

# STARMAX

## OPzS FLOODED TUBULAR BATTERIES

OPzS1200-2

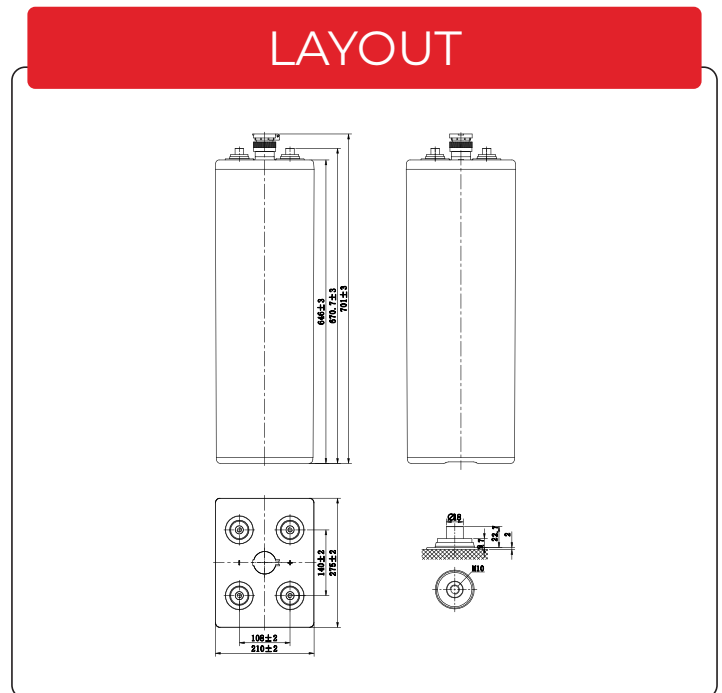


[www.starmaxbatteries.com](http://www.starmaxbatteries.com)

# OPzS1200-2 (2V 1200Ah)



## 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 <sub>10</sub> ,1.80V/cell	1200.0Ah
Dimensions	Length	275±2mm (10.83 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 67.7kg (148.9lbs)   With Electrolyte 91.7 kg (201.7lbs)	
Terminal	M10	
Container material	SAN transparent container	
Rated capacity (25°C)	1200.0 Ah	(10hr,120.0A,1.80V/cell)
	1066.0 Ah	(5hr,213.2A,1.75V/cell)
	925.2 Ah	(3hr,308.4A,1.75V/cell)
	685.2 Ah	(1hr,685.2A,1.60V/cell)
Max. discharge current	9600A (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	

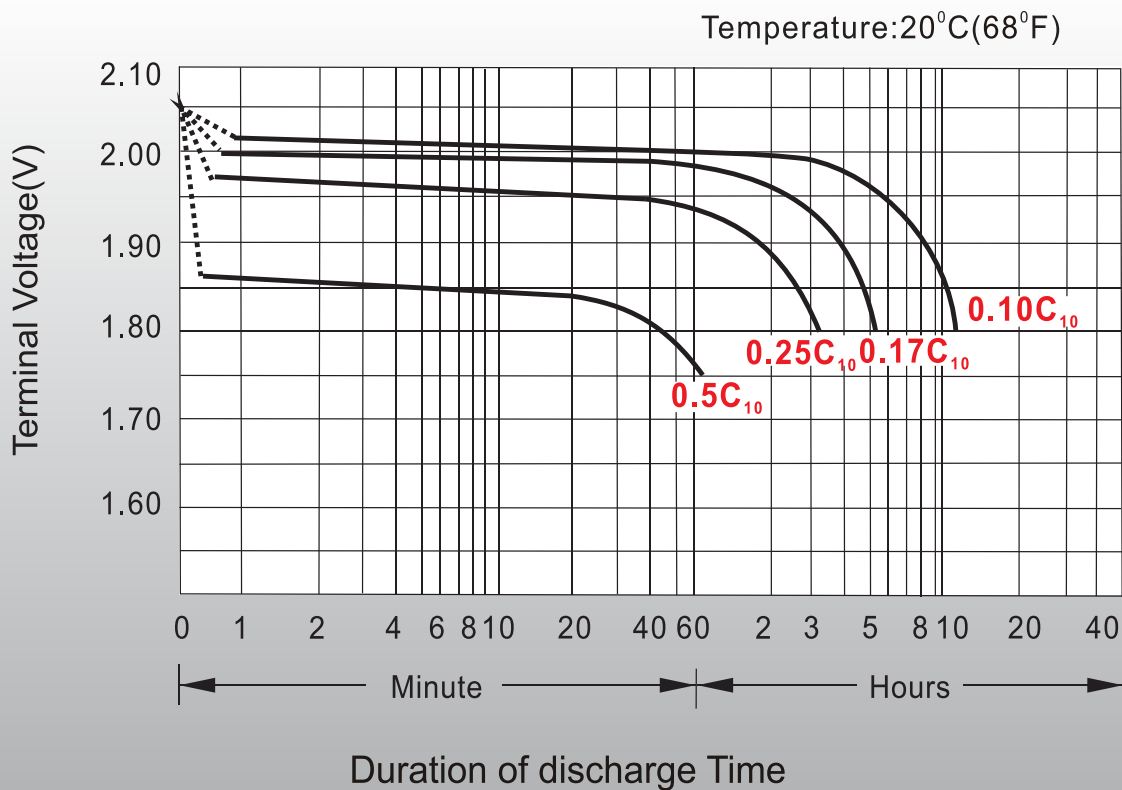
## Constant Current Discharge (Amperes) at 20°C (68°F)

F.V/Time	1h	2h	3h	4h	5h	6h	8h	10h	20h	24h	72h	100h	120h
1.85V/cell	476.4	348.0	268.0	221.9	191.5	168.2	137.1	114.9	63.1	52.9	19.0	14.2	12.2
1.80V/cell	556.8	383.4	292.8	239.8	204.4	178.6	144.2	120.0	65.6	55.0	19.7	14.8	12.7
1.75V/cell	604.8	408.0	308.4	250.5	213.2	185.4	148.3	122.7	66.8	56.0	20.1	15.1	12.9
1.70V/cell	637.2	426.0	318.4	258.3	218.9	190.0	150.8	124.7	68.0	/	/	/	/
1.65V/cell	662.4	436.2	328.0	264.3	223.8	193.6	153.5	126.8	68.9	/	/	/	/
1.60V/cell	685.2	446.4	333.6	268.2	226.8	196.3	155.4	128.3	69.6	/	/	/	/

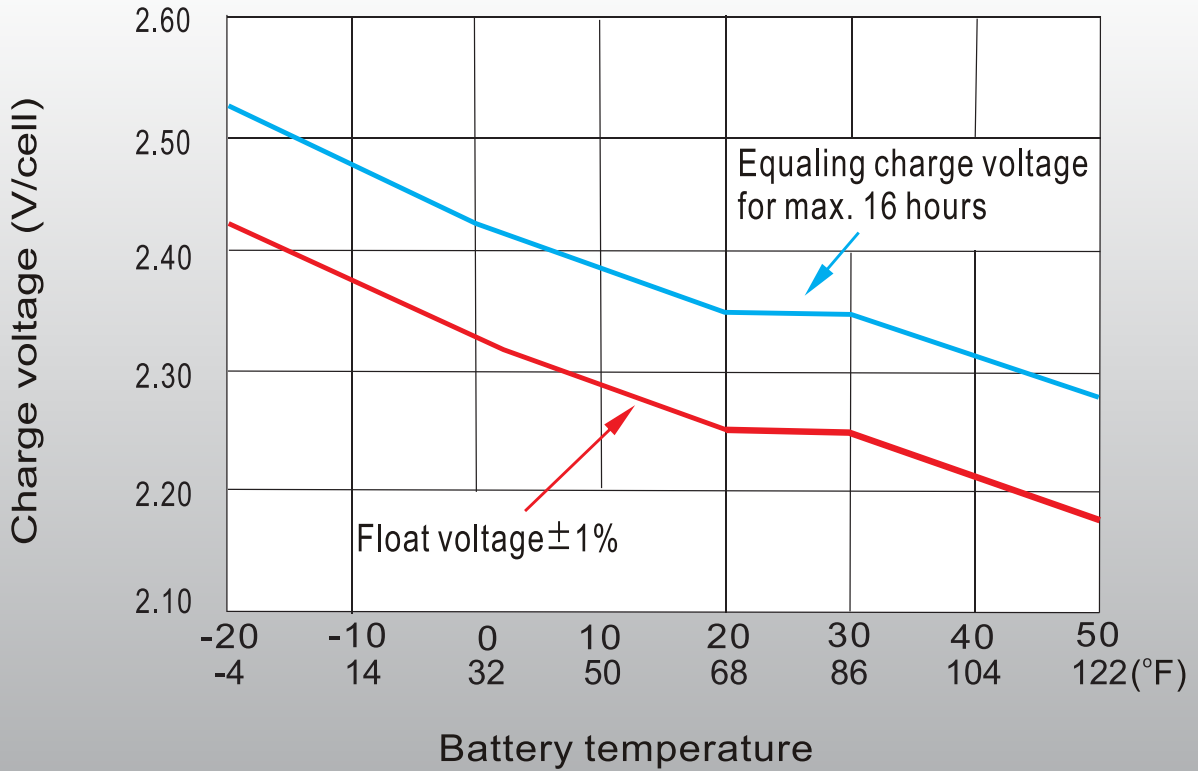
## Constant Power Discharge (Watts/Cell) at 20°C (68°F)

F.V/Time	1h	2h	3h	4h	5h	6h	8h	10h	20h	24h	72h	100h	120h
1.85V/cell	891.5	656.4	508.0	422.3	366.1	323.1	264.4	222.7	122.8	102.9	36.7	27.4	23.4
1.80V/cell	1026.8	715.2	549.1	451.8	387.2	340.4	276.0	230.8	126.6	106.1	37.8	28.3	24.2
1.75V/cell	1101.2	754.4	574.0	469.1	402.0	351.2	282.3	234.6	128.4	107.6	38.4	28.7	24.5
1.70V/cell	1149.3	781.9	588.9	481.2	411.0	358.7	286.1	237.5	130.0	/	/	/	/
1.65V/cell	1185.8	797.2	603.7	490.8	418.4	364.4	290.0	240.7	131.3	/	/	/	/
1.60V/cell	1216.6	811.8	611.0	495.5	421.9	367.6	292.1	242.3	131.9	/	/	/	/

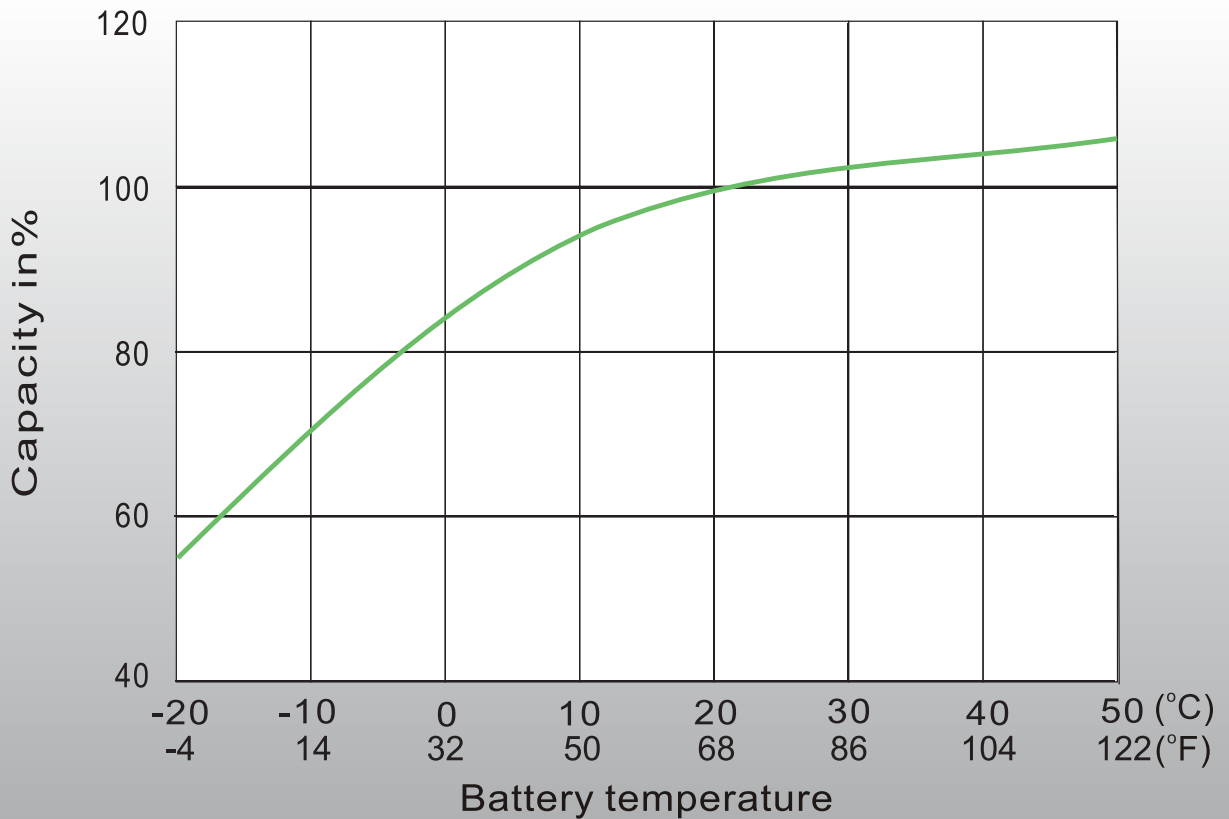
## Discharge Characteristics



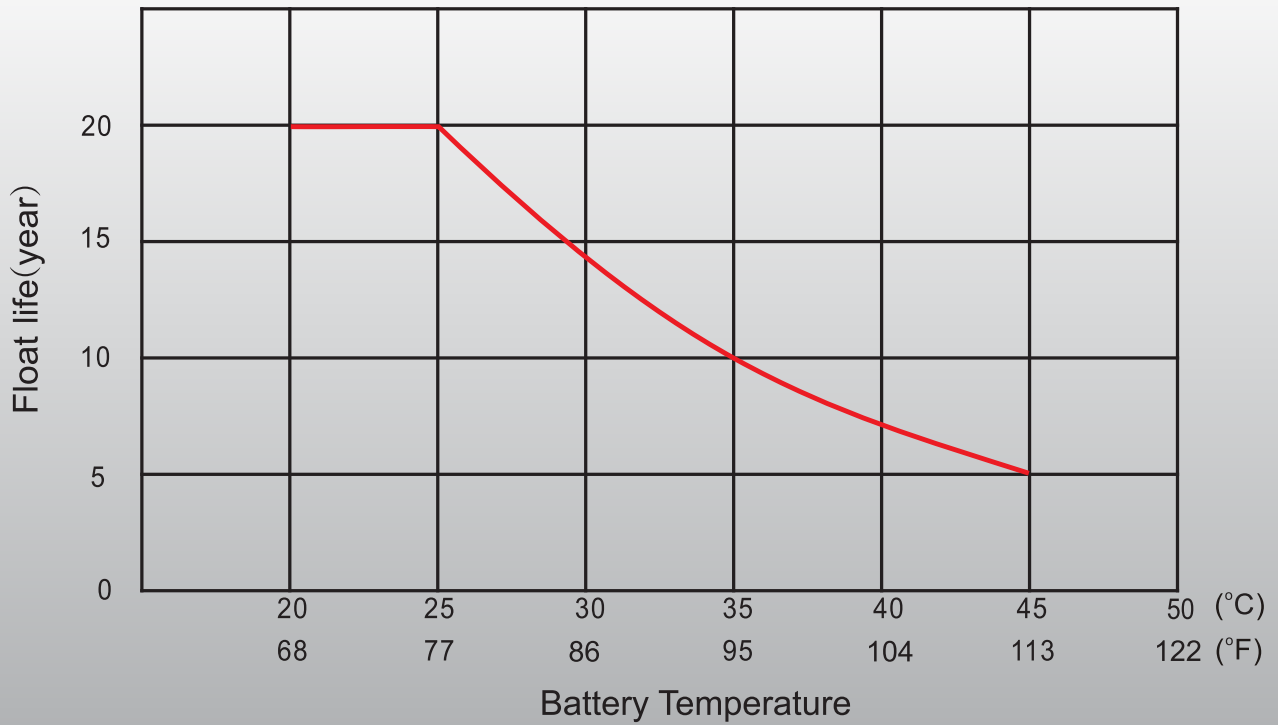
# Charge Voltage vs Ambient Temperature Curve



# Discharge Capacity vs Ambient Temp. Curve (110A)



# Effect of Temp. on Long Term Float Life





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