



Dogwood Solar, LLC
1501 Creekwood Parkway, STE 110
Columbia, MO 65202

Phone: 573-447-6527
dan@dogwoodsolar.com

March 18, 2021

Columbia Community Land Trust
Randy Cole, Staff Liaison
500 E Walnut, STE 108
Columbia, MO 65201

Members of the Columbia Community Land Trust Board,

I appreciate the opportunity to submit our proposal for the solar electric systems for the Cullimore Cottages Project. Solar installations on low- and moderate-income homes have a profound effect. Allowing those with limited discretionary income the benefits of solar they might not otherwise get to experience. Those who could benefit from solar the most are often those who are least able to afford it.

In the following pages you will find the information requested in the RFP as well as our thoughts on the potential layouts and options. We have designed these systems based on products we keep in stock at our warehouse in Columbia and use routinely on installations throughout Columbia and the surrounding area. These products, along with our workmanship are here to stand the test of time and perform for the residents of Cullimore Cottages.

Please feel free to call or email should you have questions or need any clarification.

All the best,

A handwritten signature in blue ink, appearing to read "Dan Shifley", is written over the typed name and title.

Dan Shifley
Owner, Dogwood Solar



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1501 Creekwood Parkway, STE 110
Columbia, MO 65202

Phone: 573-447-6527
dan@dogwoodsolar.com

RFP Active Solar Photovoltaic Installation – Cullimore Cottages

Submitted By:
Dan Shifley, Owner
Dogwood Solar, LLC

ORIGINAL
Dan Shifley

573-355-4582

karenv5413@gmail.com

Dogwood Solar client
Karen Volgas, Homeowner

573-999-6528

jackie@jackiebulgin.com

Dogwood Solar client
Jackie Bulgin, House of Brokers

billviewhabitat@yahoo.com

Dogwood Solar client
Bill View, Habitat for Humanity

573-446-6146

dvinson@mchsi.com

Dogwood Solar Client
Dan & Linda Vinson, Homeowner

Client References

Dan Shirley is the primary contact and project foreman
Dogwood Solar was founded January 1, 2010

P: 573-447-6527

C: 573-424-2011

Columbia, MO 65202

1501 Creekwood Parkway, STE 110

Dogwood Solar, LLC

Vendor Information

Dogwood Solar Information and Capacity

Dan and Maigan Shifley founded Dogwood Solar on January 1, 2010 with the goal supporting and expanding solar energy in Columbia. Over the past eleven years, we have completed numerous installations and have had the opportunity to give back to our community.

In 2014, we were selected through a competitive process to provide the solar electric, solar water heating and Sun Tunnels on City of Columbia's Net Zero home on Ash Street. Working with Bill View at Show Me central Habitat, we provided the design, materials and installation for the project. This partnership, utilizing HUD, CBDG and City of Columbia funds was an excellent pilot project and one that allowed Dogwood Solar experience work with affordable housing, the City of Columbia and federal funds.

Dogwood Solar has supported the Columbia Housing Authority with no-charge feasibility consulting while exploring competitive grants funded with CBDG and HOME funds.

In 2017, we were selected through a competitive process to provide the solar electric for the CCLT-owned Lynn Street Cottages project. As the Board knows, this project was profoundly influential in providing not only affordable housing, but also putting solar in the hands of those who can benefit the most.

Team Members

Dan Shifley loves nothing more than solar that performs as well as it looks. As the owner and jobsite foreman, he is personally responsible for the successful outcome of each project. He is NABCEP Certified as a PV Installation Professional as well as a Solar Heating Installer. His vision and drive to provide outstanding service to clients is Dogwood Solar's greatest asset.

PV Installation Professional # PV-041214-003603

Master Electrical License # BSDE-002357-2018

Lawrence Lile, owner of Lile Engineering is our electrical engineer on retainer. He is responsible for independently reviewing designs and completing post install inspections.

Lawrence Lile, Lile Engineering

lawrencelile@gmail.com, 573-397-5414

Depending on roof dimensions and available location preferences, we have included potential layouts for these arrays. South facing panels will provide the most energy production annually while west facing panels best align with the City's desire to reduce peak demand during the summer months. We propose installing the panels on the least-shaded roof face with preference given to south facing where available. Please see Sheet L1.

Notes Regarding Cullimore Cottages Installations

1 day – Electrical inspections and Solar inspections by City of Columbia
3 days per home – Install rooftop solar, inverters and balance of system components
Days with three or more hours of rain, snow or icy conditions will extend the installation by the number of days with inclement conditions
7 days - Receive non-stock equipment if necessary,
10 Days - Finalize design and submit to Columbia Water & Light for interconnection approval
Upon Notice to Proceed Dogwood Solar will commence with:

Project Timeline

Neither Dogwood Solar nor our team has preexisting commitments that would prevent project implementation once we receive Notice to Proceed.
No one on the Dogwood Solar team has been debarred by HUD or restricted from entering into federal contacts.

Dustin Windsor is in his first year with Dogwood Solar. He recently came to us from another industry and is excited to develop his solar career with us. Plans to pass the NABCEP Associate level and will continue training with Dogwood Solar to progress to the next level.
Carson Shackelford is in his first year with Dogwood Solar. His experience in the construction industry and is well versed with the tools of our trade. Plans to pass the NABCEP Associate level and will continue training with Dogwood Solar to progress to the next level.

The included micro-inverters are installed behind each panel on the roof.

The design selected for this project allows the future homeowner to expand the system, without changing the inverter, saving time and money.

Based on our experience with the Lynn Street Cottages project, we found lack of monitoring to be a challenge. Not having system data required the homeowner to notify us if the inverter happened to go offline. While we were happy to help, I believe the monitoring will ensure we are aware of any performance issues as quickly as possible. It is for this reason; I chose to include system monitoring for each home at no cost to CCLT. Please note, this does require connection to the homeowner's Wi-Fi. If the owner chooses not to have internet, the monitoring will be unavailable.

What makes working with Dogwood Solar different?

Owner and NABCEP Certified installer, Dan Shifley, is personally on-site and the installation is not farmed out to inexperienced installers.

We take the time to complete an analysis in order to provide accurate performance data in lieu of a guess. This ensures your production estimates are accurate and not inflated to make the performance look better than reality. We ensure your system meets or exceeds NEC and local codes. Additionally, we follow best practices for solar professionals, even if not required by local code.

Items we include for your safety and convenience:

Lightning /Surge protector with LED indicator so you know it is functioning for AC disconnect.

Quality Assurance:

- Individual component warranties per manufacturer,
- Solar panels carry a 25-year power production warranty, 25-year workmanship
- Inverters carry a 25-year warranty
- Dogwood solar provides a 10-year workmanship guarantee.

Systems include:

All line items include material, labor, permits, necessary inspections, owner orientation, Solar disconnect, and all work associated with tie-in to existing electric service. Additional labor and material, if required per structural analysis, is an additional cost and a written proposal will be provided prior to beginning work.

Squirrel guard adds \$600.00 to each array if selected.

Squirrel guard is recommended but not required. Squirrel guard keeps squirrels and other pests out from under the array. This prevents them from building nests and chewing wires beneath the array which is not covered under warranty.

Data monitoring is recommended and included at no cost [requires onsite Wi-Fi provided by the owner]

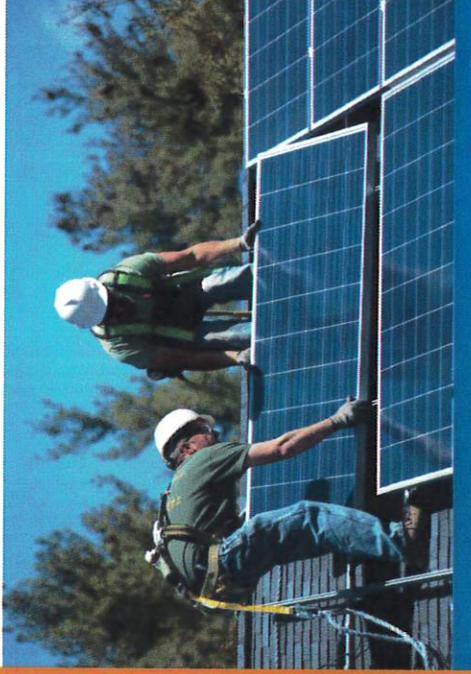
Cullimore Cottages - Solar Photovoltaic System	
4.08 kW System Size	
Solar Panels	\$1,999
Inverters, inverter cabling	\$1,750
Mounting System	\$1,063
Balance of Systems	\$432
Wire/Conduit	\$134
Safety	\$75
Freight	\$304
Subtotal	\$5,757
AC Electrical labor	\$400
Solar labor/ solar mounting	\$2,100
General labor	\$215
Subtotal	\$2,715
Material & Labor	\$8,472
Contractor Fee 10%	\$958
Per Home Total	\$9,430.00
Project Total	\$47,150.00
If Applicable:	
MO sales tax per home, add	\$457.68
Total Sales Tax, add	\$2,288.40

NABCEP™

Raising Standards. Promoting Confidence.

"The growing number of NABCEP certified installers and salespeople inspires confidence and trust in the solar industry. NABCEP certification provides value to both the solar professionals and our customers."

Gary Gerber, President
Sun Light and Power



NABCEP is a nonprofit, voluntary professional certification board and credentialing organization dedicated to upholding professional standards for the renewable energy industry. NABCEP promotes consumer confidence and quality assurance by guaranteeing that certified practitioners have met minimum levels of education and experience, passed a rigorous competency exam, and abide by a strict code of ethics.

NABCEP™

Raising Standards. Promoting Confidence.

Presented by:

Daniel Shifley

(Certificant Name)

Dogwood Solar

(Company Name)

Of:

- NABCEP Certified PV Installation Professional
- NABCEP Certified PV Technical Sales Professional
- NABCEP Certified Solar Heating Installer
(check all that apply)

Certification Number(s):

PV-041214-003603 and SH092411-20

North American Board of Certified Energy Practitioners (NABCEP) / V2.0 10.2013

Right people. Right project.
The results you want.

Right people. Right project. The results you want.

The people who install a solar energy system on your home or business are as important to its success as the system you invest in. That's why more consumers are insisting on NABCEP certificants. From technical sales to PV and solar heating installation, you want the quality assurance associated with NABCEP certifications — widely recognized as the "gold standard" for renewable energy professionals.

Across North America more than 3,000 individuals have earned the right to call themselves NABCEP Certified. And they are in demand as more state incentive programs, employers, insurers and bid documents recognize the value and peace of mind that comes with hiring individuals who have attained this professional accomplishment.

When you hire a contractor with NABCEP certified professionals working on your project, you can have confidence that your job is getting done by solar professionals with the "know-how" you need. They are part of a select group of individuals who have distinguished themselves. They've achieved certification only through specialized solar training and on-the-job experience, and they've passed a rigorous exam to prove they have the knowledge and professionalism necessary to assure the safety and quality of their work.



Learn more about how NABCEP certification can help protect your solar investment.

Use our locator to find and contact a NABCEP certified professional near you.

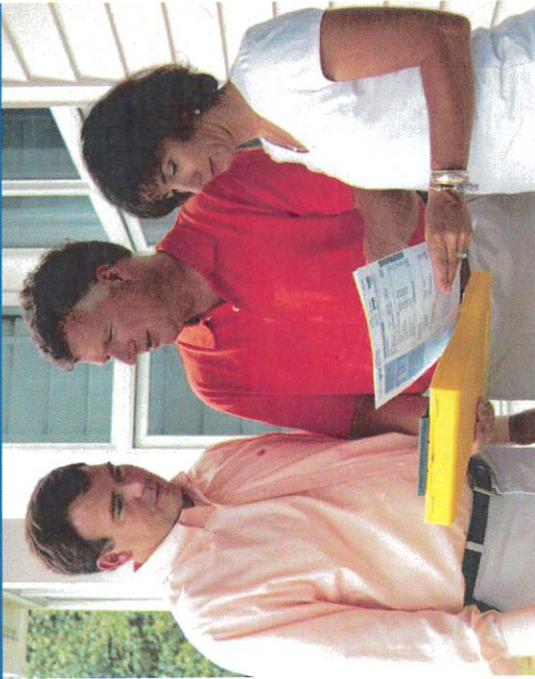
NABCEP

CERTIFIED

PV Installation Professional*

PV Technical Sales Professional

Solar Heating Installer*



Your Quality Assurance – Find out more about why NABCEP is recognized as the highest designation for quality and professionalism.

Insist on it – Demand technical sales people, installers and companies with the NABCEP mark of distinction on your project.

A Marketed Difference – Search our website to find NABCEP Certified PV Technical Sales Professionals, PV Installation Professionals and Solar Heating Installers in your area.

Visit nabcep.org or call (800) 654-0021.

NABCEP™

Raising Standards. Promoting Confidence.

"The extreme value of the NABCEP certification is that it sets you apart from others in the field. More job requests now call for NABCEP certification up front."

Jessica Baldwin
Certified NABCEP Solar Heating Installer

"PV is a young industry with participants who are enthusiastic about their special skills. NABCEP is doing a great job in providing a professional, caring, and recognized certification to the solar industry."

Mike Holt
National Electrical Code Expert



*NABCEP's certification programs are administered according to international standards for certification bodies. Our PV Installation Professional and Solar Heating Installer Certifications have been accredited by the American National Standards Institute.

Hawthorn

BANK
MEMPHIS

March 15, 2021

Columbia Community Land Trust
Randy Cole
500 E Walnut Street, Suite 108
Columbia, Mo 65201

Re: Dogwood Solar, Dan Shifley
Cullimore Cottages Solar

To Whom It May Concern:

Dan Shifley has been a customer of Hawthorn Bank since June 2020. All accounts have been handled in a satisfactory manner. Dogwood Solar has average collected balances and cash on hand in excess of the \$47,150 estimated cost for the Cullimore Cottages project.

If you have any questions, please call me at 573-449-3204

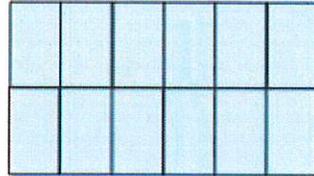
Sincerely,



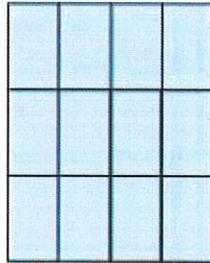
Brandon Kalista
AVP, Commercial Loan Officer
NMLS MLO #1285754



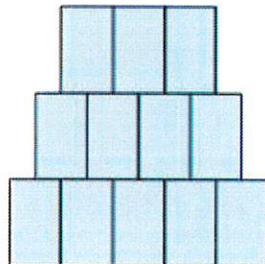
Cullimore Cottages
Typical Panel Layouts



Two Rows of 6
Portrait Layout



Three Rows of 4
Portrait Layout

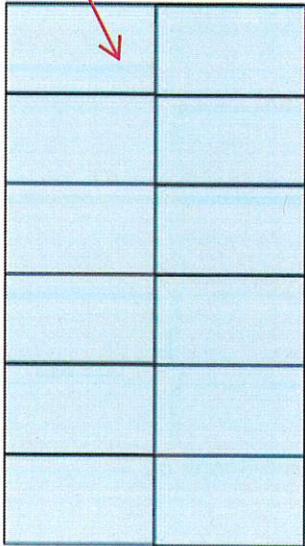


Three Rows, centered
Portrait Layout



Cullimore Cottages
Typical One Line

12 - 340 watt panels
4.08 kW
Enphase IQ7+ at
each module
Tilt: varies
Azimuth: varies



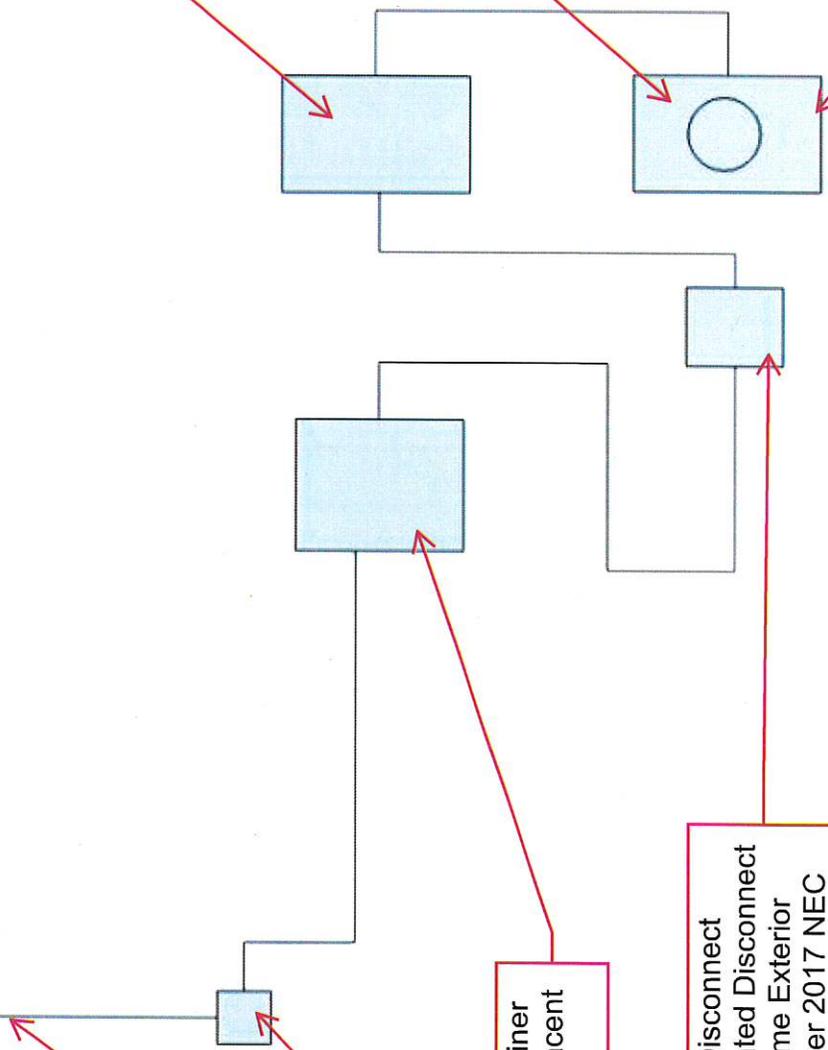
2-#10 w/ 1#10 G
typical AC

Flashing/Junction box
at roof

Enphase IQ AC Combiner
Garage Interior or adjacent
to meter on exterior

Solar Disconnect
30A Rated Disconnect
3R, Home Exterior
Label per 2017 NEC

Main Electric Panel
Bidirectional Meter
Home Exterior
Incoming Utility Service



powered by

Q.ANTUM DUO

Q.PEAK DUO BLK-G6+ 330-345

ENDURING HIGH
PERFORMANCE



Q.ANTUM TECHNOLOGY: LOW LEVELIZED COST OF ELECTRICITY

Higher yield per surface area, lower BOS costs, higher power classes, and an efficiency rate of up to 19.5%.



INNOVATIVE ALL-WEATHER TECHNOLOGY

Optimal yields, whatever the weather with excellent low-light and temperature behavior.



ENDURING HIGH PERFORMANCE

Long-term yield security with Anti LID and Anti PID Technology¹, Hot-Spot Protect and Traceable Quality Tra.Q™.



EXTREME WEATHER RATING

High-tech aluminum alloy frame, certified for high snow (5400 Pa) and wind loads (4000 Pa).



A RELIABLE INVESTMENT

Inclusive 25-year product warranty and 25-year linear performance warranty².



STATE OF THE ART MODULE TECHNOLOGY

Q.ANTUM DUO combines cutting edge cell separation and innovative wiring with Q.ANTUM Technology.

¹ APT test conditions according to IEC/TS 62804-1:2015, method B (~1500V, 168h)

² See data sheet on rear for further information

THE IDEAL SOLUTION FOR:



Rooftop arrays on
residential buildings

Engineered in Germany

Q CELLS

Note: Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approval installation and use of this product.

UL 1703, VDE Quality Tested, CE-compliant, IEC 61215-2:2016, IEC 61730-2:2016, Application Class II, U.S. Patent No. 9,893,215 (solar cells)	32
Number of Modules per Pallet	28
Number of Pallets per 53' Trailer	24
Number of Pallets per 40' HC-Container	1505 lbs (683 kg)
Pallet Weight	
Pallet Dimensions (L x W x H)	71.5 x 45.3 x 48.0 in (1815 x 1150 x 1220 mm)



QUALIFICATIONS AND CERTIFICATES

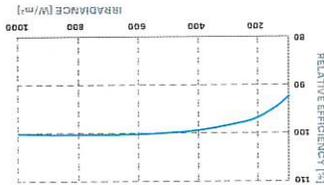
Maximum System Voltage V_{sys} [V]	1500 (IEC) / 1000 (UL)	Safety Class	II
Maximum Series Fuse Rating [A DC]	20	Fire Rating based on ANSI/UL 1703	C (IEC) / TYPE 2 (UL)
Max. Design Load, Push/Pull [lbs/ft.]	75 (3600 Pa) / 55 (2667 Pa)	Permitted Module Temperature on Continuous Duty	-40 °F up to +135 °F (-40 °C up to +85 °C)
Max. Test Load, Push/Pull [lbs/ft.]	113 (5400 Pa) / 84 (4000 Pa)		

* See Installation Manual

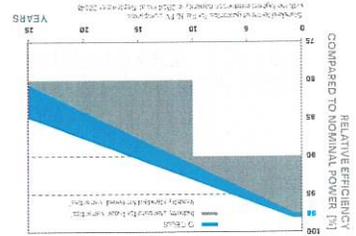
PROPERTIES FOR SYSTEM DESIGN

Temperature Coefficient of I_{sc} α [%/K]	+0.04	Temperature Coefficient of V_{oc} β [%/K]	-0.27
Temperature Coefficient of P_{mp} γ [%/K]	-0.36	Normal Module Operating Temperature	NMOT [°F]
			109 ± 5.4 (43 ± 3 °C)

Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m²)



All data within measurement tolerance. Full warranties in accordance with the warranty terms of the Q CELLS sales organization of your respective country.

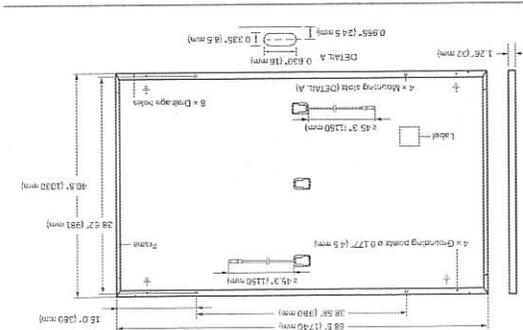


Q CELLS PERFORMANCE WARRANTY

Measurement tolerances P_{mp} ± 3%, I_{sc} ± 3%, V_{oc} ± 5% at STC; 1000 W/m², 25 ± 2 °C, AM 1.5 according to IEC 60904-3 • 800 W/m², NMOT, spectrum AM 1.5

Minimum	MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT*			
	Power at MPP	Short Circuit Current	Open Circuit Voltage	Current at MPP
345	258.2	8.52	38.59	7.93
340	254.5	8.48	38.34	7.89
335	250.7	8.43	38.10	7.84
330	247.0	8.39	37.86	7.80
325	243.2	8.34	37.62	7.76
320	239.4	8.29	37.38	7.72
315	235.6	8.24	37.14	7.68
310	231.8	8.19	36.90	7.64
305	228.0	8.14	36.66	7.60
300	224.2	8.09	36.42	7.56
295	220.4	8.04	36.18	7.52
290	216.6	7.99	35.94	7.48
285	212.8	7.94	35.70	7.44
280	209.0	7.89	35.46	7.40
275	205.2	7.84	35.22	7.36
270	201.4	7.79	34.98	7.32
265	197.6	7.74	34.74	7.28
260	193.8	7.69	34.50	7.24

ELECTRICAL CHARACTERISTICS



MECHANICAL SPECIFICATION

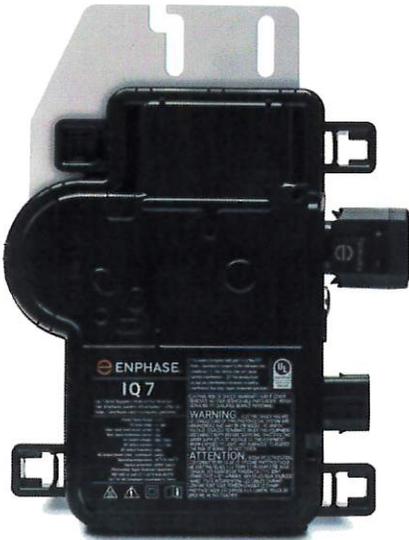
Format	68.5 x 40.6 x 1.26 in (including frame)
Weight	43.9 lbs (19.9 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodized aluminum
Cell	6 x 20 monocrystalline Q ANTUM solar half cells
Junction Box	2.09-3.98 x 1.26-2.36 x 0.59-0.71 in (53-101 x 32-60 x 15-18 mm), Protection class IP67 with bypass diodes
Cable	4 mm ² Solar cable, (+) ≥ 45.3 in (1150 mm), (-) ≥ 45.3 in (1150 mm)
Connector	Shabbli M/C4; IP68

Enphase IQ 7 and IQ 7+ Microinverters

The high-powered smart grid-ready **Enphase IQ 7 Micro™** and **Enphase IQ 7+ Micro™** dramatically simplify the installation process while achieving the highest system efficiency.

Part of the Enphase IQ System, the IQ 7 and IQ 7+ Microinverters integrate with the Enphase IQ Envoy™, Enphase IQ Battery™, and the Enphase Enlighten™ monitoring and analysis software.

IQ Series Microinverters extend the reliability standards set forth by previous generations and undergo over a million hours of power-on testing, enabling Enphase to provide an industry-leading warranty of up to 25 years.



Easy to Install

- Lightweight and simple
- Faster installation with improved, lighter two-wire cabling
- Built-in rapid shutdown compliant (NEC 2014 & 2017)

Productive and Reliable

- Optimized for high powered 60-cell and 72-cell* modules
- More than a million hours of testing
- Class II double-insulated enclosure
- UL listed

Smart Grid Ready

- Complies with advanced grid support, voltage and frequency ride-through requirements
- Remotely updates to respond to changing grid requirements
- Configurable for varying grid profiles
- Meets CA Rule 21 (UL 1741-SA)

* The IQ 7+ Micro is required to support 72-cell modules.



To learn more about Enphase offerings, visit enphase.com



Enphase IQ 7 and IQ 7+ Microinverters

INPUT DATA (DC)		IQ7-60-2-US / IQ7-60-B-US		IQ7PLUS-72-2-US / IQ7PLUS-72-B-US	
Commonly used module pairings ¹	235 W - 350 W +	235 W - 440 W +	60-cell PV modules only	60-cell and 72-cell PV modules	
Module compatibility	48 V	60 V			
Maximum input DC voltage	27 V - 37 V	27 V - 45 V			
Peak power tracking voltage	16 V - 48 V	16 V - 60 V			
Operating range	22 V / 48 V	22 V / 60 V			
Min/Max start voltage	15 A	15 A			
Max DC short circuit current (module Isc)	II	II			
Overvoltage class DC port	0 A	0 A			
DC port backfeed current	1 x 1 ungrounded array, No additional DC side protection required; AC side protection requires max 20A per branch circuit				
PV array configuration					
OUTPUT DATA (AC)					
Peak output power	250 VA	295 VA			
Maximum continuous output power	240 VA	290 VA			
Nominal (L-L) voltage/range ²	240 V / 211-264 V	240 V / 211-264 V	240 V / 183-229 V	240 V / 183-229 V	208 V / 208 V
Maximum continuous output current	1.0 A (240 V)	1.0 A (240 V)	1.15 A (208 V)	1.21 A (240 V)	1.39 A (208 V)
Nominal frequency	60 Hz	60 Hz	47 - 68 Hz	47 - 68 Hz	60 Hz
Extended frequency range	5.8 Arms	5.8 Arms	5.8 Arms	5.8 Arms	11 (208 VAC)
AC short circuit fault current over 3 cycles	16 (240 VAC)	16 (240 VAC)	13 (208 VAC)	13 (240 VAC)	11 (208 VAC)
Maximum units per 20 A (L-L) branch circuit ³	III	III	III	III	III
Overvoltage class AC port	0 A	0 A	0 A	0 A	0 A
AC port backfeed current	1.0	1.0	0.7 lagging ... 0.7 lagging	0.7 lagging ... 0.7 lagging	0.7 lagging ... 0.7 lagging
Power factor setting	Power factor (adjustable)	Power factor (adjustable)	Power factor (adjustable)	Power factor (adjustable)	Power factor (adjustable)
Efficiency	@240 V	@240 V	@208 V	@240 V	@208 V
Peak CEC efficiency	97.6 %	97.6 %	97.6 %	97.5 %	97.3 %
CEC weighted efficiency	97.0 %	97.0 %	97.0 %	97.0 %	97.0 %
MECHANICAL DATA					
Ambient temperature range	-40°C to +65°C				
Relative humidity range	4% to 100% (condensing)				
Connector type (IQ7-60-2-US & IQ7PLUS-72-2-US)	MCA (or Amphenol H4 UTX with additional Q-DCC-5 adapter)				
Connector type (IQ7-60-B-US & IQ7PLUS-72-B-US)	Friends P2 (MCA interchangeable), Adaptors for modules with MCA or UTX connectors: - P2 to MCA; order ECA-S20-S22 - P2 to UTX; order ECA-S20-S25				
Dimensions (WxHxD)	212 mm x 175 mm x 30.2 mm (without bracket)				
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				
Environmental category / UV exposure rating	NEMA Type 6 / outdoor				
FEATURES					
Communication	Power Line Communication (PLC)				
Monitoring	Enlighten Manager and MyEnlighten monitoring options. Both options require installation of an Enphase IQ Envoy.				
Disconnecting means	The AC and DC connectors have been evaluated and approved by UL for use as the load-break disconnect required by NEC 690.				
Compliance	CA Rule 21 (UL 1741-SA) UL 62109-1, UL1741/IEEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01 This product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC-2014 and NEC-2017 section 690.12 and G22.1-2015 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according manufacturer's instructions.				

1. No enforced DC/AC ratio. See the compatibility calculator at <https://enphase.com/en-us/support/module-compatibility>.

2. Nominal voltage range can be extended beyond nominal if required by the utility.

3. Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

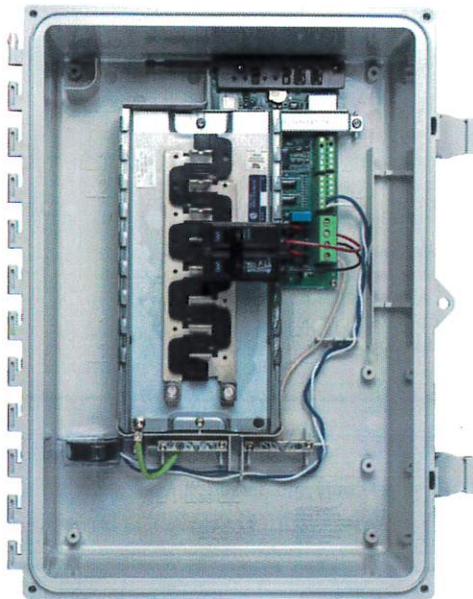
To learn more about Enphase offerings, visit enphase.com



Enphase IQ Combiner 3

(X-IQ-AM1-240-3)

The **Enphase IQ Combiner 3™** with Enphase IQ Envoy™ consolidates interconnection equipment into a single enclosure and streamlines PV and storage installations by providing a consistent, pre-wired solution for residential applications. It offers up to four 2-pole input circuits and Eaton BR series busbar assembly.



Smart

- Includes IQ Envoy for communication and control
- Flexible networking supports Wi-Fi, Ethernet, or cellular
- Optional AC receptacle available for PLC bridge
- Provides production metering and optional consumption monitoring

Simple

- Reduced size from previous combiner
- Centered mounting brackets support single stud mounting
- Supports back and side conduit entry
- Up to four 2-pole branch circuits for 240 VAC plug-in breakers (not included)
- 80 A total PV or storage branch circuits

Reliable

- Durable NRTL-certified NEMA type 3R enclosure
- Five-year warranty
- UL listed



LISTED

To learn more about Enphase offerings, visit enphase.com



Enphase IQ Combiner 3

MODEL NUMBER

IQ Combiner 3 X-IQ-AM1-240-3

IQ Combiner 3 with Enphase IQ Envoy™ printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 +/- 0.5%) and optional* consumption monitoring (+/- 2.5%)

ACCESSORIES and REPLACEMENT PARTS (not included, order separately)

Enphase Mobile Connect™
 CELLMODEM-03 (4G / 12-year data plan)
 CELLMODEM-01 (3G / 5-year data plan)
 CELLMODEM-M1 (4G based LTE-M / 5-year data plan)
 Consumption Monitoring* CT
 CT-200-SPLIT
 Split core current transformers enable whole home consumption metering (+/- 2.5%).
 Supports Eaton BR210, BR215, BR220, BR230, BR240, BR250, and BR260 circuit breakers.
 Circuit Breakers
 BRK-10A-2-240
 BRK-15A-2-240
 BRK-20A-2P-240
 EPLC-01
 XA-PLUG-120-3
 XA-ENV-PCBA-3

ELECTRICAL SPECIFICATIONS

Rating
 Continuous duty
 120/240 VAC, 60 Hz
 System voltage
 Eaton BR series busbar rating
 125 A
 65 A
 90 A
 Up to four 2-pole Eaton BR series Distributed Generation (DG) breakers only (not included)
 Max. fuse/circuit rating (output)
 Branch circuits (solar and/or storage)
 Max. continuous current rating (input from PV)
 64 A
 Max. total branch circuit breaker rating (input)
 80A of distributed generation / 90A with IQ Envoy breaker included
 Production Metering CT
 200 A solid core pre-installed and wired to IQ Envoy

MECHANICAL DATA

Dimensions (WxHxD)
 49.5 x 37.5 x 16.8 cm (19.5" x 14.75" 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.
 To 2000 meters (6,560 feet)
 Altitude

INTERNET CONNECTION OPTIONS

Integrated Wi-Fi
 802.11b/g/n
 Ethernet
 Optional, 802.3, Cat5E (or Cat 6) UTP Ethernet cable (not included)
 Cellular
 Optional, CELLMODEM-01 (3G) or CELLMODEM-03 (4G) or CELLMODEM-M1 (4G based LTE-M) (not included)

COMPLIANCE

Compliance, 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)
 UL 60601-1/CANCSA 22.2 No. 61010-1
 Compliance, IQ Envoy

* Consumption monitoring is required for Enphase Storage Systems.

To learn more about Enphase offerings, visit enphase.com

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SOLA TRIM PEST ABATEMENT BARRIER

ST-055 Product Specifications

PHYSICAL

Dimensions (H x W)	5.5" x 48.00"
Weight	0.55 lbs.
Finish	Black Polyester Coating

ENVIRONMENT

Ambient Temperature*	-40°F to 300°F
*Post Installation	-40°C to 149°C
Relative Humidity (Installation only)	< 90%

Storage >50°F / 10°C (prior to installation)

Installation > 40°F / 4°C (see instructions pg. 4)

WARRANTY

Warranty	24 Months
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PRODUCT DIMENSIONS

