GENIXGREEN
Technology Luster Life

48 Volt Lithium-Iron-Phosphate Batteries

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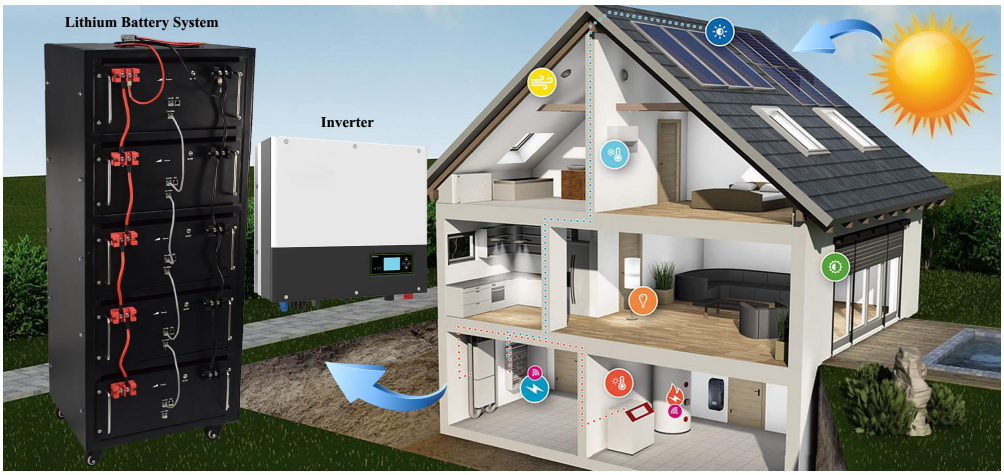

Why lithium-iron-phosphate?

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 48V LFP battery therefore consists of 16 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 (in yacht or mobile home during winter time).

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% charged state).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 12 batteries can be paralleled connected, so that a 48V battery cabinet of up to 2400Ah 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 than 3,65V.
3. Shut down the system whenever the temperature of a cell exceeds 50°C.
4. Automatic cell balancing and current limit when the batteries voltage have big gap when paralleled.
5. Anti-reverse connection.
6. Compatible with SMA, Victron, Grottwatt, UZ, Sola-X, Sinxcel, Sungrow, DEYE, etc. inverters.

Battery specification				
Model	ES2500	ES5100	ES7600	ES10200
VOLTAGE AND CAPACITY	51.2V/50Ah	51.2/100Ah	51.2/150Ah	51.2V/200Ah
Nominal voltage	51.2V	51.2V	51.2V	51.2V
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*	2560Wh	5120Wh	7680Wh	10240Wh
*Discharge current ≤1C				
CYCLE LIFE (capacity ≥ 80% of nominal)				
80% DOD	3000 cycles			
70% DOD	5000 cycles			
50% DOD	6000 cycles			
DISCHARGE				
Maximum continuous discharge current	50A	100A	150A	200A
Recommended continuous discharge current	≤50A	≤100A	≤150A	≤200A
End of discharge voltage	40V	40V	40V	40V
OPERATING CONDITIONS				
Operating temperature	Discharge: -20°C to +50°C, Charge: +5°C to +50°C			
Storage temperature	-25°C to 45°C			
Humidity (non-condensing)	Max. 95%			
Protection class	IP 22			
CHARGE				
Charge voltage	56V			
Maximum charge current	50A	100A	150A	200A
Recommended charge current	≤50A	≤100A	≤150A	≤200A
OTHER				
Max storage time @ 25°C*	3 year			
BMS connection	Male + female cable with M8 circular connector, length 50cm			
Dimensions (LxWxH) mm	483 x 440 x 134	483 x 440 x 223	483 x 440 x 223	483 x 440 x 267
Weight	30kg	50kg	80kg	100kg
*When fully charged				

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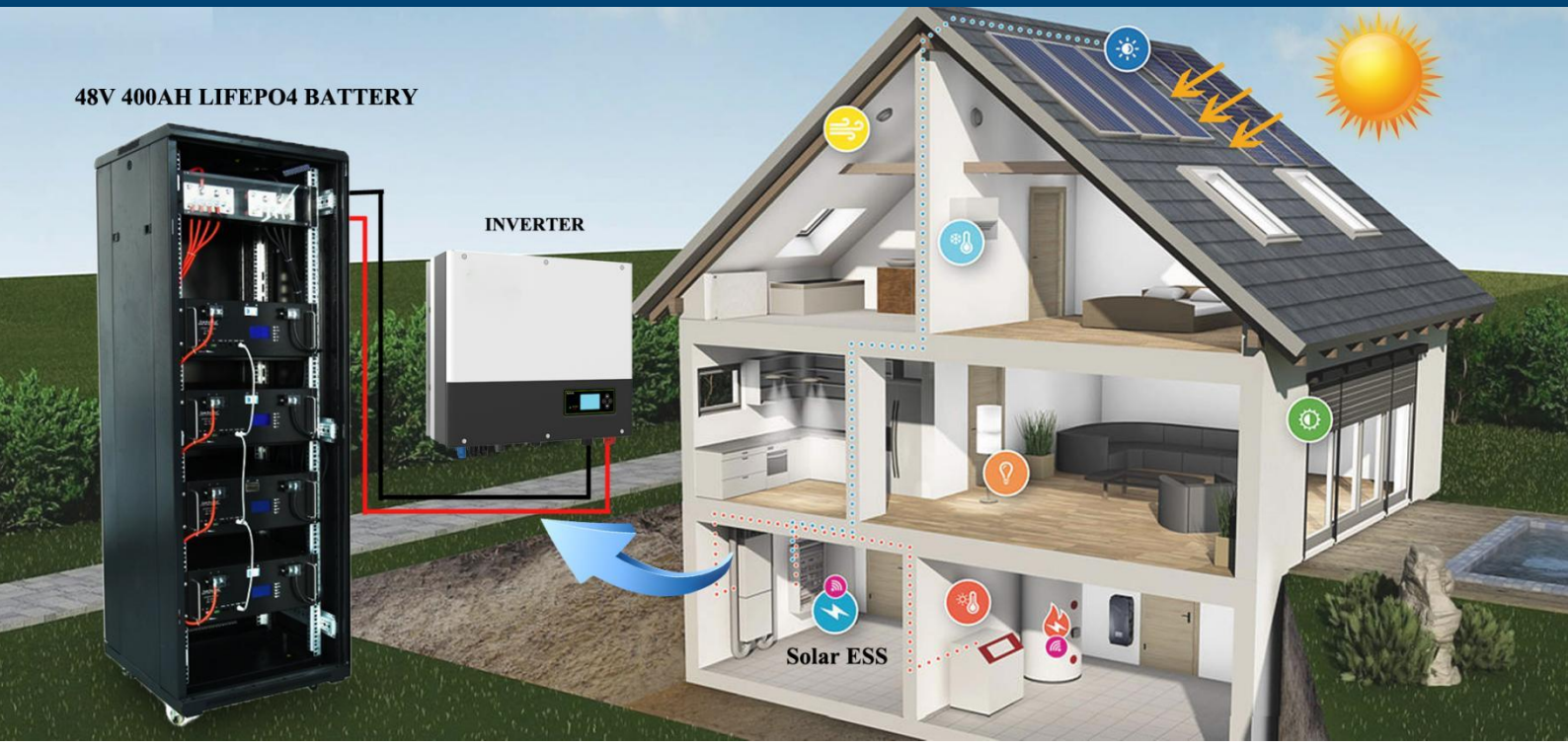
48V 400Ah LiFePO4 Battery Rack



Item	Parameter
Model	ES20480
Nominal voltage	51.2V
Nominal capacity @ 25°C*	400Ah
Configuration (*S*P)	1S4P (51.2V 100Ah in 4 parallels)
80% DOD	3000 cycles
70% DOD	5000 cycles
50% DOD	6000 cycles
Maximum continuous discharge current	200A
Recommended continuous discharge current	≤200A
End of discharge voltage	40V
Operating temperature	Discharge: -20°C to +50°C, Charge: +5°C to +50°C
Storage temperature	-25°C to 45°C
Humidity (non-condensing)	Max. 95%
Protection class	IP 22
Charge voltage	56V
Maximum charge current	200A
Recommended charge current	≤200A
Max storage time @ 25°C*	3 year
BMS connection	Male + female cable with M8 circular connector, length 50cm
Dimensions (L*W* H) mm	600*800*1200mm (Rack)
Weight	30kg

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