

## 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..



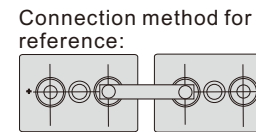
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**MPPV2-490 (2V490Ah)**

## 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)

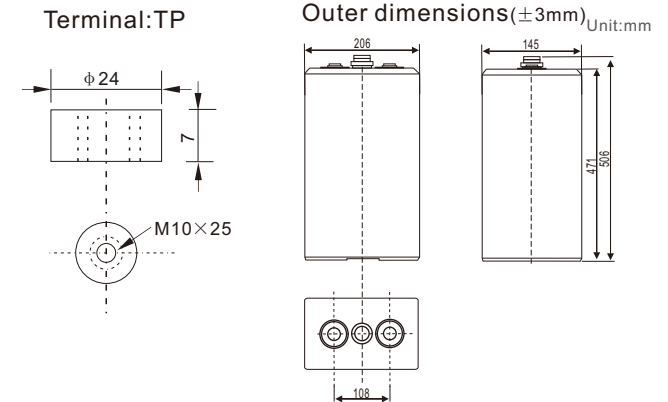
## Battery picture and construction



### 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(257A, 1.75V)	490Ah 390Ah 257Ah
Internal Resistance	Full charged battery at 25°C(77°F)	Approx 0.75 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 Standby use	Initial Charging Current less than 122.5 A Voltage 2.35-2.45V Temperature compensation:-3mV/°C Voltage 2.25-2.30V Temperature compensation:-3mV/°C

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

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

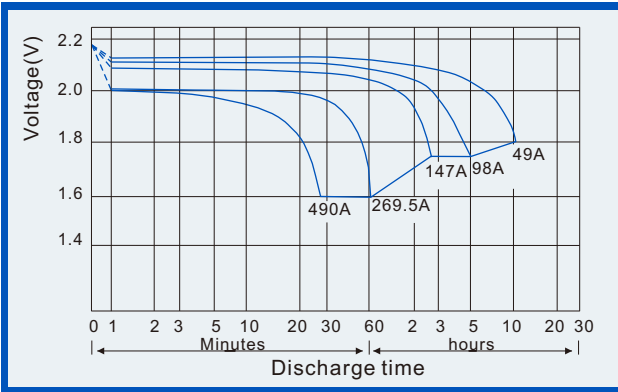
Unit:A

Unit:watts

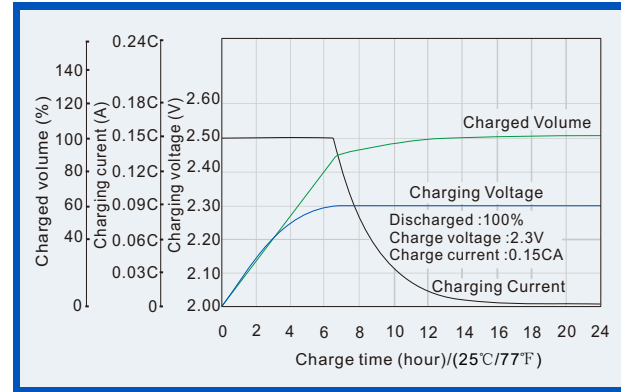
Time	30min	1h	2h	3h	5h	6h	8h	10h	20h	24h	48h	100h	
1.65V	A	426	282	185	145	100	81	65	57	29	24	13	6
	W	894	576	412	289	187	179	148	110	56	50	33	17
1.70V	A	414	270	174	136	94	76	63	54	29	24	13	6
	W	840	559	404	279	184	173	142	107	55	49	33	17
1.75V	A	392	257	164	130	89	72	60	51	28	24	13	6
	W	768	544	394	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.)

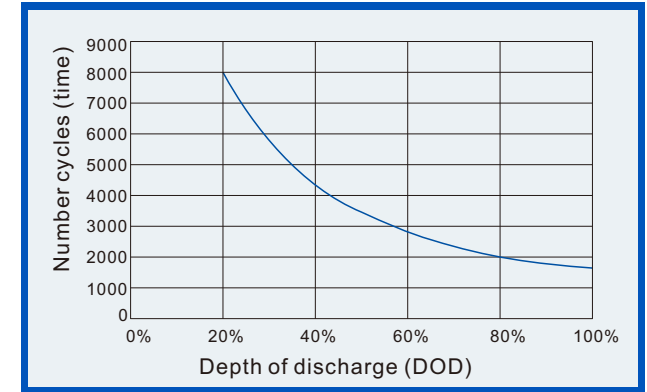
**Discharge characteristics (25°C, 77°F)**



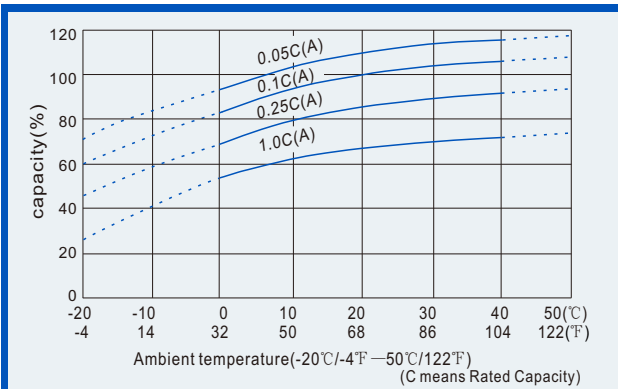
**Charge characteristics (25°C, 77°F)**



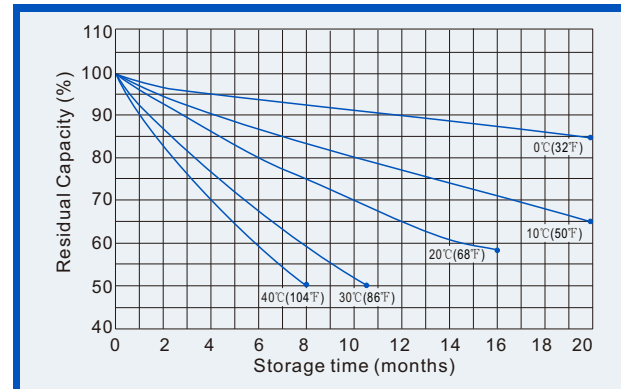
**Life characteristics of Cyclic Use (25°C, 77°F)**



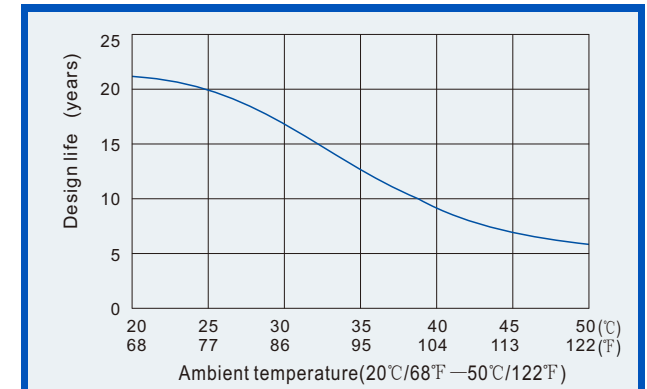
**Effect of Temperature on capacity**



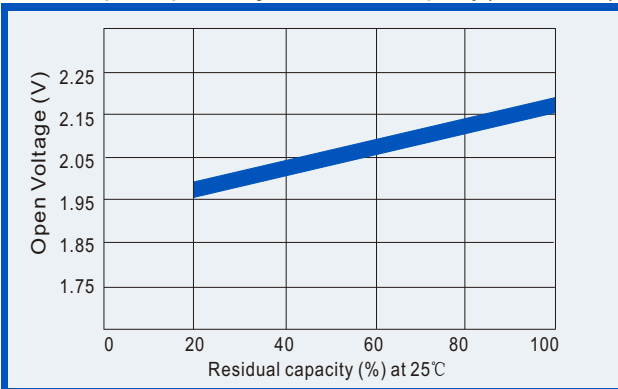
**Self-discharge characteristics (with full charging)**



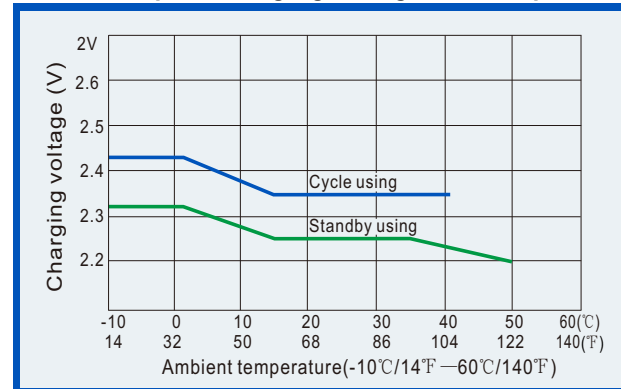
**Relationships for design life and temperature**



**Relationships for open voltage and remained capacity (for reference)**



**Relationship for charging voltage and temperature**



**Effect of temperature on capacity**

