

# OPzS2-420(2V420Ah)



OPzS series is flooded Lead Acid battery that adopts Tubular Plate technology to offer high reliability and performance. The Battery is designed and manufactured according to standards and with DIN40736/IEC60896 positive spine and patent formula of die-casting active material. The OPzS series batteries offer 400% more cyclic life than the standby series. It is suitable for solar and wind renewable energy storage, traction etc. The OPzS series is the best choice of energy storage system in high altitude area.

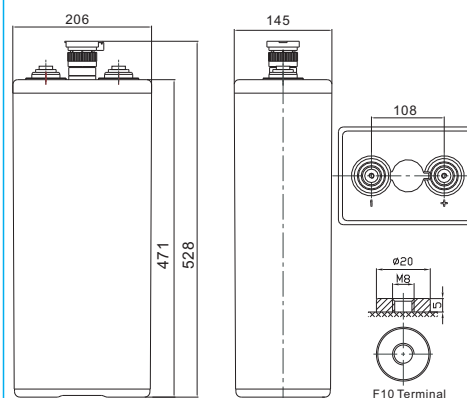


## Specification

<b>Cells Per Unit</b>	1
<b>Voltage Per Unit</b>	2V
<b>Nominal Capacity</b>	420Ah@10hour-rate to 1.80V per cell @25°C
<b>Weight</b>	Without Electrolyte 26.0 kg(Tolerance ±5%) With Electrolyte 33.6kg (Tolerance ±5%)
<b>Internal Resistance</b>	≤0.58 mΩ (Full Charge Condition @25°C)
<b>Terminal</b>	Default F10(M8)
<b>Max. Discharge Current</b>	1800A (5 sec)
<b>Design Life</b>	20 years
<b>Max. Charging Current</b>	63.0 A
<b>Reference Capacity</b>	C <sub>3</sub> 321.0Ah C <sub>5</sub> 363.5Ah C <sub>10</sub> 420.0Ah C <sub>20</sub> 508.0Ah
<b>Float Charging Voltage</b>	2.23 V~2.25 V @ 25°C Temperature Compensation: -3mV/°C/Cell
<b>Cycle Use Voltage</b>	2.40 V~2.45 V @ 25°C Temperature Compensation: -4mV/°C/Cell
<b>Operating Temperature Range</b>	Discharge: -15°C~50°C Charge: 0°C~40°C Storage: -15°C~50°C
<b>Normal Operating Temperature Range</b>	25°C ±5°C
<b>Self Discharge</b>	OPzS series is flooded Lead Acid battery. It can be stored for up to 2 years before filling acid. Monthly Self-discharge ratio is less than 3.5% at 20°C. Please charged batteries before using.
<b>Container Material</b>	S.A.N. UL94-HB, UL94-V0 Optional.

## Dimensions

Unit: mm



Length	145±2mm (5.71 inches)
Width	206±2mm (8.11 inches)
Height	471±2mm (18.5 inches)
Total Height	528±2mm (20.8 inches)
Torque Value	10~12 N*m

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

F.V/ Time	30min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.60V	443.2	285.9	169.3	123.3	95.0	79.7	69.4	54.6	46.0	26.4
1.65V	429.7	269.0	163.8	120.3	93.7	78.6	68.6	54.2	45.5	26.2
1.70V	396.8	260.6	159.2	117.5	92.1	77.4	67.7	53.8	45.1	25.9
1.75V	356.1	243.3	152.3	113.8	90.6	76.0	66.3	52.9	44.2	25.4
1.80V	321.6	217.0	141.1	107.0	86.6	72.7	63.5	50.4	42.0	24.2
1.85V	268.2	186.0	126.2	97.1	79.9	67.2	58.8	47.1	39.3	22.6

### Constant Power Discharge Characteristics : W/Cell(25°C)

F.V/ Time	30min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.60V	749.7	487.6	309.4	231.0	183.7	154.3	134.9	107.1	91.3	52.5
1.65V	737.2	466.9	301.1	226.3	181.3	152.6	133.6	106.2	90.9	52.3
1.70V	699.9	462.2	293.7	221.7	178.5	150.6	132.3	105.3	90.1	51.8
1.75V	645.2	442.5	284.5	216.6	176.2	148.4	130.0	104.0	88.8	51.0
1.80V	598.7	405.3	267.0	205.4	168.9	142.4	125.0	100.0	85.1	48.9
1.85V	513.3	357.1	243.9	188.9	156.4	132.2	116.3	94.3	80.2	46.1

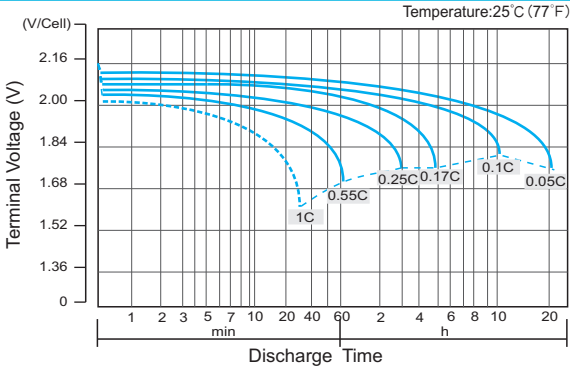
(Note) The above characteristics data are average values obtained within three charge/discharge cycle not the minimum values.

The battery must be fully charged before the capacity test. The C<sub>10</sub> should reach 95% after the first cycle and 100% after the third cycle.

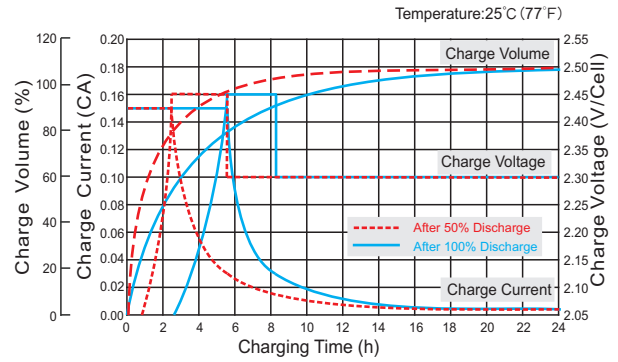
# OPzS2-420(2V420Ah)



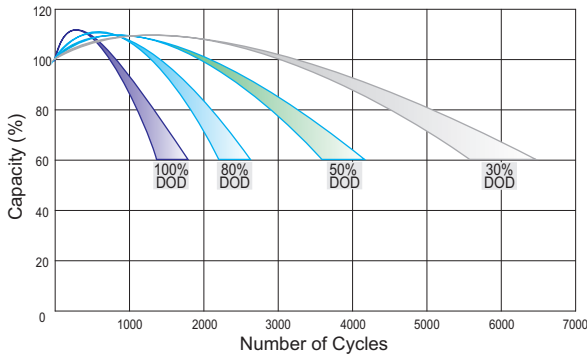
## Discharge Characteristics Curve



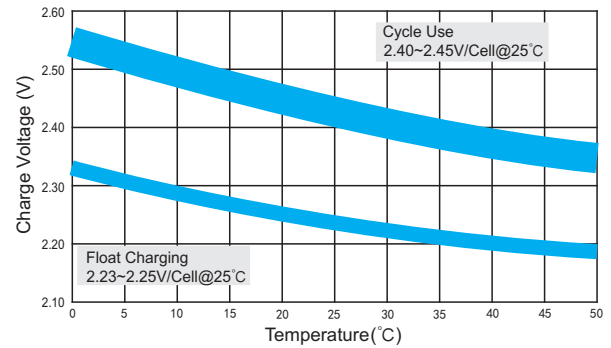
## Charge Characteristic Curve for Cycle Use(IUU)



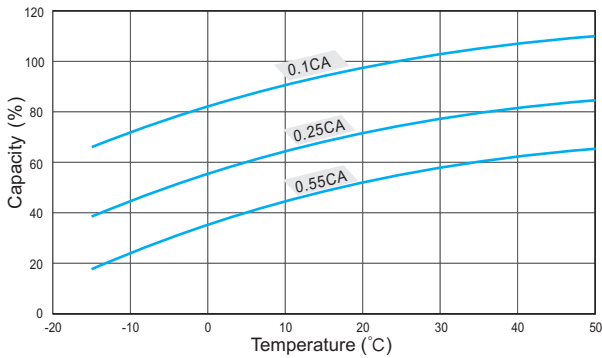
## Cycle Life in Relation to Depth of Discharge



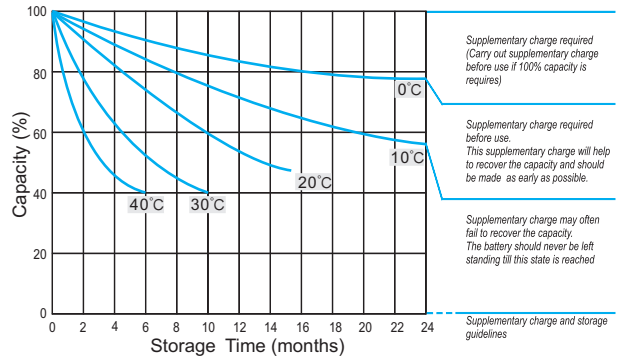
## Relationship Between Charging Voltage and Temperature



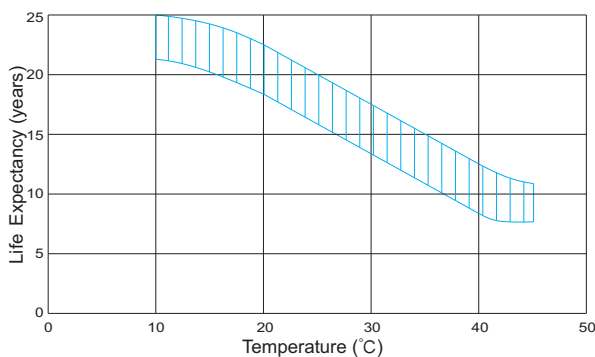
## Temperature Effects on Capacity



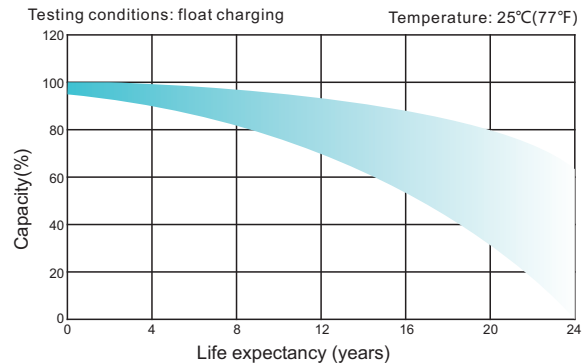
## Storage Characteristics



## Effect of Temperature on Long Term Life



## Life Characteristics Of Standby Use



(Note) All above information shall be changed without prior notice, RITAR reserves the right to explain and update the latest information.