

# MAC12280 (12V28Ah)



## MAC General Series Battery

MAC General Series VRLA batteries are designed with AGM (Absorbent Glass Mat) technology, High performance plates and electrolyte to give extra power output for common power backup system. MAC series Batteries are the general purpose batteries with 10 years floating design life at 25°C. Meet with IEC, BS, JIS and Eurobat standard

## General Features

- Safety Sealing
- Non-spillable construction
- High Reliability and Stability
- Sealed and Maintenance-free
- Safety and Quality certification
- Long Life and low self-discharge design

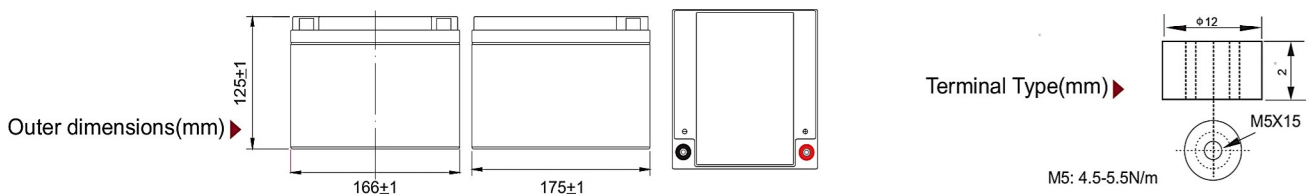
## Application

- Emergency Power System
- Communication equipment
- Telecommunication systems
- Uninterruptible power supplies
- Electric bicycle and wheelchairs, etc.
- Power tools
- Alarm system
- Marine equipment
- Fire and Security System

## Construction

- Positive .....Lead dioxide
- Electrolyte .....Sulfuric acid
- Separator .....Fiber glass
- Container .....ABS(UL94-HB), Flammability Resistance of UL94-V2 can be available upon request
- Negative .....Lead
- Safety Valve .....EPDR
- Terminal .....Copper

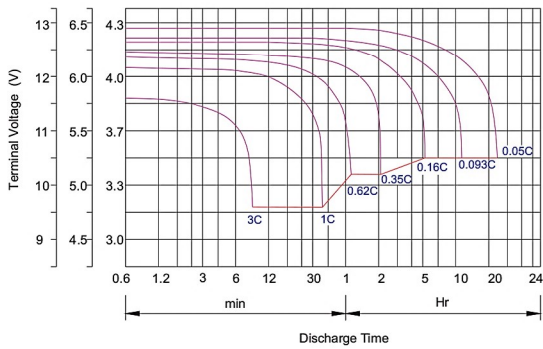
Battery Model	Nominal Voltage	12V			
	Rated capacity(20 Hour rate)	28Ah			
Dimensions	Length	Width	Height	Total Height	
	174mm(6.85 inches)	165mm (6.50 inches)	125mm(4.92 inches)	125mm(4.92inches)	
Approx Weight	9.0kg(19.84lbs) ±3%				
Capacity 25°C (77°F)	20 hour (1.4A,10.8V)	10 hour (2.58A,10.5V)	5 Hour ( 4.76A,10.2V)	1 Hour (16.8A,9.6V)	
	28.0Ah	25.8Ah	23.8Ah	16.8Ah	
Max.discharge current	280A (5 Sec.)				
Internal Resistance	Full charged at 25 °C: Approx :10 mΩ				
Capacity affected by Temp. (20 HR)	40°C (104 °F)	25°C (77°F)	0°C (32°F)	-15°C (5°F)	
	102%	100%	85%	65%	
Self Discharge at 25°C (77°F)	After 3 months storage		After 6 months storage	After 12 months storage	
	91%		82%	64%	
Charge method 25°C (77°F)	Cycle Use			Float Use	
	14.40-14.70V(Initial charging current less than 11.2A)			13.50-13.80V	



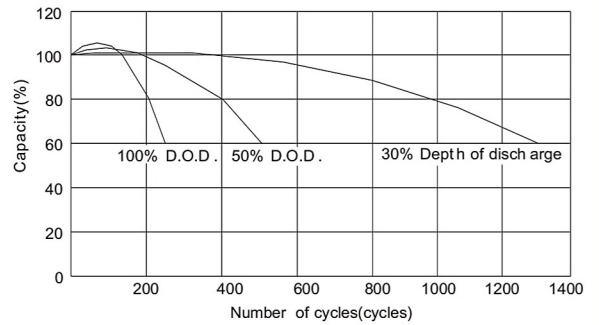
Constant Current(Amp) and Constant Power(Watt) Discharge Table at 25°C(77°F)

Time		5min	10min	15min	30min	1hr	2hr	3hr	4hr	5hr	8hr	10hr	20hr
9.60V	A	100.80	66.08	49.00	32.20	16.80	9.80	7.21	5.79	4.91	3.24	2.65	1.45
	W	1188.80	746.70	564.70	341.18	193.70	113.40	83.40	67.00	56.80	37.50	30.70	16.80
10.20V	A	92.40	63.23	45.03	30.57	15.77	9.40	7.00	5.60	4.82	3.19	2.60	1.41
	W	1118.80	707.00	530.80	339.50	182.00	108.90	81.10	64.90	55.80	36.90	30.10	16.30
10.50V	A	84.12	59.08	42.00	29.63	15.26	9.22	6.88	5.32	4.80	3.15	2.58	1.40
	W	1080.30	686.00	507.50	336.00	176.60	106.80	79.70	61.60	55.40	36.50	29.90	16.20
10.80V	A	80.84	56.47	39.20	28.82	14.75	8.98	6.77	5.23	4.55	3.07	2.51	1.37
	W	947.30	665.00	488.80	334.80	171.50	104.50	78.80	60.80	53.00	35.00	29.20	15.90
11.10V	A	74.76	53.20	36.04	28.00	14.23	8.75	6.42	5.13	4.35	2.99	2.45	1.33
	W	915.80	642.80	465.50	332.50	169.20	103.80	76.40	60.70	51.80	33.80	28.60	15.80

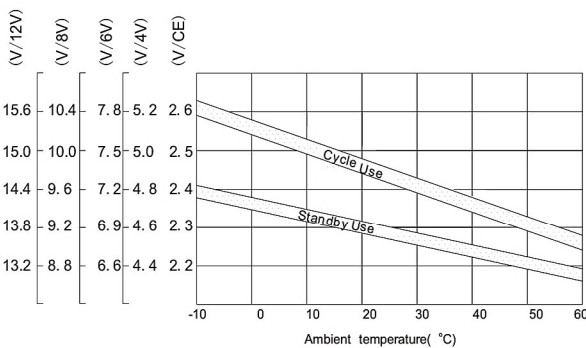
### Discharge characteristic Curve



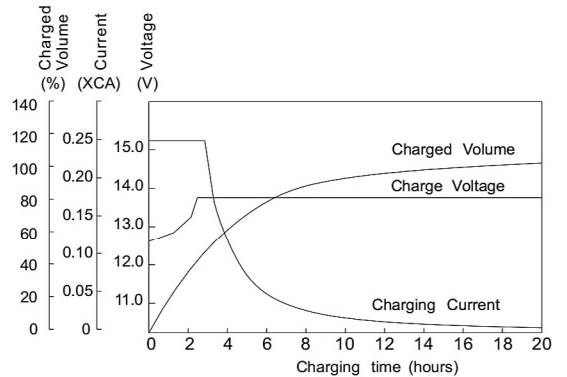
### Cycle service life in relation to depth of discharge



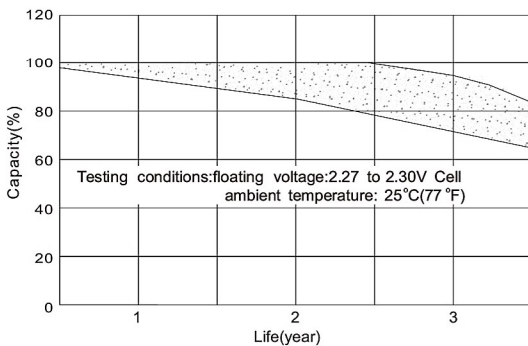
### Relationship between charging voltage and temperature



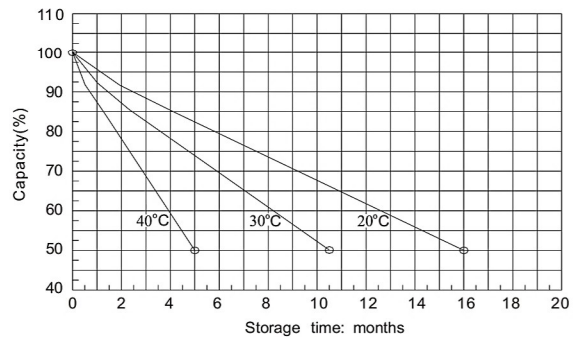
### Constant voltage charging characteristic (0.25CA, at 25°C)



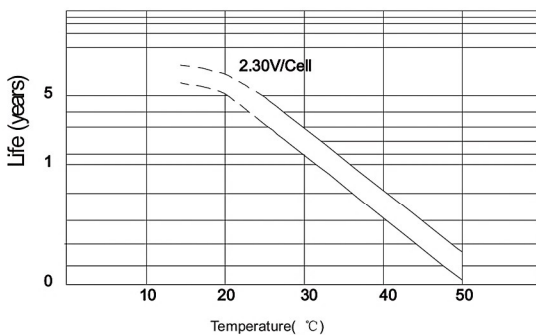
### Life characteristics of standby use



### Self-discharge characteristic



### Temperature effects on float life



### Charge characteristic Curve for standby use

