VRLA Rechargeable Battery

HR12-12

FEATURES

- Maintenance free(no water topping-up required)
- No free acid(Non-spillable battery)
- Can be used in any orientation(excluding used inverted)
- The battery is designed for high rate usage
- Its design life is up to 6 years in floating application
- Absorbent Glass Mat technology for efficient gas recombination
- The power density at 5 min~15min discharging rate is 30% higher than BP series

APPLICATIONS

- Jump starter
- Lawn Mowers

SPECIFICATIONS

Nominal Voltage	12V	
Nominal Capacity	10 Hour Rate (1100mA, 10.5V)	11.0 Ah
	15 Min Rate (288W, 7.8V)	6.0 Ah
Approx. Weight	3950g(8.71lbs.)	
Cranking Amps	CA @25°C:	275 A
	CCA @-18°C:	175 A
Reserve capacity	(25A/10.5V/25°C) 18 mins	
Terminals	B0, I1 is optional	
Short Circuit Current @ 0.1 Sec.	1050 A	
Max. Charge Current	3.3 A	
Operating Temperature Range	Charge	0°C~40°C(32°F~104°F)
	Discharge	-20°C~50°C(-4°F~122°F)
	Storage	-20°C~40°C(-4°F~104°F)
Self Discharge	< 3% per month (25°C)	
Internal Resistance	≦ 13mΩ (Fully Charged)	

CONTAINER MATERIAL

- Standard: ABS(UL94 HB)
  Model Name: HR12-12
- Optional: Flame Retardant ABS (UL94 V-0)
  Model Name: HR12-12FR

Certificate as below:

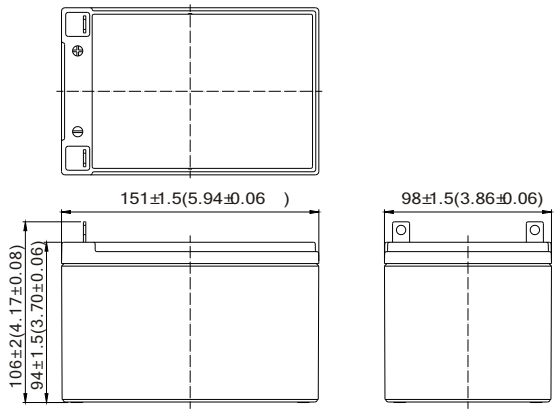
MH19884

Compliance of the standards as below:

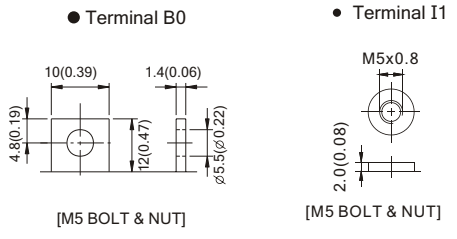
- IEC 61056-1
- JIS C 8702-1
- GB/T 19639.1

OUTER DIMENSIONS mm(inch)

Length (L)	Width (W)	Container Height (H)	Total Height (TH)
151±1.5(5.94±0.06)	98±1.5(3.86±0.06)	94±1.5(3.70±0.06)	106±2.0(4.17±0.08)

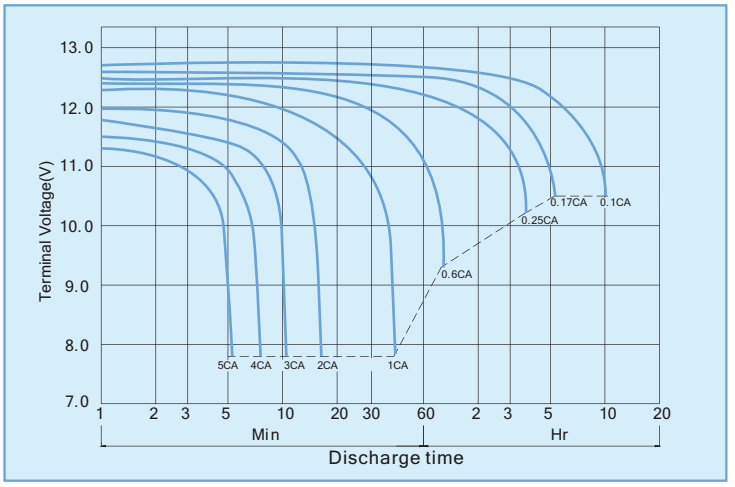


TERMINAL TYPE

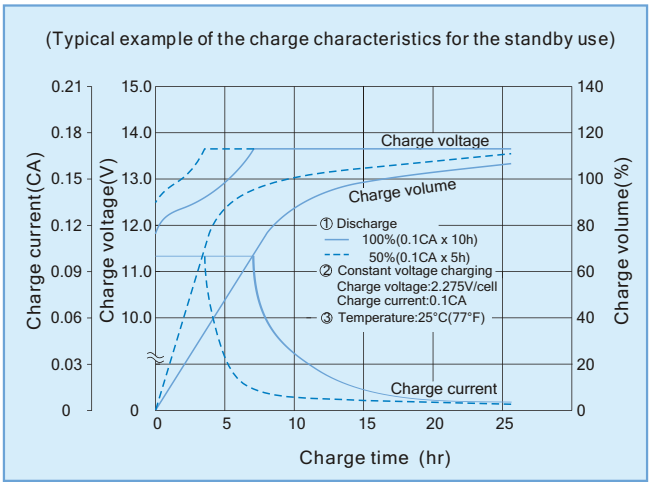


Terminal Hardware Initial Torque: I1(4.0Nm±5%)

HR12-12 (HR12-12FR) discharge characteristics (25°C/77°F)



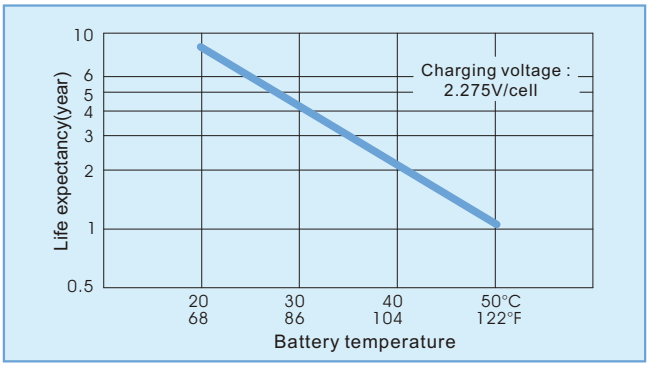
Battery Charging Characteristics



Charging Procedure

Application	Charging method	Charging Voltage at 25°C (V/cell)	Temperature compensation coefficient of charging voltage (mV/°C/cell)	Max. charging current (CA)	Charging time 0.1CA, 25°C (h)		Temp (°C)
					100% discharge	50% discharge	
For standby power Source	Constant voltage & Constant current charging (with current restriction)	2.25~2.30	-3	0.3	24	20	0~40 (32~104°F)
For cycle service		2.40~2.50	-4	0.3	16	10	

Effect Of Temperature On Long Term Float Life



Constant power discharge characteristics at 25 °C/77 °F *Unit: W*

F.V. (V/cell) \ Discharge Time	5 Min	10 Min	15 Min	20 Min	30 Min	40 Min	50 Min	60 Min	120 Min
1.80V	492.0	336.0	243.3	207.6	157.9	120.0	100.3	88.3	48.7
1.70V	588.0	375.1	264.7	219.9	164.4	124.5	103.5	90.3	49.6
1.60V	630.0	394.5	276.7	228.0	168.0	127.5	105.6	91.9	50.4
1.50V	648.0	402.0	282.7	231.6	170.1	129.1	106.8	92.7	50.7
1.40V	660.0	407.5	285.9	233.7	171.3	129.9	107.7	93.3	50.8
1.30V	666.0	411.1	288.0	235.2	172.3	130.5	108.3	93.6	50.9

Constant current discharge characteristics at 25 °C/77 °F *Unit: A*

F.V. (V/cell) \ Discharge Time	5 Min	10 Min	15 Min	20 Min	30 Min	40 Min	50 Min	60 Min	120 Min
1.80V	43.93	29.47	21.05	17.80	13.38	10.09	8.39	7.36	4.06
1.70V	53.45	32.90	22.90	18.86	13.93	10.47	8.66	7.52	4.13
1.60V	57.27	34.61	23.93	19.55	14.24	10.72	8.84	7.66	4.20
1.50V	58.91	35.26	24.45	19.86	14.42	10.86	8.94	7.72	4.22
1.40V	60.00	35.74	24.73	20.05	14.52	10.92	9.02	7.78	4.23
1.30V	60.55	36.06	24.91	20.17	14.60	10.98	9.06	7.80	4.24