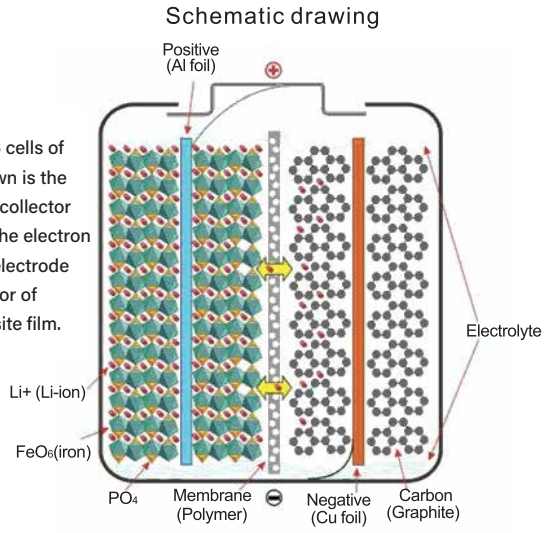
Lifepo4 Battery Cell

Lithium iron phosphate battery (lifepo) has a norminal voltage of 48vdc. 4 it is comprised by 16 cells of 3.2v each. The internal structure of lifepo 4 battery cell is shown in the figure on the right. Shown is the olivine structure of lifepo as the positive electrode of cell. Aluminum foil functions as 4 current collector of positive pole. A polymer membrane separates positive and negative electrodes of the cell. The electron (e-) can't pass through the polymer separator but li+ can pass through it freely. The negative electrode which consists of graphite is shown in the figure on the right. Copper foil is the current collector of negative electrode. There is organic electrolyte in the cell which is sealed by al-plastic composite film.



General Features

Lithium iron Phosphate (LiFe PO4) is used as positive material, which offers extended cycle life and good safety performance.
Embedded BMS offers voltage, current, temperature protection and alarm functions. BMS can communicate with other device by modbus protocol.
Embedded BMS unit measures current, voltage, single cell surface temperature and the ambient temperature of the battery.
Embedded BMS offers four remote functions which can communicate with far-end central control center by computer management.
The combination of BMS and computer management technology can achieve real-time monitoring and control of various parameters and status.
The power system has secondary cut-off protection and when the voltage is too low the system will cut off the support from the battery to protect the battery service life.
Under normal operating conditions, the entire system emits very little noise due to their passive cooling design.

Advantages

Environment-frinedly, not containing heavy metals.
Highly cycle times, Type C is with up to 5000 cycles to 80% DOD (≥ 3500 cycles to 100% DOD).
Others is with up to 3000 cycles to 80% DOD (≥ 2000 cycles to 100% DOD).
Low self-discharge rate (per month): ≤2%, no memory effect.
Low weight, specific energy is 2-3 times larger than conventional lead acid batteries.
Being in sleep mode to reduce energy loss when storage and transport.
Easy installation, the battery can be instakked in 19" standard cabinet or wall-mounted
Convenient interface design, all wiring harmess is connected with plug.
Small size, volumetric specific energy is about 2 times larger than lead acid battery.
Safety LiFePO4 battery completely solves the safety problems of traditional lithium battery.
Wide operating temperature range (-20 ~+60 °C) and good high temperature performance.
Flexible configuration, a plurality of modules in parallel can support expansion of capacity to extend backup time.
Excellent fast charging performance, after fast charging with 1C current, the capacity can reach 95% of rate capacity in half-hour.
Having FTTH usually supersedes FTTB (FTTx) could be simpler to use.

48V LiFePO4 Wall mount series

Product features:

Larger capacity supply equipment

No active cooling system is required

High operational reliability

Product life: 10 years at over 25℃

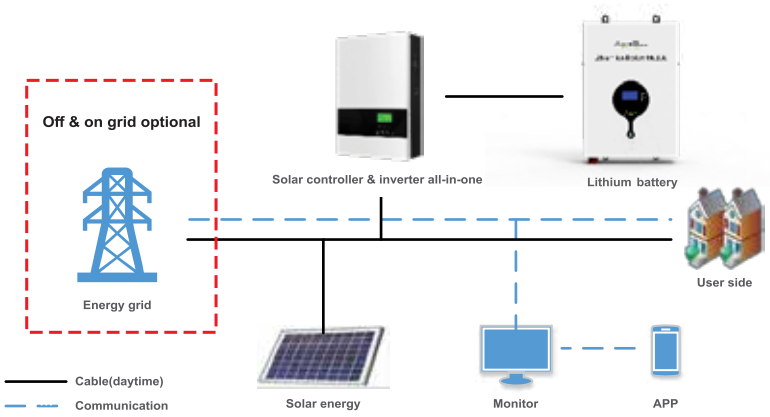
Optimal management

In line with the RoHS

Applicable field:

- Oil and electricity hybrid energy storage system
- Grid frequency adjustment energy storage system
- New energy communication base station, Core computer room, IDC ,UPS
- New energy generation (solar, wind, PV/wind hybrid) access to energy storage system
- Smart grid, micro-grid system
- Mobile container storage system
- Other energy Storage System
- Peak load shifting energy storage system
- Load tracking energy storage system

Application Scenarios

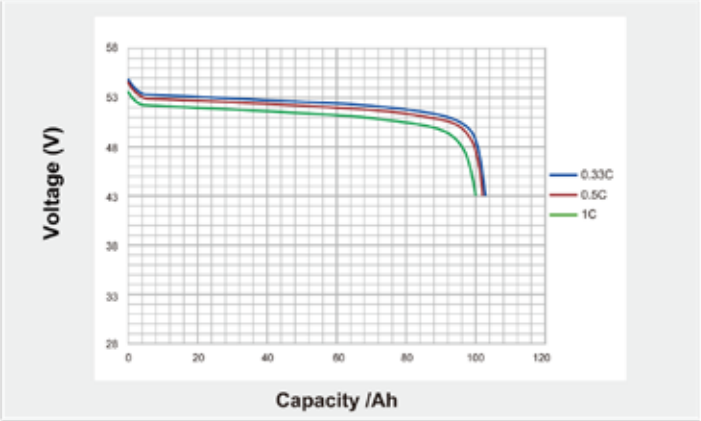


Product Parameters

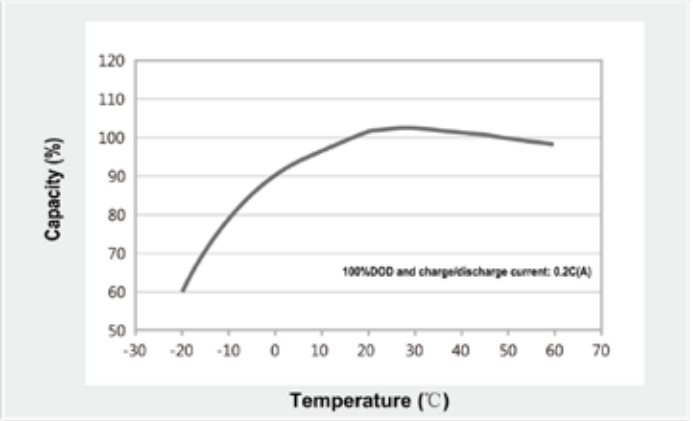
	MODEL	ASP4850LW	ASP4880LW	ASP48100LW	ASP48120LW	ASP48150LW	ASP48200LW
Electrical Characteristics	Rate voltage(Vdc)	48	48	48	48	48	48
	Rate capacity(AH)	50	80	100	120	150	200
	Energy storage(KWH)	2.4	3.84	4.8	5.76	7.2	9.6
	Cycle life	≥4000 cycles to 85% DOD					
	Months self discharge	≤2%					
	Efficiency of charge	100% at 0.2C					
	Efficiency of discharge	96-99% at 1C					
Standard Charge	Charge voltage	54.8					
	Charge mode	0.2C to 54.8V, then 54.8V,charge current to 0.02C (CC/CV)					
	Charge current(A)	10	16	20	24	30	40
	Max. Charge current(A)	50	80	100	120	120	120
	Charge cut-off voltage(VDC)	54.8					
Standard Discharge	Contiunous current(A)	50	80	100	120	120	120
	Discharge cut-off voltage(VDC)	42					
Environmental	Charge temperature	0℃ to 45℃ (32F to 113F) @60±25% Relative Humidity					
	Discharge temperature	-20℃ to 60℃ (-4F to 140F) @60±25% Relative Humidity					
	Storage temperature	0℃ to 40℃ (32F to 104F) @60±25% Relative Humidity					
	IPclass	IP60					
Mechanical	Material system	LiFePO4					
	Case material	Metal					
	Case Type	Rack/Wall Mount					
	Pack Dimensions L*W*H(mm)	525*390*150	525*390*150	471*375*147	471*375*147	680*545*155	590*375*245
	Package Dimension L*W*H(mm)	610*485*250	610*485*250	575*490*255	575*490*255	760*625*240	685*470*350
	Net Weight(kg)	37.7	37.7	39.2	54.2	66	78.8
	Gross Weight(kg)	39.7	39.7	42.6	56.2	62	81.5
	Termial	M8					
	Protocol(Optional)	CANBus/RS485/RS232					
	SOC (Optional)	LED/LCD					

Characteristic Curves

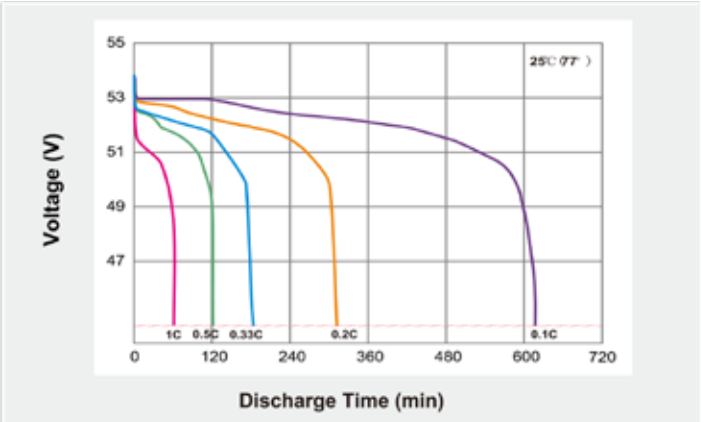
Discharge Capacity in relation to Discharge Rate



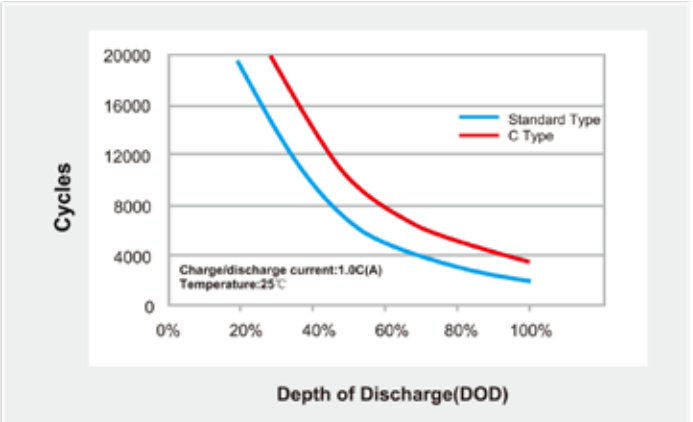
Temperature Effect in relation to Battery Capacity



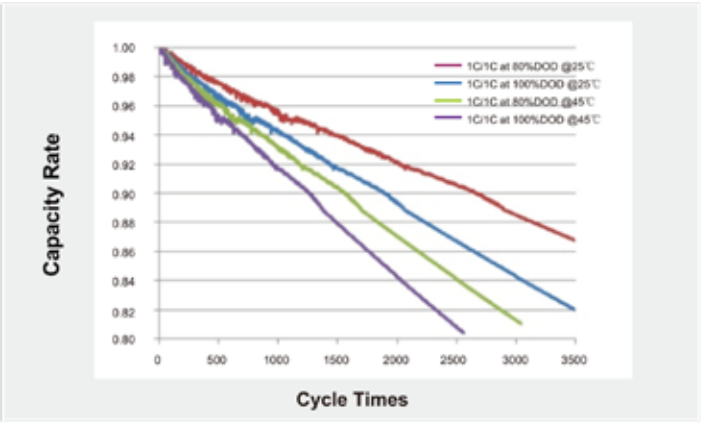
Discharge Time in relation to Discharge Rate



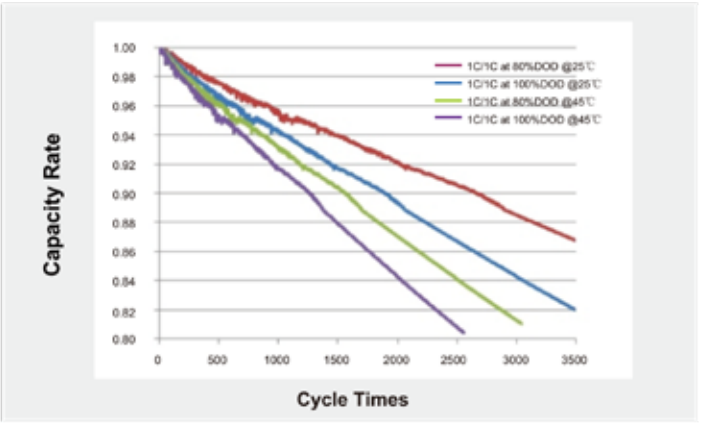
Depth of Discharge in relation to Cycle Life



Cycle Curves at different DOD & Temp of C Type



Cycle Curves at different DOD & Temp of C Type



verload protection	Temperature protection	Short circuit protection	Batteries to protect
The overcharge protection	Put protection	Over current protection	Over voltage protectionO

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