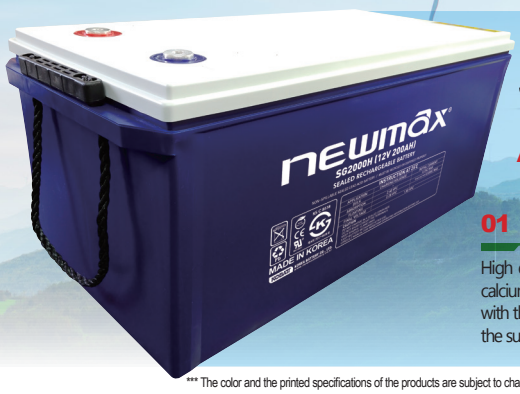
ACTIVE CARBON PREMIUM BATTERY

newmax®

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.



SG 2000H (12V230AH/C_{20})

ACTIVE CARBON Premium Battery

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.

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

General Features

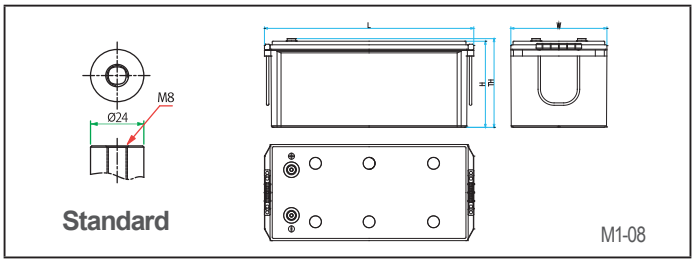
♦ Plate	Paste type with Carbon Active Material
♦ Battery type	Sealed VRLA Maintenance Free Type / Non-spillable construction design
♦ Case/cover mat	High-stiffness engineering PP plastic (Heat Deflection Temp. 140°C) RoHS Compliant EU Directive 2002/95/EC
♦ Safety performance	Safety valve & flame arrestor 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 Features

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

MaxPress™ Grid Technology
Patent pending grid compressing technology which increases 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-rings and explosion filters to prevent leakage and gassing more effectively than ever before.

Highly Resistive Heat Protection Case
Specially formulated heat and flame resistant polypropylene 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 and complies to RoHs Compliant EU Directive 2002/95/EC. Additional UL94-V0 protection option also available.

Operating temperature range

Discharge	Charge	Storage
-20°C ~ 60°C	0°C ~ 50°C	-20°C ~ 60°C

Battery Model	SG 2000H (12V230AH / 20 HOUR RATE)			
Nominal Capacity (@25°C)	C_{20} (1.80VPC)	C_{10} (1.80VPC)	C_5 (1.70VPC)	C_1 (1.60VPC)
	230Ah	200Ah	182Ah	131Ah
Dimensions (mm/inch)	Length	Width	Height	Total Height
	524(20.63)	241(9.49)	215(8.46)	221(8.70)
Weight (kg/lbs)	59.0kg(130.07 lbs)±3%			
Internal resistance (mΩ)	≤2.50mΩ(25°C, 77°F)			
Max. discharge current (5 sec.)	1456 A	Max. discharge current(continuous)		546 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)	4,000A±10%			
Recommended charging (@25°C) 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/cellCV

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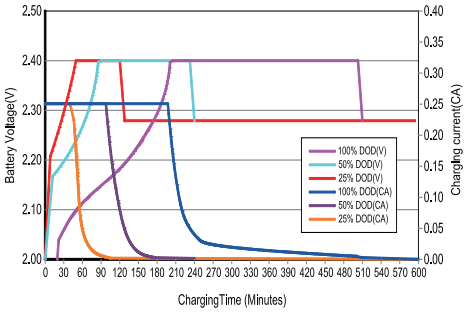
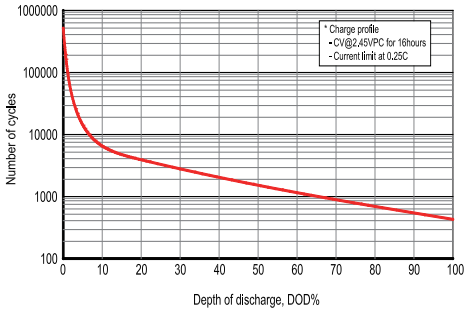
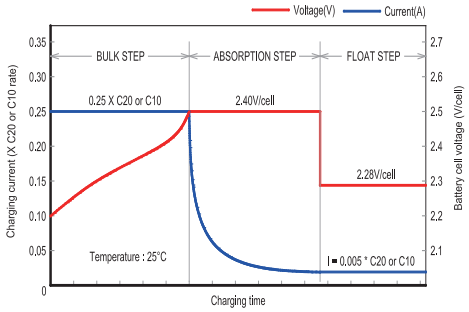
DOD% vs charging time curve (@25°C)



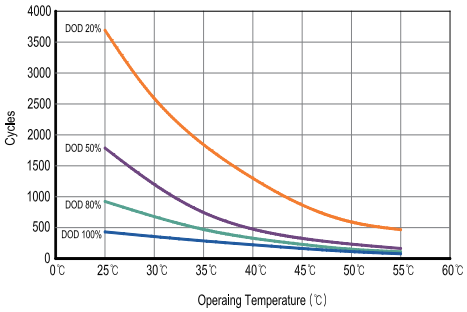
Cycle life vs detail DOD% (@25°C)



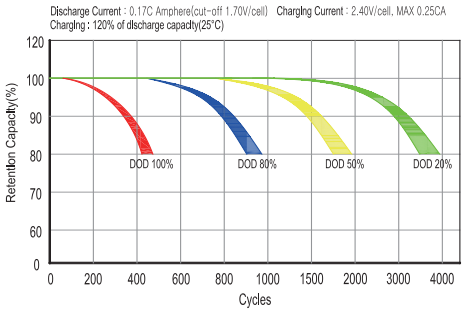
Solar charging characteristics (@25°C)



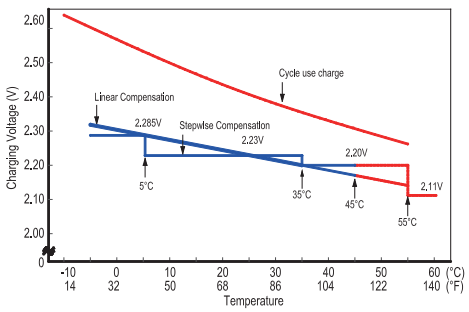
Relationship between cycle life & temp.



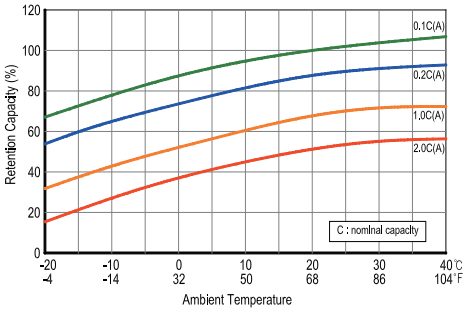
Cycle life characteristics (@25°C)



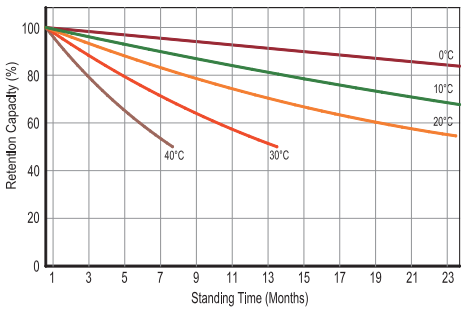
Relationship between charging voltage & temp.



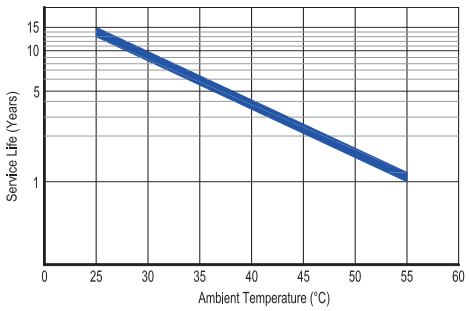
Effect of temperature on capacity



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	179	175	172	166	142	128	101	47.2	31.1	20.8	18.3	10.6
1.80V	261	250	222	199	168	146	113	51.1	33.9	22.2	20.0	11.5
1.75V	303	280	243	215	174	155	119	51.6	34.9	22.7	20.0	11.5
1.70V	343	305	261	229	182	160	123	53.3	36.4	23.2	20.0	11.5
1.65V	382	332	280	242	191	164	127	55.2	36.6	23.6	20.1	11.6
1.60V	429	364	302	258	203	172	131	56.9	38.0	24.1	20.3	11.7

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	331	323	318	307	266	241	192	90.8	60.1	40.5	35.7	20.6
1.80V	469	450	399	362	308	270	213	97.5	65.0	42.9	38.8	22.3
1.75V	530	498	435	389	318	286	222	98	66.6	43.7	38.8	22.3
1.70V	583	521	466	410	329	292	229	101	69.4	45.0	38.9	22.4
1.65V	640	572	491	430	344	298	239	104	70.2	46.0	39.1	22.5
1.60V	700	609	520	453	363	312	241	107	71.9	46.1	39.6	22.8