



1. PRODUCT OVERVIEW

TECHNICAL SPECIFICATION **CITADEL SERIES**

LiFePO4 50 kWh – 30 kW – A – HPCS

Version 1.0

Citadel 50 kWh – 30 kW – A – HPCS is an all-in-one commercial and industrial photovoltaic (PV) energy storage system developed by Kaixentec B.V. The system integrates a power conversion system (PCS), energy management system (EMS), and lithium battery clusters into a single pre-assembled cabinet, providing a compact and efficient energy storage solution.

Citadel 50 kWh – 30 kW – A – HPCS is designed for a wide range of applications, including solar self-consumption, backup power, diesel generator replacement and virtual power plant (VPP) integration. It supports seamless switching between grid-connected and off-grid operation within 10 ms, ensuring continuous power supply during grid interruptions.

The integrated cabinet design minimises installation time by requiring only AC input and load connections on site. The cabinet is delivered pre-assembled, can be transported using a forklift and provides front and side access for maintenance. Its back-to-wall installation capability allows flexible deployment in locations with limited space.

Depending on the selected configuration, a single cabinet provides an energy storage capacity ranging from 23 kWh to 53.7 kWh and is suitable for 0.5C charge and discharge applications. For larger installations, up to six cabinets can be connected in parallel in off-grid mode, providing a total power range of 30 kW to 180 kW.

Key Features

- All-in-one design integrating PCS, EMS, and battery clusters in a clean and compact design
- Seamless transition between grid-connected and off-grid operation within 10 ms
- Factory pre-assembled cabinet for simplified installation
- Compact footprint of approximately 1.2 m² with a cabinet height of 1.4 m
- Forklift-compatible design with front and side maintenance access
- Supports back-to-wall installation to optimize installation space
- Expandable system architecture supporting up to six cabinets in parallel for off-grid applications

2. TECHNICAL SPECIFICATIONS

Battery		
No.	Item	Specification
1	Rated Energy	53.7 kWh
2	Usable Energy	≥ 50 kWh
3	Battery Nominal Voltage	537 V DC
4	Battery Operating Voltage Range	470.4~613.2 V
5	Battery Nominal Capacity	100 Ah
AC Input & Output (On grid)		
6	Rated Output Power	30 kW
7	Rated Output Current	45.6 A (AC380V) / 43.3 A (AC400V)
8	Maximum Output Power	33 kW
9	Maximum Output Current	45.6 A (AC380V) / 43.3 A (AC400V)
10	Rated AC Voltage	400/380 V AC
11	Rated Frequency	50/60 Hz
12	System/Grid Connection Type	3L+N+PE
AC Output (Back-up)		
13	Back-up Rated Output Power	30 kW
14	Back-up Rated Output Current	45.6 A (AC380V) / 43.3 A (AC400V)
15	Back-up Rated AC Voltage	400/380 V AC
16	Rated Frequency	50/60 Hz
17	On/Off-grid Switching Time	≤10 ms
PV Input		
18	Max. PV Input Power	60 kW
20	MPPT Voltage Range	150-850 V
21	Max. Input Current per MPPT Tracker	40 A
22	Number of MPPT Trackers	3
23	PV Strings per MPPT Tracker	2/2/2
Others		
24	Ingress Protection Rating (IP)	IP55
25	Application Environment	Outdoor
26	Operating Temperature	-20~55°C (>45°C derating)
27	Operating Humidity	0~95% RH, non-condensing
28	Cooling Method	Air cooling
29	Altitude	≤3000m, (>2000m derating)
30	Corrosion Protection Level	C4
31	Noise Level	<75dB
32	Dimensions (W*D*H)	1020 * 1200 * 1400 mm
33	Weight	≈1000kg
34	Fire Protection	Aerosol
35	Transportation Method	Pre-assembled unit transport
36	Certifications	IEC62619/CE/UN38.3