



CITY OF ORANGE HISTORIC PRESERVATION COMMISSION

ORANGE CITY HALL

29 North Day Street, Orange, New Jersey 07050

PHONE (973) 952- 6344 FAX (973) 672-6643

**CITY OF ORANGE PRESERVATION COMMISSION
APPLICATION FOR CERTIFICATION OF APPROPRIATENESS**

DATE RECEIVED 5/19/25 APPLICATION # A6181-25

APPLICANT(S):

Name of Applicant(s): MOMENTUM SOLAR

Address: 325 HIGH STREET METUCHEN NJ 08804 Email: PERMITS@MOMENTUMSOLAR.COM

Telephone (Day) 7323661854 (Eve) _____ (Fax) _____

Relationship of Applicant to Property owner:

Owner(s) Lessee Property Under Contract Other (Specify)

Explanation if Other: _____

OWNER(S), IF DIFFERENT THAN APPLICANT:

Name(s) of Owner(s): Olutossin Olugbenga

Address: 591 Christopher St Email: Tossinolug@gmail.com

Telephone Number: (Day) 9084257385 (Eve) _____

Street Address of the Property that is subject of Application: 591 Christopher St

Tax Block: 6007 Lot: 23

Name of Historic District in which Property lies: _____

Orange Valley Montrose Seven Oaks Park Main Street St. John's

Existing use of the Property:

SINGLE FAMILY RESIDENTIAL

Existing zoning of the Property:

Describe in detail the proposed work to be done at the Property.

ROOFTOP SOLAR INSTALLATION

Explain how you plan to prevent, minimize and mitigate any adverse effects to this Property, to nearby historically significant properties, and to the Historic District?

THE ROOF IS FLAT THEREFORE PANELS WILL NOT BE SEEN FROM THE STREET

Each Application must be accompanied by sketches, drawings, photographs, descriptions or other information sufficient to show the proposed alterations, additions, changes or new construction. The Commission may require the subsequent submission of such additional materials as it reasonably requires to make an informed decision. A submission shall include:

- A photograph of each elevation of the structure.
- Fifteen (15) copies of drawings, photographs, material brochures, samples, specifications or information that may be necessary to assist the Commission. Copies may be submitted electronically, or by CD or flash drive.
- Fifteen (15) copies of a survey, or if applicable, a site plan showing the location of new and existing structures on the site and their location with respect to the building line, property line, and the front of those buildings or structures immediately adjacent to each side of the lot to be built upon.
- Fifteen (15) copies of façade elevation(s), if applicable, of the proposed work in sufficient detail to identify the limits and location of the proposed work, and existing and proposed materials to be used.
- \$70.00 Application fee (check or money order made to the City of Orange).

By signing this Application, I hereby certify that the owner of record authorizes the proposed work and I have been authorized by the owner to make this Application as his/her authorized agent. By signing this Application, the owner hereby grants authorization to the Commission members, and its professional and support staff to enter the Property in question for inspection purposes. By signing this application I further agree that the attorney's and professional staff's review of my application is chargeable to me and that I agree to pay for such review separately from the application fee, by depositing an escrow payment of \$ _____.

Signature of Applicant(s) _____

(Print Name) MOMENTUM SOLAR

Date 5/16/2025

Signature of Owner(s) (if different than Applicant)  _____

(Print Name) Olutossin Olugbenga

Date 5/16/2025

Submittal of this Application form-properly signed, with the indicated copies of documents and the Application fee will constitute a complete Application. Upon receipt of a complete Application, the Board Secretary will schedule the Application with the Commission. The Applicant delays his/her own Application if all of these required items are not submitted. The Commission shall reach a decision on the Application within forty-five (45) days of submission of a complete Application. The Applicant must appear in front of the Commission in order to present the Application during the public hearing on the scheduled date.

Telephone: 732-366-1854 Fax: 8482919798 Website: _____

Document History

SignNow E-Signature Audit Log

All dates expressed in MM/DD/YYYY (US)

Document name: Olutossin Olugbenga_Orange HPC _historic application
Document created: 05/08/2025 14:43:19
Document pages: 4
Document ID: 3a87abbb240648e99718d3db77877d59d65805d9
Document Sent: 05/08/2025 14:43:20 UTC
Document Status: Signed
 05/14/2025 15:11:45UTC

Sender: permits@momentumsolar.com
Signers: tossinolug@gmail.com
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Client	Event	By	Server Time	Client Time	IP Address
SignNow Web Application	Copied from Template	permits@momentumsolar.com	05/08/2025 14:43:19 pm UTC	05/08/2025 14:43:17 pm UTC	75.99.109.114
SignNow Web Application	Uploaded the Document	permits@momentumsolar.com	05/08/2025 14:43:19 pm UTC	05/08/2025 14:43:17 pm UTC	10.50.97.219
SignNow Web Application	Invite Sent to: tossilnolug@gmail.com	permits@momentumsolar.com	05/08/2025 14:43:20 pm UTC	05/08/2025 14:43:17 pm UTC	75.99.109.114
SignNow Web Application	Resent Invite for the Document	permits@momentumsolar.com	05/14/2025 14:36:14 pm UTC	05/14/2025 14:39:23 pm UTC	100.14.130.204
SignNow Web Application	Viewed the Document	tossilnolug@gmail.com	05/14/2025 15:10:43 pm UTC	05/14/2025 15:10:43 pm UTC	73.197.91.241
SignNow Web Application	Signed the Document	tossilnolug@gmail.com	05/14/2025 15:11:45 pm UTC	05/14/2025 15:11:45 pm UTC	73.197.91.241
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SignNow Web Application	Signer tossinolug@gmail.com received a signed document copy	tossilnolug@gmail.com	05/14/2025 15:11:54 pm UTC	05/14/2025 15:11:45 pm UTC	73.197.91.241
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Michael S. Rezk

Engineer-PE

Pro Custom Solar LLC
3096B Hamilton Blvd
South Plainfield, NJ 07080

732-902-6224
May 7, 2025

Re: Proposed Photovoltaic Solar Panel Installation
Olutossin Olugbenga
591 CHRISTOPHER ST
ORANGE, NJ 07050

Dear Plan Reviewer:

Certification: I have reviewed the engineering testing reports for the racking and attachments to be used on this project and I certify that the products are capable of supporting the code required loads and are suitable for this installation when installed in strict compliance with the manufacturers printed instructions.

Regarding the solar panel array installation on the above referenced project please note that an inspection was performed by a representative of the Architect/Engineer of Record, and analysis of the existing structure was conducted. There is adequate structural capacity for the installation of the array with the following recommendations:

1. The array will be installed on the existing roof. The roof framing is constructed of true 2"x6" wood rafters @24" o.c. spanning 12' 8" with 1"x6" T&G sheathing. The new array (See Site map by contractor) will add 2.63 Lb. / Sf. overall to the roof. The existing structure is sufficient to support the new loads associated with the additional weight & wind resistance. No additional structural support is required for the roof structure.

2. The attachment system shall be secured to the roof and shall be in strict compliance with manufacturers printed instructions. The attachment system shall be UL 1703 approved tested. Provide water tight sealant at all penetrations. Attachments shall follow panel rows as specified by the system manufacturer's installation manual. The panel angle shall match the roof slope. Reference summary table below:

Roof Type:	Low Slope	Fastener Max Spacing (in.)		
Attachment System:	UNIRAC SM LIGHT RAIL RACKING SYSTEM W/SOLAR MOUNT	Wind Zone 1	Wind Zone 2	Wind Zone 3
Fastener Info:	min. 5/16" x 4" long stainless-steel lags with a min. embedment of 3" into the rafters	80	72	72

3. Solar Modules shall be UL-1703 rated. Refer to manufacturers specifications sheets.

4. Positive drainage of the system shall be so as not to void the existing roof warranty.

5. All aspects of the installation shall comply with NJUCC, ASCE 7-16, IBC NJ 2021, NEC 2020(NFPA-70), IRC NJ 2021. Please review the attached certifications prepared by the manufacturer.

6. Please refer to the attached structural calculations.

If you have any questions relating to this matter, please contact me at your earliest convenience. Thank you.

Michael S. Rezk, P.E.
NJ. Lic. No. GE56261



Michael S. Rezk

Engineer-PE

Pro Custom Solar LLC
3096B Hamilton Blvd
South Plainfield, NJ 07080

732-902-6224
May 7, 2025

Gravity Load Calculation Criteria

Structural Design Loads per ASCE 7-16

Dead Loads = 15 psf + 2.6 psf (new solar panels) = 17.6 psf
Roof Live Load = 20 psf
Ground Snow Load/Live Load = 25 psf

Wind Load Calculation Criteria

Wind Loads per ASCE 7-16, Ch. 30.4

Design wind pressure determined by Eq. 29.4-7:

Zone 1 = -19.7 psf	Roof Slope = 7 degrees	Roof Mean Height = 15 ft
Zone 2 = -26.5 psf	Basic Wind Speed = 115 mph	
Zone 3 = -35.7 psf	Exposure = B	

Per section 2.4.1, ASD combo = $D + 0.6W$:

Zone 1 = 2.6 psf + 0.6(-19.7 psf) = -9.2 psf
Zone 2 = 2.6 psf + 0.6(-26.5 psf) = -13.3 psf
Zone 3 = 2.6 psf + 0.6(-35.7 psf) = -18.8 psf

Check Attachment to Wood Rafter

Use 5/16 dia. Lag screw w/ 3" embedment into 2 in. wide roof rafter

Lag Screw Spacing:	Lag Screw Tributary Area:
Zone 1 = 80" o.c. max	Zone 1 = $(80" \text{ o.c. max})^2 / 144 = 44.44 \text{ SF}$
Zone 2 = 72" o.c. max	Zone 2 = $(72" \text{ o.c. max})^2 / 144 = 36 \text{ SF}$
Zone 3 = 72" o.c. max	Zone 3 = $(72" \text{ o.c. max})^2 / 144 = 36 \text{ SF}$

Lag Screw Forces:

Zone 1 = 9.2 psf x 44.44 SF = 409 lb < W', OK
Zone 2 = 13.3 psf x 36 SF = 479 lb < W', OK
Zone 3 = 18.8 psf x 36 SF = 677 lb < W', OK

W = 266lb/in (Table 12.2A, 2015 NDS)

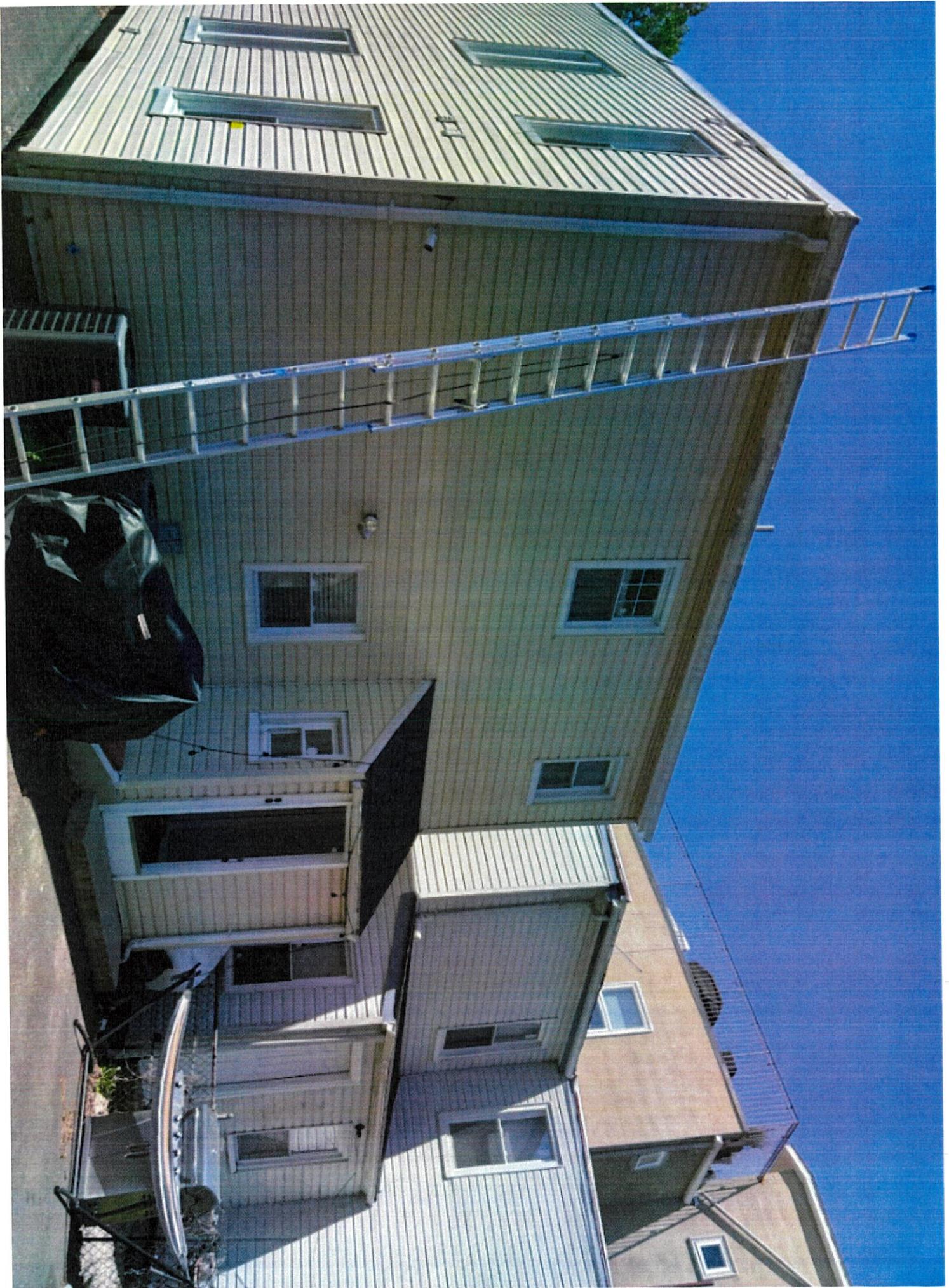
Cd = 1.6 (Table 2.3.2, 2015 NDS)

Ct = 1 (Table 2.3.3, 2015 NDS)

W' = W x embed x Cd x Ct

W' = 266 lb/in x 3 in. x 1.6 x 1 = 1276.8 lb



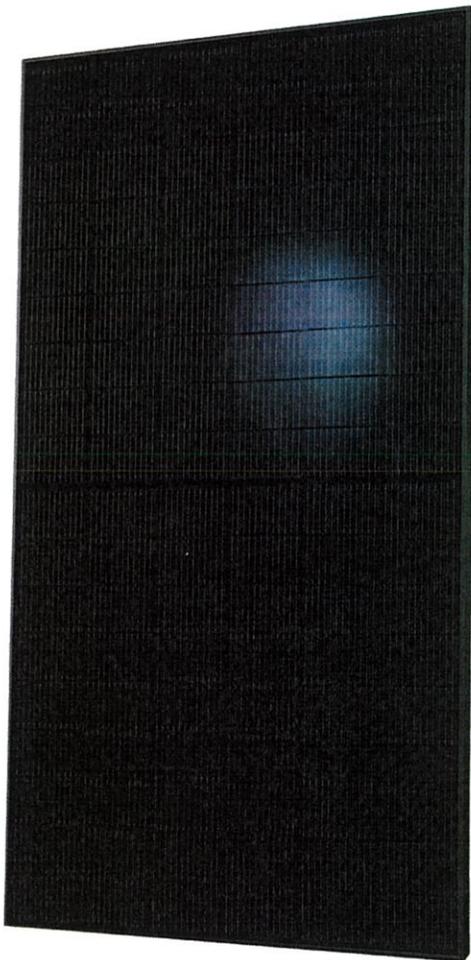


Q.TRON BLK M-G2+ SERIES



415 - 440 Wp | 108 Cells
22.5% Maximum Module Efficiency

MODEL Q.TRON BLK M-G2+, Q.TRON BLK M-G2.H+



Q.ANTUM
NEO

High performance Qcells N-type solar cells

Q.ANTUM NEO Technology with optimized module layout boosts module efficiency up to 22.5%.



A reliable investment

Inclusive 25-year product warranty and 25-year linear performance warranty¹.



Enduring high performance

Long-term yield security with Anti LeTID Technology, Anti PID Technology², Hot-Spot Protect.



Extreme weather rating

High-tech aluminium alloy frame, certified for high snow (8100 Pa) and wind loads (3600 Pa).



Innovative all-weather technology

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



The most thorough testing programme in the industry

Qcells is the first solar module manufacturer to pass the most comprehensive quality programme in the industry: The new "Quality Controlled PV" of the independent certification institute TÜV Rheinland.

¹ See data sheet on rear for further information.

² APT test conditions according to IEC/TS 62804-1:2015, method A (-1500V, 96h)

The ideal solution for:



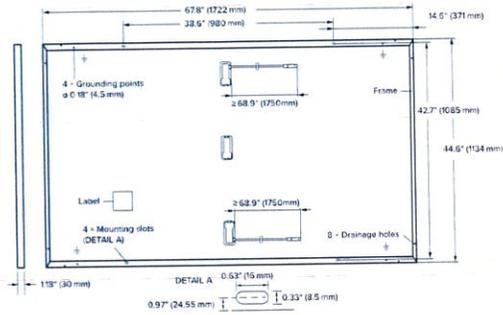
Rooftop arrays on residential buildings



Q.TRON BLK M-G2+ SERIES

Mechanical Specification

Format	67.8 in × 44.6 in × 1.18 in (including frame) (1722 mm × 1134 mm × 30 mm)
Weight	46.7 lbs (21.2 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodised aluminium
Cell	6 × 18 monocrystalline QANTUM NEO solar half cells
Junction box	2.09-3.98 in × 1.26-2.36 in × 0.59-0.71 in (53-101 mm × 32-60 mm × 15-18 mm), Protection class IP67, with bypass diodes
Cable	4 mm ² Solar cable; (+) ≥ 68.9 in (1750 mm), (-) ≥ 68.9 in (1750 mm)
Connector	Stäubli MC4; IP68

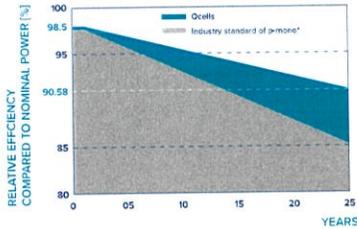


Electrical Characteristics

POWER CLASS		415	420	425	430	435	440	
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE +5W/-0W)								
Minimum	Power at MPP ¹	P_{MPP} [W]	415	420	425	430	435	440
	Short Circuit Current ¹	I_{SC} [A]	13.49	13.58	13.66	13.74	13.82	13.90
	Open Circuit Voltage ¹	V_{OC} [V]	38.47	38.75	39.03	39.32	39.60	39.88
	Current at MPP	I_{MPP} [A]	12.83	12.91	12.98	13.05	13.13	13.20
	Voltage at MPP	V_{MPP} [V]	32.34	32.54	32.74	32.94	33.14	33.33
	Efficiency ¹	η [%]	≥21.3	≥21.5	≥21.8	≥22.0	≥22.3	≥22.5
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT ²								
Minimum	Power at MPP	P_{MPP} [W]	313.7	317.5	321.2	325.0	328.8	332.6
	Short Circuit Current	I_{SC} [A]	10.87	10.94	11.00	11.07	11.14	11.20
	Open Circuit Voltage	V_{OC} [V]	36.50	36.77	37.04	37.31	37.58	37.84
	Current at MPP	I_{MPP} [A]	10.10	10.15	10.21	10.27	10.33	10.38
	Voltage at MPP	V_{MPP} [V]	31.07	31.26	31.46	31.65	31.84	32.03

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

Qcells PERFORMANCE WARRANTY

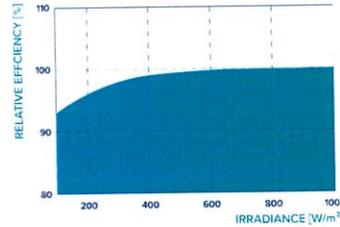


At least 98.5% of nominal power during first year. Thereafter max. 0.33% degradation per year. At least 95.53% of nominal power up to 10 years. At least 90.58% of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Qcells sales organisation of your respective country.

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

PERFORMANCE AT LOW IRRADIANCE



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

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I_{SC}	α [%/K]	+0.04	Temperature Coefficient of V_{OC}	β [%/K]	-0.24
Temperature Coefficient of P_{MPP}	γ [%/K]	-0.30	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]	25	Fire Rating based on ANSI/UL 61730	C / TYPE 2
Max. Design Load, Push/Pull ²	[lbs / ft ²]	113 (5400 Pa)/50 (2400 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]	169 (8100 Pa)/75 (3600 Pa)		

³ See Installation Manual

Qualifications and Certificates

UL61730-1 & UL61730-2, CE-compliant, Quality Controlled PV - TÜV Rheinland, IEC 61215:2016, IEC 61730:2016, U.S. Patent No. 9,893,215 (solar cells).



^{*}Contact your Qcells Sales Representative for details regarding the module's eligibility to be Buy American Act (BAA) compliant.

Qcells pursues minimizing paper output in consideration of the global environment.

Note: Installation instructions must be followed. Contact our technical service for further information on approved installation of this product.
Hanwha Q CELLS America Inc. 300 Spectrum Center Drive, Suite 500, Irvine, CA 92618, USA | TEL +1 (949)748-5996 | EMAIL na.support@qcells.com | WEB www.qcells.com/us

qcells

IQ Combiner 4/4C



The **IQ Combiner 4/4C** with IQ Gateway and integrated LTE-M1 cell modem (included only with IQ Combiner 4C) consolidates interconnection equipment into a single enclosure. It streamlines IQ Microinverters 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 Gateway for communication and control
- Includes Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05), included only with IQ Combiner 4C
- Includes solar shield to match Enphase IQ Battery aesthetics and deflect heat
- Supports Wi-Fi, Ethernet, or cellular connectivity
- Optional AC receptacle available for PLC bridge
- Provides production metering and consumption monitoring

Simple

- Mounts on single stud with centered brackets
- Supports bottom, back and side conduit entry
- Allows up to four 2-pole branch circuits for 240VAC plug-in breakers (not included)
- 80A total PV or storage branch circuits

Reliable

- Durable NRTL-certified NEMA type 3R enclosure
- Five-year limited warranty
- Two years labor reimbursement program coverage included for both the IQ Combiner SKU's
- UL listed
- X2-IQ-AM1-240-4 and X2-IQ-AM1-240-4C comply with IEEE 1547:2018 (UL 1741-SB, 3rd Ed.)



IQ Combiner 4/4C

MODEL NUMBER

IQ Combiner 4 X-IQ-AM1-240-4 X2-IQ-AM1-240-4 (IEEE 1547:2018)	IQ Combiner 4 with 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 and IQ System Controller 2 and to deflect heat.
IQ Combiner 4C X-IQ-AM1-240-4C X2-IQ-AM1-240-4C (IEEE 1547:2018)	IQ Combiner 4C with IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI C12.20 ± 0.5%) and consumption monitoring (± 2.5%). Includes 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)

Supported microinverters	IQ6, IQ7, and IQ8. (Do not mix IQ6/7 Microinverters with IQ8)
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 - 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
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)
X-IQ-NA-HD-125A	Hold-down kit for Eaton circuit breaker with screws
Consumption monitoring CT (CT-200-SPLIT/CT-200-CLAMP)	A pair of 200A split core current transformers

ELECTRICAL SPECIFICATIONS

Rating	Continuous duty
System voltage	120/240VAC, 60 Hz
Eaton BR series busbar rating	125A
Max. continuous current rating	65A
Max. continuous current rating (input from PV/storage)	64A
Max. fuse/circuit rating (output)	90A
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
IQ Gateway breaker	10A or 15A rating GE/Siemens/Eaton included
Production metering CT	200A solid core pre-installed and wired to IQ Gateway

MECHANICAL DATA

Dimensions (WxHxD)	37.5 cm x 49.5 cm x 16.8 cm (14.75 in x 19.5 in x 6.63 in). Height is 53.5 cm (21.06 in) with mounting brackets.
Weight	7.5 kg (16.5 lbs)
Ambient temperature range	-40°C to +46°C (-40°F to 115°F)
Cooling	Natural convection, plus heat shield
Enclosure environmental rating	Outdoor, NRTL-certified, NEMA type 3R, polycarbonate construction
Wire sizes	<ul style="list-style-type: none"> • 20A to 50A breaker inputs: 14 to 4 AWG copper conductors • 60A 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	Up to 3,000 meters (9,842 feet)

INTERNET CONNECTION OPTIONS

Integrated Wi-Fi	IEEE 802.11b/g/n
Cellular	CELLMODEM-M1-06-SP-05, CELLMODEM-M1-06-AT-05 (4G based LTE-M1 cellular modem). Note that an Mobile Connect cellular modem is required for all Enphase Energy System installations.
Ethernet	Optional, IEEE 802.3, Cat5E (or Cat6) UTP Ethernet cable (not included)

COMPLIANCE

Compliance, IQ Combiner	CA Rule 21 (UL 1741-SA) IEEE 1547:2018 - UL 1741-SB, 3 rd Ed. (X2-IQ-AM1-240-4 and X2-IQ-AM1-240-4C) CAN/CSA C22.2 No. 107.1, Title 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

IQ8HC Microinverter

Our newest IQ8 Series Microinverters^{1,2,3} are the industry's first microgrid-forming⁴, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently.



Key specifications	IQ8HC-72-M-US@240 VAC	IQ8HC-72-M-US@208 VAC
	IQ8HC-72-M-DOM-US @240 VAC	IQ8HC-72-M-DOM-US @208 VAC
Peak output power	384 VA	366 VA
Nominal grid voltage (L-L)	240 V, split-phase (L-L), 180°	208 V, single-phase (L-L), 120°
Nominal frequency	60 Hz	
CEC weighted efficiency	97.0%	96.5%
Maximum input DC voltage	60 V	
MPPT voltage range	29.5–45 V	
Maximum module I _{sc}	20 A	
Ambient temperature range	-40°C to 65°C (-40°F to 149°F)	

Simple

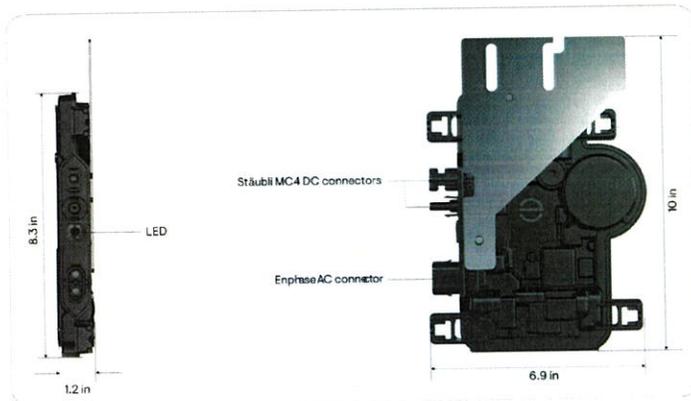
- Lightweight and compact with plug-and-play connectors
- Power line communication (PLC) between components
- Faster installation with simple two-wire cabling

Reliable

- Produces power even when the grid is down⁴
- More than one million cumulative hours of testing
- Industry-leading limited warranty of up to 25 years
- 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) and IEEE 1547:2018 (UL 1741-SB 3rd Ed.)



¹ IQ8 Series Microinverters can be added to existing IQ7 systems on the same IQ Gateway only in the following grid-tied configurations: Solar Only or Solar + Battery (IQ Battery 3T/10T and IQ Battery 5P) without backup.
² IQ7 Series Microinverters cannot be added to a site with existing IQ8 Series Microinverters on the same gateway. Mixed system of IQ7 and IQ8 will not support IQ8-specific PCS features and grid-forming capabilities.
³ IQ Microinverters ship with default settings that meet North America's IEEE 1547 interconnection standard requirements. Region-specific adjustments may be requested by an Authority Having Jurisdiction (AHJ) or utility representative, according to the IEEE 1547 interconnection standard. Use an IQ Gateway to make these changes during installation.
⁴ Meets UL 1741 only when installed with IQ System Controller 2 or 3.

Input data (DC)	Units	IQ8HC-72-M-US @240 VAC	IQ8HC-72-M-US @208 VAC
		IQ8HC-72-M-DOM-US @240 VAC	IQ8HC-72-M-DOM-US ⁵ @208 VAC
Commonly used module pairings ⁶	W	320-540	
Module compatibility	—	To meet compatibility, PV modules must be within the maximum input DC voltage and maximum module I_{sc} listed below. Module compatibility can be checked at https://enphase.com/installers/microinverters/calculator .	
MPPT voltage range	V	29.5-45	
Operating range	V	18-58	
Minimum/Maximum start voltage	V	22/58	
Maximum input DC voltage	V	60	
Maximum continuous operating DC current	A	14	
Maximum input DC short-circuit current	A	25	
Maximum module I_{sc}	A	20	
Overvoltage class DC port	—	II	
DC port backfeed current	mA	0	
PV array configuration	—	Ungrounded array; no additional DC side protection required; AC side protection requires a maximum of 20 A per branch circuit	

Output data (AC)	Units	IQ8HC-72-M-US @240 VAC	IQ8HC-72-M-US @208 VAC
		IQ8HC-72-M-DOM-US @240 VAC	IQ8HC-72-M-DOM-US ⁵ @208 VAC
Peak output power	VA	384	366
Maximum continuous output power	VA	380	360
Nominal grid voltage (L-L)	V	240, split-phase (L-L), 180°	208, single-phase (L-L), 120°
Minimum and maximum grid voltage ⁷	V	211-264	183-229
Maximum continuous output current	A	1.58	1.73
Nominal frequency	Hz	60	
Extended frequency range	Hz	47-68	
AC short-circuit fault current over three cycles	A_{rms}	2.7	
Maximum units per 20 A (L-L) branch circuit ⁸	—	10	9
Total harmonic distortion	%	<5	
Overvoltage class AC port	—	III	
AC port backfeed current	mA	18	
Power factor setting	—	1	
Grid-tied power factor (adjustable)	—	0.85 leading ... 0.85 lagging	
Peak efficiency	%	97.3	97.2
CEC weighted efficiency	%	97.0	96.5
Nighttime power consumption	mW	22	26

⁵ IQ8HC-72-M-DOM-US (240 VAC and 208 VAC) is made in the USA, and the PCBA, electrical parts, and enclosure are domestically manufactured to meet the requirements of eligibility to be considered for the ITC domestic content bonus adder.

⁶ No enforced DC/AC ratio.

⁷ Nominal voltage range can be extended beyond nominal if required by the utility.

⁸ Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

Mechanical data	IQ8HC-72-M-US @240 VAC IQ8HC-72-M-DOM-US @240 VAC	IQ8HC-72-M-US @208 VAC IQ8HC-72-M-DOM-US ⁵ @208 VAC
Ambient temperature range	-40°C to 65°C (-40°F to 149°F)	
Relative humidity range	4% to 100% (condensing)	
DC connector type	Stäubli MC4	
Dimensions (H × W × D); Weight	212 mm (8.3 in) × 175 mm (6.9 in) × 30.2 mm (1.2 in); 1.1 kg (2.43 lb)	
Cooling	Natural convection—no fans	
Approved for wet locations; Pollution degree	Yes; PD3	
Enclosure	Class II double-insulated, corrosion-resistant polymeric enclosure	
Environmental category; UV exposure rating	NEMA Type 6; outdoor	

Compliance	IQ8HC-72-M-US @240 VAC IQ8HC-72-M-DOM-US @240 VAC	IQ8HC-72-M-US @208 VAC IQ8HC-72-M-DOM-US ⁵ @208 VAC
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Certifications

CA Rule 21 (UL 1741-SA), UL 62109-1, IEEE 1547:2018 (UL 1741-SB 3rd Ed.), 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 shutdown equipment and conforms with NEC 2014, NEC 2017, NEC 2020, and NEC 2023 section 690.12 and C22.1-2018 Rule 64-218 rapid shutdown of PV systems for AC and DC conductors when installed according to the manufacturer's instructions.

Components of the Enphase Energy System



IQ Battery

All-in-one AC-coupled storage solution that integrates seamlessly with your solar energy system, providing reliable backup power and intelligent energy management for maximum performance and energy savings.



IQ System Controller

The IQ System Controller connects the home to the grid power, IQ Batteries, generator and solar PV with microinverters.



IQ Combiner/IQ Gateway

The IQ Combiner/IQ Gateway is a device that performs energy management, provides internet connectivity, and integrates with the IQ Series Microinverters to provide complete control and insights into the Enphase Energy System.



IQ Cable

The IQ Cable is a continuous-length 12-AWG cable with pre-installed connectors for IQ Microinverters that support faster, simpler, and more reliable installations. The cable is handled like standard outdoor-rated electrical wire, allowing it to be cut, spliced, and extended as needed.

Revision history

Revision	Date	Description
DSH-00047-7.0	December 2024	Updated information on backward compatibility with IQ7 Series Microinverters.
DSH-00047-6.0	October 2024	Updated a footnote of the specifications table.
DSH-00047-5.0	July 2024	Added US DOM SKU.
DSH-00047-4.0	February 2024	Updated information about IEEE 1547 interconnection standard requirements.
DSH-00047-3.0	October 2023	Included NEC 2023 specification in the "Compliance" section.
DSH-00047-2.0	September 2023	Updated module compatibility information.
DSH-00047-1.0	May 2023	Preliminary release.