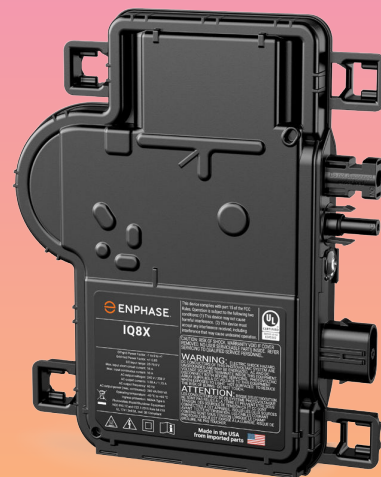
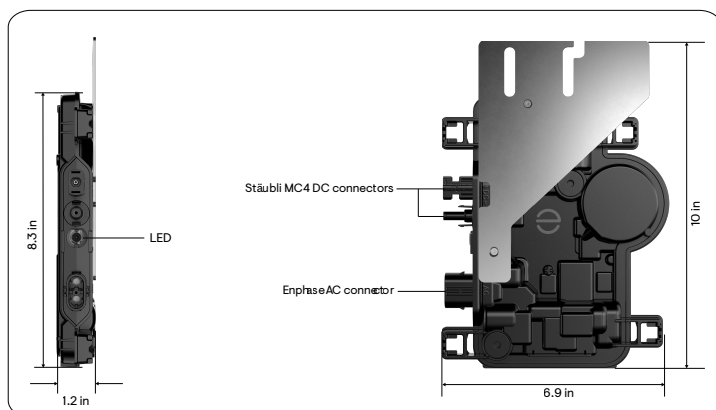


# IQ8X Microinverter

Our newest IQ8 Series Microinverters<sup>1,2,3</sup> are the industry's first microgrid-forming<sup>4</sup>, 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 high output DC voltage and cell counts, such as 80-half-cut cells, 88-half-cut cells, and 96-cells.



| Key specifications             | IQ8X-80-M-US/<br>IQ8X-80-M-DOM-US<br>@ 240 V | IQ8X-80-M-US/<br>IQ8X-80-M-DOM-US<br>@ 208 V |
|--------------------------------|----------------------------------------------|----------------------------------------------|
| Peak output power              | 384 VA                                       | 366 VA                                       |
| Nominal grid voltage (L-L)     | 240 V,<br>split-phase (L-L), 180°            | 208 V,<br>single-phase (L-L), 120°           |
| Nominal frequency              | 60 Hz                                        | 60 Hz                                        |
| CEC weighted efficiency        | 96.5%                                        | 96.5%                                        |
| Maximum input DC voltage       | 79.5 V                                       | 79.5 V                                       |
| MPPT voltage range             | 43–60 V                                      | 43–60 V                                      |
| Maximum module I <sub>sc</sub> | 13 A                                         | 13 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<sup>4</sup>
- 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 3<sup>rd</sup> Ed.)

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> 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. An IQ Gateway is required to make these changes during installation.

<sup>4</sup> Meets UL 1741 only when installed with IQ System Controller 2 or 3.

| Input data (DC)                                          | Units            | IQ8X-80-M-US/IQ8X-80-M-DOM-US @ 240 V                                                                                                                                                                                                                                                          | IQ8X-80-M-US/IQ8X-80-M-DOM-US <sup>5</sup> @ 208 V |
|----------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| Commonly used module pairings <sup>6</sup>               | W                | 320–540                                                                                                                                                                                                                                                                                        |                                                    |
| Module compatibility                                     | —                | To meet compatibility, PV modules must be within the following maximum input DC voltage and maximum module $I_{sc}$ . 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/Maximum start voltage                            | V                | 30–79.5                                                                                                                                                                                                                                                                                        |                                                    |
| Maximum input DC voltage                                 | V                | 79.5                                                                                                                                                                                                                                                                                           |                                                    |
| Maximum continuous input DC current                      | A                | 10                                                                                                                                                                                                                                                                                             |                                                    |
| Maximum input DC short-circuit current                   | A                | 16                                                                                                                                                                                                                                                                                             |                                                    |
| Maximum module $I_{sc}$                                  | 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 a maximum of 20 A per branch circuit                                                                                                                                                                  |                                                    |
| Output data (AC)                                         | Units            | IQ8X-80-M-US/IQ8X-80-M-DOM-US @ 240 V                                                                                                                                                                                                                                                          | IQ8X-80-M-US/IQ8X-80-M-DOM-US <sup>5</sup> @ 208 V |
| Peak output power                                        | VA               | 384                                                                                                                                                                                                                                                                                            | 366                                                |
| Maximum continuous output power                          | VA               | 380                                                                                                                                                                                                                                                                                            | 360                                                |
| Nominal voltage (L-L)                                    | V                | 240, split-phase (L-L), 180°                                                                                                                                                                                                                                                                   | 208, single-phase (L-L), 120° <sup>7</sup>         |
| Minimum and maximum grid voltage <sup>8</sup>            | 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 <sub>rms</sub> | 2.70                                                                                                                                                                                                                                                                                           |                                                    |
| Maximum units per 20 A (L-L) branch circuit <sup>9</sup> | —                | 10                                                                                                                                                                                                                                                                                             | 9                                                  |
| 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                                                                                                                                                                                                                                                                                           | 97.0                                               |
| CEC weighted efficiency                                  | %                | 96.5                                                                                                                                                                                                                                                                                           | 96.5                                               |
| Nighttime power consumption                              | mW               | 26                                                                                                                                                                                                                                                                                             | 12                                                 |

<sup>5</sup> IQ8X-80-M-DOM-US is made in the U.S., and the PCBA, electrical parts, and enclosure are domestically manufactured to meet the eligibility requirements to be considered for the ITC domestic content bonus adder.

<sup>6</sup> No enforced DC/AC ratio.

<sup>7</sup> IQ8X is not certified for use with Enphase Three Phase Network Protection Relay (NPR-3P-208-NA) and is, therefore, designed for single-phase operation only. Check with the local utility requirements if you wish to install single-phase inverters across three phases.

<sup>8</sup> Nominal voltage range can be extended beyond nominal if required by the utility.

<sup>9</sup> Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

| Mechanical data                           | IQ8X-80-M-US/IQ8X-80-M-DOM-US @ 240 V                                                                                                                                                                                                                                                                                                                                                                                                                     | IQ8X-80-M-US/IQ8X-80-M-DOM-US <sup>5</sup> @ 208 V |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| 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)                    | 212 mm (8.3") × 175 mm (6.9") × 30.2 mm (1.2"); 1.1 kg (2.43 lb)                                                                                                                                                                                                                                                                                                                                                                                          |                                                    |
| Cooling                                   | Natural convection—no fans                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                    |
| Approved for wet locations                | Yes; PD3                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                    |
| Enclosure                                 | Class II double-insulated, corrosion-resistant polymeric enclosure                                                                                                                                                                                                                                                                                                                                                                                        |                                                    |
| Environmental category/UV exposure rating | NEMA Type 6/Outdoor                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                    |
| Compliance                                | IQ8X-80-M-US/IQ8X-80-M-DOM-US @ 240 V                                                                                                                                                                                                                                                                                                                                                                                                                     | IQ8X-80-M-US/IQ8X-80-M-DOM-US <sup>5</sup> @ 208 V |
| Certifications                            | <p>CA Rule 21 (UL 1741-SA), UL 62109-1, IEEE 1547:2018 (UL 1741-SB 3<sup>rd</sup> Ed.), FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01.</p> <p>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.</p> |                                                    |

# 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.



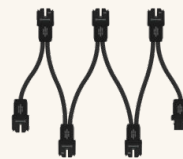
## **IQ System Controller**

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-00185-6.0 | December 2024 | Updated information on backward compatibility with IQ7 Series Microinverters.  |
| DSH-00185-5.0 | October 2024  | Updated a footnote of the specifications table.                                |
| DSH-00185-4.0 | August 2024   | Added the SKU 'IQ8X-80-M-DOM-US'.                                              |
| DSH-00185-3.0 | February 2024 | Updated the information about IEEE 1547 interconnection standard requirements. |
| DSH-00185-2.0 | November 2023 | Preliminary release - public.                                                  |
| DSH-00185-1.0 | October 2023  | Preliminary release.                                                           |
|               |               | Previous releases.                                                             |