



Liquid-Cooled Containerised Battery Energy Storage System

The Mecpower Orion energy storage system is configured with 6.25 MWh. It integrates lithium iron phosphate (LFP) battery clusters, a three-level battery management system, liquid thermal management, and aerosol fire suppression in a single 20-foot enclosure. It is designed for large-scale energy storage power stations, peak shaving and valley filling, and frequency regulation.



6.25 MWh

LIQUID-COOLED BESS CONTAINER

NOMINAL ENERGY

6,261.9 kWh

RATED POWER

3.125 MW

PROTECTION

IP54 / C4

COOLING

Liquid

RATED VOLTAGE

1,331.2 V

BATTERY CLUSTERS

8 x 588 Ah

Key Features



LFP battery cells

Lithium iron phosphate cells at 3.2 V nominal, rated for charge and discharge up to 0.5C.



Liquid thermal management

An integrated liquid-cooled unit keeps cells near the optimal 25 ± 2 °C, extending service life.



Three-level BMS

Module, cluster and stack level management with three-level software protection.



Aerosol fire suppression

Composite detection, fully automatic release, discharge time of 14 s or less, alarm outside the cabin.



Robust enclosure

IP54 protection, C4 anti-corrosion grade, operation from -30 to 55 °C and up to 2,000 m.



Standard container format

Compact 6,058 × 2,438 × 2,896 mm Footprint for straightforward transport and siting.

System Specifications

Parameter	Specification
Nominal Energy	6261.9kWh
Rated capacity	4704Ah
System configuration	8P416S
Number of battery clusters	8
Rated voltage	1,331.2 V
DC operating voltage range	1,123.2 – 1,497.6 V
Rated continuous charge / discharge power	3.125 MW
Operating temperature (charging/discharge)	0~55°C/-30~55°C
Storage temperature	-20 to 45 °C (1 month) / 0 to 35 °C (1 year)
Container size (L × W × H)	6,058 × 2,438 × 2,896 mm
Weight	Approx. 46 t
Working Altitude	≤2000m
Ingress protection / Corrosion Protection grade	IP54 / C4
Cooling / fire suppression	Liquid cooling / Aerosol

Battery Cell and Pack

Parameter	Specification
CELL	
Battery cathode material	Lithium iron phosphate (LiFePO ₄)
Cell capacity	588Ah
Rated voltage	3.2 V
Operating voltage range	2.7 – 3.6 V
Operating temperature (charging/discharge)	0~55°C/-30~55°C
BATTERY PACK	
Cell Type	LFP
Maximum continuous charge / discharge rate	≤0.5C
Composition mode	1P104S
Nominal capacity / energy / voltage	588Ah / 195.686kWh / 332.8V
Operating voltage range	280.8~374.4V
Optimum working temperature charge / discharge	25 ± 2 °C
Insulation performance resistance	≥500 M-ohm @ 2,500 VDC
IP level	IP67
Ambient humidity	<90%RH (non-condensing)
Cooling mode	Liquid-cooling
Weight	Approx. 1200 kgs
Dimensions (W × D × H)	1250 x 2220 x 255 mm

Transport and storage temperatures apply with the battery at 30% state of charge.