



# Valve Regulated Lead-Acid Rechargeable Battery

## EB20-12

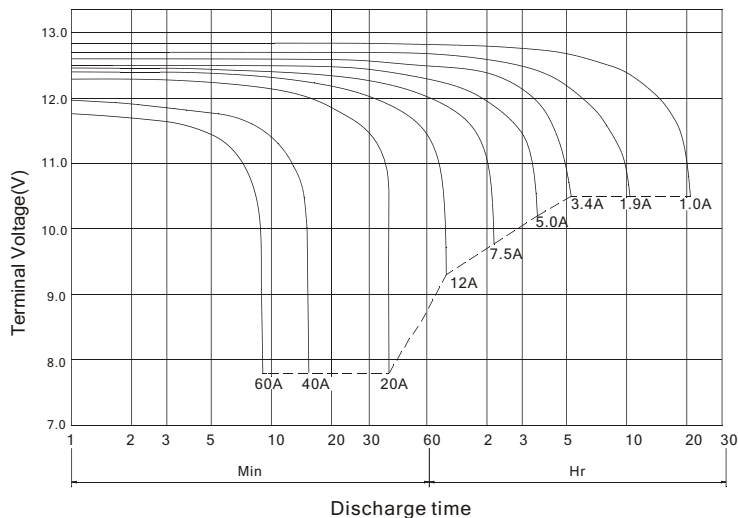


The battery is constructed by plates, separators, safety valves and container. Since the electrolyte is held by a glass-mat separator and plates, the battery can be used in any direction and position (but upside-down should be avoided) without leakage.

### PERFORMANCE SPECIFICATIONS

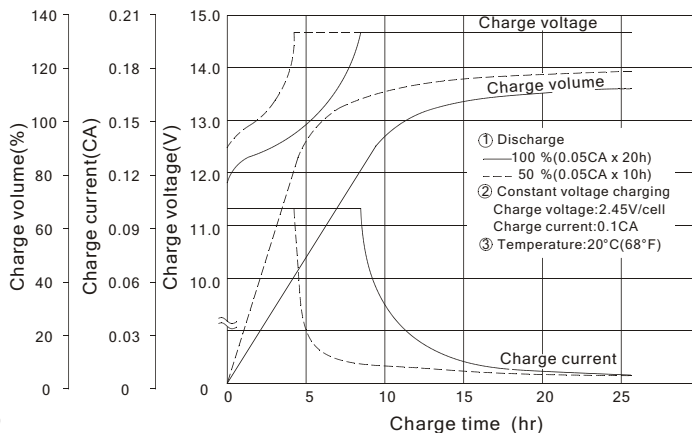
Nominal Voltage(V).....	12 volts(6cells in series)
Nominal Capacity(Ah)	
20 hour rate F.V.(1.75V/cell) (1.0A to 10.50volts) .....	20.0Ah
2 hour rate F.V.(1.60V/cell) (7.5A to 9.60volts) .....	15.0Ah
Approximate Weight.....	6450g(14.22lbs.)
Terminal	
Standard.....	Type B1
Optional.....	Type I1
Terminal Hardware Initial Torque.....	B1(2.5 Nm ± 5%), I1(4.0 Nm ± 5%)
Internal Resistance (Fully Charged Battery).....	≤11mΩ
Maximum Discharge Current For 5 sec.(A).....	300A
Maximum Charge Current(A).....	6.0A
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.	
Case.....	ABS: UL 94-HB
Dimension(mm/inch)	
Length ±1.5mm.....	181/7.13
Width ±1.5mm.....	76/2.99
Container Height ±1.5mm.....	166/6.54
Total Height ±2mm.....	166/6.54
Application.....	E-bike, Wheelchairs, Lawn Mowers, Electrical Scooter, Golf-Carts.
Cycle Life.....	Approx. 300 Cycles(D.O.D.100%), 500 Cycles(D.O.D.70%)

## EB20-12 Battery discharge characteristics (25°C/77°F)



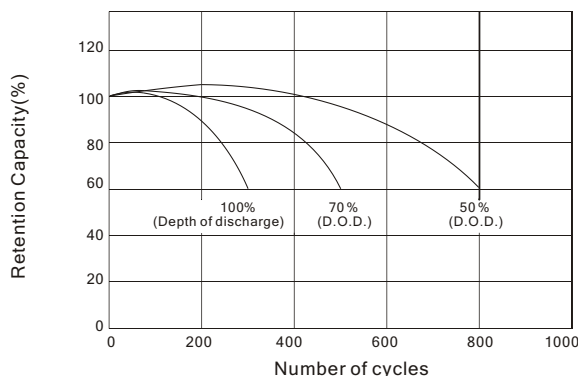
## Battery Charging Characteristics

(Typical example of the charge characteristics for the cycle use)



## Battery Life Characteristics of Cyclic Use

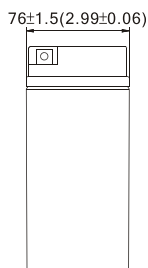
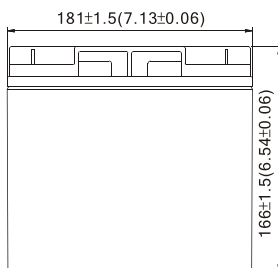
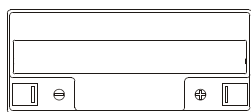
Testing Conditions: Discharge Current: 7.5Amp  
Final voltage: 1.60V/cell  
Charging Current: 0.1C Amp  
Charging Volume: 120% of Discharge Capacity  
Ambient Temperature: 20°C(68°F)



## Charging Procedure

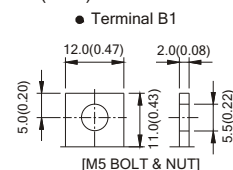
Application	Charging method	Charging Voltage at 20°C (V/cell)	Temperature compensation coefficient of charging voltage (mV/°C/cell)	Max. charging current (CA)	Charging time 0.1CA, 20°C (h)		Temp (°C)
					100% discharge	50% discharge	
For standby power Source	Constant voltage & Constant current charging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

## OUTER DIMENSIONS

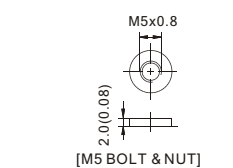


## TERMINAL TYPE

mm(inch)



## Terminal I1



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

Final Voltage	Discharge time									
	10Min	15Min	30Min	40Min	1Hr	2Hr	3Hr	5Hr	10Hr	20Hr
10.80V	538.5	436.1	274.2	217.4	162.8	85.5	70.1	44.4	22.44	11.76
10.50V	583.5	456.8	285.1	225.4	167.5	87.8	71.5	44.9	22.80	12.00
10.20V	604.8	470.6	291.2	229.7	170.3	88.7	72.0	45.2	22.92	12.12
9.90V	619.3	481.6	295.5	233.0	172.6	89.6	72.5	45.6	23.04	12.24
9.60V	631.6	490.8	298.3	235.4	174.5	90.0	73.0	45.7	23.04	12.24
9.00V	643.9	500.9	301.1	237.7	176.3	90.5	73.4	45.7	23.04	12.24

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

Final Voltage	Discharge time									
	10Min	15Min	30Min	40Min	1Hr	2Hr	3Hr	5Hr	10Hr	20Hr
10.80V	47.4	37.9	23.2	18.4	13.68	7.13	5.84	3.70	1.87	0.98
10.50V	51.4	39.7	24.2	19.0	14.07	7.31	5.96	3.74	1.90	1.00
10.20V	53.2	40.9	24.7	19.4	14.31	7.39	6.00	3.77	1.91	1.01
9.90V	54.5	41.9	25.0	19.7	14.50	7.46	6.04	3.80	1.92	1.02
9.60V	55.6	42.7	25.3	19.9	14.66	7.50	6.08	3.81	1.92	1.02
9.00V	56.7	43.6	25.5	20.1	14.82	7.54	6.12	3.81	1.92	1.02



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