

EV Series

Maintenance-free Sealed Lead Acid Battery

Application for motive power systems.



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.

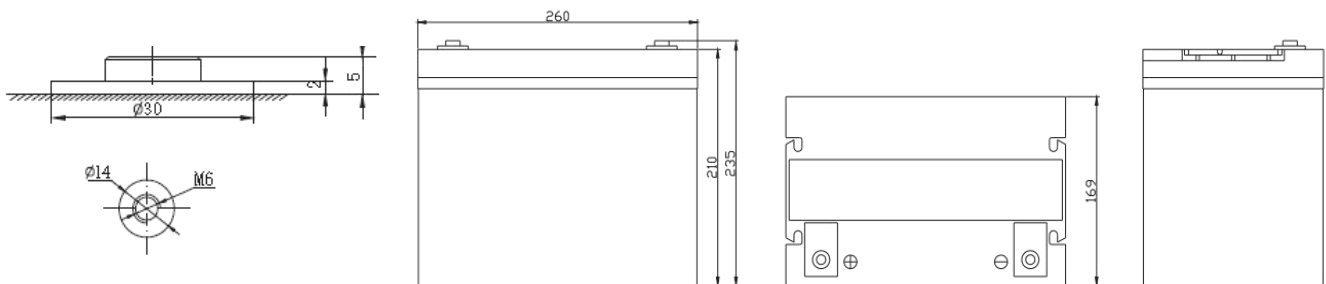
2. Construction for EV Series Batteries

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

3. Specifications

Nominal Voltage	12 Volt		
Nominal Capacity (20HR)	60 Ah		
Dimension	Length	260 mm	10.2 in
	Width	169 mm	6.7 in
	Height	210 mm	8.3 in
	Total Height (with terminals)	235 mm	9.3 in
Weight	Approx.	20 kg	44.0 ibs

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	214.5	116.5	68.22	39.00	23.82	16.02	10.62	7.68	6.24	3.30
1.67V/Cell	208.3	114.1	67.02	38.22	23.64	15.90	10.56	7.56	6.18	3.24
1.70V/Cell	202.1	112.4	65.82	37.26	23.46	15.60	10.50	7.50	6.12	3.18
1.75V/Cell	181.5	107.0	65.28	36.48	23.28	15.24	10.38	7.44	6.06	3.12
1.80V/Cell	163.9	98.6	64.14	35.40	22.86	15.00	10.32	7.38	6.00	3.06
1.85V/Cell	139.9	88.4	60.12	34.14	21.84	14.76	10.02	7.08	5.94	2.94

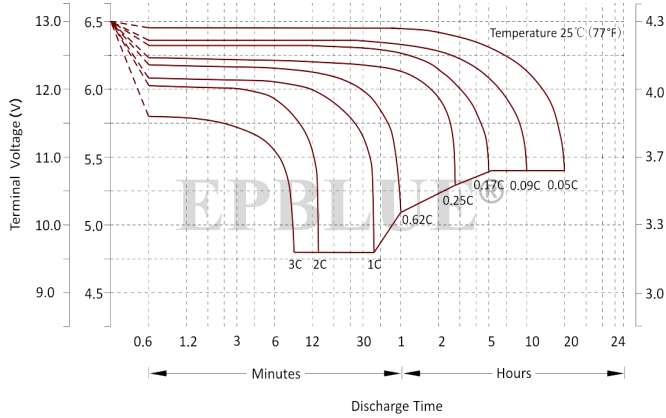
4. Characteristics

Rated Capacity 25°C (77°F)	C ₂₀ 1.80V/Cell	60 Ah
	C ₁₀ 1.80V/Cell	56 Ah
	C ₅ 1.80V/Cell	50 Ah
	C ₁ 1.70V/Cell	36 Ah
Capacity Affected by Temperature (20 HR)	40°C (104°F)	103%
	25°C (77°F)	100%
	0°C (32°F)	86%
Internal Resistance	6.5 mΩ	
Max. Discharge Current 25°C (77°F)	600 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.	

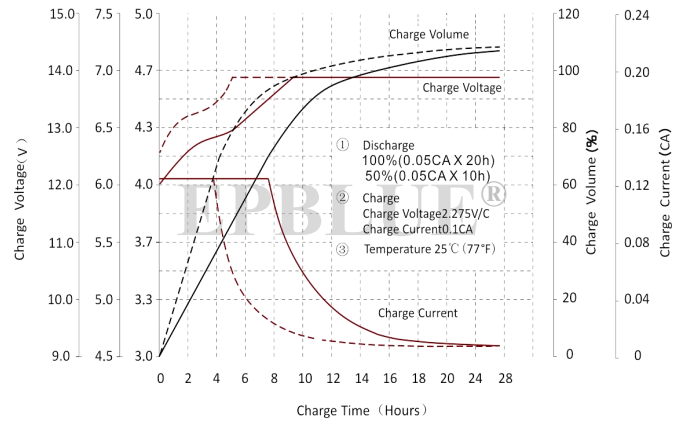
7. Constant Power Discharge (Watts/cell) at 25°C

F.V/Time	5Min	15Min	30Min	1Hr	2Hr	3Hr	5Hr	8Hr	10Hr	20Hr
1.60V/Cell	1132	644.6	390.4	225.4	141.2	95.04	63.66	45.78	37.44	20.34
1.67V/Cell	1109	634.3	385.7	224.8	140.8	94.98	63.18	45.54	37.20	20.04
1.70V/Cell	1097	629.6	382.3	223.1	139.9	93.54	63.00	45.30	36.90	19.62
1.75V/Cell	998	610.3	380.6	218.6	139.4	91.50	62.40	44.88	36.60	19.26
1.80V/Cell	909	564.0	377.6	212.5	137.3	90.48	61.80	44.16	36.18	18.90
1.85V/Cell	518	517.7	356.0	205.0	131.5	88.86	60.30	42.30	35.70	18.36

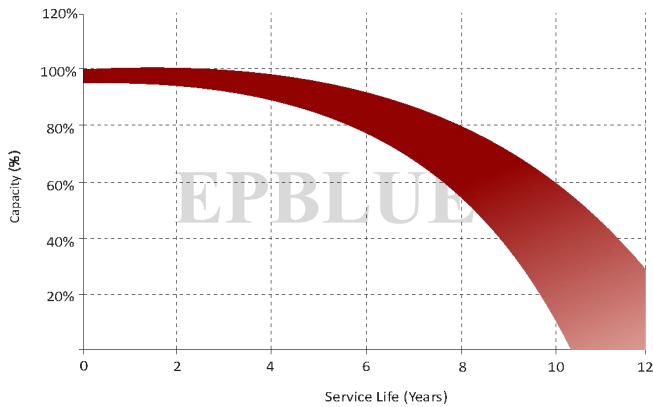
8. Discharge Characteristics



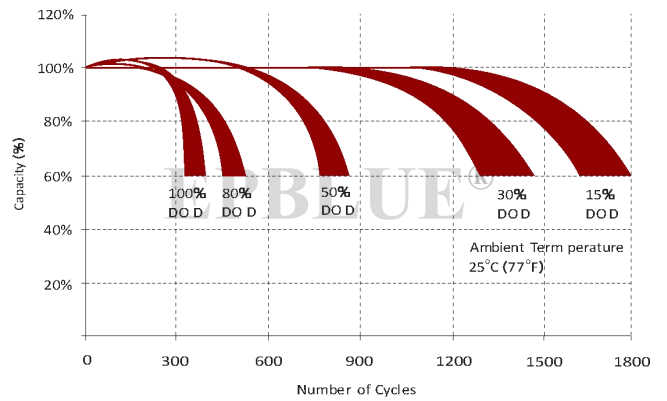
9. Float Charging Characteristics



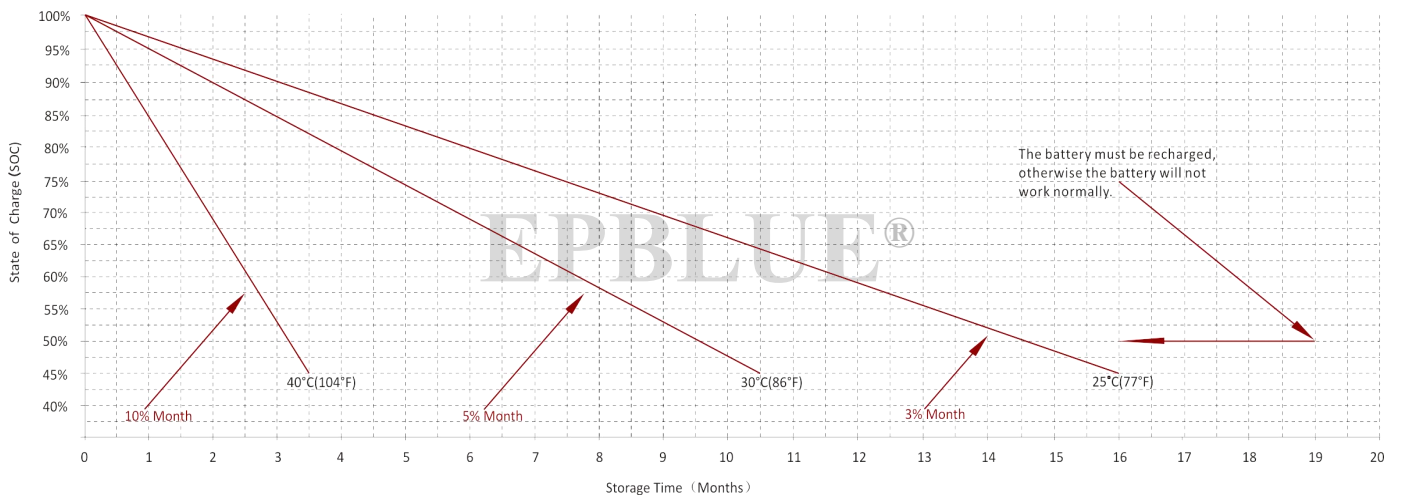
10. Float Service Life vs Capacity (%)



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.