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SBCR ISO 9001 CERTIFIED SBCR ISO 14001 CERTIFIED SBCR ISO 45001 CERTIFIED

SG 2500H (12V250AH/C_{20})

Power Solar Gel 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
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

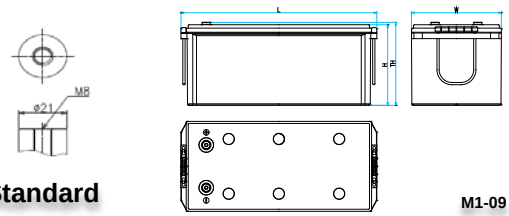
❖ Plate	Paste type
❖ Battery type	Sealed and Maintenance free / Non-spillable construction design
❖ Case/cover mat	High-stiffness engineering PP plastic (Heat Deflection Temp. 140℃) RoHS Compliant EU Directive 2002/95/EC
❖ Safety performance	Safety valve & flame arrestor installation for explosion proof.

❖ 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



Standard M1-09

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℃.

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.

Battery model	SG 2300H (12V230AH / 20 HOUR RATE)			
Capacity (@25℃)	C_{20} (1.80VPC)	C_{10} (1.80VPC)	C_5 (1.70VPC)	C_1 (1.60VPC)
	250Ah	229Ah	199Ah	150Ah
Dimensions (mm/inch)	Length	Width	Height	Total Height
	524(20.63)	241(9.49)	215(8.46)	221(8.70)
Weight (kg/lbs)	62kg (136.7lbs) ±3%			
Internal resistance (mΩ)	2.10 mΩ ±10% (@25℃, 77˚F), full charged			
Max. discharge current (5sec)	1700 A	Max. discharge current(continuous)		640 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)	4240A±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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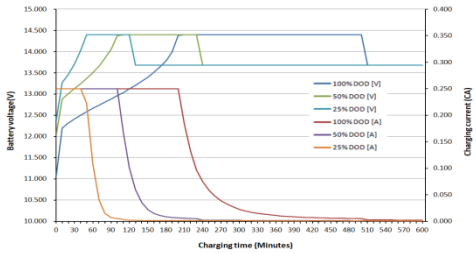
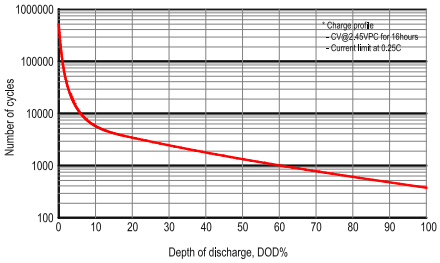
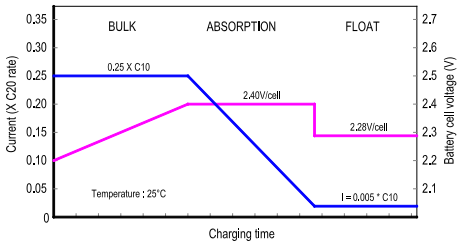
DOD % vs charging time curve (@25℃)



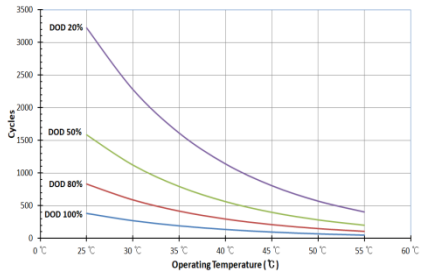
Cycle life vs detail DOD% (@25℃)



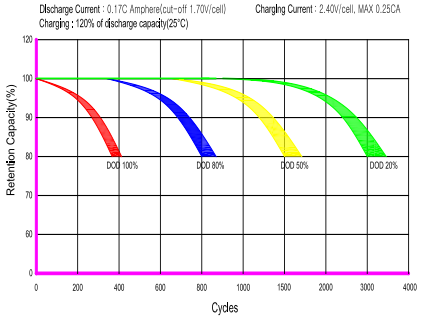
Solar charging characteristics (@25℃)



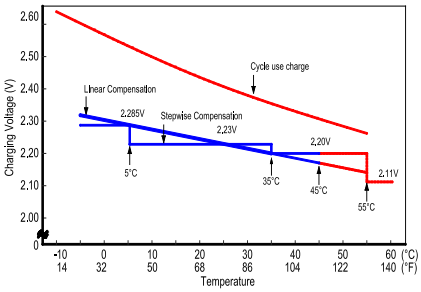
Relationship between cycle life & temp.



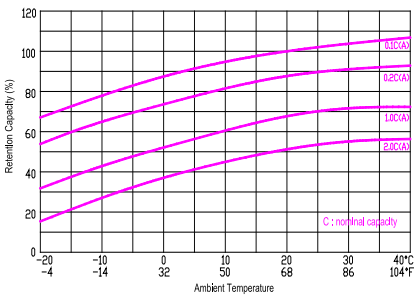
Cycle life characteristics (@25℃)



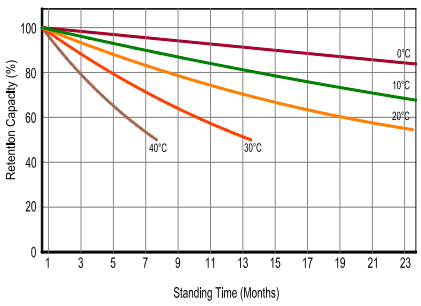
Relationship between charging voltage & temp.



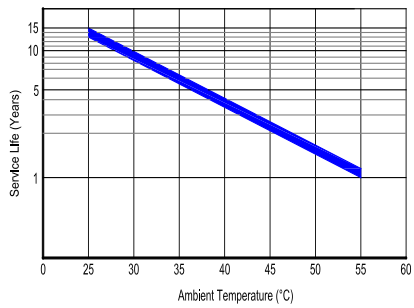
Effect of temperature on capacity



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	191	186	183	177	151	136	108	50.3	33.1	22.2	19.5	10.6
1.80V	278	266	236	212	179	155	121	54.4	36.1	23.6	21.3	11.5
1.75V	322	298	259	229	185	165	127	55.0	37.1	24.2	21.3	11.5
1.70V	365	325	278	243	193	170	131	56.7	38.7	24.7	21.3	11.5
1.65V	407	353	298	258	204	175	135	58.8	39.0	25.2	21.4	11.6
1.60V	457	387	321	275	216	183	140	60.6	40.5	25.6	21.6	11.7

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	352	344	339	327	283	257	205	96.7	64.0	43.1	38.0	20.6
1.80V	500	479	425	386	328	288	227	103.8	69.2	45.7	41.3	22.3
1.75V	564	530	463	414	339	304	237	105	70.9	46.5	41.3	22.3
1.70V	621	555	496	436	351	311	244	108	73.9	48.0	41.4	22.4
1.65V	682	609	523	458	366	317	254	111	74.7	49.0	41.6	22.5
1.60V	745	648	554	482	386	332	257	114	76.6	49.1	42.1	22.8