

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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MPE12-90 (12V90Ah)

Specifications

Nominal Voltage		12V	
Rated capacity (10 hour rate)		90 Ah	
Dimensions (±2mm)	Total Height	T16	216 mm (8.50 inches)
		T10	234 mm (9.21 inches)
	Height	211 mm (8.30 inches)	
	Length	307 mm (12.1 inches)	
Weight Approx (±3%)		27.0 Kg (59.4 lbs)	
Width		169 mm (6.65 inches)	

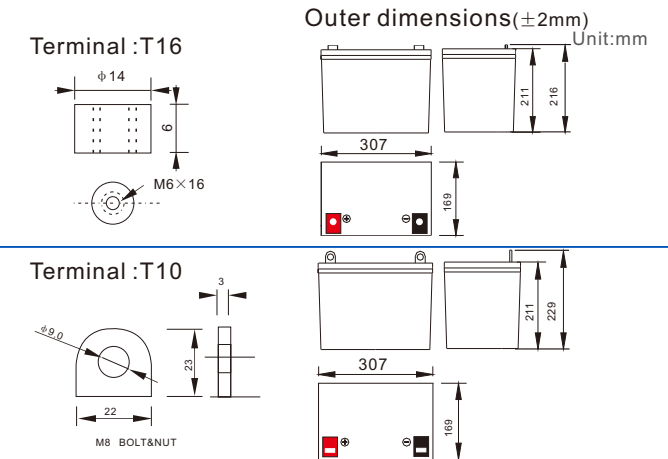
Battery picture and construction



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(9.0 A, 10.8V) 5 hour rate(14.4A, 10.5V) 1 hour rate(54 A, 9.6V)	90 Ah 72Ah 54Ah
Internal Resistance	Full charged battery at 25°C(77°F)	Approx 4.6mΩ
Capacity affected by Temperature (10hour rate)	40°C (104°F) 25°C (77°F) 0°C (32°F) -15°C (5°F)	102% 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	91% 82% 64%
Terminal type	T16 (Option T10)	
Max. Discharge current 25°C/(77°F)	800A (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 22.5A Voltage 14.5-15.0V Temperature compensation:-30mV/°C 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

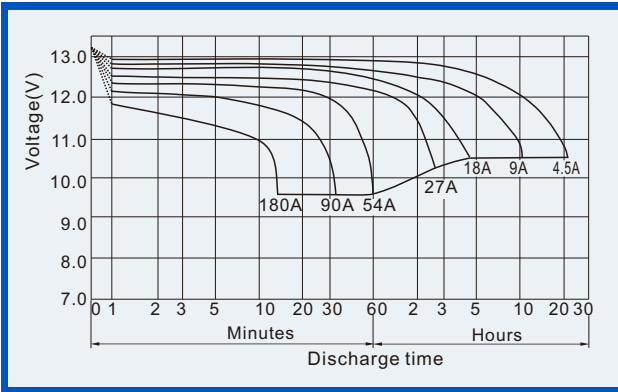
Unit:watts

Time	5min	10min	15min	30min	1h	2h	3h	4h	5h	8h	10h	20h
9.60V	A	288	190	153	102.6	54.0	31.5	23.1	18.0	14.9	10.53	5.10
	W	2975	2028	1641	1103	583	346	257	203	169	121	59.3
10.20V	A	279	171	144	98.1	50.8	30.1	22.5	17.6	14.6	10.26	4.95
	W	2982	1913	1613	1101	574	346	261	204	170	120	58.1
10.50V	A	270	153	126	91.8	49.1	29.3	22.0	17.3	14.4	10.17	4.95
	W	2949	1744	1439	1056	569	340	256	202	169	120	58.5
10.80V	A	260	144	117	84.6	47.5	28.6	21.4	17.0	14.0	9.90	4.86
	W	2920	1666	1350	980	553	335	253	201	166	117	57.9
11.10V	A	252	135	108	75.6	45.9	27.9	20.7	16.6	13.7	9.63	4.59
	W	2853	1567	1259	885	540	330	246	197	163	115	55.6

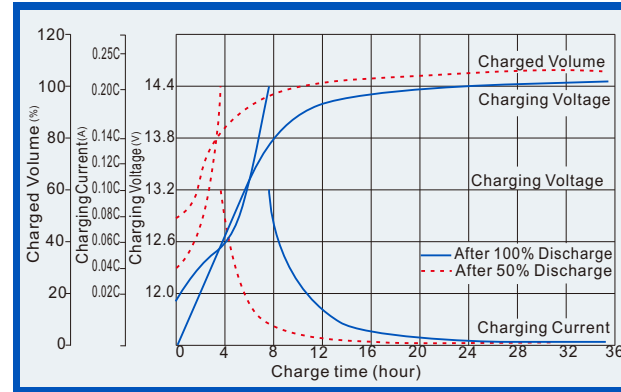
(Above characteristics data are average values obtained within three charge/discharge cycles, not the minimum values.)

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

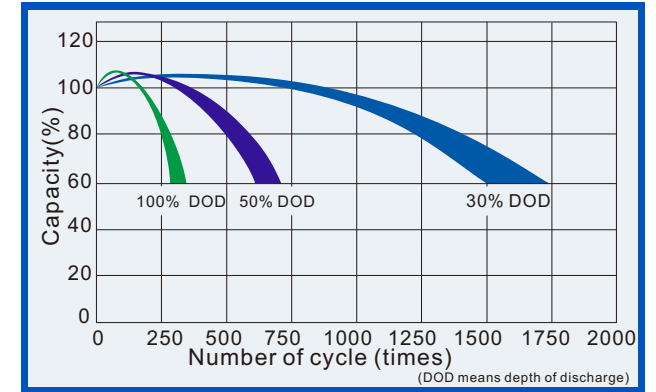
Discharge characteristics (25°C, 77°F)



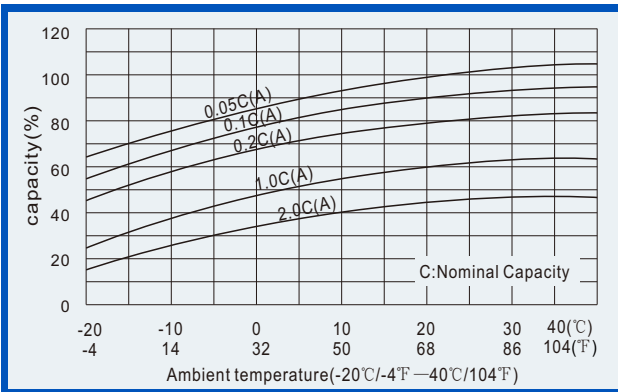
Charge characteristics (25°C, 77°F)



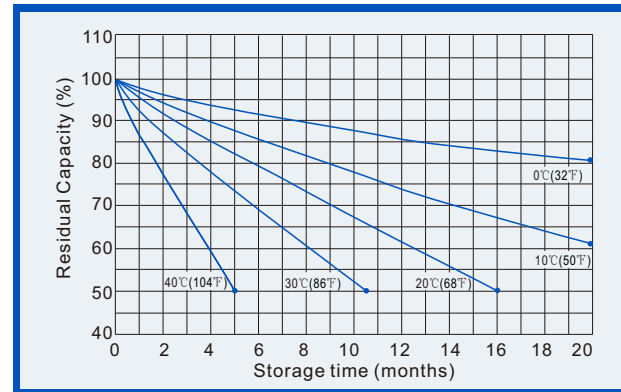
Life characteristics of Cyclic Use (25°C, 77°F)



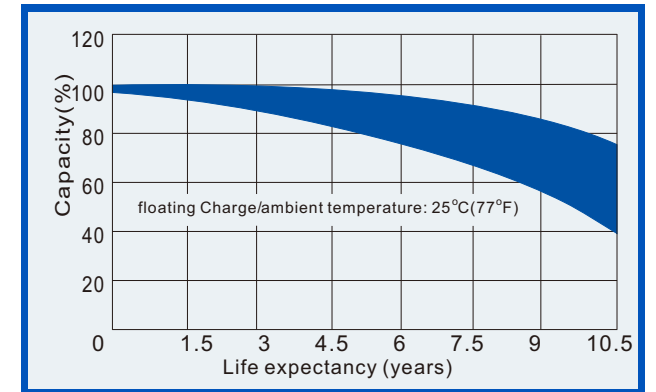
Effect of Temperature on capacity



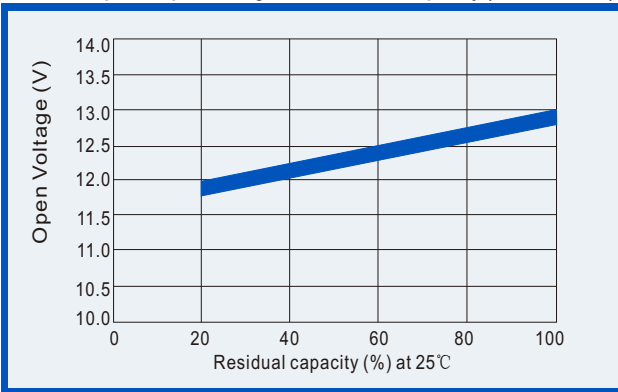
Self-discharge characteristics



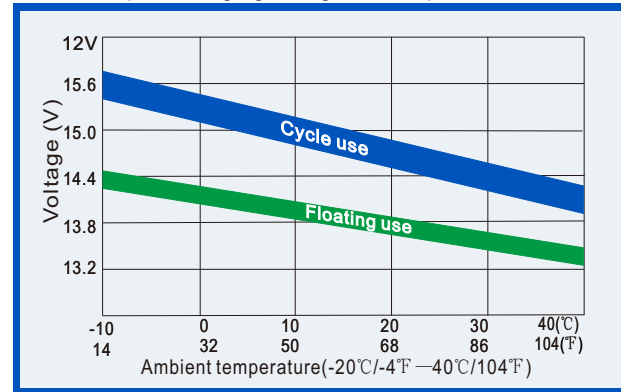
Life Characteristics of standby use (25°C, 77°F)



Relationships for open voltage and remained capacity (for reference)



Relationship for charging voltage and temperature



Temperature effects on floating life

