# Lithium Battery Energy Storage 2022 Catalog


**AfriSol Power Limited**

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## COMPANY PROFILE

Headquartered in the City of London, AfriSol Power Limited is the brainchild of a group of experienced African solar experts with the aim to produce solar energy equipment for the African environment at competitive prices.

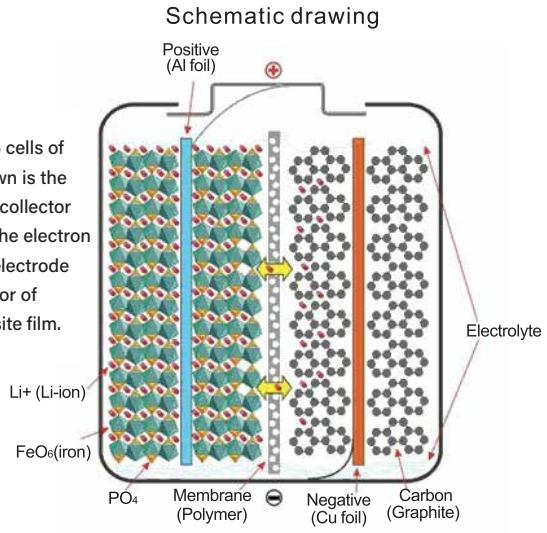
Solar panels, inverters, batteries, cables, and mounting structures are our main focus. We aim to offer the best components for solar systems at affordable prices (best value for money). After years of analysing, installing, and monitoring several components, we have identified the best components that have performed well under African local conditions.

Thus, we are manufacturing these components in state-of-the-art factories in China under our own brand name – AfriSol Power.

## DIRECTORY

# 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℃

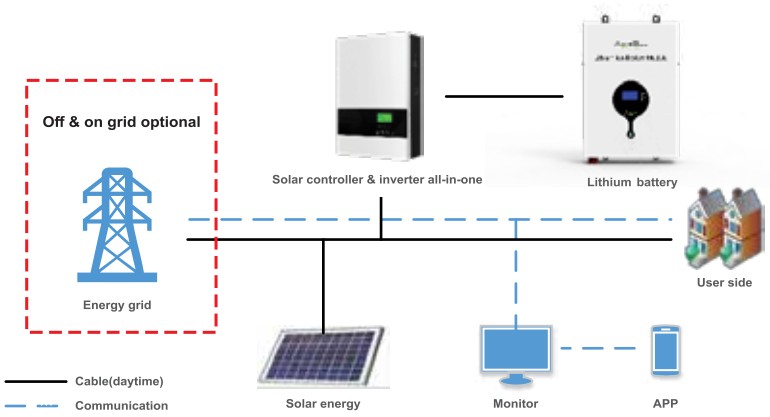
Optimal management

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 | | | | | |

## 51.2V 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 | ASP4850HW | ASP4880HW | ASP48100HW | ASP48120HW | ASP48150HW | ASP48200HW |
|---|---|---|---|---|---|---|---|
| Electrical Characteristics | Rate voltage(Vdc) | 51.2 | 51.2 | 51.2 | 51.2 | 51.2 | 51.2 |
| | Rate capacity(AH) | 50 | 80 | 100 | 120 | 150 | 200 |
| | Energy storage(KWH) | 2.56 | 4.096 | 5.12 | 6.144 | 7.68 | 10.24 |
| | 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 | 58.8 | | | | | |
| | Charge mode | 0.2C to 58.4V, then 58.4V,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) | 58.8 | | | | | |
| Standard Discharge | Contiunous current(A) | 50 | 80 | 100 | 120 | 120 | 120 |
| | Discharge cut-off voltage(VDC) | 44.8 | | | | | |
| 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 | 540*220*185 | 525*485*170 | 470*390*150 | 680*545*150 | 590*375*245 |
| | Package Dimension L*W*H(mm) | 610*485*250 | 690*300*260 | 600*485*255 | 575*490*255 | 760*625*240 | 685*470*350 |
| | Net Weight(kg) | 39.5 | 40 | 43.4 | 39.5 | 72 | 82 |
| | Gross Weight(kg) | 41.5 | 42.6 | 45.9 | 42.8 | 75 | 85 |
| | Termial | M8 | | | | | |
| | Protocol(Optional) | CANBus/RS485/RS232 | | | | | |
| | SOC (Optional) | LED/LCD | | | | | |

## 48/51.2V Blade 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 | ASPB48138LW | ASPB48276LW | ASPB48138HW | ASPB48276HW |
|---|---|---|---|---|---|
| Electrical Characteristics | Rate voltage(Vdc) | 48 | 48 | 51.2 | 51.2 |
| | Rate capacity(AH) | 138 | 276 | 138 | 276 |
| | Energy storage(KWH) | 6.624 | 13.248 | 1.0656 | 14.1312 |
| | Cycle life | ≥6000 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 | 54.7 | | 58.4 | |
| | Charge mode | 0.2C to 54.7V, then 54.7V,charge current to 0.02C (CC/CV) | | 0.2C to 58.4V, then 58.4V,charge current to 0.02C (CC/CV) | |
| | Charge current(A) | 30 | 60 | 30 | 60 |
| | Max. Charge current(A) | 120 | 200 | 120 | 200 |
| | Charge cut-off voltage(VDC) | 54.7 | | 58.4 | |
| Standard Discharge | Contiunous current(A) | 120 | 200 | 120 | 200 |
| | Discharge cut-off voltage(VDC) | 42 | | 44.8 | |
| 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) | 1095*150*420mm | 1095*150*770mm | 1095*150*420mm | 1095*150*770mm |
| | Package Dimension L*W*H(mm) | 1145*200*470mm | 1145*200*820mm | 1145*200*470mm | 1145*200*820mm |
| | Net Weight(kg) | 62.5 | 113.5 | 66 | 116 |
| | Gross Weight(kg) | 70.5 | 123.5 | 73 | 126 |
| | Termial | M8 | | | |
| | Protocol(Optional) | CANBus/RS485/RS232 | | | |
| | SOC (Optional) | LED/LCD | | | |

## 24V/48V NMC 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

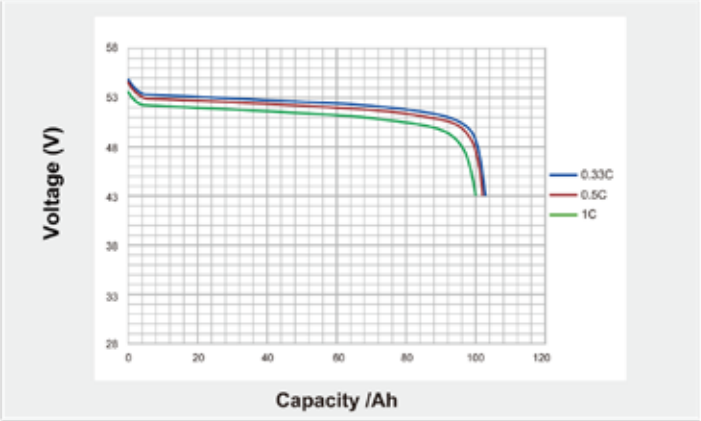
## Application Scenarios

## Product Parameters

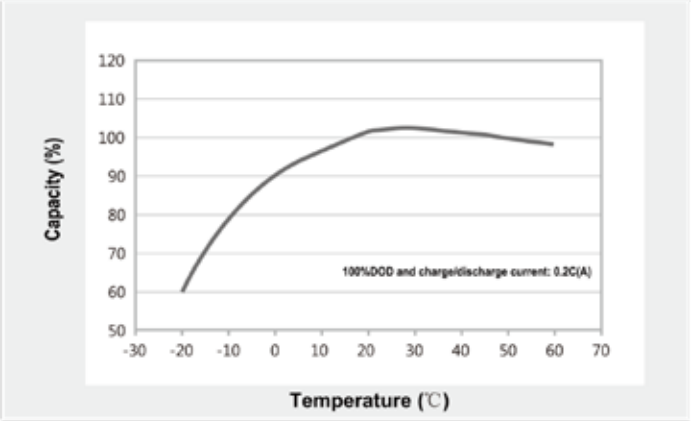
| | MODEL | ASP24100LW | ASP4850LW | ASP48100LW | ASP48120LW | ASP48200LW |
|---|---|---|---|---|---|---|
| Electrical Characteristics | Rate voltage(Vdc) | 24 | 48 | 48 | 48 | 48 |
| | Rate capacity(AH) | 100 | 50 | 100 | 120 | 200 |
| | Energy storage(KWH) | 2.59 | 2.4 | 4.8 | 5.76 | 9.6 |
| | Cycle life | ≥4000 cycles @ 85% DOD | | | | |
| | Months self discharge | ≤2% | | | | |
| | Efficiency of charge | 100% at 0.2C | | | | |
| | Efficiency of discharge | 96-99% at 1C | | | | |
| Standard Charge | Equalized Charge voltage | 54Vdc | | | | |
| | Float Charge Voltage | 53.6Vdc | | | | |
| | Charge mode | 0.2C to 54.4V, then 54.4V charge current to 0.02C (CC/CV) | | | | |
| | Charge current(A) | 20 | 10 | 20 | 24 | 40 |
| | Max. Charge current(A) | 60 | 30 | 60 | 72 | 120 |
| | Charge cut-off voltage(VDC) | 54.6 | | | | |
| Standard Discharge | Contiunous current(A) | 120 | 50 | 100 | 120 | 120 |
| | Discharge cut-off voltage(VDC) | 21.7 | 44 | | | |
| 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 | IP20 | | | | |
| Mechanical | Material system | NMC | | | | |
| | Case material | Mental | | | | |
| | Case Type | Rack/Wall Mount | | | | |
| | Pack Dimensions L*W*H(mm) | 375*340*147 | 375*471*147 | 590*375*245 | | |
| | Package Dimension L*W*H(mm) | 575*360*270 | 575*480*270 | 680*470*350 | | |
| | Net Weight(kg) | 24 | 41.5 | 78.8 | | |
| | Gross Weight(kg) | 26 | 43.5 | 81.5 | | |
| | Termial | M8 | | | | |
| | Protocol(Optional) | CANBus/RS485/RS232 | | | | |
| | SOC (Optional) | LED/LCD | | | | |

## Characteristic Curves

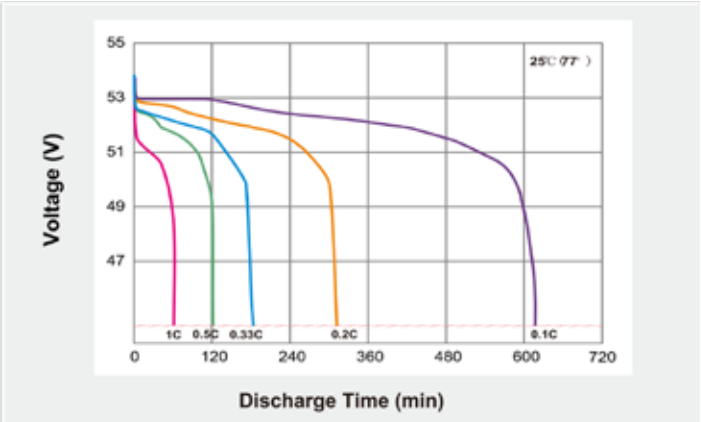
### Discharge Capacity in relation to Discharge Rate



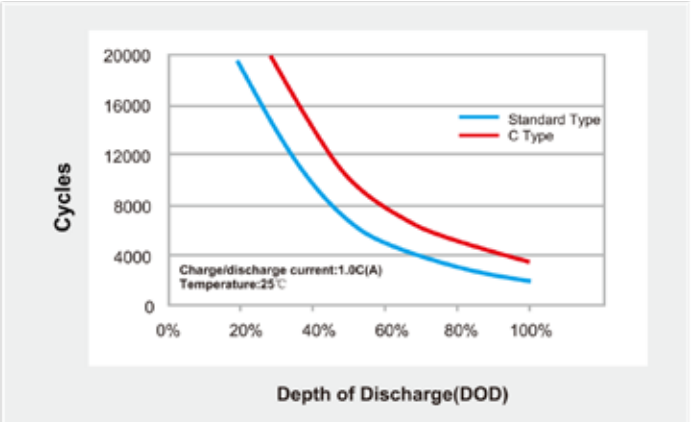

### Temperature Effect in relation to Battery Capacity



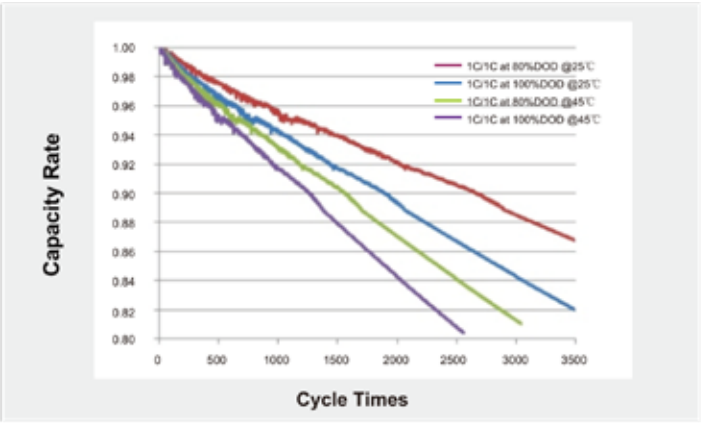

### Discharge Time in relation to Discharge Rate



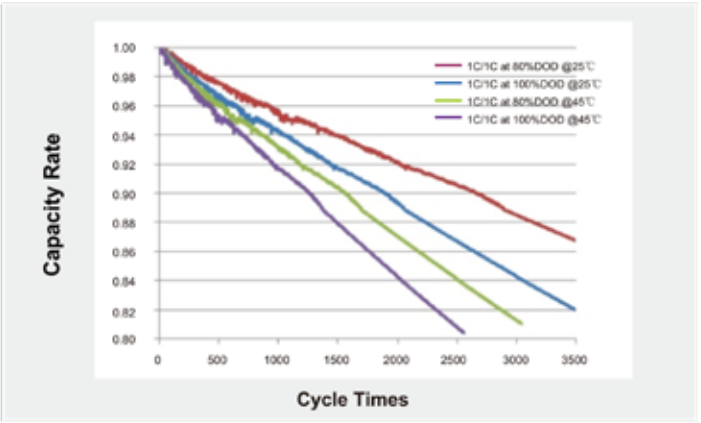

### Depth of Discharge in relation to Cycle Life




### 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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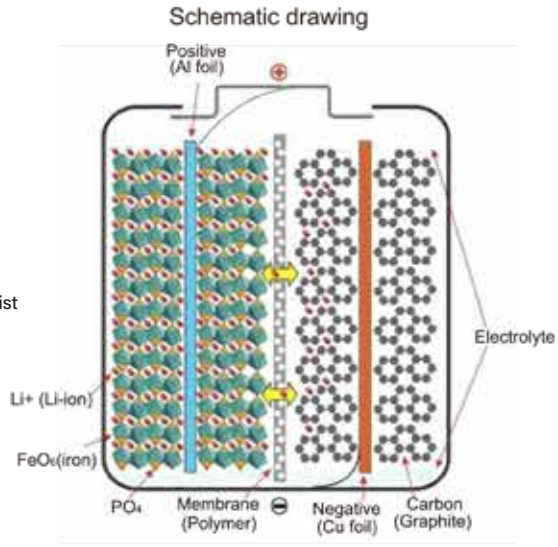
# Lifepo4 Battery Cell

Lithium iron Phosphate battery (LiFe PO4) has a nominal voltage of 48VDC. It is comprised by 16 cells of 3.2V each. The internal structure of LiFePO4 battery cell is shown in the figure on the right. Shown is the olivine structure of LiFePO4 as the positive electrode of cell. Aluminum foilt functions as 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 consist of graphite is shown in the right. Copper foil is the current collector of negative electrolyte. There is organic electrolyte in the cell which is sealed by Al-plasticcomposite 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.
- Good electromagnetics shielding.


## Advantages

- Environment-friendly, 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 Rack Mount Series


**Product features:**

Larger capacity supply equipment cabinet

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 | ASP4850LR | ASP4880LR | ASP48100LR | ASP48120LR | ASP48150LR | ASP48200LR |
|---|---|---|---|---|---|---|---|
| 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) | 451*450(492)*177 | 465*440(482)*191 | 490*440(482)*177 | 470*390*155 | 500*440(482)*260 | 590*375*245 |
| | Package Dimension L*W*H(mm) | 545*525*255 | 560*515*265 | 585*515*345 | 610*490*255 | 575*515*335 | 680*470*350 |
| | Net Weight(kg) | 37.2 | 39.9 | 41.6 | 39 | 76.2 | 78.8 |
| | Gross Weight(kg) | 40.4 | 41.1 | 45.4 | 42.2 | 79.6 | 81.5 |
| | Termial | M8 | | | | | |
| | Protocol(Optional) | CANBus/RS485/RS232 | | | | | |
| | SOC (Optional) | LED/LCD | | | | | |

## 48V LiFePO4 Rack Mount Series


**Product features:**

Larger capacity supply equipment cabinet

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 | ASP4850HR | ASP4880HR | ASP48100HR | ASP48120HR | ASP48150HR | ASP48200HR |
|---|---|---|---|---|---|---|---|
| Electrical Characteristics | Rate voltage(Vdc) | 51.2 | 51.2 | 51.2 | 51.2 | 51.2 | 51.2 |
| | Rate capacity(AH) | 50 | 80 | 100 | 120 | 150 | 200 |
| | Energy storage(KWH) | 2.56 | 4.096 | 5.12 | 6.144 | 7.68 | 10.24 |
| | 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 | 58.4 | | | | | |
| | Charge mode | 0.2C to 58.4V, then 58.4V,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) | 44.8 | | | | | |
| 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) | 451*450(492)*177 | 465*440(482)*191 | 490*440(482)*191 | 490*440(482)*191 | 490*442(484)*250 | 490*442*290 |
| | Package Dimension L*W*H(mm) | 545*525*255 | 560*515*265 | 585*515*345 | 585*515*345 | 575*515*325 | 600*600*325 |
| | Net Weight(kg) | 39 | 39.9 | 67.8 | 72 | 79 | 79 |
| | Gross Weight(kg) | 42 | 42.5 | 72 | 76 | 82 | 83.2 |
| | Termial | M8 | | | | | |
| | Protocol(Optional) | CANBus/RS485/RS232 | | | | | |
| | SOC (Optional) | LED/LCD | | | | | |

## 51.2V LiFePO4 Rack mount series


**Product features:**

Larger capacity supply equipment cabinet

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 | ASP24100LR | ASP4850LR | ASP48100LR | ASP48120LR | ASP48200LR |
|---|---|---|---|---|---|---|
| Electrical Characteristics | Rate voltage(Vdc) | 24 | 48 | 48 | 48 | 48 |
| | Rate capacity(AH) | 100 | 50 | 100 | 120 | 200 |
| | Energy storage(KWH) | 2.59 | 2.4 | 4.8 | 5.76 | 9.6 |
| | Cycle life | ≥4000 cycles @ 85% DOD | | | | |
| | Months self discharge | ≤2% | | | | |
| | Efficiency of charge | 100% at 0.2C | | | | |
| | Efficiency of discharge | 96-99% at 1C | | | | |
| Standard Charge | Equalized Charge voltage | 54Vdc | | | | |
| | Float Charge Voltage | 53.6Vdc | | | | |
| | Charge mode | 0.2C to 54.4V, then 54.4V charge current to 0.02C (CC/CV) | | | | |
| | Charge current(A) | 20 | 10 | 20 | 24 | 40 |
| | Max. Charge current(A) | 60 | 30 | 60 | 72 | 120 |
| | Charge cut-off voltage(VDC) | | 54.6 | | | |
| Standard Discharge | Contiunous current(A) | 120 | 50 | 100 | 120 | 120 |
| | Discharge cut-off voltage(VDC) | 21.7 | 44 | | | |
| 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 | IP20 | | | | |
| Mechanical | Material system | NMC | | | | |
| | Case material | Mental | | | | |
| | Case Type | Rack/Wall Mount | | | | |
| | Pack Dimensions L*W*H(mm) | 375*340*147 | | 375*471*147 | | 590*375*245 |
| | Package Dimension L*W*H(mm) | 575*360*270 | | 575*480*270 | | 680*470*350 |
| | Net Weight(kg) | 24 | | 41.5 | | 78.8 |
| | Gross Weight(kg) | 26 | | 43.5 | | 81.5 |
| | Termial | M8 | | | | |
| | Protocol(Optional) | CANBus/RS485/RS232 | | | | |
| | SOC (Optional) | LED/LCD | | | | |

## 25.6V LiFePO4 Rack mount series


**Product features:**

Larger capacity supply equipment cabinet

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 | ASP2450R | ASP24100R | ASP24120R | ASP24150R | ASP24200R |
|---|---|---|---|---|---|---|
| Electrical Characteristics | Rate voltage(Vdc) | 25.6 | 25.6 | 25.6 | 25.6 | 25.6 |
| | Rate capacity(AH) | 50 | 100 | 120 | 150 | 200 |
| | Energy storage(KWH) | 1.28 | 2.56 | 3.072 | 3.84 | 5.12 |
| | 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 | 29.2±0.2V | | | | |
| | Charge mode | 0.2C to 29.2V, then 29.2V,charge current to 0.02C (CC/CV) | | | | |
| | Charge current(A) | 10 | 20 | 24 | 30 | 40 |
| | Max. Charge current(A) | 50 | 100 | 120 | 150 | 200 |
| | Charge cut-off voltage(VDC) | 22.4 | | | | |
| Standard Discharge | Contiunous current(A) | 15 | 30 | 36 | 45 | 60 |
| | Discharge cut-off voltage(VDC) | 22.4 | | | | |
| 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 | | | | |
| | Pack Dimensions L*W*H(mm) | 325*440 (482) *137 | 475*450 (492) *133 | 470*440 (482) *177 | 471*440 (482) *266 | 471*440 (482) *266 |
| | Package Dimension L*W*H(mm) | 410*515*215 | 545*530*215 | 565*515*255 | 565*535*360 | 565*535*360 |
| | Net Weight(kg) | 16 | 36 | 37.5 | 42 | 66.5 |
| | Gross Weight(kg) | 18.5 | 38.5 | 40.5 | 45 | 69 |
| | Termial | M8 | | | | |
| | Protocol(Optional) | CANBus/RS485/RS232 | | | | |
| | SOC (Optional) | LED/LCD | | | | |

## BMS - Intelligent Monitoring System

For battery group and single series cells, it provides hardware and software protection functions such as over-voltage, under-voltage, charge-discharge over-current, high-low temperature and short circuit, etc. The system terminal recelves soC and SOH information through: RS485-1 and RS485-2 interfaces. It can calculate the present battery capacity by real-time monitoring voltage and current; makes relevant control and protection actions by monitoring various protection states; and has intelligent cell equalization function to improve the battery pack's effective use time and cycle life.

### Applications

Solar batteries, energy storage power station, UPS batteries, solar street lamps, etc.