

# STARMAX

## OPzS FLOODED TUBULAR BATTERIES

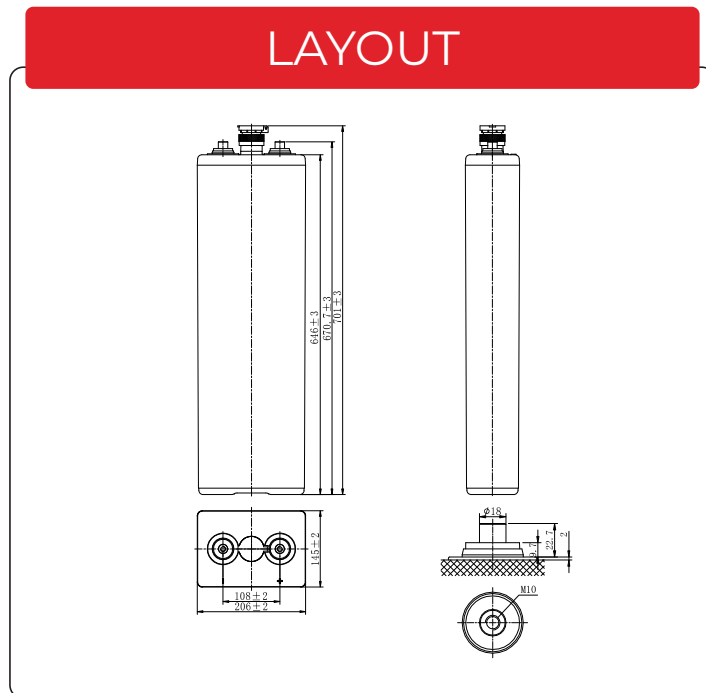
OPzS600-2



# OPzS600-2 (2V 600Ah)



## 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	600.0Ah
Dimensions	Length	145±2mm (5.71 inches)
	Width	206±2mm (8.11 inches)
	Container height	646±3mm (25.43 inches)
	Total height	701±3mm (27.60 inches)
Approx. weight	Without Electrolyte 33.4kg (73.6lbs)   With Electrolyte 45.4 kg (100.1lbs)	
Terminal	M10	
Container material	SAN transparent container	
Rated capacity (25°C)	600.0 Ah	(10hr,60.0A,1.80V/cell)
	533.0 Ah	(5hr,106.6A,1.75V/cell)
	462.6 Ah	(3hr,154.2A,1.75V/cell)
	342.6 Ah	(1hr,342.6A,1.60V/cell)
Max. discharge current	4800A (5s)	
Internal resistance (25°C)	Approx 0.70mΩ	
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	

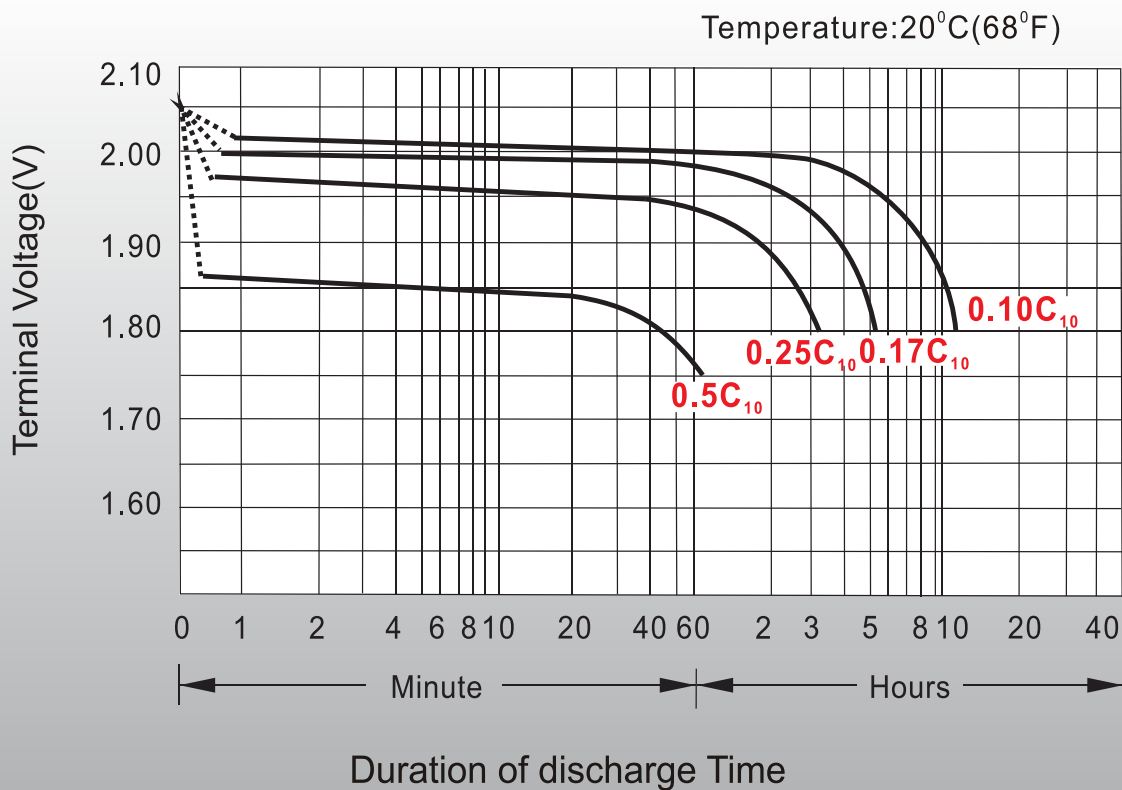
## Constant Current Discharge (Amperes) at 20°C (68°F)

F.V/Time	1h	2h	3h	4h	5h	6h	8h	10h	20h	24h	72h	100h	120h
1.85V/cell	238.2	174.0	134.0	110.9	95.8	84.1	68.5	57.4	31.5	26.4	9.48	7.11	6.10
1.80V/cell	278.4	191.7	146.4	119.9	102.2	89.3	72.1	60.0	32.8	27.5	9.88	7.41	6.35
1.75V/cell	302.4	204.0	154.2	125.3	106.6	92.7	74.1	61.3	33.4	28.0	10.1	7.54	6.47
1.70V/cell	318.6	213.0	159.2	129.2	109.5	95.0	75.4	62.4	34.0	/	/	/	/
1.65V/cell	331.2	218.1	164.0	132.2	111.9	96.8	76.7	63.4	34.5	/	/	/	/
1.60V/cell	342.6	223.2	166.8	134.1	113.4	98.2	77.7	64.2	34.8	/	/	/	/

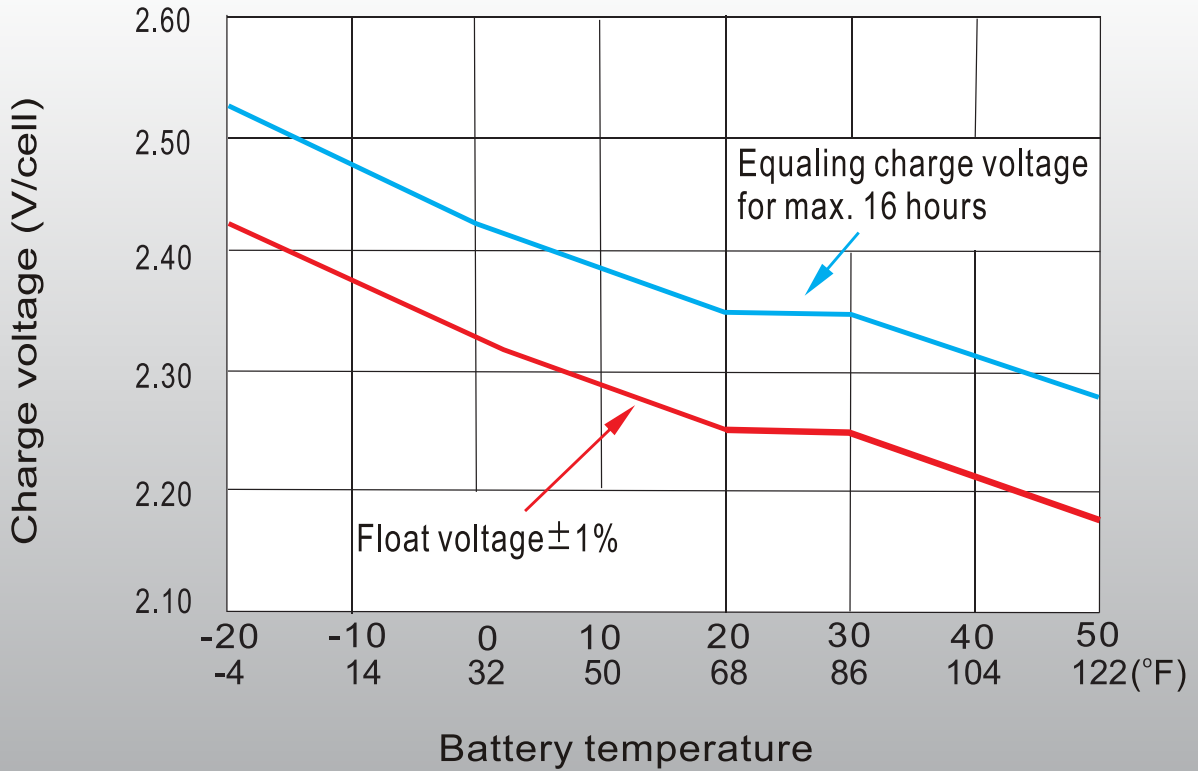
## Constant Power Discharge (Watts/Cell) at 20°C (68°F)

F.V/Time	1h	2h	3h	4h	5h	6h	8h	10h	20h	24h	72h	100h	120h
1.85V/cell	445.7	328.2	254.0	211.1	183.0	161.5	132.2	111.3	61.4	51.5	18.3	13.7	11.72
1.80V/cell	513.4	357.6	274.6	225.9	193.6	170.2	138.0	115.4	63.3	53.1	18.9	14.1	12.08
1.75V/cell	550.6	377.2	287.0	234.5	201.0	175.6	141.1	117.3	64.2	53.8	19.2	14.3	12.3
1.70V/cell	574.7	391.0	294.5	240.6	205.5	179.3	143.0	118.7	65.0	/	/	/	/
1.65V/cell	592.9	398.6	301.9	245.4	209.2	182.2	145.0	120.3	65.7	/	/	/	/
1.60V/cell	608.3	405.9	305.5	247.8	211.0	183.8	146.1	121.2	66.0	/	/	/	/

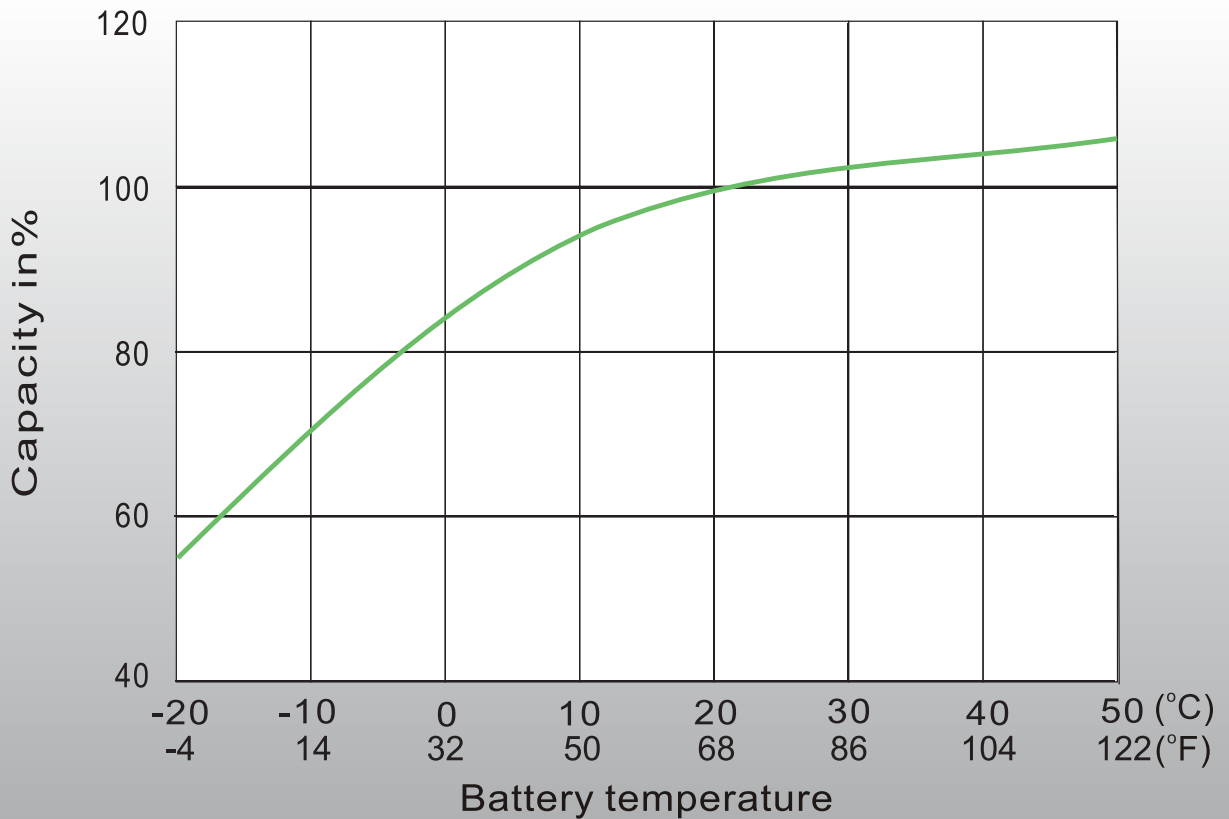
## Discharge Characteristics



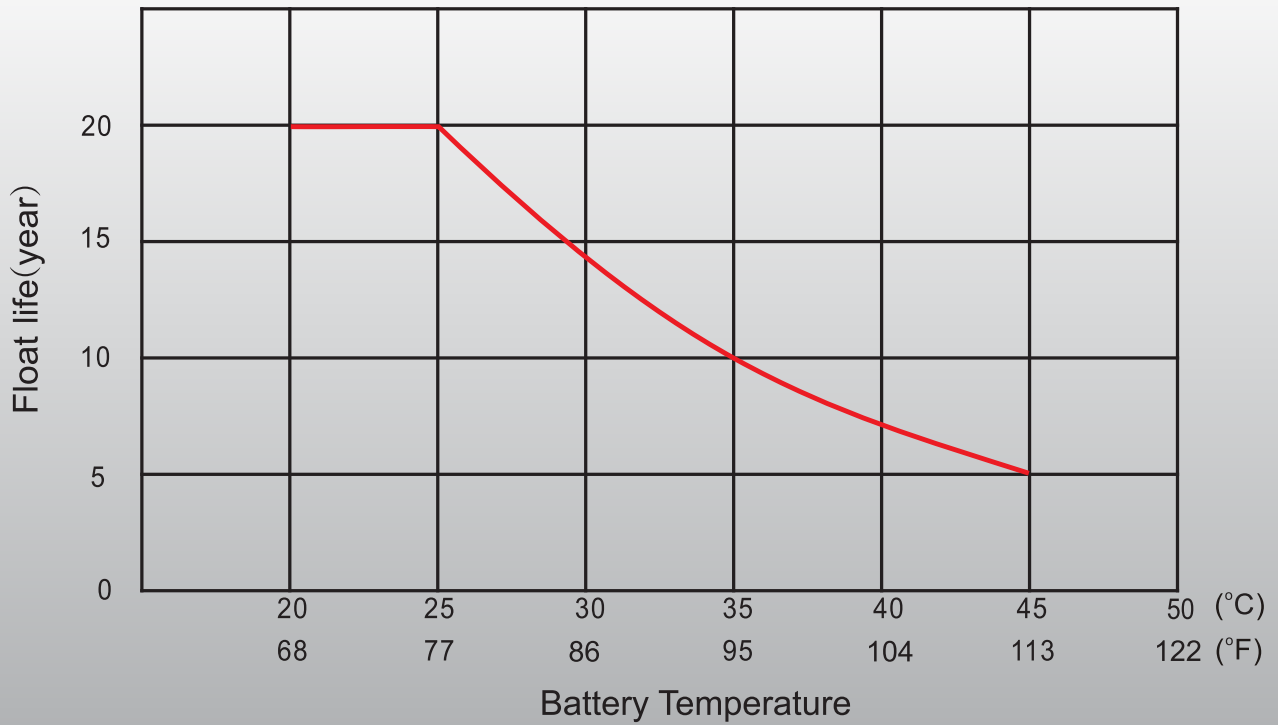
# Charge Voltage vs Ambient Temperature Curve



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



# Effect of Temp. on Long Term Float Life





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