



# LP Series-General Purpose LP12-3.5(12V3.5Ah)

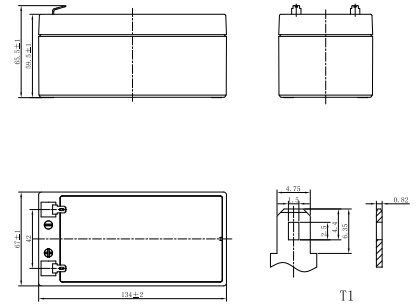


## Specifications

|                               |   |                                |
|-------------------------------|---|--------------------------------|
| Rated Voltage                 | 12V   |                                |
| Nominal Capacity              | 3.5Ah   | (C <sub>20</sub> , 1.75V/cell) |
| Dimension                     | Length  | 134±2mm (5.28 inches)          |
|                               | Width   | 67±1mm (2.64 inches)           |
|                               | Container Height  | 59.5±1mm (2.34 inches)         |
|                               | Total Height  | 65.5±1mm (2.58 inches)         |
| Approx Weight                 | 1.19 Kg (2.62 lbs)  |                                |
| Terminal                      | T1  |                                |
| Container Material            | ABS   |                                |
| Rated Capacity (25°C)         | 3.50 Ah   | (20hr, 0.175A, 1.75V/cell)     |
|                               | 3.31 Ah   | (10hr, 0.331A, 1.75V/cell)     |
|                               | 3.01 Ah   | (5hr, 0.602A, 1.75V/cell)      |
|                               | 2.62 Ah   | (3hr, 0.872A, 1.75V/cell)      |
|                               | 2.15 Ah   | (1hr, 2.15A, 1.60V/cell)       |
| Max. Discharge Current        | 53A (5s)  |                                |
| Internal Resistance (25°C)    | Approx 40mΩ   |                                |
| Operating Temp. Range         | Discharge   | -15 ~ 50°C (5 ~ 122°F)         |
|                               | Charge  | -20 ~ 40°C (-4 ~ 104°F)        |
|                               | Storage   | -15 ~ 40°C (5 ~ 104°F)         |
| Nominal Operating Temp. Range | 25±3°C (77±5°F)   |                                |
| Cycle Use                     | Initial Charging Current less than 1.05A. Voltage 14.4V~15.0V at 25°C(77°F)Temp. Coefficient -30mV/°C   |                                |
| Standby Use                   | Initial Charging Current less than 1.05A. Voltage 13.5V~13.8V at 25°C(77°F)Temp. Coefficient -20mV/°C   |                                |
| Effect of temp. to Capacity   | 40°C (104°F)  | 103%                           |
|                               | 25°C (77°F)   | 100%                           |
|                               | 0°C (32°F)  | 86%                            |
| Self Discharge                | LP series batteries may be stored for up to 6 months at 25°C(77°F) and then a freshening charge is required. For higher temperatures the time interval will be shorter. |                                |



## Layout



## Constant Current Discharge (Amperes) at 25 °C (77°F)

| F.V/Time   | 5min | 10min | 15min | 20min | 30min | 45min | 1h   | 1.5h | 2h   | 3h    | 4h    | 5h    | 6h    | 8h    | 10h   | 20h   |
|------------|------|-------|-------|-------|-------|-------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| 1.85V/cell | 10.6 | 7.36  | 5.72  | 4.66  | 3.43  | 2.47  | 1.94 | 1.45 | 1.15 | 0.845 | 0.681 | 0.586 | 0.502 | 0.396 | 0.323 | 0.171 |
| 1.80V/cell | 11.4 | 7.80  | 6.01  | 4.84  | 3.53  | 2.54  | 1.99 | 1.48 | 1.18 | 0.859 | 0.691 | 0.595 | 0.510 | 0.401 | 0.328 | 0.173 |
| 1.75V/cell | 12.0 | 8.11  | 6.21  | 4.98  | 3.62  | 2.59  | 2.03 | 1.50 | 1.20 | 0.872 | 0.700 | 0.602 | 0.516 | 0.406 | 0.331 | 0.175 |
| 1.70V/cell | 12.5 | 8.44  | 6.41  | 5.12  | 3.72  | 2.65  | 2.07 | 1.53 | 1.21 | 0.885 | 0.710 | 0.611 | 0.522 | 0.410 | 0.334 | 0.176 |
| 1.67V/cell | 13.0 | 8.67  | 6.57  | 5.23  | 3.78  | 2.69  | 2.10 | 1.55 | 1.23 | 0.894 | 0.717 | 0.616 | 0.527 | 0.413 | 0.337 | 0.178 |
| 1.60V/cell | 13.8 | 9.04  | 6.80  | 5.38  | 3.88  | 2.76  | 2.15 | 1.58 | 1.25 | 0.910 | 0.729 | 0.626 | 0.534 | 0.419 | 0.341 | 0.180 |

## Constant Power Discharge (Watts/cell) at 25 °C (77°F)

| F.V/Time   | 5min | 10min | 15min | 20min | 30min | 45min | 1h   | 1.5h | 2h   | 3h   | 4h   | 5h   | 6h   | 8h    | 10h   | 20h   |
|------------|------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|-------|-------|-------|
| 1.85V/cell | 20.0 | 14.0  | 11.0  | 8.97  | 6.62  | 4.79  | 3.78 | 2.82 | 2.26 | 1.66 | 1.34 | 1.16 | 0.99 | 0.784 | 0.643 | 0.342 |
| 1.80V/cell | 21.3 | 14.7  | 11.4  | 9.28  | 6.80  | 4.90  | 3.86 | 2.87 | 2.29 | 1.68 | 1.36 | 1.17 | 1.01 | 0.795 | 0.651 | 0.346 |
| 1.75V/cell | 22.2 | 15.2  | 11.7  | 9.48  | 6.94  | 4.99  | 3.93 | 2.92 | 2.33 | 1.71 | 1.38 | 1.19 | 1.02 | 0.803 | 0.657 | 0.350 |
| 1.70V/cell | 23.0 | 15.7  | 12.1  | 9.70  | 7.09  | 5.08  | 3.99 | 2.96 | 2.36 | 1.73 | 1.39 | 1.20 | 1.03 | 0.810 | 0.663 | 0.353 |
| 1.67V/cell | 23.6 | 16.1  | 12.3  | 9.88  | 7.20  | 5.15  | 4.04 | 2.99 | 2.38 | 1.74 | 1.40 | 1.21 | 1.04 | 0.816 | 0.668 | 0.356 |
| 1.60V/cell | 24.6 | 16.5  | 12.7  | 10.1  | 7.36  | 5.24  | 4.11 | 3.04 | 2.42 | 1.77 | 1.42 | 1.23 | 1.05 | 0.827 | 0.675 | 0.359 |



# LP Series-General Purpose LP12-3.5(12V3.5Ah)



## Applications

- All purpose
- Uninterruptable Power Supply (UPS)
- Electric Power System (EPS)
- Emergency backup power supply
- Alarm and security system
- Communication power supply
- DC power supply
- Auto control system

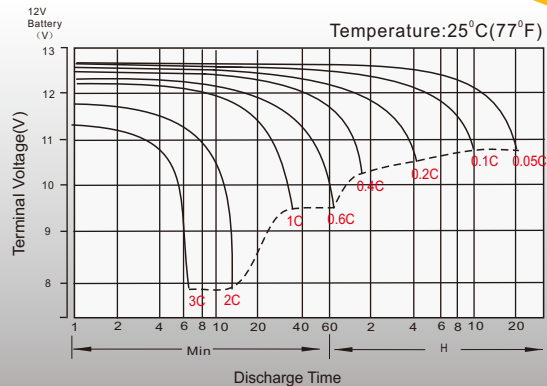
## General Features

- 5 years design life(25°C)
- Special exhaust structure and sealing technology, safe and reliable, flexible installation, convenient maintenance
- PbCaSn alloy for plate grids: less gassing, less self-discharging
- High quality AGM separator: extend cycle life and prevent micro short circuit
- High purity raw material: ensure low self discharge rate

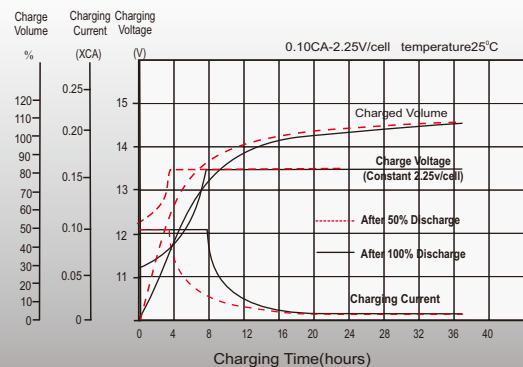
## Standards

- Compliance with IEC 60896 standards, EU Battery Directive
- UL, CE Certified
- Manufactured in Leoch®IATF16949, ISO45001,ISO 9001 and ISO 14001 certified production facilities

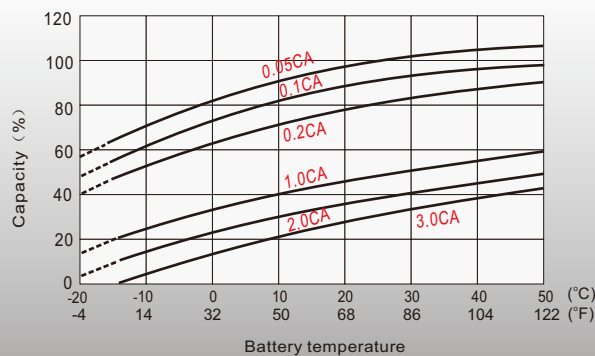
## Discharge Characteristics



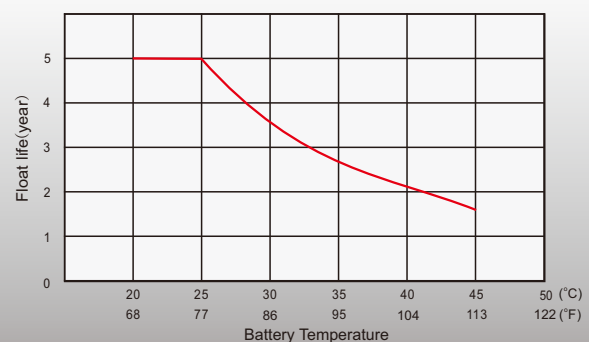
## Float Charging Characteristics



## Temperature Effects in Relation to Battery Capacity



## Effect of Temperature on Long Term Float Life



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