SYSTEM INFORMATION					
MODULE HANWHA Q.PEAK DUO BLK ML-G10+ 405					
INVERTER	ENPHASE IQ8PLUS-72-2-US				
RACKING	ROOFTECH RT-MINI II W/ UNIRAC NXT HORIZON 2-RAIL RACKING SYSTEM				
SYSTEM SIZE (DC)	4.455 KW				
LOCATION	30.1764660,-82.6001390				

CLIMATIC & GEOGRAPHIC DESIGN CRITERIA TABLE R301.2(1)						
SPEED (MPH)	120					
TOPOGRAPHIC EFFECTS	В					
SPECIAL WIND REGION	NO					
WIND BORNE DEBRIS ZONE	2					
SEISMIC DESIGN CATEGORY	С					
CLIMATE ZONE	2A					
WIND EXPOSURE CATETORY	В					

FBC, RESIDENTIAL 2020

TABLE R301.2.1.3

WIND SPEED CONVERSIONS<sup>a</sup>

 $V_{\text{ult}} | 110 | 115 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 |$ 

V<sub>asd</sub>| 85 | 89 | 93 |101|108|116|124|132|139|147|155|

PLAN KEY						
PV-1	COVER PAGE					
PV-1.1	ATTACHMENT DETAIL					
PV-1.1 (2)	ATTACHMENT DETAIL CONT.					
PV-2	ROOF LAYOUT					
PV-3	ELECTRICAL					
PV-3.1	ELECTRICAL CONT.					
PV-3.2	EQUIPMENT LABELS					

# A. MAATINA A. MAATINA

Maria Maria Maria
nty Building
Plans Reviewed
for Code
e of Florida

	AND DESCRIPTION OF THE PARTY OF
Cou	nty Building
olumbia	Plans S Reviewed
1310	for Code
10	
100	le of Florida
	NAME OF TAXABLE PARTY.

unty Building	<b>A</b>
Comment	10
Plans Reviewed	18
for Code	rime
3 Compliance	¥/
of Florida	A STATE OF THE PARTY OF THE PAR
A STATE OF THE PARTY OF THE PAR	

unity Bui	To a second
Cooking	
Review for Co	ed 2
for Co Complia	
\$	da
ale of F	Office

# **GENERAL NOTES:**

THIS PV SYSTEM HAS BEEN DESIGNED TO MEET THE MINIMUM DESIGN STANDARDS FOR BUILDING AND OTHER STRUCTURES OF THE ASCE 7-16, 7TH EDITION 2020 FLORIDA RESIDENTIAL CODE, 7TH EDITION 2020 FLORIDA BUILDING CODE, 7TH EDITION 2020 FLORIDA FIRE PREVENTION CODE, NEC 2017 AND ALL LOCAL CODES & ORDINANCES.

ROOF SHALL HAVE NO MORE THAN TWO LAYERS OF COVERING IN ADDITION TO THE SOLAR EQUIPMENT.

INSTALLATION OF SOLAR EQUIPMENT SHALL BE FLUSH MOUNTED, PARALLEL TO AND NO MORE THAN 6-INCHES ABOVE THE SURFACE OF THE ROOF.

ANY PLUMBING VENTS ARE NOT TO BE CUT OR COVERED FOR SOLAR EQUIPMENT INSTALLATION. ANY RELOCATION OR MODIFICATION OF THE VENT REQUIRES A PLUMBING PERMIT AND INSPECTION.

ALL DESIGN, CALCULATIONS ARE PERFORMED BY DANIEL DUNZIK REGISTERED ARCHITECT. FLORIDA STATE STATUTE 471.003(3) PROVIDES THAT LICENSED ARCHITECTS ARE EXEMPTED FROM THE PROVISIONS OF CHAPTER 471 ENGINEERING AND NOT PRECLUDED FROM PERFORMING ENGINEERING SERVICES FOR INTEGRATED SYSTEMS AND SERVICES THAT ARE INCIDENTAL TO BUILDINGS AND STRUCTURES.

## **INVERTER PLACEMENT:**

SYSTEM UTILIZES "ENPHASE" MICRO-INVERTERS WITH RAPID SHUTDOWN CONTROL LOCATED ON THE BACK SIDE OF EACH MODULE.

# **STRUCTURAL STATEMENT:**

THE EXISTING STRUCTURE IS ADEQUATE TO SUPPORT THE NEW LOADS IMPOSED BY THE PHOTOVOLTAIC MODULE SYSTEM INCLUDING UPLIFT & SHEAR.EXISTING RAFTER SIZES & DIMENSIONS CONFORM TO 7TH EDITION 2020 FLORIDA RESIDENTIAL CODE

MOUNTING BRACKETS AND HARDWARE MEET OR EXCEED FLORIDA CODE REQUIREMENTS FOR THE DESIGN CRITERIA OF THE TOWN.

#### **FSEC CERTIFICATION STATEMENT:**

PER FL. STATUE 377.705, I, MINA A. MAKAR PE# 86753, CERTIFICATE OF AUTHORIZATION #33404, AN ENGINEER LICENSED PURSUANT TO CHAPTER 471, CERTIFY THAT THE PV ELECTRICAL SYSTEM AND ELECTRICAL COMPONENTS ARE DESIGNED AND APPROVED USING THE STANDARDS CONTAINED IN THE MOST RECENT VERSION OF THE FLORIDA BUILDING CODE. FBC 2020

permitted.

For SI: 1 mile per hour = 0.447 m/s.

a. Linear interpolation is

HANWHA Q.PEAK DUO BLK ML-G10+ 405 **405 WATT MODULE** 74" X 41.1" X 1.26" (SEE DATASHEET)

BILL OF MATERIALS	
MODULES	11
INVERTERS	11
L-FOOT ATTACHMENT W/ RT-MINI	24
171" RAILS	5
SKIRTS	0
ENPHASE COMBINER BOX	1
EATON 60A FUSIBLE AC DISCONNECT	1
35A FUSES	2
20A BACKFEED BREAKER	1

**CHRISTOPHER WEEKES - MS135056 172 SE GOLDIE WAY** LAKE CITY, FL 32025 3174370594

momentum

SOLAR

Digitally signed by

PRO CUSTOM SOLAR LLC D.B.A. MOMENTUM SOLAR 325 HIGH STREET, METUCHEN, NJ 08840 (732) 902-6224 MOMENTUMSOLAR.COM **PROFESSIONAL** 

Reason: Digitally signed by Mina

A Maker: Reasont This it is has been electronically signed and sealed by MAMAL Makar, PE

86753, COA # 33404] on the

Date and Jierb Stame Ahawar

psiasoa digitaltsignatureeRrinted

ender state a la compensa la la compensa l

nansidenad signed strotseated #

and the signature must be Stamp

serified sin anyticlect conict copies

Printed copies of this document are

not considered signed and sealed

and the signature must be verified

Date: 2023.08.28 10:08:25 -05:00

**SOLAR CONTRACTOR** 

CAMERON CHRISTENSEN
CERTIFIED SOLAR CONTRACTOR LICENSE NUMBER: CVC57036

MOMENTUM SOLAR 5728 MAJOR BLVD. SUITE 307, ORLANDO FL. 32819

**CUSTOMER INFORMATION** 

on any electronic copies

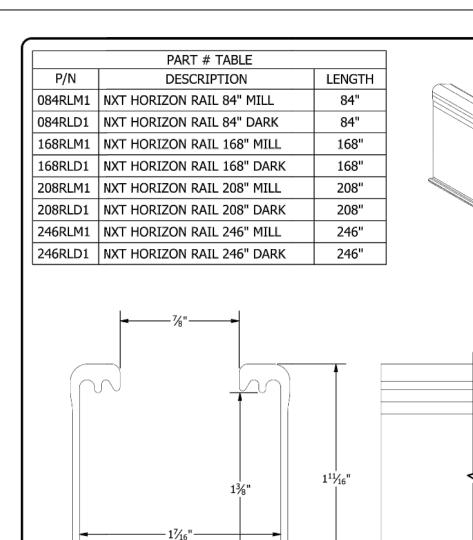
#### **PV SYSTEM INFORMATION**

SYSTEM SIZE (DC): 4.455 KW 11 MODULES: HANWHA Q.PEAK DUO BLK ML-G10+ 405 11 INVERTERS: ENPHASE IQ8PLUS-72-2-US

PROJECT INFORMATION INITIAL DATE: 8/28/2023 DESIGNER: KJL REV: DESIGNER REV:

**COVER PAGE** 

**PV-1** 



1411 BROADWAY BLVD, NE

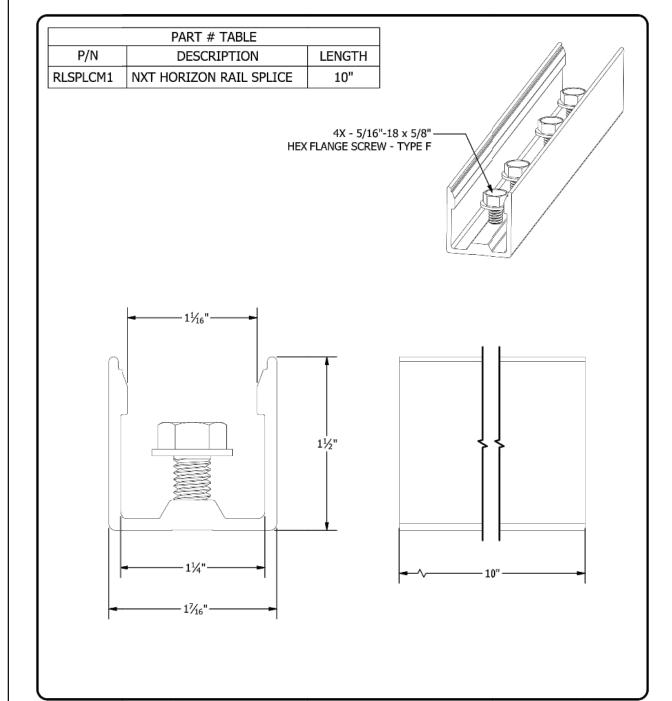
PHONE: 505.242.6411

WWW.UNIRAC.COM

ALBUQUERQUE, NM 87102 USA

PRODUCT LINE:	NXT HORIZON	DRAWING NOT TO SCALE ALL DIMENSIONS ARE	
DRAWING TYPE:	PART DETAIL	NOMINAL	NH-P01
DESCRIPTION:	RAIL	PRODUCT PROTECTED BY ONE OR MORE US PATENTS	=
REVISION DATE:	9/13/2021	LEGAL NOTICE	SHEET

LENGTH





1411 BROADWAY BLVD. NE ALBUQUERQUE, NM 87102 USA PHONE: 505.242.6411 WWW.UNIRAC.COM PRODUCT LINE: NXT HORIZON

DRAWING TYPE: PART DETAIL

DESCRIPTION: RAIL SPLICE

REVISION DATE: 9/22/2021

DRAWING NOT TO SCALE
ALL DIMENSIONS ARE
NOMINAL

PRODUCT PROTECTED BY
ONE OR MORE US PATENTS

LEGAL NOTICE

C BY SHEET

momentum

PRO CUSTOM SOLAR LLC D.B.A. MOMENTUM SOLAR 325 HIGH STREET, METUCHEN, NJ 08840 (732) 902-6224 MOMENTUMSOLAR.COM

# PROFESSIONAL ENGINEERING

No PE86753

Digitally signed by Reason: Digitally sign

Reason: Digitally signed by Mina A Maker: Reason This it is not has been electronically signed and sealed by Mina Maker. PE 86753, COA # \$3404] on the Batternsignize by the Anawar. Reason digital teignature Printed environal denal signature and sealed # and the signature and the Stamp service in an analysic energy in the stamp service in an analysic energy in the stamp

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies

Date: 2023.08.28 10:08:25 -05:00

# SOLAR CONTRACTOR

CERTIFIED SOLAR CONTRACTOR LICENSE NUMBER: CVC57036
MOMENTUM SOLAR
5728 MAJOR BLVD. SUITE 307, ORLANDO FL. 32819

#### **CUSTOMER INFORMATION**

CHRISTOPHER WEEKES - MS135056 172 SE GOLDIE WAY LAKE CITY, FL 32025 3174370594

#### **PV SYSTEM INFORMATION**

SYSTEM SIZE (DC ): 4.455 KW 11 MODULES: HANWHA Q.PEAK DUO BLK ML-G10+ 405 11 INVERTERS: ENPHASE

IQ8PLUS-72-2-US

PROJECT INFORMATION

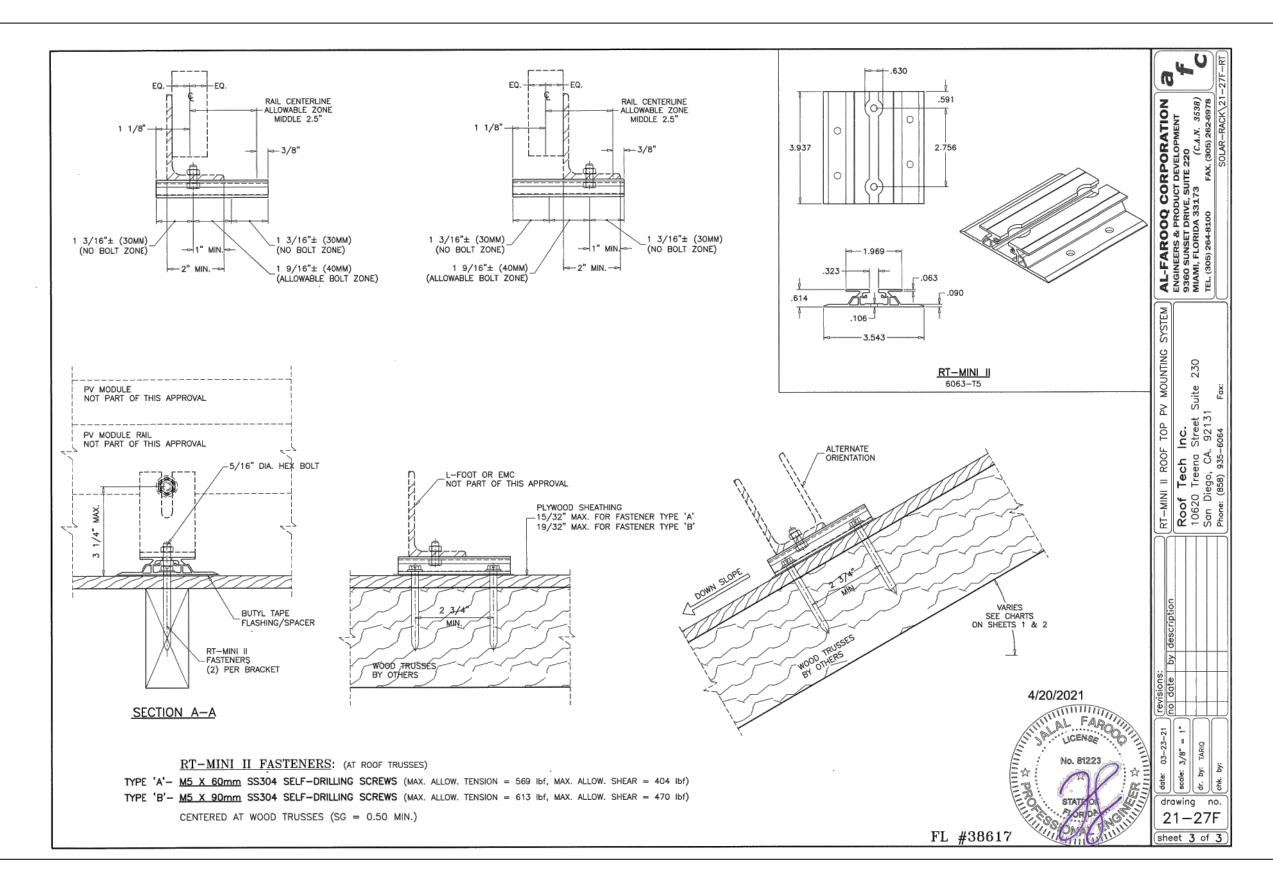
INITIAL DATE: 8/28/2023 DESIGNER: KJL

REV: DATE: DESIGNER:

REV: DATE: DESIGNER:

ATTACHMENT DETAIL

**PV-1.1** 



ATTACHMENT DETAIL FOR SHINGLE ROOF



PRO CUSTOM SOLAR LLC D.B.A. MOMENTUM SOLAR 325 HIGH STREET, METUCHEN, NJ 08840 (732) 902-6224 MOMENTUMSOLAR.COM

# PROFESSIONAL ENGINEERING

No PE86753

Digitally signed by

Digitally signed by Reason: Digitally signed by Mina A Maker. Reason: This it is in has been electronically signed and sealed by Minam. Maker, PE 86753, COA # 33404] on the Bathandi Tieres toma showar. Reinsch digital teignature Printed environtally signed and same oby panside nateignature and the Stamp sacional signature and the Stamp sacional singual injection is copies.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies

Date: 2023.08.28 10:08:25 -05:00

# SOLAR CONTRACTOR

CERTIFIED SOLAR CONTRACTOR LICENSE NUMBER: CVC57036
MOMENTUM SOLAR
5728 MAJOR BLVD. SUITE 307, ORLANDO FL. 32819

#### **CUSTOMER INFORMATION**

CHRISTOPHER WEEKES - MS135056 172 SE GOLDIE WAY LAKE CITY, FL 32025 3174370594

#### PV SYSTEM INFORMATION

SYSTEM SIZE (DC ): 4.455 KW
11 MODULES: HANWHA Q.PEAK DUO BLK
ML-G10+ 405
11 INVERTERS: ENPHASE
IQ8PLUS-72-2-US

PROJECT INFORMATION

INITIAL DATE: 8/28/2023 DESIGNER: KJL

REV: DATE: DESIGNER:

ATTACHMENT DETAIL

PV-1.1 (2)

SCALE: 3/32" = 1'-0"	ROOF	PANEL COUNT	TILT	AZIMUTH	SHADING	LANDSCAPE MAX SPAN (ROOF AREA 1/2/3)	PORTRAIT MAX SPAN (ROOF AREA 1/2/3)	LANDSCAPE MAX CANTILEVER	PORTRAIT MAX CANTILEVER
	R1	11	22°	270°	78%	48 /48 /48	48 /48 /48	16 /10 /10	16/10/10
L									
GROUND ACCESS —				AC CB		FIRE SETBACK			
(TYP)			ELECTRIC	AL EQUIPMENT		(36" VENTILATION 36" ROOF ACCES			
		2 21 211	////	//////	I OH	(TYP) ₩			
		370"		/////3	<del>/</del> ////				
		GUTI .		3'-0"					
		Ħ <u></u>	R1						
							Щ		
		.3	'-0"				.DENG		
							NT OF RESIDEN SE GOLDIE WAY		
							IT OF		
		GUT	•				FRONT OF RESIDENCE SE GOLDIE WAY		
		TER P	•					TOTAL SQUARE FOOTAGE OF	ROOF: 2380 SQFT
	0'-8	,1,,	•					SQUARE FOOTAGE OF SOLAR	
		0 0				MSP		PERCENTAGE OF SOLAR ROO 18" RIDGE SETBACK SHALL B	
RAFTER SPACIN 24" O.C. (TYF						ELECTRICAL EQUIPMENT		SYMBOL	
								MSP MAIN SERVICE PANEL	CHIMNEY
							EWAY	SP SUB-PANEL	SKYLIGHT
		14'-8\frac{1}{2}	uDGE.		1 .	✓   Bidv	EWAT	M UTILITY METER	VENT
								AC DISCONNECT	O PIPE VENT
						<u>. ´</u>		UDC UTILITY DISCONNECT	FAN
									n
CLAMBING MAY CDACING IN ZONE 1 70	" O C								SATELLITE DISH  FIRE SETBACKS
CLAMPING MAX SPACING IN ZONE 1 72 AND IN ZONE 2 AND ZONE 3 48" O.C	U.C								
NOTE:								CB COMBINER BOX	MIN 3'x3' GROUND ACCES POINT
1. ROOF COVERING MATERIAL IS COMPO				ITE SHINGLE.				MODULE	PITCH DIRECTION

2. REFER TO LAYOUT DETAIL DRAWING PV-3 FOR ALL ROOFTOP DIMENSIONS.

**ROOF LAYOUT** 

PROJECT INFORMATION

DESIGNER: KJL

DESIGNER:

DESIGNER:

DATE: 8/28/2023

DATE:

DATE:

momentum

SOLAR

PRO CUSTOM SOLAR LLC D.B.A. MOMENTUM SOLAR 325 HIGH STREET, METUCHEN, NJ 08840 (732) 902-6224 MOMENTUMSOLAR.COM **PROFESSIONAL** 

**ENGINEERING** 

No PE86753

Reason: Digitally signed by Mina A Maker. Reason This it is has been electronically signed and sealed by Mina Makar, PE

86753, COA'#334b4] on the Date and Jieros Stame shawar. psiaspa digitaltsignaturee Printed equips notating signed rapids a see noty manside realisigned agos sealed # and the signature must be Stamp serified singapyigleateopies copies Printed copies of this document are not considered signed and sealed and the signature must be verified

on any electronic copies

ML-G10+ 405 11 INVERTERS: ENPHASE

IQ8PLUS-72-2-US

INITIAL

REV:

WIND PRESSURE ZONE LINES. REFER TO PV-2.2 FOR ADDITIONAL INFO

Date: 2023.08.28 10:08:25 -05:00

SOLAR CONTRACTOR CAMERON CHRISTENSEN
CERTIFIED SOLAR CONTRACTOR LICENSE NUMBER: CVC57036

MOMENTUM SOLAR 5728 MAJOR BLVD. SUITE 307, ORLANDO FL. 32819 **CUSTOMER INFORMATION** CHRISTOPHER WEEKES - MS135056 172 SE GOLDIE WAY LAKE CITY, FL 32025 3174370594 **PV SYSTEM INFORMATION** SYSTEM SIZE (DC ): 4.455 KW 11 MODULES: HANWHA Q.PEAK DUO BLK

Digitally signed by

**PV-2** 

PV MODULE RA	MODULE RATINGS VOLTAGE DROP CALCULATIONS											
MODULE MAKE	HANWHA	INVERTER MAKE	ENPHASE		FORMULA US	ED PER NEC H	ANDBOOK 21	5.2(A)(4) WHE	RE APPLICABL	_E		l
MODEL	Q.PEAK DUO BLK	MODEL	IQ8PLUS-72-2-	WIRE RUN	V <sub>mp</sub>	I <sub>mp</sub>	R	L (FT)	Vo	% V <sub>0</sub>	WIRE SIZE	
	ML-G10+ 405		US	BRANCH TO J-BOX	240.00	13.31	1.98	72.42	3.817	1.59%	12 AWG	l
MAX POWER	405W	MAX OUTPUT POWER	290W	DIVARCIT TO 3 BOX	240.00	13.51	1.50	72.42	3.017	1.55%	12 AWG	PF
OPEN CIRCUIT VOLTAGE	45.34V	OPEN DC VOLTAGE	60V	J-BOX TO LOAD CENTER	240.00	13.31	1.24	50.00	1.650	0.69%	10 AWG	 
MPP VOLTAGE	37.39V	NOMINAL AC VOLTAGE	240V	LOAD CENTER TO AC								<del></del>
SHORT CIRCUIT CURRENT	11.17A	MAX AC CURRENT	1.21A	DISCONNECT	240.00	16.6375	0.778	3.00	0.078	0.03%	08 AWG	ĺ
MPP CURRENT	10.83A	CEC INVERTER EFFICIENCY	97%	AC DISCONNECT TO	240.00	16.6375	0.778	10.00	0.259	0.11%	08 AWG	
NUMBER OF MODULES	11	NUMBER OF INVERTERS	11	INTERCONNECTION								1

SUB PANEL **BREAKER SIZE** 

**UL1703 COMPLIANT** 

\_UL1703 COMPLIANT PV BREAKER # OF MODULES PER BRANCH **UP TO 16** 20A

YES

THIS SOLAR PHOTOVOLTAIC SYSTEM COMPLIES WITH THE 2020 FLORIDA BUILDING CODE AND THE 2017 NATIONAL ELECTRICAL CODE

YES

11 HANWHA Q.PEAK DUO BLK ML-G10+ 405 405W MODULES PAIRED WITH

11 ENPHASE IQ8PLUS-72-2-US MICRO-INVERTERS

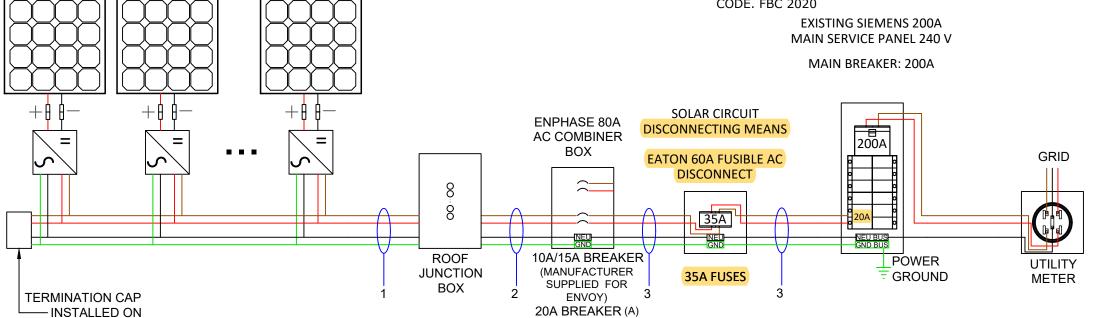
NEC 705.12(B)(2)(3)(b) 120% RULE

(1.25 x INVERTER OUTPUT) + MAIN OCPD ≤ BUS RATING x 1.20  $(1.25 \times 13.31) + 200 \le 200 \times 1.20$ 

#### **FSEC CERTIFICATION STATEMENT:**

PER FL. STATUE 377.705, I, MINA A. MAKAR PE# 86753, CERTIFICATE OF AUTHORIZATION #33404, AN ENGINEER LICENSED PURSUANT TO CHAPTER 471, CERTIFY THAT THE PV ELECTRICAL SYSTEM AND ELECTRICAL COMPONENTS ARE DESIGNED AND APPROVED USING THE STANDARDS CONTAINED 86753, COA # 33404] on the IN THE MOST RECENT VERSION OF THE FLORIDA BUILDING CODE. FBC 2020

**BRANCH CIRCUIT A** 11 MICRO-INVERTERS



PRO CUSTOM SOLAR LLC D.B.A. MOMENTUM SOLAR 325 HIGH STREET, METUCHEN, NJ 08840 (732) 902-6224 MOMENTUMSOLAR.COM

SOLAR

momentum

## **PROFESSIONAL ENGINEERING**

No PE86753 Digitally signed by Reason: Digitally signed by Mina A Maker Reason This it is has been electronically signed and sealed by MANAL Makar, PE Date and Jine Stame shawar. ksiaspa digitaltsignatureeRrinted |eadiesnotathis:daeumentseaendty pansidenad signed sandseated #

section of the state of the sta Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies

| **3040th| 606 igneature anust he** Stamp

Date: 2023.08.28 10:08:25 -05:00

# **SOLAR CONTRACTOR**

CERTIFIED SOLAR CONTRACTOR LICENSE NUMBER: CVC57036 MOMENTUM SOLAR 5728 MAJOR BLVD. SUITE 307, ORLANDO FL. 32819

#### **CUSTOMER INFORMATION**

**CHRISTOPHER WEEKES - MS135056** 172 SE GOLDIE WAY LAKE CITY, FL 32025 3174370594

#### **PV SYSTEM INFORMATION**

SYSTEM SIZE (DC): 4.455 KW 11 MODULES: HANWHA Q.PEAK DUO BLK ML-G10+ 405 11 INVERTERS: ENPHASE

IQ8PLUS-72-2-US

PROJECT INFORMATION								
INITIAL	DATE: 8/28/2023	DESIGNER: KJL						
REV:	DATE:	DESIGNER:						
REV:	DATE:	DESIGNER:						

THREE LINE DIAGRAM

PV-3

																1
Wire Tag	Conduit	Wire Qty	Wire Gauge	Wire Type	Temp. Rating	Wire Ampacity (A)	Temp. Derate	Conduit Fill Derate	Derated Ampacity (A)	Inverter Qty	NOC (A)	NEC Correction	Design Current (A)	Ground Size	Ground Wire Type	
								1 2 6. 6.6		` '			( )	0.20	71	$\vdash$
1	OPEN AIR	1	12 AWG	Trunk Cable	90°C	30	0.96	1	28.80	11	1.21	1.25	16.64	12 AWG	Trunk Cable	INI
_		_		I Traint easie			0.00	_	_0.00							- RE\
2	3/4" PVC	2	10 AWG	THWN-2	75°C	35	0.96	1	33.60	11	1.21	1.25	16.64	08 AWG	TIIVA/NI 2	RE\
3	3/4" PVC	3 + G	08 AWG	THWN-2	75°C	50	0.96	1	48.00	11	1.21	1.25	16.64	08 AWG	THWN-2	Γ
																Ľ

NOTE: LETTER "G" IN WIRE QTY TAB STANDS FOR GROUNDING CONDUCTOR.

**END OF CABLE** 

#### **ELECTRICAL NOTES:**

- 1. ALL CALCULATIONS FOR VOC, VMAX, IMP AND ISC HAVE BEEN CALCULATED USING THE MANUFACTURED STRING CALCULATOR BASED ON ASHRAE 2% HIGH AND EXTREME MINIMUM TEMPERATURE COEFFICIENTS.
- 2. THE ENTIRE ARRAY IS BONDED ACCORDING TO (NEC 690.46 250.120 PARAGRAPH C). THE GROUND IS CARRIED AWAY FROM THE GROUNDING LUG USING #6 BARE COPPER WIRE OR #8 THWN-2 COPPER WIRE.
- 3. THIS SYSTEM COMPLIES WITH NEC 2017
- BRANCH CIRCUIT CALCULATION FOR WIRE TAG 1 DISPLAYS THE LARGEST BRANCH CIRCUIT IN SYSTEM. OTHER BRANCH CIRCUITS SHALL HAVE LOWER DESIGN CURRENT THAN THE ONE SHOWN. IN ADDITION, VOLTAGE DROP CALCULATIONS FROM PANELS TO THE COMBINER BOX SHALL BE SHOWN IN A SIMILAR FASHION
- 5. ALL CONDUCTORS ARE SIZED BASED ON NEC 2017 ARTICLE 310
- 6. ALL EQUIPMENT INSTALLED IS RATED AT 75°C
- 7. INVERTER NOC (NOMINAL OPEN CURRENT) OBTAINED FROM **EQUIPMENT DATASHEET**
- 8. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL LOCAL AND NATIONAL CODE REQUIREMENTS.
- 9. EACH MODULE MUST BE GROUNDED ACCORDING TO USER **INSTRUCTIONS**
- 10. ALL EQUIPMENT SHALL BE LISTED PER NEC 690.4(B)
- 11. PER NEC 690.13. 690.15. PROVIDE A WARNING SIGN AT ALL LOCATIONS WHERE TERMINALS OF THE DISCONNECTING MEANS MAY BE ENERGIZED IN THE OPEN POSITION> SIGN SHALL READ \*WARNING -ELECTRIC SHOCK HAZARD - DO NOT TOUCH TERMINALS - OR EQUIVALENT.
- 12. PER NEC 705.10. PROVIDE A PERMANENT PLAQUE OR DIRECTORY SHOWING ALL ELECTRIC POWER SOURCES ON THE PREMISES AT SERVICE ENTRANCE.
- 13. INTERCONNECTION METHOD SHALL COMPLY WITH NEC 705.12
- 14. AND OPTION FOR A SINGLE CIRCUIT BRANCH TO BE SPLIT INTO TWO SUB-CIRCUIT BRANCHES IS ACCEPTABLE
- 15. ALL CONDUCTORS MUST BE COPPER.
- 16. NEUTRAL AND EQUIPMENT GROUNDING CONDUCTOR BONDED AS PER NEC 250.24(C).
- 17. EQUIPMENT GROUNDING CONDUCTOR IS CONNECTED TO A GROUNDING ELECTRODE SYSTEM PER 250.54(D).
- 18. FUSES FOR PV DISCONNECT HAVE AIC RATINGS OF 200KA AC AND 20KA DC.
- 19. SUPPLY SIDE CONNECTION SHALL BE MADE USING ILSCO INSULATION PIERCING CONNECTORS (IPC). MAKE, MODEL, AND RATING OF INTERCONNECTION CAN BE SEEN ON TABLE 1 BELOW.
- 20. METHOD OF INTERCONNECTION CAN BE SEEN IN FIGURE 1.
- 21. UTILITY HAS 24-HR UNRESTRICTED ACCESS TO ALL PHOTOVOLTAIC SYSTEM COMPONENTS LOCATED AT THE SERVICE ENTRANCE.

- 22. WORKING CLEARANCES AROUND THE EXISTING AND NEW ELECTRICAL EQUIPMENT WILL BE MAINTAINED IN ACCORDANCE WITH NEC ARTICLE 110.26
- CONDUCTORS EXPOSED TO SUNLIGHT SHALL BE LISTED AS SUNLIGHT RESISTANT PER NEC ARTICLE 300.6 (C)(1) AND ARTICLE 310.8 (D).
- 24. CONDUCTORS EXPOSED TO WET LOCATIONS SHALL BE SUITABLE FOR USE IN WET LOCATIONS PER NEC ARTICLE 310.10 (C).
- 25. TOTAL AREA OF ALL CONDUCTORS, SPLICES, AND TAPS INSTALLED AT ANY CROSS SECTION OF THE WIRING DOES NOT EXCEED 75% OF THE CROSS SECTIONAL AREA OF THE SPACE. NEC 312.8(A)(2).
- 26. SYSTEM IS CONSIDERED AN AC MODULE SYSTEM. NO DC CONDUCTORS ARE PRESENT IN CONDUIT, COMBINER, JUNCTION BOX, DISCONNECT. AND COMPLIES WITH 690.6 - NO DC DISCONNECT AND ASSOCIATED DC LABELING ARE REQUIRED.
- 27. SYSTEM COMPLIES WITH 690.12 RAPID SHUTDOWN AND ASSOCIATED LABELING AS PER 690.56(C). AC VOLTAGE AND SYSTEM OPERATING CURRENT SHALL BE PROVIDED 690.52.
- 28. CONDUCTORS IN CONDUIT ARE AC CONDUCTORS BRANCH CIRCUITS AND NOT PV SOURCE CIRCUITS, 690.6.
- 29. ALL GROUNDING SHALL COMPLY WITH 690.47(A) IN THAT THE AC MODULES WILL COMPLY WITH 250.64.
- 30. NO TERMINALS SHALL BE ENERGIZED IN THE OPEN POSITION IN THIS AC MODULE SYSTEM 690.13, 690.15, 690.6.
- 31. WHERE APPLICABLE: INTERCONNECTION SHALL COMPLY WITH 705.12(A) OR 705.12(B)
- 32. ALL WARNING SIGN(S) OR LABEL(S) SHALL COMPLY WITH 2017 NEC ARTICLE 110.21(B). LABEL WARNINGS SHALL ADEQUATELY WARN OF THE HAZARD. LABELS SHALL BE PERMANENTLY AFFIXED TO THE EQUIPMENT, AND LABELS REQUIRED SHALL BE SUITABLE FOR THE ENVIRONMENT.
- PV POWER CIRCUIT LABELS SHALL APPEAR ON EVERY SECTION OF THE WIRING SYSTEM THAT IS SEPARATED BY ENCLOSURES. WALLS, PARTITIONS, CEILINGS, OR FLOORS.

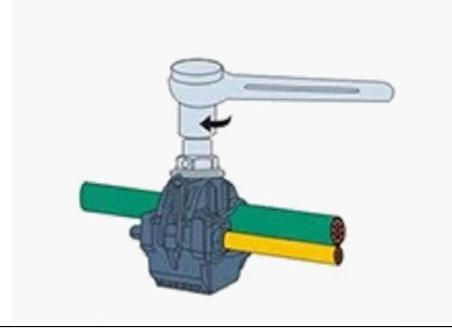
#### **TABLE 1:**

MAKE	MODEL	VOLTAGE RATING	CONDUCTOR RANGE MAIN	CONDUCTOR RANGE TAP	
ILSCO	IPC 4006	600 V	4/0-4 AWG	6-14 AWG	
ILSCO	IPC 4020	600 V	4/0-2 AWG	2/0-6 AWG	

#### INSTRUCTIONS FOR LINE TAPS

#### FIGURE 1:

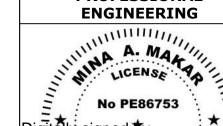
- 1. ADJUST THE CONNECTOR NUT TO SUITABLE LOCATION
- PUT THE BRANCH WIRE INTO THE CAP SHEATH FULLY
- INSERT THE MAIN WIRE, IF THERE ARE TWO LAYS OF INSULATED LAY IN THE MAIN CABLE, SHOULD STRIP A CERTAIN LENGTH OF THE FIRST INSULATED LAY FROM INSERTED END
- TURN THE NUT BY HAND, AND FIX THE CONNECTOR IN SUITABLE LOCATION.
- SCREW THE NUT WITH THE SLEEVE SPANNER.
- SCREW THE NUT CONTINUALLY UNTIL THE TOP PART IS CRACKED AND DROPPED DOWN





PRO CUSTOM SOLAR LLC D.B.A. MOMENTUM SOLAR 325 HIGH STREET, METUCHEN, NJ 08840 (732) 902-6224 MOMENTUMS OF ARCOM

# **PROFESSIONAL**



Digitally signed by Reason: Digitally signed by Mina A Maker Reason This it is has been electronically signed and sealed by MANAL Maker, PE 86753, COA # 33404] on the Date and Jibeb Stame Ahawar psiaspa digitaltsignatureeRrinted leavies natalnis idaeura en la atendati ngnsjdengdsigned ændseded # and the signature must be stamp varified sin capyligheats onist copies

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies

Date: 2023.08.28 10:08:25 -05:00

#### **SOLAR CONTRACTOR**

CAMERON CHRISTENSEN

CERTIFIED SOLAR CONTRACTOR LICENSE NUMBER: CVC57036 MOMENTUM SOLAR 5728 MAJOR BLVD. SUITE 307, ORLANDO FL. 32819

#### **CUSTOMER INFORMATION**

**CHRISTOPHER WEEKES - MS135056** 172 SE GOLDIE WAY LAKE CITY, FL 32025 3174370594

#### **PV SYSTEM INFORMATION**

SYSTEM SIZE (DC): 4.455 KW 11 MODULES: HANWHA Q.PEAK DUO BLK ML-G10+ 405 11 INVERTERS: ENPHASE IQ8PLUS-72-2-US

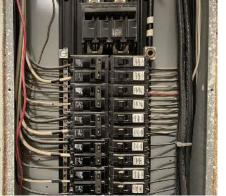
	PROJECT INFORMATION						
INITIAL		DATE: 8/28/2023	DESIGNER: KJL				
	REV:	DATE:	DESIGNER:				
	REV:	DATE:	DESIGNER:				

ELECTRICAL CONT.

**PV-3.1** 

	WARNING SIGN(S) OR LABEL(S) SHALL COMPLY WITH NEC ARTICLE 110.21(B). LABEL WARNINGS SHA	ADEQUATELY M	IADNI OF THE HAZARD, LABE	C CHALL DE DEDMANENTI V ACCIVED TO THE	EQUITAMENT AND LARGE REQUIRED CHALL BE CUITARLE FOR THE ENVIRONMENT
TAG	LABEL	QUANTITY	LOCATION	NOTE	EXAMPLES
A	AC SOLAR VOLTAGE	12	AC CONDUITS	1 AT EVERY SEPARATION BY ENCLOSURES / WALLS / PARTITIONS / CEILINGS / FLOORS OR NO MORE THAN 10'	
B	WARNING: PHOTOVOLTAIC POWER SOURCE PHOTOVOLTAIC SYSTEM EQUIPPED WITH RAPID SHUTDOWN	1	COMBINER BOX	1 AT ANY COMBINER BOX	
©	ELECTRICAL SHOCK HAZARD TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION	1	JUNCTION BOX	1 AT ANY JUNCTION BOX	
(E)	PHOTOVOLTAIC SYSTEM A C DISCONNECT  RATED AC OUTPUT CURRENT  NOMINAL OPERATING AC VOLTAGE  POWER TO THIS SERVICE IS ALSO SUPPLIED FROM ON-SITE SOLAR GENERATION  AC SYSTEM DISCONNECT  AC WARNING  ELECTRICAL SHOCK HAZARD TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION  RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM INSTALLED BY MOMENTUM SOLAR 3096 B HAMILTON BLVD S. PLAINFIELD, NJ 07080 PHONE NUMBER: 732-902-6224	1	AC DISCONNECT (RSD SWITCH)	1 OF EACH AT FUSED AC DISCONNECT COMPLETE VOLTAGE AND CURRENT VALUES ON DISCONNECT LABEL	A Comment of the control of the cont
F	DUAL POWER SUPPLY SECOND SOURCE IS PHOTOVOLTAIC SYSTEM	1	UTILITY METER	1 AT UTILITY METER AND ONE DIRECTORY PLACARD	ELECTRIC SHOCK HAZAND  DO NOT TOUGH TERMINALS  TERMINAS TERMINALS  TERMINAS TERMINALS  TOUGH HE SHE WICE  TO
<b>©</b> .	EMERGENCY RESPONDER THIS SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN  TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN ENTIRE PV SYSTEM  SECTION OF THE PV SYSTEM SECTION OF THE PV SYSTEM SECTION OF THE PV SYSTEM FAIL  SECTION OF THE PV SYSTEM FAIL SECTION SHUTCHS OF THE PV SECTION SHUTCHS	1	INTERCONNECTION POINT	1 OF FACH AT BUILDING	CONTROL OF THE PROPERTY OF THE
	POWER SOURCE OUTPUT CONNECTION. DO NOT RELOCATE THIS OVERCURRENT DEVICE	1	BACKFEED PANEL	1 OF EACH AT BUILDING INTERCONNECTION POINT AND ONE DIRECTORY PLACARD	1:210×(c
Θ	NOMINAL OPERATING AC VOLTAGE: 240V NOMINAL OPERATING AC FREQUENCY: 60HZ MAXIMUM AC POWER: VA MAXIMUM AC CURRENT: A MAXIMUM OVERCURRENT DEVICE RATING FOR AC MODULE PROTECTION: 20A	1	AC CURRENT PV MODULES		CUAL POYER'S SUPPLY SOURCE ULLIN GENTED IN TOOL OF THE POYER'S UNIT GENTED IN TOOL OF T









B









G BACKFEED



PRO CUSTOM SOLAR LLC D.B.A. MOMENTUM SOLAR 325 HIGH STREET, METUCHEN, NJ 08840 (732) 902-6224 MOMENTUMSOLAR.COM

## **PROFESSIONAL ENGINEERING**

No PE86753

Digitally signed by Reason: Digitally signed by Reason: Digitally signed by Mina A Maker: Reason of this it in has been electronically signed and sealed by Mina Maker, PE 86753, COA # \$3404] on the Bate and Time Stemps shower Date and Jierb Stame Ahawar. Rejaspa digitalteignatureeRrinted enpires notathis indocuments a see noty pansidenalisigned and sealed # andounesignature must be Stamp serified singapyigleateopies copies

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies

Date: 2023.08.28 10:08:25 -05:00

#### **SOLAR CONTRACTOR**

CAMERON CHRISTENSEN
CERTIFIED SOLAR CONTRACTOR LICENSE NUMBER: CVC57036
MOMENTUM SOLAR
5728 MAJOR BLVD. SUITE 307, ORLANDO FL. 32819

## **CUSTOMER INFORMATION**

CHRISTOPHER WEEKES - MS135056 172 SE GOLDIE WAY LAKE CITY, FL 32025 3174370594

# **PV SYSTEM INFORMATION**

SYSTEM SIZE (DC ): 4.455 KW 11 MODULES: HANWHA Q.PEAK DUO BLK ML-G10+ 405 11 INVERTERS: ENPHASE IQ8PLUS-72-2-US

PROJECT INFORMATION							
INITIAL	DATE: 8/28/2023	DESIGNER: KJL					
REV:	DATE:	DESIGNER:					
REV:	DATE:	DESIGNER:					

**EQUIPMENT LABELS** 

**PV-3.2**