

STARMAX

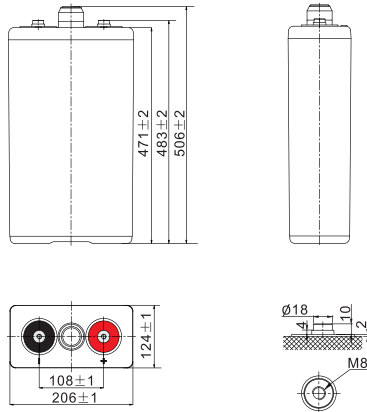
OPzV TUBULAR GEL BATTERIES

OPzV350-2



OPzV350-2 (2V 350Ah)

LAYOUT



General Features

- ✓ 20 years design life(20°C)
- ✓ Better recovery performance
- ✓ Wide working temperature range (-20~55)°C
- ✓ No electrolyte stratification provides longer service life
- ✓ High recombination efficient
- ✓ Build in copper core based in lead will carry large current
- ✓ Separator imported form AMER-SIL high porosity. PVC-SiO₂ and low resistance
- ✓ Pasted negative plate special grid design increase the active material. Availability large current discharge and charge ability
- ✓ Tubuler type positive plate (polyester tube) prevent the active material from falling. Muti metal alloy pressed positive grid increase the anti corrosion ability and service life

Applications

- ✓ Green energy systems (solar, wind, hydro, etc)
- ✓ Telecommunications installations
- ✓ Solar power stations
- ✓ Alarm installations
- ✓ Railway crossing
- ✓ Street lightening
- ✓ Pump systems
- ✓ Signal station
- ✓ Street signs
- ✓ Traffic lights
- ✓ Lawn lamp

Standards

- ✓ ACC. to IEC 60896, IEC 61427, DIN 40742 standards
- ✓ UL, CE Certified
- ✓ Manufactured by Starmax, ISO 45001, ISO 9001 and ISO 14001 certified production facilities



SPECIFICATIONS

| | | |
|-------------------------------|-----------------------|------------------------------|
| Rated Voltage | 2V | |
| Nominal Capacity | 350Ah | C ₁₀ , 1.80V/cell |
| Dimensions | Length | 124mm(4.88 in.) |
| | Width | 206mm(8.11 in.) |
| | Container height | 471mm(18.54 in.) |
| | Total height | 506mm(19.92 in.) |
| Approx. weight | 29.0Kg (63.93 lbs) | |
| Terminal | M8 | |
| Container material | ABS | |
| Rated capacity (25°C) | 455.0 Ah | (100hr,4.55A,1.80V/cell) |
| | 350.0 Ah | (10hr,35.0A,1.80V/cell) |
| | 305.5 Ah | (5hr,61.1A,1.75V/cell) |
| | 270.9 Ah | (3hr,90.3A,1.75V/cell) |
| | 195.3 Ah | (1hr,195.3A,1.65V/cell) |
| Max. discharge current | 2800A | |
| Internal resistance (25°C) | Approx.0.85mΩ | |
| Operating temp. range | Discharge | -20°C~55°C (-4°F~131°F) |
| | Charge | 0°C~40°C (32°F~104°F) |
| | Storage | -20°C~50°C (-4°F~122°F) |
| Nominal operating temp. range | 25±3°C (77±5°F) | |
| Cycle Use | 87.5A | |
| Effect of temp. to Capacity | Float | 2.25V |
| | Temp. Coefficient | -3mV/cell/°C |
| | Cycle(Equalization) | 2.35~2.40V |
| Effect of temp. to Capacity | 40°C (104°F) | 106% |
| | 25°C (77°F) | 100% |
| | 0°C (32°F) | 86% |
| Self discharge | ≤3% per month at 25°C | |

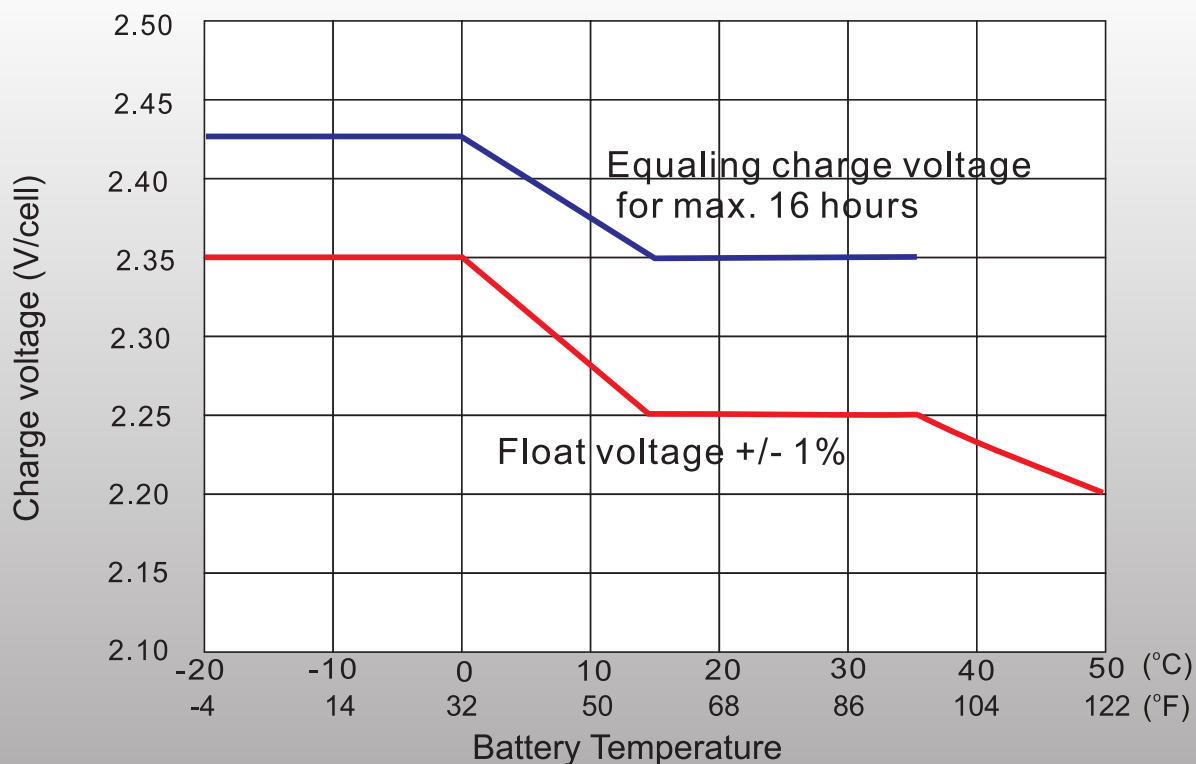
Constant Current Discharge (Amperes) at 25°C (77°F)

| F.V/Time | 1h | 2h | 3h | 5h | 8h | 10h | 24h | 48h | 72h | 100h | 120h |
|------------|-------|-------|------|------|------|------|------|------|------|------|------|
| 1.85V/cell | 156.4 | 105.8 | 81.2 | 55.5 | 38.9 | 32.8 | 15.6 | 8.14 | 5.86 | 4.44 | 3.83 |
| 1.80V/cell | 175.4 | 115.9 | 88.3 | 59.9 | 41.7 | 35.0 | 16.1 | 8.46 | 6.08 | 4.55 | 3.94 |
| 1.75V/cell | 182.3 | 119.9 | 90.3 | 61.1 | 42.4 | 35.6 | 16.2 | 8.65 | 6.23 | 4.64 | 4.00 |
| 1.70V/cell | 190.3 | 122.9 | 92.1 | 62.0 | 43.0 | 36.0 | 16.5 | 8.82 | 6.29 | 4.71 | 4.05 |
| 1.67V/cell | 195.3 | 124.9 | 93.8 | 63.0 | 43.5 | 36.3 | 16.6 | 8.91 | 6.34 | 4.79 | 4.10 |
| 1.60V/cell | 198.3 | 126.9 | 94.9 | 63.6 | 43.8 | 36.6 | 16.8 | 9.01 | 6.39 | 4.84 | 4.15 |

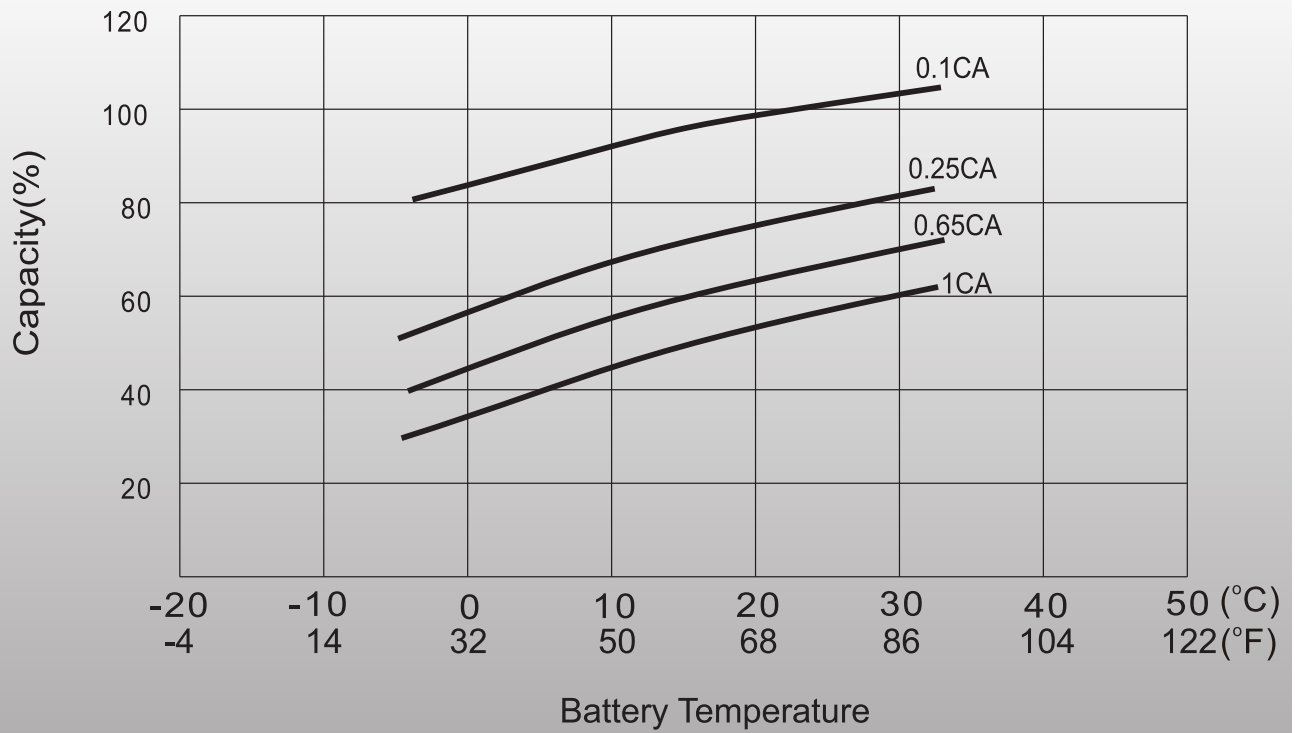
Constant Power Discharge (Watts/Cell) at 25°C (77°F)

| F.V/Time | 1h | 2h | 3h | 5h | 8h | 10h | 24h | 48h | 72h | 100h | 120h |
|------------|-------|-------|-------|-------|------|------|------|------|------|------|------|
| 1.85V/cell | 301.9 | 205.5 | 158.4 | 109.1 | 77.2 | 65.2 | 31.1 | 16.3 | 11.8 | 8.92 | 7.71 |
| 1.80V/cell | 337.7 | 224.6 | 171.4 | 117.1 | 82.5 | 69.5 | 32.2 | 16.9 | 12.2 | 9.14 | 7.92 |
| 1.75V/cell | 348.7 | 229.7 | 174.4 | 119.1 | 83.7 | 70.5 | 32.3 | 17.3 | 12.5 | 9.31 | 8.03 |
| 1.70V/cell | 360.7 | 234.7 | 177.4 | 121.1 | 84.6 | 71.2 | 32.8 | 17.6 | 12.6 | 9.43 | 8.13 |
| 1.67V/cell | 367.6 | 238.8 | 180.4 | 122.1 | 85.4 | 71.8 | 33.1 | 17.8 | 12.7 | 9.59 | 8.22 |
| 1.60V/cell | 371.6 | 240.8 | 181.4 | 123.1 | 85.8 | 72.2 | 33.3 | 17.9 | 12.8 | 9.68 | 8.30 |

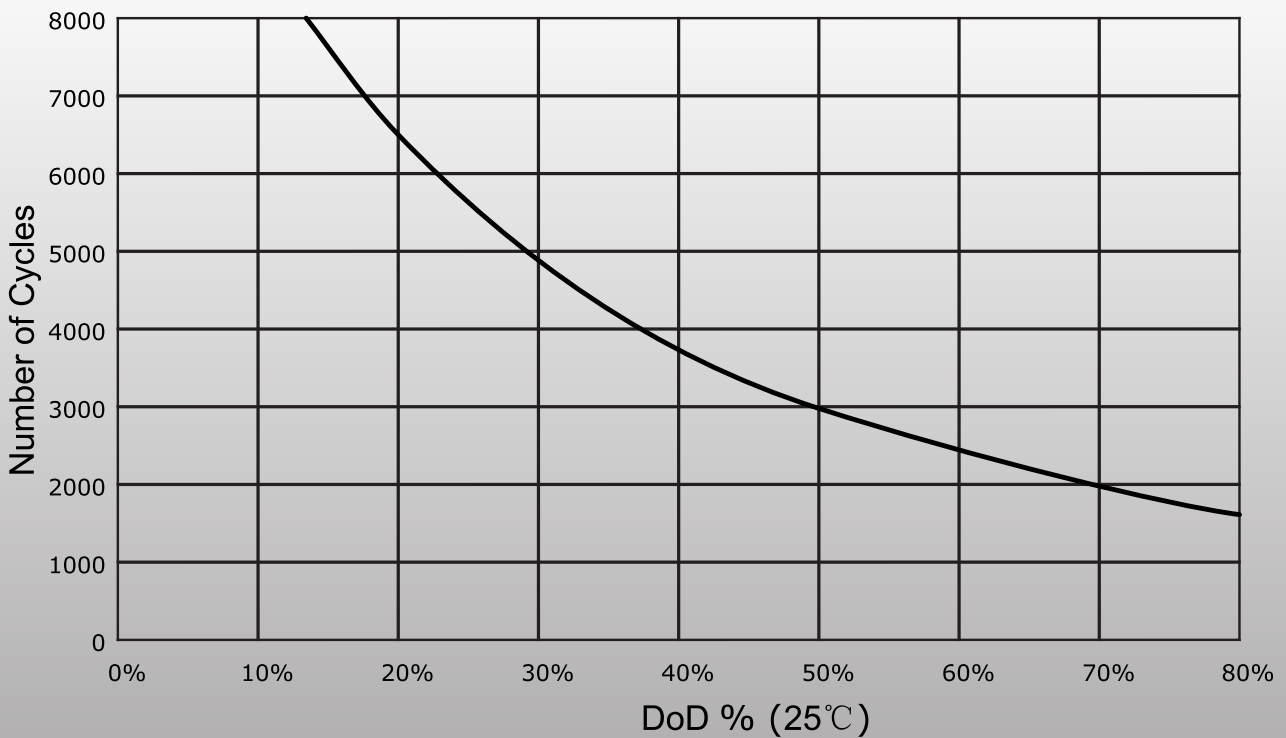
Charge voltage vs Ambient Temp. Curve



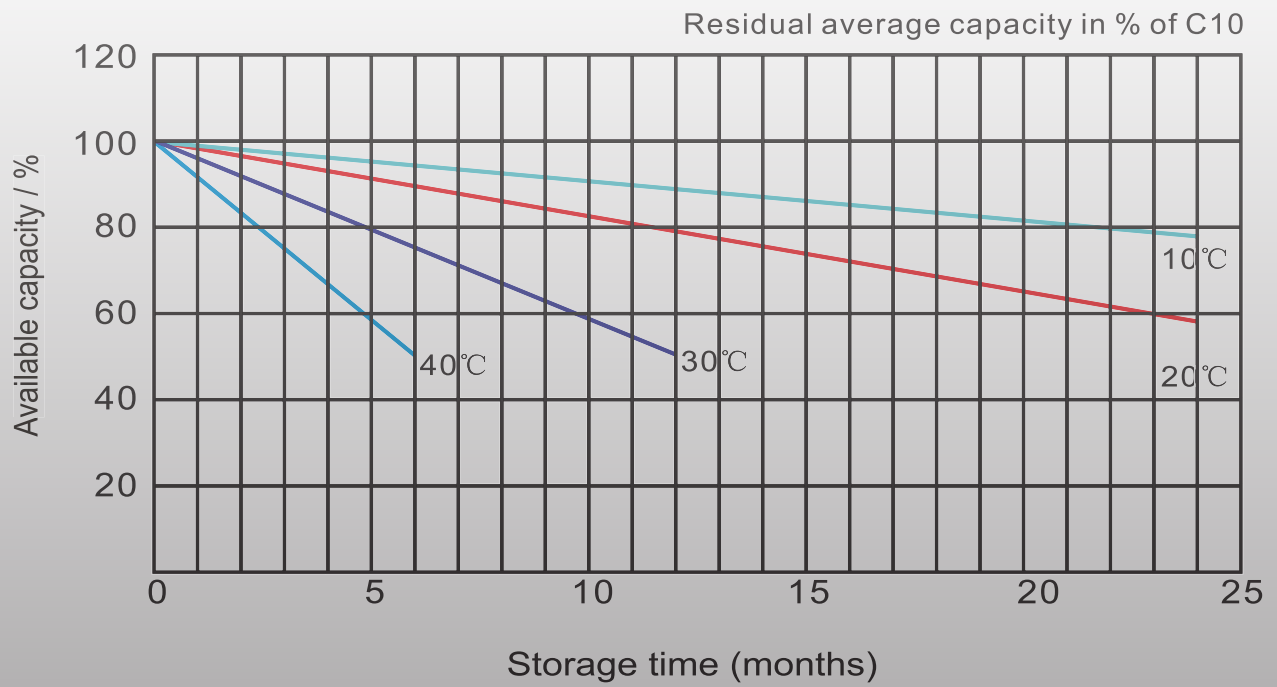
Temperature Effects in relation to Battery Capacity



Cycle Life in Relation to DOD



General Relation of Capacity vs Storage Time





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