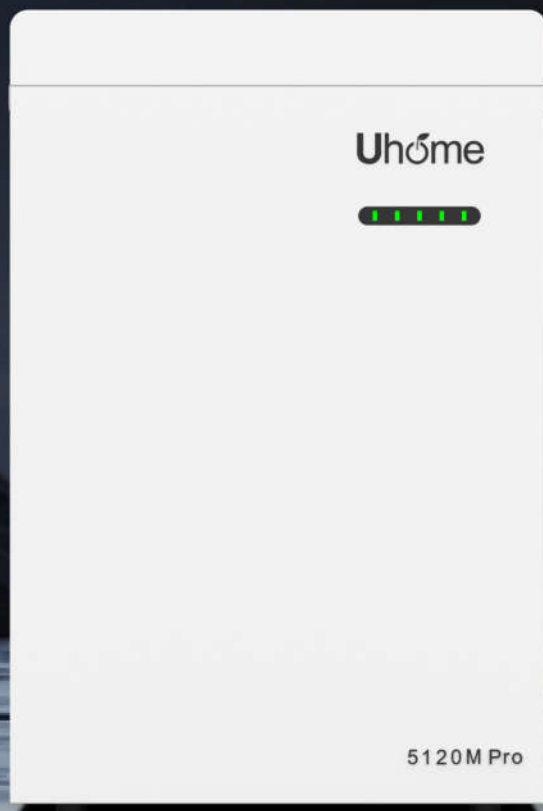


# Pioneer Solid-State Lithium-ion Battery ESS

## 5120M Pro



**8000**  
Cycle Life@25°C



**Solid-State**  
Battery Cells better safety



**1.5C**  
Faster charging & Discharging



**7680**  
Peak Power



**IP 65 Protection**  
Fearless of outdoor installation, strong environmental adaptability



**No DIP Switch**  
Easy for commission



**93%**  
Max Recommended DOD  
(Set at 93% DOD simultaneously)

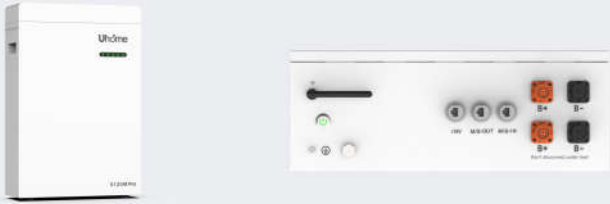


**Versatile Installation**  
Wall/Ground Mounted



**Great Expandability**  
Supports parallel connection of 16 units

## Technical Specifications

Product Image			
Model		5120MPro	
Battery Type		Semi-solid state pouch	
Nominal Energy		6.1kWh	
Usable Energy*		Not less than 5.4kWh	
Nominal Capacity		120Ah	
Nominal Voltage		51.2V	
Operating Voltage		48~56V	
Under Lead-acid Mode	Recommended Current	50A	
	Recommended Voltage	48~55.2V	
Recommended Charge&Discharge Current		60A/60A	
Max Charge/Discharge Current		80A/100 A	
Peak Discharge Current		150A(3S)	
Peak Discharge Power		7.68kW(3S)	
Recommended Depth of Discharge (DOD)		93%	
Charging Temp. Range		From 0~55 ℃	
Discharging Temp. Range		From -20~55 ℃	
Cycle Life		≥8000@25 ℃	
Scalability		16 Parallel	
WIFI Module		Uhome	
Communication		CAN/ RS485	
IP Rating		IP65	
Recommended Humidity		5%~95%(No condensed water)	
Cooling Type		Natural cooling	
Color		White(optional)	
Installation		Wall/Ground mounted	
Net Weight		57±1kg	
Dimension(L*W*H)		440*588*165mm	
Protection		Over-current/Over-voltage/Short circuit/ Under-voltage/Over temperature	
Warranty		10 years*	
Certification		UN38.3/CE/IEC62619	

Testing conditions based on temperature 25 ℃ at the beginning of life.

\*Total Energy/Usable Energy measured under specific conditions by Uhome 0.2C CC-CV and based on recommended DOD(93%);

## What is Semi-solid State Battery

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 1<sup>st</sup> 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.

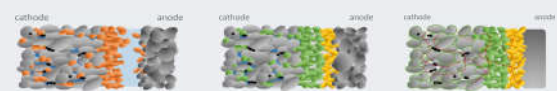
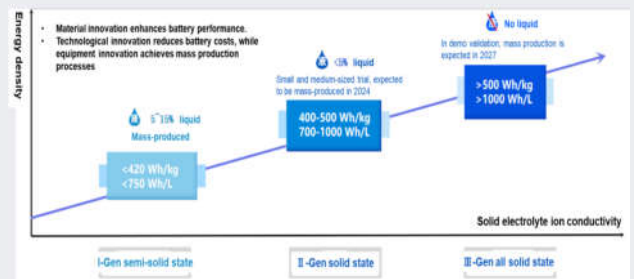
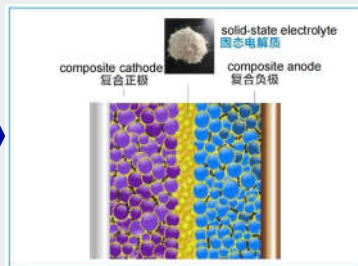
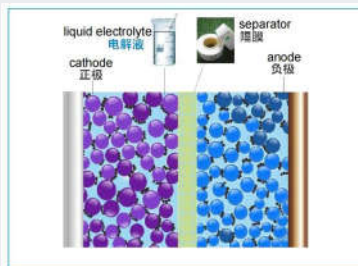


The core and barrier of solid-state LIBs is the innovative development of materials.



Our products have undergone multiple rigorous tests.

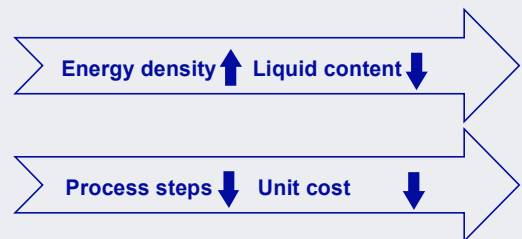
## Product Advantages



**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.

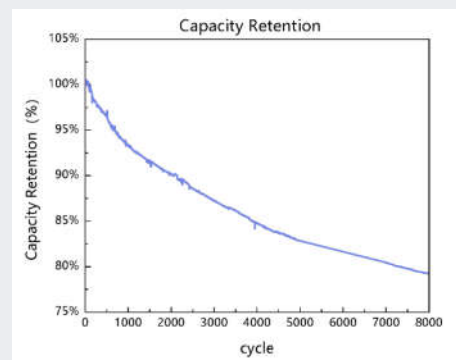
**LONGER SPAN LIFE:** Solid electrolytes slow down the corrosion and volume expansion of electrode materials, improving long-term stability.

**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.



300°C ARC Test (Accelerating Rate Calorimeter)		
Items	Solid state LFP Battery	Traditional LFP
Max. temperature rise rate (dT/dt) <sub>max</sub> (°C/S)	0.235	2.129
Temperature point T <sub>max</sub> (°C)	No thermal runaway	471.4

Note: Definition conditions for thermal runaway, temperature rise rate dT/dt ≥ 1°C/S



- High Safety
- Long Battery Life
- More affordable