

STARMAX

OPzS FLOODED TUBULAR BATTERIES

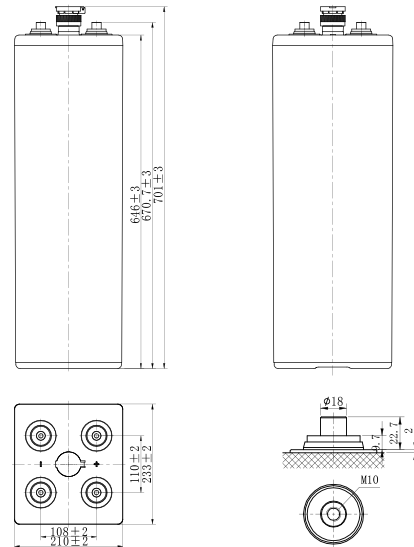
OPzS1000-2



OPzS1000-2 (2V 1000Ah)



LAYOUT



General Features

- ✓ 20 years design life(20°C)
- ✓ Lower self discharge
- ✓ Higher thermal capacity, no thermal runaway will occur
- ✓ Superior deep cycle performance
- ✓ Wide operation temperature range

Applications

- ✓ Telecommunications
- ✓ Buoy lighting
- ✓ Standby power
- ✓ Railway signalling
- ✓ Emergency lighting systems
- ✓ Alternative power (solar, wind)
- ✓ Maritime standby power on ships and ashore

Standards

- ✓ ACC. to IEC60896, DIN 40736
- ✓ Manufactured by Starmax ISO 45001, ISO 9001 and ISO 14001 certified production facilities



SPECIFICATIONS

Rated Voltage	2V	
Nominal Capacity	C ₁₀ ,1.80V/cell	1000.0Ah
Dimensions	Length	233±2mm (9.13 inches)
	Width	210±3mm (8.27 inches)
	Container height	646±3mm (25.43 inches)
	Total height	701±3mm (27.60 inches)
Approx. weight	Without Electrolyte 57.4kg (126.3lbs) With Electrolyte 77.4 kg (170.3lbs)	
Terminal	M10	
Container material	SAN transparent container	
Rated capacity (25°C)	1000.0 Ah	(10hr,100.0A,1.80V/cell)
	888.0 Ah	(5hr,177.6A,1.75V/cell)
	771.0 Ah	(3hr,257.0A,1.75V/cell)
	571.0 Ah	(1hr,571.0A,1.60V/cell)
Max. discharge current	8000A (5s)	
Internal resistance (25°C)	Approx 0.45mΩ	
Operating temp. range	Discharge	-15~55°C (5~131°F)
	Charge	0~45°C (32~113°F)
	Storage	-15~45°C (5~113°F)
Nominal operating temp. range	25±5°C (77±9°F)	
Cycle Use	Initial Charging Current less than 0.15CA.Voltage 2.40V~2.45V at 20°C(68°F)Temp. Coefficient -5mV/°C	
Standby Use	Initial Charging Current less than 0.15CA. Voltage 2.23V~2.25V at 20°C(68°F)Temp. Coefficient -3mV/°C	
Effect of temp. to Capacity	40°C (104°F)	103%
	20°C (68°F)	100%
	0°C (32°F)	86%
Self discharge	≤4% per month at 20°C	

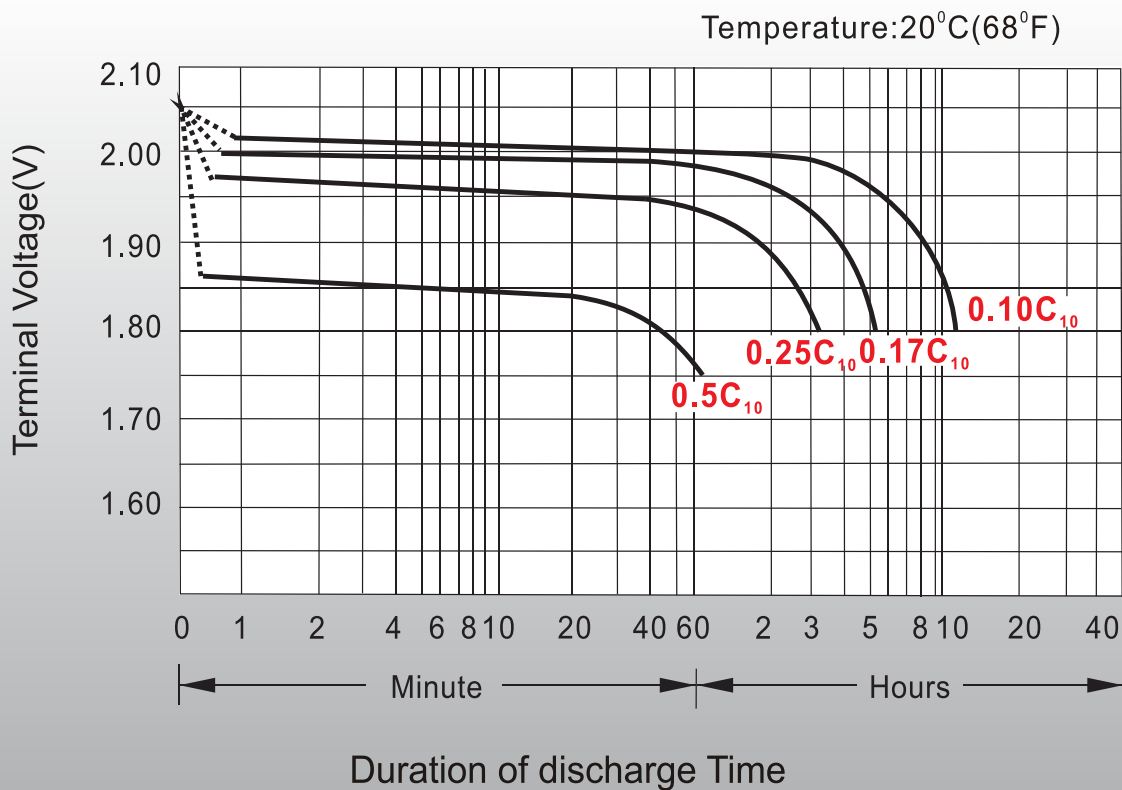
Constant Current Discharge (Amperes) at 20°C (68°F)

F.V/Time	1h	2h	3h	4h	5h	6h	8h	10h	20h	24h	72h	100h	120h
1.85V/cell	397.0	290.0	223.3	184.9	159.6	140.2	114.2	95.7	52.6	44.1	15.83	11.87	10.17
1.80V/cell	464.0	319.5	244.0	199.9	170.3	148.8	120.2	100.0	54.7	45.9	16.46	12.34	10.57
1.75V/cell	504.0	340.0	257.0	208.8	177.6	154.5	123.6	102.2	55.7	46.7	16.8	12.56	10.77
1.70V/cell	531.0	355.0	265.3	215.3	182.4	158.3	125.6	104.0	56.7	/	/	/	/
1.65V/cell	552.0	363.5	273.3	220.3	186.5	161.4	127.9	105.7	57.5	/	/	/	/
1.60V/cell	571.0	372.0	278.0	223.5	189.0	163.6	129.5	106.9	58.0	/	/	/	/

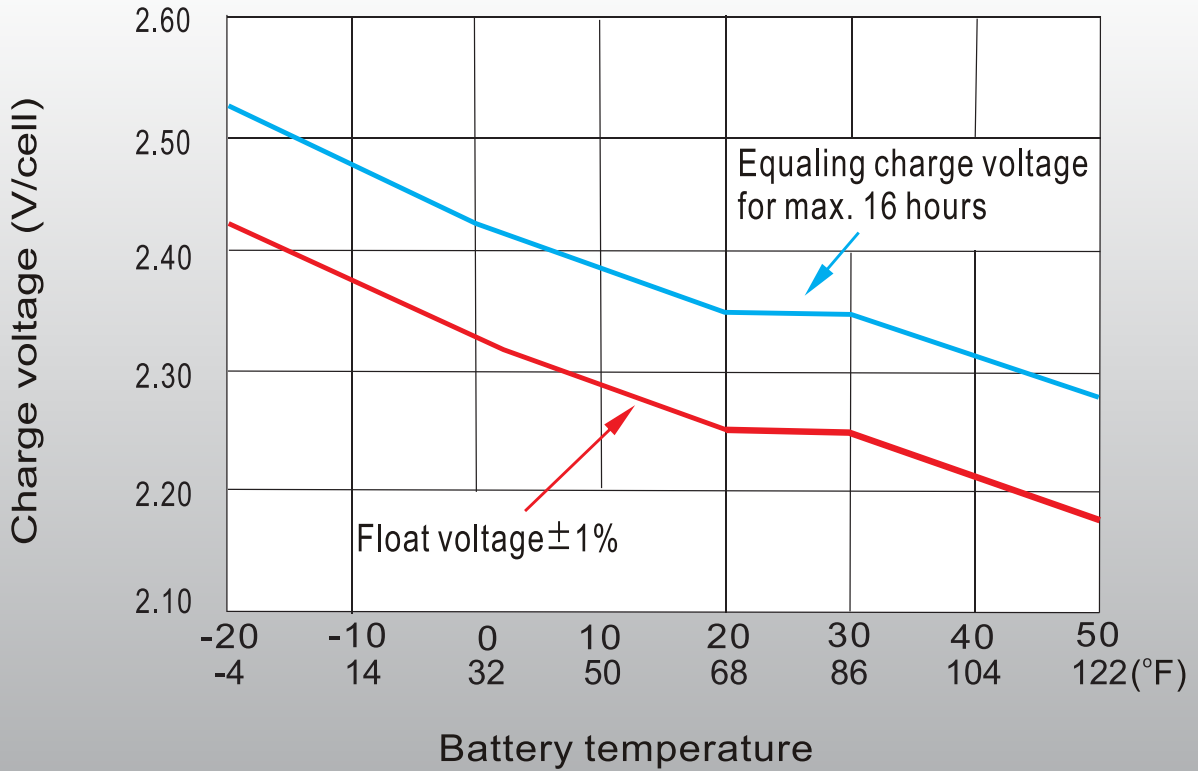
Constant Power Discharge (Watts/Cell) at 20°C (68°F)

F.V/Time	1h	2h	3h	4h	5h	6h	8h	10h	20h	24h	72h	100h	120h
1.85V/cell	742.9	547.0	423.3	351.9	305.0	269.2	220.3	185.6	102.3	85.8	30.6	22.8	19.53
1.80V/cell	855.7	596.0	457.6	376.5	322.7	283.6	230.0	192.3	105.5	88.4	31.5	23.6	20.14
1.75V/cell	917.7	628.6	478.3	390.9	335.0	292.7	235.2	195.5	107.0	89.7	32.0	23.9	20.4
1.70V/cell	957.8	651.6	490.8	401.0	342.5	298.9	238.4	197.9	108.3	/	/	/	/
1.65V/cell	988.2	664.3	503.1	409.0	348.7	303.7	241.7	200.6	109.4	/	/	/	/
1.60V/cell	1013.8	676.5	509.2	412.9	351.6	306.3	243.4	201.9	109.9	/	/	/	/

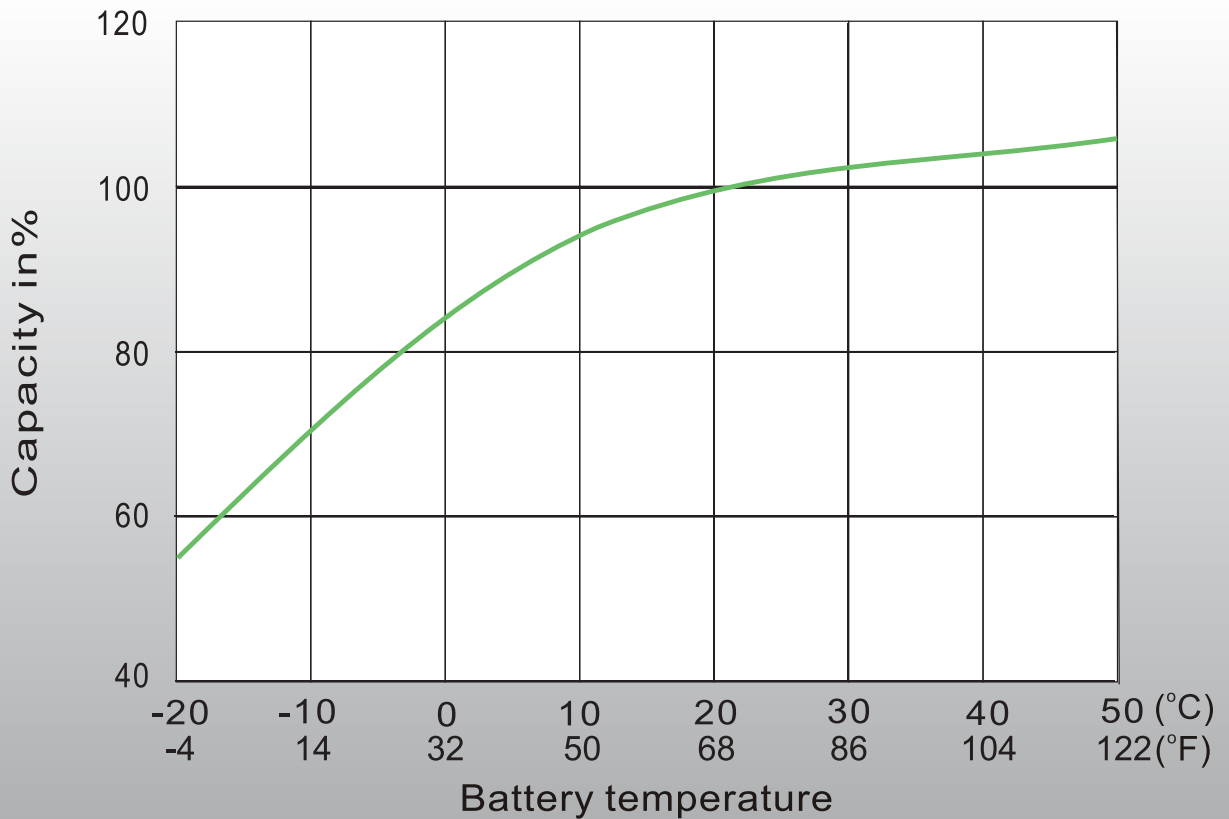
Discharge Characteristics



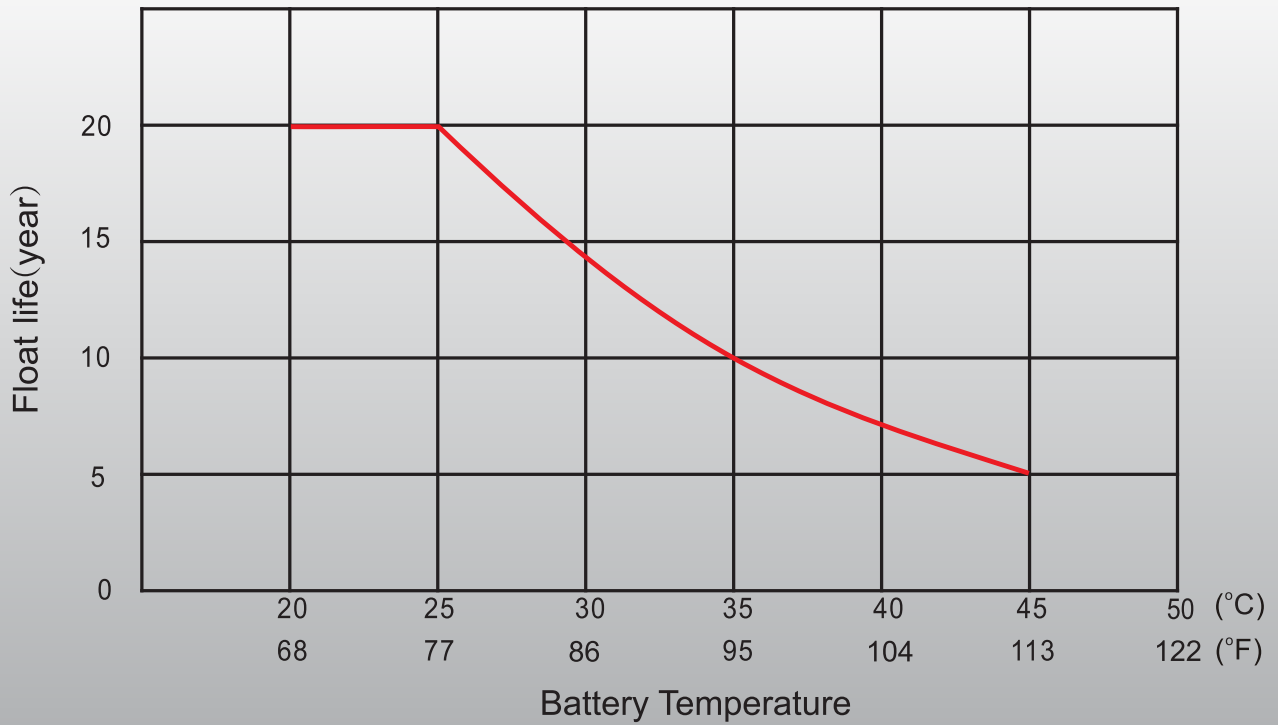
Charge Voltage vs Ambient Temperature Curve



Discharge Capacity vs Ambient Temp. Curve (110A)



Effect of Temp. on Long Term Float Life





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