General features for MPHR series battery

* MPHR stands for "High Rate Discharge." The series is a modern hi-tech energy application product;
* Lead-calcium alloy grids and the use of high purity lead account for superior shelf-life characteristics;
* Precision plate pasting for higher consistency with 100% load testing to ensure uniform capacity;
* When it is used in safe surroundings, the battery is maintenance free, and you never need to add electrolyte,It can be recycled repeatedly;
* High energy, high intensity, high quality output electrical energy product series.

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MPHR12-106W (12V28h)

Specifications

Nominal Voltage		12V
Number of cell		6 cells
Rated capacity (25℃)	Rated capacity/cell (15 minutes rate to 1.67V/cell)	106W
	Rated capacity (20 hour rate)	28Ah
Dimensions (±2mm)	Total Height	182mm (7.17 inches)
	Height	175mm (6.89 inches)
	Length	166mm (6.50 inches)
	Width	125mm (4.92 inches)
Weight Approx (±3%)		9.6Kg (21.2 lbs)

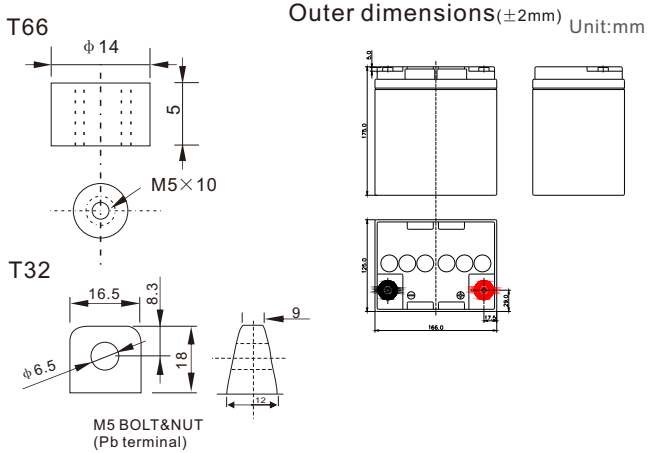
Battery picture and construction

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 (or lead)

Outer dimension and terminal

Outer dimensions(±2mm) Unit:mm



Characteristics

Capacity 25℃(77℉)	30 minutes rate(34.4A,1.70V/cell) 15 minutes rate(58.3A,1.67V/cell) 5 minutes rate(105.2A,1.60V/cell)	383W 636W 1122W
Internal Resistance	Full charged battery at 25℃(77℉)	Appox 11 mΩ
Capacity affected by Temperature (20hour rate)	40℃ (104℉) 25℃ (77℉) 0℃ (32℉) -15℃ (5℉)	102% 100% 85% 65%
Remaining capaicty Self-Discharge At 25℃(77℉)	Capacity after 3 month storage Capacity after 6 month storage Capacity after 12 month storage	91% 82% 64%
Terminal type		T66 (Option T32)
Max. Discharge current 25℃/(77℉)		280A (5Seconds)
Nominal operating temperature		25℃ ±5℃(77℉ ±9℉)
Operating Temperature Range	Discharge Charge Storage	-15℃～50℃ (5℉～122℉) -10℃～50℃ (14℉～122℉) -20℃～50℃ (-4℉～122℉)
Charge methods (constant Voltage) At 25℃(77℉)	Cycle use	Initial Charging Current less than 8.4 A Voltage 14.50-15.00V Temperature compensation:-30mV/℃
	Standby use	Voltage 13.50-13.80V Temperature compensation:-18mV/℃

Constant current discharge (25℃ , 77 ℉)

Unit:A

Time F.V/cell	5min	15min	30min	45min	60min	90min	5hours	10hours
1.60V	105.2	60.7	37.1	27.1	21.2	15.7	4.7	3.0
1.67V	99.6	58.3	35.6	25.7	20.3	14.9	4.6	3.0
1.70V	92.6	56.1	34.4	25.2	19.6	14.3	4.6	2.9
1.75V	85.7	52.5	32.0	23.1	17.9	13.4	4.5	2.8
1.80V	81.7	46.5	28.9	20.9	16.4	12.6	4.5	2.8
1.85V	71.7	42.6	27.0	19.6	15.4	11.9	4.4	2.7

Note:
the end voltage means Voltage per cell.
(Above characteristics data are average values obtained within three charge/ discharge cycles,not the minimum values.)

Constant power discharge (25℃ , 77 ℉)

Unit:watts

Time F.V/cell	5min	10min	15min	20min	30min	45min	60min	90min
1.60V	1122	840	651	536	400	294	231	172
1.67V	1074	812	636	527	391	283	225	166
1.70V	1026	781	621	514	383	280	220	160
1.75V	979	763	605	505	376	271	211	152
1.80V	931	683	536	469	334	242	191	146
1.85V	830	611	487	432	311	227	179	139

Note:
the end voltage means Voltage per cell.
(Above characteristics data are average values obtained within three charge/ discharge cycles,not the minimum values.)

General features for MPHR12-106W (High rate discharge)

- *Positive and negative plates in lead -calcium tin alloy
- *Superior energy density
- *Operates at a low internal pressure.
- *Gas Recombination
- * Very high power output
- * Application specific designs
- * Six months self-life at 25℃(77℉),then a freshening charge is required.
- * Design life 5 years @ floating service at 25℃(77℉).

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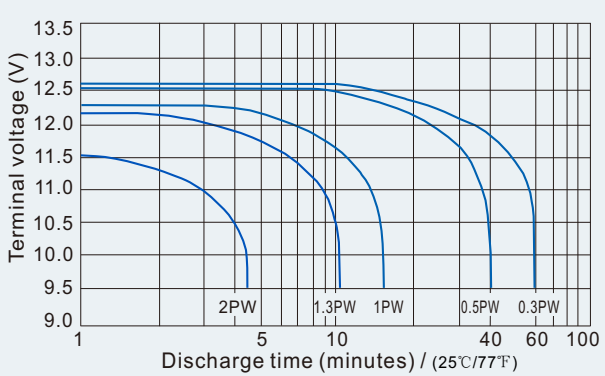
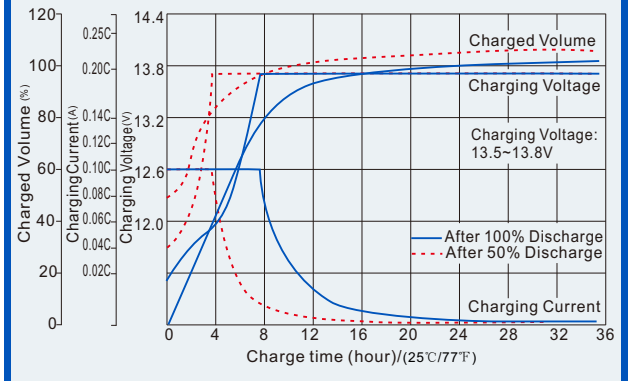
MPHR12-106W (12V28Ah)

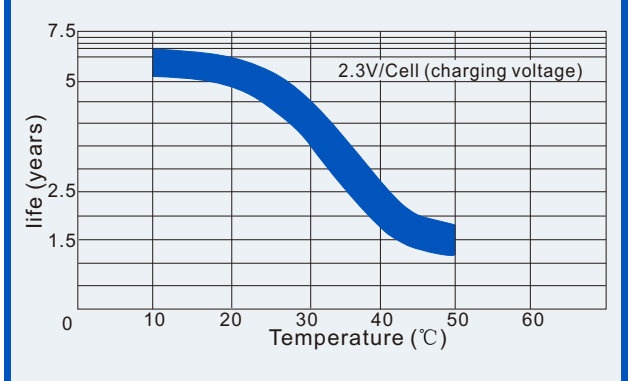
Terminal voltage(V) and discharge time



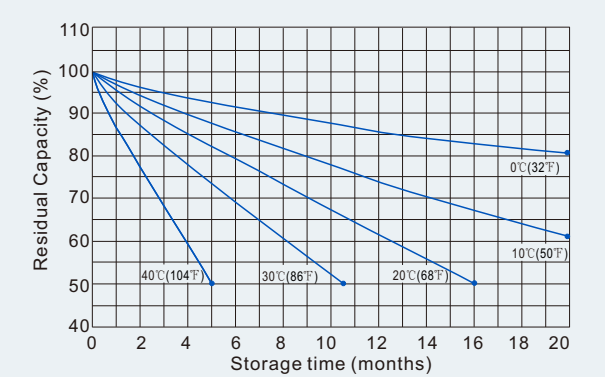
Battery voltage and charge time for standby use



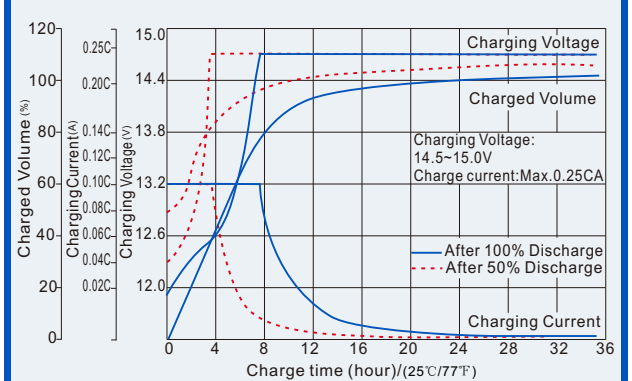
Life Characteristics of float service



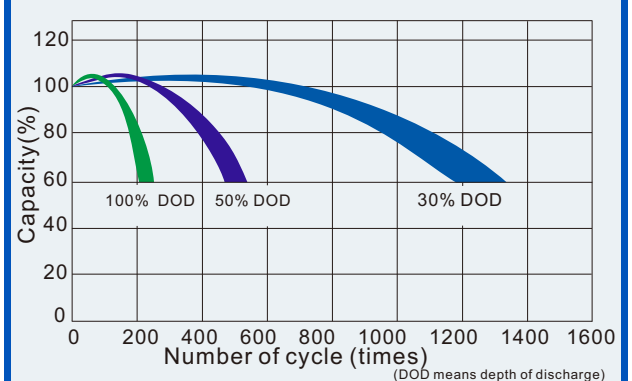
Self-discharge characteristics



Battery voltage and charge time for cycle use



Life characteristics of Cyclic Use



Charging procedures

Application	Charging voltage(V)			Max Charging current
	Temperature	Set Point	Allowable range	
Cycle Use	25℃(77℉)	14.70	14.50~15.00	8.4A
Standby Use		13.70	13.50~13.80	

Discharging current & discharging voltage

Final Discharging Voltage (V)	10.50	10.20	9.60	7.80
Discharging Power (W)	W＜0.1P	0.1P≥(W)＜0.25P	0.25P≤(W)＜1.0P	W≥1.0P