

12 V 315 Ah Lithium Iron Phosphate (LiFePO4) Li-ion Battery

PN: Li-315

Features

- ◆ Drop-in compatible for lead acid battery, maintenance free
- ◆ 200 A discharge; charges in 2 hours
- ◆ Safe: Lithium Iron Phosphate cells, no hazardous gases
- ◆ Thousands of cycles, to 100% DOD, under normal conditions
- ◆ Built-in protector BMS with cell balancing: over-charge, over-discharge, over-current and over-temperature
- ◆ Wide temperature range:-20 °C– 60 °C
- ◆ Five-year limited warranty
- ◆ Some battery components may be recycled or repurposed

Applications

- ◆ UPS
- ◆ Mobility
- ◆ Electric Vehicle, E-bike, E-Rickshaw etc.
- ◆ Lighting
- ◆ Leisure and Marine

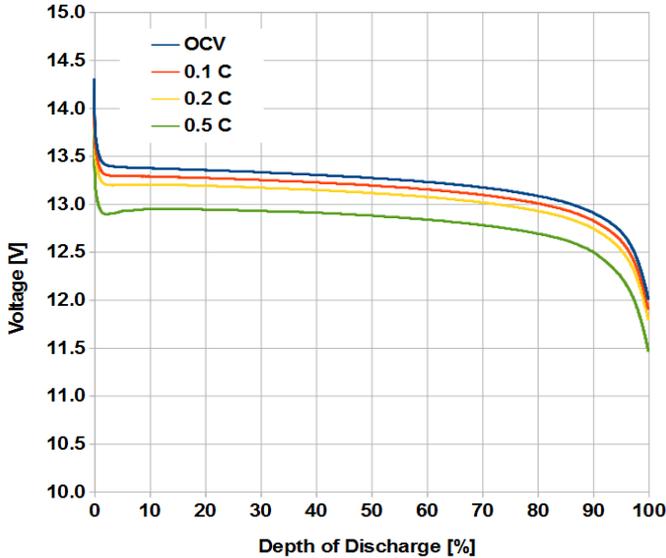


| Product specifications | | | Min | Nom | Max | |
|------------------------|-----------------------|---|-----------------|------|------|-----------|
| Electrical | Voltage | Open circuit, 2 hour relaxation | 12.0 | 13.3 | 14.4 | V |
| | Capacity | 1/20 C | | 315 | | Ah |
| | Energy | 1/20 C | | 4.0 | | kWh |
| | Internal resistance | 25 °C | | 2.5 | | mΩ |
| | Cycle life | 0.5C charging/discharging, 25 °C, to 90% of nominal capacity | | 2000 | | Cycles |
| | Self discharge | 25 °C | | | 3.5 | % / month |
| Mechanical | Dimension LWH | | 294 x 272 x 223 | | | mm |
| | Connection | | M8 Stud | | | - |
| | Mass | | | 30 | | Kg |
| | Ingress protection | Powder-coated steel enclosure | IP55 | | | - |
| Operating conditions | | | Min | Nom | Max | |
| CCCV charging | Constant current | CC stage ("bulk") | | | 157 | A |
| | Peak current | 10 s max | | | 197 | A |
| | Constant voltage {CV} | CV stage ("absorption"), until current drops below 5 A, 2 hr max | 13.7 | 13.8 | 14.4 | V |
| | Float voltage | | | 13.4 | 13.5 | V |
| | Temperature | | With heat pad | -10 | | 45 |
| Without heat pad | | | 0 | | 45 | °C |
| Discharging | Continuous current | | | | 200 | A |
| | Peak current | 10 s max | | | 210 | A |
| | Cut-off voltage | | | 11.2 | | V |
| | Temperature | | -20 | | 75 | °C |
| Environmental | Humidity | With heat pad | 35 | | 75 | % |

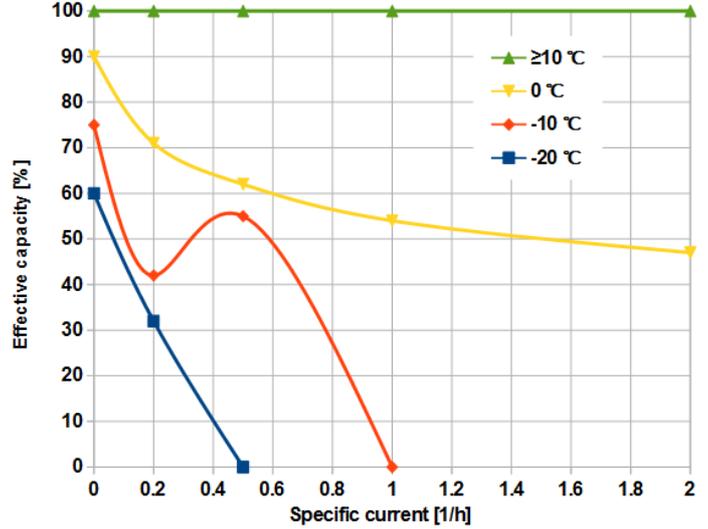
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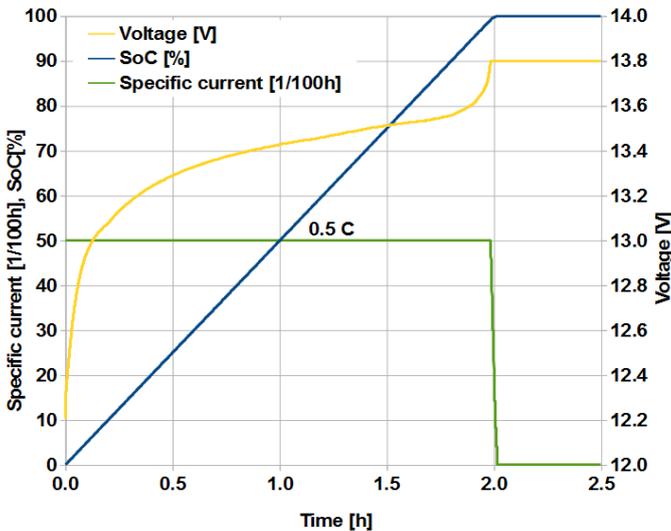
Discharge curves at various currents, 25 °C



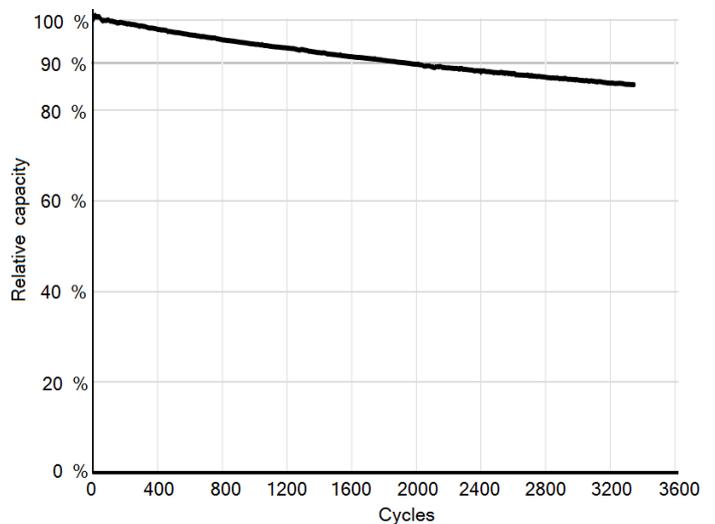
Effective capacity at various temperatures, currents



CCCV charge curve, @ recommended settings, 25 °C



Cycle life, 25 °C, 0.5 C



Battery care

- ◆ Storage:
 - ◆ Bring to ~50 % charge, then store in a cool, dry place
 - ◆ Do not drop
- ◆ Charging:
 - ◆ A CV stage that lasts too long degrades the battery rapidly
 - ◆ Stand-by applications: exceeding {CV} V degrades the battery
 - ◆ Charging is disabled below freezing; warm the battery first
 - ◆ Maximize capacity by regularly charging to the specified voltage
- ◆ Discharging:
 - ◆ If no voltage, the battery is off; charge it to wake it up

System design

- ◆ Though it may oriented in any direction, upright use is preferable
- ◆ Connect no more than 4 Batteries in Parallel.
- ◆ Do Not Connect in Series.

Refer to user manual for complete information.

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| Performance specifications* | | | Min | Nom | Max | |
|-----------------------------|-----------------------|--|------|-----|---------|-------|
| Electrical | Energy storage | 1-hour discharge, new | 3.35 | | | kWh |
| | | 10-hour discharge, new | 4.19 | | | kWh |
| | | Derating, 1 cycle per day | | | -0.0164 | %/day |
| | | Derating, 1 cycle every 2 days | | | -0.0123 | %/day |
| | | Derating, 1 cycle every week | | | -0.0094 | %/day |
| | | Derating, not cycled | | | -0.0082 | %/day |
| | Round-trip efficiency | 1-hour discharge, 2-hour charge, new | 96.5 | | | % |
| | | Derating, 1 cycle per day | | | -0.0055 | %/day |
| | | Derating, 1 cycle every 2 days | | | -0.0041 | %/day |
| | | Derating, 1 cycle every week | | | -0.0031 | %/day |
| | | Derating, not cycled | | | -0.0027 | %/day |
| | Self discharge | Powered off, 100 % SoC to 0 % SoC, new | | 2.3 | | years |
| | | Powered on, no load, 100 % SoC to 0 % SoC, new | | 23 | | days |

Relative energy, 25 °C, 100 % to 0 % cycles, ≤ 0.5 MW

