

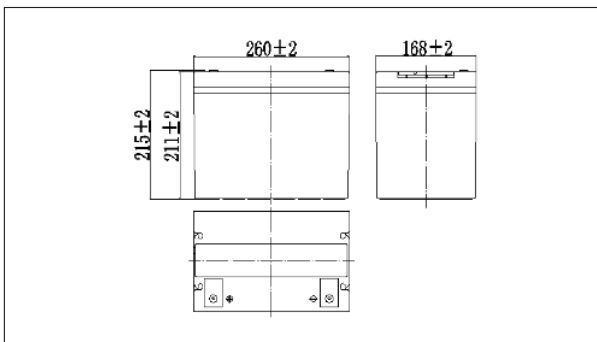
## HR12280W-FR (12V280 Watts/cell)

### Specifications

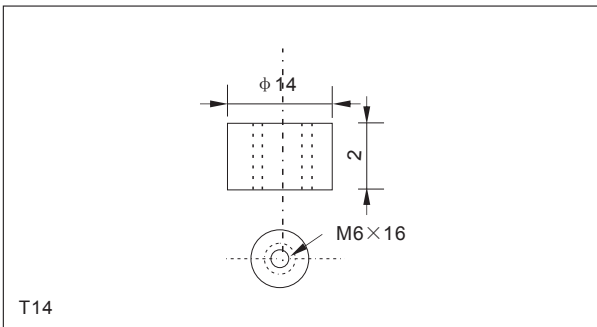
|                           |                    |                    |
|---------------------------|--------------------|--------------------|
| Nominal Voltage           | 12V                |                    |
| Number of cell            | 6 cells            |                    |
| Rated capacity(15min.rat) | 280 Watts/cell     |                    |
| Dimensions                | Length             | 260±2mm(10.24inch) |
|                           | Width              | 168±2mm(6.61inch)  |
|                           | Height             | 211±2mm(8.31inch)  |
|                           | Total Height       | 215±2mm(8.46inch)  |
| Approx. Weight            | 25.3kg(55.8lbs)±3% |                    |



### Outer dimensions (mm)



### Terminal Type (mm)



### Characteristics

|  |   |                        |
|--|---|------------------------|
| Capacity(10HR,25°C)                      | 70Ah  |                        |
| Capacity(15min.rate,25°C)                | 280 Watts/cell  |                        |
| Terminal type                            | T14   |                        |
| Internal resistance (Fully charged,25°C) | Approx.5m Ω   |                        |
| Capacity affected by temperature (10HR)  | 40°C  | 102%                   |
|  | 25°C  | 100%                   |
|  | 0°C   | 85%                    |
|  | -15°C   | 65%                    |
| Self-discharge (25°C)                    | 3 months  | Remaining Capacity:91% |
|  | 6 months  | Remaining Capacity:82% |
|  | 12 months   | Remaining Capacity:65% |
| Nominal operating temperature            | 25°C ±3°C(77°F ±5°F)                                  |                        |
| Operating temperature range              | Discharge   | -15°C~50°C(5°F~122°F)  |
|  | Charge  | -10°C~50°C(14°F~122°F) |
|  | Storage   | -20°C~50°C(-4°F~122°F) |
| Float charging voltage(25°C)             | 13.50 to 13.80V<br>Temperature compensation: -18mV/°C |                        |
| Cyclic charging voltage(25°C)            | 14.50 to 15.00V<br>Temperature compensation: -30mV/°C |                        |
| Maximum charging current                 | 21A   |                        |
| Maximum discharge current                | 700A(5 sec.)  |                        |
| Designed floating life(20°C)             | 10years   |                        |

### Construction

| Component    | Positive plate | Negative plate | Container | Cover | Separator | Electrolyte   | Safety valve | Terminal |
|--------------|----------------|----------------|-----------|-------|-----------|---------------|--------------|----------|
| Raw material | Leaddioxide    | Lead           | ABS       | ABS   | AGM       | Sulfuric acid | Rubber       | Copper   |

### Constant Current Discharge Characteristics Unit:A(25°C,77°F)

| F.V/Time   | 10min | 15min | 20min | 30min | 45min | 60min | 2h   | 3h   | 4h   | 5h   | 6h   |
|------------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|
| 1.60V/cell | 183   | 150   | 120   | 84.9  | 63.3  | 51.6  | 27.4 | 19.7 | 15.8 | 13.8 | 11.8 |
| 1.67V/cell | 175   | 145   | 115   | 82.2  | 61.2  | 50.3  | 27.2 | 19.5 | 15.7 | 13.6 | 11.7 |
| 1.70V/cell | 170   | 141   | 113   | 80.7  | 60.1  | 49.6  | 27.0 | 19.4 | 15.6 | 13.6 | 11.6 |
| 1.75V/cell | 163   | 136   | 109   | 78.7  | 58.7  | 48.6  | 26.6 | 19.3 | 15.5 | 13.5 | 11.6 |
| 1.80V/cell | 154   | 129   | 103   | 75.8  | 56.5  | 47.1  | 25.9 | 18.7 | 15.1 | 13.1 | 11.2 |

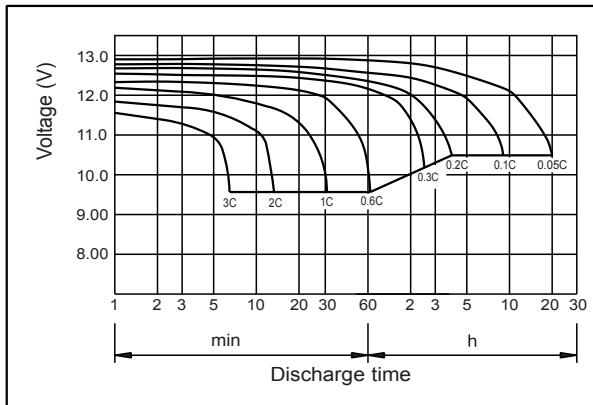
### Constant Power Discharge Characteristics Unit:W(25°C,77°F)

| F.V/Time   | 10min | 15min | 20min | 30min | 45min | 60min | 2h   | 3h   | 4h   | 5h   | 6h   |
|------------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|
| 1.60V/cell | 344   | 289   | 231   | 164   | 122   | 99.6  | 53.4 | 38.7 | 31.2 | 27.3 | 23.3 |
| 1.67V/cell | 329   | 281   | 222   | 159   | 118   | 97.1  | 53.0 | 38.4 | 30.9 | 27.0 | 23.1 |
| 1.70V/cell | 320   | 272   | 217   | 159   | 116   | 95.6  | 52.7 | 38.2 | 30.8 | 26.9 | 23.0 |
| 1.75V/cell | 306   | 263   | 210   | 152   | 113   | 93.7  | 51.9 | 38.0 | 30.6 | 26.7 | 22.9 |
| 1.80V/cell | 289   | 249   | 199   | 146   | 109   | 90.9  | 50.5 | 36.8 | 29.7 | 25.9 | 22.2 |

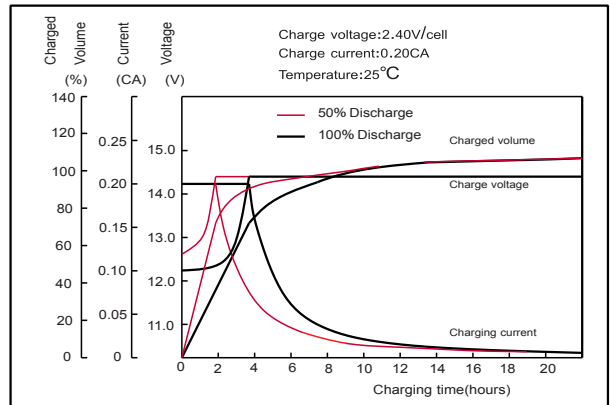
Note: The above characteristics data can be obtained within three charge or discharge cycles.

**HR12280W-FR (12V280 Watts/cell)**

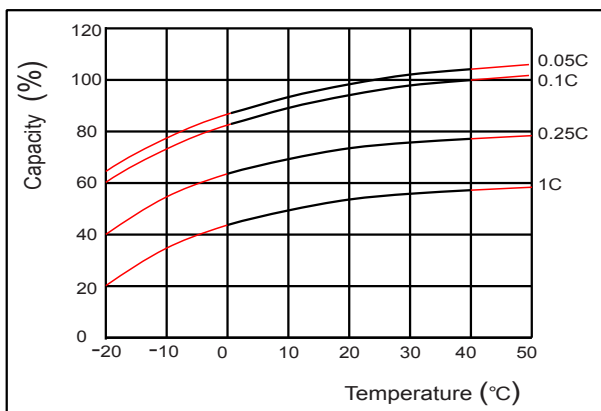
**● Discharge characteristics(25°C)**



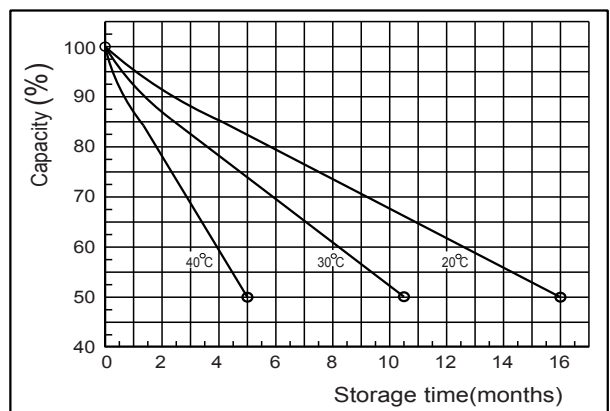
**● Charging characteristics (25°C)**



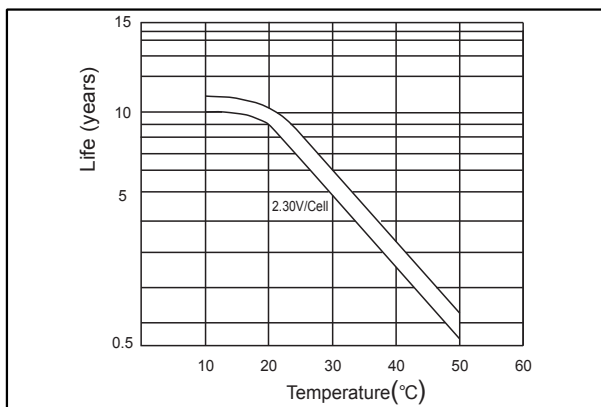
**● Effect of Temperature on Capacity**



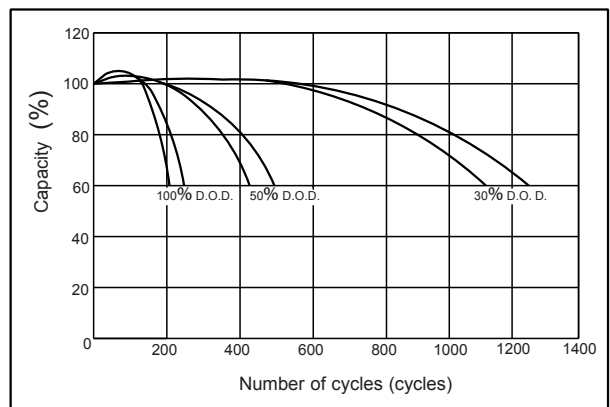
**● Self-discharge characteristics**



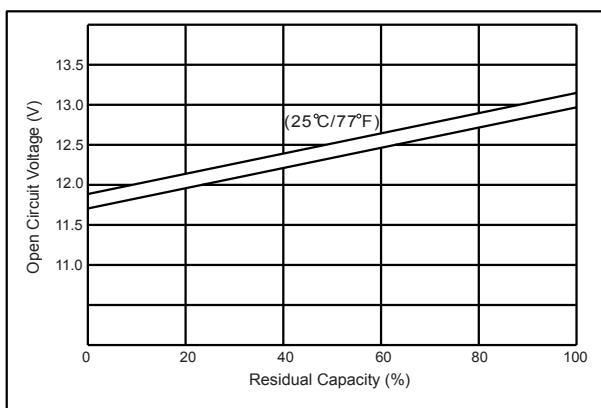
**● Floating Life on Temperature**



**● Cycle service Life on D.O.D (25°C)**



**● The relationship for OCV and Capacity (25°C)**



**● The relationship for Charging voltage and Temperature**

