KOYAMA®

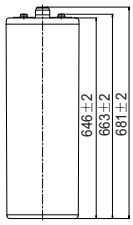
# OPzV Series-Tubular Gel

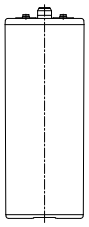
## 10 OPzV1000(2V1000Ah)

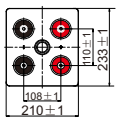
## Specifications

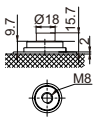
| | | |
|---|---|---|
| Rated Voltage | | 2V |
| Nominal Capacity | 1000Ah | ($C_{10}$,1.80V/cell) |
| Dimension | Length<br>Width<br>Container Height<br>Total Height | 233mm(9.17 in.)<br>210mm(8.27 in.)<br>646mm(25.43 in.)<br>681mm(26.81 in.) |
| Approx Weight | | 78.5Kg (173.06 lbs) |
| Terminal | | M8 |
| Container Material | | ABS |
| Rated Capacity (25℃) | 1000.0 Ah<br>875.0 Ah<br>771.0 Ah<br>558.0Ah | (10hr,100.0A,1.80V/cell)<br>(5hr,175.0A,1.75V/cell)<br>(3hr,257.0A,1.75V/cell)<br>(1hr,558.0A,1.65V/cell) |
| Max. Discharge Current(5s) | | 8000A |
| Internal Resistance(25℃) | | Approx.0.45mΩ |
| Operating Temp.Range | Discharge<br>Charge<br>Storage | -20℃~55℃ (-4℉~131℉)<br>0°C~40°C (32°F~104°F)<br>-20℃~50℃ (-4℉~122℉) |
| Nominal Operating Temp. Range | | 25±3℃ (77±5℉) |
| Max.Charging Current(25℃) | | 250.0A |
| Charge voltage(25℃) | Float<br>Temp. Coefficient<br>Cycle(Equalization) | 2.25V<br>-3mV/cell/℃<br>2.35~2.40V |
| Effect of temp. to Capacity | 40°C (104°F)<br>25℃ (77°F)<br>0℃ (32°F) | 106%<br>100%<br>86% |
| Self Discharge | | ≤3% per month at 25°C |


## Layout






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

| F.V/Time | 10min | 15min | 30min | 1h | 2h | 3h | 5h | 8h | 10h |
|---|---|---|---|---|---|---|---|---|---|
| 1.85V/cell | 682.0 | 648.0 | 558.0 | 445.0 | 295.0 | 231.0 | 159.0 | 111.0 | 93.7 |
| 1.80V/cell | 839.0 | 784.0 | 650.0 | 502.0 | 324.0 | 252.0 | 171.0 | 119.0 | 100.0 |
| 1.75V/cell | 992.0 | 877.0 | 693.0 | 522.0 | 333.0 | 257.0 | 175.0 | 120.0 | 102.0 |
| 1.70V/cell | 1113.0 | 957.0 | 733.0 | 542.0 | 342.0 | 262.0 | 177.0 | 122.0 | 103.0 |
| 1.65V/cell | 1196.0 | 1011.0 | 763.0 | 558.0 | 349.0 | 267.0 | 180.0 | 123.0 | 104.0 |
| 1.60V/cell | 1251.0 | 1047.0 | 782.0 | 568.0 | 354.0 | 270.0 | 182.0 | 124.0 | 105.0 |

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

| F.V/Time | 10min | 15min | 30min | 1h | 2h | 3h | 5h | 8h | 10h |
|---|---|---|---|---|---|---|---|---|---|
| 1.85V/cell | 1268.0 | 1217.0 | 1066.0 | 862.0 | 574.0 | 451.9 | 312.9 | 219.0 | 186.0 |
| 1.80V/cell | 1532.0 | 1452.0 | 1230.0 | 964.0 | 627.0 | 488.8 | 335.9 | 234.0 | 199.0 |
| 1.75V/cell | 1782.0 | 1603.0 | 1298.0 | 997.0 | 641.0 | 497.8 | 340.9 | 238.0 | 201.0 |
| 1.70V/cell | 1964.0 | 1724.0 | 1360.0 | 1029.0 | 654.0 | 505.8 | 344.9 | 240.0 | 203.0 |
| 1.65V/cell | 2071.0 | 1793.0 | 1400.0 | 1051.0 | 665.0 | 512.8 | 348.9 | 243.0 | 205.0 |
| 1.60V/cell | 2126.0 | 1830.0 | 1421.0 | 1062.0 | 670.0 | 516.7 | 350.9 | 244.0 | 206.0 |

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### Applications

- Telecommunications
- Radio and cellular telephone relay stations
- Emergency lighting systems
- Power stations,Conventional power stations, alternative pwer(solar,wind)
- Large UPS and computer back-up
- Railway signaling
- Maritime standby power on ships and ashore
- Process and control engineering
- Standby power
- Buoy lighting

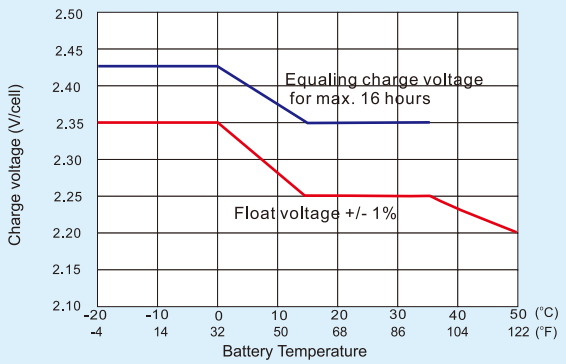
### General Features

- 20 years design life(20℃)
- Better recovery performance
- Wide working temperature range (-20~55)℃
- 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-$SiO_2$and low resistance
- Pasted negative plate special grid design increase the active material.availablity 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 ablity and service life

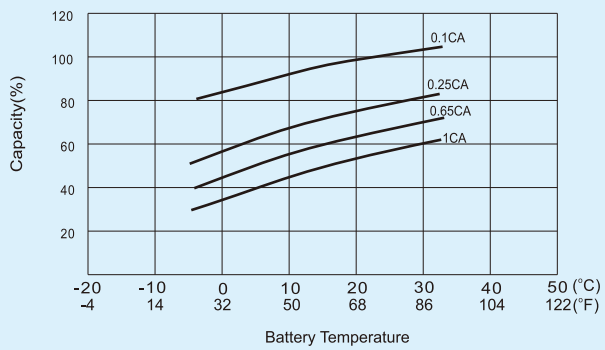
### Standards

- Compliance with IEC 60896, IEC 61427, DIN 40742 standards
- UL, CE Certified
- Manufactured in KOYAMA® IATF16949, OHSAS 18001,ISO 9001 and ISO 14001certified production facilities

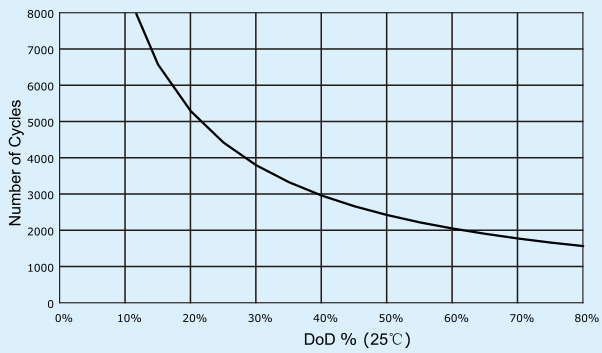
### Charge voltage vs ambient temperature curve



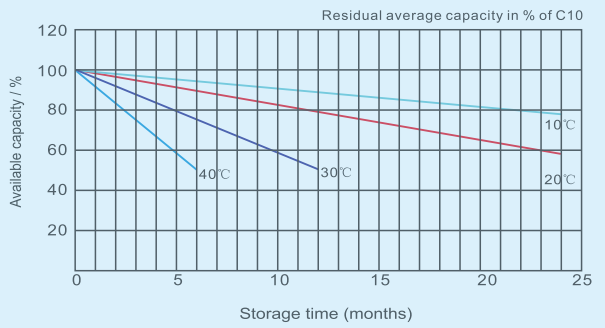

### Temperature effects in relation to battery capacity




### Cycle Life in Relation to DOD




### General Relation of Capacity VS. Storage Time





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