

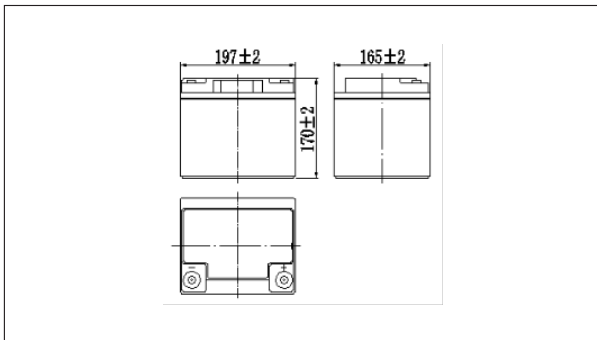
HR12160W (12V160 Watts/cell)

● Specifications

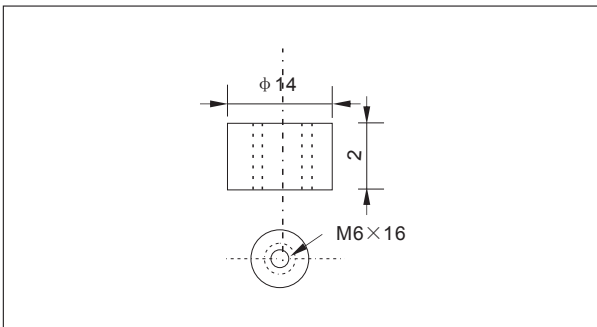
| | | |
|---------------------------|--------------|--------------------|
| Nominal Voltage | | 12V |
| Number of cell | | 6 cells |
| Rated capacity(15min.rat) | | 160 Watts/cell |
| Dimensions | Length | 197±2mm(7.76inch) |
| | Width | 165±2mm(6.50inch) |
| | Height | 170±2mm(6.69inch) |
| | Total Height | 170±2mm(6.69inch) |
| Approx. Weight | | 14.3kg(31.5lbs)±3% |



● Outer dimensions (mm)



● Terminal Type (mm)



● 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 | 104 | 85.5 | 68.4 | 48.4 | 36.1 | 29.4 | 16.4 | 11.8 | 9.50 | 8.26 | 7.07 |
| 1.67V/cell | 100 | 82.9 | 65.6 | 46.9 | 34.9 | 28.7 | 16.3 | 11.7 | 9.42 | 8.19 | 7.01 |
| 1.70V/cell | 97.1 | 80.3 | 64.3 | 46.0 | 34.3 | 28.3 | 16.2 | 11.6 | 9.38 | 8.16 | 6.98 |
| 1.75V/cell | 93.0 | 77.6 | 62.1 | 44.9 | 33.4 | 27.7 | 16.0 | 11.6 | 9.32 | 8.10 | 6.93 |
| 1.80V/cell | 87.7 | 73.5 | 58.8 | 43.2 | 32.2 | 26.8 | 15.6 | 11.2 | 9.04 | 7.86 | 6.72 |

● 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 | 196 | 165 | 132 | 93.5 | 69.6 | 56.8 | 32.1 | 23.2 | 18.7 | 16.4 | 14.0 |
| 1.67V/cell | 188 | 160 | 127 | 90.5 | 67.4 | 55.4 | 31.8 | 23.0 | 18.6 | 16.2 | 13.9 |
| 1.70V/cell | 183 | 155 | 124 | 88.8 | 66.2 | 54.5 | 31.6 | 22.9 | 18.5 | 16.2 | 13.8 |
| 1.75V/cell | 175 | 150 | 120 | 86.6 | 64.6 | 53.5 | 31.1 | 22.8 | 18.4 | 16.0 | 13.7 |
| 1.80V/cell | 165 | 142 | 113 | 83.5 | 62.2 | 51.8 | 30.3 | 22.1 | 17.8 | 15.6 | 13.3 |

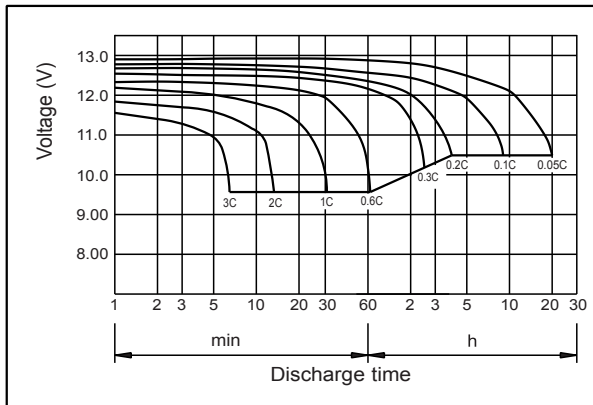
Note: The above characteristics data can be obtained within three charge or discharge cycles.

● Characteristics

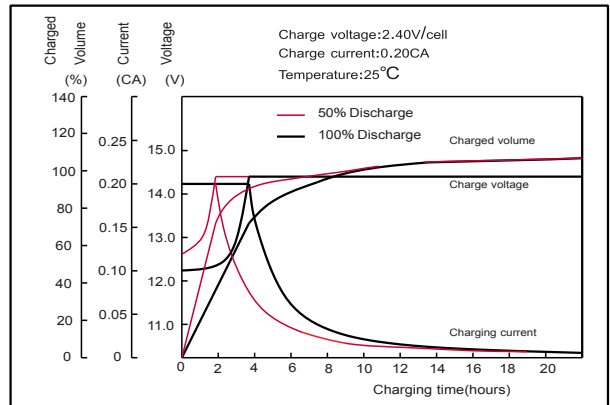
| | | |
|--|-----------|---|
| Capacity(20HR,25°C) | | 45Ah |
| Capacity(15min.rate,25°C) | | 160 Watts/cell |
| Terminal type | | T14 |
| Internal resistance (Fully charged,25°C) | | Approx.7m Ω |
| Capacity affected by temperature (20HR) | 40°C | 102% |
| | 25°C | 100% |
| | 0°C | 85% |
| | -15°C | 65% |
| Self-discharge (25°C) | 3month | Remaining Capacity:91% |
| | 6month | Remaining Capacity:82% |
| | 12month | 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 Temperature compensation: -18mV/°C |
| Cyclic charging voltage(25°C) | | 14.50 to 15.00V Temperature compensation: -30mV/°C |
| Maximum charging current | | 13.5A |
| Terminal material | | Copper |
| Maximum discharge current | | 400A(5 sec.) |
| Designed floating life(20°C) | | 10years |

HR12160W (12V160 Watts/cell)

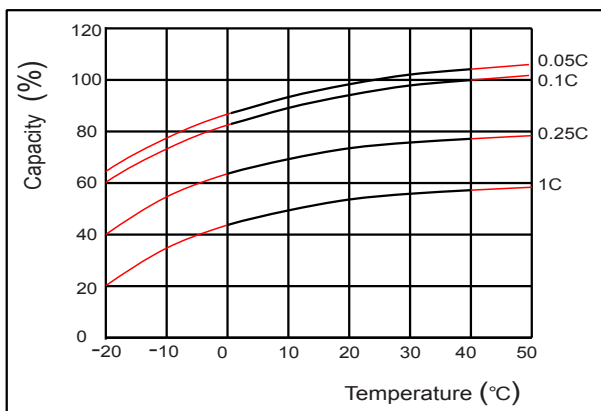
● Discharge characteristics(25°C)



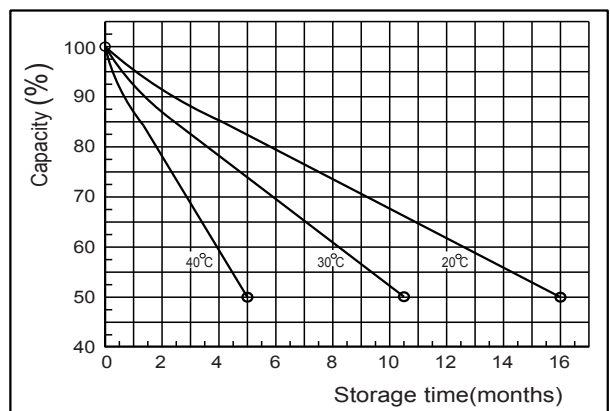
● Charging characteristics (25°C)



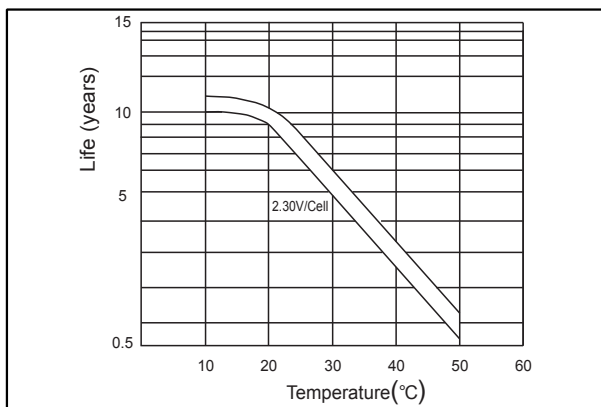
● Effect of Temperature on Capacity



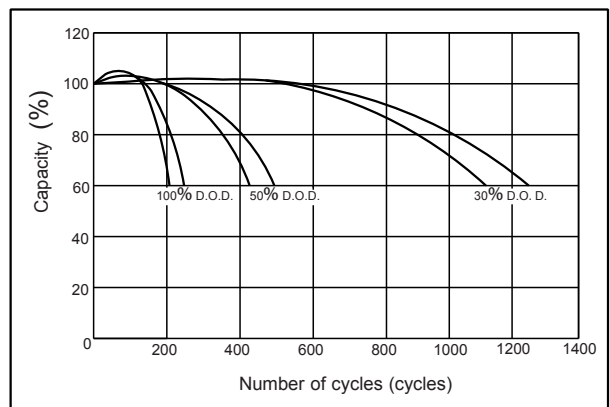
● Self-discharge characteristics



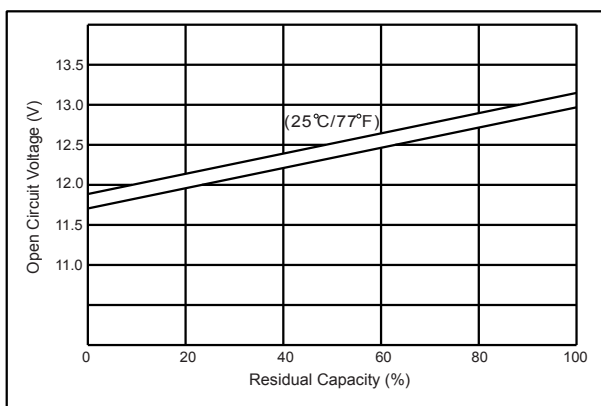
● Floating Life on Temperature



● Cycle service Life on D.O.D (25°C)



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



● The relationship for Charging voltage and Temperature

