

SAFIERY SOLID STATE LITHIUM SAFEST LITHIUM BATTERY



Stackable
217Ah 12V
2,788Wh 48V



1) Higher Safety:

The liquid electrolyte in traditional batteries creates safety hazards if over charging or electrical abuse. Result is thermal runaway and fire. Solid-state batteries have higher safety without this electrolyte mass.

2) Higher Cycle Life:

Because solid-state batteries use solid electrolytes, the cycle life is doubled. A minimum of 10,000 cycles at 80% depth of discharge is expected. There is 3-5% electrolyte as a wetting agent.

10,000 Cycles
80% Depth of Discharge

3) High energy density:

As solid-state batteries use solid electrolytes, they do not need to use lithium-intercalated graphite anodes, but directly use metal lithium as the anode, which can reduce the amount of anode materials and increase the energy density of the entire battery.

4) Smaller size:

The separator and electrolyte in the traditional liquid lithium battery account for nearly 25% of the entire battery mass. With the solid electrolyte, the distance between the positive and negative electrodes can be shortened to ten micrometers. The result is smaller battery dimensions and better quality control.

5) CAN Battery Management System (BMS) is Victron Compliant.

Not only is the BMS in the SAFIERY Solid State Lithium VICTRON Energy Compliant, it is also Marine Regulations Compliant with Cell Min Max Voltages and Cell Temp Min Max Visible in Victron Display.

6) High Discharge rate:

Solid State Batteries can discharge up to 10C. However, the BMS current rating limits discharge rates to 1C Continuous and higher for 2 secs.



5 Year Warranty CAN Connected

24V Now Available
12V and 48V Same Size Case

Specifications

Nominal Voltage	12.8V, 51.2
Nominal Capacity	217Ah, 53.7Ah (Either one 2,788Wh)
Parallel Connection	Max. 40 units either Voltage
Serial Connection	2 in Series for 24V
BMS	4S 200A at 12V, 16S 50A at 48V
Circuit Protection	Over charge, Over discharge, Over current, Over temp, Short, Balance
Communication	1 x CAN Victron GX Compliant
Cycle Life	10,000 cycles @80% DOD
Self Discharge	Less than 3% per month
Charge Efficiency	100% @0.2C
Discharge Efficiency	98-99% @1C
Charge Voltage	14.4 ± 0.8V, 57.6 to max 58V
Max Con. Charge Amps	200A at 12V, 50A at 48V
BMS Current Measure A	0.3A, 0.1A
Voltage at 0% SOC	11.5V for 12V, 44V for 48V
Max.Con.Discharge A	200A for 12V, 50A for 48V
Peak Discharge A	250A for 12V(2s), 60A for 48V (2s)
Cut-off Voltage	10V, 40V
Dimensions (mm)	420L x 252H x 150D mm (Same Case Size for 12V & 48V)
Approx weight	20 kgs
Terminal Type	M8
Case Color/material	Safier ABS Case
IP Rating	IP65
Cell Type	Automotive EV Grade A 3.2V 50Ah solid state wafer cell
Charge Temp	-5°C to 55°C (28°F to 131°F)
Discharge Temp	-20°C to 60°C (-4°F to 140°F)
Storage Temp	-20°C to 45°C (-4°F to 113°F)



Actual Photo

Safier Solid State Lithium showing Ceramic Wafers Contained in steel frame Inside ABS Case



Connecting Straps between Batteries
50mm² of Flexible Laminated Copper



CAN Based Communications
Full Victron Compatibility

Up to 63 Batteries with ONE Start/Stop, can be Remote

GB/T 31484-2015

Cycle Life Requirements And Test Methods Of Power Batteries For Electric Vehicles

IEC 62619-2022

Safety Requirements for Industrial Secondary Lithium-ion Cells and Batteries

GB/T 31486-2015

Electrical Performance Requirements And Test Methods Of Power Batteries For Electric Vehicles

GB/T 36276-2018

Lithium-ion Batteries for Electrical Storage

UL1973-2022

Batteries for Use In Stationary and Motive Auxiliary Power Applications

SAFIERY SAFETY SPECIFICATION

- CAN BE CHARGED AT TWICE NORMAL VOLTAGE
- CAN BE SHORT CIRCUIT FOR EXTENDED 60 MINS
- CAN SUSTAIN HEAT TO 130C
- CAN BE CRUSHED TO 200KN
- CAN BE PENETRATED BY 8mm NAIL at 25mm/s

Nail Penetration Test

Of Solid State Lithium Cells
No Resultant Safety Dangers.

