First Solid-State Battery ESS | 5120MPlus

FEATURES

6000
Cycle Life@25°C

6000W
Peak Power

Increase 8%
Energy Density

93%
Max Recommended DOD (Capacity)

Solid-State
Battery Cells better safety

IP 65
Supports indoors and outdoors

No DIP Switch
Easy for commission

Versatile Installation
Wall/Ground Mounting

Technical Specifications

【FRONT】 【BACK】 【TOP】

Model		5120MPlus
Total Energy*		5.4kWh
Usable Energy(DC)*		4.9kWh
Peak Power(Discharge)		6kW for 3s
Voltage		48~56Vd.c
Nominal Voltage		51.2Vd.c
Max Charge Voltage		57.6Vd.c
Rated Discharge Current		100A
Rated Charge Current		60A
Weight		50±1kg
Dimension(L*W*H)		569*165*560mm
Max Recommended DOD		93%
Operating Condition		Indoor/Outdoor
Operating Temperature (Cell)	Charge	From 0~55℃
	Discharge	From -20~55℃
WIFI Bluetooth Frequency Range		2400MHz~2483MHz
Bluetooth Max. Transmisson Power		7.5dBm
WIFI Max. Transmisson Power		17.8dBm
Recommended Humidity		<60%(No condensed water)
Over Voltage Category		II
Cooling Type		Natural convection
Case Material		Metal
Color		Black or White
Installation		Wall/Ground Mounting
IP Rating		IP 65
Communication		CAN/ RS485
Protection Mode		Dual hardware protection
Battery Protection		Over-current/Over-voltage/Short circuit/ Under-voltage/Over temperature
Safety		Cell UL 1973/CE
Hazardous Material Classification		9
Transportation		UN 38.3
Battery Type		Semi-Solid State Battery(Please refer to the instructions on the next page for details)
Product Warranty		10 years warranty, 6000 cycles life 1)For better battery life cycles,we suggest charge in 0.5C @25°C 2)For better battery life cycles,we suggest discharge in 0.5C @25°C

Testing conditions based on temperature 25℃ at the beginning of life.
*Total Energy/Usable Energy measured under specific conditions from uhome 0.2C CC-CV.
*This battery can be used as an expansion battery for UHOME balcony all-in-one energy storage system.

What Is Semi-Solid State

In solid-state lithium-ion batteries, lithium ions travel between electrodes through a solid electrolyte during the charging and discharging processes. However, full solid-state batteries encounter challenges related to limited contact efficiency between the electrodes and the electrolyte. To overcome this issue, a promising solution is to incorporate small amounts of liquid electrolytes, which can optimize battery performance and extend lifespan.

Semi-solid state batteries, the 1st generation of all solid state, offer enhanced safety compared to traditional LFP batteries, as the solid components significantly reduce the risk of leakage. Additionally, the special small amounts inclusion of liquid electrolytes improves ion conductivity, thereby enhancing overall battery performance.

The core and barrier of solid-state LIBs is the innovative development of materials.

✓ Test of drill

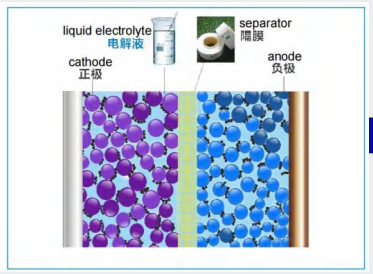
✓ Test of needling

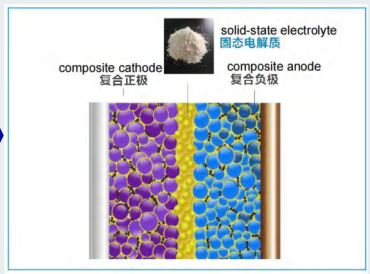
✓ Test of shear

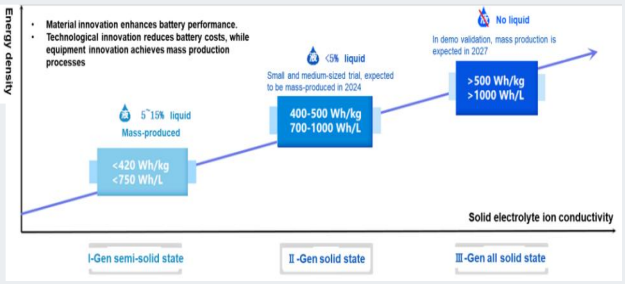
✓ Test of squeeze

Our products have undergone multiple rigorous tests.

Core Advantages



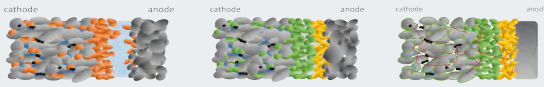




MUCH SAFER: The liquid electrolyte content of semi-solid state batteries is reduced to 5% -10%, and the semi-solid structure significantly reduces the risk of leakage. The solid-state electrolyte layer suppresses lithium dendrite growth and reduces the probability of thermal runaway.

LONGER SPAN LIFE: Solid electrolytes slow down the corrosion and volume expansion of electrode materials, improving long-term stability.

HIGHER COST-EFFECTIVENESS: The semi-solid state battery adopts in-situ solidification technology, and only requires partial modification of the liquid battery production line to achieve mass production, greatly reducing equipment investment costs.

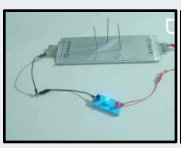


Energy density ↑ Liquid content ↓

Process steps ↓ Unit cost ↓

Thermal runaway traditional battery

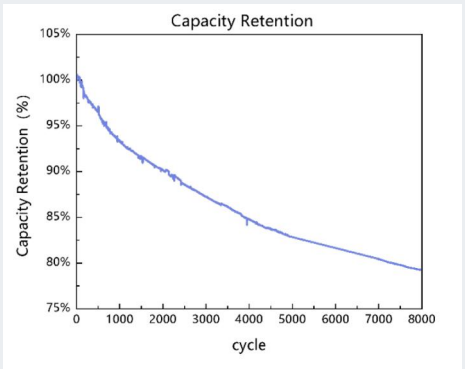
Traditional battery after ARC test



Needle test Solid State Battery

Punch test on Solid State Battery

300℃ ARC Test (Accelerating Rate Calorimeter)		
Items	**Solid state LFP Battery**	**Traditional LFP**
Max. temperature rise rate (dT/dt)max(℃/S)	0.235	2.129
Temperature point Tmax (℃)	No thermal runaway	471.4
Note: Definition conditions for thermal runaway, temperature rise rate dT/dt ≥ 1℃/S		



High Safety

Long Battery Life

More affordable