



# PLH-Pure Lead Punched Grid PLH90FT(A) (12V90Ah)

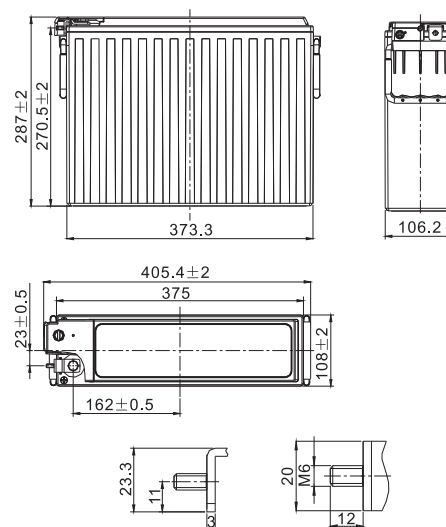


## Specifications

|                               |  |                           |
|-------------------------------|--|---------------------------|
| Rated Voltage                 | 12V  |                           |
| Nominal Capacity              | C <sub>10</sub> , 1.80V/cell   | 90Ah                      |
|                               | C <sub>8</sub> , 1.75V/cell  | 90Ah                      |
| Dimension                     | Length   | 405.4±3mm (15.96 inches)  |
|                               | Width  | 108±2mm (4.25 inches)     |
|                               | Container Height   | 287±3mm (11.30 inches)    |
|                               | Total Height   | 287±3mm (11.30 inches)    |
| Approx. Weight                | 28.7 Kg (63.3 lbs)   |                           |
| Terminal                      | M6   |                           |
| Container Material            | PC-ABS flame retardant jar and cover to UL94 V-0   |                           |
| Rated Capacity (25°C)         | 94.4 Ah  | (20hr, 4.72A, 1.80V/cell) |
|                               | 90.0 Ah  | (10hr, 9.00A, 1.80V/cell) |
|                               | 83.0 Ah  | (5hr, 16.6A, 1.75V/cell)  |
|                               | 80.4 Ah  | (3hr, 26.8A, 1.75V/cell)  |
|                               | 62.3 Ah  | (1hr, 62.3A, 1.67V/cell)  |
| Max. Discharge Current        | 1080A  |                           |
| Internal Resistance (25°C)    | Approx. 4.6mΩ(Fully charged)   |                           |
| Operating Temp. Range         | Discharge  | -40 ~ 65°C (-40 ~ 149°F)  |
|                               | Charge   | 0 ~ 40°C (32 ~ 104°F)     |
|                               | Storage  | -20 ~ 40°C (-4 ~ 104°F)   |
| Nominal Operating Temp. Range | 25±3°C (77±5°F)  |                           |
| Max. Charging Current(25°C)   | 27.0A  |                           |
| Charge voltage(25°C)          | Float  | 13.62V                    |
|                               | Temp. Coefficient  | -3mV/cell/°C              |
|                               | Equalization   | 14.1~14.4V                |
| Effect of temp. to Capacity   | 40°C (104°F)   | 103%                      |
|                               | 25°C (77°F)  | 100%                      |
|                               | 0°C (32°F)   | 86%                       |
| Self Discharge                | <p>PLH series batteries can be stored up to 24 months at 25°C(77°F), For higher temperatures the time interval will be shorter.</p> <p>Battery needs to be given a freshening charge when the OCV approach 2.10V/cell or when the maximum storage time is reached, whichever occurs first.</p> |                           |



## Layout



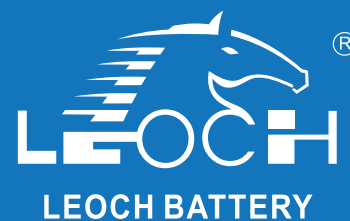
Unit: mm

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

| F.V/Time   | 10 min | 15min | 20min | 30min | 45min | 1h   | 2h   | 3h   | 4h   | 5h   | 8h   | 10h  | 20h  |
|------------|--------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|
| 1.85V/cell | 174.2  | 145.4 | 124.6 | 99.2  | 74.3  | 54.7 | 35.3 | 25.1 | 20.1 | 16.2 | 10.7 | 8.92 | 4.61 |
| 1.80V/cell | 195.8  | 162.6 | 134.8 | 104.0 | 78.6  | 57.0 | 36.6 | 26.1 | 20.3 | 16.4 | 11.0 | 9.00 | 4.72 |
| 1.75V/cell | 213.0  | 171.4 | 144.2 | 110.8 | 82.2  | 59.1 | 37.7 | 26.8 | 20.6 | 16.6 | 11.3 | 9.18 | 4.77 |
| 1.70V/cell | 227.4  | 181.3 | 151.8 | 115.2 | 85.1  | 60.6 | 38.4 | 27.0 | 20.8 | 16.7 | 11.3 | 9.36 | 4.84 |
| 1.67V/cell | 242.4  | 188.6 | 155.6 | 119.3 | 86.4  | 62.3 | 38.9 | 27.8 | 21.0 | 17.2 | 11.5 | 9.72 | 4.88 |
| 1.60V/cell | 256.0  | 197.4 | 161.6 | 120.4 | 88.1  | 63.4 | 39.2 | 28.1 | 21.1 | 17.5 | 11.7 | 9.90 | 4.96 |

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

| F.V/Time   | 10 min | 15min | 20min | 30min | 45min | 1h    | 2h   | 3h   | 4h   | 5h   | 8h   | 10h  | 20h  |
|------------|--------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|
| 1.85V/cell | 332.3  | 278.1 | 239.8 | 193.1 | 146.8 | 108.4 | 70.4 | 50.3 | 40.4 | 32.7 | 21.7 | 18.2 | 9.42 |
| 1.80V/cell | 367.5  | 306.9 | 256.8 | 201.1 | 154.5 | 112.3 | 72.5 | 52.1 | 40.7 | 33.0 | 22.2 | 18.3 | 9.62 |
| 1.75V/cell | 395.8  | 320.5 | 272.5 | 212.6 | 160.3 | 115.9 | 74.3 | 53.1 | 41.2 | 33.3 | 22.8 | 18.6 | 9.69 |
| 1.70V/cell | 416.1  | 334.9 | 284.1 | 219.2 | 165.0 | 118.1 | 75.2 | 53.2 | 41.4 | 33.4 | 22.7 | 18.9 | 9.82 |
| 1.67V/cell | 439.2  | 344.9 | 288.7 | 226.0 | 166.9 | 121.0 | 76.0 | 54.5 | 41.7 | 34.3 | 23.1 | 19.5 | 9.88 |
| 1.60V/cell | 451.5  | 353.4 | 295.0 | 225.2 | 168.3 | 122.0 | 75.8 | 54.6 | 41.5 | 34.6 | 23.3 | 19.8 | 10.0 |



# PLH-Pure Lead Punched Grid PLH90FT(A) (12V90Ah)

## Applications

- Telecommunication
- Railway signal
- Alarm and security system
- Power station systems
- Emergency power supply

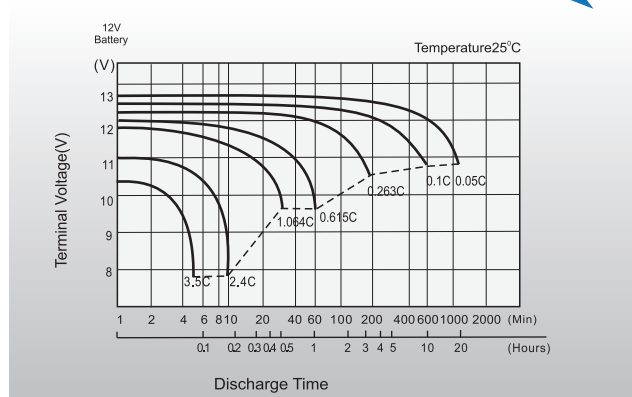
## General Features

- 20 years design life(25°C)
- Premium ABS+PC jar & covers, Flame Retardant to UL94 V-0
- High-rate performance, high energy density
- High quality AGM separators minimize electrical resistance to allow high current discharging properties

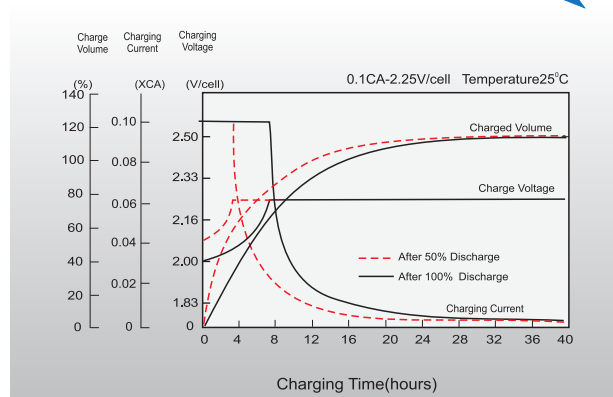
## Standards

- Meets Telcordia® NEBS™ Level III, GR63 Requirements
- Classified as "Very Long Life" according to Eurobat IEC 60896-21 & 22
- CE, UL Certified
- Manufactured in LEOCH® IATF16949, OSHAS 18001, ISO 9001 and ISO 14001 Certified Production Facilities

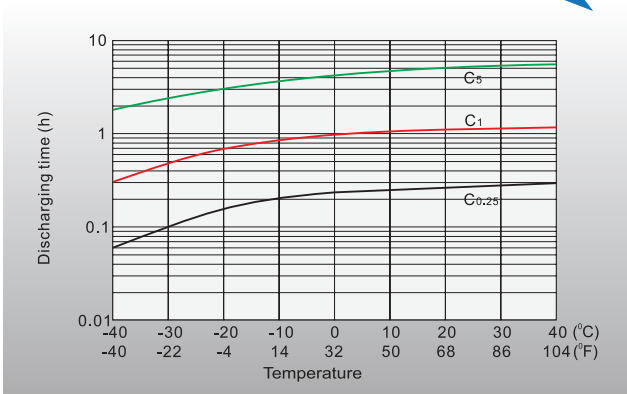
## Discharge Characteristics



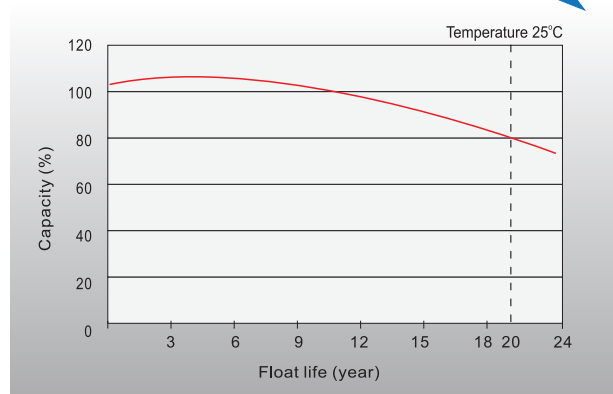
## Float Charging Characteristics



## Effects of Temperature on Discharging Time



## Float Life



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