



DC2-650 (2V650Ah)

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.

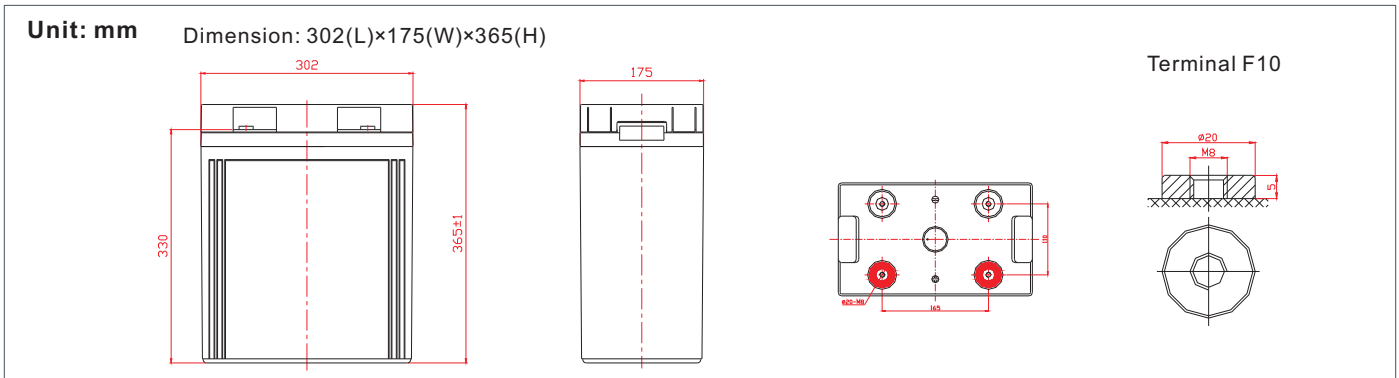


Specification

| | |
|--|---|
| Cells Per Unit | 1 |
| Voltage Per Unit | 2 |
| Capacity | 650Ah@10hr-rate to 1.80V per cell @25°C |
| Weight | Approx. 40.0 Kg (Tolerance±2%) |
| Max. Discharge Current | 3250 A (5 sec) |
| Internal Resistance | Approx. 0.6 mΩ |
| Operating Temperature Range | Discharge: -20°C~60°C Charge: 0°C~50°C Storage: -20°C~60°C |
| Normal Operating Temperature Range | 25°C±5°C |
| Float charging Voltage | 2.27 to 2.3 VDC/unit Average at 25°C |
| Recommended Maximum Charging Current Limit | 130 A |
| Equalization and Cycle Service | 2.43 to 2.47 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 | Thread insert & Bolt (F10) |
| Container Material | A.B.S. UL94-HB, UL94-V0 Optional. |



Dimensions



Constant Current Discharge Characteristics : A(25°C)

| F.V/Time | 15MIN | 30MIN | 1HR | 2HR | 3HR | 4HR | 5HR | 6HR | 8HR | 10HR |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1.60V | 882.5 | 650.8 | 405.9 | 249.0 | 185.4 | 133.0 | 116.4 | 104.6 | 84.40 | 67.70 |
| 1.65V | 839.2 | 624.9 | 400.7 | 239.9 | 177.7 | 128.4 | 115.3 | 102.0 | 80.62 | 67.06 |
| 1.70V | 782.5 | 589.1 | 392.9 | 236.0 | 173.8 | 127.2 | 113.6 | 99.52 | 79.36 | 66.41 |
| 1.75V | 694.7 | 530.1 | 361.8 | 223.0 | 164.7 | 120.2 | 112.2 | 94.48 | 76.84 | 65.70 |
| 1.80V | 598.0 | 482.9 | 341.0 | 212.7 | 158.2 | 119.0 | 110.2 | 93.22 | 75.58 | 65.09 |
| 1.85V | 505.7 | 434.7 | 315.1 | 201.0 | 150.4 | 109.7 | 103.7 | 88.18 | 71.80 | 61.12 |

Constant Power Discharge Characteristics : W(25°C)

| F.V/Time | 15MIN | 30MIN | 1HR | 2HR | 3HR | 4HR | 5HR | 6HR | 8HR | 10HR |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1.60V | 1545 | 1186 | 755.2 | 465.8 | 345.6 | 250.0 | 231.5 | 201.7 | 160.6 | 134.9 |
| 1.65V | 1505 | 1180 | 751.3 | 459.1 | 338.8 | 246.3 | 229.4 | 199.2 | 159.2 | 133.6 |
| 1.70V | 1421 | 1117 | 743.8 | 452.4 | 333.6 | 245.3 | 226.7 | 194.5 | 156.8 | 132.8 |
| 1.75V | 1266 | 1006 | 697.7 | 428.2 | 321.7 | 233.0 | 223.5 | 185.0 | 151.9 | 131.5 |
| 1.80V | 1096 | 918.0 | 663.5 | 409.0 | 308.4 | 232.0 | 219.5 | 182.8 | 149.4 | 130.4 |
| 1.85V | 934.4 | 827.7 | 615.4 | 387.2 | 293.7 | 214.9 | 207.2 | 173.1 | 142.0 | 122.9 |

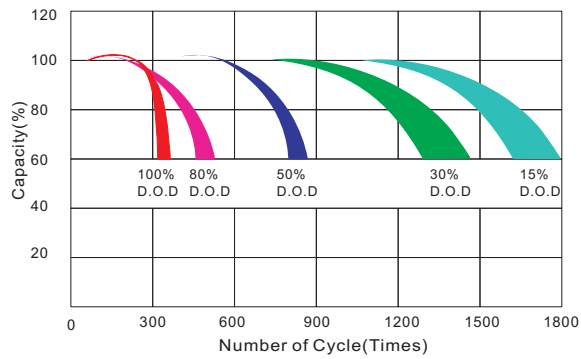
All mentioned values are average values(Tolerance±2%).

DC2-650

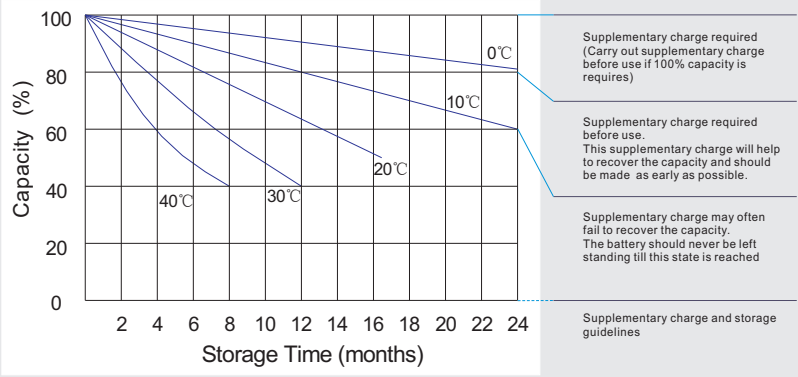
2V650Ah



Life characteristics of cyclic use



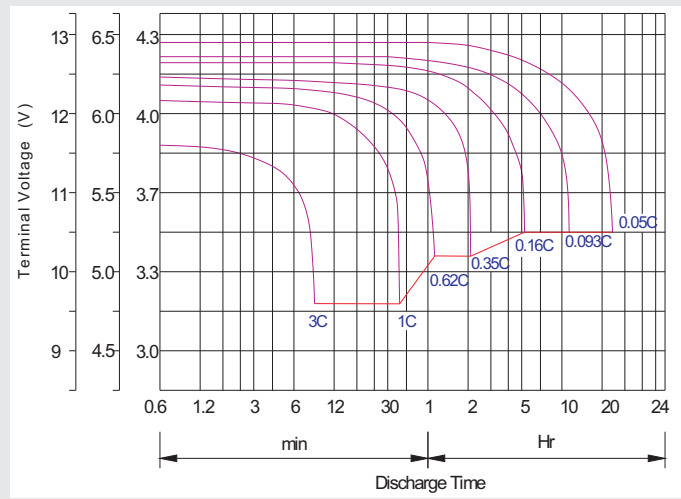
Storage characteristic



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 0.2C |
| Constant Current | -0.2Cx2h+0.1Cx12h |
| Fast | -0.2Cx2h+0.2Cx6h |

| | | | |
|----------|-----------------------|------------------|-----------------------|
| 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

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|---|
| 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 specking, the most important factors is depth of discharge. |