

# Sealed Lead Acid Durable AGM Battery

# ES12-9

**EcoShield ES** series Sealed free maintenance lead acid batteries are designed with AGM technology, high performance pure lead plates and sulfuric acid electrolyte to gain extra power output for common power backup system applications widely used in the fields of UPS, Security and Emergency lighting system. They are sealed and free maintenance whole life, valve regulated type standby AGM battery, also named by VRLA battery, SLA battery, and SMF battery.

12V  
9Ah

AGM  
Technology

VRLA  
Battery



## Applications

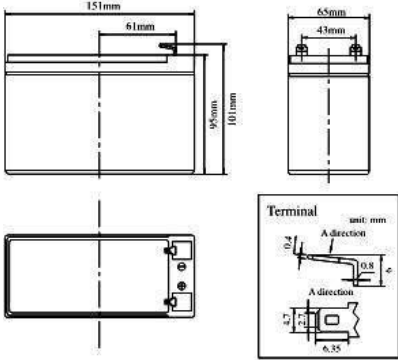
- Fire & Security
- UPS systems & Inverter
- Alarm & Portable lights
- Power tools & Toys
- Emergency Power Systems

## General Features

- ◆ Non-spillable construction design
- ◆ Long life span 5-8 years in floating condition
- ◆ High quality AGM separator: extend cycle life and prevents micro short circuit
- ◆ 99.99% pure lead plates ensure high quality and high reliability.
- ◆ Flame-resistance ABS material: increases the strength of battery container.

## Dimensions & Weight

Length(mm/inch)	151/5.95
Width(mm/inch)	65/2.56
Height(mm/inch)	94/3.71
Total Height(mm/inch)	100/3.94
Weight(kg/lbs)(±3%)	2.4/5.28



## Technical Specifications

Nominal Voltage		12V(6 cells per unit)
Design Floating Life @25°C		5 Years
Nominal Capacity @25°C (20 hour rate@0.45A, 10.8V)		9Ah
Capacity @25°C	10hour rate (0.83A, 10.8V)	8.3Ah
	5 hour rate (1.51A, 10.5V)	7.55Ah
	1 hour rate (5.67A, 9.6V)	5.67Ah
Internal Resistance	Full Charged Battery@25°C	<20.0mΩ
Ambient Temperature	Discharge	-15°C~45°C
	Charge	-15°C~45°C
	Storage	-15°C~45°C
Max.Discharge Current@25°C		54A (5s)
Capacity affected by Temperature (10 hour)	40°C	105%
	25°C	100%
	0°C	85%
	-15°C	65%
Self-Discharge@25°C per Month		3%
Charge (Constant Voltage) @25°C	Standby Use	Initial Charging Current Less than 2.7A Voltage 13.6-13.8V
	Cycle Use	Initial Charging Current Less than 2.7A Voltage 14.4-14.9V

## COMPLIED STANDARDS



## Battery Discharge Table

### Discharge Constant Current per Cell (Amperes at 25°C)

F.V/Time	15min	30min	45min	1h	2h	3h	5h	8h	10h	20h
1.60V	17.1	9.76	6.95	5.67	3.51	2.40	1.60	1.08	0.89	0.47
1.65V	16.7	9.50	6.76	5.47	3.44	2.36	1.57	1.06	0.87	0.46
1.70V	16.2	9.24	6.58	5.28	3.38	2.32	1.54	1.04	0.86	0.45
1.75V	15.8	8.97	6.39	5.08	3.32	2.27	1.51	1.02	0.84	0.45
1.80V	15.3	8.71	6.21	4.89	3.19	2.18	1.46	0.98	0.83	0.45

### Discharge Constant Power per Cell (Watts at 25°C)

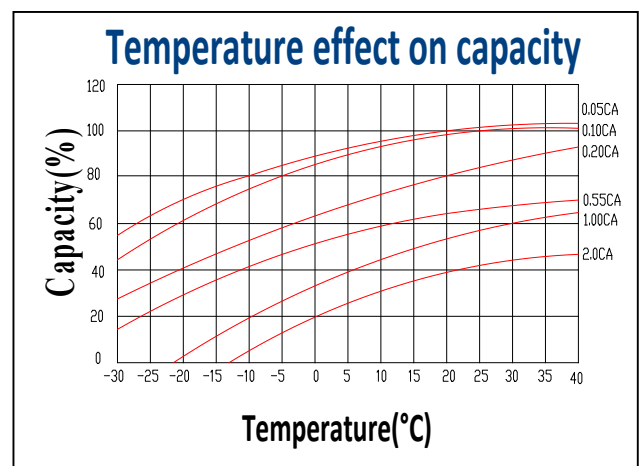
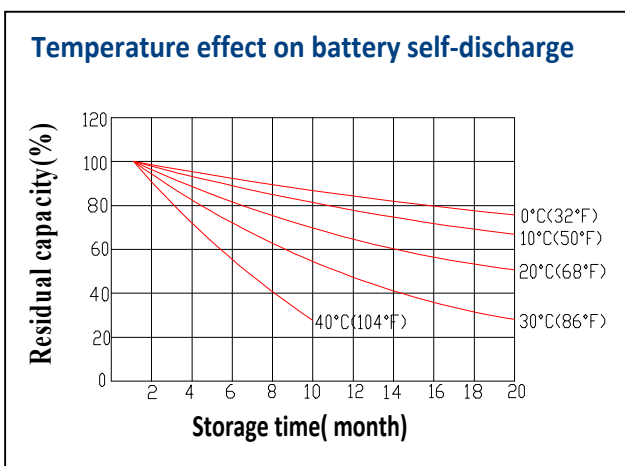
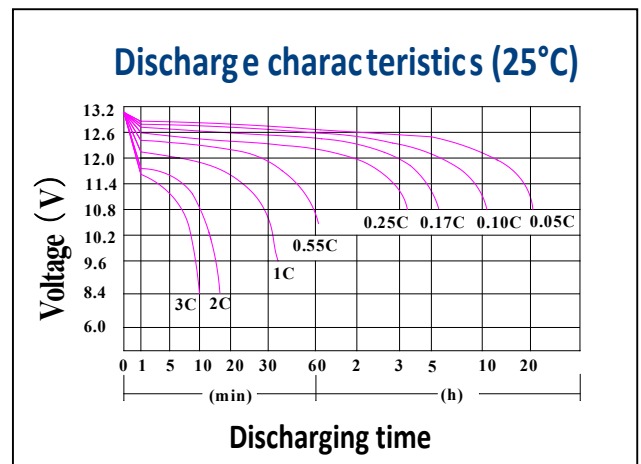
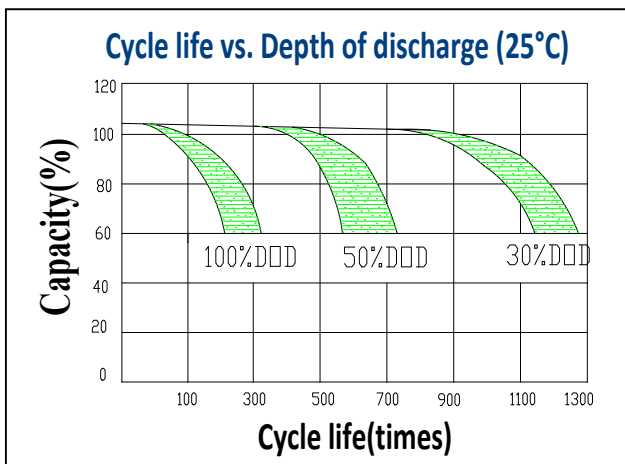
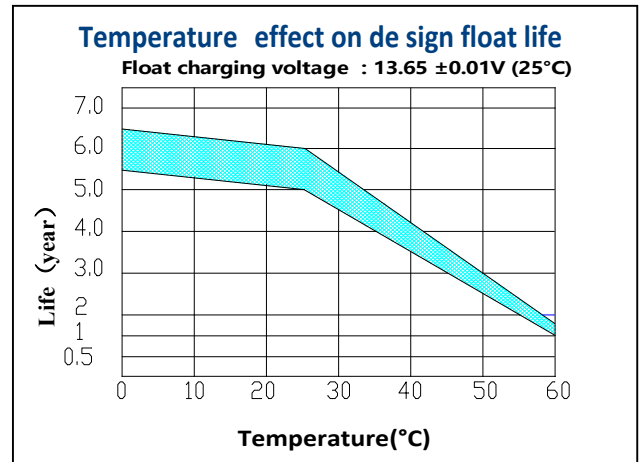
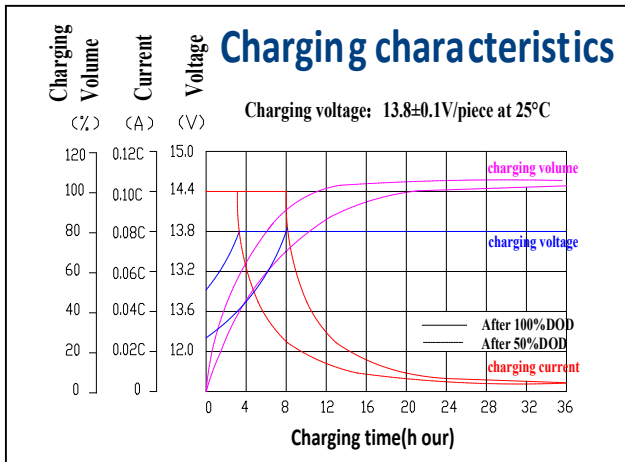
F.V/Time	15min	30min	45min	1h	2h	3h	5h	8h	10h	20h
1.60V	33.0	18.78	13.38	10.91	6.75	4.63	3.08	2.07	1.71	0.90
1.65V	32.1	18.28	13.02	10.54	6.63	4.54	3.03	2.04	1.68	0.88
1.70V	31.2	17.78	12.66	10.16	6.50	4.46	2.97	2.00	1.65	0.87
1.75V	30.3	17.27	12.30	9.78	6.38	4.37	2.92	1.96	1.62	0.85
1.80V	29.5	16.77	11.94	9.41	6.14	4.21	2.80	1.88	1.56	0.82

**Note:** The above data are average values, and can be obtained within 3 charge/discharge cycles. These are not minimum values. Cell and battery designs/specifications are subject to modification without notice. Contact **Eco Shield** for the latest information.

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## Performance Characteristics



## Battery Construction

Component	Positive plate	Negative plate	Container & Cover	Safety valve	Terminal	Separator	Electrolyte	Pillar seal
Features	Thick high Sn low Ca grid with special paste	Balanced Pb-Ca grid for improved recombination efficiency	ABS (UL94-V0)	Flame Si-Rubber and aging resistance	F1/F2	Advanced AGM separator for high pressure cell design	Dilute high purity sulfuric acid	Two layers epoxy resin seal