

GENERAL ELECTRICAL NOTES

- Equipment shall be new unless otherwise noted.
- Equipment shall be listed unless otherwise noted.
- Equipment shall be installed providing adequate working space in compliance with NEC.
- Copper conductors shall be used and shall have insulation rating 600v, 90°C unless otherwise noted.
- Conductors shall be sized in accordance with the NEC and ampacity shall be derated for temperature increase, conduit fill & voltage drop.
- All conductors shall be installed in approved conduits. Conduits shall be adequately supported in accordance with the NEC.
- AC Disconnect is optional, however it may be required by the utility.
- Exposed non-current carrying metal parts shall be grounded in accordance with the NEC.
- All work shall comply with the NEC and all applicable local electrical code requirements.
- Contractor will provide labeling in accordance with the NEC, Article 110, 225, 690, and 705.

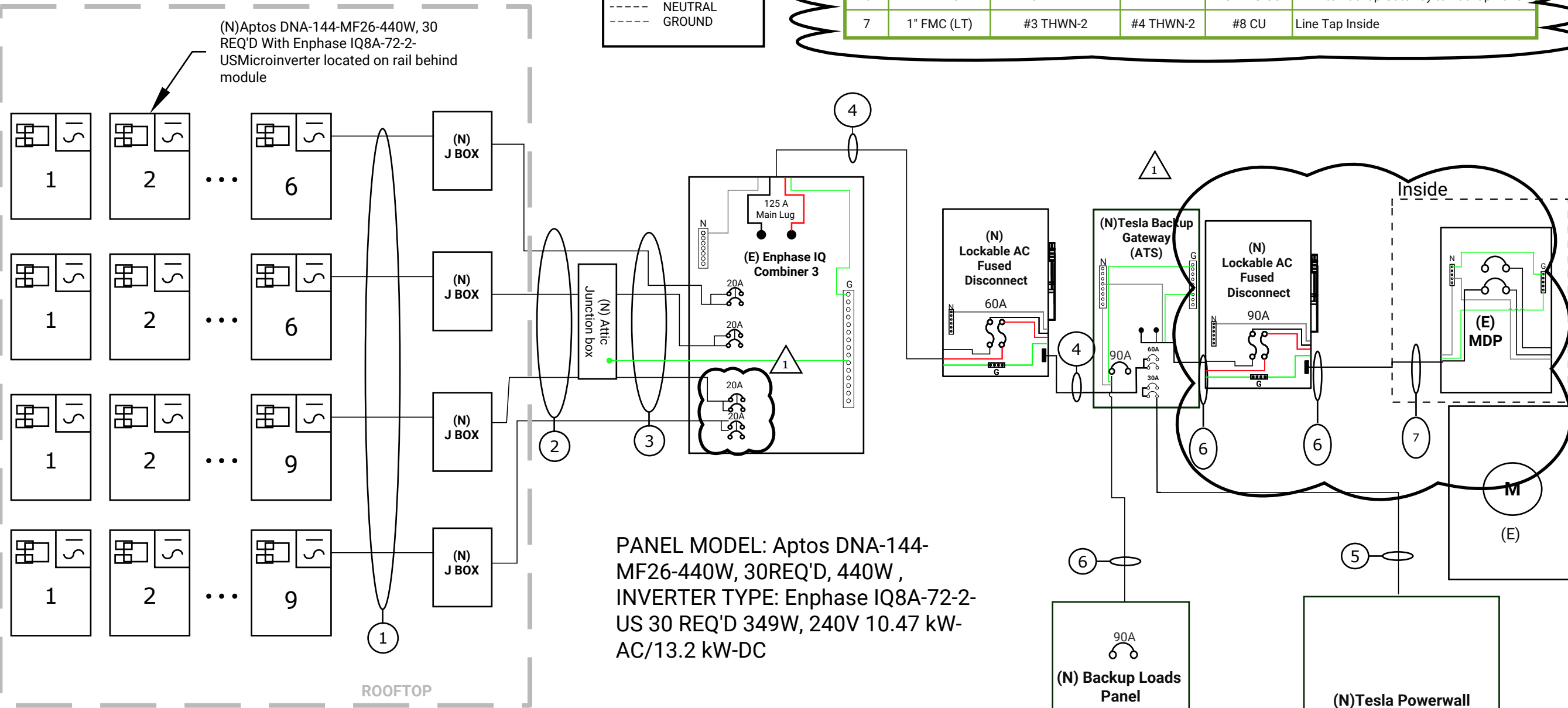


LEGEND

(N)	NEW
(E)	EXISTING
(O)	NEW BY OTHERS
---	NEUTRAL
---	GROUND

WIRING SCHEDULE

TAG	CONDUIT SIZE	CONDUCTOR	NEUTRAL	GROUND	NOTES
1	NONE	12/2 Trunk Cable	NONE	6 AWG	(Mfg. supplied cabling within array)
2	NONE	10/2 UF (60°)	NONE	10 AWG	J Box to Generation Sub Panel/ Enphase Combiner 3
3	1" PVC	#10 THWN-2	NONE	#10 AWG	Attic J Box to IQ Combiner to MDP
4	1" PVC	#6 THWN-2	#6 THWN-2	#10 AWG	Enphase Combiner 3 to Disco to Backup Gateway
5	1" PVC	#10 THWN-2	#10 THWN-2	#10 AWG	Backup Gateway to powerwall
6	1" PVC	#3 THWN-2	#4 THWN-2	#8 AWG CU	MDP to Backup Gateway to Backup Panel
7	1" FMC (LT)	#3 THWN-2	#4 THWN-2	#8 CU	Line Tap Inside



Inverter output	Continuous Load			Total Amperage
1.45	1.25	x	x	= 54.37

CAPE FEAR SOLAR SYSTEMS
 901 Martin Street, Unit A
 Wilmington, NC 28401
 910-409-5533

GC LIC. NO. : 65677
 ELEC. LIC. NO. : U-33321

13.2KW PV SYSTEM
ROMERO RESIDENCE
 58 Will Lucas Rd, Linden, NC 28356
LINE DIAGRAM

REVISION LIST

#	REV. DATE	DESC.
1	24Jun22	Added Disco, Wire Size

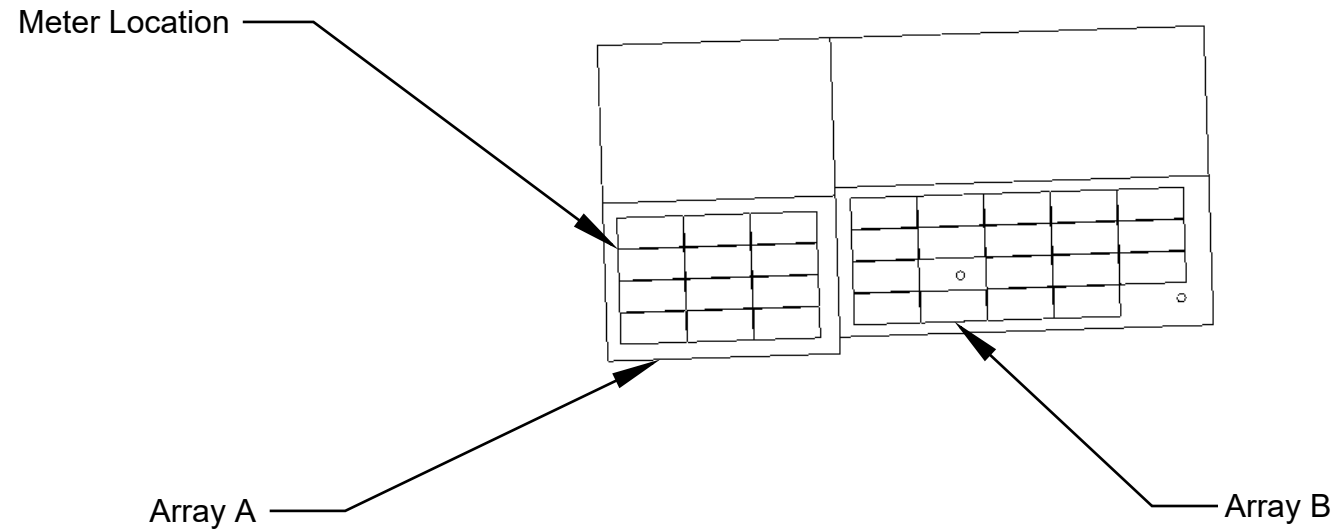
DATE: July 1, 2022
 DRAWN BY: ZJP

Sheet No. **E-01**

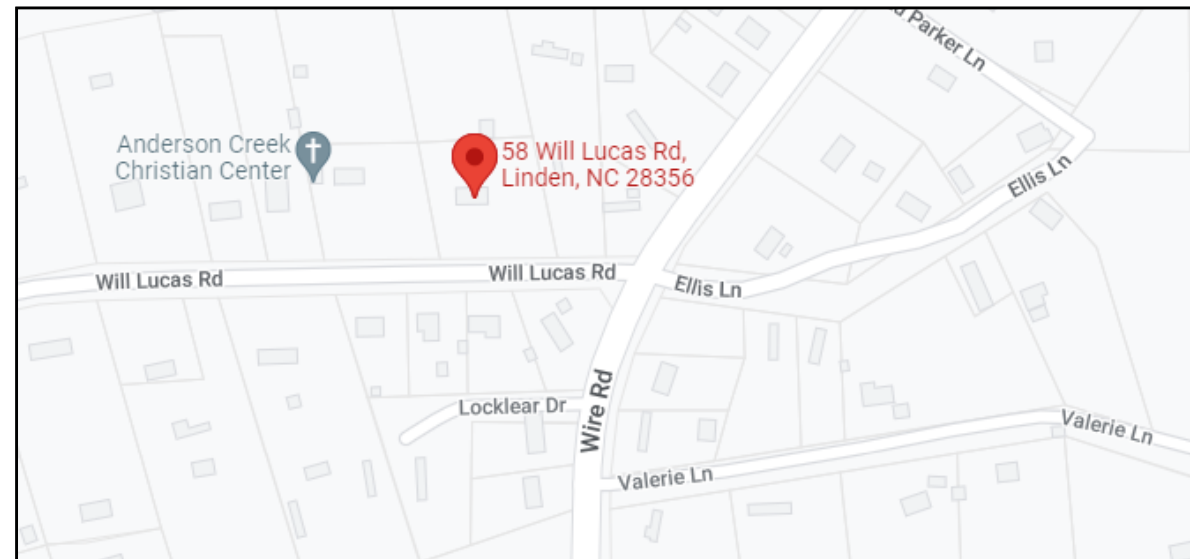


SHEET SCHEDULE

SHEET NO.	SHEET TITLE
G-01	COVER
S-01	ARRAY A LAYOUT
S-02	ARRAY B LAYOUT
S-03	ASSEMBLY DETAILS
R-01	RESOURCES
R-02	RESOURCES
R-03	RESOURCES
R-04	RESOURCES
R-05	RESOURCES
R-06	RESOURCES
R-07	RESOURCES
R-08	RESOURCES
E-01	LINE DIAGRAM
E-02	STICKERS



01
G-01 SITE SKETCH
SCALE: N/A



02
G-01 LOCATION MAP
SCALE: N/A



PROJECT INFORMATION:

CONTRACTOR
NAME: CAPE FEAR SOLAR SYSTEMS, LLC
PHONE: (910) 409-5533
PROJECT MANAGER: ROBERT PARKER
PHONE: (910) 232-6288

AUTHORITIES HAVING JURISDICTION:

BUILDING: HARNETT COUNTY
ZONING: HARNETT COUNTY
ELECTRICAL: HARNETT COUNTY
UTILITY: DEP

APPLICABLE CODES & STANDARDS

BUILDING: IRC WITH NORTH CAROLINA AMENDMENTS 2018
ELECTRICAL: NEC 2017
FIRE: IFC WITH NORTH CAROLINA AMENDMENTS 2018,
STATEWIDE UNIFORM REQUIREMENTS OF INSPECTION PROCEDURES
FOR SOLAR PHOTOVOLTAIC SYSTEMS INSTALLED ON RESIDENTIAL
ROOFTOPS

STRUCTURAL REVIEW PROVIDED BY:
RONALD P. BITTLER, PE
RB ENGINEERING, INC. (C-2499)
168 QUADE DRIVE
CARY, NC 27513
919-677-9662
PROJECT #RB-228004

DocuSigned by:
Ron Bittler
157097CCC9304AF...
5/12/2022



STRUCTURAL
05.12.2022

REVISION LIST ⚠

#	REV. DATE	DESC.

DATE: **May 12, 2022**
DRAWN BY: **ZJP**

Sheet No.

G-01

13.2KW PV SYSTEM
ROMERO RESIDENCE
58 Will Lucas Rd, Linden, NC
28356
COVER

STRUCTURAL NOTES

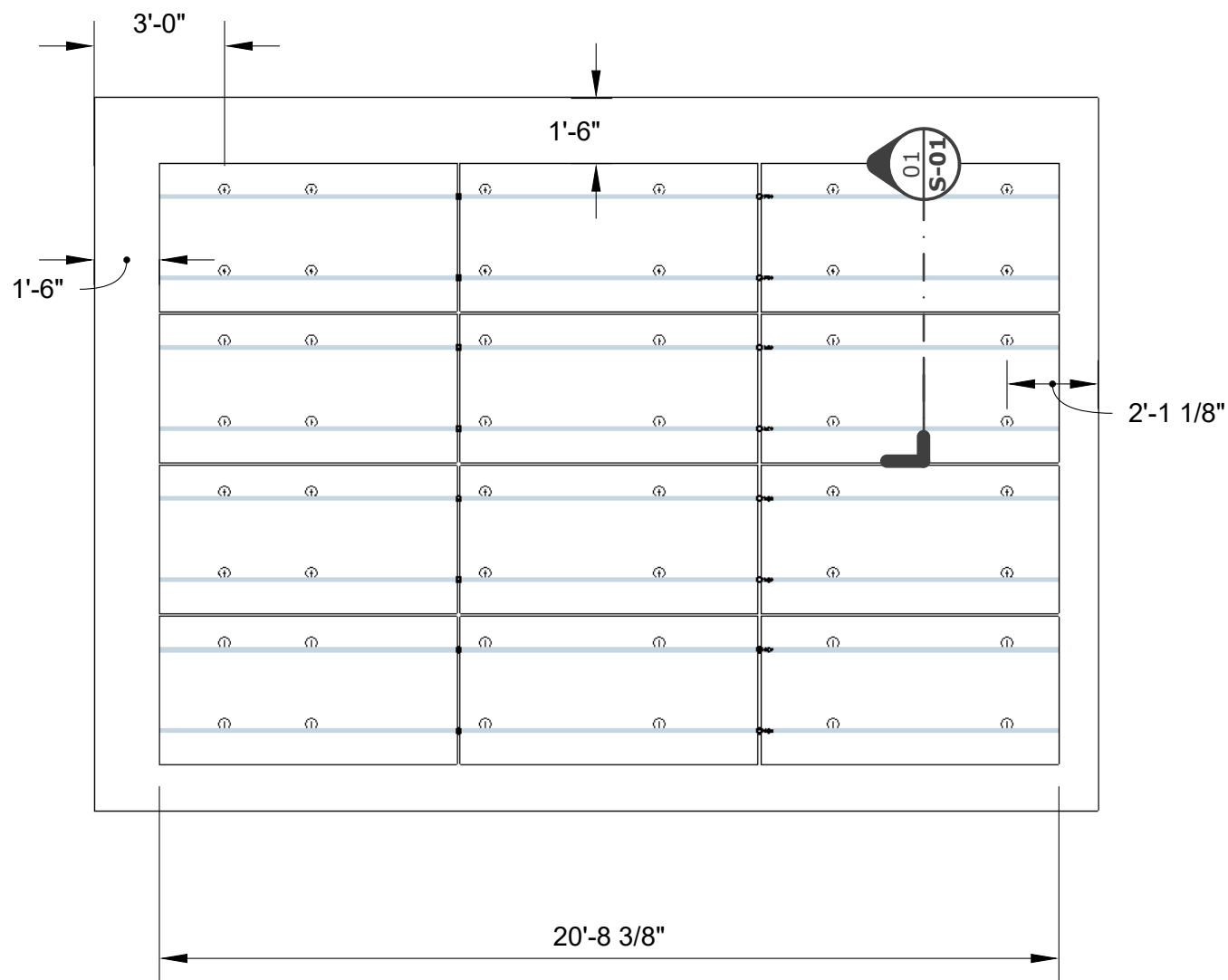
1. ROOF MOUNT RACKING SYSTEM & PV ARRAY TO BE INSTALLED IN STRICT ACCORDANCE WITH THESE DRAWINGS & MFG'S RECOMMENDATIONS. MINOR SPACING MODIFICATIONS ARE ACCEPTABLE TO ACCOMMODATE EXISTING ROOF STRUCTURE MEMBERS

2. EXISTING ROOF STRUCTURE HAS BEEN INCLUDED IN THE STRUCTURAL EVALUATION AND FOUND SUITABLE FOR THIS INSTALLATION

3. ALL ATTACHMENT BOLTS SHALL BE INSTALLED IN THE MIDDLE THIRD OF THE RAFTER (OR TRUSS) THICKNESS

DESIGN SPECIFICATIONS

GROUND SNOW LOAD: 10 PSF
 DESIGN WIND SPEED: 119 MPH (ASCE 7-10)
 DESIGN EXPOSURE CATEGORY: B
 DEAD LOAD: 2.48 PSF



01 S-01 PLAN - ARRAY A LAYOUT
 SCALE: 1/4" = 1'

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ARRAY A LAYOUT



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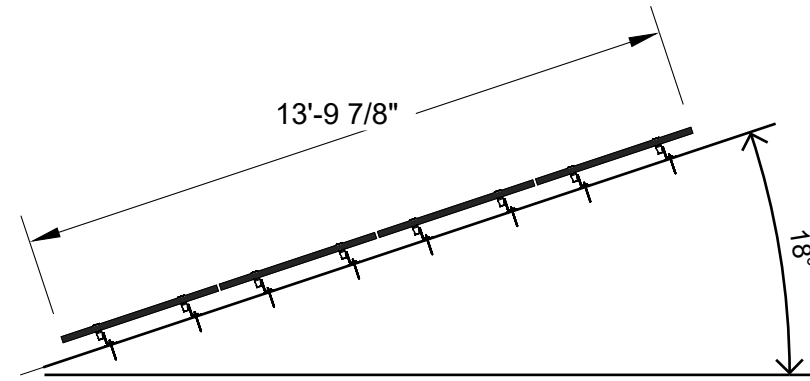
S-01

**CAPE FEAR
SOLAR SYSTEMS**

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910-409-5533



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28356**

ARRAY A ELEVATION



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Sheet No.
S-02

**01
S-02** **PLAN - ARRAY A ELEVATION**
SCALE: 1/4" = 1'



**13.2KW PV SYSTEM
ROMERO RESIDENCE**
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ARRAY B LAYOUT



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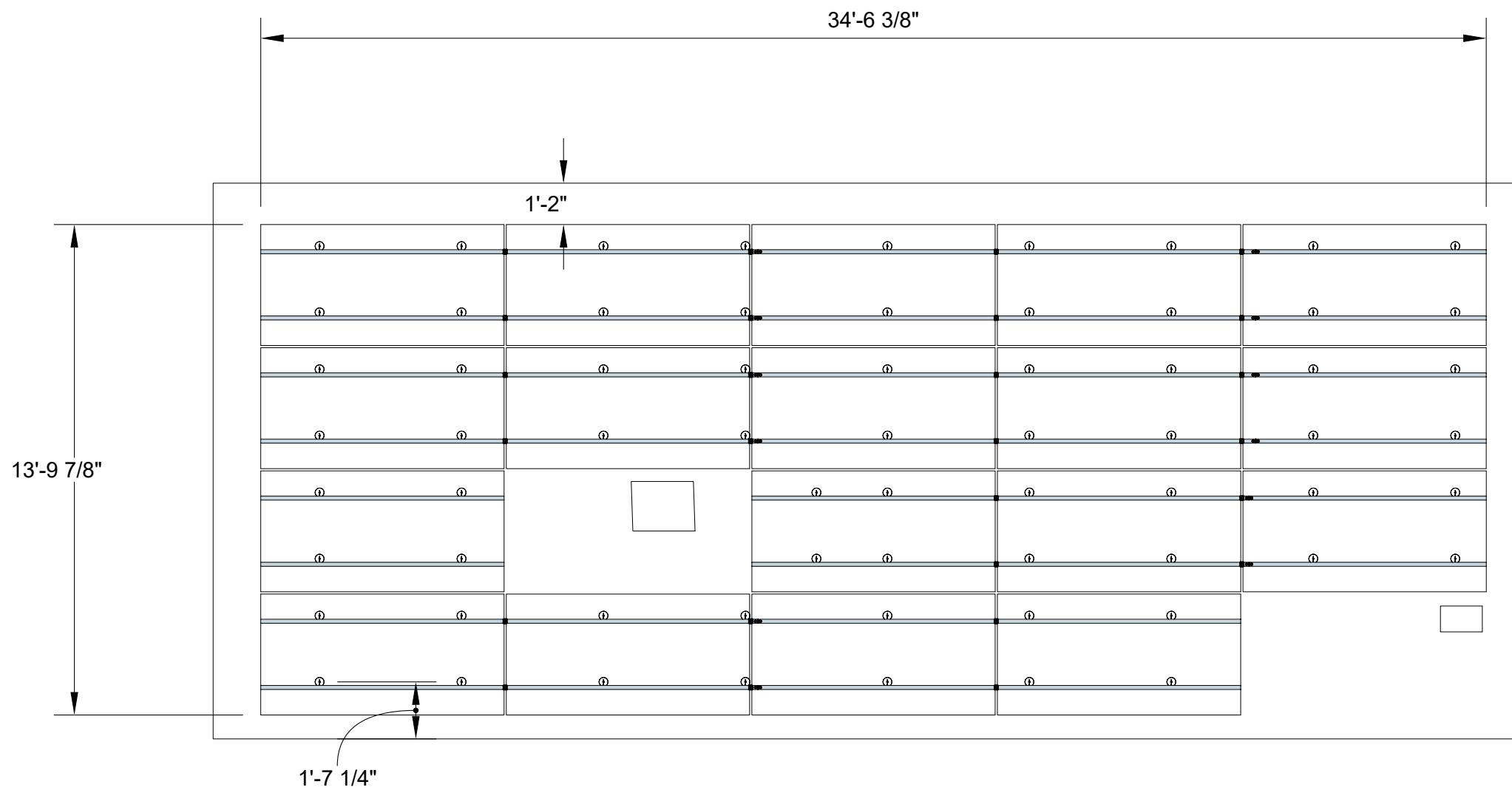
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Sheet No.

S-03



01
S-03 **PLAN - ARRAY B LAYOUT**
SCALE: 1/4" = 1'

**CAPE FEAR
SOLAR SYSTEMS**

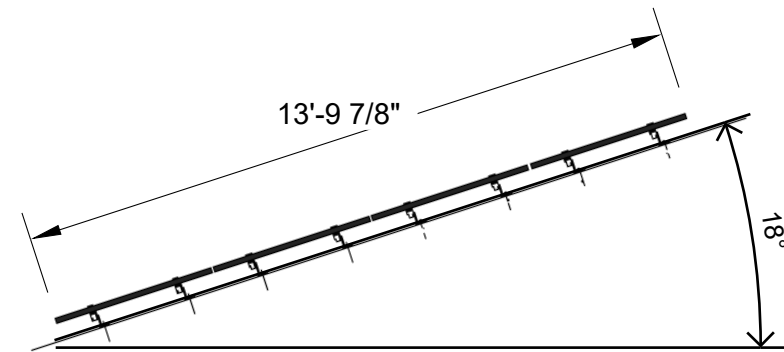
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**13.2KW PV SYSTEM
ROMERO RESIDENCE
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28356**

ARRAY B ELEVATION



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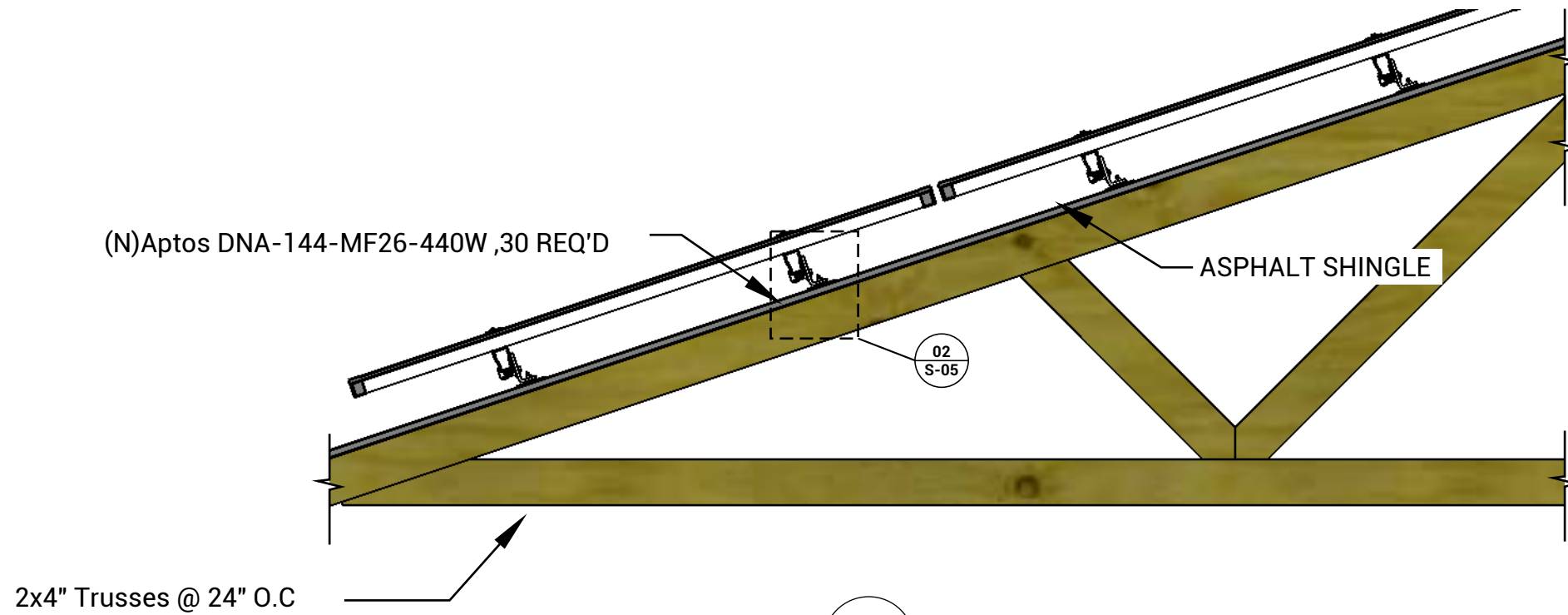
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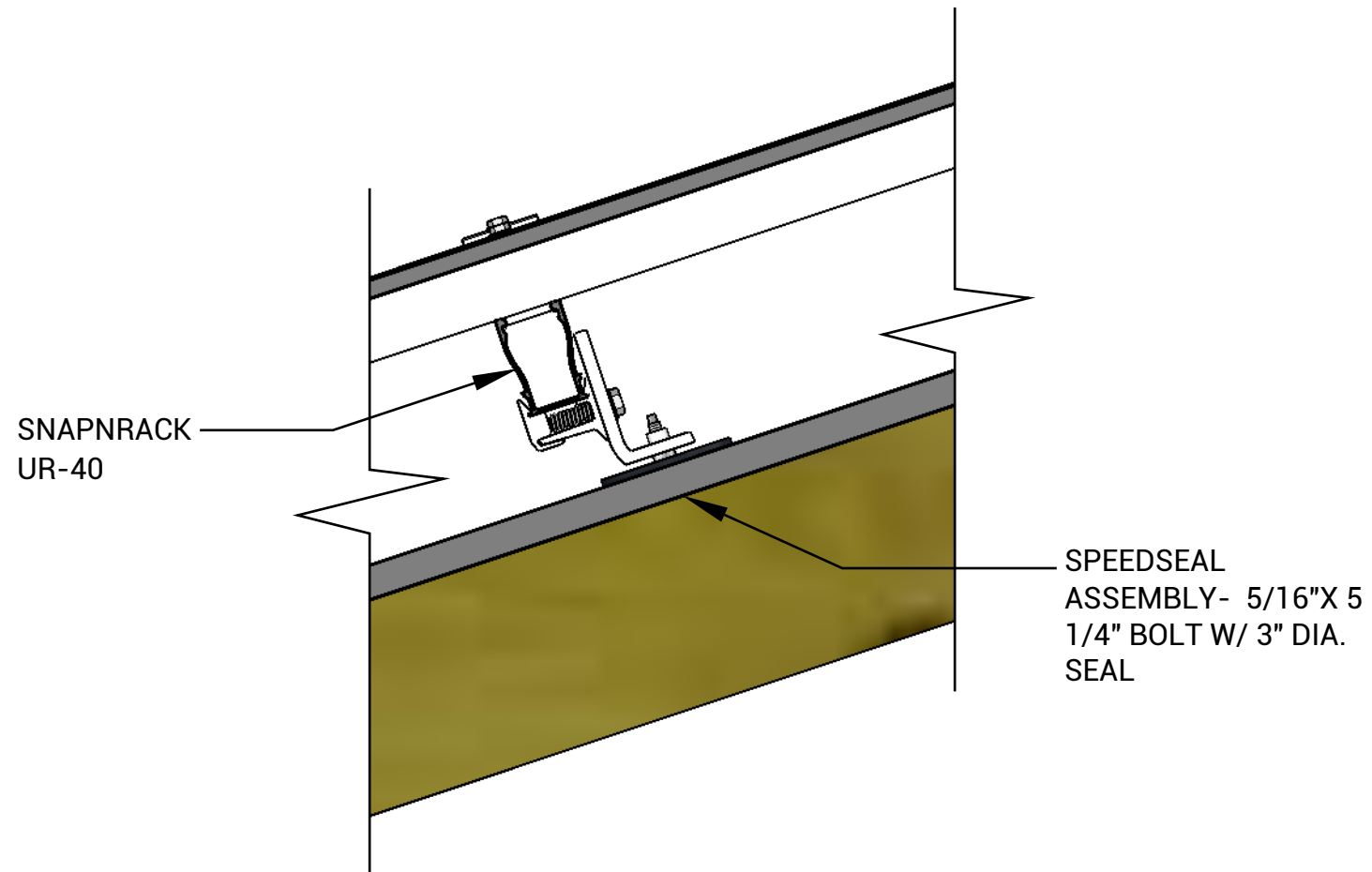
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Sheet No.
S-04

01
S-04 **PLAN - ARRAY B ELEVATION**
SCALE: 1/4" = 1'



01
S-05 SECTION - RAIL
SCALE: 3/4" = 1'



02
S-05 DETAIL - SPEEDSEAL
SCALE: 3" = 1'

13.2KW PV SYSTEM
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ASSEMBLY DETAILS



05.12.2022

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Sheet No.

S-05

SnapNrack SpeedSeal™ Foot

Patent Pending Lag Driven Sealant Solution for Ultra Rail



A New Generation of Roof Attachments

- Innovative design incorporates flashing reliability into a single roof attachment
- 100% waterproof solution
- Sealing cavity with compressible barrier secures sealant in place & fills voids

Maintain the Integrity of the Roof by Eliminating Disruption

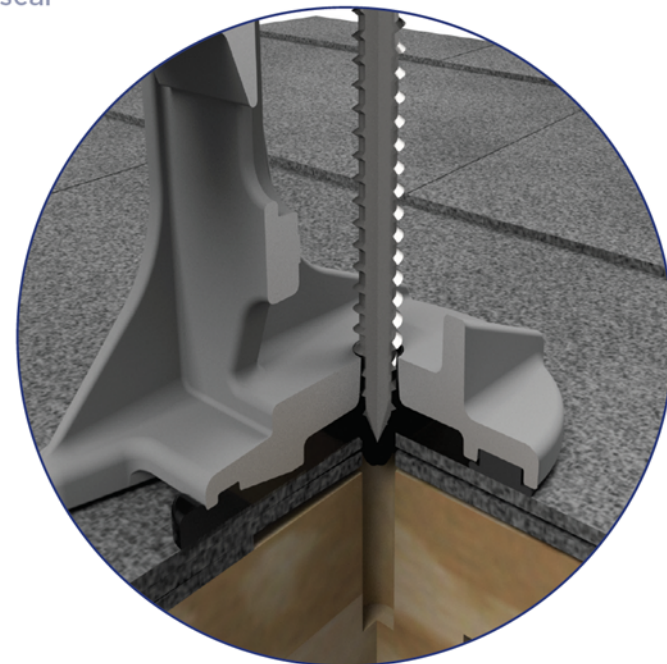
- Zero prying of shingles
- Zero removal of nails leaving holes in the roof
- Roof remains installed the way manufacturer meant it to be

Lag Driven Sealant Waterproofing

- Time Tested Roof Sealant provides lasting seal
- Sealant is compressed into cavity and lag hole as attachment is secured to rafter
- Active sealant solidifies bond if ever touched by liquid
- Technology passes UL 2582 Wind Driven Rain Test and ASTM E2140 Water Column Testing standards. Patent Pending.

Single Tool Installation

- SnapNrack was the first in the industry to develop a complete system that only requires a single tool. That tradition is continued as a 1/2" socket is still the only tool necessary to secure the mount as well as all other parts of the system.



Note: Sealant shown in white for illustration purposes only.

SnapNrack SpeedSeal™ Foot

Fastest Roof Attachment in Solar

- Lag straight to a structural member, no in-between components such as flashings or bases.
- Simply locate rafter, fill sealant cavity & secure to roof. *It's that simple!*

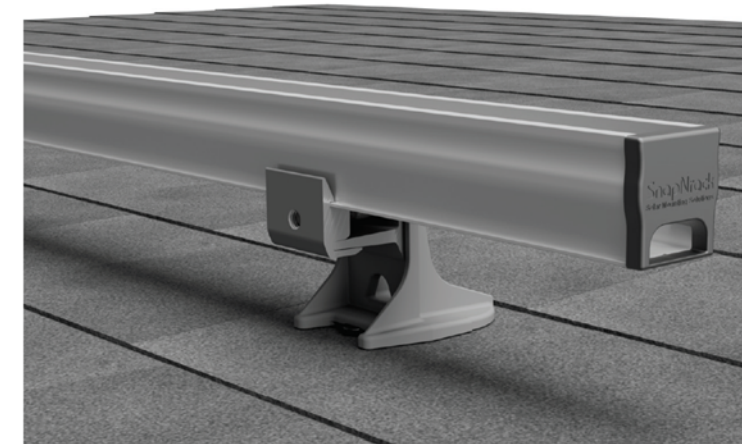


Integrated Flashings. No Questions.

- Sealant fills around lag screw keeping roof and structure sealed and intact
- No added holes from ripping up nails, staples and screws holding shingles on roof

Less Time. Less Parts. Less Tools.

- No more need for a pry bar to rip up shingles
- No more proprietary lag screws
- Single Tool installation with 1/2" socket



Total System Solution One Tool. One Warranty.

- SnapNrack Ultra Rail is a straightforward intuitive install experience on the roof without compromising quality, aesthetics & safety, all supported by a 25 year warranty.
- Built-in Wire Management & Aesthetically pleasing features designed for Ultra Rail result in a long-lasting quality install that installers and homeowners love.

Certifications

SnapNrack Ultra Rail System has been evaluated by Underwriters Laboratories (UL) and Listed to UL/ANSI Standard 2703 for Mechanical Loading and Fire. Additionally it is listed to UL 2582 for wind-driven rain and ASTM 2140.



13.2KW PV SYSTEM
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RESOURCES

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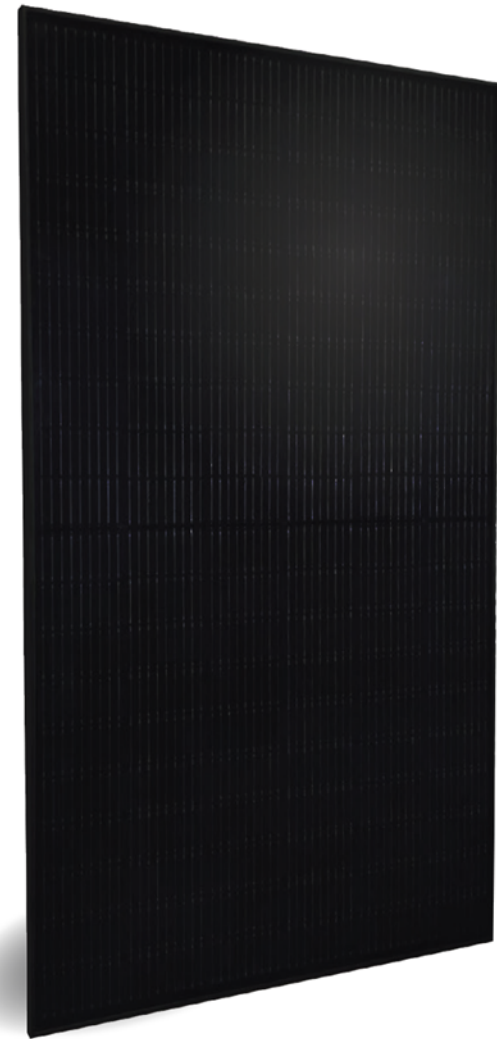
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R-01

DNA™ 144

Residential | Commercial



30 Year Warranty

3X IEC Standards

RETC Top Performer



3140 De La Cruz Blvd., Ste 200
Santa Clara, CA 95054
www.aptossolar.com
info@aptossolar.com

Solar for Innovators

Designed & Engineered in Silicon Valley 440W | 435W | 430W

Our DNA™ Split Cell Series impressively combines advanced solar technologies to maximize performance. Our patented Dual Nano Absorber (DNA™) Technology allows the panel to operate at high-efficiencies in extreme temperatures. Contact our sales team today to learn more about our line of high-efficiently solar panels.

Patented DNA™ technology boosts power performance & module efficiency

Advanced split cell technology with 9 ultra-thin busbars allows for less resistance and more photon capture

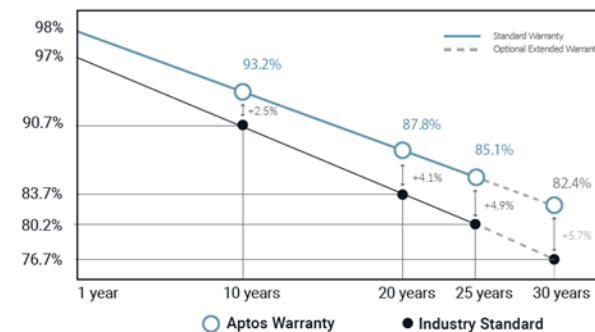
Ideal solution for applications affected by shading

All-black design for pristine aesthetics
No excessive silver bussing or ribbons

Robust product design is resilient in extreme weather. Up to 5400 Pa snow load and 210 mph wind speeds



Linear Performance Warranty



DNA™ 144

Solar for Innovators



Electrical Specifications	DNA-144-MF26-440W	DNA-144-MF26-435W	DNA-144-MF26-430W
STCrated Output P _{mp} (W)	440W	435W	430W
Module Efficiency	20.21%	19.98%	19.76%
Open Circuit Voltage V _{oc} (V)	49.9	49.7	49.5
Short Circuit Current I _{sc} (A)	11.33	11.26	11.19
Rated Voltage V _{mp} (V)	41.0	40.8	40.6
Rated Voltage I _{mp} (A)	10.74	10.67	10.60

Standard Test Conditions for front-face of panel: 1000 W/m², 25°C, measurement uncertainty ±3%

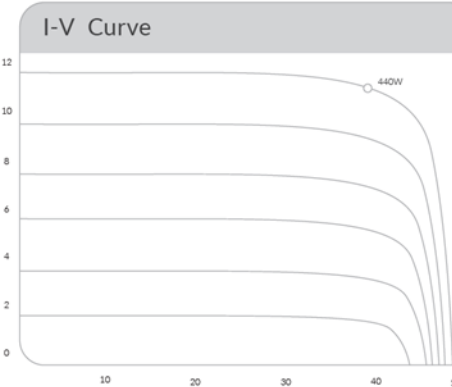
Temperature Coefficients	
Temperature Coefficients P _{mp}	-0.36%
Temperature Coefficients I _{sc}	+0.05%/°C
Temperature Coefficients V _{oc}	-0.29%/°C
Normal Operating Cell Temperature (NOCT)	44°C

Test Operating Conditions	
Maximum Series Fuse	20A
Maximum System Voltage	1,000 VDC (UL&IEC)
Maximum Load Capacity (Per UL 1703)	5400 PA Snow Load / 210mph Wind Rating
Fire Performance Class	Class C/Type 1

Packaging Configuration	
Number of Modules per Pallet	27
Number of Pallets per 40ft. Container	22
Pallet Dimensions	2110 X 1120 X 2365
Pallet Weight (kg)	680
Container Weight (kg)	14960

Aptos Solar Technology reserves the right to make specification changes without notice

Mechanical Properties	
Cell Type	Monocrystalline
Glass	3.2mm, anti-reflection coating, high transmission, low iron, tempered glass
Frame	Anodized Aluminum Alloy
Junction Box	IP68
Dimensions	2095 X 1039 X 40mm
Output Cable	4mm2 (EU)12AWG,39.37in.(1200mm)
Weight	53.13lbs.(24.1kg)
Cable Length	1200mm
Encapsulant	POE



Certifications
intertek CE
UL61730-1, UL61730-2

CAPE FEAR SOLAR SYSTEMS

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ROMERO RESIDENCE**
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Sheet No.

R-02

NXT HORIZON®

UNIRAC
BETTER SOLAR STARTS HERE

#UNIRAC
25
YEAR
FULL-SYSTEM
WARRANTY

DISCOVER YOUR NXT HORIZON®

The culmination of over two decades of experience. Thoughtful design, rigorous engineering, world-class support, and a reliable supply chain are the foundation of what makes us confident that NXT HORIZON® is the NXT Level of DESIGN, SIMPLICITY, and VALUE.

STRONGHOLD™ RAIL CLAMP
DARK: SHCLMPD1
MILL: SHCLMPM1
Adaptable rail connection to attachments allows click-in feature compatibility with almost all of Unirac's attachments.

STRONGHOLD™ ATTACHMENT KIT
DARK: SHCPKTD1
MILL: SHCPKTM1
Rail clicks into the clamps attached to the Stronghold™ base. Open slot in L-foot allows drop-in rail clamp.

Alternative attachment options:
SOLARHOOKS (all varieties)
FLASHLOC PRO (DARK: 004055D, MILL: 004055M)
FLASHLOC™ DUD (DARK: 004275D, MILL: 004275M)

NXT HORIZON™ RAIL
DARK: 168RLD1
MILL: 168RLM1
Strong, lightweight open channel rail with invisible, easy, unfalling and integrated wire management system.

NXT HORIZON™ RAIL SPLICE
RLSPLCM1
Structural internal splice that does not interfere with roof connection nor module connection. Pre-assembled thread cutting bolts.

NXT HORIZON™ COMBO CLAMP
DARK: CCLAMPD1
MILL: CCLAMPM1
Clicks into rail anywhere (even where there are cables!)
Self-standing clamp with spring combines as both mid and end clamp. Clamps 30-40 mm modules

1/2 inch module spacing for efficiency.
Unirac-quality bonding that works both as mid and end clamps.

NXT HORIZON™ WIRE MANAGEMENT OPTIONS

NXT HORIZON™ MLPE & LUG CLAMP
LUGMLPE1
Works as either MLPE Mount or Grounding Lug connection to the rail. Why source two parts when one can do the job?

NXT HORIZON™ WIRE MANAGEMENT CLIP
WRMCLPD1
Aesthetic, yet functional accessory that works to help installers keep wires inside the rail. No zip-ties required. Optional zip tie loop for extra wire management capabilities!

NXT HORIZON™ NORTH/SOUTH WIRE MANAGEMENT CLIP
WRMNSD1
An elegant solution to help installers get to the home run. The same hardware works to provide both easy entry to rail and adjustability for cable thickness.

NXT HORIZON™ CAP KIT
ENDCAPD1
Make the install look clean with the end cap kit designed to complement the module end clamp and rail ends.

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28356

RESOURCES

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R-03

ALL NXT HORIZON® SYSTEMS INCLUDE A FREE PERMITTING PLANSET DESIGN - FOR QUESTIONS OR CUSTOMER SERVICE VISIT UNIRAC.COM OR EMAIL NXTPERMITS@UNIRAC.COM

pe.eaton.com



Eaton general duty cartridge fuse safety switch

DG222NRB

UPC:782113144221

Dimensions:

- **Height:** 14.37 IN
- **Length:** 7.35 IN
- **Width:** 8.4 IN

Weight:10 LB

Notes:Maximum hp ratings apply only when dual element fuses are used. 3-Phase hp rating shown is a grounded B phase rating, UL listed.

Warranties:

- Eaton Selling Policy 25-000, one (1) year from the date of installation of the Product or eighteen (18) months from the date of shipment of the Product, whichever occurs first.

Specifications:

- **Type:** General duty, cartridge fused
- **Amperage Rating:** 60A
- **Enclosure:** NEMA 3R
- **Enclosure Material:** Painted galvanized steel
- **Fuse Class Provision:** Class H fuses
- **Fuse Configuration:** Fusible with neutral
- **Number Of Poles:** Two-pole
- **Number Of Wires:** Three-wire
- **Product Category:** General duty safety switch
- **Voltage Rating:** 240V

Supporting documents:

- [Eaton's Volume 2-Commercial Distribution](#)
- [Eaton Specification Sheet - DG222NRB](#)

Certifications:

- UL Listed

Product compliance: No Data

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Sheet No.

R-04

POWERWALL

Tesla Powerwall is a fully-integrated AC battery system for residential or light commercial use. Its rechargeable lithium-ion battery pack provides energy storage for solar self-consumption, time-based control, and backup.

Powerwall's electrical interface provides a simple connection to any home or building. Its revolutionary compact design achieves market-leading energy density and is easy to install, enabling owners to quickly realize the benefits of reliable, clean power.



PERFORMANCE SPECIFICATIONS

AC Voltage (Nominal)	120/240 V
Feed-In Type	Split Phase
Grid Frequency	60 Hz
Total Energy	14 kWh
Usable Energy	13.5 kWh
Real Power, max continuous	5 kW (charge and discharge)
Real Power, peak (10s, off-grid/backup)	7 kW (charge and discharge)
Apparent Power, max continuous	5.8 kVA (charge and discharge)
Apparent Power, peak (10s, off-grid/backup)	7.2 kVA (charge and discharge)
Maximum Supply Fault Current	10 kA
Maximum Output Fault Current	32 A
Overcurrent Protection Device	30 A
Imbalance for Split-Phase Loads	100%
Power Factor Output Range	+/- 1.0 adjustable
Power Factor Range (full-rated power)	+/- 0.85
Internal Battery DC Voltage	50 V
Round Trip Efficiency ^{1,2}	90%
Warranty	10 years

¹Values provided for 25°C (77°F), 3.3 kW charge/discharge power.
²In Backup mode, grid charge power is limited to 3.3 kW.
³AC to battery to AC, at beginning of life.

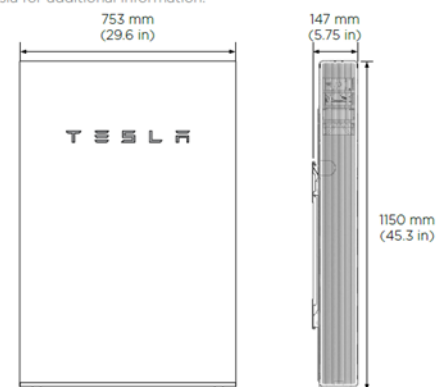
COMPLIANCE INFORMATION

Certifications	UL 1642, UL 1741, UL 1973, UL 9540, IEEE 1547, UN 38.3
Grid Connection	Worldwide Compatibility
Emissions	FCC Part 15 Class B, ICES 003
Environmental	RoHS Directive 2011/65/EU
Seismic	AC156, IEEE 693-2005 (high)

MECHANICAL SPECIFICATIONS

Dimensions ¹	1150 mm x 755 mm x 147 mm (45.3 in x 29.6 in x 5.75 in)
Weight ¹	114 kg (251.3 lbs)
Mounting options	Floor or wall mount

¹Dimensions and weight differ slightly if manufactured before March 2019. Contact Tesla for additional information.

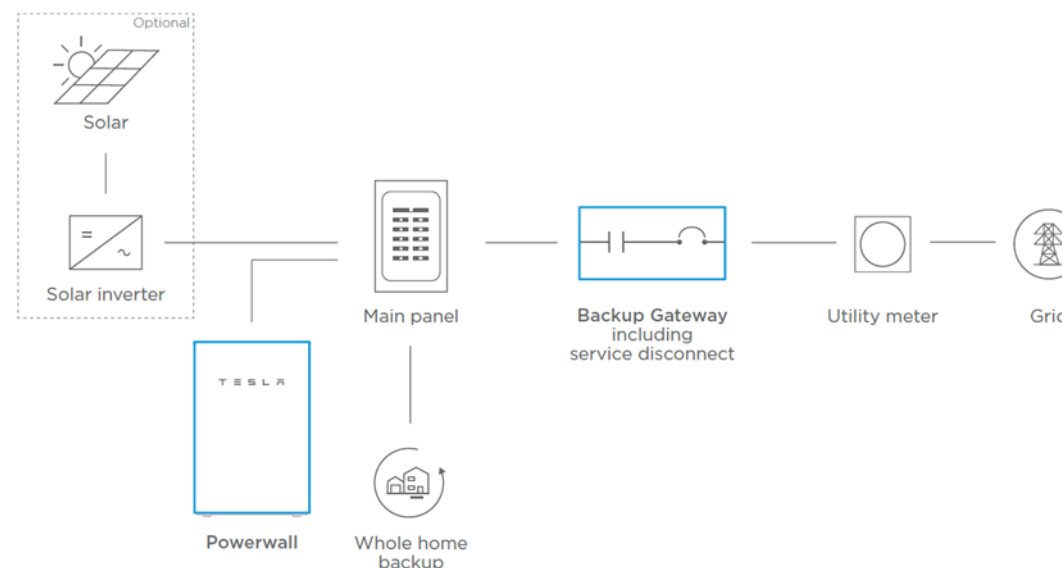


ENVIRONMENTAL SPECIFICATIONS

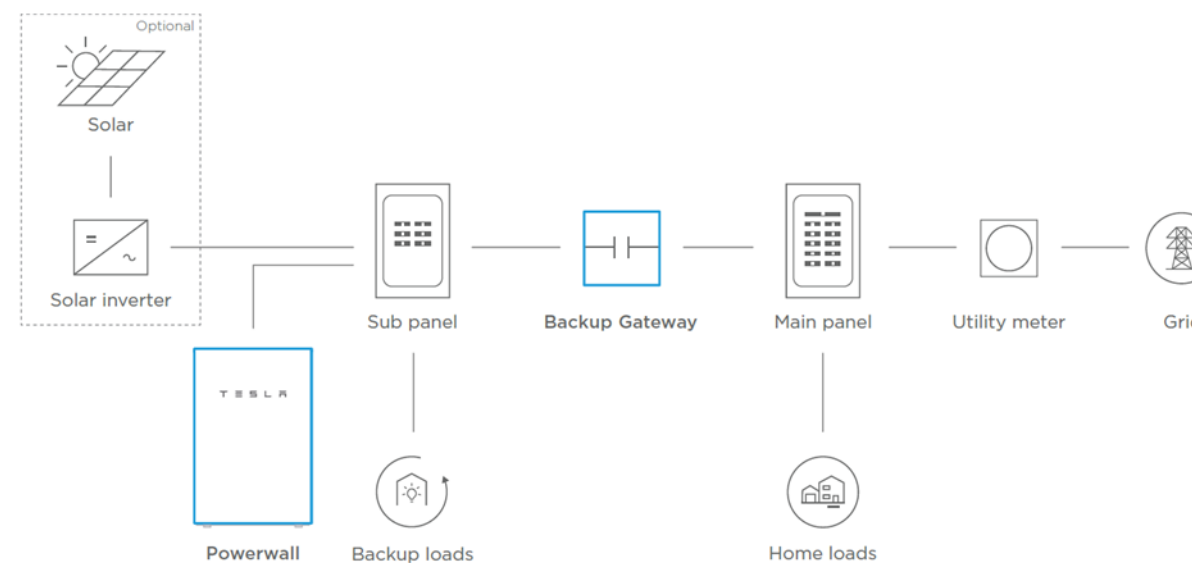
Operating Temperature	-20°C to 50°C (-4°F to 122°F)
Recommended Temperature	0°C to 30°C (32°F to 86°F)
Operating Humidity (RH)	Up to 100%, condensing
Storage Conditions	-20°C to 30°C (-4°F to 86°F) Up to 95% RH, non-condensing State of Energy (SoE): 25% initial
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Type	NEMA 3R
Ingress Rating	IP67 (Battery & Power Electronics) IP56 (Wiring Compartment)
Wet Location Rating	Yes
Noise Level @ 1m	< 40 dBA at 30°C (86°F)

TYPICAL SYSTEM LAYOUTS

WHOLE HOME BACKUP



PARTIAL HOME BACKUP



TESLA

TESLA.COM/ENERGY

TESLA

NA - BACKUP - 2019-06-11

TESLA.COM/ENERGY

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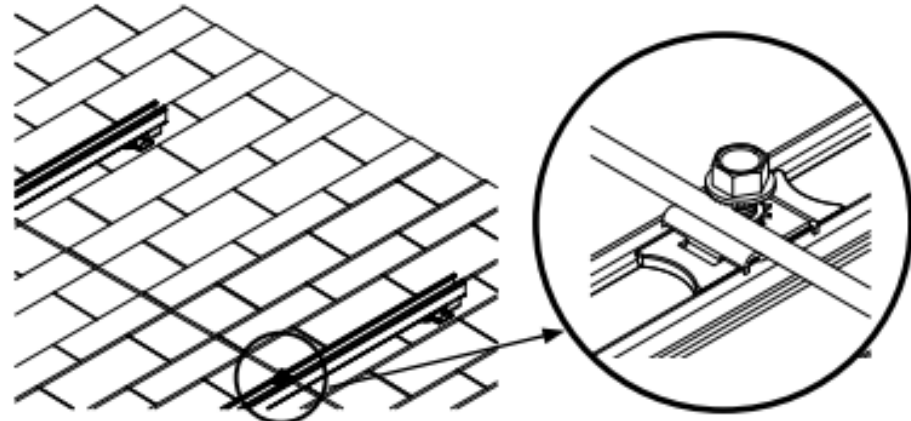
R-05



SYSTEM GROUNDING

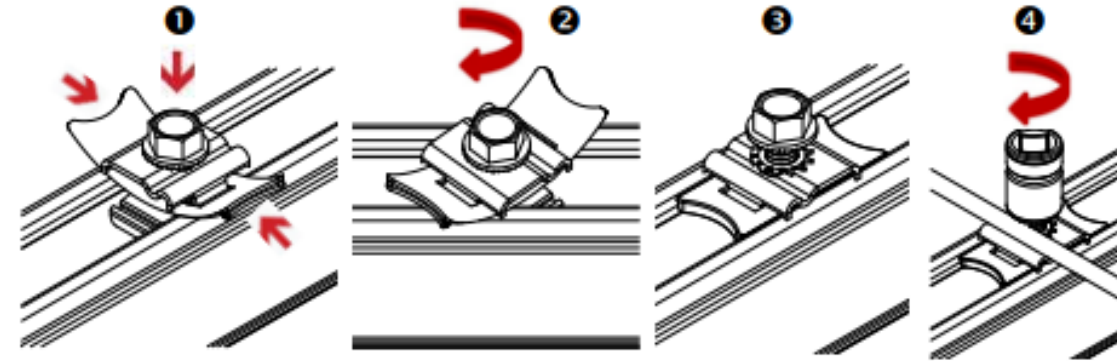
INSTALLATION GUIDE

J PAGE



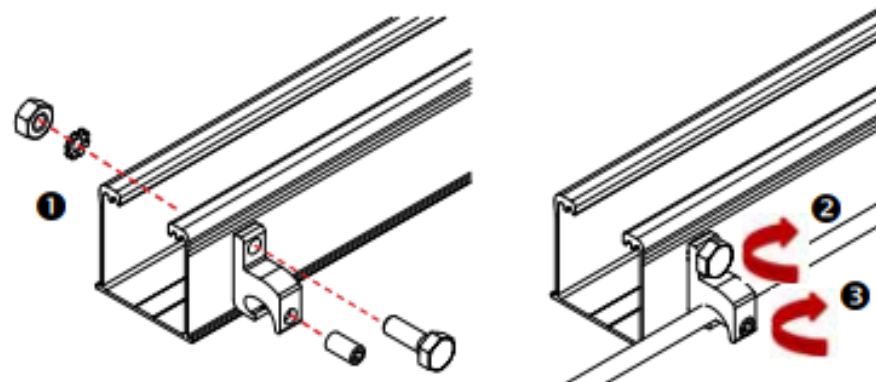
SYSTEM GROUNDING: Rails can be bonded using an NXT Horizon MLPE & Lug Clamp, GROUND WEEBLUG #1 or ILSCO LAY IN LUG (GBL4DBT). At least one rail per row of modules in an array must be bonded to electrical ground. Each additional row of modules must be grounded with at least one rail lug per row or with a row-to-row bonding device listed here.

Note: See Page F for additional lugs required for expansion joints.



SYSTEM GROUNDING WITH MLPE & LUG CLAMP: Insert the rail nut profile in the opening by lifting the flaps of the plastic clip. Rotate the clamp 90 deg and release the flaps to get flush with rail. Ensure that the rail nut is engaged in the rail profile. Align the ground wire in the depression of the washer. Tighten bolt.

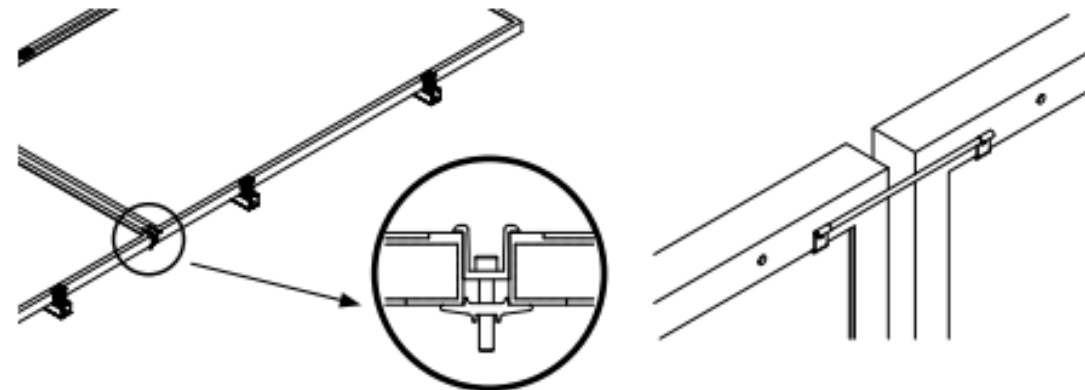
TORQUE VALUE: 6-8 AWG: 12 ft lbs.
CAUTION: MLPE & Lug Clamp cannot be used to simultaneously mount a MLPE and ground wire.



ALTERNATE SYSTEM GROUNDING WITH ILSCO LAY-IN LUG - UNIRAC P/N 008009P: Alternate Grounding Lug. Drill hole in rail 7/32" in diameter, deburr hole and bolt thru one wall of rail.

BOLT TORQUE VALUE: 5 ft lbs.
TERMINAL TORQUE: 4-6 AWG: 35in-lbs, 8 AWG: 25 in-lbs.

WARNING: ISOLATE COPPER FROM ALUMINUM CONTACT TO PREVENT CORROSION



ALTERNATE ROW GROUNDING WITH NXT HORIZON ROW BONDING CLAMP: Insert clamp between module rows and tighten bolt.

TORQUE VALUE: 20 ft-lbs

ALTERNATE ROW GROUNDING WITH N/S BONDING CLIP: Fully seat bonding clip on each module flange to provide bond across N/S module gap.



13.2KW PV SYSTEM
ROMERO RESIDENCE
 58 Will Lucas Rd, Linden, NC
 28356

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DATE: May 12, 2022
 DRAWN BY: ZJP

Sheet No.

R-06



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.



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.



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

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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, 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/IEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 1071-01					

(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.

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CAPE FEAR SOLAR SYSTEMS

901 Martin Street, Unit A
 Wilmington, NC 28401
 910-409-5533



GC LIC. NO. : 65677
 ELEC. LIC. NO. : U-33321

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R-07