

## 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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**MPHR12-430W (12V110Ah)**

## Specifications

Nominal Voltage		12V
Number of cell		6 cells
Rated capacity (25°C)	Rated capacity/cell (15 minutes rate to 1.67V/cell)	430W
	Rated capacity (10 hour rate)	110Ah
Dimensions (±2mm)	Total Height	T16 218mm (8.58 inches)
		T10 235mm (9.25 inches)
	Height	213mm (8.39 inches)
	Length	331mm (13.0 inches)
	Width	173mm (6.81 inches)
Weight Approx (±3%)		33.0Kg (72.6 lbs)

## Battery picture and construction



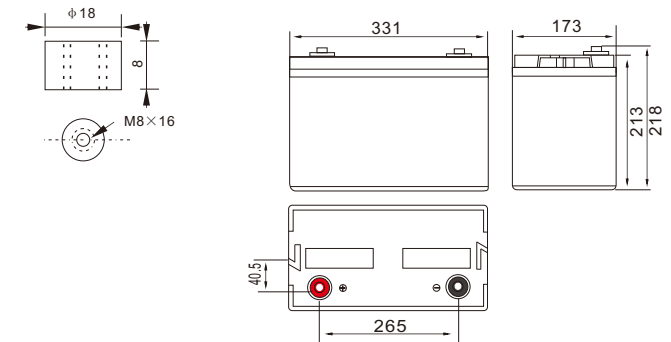
### Battery Construction

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

Terminal: T85

Outer dimensions(±2mm) Unit:mm



## Characteristics

Capacity 25°C(77°F)	30 minutes rate(133.3A, 1.70V/cell) 15 minutes rate(225.8A, 1.67V/cell) 5 minutes rate(407.6A, 1.60V/cell)	1555W 2580W 4553W
Internal Resistance	Full charged battery at 25°C(77°F)	Approx 3.5mΩ
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	T85	
Max. Discharge current 25°C/(77°F)	850A (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 33 A Voltage 14.50-14.90V Temperature compensation:-30mV/°C
	Standby use	Voltage 13.60-13.80V 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	407.6	235.1	143.9	105.2	82.1	60.9	18.1	11.8
1.67V	386.0	225.8	138.0	99.8	78.5	57.8	17.9	11.6
1.70V	359.0	217.6	133.3	97.6	75.9	55.3	17.8	11.3
1.75V	332.0	203.5	124.0	89.6	69.2	51.9	17.6	11.0
1.80V	316.5	180.1	112.1	80.9	63.7	48.7	17.4	10.7
1.85V	277.9	164.9	104.6	75.9	59.8	46.2	17.0	10.4

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	4553	3406	2639	2175	1622	1194	936	696
1.67V	4358	3295	2580	2138	1585	1150	914	672
1.70V	4164	3170	2521	2086	1555	1135	892	649
1.75V	3973	3096	2455	2049	1526	1098	855	618
1.80V	3779	2772	2175	1902	1356	980	774	594
1.85V	3365	2477	1976	1754	1261	921	728	565

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 MPHR12-430W (High rate discharge)

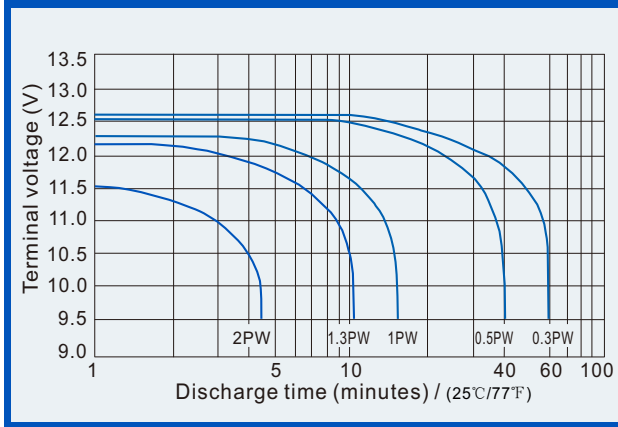
- \* Positive and negative plates in lead-calcium tin alloy
- \* Superior energy density
- \* Operates at a low internal pressure.
- \* Gas Recombination
- \* Very high power output
- \* Application specific designs
- \* Six months self-life at 25°C (77°F), then a freshening charge is required.
- \*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



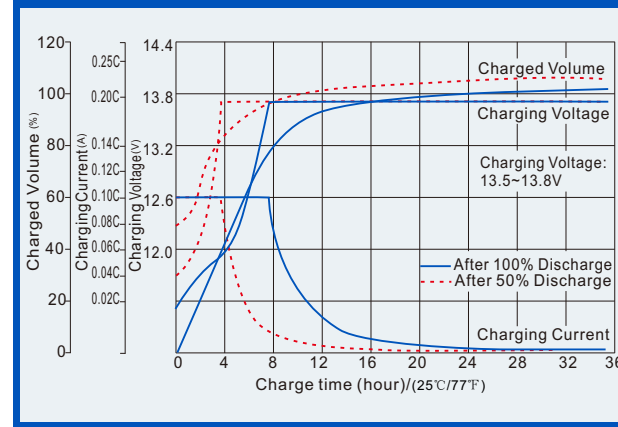
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## MPHR12-430W (12V110Ah)

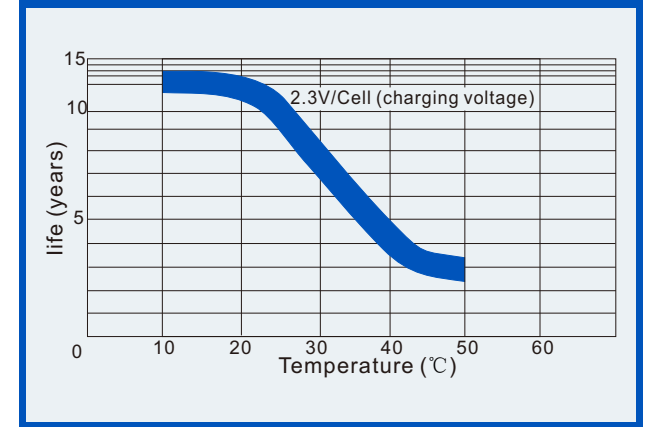
### Terminal voltage(V) and discharge time



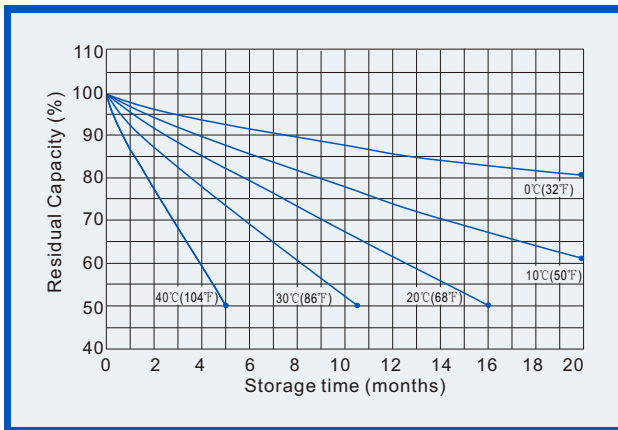
### Battery voltage and charge time for standby use



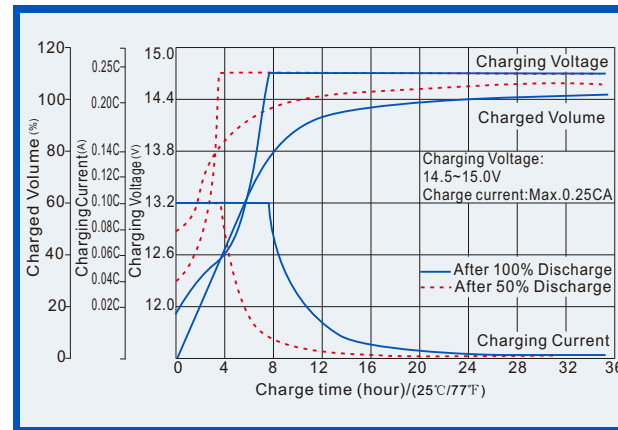
### Life Characteristics of float service



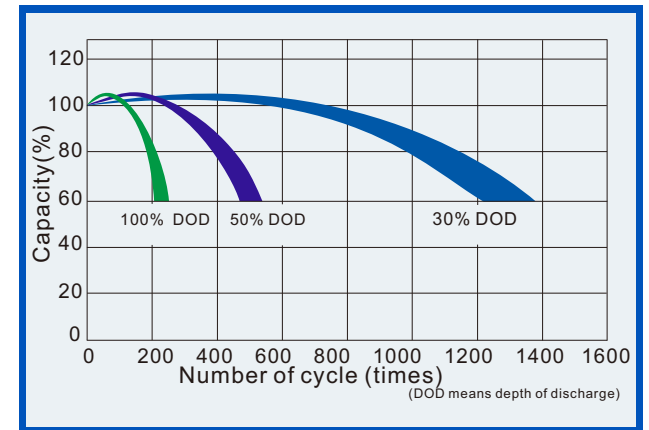
### Self-discharge characteristics



### 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	27.5A
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