

# RF12-150

## (12V150Ah)



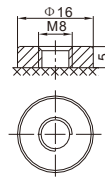
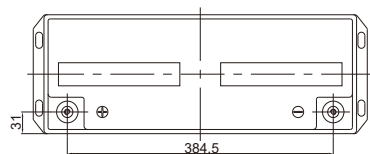
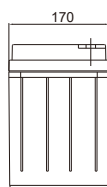
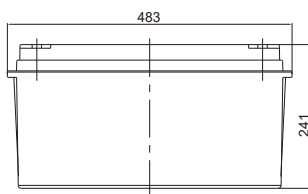
- Non-Spillable Sealed Construction
- Absorbent Glass Mat System (AGM System)
- ABS (Acrylonitrile Butadiene Styrene) container and cover
- Gas Recombination
- Maintenance-Free Operation
- Low Pressure Venting System
- Low Self-Discharge - Long Shelf Life
- Wide Operating Temperature Range
- High Recovery Capability



### SPECIFICATION

|                                    |  |
|------------------------------------|--|
| Cells Per Unit                     | 6  |
| Voltage Per Unit                   | 12   |
| Nominal Capacity                   | 150Ah@10hour-rate to 1.80V per cell @25°C  |
| Weight                             | Approx. 42.5 Kg (Tolerance ±3.0%)  |
| Internal Resistance                | Approx. 4.4 mΩ   |
| Terminal                           | F5(M8)/F12(M8)   |
| Max. Discharge Current             | 1500A (5 sec)  |
| Short Circuit Current              | 2700A  |
| Design Life                        | 12 years (Float charging)  |
| Max. Charging Current              | 45.0 A   |
| Reference Capacity                 | C3 116.1AH<br>C5 131.0AH<br>C10 150.0AH<br>C20 159.0AH   |
| Standby Use Voltage                | 13.7 V~13.9 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: -10°C~60°C<br>Storage: -20°C~60°C   |
| Normal Operating Temperature Range | 25°C ± 5°C   |
| Self Discharge                     | Restar 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% at 25°C. Please charge batteries before using. |
| Container Material                 | A.B.S. UL94-HB, UL94-V0 Optional.  |

### DIMENSIONS



F5 Terminal

|              |                       |
|--------------|-----------------------|
| Length       | 483±2mm (19.0 inches) |
| Width        | 170±2mm (6.69 inches) |
| Height       | 241±2mm (9.49 inches) |
| Total Height | 241±2mm (9.49 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    | 329.5 | 264.2 | 162.6 | 91.6 | 54.6 | 42.3 | 33.3 | 28.3 | 19.0 | 15.8 | 8.28 |
| 1.65V    | 311.4 | 252.6 | 156.1 | 88.5 | 52.9 | 41.0 | 32.4 | 27.6 | 18.8 | 15.6 | 8.15 |
| 1.70V    | 286.6 | 236.6 | 149.2 | 85.6 | 51.1 | 39.9 | 31.5 | 26.8 | 18.5 | 15.4 | 8.05 |
| 1.75V    | 262.4 | 220.2 | 142.6 | 82.5 | 49.3 | 38.7 | 30.7 | 26.2 | 18.3 | 15.2 | 7.95 |
| 1.80V    | 237.5 | 203.3 | 136.3 | 79.3 | 47.6 | 37.5 | 29.8 | 25.5 | 17.9 | 15.0 | 7.87 |
| 1.85V    | 194.1 | 168.7 | 117.4 | 71.2 | 43.6 | 34.7 | 27.7 | 23.8 | 16.8 | 14.1 | 7.47 |

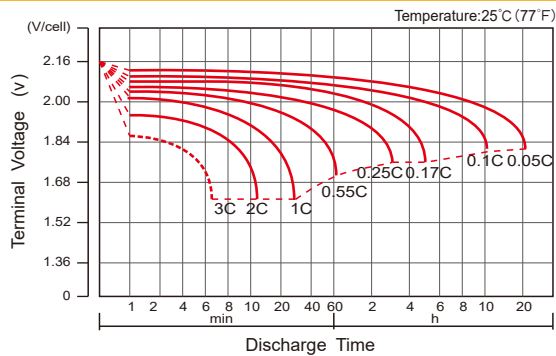
#### Constant Power Discharge Characteristics : WPC (25°C)

| F.V/Time | 10MIN | 15MIN | 30MIN | 1HR   | 2HR   | 3HR  | 4HR  | 5HR  | 8HR  | 10HR | 20HR |
|----------|-------|-------|-------|-------|-------|------|------|------|------|------|------|
| 1.60V    | 560.1 | 461.9 | 295.4 | 172.2 | 103.5 | 80.8 | 63.8 | 54.5 | 37.1 | 31.1 | 16.3 |
| 1.65V    | 539.4 | 448.1 | 286.5 | 167.3 | 100.7 | 78.6 | 62.3 | 53.3 | 36.8 | 30.8 | 16.1 |
| 1.70V    | 505.7 | 426.0 | 276.6 | 162.8 | 97.9  | 76.8 | 60.9 | 52.1 | 36.3 | 30.3 | 15.9 |
| 1.75V    | 471.3 | 402.2 | 267.1 | 157.8 | 94.9  | 74.9 | 59.5 | 51.0 | 35.9 | 30.0 | 15.7 |
| 1.80V    | 434.0 | 376.6 | 257.9 | 152.7 | 92.0  | 72.8 | 58.0 | 49.9 | 35.4 | 29.6 | 15.6 |
| 1.85V    | 361.0 | 317.0 | 224.3 | 137.8 | 84.7  | 67.6 | 54.2 | 46.6 | 33.3 | 27.9 | 14.8 |

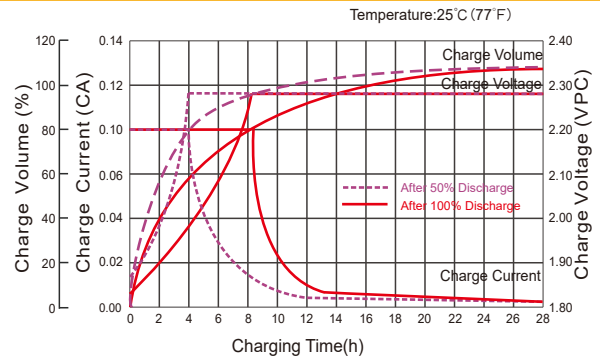
(Note) The above characteristics data are average values obtained within three charge/discharge cycle not the minimum values. The battery must be fully charged before the capacity test. The C<sub>10</sub> should reach 95% after the first cycle and 100% after the third cycle.

# RF12-150 (12V150Ah)

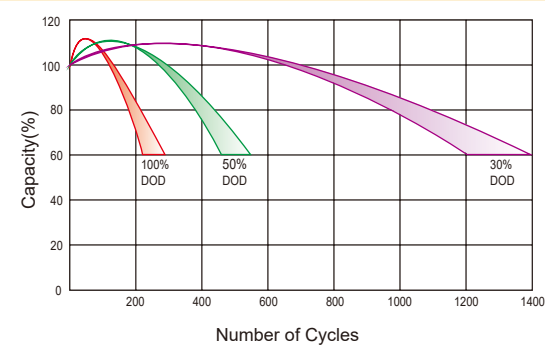
## Discharge Characteristics Curve



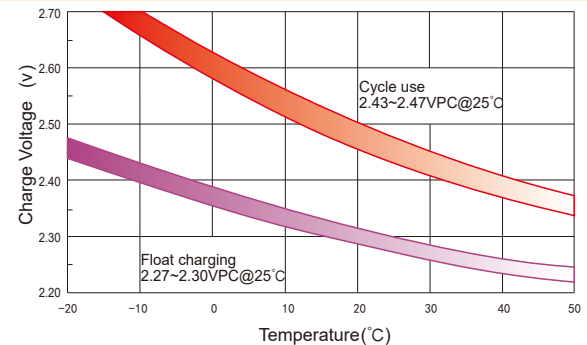
## Charge Characteristic Curve For Standby Use



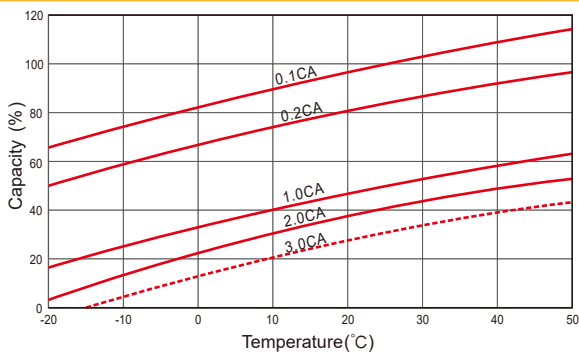
## Cycle Life In Relation To Depth Of Discharge



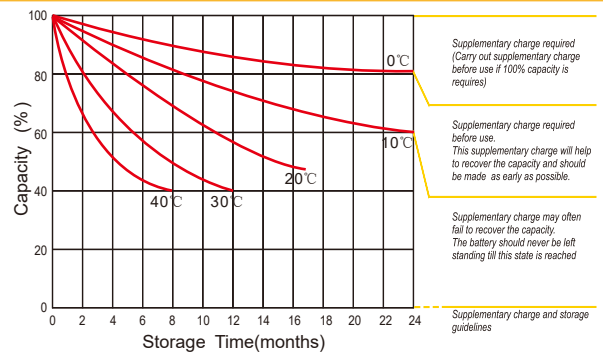
## Relationship Between Charging Voltage And Temperature



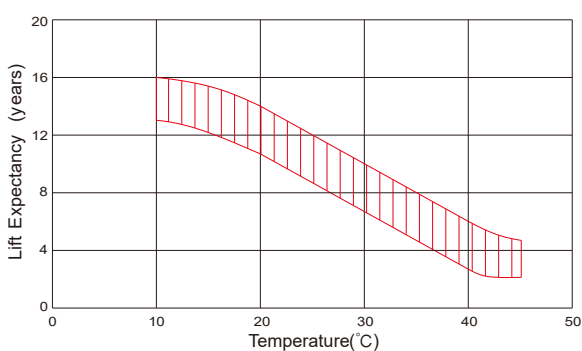
## Temperature Effects On Capacity



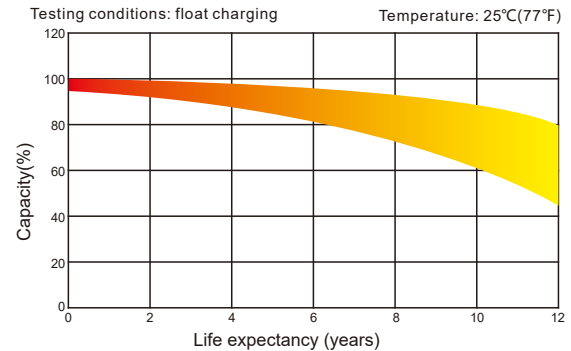
## Storage Characteristics



## Effect Of Temperature On Long Term Life



## Life Characteristics Of Standby Use



(Note) All above information shall be changed without prior notice, Restar reserves the right to explain and update the latest information

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