

## OPzS Deep Cycle Tubular Flooded Battery

## OPzS2-350

**CSPower OPzS** series is flooded Lead Acid battery that adopts Tubular Plate technology to offer high reliability and performance. The Battery is designed and manufactured according to standards and with DIN40736-2/IEC60896-11 positive spine and patent formula of die-casting active material. OPzS series exceeds standard values with more DIN40736-2/IEC60896-11 than 20 years floating design even more suitable for life at 25°C and is cyclic use(PV/solar, traction etc) under extreme operating conditions.

2V  
350Ah

Flooded  
Technology

Tubular  
Plate



### Applications

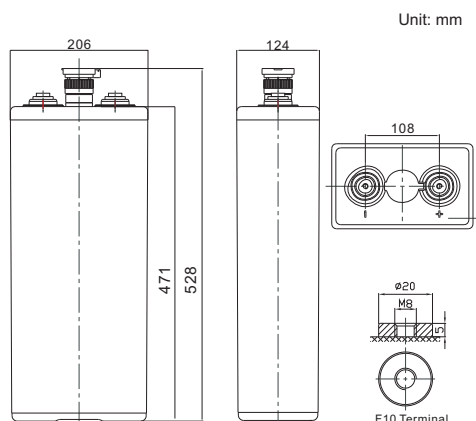
- Solar & Wind Power system
- Nuclear power station
- Telecom backup power supply
- energy saving requirements
- Emergency Power System

### General Features

- ✓ It can discharge at -40°C~70°C, Charge at 0~50°C
- ✓ Long life expectancy of 20+ years in floating condition
- ✓ Adopts quality silicon nano gel electrolyte
- ✓ Excellent deep discharge recovery capability
- ✓ Deep cycle performance: up to 3300

### Dimensions & Weight

### Technical Specifications



|              |                       |
|--------------|-----------------------|
| Length       | 124±1mm (4.88 inches) |
| Width        | 206±1mm (8.11 inches) |
| Height       | 471±1mm (18.5 inches) |
| Total Height | 528±1mm (20.8 inches) |
| Torque Value | 10~12 N·m             |

|                                           |                                                                                                                                                                                                                        |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Cells Per Unit</b>                     | 1                                                                                                                                                                                                                      |
| <b>Voltage Per Unit</b>                   | 2                                                                                                                                                                                                                      |
| <b>Nominal Capacity</b>                   | 350Ah@10hr-rate to 1.85V per cell @25°C                                                                                                                                                                                |
| <b>Weight</b>                             | Without Electrolyte 20.5kg/With Electrolyte 26.7kg                                                                                                                                                                     |
| <b>Internal Resistance</b>                | Approx. 0.65 mΩ                                                                                                                                                                                                        |
| <b>Terminal</b>                           | F10(M8)                                                                                                                                                                                                                |
| <b>Max. Discharge Current</b>             | 1600A (5 sec)                                                                                                                                                                                                          |
| <b>Design Life</b>                        | 20 years (floating charge)                                                                                                                                                                                             |
| <b>Maximum Charging Current</b>           | 52.50 A                                                                                                                                                                                                                |
| <b>Reference Capacity</b>                 | C24 419.0AH<br>C48 437.5AH<br>C72 455.0AH<br>C100 472.5AH<br>C120 490.0AH<br>C240 507.5AH                                                                                                                              |
| <b>Float Charging Voltage</b>             | 2.23 V~2.25 V @ 25°C<br>Temperature Compensation: -3mV/°C/Cell                                                                                                                                                         |
| <b>Cycle Use Voltage</b>                  | 2.40 V~2.45 V @ 25°C<br>Temperature Compensation: -4mV/°C/Cell                                                                                                                                                         |
| <b>Operating Temperature Range</b>        | Discharge: -15°C~50°C<br>Charge: 0°C~40°C<br>Storage: -15°C~50°C                                                                                                                                                       |
| <b>Normal Operating Temperature Range</b> | 25°C±5°C                                                                                                                                                                                                               |
| <b>Self Discharge</b>                     | Valve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25°C and then recharging is recommended. Monthly Self-discharge ratio is less than 3.5% at 25°C. Please charged batteries before using. |
| <b>Container Material</b>                 | A.B.S. UL94-HB, UL94-V0 Optional.                                                                                                                                                                                      |

### Battery Discharge Table

### Discharge Constant Current per Cell (Amperes at 25° C)

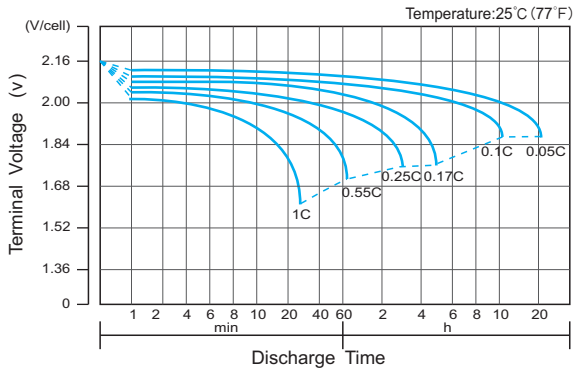
| F.V/ Time | 30min | 1h    | 2h    | 3h    | 4h    | 5h    | 6h    | 8h    | 10h   | 20h   |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1.90V     | 186.2 | 147.6 | 104.1 | 79.34 | 62.84 | 55.86 | 48.88 | 38.14 | 32.71 | 18.81 |
| 1.87V     | 208.2 | 162.8 | 111.7 | 84.47 | 66.33 | 59.08 | 51.82 | 39.93 | 34.18 | 19.65 |
| 1.83V     | 238.5 | 181.7 | 121.1 | 90.35 | 69.83 | 61.74 | 53.66 | 41.71 | 35.65 | 20.50 |
| 1.80V     | 265.0 | 196.8 | 125.7 | 93.00 | 71.22 | 63.17 | 55.13 | 42.78 | 36.75 | 21.13 |
| 1.75V     | 295.2 | 210.8 | 131.3 | 95.98 | 72.40 | 64.31 | 56.23 | 43.49 | 37.49 | 21.55 |
| 1.70V     | 325.5 | 217.7 | 135.1 | 98.25 | 73.67 | 65.31 | 56.96 | 43.85 | 37.85 | 21.77 |
| 1.65V     | 335.8 | 231.3 | 139.7 | 100.7 | 74.71 | 66.21 | 57.70 | 44.20 | 38.22 | 21.98 |
| 1.60V     | 350.1 | 239.2 | 145.0 | 104.1 | 76.81 | 67.62 | 58.43 | 44.56 | 38.59 | 22.19 |

### Discharge Constant Power per Cell (Watts at 25° C)

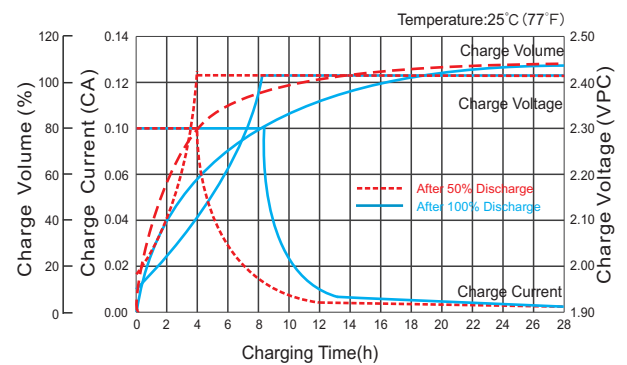
| F.V/ Time | 30min | 1h    | 2h    | 3h    | 4h    | 5h    | 6h    | 8h    | 10h   | 20h   |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1.90V     | 356.5 | 283.4 | 201.2 | 154.3 | 123.0 | 109.8 | 96.65 | 76.29 | 66.66 | 38.33 |
| 1.87V     | 392.2 | 307.8 | 213.4 | 163.1 | 129.6 | 115.9 | 102.2 | 79.49 | 69.51 | 39.97 |
| 1.83V     | 439.4 | 335.5 | 227.1 | 172.4 | 135.9 | 120.7 | 105.5 | 82.35 | 72.01 | 41.40 |
| 1.80V     | 480.1 | 358.0 | 234.7 | 177.0 | 138.5 | 123.3 | 108.0 | 84.13 | 73.79 | 42.43 |
| 1.75V     | 520.8 | 374.0 | 242.3 | 181.1 | 140.3 | 125.1 | 109.9 | 85.20 | 74.86 | 43.04 |
| 1.70V     | 558.5 | 377.8 | 248.4 | 184.9 | 142.6 | 126.8 | 111.0 | 85.91 | 75.57 | 43.45 |
| 1.65V     | 568.0 | 394.5 | 255.3 | 188.8 | 144.4 | 128.2 | 112.1 | 86.62 | 75.93 | 43.66 |
| 1.60V     | 574.8 | 406.7 | 261.3 | 193.4 | 148.1 | 130.5 | 112.8 | 86.98 | 76.29 | 43.86 |

### Performance Characteristics

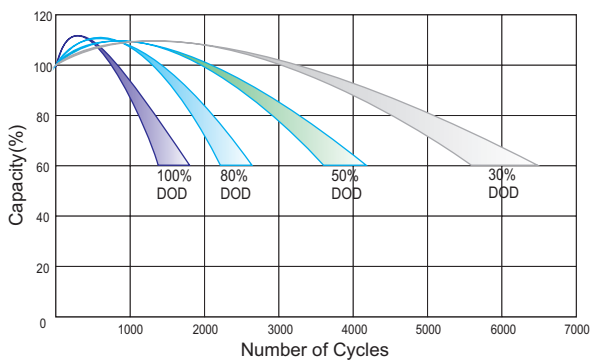
**Discharge Characteristics Curve**



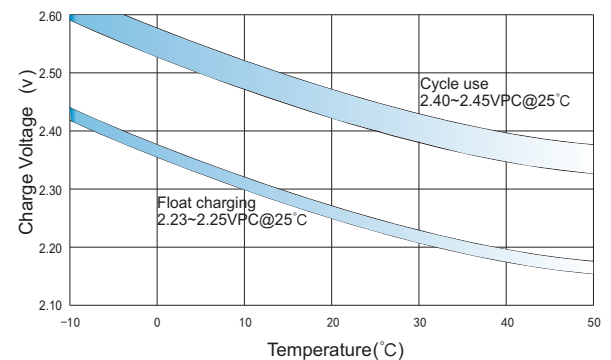
**Charge Characteristic Curve for Cycle Use(IU)**



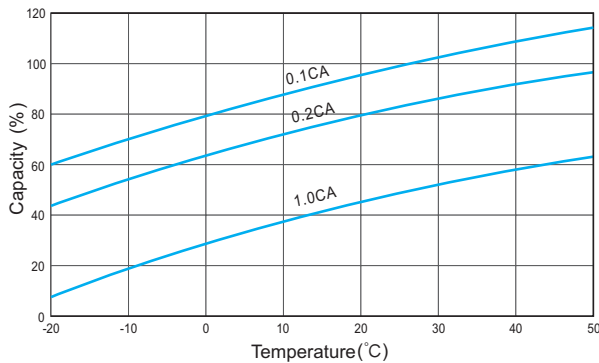
**Cycle Life in Relation to Depth of Discharge**



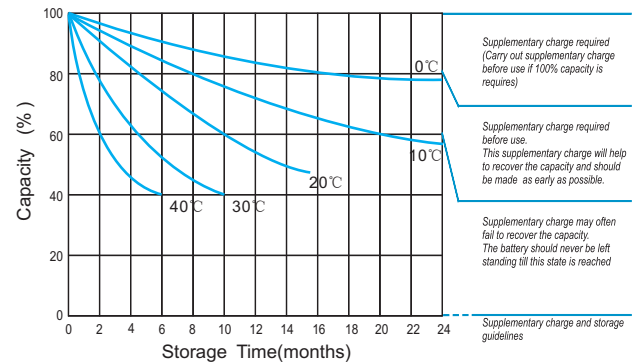
**Relationship Between Charging Voltage and Temperature**



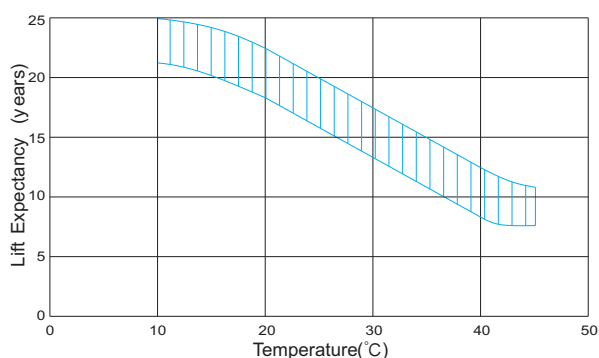
**Temperature Effects on Capacity**



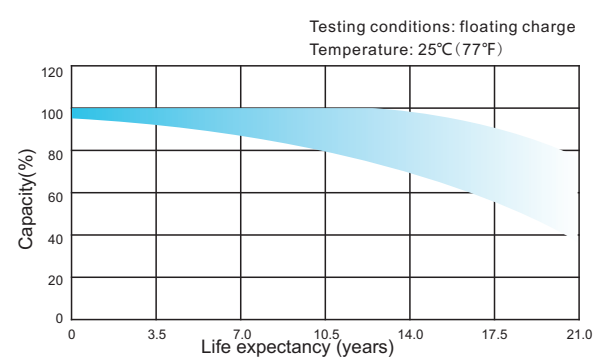
**Storage Characteristics**



**Effect of Temperature on Long Term Life**



**Life Characteristics Of Standby Use**



**Note:** The above data are average values, and can be obtained within 3 charge/discharge cycles. These are not minimum values. Cell and battery designs/specifications are subject to modification without notice. Contact **CSPower** for the latest information.

**CSPower Battery Tech Co., Ltd.**

Add: Floor 3, Evolution Space, NO.61, Liuxian 2nd Road, Baoan, Shenzhen, China

Tel: +86-755-29123661 Email: sales@csppowerbattery.com