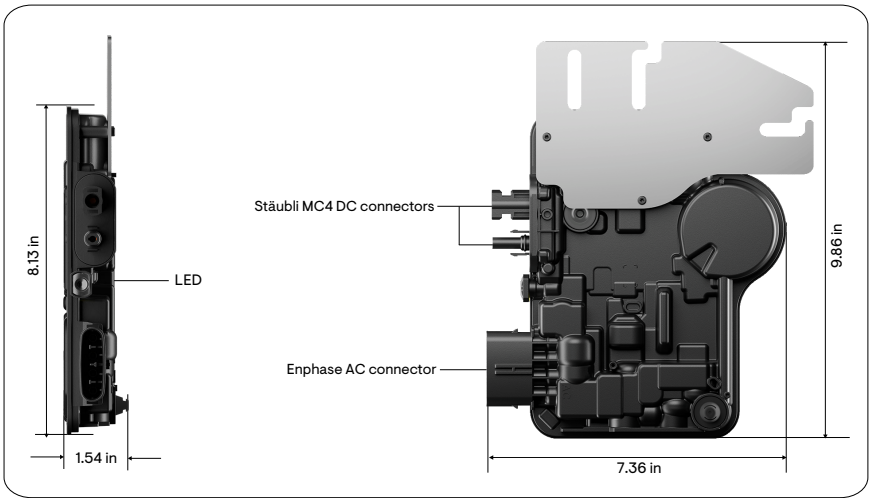
IQ9 Commercial Microinverter

The high-powered, smart grid-ready IQ9 Commercial Microinverter supports 480 VAC three-phase commercial PV systems. It boosts energy harvesting and integrates with the IQ Gateway Commercial Pro, Enphase App, and analysis software for easy operation and maintenance.[1]

Enphase 25 year limited warranty

Intertek 5034331

Key specifications	IQ9N-3P-277-A-DOM-US
Peak output power	427 VA
Nominal grid voltage	277 V (L-N)
Nominal frequency	60 Hz
CEC weighted efficiency	97.5%
Operating voltage	18-58 V
Peak power tracking voltage	28–45 V
Max. short-circuit DC input current	25 A
Ambient air temperature range	–40°C to 65°C (–40°F to 149°F)



Easy

- Lightweight design with easy plug-and-play connectors
- Power line communication (PLC) for quick and hassle-free setup

Smart

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

Reliable

- Over one million cumulative hours of testing
- Class II double-insulated enclosure
- Optimized for the latest high-powered PV modules
- Tailored solutions for different grid configurations, including 480 VAC WYE
- Industry-leading limited warranty of up to 25 years

[1] IQ9N-3P Microinverters are made in the USA. The PCBA, electrical parts, and enclosure are domestically manufactured to meet the eligibility requirements for the ITC domestic content bonus adder.

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Input data (DC)	Units	IQ9N-3P-277-A-DOM-US
Commonly used module power for pairing	W	340–600[2]
Operating voltage	V	18-58
Min./Max. startup input voltage	V	21/58
Max. input DC volatge	V	60
Peak power tracking voltage	V	28–45
Max. DC continuous current (module Imp)	A	16
Max. DC short-circuit current (module Isc)	A	20
Max. short-circuit DC input current	A	25
DC port backfeed current	mA	0

Output data (AC)	Units	IQ9N-3P-277-A-DOM-US
Peak output power[3]	VA	427
Max. continuous output power[3]	VA	427
Nominal grid voltage[4]	—	277 V (L-N)
Min./Max. grid voltage	—	243–305 V (L-N)
Max. continuous output current	A	1.54
Nominal frequency	Hz	60
Max. microinverters per 20 A 480 V WYE (277 L-N) three-phase branch circuit	—	30
Total harmonic distortion	%	<5
Power factor setting	—	1
Power factor range	—	0.85 leading ... 0.85 lagging
CEC weighted efficiency	%	97.5
Nighttime power consumption (tare loss)	mW	<250

Mechanical data	IQ9N-3P-277-A-DOM-US
Ambient air temperature range	–40°C to 65°C (–40°F to 149°F)
Relative humidity range	4% to 100% (condensing)
Overvoltage class AC port	III
AC connector type	Enphase QD 4-pin connector
DC connector type	MC4
Dimensions (H × W × D)	206.5 mm (8.13") × 187 mm (7.36") × 39.2 mm (1.54") (without mounting brackets)
Weight	1.2 kg (2.65 lb)
Cooling	Natural convection – no fans
Enclosure	Class II double-insulated, corrosion-resistant polymeric enclosure
Environmental category/UV exposure rating	NEMA Type 6; outdoor
Altitude	<3000 m (<9842 ft)
Approved for wet locations	Yes

[2] Pairing PV modules with wattage above the limit may result in additional clipping losses. See the compatibility calculator at https://enphase.com/installers/microinverters/calculator.
[3] IQ9 Commercial Microinverters generate a single-phase AC output. A three-phase configuration with phase balancing is achieved through the use of a three-phase QD Cable.
[4] The nominal voltage range can be configured if required by the utility. For interconnection with other system voltages, a transformer is required to connect to the grid.

Communication	IQ9N-3P-277-A-DOM-US
Communication	Power line communication (PLC)
Monitoring	Enphase App monitoring and analysis software
Gateway compatibility	IQ Gateway Commercial Pro (GW0-1CL-1N-D0-0R)

Standards	IQ9N-3P-277-A-DOM-US
Grid compliance	CA Rule 21 and IEEE 1547 (UL 1741-SA/SB), UL 62109-1, UL 1741/ IEEE 1547, 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.

Revision history

Revision	Date	Description
DSH-00712-5.0	January 2026	Added "Maximum input DC voltage".
DSH-00712-4.0	November 2025	Updated compliance status to reflect confirmation.
DSH-00712-3.0	October 2025	Updated SKU to IQ9N-3P-277-A-DOM-US.
DSH-00712-2.0	September 2025	Updated SKUs and product names.
DSH-00712-1.0	May 2025	Preliminary release.