

NORDMAXTM

NM110LITBT

User Guide

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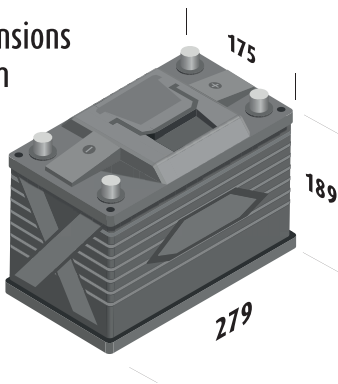
Premium Features

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Dimensions & Weight

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Dimensions
in mm



Weight
11 kg

Global Sales Offices

Japan

BYG CO., LTD
18-30 Beysko Fukui-City,
Fukui 918-8115, Japan
Tel: +81 0776636983

Europe

Batteripoolen
Fredriksbergsgatan 2
573 92 Tranås, Sweden
Tel: +46 75 - 242 43 00
www.batteripoolen.se

USA

AZ Battery Store
600 N. Bullard Ave
Suite 11/12
Goodyear, AZ 85338
USA
Tel: +1 623-853-3321
www.azbattery.com

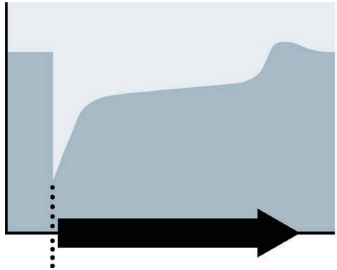
China

Ray-Tech International
423, Overseas Students
(LongGang) Pioneer Park,
TengFei Road, Longgang,
Shenzhen
China
Tel: +86 13714441432
www.lileadbattery.com

Dual Battery Functions

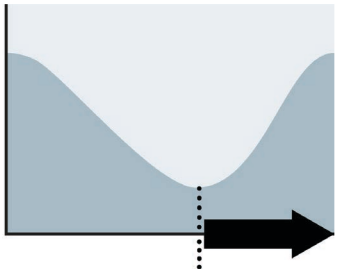
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Engine Cranking (Starting)



Sudden power demand from electric ignition followed by immediate power restoration from onboard alternator.









Supply Power



Slower and deeper discharge until power restoration from charger, alternator or renewable energy source.

Power in - Power out

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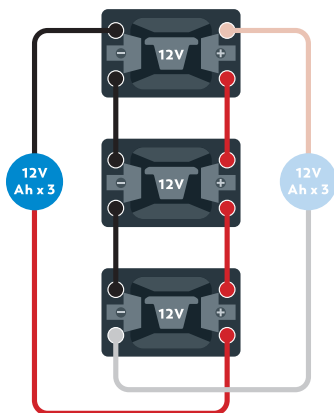
Power In	
Main charger	 With suitable charger
Alternator	
Solar/Wind	
Power Out	
Engine Cranking	
Supply Power	
Applications	
Camping	Motorhome Starter Battery - not recommended as a replacement of vehicle manufacturers specified battery
Leisure Boats	  

Parallel Connection

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Diagonal Parallel Connection
of 2 - 4 (max) batteries

HIGHER
AMP HOUR



Basic principle illustrated - other 'plus to plus' and 'minus to minus' terminal connection can be used.

These connection diagrams are for guidance only. Refer to electrical instructions in your craft's handbook or consult a certified marine electrician. Check and replace damaged cables/terminal connectors.

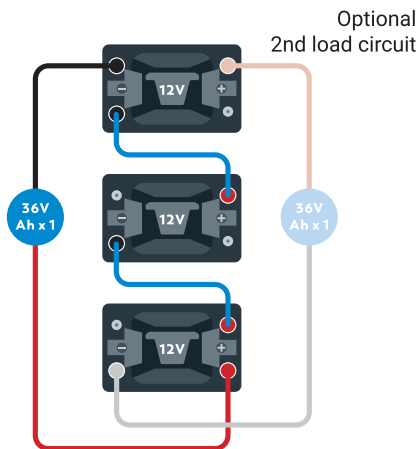
NOTE: Must fully charge all batteries before parallel connection

Series Connection

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Series Connection
of 2 - 4 (max) batteries

INCREASED
VOLTAGE



Basic principle illustrated -
other 'plus to plus' terminal connections can be
used.

These connection diagrams are for guidance only.
Refer to electrical instructions in your craft's hand-
book or consult a certified marine electrician. Check
and replace damaged cables/terminal connectors.

NOTE: Must fully charge all batteries before series connection

Battery Management System (BMS) Protection

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Active Balance	Current	200mA
	Activate volt	Cell volt >3.3V & Volt difference >50mV
High Temperature Protection (MOFSET)	Protection	100°C / 212°F
	Release	70°C / 158°F
High Temperature Protection (cell)	Protection	65°C / 149°F (charge) 80°C / 176°F (discharge)
	Release	55°C / 131°F (charge) 65°C / 149°F (discharge)
Low Temperature Protection (cell)	Protection	0°C / 32°F (charge) -20°C / -4°F (discharge)
	Release	5°C / 41°F (charge) -10°C / 14°F (discharge)
Over-charge	Protection	15.4V (3.85V/cell)
	Release	14.6V (3.65V/cell)
Over-discharge	Protection	9.2V (2.3V/cell)
	Release	10.24V (2.6V/cell)
Over-current	Protection	400A < 60S 1000A < 5S
	Release	Automatic recover after 60 seconds
Short-circuit	Protection	3000 A
	Release	Remove load for the short circuit protection or release
Heating (HE version only)	Act	Battery < 0°C & Charge current ≥ 10A
	Release	Battery temp ≥ 5°C

Nordmax Battery APP

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Download "NORDMAX BATTERY" via Google play or App Store





With NORDMAX BATTERY APP, you can easily monitor your battery status, and re-boot engine when battery capacity is low.



Recharge Times

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Charging time is influenced by the Amp rating of the charger as shown in the table below. The charger Amp rating is also shown for the optimum recharge speed.

Charger Higher 'AMP' = Faster Charging			
25A	40A	60A	80A
			

Time in (Hours: Minutes)


Lithium battery fully charged
from totally discharged


Rapid Charge

100A







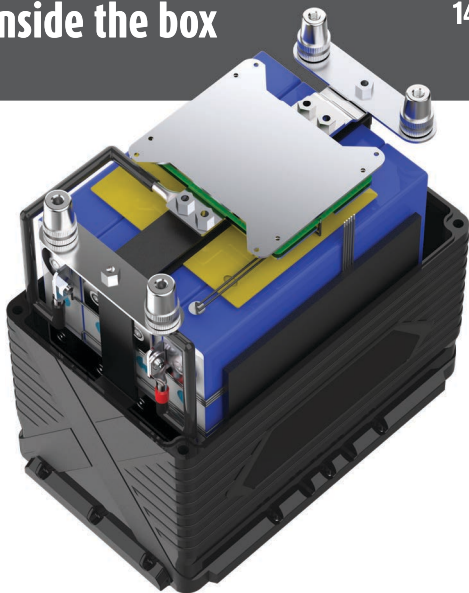
Cycle Life & Temperature Range

Cycle Life	Average Temp.	Average Discharge	No. of Cycles
	0.5C / 23°C (73°F)	10% shallow	4.000
		100% deep	2.000

Temperature Range		
	Charge	±0 to +55°C (32° - 131°F)
	Discharge	-20 to +60°C (-4° - 140°F)
	Storage	-20 to +45°C (-4° - 113°F)

Normal Voltage	Volts (V)	12.8 V
Rated Capacity	Amp hour (Ah)	110 Ah
Stored Energy	Watt hour (Wh)	1350 Wh
Starting Power	Cranking Amps (CA) ($\pm 0^{\circ}\text{C}$)	800 CA
Voltage Range	Volts (V)	8 - 14.6 V
Cell Type	Prismatic	LiFeP04
Charge Time	Standard	5.5 hr
	Rapid	1.5 hr
Charge Method CC-CV	Standard	22 A / 14.6 V
	Rapid	100 A / 14.6 V
Max Discharge Current	Continuous	100 A

Ingress Protection (enclosure)	
	IP67
Solid objects	Totally protected against dust
Liquids	Protected against the effects of temporary immersion between 15 cm and 1 m. Duration of test 30 minutes.
Flammability Code	
	UL94-V0
Burning stops within 10 seconds on a vertical part allowing for drops of plastic that are not in flames.	
Transportation	
	UN38.3
Certified safe for shipping by air	
Recycling	
	Li-Ion 30



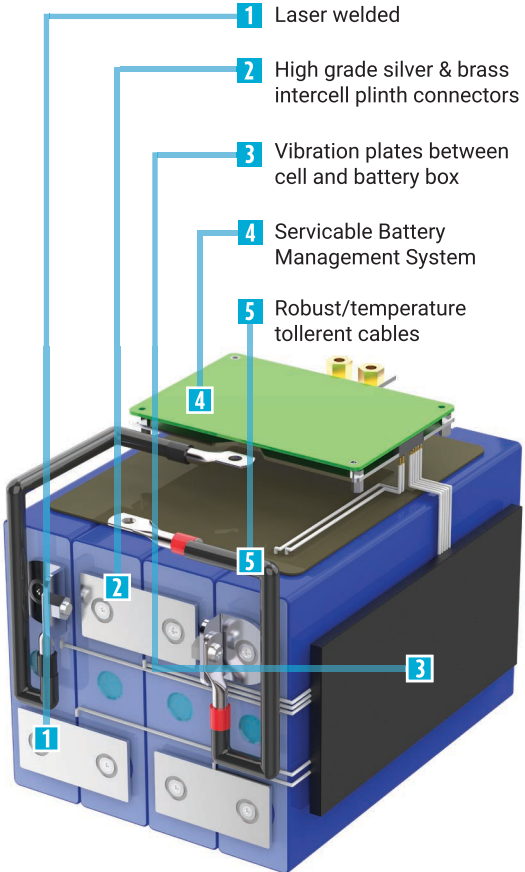
Superior design, manufactured with precision using only the highest quality components.

Results in a lithium battery that is safer, more durable with greater performance and longer life.

Safety Features

Built to withstand extreme weather conditions and temperature. Battery remains cool at high temperatures with no risk of thermal runaway and danger of overheating or overcharging.

Premium Features



Warranty

RAY-TECH warrants each NORDMAX battery, sold by RAY-TECH or any of its authorized distributors and dealers, to be free of defects for 2 years, from the date of sale and determined by either the customer's sale receipt or the shipping invoice, with proof of purchase. Within the Warranty Period, subject to the exclusions listed below, the Manufacturer will credit, replace or repair, if serviceable, the Product and/or parts of the Product, if the components in question are determined to be defective in material or workmanship.

This warranty is invalidated if any of the following occurs, but not limited to:

1. Failure to follow the instructions in the User's Manual.
2. Accidental or unreasonable use, misuse, over charging or loading, or normal wear.
3. Extended storage without recharging or repairs done by an unauthorized person or modification.
4. Opening or modifying the battery casing.

RAY-TECH will not be liable for consequential or incidental damages. Changes or modifications not expressly approved by RAY-TECH could void the user's authority to operate this device.

NORDMAX™