



1. Brief Introduction for EV Series Batteries

The EPBLUE® EV Series Maintenance-free Sealed Lead Acid Battery should be used for electric vehicles cars, mowers, electric wheel chair, sweeping machines and related electric power systems fields, using radial high tin lead calcium alloy grids, thin plate design and unique negative plates of lead paste formula to increase the battery active material utilization rate and electrode surface area, to ensure battery high power discharge performance and capacity are stronger. Capacity is stable and decay rates is low. Thickened and widened collecting bar, bold pole and tight assembly production process, making battery cycle performance and deep discharge recovery are superior, fast charge, safe and reliable usage.

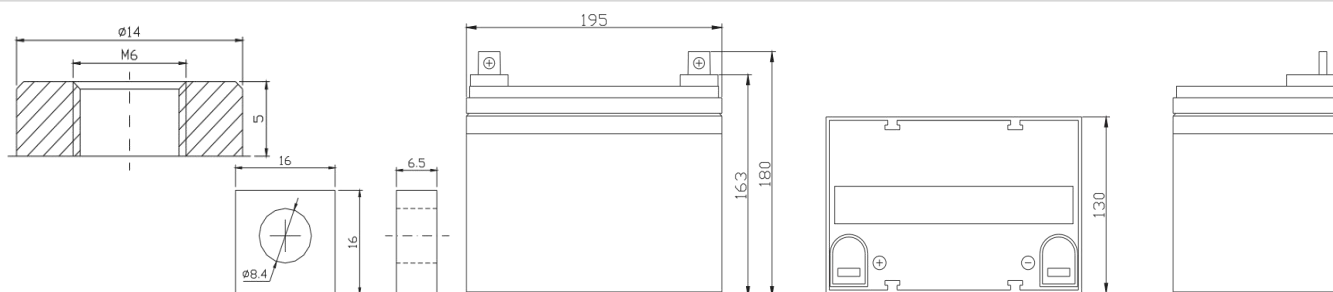
2. Construction for EV Series Batteries

Component	Raw material
Positive Plate	Lead dioxide
Negative Plate	Lead
Container & Cover	ABS UL94HB/V0
Safety Valve	Rubber
Terminal	Copper / F11 / Lead / F6
Separator	Fiberglass
Electrolyte	Sulfuric acid

3. Specifications

Nominal Voltage	12 Volt		
Nominal Capacity (20HR)	33 Ah		
Dimension	Length	195 mm	7.68 in
	Width	130 mm	5.12 in
	Height	163 mm	6.42 in
	Total Height (with terminals)	180 mm	7.09 in
Weight	Approx.	11.2 kg	24.6 lbs

5. Physical Dimensions: mm



6. Constant Current Discharge (Amperes) at 25°C

F.V/Time	5Min	15Min	30Min	1Hr	2Hr	3Hr	5Hr	8Hr	10Hr	20Hr
1.60V/Cell	118.0	64.09	37.52	21.45	13.10	8.81	5.84	4.22	3.43	1.82
1.67V/Cell	114.6	62.77	36.86	21.02	13.00	8.75	5.81	4.16	3.40	1.78
1.70V/Cell	111.2	61.81	36.20	20.49	12.90	8.58	5.78	4.13	3.37	1.75
1.75V/Cell	99.8	58.84	35.90	20.06	12.80	8.38	5.71	4.09	3.33	1.72
1.80V/Cell	90.1	54.22	35.28	19.47	12.57	8.25	5.68	4.06	3.30	1.68
1.85V/Cell	76.9	48.64	33.07	18.78	12.01	8.12	5.51	3.89	3.27	1.62

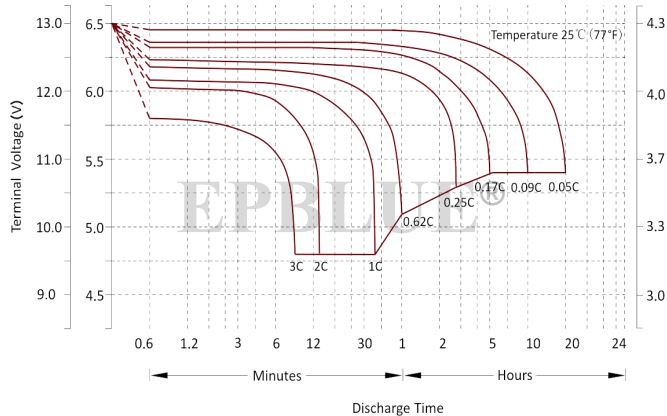
4. Characteristics

Rated Capacity 25°C (77°F)	C ₂₀ 1.80V/Cell	33 Ah
	C ₁₀ 1.80V/Cell	31 Ah
	C ₅ 1.80V/Cell	28 Ah
	C ₁ 1.70V/Cell	20 Ah
Capacity Affected by Temperature (20 HR)	40°C (104°F)	103%
	25°C (77°F)	100%
	0°C (32°F)	86%
Internal Resistance		7.8 mΩ
Max. Discharge Current 25°C (77°F)		330 A (5S)
Nominal Operating Temperature Range		25 ± 3°C (77 ± 5°F)
Operating Temperature Range	Discharge : -15 ~ 50°C (5 ~ 122°F)	
	Charge: 0 ~ 40°C (32 ~ 104°F)	
	Storage: -15 ~ 40°C (5 ~ 104°F)	
Cycle Use		Initial charging current less than 0.3CA. Voltage 14.40V ~ 14.70V at 25°C (77°F) temperature coefficient -15mV/°C.
Standby Use		No limit on Initial charging current, Voltage 13.50V ~ 13.80V at 25°C (77°F) temperature coefficient -10mV/°C.
Self Discharge		The EPBLUE® EV Series batteries may be stored for up to 6 months at 25°C (77°F), and then a freshening charge is required. For higher temperatures the time interval will be shorter.

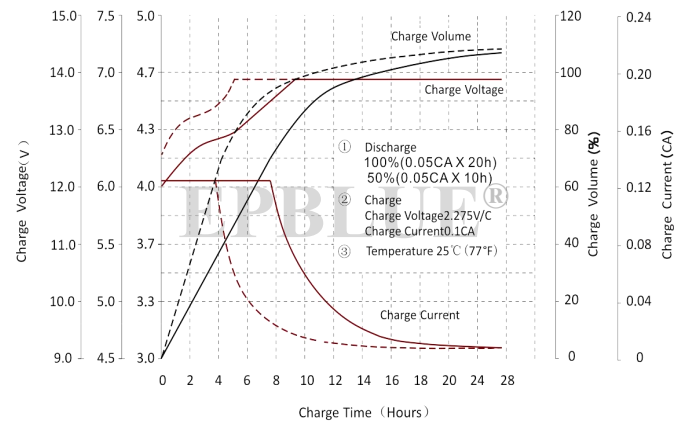
7. Constant Power Discharge (Watts/cell) at 25°C

F.V/Time	5Min	15Min	30Min	1Hr	2Hr	3Hr	5Hr	8Hr	10Hr	20Hr
1.60V/Cell	622.4	354.6	214.7	123.9	77.65	52.27	35.01	25.18	20.59	11.19
1.67V/Cell	610.1	348.9	212.1	123.7	77.42	52.24	34.75	25.05	20.46	11.02
1.70V/Cell	603.2	346.3	210.3	122.7	76.96	51.45	34.65	24.92	20.30	10.79
1.75V/Cell	549.1	335.7	209.4	120.3	76.69	50.33	34.32	24.68	20.13	10.59
1.80V/Cell	500.1	310.2	207.7	116.9	75.54	49.76	33.99	24.29	19.90	10.40
1.85V/Cell	284.7	284.7	195.8	112.8	72.30	48.87	33.17	23.27	19.64	10.10

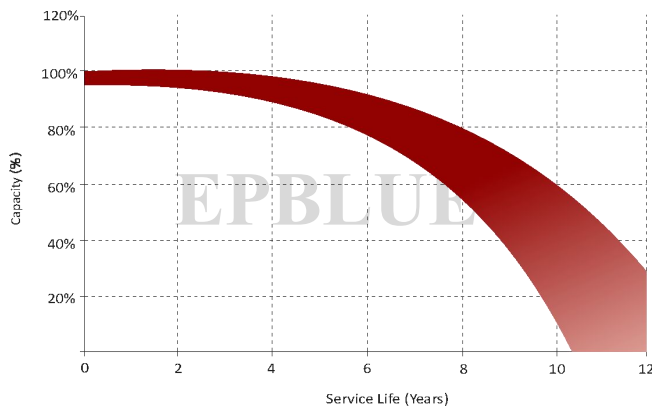
8. Discharge Characteristics



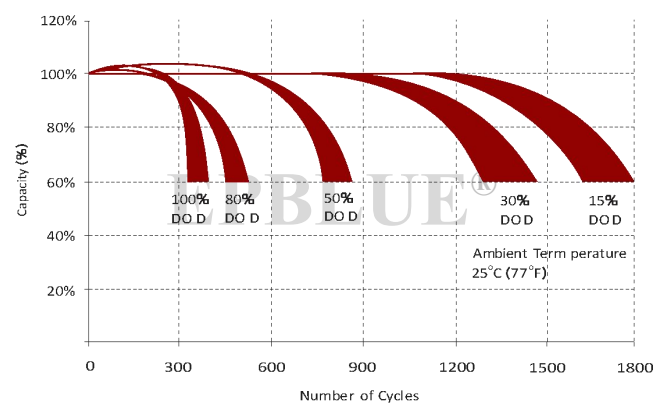
9. Float Charging Characteristics



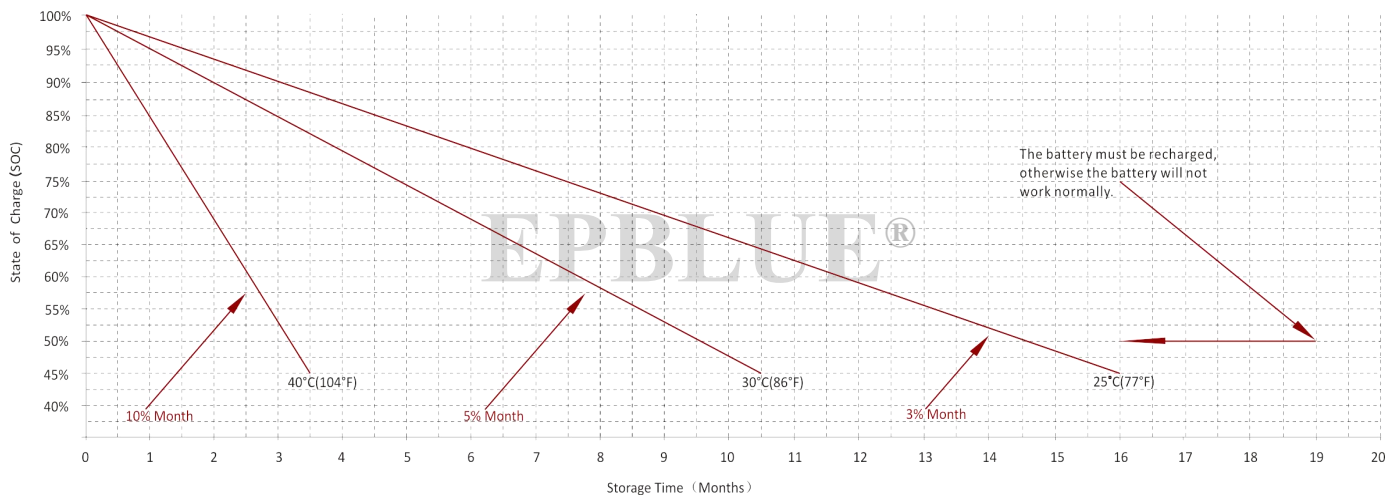
10. Float Service Life vs Capacity (%)



11. Cycle Life vs Depth of Discharge (DOD%)



12. Self Discharge Characteristics



13. Maintenance & Cautions

Cycle Service:

- > Avoid battery over discharge, especially battery series connection use.
- > Charged with recommend voltage, ensure battery can be full recharged. In general, recharge capacity should be 1.1-1.15 times discharge capacity.
- > Effect of temperature on float charge voltage: -4mV/°C/Cell.

- > There are a number of factors that will affect the length of cyclic service. The most significant are depth of discharge, ambient temperature, discharge rate, and the manner in which the battery is recharged. Generally speaking, the most important factors is depth of discharge.