

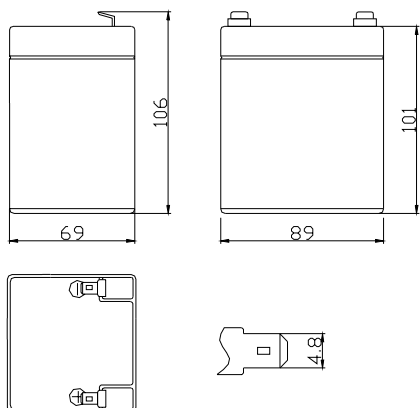


# WBR BATTERY CO.,LIMITED

## 12V4.5Ah

The battery is constructed by plates, separators, safety valves and container.  
 Since the electrolyte is held by a glassmat separator and plates, the battery can use in any direction and position without leakage.

### Outer Dimensions



### Performance Characteristics

Nominal Voltage .....	12V
Number of cell .....	6
Design Life .....	5 years
Nominal Capacity 77°F(25°C)	
20 hour rate(0.225A,10.5V) .....	4.5Ah
10 hour rate(0.42A,10.5V) .....	4.2Ah
5 hour rate (0.77A,10.5V) .....	3.85Ah
1 hour rate(2.93A,9.6V) .....	2.93Ah
Internal Resistance	
Fully Charged battery 77°F(25°C) .....	50 mΩ
Self-Discharge	
3% of capacity declined per month at 20°C(average)	
Operation Temperature Range	
Discharge .....	-20~60°C
Charge .....	-10~60°C
Storage .....	-20~60°C
Max.Discharge Current 77°F(25°C) .....	54A(5s)
Short Circuit Current .....	67.5A

### Dimensions and Weight

Length ( mm / inch ) .....	89 / 3.50
Width ( mm / inch ) .....	69 / 2.72
Height ( mm / inch ) .....	101 / 3.98
Total Height ( mm / inch ) .....	106 / 4.17
Approx.Weight( Kg / lbs ) .....	1.42/ 3.14

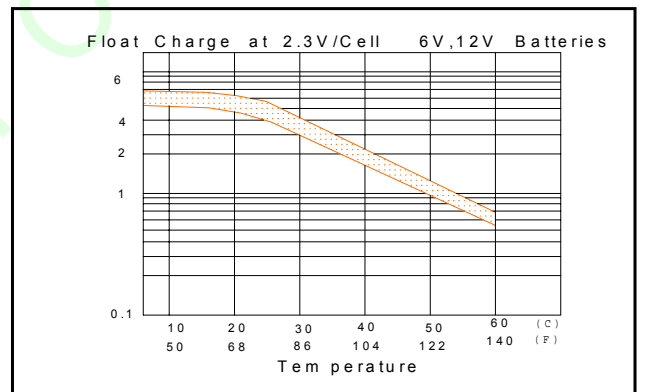
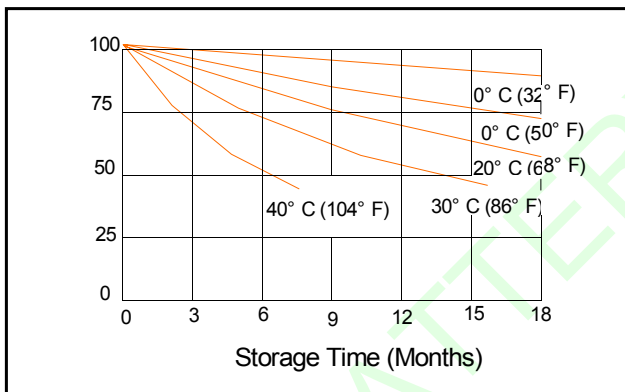
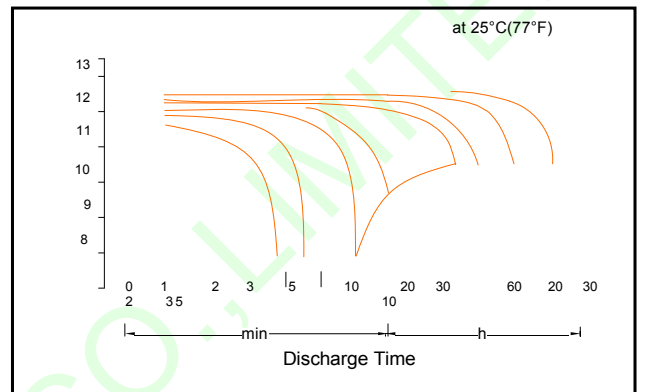
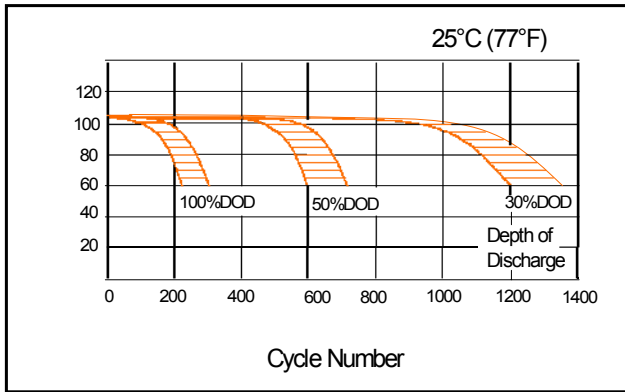
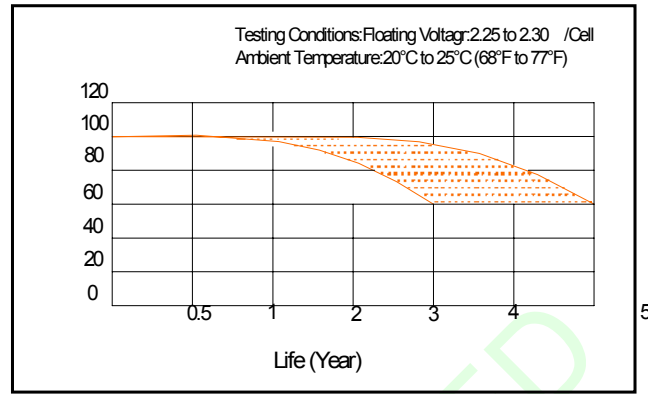
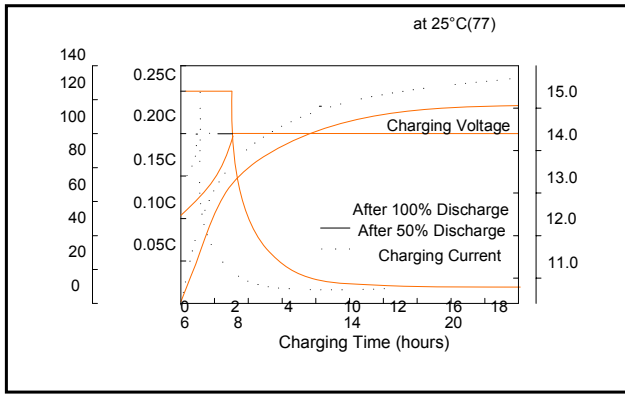
### Battery Construction

COMPONENT	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
RAW MATERIAL	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

### Charging Methods

Application	Charging method	Charging Voltage at 25C	Temperature compensation coefficient of charging voltage	Max.charging current	Charging time 25°C(h)		Temp (C)
					100% discharge	50% discharge	
For standby power source	Constant voltage & Constant Current Charging (with current restriction)	13.4-13.8V	-18 mV/C	1.35A	24	20	0~40 (32~104 F)
For cycle service		14.5-15.0V	-30 mV/C	1.35A	16	10	

# 12V4.5Ah



### Discharge Constant Current (Amperes at 77°F25°C)

F.V/Time	5min	10min	15min	30min	45min	1h	2h	3h	5h	8h	10h	20h
1.60V	15.8	12.6	9.00	5.18	3.69	2.93	1.58	1.14	0.77	0.51	0.42	0.23
1.65V	15.3	12.2	8.55	5.09	3.65	2.90	1.56	1.13	0.77	0.51	0.42	0.23
1.70V	14.4	11.3	8.10	4.95	3.60	2.88	1.55	1.13	0.77	0.50	0.42	0.23
1.75V	12.6	9.45	7.65	4.68	3.56	2.84	1.53	1.11	0.77	0.50	0.42	0.23
1.80V	11.3	8.10	7.20	4.05	3.51	2.79	1.49	1.08	0.76	0.50	0.41	0.22

### Discharge Constant Power (Watts/cell at 77°F25°C)

F.V/Time	5min	10min	15min	30min	45min	1h	2h	3h	5h	8h	10h	20h
1.60V	28.7	23.0	16.6	10.0	7.02	5.63	3.02	2.20	1.49	0.99	0.82	0.45
1.65V	27.5	22.1	15.7	9.68	6.93	5.54	3.01	2.18	1.49	0.98	0.82	0.45
1.70V	26.2	20.7	14.9	9.23	6.84	5.54	2.98	2.17	1.48	0.98	0.82	0.45
1.75V	23.0	17.5	14.1	8.69	6.75	5.45	2.94	2.15	1.48	0.97	0.81	0.44
1.80V	20.5	15.8	13.3	7.52	6.66	5.36	2.85	2.08	1.46	0.97	0.80	0.43

**WBR BATTERY CO., LIMITED**

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