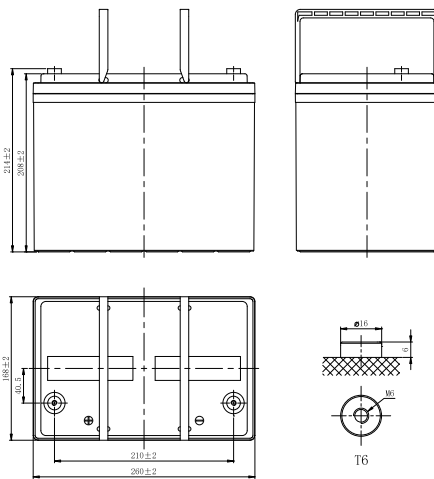


# LP SERIES-GENERAL PURPOSE

## LP12-60 (12V60Ah)



### CHARACTERISTICS

| Item                          | Specifications   |                     |
|-------------------------------|--|---------------------|
| Rated Voltage                 | 12V  |                     |
| Nominal Capacity (25°C)       | C <sub>10</sub> , 1.80V/cell   | 60Ah                |
| Dimension                     | Length   | 260mm (10.2inches)  |
|                               | Width  | 168mm (6.61inches)  |
|                               | Container Height   | 208mm (8.19inches)  |
|                               | Total Height   | 214mm (8.43inches)  |
| Approx Weight                 | 18.4kg (40.6lbs)   |                     |
| Terminal                      | T6(M6)   |                     |
| Container Material            | ABS (UL94 HB or V-0 optional)  |                     |
| Short-circuit current         | 1380A  |                     |
| Internal Resistance (25°C)    | Approx 7.4 mΩ (Fully charged)  |                     |
| 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)  |                     |
| Max. Charging Current (25°C)  | 0.3C   |                     |
| Charge voltage (25°C)         | Standby Use  | Cycle Use           |
|                               | 2.25-2.30V/cell  | 2.35-2.40V/cell     |
| Temp. Coefficient             | -3mV/cell/°C   |                     |
|                               | -5mV/cell/°C   |                     |
| Effect of temp. to Capacity   | 40°C (104°F)   | 103%                |
|                               | 25°C (77°F)  | 100%                |
|                               | 0°C (32°F)   | 86%                 |
| Self Discharge                | ≤3% per month at 25°C (77°F).<br>LP series batteries may be stored up to 6 months at 25°C (77°F) and then a freshening charge is required.<br>For higher temperatures the time interval will be shorter. |                     |

### DISCHARGE TABLE

| 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   | 119.8 | 85.2  | 76.2  | 59.9  | 53.6  | 38.8  | 33.2 | 24.0 | 20.2 | 14.8 | 11.6 | 10.1 | 8.90 | 6.85 | 5.67 | 3.01 |
| 1.80V/cell   | 136.3 | 96.7  | 86.3  | 67.7  | 58.3  | 41.1  | 34.4 | 24.9 | 20.9 | 16.1 | 12.4 | 10.6 | 9.56 | 7.20 | 6.00 | 3.12 |
| 1.75V/cell   | 148.0 | 104.9 | 93.5  | 73.1  | 59.5  | 42.6  | 36.1 | 26.1 | 22.0 | 16.4 | 12.7 | 10.8 | 9.64 | 7.24 | 6.03 | 3.15 |
| 1.70V/cell   | 158.3 | 111.8 | 99.3  | 77.5  | 60.7  | 43.4  | 36.8 | 26.7 | 22.4 | 16.7 | 12.9 | 11.0 | 9.69 | 7.35 | 6.06 | 3.18 |
| 1.67V/cell   | 163.8 | 115.4 | 102.2 | 79.7  | 61.6  | 44.1  | 37.3 | 27.1 | 22.7 | 16.9 | 13.1 | 11.2 | 9.73 | 7.45 | 6.14 | 3.22 |
| 1.60V/cell   | 169.6 | 119.3 | 105.3 | 81.7  | 62.5  | 44.7  | 37.9 | 27.4 | 23.1 | 17.0 | 13.2 | 11.4 | 9.80 | 7.55 | 6.21 | 3.26 |
| 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   | 223.8 | 160.3 | 149.4 | 118.0 | 106.0 | 74.6  | 66.5 | 48.3 | 40.7 | 30.0 | 23.6 | 20.6 | 17.6 | 14.1 | 11.7 | 6.20 |
| 1.80V/cell   | 250.4 | 179.3 | 167.1 | 132.0 | 114.5 | 78.5  | 68.5 | 49.7 | 41.8 | 32.4 | 25.1 | 21.6 | 18.8 | 14.8 | 12.2 | 6.42 |
| 1.75V/cell   | 267.2 | 191.4 | 178.3 | 140.9 | 115.9 | 80.8  | 71.5 | 52.0 | 43.9 | 33.0 | 25.5 | 21.9 | 18.9 | 14.8 | 12.3 | 6.48 |
| 1.70V/cell   | 280.9 | 201.2 | 187.5 | 148.1 | 117.3 | 81.9  | 72.6 | 52.8 | 44.6 | 33.5 | 25.9 | 22.2 | 19.0 | 15.0 | 12.4 | 6.54 |
| 1.67V/cell   | 285.5 | 204.5 | 190.5 | 150.5 | 118.1 | 82.6  | 73.2 | 53.3 | 45.0 | 33.6 | 26.2 | 22.5 | 19.0 | 15.2 | 12.6 | 6.61 |
| 1.60V/cell   | 289.5 | 207.3 | 193.2 | 152.6 | 118.6 | 83.0  | 73.8 | 53.7 | 45.4 | 33.8 | 26.4 | 22.8 | 19.1 | 15.3 | 12.7 | 6.68 |

# LP SERIES-GENERAL PURPOSE

## LP12-60 (12V60Ah)



### 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

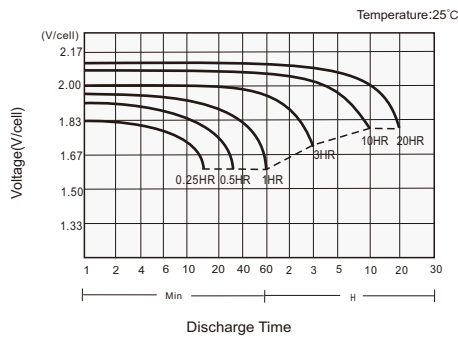
### GENERAL FEATURES

- 10 years design life (25°C)
- Lead calcium alloy, sealed design, no watering required
- Puncture resistant micro-porous glass mat separators extend life
- Unique technology optimizes power capacity, cell consistency, and long-term reliability
- Designed for a wide range of applications

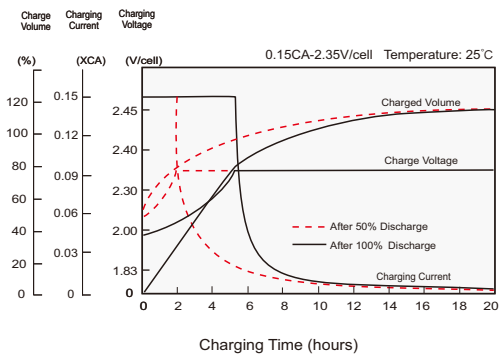
### STANDARDS

- Compliance with IEC 60896 standards, EU Battery Directive
- UL, CE Approved
- Manufactured in Leoch@IATF 16949, ISO 45001, ISO 9001 and ISO 14001 certified production facilities

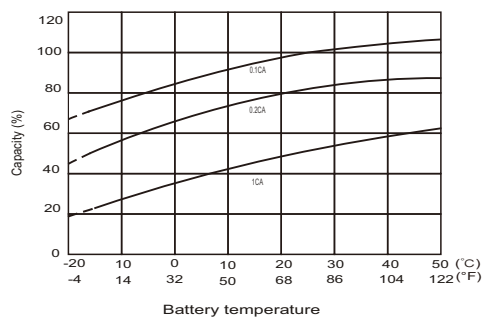
#### Discharge Characteristics



#### Charging Characteristics



#### Effects of Temperature on Capacity



#### Self Discharge Characteristics

