REGUERO BATERIAS,S.L.

# HA12-12 (12V-12 Ah)

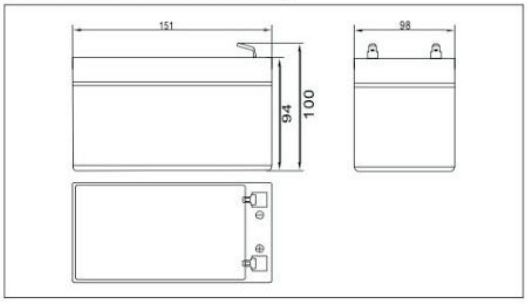
HEYCAR service

Sealed lead-acid battery

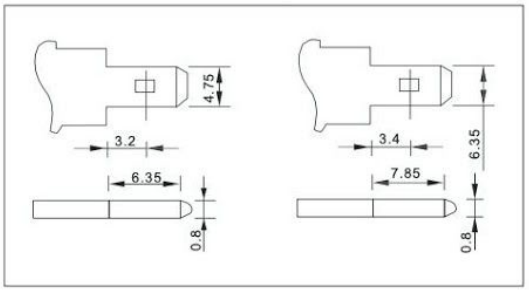
## Specifications

| | | |
|---|---|---|
| Nominal Voltage | | 12V |
| Rated capacity (20 hour rate) | | 12Ah |
| Dimensions | Length | 151±1.5mm(5.94inch) |
| | Width | 98±1mm(3.86inch) |
| | Height | 95±1mm(3.74inch) |
| | Total Height | 101±1mm(3.98inch) |
| Approx. Weight | | 3.4kg(7.5lbs)±4% |

## Outer dimensions (mm)




## Terminal Type (mm)




## Characteristics

| | | |
|---|---|---|
| Capacity (25℃) | 20HR(10.5V) | 12Ah |
| | 10HR(10.5V) | 11Ah |
| | 1HR(9.60V) | 7.2Ah |
| Terminal type | | T2/T1 |
| Internal resistance (Fully charged,25℃) | | Approx.19mΩ |
| Capacity affected by temperature (20HR) | 40℃ | 102% |
| | 25℃ | 100% |
| | 0℃ | 85% |
| | -15℃ | 65% |
| Self-discharge (25℃) | 3month | Remaining Capacity:91% |
| | 6month | Remaining Capacity:82% |
| | 12month | Remaining Capacity:65% |
| Nominal operating temperature | | 25℃±3℃(77℉±5℉) |
| Operating temperature range | Discharge | -15℃~50℃(5℉~122℉) |
| | Charge | -10℃~50℃(14℉~122℉) |
| | Storage | -20℃~50℃(-4℉~122℉) |
| Float charging voltage(25℃) | | 13.50 to 13.80V<br>Temperature compensation: -18mV/℃ |
| Cyclic charging voltage(25℃) | | 14.50 to 15.00V<br>Temperature compensation: -30mV/℃ |
| Maximum charging current | | 3.6A |
| Maximum discharge current | | 180A(5 sec.) |
| Designed floating life(20℃) | | 5 years |

## Construction

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

## Constant Current Discharge Characteristics Unit:A(25℃,77℉)

| F.V/Time | 5min | 10min | 15min | 30min | 60min | 2h | 3h | 4h | 5h | 10h | 20h |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9.60V | 45.8 | 29.0 | 22.7 | 12.8 | 7.86 | 4.3 | 2.97 | 2.46 | 2.09 | 1.14 | 0.61 |
| 9.90V | 44.5 | 28.2 | 22.1 | 12.5 | 7.74 | 4.27 | 2.96 | 2.45 | 2.08 | 1.13 | 0.61 |
| 10.2V | 42.6 | 27.0 | 21.3 | 12.1 | 7.55 | 4.24 | 2.94 | 2.43 | 2.07 | 1.13 | 0.60 |
| 10.5V | 40.8 | 25.8 | 20.6 | 11.8 | 7.40 | 4.17 | 2.92 | 2.41 | 2.05 | 1.12 | 0.60 |
| 10.8V | 38.5 | 24.4 | 19.5 | 11.4 | 7.17 | 4.07 | 2.83 | 2.34 | 1.99 | 1.10 | 0.59 |

## Constant Power Discharge Characteristics Unit:W(25℃,77℉)

| F.V/Time | 5min | 10min | 15min | 30min | 60min | 2h | 3h | 4h | 5h | 10h | 20h |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9.60V | 512 | 328 | 259 | 146 | 91.0 | 50.3 | 35.3 | 29.3 | 25.0 | 13.6 | 7.31 |
| 9.90V | 496 | 318 | 252 | 144 | 89.7 | 50.0 | 35.1 | 29.1 | 24.8 | 13.6 | 7.28 |
| 10.2V | 476 | 305 | 243 | 139 | 87.4 | 49.6 | 34.9 | 28.9 | 24.7 | 13.5 | 7.24 |
| 10.5V | 455 | 292 | 235 | 136 | 85.6 | 48.8 | 34.6 | 28.7 | 24.5 | 13.4 | 7.20 |
| 10.8V | 430 | 275 | 222 | 131 | 83.0 | 47.6 | 33.6 | 27.9 | 23.8 | 13.2 | 7.06 |

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

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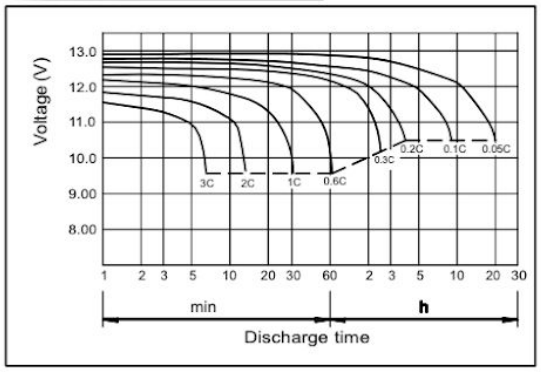
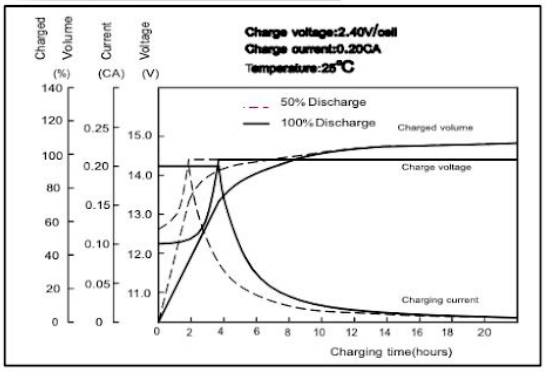
# HA12-12 (12V-12 Ah)

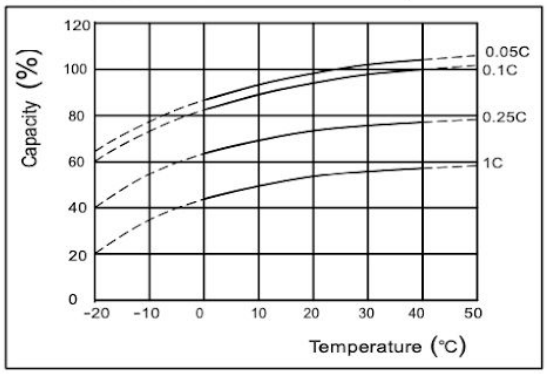
## Discharge characteristics(25°C)



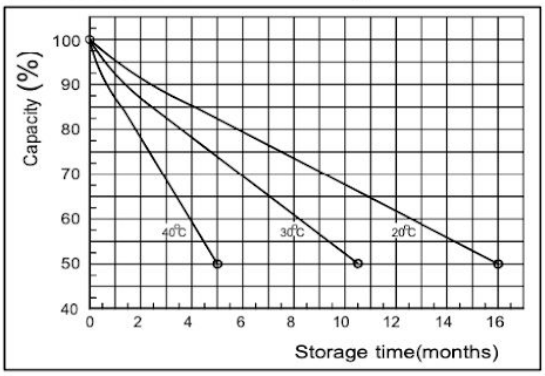

## Charging characteristics (25°C)



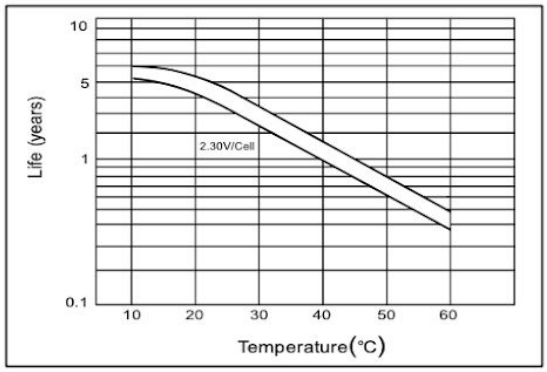

## Effect of temperature on capacity



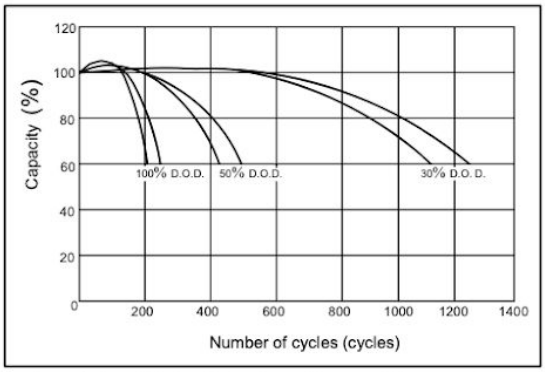

## Self-discharge characteristics



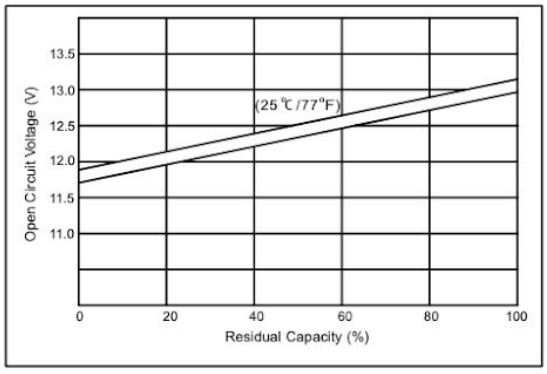

## Floating life on temperature

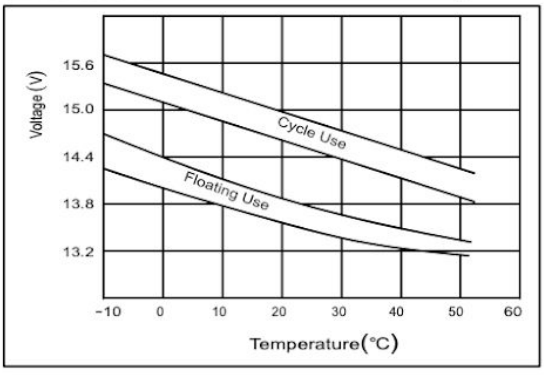



## Cycle life on D.O.D(25℃)




## The relationship for OCV and Capacity (25℃)




## The relationship for Charging voltage and Temperature