

# HRL Series

## HRL12-440W 12V98Ah

Sacred Sun HRL batteries adopt new appearance and constructure design, automatic welding+through the partition welding+heat sealing technology, full automatic production process with good consistency. It has excellent high power discharge, long floating backup time and fast charging performance. It can be widely used in data center, UPS, IDC room.

### Benefits

- Very long life according to EUROBAT Classification
- High power density, 30% higher than ordinary batteries
- Special lead paste formula and additives improve the battery service life
- Maximum charge efficiency
- Low self-discharge rate
- Wide range of power, easy sizing of batteries
- Easy installation and handling

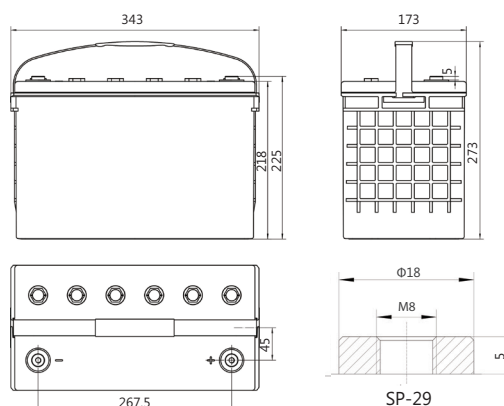
### Applications

- Data center
- UPS
- IDC room
- Emergency power
- HVDC system

### Standards

- IEC 60896-21/22
- JIS C8704-1/2
- EUROBAT guide

### Drawing



### Specifications

|                                      |                                                          |               |                       |                   |
|--------------------------------------|----------------------------------------------------------|---------------|-----------------------|-------------------|
| Battery Model                        | HRL12-440W                                               |               |                       |                   |
| Design Life (years, 25°C)            | 15                                                       |               |                       |                   |
| Capacity (Ah, 25°C)                  | 10min (1.60V)                                            | 15min (1.67V) | 1HR (64.2A, 1.70V)    | 10HR(9.8A, 1.80V) |
|                                      | 550W/cell                                                | 440W/cell     | 64.2                  | 98                |
| Dimensions (mm)                      | Length                                                   | Width         | Height                | Total Height      |
|                                      | 343                                                      | 173           | 218                   | 225               |
| Approx. Weight (kg)                  | 33                                                       |               |                       |                   |
| Reference Internal Resistance (mΩ)   | 2.3±15%( full charged @ 25°C,testing device:HIOKIBT3562) |               |                       |                   |
| Maximum Discharge Current (A/3 Sec.) | 1270                                                     |               |                       |                   |
| Self-Discharge (25°C)                | ≤ 2% per month                                           |               |                       |                   |
| Charge Voltage (V/cell, 25°C)        | Cycle use                                                |               | Float use             |                   |
|                                      | 2.35 (-3.5mV/°C/cell), max charge current:24.5A          |               | 2.25 (-3.5mV/°C/cell) |                   |
| Short Circuit Current (A)            | 4200                                                     |               |                       |                   |

## Discharge Data

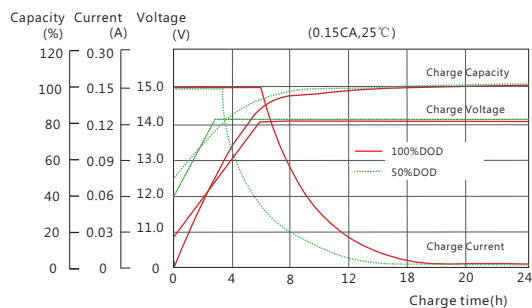
Constant Power Discharge Data (25°C, W/cell)

| End Voltage (V/cell) | min |     |     |     |     |     |     | h   |      |      |      |      |      |      |      |      |
|----------------------|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
|                      | 5   | 10  | 15  | 20  | 25  | 30  | 45  | 1   | 1.5  | 2    | 3    | 4    | 5    | 6    | 8    | 10   |
| 1.60                 | 725 | 550 | 450 | 360 | 300 | 245 | 188 | 130 | 107  | 83.0 | 59.0 | 45.4 | 37.8 | 32.6 | 25.8 | 21.2 |
| 1.65                 | 710 | 545 | 445 | 354 | 296 | 240 | 186 | 128 | 106  | 82.3 | 58.6 | 45.0 | 37.6 | 32.4 | 25.6 | 21.0 |
| 1.67                 | 700 | 540 | 440 | 348 | 290 | 238 | 183 | 126 | 105  | 81.7 | 58.2 | 44.7 | 37.4 | 32.2 | 25.5 | 20.8 |
| 1.70                 | 690 | 530 | 430 | 343 | 286 | 234 | 180 | 124 | 103  | 81.0 | 57.7 | 44.3 | 37.0 | 31.8 | 25.2 | 20.6 |
| 1.75                 | 660 | 515 | 410 | 327 | 272 | 224 | 173 | 120 | 100  | 79.2 | 56.4 | 43.3 | 36.3 | 31.2 | 24.7 | 20.3 |
| 1.80                 | 620 | 480 | 380 | 307 | 256 | 212 | 164 | 114 | 96.5 | 77.0 | 55.0 | 42.0 | 35.3 | 30.5 | 24.0 | 19.8 |

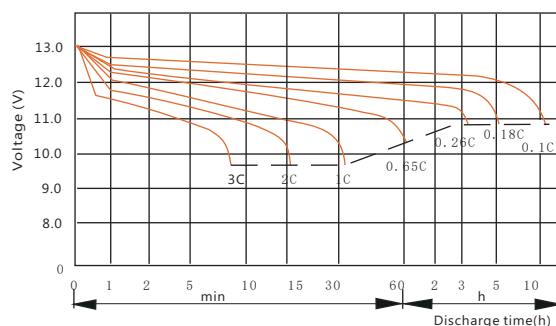
Constant Current Discharge Data (25°C, A)

| End Voltage (V/cell) | min |     |     |     |     |     |      | h    |      |      |      |      |      |      |      |      |
|----------------------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|
|                      | 5   | 10  | 15  | 20  | 25  | 30  | 45   | 1    | 1.5  | 2    | 3    | 4    | 5    | 6    | 8    | 10   |
| 1.60                 | 420 | 324 | 254 | 198 | 163 | 130 | 99.3 | 67.8 | 55.3 | 42.8 | 30.4 | 23.4 | 19.4 | 16.7 | 13.2 | 10.8 |
| 1.65                 | 400 | 317 | 248 | 194 | 160 | 128 | 97.4 | 66.5 | 54.5 | 42.4 | 30.0 | 23.0 | 19.2 | 16.5 | 13.0 | 10.7 |
| 1.67                 | 390 | 310 | 244 | 190 | 157 | 126 | 95.8 | 65.5 | 53.8 | 42.0 | 29.8 | 22.8 | 19.0 | 16.4 | 12.8 | 10.6 |
| 1.70                 | 380 | 304 | 238 | 186 | 153 | 124 | 93.7 | 64.2 | 52.8 | 41.4 | 29.4 | 22.6 | 18.8 | 16.2 | 12.7 | 10.5 |
| 1.75                 | 360 | 288 | 224 | 175 | 144 | 117 | 88.8 | 61.2 | 50.8 | 40.2 | 28.6 | 21.8 | 18.3 | 15.7 | 12.4 | 10.2 |
| 1.80                 | 340 | 268 | 208 | 162 | 133 | 108 | 83.3 | 57.7 | 48.5 | 38.7 | 27.5 | 21.0 | 17.6 | 15.2 | 12.0 | 9.8  |

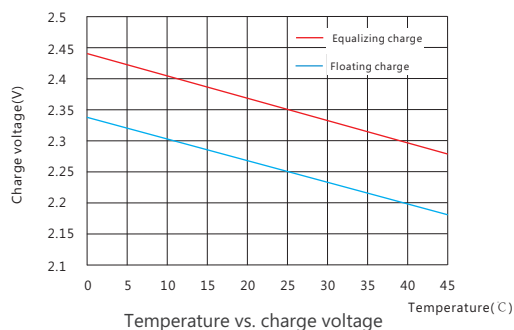
## Performance Curve



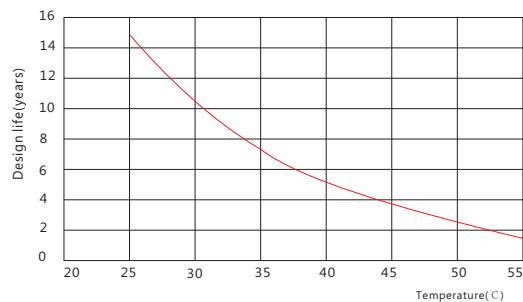
Charge performance



Discharge voltage vs. discharge time



Temperature vs. charge voltage



Design life vs. temperature

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