



VRLA Rechargeable Battery

EP33-12 Standard Type



FEATURES

- Absorbent Glass Mat technology for efficient gas recombination
- 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 heavy duty cyclic application
- Its design life is approx.400 cycles at 100% discharge in cycle service at 77°F/25°C

APPLICATION

- UPS
- Wheelchairs
- Golf-Carts
- Lawn Mowers

SPECIFICATIONS

Nominal Voltage	12V	
Nominal Capacity	20 Hour Rate (1.65A, 10.5V)	33.0 Ah
	10 Hour Rate (3.14A, 10.5V)	31.4 Ah
	5 Hour Rate (5.61A, 10.5V)	28.1 Ah
	30 Min Rate (33.00A, 7.8V)	16.5 Ah
Approx. Weight	11500g(25.36lbs.)	
Terminals	B7 (Fitting M6 bolt & nut)	
Max. Discharge Current	495 A (5 sec.)	
Max. Charge Current	9.9 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

- Standard: ABS(UL 94-HB)
Model Name: EP33-12
- Optional: Flame Retardant ABS (UL 94-V0)
Model Name: EP33-12FR

WSF ISO9001 **WSF** ISO14001 **WSF** OHSMS



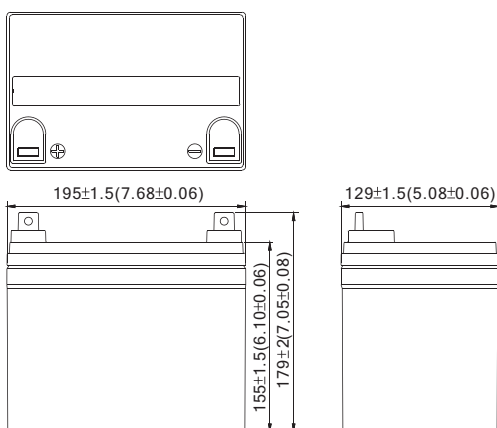
MH19884



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

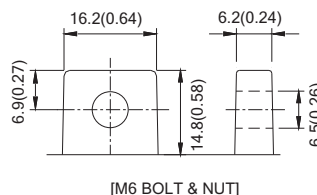
OUTER DIMENSIONS mm(inch)

Length (L)	Width (W)	Container Height (H)	Total Height (TH)
195±1.5(7.68±0.06)	129±1.5(5.08±0.06)	155±1.5(6.10±0.06)	179±2.0(7.05±0.08)



TERMINAL TYPE

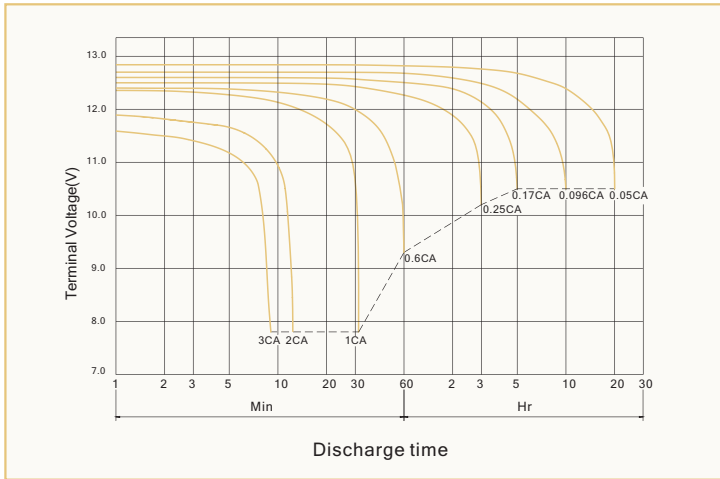
- Terminal B7



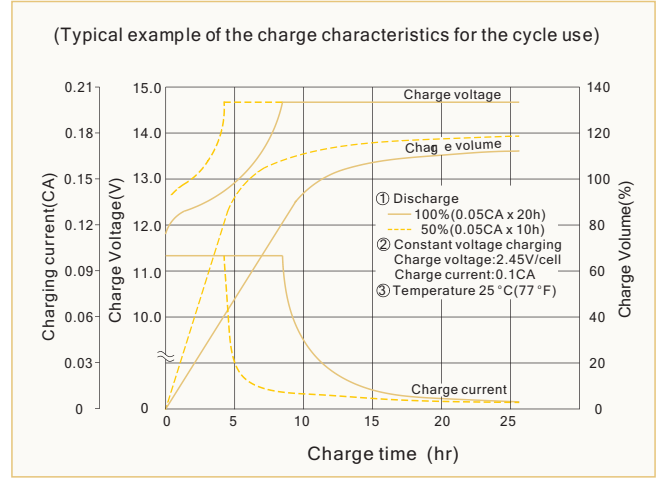
[M6 BOLT & NUT]

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

EP33-12 (EP33-12FR) discharge characteristics (25°C/77°F)



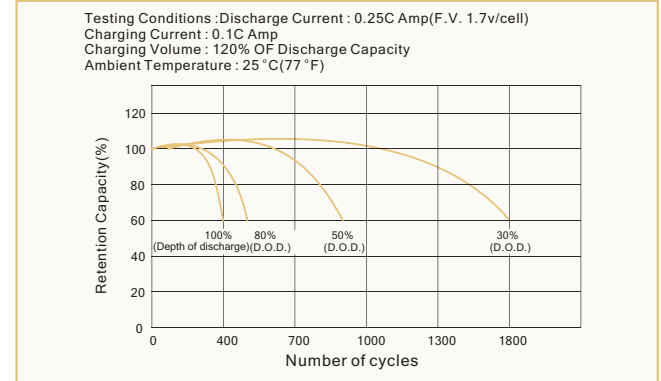
Battery Charging Characteristics



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) (32°-104°F)
					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					16	10	

Battery Life Characteristics of Cyclic Use



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

F.V. (V/cell) \ Discharge Time	5 Min	10 Min	15 Min	30 Min	1 Hr	3 Hr	5 Hr	10 Hr	20 Hr
1.80V	1075.0	808.0	654.3	393.6	228.2	96.2	66.50	37.05	19.38
1.75V	1245.0	875.4	685.0	408.7	234.8	98.1	67.40	37.62	19.80
1.70V	1320.0	907.0	705.7	417.7	239.0	99.0	67.90	37.81	19.89
1.65V	1381.0	928.7	722.2	423.8	242.3	99.9	68.40	37.90	19.94
1.60V	1424.0	947.1	736.4	428.1	244.7	100.4	68.40	37.90	19.94

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

F.V. (V/cell) \ Discharge Time	5 Min	10 Min	15 Min	30 Min	1 Hr	3 Hr	5 Hr	10 Hr	20 Hr
1.80V	96.8	71.1	56.9	33.4	19.2	8.02	5.54	3.09	1.62
1.75V	114.2	77.1	59.6	34.6	19.7	8.18	5.62	3.14	1.65
1.70V	121.1	79.8	61.4	35.4	20.1	8.25	5.66	3.15	1.66
1.65V	126.7	81.8	62.8	35.9	20.4	8.33	5.70	3.16	1.66
1.60V	130.6	83.4	64.0	36.3	20.6	8.37	5.70	3.16	1.66

All data and artworks shall be changed without prior notice, BBT reserves the right to explain and update the information contained hereinto.

For operation, please refer to the instruction from technical manual.

A/0 REV. July. 2016

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