

IQ8 Series Microinverters

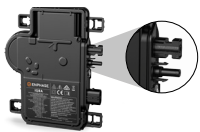
The high-powered IQ8 Series Microinverters are designed to match the latest-generation high-output PV modules. IQ8 Series Microinverters have the highest energy production and reliability standards in the industry, and with rapid shutdown functionality, they meet the highest safety standards. The brain 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 in advanced 55 nm technology with high-speed digital logic and superfast response times to changing loads and grid events.



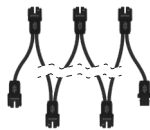
IQ Gateway
The IQ Gateway is a platform for energy management and integrates with IQ Microinverters to provide complete control and insights into the Enphase Energy System.



IQ Relay, single-phase and multi-phase
Production and storage circuit, integrated Neutral Sensing-protection device with PLC-Phase coupler (multi-phase) and DC current injection monitoring.



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



IQ Cabling
Install microinverters quickly and safely with IQ Cabling. With multi-phase IQ Cabling, the installed capacity is automatically distributed evenly across all three phases.



25-year limited warranty
IQ8 Series Microinverters redefine reliability standards with more than 1 million cumulative hours of power-on testing, enabling an industry-leading limited warranty of up to 25 years.*

* 25-year limited warranty is valid, provided an internet-connected IQ Gateway is installed.

Compatible with latest-generation high-output PV modules

- Supports latest high-current PV modules
- IQ8 Series Microinverters support all common PV module powers and cell architectures

Easy to install and commission

- Lightweight and compact with integrated Stäubli MC4 connectors for easy installation
- Fast installation with simple AC cabling
- New integrated circuit technology enables faster firmware upgrades

High-energy production, reliability, and safety

- More than 1 million power-on hours of reliability testing
- Patented Burst Mode technology provides increased energy production
- Low-voltage DC and rapid shutdown for the ultimate fire safety

NOTE

Commissioning of IQ8 Series Microinverter systems requires Enphase Installer App version 3.31.0 or higher.

IQ8 Series Microinverters cannot be mixed together with previous generations of Enphase microinverters (IQ7 Series, and IQ6 Series) on the same IQ Gateway.

IQ8 Series Microinverters

INPUT DATA (DC)		UNITS		IQ8HC-72-M-INT	
Typical module compatibility	—	—	54-cell/108-half-cell, 60-cell/120-half-cell, 66-cell/132-half-cell, 72-cell/144-half-cell No enforced DC/AC ratio and maximum input power. Modules can be paired as long as the maximum input voltage is not exceeded and the maximum input current of the inverter at the lowest and highest temperatures is respected. See the module compatibility calculator at: https://enphase.com/en-za/installers/microinverters/calculator . ¹		
Minimum/Maximum input voltage	U_{dcmin}/U_{dcmax}	V	18/60		
Start-up input voltage	$U_{dcstart}$	V	22		
Rated input voltage	$U_{dc,r}$	V	37.0		
Minimum/Maximum MPP voltage	U_{mppmin}/U_{mppmax}	V	29.5/45		
Minimum/Maximum operating voltage	U_{opmin}/U_{opmax}	V	18/49		
Maximum input current	I_{dcmax}	A	14		
Maximum short-circuit DC input current	I_{scmax}	A	25 Maximum short-circuit current for modules (Isc) allowed for being paired with IQ8 Series Microinverters: 20 A (calculated with 1.25 safety factor according to IEC 62548).		
Maximum input power ¹	P_{dcmax}	W	570		
OUTPUT DATA (AC)		UNITS		IQ8HC-72-M-INT	
Maximum apparent power	$S_{ac,max}$	VA	384		
Rated apparent power	$P_{ac,r}$	VA	380		
Nominal grid voltage	U_{acnom}	V	230		
Minimum/Maximum grid voltage	U_{acmin}/U_{acmax}	V	184/276		
Rated/Maximum output current	I_{acmax}	A	1.65/1.67		
Nominal frequency	f_{nom}	Hz	50		
Minimum/Maximum frequency	f_{min}/f_{max}	Hz	45/55		
Maximum units per single-phase 20 A circuit	—	—	10 (L+N) Single-phase	30 (3L+N) 25 A C/B Multi-phase	
Maximum units per multi-phase 25 A circuit	—	—	wFor IQ Cable with 2.5 mm ² stranded conductors and 1.20 safety factor. The safety factors applied may vary based on local regulations or best practices and the characteristic selected by the OCPD.		
Recommended maximum units per single/multi-phase IQ Cable section to reduce voltage rise in IQ Cable	—	—	8 (L+N) Single-phase	15 (3L+N) Multi-phase	
Protective class (all ports)	—	—	II		
Total harmonic distortion	—	%	< 5		
Power factor setting	—	—	1.0		
Power factor range	cos phi	—	0.8 leading to 0.8 lagging		
Inverter maximum efficiency	η_{max}	%	97.4		
European weighted efficiency	η_{EU}	%	96.8		
Inverter topology	—	—	Isolated (HF transformer)		
Nighttime power loss	—	mW	50		
MECHANICAL DATA		IQ8HC-72-M-INT			
Ambient air temperature range	-40°C to 65°C (-40°F to 149°F)				
Relative humidity range	4% to 100% (condensing)				

(1) Pairing PV modules with wattage above the limit may result in additional clipping losses. See the compatibility calculator at <https://enphase.com/en-za/installers/microinverters/calculator>.

MECHANICAL DATA

IQ8HC-72-M-INT

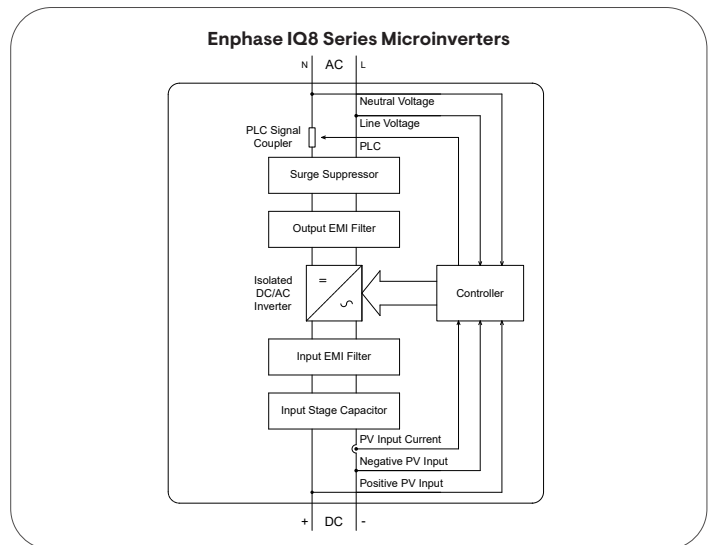
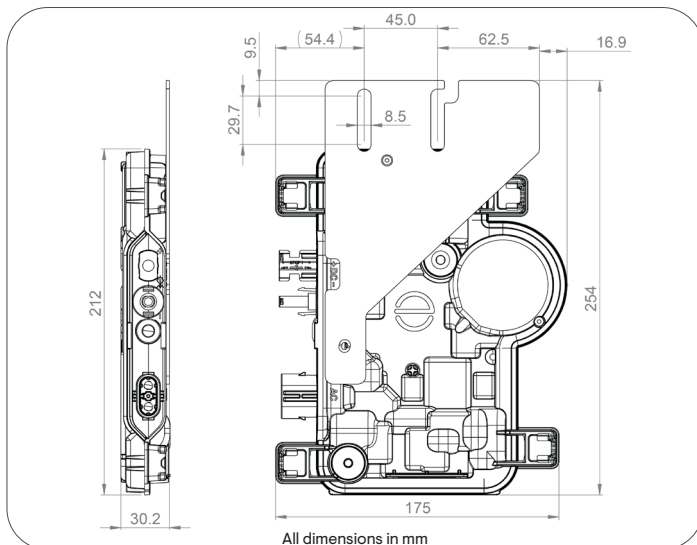
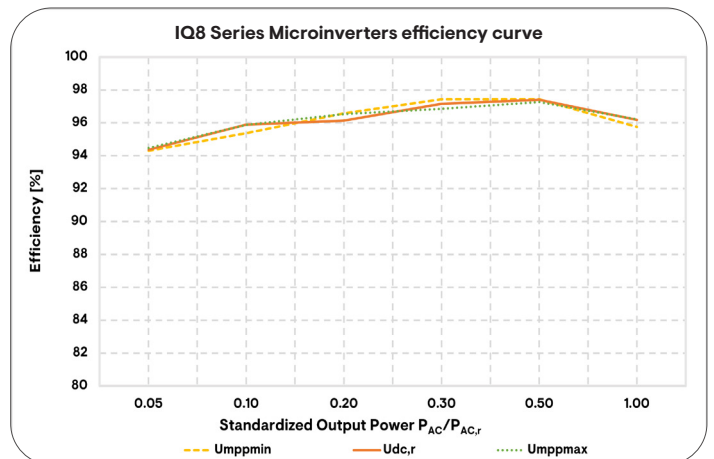
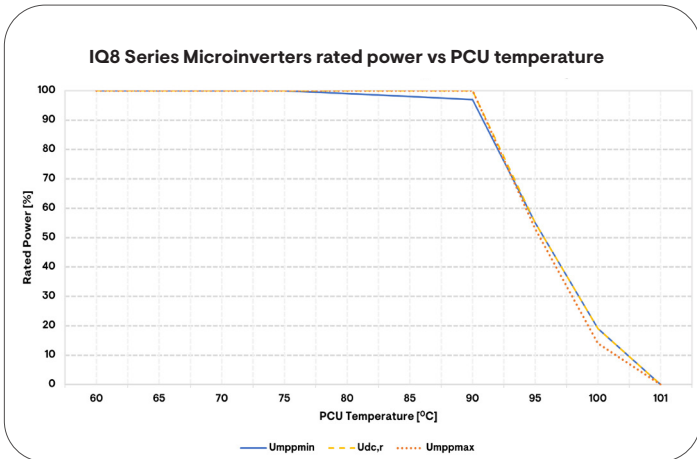
Overvoltage class AC port/DC port	III/II
Number of input DC connectors (pairs) per single MPP-tracker	1
AC connector type	IQ Cabling (refer to separate datasheet for cable and accessories)
DC connector type	Stäubli MC4
Dimensions (H × W × D)	212 mm (8.3") × 175 mm (6.9") × 30.2 mm (1.2") (without mounting brackets)
Weight (with mounting plate)	1.1 kg (2.4 lbs)
Cooling	Natural convection—no fans
Enclosure	Class II double-insulated, corrosion-resistant polymeric enclosure
IP rating	Outdoor—IP67
Altitude	< 2600 m
Calorific value	37.5 MJ/unit

STANDARDS

IQ8HC-72-M-INT

Grid compliance (with IQ Relay)	NRS 097-2-1:2017
Safety	EN IEC 62109-1, EN IEC 62109-2
EMC	EN IEC 61000-3-2, 61000-3-3, 61000-6-2, 61000-6-3, EN IEC 50065-1, 50065-2-1, EN55011
Product labeling	CE, RCM
Advanced grid functions ³	Power export limiting (PEL), phase imbalance management (PIM), loss of phase detection (LOP), power factor control Q (U), cos (phi) (P)
Microinverter communication	Power line communication (PLC) 110 kHz–120 kHz (Class B), Narrowband 200 Hz

(3) Some of these functions require IQ Gateway Metered with current transformers and/or IQ Relay installed.



Assembled in China, India, or Romania

Manufacturer: Enphase Energy, Inc. 47281 Bayside Pkwy., Fremont, CA 94538, United States, PH: +1 (707) 763-4784

Revision history

REVISION	DATE	DESCRIPTION
DSH-00199-2.0	September 2023	Updated the module comparability calculator link
DSH-00199-1.0	August 2023	Preliminary release