

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.



Maxton Power Tech Co., Ltd
www.maxtonpower.com
info@maxtonpower.com

MPHR12-270W (12V70Ah)

Specifications

Nominal Voltage		12V
Number of cell		6 cells
Rated capacity (25°C)	Rated capacity/cell (15 minutes rate to 1.67V/cell)	270W
	Rated capacity (10 hour rate)	70Ah
Dimensions (±2mm)	Total Height	T16 216mm (8.50 inches)
		T33 228mm (8.98 inches)
	Height	208mm (8.19 inches)
	Length	260mm (10.2 inches)
Width		169mm (6.65 inches)
Weight Approx (±3%)		23.0Kg (50.7 lbs)

Battery picture and construction

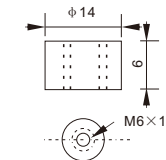


Battery Construction

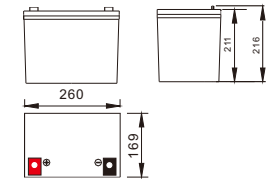
Component	Positive plate	Negative plate	Container	Cover
Raw material	Lead dioxide	Lead	ABS	ABS
Component	Electrolyte	Separator	Safety valve	Terminal
Raw material	Dilute sulfuric acid	Fiberglass	Rubber	Copper

Outer dimension and terminal

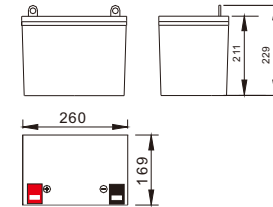
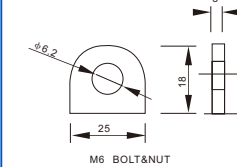
T16



Outer dimensions(±2mm)
Unit:mm



T33



Characteristics

Capacity 25°C(77°F)	30 minutes rate(85.0A, 1.70V/cell) 15 minutes rate(143.9A, 1.67V/cell) 5 minutes rate(259.8A, 1.60V/cell)	977W 1620W 2859W
Internal Resistance	Full charged battery at 25°C(77°F)	Approx 6.0 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 T33)
Max. Discharge current 25°C/(77°F)		700A (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 17.5 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	259.8	149.8	91.7	67.1	52.3	38.8	11.6	7.5
1.67V	246.0	143.9	88.0	63.6	50.0	36.8	11.4	7.4
1.70V	228.8	138.7	85.0	62.2	48.4	35.3	11.3	7.2
1.75V	211.6	129.7	79.0	57.1	44.1	33.1	11.2	7.0
1.80V	201.6	114.7	71.4	51.6	40.6	31.0	11.1	6.8
1.85V	177.1	105.1	66.6	48.4	38.1	29.4	10.8	6.6

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	2859	2138	1657	1365	1018	750	588	437
1.67V	2737	2069	1620	1342	995	722	574	422
1.70V	2614	1990	1583	1310	977	713	560	408
1.75V	2495	1944	1541	1287	958	690	537	388
1.80V	2373	1740	1365	1194	852	616	486	373
1.85V	2113	1555	1240	1102	791	579	457	355

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 MPHR12-270W (High rate discharge)

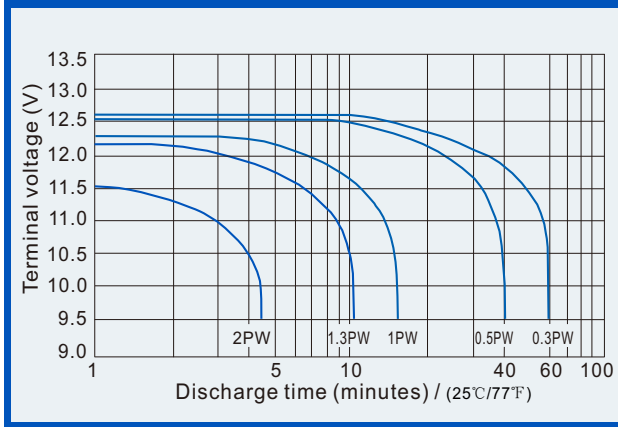
- * Positive and negative plates in lead-calcium tin alloy
- * Superior energy density
- * Operates at a low internal pressure.
- * Gas Recombination
- * Very high power output
- * Application specific designs
- * Six months self-life at 25°C (77°F), then a freshening charge is required.
- * Design life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



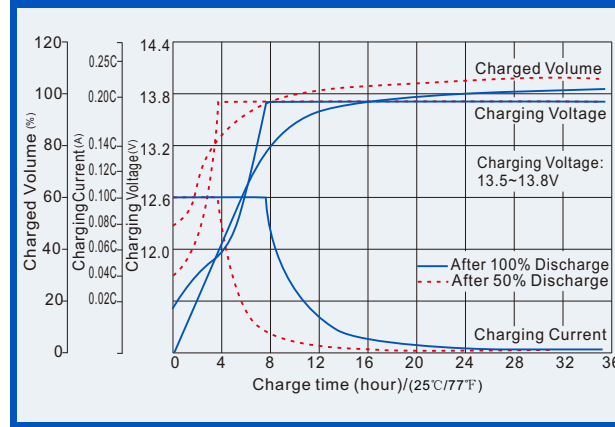
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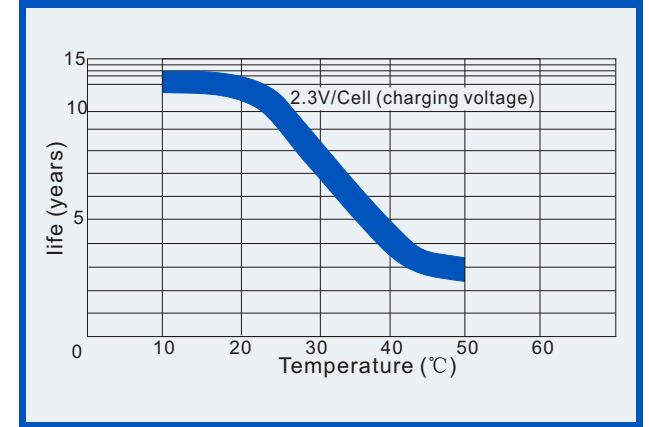
Terminal voltage(V) and discharge time



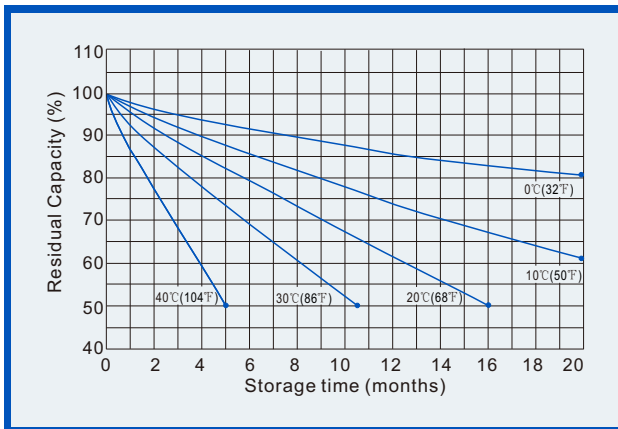
Battery voltage and charge time for standby use



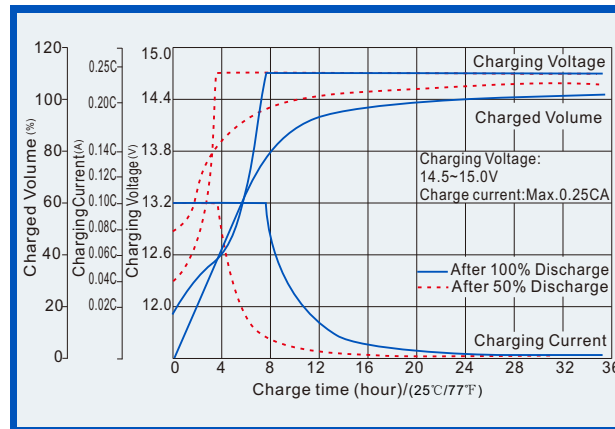
Life Characteristics of float service



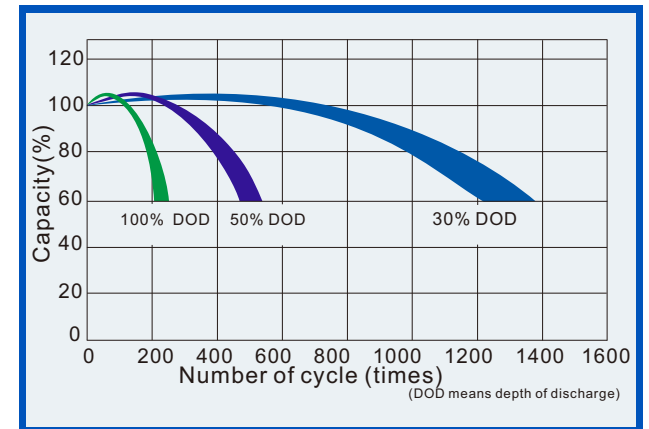
Self-discharge characteristics



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	17.5A
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