



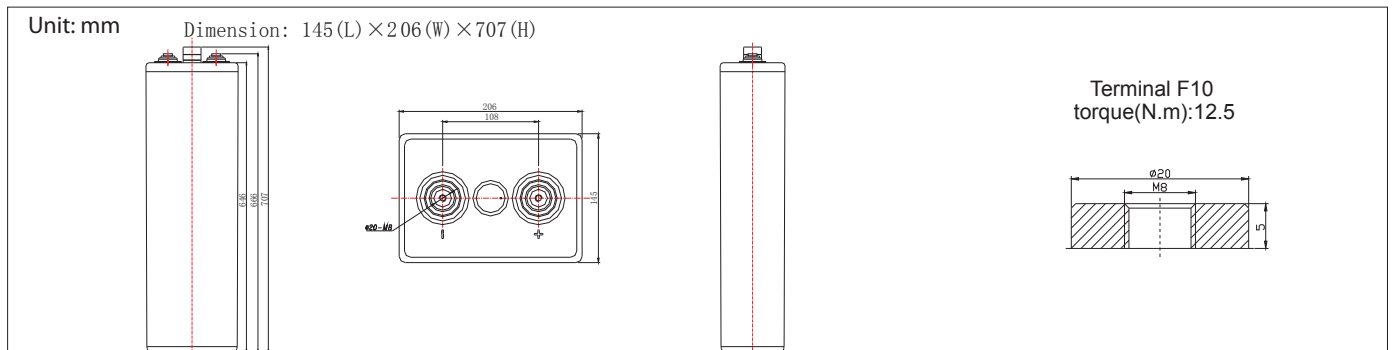
Ritar OPzS series is a flooded Lead Acid battery that adopts Tubular Plate technology to offer high reliability and performance. The Battery is designed and manufactured according to DIN40736-2/IEC60896-11 standards and with die-casting positive spine and patent formula of active material. OPzS series exceeds DIN40736-2/IEC60896-11 standard values with more than 20 years floating design life at 25°C and is even more suitable for cyclic use(PV/solar,traction etc) under extreme operating conditions.

## Specification

Voltage Per Unit	2V
Capacity	600Ah@10hr-rate to 1.80V per cell @25°C
Approx Weight	Without Electrolyte 34.4 kg With Electrolyte 46.4 kg
Max. Discharge Current	2500 A (5 sec)
Internal Resistance	Approx. 0.45 mΩ
Operating Temperature Range	Discharge: -15°C~50°C Charge: 0°C~40°C Storage: -15°C~50°C
Optimal Operating Temperature Range	25°C ± 5°C
Float charging Voltage	2.23 to 2.25 V(DC)/cell at 25°C
Maximum Charging Current	90A
Cycle Service	2.40 to 2.45 V(DC)/cell at 25°C
Self Discharge	Self-discharge rate less than 3.5% per month at 25°C. Please charge batteries before using.
Terminal	Thread insert & Bolt (F10-M8)
Container Material	A.S. (UL94-HB), and UL94-V0 is optional



## Dimensions



### Constant Current Discharge Characteristics : A(25 C)

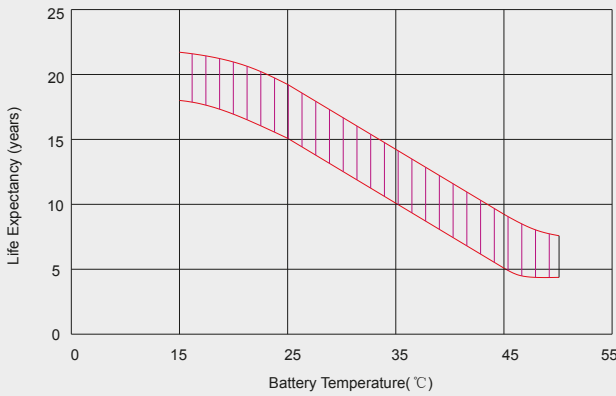
F.V/ Time	30min	1h	2h	4h	5h	8h	10h	20h	24h	48h
1.90	319.3	253.1	178.4	107.7	95.76	65.39	56.07	29.44	24.76	13.08
1.87	356.9	279.0	191.4	113.7	101.3	68.44	58.59	30.76	25.88	13.67
1.83	408.8	311.5	207.6	119.7	105.8	71.50	61.11	32.08	26.99	14.26
1.80	454.2	337.4	215.4	122.1	108.3	73.33	63.00	33.08	27.83	14.70
1.75	506.1	361.4	225.2	124.1	110.3	74.55	64.26	33.74	28.38	14.99
1.70	558.1	373.1	231.7	126.3	112.0	75.17	64.89	34.07	28.66	15.14
1.65	575.6	396.5	239.4	128.1	113.5	75.78	65.52	34.40	28.94	15.29
1.60	600.2	410.1	248.5	131.7	115.9	76.39	66.15	34.73	29.22	15.44

### Constant Power Discharge Characteristics : W(25 C)

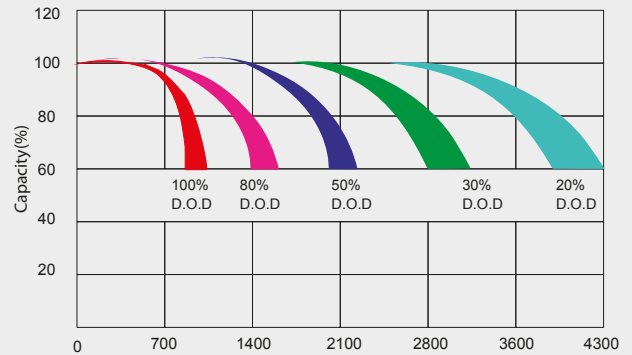
F.V/ Time	30min	1h	2h	4h	5h	8h	10h	20h	24h	48h
1.90	611.1	485.8	345.0	210.8	188.3	130.8	114.3	59.99	50.47	26.66
1.87	672.4	527.6	365.9	222.2	198.7	136.3	119.2	62.56	52.36	27.81
1.83	753.2	575.2	389.3	233.0	206.9	141.2	123.4	64.81	54.52	28.80
1.80	823.0	613.7	402.4	237.4	211.3	144.2	126.5	66.41	55.87	29.52
1.75	892.8	641.1	415.4	240.6	214.5	146.1	128.3	67.37	56.68	29.94
1.70	957.3	647.6	425.9	244.4	217.3	147.3	129.6	68.02	57.22	30.23
1.65	973.7	676.3	437.6	247.6	219.9	148.5	130.2	68.34	57.49	30.37
1.60	985.4	697.1	448.0	253.9	223.7	149.1	130.8	68.66	57.76	30.51

All mentioned values are average values.

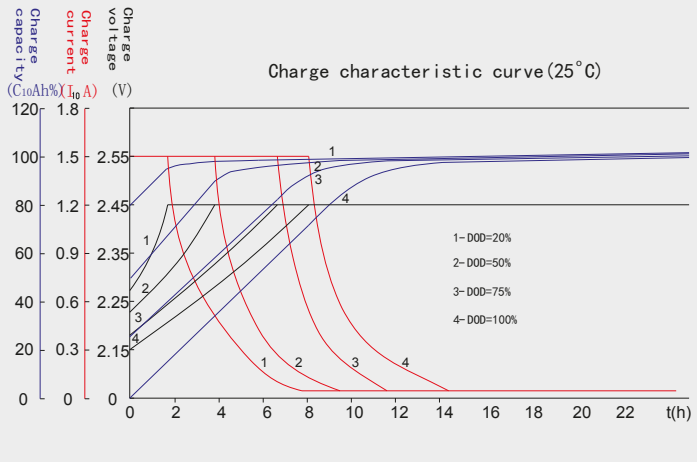
Effect of temperature on long term float life



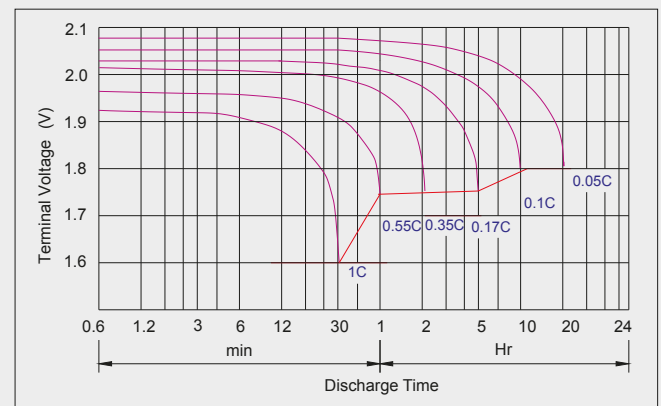
Life characteristics of cyclic use



Charge characteristic Curve for cyclic use



Discharge characteristic Curve



Long time discharge capacity for solar/wind application

Model	Capacity	C24 (Ah)	C48 (Ah)	C72 (Ah)	C100 (Ah)	C120 (Ah)	C240 (Ah)
		F.V=1.85VPC					
OPzS2-600		634.4	670.3	703.8	718.2	732.6	775.7

Capacity factors vs temperature (OPzS series)

Temperature	-30°C	-20°C	-10°C	0°C	10°C	20°C	25°C	30°C	40°C	45°C	50°C
Capacity	60%	75%	83%	89%	92%	99%	100%	103%	105%	107%	109%

Discharge Current VS. Final Voltage

Discharge current (Amp)	Final voltage (V/cell)
$I_{dis} \leq 0.1I_{10}$	1.90
$0.1I_{10} < I_{dis} \leq I_{10}$	1.85
$I_{10} < I_{dis} \leq 4I_{10}$	1.80
$4I_{10} < I_{dis} \leq 6I_{10}$	1.75
$6I_{10} < I_{dis} \leq 10I_{10}$	1.70
$I_{dis} > 15I_{10}$	1.60

Charge the batteries once every six months, if they are stored at 25°C.

Charging Method:

Constant Voltage	-0.15Cx2h+2.40~2.45V,24h,Max. Current 0.15CA
Constant Current	-0.15Cx2h+0.15Cx8h+0.10Cx4h

Maintenance & Cautions

Float Service:
※ Every six months, recommend inspection every battery voltage.
※ Every six months, recommend equalization charge for one time.
Equalization charge method:
Discharge: 40~50% rate capacity discharge.
Charge: Max. current 0.15CA, constant voltage 2.40-2.45V/cell charge 24h.
※ Effect of temperature on float charge voltage: -3mV/°C/cell.
※ Service life will be directly affected by the number of discharge cycles, depth of discharge, ambient temperature and charging method.