

SG 650H (12V65AH/C₁₀)

Power Solar Gel 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°C) 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

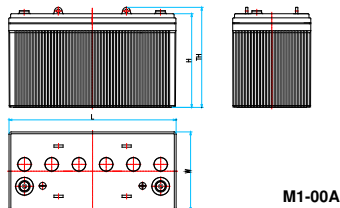
Patent pending proprietary cap filtering and sealing technology. Battery cell caps are sealed simultaneously using specially designed O-ring and explosion filters to prevent leakage and gassing more effectively than ever before.



Active Carbon™

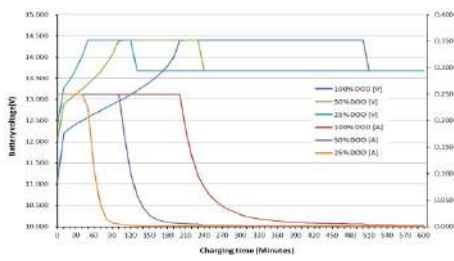
In every NEWMAX battery, proprietary active carbon additive is used in the active material for both positive and negative plates to enhance charge acceptance and cycle endurance. Active Carbon™ works to strengthen charge pathways to improve performance consistency and enhance performance at partial state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

Standard

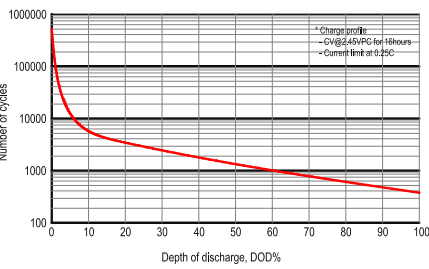


Battery model	SG 650H (12V65AH / 10 HOUR RATE)			
Capacity (@25°C)	C ₁₀ (1.80VPC)	C ₅ (1.70VPC)	C ₃ (1.65VPC)	C ₁ (1.60VPC)
	65Ah	59Ah	54Ah	43Ah
Dimensions (mm/inch)	Length	Width	Height	Total Height
	371(14.60)	174(6.85)	205(8.07)	219(8.62)
Weight (kg/lbs)	22kg(48.5lbs) ± 5%			
Internal resistance (mΩ)	≤6.90mΩ (25°C, 77°F)			
Max. discharge current (5sec)	520 A	Max. discharge current(continuous)		195 A
Capacity affected by Temperature	@30°C (86°F)	@25°C (77°F)	@10°C (50°F)	@-10°C (14°F)
	105%	103%	95%	78%
Self discharge (@25°C, 77F)	After 1 month ≤2%		After 3 month ≤6%	After 6 month ≤12%
Max. short duration discharge current (0.1sec)	1,300A ± 10%			
Recommended charging (@25°C) Solar system	1 st Bulk step	2 nd Absorption step		3 rd Floating step
	0.20~0.25C CC	2.40V/cell CV, (cut-off A : 0.005C)		2.28V/cell CV

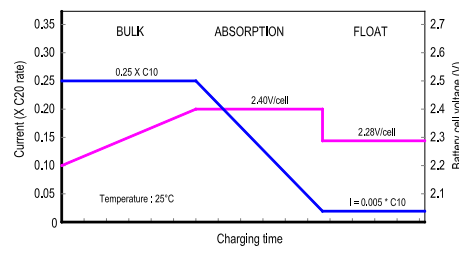
DOD % vs charging time curve (@25°C)



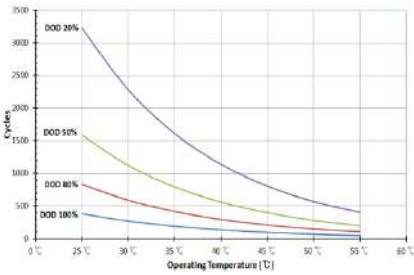
Cycle life vs detail DOD% (@25°C)



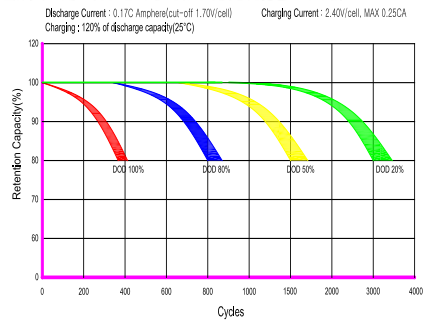
Solar charging characteristics (@25°C)



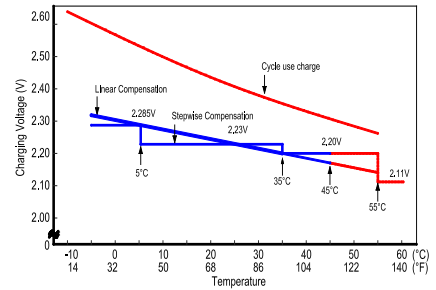
Relationship between cycle life & temp.



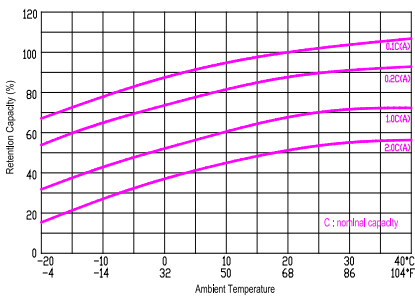
Cycle life characteristics (@25°C)



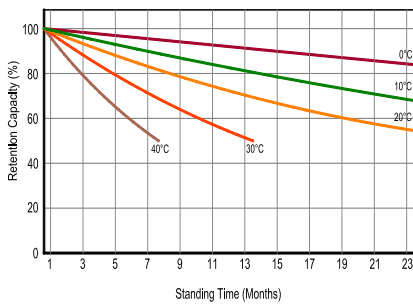
Relationship between charging voltage & temp.



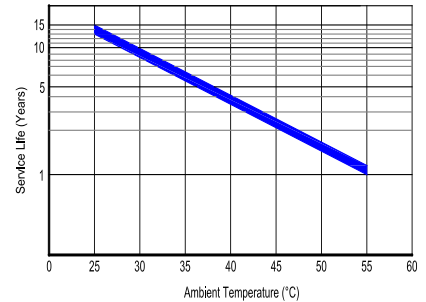
Effect of temperature on capacity



Self discharge



Relationship between Floating life & temp.



Constant current discharge ratings – Amperes per cell @ 25°C

V/cell	Minutes						Hours					
	5	10	15	20	30	40	1	3	5	8	10	20
1.85V	58.2	56.9	55.8	54.1	46.1	41.6	33.0	15.4	10.1	6.77	5.96	3.22
1.80V	84.8	81.2	72.1	64.9	54.6	47.4	36.9	16.6	11.0	7.22	6.50	3.51
1.75V	98.5	90.9	79.2	70.1	56.6	50.3	38.7	16.8	11.3	7.39	6.51	3.52
1.70V	112	99.3	85.0	74.3	59.1	52.0	40.0	17.3	11.7	7.56	6.51	3.52
1.65V	124	108	91.0	78.7	62.3	53.5	41.2	18.0	11.9	7.69	6.54	3.54
1.60V	139	118	98.2	83.9	65.9	56.1	42.7	18.5	12.4	7.83	6.61	3.57

Constant power discharge ratings – Watts per cell @ 25°C

V/cell	Minutes						Hours					
	5	10	15	20	30	40	1	3	5	8	10	20
1.85V	108	105	103	100	86.5	78.6	62.5	29.5	19.6	13.2	11.6	6.28
1.80V	153	146	130	118	100	87.9	69.3	31.7	21.1	14.0	12.6	6.82
1.75V	172	162	142	126	103	92.9	72.3	32.0	21.7	14.2	12.6	6.83
1.70V	190	169	152	133	107	95.1	74.4	32.9	22.3	14.7	12.6	6.83
1.65V	208	186	160	140	112	97.0	77.6	34.0	22.8	15.0	12.7	6.87
1.60V	228	198	169	147	118	101	78.4	34.9	23.4	15.0	12.9	6.96