



# SG 1000H

Power Lead carbon Premium Battery

**SG SERIES**  
Solar Gel Deep Cycle



\*\*\* The color and the printed specifications of the products are subject to change without prior notice.

NEWMAX Solar gel batteries are true maintenance-free sealed batteries engineered specially to satisfy the need for frequent deep cycles from PVs and renewable energy storage applications. We are confident that our technology-intensive, long-lasting, and environment friendly SG batteries will provide stability and efficiency for your everyday renewable energy needs.

**01 Longer Life    02 Maintenance Free    03 Leak Free    04 Safety**

High density, anti-corrosion lead calcium alloy is used in harmony with the GEL electrolyte to reduce the sulfation effect significantly.

NEWMAX battery has a gas recombining design that doesn't need maintenance until the end of its life.

Gel Technology is applied to prevent leakage. They won't spill even if the battery is tipped upside down.

Specially designed anti-explosion filter and safety valves prevent gas leakage when overcharged.

**General Feature**

◆ Plate	Paste type
◆ Battery type	Sealed and Maintenance free / Non-spillable construction design
◆ Case/cover mat	High-stiffness engineering PP plastic (Heat Deflection Temp. 140℃) RoHS Compliant EU Directive 2002/95/EC
◆ Safety performance	Safety valve & flame arrestor installation for explosion proof.
◆ High quality, high reliability and low self discharge rate	◆ Exceptional deep discharge recovery performance
◆ Flexibility design for multiple install positions (Position Free, GEL Technology)	
◆ Designed in accordance with and published in compliance with applicable IEC and BS EN, KS stds.	

- IEC 60896-21/22 Stationary lead-acid batteries – Valve regulated types
- BS EN 61427 Secondary cells and batteries for photovoltaic energy systems (PVES)
- KS C 8518 Stationary sealed lead-acid batteries – Valve regulated types

**Technical Feature**



**Fahrenheit-Schutz™ Heat Protection Case**

Specially Formulated heat and flame resistant PP case material is used to effectively block ambient heat thus preventing heat related malfunctions such as thermal runaway. This proprietary high rigidity case material has heat deflection rating of 140°C.



**MaxPress™ Grid Technology**

Patent pending grid compressing technology which increase the density of the lead grain of the grids. The grain density is typically 400% greater than that of the conventional casting method. This up-to-date grid technology enables our batteries to survive even the toughest deep discharge and PSoC applications.



**ThixoPure™ GEL Technology**

Application of refined pure thixotropic colloidal silica GEL technology to battery electrolyte has greatly increased the cycle life by both preventing plate stratification and providing extra temperature protection against heat and cold. We are the first Korean company to successfully commercialize the GEL technology in the VRLA battery industry.



**FlexSealing™ Anti Explosion Filter**

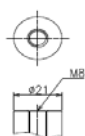
Patent pending proprietary cap filtering and sealing technology. Battery cell caps are sealed simultaneously using specially designed O-ring and explosion filters to prevent leakage and gassing more effectively than ever before.



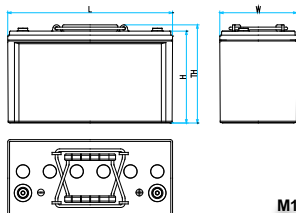
**Active Carbon™**

In every NEWMAX battery, proprietary active carbon additive is used in the active material for both positive and negative plates to enhance charge acceptance and cycle endurance. Active Carbon™ works to strengthen charge pathways to improve performance consistency and enhance performance at partial state of charge (PSoC) environment.

Operating temperature range		
Discharge	Charge	Storage
-20℃~60℃	0℃~50℃	-20℃~60℃



Standard

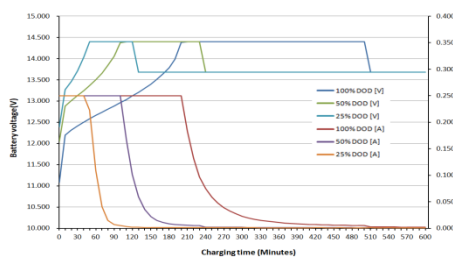


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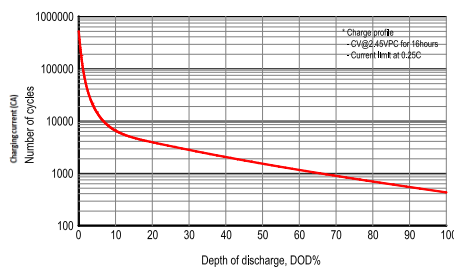
Battery model	SG 1000H (12V100AH / 20 HOUR RATE)			
Capacity (@25℃)	C <sub>20</sub> (1.80VPC)	C <sub>10</sub> (1.80VPC)	C <sub>5</sub> (1.70VPC)	C <sub>1</sub> (1.60VPC)
	100Ah	90Ah	86Ah	65Ah
Dimensions (mm/inch)	Length	Width	Height	Total Height
	371(14.60)	173(6.81)	205(8.07)	220(8.66)
Weight (kg/lbs)	30.6kg(67.46 lbs) ± 5%			
Internal resistance (mΩ)	≤4.18mΩ (25℃, 77°F), Full charged			
Max. discharge current (5sec)	720A	Max. discharge current(continuous)		270 A
Capacity affected by Temperature	@30℃ (86°F)	@25℃ (77°F)	@10℃ (50°F)	@-10℃ (14°F)
	105%	103%	95%	78%
Self discharge (@25℃, 77F)	After 1 month ≤2%		After 3 month ≤6%	After 6 month ≤12%
Max. short duration discharge current (0.1sec)	1,800A ± 10%			
Recommended charging (@25℃) Solar system	<b>1<sup>st</sup> Bulk step</b>	<b>2<sup>nd</sup> Absorption step</b>		<b>3<sup>rd</sup> Floating step</b>
	0.20~0.25C CC	2.40V/cell CV, (cut-off A : 0.005C)		2.28V/cell CV



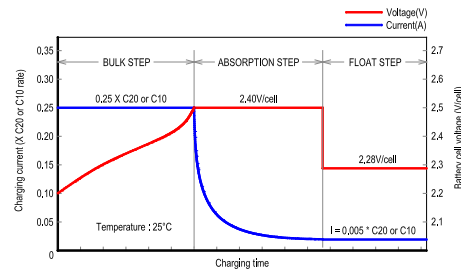
## DOD % vs charging time curve (@25°C)



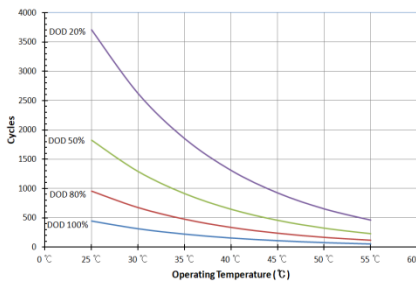
## Cycle life vs detail DOD% (@25°C)



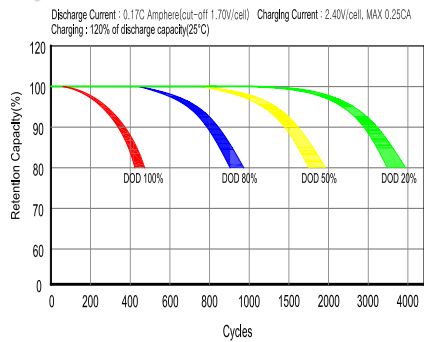
## Solar charging characteristics (@25°C)



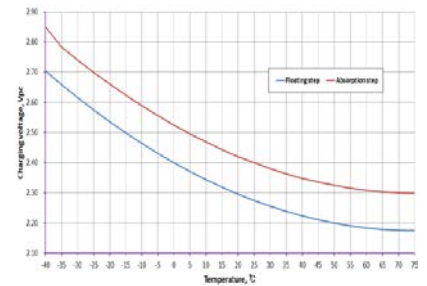
## Relationship between cycle life & temp.



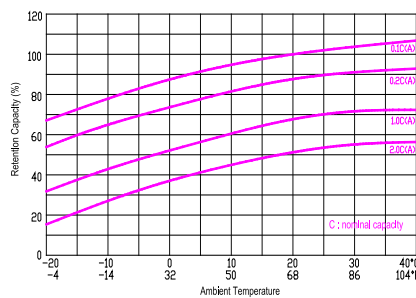
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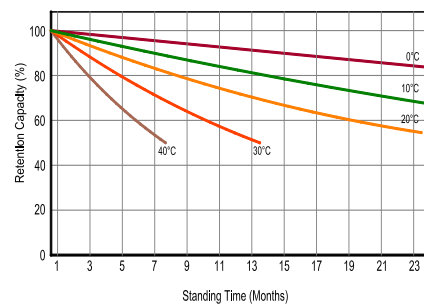
## Relationship between charging voltage & temp. (For solar system)



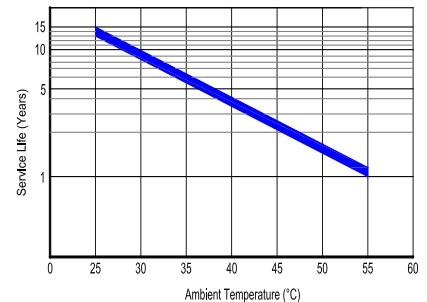
## Effect of temperature on capacity



## Self discharge



## Relationship between Floating life & temp.



## Discharge ratings – Amperes @ 25°C

V/cell	Minutes						Hours						
	5	10	15	20	30	45	1	2	3	5	8	10	20
1.85V	200	158	130	111	90.2	66.7	53.6	32.0	22.8	15.7	10.1	8.23	4.59
1.80V	233	178	144	121	98.0	72.9	58.4	33.9	23.9	16.7	11.0	9.00	5.00
1.75V	264	201	161	134	106	76.9	60.7	34.9	24.4	17.1	11.1	9.17	5.01
1.70V	296	217	170	139	109	78.4	61.9	35.3	24.8	17.3	11.3	9.26	5.01
1.65V	326	227	176	143	111	80.0	63.1	35.7	25.2	17.5	11.5	9.34	5.03
1.60V	363	239	181	145	114	82.4	64.7	36.1	25.5	17.7	11.6	9.43	5.09

## Discharge ratings – Watts / Block @ 25°C

V/cell	Minutes						Hours						
	5	10	15	20	30	45	1	2	3	5	8	10	20
1.85V	2,256	1,831	1,537	1,321	1,098	827	673	387	275	189	123	99.4	55.4
1.80V	2,593	2,015	1,667	1,428	1,176	883	714	398	282	193	125	101	56.2
1.75V	2,887	2,204	1,804	1,520	1,230	912	735	414	290	199	128	103	56.1
1.70V	3,167	2,330	1,863	1,556	1,247	925	745	418	293	201	129	105	56.6
1.65V	3,396	2,444	1,922	1,593	1,271	943	757	422	297	203	131	106	57.2
1.60V	3,593	2,519	1,956	1,619	1,290	957	765	426	300	206	133	108	58.3