

Helix Power Hub

Uninterrupted power. Plug-and-play efficiency.

The Helix Power Hub is an all-in-one solar energy system built around high-density Lithium Iron Phosphate (LiFePO4) storage. It keeps interactive displays, charging infrastructure and critical devices running when grid power is unavailable, quietly and without fuel.

An integrated pure sine wave inverter, lithium battery and MPPT solar charge controller sit in a single portable enclosure. Charge from solar panels, or from grid or generator AC.



Image for illustration.

Choose your capacity

Helix Power Hub 500

500 W | 1.0 kWh LiFePO4

Ideal for: small workstations, micro businesses, charging kiosks and field data teams.

- 500 W pure sine wave output
- 1,004 Wh LiFePO4 energy storage (3.2 V, 314 Ah)
- Up to 300 W solar input, 80 A PV charge current
- 10.7 kg | 255 × 155 × 315 mm

Helix Power Hub 1000

1,000 W | 2.0 kWh LiFePO4

Ideal for: executive suites, office pods and smart classrooms with interactive flat panels.

- 1,000 W pure sine wave output
- 2,009 Wh LiFePO4 energy storage (6.4 V, 314 Ah)
- Up to 550 W solar input, 100 A PV charge current
- 19 kg | 285 × 230 × 315 mm

Key features

All-in-one MPPT architecture

Pure sine wave inverter, lithium battery and high-efficiency MPPT solar charge controller in one portable enclosure.

Plug-and-play deployment

Small, light and portable, with carrying handle, simple panel display, USB 5 V / 1 A output and AC plug points.

Dual AC and solar charging

Wide 90–280 VAC input for rapid grid or generator charging, plus a high-current PV controller for fast solar replenishment.

Complete protection

Overcurrent, overvoltage, over-temperature and short-circuit protection safeguards your equipment and the battery.

High-density LiFePO4 storage

Long-life 3.2 V 314 Ah cells: thousands of recharge cycles, high thermal stability, zero maintenance.

Quiet, clean backup

Intelligent air-cooled, energy-saving design with noise of 50 dB or less. No fumes and no fuel costs.

Powers what matters

Laptops, Helix Interactive Flat Panels, Helix Smart Charging Carts, network routers, LED lighting, TV setups and field survey equipment, for smart classrooms, office workstations, homes and mobile field operations.

Ask us about sizing

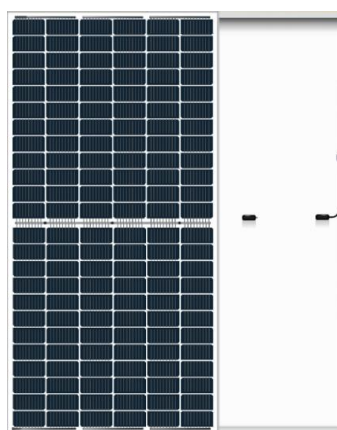
We will help you size the right system for your space and equipment. Request a quote at helix.itcnetworks.com.ng/contact

Technical specifications

Specification	Helix Power Hub 500	Helix Power Hub 1000
Rated output power	500 W	1,000 W
AC output	230 VAC ± 5 V, 50 Hz $\pm 0.5\%$, pure sine wave	
Output power factor and THD	Power factor ≥ 0.99 ; THD $< 3\%$ (linear load), $< 5\%$ (non-linear load)	
AC input (grid / generator)	230 VAC; range 90–280 VAC, 45–65 Hz; power factor > 0.95	
Changeover time	≤ 20 ms	
Battery chemistry and voltage	LiFePO ₄ , 3.2 V, 314 Ah	LiFePO ₄ , 6.4 V, 314 Ah
Battery energy storage	1,004 Wh (~1 kWh)	2,009 Wh (~2 kWh)
Maximum battery charging power	500 W	1,000 W
AC + PV maximum charging current	1–140 A (configurable)	1–160 A (configurable)
PV input voltage range	11–55 VDC	
Maximum PV input power	300 W	550 W
Maximum PV input current	10 A	15 A
Maximum PV charge current	80 A	100 A
USB output and monitoring	USB 5 V / 1 A output; USB serial interface	
Operating / storage temperature	-10 to 40 °C / -15 to 60 °C	
Humidity, noise, altitude	5–95% (non-condensing); ≤ 50 dB; up to 3,000 m (10% derating per 1,000 m above)	
Dimensions (L × W × H)	255 × 155 × 315 mm	285 × 230 × 315 mm
Net / gross weight	10.7 kg / 11.5 kg	19 kg / 20 kg
Solar panel	300 W monocrystalline (1 panel)	One 590 W monocrystalline panel (550 W maximum PV input)
Solar cable	4 mm ² PVC single core	4 mm ² PVC single core, red and black (100 m roll options)

Solar panel (Hub 500)

300 W solar panel	
Peak power (P _{max})	300 W
Cell efficiency	20.97%
Maximum power voltage (V _{mp})	33.3 V
Maximum power current (I _{mp})	9.00 A
Open circuit voltage (V _{oc})	38.9 V
Short circuit current (I _{sc})	9.39 A
Power tolerance	$\pm 3\%$
Maximum system voltage	1,000 V
Solar cells	60 cells in series (6 × 10)
Dimensions	1709 × 1006 × 35 mm
Weight	17.3 kg



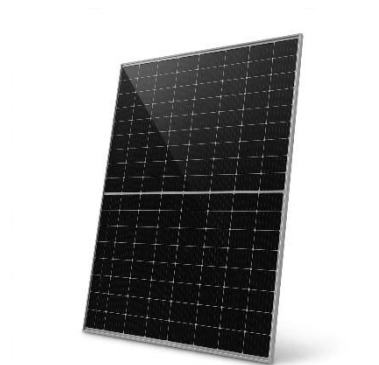
300 W monocrystalline panel supplied with the Hub 500. Image for illustration.

Panel ratings at STC: irradiance 1000 W/m², AM1.5 spectrum, module temperature 25°C.

Solar panel (Hub 1000)

590 W solar panel	
Peak power (Pmax)	590 W
Module efficiency	22.45%
Maximum power voltage (Vmp)	42.37 V
Maximum power current (Imp)	13.69 A
Open circuit voltage (Voc)	51.02 V
Short circuit current (Isc)	14.47 A
Power tolerance	±3%
Maximum system voltage	1,500 V
Temperature coefficient of Pmax	-0.350%/°C
Operating temperature	-40 to +85 °C
Dimensions	2278 × 1134 × 30 mm
Weight	28.4 kg
Junction box	IP68
Connector	MC4 compatible

Panel ratings at STC: irradiance 1000 W/m², AM1.5 spectrum, module temperature 25°C.



590 W monocrystalline panel for the Hub 1000. Image for illustration.