

IQ8 Series Microinverters

The high-powered, smart grid-ready IQ8 Series Microinverters are designed to match the latest generation high output PV modules. The IQ8 Series Microinverter has the highest energy production and reliability standards in the industry, and with rapid shutdown functionality, it meets the highest safety standards. The brain of the semiconductor-based microinverter is our proprietary, application-specific integrated circuit (ASIC) that enables the microinverter to operate in a grid-connected mode.



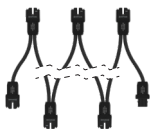
IQ Gateway

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



IQ8 Series with integrated MC4 connectors

Connect PV modules quickly and easily to the IQ8 Series Microinverters that have 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.



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.*

Compatible with latest generation high-output PV modules

- Supports the latest high-current PV modules
- Supports 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
- Faster firmware upgrades enabled by the new integrated circuit technology

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:

- (i) Commissioning of IQ8 Series Microinverter systems requires Enphase Installer App version 3.31.0 or higher.
- (ii) IQ8 Series Microinverters cannot be mixed together with previous generations of Enphase microinverters (IQ7 Series, IQ6 Series and so on) on the same IQ Gateway.

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

IQ8 Series Microinverters

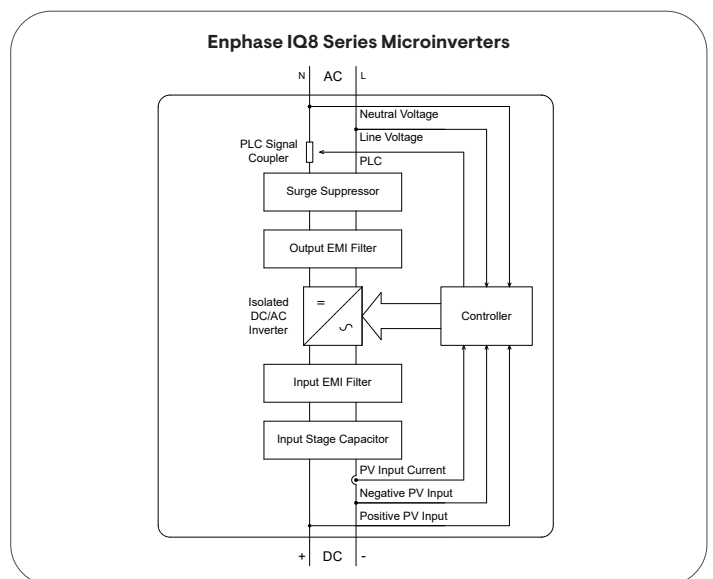
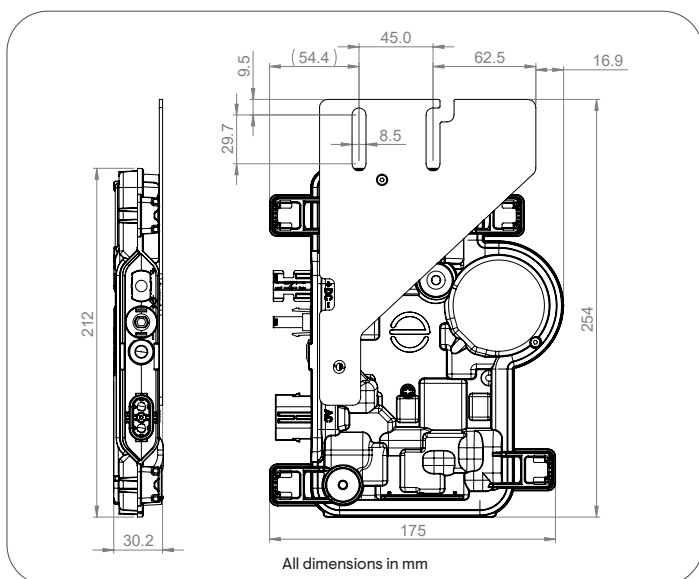
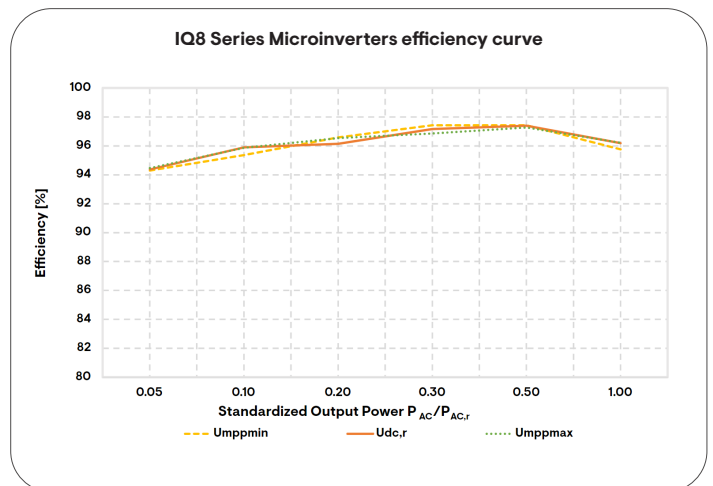
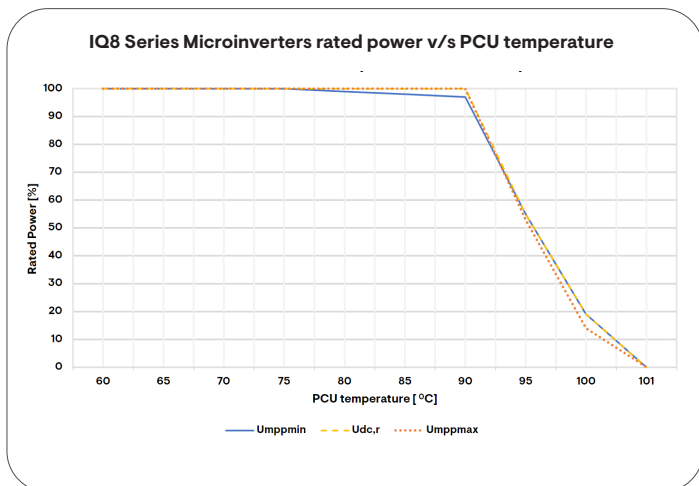
INPUT DATA (DC)		UNITS	IQ8MC-72-M-INT	IQ8AC-72-M-INT	IQ8HC-72-M-INT
Typical module compatibility			54-cell/108-half-cell, 60-cell/120-half-cell, 66-cell/132-half-cell, 72-cell/144-half-cell		
Minimum/Maximum input voltage	U_{dcmin}/U_{dcmax}	V	18/60		
Start-up input voltage	$U_{dcstart}$	V	22		
Rated input voltage	$U_{dc,r}$	V	35.0	36.5	37.0
Minimum/Maximum MPP voltage	U_{mppmin}/U_{mppmax}	V	25/45	28/45	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 input power ¹	P_{dcmax}	W	480	530	560
Maximum short circuit current for modules (I_{sc}) allowed to be paired with IQ8 Series Microinverters: 20 A (calculated with 1.25 safety factor as per IEC 62548).					
OUTPUT DATA (AC)		UNITS	IQ8MC-72-M-INT	IQ8AC-72-M-INT	IQ8HC-72-M-INT
Maximum apparent power	$S_{ac,max}$	VA	330	366	384
Rated power	$P_{ac,r}$	W	325	360	380
Nominal grid voltage	U_{acnom}	V	230		
Minimum/Maximum grid voltage	U_{acmin}/U_{acmax}	V	184/276		
Maximum output current	I_{acmax}	A	1.43	1.59	1.67
Nominal frequency	f_{nom}	Hz	50		
Minimum/Maximum frequency	f_{min}/f_{max}	Hz	45/55		
Maximum units per single/ Multi-phase 20 A circuit	$16 A/I_{acmax}$		11 (L+N)/33 (3L+N)	10 (L+N)/30 (3L+N)	9 (L+N)/27 (3L+N)
Maximum units per single/ Multi-phase IQ Cable section			8 (L+N)/18 (3L+N)	8 (L+N)/18 (3L+N)	8 (L+N)/18 (3L+N)
Protective class (all ports)			II		
Total harmonic distortion		%	< 5		
Power factor setting			1.0		
Power factor range	$\cos\phi$		0.8 leading – 0.8 lagging		
Inverter maximum efficiency	η_{max}	%	97.5	97.3	97.4
European weighted efficiency	η_{EU}	%	96.7	96.6	96.8
Inverter topology			Isolated (HF transformer)		
Nighttime power loss		mW	50		
MECHANICAL DATA			IQ8MC-72-M-INT	IQ8AC-72-M-INT	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)		
Overvoltage class AC port			III		
Number of input DC connectors (pairs) per single MPP tracker			1		
AC connector type			IQ Cabling (refer to the cable accessories datasheet)		

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

MECHANICAL DATA	IQ8MC-72-M-INT	IQ8AC-72-M-INT	IQ8HC-72-M-INT
DC connector type	Stäubli MC4		
Dimensions (H x W x D)	212 mm (8.3") x 175 mm (6.9") x 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	IQ8MC-72-M-INT	IQ8AC-72-M-INT	IQ8HC-72-M-INT
Grid compliance	G98, G99, G100		
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 ²		
Product labelling	CE		
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 – 120 kHz (Class B), narrow band 200 Hz		

(2) At STC within MPP range.

(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 of America, Tel: +1(707) 763-4784

Importer: Enphase Energy NL B.V., Het Zuiderkruis 65, 5215MV, 's-Hertogenbosch, Netherlands, Tel: +31 73 3035859

IQ8SE-14A-DSH-00198-2.0-EN-INT-2023-09-04

Revision history

Revision	Date	Description
DSH-00198-2.0	September 2023	Initial release
DSH-00198-1.0	August 2023	Preliminary release



IQ Battery 5P

IQ Battery 5P all-in-one AC-coupled system is powerful, reliable, simple, and safe. It has a total usable energy capacity of 5.0 kWh and includes six embedded IQ8D-BAT Microinverters with a 3.2 kVA continuous power rating.

Components of the Enphase Energy System



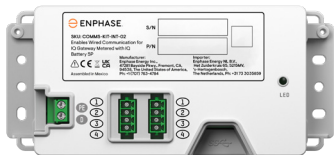
IQ Gateway and current transformers (CTs)

Provides complete control and insights into the Enphase Energy System. IQ Gateway is shipped with two CTs to enable production and consumption monitoring with an accuracy of $\pm 1\%$.



IQ Microinverters

IQ Series Microinverters pack more power into less space than other rooftop solar systems and make rooftop solar more productive, reliable, smart, and safe.



Communications Kit 2 INT

The Enphase Communications Kit 2 INT enables wired communication between IQ Gateway Metered and IQ Battery 5P using Control cables.



IQ Battery 5P accessories

The IQ Battery 5P lifting handles are reusable and ease the installation process. The IQ Battery 5P pedestal enables floor mounting of the IQ Battery 5P.

Powerful

- Provides 3.2 kVA continuous power
- Includes six embedded IQ8D-BAT Microinverters

Reliable

- 15-year limited warranty
- Cools passively with no moving parts or fans
- Uses wired communication for fast and consistent connection
- Updates software and firmware remotely

Simple

- Fully integrated AC-coupled battery system
- Installs and commissions easily
- Supports Self-Consumption mode of operation
- Offers homeowners remote monitoring and control from the Enphase App
- Field replaceable components

Safe

- Meets UL 9540A, the highest industry standard for battery safety
- Uses lithium iron phosphate (LFP) chemistry for maximum safety and longevity

Grid compliance

- EREC G98, G99, and G100 Issue 2 Amd 2



IQ Battery 5P

PRODUCT DETAILS		UNITS	IQBATTERY-5P-1P-INT
Name	—		IQ Battery 5P
Description	—		The IQ Battery 5P with integrated IQ8D-BAT Microinverters and battery management system (BMS) with battery controller
OUTPUT (@230 VAC ¹)			
Rated (continuous) output apparent power ²	kVA		3.2
Nominal voltage	VAC		230
Nominal voltage range	VAC		195–253
Nominal frequency	Hz		50
Nominal frequency range	Hz		47.5–51.5
Rated output current ²	A		13.9
Power factor (adjustable)	—		0.8 leading ... 0.8 lagging
Interconnection	—		Single-phase
AC round-trip efficiency ³	%		90
Optimum operating temperature range	°C		0 to 30
Operating modes	—		Self-Consumption and charge from the grid
BATTERY MODULE			
Usable capacity	kWh		5.0
DC round-trip efficiency	%		96
Nominal DC voltage	V		76.8
Ambient operating temperature (charging) ⁴	°C		-20 to 50 (non-condensing)
Ambient operating temperature (discharging) ⁵	°C		-20 to 55 (non-condensing)
Chemistry	—		Lithium iron phosphate (LFP)
MECHANICAL DATA			
Dimensions (H × W × D)	mm		980 × 550 × 188
Lifting weight	kg		66.3
Total installed weight	kg		78.9
IQ Battery enclosure	—		Outdoor-IP55
IQ8D-BAT Microinverter enclosure	—		Outdoor-IP67
Cooling	—		Natural convection
Altitude	m		<2500
Mounting	—		Wall-mount (included) or pedestal-mount (sold separately)
COMMUNICATION INTERFACES			
Communication	—		Wired control communication
Monitoring	—		Enphase Installer Platform and Enphase App monitoring options; API integration
STANDARDS			
Grid compliance	—		G98, G98 NI, G99, G99 NI, G100-2
Safety	—		UN 38.3, EN 62040-1, IEC 62619 2022, EN IEC 62109-1 & 2, IEC/EN 62116
EMC	—		EN 61000-3, EN 61000-6 EMC, EN 55011:2016+A11:2020, IEC 61326-1, EN 50065-1, EN 50065-2-2
EC Declaration of Conformity ⁶	—		Electro Magnetic Compatibility (EMC) Directive 2014/30/EU, Low Voltage Directive (LVD) 2014/35/EU, Restriction of Hazardous Substances (RoHS), 2011/65/EU, and Battery Directive 2006/66/EC
Product labelling	—		CE
LIMITED WARRANTY			
Limited warranty	—		>60% capacity, up to 15 years or 6000 cycles ⁷

(1) Supported in grid-tied operation.

(2) Limited by software.

(3) AC to the battery to AC at 50% power rating at 25°C, and at the beginning of life.

(4) Reduction in charging power will occur at temperatures below 15°C and above 45°C.

(5) Reduction in discharge power will occur at temperatures below 5°C and above 50°C.

(6) The full text of the EU Declaration of Conformity (DoC) is available at <https://enphase.com/en-gb/installers/resources/documentation>.

(7) Whichever occurs first. Restrictions apply. The full text of the warranty is available at <https://enphase.com/en-gb/warranty/uk>.

WHAT'S IN THE BOX
ORDER CODE: IQBATTERY-5P-1P-INT

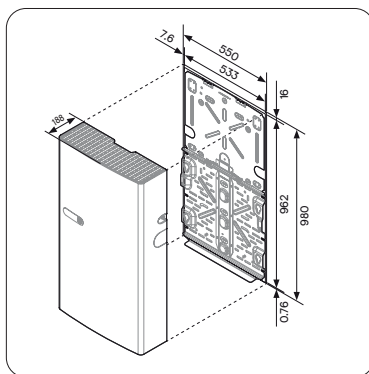
IQ Battery 5P	Base battery unit of IQ Battery 5P with six integrated IQ8D-BAT Microinverters
ID cover and conduit cover	IQ Battery 5P cover with two conduit covers for the left and right sides of the unit
Bottom mounting bracket and top protective shield	Bottom mounting bracket for mounting the battery on the wall and one top protective shield
M5 locking screws	Two M5 locking screws for securing the battery unit on the bottom mounting bracket
M4 grounding screws	Two M4 grounding screws for securing the top protective shield on the bottom mounting bracket
M5 ID cover grounding screws	Two M5 ID cover grounding screws for the EMI/EMC requirement
Cable ties	Six cable ties for securing field cables to the unit
Control (CTRL) connector	One pre-installed and one spare CTRL connector without resistor for CTRL wiring
Control (CTRL) connector with resistor	One pre-installed and one spare CTRL connector with resistor for CTRL wiring
Quick install guide (QIG)	QIG for IQ Battery 5P unit installation instructions
Drill template	Two drill templates for marking drilling locations on the mounting surface

ACCESSORIES AND REPLACEMENT PART

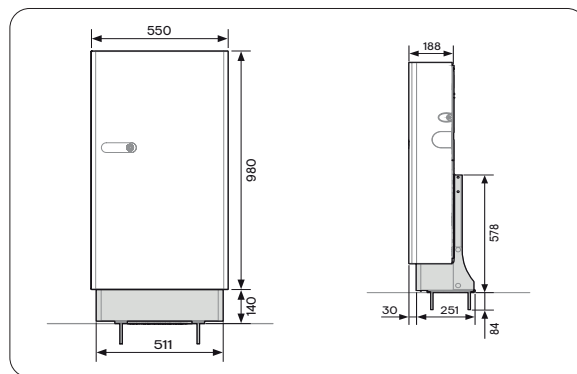
IQ8D-BAT-RMA	IQ8D-BAT Microinverter for field replacement
B05-T02-INT00-1-2-RMA	IQ Battery 5P unit for field replacement
B05-CX-0550-O	IQ Battery 5P cover for field replacement
B05-PM-0550-O	IQ Battery 5P pedestal mount
B05-CP-096-O	IQ Battery 5P conduit plates for field replacement. Includes one left-side and one right-side conduit plate
B05-WB-0543-O	IQ Battery 5P wall bracket for field replacement. Includes one bottom mounting bracket and one top protective shield
IQBATTERY-HNDL-5	IQ Battery 5P lifting handles. Includes one left-side and one right-side lifting handle
B05-ACFB-080-O	IQ Battery 5P AC filter board for field replacement
B05-BMSIA-0490-O	IQ Battery 5P BMS board for field replacement
B05-CANBR-063-O	IQ Battery 5P control communication board for field replacement
B05-IICS-0524-O, B05-IUCS-0524-O	IQ Battery 5P control switch pre-installed on the wiring cover for field replacement

COMPATIBILITY

IQ Battery	IQ Battery 5P
IQ Gateway	IQ Gateway Metered
Communications Kit	Communications Kit 2 INT
Solar inverters	IQ Series Microinverters, third-party PV string inverters

Dimensions in mm


Wall-mounted



Floor-mounted with pedestal

Note for third-party products:

Any third-party manufacturer or importer of product(s) used to install or commission Enphase product(s) shall comply with the applicable EU Directive(s) and requirements in the European Economic Area (EEA). It is the responsibility of the installer to confirm that all such products are labelled correctly and have the required compliant supporting documentation.

Manufacturer:

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

Importer:

Enphase Energy NL B.V., Het Zuiderkruis 65, 5215MV, 's-Hertogenbosch, The Netherlands, PH: +31 73 3035859

Assembled in China

Revision history

REVISION	DATE	DESCRIPTION
DSH-00166-6.0	March 2024	Corrected the warranty badge on the first page.
DSH-00166-5.0	February 2024	Updated the foot note and made editorial updates.
DSH-00166-4.0	January 2024	Updated the target region to “Great Britain” and made editorial updates.
DSH-00166-3.0	November 2023	<ul style="list-style-type: none">Updated the IQ Battery dimensions in the diagram.Updated SKU.
DSH-00166-2.0	September 2023	Editorial updates, updated images, and added warranty webpage link.
DSH-00166-1.0	August 2023	Initial release.
Previous releases.		



Local Power Worldwide

LE-v150

**The perfect silent turbine
for battery charging applications**



**MADE IN
BRITAIN**



+44 1981 241668



sales@leadingedgepower.com



www.leadingedgepower.com



[@leadingedgepower](https://www.instagram.com/leadingedgepower)

LE-v150 Features



Output

24W at 8m/s (17.8mph), 200W max

Robust Design

Only one moving part so little can go wrong

Ideal for sub-zero temperatures

Keeps on working down to -30 degC

Small and compact

Easy to install in places where space is limited

Silent Operation

Noise produced is below that of background level

Lightweight

Weights just 13Kg

Proven in some of the most challenging environments

This robust and compact vertical axis turbine is designed for a host of different battery charging applications, ranging from marine to data communications and rural broadband.

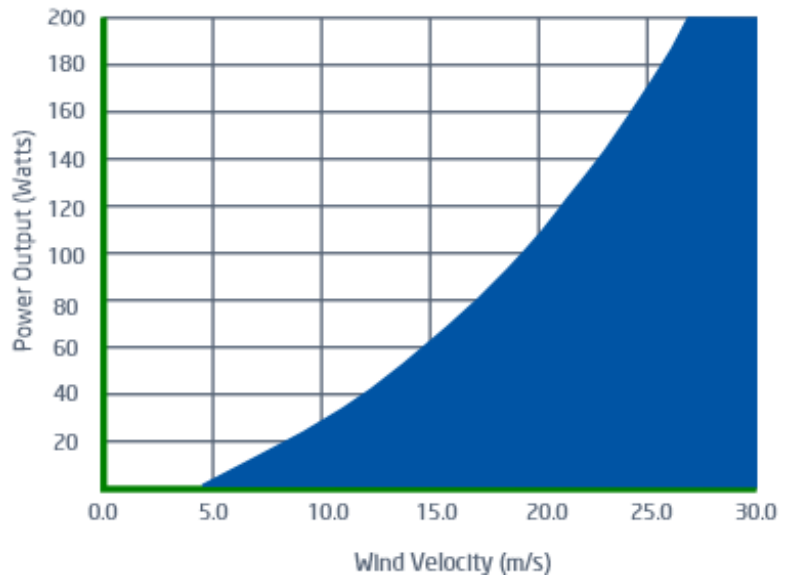
The LE-v150 uses a proven cross-ventilated 'savonius' rotor design which gives excellent power conversion for a vertical axis turbine of this size. It's design means it can survive storm force winds that would destroy a traditional horizontal wind turbine. The turbine will receive the wind from 360 degrees without the need to yaw into position.

At 270mm wide, the turbine fits into spaces that a traditional horizontal axis turbine simply can't.

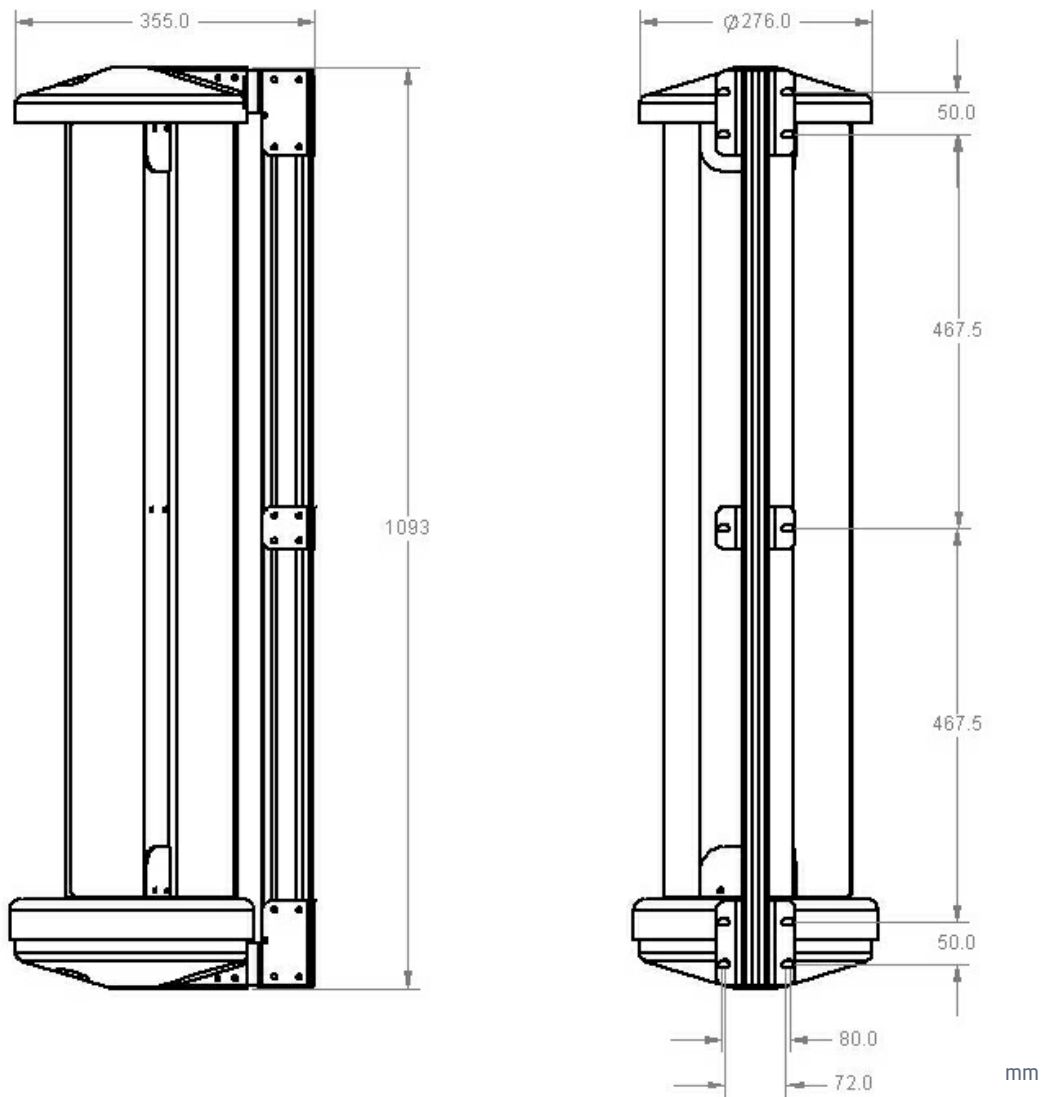
The LE-v150 has fully lubricated sealed bearings, so no greasing or maintenance is required. With only 1 moving part and no brushes or sliprings to wear out, there is little to go wrong.

LE-v150 Technical Overview

- vRotor diameter - 270mm
- Height - 918mm
- Rotor type - 3-Blade savonius
- Blade material - Aluminium
- Rated output - 24W at 8m/s (18mph)
- Peak output - 200W
- Cut-in speed - 5m/s (11mph)
- Survival wind speed - 27m/s (60mph)
- Weight - 9Kg
- Warranty - 2 years
- DC Voltage output - 12V, 24V, 48V



Wind turbine performance is subject to many factors. All output data contained in this document is indicative and actual turbine outputs will depend on the prevailing site and installation conditions.



Industrial off-grid

LE-v150 Applications



- Data logging
- Telemetry
- Security
- Marine
- Data communications
- Environmental monitoring

Our LE-v150 vertical axis turbine is suitable for trickle charging marine batteries or powering data logging/comms equipment in remote locations.

In a typical stand alone system, the LE-v150 sits on a tower (see our Guyed Tower Kit) and is connected to a battery bank via a maintenance (run/stop) switch. A charge controller is used to divert excess power to a dump load when the batteries are full.



Call +44 (0) 1981 241668
www.leadingedgepower.com

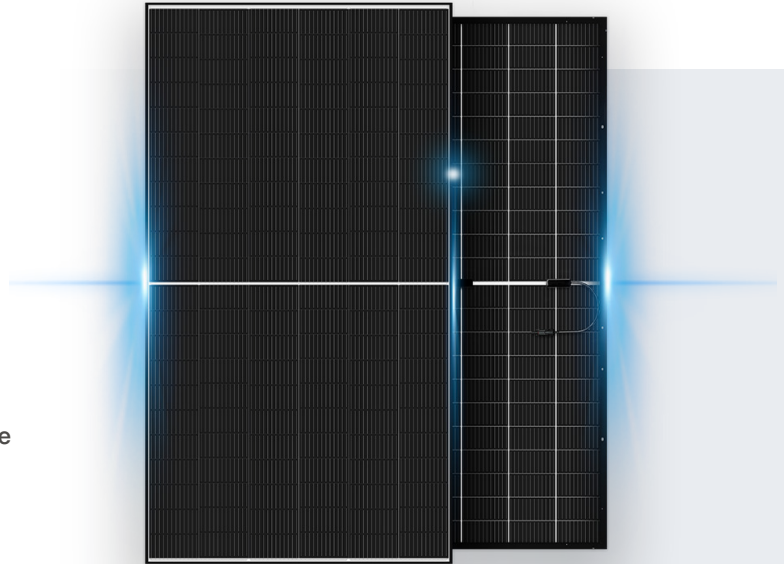
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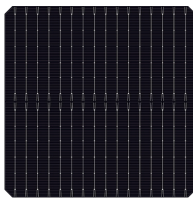
FUSION 2 SOLAR MODULE

FUSION²

The REA FUSION 2 dual-sided solar module dramatically amplifies energy conversion to provide the highest system efficiency and space management, allowing **up to 30% more energy** than standard solar modules.



FEATURES



16 wires
cell connection

Highest Performance

- N-Type HJT Cell technology
- Superior low and oblique light performance
- Split cell structure for higher shading tolerance
- Double sided power generation
- Parallel Circuitry maximises energy production

Engineered Durability

- Flexible cell connection technology
- Aerospace adhesive reinforce cell connections
- Dual glass structure for increased durability
- Salt Mist Spray tested and certified

Maximum Safety

- Low voltage parallel design
- Zero Potential Induced Degradation
- AC Module design optimisation

Your Roof Solution



Unified module,
Microinverter integrated



Aesthetically all-black design

Industry-leading Warranty

25 Year
Product Warranty

30 Year
Performance Warranty

FUSION 2 | REA-HD108N-440

AC Electrical Data

Inverter Model	IQ8HC ACM	Nominal Frequency	50 Hz
Maximum Apparent Power	384 VA	Min/Max. Frequency	45/55 Hz
Rated Apparent Power	380 VA	Total Harmonic Distortion	<5%
Min/Max. Grid Voltage	184/276 V	Overvoltage Class AC Port	III
Max. Output Current	1.67 A	Nighttime Power Loss	50 mW
Max. Units per single-phase 20 A circuit	10 (L+N) Single-phase	Power Factor Setting	1.0
Inverter Maximum Efficiency	97.4%	Power Factor Range	0.8 leading ... 0.8 lagging

Mechanical Parameters

Cell Type	N-Type HJT M10	Glass	2.0 mm ARC Glass Front and Rear
Junction Box	Tripple design IP68, 3 diodes	Frame	Black Anodised Aluminium Alloy
Cable Detail	4 mm ² 12 AWG, 1000 mm	Weight	24 kg
Connector	Stabuli MC4 EVO2	Dimension	1722 mm x 1134 mm x 30 mm

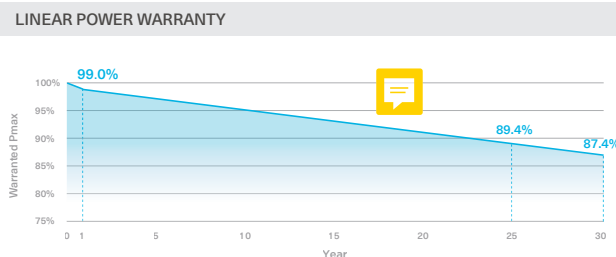
Electrical Characteristics

TEST METHOD	STC	COMBINED WITH REAR (10%)	COMBINED WITH REAR (20%)
Max Power P _{MAX} (W)	440	484	528
Open Circuit Voltage, V _{OC} (V)	38.6	37.7	37.9
Short Circuit Current I _{SC} (A)	14.25	16.08	17.9
Max Power Voltage, V _{MP} (V)	32.7	31.7	32.0
Max Power Current I _{MP} (A)	14.36	15.17	16.4
Module Efficiency (%)	22.53		

STANDARDS			
STC	1000 W/m ² , 25°C, AM 1.5	NOCT	800 W/m ² , 20°C, AM 1.5, wind speed 1m/s

TEMPERATURE RATING (STC)			
Temperature Coefficient of I _{SC}	+0.045% / °C	Temperature Coefficient of P _{MAX} (W)	-0.30% / °C
Temperature Coefficient of V _{OC}	-0.25% / °C		

WARRANTY	
Product Warranty	25 years
Performance Warranty	30 years linear
Backed By	Munich RE



Operation Parameters

Operational Temperature	-40°C ~ +85°C	Safety Class	Class II
Power Output Tolerance	-0 / +3%	Fire Rating	Class A / UL Type 1 or 2
Max System Voltage	DC 1500 V (IEC/UL)	Front Side Design Load	6000 Pa 125 lb/ft ²
Max Series Fuse Rating	30 A	Rear Side Design Load	5400 Pa 1.5 Safety Factor
NOCT	45.7 +/- 2°C	Hail Impact Test	25 mm Hailstone at 23 m/s

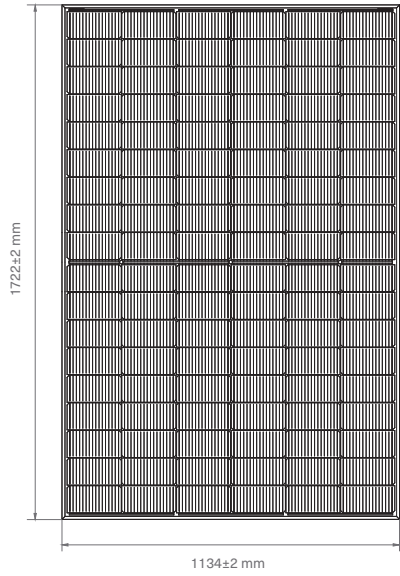
Qualifications and Certificates



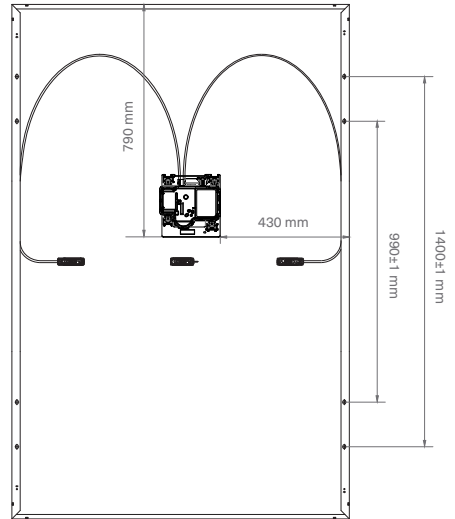
Contact

Unit 6, 19 Lennox Street, Redland Bay, QLD 4165, Australia
 PH: 1300 360 047
 E: engineering@reapower.com.au
 W: www.reapower.com.au

Front



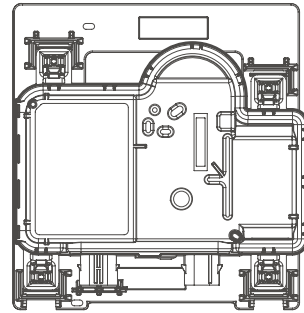
Rear



Side



Microinverter



Engineered in Australia
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