

General features for MPPV Series battery (OPzV)

- * Tubular positive plate; separator with the combined application of porous rubber and porous PVC, separator is with a high porosity & good corrosion resistance. Gelled electrolyte technology.
- * Computer designed lead, calcium tin alloy grid for high power density.
- * Long service life, maintenance-free during the whole service life.
- * Alloy (no antimony) and internal oxygen recombination ensure low gassing.
- * High cyclic ability, no internal short circuits in the GEL structure.
- * Easy to move and handle, easy using cable connectors or copper connectors in the battery connection..



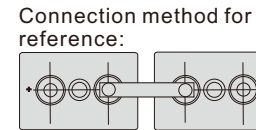
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MPPV2-490 (2V490Ah)

Specifications

Nominal Voltage		2 V
Rated capacity (10 hour rate)		490 Ah
Dimensions (±3mm)	Total Height (Include terminal)	506mm (19.9inches)
	Height	471mm (18.5inches)
	Length	166mm (6.53inches)
	Width	206mm (8.11inches)
Approx weight (±5%)		36.0Kg (79.4lbs)

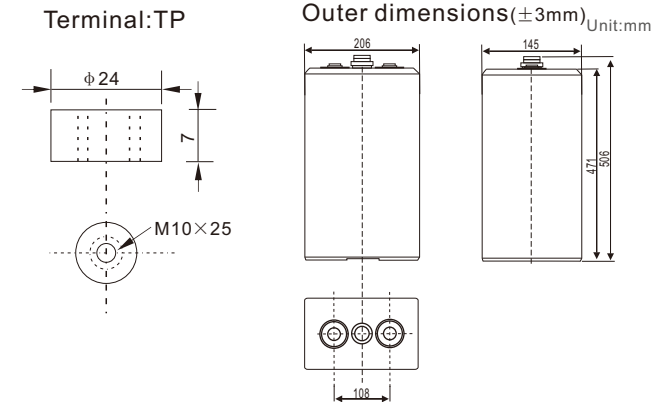
Battery picture and construction



Battery Construction

Component	Positive plate	Negative plate	Container	Cover
Raw material	Lead dioxide	Lead	ABS	ABS
Component	Electrolyte	Separator	Safety valve	Terminal
Raw material	Gelled acid	PVC	Rubber	Copper

Outer dimension and terminal



Characteristics

Capacity 25°C(77°F)	10 hour rate(49A, 1.8V) 3 hour rate(130A, 1.75V) 1 hour rate(290A, 1.60V)	490Ah 390Ah 290Ah
Internal Resistance	Full charged battery at 25°C(77°F)	Approx 0.6 mΩ
Capacity affected by Temperature (10hour rate)	40°C (104°F) 25°C (77°F) 0°C (32°F) -15°C (5°F)	103% 100% 85% 65%
Remaining capacity Self-Discharge At 25°C(77°F)	Capacity after 3 month storage Capacity after 6 month storage Capacity after 12 month storage	94% 88% 75%
Terminal type	TP (copper)	
Max. Discharge current 25°C/(77°F)	2450A (5Seconds)	
Nominal operating temperature	25°C ±5°C(77°F ±9°F)	
Operating Temperature Range	Discharge Charge Storage	-15°C ~50°C (5°F ~122°F) -10°C ~50°C (14°F ~122°F) -20°C ~50°C (-4°F ~122°F)
Charge methods (constant Voltage) At 25°C(77°F)	Cycle use	Initial Charging Current less than 122.5 A Voltage 2.35-2.45V Temperature compensation:-3mV/°C
	Standby use	Voltage 2.25-2.30V Temperature compensation:-3mV/°C

Constant current discharge (25°C , 77 °F)

Unit:A

Constant power discharge (25°C , 77 °F)

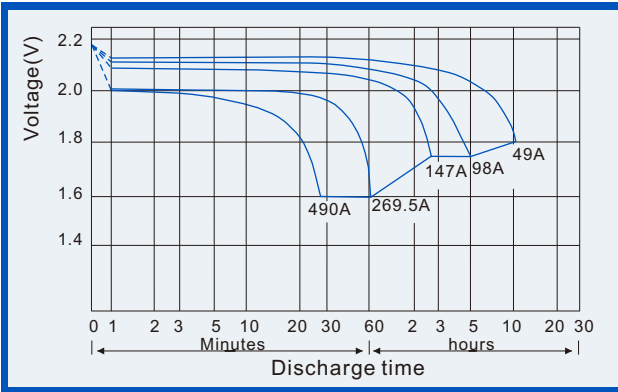
Unit:watts

Constant Current(Amp) and Constant Power(Watt) Discharge Table at 25°C(77°F)

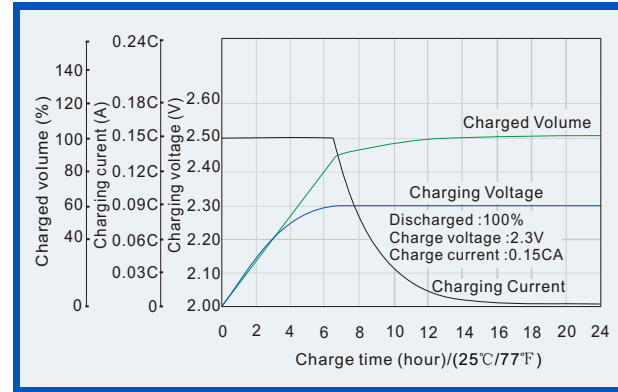
Time		30min	1h	2h	3h	5h	6h	8h	10h	20h	24h	48h	100h
1.65V	A	426	282	185	145	100	81	65	57	29	24	13	6
	W	894	576	412	289	187	179	148	110	56	50	33	17
1.70V	A	414	270	174	136	94	76	63	54	29	24	13	6
	W	840	559	404	279	184	173	142	107	55	49	33	17
1.75V	A	392	257	164	130	89	72	60	51	28	24	13	6
	W	768	544	394	270	181	168	137	103	54	49	33	17
1.80V	A	377	245	155	123	83	69	58	49	26	24	13	6
	W	684	510	385	260	176	162	132	100	54	49	33	17
1.85V	A	355	233	148	115	80	66	54	46	25	23	13	6
	W	593	497	365	247	169	154	127	96	51	46	33	17

(Above characteristics data are average values obtained within three charge/discharge cycles, not the minimum values.)

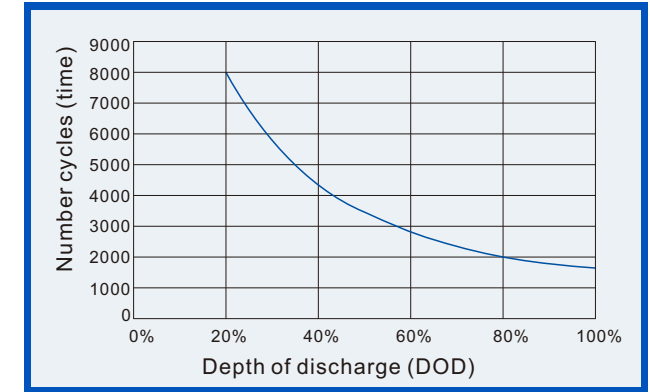
Discharge characteristics (25°C, 77°F)



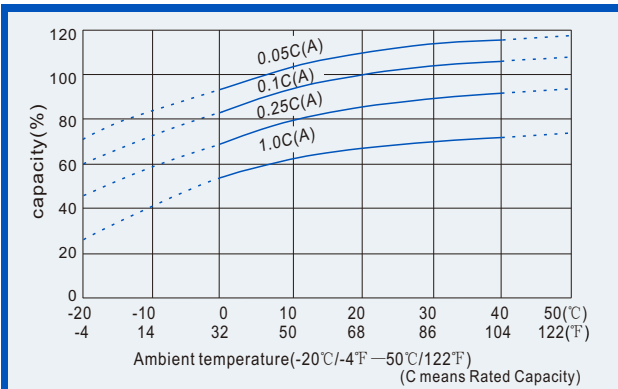
Charge characteristics (25°C, 77°F)



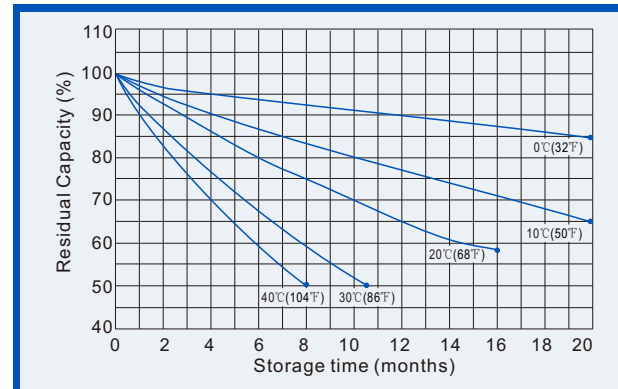
Life characteristics of Cyclic Use (25°C, 77°F)



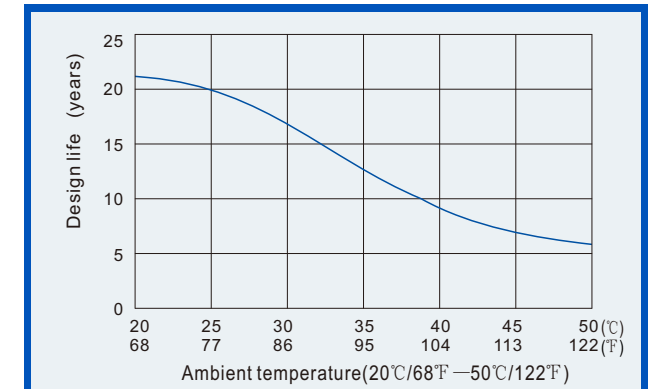
Effect of Temperature on capacity



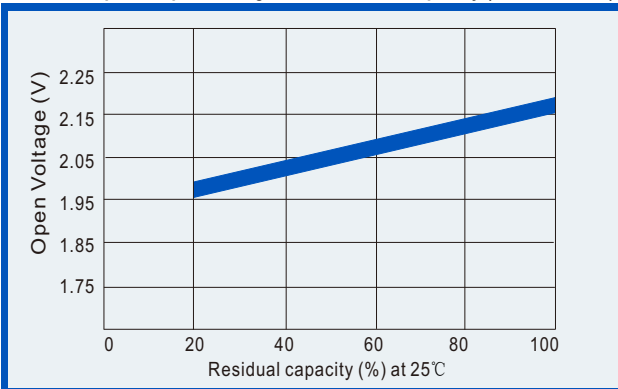
Self-discharge characteristics (with full charging)



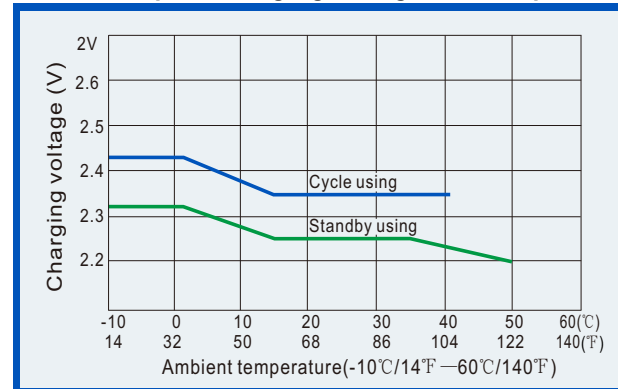
Relationships for design life and temperature



Relationships for open voltage and remained capacity (for reference)



Relationship for charging voltage and temperature



Effect of temperature on capacity

