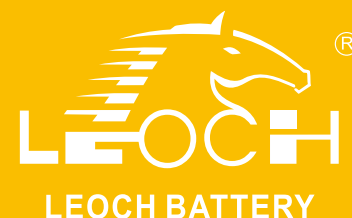




# LPL Series-Long Life Standby

## LPL2-450(2V450Ah)

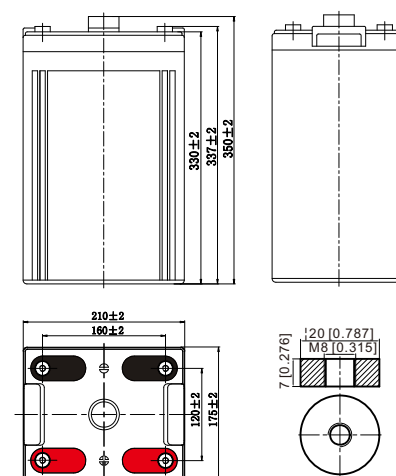


### Specifications

|                               |                                                                                                                                                                          |                                |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| Rated Voltage                 | 2V                                                                                                                                                                       |                                |
| Nominal Capacity              | 450.0Ah                                                                                                                                                                  | (C <sub>10</sub> , 1.80V/cell) |
| Dimension                     | Length                                                                                                                                                                   | 210±3mm (8.27 inches)          |
|                               | Width                                                                                                                                                                    | 175±2mm (6.89 inches)          |
|                               | Container Height                                                                                                                                                         | 330±3mm (12.99 inches)         |
|                               | Total Height                                                                                                                                                             | 350±3mm (13.78 inches)         |
| Approx Weight                 | 26.3 Kg (58.0 lbs)                                                                                                                                                       |                                |
| Terminal                      | M8                                                                                                                                                                       |                                |
| Container Material            | ABS or PP                                                                                                                                                                |                                |
| Rated Capacity (25°C)         | 480.0 Ah                                                                                                                                                                 | (20hr, 24.0A, 1.80V/cell)      |
|                               | 450.0 Ah                                                                                                                                                                 | (10hr, 45.0A, 1.80V/cell)      |
|                               | 399.5 Ah                                                                                                                                                                 | (5hr, 79.9A, 1.75V/cell)       |
|                               | 347.4 Ah                                                                                                                                                                 | (3hr, 115.8A, 1.75V/cell)      |
|                               | 270.3 Ah                                                                                                                                                                 | (1hr, 270.3A, 1.60V/cell)      |
| Max. Discharge Current        | 3600A (5s)                                                                                                                                                               |                                |
| Internal Resistance (25°C)    | Approx 0.65mΩ                                                                                                                                                            |                                |
| Operating Temp. Range         | Discharge                                                                                                                                                                | -15 ~ 50°C (5 ~ 122°F)         |
|                               | Charge                                                                                                                                                                   | 0 ~ 40°C (32 ~ 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 135.0A. Voltage                                                                                                                       |                                |
|                               | 2.4V~2.5V at 25°C(77°F)Temp. Coefficient -5mV/°C                                                                                                                         |                                |
| Standby Use                   | Initial Charging Current less than 135.0A. Voltage                                                                                                                       |                                |
|                               | 2.25V~2.30V at 25°C(77°F)Temp. Coefficient -3mV/°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 )

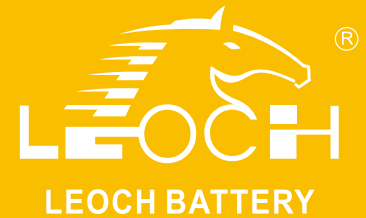
| F.V/Time   | 15min | 20min | 30min | 45min | 1h    | 2h    | 3h    | 4h   | 5h   | 6h   | 8h   | 10h  | 20h  |
|------------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|
| 1.85V/cell | 452.7 | 407.7 | 337.7 | 270.7 | 225.7 | 140.0 | 106.8 | 87.3 | 74.4 | 64.9 | 52.0 | 43.3 | 23.2 |
| 1.80V/cell | 514.5 | 454.1 | 362.3 | 284.8 | 236.0 | 146.3 | 112.1 | 91.2 | 77.5 | 67.9 | 54.2 | 45.0 | 24.0 |
| 1.75V/cell | 565.3 | 489.5 | 383.7 | 299.5 | 246.3 | 152.1 | 115.8 | 94.3 | 79.9 | 69.5 | 55.3 | 45.6 | 24.1 |
| 1.70V/cell | 603.5 | 523.7 | 402.6 | 310.8 | 254.9 | 158.2 | 119.4 | 96.4 | 81.2 | 70.7 | 56.3 | 46.1 | 24.4 |
| 1.65V/cell | 635.9 | 549.5 | 422.3 | 324.3 | 264.1 | 163.4 | 122.1 | 98.5 | 83.0 | 71.9 | 57.1 | 46.7 | 24.6 |
| 1.60V/cell | 666.6 | 569.7 | 436.8 | 333.0 | 270.3 | 166.5 | 124.2 | 99.8 | 84.2 | 72.9 | 57.9 | 47.3 | 24.8 |

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

| F.V/Time   | 15min  | 20min  | 30min | 45min | 1h    | 2h    | 3h    | 4h    | 5h    | 6h    | 8h    | 10h  | 20h  |
|------------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| 1.85V/cell | 857.1  | 775.5  | 645.3 | 520.5 | 436.6 | 272.2 | 208.7 | 171.3 | 146.5 | 128.3 | 103.1 | 86.2 | 46.2 |
| 1.80V/cell | 961.6  | 854.6  | 686.8 | 544.0 | 454.0 | 283.1 | 217.9 | 178.3 | 152.0 | 133.5 | 107.3 | 89.4 | 47.7 |
| 1.75V/cell | 1041.6 | 910.6  | 721.8 | 568.7 | 471.6 | 293.3 | 224.7 | 183.7 | 156.1 | 136.3 | 109.1 | 90.4 | 47.9 |
| 1.70V/cell | 1100.6 | 966.0  | 751.0 | 586.0 | 485.6 | 303.7 | 230.8 | 187.0 | 158.3 | 138.5 | 110.9 | 91.4 | 48.4 |
| 1.65V/cell | 1145.3 | 1002.6 | 781.9 | 608.1 | 500.2 | 312.3 | 234.9 | 190.4 | 161.2 | 140.4 | 112.3 | 92.4 | 48.8 |
| 1.60V/cell | 1180.7 | 1027.7 | 800.6 | 618.6 | 508.4 | 316.4 | 237.7 | 192.2 | 162.8 | 141.9 | 113.7 | 93.5 | 49.1 |



# LPL Series-Long Life Standby LPL2-450(2V450Ah)



## Applications

- Tele-communication central station (wired or cellular)
- Power system communication, military communication, etc.
- Network communication including: data transmission, television signal transmission, etc.
- Uninterruptable Power System (UPS- for Telecom)
- EPS

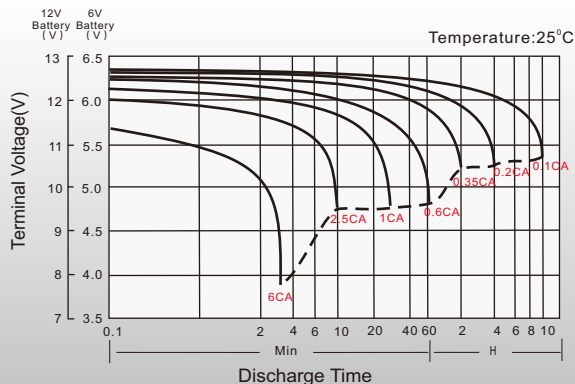
## General Features

- 20 years design life
- 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
- Can be operated in upright, side, or end mounting orientation

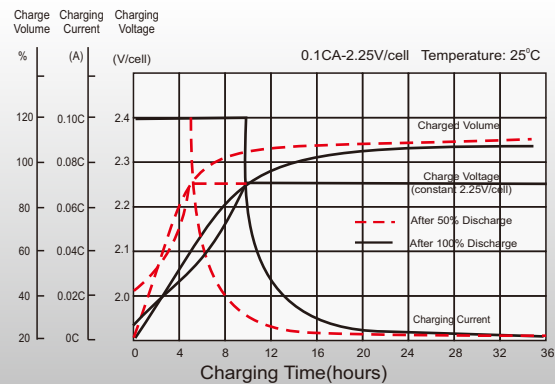
## Standards

- Compliance with IEC 60896 standards, EU Battery Directive
- UL, CE Certified
- Manufactured in Leoch@IATF16949, OHSAS 18001, ISO 9001 and ISO 14001 certified production facilities

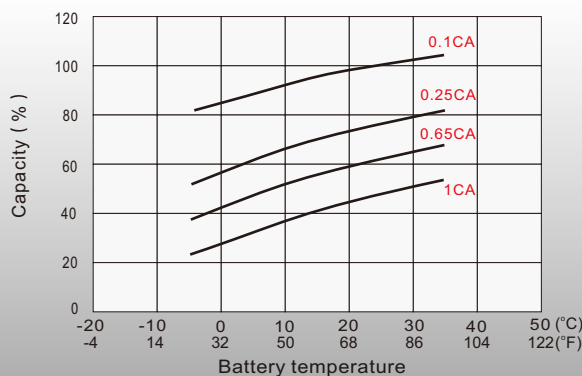
## Discharge Characteristics



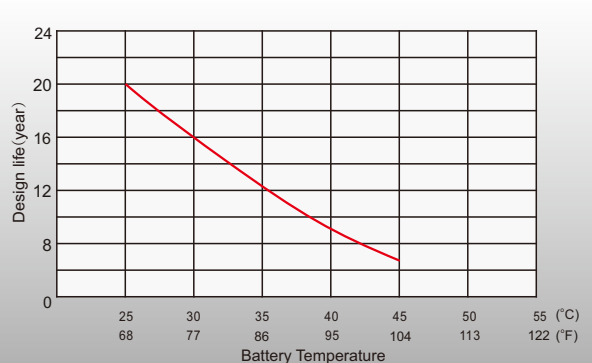
## Float Charging Characteristics



## Temperature Effects in Relation to Battery Capacity



## Design Life



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