

## General features for MPE Series (Deep-cycle) battery

- \* Absorbent Glass Mat (AGM) technology for efficient gas recombination of up to 99% and freedom from electrolyte maintenance or water adding.
- \* Computer designed lead, calcium tin alloy grid for high power density.
- \* UL-recognized component.
- \* Long service life, float or cyclic applications.
- \* Maintenance-free operation.
- \* Low self discharge.
- \* Case and cover are available in both standard and flame retardant ABS (Standard :UL94V0).



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**MPE12-180 (12V180Ah)**

## Specifications

Nominal Voltage		12V	
Rated capacity (10 hour rate)		180 Ah	
Dimensions (±2mm)	Total Height	T11	237mm (9.33inches)
		T60	221mm (8.70inches)
	Height	216 mm (8.50 inches)	
	Length	534 mm (21.1 inches)	
Width	209 mm (8.23 inches)		
Weight Approx (±3%)		50 Kg (110.0 lbs)	

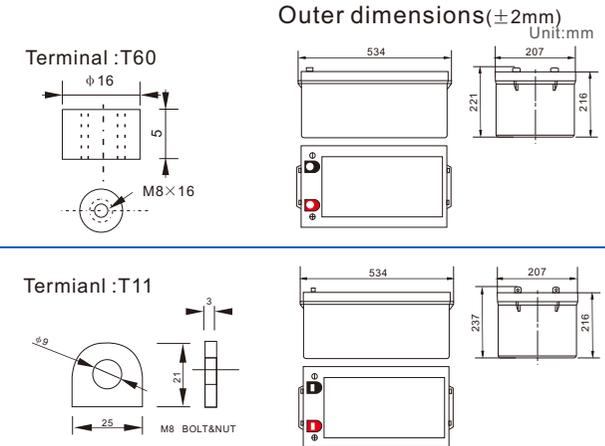
## Battery picture and construction



### Battery Construction

Component	Positive plate	Negative plate	Container	Cover
Raw material	Lead dioxide	Lead	ABS	ABS
Component	Electrolyte	Separator	Safety valve	Terminal
Raw material	Dilute sulfuric acid	Fiberglass	Rubber	Copper

## Outer dimension and terminal



## Characteristics

Capacity 25°C(77°F)	10 hour rate(18.0 A, 10.8V)	180 Ah
	5 hour rate(28.8A, 10.5V)	144Ah
	1 hour rate(108 A, 9.6V)	108 Ah
Internal Resistance	Full charged battery at 25°C(77°F)	Approx 4.5mΩ
Capacity affected by Temperature (10hour rate)	40°C (104°F)	102%
	25°C (77°F)	100%
	0°C (32°F)	85%
	-15°C (5°F)	65%
Remaining capacity Self-Discharge At 25°C(77°F)	Capacity after 3 month storage	91%
	Capacity after 6 month storage	82%
	Capacity after 12 month storage	64%
Terminal type		T60 (Option T11)
Max. Discharge current 25°C/(77°F)		1300A (5Seconds)
Nominal operating temperature		25°C ±5°C(77°F ±9°F)
Operating Temperature Range	Discharge	-15°C ~50°C (5°F ~122°F)
	Charge	-10°C ~50°C (14°F ~122°F)
	Storage	-20°C ~50°C (-4°F ~122°F)
Charge methods (constant Voltage) At 25°C(77°F)	Cycle use	Initial Charging Current less than 45 A Voltage 14.5-15.0V Temperature compensation:-30mV/°C
	Standby use	Voltage 13.5-13.8V Temperature compensation:-18mV/°C

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

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

Unit:A

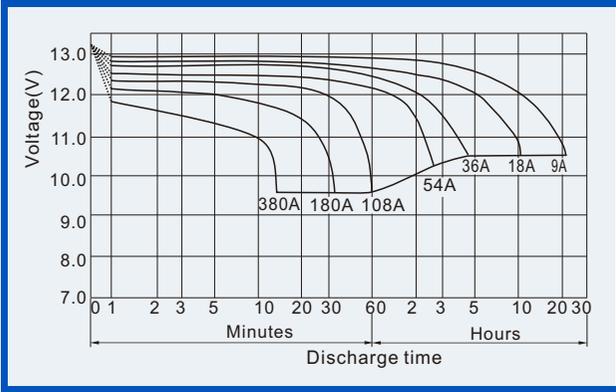
Unit:watts

Constant Current(Amp) and Constant Power(Watt) Discharge Table at 25°C(77°F)													
Time		5min	10min	15min	30min	1h	2h	3h	4h	5h	8h	10h	20h
9.60V	A	577	380	306	205.2	108.0	63.0	46.3	36.0	29.7	21.06	18.90	10.21
	W	5950	4056	3283	2206	1166	692	515	405	338	241	218	118.7
10.20V	A	558	343	288	196.2	101.5	60.1	45.0	35.1	29.2	20.52	18.54	9.90
	W	5963	3827	3227	2203	1148	693	521	408	340	240	218	116.1
10.50V	A	540	307	252	183.6	98.3	58.7	43.9	34.6	28.8	20.34	18.18	9.90
	W	5899	3487	2878	2113	1138	681	512	404	338	239	215	117.0
10.80V	A	521	289	234	169.2	95.0	57.2	42.8	34.0	28.1	19.80	18.00	9.72
	W	5841	3332	2700	1960	1106	670	505	402	332	235	214	115.8
11.10V	A	503	271	216	151.2	91.8	55.8	41.4	33.1	27.4	19.26	17.10	9.18
	W	5705	3135	2518	1769	1080	660	492	394	327	231	206.4	111.3

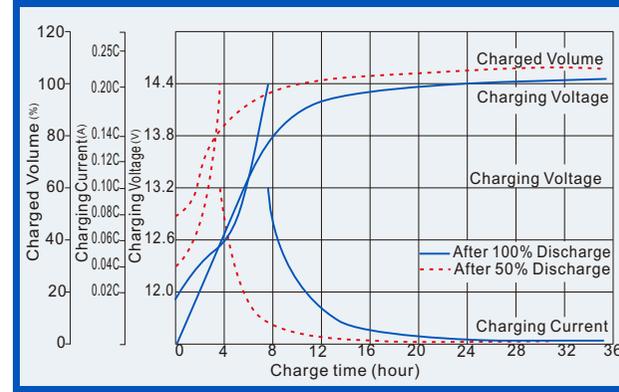
(Above characteristics data are average values obtained within three charge/discharge cycles, not the minimum values.)

# Deep Cycle Battery (VRLA Battery, AGM technology) Maintenance-free Sealed Lead Acid Rechargeable Battery

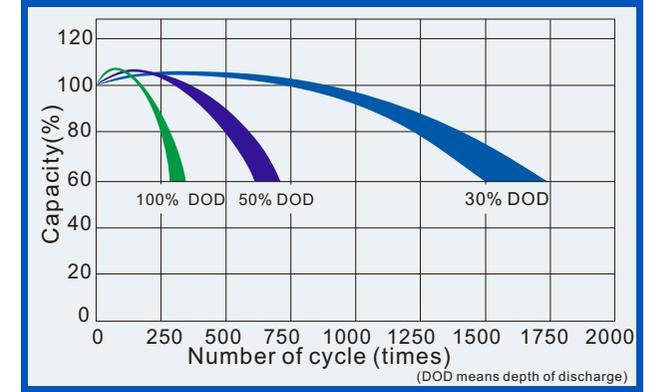
**Discharge characteristics (25°C, 77°F)**



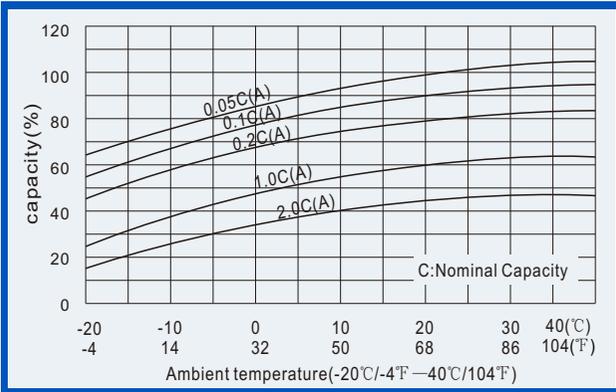
**Charge characteristics (25°C, 77°F)**



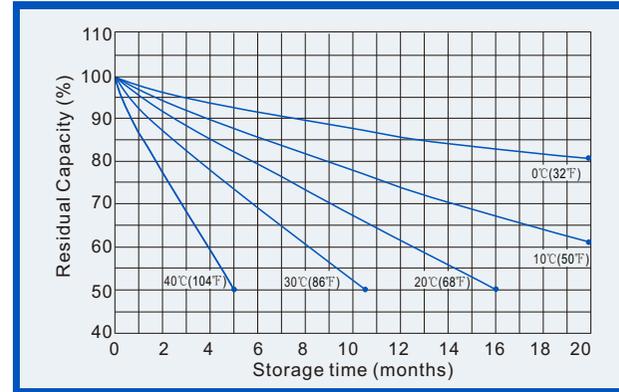
**Life characteristics of Cyclic Use (25°C, 77°F)**



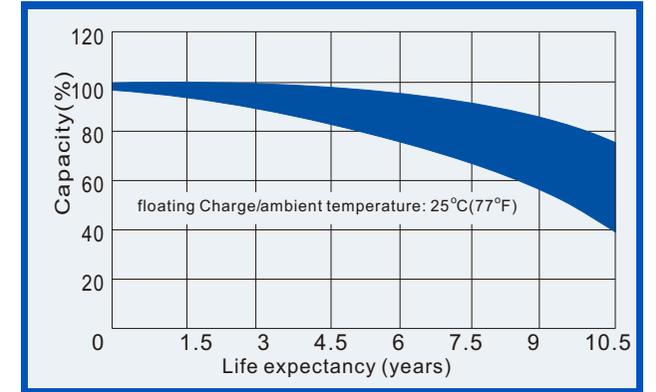
**Effect of Temperature on capacity**



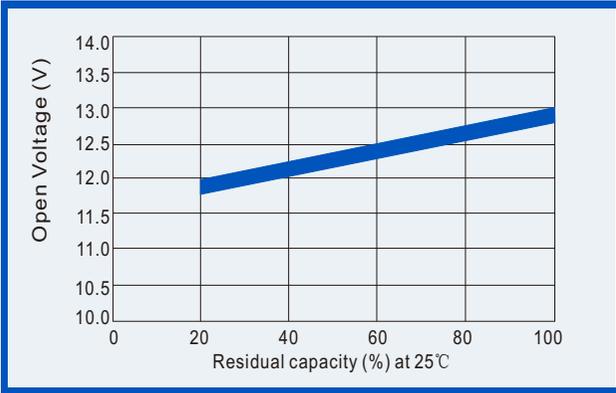
**Self-discharge characteristics**



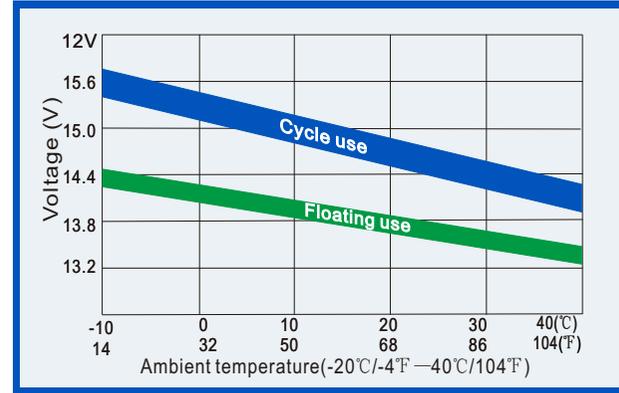
**Life Characteristics of standby use (25°C, 77°F)**



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



**Relationship for charging voltage and temperature**



**Temperature effects on floating life**

