



SCOPE OF WORK:
 TO INSTALL A ROOF MOUNTED SOLAR PHOTOVOLTAIC SYSTEM AT THE OWNER RESIDENCE LOCATED AT 525 SOUTHWEST KIRBY AVENUE, LAKE CITY, FL 32024.

SYSTEM DC RATING: 9.60 KWDC
 SYSTEM AC RATING: 6.97 KWAC

- GENERAL NOTES:**
- THESE CONSTRUCTION DOCUMENTS HAVE BEEN BASED ON FIELD INSPECTIONS AND OTHER INFORMATION AVAILABLE AT THE TIME. ACTUAL FIELD CONDITIONS MAY REQUIRE MODIFICATIONS IN CONSTRUCTION DETAILS.
 - CONTRACTOR HAS THE FULL RESPONSIBILITY TO CHECK AND VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK. ANY WORK STARTED BEFORE CONSULTATION AND ACCEPTANCE BY THE ENGINEER SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE SUBJECT TO CORRECTION BY THEM WITHOUT ADDITIONAL COMPENSATION.
 - THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE PROPER INSTALLATION AND COMPLETION OF THE WORK WITH APPROVED MATERIALS.
 - THE EQUIPMENT AND ALL ASSOCIATED WIRING AND INTERCONNECTION SHALL BE INSTALLED ONLY BY QUALIFIED PEOPLE. A QUALIFIED PERSON IS ONE WHO HAS SKILLS AND KNOWLEDGE RELATED TO THE CONSTRUCTION AND OPERATION OF THE ELECTRICAL EQUIPMENT AND INSTALLATIONS AND HAS RECEIVED SAFETY TRAINING TO RECOGNIZE AND AVOID THE HAZARDS INVOLVED. (NEC 690.4(C), NEC 2017).
 - NEW CONDUIT ROUTING SHOWN IS ESSENTIALLY SCHEMATIC. CONTRACTOR SHALL LAY OUT RUNS TO SUIT FIELD CONDITIONS AND THE COORDINATION REQUIREMENTS OF OTHER TRADES.
 - ARRAY WIRING SHOULD NOT BE READILY ACCESSIBLE EXCEPT TO QUALIFIED PERSONNEL.
 - THE AC DISCONNECT MUST BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH.

SHEET INDEX	
CS-0	COVER SHEET & BOM
E-1	STRING LAYOUT & SIGNAGE
E-2	ELECTRICAL DIAGRAM & CALCS.
E-3+	EQUIPMENT SPECIFICATIONS

GOVERNING CODES	
2018 NFPA 1 (FIRE CODE)	2020 FFPC (7TH EDITION)
2017 NATIONAL ELECTRICAL CODE	
2020 FLORIDA BUILDING CODE (7TH EDITION)	
AUTHORITY HAVING JURISDICTION (AHJ): COUNTY OF COLUMBIA	

BILL OF MATERIALS		
EQUIPMENT	QTY	DESCRIPTION
SOLAR PV MODULE	24	Q.PEAK DUO BLK ML-G10+ 400
MICROINVERTER	24	ENPHASE IQ8PLUS-72-2-US
JUNCTION BOX	1	JUNCTION BOX, NEMA 3R, UL LISTED
COMBINER BOX	1	ENPHASE IQ COMBINER 4/4C W/ IQ ENVOY (X-IQ-AM1-240-4)
AC DISCONNECT	1	60A NON FUSED AC DISCONNECT, 240V, NEMA 3R, UL LISTED
POWER PERFECT BOX	1	(ES1PN), 120V/240V, NEMA 3X

ATLANTIC KEY ENERGY LLC
 12600 CHALLENGER PARKWAY
 SUITE 200
 ORLANDO, FL 32826
 1 (407) 988-0273

PROJECT NAME & ADDRESS

SEAN VASQUEZ
 RESIDENCE
 PROJECT # P-0065775
 525 SOUTHWEST KIRBY AVENUE
 LAKE CITY, FL 32024

SIGNATURE WITH SEAL

REVISIONS		
DESCRIPTION	DATE	REV

Drawn by: _____ A.A.
 Date: _____ 02/01/2023

SHEET NAME
COVER SHEET & BOM
 SHEET NUMBER
CS-0

2023.02.02
 13:25:06
 -05'00'

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LEGEND	
X	- MODULE STRING ID
(E)	- EXISTING
(N)	- NEW
(M)	- UTILITY METER
MSP	- MAIN SERVICE PANEL
ACD	- AC DISCONNECT
CB	- COMBINER BOX
LC	- LOAD CENTER
SP	- SUBPANEL
JB	- JUNCTION BOX
SCT	- STRING CENTER TAP
---	- CONDUIT
BAT	- ENERGY STORAGE
ICD	- INTERCONNECTION DEVICE
BUL	- BACK UP LOADS PANEL

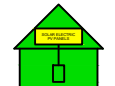
- ADHESIVE FASTENED SIGNS:**
- ANSI Z535.4-2011 PRODUCT SAFETY SIGNS AND LABELS, PROVIDES GUIDELINES FOR SUITABLE FONT SIZES, WORDS, COLORS, SYMBOLS, AND LOCATION REQUIREMENTS FOR LABELS. NEC 110.21(B)(1).
 - THE LABEL SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED. NEC 110.21(B)(3).
 - ADHESIVE FASTENED SIGNS MAY BE ACCEPTABLE IF PROPERLY ADHERED. VINYL SIGNS SHALL BE WEATHER RESISTANT.
 - ALL LABELS AND MARKINGS FOR PHOTOVOLTAIC SYSTEMS WILL BE REFLECTIVE AND MEET ALL REQUIREMENTS.

WARNING
ELECTRIC SHOCK HAZARD
DO NOT TOUCH TERMINALS
TERMINALS ON BOTH THE LINE AND
LOAD SIDES MAY BE ENERGIZED
IN THE OPEN POSITION

LABEL LOCATION:
COMBINER BOX/ EMT
ENCLOSURES/ AC DISCONNECT/
MAIN SERVICE PANEL
PER CODE: NEC 2017, 690.13(B)

EMERGENCY RESPONDER
SOLAR PV SYSTEM EQUIPPED
WITH RAPID SHUTDOWN

TURN RAPID SHUTDOWN
SWITCH TO THE "OFF"
POSITION TO SHUT
DOWN THE ENTIRE PV
SYSTEM



LABEL LOCATION:
RAPID SHUTDOWN (AC DISCONNECT)
PER CODE: NEC 690.56 (C)(1) &
NFPA1 11.12.2.1.1.1.1, 11.12.2.1.4
SHALL BE REFLECTIVE, WITH ALL
LETTERS CAPITALIZED AND HAVING A
MINIMUM HEIGHT OF 3/8 IN. (9.5 MM), IN
WHITE ON RED BACKGROUND.

**WARNING: PHOTOVOLTAIC
POWER SOURCE**

LABEL LOCATION:
CONDUIT/ RACEWAY/ ENCLOSURES/
COMBINER BOX/ AC DISCONNECT
PER CODE: NEC2017, 690.31(G)(3)(4)

**PHOTOVOLTAIC
AC DISCONNECT**

LABEL LOCATION:
AC DISCONNECT/ BREAKER/
POINTS OF CONNECTION
PER CODE: NEC2017, 690.13(B)

PHOTOVOLTAIC AC DISCONNECT
RATED AC OUTPUT CURRENT 63.0 A
NOMINAL OPERATING AC VOLTAGE 240 V

LABEL LOCATION:
AC DISCONNECT
PER CODE: NEC2017, 690.54

**RAPID SHUTDOWN
SWITCH FOR
SOLAR PV SYSTEM**

LABEL LOCATION:
RAPID SHUTDOWN
(AC DISCONNECT)
PER CODE: NEC 690.58 (C)(3)

WARNING
DUAL POWER SOURCE
SOURCES: UTILITY GRID AND
PV SOLAR ELECTRIC SYSTEM

LABEL LOCATION:
POINT OF INTERCONNECTION
PER CODE: NEC 2017, 705.12(B)

! WARNING !
INVERTER OUTPUT CONNECTION. DO NOT
RELOCATE THIS OVERCURRENT DEVICE.

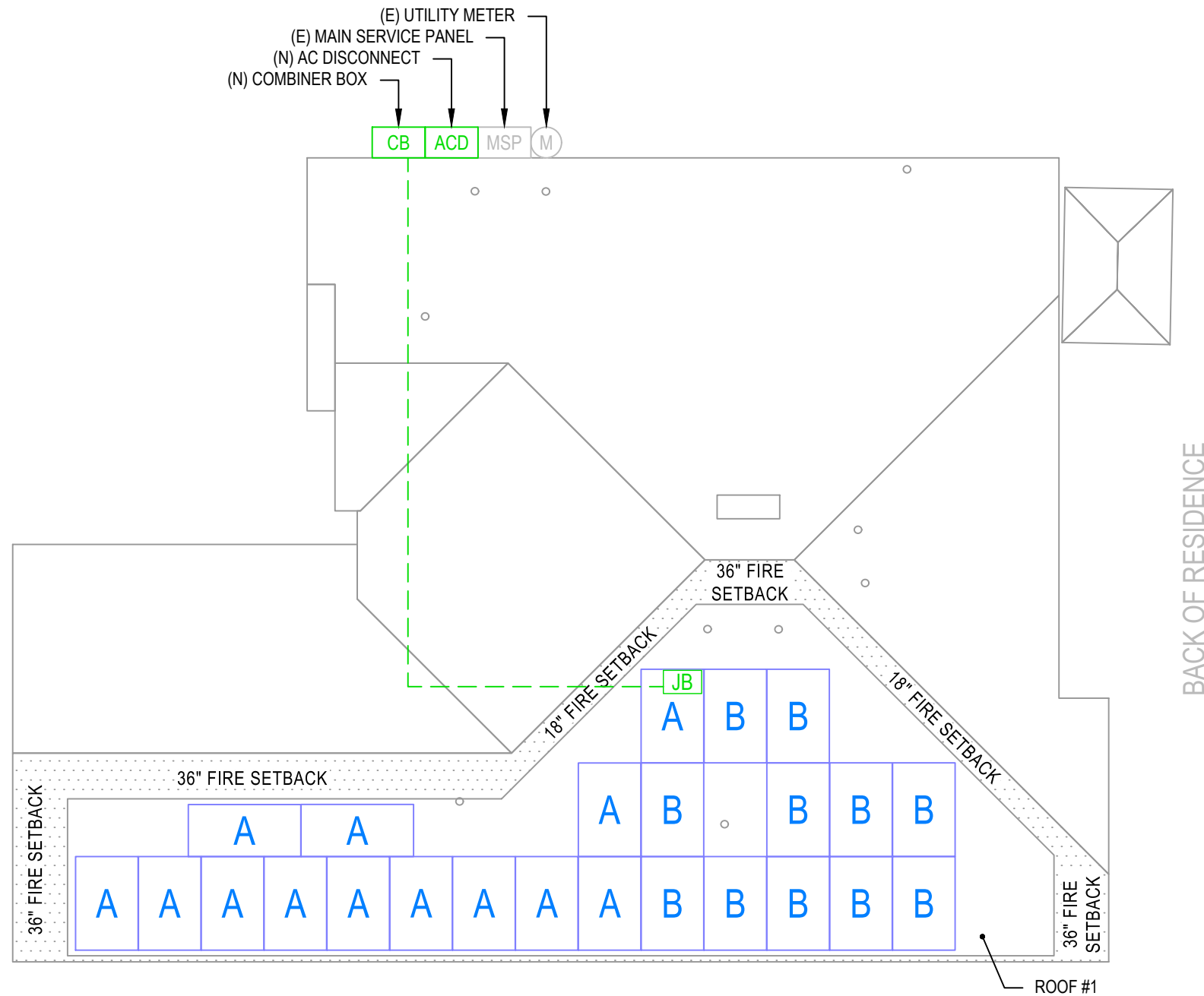
LABEL LOCATION:
POINT-OF-INTERCONNECTION OR AT
MAIN SERVICE DISCONNECT (MSP)
PER CODE: NEC 705.12(B)(2)(3)(b)

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

LABEL LOCATION:
ANY ELECTRICAL PANEL THAT IS FED BY
BOTH THE UTILITY AND THE PHOTOVOLTAIC
SYSTEM (AC DISCONNECT, MSP)
PER CODE: NEC 705.12(B)(2)(3)(C)



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DESCRIPTION	DATE	REV

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Date: 02/01/2023

SHEET NAME
STRING LAYOUT & SIGNAGE
SHEET NUMBER

1 | ROOF PLAN WITH STRING LAYOUT
E-1 | SCALE: NTS

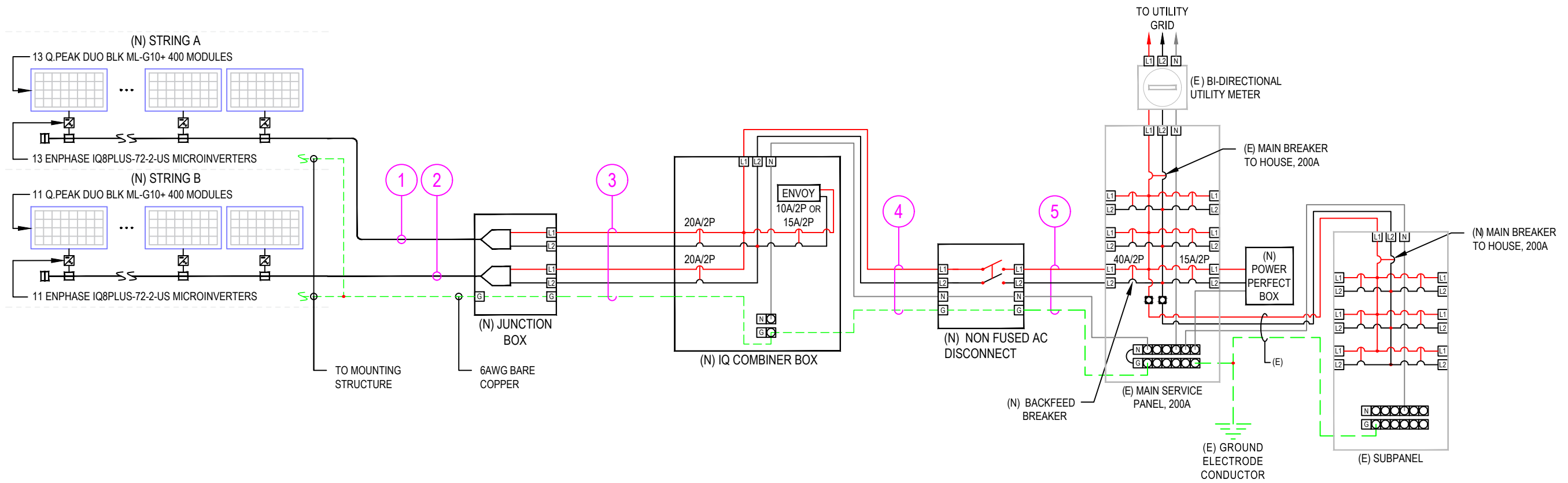
E-1

ID	INITIAL CONDUCTOR LOCATION	FINAL CONDUCTOR LOCATION	MIN. CONDUCTOR SIZE (AWG)		MIN. DIA CONDUIT SIZE (IN.)	# OF PARALLEL CIRCUITS	CURRENT-CARRYING CONDUCTORS IN CONDUIT	OCPD (A)	MIN. EGC SIZE (AWG)		TEMP. CORR. FACTOR		CONDUIT FILL FACTOR	CONT. CURRENT (A)	MAX. CURRENT (A)	BASE AMP. (A)	DERATED AMP. (A)	TERM. AMP. RATING (A)	LENGTH (FT)	VOLTAGE DROP (%)
1	STRING A	JUNCTION BOX	12	Q CABLE	N/A	1	2	N/A	6	BARE COPPER	0.76	55°C	N/A	15.73	19.66	30	N/A	N/A	55.00	0.58
2	STRING B	JUNCTION BOX	12	Q CABLE	N/A	1	2	N/A	6	BARE COPPER	0.76	55°C	N/A	13.31	16.64	30	N/A	N/A	42.00	0.92
3	JUNCTION BOX	COMBINER BOX	10	THWN-2 COPPER	0.75 LTNM	2	4	20	10	THWN-2 COPPER	0.76	55°C	0.8	15.73	19.66	40	24.3	35	53.00	0.86
4	COMBINER BOX	AC DISCONNECT	8	THWN-2 COPPER	0.75 LTNM	1	3	N/A	10	THWN-2 COPPER	0.96	34°C	1	29.04	36.30	55	52.8	35	5.00	0.09
5	AC DISCONNECT	MSP	8	THWN-2 COPPER	0.75 LTNM	1	3	40	10	THWN-2 COPPER	0.96	34°C	1	29.04	36.30	55	52.8	35	5.00	0.09

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1 | ELECTRICAL LINE DIAGRAM
 E-2 | SCALE: NTS

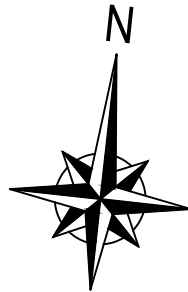
DESIGN TEMPERATURE SPECIFICATIONS	
RECORD LOW TEMP	-5°C
AMBIENT TEMP. (HIGH TEMP. 2%)	34°C
CONDUIT HEIGHT	1.0"
CONDUCTOR TEMP. RATE (ROOF)	55°C

REVISIONS		
DESCRIPTION	DATE	REV

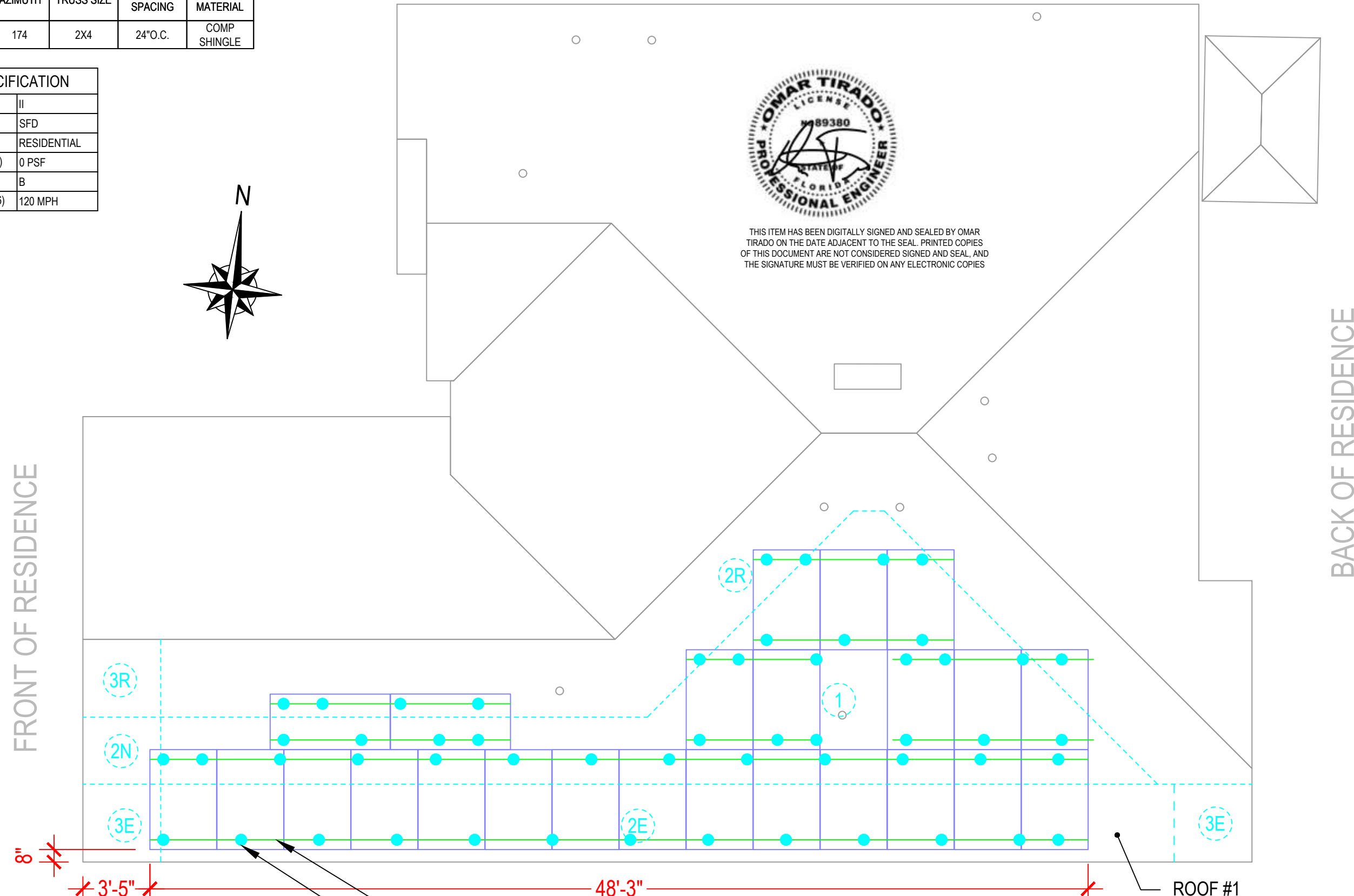
Drawn by: _____ A.A.
 Date: 02/01/2023
 SHEET NAME
ELECTRICAL LINE DIAGRAM & CALCS.
 SHEET NUMBER
E-2

ARRAY DESCRIPTION					
ROOF	# OF MODULES	AZIMUTH	TRUSS SIZE	TRUSS SPACING	ROOF MATERIAL
#1	24	174	2X4	24" O.C.	COMP SHINGLE

DESIGN SPECIFICATION	
RISK CATEGORY	II
CONSTRUCTION	SFD
ZONING	RESIDENTIAL
SNOW LOAD (ASCE 7-16)	0 PSF
EXPOSURE CATEGORY	B
WIND SPEED (ASCE 7-16)	120 MPH



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BACK OF RESIDENCE

FRONT OF RESIDENCE

(N) UNIRAC RAIL SM
 (N) UNIRAC FLASHLOC DUO @ 48" O.C.

LEGEND	
(E)	- EXISTING
(N)	- NEW

1 | ROOF PLAN AND MODULES
 S-0 | SCALE: NTS

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S-0

FLASHLOC™ DUO

THE MOST VERSATILE DIRECT TO DECK ATTACHMENT



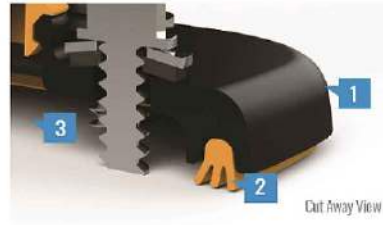
BETTER SOLAR STARTS HERE

FLASHLOC™ DUO is the most versatile direct to deck and rafter attachment for composition shingle and rolled comp roofs. The all-in-one mount installs fast — no kneeling on hot roofs to install flashing, no prying or cutting shingles, no pulling nails. Simply drive the required number of screws to secure the mount and inject sealant into the base. **FLASHLOC's** patented **TRIPLE SEAL** technology preserves the roof and protects the penetration with a permanent pressure seal. Kitted with two rafter screws, sealant and hardware for maximum convenience (deck screws sold separately). Don't just divert water, **LOC it out!**



PROTECT THE ROOF

Install a high-strength waterproof attachment without lifting, prying or damaging shingles.



LOC OUT WATER

With an outer shield **1** contour-conforming gasket **2** and pressurized sealant chamber **3** the Triple Seal technology delivers a 100% waterproof connection.



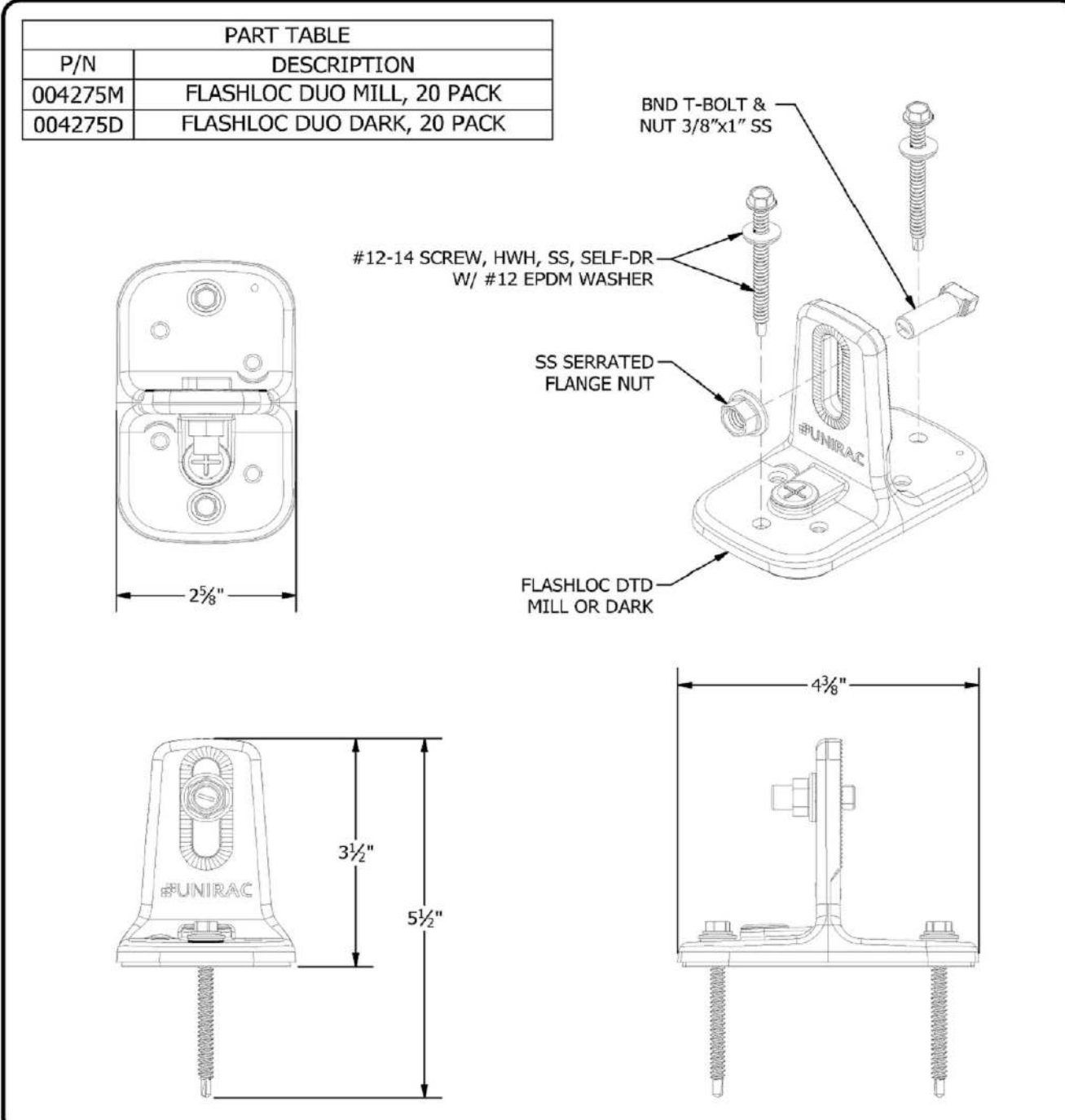
HIGH-SPEED INSTALL

Simply drive the required number of screws and inject sealant into the port **4** to create a permanent pressure seal.

APRIL2021_FLASHLOC2DUO_V1

FASTER INSTALLATION. 25-YEAR WARRANTY.

FOR QUESTIONS OR CUSTOMER SERVICE VISIT UNIRAC.COM OR CALL (505) 248-2702



<p>1411 BROADWAY BLVD. NE ALBUQUERQUE, NM 87102 USA PHONE: 505.242.6411 WWW.UNIRAC.COM</p>	PRODUCT LINE:	SOLARMOUNT	DRAWING NOT TO SCALE ALL DIMENSIONS ARE NOMINAL	FL-A04 SHEET
	DRAWING TYPE:	ASSEMBLY DETAIL		
	DESCRIPTION:	FLASHLOC DUO KIT	PRODUCT PROTECTED BY ONE OR MORE US PATENTS LEGAL NOTICE	
	REVISION DATE:	4/29/2021		

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EQUIPMENT SPECIFICATIONS
 SHEET NUMBER
S-1

SOLARMOUNT



SOLARMOUNT defined the standard in solar racking. Features are designed to get installers off the roof faster. Our grounding & bonding process eliminates copper wire and grounding straps to reduce costs. Systems can be configured with standard or light rail to meet your design requirements at the lowest cost possible. The superior aesthetics package provides a streamlined clean edge for enhanced curb appeal, with no special brackets required for installation.



Now Featuring:
THE NEW FACE OF SOLAR RACKING
Superior Aesthetics Package



LOSE ALL OF THE COPPER & LUGS
System grounding through Enphase microinverters and trunk cables



SMALL IS THE NEXT NEW BIG THING
Light Rail is Fully Compatible with all SM Components



ENHANCED DESIGN & LAYOUT TOOLS
Featuring Google Map Capabilities within U-Builder

FAST INSTALLATION. SUPERIOR AESTHETICS

OPTIMIZED COMPONENTS • VERSATILITY • DESIGN TOOLS • QUALITY PROVIDER

SOLARMOUNT



OPTIMIZED COMPONENTS

INTEGRATED BONDING & PRE-ASSEMBLED PARTS

Components are pre-assembled and optimized to reduce installation steps and save labor time. Our new grounding & bonding process eliminates copper wire and grounding straps or bonding jumpers to reduce costs. Utilize the microinverter mount with a wire management clip for an easier installation.

VERSATILITY

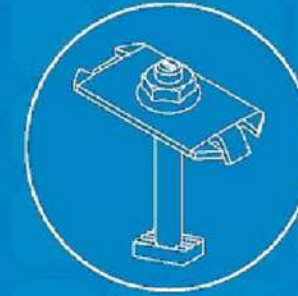
ONE PRODUCT - MANY APPLICATIONS

Quickly set modules flush to the roof or at a desired tilt angle. Change module orientation to portrait or landscape while securing a large variety of framed modules on flat, low slope or steep pitched roofs. Available in mill, clear and dark anodized finishes to outperform your projects financial and aesthetic aspirations.

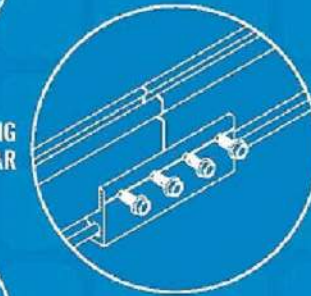
AUTOMATED DESIGN TOOL

DESIGN PLATFORM AT YOUR SERVICE

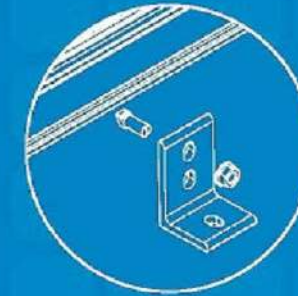
Creating a bill of materials is just a few clicks away with U-Builder, a powerful online tool that streamlines the process of designing a code compliant solar mounting system. Save time by creating a user profile, and recall preferences and projects automatically when you log in. You will enjoy the ability to share projects with customers, there's no need to print results and send to a distributor, just click and share.



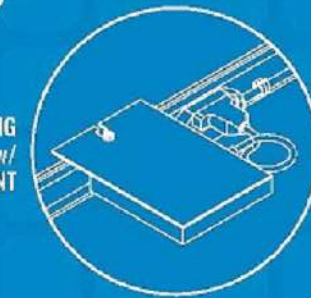
INTEGRATED BONDING MIDCLAMP



INTEGRATED BONDING SPLICE BAR



INTEGRATED BONDING L-FOOT w/ T-BOLT



INTEGRATED BONDING MICROINVERTER MOUNT w/ WIRE MANAGEMENT



UNIRAC CUSTOMER SERVICE MEANS THE HIGHEST LEVEL OF PRODUCT SUPPORT

- UNMATCHED EXPERIENCE
- CERTIFIED QUALITY
- ENGINEERING EXCELLENCE
- BANKABLE WARRANTY
- DESIGN TOOLS
- PERMIT DOCUMENTATION

TECHNICAL SUPPORT

Unirac's technical support team is dedicated to answering questions & addressing issues in real time. An online library of documents including engineering reports, stamped letters and technical data sheets greatly simplifies your permitting and project planning process.

CERTIFIED QUALITY PROVIDER

Unirac is the only PV mounting vendor with ISO certifications for 9001:2015, 14001:2015 and OHSAS 18001:2007, which means we deliver the highest standards for fit, form, and function. These certifications demonstrate our excellence and commitment to first class business practices.

BANKABLE WARRANTY

Don't leave your project to chance. Unirac has the financial strength to back our products and reduce your risk. Have peace of mind knowing you are receiving products of exceptional quality. SOLARMOUNT is covered by a twenty five (25) year limited product warranty and a five (5) year limited finish warranty.

PROTECT YOUR REPUTATION WITH QUALITY RACKING SOLUTIONS BACKED BY ENGINEERING EXCELLENCE AND A SUPERIOR SUPPLY CHAIN

PLR0007828 - PRINTED



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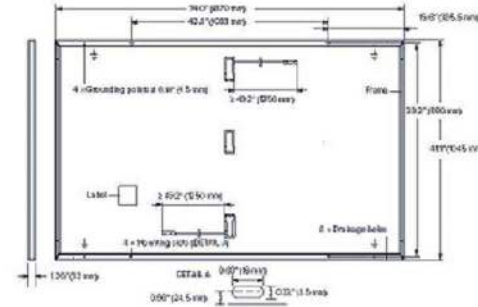
SHEET NUMBER

S-2

Q.PEAK DUO BLK ML-G10+ SERIES

Mechanical Specification

Format	74.0 in x 41.1 in x 1.26 in (including frame) (1879 mm x 1045 mm x 32 mm)
Weight	48.5 lbs (22.0 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodized aluminium
Cell	6 x 22 monocrystalline QANTUM solar half cells
Junction box	2.09 x 3.98 in x 1.26 x 2.26 in x 0.59 x 0.71 in (53.101 mm x 32.60 mm x 15.18 mm), IP67, with bypass diodes
Cable	4 mm ² Solar cable: (+) ≥ 49.2 in (1250 mm), (-) ≥ 49.2 in (1250 mm)
Connector	Staubli MC4; IP68

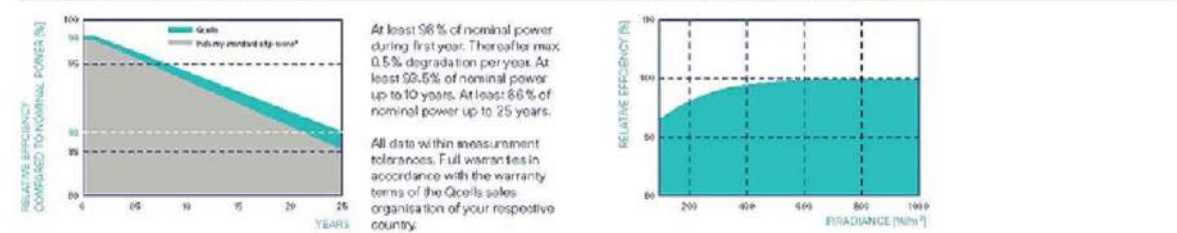


Electrical Characteristics

POWER CLASS		385	390	395	400	405
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE +5W/-0W)						
Power at MPP ¹	P _{MPP} [W]	385	390	395	400	405
Short Circuit Current ¹	I _{sc} [A]	11.04	11.07	11.10	11.14	11.17
Open Circuit Voltage ¹	V _{oc} [V]	45.19	45.23	45.27	45.3	45.34
Current at MPP	I _{MPP} [A]	10.59	10.65	10.71	10.77	10.83
Voltage at MPP	V _{MPP} [V]	36.36	36.62	36.88	37.13	37.39
Efficiency ¹	η [%]	≥19.6	≥19.9	≥20.1	≥20.4	≥20.6
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT ²						
Power at MPP	P _{MPP} [W]	288.8	292.6	296.3	300.1	303.8
Short Circuit Current	I _{sc} [A]	8.90	8.92	8.95	8.97	9.00
Open Circuit Voltage	V _{oc} [V]	42.62	42.65	42.69	42.72	42.76
Current at MPP	I _{MPP} [A]	8.35	8.41	8.46	8.51	8.57
Voltage at MPP	V _{MPP} [V]	34.59	34.81	35.03	35.25	35.46

¹Measurement tolerances P_{MPP} ±3%; I_{sc}, V_{oc} ±5% at STC; 1000W/m², 25±2°C, AM 1.5 according to IEC 60904-3 • ²800W/m², NMOT, spectrum AM 1.5

Qcells PERFORMANCE WARRANTY



*Standard terms of guarantee for the 5 PV companies with the highest production capacity in 2021 (February 2021)

TEMPERATURE COEFFICIENTS			
Temperature Coefficient of I _{sc}	α [%/K] +0.04	Temperature Coefficient of V _{oc}	β [%/K] -0.77
Temperature Coefficient of P _{MPP}	γ [%/K] -0.34	Nominal Module Operating Temperature	NMOT [°F] 109±5.4 (43±3°C)

Properties for System Design

Maximum System Voltage	V _{sys} [V]	1000 (IEC)/1000 (UL)	PV module classification	Class II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating based on ANSI/UL 61730	TYPE 2
Max. Design Load, Push/Pull ²	[lbs/ft ²]	75 (2600 Pa) / 55 (2650 Pa)	Permitted Module Temperature on Continuous Duty	-40°F up to +185°F (-40°C up to +85°C)
Max. Test Load, Push/Pull ³	[lbs/ft ²]	113 (5400 Pa) / 84 (4000 Pa)		

²See Installation Manual

Qualifications and Certificates

UL 61730, CE-compliant, Quality Controlled PV - TUV Rheinland, IEC 61215/2016, IEC 61730/2016, U.S. Patent No. 9,860,215 (solar cells)

IQ8 and IQ8+ Microinverters

INPUT DATA (DC)		108-60-2-US	108PLUS-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 and 72-cell/144 half-cell
MPPT voltage range	V	27 - 37	29 - 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 ² [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)		108-60-2-US	108PLUS-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	A	10	1.21
Nominal frequency	Hz	60	
Extended frequency range	Hz	50 - 68	
Max units per 20 A (L-L) branch circuit ⁴		16	13
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
CEC weighted efficiency	%	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		1.03 kg (2.38 lbs)	
Cooling		Natural convection - no fans	
Approved for wet locations		Yes	
Acoustic noise at 1 m		<60 dBA	
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. 1071-01	

(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-D5-0002-01-EN-US-2021-10-19



ATLANTIC KEY ENERGY LLC
12600 CHALLENGER PARKWAY
SUITE 200
ORLANDO, FL 32826
1 (407) 988-0273



PROJECT NAME & ADDRESS

SEAN VASQUEZ
RESIDENCE
PROJECT # P-0065775
525 SOUTHWEST KIRBY AVENUE
LAKE CITY, FL 32024

SIGNATURE WITH SEAL

REVISIONS		
DESCRIPTION	DATE	REV

Drawn by: A.A.
Date: 02/01/2023

SHEET NAME
EQUIPMENT SPECIFICATIONS
SHEET NUMBER
E-3



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SHEET NAME

EQUIPMENT
SPECIFICATIONS

SHEET NUMBER

E-4

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
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

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