1912

SG 650H (12V65AH/C_{10})

Power Solar Gel Battery

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SG SERIES
Solar Gel Deep Cycle

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

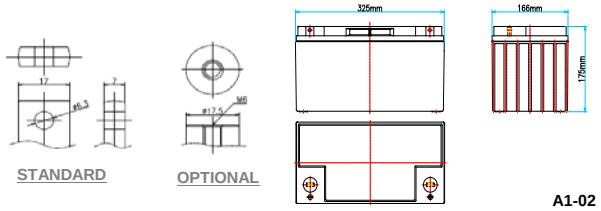
02 Maintenance Free
NEWMAX battery has a gas recombinig design that doesn't need maintenance until the end of its life.

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

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

General feature

Plate	Paste type
Battery type	Sealed and Maintenance free operation
Structure	Nonspillable construction design
Container/cover	ABS resin (Optional Flame retardant, UL94-V0)
Safety	Safety valve installation for explosion proof.
High quality and high reliability and low self discharge characteristics	
Exceptional deep discharge recovery performance	
Flexibility design for multiple install positions (Position Free)	



Technical feature

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.

Battery model	SG 650H (12V65AH / 10 HOUR RATE)			
Capacity (@25℃)	20HR (1.80VPC)	10HR (1.80VPC)	5HR (1.70VPC)	1HR (1.60VPC)
	68Ah	65Ah	59Ah	43Ah
Dimensions (mm/inch)	Length	Width	Height	Total Height
	325(12.80)	166(6.54)	175(6.89)	175(6.89)
Weight (kg/lbs)	21.2kg(46.7lbs)±5%			
Internal resistance (mΩ)	≤6.93mΩ (25℃, 77˚F)			
Max. discharge current (5sec)	520 A	Max. discharge current(continuous)		195 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)	1,300A±10%			
Recommended charging (@25℃) Solar system	**1st Bulk step**	**2nd Absorption step**		**3rd Floating step**
	0.20~0.25C CC	2.40V/cell CV, (cut-off A : 0.005C)		2.28V/cell CV

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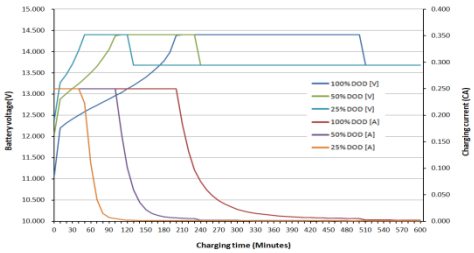
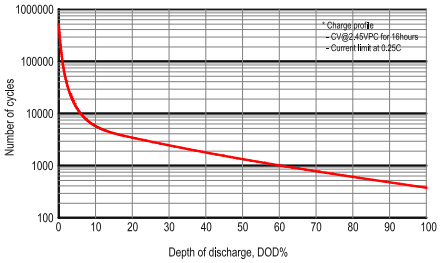
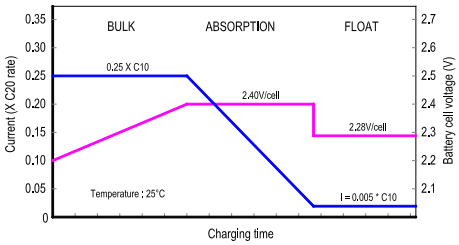
DOD % vs charging time curve (@25℃)



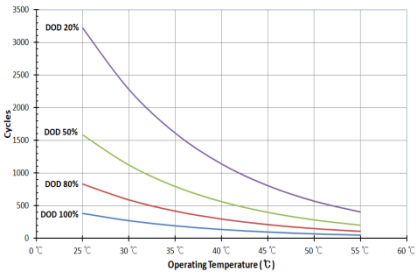
Cycle life vs detail DOD% (@25℃)



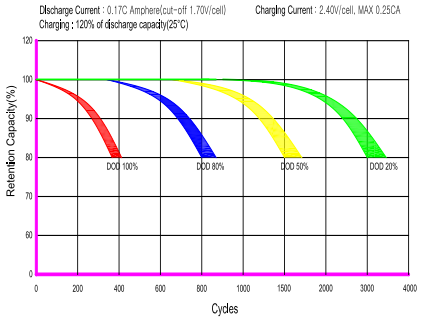
Solar charging characteristics (@25℃)



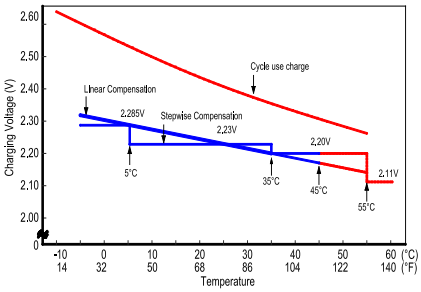
Relationship between cycle life & temp.



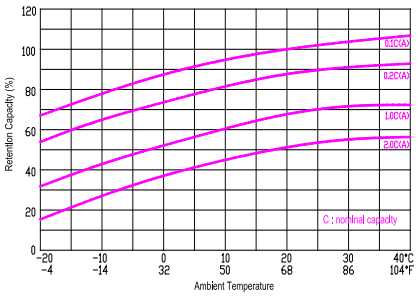
Cycle life characteristics (@25℃)



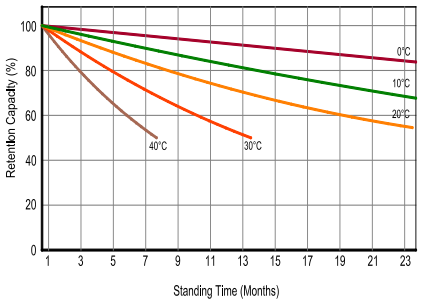
Relationship between charging voltage & temp.



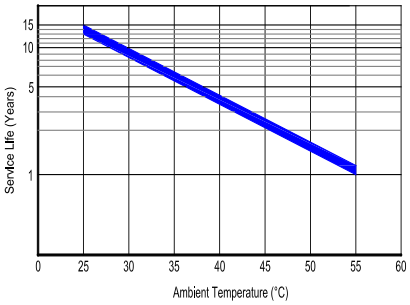
Effect of temperature on capacity



Self discharge



Relationship between Floating life & temp.



Constant current discharge ratings – Amperes per cell @ 25℃

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℃

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