



# DC12-120S (12V115Ah)

DC (Deep Cycle) series is specially designed for frequent cyclic discharge. By using strong grids and specially designed active material, the DC series battery offers 30% more cyclic life than the standby series. It is suitable for solar energy systems, marine and RV etc.



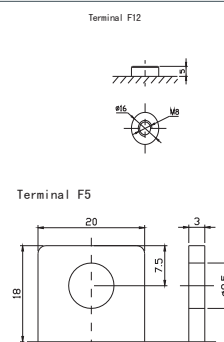
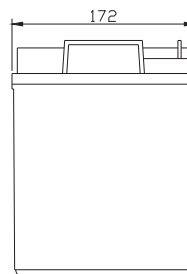
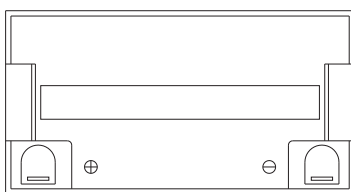
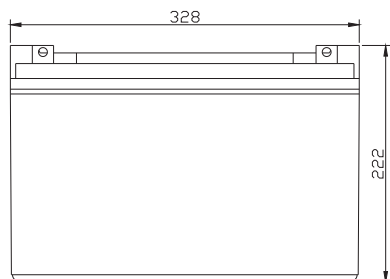
## Specification

|  |   |
|--|---|
| Cells Per Unit                             | 6   |
| Voltage Per Unit                           | 12  |
| Capacity                                   | 115Ah@10hr-rate to 1.80V per cell @25°C   |
| Weight                                     | Approx. 32.0 Kg (Tolerance±2%)  |
| Max. Discharge Current                     | 1150 A (5 sec)  |
| Internal Resistance                        | Approx. 4.2 mΩ  |
| Operating Temperature Range                | Discharge: -20°C~60°C<br>Charge: 0°C~50°C<br>Storage: -20°C~60°C  |
| Normal Operating Temperature Range         | 25°C±5°C  |
| Float charging Voltage                     | 13.6 to 13.8 VDC/unit Average at 25°C   |
| Recommended Maximum Charging Current Limit | 34.5 A  |
| Equalization and Cycle Service             | 14.6 to 14.8 VDC/unit Average at 25°C   |
| Self Discharge                             | RITAR Valve Regulated Lead Acid (VRLA) batteries can be stored for more than 6 months at 25°C. Self-discharge ratio less than 3% per month at 25°C. Please charge batteries before using. |
| Terminal                                   | Terminal F5/F12   |
| Container Material                         | A.B.S. UL94-HB, UL94-V0 Optional.   |



## Dimensions

Unit: mm Dimension: 328(L)×172(W)×222(H)



### Constant Current Discharge Characteristics: A (25°C)

| F.V/Time | 5MIN  | 10MIN | 15MIN | 30MIN | 1HR   | 2HR   | 3HR   | 4HR   | 5HR   | 8HR   | 10HR  | 20HR |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| 9.60V    | 402.1 | 284.5 | 217.7 | 120.6 | 74.90 | 43.93 | 29.86 | 24.07 | 19.98 | 13.16 | 11.86 | 6.28 |
| 10.0V    | 390.5 | 270.7 | 213.2 | 119.0 | 73.91 | 43.05 | 29.30 | 23.73 | 19.81 | 13.11 | 11.75 | 6.16 |
| 10.2V    | 378.9 | 261.1 | 209.9 | 117.2 | 73.20 | 42.59 | 29.04 | 23.49 | 19.68 | 12.99 | 11.63 | 6.05 |
| 10.5V    | 340.2 | 241.0 | 199.8 | 114.0 | 72.30 | 42.03 | 28.78 | 23.15 | 19.51 | 12.88 | 11.51 | 5.93 |
| 10.8V    | 307.1 | 219.7 | 184.2 | 110.2 | 71.30 | 41.69 | 28.45 | 22.35 | 19.42 | 12.82 | 11.41 | 5.87 |
| 11.1V    | 262.2 | 196.4 | 165.2 | 106.0 | 69.61 | 40.01 | 27.89 | 22.03 | 19.27 | 12.72 | 11.28 | 5.63 |

### Constant Power Discharge Characteristics: W (25°C)

| F.V/Time | 5MIN | 10MIN | 15MIN | 30MIN | 1HR   | 2HR   | 3HR   | 4HR   | 5HR   | 8HR   | 10HR  | 20HR  |
|----------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 9.60V    | 4159 | 3030  | 2395  | 1380  | 868.0 | 514.8 | 351.5 | 288.1 | 239.4 | 157.6 | 142.3 | 75.65 |
| 10.0V    | 4077 | 2937  | 2356  | 1366  | 860.1 | 508.5 | 346.3 | 284.1 | 237.3 | 157.0 | 141.1 | 74.34 |
| 10.2V    | 4031 | 2859  | 2330  | 1354  | 855.0 | 504.9 | 344.7 | 281.4 | 235.8 | 155.8 | 139.9 | 72.96 |
| 10.5V    | 3669 | 2663  | 2222  | 1326  | 849.5 | 498.5 | 341.9 | 277.6 | 233.9 | 154.5 | 138.5 | 71.58 |
| 10.8V    | 3342 | 2454  | 2054  | 1295  | 838.6 | 494.8 | 338.1 | 268.3 | 232.9 | 153.8 | 137.1 | 70.89 |
| 11.1V    | 2935 | 2219  | 1849  | 1259  | 826.0 | 476.3 | 332.4 | 264.4 | 232.0 | 152.8 | 135.6 | 68.36 |

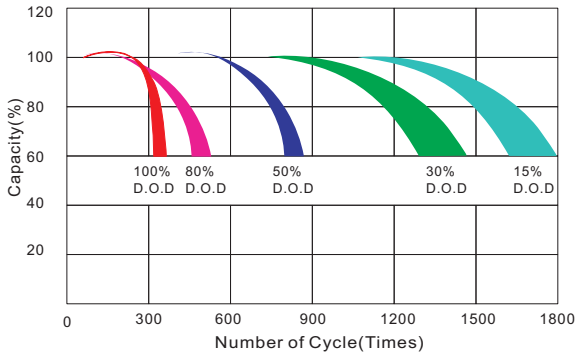
All mentioned values are average values (Tolerance±2%).

# DC12-120S

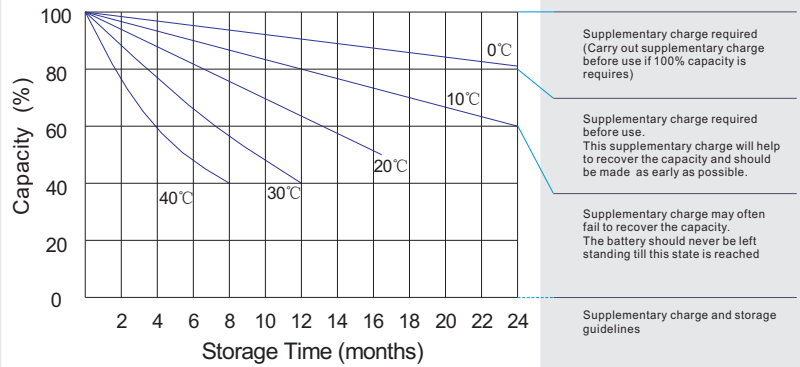
12V115Ah



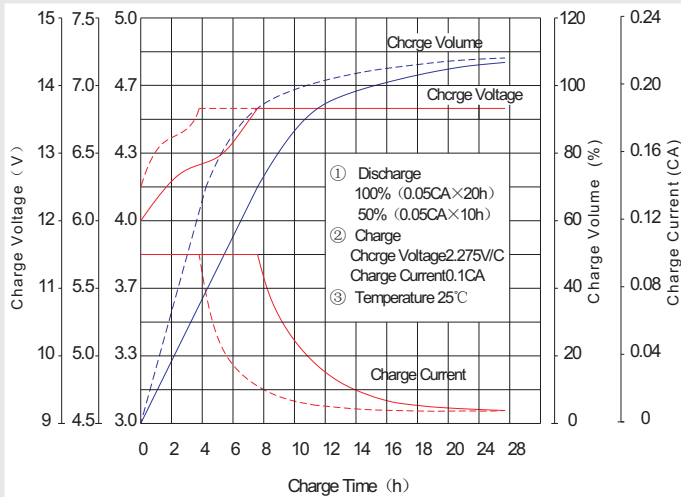
## Life characteristics of cyclic use



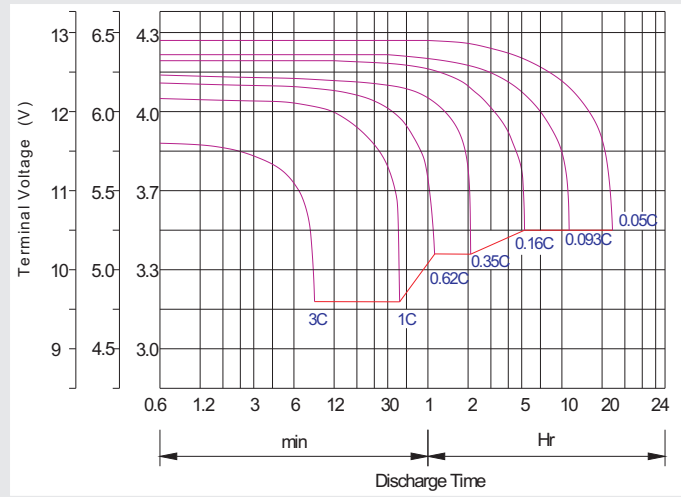
## Storage characteristic



## Charge characteristic curve for cyclic use



## Discharge characteristic curve



## Capacity Factors With Different Temperature

| Battery Type |        | -20°C | -10°C | 0°C | 5°C | 10°C | 20°C | 25°C | 30°C | 40°C | 45°C |
|--------------|--------|-------|-------|-----|-----|------|------|------|------|------|------|
| GEL Battery  | 6V&12V | 50%   | 70%   | 83% | 85% | 90%  | 98%  | 100% | 102% | 104% | 105% |
|              | 2V     | 60%   | 75%   | 85% | 88% | 92%  | 99%  | 100% | 103% | 105% | 106% |
| AGM Battery  | 6V&12V | 46%   | 66%   | 76% | 83% | 90%  | 98%  | 100% | 103% | 107% | 109% |
|              | 2V     | 55%   | 70%   | 80% | 85% | 92%  | 99%  | 100% | 104% | 108% | 110% |

## Discharge Current VS. Discharge Voltage

| Final Discharge Voltage V/cell | 1.75V      | 1.70V             | 1.60V      |
|--------------------------------|------------|-------------------|------------|
| Discharge Current (A)          | (A) ≤ 0.2C | 0.2C < (A) < 1.0C | (A) ≥ 1.0C |

Charge the batteries at least once every six months, if they are stored at 25°C.

Charging Method:

|                  |  |
|------------------|--|
| Constant Voltage | -0.2Cx2h+2.4-2.45V/cellx24h, Max. Current 0.3C |
| Constant Current | -0.2Cx2h+0.1Cx12h                              |
| Fast             | -0.2Cx2h+0.3Cx4h                               |

| Bolt     | M5                    | M6               | M8                    |
|----------|-----------------------|------------------|-----------------------|
| Terminal | F3 F4 F13 F18 T25 T26 | F8 F11 F12-1 F15 | F5 F9 F10 F12 F14 F16 |
| Torque   | 6-7N·m                | 8-10N·m          | 10-12N·m              |

## Maintenance & Cautions

### Cycle service

- ※ Avoid battery over discharge, especially battery series connection use.
- ※ Charged with recommend voltage, ensure battery can be full recharged.
- In general, recharge capacity should be 1.1-1.15 times discharge capacity.
- ※ Effect of temperature on cycle charge voltage: -4mV/°C/Cell.
- ※ There are a number of factors that will affect the length of cyclic service.
- The most significant are depth of discharge, ambient temperature, discharge rate, and the manner in which the battery is recharged.
- Generally speaking, the most important factors is depth of discharge.