

# SR-100-48 LiFePO4 Household Energy Storage Battery Pack Specification

## 1. Scope

This specification applies to MingHong Technology Co., Limited, design and development of the battery, it is the basis of product design, production and inspection. The role of understanding the quality of the product and the correct method of use.

## 2. Product photo

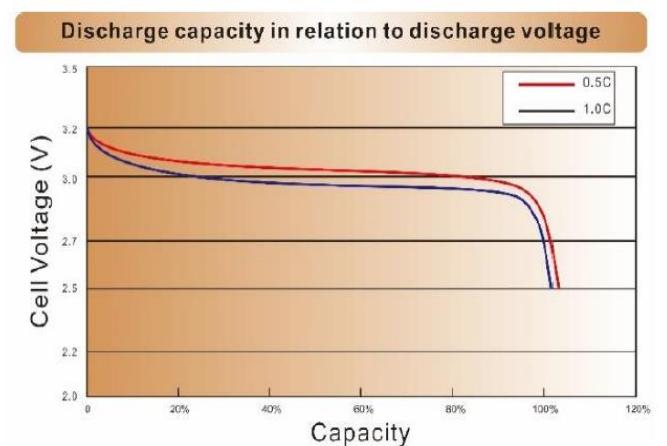
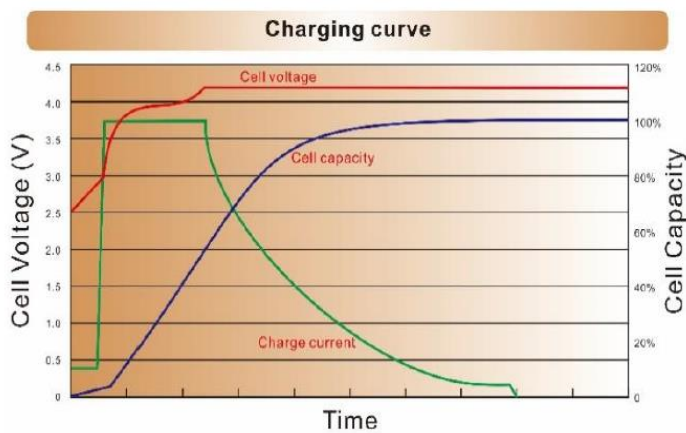
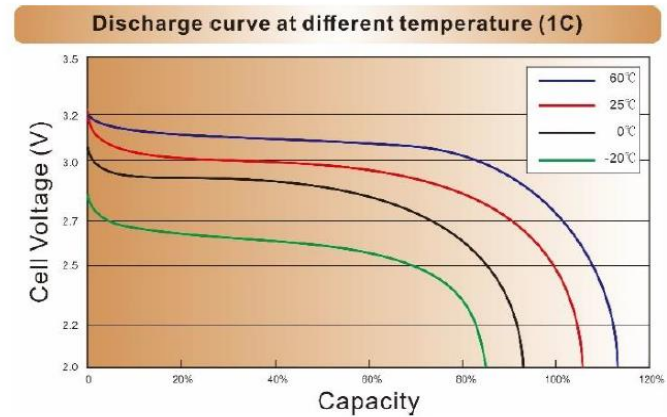
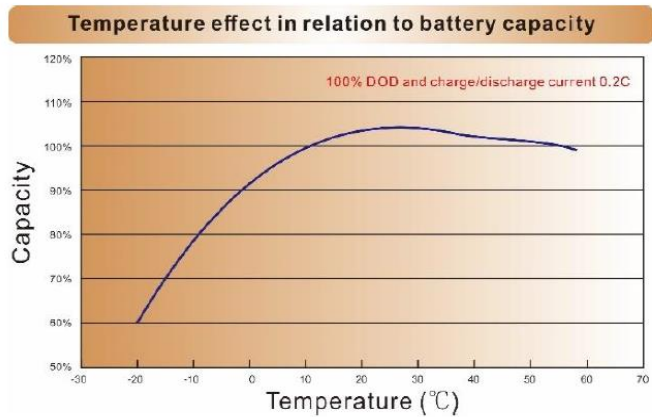
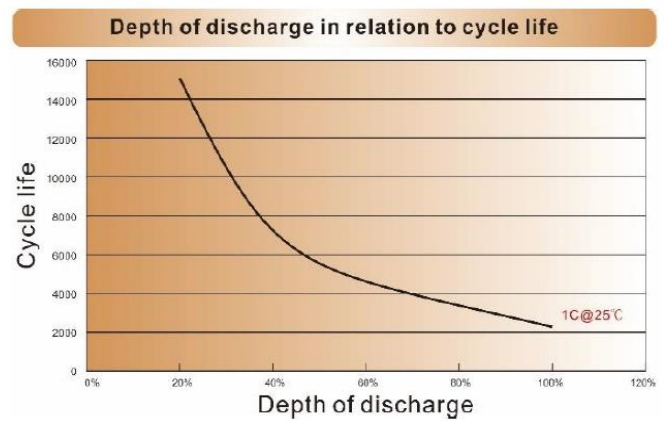
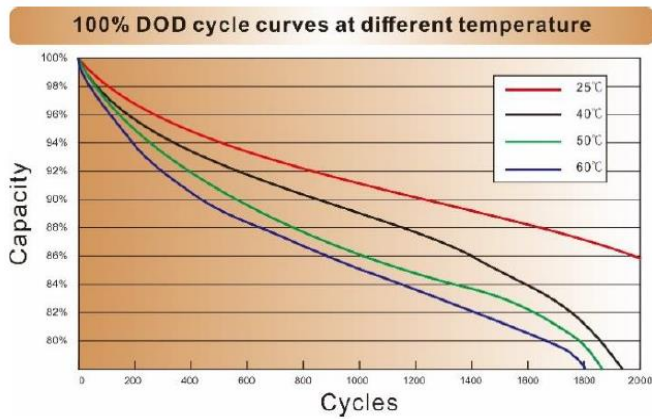


## 3. Normal Parameters

| No. | Item for Battery System              | General Parameter     | Remark |
|-----|--------------------------------------|-----------------------|--------|
| 1   | Model No#                            | SR-100-48             |        |
| 2   | Nominal Voltage                      | 51.20V                |        |
| 3   | Standard Capacity For Battery System | 100AH                 |        |
| 4   | Energy                               | 5.12KWH               |        |
| 5   | Cycle Life                           | 6000-8000 cycles      |        |
| 6   | Period Warranty                      | 5 years               |        |
| 7   | Short Circuit Protection             | Yes                   |        |
| 8   | Size ( L*W*H )                       | 490*450*178mm (L*W*H) |        |
| 9   | Limited Charge Voltage               | 58.40V ±0.1V          |        |
| 10  | Floating Charge Voltage              | 55.20V ±0.1V          |        |

|    |                                      |  |                    |
|----|--------------------------------------|--|--------------------|
| 11 | Standard Charge Current              | Constant current 0.1C,<br>Constant Voltage 58.4V,<br>0.01C cut-off | CC/CV              |
| 12 | Max. Charge Current                  | 50.0A  |                    |
| 13 | Cut-off Voltage                      | 44.80V   |                    |
| 14 | Max. Continuous Discharge Current    | 100.0A   |                    |
| 15 | Operating Temperature                | Charge   | 0~45°C, 45~85%RH   |
|    |                                      | Discharge  | -10~55°C, 45~85%RH |
| 16 | Weight                               | Approx. 55 Kg  |                    |
| 17 | Full voltage difference battery pack | ≤ 20mV   | Standard charging  |
| 18 | IP grade                             | IP55   |                    |

#### 4. Battery Standard Performance Summary Chart



#### 5. Cell Electrochemistry Characteristics Test

### 5.1 Electrochemistry Characteristics

| No. | Item   | Feature  | Measurement  |
|-----|--|--|--|
| 1   | Discharge performance under normal temperature | Discharge capacity/standard capacity×100%(A)0.2C ≥100%(B)0.5C ≥90% | (A) After standard charging, laying the battery 0.5~1.0h, then discharging at 0.2C to ending voltage, recording the discharging time.<br>(B) After standard charging, rest 5 minutes, then 0.5C discharge to ending voltage. |
| 2   | Storage charge under room temperature          | Resting capacity ≥Standard capacity *80%                           | After standard charged, on-hold for 28 days, discharged with 0.2C to ending voltage, then measure the residual capacity of battery, and examine the recover capacity with 0.2C/0.2C.   |
| 3   | Testing for cycle life                         | Capacity≥ Standard capacity *80%                                   | After charged with 0.1C current, then discharged with 0.2C to ending voltage. On-hold for 10mins, hence as above testing features are to cycle for 1000 times.   |
| 4   | Storage performance                            | On-hold for 1 month. Capacity≥92%                                  | After standard charged, under 25°C±5°C, on-hold for 1 month, then discharged with 0.2C to ending voltage, and measure residual capacity of battery.  |

### 5-2. Environmental Characteristics

| No. | Item                          | Feature | Measurement   |
|-----|-------------------------------|---------|---|
| 1   | Discharge at high temperature | ≥100min | After standard charging, laying the battery 2h at 55±2°C, then discharging at 0.2C to ending voltage, recording the discharging time.   |
| 2   | Discharge at low temperature  | ≥180min | After standard charging, laying the battery 16h at -10±2°C, then discharging at 0.2C to ending voltage, recording the discharging time. |

### 5.3 Safe performance

| No. | Item   | Feature                                    | Measurement   |
|-----|--|--|---|
| 1   | Over-charge performance                          | No fire, No exploding, No smoking obtained | After standard charge, the battery shall be charged at 0.1C, 58.4V for 8.0hour.   |
| 2   | Over-discharge performance                       | No fire, No exploding, No smoking obtained | After discharged to the cut-off voltage, the battery shall be subjected to a short-circuit condition with a load of resistance less than 30Ω for 24 hour.   |
| 3   | Short-circuit performance under room temperature | No fire, No exploding, No smoking obtained | After standard charged, put the cell/battery into the explosion-proof with glass cover to short the positive and the negative for the battery (the total impedance is less than 100mΩ) for 1 hour |

## 6. Protection Circuit

### 6.1 Electrical Characteristics

| No. | Parameter                 | Specifications    | Criterion           |
|-----|---------------------------|-------------------|---------------------|
| 1   | Over Charge Protection    | Protect voltage   | 3.65V±25mV /cell    |
|     |                           | renew voltage     | 3.60V±25mV /cell    |
| 2   | Over Discharge Protection | Protect voltage   | 2.8V±50mV /cell     |
|     |                           | Renew voltage     | 2.85V±0.1V /cell    |
|     |                           | Protect last time | 600mS±100mS (Max)   |
| 3   | Over Current              | Protect current   | MIN: 50A, MAX: 100A |

|   |   |                                  |                          |
|---|---|----------------------------------|--------------------------|
|   | Protection                              | Protect last time                | 130mS                    |
|   |   | Max continuous discharge current | 100.0 A                  |
|   |   | Protect release voltage          | Switch short circuit     |
| 4 | Short Circuit Protection                | Protect condition                | Exterior short circuit   |
|   |   | Protect last time                | 200-400μS (MAX)          |
|   |   | Protect relieve condition        | Switch off short circuit |
| 5 | Supply Current                          | Inner circuit consumption        | ≤80μA                    |
| 6 | Internal Resistance in normal Operation | Main loop electrify resistance   | B-P- RDS ≤40mΩ           |

**7. Transportation:**

Battery should shipped by container, prevent severe vibration, pressing, squeezing and exposing to the sun and rain during the transportation, ship by bus, train, ship and plane and so on.

**8. Storage:**

| Item                |                                | Criteria                    |
|---------------------|--------------------------------|-----------------------------|
| Storage Temperature | Short period less than 1 month | -10~45°C                    |
|                     | Long period less than 3 month  | -10~35°C                    |
|                     | Long period more than 3 month  | 0~30°C                      |
| Relative Humidity   |                                | ≤75%RH                      |
| Charged             |                                | About 40%~60% charged state |

The batteries should be stored at room temperature, charged to about 30%~50% of capacity. We recommend that batteries be charged about once per 1 month to prevent over discharge.

**9. Appearance & Output port:**



( 1. Output +                      2. Output -                      3. ON/OFF )



#### **10. Period of Warranty:**

The period of warranty is 5 year from the date of shipment. MSN Battery guarantees to give a replacement in case of cells with defects proven due to manufacturing process instead of the customer abuse and misuse.

#### **11. Warning!!!**

- 10.1. Never throw the battery into water, keep it under dry, shady and cool circumstance when not use.
- 10.2. Never keep the battery beside high temperature source examples: fire, heating machine and etc.
- 10.3. Never throw the battery into fire or heating machine.
- 10.4. Never connect the positive and negative of battery with metal.
- 10.5. Never ship or store the battery together with metal
6. Never knock, throw or trample the battery.