

# IQ8X Microinverter

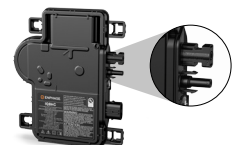
Our newest IQ8 Series Microinverters are the industry’s first microgrid-forming\*, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. IQ8X Microinverter is the latest addition to this family, designed to support PV modules with higher input DC voltage and cell counts, such as 96 cells, 80 half-cut cells, and 88 half-cut cells. 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 modes. This chip is built in advanced 55 nm technology with high-speed digital logic and has superfast response times to changing loads and grid events, alleviating constraints on battery sizing for home energy systems.



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 that have integrated MC4 connectors.



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

\*Only when installed with IQ System Controller 2, meets UL 1741.

### 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 together with previous generations of Enphase microinverters (IQ7 Series, IQ6 Series, and so on) in the same system.

# IQ8X Microinverter

INPUT DATA [DC]		IQ8X-80-M-US	
Commonly used module pairings <sup>1</sup>	W	320–540	
Module compatibility		To meet compatibility, PV modules must be within Max. Input DC voltage and Max module $I_{sc}$ listed below 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	
Max. input DC voltage	V	79.5	
Max. continuous operating DC current	A	10	
Max. input DC short-circuit current	A	16	
Max. module $I_{sc}$	A	13	
Overtoltage 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 max 20 A per branch circuit	
OUTPUT DATA [AC]		IQ8X-80-M-US @240 VAC	IQ8X-80-M-US @208 VAC
Peak output power	VA	384	366
Max. 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 <sup>2</sup>	V	211–264	183–229
Max. 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 $I_{Arms}$		2.70	
Max. units per 20 A (L-L) branch circuit <sup>3</sup>		10	9
Total harmonic distortion	%	< 5	
Overtoltage 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	%	97.6	97.4
CEC weighted efficiency	%	97.2	96.9
Nighttime power consumption	mW	22	29
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	
Environ. 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, and NEC 2020 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.

# Revision history

REVISION	DATE	DESCRIPTION
DSH-00185-1.0	August 2023	Preliminary release