

## Specification



DC (Deep Cycle) series batteries provide superior high integrity and reliability. It is specially designed for frequent cyclic charge and discharging. By using strong grids, thick plate and specially active material are designed for repeated deep-discharge applications. The DC series batteries offer 30% more cyclic life than the standby series. It is suitable for solar and wind renewable energy storage, mobility and medical equipment and cable TV etc.



|                                    |                                                                                                                                                                                                                    |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cells Per Unit                     | 6                                                                                                                                                                                                                  |
| Voltage Per Unit                   | 12                                                                                                                                                                                                                 |
| Capacity                           | 120Ah@20hr-rate to 1.75V per cell @25°C                                                                                                                                                                            |
| Weight                             | Approx. 30.0 Kg (Tolerance ±3.0%)                                                                                                                                                                                  |
| Internal Resistance                | Approx. 5.0 mΩ                                                                                                                                                                                                     |
| Terminal                           | F5(M8)/F12(M8)                                                                                                                                                                                                     |
| Max. Discharge Current             | 1140A (5 sec)                                                                                                                                                                                                      |
| Design Life                        | 12 years (floating charge)                                                                                                                                                                                         |
| Max. Charging Current              | 34.5 A                                                                                                                                                                                                             |
| Reference Capacity                 | C3 91.7AH<br>C5 103.4AH<br>C10 114.3AH<br>C20 120.0AH                                                                                                                                                              |
| Float Charging Voltage             | 13.6 V~13.8 V @ 25°C<br>Temperature Compensation: -3mV/°C/Cell                                                                                                                                                     |
| Cycle Use Voltage                  | 14.6 V~14.8 V @ 25°C<br>Temperature Compensation: -4mV/°C/Cell                                                                                                                                                     |
| 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                                                                                                                                                                                                          |
| Self Discharge                     | AMP-Tech Plus batteries (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% at 25°C. Please charged batteries before using. |
| Container Material                 | A.B.S. UL94-HB, UL94-V0 Optional.                                                                                                                                                                                  |

## Dimensions

|              |  |  |  |
|--------------|--|--|--|
|              |  |  |  |
| F12 Terminal |  |  |  |

|              |                       |
|--------------|-----------------------|
| Length       | 328±2mm (12.9 inches) |
| Width        | 172±2mm (6.77 inches) |
| Height       | 215±2mm (8.46 inches) |
| Total Height | 220±2mm (8.66 inches) |
| Terminal     | Value                 |
| M5           | 6~7 N*m               |
| M6           | 8~10 N*m              |
| M8           | 10~12 N*m             |

Unit: mm

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

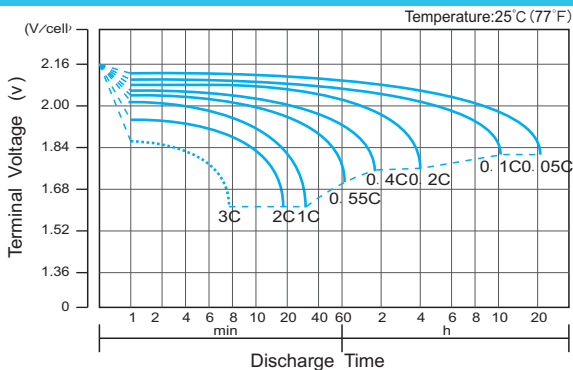
| F.V/Time | 10MIN | 15MIN | 30MIN | 1HR   | 2HR   | 3HR   | 4HR   | 5HR   | 8HR   | 10HR  | 20HR  |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1.60V    | 268.5 | 213.4 | 129.4 | 72.88 | 43.40 | 33.81 | 26.52 | 22.56 | 14.47 | 12.00 | 6.219 |
| 1.65V    | 247.3 | 199.5 | 122.6 | 70.40 | 41.95 | 32.77 | 25.73 | 21.85 | 14.36 | 11.89 | 6.186 |
| 1.70V    | 229.2 | 187.6 | 116.2 | 68.14 | 40.83 | 31.38 | 24.93 | 21.26 | 14.13 | 11.66 | 6.108 |
| 1.75V    | 210.3 | 175.7 | 111.6 | 66.00 | 39.26 | 30.58 | 24.25 | 20.67 | 13.90 | 11.54 | 6.000 |
| 1.80V    | 191.4 | 160.9 | 107.5 | 63.07 | 37.92 | 30.00 | 23.69 | 20.40 | 13.67 | 11.43 | 5.942 |
| 1.85V    | 149.7 | 133.2 | 91.15 | 56.30 | 34.68 | 27.92 | 22.21 | 18.78 | 12.87 | 10.74 | 5.887 |

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

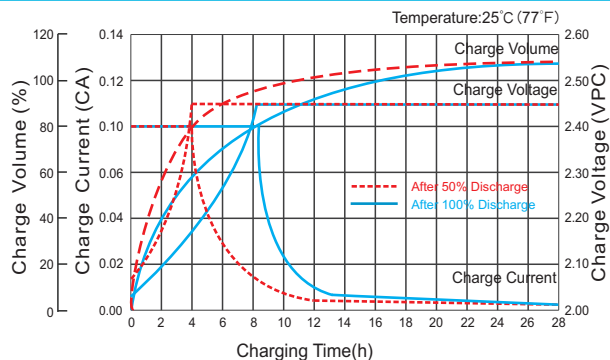
| F.V/Time | 10MIN | 15MIN | 30MIN | 1HR   | 2HR   | 3HR   | 4HR   | 5HR   | 8HR   | 10HR  | 20HR  |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1.60V    | 457.2 | 372.2 | 235.1 | 136.8 | 82.06 | 64.20 | 51.11 | 42.70 | 28.20 | 23.53 | 12.42 |
| 1.65V    | 440.2 | 361.9 | 229.6 | 134.5 | 79.85 | 62.60 | 49.87 | 41.55 | 27.97 | 23.31 | 12.31 |
| 1.70V    | 410.9 | 342.5 | 218.5 | 130.5 | 77.85 | 60.20 | 48.28 | 40.51 | 27.63 | 22.85 | 12.19 |
| 1.75V    | 382.3 | 323.3 | 210.9 | 126.9 | 75.09 | 58.71 | 47.15 | 39.58 | 27.18 | 22.63 | 11.97 |
| 1.80V    | 352.3 | 298.9 | 204.1 | 121.7 | 73.38 | 58.38 | 46.24 | 39.05 | 26.73 | 22.40 | 11.86 |
| 1.85V    | 279.4 | 251.1 | 175.0 | 109.3 | 67.57 | 54.46 | 43.52 | 36.12 | 25.27 | 21.16 | 11.75 |

(Note) The above characteristics data are average values obtained within three charge/discharge cycle not the minimum values.  
The battery must be fully charged before the capacity test. The C<sub>20</sub> should reach 95% after the first cycle and 100% after the third cycle.

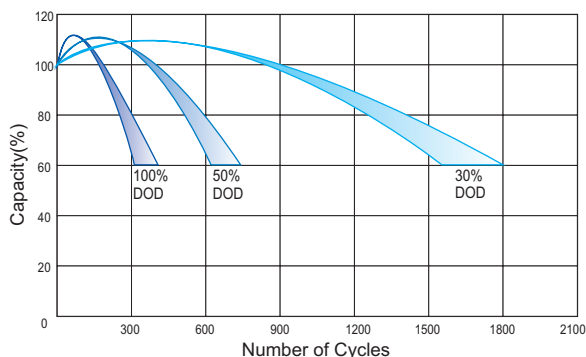
**Discharge Characteristics Curve**



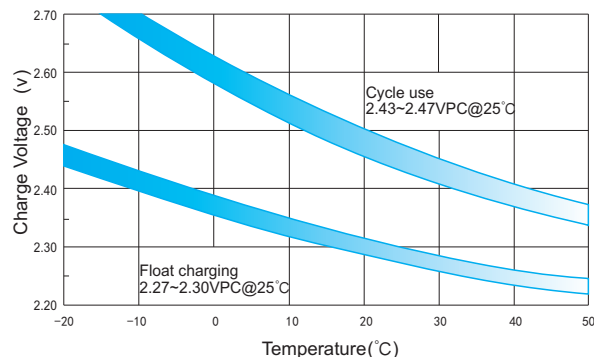
**Charge Characteristic Curve for Cycle Use(IU)**



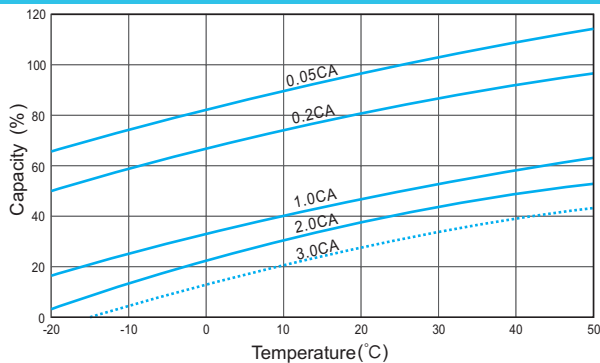
**Cycle Life in Relation to Depth of Discharge**



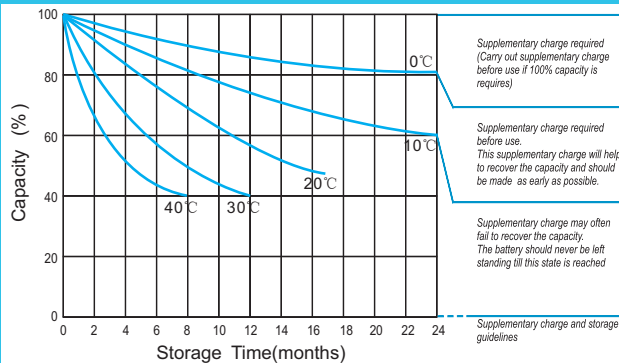
**Relationship Between Charging Voltage and Temperature**



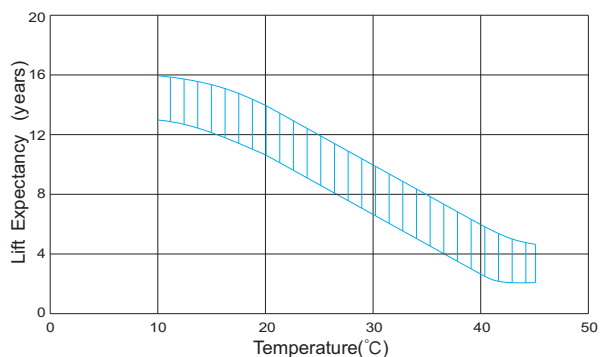
**Temperature Effects on Capacity**



**Storage Characteristics**



**Effect of Temperature on Long Term Life**



**Relationship of OCV And State of Charge(20°C)**

