Welcome to your future with solar

A customized proposal for

Odd Fellows Hall

112 Haven Rd. Eastsound, WA 98245

Contact

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Electrical Administrator # AD ORMENT*752RA

June 17, 2026

Thank you for your interest in a solar electric system from Rainshadow Solar.

Rainshadow Solar has been providing solar installations in San Juan County for the last 37 years, making us the oldest solar installer in the state of Washington.

This proposal is for a grid-tied photovoltaic (PV) system to be installed at the Odd Fellows Hall on Orcas Island.

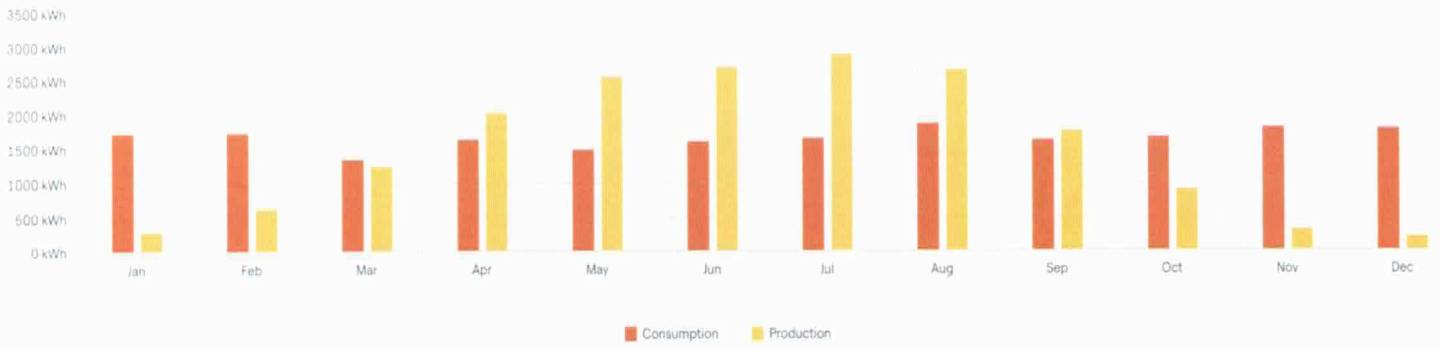
Solar Option

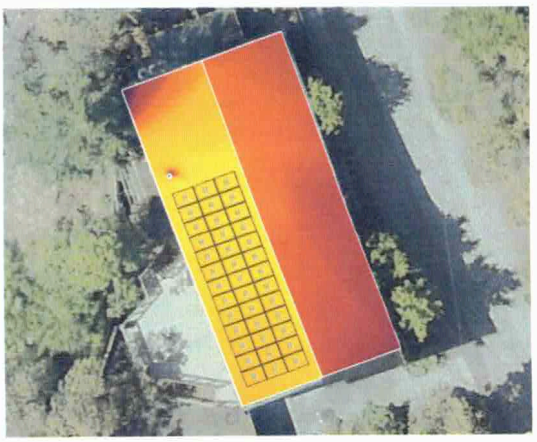
39 Hyundai 440 watt PV modules with 39 Enphase IQ8H microinverters

Total Cost: **$45,020**
Materials Deposit: **$22,500**

Hyundai and Enphase carry a 25-year warranty, including against power degradation over time.

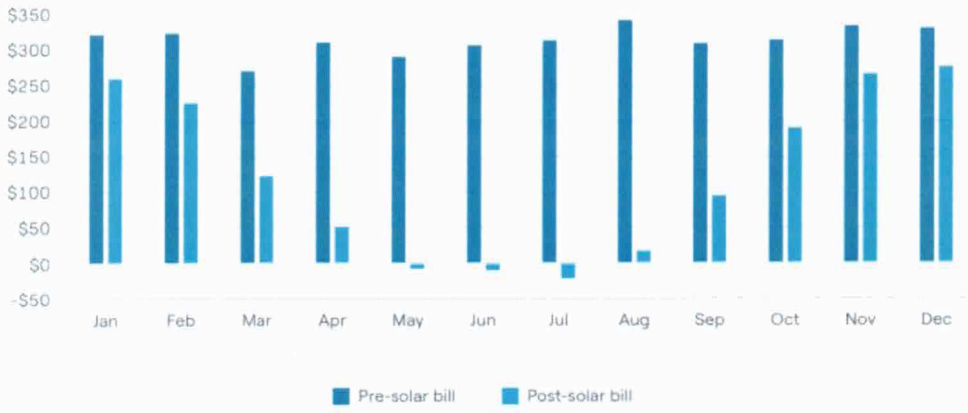
39	18,245 kWh	91%
Solar panels	Yearly energy produced	Energy offset
17.16 kW		





Solar Option

Comparing pre and post-solar bills



Pre-solar Year 1 estimate

Grid use	$253.43
Fixed costs	$85.73

Average monthly payment **$339.16**

Total rate ⓘ
$0.20 per kWh

Utility bill lifetime total
$271,295.69

Post-solar Year 1 estimate

Grid use	$68.15
Fixed costs	$53.48

Average monthly payment **$121.63**

↓ $217.53

Total rate ⓘ
$0.08 per kWh

Lifetime
↓ $97,668.54

Solar Option

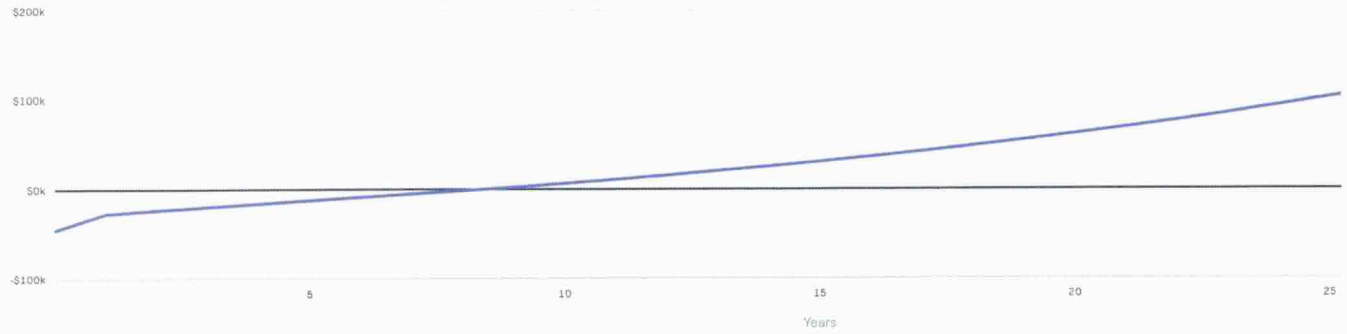
Your System Summary

Consultation with a tax advisor is needed to establish eligibility for the 30% tax credit. With the 30% tax credit on total cost of system, total return on investment is estimated in 8 years.

Solar system cost: **$45,020**

Solar materials deposit: **$22,500**

*All solar system components are WA sales tax exempt. Estimated savings **$3,827**.



Financing this system through OPALCO's Switch It Up program (on-bill financing at 3%) adds $435 to your monthly bill.

IRS requirements for tax credit eligibility are dependent on federal guidance. Non-Foreign Entities of Concern and/or Domestic Content material requirements are evolving. Our compliance research has provided you with the best system, with the best warranty to current requirements. These compliance mandates include 40% of materials not be sourced from "prohibited foreign entities" to obtain the 30% federal tax credit, with increasing percentages expected in the following years. We are not tax advisors nor can we recommend tax advice.

If you have further questions, please do not hesitate to reach out.

Please note that the costs estimated are good for 30 days from receipt of this proposal. Included in the total cost of installation are:

-Materials for all electrical and mechanical aspects of the installation,
-Installation labor,
-Coordination with the WA epartment of abor and Industries for electrical inspection,
-Coordination with an uan County for a mechanical building permit,
-Coordination with OPA CO for setting of a new bi-directional utility meter, and
-Completion of supplemental materials for your Interconnect Agreement and Application.

A full materials deposit is required for us to place you on the schedule for installation. After the system has been installed and received inspection approval, OPALCO will set your new bi-directional meter, and the system will be operational.

We appreciate your business and hope you'll consider us for your project.

Have questions?

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Rainshadow SOLAR

solar, battery, and electrical solutions

HD HYUNDAI ENERGY SOLUTIONS

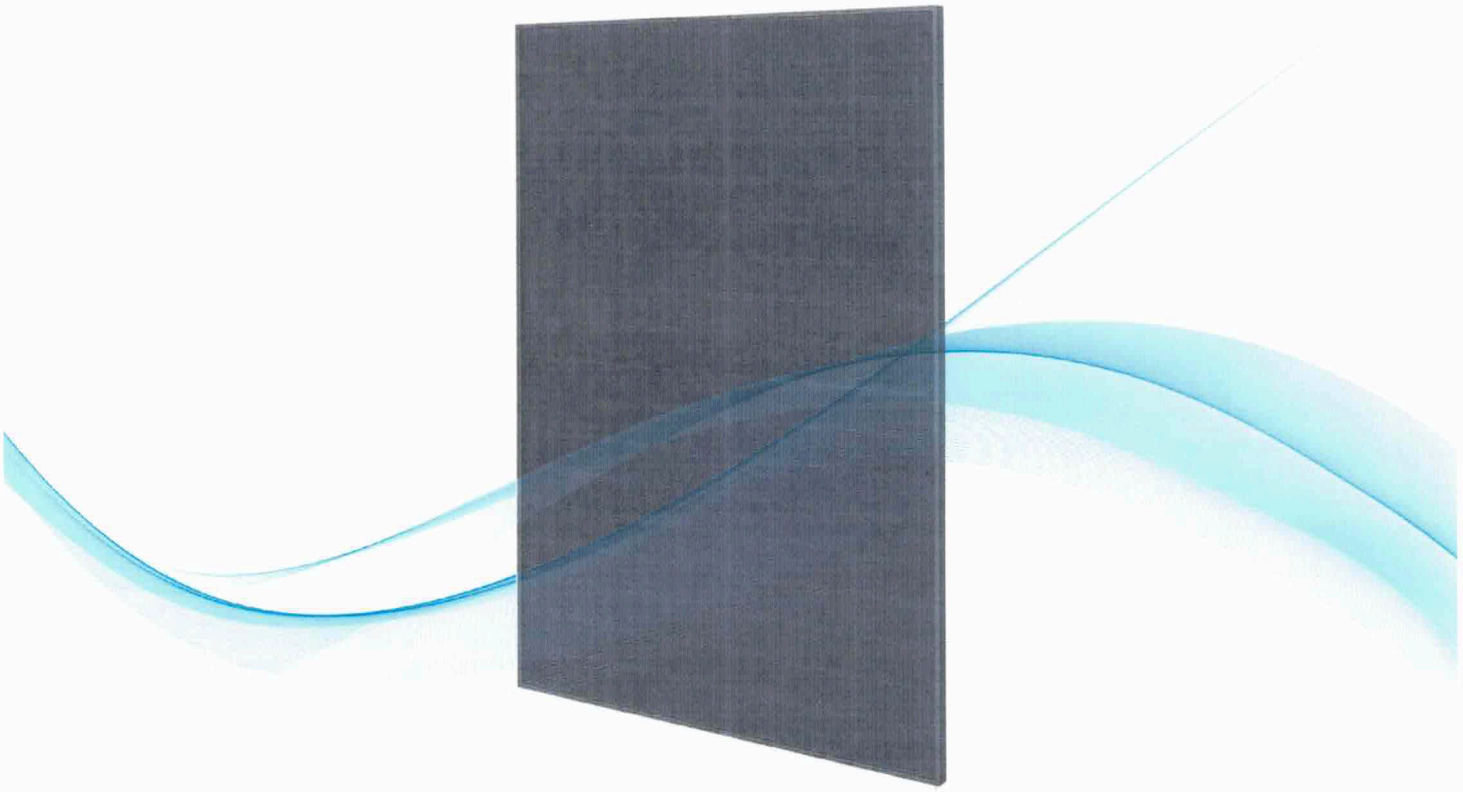
eng.hd-hyundaies.co.kr

HD HYUNDAI SOLAR MODULE

NF(BK) Series

Premium N-Type TOPCon Module

HiN-T430NF(BK) | HiN-T435NF(BK) | HiN-T440NF(BK)



22.53%
22.53% High Efficiency

TOPCon
High-End TOPCon Technology

Higher Bifaciality

Long-Term Reliability

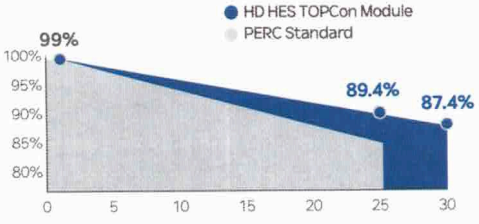
Compatible with Carport Applications

For Residential (Full Black Design)

HD Hyundai's Warranty Provisions

25 YEARS
- 25-Year Product Warranty
  - Materials and workmanship

30 YEARS
- 30-Year Performance Warranty
  - First year degradation: 1%
  - Linear warranty after initial year: with 0.4%p annual degradation, 87.4% is guaranteed up to 30years



*Refer to HD HES standard warranty for details.

Certification

ISO SP kiwa PVEL

- ISO 9001 : Quality management systems
- ISO 14001 : Environmental management systems
- ISO 45001 : Occupational health and safety management systems
- UL 61730: Photovoltaic (PV) module safety qualification (CSA)
- IEC 61701: Salt mist corrosion testing
- IEC 62716: Ammonia corrosion testing
- IEC 62804: Potential Induced Degradation (PID) testing
- IEC 60068-2-68: Sand and dust testing for environmental durability

Electrical Characteristics

HiN-TxxxNF(BK)		HiN-T430NF(BK)		HiN-T435NF(BK)		HiN-T440NF(BK)	
Item	Unit		BNPI		BNPI		BNPI
Nominal output (Pmax)	W	430	476	435	482	440	488
Open circuit voltage (Voc)	V	38.4	38.4	38.6	38.6	38.8	38.8
Short circuit current (Isc)	A	14.25	15.79	14.32	15.87	14.39	15.94
Voltage at Pmax (Vmpp)	V	31.9	31.9	32.1	32.1	32.3	32.3
Current at Pmax (Impp)	A	13.48	14.94	13.56	15.01	13.63	15.10
Module efficiency	%	22.02	24.40	22.28	24.68	22.53	25.00
Power Class Sorting	W	0 ~ +5					
Temperature coefficient of Pmax	%/K	-0.30					
Temperature coefficient of Voc	%/K	-0.25					
Temperature coefficient of Isc	%/K	0.046					
Bifaciality	%	80%±10%					

*STC : Irradiance 1,000 W/m², cell temperature 25°C, AM=1.5 / Test uncertainty for Pmax ±3%; Voc ±3%; Isc ±3%
**The electrical properties of BNPI are measured under the irradiance corresponding to 1000 W/m² on the module front and 135 W/m² on the module rear.

Additional Power Gain from rear side					
Pmpp gain	Pmpp[W]	Vmpp[V]	Impp[A]	Voc[V]	Isc[A]
5%	458	32.30	14.18	38.80	14.97
15%	493	32.30	15.27	38.80	16.12
25%	528	32.40	16.36	38.90	17.27

*Electrical characteristics with different rear power gain (reference to 440W)

Mechanical Characteristics

Dimensions	1,722mm (L) x 1,134mm (W) x 30mm (H) (67.8in x 44.6in x 1.2in)
Weight	24.5 kg (50.01lbs)
Solar Cells	N-Type TOPCon, 108 (6x18) monocrystalline 16BB half-cut bifacial cells
Output Cables	Cable : (+)1,200mm(47.2in), (-)1,200mm(47.2in) / Customized length available Connector : Stäubli MC4 genuine Connector / Compatible, IP68
Junction Box	3-part, 3 bypass diodes, IP68 rated
Construction	Front : 2.0mm(0.08in) semi-tempered solar glass with high transmittance and anti-reflective coating Rear : 2.0mm(0.08in) semi-tempered solar glass
Frame	Anodized aluminum alloy

Installation Safety Guide

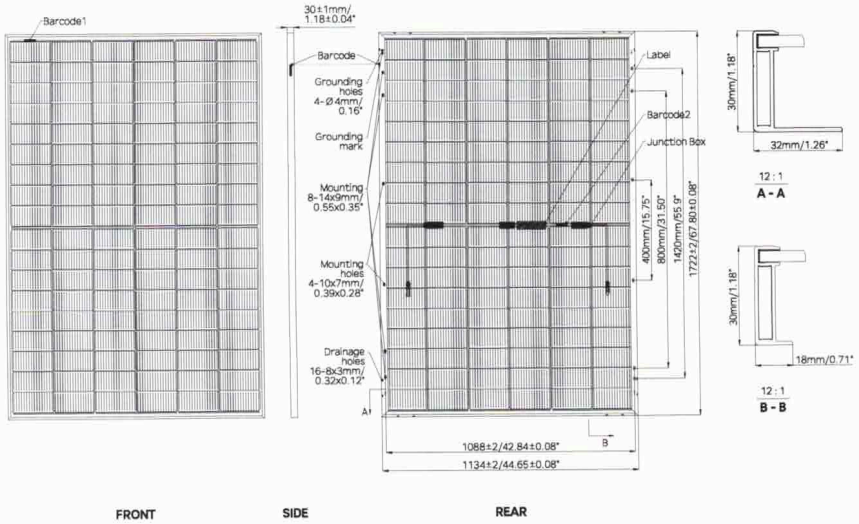
- Only qualified personnel should install or perform maintenance.
- Be aware of dangerous high DC voltage.
- Do not handle or install modules when they are wet.

Nominal Module Operation Temperature	44°C ± 2°C
Operating Temperature	-40°C~+85°C
Maximum System Voltage	DC 1,500 V
Maximum Reverse Current	30A
Maximum Test Load *See Installation Manual	Front 5,400Pa *Rear 5,400Pa
Fire Performance	Type 29

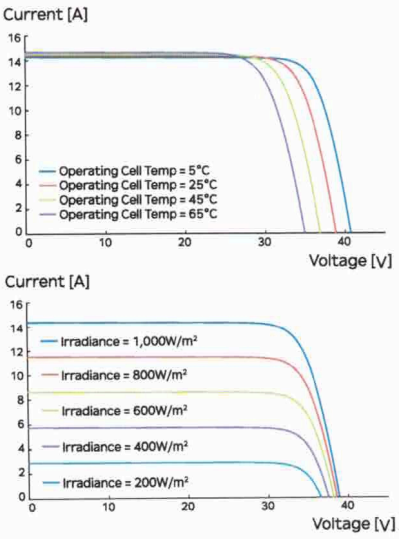
Shipping Configurations

Packing Direction	Vertical	Packing pallet weight (kg)	912
Container Size (HC)	40'	Modules Per Pallet (pcs)	36
Pallets Per Container	26	Modules Per Container (pcs)	936

Module Diagram (unit : mm)



I-V Curves (HiN-T440NF(BK))



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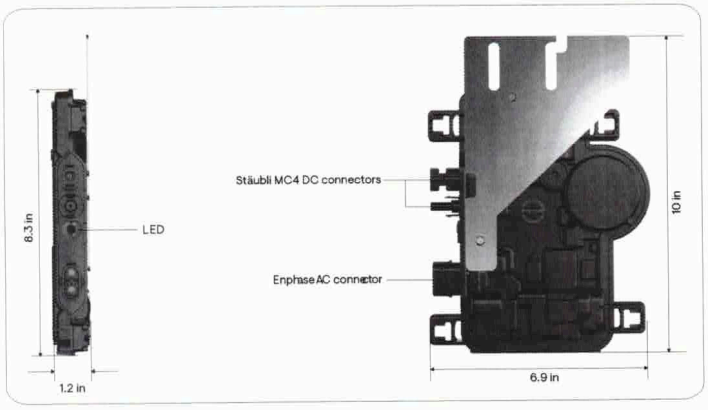
HD Hyundai Energy Solutions reserves the right to update or modify the specifications and features listed in this datasheet without prior notice. Always check the latest version of the datasheet for accurate information. Before using the product, please refer to the Installation and Operation Manual and Warranty. We retain the right of final interpretation.

HD HYUNDAI ENERGY SOLUTIONS

IQ8HC Microinverter

Our newest IQ8 Series Microinverters[1, 2, 3] are the industry's first microgrid-forming[4], 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-DOM-US @240 VAC	IQ8HC-72-M-US@208 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 down[4]
- 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.

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Input data (DC)	Units	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
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-DOM-US @240 VAC	IQ8HC-72-M-US @208 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.