



VRLA Rechargeable Battery

HRL40-12 (HRL40-12FR)

Standard Type

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
- Long life expectancy up to 10 years in float 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
- Electronic Medical Equipment
- Jump Starter
- Wheelchairs
- Golf-Carts
- Wind Power
- Lawn Mowers

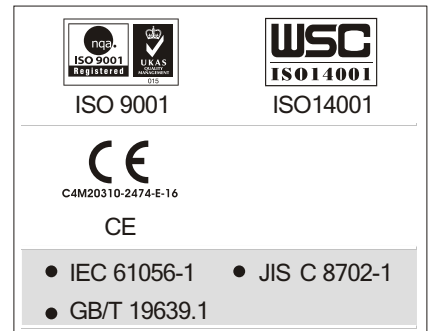


SPECIFICATIONS

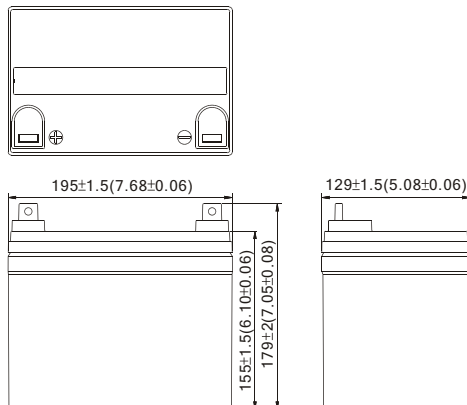
Nominal Voltage	12V	
Nominal Capacity	10 Hour Rate (3800mA, 10.5V)	38.0 Ah
	15 Min Rate (960W, 7.8V)	20.0 Ah
Approx. Weight	12.1Kg(26.68lbs.)	
Terminals	B7 (Fitting M6 bolt & nut)	
Max. Discharge Current	495 A (5 sec.)	
Max. Charge Current	11.4 A	
Operating Temperature Range	Charge	0°C~40°C(32°F~104°F)
	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	≤ 6mΩ (Fully Charged)	

CONTAINER MATERIAL

- HRL40-12:
ABS: UL 94-HB (Dark gray color)
- HRL40-12FR:
ABS: UL 94-V0 (Light gray color)

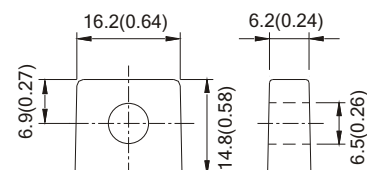


OUTER DIMENSIONS mm(inch)	Length (L)	Width (W)	Container Height (H)	Total Height (TH)
		195±1.5(7.68±0.06)	129±1.5(5.08±0.06)	155±1.5(6.10±0.06)



TERMINAL TYPE

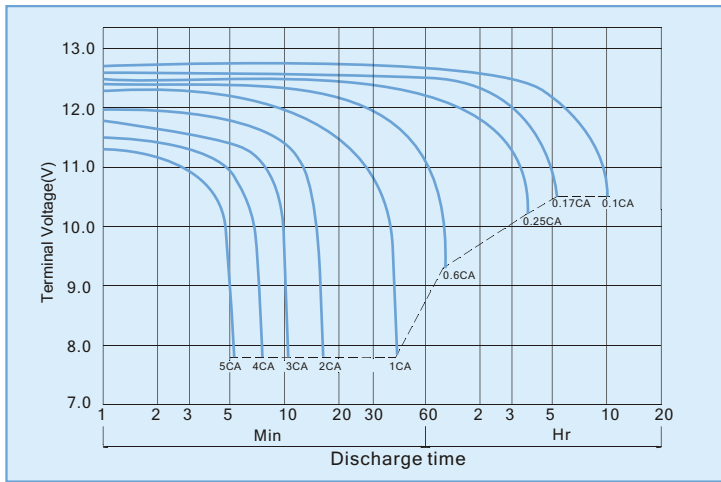
- Terminal B7



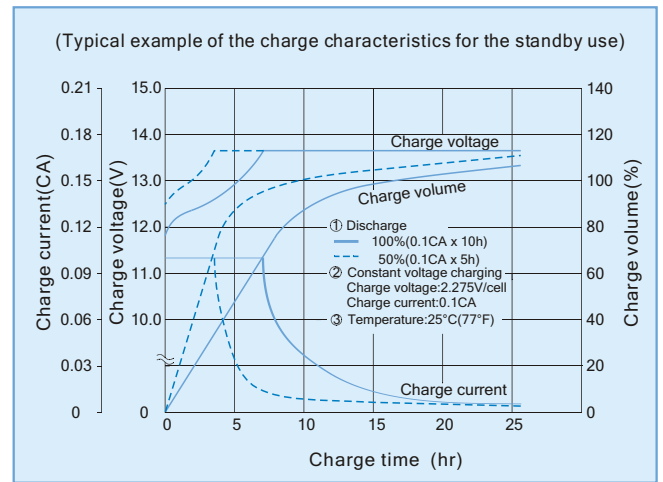
[M6 BOLT & NUT]

Terminal Hardware Initial Torque: B7(5.5Nm±5%)

HRL40-12 (HRL40-12FR) discharge characteristics (25°C /77°F)



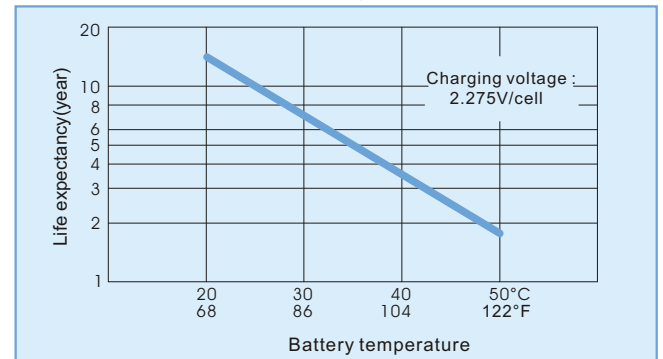
Battery Charging Characteristics



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	1640.0	1120.0	811.0	692.0	526.0	400.0	334.0	294.0	162.2
1.70V	1960.0	1250.0	882.0	733.0	548.0	415.0	345.0	301.0	165.3
1.60V	2100.0	1315.0	922.0	760.0	560.0	425.0	352.0	306.0	168.0
1.50V	2160.0	1340.0	942.0	772.0	567.0	430.0	356.0	309.0	168.9
1.40V	2200.0	1358.0	953.0	779.0	571.0	433.0	359.0	311.0	169.3
1.30V	2220.0	1370.0	960.0	784.0	574.0	435.0	361.0	312.0	169.8

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	146.43	98.25	70.16	59.35	44.58	33.64	27.95	24.50	13.52
1.70V	178.18	109.65	76.30	62.86	46.44	34.90	28.87	25.08	13.78
1.60V	190.91	115.35	79.76	65.18	47.46	35.74	29.46	25.50	14.00
1.50V	196.36	117.54	81.49	66.21	48.05	36.16	29.79	25.75	14.08
1.40V	200.00	119.12	82.44	66.81	48.39	36.42	30.04	25.92	14.11
1.30V	201.82	120.18	83.04	67.24	48.64	36.59	30.21	26.00	14.15

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

Trials A/O REV. Dec. 2010

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