



## OPzV Series-Tubular Gel

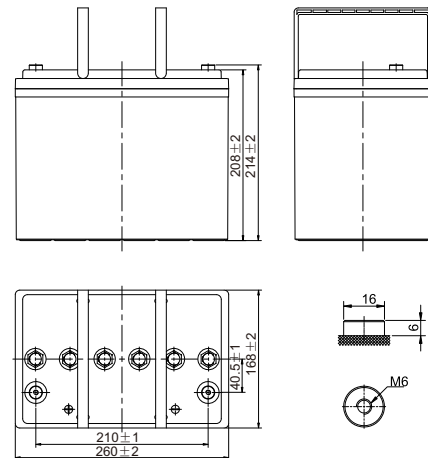
### 12V 20PzV45(12V45Ah)

#### Specifications

Rated Voltage	12V	
Nominal Capacity	45Ah	(C <sub>10</sub> , 1.80V/cell)
Dimension	Length	260mm(10.24 in.)
	Width	168mm(6.61 in.)
	Container Height	208mm(8.19 in.)
	Total Height	214mm(8.43 in.)
Approx Weight	19.5Kg (42.99 lbs)	
Terminal	M6	
Container Material	ABS	
Rated Capacity (25C)	45.0 Ah	(10hr, 4.50A, 1.80V/cell)
	38.2 Ah	(5hr, 7.64A, 1.75V/cell)
	33.0 Ah	(3hr, 11.0A, 1.75V/cell)
	26.6 Ah	(1hr, 26.6A, 1.67V/cell)
Max. Discharge Current (5s)	360A	
Internal Resistance(25°C)	Approx. 11.7mΩ	
Operating Temp. Range	Discharge	-20°C~55°C (-4F~131F) °
	Charge	0°C~40°C (32F~104F) °
	Storage	-20°C~50°C (-4F~122F) °
Nominal Operating Temp. Range	25±3°C (77±5F)	
Max. Charging Current(25°C)	11.25A	
Charge voltage(25C)	Float	13.5V
	Temp. Coefficient	-3mV/cell/°C
	Cycle(Equalization)	14.1~14.4V
Effect of temp. to Capacity	40 °C (104 °F)	106%
	25C (77 °F)	100%
	0C (32 °F)	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	40.1	35.5	26.5	20.3	12.9	9.83	7.03	5.08	4.30
1.80V/cell	48.3	40.9	29.6	22.3	13.9	10.6	7.35	5.30	4.50
1.75V/cell	55.4	45.7	31.9	23.7	14.7	11.0	7.64	5.44	4.59
1.70V/cell	60.4	49.6	35.9	25.8	15.6	11.8	8.09	5.52	4.63
1.67V/cell	66.1	53.2	37.5	26.6	16.1	12.2	8.24	5.62	4.71
1.60V/cell	70.6	56.3	39.0	27.5	16.7	12.5	8.47	5.71	4.80

#### 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	66.0	60.7	50.4	39.5	25.2	19.2	13.8	10.0	8.61
1.80V/cell	79.9	72.4	56.7	43.2	27.1	20.5	14.5	10.5	8.91
1.75V/cell	92.9	79.9	60.4	45.8	28.4	21.5	15.0	10.8	9.13
1.70V/cell	102.3	86.0	67.4	49.4	30.1	22.9	15.8	10.9	9.21
1.67V/cell	107.8	89.5	69.8	50.8	30.9	23.5	16.1	11.1	9.36
1.60V/cell	110.7	91.4	71.6	52.0	31.8	23.9	16.4	11.3	9.51



## OPzV Series-Tubular Gel 12V 20PzV45(12V45Ah)

### 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

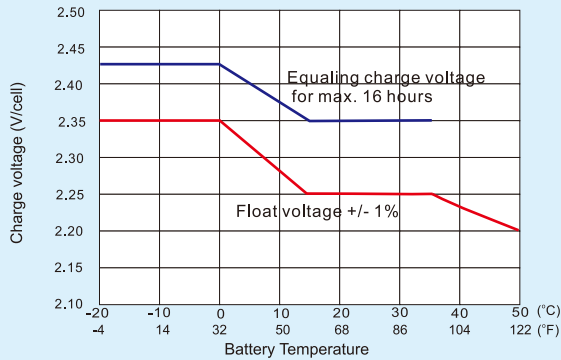
### General Features

- 20 years design life(20°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-SiO<sub>2</sub> 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

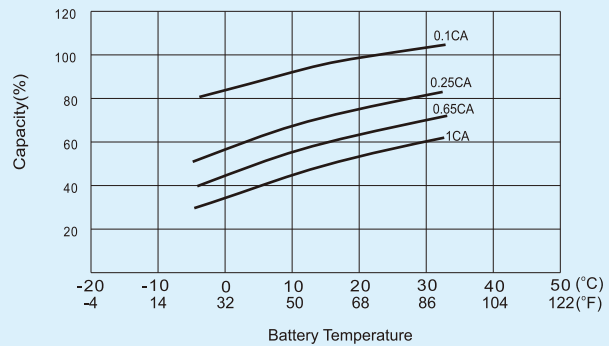
### Standards

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

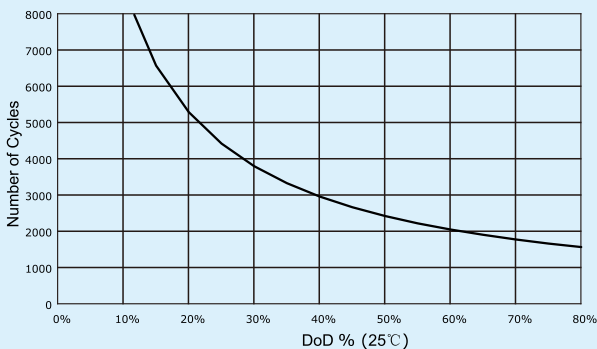
### Charge voltage vs ambient temperature curve



### Temperature effects in relation to battery capacity



### Cycle Life in Relation to DOD



### General Relation of Capacity VS. Storage Time

