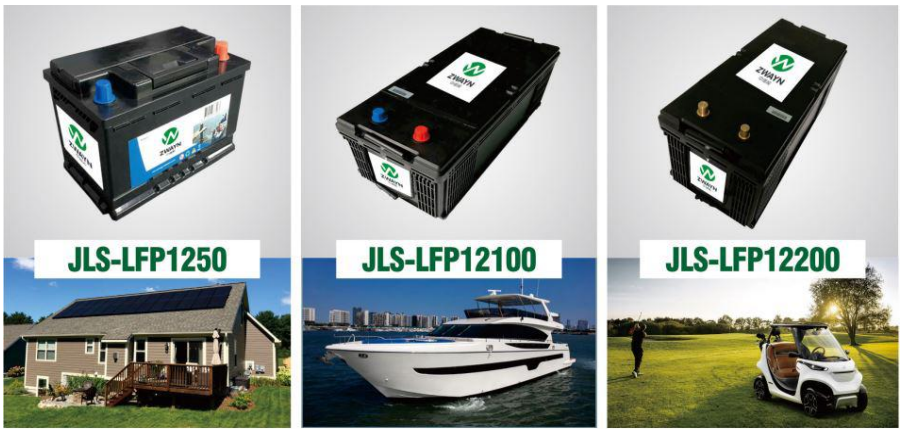
GENIXGREEN®
Technology Luster Life

12.8 Volt Lithium-Iron-Phosphate Batteries Series

www.genixenergy.com



Why lithium-iron-phosphate?

Lithium-iron-phosphate (LiFePO4 or LFP) is the safest of the mainstream li-ion battery types. The nominal voltage of a LFP cell is 3.2V (lead-acid: 2V/cell). A 12.8V LFP battery therefore consists of 4 cells connected in series.

Rugged

A lead-acid battery will fail prematurely due to sulfation:

- If it operates in deficit mode during long periods of time (i.e. if the battery is rarely, or never at all, fully charged).
- If it is left partially charged or worse, fully discharged (yacht or mobile home during wintertime).

A LFP battery does not need to be fully charged. Service life even slightly improves in case of partial charge instead of a full charge. This is a major advantage of LFP compared to lead-acid.
Other advantages are the wide operating temperature range, excellent cycling performance, low internal resistance and high efficiency (see below).

LFP is therefore the chemistry of choice for very demanding applications.

Efficient

In several applications (especially off-grid solar and/or wind), energy efficiency can be of crucial importance. The round trip energy efficiency (discharge from 100% to 0% and back to 100% charged) of the average lead- acid battery is 80%.The round trip energy efficiency of a LFP battery is 92%.

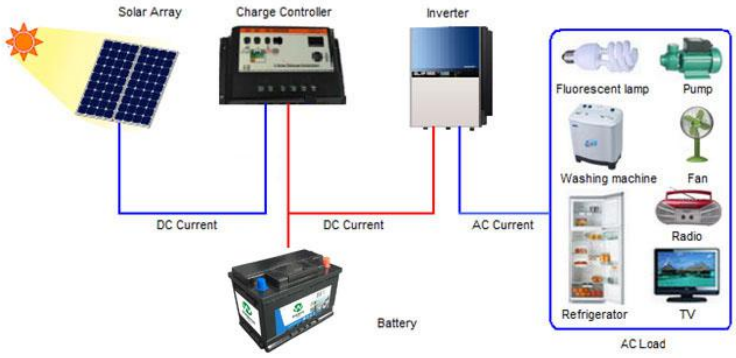
The charge process of lead-acid batteries becomes particularly inefficient when the 80% state of charge has been reached, resulting in efficiency of 50% or even less in solar systems where several days of reserve energy is required (battery operating in 70% to 100% chargedstate).In contrast, a LFP battery will still achieve 90% efficiency under shallow discharge conditions.

Size and weight

Saves up to 70% in space
Saves up to 70% in weight

Expensive?

LFP batteries are expensive when compared to lead-acid. But in demanding applications, the high initial cost will be more than compensated by longer service life, superior reliability and excellent efficiency.



Our LFP batteries have integrated cell balancing. Up to 5 batteries can be paralleled connected, so that a 12V battery bank of up to 1200Ah can be assembled.

Battery Management System (BMS)

The BMS will:

1. Disconnect or shut down the load whenever the voltage of a battery cell decreases to less than 2,5V.
2. Stop the charging process whenever the voltage of a battery cell increases to more than4,2V.
3. Shut down the system whenever the temperature of a cell exceeds 50°C.

Battery specification				
VOLTAGE AND CAPACITY	Smart 12.8/50	Smart 12.8/100	Smart 12.8/150	Smart 12.8/200
Nominal voltage	12.8V	12.8V	12.8V	12.8V
Nominal capacity @ 25°C*	50Ah	100Ah	150Ah	200Ah
Nominal capacity @ 0°C*	40Ah	80Ah	120Ah	160Ah
Nominal capacity @ -20°C*	25Ah	50Ah	75Ah	100Ah
Nominal energy @ 25°C*	640Wh	1280Wh	1920Wh	2560Wh
*Discharge current ≤1C				
CYCLE LIFE (capacity ≥ 80% of nominal)				
80% DoD	2500 cycles			
70% DoD	3000 cycles			
50% DoD	5000 cycles			
DISCHARGE				
Maximum continuous discharge current	20A	50A	60A	80A
Recommended continuous discharge current	≤20A	≤50A	≤60A	≤80A
End of discharge voltage	10V	10V	10V	10V
OPERATING CONDITIONS				
Operating temperature	Discharge: -20°C to +50°C, Charge: +5°C to +50°C			
Storage temperature	-25°C to 65°C			
Humidity (non-condensing)	Max. 95%			
Protection class	IP 22			
CHARGE				
Charge voltage	Between 14V and 14.4V (14.2V recommended)			
Float voltage	13.5V			
Maximum charge current	20A	50A	60A	80A
Recommended charge current	≤20A	≤50A	≤60A	≤80A
OTHER				
Max storage time @ 25°C*	1 year			
BMS connection	Male + female cable with M8 circular connector, length 50cm			
Power connection (threaded inserts)	M6	M6	M8	M8
Dimensions (Lxwxh) mm	256 x 165 x 210	256 x 165 x 210	520 x 267 x 220	520 x 267 x 220
Weight	7.5kg	11.5kg	22.5kg	22.5kg
*When fully charged				