

## Fast Charge Deep Cycle Lead Carbon Battery

## HLC6-280

HLC series lead-carbon batteries use functional activated carbon and graphene as carbon materials, which are added to the negative plate of the battery to make lead carbon batteries have the advantages of both lead-acid batteries and super capacitors. It not only improves the ability of rapid charge and discharge, but also greatly prolongs the battery life. It is more suitable for the application of PSOC.

6V  
280Ah

Lead Carbon  
Technology

Deep  
Cycle



### COMPLIED STANDARDS

IEC 60869-21-22 JIS C8704 YD/T799  
BS6290 part4 GB/T 19638 UL 1989



### General Features

- ✓ Combine the characteristics of lead acid battery and super capacitor
- ✓ Long life cycle service design, excellent PSOC and cyclic performance
- ✓ High power, rapid charging and discharging
- ✓ Unique grid and lead pasting design
- ✓ Extreme temperature tolerance
- ✓ Able to operate at -30°C -60°C
- ✓ Deep Discharge recovery capability

### Applications

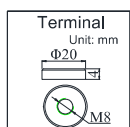
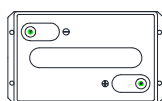
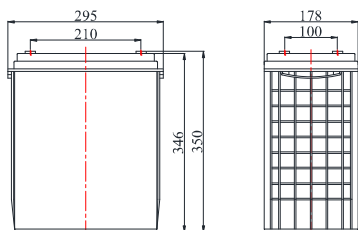
- Home Energy storage system
- Smart Power grid system
- Solar & Wind Power system
- Wheel chair, Golf Car
- Telecom systems
- BTS Stations
- Micro-grid system

### Technical Specifications

|  |                             |  |
|--|-----------------------------|--|
| Nominal Voltage                                    |                             | 6V(3 cells per unit)   |
| Design Floating Life @25°C                         |                             | 20 Years   |
| Nominal Capacity @25°C(20 hour rate@14.00A,5.25V)  |                             | 280.0Ah  |
| Capacity @25°C                                     | 10 hour rate (25.99A,5.40V) | 259.9Ah  |
|  | 5 hour rate (48.20A,5.25V)  | 241.0Ah  |
|  | 1 hour rate (168.4A,4.80V)  | 168.4Ah  |
| Internal Resistance                                | Full Charged Battery@25°C   | ≤2.6mΩ   |
| Ambient Temperature                                | Discharge                   | -30°C~60°C   |
|  | Charge                      | -30°C~60°C   |
|  | Storage                     | -30°C~60°C   |
| Max. Discharge Current@25°C                        |                             | 2500A(5s)  |
| Capacity affected by Temperature (10 hr Capacity ) | 40°C                        | 108%   |
|  | 25°C                        | 100%   |
|  | 0°C                         | 90%  |
|  | -15°C                       | 70%  |
| Self-Discharge@25°C per Month                      |                             | 3%   |
| Charge (Constant Voltage) @25°C                    | Standby Use                 | Initial Charging Current Less than 70.0A<br>Voltage 6.80-6.90V |
|  | Cycle Use                   | Initial Charging Current Less than 70.0A<br>Voltage 7.20-7.35V |

### Dimensions & Weight

|                  |         |
|------------------|---------|
| Length(mm)       | 295±1   |
| Width(mm)        | 178±1   |
| Height(mm)       | 346±1   |
| Total Height(mm) | 350±1   |
| Weight(kg)       | 45.8±3% |



### Battery Discharge Table

Discharge Constant Current per Cell(Ampers at 25 °C)

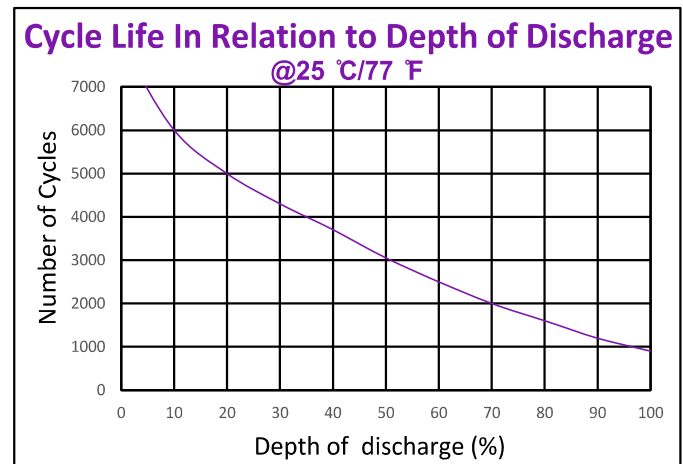
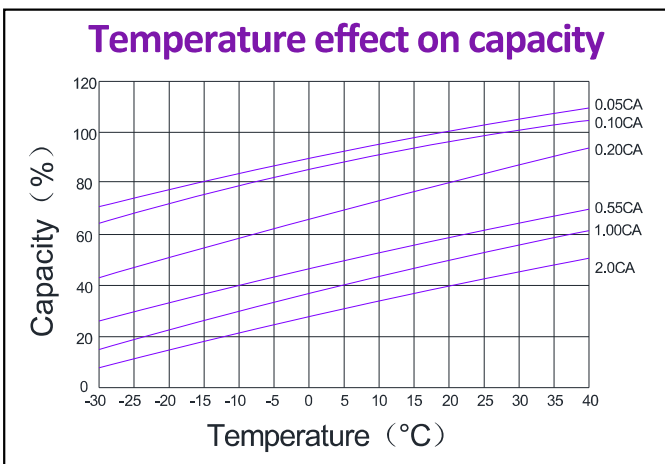
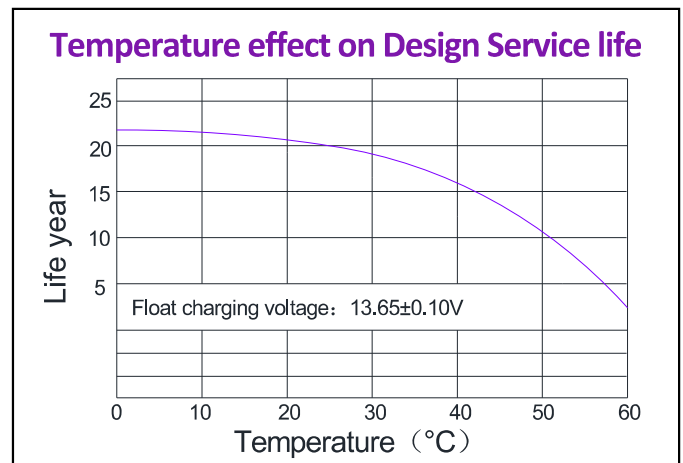
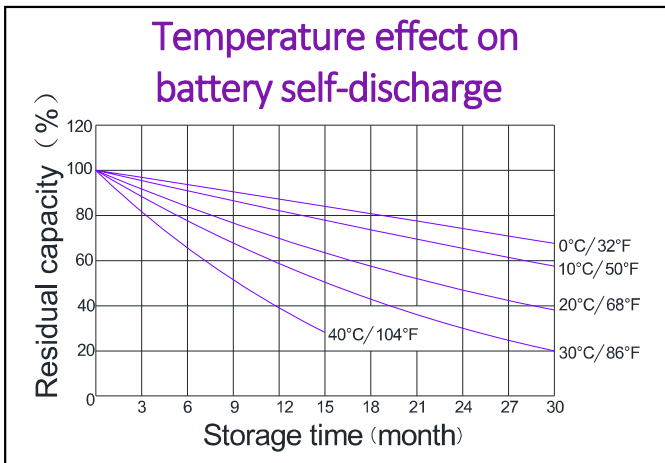
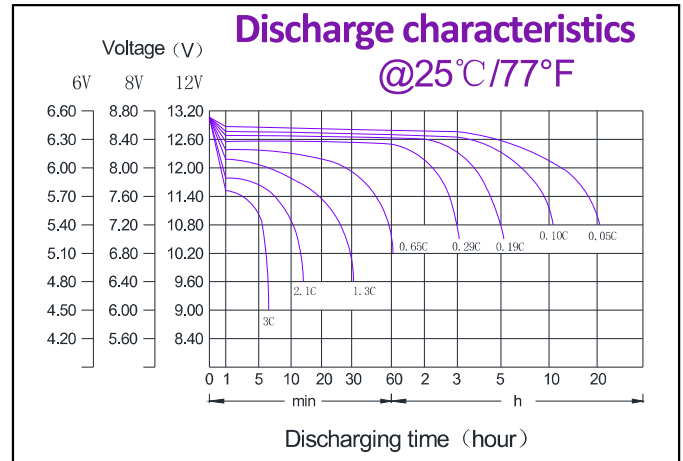
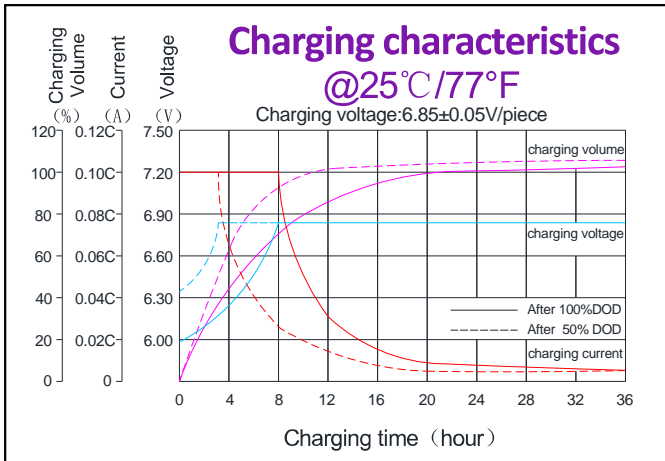
| F.V/Time | 5min  | 10min | 15min | 20min | 25min | 30min | 35min | 40min | 45min | 60min | 90min | 2h    | 3h   | 4h   | 5h   | 6h   | 7h   | 8h   | 10h   | 12h   | 20h   |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|-------|-------|-------|
| 1.60V    | 761.4 | 485.5 | 412.4 | 335.9 | 296.1 | 263.7 | 232.8 | 211.6 | 193.5 | 168.4 | 136.0 | 106.9 | 75.1 | 61.5 | 50.9 | 42.7 | 37.6 | 33.6 | 28.53 | 23.99 | 14.84 |
| 1.65V    | 747.6 | 476.5 | 405.0 | 330.4 | 291.0 | 258.9 | 228.4 | 207.6 | 190.0 | 165.1 | 133.3 | 104.8 | 73.6 | 60.3 | 50.0 | 41.8 | 37.0 | 33.0 | 27.99 | 23.56 | 14.56 |
| 1.67V    | 740.2 | 472.0 | 400.6 | 325.1 | 288.5 | 256.7 | 227.2 | 206.7 | 189.1 | 163.6 | 132.4 | 103.9 | 73.0 | 59.7 | 49.4 | 41.5 | 36.7 | 32.7 | 27.70 | 23.39 | 14.42 |
| 1.70V    | 725.2 | 463.4 | 392.9 | 319.3 | 283.0 | 251.5 | 223.4 | 203.1 | 185.9 | 160.3 | 129.7 | 103.0 | 72.4 | 59.1 | 49.1 | 41.2 | 36.4 | 32.4 | 27.13 | 22.99 | 14.31 |
| 1.75V    | 719.7 | 458.6 | 390.0 | 315.3 | 278.6 | 249.3 | 220.4 | 200.4 | 183.3 | 158.5 | 128.5 | 100.9 | 70.9 | 58.2 | 48.2 | 40.6 | 35.7 | 31.8 | 26.85 | 22.62 | 14.00 |
| 1.80V    | 697.0 | 443.8 | 376.5 | 308.2 | 270.4 | 241.3 | 214.0 | 194.5 | 177.8 | 153.6 | 124.5 | 96.9  | 68.2 | 55.4 | 46.4 | 39.1 | 34.2 | 30.6 | 25.99 | 21.88 | 13.58 |

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

| F.V/Time | 5min   | 10min | 15min | 20min | 25min | 30min | 35min | 40min | 45min | 60min | 90min | 2h    | 3h    | 4h    | 5h   | 6h   | 7h   | 8h   | 10h  | 12h  | 20h   |
|----------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|-------|
| 1.60V    | 1426.6 | 915.2 | 777.7 | 636.4 | 563.3 | 503.7 | 444.8 | 405.5 | 371.1 | 323.3 | 260.5 | 205.3 | 144.2 | 117.9 | 97.6 | 81.8 | 72.1 | 64.5 | 54.5 | 46.3 | 28.84 |
| 1.65V    | 1406.1 | 901.4 | 768.1 | 628.7 | 555.6 | 496.7 | 436.8 | 397.3 | 365.6 | 317.5 | 256.0 | 201.8 | 141.8 | 116.0 | 96.3 | 80.3 | 71.2 | 63.6 | 53.7 | 45.4 | 28.56 |
| 1.67V    | 1396.2 | 894.0 | 761.1 | 622.3 | 551.2 | 492.2 | 434.5 | 396.1 | 363.4 | 314.2 | 254.2 | 200.0 | 140.6 | 114.8 | 95.1 | 80.0 | 70.6 | 63.0 | 53.4 | 45.1 | 28.42 |
| 1.70V    | 1383.4 | 881.2 | 748.9 | 610.8 | 541.2 | 482.6 | 428.4 | 389.7 | 357.9 | 308.4 | 249.0 | 198.1 | 139.1 | 113.6 | 94.5 | 79.4 | 70.0 | 62.4 | 52.3 | 44.3 | 28.28 |
| 1.75V    | 1376.0 | 873.8 | 744.1 | 602.8 | 533.5 | 478.1 | 423.0 | 385.2 | 352.2 | 305.1 | 246.6 | 194.2 | 136.3 | 111.8 | 92.7 | 78.2 | 68.8 | 61.2 | 51.7 | 43.7 | 27.72 |
| 1.80V    | 1335.6 | 849.5 | 721.6 | 591.9 | 519.4 | 463.4 | 410.8 | 374.6 | 341.9 | 295.7 | 239.0 | 186.9 | 131.2 | 106.6 | 89.4 | 75.1 | 65.7 | 58.8 | 50.0 | 42.3 | 26.88 |

**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.

**PERFORMANCE CHARACTERISTICS**



**BATTERY CONSTRUCTION**

| Component | Positive plate                                       | Negative plate  | Container & Cover      | Safety valve                       | Terminal                                   | Separator   | Electrolyte                                  | Pillar seal   |
|-----------|--|---|------------------------|------------------------------------|--|---|--|---|
| Features  | Rare earth alloy grid with good corrosion resistance | Unique anode formula, high purity material, low self-discharge rate | ABS (UL94-V0 optional) | Flame resistance, aging resistance | Female Copper Insert M8 (torque: 10~12N.m) | AGM separator with organic fiber, longer service life | Gradual change gel electrolyte (with patent) | Anti-corrosion elastic O ring, two layers epoxy seal technology |

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