

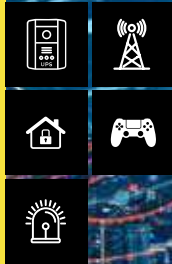
SOLAR HYBRID GEL

[Solar Series]



NORTHBATT HG Hybrid Gel series is designed for repeated Deep Cycle use, to be discharged and recharged hundreds of times. The consistency performance of group usage (groups with multiple connections) is much better than of other general series, making HG ideal for heavy duty applications.

SOLAR HYBRID GEL [Solar Series]



By combining the newly developed Nanometer Gel electrolyte, high tin content cathode plate and AGM separator, HG series enjoys excellent discharging performance, long cycle life and stable performance at high and low temperature surrounding. It is suited for all kinds of ranges for the energy storage, especially for renewable solar energy systems etc.

It differs from conventional VRLA batteries, as it contains more lead, heavier plates and other special materials that are able to deliver more power and capacity over many charging cycles. The use of a special plate curing process for 10 days and extra superior pasting to the grids, ensuring long service life and fast recovery from deep discharge.

NORTHBATT HG Hybrid Gel provides excellent cyclic and recovery performance after over-discharging. It incorporates the latest Hybrid Gel VRLA technology and excellent know-how.

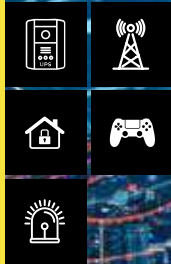
Tested according to international standard IEC 60896-21, IEC 61982-3: 2001 and complies to defined requirements of IEC 60896-22, BS 6290-3/4, IEC 62485-2 & IEC 61427.

NORTHBATT HG Hybrid Gel series are classified as High Performance Long Life (10 – 12 years lifetime) according to Eurobat Guide 2015.



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**SOLAR
HYBRID
GEL
[Solar
Series]**



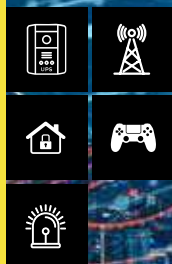
DESIGN FEATURES & BENEFITS

- Nanosilica colloidal electrolyte and high tin positive plate alloy design to enhance battery performance.
- Relatively rich electrolyte, high temperature and low temperature performance is superior.
- Long cycle life, excellent deep cycle discharge ability.
- Excellent charge acceptance ability.
- Precision sealing technology.
- Extra long cycle life and resistance to mechanical stress.
- Increase durability and deep cycle ability (1.200 cycles @ 50% D.O.D) for heavy demand applications.
- Flame arresting pressure regulated safety sealing valves.
- Charging Voltage – Float 13.5 – 13.8V, Cyclic 14.4 – 15.0V

APPLICATIONS

- Small-Medium Solar Systems
- UPS/EPS- Road lights
- RV service applications
- Communication & Emergency back-up systems
- Marine signaling/service applications

SOLAR HYBRID GEL [Solar Series]



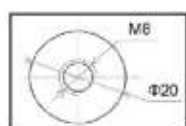
NORTHBATT HYBRID GEL SOLAR SPECIFICATION TABLE

Northbatt Code	V	AH		DIMENSIONS				Recom. Charge Current	Max Discharge Current (5 sec)	Weight	TERMINALS	
				L	W	H	T.H				TYPE	LAYOUT
				(mm)				A	A	(kg)		
		C100	C10									
HG115-12	12	115	100	330	171	216	219	10	1200	29.5	M8	C
HG140-12	12	140	120	407	173	237	237	12	1440	35	M8	C
HG185-12	12	185	150	484	170	241	241	15	1800	45	M8	C
HG250-12	12	250	200	522	240	219	222	20	2400	57	M8	B
HG310-12	12	310	250	520	268	220	223	25	3000	68	M8	B

TERMINAL TYPES - LAYOUTS

TERMINAL TYPE

TERMINAL LAYOUTS



M8

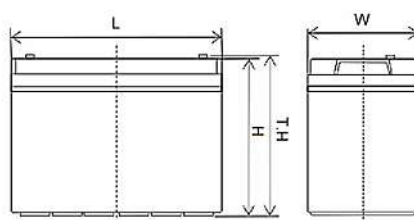


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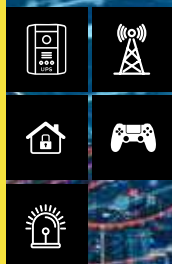


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BATTERY DIMENSIONS

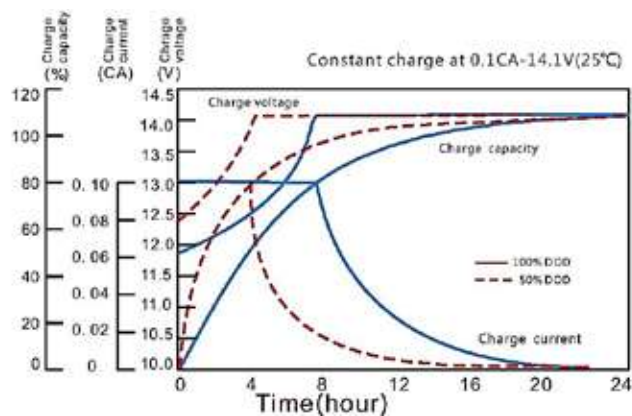


SOLAR HYBRID GEL [Solar Series]

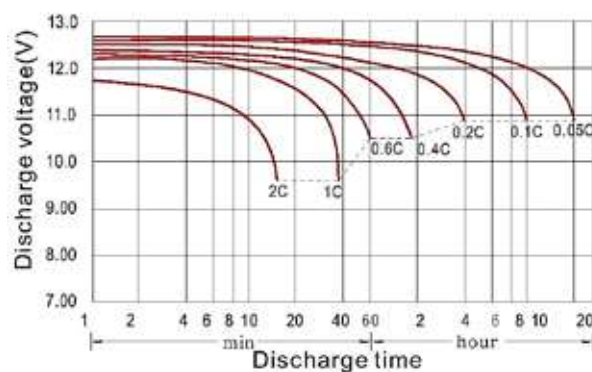


PERFORMANCE CURVES

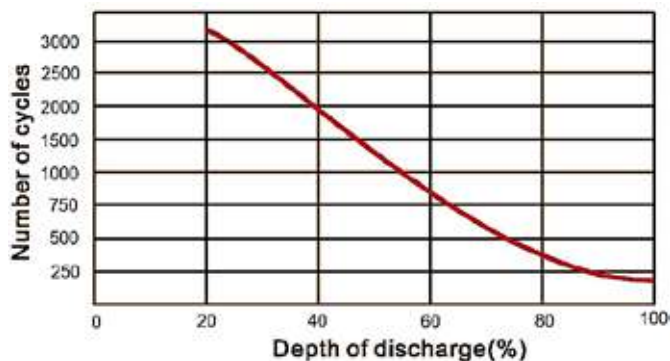
Charge Characteristic Curve (25 °C)



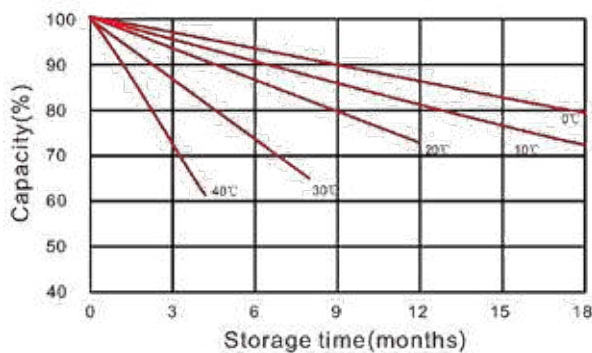
Discharge Characteristic Curves (25 °C)



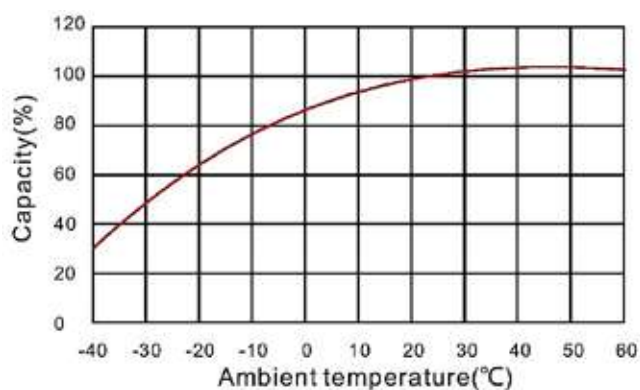
Life characteristics of cyclic use



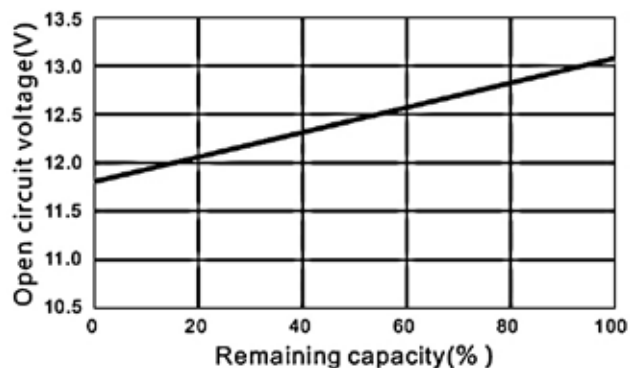
Storage characteristic



Temperature vs Capacity



OCV vs Capacity



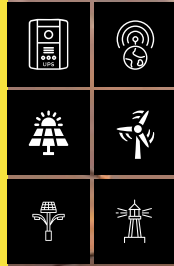
SOLAR LEAD CARBON

[Solar Series]



NORTHBATT LC Lead - Carbon series is the latest product in the NORTHBATT Solar battery family. This product has been specially designed for Renewable Energy Sources such as solar and wind power storage system, based on international advanced lead-carbon technology.

SOLAR LEAD CARBON [Solar Series]

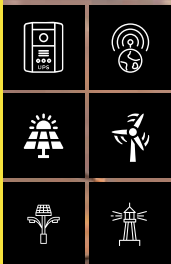


Grid alloy and structure, active material formula, battery case material and electrolyte compositions are optimized by high specific surface area Carbon materials with high electric conductivity and dispersibility to active material, improving utilizing rate, protect negative plate effectively and restrain the growth of lead sulfate crystallization.



NORTHBATT LC series is mixture of Lead-acid battery and super capacitor, providing not only high energy density, but also high power, rapid charge and discharge as well as longer cycle life. Tested according to international standard IEC 60896-21, IEC 61982-3: 2001 and complies to defined requirements of IEC 60896-22, BS 6290-3/4, IEC 62485-2 & IEC 61427. NORTHBATT LC Lead Carbon series are classified as Very Long Life (12+ years lifetime) according to Eurobat Guide 2015.

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SOLAR LEAD CARBON [Solar Series]



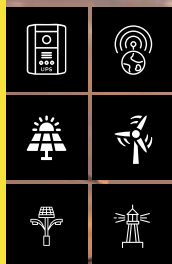
DESIGN FEATURES & BENEFITS

- Adopt lead carbon technology, combine the advantage of lead -acid battery and supercapacitor.
- Reduce the cathode sulphation, ideal for PSOC cycle application.
- Multiple plate grid alloy and special grid structure, extended battery life
- Improve the conductivity of the plates, reduce battery internal resistance, improve the battery discharge performance.
- Restrain the grow-up of lead sulfate of lead sulfate, no negative plate sulfation when battery is used.
- Unique plates elongation resistance structure, solve the problem of plates creep elongation.
- 3.000 cycles @ 50% D.O.D - 15 years design life.
- Superior PSOC cycling performance, excellent deep cycling profile, very fast charging time, reduced charging time by 50%.
- Charging Voltage – Float 13.5 – 13.8V, Cyclic 14.4 – 15.0V

APPLICATIONS

- On/Off – Grid & Hybrid Energy Storage Systems
- UPS/EPS- Road lights
- Power smoothing / load shifting / ramp control
- Distributed infrastructure / mobile telecoms & utilities
- Communication & Emergency back-up systems
- Marine signaling / service applications
- Traffic Lights / Emergency lighting

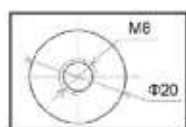
SOLAR LEAD CARBON [Solar Series]



SOLAR LEAD CARBON												
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		C100	C10									
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LC145-12	12	145	120	407	173	237	237	"12 - 24"	1440	35	M8	C
LC195-12	12	195	150	484	170	241	241	"15 - 30"	1800	45	M8	C
LC260-12	12	260	200	522	240	219	222	"20 - 40"	2400	57	M8	B
LC320-12	12	320	250	520	268	220	223	"25 - 50"	3000	68	M8	B

TERMINAL TYPES - LAYOUTS

TERMINAL TYPE



M8

TERMINAL LAYOUTS

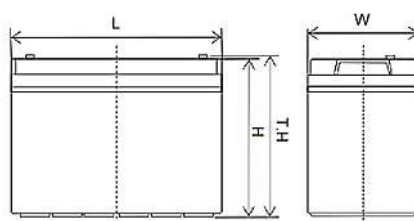


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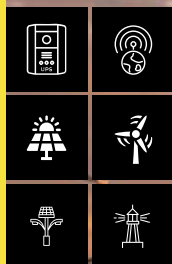


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BATTERY DIMENSIONS

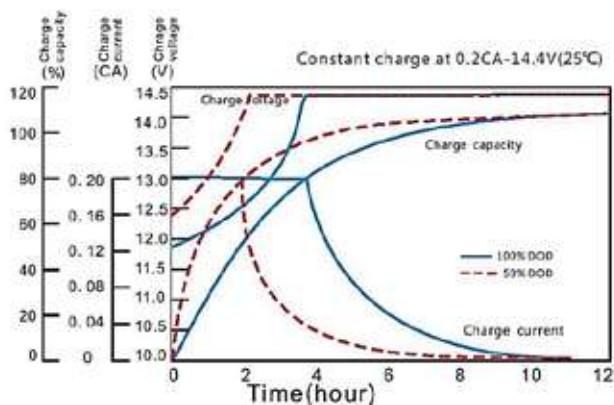


SOLAR LEAD CARBON [Solar Series]

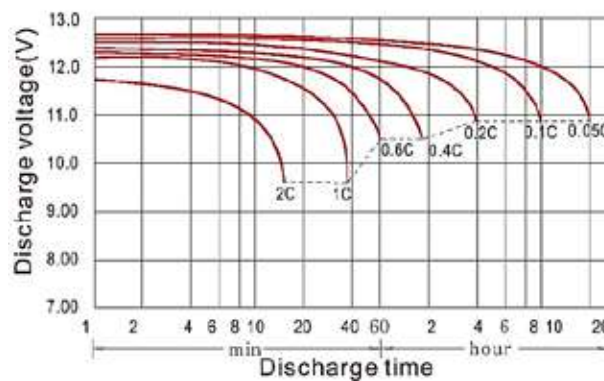


PERFORMANCE CURVES

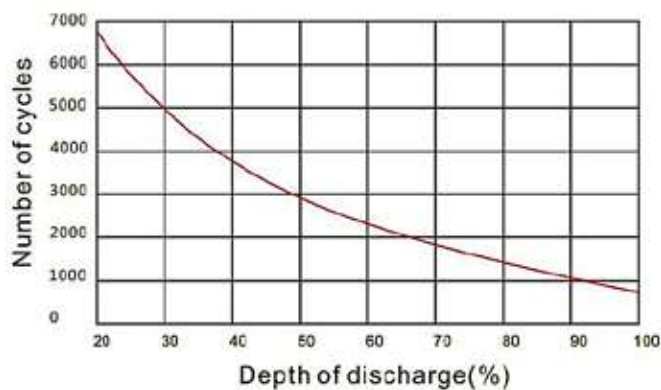
Charge Characteristic Curve (25 °C)



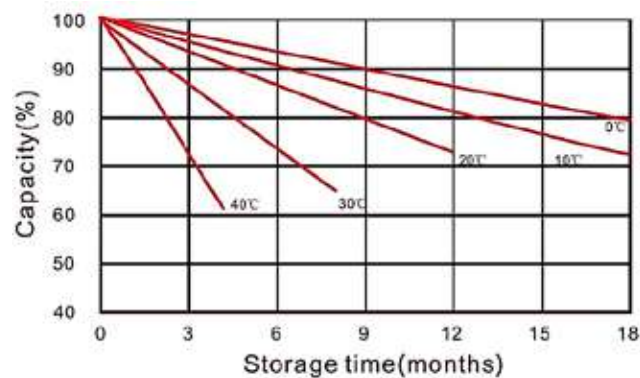
Discharge Characteristic Curves (25 °C)



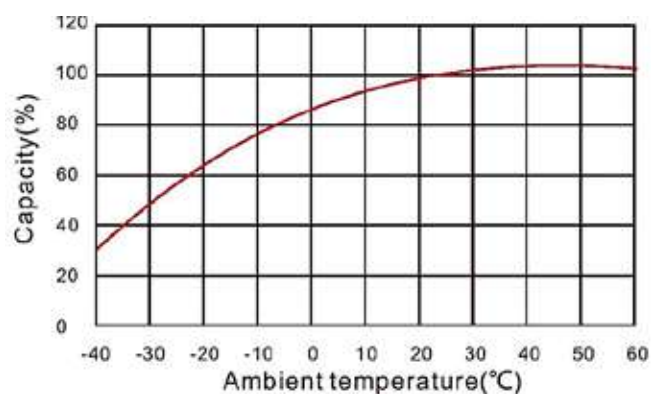
Life characteristics of cyclic use



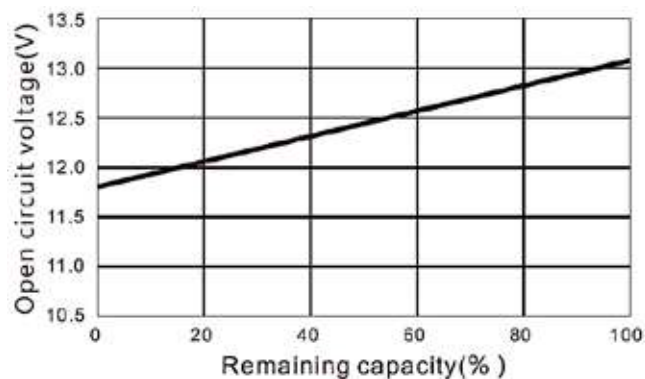
Storage characteristic



Temperature vs Capacity



OCV vs Capacity





HEAD OFFICES:

SCHOLIOU 6, IONIA, P.C 57 008,
P.O. 485, THESSALONIKI, GREECE

WAREHOUSE:

BLOCK 53B STREET 14,
THESSALONIKI'S INDUSTRIAL AREA
57 022, GREECE

BRANCH STORE:

KOUSKOURA 7, 54 622,
THESSALONIKI, GREECE

ATHENS'S OFFICES:

4 ETHNIKIS ANTISTASEOS Str.,
P.C 15232 CHALANDRI,
ATHENS, GREECE

+30 2310 785722

info@northbatt.com

www.northbatt.com



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