



# Valve Regulated Lead-Acid Rechargeable Battery



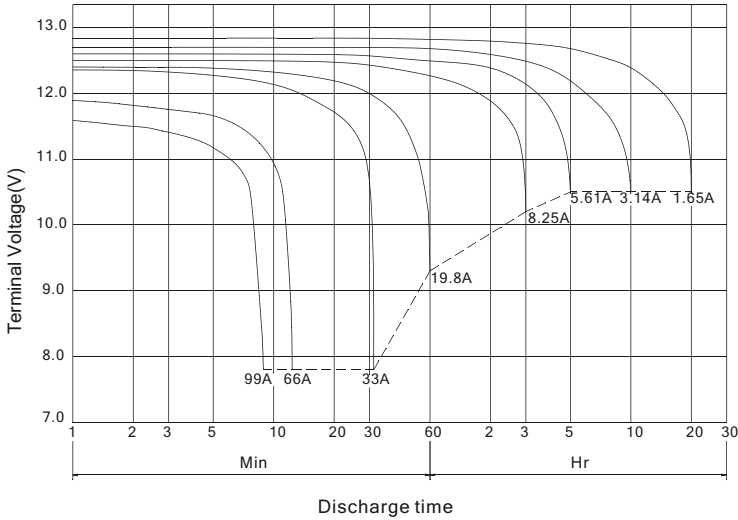
## BPL33-12

The battery is constructed by plates, separators, safety valves and container. Since the electrolyte is held by a glass-mat separator and plates, the battery can be used in any direction and position without leakage.

### PERFORMANCE SPECIFICATIONS

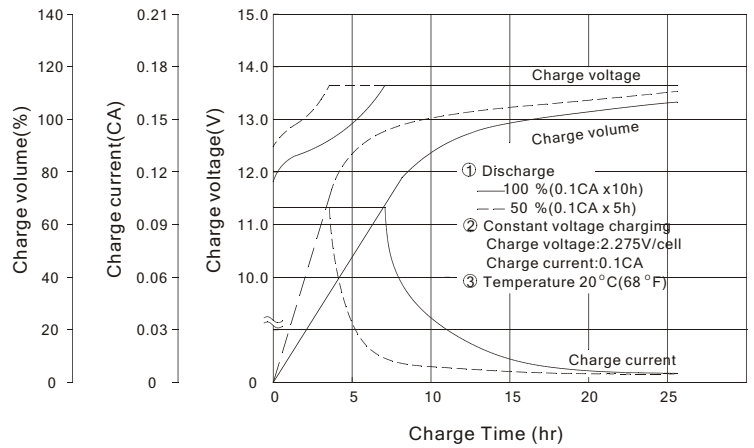
Nominal Voltage(V).....	12 volts(6cells in series)
Nominal Capacity(AH)	
20 Hour rate F.V.(1.75V/cell) (1650mA to 10.50volts) .....	33.0A.H.
10 Hour rate F.V.(1.75V/cell) (3140mA to 10.50volts) .....	31.4A.H.
5 Hour rate F.V.(1.75V/cell) (5610 mA to 10.50volts) .....	28.1A.H.
30 Min rate F.V.(1.30V/cell) (33000mA to 7.80volts).....	16.5A.H.
Approximate Weight.....	11500g(25.36lbs.)
Terminal	
Standard.....	Type B7
Optional.....	Type I2
Internal Resistance (Fully Charged Battery).....	<9m Ω
Maximum Discharge Current For 5 sec.(A).....	495A
Maximum Charge Current(A).....	9.9A
Ambient Temperature	
Charge.....	0°C(32°F)~40°C(104°F)
Discharge.....	-20°C(-4°F)~50°C(122°F)
Storage.....	-20°C(-4°F)~40°C(104°F)
Vibration test:	
Frequency: 16.7HZ	
Amplitude: 4mm	
Vibrate the battery horizontally or vertically for 60 minutes. The battery have no abnormality.	
Design Life: 10 years for standby use at 20°C	
Case.....	ABS
Dimension(mm/inch)	
Length           ±1.5mm.....	210/8.27
Width           ±1.5mm.....	129/5.08
Container Height ±1.5mm.....	168/6.61
Total Height   ±2mm.....	179/7.05
Application.....	Wheelchairs, Lawn Mowers, Electronic Medical Equipment, Golf-Carts.

## BPL33-12 Battery discharge characteristics (25 °C/77 °F)



## Battery Charging Characteristics

(Typical example of charge characteristic for the standby use)



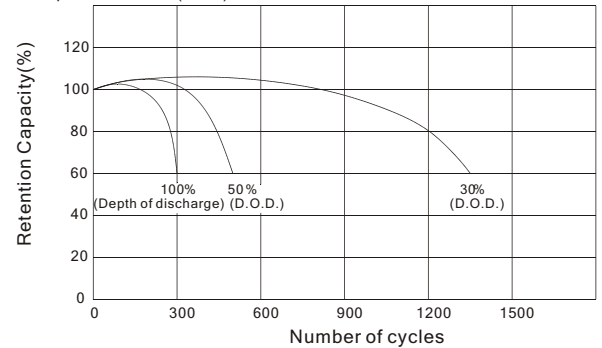
## Charging Procedure

Application	Charging method	Charging Voltage at 20 °C (V/cell)	Temperature compensation coefficient of charging voltage (mV/°C/cell)	Max. charging current (CA)	Charging time 0.1CA, 20 °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	

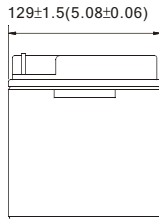
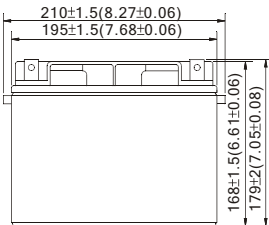
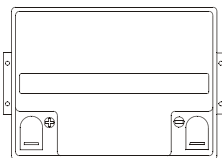
\*Temperature compensation of charging voltage is not needed, when using the batteries within 5 °C to 35 °C range.

## Battery Life Characteristics of Cyclic Use

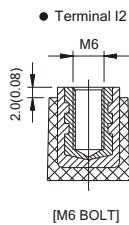
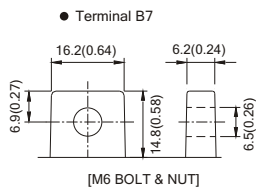
Testing Conditions : Discharge Current : 0.25C Amp (F.V. 1.7v/cell)  
Charging Current : 0.1C Amp  
Charging Volume : 120% OF Discharge Capacity  
Ambient Temperature : 20 °C (68 °F)



## OUTER DIMENSIONS



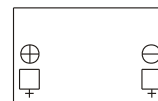
## TERMINAL TYPE mm (inch)



## Constant power discharge characteristics at 25°C/77°F

Final Voltage	Discharge time								
	5Min	10Min	15Min	30Min	1Hr	3Hr	5Hr	10Hr	20Hr
10.80V	1075	808.0	654.3	393.6	228.2	96.2	66.5	37.05	19.38
10.50V	1245	875.4	685.0	408.7	234.8	98.1	67.4	37.62	19.80
10.20V	1320	907.0	705.7	417.7	239.0	99.0	67.9	37.81	19.89
9.90V	1381	928.7	722.2	423.8	242.3	99.9	68.4	37.90	19.94
9.60V	1424	947.1	736.4	428.1	244.7	100.4	68.4	37.90	19.94

## TERMINAL POSITION



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