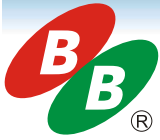




Measures Technology Values Innovation



## VRLA Rechargeable Battery

# HR22-12 (HR22-12FR)

### 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

### APPLICATION

- UPS
- Fishing Lights
- Booster
- Emergency Lights
- Lawn Mowers
- Video Camcorders(VCR)

### SPECIFICATIONS

Nominal Voltage	12V	
Nominal Capacity	10 Hour Rate (2000mA, 10.5V)	20.0 Ah
	15 Min Rate (528W, 7.8V)	11.0 Ah
Approx. Weight	6500g(14.33lbs.)	
Terminals	B1 (Fitting M5 bolt & nut) , T2 and I1 are optional	
Max. Discharge Current	300 A (5 sec.)	
Max. Charge Current	6.0 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	≤ 9mΩ (Fully Charged)	

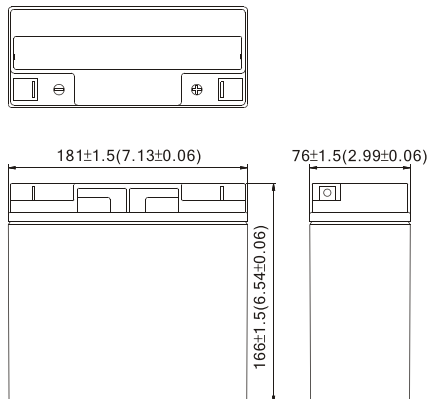


### CONTAINER MATERIAL

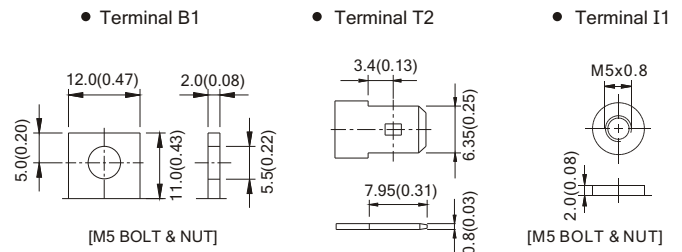
- HR22-12:  
ABS: UL 94-HB (Dark gray color)
- HR22-12FR:  
ABS: UL 94-V0 (Light gray color)

 ISO 9001	 ISO 14001
 MH19884 UL	 C4M20310-2474-E-16 CE
● 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)
		181±1.5(7.13±0.06)	76±1.5(2.99±0.06)	166±1.5(6.54±0.06)

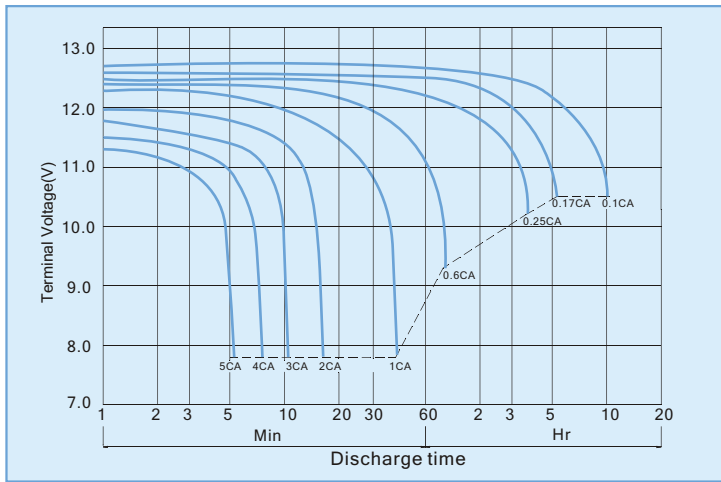


### TERMINAL TYPE

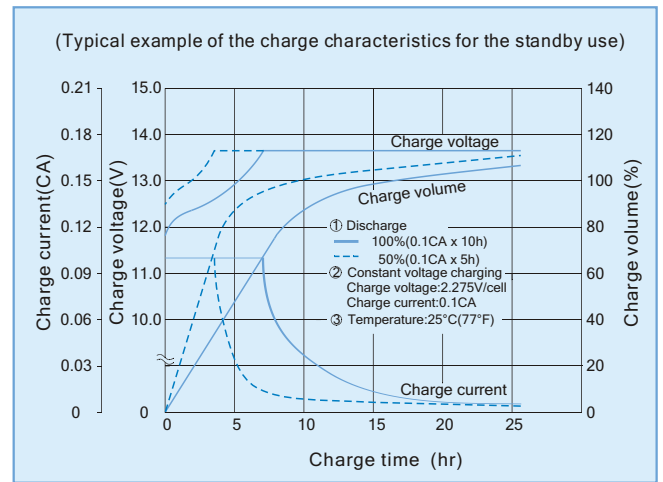


Terminal Hardware Initial Torque:  
B1(2.5Nm±5%),I1(4.0Nm±5%)

### HR22-12 (HR22-12FR) discharge characteristics (25°C /77°F)



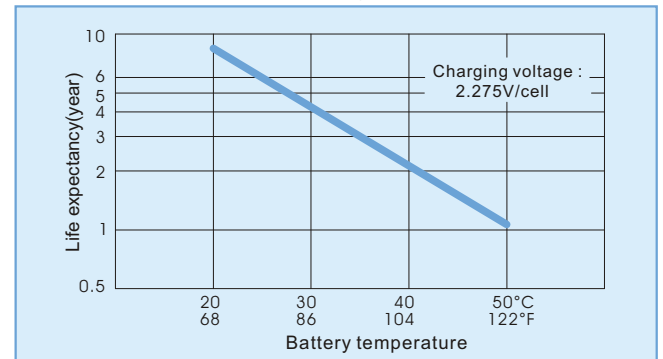
### Battery Charging Characteristics



### 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	902.0	616.0	446.1	380.6	289.3	220.0	183.7	161.7	89.2
1.70V	1078.0	687.5	485.1	403.2	301.4	228.3	189.8	165.6	90.9
1.60V	1155.0	723.3	507.1	418.0	308.0	233.8	193.6	168.3	92.4
1.50V	1188.0	737.0	518.1	424.6	311.9	236.5	195.8	170.0	92.9
1.40V	1210.0	746.9	524.2	428.5	314.1	238.2	197.5	171.1	93.1
1.30V	1221.0	753.5	528.0	431.2	315.7	239.3	198.6	171.6	93.4

### 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	80.54	54.04	38.59	32.64	24.52	18.50	15.37	13.48	7.43
1.70V	98.00	60.31	41.96	34.58	25.54	19.20	15.88	13.80	7.58
1.60V	105.00	63.45	43.87	35.85	26.10	19.66	16.20	14.03	7.70
1.50V	108.00	64.65	44.82	36.42	26.43	19.89	16.38	14.17	7.74
1.40V	110.00	65.52	45.35	36.75	26.62	20.03	16.53	14.26	7.76
1.30V	111.00	66.10	45.67	36.98	26.75	20.13	16.62	14.30	7.78

All data shall be changed without prior notice, BB reserves the right to explain and update the information contained herein.

A/3 REV. Dec. 2010

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