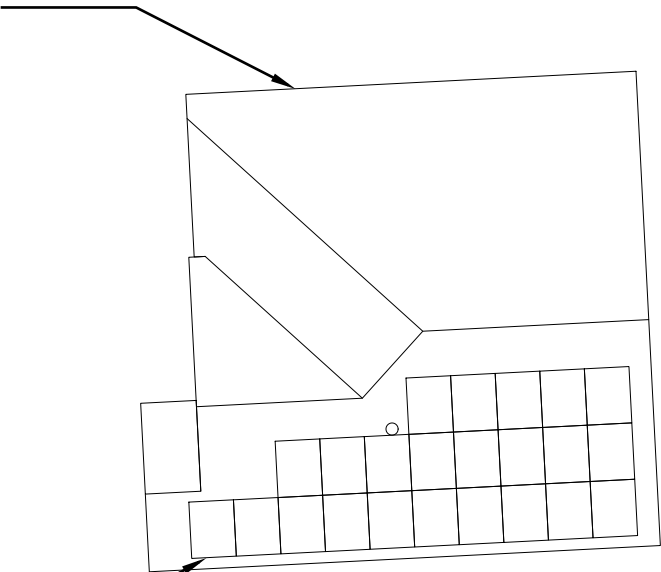


SHEET INDEX:

SHEET NO.	SHEET TITLE
S-01	ARRAY A LAYOUT
S-02	ASSEMBLY DETAILS
R-01	RESOURCES
R-02	RESOURCES

METER & ESS  
EQUIPMENT LOCATION



PHOTOVOLTAIC ARRAY A



CAPE FEAR  
SOLAR SYSTEMS

910 S. 2nd St.  
Wilmington, NC 28401  
910-409-5533



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

9.89 kW DC PV SYSTEM

IAN WISDOM

115 Mary Robertson St, Dunn,  
NC 28334

COVER

STRUCTURAL REVIEW PROVIDED BY:  
RONALD P. BITTLER, PE  
RB ENGINEERING, INC. (C-2499)  
168 QUADE DRIVE  
CARY, NC 27513  
919-677-9662  
PROJECT #RB-25382

AUTHORITIES HAVING JURISDICTION:

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

REFERENCE CODES:

ELECTRICAL CODE: 2017 NEC  
BUILDING CODE(S): 2018 IRC WITH NORTH CAROLINA AMENDMENTS  
FIRE CODE: 2018 IFC WITH NORTH CAROLINA AMENDMENTS  
ENGINEERING: ASCE 7-10

DESIGN CRITERIA:

GROUND SNOW LOAD: 10 PSF  
DESIGN WIND SPEED: 120 MPH  
DESIGN EXPOSURE CATEGORY: B  
DEAD LOAD: 2.41 PSF  
AVERAGE HIGH TEMPERATURE: 34°C  
ASHRAE LOW TEMPERATURE: -9°C

SYSTEM ATTRIBUTES	QTY
Q Tron 430 ACPV	23
Q TRON ACPV	23

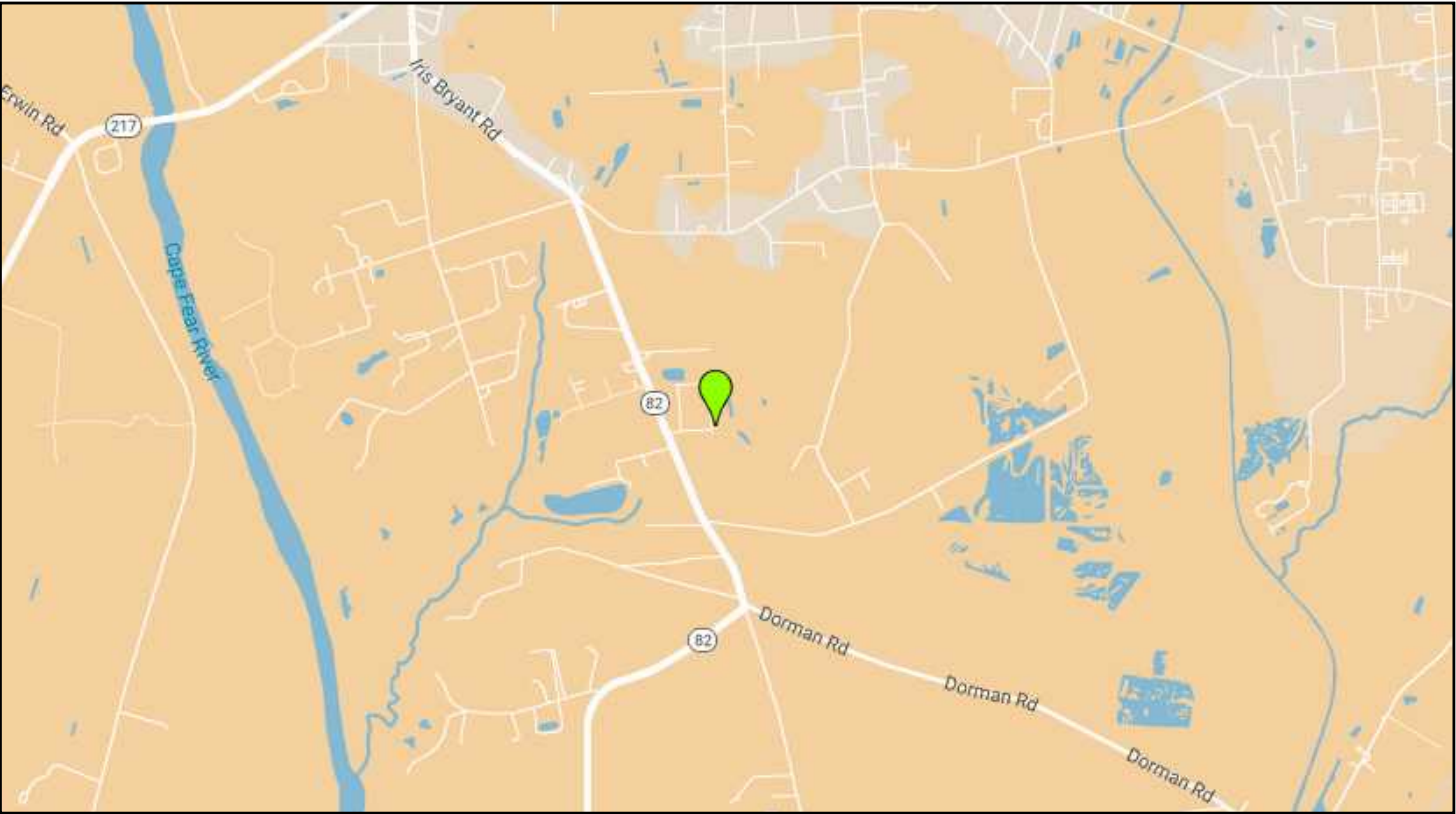
SYSTEM SIZE

8.027 kW-AC/ 9.890 kW-DC

NAME	EMAIL	PHONE	TITLE
ROBERT PARKER	ROBERT.PARKER@CAPEFEARSOLARSYSTEMS.COM	910-232-6288	CHIEF OPERATING OFFICER
DANIEL CAVANAGH	DANIEL.CAVANAGH@CAPEFEARSOLARSYSTEMS.COM	910-599-0428	RESIDENTIAL PROJECT MANAGER
WILLIAM PARKER	WILLIAM.PARKER@CAPEFEARSOLARSYSTEMS.COM	910-777-3749	COMMERCIAL PROJECT ASSOCIATE
MICHAEL HORAN	MICHAEL.HORAN@CAPEFEARSOLARSYSTEMS.COM	336-404-0511	PROJECT DEVELOPMENT COORDINATOR
JOHN NOVAK	JOHN.NOVAK@CAPEFEARSOLARSYSTEMS.COM	910-622-7361	SOLAR DESIGNER
DEREK MADRID	DEREK.MADRID@CAPEFEARSOLARSYSTEMS.COM	910-574-4229	SOLAR SITE SURVEYOR

01  
G-01

SITE SKETCH  
SCALE: 1:240



02  
G-01

LOCATION MAP (VICINITY)



STRUCTURAL  
03.18.2025

REVISION LIST

#	REV. DATE	DESC.

DATE:

March 18, 2025

DRAWN BY:

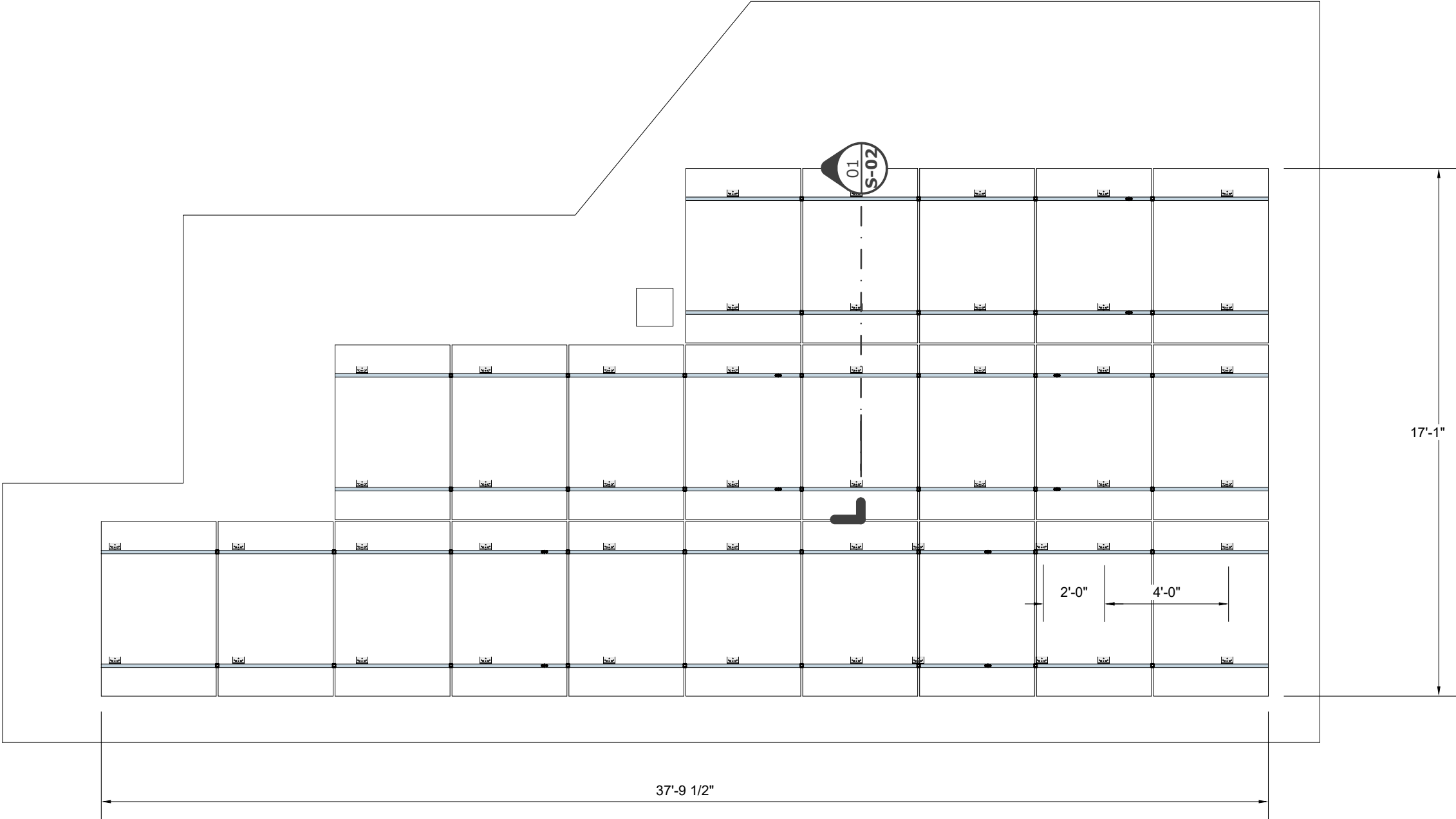
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Sheet No.

G-01

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 ACCOMODATE 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



01  
S-01

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

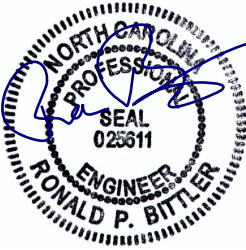
CAPE FEAR  
SOLAR SYSTEMS

910 S. 2nd St.  
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910-409-5533



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

9.89 kW DC PV SYSTEM  
IAN WISDOM  
115 Mary Robertson St, Dunn,  
NC 28334  
ARRAY A LAYOUT



03.18.2025

REVISION LIST		
#	REV. DATE	DESC.
DATE:		March 18, 2025
DRAWN BY:		JPN

Sheet No.

S-01





Solar Simplified.



Q.TRON AC  
Q.TRON BLK M-G2+AC

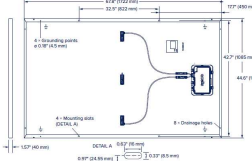


Description

The Q.TRON AC SERIES is a N-Type TOPCon PV module with an integrated microinverter. The module, with its embedded microinverter, provides optimized power output while also acting as a rapid shutdown compliant solution for optimal system safety. The solution includes a microinverter, DC cables and a junction box, enabling a streamlined installation experience.

Mechanical Specification

Format	67.8 in × 44.6 in × 1.57 in (including frame) (722 mm × 1134 mm × 40 mm)
Weight	50.6 lbs (23 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed ARC solar glass
Back Cover	Composite film
Frame	Black anodized aluminum
Cell	6 × 18 monocrystalline QANTUM NEO solar half cells
Junction Box	2.09-3.08 in × 1.26-2.36 in × 0.59-0.71 in (53.10 mm × 32.40 mm × 15.18 mm). Protection class IP67, with bypass diodes
Cable	4 mm <sup>2</sup> Solar cable (H) ≥ 25.8 in (655 mm), (L) ≥ 25.2 in (640 mm)
Connector	Stäubli MC4, IP68



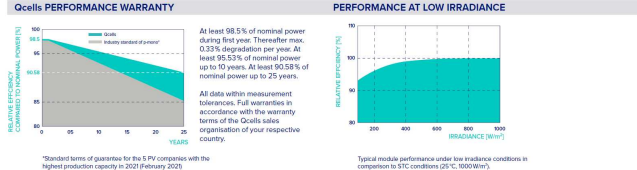
AC Output Electrical Characteristics

Q.MI.349B-G1 (Model Name)		Power Factor (adjustable)		0.85 leading...0.85 lagging	
Peak Output Power	[VA]	366	Max. number of AC Modules per Q.HOME COMBINER 80 G1	[ea]	44 (Q.HOME COMBINER CB: Max 4)
Max Continuous Output Power	[VA]	349	Max Units per 20 A (L-L) Branch Circuit	[ea]	11
Nominal (L-L) Voltage / Range	[V]	240 / 211 to 264	Total Harmonic Distortion	[%]	<5
Nominal Rated Output Current	[A]	1.45	Overvoltage Class AC Port	[III]	
Nominal Frequency / Range	[Hz]	60 / 59.3 to 60.5	Night-Time Power Consumption	[mW]	60
Extended Frequency Range	[Hz]	50 to 66	CEC Efficiency	[%]	97
Power Factor at Rated Power		1.0			

Electrical Characteristics

POWER CLASS	415	420	425	430	435	440
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC <sup>1</sup> POWER TOLERANCE: ±5 W/-0 W						
Power at MPP <sup>2</sup>	P <sub>MPP</sub> [W]	415	420	425	430	435
Short Circuit Current <sup>1</sup>	I <sub>SC</sub> [A]	13.49	13.58	13.66	13.74	13.82
Open Circuit Voltage <sup>1</sup>	V <sub>OC</sub> [V]	38.47	38.75	39.03	39.32	39.60
Current at MPP	I <sub>MPP</sub> [A]	12.83	12.91	12.98	13.05	13.13
Voltage at MPP	V <sub>MPP</sub> [V]	32.34	32.54	32.74	32.94	33.14
Efficiency <sup>3</sup>	η [%]	≥21.3	≥21.5	≥21.8	≥22.0	≥22.3

MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMO <sup>2</sup>	415	420	425	430	435	440
Power at MPP	P <sub>MPP</sub> [W]	313.7	317.5	321.2	325.0	328.8
Short Circuit Current	I <sub>SC</sub> [A]	10.87	10.94	11.00	11.07	11.14
Open Circuit Voltage	V <sub>OC</sub> [V]	36.50	36.77	37.04	37.31	37.58
Current at MPP	I <sub>MPP</sub> [A]	10.90	10.95	11.01	11.07	11.14
Voltage at MPP	V <sub>MPP</sub> [V]	31.07	31.26	31.45	31.65	31.84
Efficiency	η [%]	≥20.3	≥20.5	≥20.7	≥20.9	≥21.1



TEMPERATURE COEFFICIENTS	α	β
Temperature Coefficient of I <sub>sc</sub>	α [%/K]	β [%/K]
Temperature Coefficient of P <sub>MPP</sub>	γ [%/K]	δ [%/K]

Q.TRON AC

AC module powered by Q.ANTUM NEO Technology

Module-Level Monitoring & Control

- Easily and intelligently monitor system performance at the module level using the Q.COMMAND PRO App for installers
- Homeowners have PV production visibility at their fingertips with the user friendly Q.COMMAND HOME App
- Enhanced communications performance, thanks to high-bandwidth PLC communication technology

Streamlined Installation & Product Management

- Fast installation enabled by integrated Qcells microinverter
- QR codes on both module and embedded microinverter allow installer to map out arrays in the Q.COMMAND Pro app pre- or post-installation
- Improved inventory management enabled by reduced SKU counts and one complete module and MLPE solution by the same brand
- Seamlessly couples with Qcells' residential energy storage system to form one complete Q.HOME SMART system

Superior Module Performance

- Q.TRON AC is powered by Q.ANTUM NEO Technology, delivering up to 22.0% efficiency
- Lowest module degradation rate compared with Tier 1 TOPCon competitors, translating to more power production over time (90%+ nominal power guaranteed after 25 years)

Dependably Backed by One Warrantor

- Inclusive 25-year product warranty and 25-year linear performance warranty
- Integrated module & microinverter solution backed by one bankable, leading complete solutions provider

USA Manufacturing

- Module and microinverter both assembled in the USA by America's No.1 residential module manufacturer



aGate

Intelligent energy management system



The aGate serves as the controller for all home power sources by interconnecting solar, grid, batteries, and a standby generator to supply electricity to the home. It seamlessly transitions the home supply from grid power to backup power so that always-on appliances, such as the refrigerator and network router, will not be affected when the grid goes down.

The aGate can be installed at the service entrance, connected to the main load center, or used as a load center.



Robust

- ✓ Micro-grid interconnect device (MID)
- ✓ EMS Integrated PV and grid metering
- ✓ UL1741 certified PCS function & 280A busbar to avoid Main Panel Upgrades
- ✓ 12-year limited warranty



Hassle-free

- ✓ Precise control of electricity usage through Smart Circuits Module
- ✓ Standby generator integration via generator module
- ✓ Remarkable black start function ensures battery charge after a prolonged outage or extended trip
- ✓ Vehicle to loads (V2L) function to power essential home appliances during an emergency
- ✓ Commissioning through the aGate Wifi hotspot or Bluetooth



Easy installation

- ✓ Built-in design Smart Circuits and Generator Modules
- ✓ Conduit entry options from the bottom, left, or right



Flexible

- ✓ Compatible with micro and string solar inverter
- ✓ Indoor and outdoor / wall-mounted



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DATASHEET

PERFORMANCE SPECIFICATIONS

Model Number	aGate X
Coupling	AC-coupled
Nominal AC Voltage	120 / 208 V, 120 / 240 V, 60 Hz
Phase	2 in N+PE
aPower Over Current Protection Device	125 A Max
Solar Input Over Current Protection Device	80 A Max
Backup Load Port Over Current Protection Device	200 A Max
Generator Over Current Protection Device	200 A Max
Smart Circuits Over Current Protection Device	Opt. a 1 × 80 A Max @ 208 V / 240 V & 1 × 50 A Max @ 208 V / 240 V Opt. b 1 × 80 A Max @ 208 V / 240 V & 2 × 50 A Max @ 208 V
Maximum Supply Fault Current	22 kA
Busbar Rating	280 A
Work Modes	Self-Consumption, Time of Use, Emergency Backup
Communications	Ethernet / 4G / Wifi / Bluetooth
User Interface	FranklinWH App
Warranty	12-year limited

MECHANICAL SPECIFICATIONS

Dimensions (H × W × D)	21.5 in × 21.7 in × 6.3 in (550 mm × 550 mm × 160 mm)
Weight	38.6 lb (17.5 kg)
Mounting	Wall mount
1. Generator Module is optional. 2. Smart Circuit Module is optional.	

COMPLIANCE INFORMATION

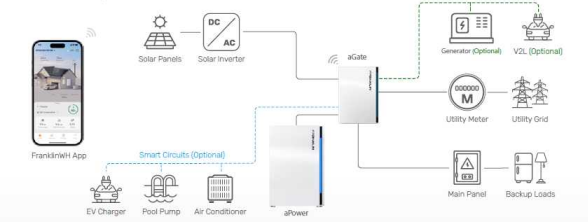
Certifications	UL 1741, UL 1011, TFC, PSC, UL 487, UL 800A, UL 978, CAN / CSA C22.2 No. 107-1-16, CSA C22.2 No. 29, CSA C22.2 No. 0.19
Seismic	AC 15a, DSHPD, IEEE 693-2005 (high)
Environmental	California Proposition 65, RoHS Directive 2011 / EU
Emissions	FCC Part 15 Class B, ICES 003

ENVIRONMENTAL SPECIFICATIONS

Enclosure Type	NEMA 3R
Operating Temperature	-4°F to 122°F (-20°C to 50°C)
Operating Humidity (RH)	Up to 100% RH, condensing
Altitude	Maximum 9,843 ft (3,000 m)
Environment	Indoor and outdoor-rated

Franklin Home Power Solution

Whole Home Backup



Address: 1731 Technology Dr., Suite 530 San Jose, CA 95110 Telephone: +1 888-837-2655 Email: info@franklinwh.com Website: www.franklinwh.com  
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aPower  
AC-coupled battery

Store solar generated power while the sun is shining. Use the stored energy when needed to lower electric bills. Run heavy loads such as air conditioners and water heaters as usual even during grid outages. Provide homeowner peace of mind by fully charging before severe weather events.



- ✓ Safe LFP chemistry
- ✓ Built-in inverter
- ✓ 13.6 kWh per unit, up to 204 kWh (16 units) per aGate
- ✓ 5 kW continuous / 10 kW peak for 10s (discharge)

- ✓ Normal operations down to -4°F (-20°C)
- ✓ IP67 protection
- ✓ Single aPower capable of starting a 4-Ton AC
- ✓ First-of-its-kind 208 V compliant battery for multi-family housing

PERFORMANCE SPECIFICATIONS

Model Number	aPower X
Battery Chemistry	Lithium Iron Phosphate (LFP)
Usable System Energy	13.6 kWh per unit, up to 15 units per aGate
Aggregate Throughput	43 MWh
Real Power (Charge)	5 kW continuous, 7.0 kW peak for 30 minutes
Real Power (Discharge)	5 kW continuous, 10 kW peak for 10 seconds
Load Start Capability	118 A (L-A)
Nominal AC Voltage	120 / 208 V, 120 / 240 V, 60 Hz
Coupling	AC-coupled
Phase	2 in N+PE
Round Trip Efficiency	89%
Work Modes	Self-Consumption, Time of Use, Emergency Backup
Noise Emission	<30 dB(A)
User Interface	FranklinWH App
Warranty	10 years

MECHANICAL SPECIFICATIONS

Dimensions (H × W × D)	45.3 in × 29.5 in × 15.4 in (1150 mm × 750 mm × 390 mm)
Weight	395 lb (179 kg)
Mounting	Wall mount or floor mount
Cooling	Natural air-cooled design
1. at beginning of life, AC to battery to AC, 50% power rating. 2. Load start capacity may vary.	

COMPLIANCE INFORMATION

Certifications	UL 9540, UL 9540A, UL 1741, UL 978, IEEE 1547, IEEE 5674, UL 58.3, CAN/CSA C22.2 No. 107-1-16, AC 15a, DSHPD, IEEE 693-2005 (high)
Seismic	California Proposition 65
Environmental	RoHS Directive 2011 / EU
Emissions	FCC Part 15 Class B, ICES 003

ENVIRONMENTAL SPECIFICATIONS

Ingress Protection	IP67 (Battery and power converter system, IP65 (being completed))
Operating Temperature	-4°F to 122°F (-20°C to 50°C)
Operating Humidity (RH)	Up to 100% RH, condensing
Altitude	Maximum 9,843 ft (3,000 m)
Environment	Indoor and outdoor-rated

WWW.FRANKLINWH.COM

DATASHEET



Franklin Home Power  
Generator Module

Standby Generator Integration for Whole Home Energy Resilience

Though solar energy is a clean and renewable way to supplement or replace grid power, sometimes there are extreme weather conditions where the grid goes down and the solar system isn't generating enough energy. Backup generators are a critical energy management source where those events are becoming more common. In the past, it has been difficult to integrate generators and solar power, but FranklinWH has addressed that need. The Franklin Home Power (FHP) energy management solution provides the ability to smoothly switch between the grid, solar, generators and battery backup to provide robust home energy management.

Fast and reliable switchover to generator power during a grid failure is a major way in which the Generator Module benefits the household. In addition, generators can be noisy. During a longer outage, or when operating off-grid, generator auto start times can be scheduled through the FranklinWH app. You can run the generator during the day, when people aren't home, and switch to battery power at night, according to a pre-set schedule or through manual control.

Safe and reliable energy relies on multiple sources of power. The FHP Generator Module adds generators to provide a complete home energy management solution.

- Smart Simple Flexible

Integrated Power Management

The generator can both power home loads and charge the aPower X battery.

Wide Adaptability

Compatible with most models of standby generators. Applicable for new and retrofit installations.



Easy Installation

The Generator Module is an optional aGate X component which can be easily installed without requiring any external components.

Better Experience

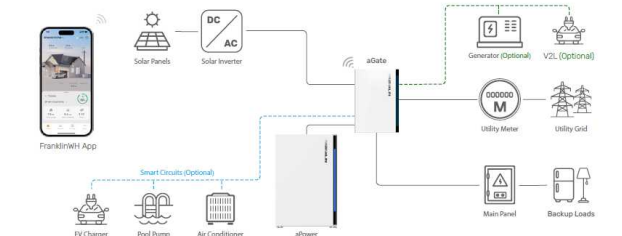
Seamless and automatic generator switchover and remote manual control via the app.

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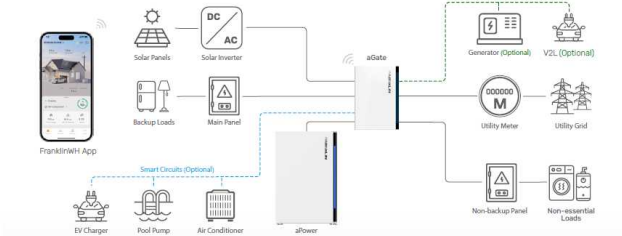
DATASHEET

Franklin Home Power Solution

Whole Home Backup



Partial Home Backup



Address: 1731 Technology Dr., Suite 530 San Jose, CA 95110 Telephone: +1 888-837-2655 Email: info@franklinwh.com Website: www.franklinwh.com  
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CAPE FEAR  
SOLAR SYSTEMS

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

9.89 kW DC PV SYSTEM

IAN WISDOM

115 Mary Robertson St, Dunn,  
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RESOURCES

REVISION LIST

#	REV. DATE	DESC.

DATE:	March 18, 2025
DRAWN BY:	JPN

Sheet No.

R-01



## Ultra Rail

UR-40  
UR-60

### SnapNrack Ultra Rail System

A sleek, straightforward rail solution for mounting solar modules on all roof types. Ultra Rail features two rail profiles; UR-40 is a lightweight rail profile that is suitable for most geographic regions and maintains all the great features of SnapNrack rail, while UR-60 is a heavier duty rail profile that provides a larger rail channel and increased span capabilities. Both are compatible with all existing mounts, module clamps, and accessories for ease of install.

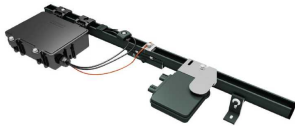
#### The Entire System is a Snap to Install

- New Ultra Rail Mounts include snap-in brackets for attaching rail
- Compatible with all the SnapNrack Mid Clamps and End Clamps customers love
- Universal End Clamps and snap-in End Caps provide a clean look to the array edge



#### Unparalleled Wire Management

- Open rail channel provides room for running wires resulting in a long-lasting quality install
- Industry best wire management offering includes Junction Boxes, Universal Wire Clamps, MLPE Attachment Kits, and Conduit Clamps
- System is fully bonded and listed to UL 2703 Standard



#### Heavy Duty UR-60 Rail

- UR-60 rail profile provides increased span capabilities for high wind speeds and snow loads
- Taller, stronger rail profile includes profile-specific rail splice and end cap
- All existing mounts, module clamps, and accessories are retained for the same great install experience



## Quality. Innovative. Superior.

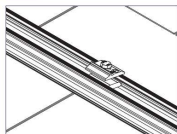
SnapNrack Solar Mounting Solutions are engineered to optimize material use and labor resources and improve overall installation quality and safety.

877-732-2860    [www.snapnrack.com](http://www.snapnrack.com)    [contact@snapnrack.com](mailto:contact@snapnrack.com)  
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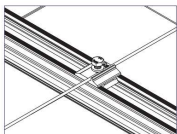
### Grounding Specifications

[snapnrack.com](http://snapnrack.com)

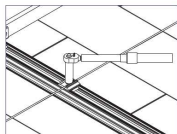
#### INSTALLATION INSTRUCTIONS - SNAPNRACK GROUND LUG



1) Snap the SnapNrack Ground Lug into the rail channel on one rail per module row.



2) Place grounding conductor into slot underneath split ring washer.

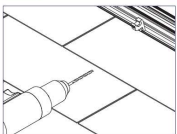


3) Tighten hardware to 16 ft.-lbs.

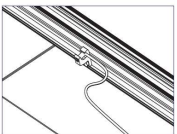
**Install Note:**  
SnapNrack Ground Lug may be used in side or top channel, and may be rotated 90 degrees relative to slot to facilitate running copper across top of rails.

**Install Note:**  
SnapNrack Ground Lug only Listed for use with 6-12 AWG solid copper conductor.

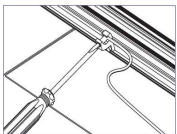
#### INSTALLATION INSTRUCTIONS - ILSCO LAY-IN LUG



1) Drill and deburr a 1/4" hole in the back side of the rail for the IlSCO lug to attach to, place the bolt through the hole, and attach the lug assembly on one rail per module row.



2) Place grounding conductor into slot.



**Install Note:**  
Torque set screw to 20 in.-lbs for #10-#14 solid and stranded copper, 25 in.-lbs for #8 stranded copper, and 35 in.-lbs for #4-#6 stranded copper.

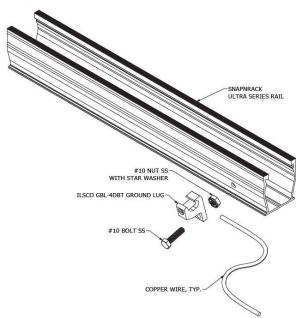
**Note:**

- System has been evaluated to a maximum overcurrent device (OCD) protection level of 20 Amps.
- Universal End Clamp (UEC) does not bond module to rail. Be sure to separately ground any modules that are only secured by UECs, especially during servicing.
- SnapNrack recommends that bare copper never come into contact with aluminum.
- SnapNrack Ground Lug: torque bolt to 16 ft.-lbs. The Ground Lug may be used in side or top channel. It may be rotated 90 degrees relative to slot to facilitate running copper across top of rails.
- Grounding with a standard IlSCO GBL-4DBT Lug is a listed alternate and requires drilling of a hole in the rail.
- IlSCO hardware connection to rail: 5 ft.-lbs. Torque for lug set screw: #10-#14 solid and stranded copper- 20 in.-lbs, #8 stranded copper- 25 in.-lbs, #4-#6 stranded copper- 35 in.-lbs.

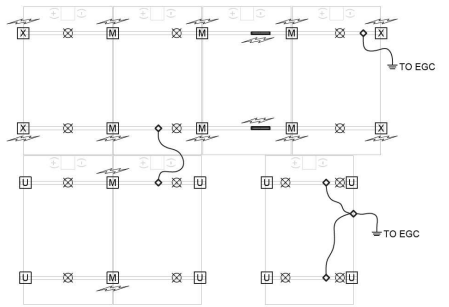
### Grounding Specifications

[snapnrack.com](http://snapnrack.com)

#### IlSCO Lay-in Lug Assembly



#### Ground Path Details



RAIL    RAIL SPLICE    MOUNT    GROUND LUG    MODULE CLAMP  
GROUND PATH    EQUIPMENT GROUNDING CONDUCTOR  
M = MIDCLAMP  
X = X-END CLAMP  
U = UNIVERSAL END CLAMP

## Ultra Rail

UR-40  
UR-60

### SnapNrack Ultra Rail System

A sleek, straightforward rail solution for mounting solar modules on all roof types. Ultra Rail features two rail profiles; UR-40 is a lightweight rail profile that is suitable for most geographic regions and maintains all the great features of SnapNrack rail, while UR-60 is a heavier duty rail profile that provides a larger rail channel and increased span capabilities. Both are compatible with all existing mounts, module clamps, and accessories for ease of install.

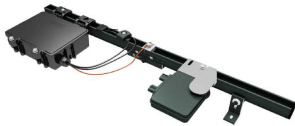
#### The Entire System is a Snap to Install

- New Ultra Rail Mounts include snap-in brackets for attaching rail
- Compatible with all the SnapNrack Mid Clamps and End Clamps customers love
- Universal End Clamps and snap-in End Caps provide a clean look to the array edge



#### Unparalleled Wire Management

- Open rail channel provides room for running wires resulting in a long-lasting quality install
- Industry best wire management offering includes Junction Boxes, Universal Wire Clamps, MLPE Attachment Kits, and Conduit Clamps
- System is fully bonded and listed to UL 2703 Standard



#### Heavy Duty UR-60 Rail

- UR-60 rail profile provides increased span capabilities for high wind speeds and snow loads
- Taller, stronger rail profile includes profile-specific rail splice and end cap
- All existing mounts, module clamps, and accessories are retained for the same great install experience



## Quality. Innovative. Superior.

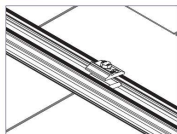
SnapNrack Solar Mounting Solutions are engineered to optimize material use and labor resources and improve overall installation quality and safety.

877-732-2860    [www.snapnrack.com](http://www.snapnrack.com)    [contact@snapnrack.com](mailto:contact@snapnrack.com)  
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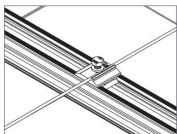
### Grounding Specifications

[snapnrack.com](http://snapnrack.com)

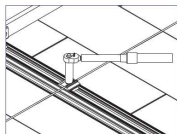
#### INSTALLATION INSTRUCTIONS - SNAPNRACK GROUND LUG



1) Snap the SnapNrack Ground Lug into the rail channel on one rail per module row.



2) Place grounding conductor into slot underneath split ring washer.

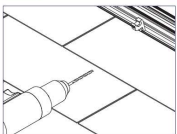


3) Tighten hardware to 16 ft.-lbs.

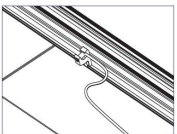
**Install Note:**  
SnapNrack Ground Lug may be used in side or top channel, and may be rotated 90 degrees relative to slot to facilitate running copper across top of rails.

**Install Note:**  
SnapNrack Ground Lug only Listed for use with 6-12 AWG solid copper conductor.

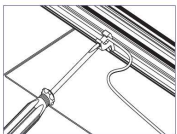
#### INSTALLATION INSTRUCTIONS - ILSCO LAY-IN LUG



1) Drill and deburr a 1/4" hole in the back side of the rail for the IlSCO lug to attach to, place the bolt through the hole, and attach the lug assembly on one rail per module row.



2) Place grounding conductor into slot.



**Install Note:**  
Torque set screw to 20 in.-lbs for #10-#14 solid and stranded copper, 25 in.-lbs for #8 stranded copper, and 35 in.-lbs for #4-#6 stranded copper.

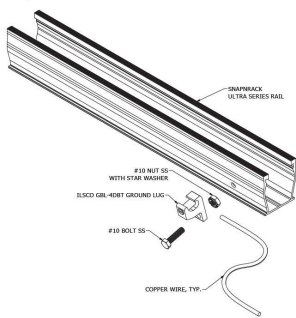
**Note:**

- System has been evaluated to a maximum overcurrent device (OCD) protection level of 20 Amps.
- Universal End Clamp (UEC) does not bond module to rail. Be sure to separately ground any modules that are only secured by UECs, especially during servicing.
- SnapNrack recommends that bare copper never come into contact with aluminum.
- SnapNrack Ground Lug: torque bolt to 16 ft.-lbs. The Ground Lug may be used in side or top channel. It may be rotated 90 degrees relative to slot to facilitate running copper across top of rails.
- Grounding with a standard IlSCO GBL-4DBT Lug is a listed alternate and requires drilling of a hole in the rail.
- IlSCO hardware connection to rail: 5 ft.-lbs. Torque for lug set screw: #10-#14 solid and stranded copper- 20 in.-lbs, #8 stranded copper- 25 in.-lbs, #4-#6 stranded copper- 35 in.-lbs.

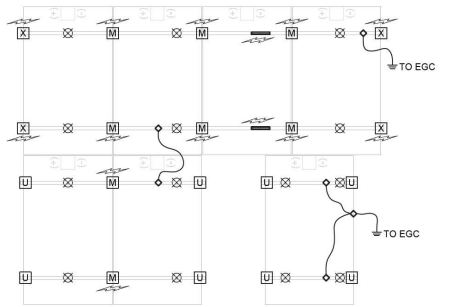
### Grounding Specifications

[snapnrack.com](http://snapnrack.com)

#### IlSCO Lay-in Lug Assembly



#### Ground Path Details



RAIL    RAIL SPLICE    MOUNT    GROUND LUG    MODULE CLAMP  
GROUND PATH    EQUIPMENT GROUNDING CONDUCTOR  
M = MIDCLAMP  
X = X-END CLAMP  
U = UNIVERSAL END CLAMP

910 S. 2nd St.  
Wilmington, NC 28401  
910-409-5533



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

9.89 kW DC PV SYSTEM

IAN WISDOM

115 Mary Robertson St, Dunn,  
NC 28334

RESOURCES

### REVISION LIST

#	REV. DATE	DESC.

DATE: March 18, 2025

DRAWN BY: JPN

Sheet No.

R-02

Ultra Rail

## AnchorFoot™



### SnapNrack AnchorFoot™ & DeckAnchor™

are the latest innovation designed to reduce the number of roof fasteners when mounting direct to deck and provide maximum flexibility to mount anywhere on the roof. Engineered with butyl, now installers do not have to add sealant to the bottom of the mount, simplifying the installation process and further protecting the roof.

#### AnchorFoot™

- Pre-installed butyl for easy peel & stick installation allows for no disruption to composition shingles
- Industry-leading .200" thick butyl allows installation over shingles without cutting pieces
- Flexible direct to deck mounting options with (2) DeckAnchors or (4) #14 wood screws
- Flexible rafter mounting options with (1) 5/16" lag or (2) #14 wood screws
- Ships pre-assembled with Ultra Rail Mounting Clamp for easy rail attachment
- Rated for UL2703 Bonding & Grounding with TAS 100A Wind Driven Rain Testing for waterproof certification



#### DeckAnchor

- Proprietary fastening technology to reduce the number of screws for direct to deck mounting
- Familiar 1/2" hex head to maintain the SnapNrack tradition of a single tool install
- Wide threads securely grip the wood deck and significantly reduces the potential for over-tightening
- TAS 100A Wind Driven Rain Testing + ASTM D1761 Screw Capacities



## Quality. Performance. Innovation.

SnapNrack solutions are focused on simplifying the installation experience through intuitive products and the best wire management in the industry.

SnapNrack

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### Deck Mounting, *re-imagined.*



Flexible direct to deck mounting & rafter mounting options



Pre-installed butyl for easy worry-free sealing



Compatible with proprietary DeckAnchor™ fasteners cutting the number of deck fasteners in half, from 4 to 2



Single Tool installation & snap-in features as with all SnapNrack products

Start Installing AnchorFoot™ Today!