

# IQ8X Microinverter

Our newest IQ8 Series Microinverters are the industry’s first microgrid-forming\*, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC), which enables the microinverter to operate in grid-tied or off-grid mode. This chip is built using advanced 55-nm technology with high-speed digital logic and superfast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.

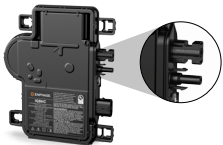
IQ8X Microinverter is the latest addition to this family, designed to support PV modules with high input DC voltage and cell counts, such as 80-half-cut cells, 88-half-cut cells and 96-cells.



Part of the Enphase Energy System, IQ8 Series Microinverters integrate with the IQ Battery, IQ Gateway, and the Enphase App monitoring and analysis software.



IQ8 Series Microinverters redefine reliability standards with more than one million cumulative hours of power-on testing, enabling an industry-leading limited warranty of up to 25 years.



Connect PV modules quickly and easily to the IQ8 Series Microinverters with integrated MC4 connectors.



IQ8 Series Microinverters are UL Listed as PV rapid shutdown equipment and conform with regulations when installed according to the manufacturer’s instructions.

\*Meets UL 1741 only when installed with IQ System Controller 2 and 3.

### Easy to install

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

### High productivity and reliability

- Produces power even when the grid is down\*
- More than one million cumulative hours of testing
- Class II double-insulated enclosure
- Optimized for the latest high-powered PV modules

### Microgrid-forming

- Complies with the latest advanced grid support
- Remote automatic updates for the latest grid requirements
- Configurable to support a wide range of grid profiles
- Meets CA Rule 21 (UL 1741-SA) and IEEE 1547:2018 (UL 1741-SB)

### NOTE:

- IQ8 Series Microinverters cannot be mixed with previous generations of Enphase microinverters (IQ7 Series, IQ6 Series, and so on) in the same system.
- IQ Gateway is required to change the default grid profile at the time of installation to meet local Authority Having Jurisdiction (AHJ) requirements.

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INPUT DATA (DC)		UNIT	IQ8X-80-M-US	
Commonly used module pairings <sup>1</sup>		W	320-540	
Module compatibility		—	To meet compatibility, PV modules must be within the following maximum input DC voltage and maximum module I <sub>sc</sub> . Module compatibility can be checked at <a href="https://enphase.com/installers/microinverters/calculator">https://enphase.com/installers/microinverters/calculator</a>	
MPPT voltage range		V	43-60	
Operating range		V	25-79.5	
Minimum and maximum start voltage		V	30-79.5	
Maximum input DC voltage		V	79.5	
Maximum continuous operating DC current		A	10	
Maximum input DC short-circuit current		A	16	
Maximum module I <sub>sc</sub>		A	13	
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 maximum 20 A per branch circuit	
OUTPUT DATA (AC)		UNIT	IQ8X-80-M-US @240 VAC	
Peak output power		VA	384	
Maximum continuous output power		VA	380	
Nominal grid voltage (L-L)		V	240, split-phase (L-L), 180°	
Minimum and maximum grid voltage <sup>2</sup>		V	211-264	
Max. continuous output current		A	1.58	
Nominal frequency		Hz	60	
Extended frequency range		Hz	47-68	
AC short circuit fault current over three cycles		A <sub>rms</sub>	2.70	
Maximum units per 20 A (L-L) branch circuit <sup>3</sup>		—	10	
Total harmonic distortion		%	<5	
Overvoltage class AC port		—	III	
AC port backfeed current		mA	18	
Power factor setting		—	1.0	
Grid-tied power factor (adjustable)		—	0.85 leading ... 0.85 lagging	
Peak efficiency		%	97.3	
CEC weighted efficiency		%	96.5	
Nighttime power consumption		mW	26	
			12	
MECHANICAL DATA				
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") × 175 mm (6.9") × 30.2 mm (1.2"); 1.1 kg (2.43 lbs)	
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				
Certifications	CA Rule 21 (UL 1741-SA), UL 62109-1, IEEE 1547:2018 (UL 1741-SB), 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.			

(1) No enforced DC/AC ratio.

(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.

(4) IQ8X is not certified for use with Enphase Three Phase Network Protection Relay (NPR-3P-208-NA) and therefore designed for single-phase operation only. Check with the local utility requirements if you wish to install single phase inverter across three phases.

# Revision history

REVISION	DATE	DESCRIPTION
DSH-00185-2.0	November 2023	Preliminary release - public.
DSH-00185-1.0	October 2023	Preliminary release.