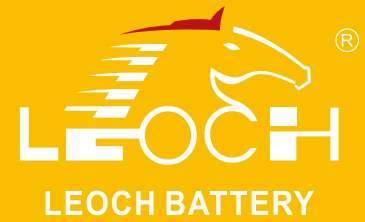




# LPL Series-Long Standby Life LPL12-28H(12V28Ah)

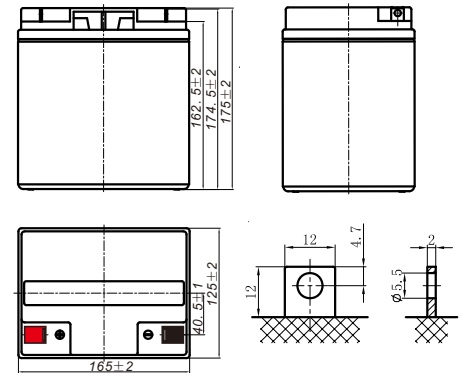


## Specifications

|                               |  |                                |
|-------------------------------|--|--------------------------------|
| Rated Voltage                 | 12V  |                                |
| Nominal Capacity              | 28.0Ah   | (C <sub>20</sub> , 1.75V/cell) |
| Dimension                     | Length   | 164±2mm (6.46 inches)          |
|                               | Width  | 125±2mm (4.92 inches)          |
|                               | Container Height   | 175±2mm (6.89 inches)          |
|                               | Total Height   | 175±2mm (6.89 inches)          |
| Approx Weight                 | 9.1 Kg (20.1 lbs)  |                                |
| Terminal                      | T3-A   |                                |
| Container Material            | ABS  |                                |
| Rated Capacity (25°C)         | 28.00 Ah   | (20hr, 1.40A, 1.75V/cell)      |
|                               | 26.30 Ah   | (10hr, 2.63A, 1.75V/cell)      |
|                               | 23.80 Ah   | (5hr, 4.76A, 1.75V/cell)       |
|                               | 21.69 Ah   | (3hr, 7.23A, 1.75V/cell)       |
|                               | 18.70 Ah   | (1hr, 18.7A, 1.60V/cell)       |
| Max. Discharge Current        | 420A (5s)  |                                |
| Internal Resistance (25°C)    | Approx 14.0mΩ  |                                |
| 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 8.4A. Voltage 14.4V~15.0V at 25°C(77°F)Temp. Coefficient -30mV/°C   |                                |
|                               | Initial Charging Current less than 8.4A. 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                | LPL 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)

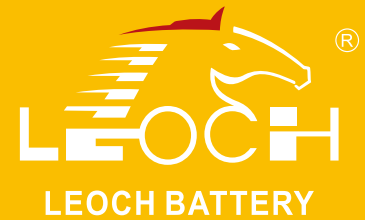
| F.V/Time   | 10min | 15min | 20min | 30min | 45min | 1h   | 2h   | 3h   | 4h   | 5h   | 6h   | 8h   | 10h  | 20h  |
|------------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|
| 1.85V/cell | 58.4  | 46.3  | 40.1  | 28.5  | 20.9  | 17.1 | 9.68 | 7.02 | 5.58 | 4.64 | 3.97 | 3.12 | 2.57 | 1.37 |
| 1.80V/cell | 61.4  | 48.1  | 41.3  | 29.2  | 21.3  | 17.4 | 9.83 | 7.13 | 5.66 | 4.70 | 4.02 | 3.16 | 2.60 | 1.39 |
| 1.75V/cell | 64.4  | 49.9  | 42.5  | 29.9  | 21.8  | 17.7 | 9.98 | 7.23 | 5.73 | 4.76 | 4.07 | 3.20 | 2.63 | 1.40 |
| 1.70V/cell | 67.4  | 51.7  | 43.8  | 30.6  | 22.2  | 18.0 | 10.1 | 7.34 | 5.81 | 4.83 | 4.13 | 3.24 | 2.66 | 1.41 |
| 1.65V/cell | 69.2  | 52.8  | 44.6  | 31.0  | 22.4  | 18.2 | 10.2 | 7.40 | 5.86 | 4.86 | 4.16 | 3.26 | 2.68 | 1.42 |
| 1.60V/cell | 73.4  | 55.2  | 46.3  | 32.0  | 23.0  | 18.7 | 10.4 | 7.55 | 5.97 | 4.95 | 4.23 | 3.31 | 2.72 | 1.44 |

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

| F.V/Time   | 10min | 15min | 20min | 30min | 45min | 1h   | 2h   | 3h   | 4h   | 5h   | 6h   | 8h   | 10h  | 20h  |
|------------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|
| 1.85V/cell | 111.7 | 89.0  | 77.1  | 55.1  | 40.6  | 33.3 | 18.9 | 13.8 | 11.0 | 9.16 | 7.85 | 6.19 | 5.11 | 2.74 |
| 1.80V/cell | 116.7 | 92.0  | 79.2  | 56.2  | 41.3  | 33.8 | 19.2 | 14.0 | 11.1 | 9.27 | 7.95 | 6.26 | 5.16 | 2.77 |
| 1.75V/cell | 121.8 | 94.8  | 81.1  | 57.3  | 41.9  | 34.3 | 19.4 | 14.2 | 11.3 | 9.38 | 8.03 | 6.33 | 5.22 | 2.80 |
| 1.70V/cell | 126.7 | 97.7  | 83.2  | 58.4  | 42.6  | 34.8 | 19.7 | 14.3 | 11.4 | 9.49 | 8.13 | 6.40 | 5.28 | 2.83 |
| 1.65V/cell | 129.7 | 99.5  | 84.4  | 59.1  | 43.0  | 35.0 | 19.8 | 14.4 | 11.5 | 9.55 | 8.18 | 6.44 | 5.32 | 2.84 |
| 1.60V/cell | 136.4 | 103.3 | 87.1  | 60.5  | 43.9  | 35.7 | 20.2 | 14.7 | 11.7 | 9.70 | 8.31 | 6.54 | 5.40 | 2.89 |



# LPL Series-Long Standby Life LPL12-28H(12V28Ah)



## Applications

- UPS and EPS
- Emergency light
- Railway signal and aircraft signal system
- Marine and power stations
- Alarm and security system
- Electronic apparatus and equipment
- Communication power supply, DC power supply

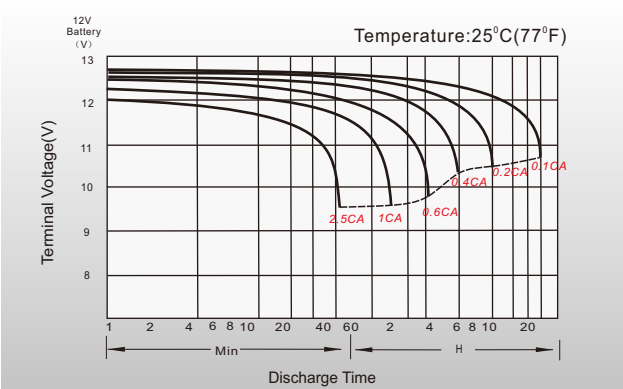
## General Features

- 10 ~ 12 years design life(20°C)
- Grid refining technology and the thicker plates are used to extend the battery standby life and reduce the plate grid corrosion speed
- Using oxygen recombination technology: maintenance-free
- Unique vent valve design: control water losing, prevent air and spark going inside

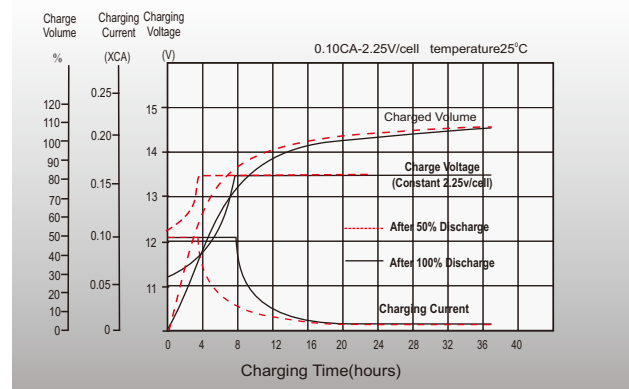
## Standards

- Compliance with IEC 60896 standards, EU Battery Directive
- UL, CE Certified
- Manufactured in Leoch@IATF16949, ISO 45001, ISO 9001 and ISO 14001 certified production facilities

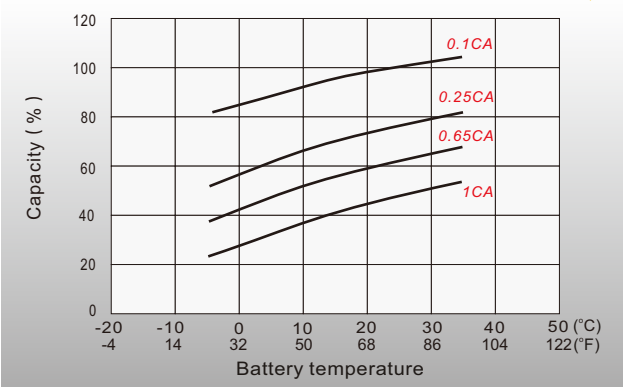
## Discharge Characteristics



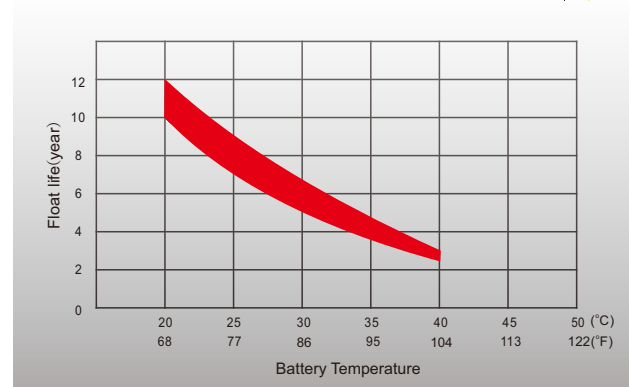
## Float Charging Characteristics



## Temperature Effects in Relation to Battery Capacity



## Effect of Temperature on Long Term Float Life



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