

## 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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**MPHR12-170W (12V55Ah)**

## Specifications

Nominal Voltage		12V
Number of cell		6 cells
Rated capacity (25°C)	Rated capacity/cell (15 minutes rate to 1.67V/cell)	170W
	Rated capacity (10 hour rate)	55Ah
Dimensions (±2mm)	Total Height	214mm (8.43 inches)
	Height	208mm (8.19 inches)
	Length	230mm (9.10 inches)
	Width	138mm (5.43 inches)
Weight Approx (±3%)		17.0Kg (37.5 lbs)

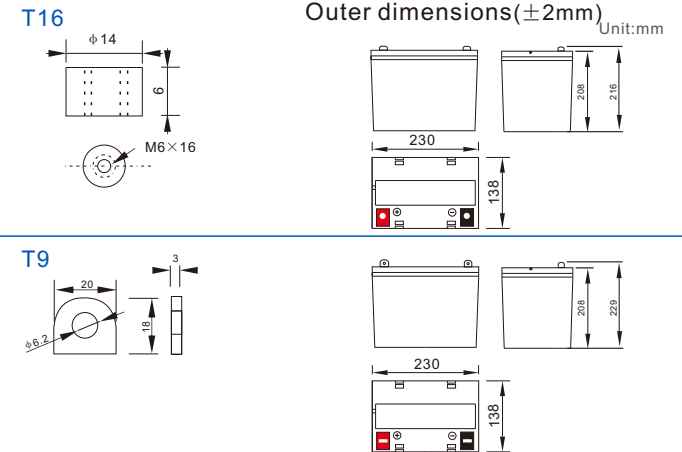
## Battery picture and construction



### 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)	30 minutes rate(67.4A,1.70V/cell) 15 minutes rate(82.7A,1.67V/cell) 5 minutes rate(1205.9A,1.60V/cell)	615W 900W 1800W
Internal Resistance	Full charged battery at 25°C(77°F)	Approx 8 mΩ
Capacity affected by Temperature (20hour 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	T16 (Option T9)	
Max. Discharge current 25°C/(77°F)	550A (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 13.8 A Voltage 14.50-15.00V Temperature compensation:-30mV/°C
	Standby use	Voltage 13.50-13.80V Temperature compensation:-18mV/°C

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

Unit:A

Time F.V/cell	5min	15min	30min	45min	60min	90min	5hours	10hours
1.60V	205.9	118.8	72.7	53.1	41.5	30.8	9.2	6.0
1.67V	195.0	114.0	39.7	50.4	39.7	29.2	9.1	5.9
1.70V	181.4	109.9	67.4	49.3	38.4	28.0	9.0	5.7
1.75V	167.7	102.8	62.6	45.3	35.0	26.2	8.9	5.5
1.80V	159.9	91.0	56.6	40.9	32.2	24.6	8.8	5.4
1.85V	140.4	83.3	52.8	38.4	30.2	23.3	8.6	5.3

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°C , 77 °F)

Unit:watts

Time F.V/cell	5min	10min	15min	20min	30min	45min	60min	90min
1.60V	1800	1346	1043	860	641	472	370	275
1.67V	1723	1303	1020	845	627	455	361	266
1.70V	1646	1253	997	825	615	449	353	257
1.75V	1571	1224	970	810	603	434	338	245
1.80V	1494	1096	860	752	536	388	306	235
1.85V	1330	979	781	694	498	364	288	223

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 MPHR12-170W (High rate discharge)

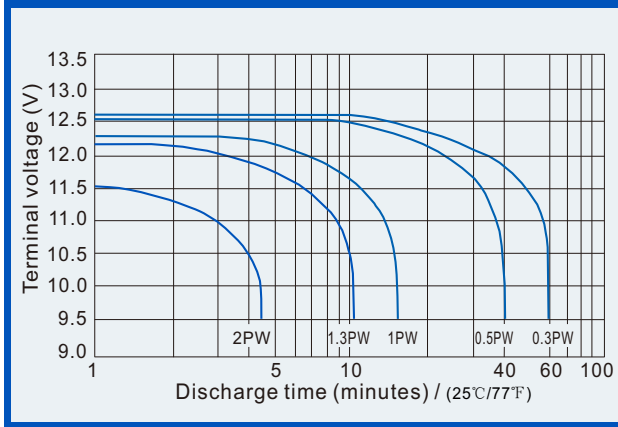
- \* Positive and negative plates in lead-calcium tin alloy
- \* Superior energy density
- \* Operates at a low internal pressure.
- \* Gas Recombination
- \* Very high power output
- \* Application specific designs
- \* Six months self-life at 25°C (77°F), then a freshening charge is required.
- \* Design life 10 years @ floating service at 25°C (77°F).



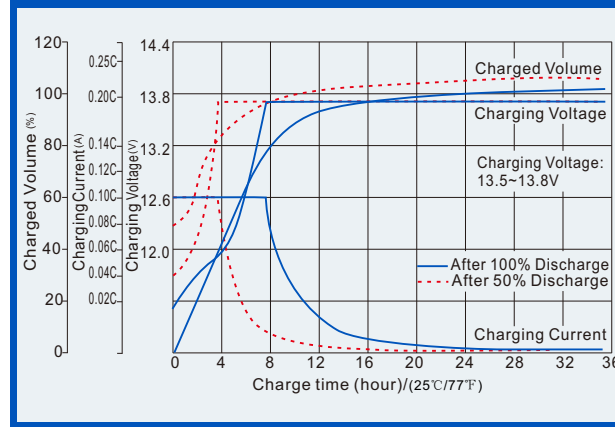
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## MPHR12-170W (12V55Ah)

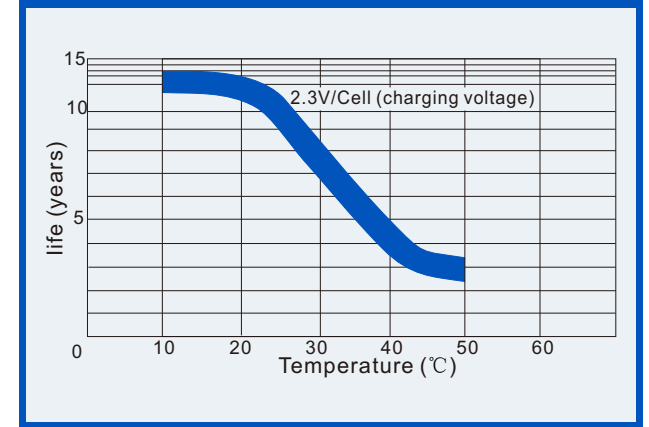
### Terminal voltage(V) and discharge time



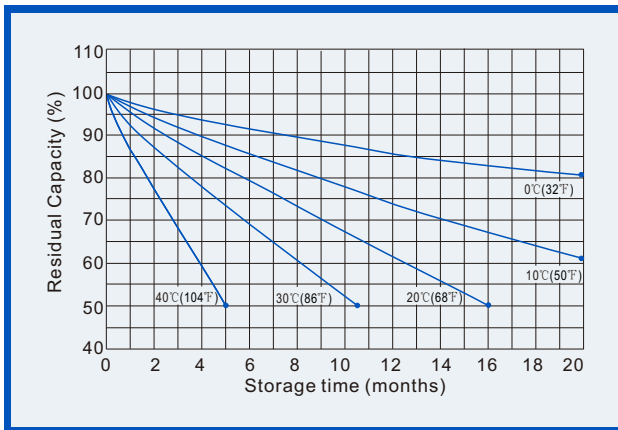
### Battery voltage and charge time for standby use



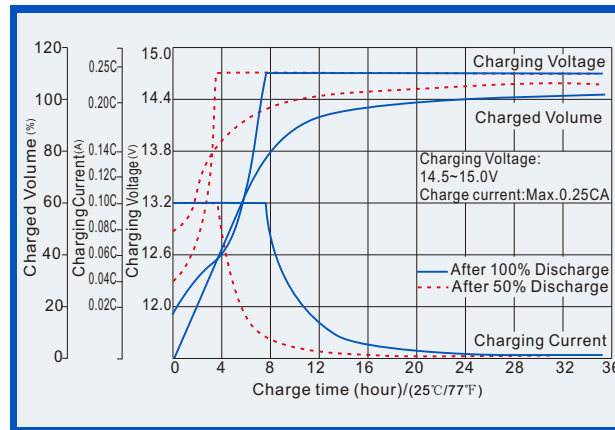
### Life Characteristics of float service



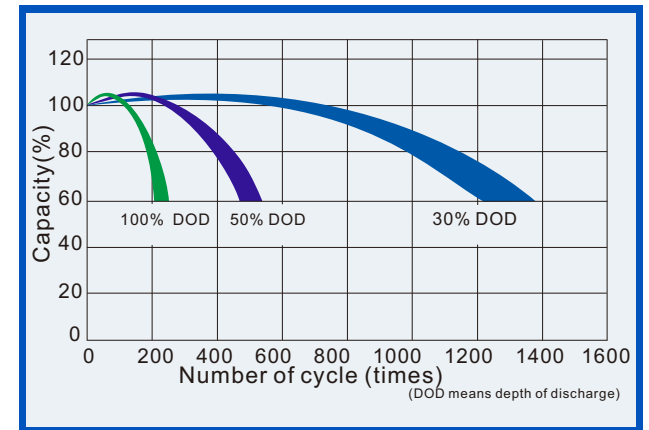
### Self-discharge characteristics



### 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°C(77°F)	14.70	14.50~15.00	13.8A
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)	0.1P > (W)	0.1P ≥ (W) < 0.25P	0.25P ≤ (W) < 1.0P	W ≥ 1.0P