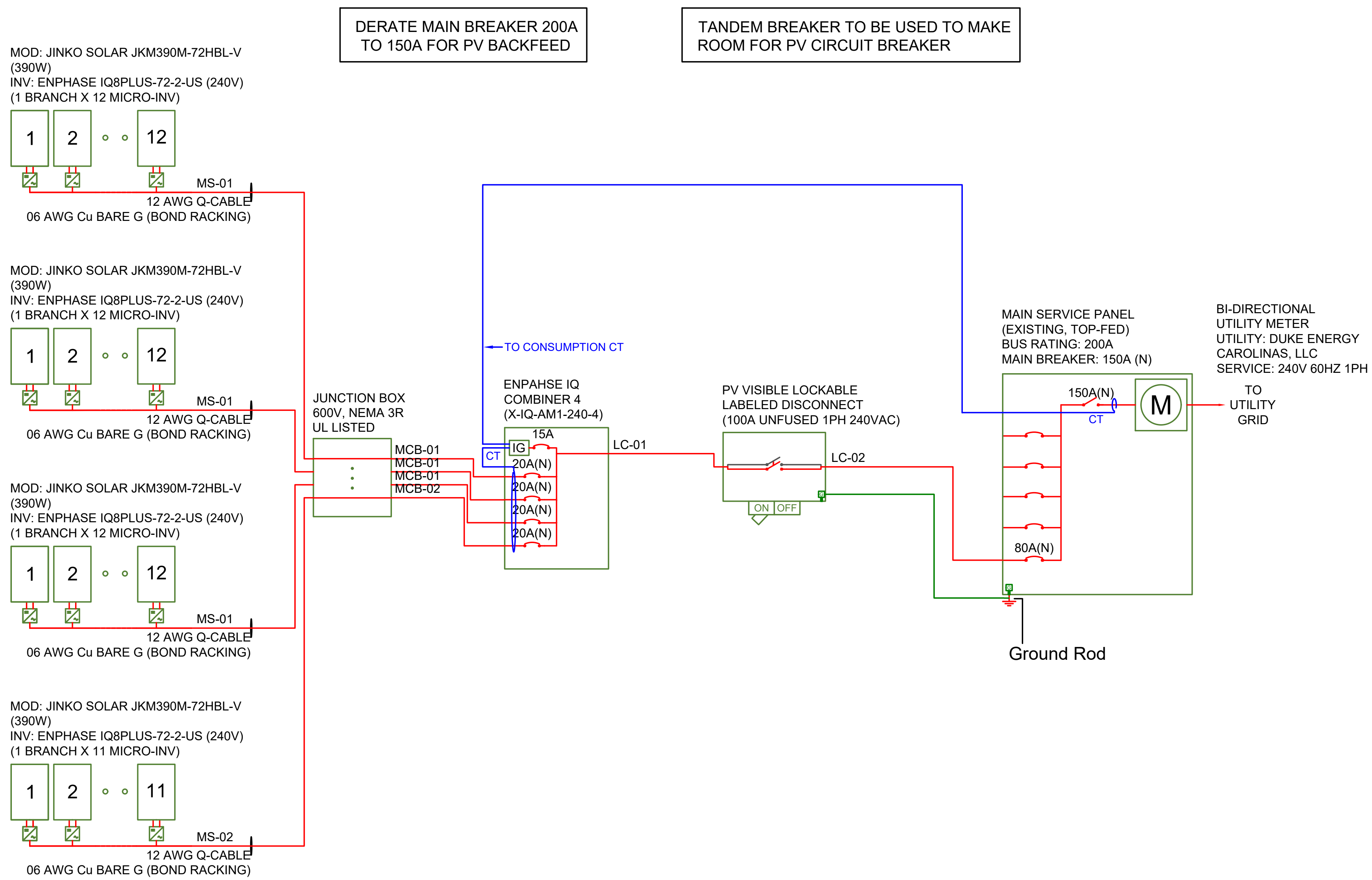
SHEET NUMBER

PV-3

SYSTEM SUMMARY STC (18.33 kW DC / 13.63 kW AC)

STC DC: (47) 390W = 18.33 kW
STC AC: (47) 290W = 13.63 kW

- (47) JINKO SOLAR JKM390M-72HBL-V (390W) MODULES
- (47) ENPHASE IQ8PLUS-72-2-US (240V) MICROINVERTERS
- 3x BRANCHES OF 12 CONNECTED IN PARALLEL
- 1x BRANCH OF 11 CONNECTED IN PARALLEL



AC wire details

Wire	Min Ampacity	Live	Neutral	Ground	Min EMT	Min PVC	Min RMC
MS-01	18.15A	12 AWG (Q-Cable)	-	06 AWG BARE (NOT IN CONDUIT)	-	-	-
MS-02	16.64A	12 AWG (Q-Cable)	-	06 AWG BARE (NOT IN CONDUIT)	-	-	-
MCB-01	18.15A	(2) 10 AWG THWN-2	-	10 AWG THWN-2	1/2 in	1/2 in	1/2 in
MCB-02	16.64A	(2) 10 AWG THWN-2	-	10 AWG THWN-2	1/2 in	1/2 in	1/2 in
LC-01	71.09A	(2) 03 AWG THWN-2	03 AWG THWN-2	08 AWG THWN-2	1 in	1 in	1 in
LC-02	71.09A	(2) 03 AWG THWN-2	03 AWG THWN-2	06 AWG BARE (NOT IN CONDUIT)	1 in	1 in	1 in

INTERCONNECTION 120% RULE (MAIN PANEL)

UTILITY FEED + TOTAL BACKFEED
150A + 80A = 230A

LESS OR EQUAL TO
BUS RATING x 120%
200A x 120% = 240A

CALCULATION ENSURES BUS IS SAFE REGARDLESS OF LOADS

EXTREME CASE MODULE OUTPUT (JINKO SOLAR JKM390M-72HBL-V (390W))

Isc(25°C) = 10.46A, Tisc = 0.048A/°C
Isc(T) = Isc(25°C) + [Tisc x (T-25°C)]
Isc(-9°C) = 8.83A, Isc(35°C) = 10.94A

Voc(25°C) = 48.60V, Tvoc = -0.290V/°C
Voc(T) = Voc(25°C) + [Tvoc x (T-25°C)]
Voc(-9°C) = 58.46V, Voc(35°C) = 45.70V

ELECTRICAL NOTES

1) ALL GROUNDING TO COMPLY WITH NEC 690.47.
2) ROOFTOP CONDUIT SHALL BE LOCATED MIN. 7/8" ABOVE ROOF SURFACE.
3) ALL TERMINALS SHALL BE MIN. 75°C RATED.
4) IF ENVOY PRESENT, ENVOY BREAKER DETERMINED AT FACTORY BY MANUFACTURER.
5) IF ENVOY PRESENT, FOR IQ COMBINER USE SINGLE CT ON L1. AT SYSTEM CONTROLLER MAIN USE DOUBLE CT ON L1 AND L2.

ELECTRICAL SINGLE LINE DIAGRAM

SCALE: NTS

CONTRACTOR
NAME: TOP TIER SOLAR SOLUTIONS
ADDRESS: 1530 CENTER PARK DR, CHARLOTTE, NC, 28217,USA
PHONE: 855-997-1213
CONTRACTOR LICENSE# SC - CLG.123883
ELECTRICAL LICENSE#:NC - 87345
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REVISIONS

DESCRIPTION	DATE	REV

SIGNATURE & SEAL

HOMEOWNER INFO

JENNIFER IVEY
165 NATURES WAY, DUNN, NC 28334, USA

APN: 7549817
EMAIL: -
PHONE: -

SHEET NAME: SINGLE LINE DIAGRAM

SHEET SIZE: ANSI B 11" X 17"

SHEET NUMBER: PV-4

SYSTEM SUMMARY STC (18.33 kW DC / 13.63 kW AC)

STC DC: (47) 390W = 18.33 kW
STC AC: (47) 290W = 13.63 kW

- (47) JINKO SOLAR JKM390M-72HBL-V (390W) MODULES
- (47) ENPHASE IQ8PLUS-72-2-US (240V) MICROINVERTERS

- 3x BRANCHES OF 12 CONNECTED IN PARALLEL
- 1x BRANCH OF 11 CONNECTED IN PARALLEL

AC wire details

WireID	#Modules	Nominal Voltage	Backfeed *1.25 /cond. set	Min OCPD	Total Power	Conductor sets	ccConductors /conduit	Expected max temp	Adjusted ampacity (ampacity x temp derate x conduit fill derate)	Conductor & neutral size	EGC size (Cu)	Conductor metal	Max length	V drop	Min EMT size	Min PVC size	Min RMC size
MS-01	12	240 V	18.15 A	20 A	3.5 kW	1	2	35	25 x 0.94 x 1.00 = 23.50 A	12 AWG (Q-Cable)	06 AWG BARE (NOT IN CONDUIT)	Cu	50 ft	1.05 %	-	-	-
MS-02	11	240 V	16.64 A	20 A	3.2 kW	1	2	35	25 x 0.94 x 1.00 = 23.50 A	12 AWG (Q-Cable)	06 AWG BARE (NOT IN CONDUIT)	Cu	50 ft	0.97 %	-	-	-
MCB-01	12	240 V	18.15 A	20 A	3.5 kW	1	2	35	35 x 0.94 x 1.00 = 32.90 A	10 AWG THWN-2	10 AWG THWN-2	Cu	50 ft	0.63 %	1/2 in	1/2 in	1/2 in
MCB-02	11	240 V	16.64 A	20 A	3.2 kW	1	2	35	35 x 0.94 x 1.00 = 32.90 A	10 AWG THWN-2	10 AWG THWN-2	Cu	50 ft	0.58 %	1/2 in	1/2 in	1/2 in
LC-01	47	240 V	71.09 A	80 A	13.6 kW	1	2	35	100 x 0.94 x 1.00 = 94.00 A	03 AWG THWN-2	08 AWG THWN-2	Cu	10 ft	0.10 %	1 in	1 in	1 in
LC-02	47	240 V	71.09 A	80 A	13.6 kW	1	2	35	100 x 0.94 x 1.00 = 94.00 A	03 AWG THWN-2	06 AWG BARE (NOT IN CONDUIT)	Cu	10 ft	0.10 %	1 in	1 in	1 in

INTERCONNECTION 120% RULE
(MAIN PANEL)

UTILITY FEED + TOTAL BACKFEED
150A + 80A = 230A

LESS OR EQUAL TO
BUS RATING x 120%
200A x 120% = 240A

CALCULATION ENSURES BUS IS SAFE REGARDLESS OF LOADS

EXTREME CASE MODULE OUTPUT
(JINKO SOLAR JKM390M-72HBL-V (390W))

Isc(25°C) = 10.46A, Tisc = 0.048A/°C
Isc(T) = Isc(25°C) + [Tisc x (T-25°C)]
Isc(-9°C) = 8.83A, Isc(35°C) = 10.94A

Voc(25°C) = 48.60V, Tvoc = -0.290V/°C
Voc(T) = Voc(25°C) + [Tvoc x (T-25°C)]
Voc(-9°C) = 58.46V, Voc(35°C) = 45.70V

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 600V AND 90°C WET ENVIRONMENT.
3) 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.
4) WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26.
5) DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS. CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS AND ACCESSORIES TO FULFILL APPLICABLE CODES AND STANDARDS.
6) WHERE SIZES OF JUNCTION BOXES, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY.
7) ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.
8) MODULE GROUNDING CLIPS TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER THE GROUNDING CLIP MANUFACTURER'S INSTRUCTION.
9) MODULE SUPPORT RAIL TO BE BONDED TO CONTINUOUS COPPER G.E.C.VIA WEEB LUG OR ILSCO GBL-4DBT LAY-IN LUG.
10) PV EQUIPMENT SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH NEC 690.
11) EXACT LOCATION OF AUXILIARY GROUNDING TO BE DETERMINED AT TIME OF INSTALL.
12) EXISTING WIRES MUST BE REPLACED IF SMALLER THAN LISTED MINIMUM SIZES PER NEC 310.15(B)(16).
13) IF ENVOY PRESENT, ENVOY BREAKER DETERMINED AT FACTORY BY MANUFACTURER.
14) IF ENVOY PRESENT, FOR IQ COMBINER USE SINGLE CT ON L1. AT SYSTEM CONTROLLER MAIN USE DOUBLE CT ON L1 AND L2.

TOP TIER SOLAR SOLUTIONS

CONTRACTOR
NAME: TOP TIER SOLAR SOLUTIONS
ADDRESS: 1530 CENTER PARK DR, CHARLOTTE, NC, 28217,USA
PHONE: 855-997-1213
CONTRACTOR LICENSE# SC - CLG.123883
ELECTRICAL LICENSE#:NC - 87345
EMAIL #: bdunford@toptiersolarsolutions.com

REVISIONS

DESCRIPTION	DATE	REV

SIGNATURE & SEAL

HOMEOWNER INFO

JENNIFER IVEY
165 NATURES WAY, DUNN, NC
28334, USA

APN: 7549817
EMAIL: -
PHONE: -

SHEET NAME
WIRING CALCULATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-5

Article 220 - Service/Feeder calculation for (address):	Job Code
165 Natures Way, Dunn, NC 28334	Jennifer Ivey

Section 220.83 Existing Dwelling Unit

Part #1 - Section 220.83 (B)(1) General Lighting/Receptacles @ 3 VA per sq ft:

Building	Square Footage	VA (watts)	Amps
House	2382	7146	29.775

Total for Part #1:	Amps	Box A (VA)
	29.78	7146

Part #2 - Section 220.83 (B)(2),(3)a, b, c, d - Appliances and Dedicated Circuits:

Dedicated circuit	Size in VA	Dedicated circuit	Size in VA
Laundry	1500	EV Charging System	N/A
Appliance Circuit(s)	3000	Water Heater	5760
Dishwasher(s)	1000		N/A
Disposal(s)	600		N/A
Refrigerator(s)	1000		N/A
Microwave(s)	1600		N/A
Dryer	5760		N/A
Range	7680		N/A
Oven	N/A		N/A
Cooktop	N/A	Totals for Part #2:	Amps / Box B (VA)
Pool Equipment	N/A		116.25 / 27900

Total VA from Parts #1 and #2 combined: Box A + Box B = 35046

Total VA	35046			
First 8,000 VA @ 100%	8000	Remaining VA @ 40%		
Remaining VA =	27046	27046 x 40% =	10818.4	VA
		Adding First 8000 VA	8000	VA
Total VA for Gen. Lights/Recep, Appliances & Dedicated circuits:			18818.4	VA
Total AMP for Gen. Lights/Recep, Appliances & Dedicated circuits:			78.41	Amps

Part #3 - Section 220.83 (B) Heating and A/C loads:

*Combine the larger loads of either the Heating or the A/C loads togther

100% of all the Heating or A/C loads in VA:	11,520	VA
100% of all the Heating or A/C loads in Amps:	48.00	A

Totals from all Parts

	VA	Volts	Amps
Parts #1 & #2	18818.4	240	78.41
Part #3	11,520	240	48.00
Total VA for all Parts:	30,338		

Totals Service/Feeder Load 126.41

TOP TIER SOLAR SOLUTIONS

CONTRACTOR
NAME: TOP TIER SOLAR SOLUTIONS
ADDRESS: 1530 CENTER PARK DR, CHARLOTTE, NC, 28217,USA
PHONE: 855-997-1213
CONTRACTOR LICENSE# SC - CLG.123883
ELECTRICAL LICENSE#:NC - 87345
EMAIL #: bdunford@toptiersolarsolutions.com

REVISIONS

DESCRIPTION	DATE	REV

SIGNATURE & SEAL

HOMEOWNER INFO

JENNIFER IVEY
165 NATURES WAY, DUNN, NC 28334, USA
APN: 7549817
EMAIL: -
PHONE: -

SHEET NAME
LOAD CALCULATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-5.1

⚠WARNING

ELECTRICAL SHOCK HAZARD

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

LABEL LOCATION: INVERTERS, AC DISCONNECTS, AC COMBINER BOXES, AC JUNCTION BOXES
CODE REF: NEC 2017 - 690.13(B)

⚠WARNING⚠

ELECTRICAL SHOCK HAZARD

IF GROUND FAULT IS INDICATED ALL NORMALLY GROUNDED CONDUCTORS MAY BE UNGROUNDED AND ENERGIZED

LABEL LOCATION: AC DISCONNECTS, AC COMBINER BOXES, SERVICE PANELS
CODE REF: NEC 2017 - 690.5(C)

PV SYSTEM DISCONNECT

MAXIMUM AC OPERATING CURRENT: 56.87 AMPS
NOMINAL OPERATING AC VOLTAGE: 240.0 VAC

LABEL LOCATION: INTERCONNECTION Placard (MSP BACKFEED BREAKER OR TAP BOX IF LINE SIDE TAP), AC DISCONNECTS
CODE REF: NEC 2017 - 690.54

PHOTOVOLTAIC SYSTEM UTILITY DISCONNECT SWITCH

LABEL LOCATION: AC DISCONNECTS FOR UTILITY ACCESS
CODE REF: UTILITY

PHOTOVOLTAIC SYSTEM METER

LABEL LOCATION: PV PRODUCTION METER
CODE REF: NEC 2017 - 690.4(B)

⚠WARNING

PHOTOVOLTAIC SYSTEM COMBINER PANEL

DO NOT ADD LOADS

LABEL LOCATION: AC COMBINER BOX
CODE REF: NEC 2017 - 690.12(B)

⚠WARNING

INVERTER OUTPUT CONNECTION
DO NOT RELOCATE THIS OVERCURRENT DEVICE

LABEL LOCATION: FIRST BACKFEED BREAKER (MSP/SUBPANEL) IF NO LINE SIDE TAP
CODE REF: NEC 2017 - 705.12(B)(2)(3)(b), NEC 2017 - 705.12(B)(3), CEC 2019 - 705.12(B)(2)(3)(b), CEC 2019 - 705.12(B)(3)

⚠CAUTION

PHOTOVOLTAIC SYSTEM CIRCUIT IS BACKFED

LABEL LOCATION: INTERCONNECTION Placard (MSP BACKFEED BREAKER OR TAP BOX IF LINE SIDE TAP)
CODE REF: NEC 2017 - 705.2(4)

PV SOLAR BREAKER

DO NOT RELOCATE THIS OVERCURRENT DEVICE

LABEL LOCATION: FIRST BACKFEED BREAKER (MSP/SUBPANEL) IF NO LINE SIDE TAP
CODE REF: NEC 2017 - 705.12(B)(2)(3)(b)

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

LABEL LOCATION: MSP
CODE REF: NEC 2017 - 690.56(C)(3)

⚠CAUTION

DUAL POWER SOURCE SECOND SOURCE IS PHOTOVOLTIC

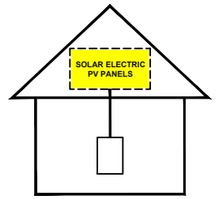
LABEL LOCATION: MSP, UTILITY METER (IF SEPARATE)
CODE REF: UTILITY

MAIN BREAKER HAS BEEN DOWNSIZED TO 150A DONOT UPSIZE MAIN BREAKER

SIGNAGE LOCATIONS:
NEXT TO MAIN BREAKER

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

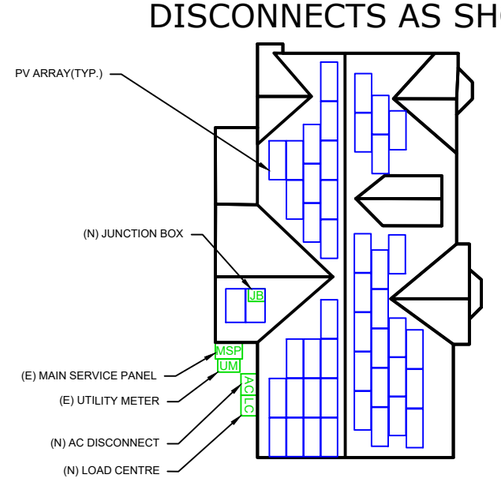
TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY.



LABEL LOCATION: INTERCONNECTION POINT (MSP OR AC DISCONNECT IF LINE SIDE TAP)
CODE REF: NEC 2017 - 690.12, NEC 2017 - 690.56(C)

CAUTION:

POWER TO THIS SERVICE IS ALSO SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECTS AS SHOWN



LABEL LOCATION: MSP
CODE REF: NEC 2017 - 705.10

NOTES AND SPECIFICATIONS

1) SIGNS AND LABELS SHALL MEET THE REQUIREMENTS OF NEC 110.21(B), UNLESS SPECIFIC INSTRUCTIONS ARE REQUIRED BY SECTION 690, OR IF REQUESTED BY THE LOCAL AHJ.
2) SIGNS AND LABELS SHALL ADEQUATELY WARN OF HAZARDS USING EFFECTIVE WORDS, COLORS AND SYMBOLS.
3) LABELS SHALL BE PERMANENTLY AFFIXED TO THE EQUIPMENT OR WIRING METHOD AND SHALL NOT BE HAND WRITTEN.
4) LABEL SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED.
5) SIGNS AND LABELS SHALL COMPLY WITH ANSI Z535.4 - 2011, PRODUCT SAFETY SIGNS AND LABELS, UNLESS OTHERWISE SPECIFIED.
6) DO NOT COVER EXISTING MANUFACTURER LABELS.

TOP TIER SOLAR SOLUTIONS

CONTRACTOR
NAME: TOP TIER SOLAR SOLUTIONS
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PHONE: 855-997-1213
CONTRACTOR LICENSE# SC - CLG.123883
ELECTRICAL LICENSE#:NC - 87345
EMAIL #: bdunford@toptiersolarsolutions.com

REVISIONS

DESCRIPTION	DATE	REV

SIGNATURE & SEAL

HOMEOWNER INFO

JENNIFER IVEY
165 NATURES WAY, DUNN, NC
28334, USA

APN: 7549817
EMAIL: -
PHONE: -

SHEET NAME

PLACARDS

SHEET SIZE

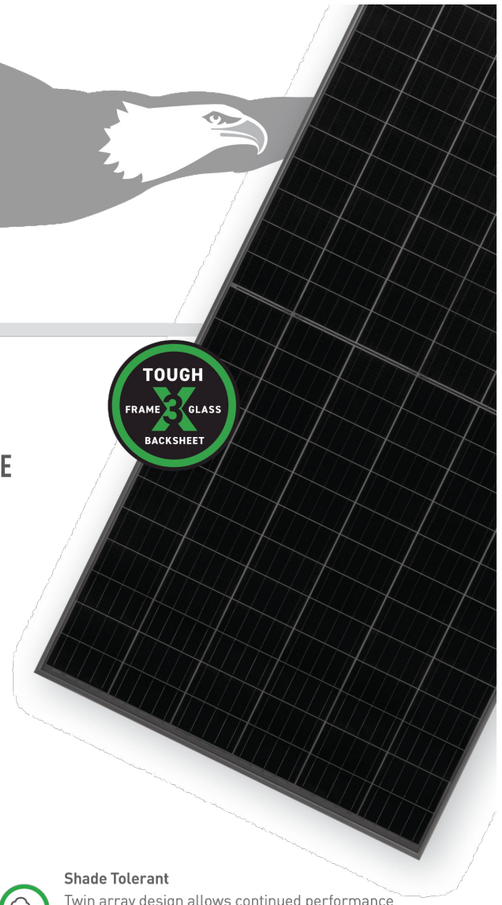
ANSI B
11" X 17"

SHEET NUMBER

PV-6

EAGLE
MODULES

THE MOST DEPENDABLE SOLAR PRODUCT



EAGLE G2 BLACK

380-400 WATT • MONO PERC HALF-CELL MODULE

Positive power tolerance of 0~+3%

*PRELIMINARY VERSION

- NYSE-listed since 2010, Bloomberg Tier 1 manufacturer
- Top performance in the strictest 3rd party labs
- Automated manufacturing utilizing artificial intelligence
- Vertically integrated, tight controls on quality
- Premium solar module factory in Jacksonville, Florida

KEY FEATURES

Superior Aesthetics
Black backsheet and black frame create ideal look for residential applications.

Diamond Half-Cell Technology
World-record breaking efficient mono PERC half-cells deliver high power in a small footprint.

Thick and Tough
Fire Type 1 rated module engineered with a thick frame, 3.2mm front side glass, and thick backsheet for added durability.

Shade Tolerant
Twin array design allows continued performance even with shading by trees or debris.

Protected Against All Environments
Certified to withstand humidity, heat, rain, marine environments, wind, hailstorms, and packed snow.

Warranty
12-year product and 25-year linear power warranty.

- ISO9001:2008 Quality Standards
- ISO14001:2004 Environmental Standards
- IEC61215, IEC61730 certification pending
- ISO 45001 2018 Occupational Health & Safety Standards
- UL1703/61730 certification pending

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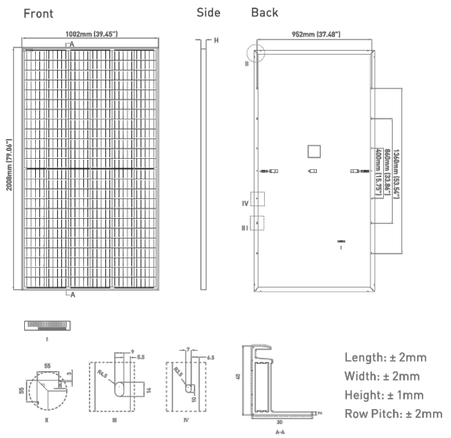
JinKO Solar

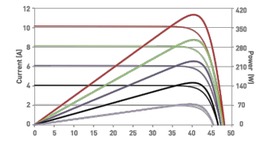
ENGINEERING DRAWINGS



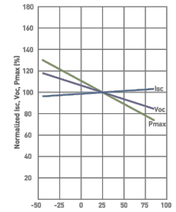
Length: ± 2mm
Width: ± 2mm
Height: ± 1mm
Row Pitch: ± 2mm

ELECTRICAL PERFORMANCE & TEMPERATURE DEPENDENCE

Current-Voltage & Power-Voltage Curves (400W)



Temperature Dependence of Isc, Voc, Pmax



MECHANICAL CHARACTERISTICS

Cells	Mono PERC Diamond Cell (158.75 x 158.75mm)
No. of Half Cells	144 (6 x 24)
Dimensions	2008 x1002 x 40mm (79.06 x 39.45 x 1.57in)
Weight	22.5kg (49.6lbs)
Front Glass	3.2mm, Anti-Reflection Coating High Transmission, Low Iron, Tempered Glass
Frame	Anodized Aluminum Alloy
Junction Box	IP68 Rated
Output Cables	12 AWG, 1400mm (55.12in)
Connector	Staubli MC4 Series
Fire Type	Type 1
Pressure Rating	5400Pa (Snow) & 2400Pa (Wind)
Hailstone Test	50mm Hailstones at 35m/s

TEMPERATURE CHARACTERISTICS

Temperature Coefficients of Pmax	-0.35%/°C
Temperature Coefficients of Voc	-0.29%/°C
Temperature Coefficients of Isc	0.048%/°C
Nominal Operating Cell Temperature (NOCT)	45±2°C

MAXIMUM RATINGS

Operating Temperature (°C)	-40°C~+85°C
Maximum System Voltage	1500VDC (UL and IEC)
Maximum Series Fuse Rating	20A

PACKAGING CONFIGURATION

(Two pallets = One stack)

27pcs/pallet, 54pcs/stack, 594pcs/40'HQ Container

WARRANTY

12-year product and 25-year linear power warranty

1st year degradation not to exceed 2.5%, each subsequent year not to exceed 0.6%, minimum power at year 25 is 83.1% or greater.

ELECTRICAL CHARACTERISTICS

Module Type	JKM380M-72HBL-V		JKM385M-72HBL-V		JKM390M-72HBL-V		JKM395M-72HBL-V		JKM400M-72HBL-V	
	STC	NOCT	STC	NOCT	SCT	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	380Wp	279Wp	385Wp	283Wp	390Wp	287Wp	395Wp	291Wp	400Wp	294Wp
Maximum Power Voltage (Vmp)	39.10V	36.5V	39.37V	36.8V	39.64V	37.0V	39.90V	37.4V	40.16V	37.6V
Maximum Power Current (Imp)	9.72A	7.67A	9.78A	7.71A	9.84A	7.75A	9.90A	7.77A	9.96A	7.82A
Open-circuit Voltage (Voc)	48.2V	45.4V	48.4V	45.6V	48.6V	45.8V	48.8V	46.0V	49.1V	46.2V
Short-circuit Current (Isc)	10.30A	8.32A	10.38A	8.38A	10.46A	8.45A	10.54A	8.51A	10.61A	8.57A
Module Efficiency STC (%)	18.89%		19.14%		19.38%		19.63%		19.88%	

***STC:** Irradiance 1000W/m² | Cell Temperature 25°C | AM = 1.5
NOCT: Irradiance 800W/m² | Ambient Temperature 20°C | AM = 1.5 | Wind Speed 1m/s

*Power measurement tolerance: ±3%

**PRELIMINARY VERSION*
The company reserves the final right for explanation on any of the information presented hereby. JKM380-400M-72HBL-V-D1-US

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JinKO Solar

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SHEET NAME
EQUIPMENT SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-7

ENPHASE.

DATA SHEET

IQ8 Series Microinverters

Our newest IQ8 Microinverters are the industry's first microgrid-forming, software-defined 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.

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.

Enphase 25 year limited warranty

IQ8 Series Microinverters redefine reliability standards with more than one million cumulative hours of power-on testing, enabling an industry-leading limited warranty of up to 25 years.

Connect PV modules quickly and easily to IQ8 Series Microinverters using the included Q-DCC-2 adapter cable with plug-n-play MC4 connectors.

UL CERTIFIED SAFETY

IQ8 Series Microinverters are UL Listed as PV Rapid Shut Down Equipment and conform with various regulations, when installed according to manufacturer's instructions.

IQ8SE-DS-0001-01-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 high-powered 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. IQ8H-208V operates only in grid-tied mode.
** IQ8 Series Microinverters supports split phase, 240V. IQ8H-208 supports split phase, 208V only.

IQ8 Series Microinverters

INPUT DATA (DC)		IQ8-60-2-US	IQ8PLUS-72-2-US	IQ8M-72-2-US	IQ8A-72-2-US	IQ8H-240-72-2-US	IQ8H-208-72-2-US[1]
Commonly used module pairings[2]	W	235 – 350	235 – 440	260 – 460	295 – 500	320 – 540+	295 – 500+
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	V	27 – 37	29 – 45	33 – 45	36 – 45	38 – 45	38 – 45
Operating range	V	25 – 48	25 – 58				
Min/max start voltage	V	30 / 48	30 / 58				
Max input DC voltage	V	50	60				
Max DC current[3] [module Isc]	A	15					
Overvoltage class DC port		II					
DC port backfeed current	mA	0					
PV array configuration		1x1 Ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit					
OUTPUT DATA (AC)		**IQ8-60-2-US**	**IQ8PLUS-72-2-US**	**IQ8M-72-2-US**	**IQ8A-72-2-US**	**IQ8H-240-72-2-US**	**IQ8H-208-72-2-US[1]**
Peak output power	VA	245	300	330	366	384	366
Max continuous output power	VA	240	290	325	349	380	360
Nominal (L-L) voltage/range[4]	V	240 / 211 – 264					208 / 183 – 250
Max continuous output current	A	1.0	1.21	1.35	1.45	1.58	1.73
Nominal frequency	Hz	60					
Extended frequency range	Hz	50 – 68					
AC short circuit fault current over 3 cycles	Arms	2					4.4
Max units per 20 A (L-L) branch circuit[5]		16	13	11	11	10	9
Total harmonic distortion		<5%					
Overvoltage class AC port		III					
AC port backfeed current	mA	30					
Power factor setting		1.0					
Grid-tied power factor (adjustable)		0.85 leading – 0.85 lagging					
Peak efficiency	%	97.5	97.6	97.6	97.6	97.6	97.4
CEC weighted efficiency	%	97	97	97	97.5	97	97
Night-time power consumption	mW	60					
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					
COMPLIANCE							
Certifications		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 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) The IQ8H-208 variant will be operating in grid-tied mode only at 208V AC. (2) No enforced DC/AC ratio. See the compatibility calculator at https://link.enphase.com/module-compatibility (3) Maximum continuous input DC current is 10.6A (4) Nominal voltage range can be extended beyond nominal if required by the utility. (5) Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

IQ8SE-DS-0001-01-EN-US-2022-03-17

TOP TIER SOLAR SOLUTIONS

CONTRACTOR

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SHEET NAME

EQUIPMENT SPECIFICATION

SHEET SIZE

ANSI B
11" X 17"

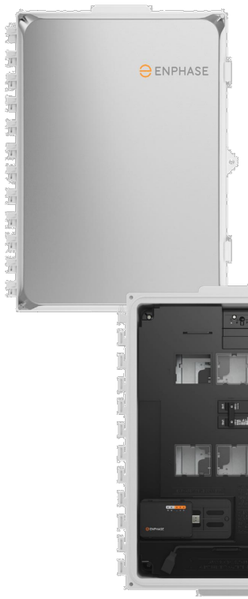
SHEET NUMBER

PV-8

Data Sheet
Enphase Networking

Enphase IQ Combiner 4/4C

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



X-IQ-AM1-240-4C

X-IQ-AM1-240-4

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 Combiner 4C
- 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 stud mounting
- 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-year limited warranty
- Two years labor reimbursement program coverage included for both the IQ Combiner SKU's
- UL listed

UL LISTED

To learn more about Enphase offerings, visit **enphase.com**

ENPHASE

Enphase IQ Combiner 4/4C

MODEL NUMBER	
IQ Combiner 4 (X-IQ-AM1-240-4)	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 IQ System Controller 2 and to deflect heat.
IQ Combiner 4C (X-IQ-AM1-240-4C)	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 the installation area.) Includes a silver solar shield to match the IQ Battery and IQ System Controller and to deflect heat.
ACCESSORIES AND REPLACEMENT PARTS	(not included, order separately)
Ensemble Communications Kit COMMS-CELLMODEM-M1-06 CELLMODEM-M1-06-SP-05 CELLMODEM-M1-06-AT-05	- Includes COMMS-KIT-01 and CELLMODEM-M1-06-SP-05 with 5-year Sprint data plan for Ensemble sites - 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 Breakers BRK-10A-2-240V BRK-15A-2-240V BRK-20A-2P-240V BRK-15A-2P-240V-B BRK-20A-2P-240V-B	Supports Eaton BR210, BR215, BR220, BR230, BR240, BR250, and BR260 circuit breakers. Circuit breaker, 2 pole, 10A, Eaton BR210 Circuit breaker, 2 pole, 15A, Eaton BR215 Circuit breaker, 2 pole, 20A, Eaton BR220 Circuit breaker, 2 pole, 15A, Eaton BR215B with hold down kit support Circuit breaker, 2 pole, 20A, Eaton BR220B with hold down kit support
EPLC-01	Power line carrier (communication bridge pair), quantity - one pair
XA-SOLARSHIELD-ES	Replacement solar shield for IQ Combiner 4/4C
XA-PLUG-120-3	Accessory receptacle for Power Line Carrier in IQ Combiner 4/4C (required for EPLC-01)
XA-ENV-PCBA-3	Replacement IQ Gateway printed circuit board (PCB) for Combiner 4/4C
X-IQ-NA-HD-125A	Hold down kit for Eaton circuit breaker with screws.
ELECTRICAL SPECIFICATIONS	
Rating	Continuous duty
System voltage	120/240 VAC, 60 Hz
Eaton BR series busbar rating	125 A
Max. continuous current rating	65 A
Max. continuous current rating (input from PV/storage)	64 A
Max. fuse/circuit rating (output)	90 A
Branch circuits (solar and/or storage)	Up to four 2-pole Eaton BR series Distributed Generation (DG) breakers only (not included)
Max. total branch circuit breaker rating (input)	80A of distributed generation / 95A with IQ Gateway breaker included
Envoy breaker	10A or 15A rating GE/Siemens/Eaton included
Production metering CT	200 A solid core pre-installed and wired to IQ Gateway
Consumption monitoring CT (CT-200-SPLIT)	A pair of 200 A split core current transformers
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.
Weight	7.5 kg (16.5 lbs)
Ambient temperature range	-40° C to +46° C (-40° to 115° F)
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.
Altitude	To 2000 meters (6,560 feet)
INTERNET CONNECTION OPTIONS	
Integrated Wi-Fi	802.11b/g/n
Cellular	CELLMODEM-M1-06-SP-05, CELLMODEM-M1-06-AT-05 (4G based LTE-M1 cellular modem). Note that an Enphase Mobile Connect cellular modem is required for all Ensemble installations.
Ethernet	Optional, 802.3, Cat5E (or Cat 6) UTP Ethernet cable (not included)
COMPLIANCE	
Compliance, IQ Combiner	UL 1741, CAN/CSA C22.2 No. 107.1, 47 CFR, Part 15, Class B, ICES 003 Production metering: ANSI C12.20 accuracy class 0.5 (PV production) Consumption metering: accuracy class 2.5
Compliance, IQ Gateway	UL 60601-1/CANCSA 22.2 No. 61010-1

To learn more about Enphase offerings, visit **enphase.com**

ENPHASE

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ANSI B
11" X 17"

SHEET NUMBER

PV-9

Datasheet

IRONRIDGE

Flush Mount System

Built for solar's toughest roofs.

IronRidge builds the strongest mounting system for pitched roofs in solar. Every component has been tested to the limit and proven in extreme environments.

Our rigorous approach has led to unique structural features, such as curved rails and reinforced flashings, and is also why our products are fully certified, code compliant and backed by a 20-year warranty.

Strength Tested
All components evaluated for superior structural performance.

PE Certified
Pre-stamped engineering letters available in most states.

Class A Fire Rating
Certified to maintain the fire resistance rating of the existing roof.

Design Assistant
Online software makes it simple to create, share, and price projects.

UL 2703 Listed System
Entire system and components meet newest effective UL 2703 standard.

20-Year Warranty
Twice the protection offered by competitors.

Datasheet

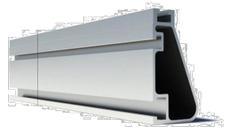
XR Rails

XR10 Rail


A low-profile mounting rail for regions with light snow.
- 6' spanning capability
- Moderate load capability
- Clear and black finish

XR100 Rail


The ultimate residential solar mounting rail.
- 8' spanning capability
- Heavy load capability
- Clear and black finish

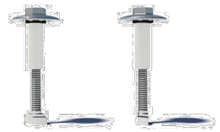
XR1000 Rail


A heavyweight mounting rail for commercial projects.
- 12' spanning capability
- Extreme load capability
- Clear anodized finish

Bonded Splices


All rails use internal splices for seamless connections.
- Self-drilling screws
- Varying versions for rails
- Forms secure bonding

Clamps & Grounding

UFOs


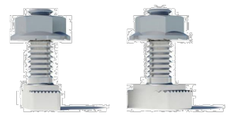
Universal Fastening Objects bond modules to rails.
- Fully assembled & lubed
- Single, universal size
- Clear and black finish

Stopper Sleeves


Snap onto the UFO to turn into a bonded end clamp.
- Bonds modules to rails
- Sized to match modules
- Clear and black finish

Grounding Lugs


Connect arrays to equipment ground.
- Low profile
- Single tool installation
- Mounts in any direction

Microinverter Kits


Mount MIs or POs to XR Rails.
- Bonds devices to rails
- Kit comes assembled
- Listed to UL 2703

Attachments

FlashFoot2


Flash and mount XR Rails with superior waterproofing.
- Twist-on Cap eases install
- Wind-driven rain tested
- Mill and black finish

Slotted L-Feet


Drop-in design for rapid rail attachment.
- Secure rail connections
- Slot for vertical adjusting
- Clear and black finish

Bonding Hardware


Bond and attach XR Rails to roof attachments.
- T & Square Bolt options
- Nut uses 7/16" socket
- Assembled and lubricated

Flush Standoffs


Raise Flush Mount System to various heights.
- Works with vent flashing
- 4" and 7" lengths
- Ships assembled

Resources

Design Assistant
Go from rough layout to fully engineered system. For free.
Go to IronRidge.com/design

NABCEP Certified Training
Earn free continuing education credits, while learning more about our systems.
Go to IronRidge.com/training

TOP TIER SOLAR SOLUTIONS

CONTRACTOR

NAME: TOP TIER SOLAR SOLUTIONS
ADDRESS: 1530 CENTER PARK DR, CHARLOTTE, NC, 28217,USA
PHONE: 855-997-1213
CONTRACTOR LICENSE# SC - CLG.123883
ELECTRICAL LICENSE#:NC - 87345
EMAIL #: bdunford@toptiersolarsolutions.com

REVISIONS

DESCRIPTION	DATE	REV

SIGNATURE & SEAL

HOMEOWNER INFO

JENNIFER IVEY
165 NATURES WAY, DUNN, NC
28334, USA

APN: 7549817
EMAIL: -
PHONE: -

SHEET NAME
EQUIPMENT SPECIFICATION

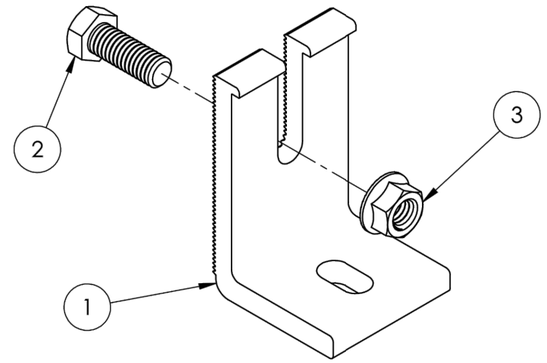
SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-10

Cut Sheet

IRONRIDGE

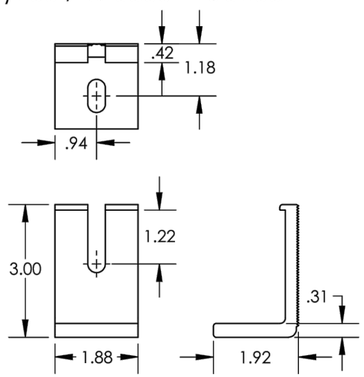
Slotted L-Foot



Item Number	Component	Qty in Kit
1	FOOT, EXTRUDED L - SLOTTED	4
2	BOLT, 3/8-16 X 1" HEX CS SS	4
3	NUT, FLANGE HEX 3/8-16 SS	4

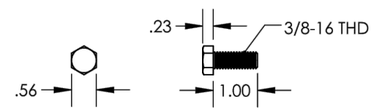
Part Number	Description
RS-LFT-001	Kit of 4, Slotted L-Foot (Mill Finish)
RS-LFT-001B	Kit of 4, Slotted L-Foot (Black Finish)

1) Foot, Extruded L - Slotted



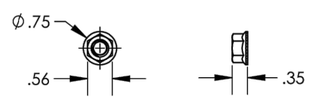
Property	Value
Material	Aluminum
Finish	Mill / Black

2) Bolt, 3/8-16 x 1" Hex CS SS



Property	Value
Material	Stainless Steel
Finish	Clear

3) Nut, Flange Hex 3/8-16 SS



Property	Value
Material	Stainless Steel
Finish	Clear

v1.0

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