

DEEP CYCLE GEL BATTERY

ES-100 GEL



MADE IN VIETNAM

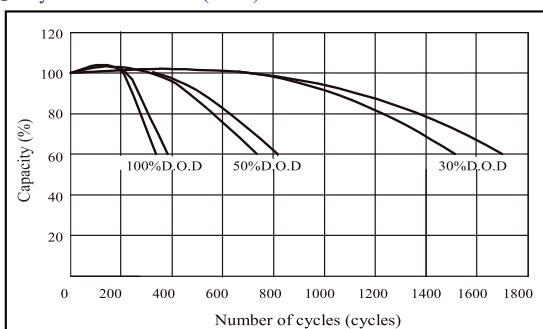
Special Features :

- Superior deep cycle design
- Very long life in deep cycle applications
- Superior recovery from deep discharge
- Wide working environment

● Specifications

| | | |
|-----------------------|------------------------|-------------------|
| Nominal voltage | 12V (6 cells per unit) | |
| Rated capacity (10HR) | 100Ah/10.8V | |
| Dimensions | Length | 330±2mm (33 cm) |
| | Width | 171±2mm (17.1 cm) |
| | Height | 214±2mm (21.4 cm) |
| | Total height | 220±2mm (22 cm) |
| Approx. weight | 30.50kg (67.20lbs)±3% | |

● Cycle life on D.O.D (25°C)



Applications :



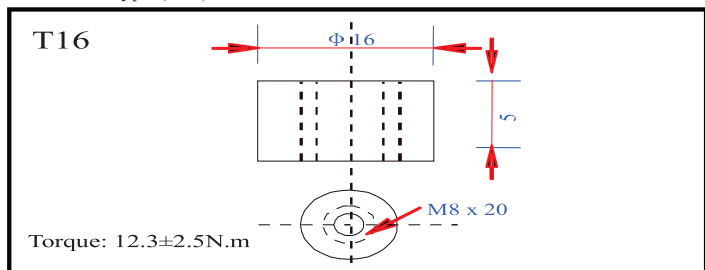
Certifications :



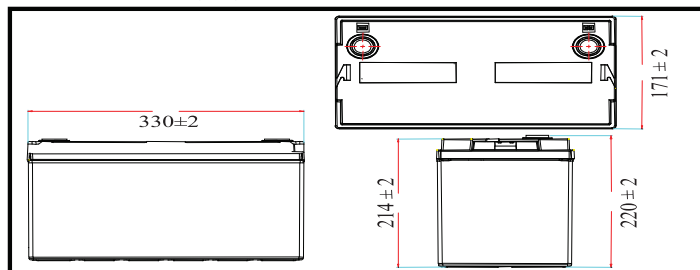
● Characteristics

| | | |
|-------------------------------------------|----------------------------------------------------------|------------------------------|
| Capacity (25°C) | 10HR (10.8V) | 100Ah |
| | 3HR (10.8V) | 75Ah |
| | 1HR (10.5V) | 55Ah |
| Terminal type | T16 | |
| Internal resistance (Fully charged, 25°C) | Approx. 5mΩ | |
| 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 Temperature compensation: -18mV/°C/Block | |
| Cycle charging voltage (25°C) | 14.50 to 14.70V Temperature compensation: -30mV/°C/Block | |
| Cycle Life | >750 cycles @ 0.2C 50% DOD. | |
| Maximum charging current | 20A | |
| Pulse discharge current | 800A (5 sec.) | |
| Design life | 12 years for floating (25°C) | |
| | Eurobat (20°C): 10-12 years, long life. | |

● Terminal type (mm)



● Outer dimensions (mm)



● Construction

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

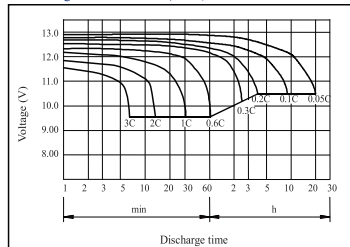
● Constant current discharge characteristics unit: Ampere/Cell (at 25°C, 77°F)

| F.V/Time | 10min | 15min | 30min | 60min | 2h | 3h | 4h | 5h | 8h | 10h | 20h |
|----------|-------|-------|-------|-------|------|------|------|------|------|------|------|
| 9.60V | 195 | 160 | 97.0 | 60.0 | 36.5 | 26 | 20.4 | 17.3 | 12.2 | 10.2 | 5.40 |
| 9.90V | 189 | 156 | 95.1 | 59.1 | 36.3 | 25.9 | 20.3 | 17.2 | 12.2 | 10.2 | 5.38 |
| 10.2V | 181 | 150 | 92.2 | 57.6 | 36.0 | 25.7 | 20.1 | 17.1 | 12.1 | 10.1 | 5.37 |
| 10.5V | 174 | 145 | 89.9 | 55.8 | 35.5 | 25.5 | 20.0 | 17.0 | 12.0 | 10.1 | 5.34 |
| 10.8V | 164 | 138 | 86.6 | 54.0 | 34.6 | 25.0 | 19.4 | 16.5 | 11.6 | 10.0 | 5.30 |

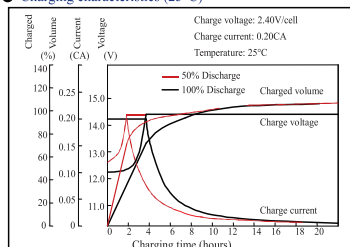
● Constant power discharge characteristics unit: Watt/Cell (at 25°C, 77°F)

| F.V/Time | 10min | 15min | 30min | 60min | 2h | 3h | 4h | 5h | 8h | 10h | 20h |
|----------|-------|-------|-------|-------|-----|-----|-----|-----|-----|-----|------|
| 9.60V | 2106 | 1757 | 1088 | 684 | 423 | 306 | 240 | 205 | 145 | 122 | 64.7 |
| 9.90V | 2043 | 1715 | 1067 | 674 | 421 | 304 | 238 | 204 | 145 | 121 | 64.6 |
| 10.2V | 1959 | 1651 | 1034 | 657 | 417 | 302 | 237 | 202 | 144 | 121 | 64.4 |
| 10.5V | 1874 | 1595 | 1009 | 636 | 411 | 300 | 235 | 201 | 143 | 120 | 64.0 |
| 10.8V | 1769 | 1511 | 972 | 616 | 400 | 294 | 228 | 195 | 138 | 119 | 63.6 |

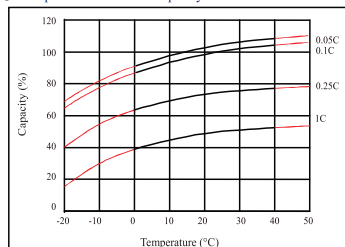
● Discharge characteristics (25°C)



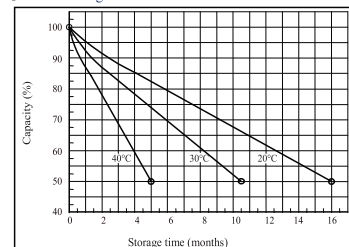
● Charging characteristics (25°C)



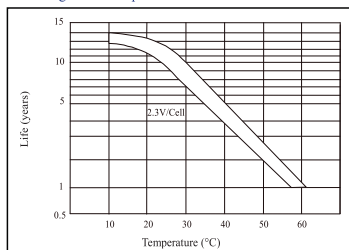
● Temperature effects on capacity



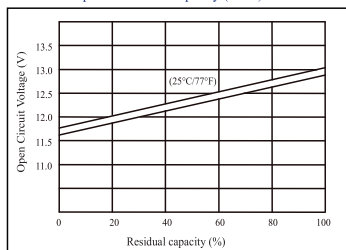
● Self-discharge characteristics



● Floating life on temperature



● Relationship for OCV and capacity (25°C)



● Relationship for charging voltage and temperature

