AL1220BT

Product Data Sheet

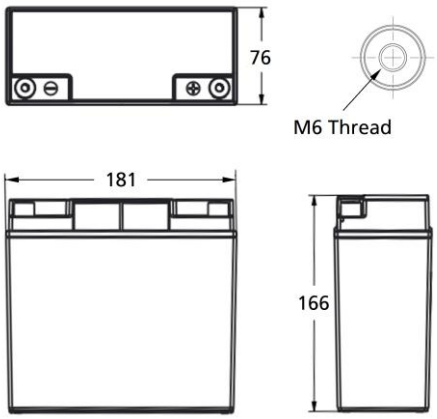
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ALLiON LITHIUM BATTERIES

Technical Information

The ALLiON AL1220BT Lithium-iron battery is a high performing 12V Deep Cycle battery with Bluetooth technology and a capacity of 20Ah (Amp Hours). Suitable for sport & leisure applications, the ALLiON range of Lithium batteries are much lighter than comparable lead acid batteries and can last up to 4 times as long. ALLiON LiFePO4 batteries are safe and dependable thanks to the integrated Battery Management System (BMS). The IP54 rating means that these batteries should be protected from direct exposure to water and dust.



Features and Benefits

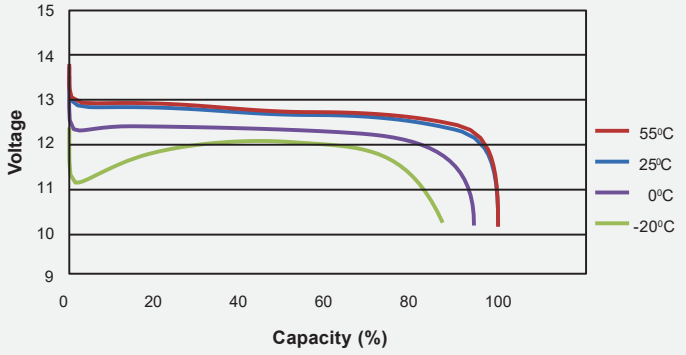
- Up to 4x longer life compared to lead acid batteries
- More usable capacity & greater efficiency
- Lightweight
- Faster recharging
- IP54 rated case
- IEC 62619 certification

Applications
RV, Sport & Leisure
Industrial Equipment
Solar

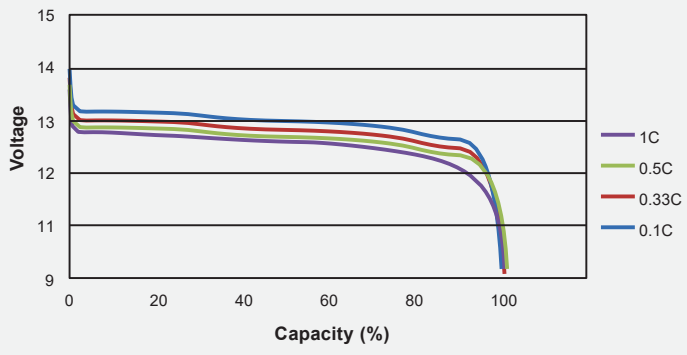
Characteristic		Specification
Nominal Capacity		20Ah
Nominal Energy		256Wh
Nominal Voltage		12.8V (4S4P)
Internal Impedance		≤ 60mΩ @ 1kHz AC
Nominal Charge Voltage		14.6V
Float Charge Voltage (for stand-by use)		13.6V
Maximum charge current		20A
Recommended charge current		≤10A
Maximum discharge current		20A
Discharge cut-off voltage		9.5V - 10.5V
Dimensions (L x W x H), ±2mm		181mm x 76mm x 166mm
Nominal Weight		3kg
Bluetooth Connectivity		Yes, via ALLiON App
Operation Temperature	Charge	0°C to +45°C
	Discharge	-20°C to +60°C
Self-discharge	Residual Capacity	≤ 3% /month, ≤ 15% /year
	Recover Capacity	≤ 1.5% /month, ≤ 8% /year
Storage Environment	≤ 1 month	-20°C to +60°C, 5% to 75% RH
	≤ 3 months	-10°C to +45°C, 5% to 75% RH
	Recommended	+15°C to +35°C, 5% to 75% RH

Characteristic		Specification
High Voltage (V_{max})	High voltage protection	3.75V ±0.03V per cell
	Reset voltage	3.60V ±0.04V per cell
	Reset trigger	Below reset voltage
Low Voltage (V_{min})	Low voltage protection	2.50V ±0.05V per cell
	Reset voltage	2.80V ±0.05V per cell
	Reset trigger	Begin charging
Overcurrent (I_{max})	Maximum charge current protection	22A ±2A
	Charge current protection reset	Auto reset after 60s
	Maximum discharge current protection	28A ±2A for 15s
	Discharge current protection reset	Charge or auto reset after 60s
	Short circuit protection	Do not short circuit the battery.
Temperature	Over temperature protection	Protect 65 ±5°C, Reset 50 ±5°C
	Under temperature protection	Protect -10 ±5°C, Reset 0 ±5°C
	MOSFET over temperature protection	Protect 103 ±10°C, Reset 75 ±10°C

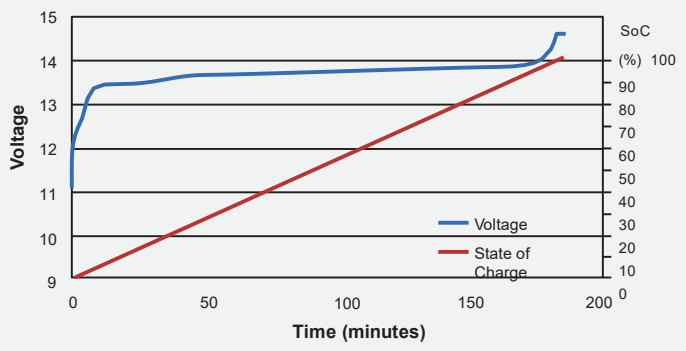
Discharge voltage at various temperatures @ 0.5C



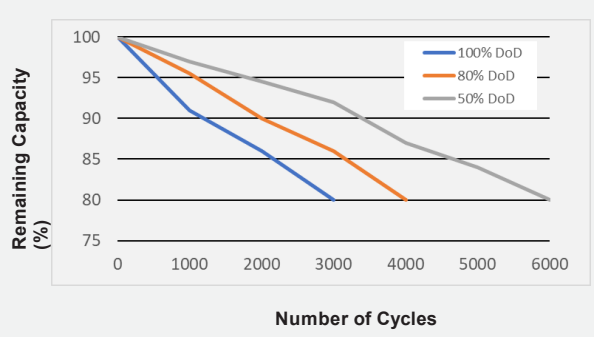
Discharge voltage at various rates



Charge Voltage & State of Charge (SoC) @ 0.33C charge rate



Cycle Life vs Depth of Discharge (DoD) @ 0.2C discharge



Discharge Test Expected Runtime:

Tester	Astratec 12V 20A	Lester 48V 56A	Lester 12/24/36V 75A
Minutes	20	N/A	N/A

Parallel & Series Connection:

- Parallel connection of up to 4 batteries is supported.
- For series connection, up to 4 batteries can also be connected but CAUTION must be taken. Individual battery voltages must all be kept within a 0.2V range (a battery balancer is recommended)
- Combinations of Parallel and Series are not supported. Failure to comply may void warranty.

Product Safety

1. Storage & Transport

The battery must be charged using the Standard Charge Process every 6 months if not in use.
Do not drop the battery.
Maximum stacking quantity (height) is 6 batteries.
The battery must be kept upright at all times.

2. Product Warnings

Please read and follow the handling instructions before use. Improper use may cause heat, fire, rupture, damage or capacity deterioration of the battery. The manufacturer is not responsible for any accidents caused by misuse or poor maintenance.

- Do not store or use battery near heat source.
- Do not install in vehicle engine bay.
- Do not expose battery to direct sunlight for extended periods.
- Do not connect battery to high voltage.
- Do not place battery in water or fire.
- Always check polarity before connecting the battery.
- Do not short circuit battery.
- Do not expose the battery to impact or crushing force.
- Do not install or connect this battery with different battery types.
- Protect battery from high temperatures. High temperatures may result in fire or loss of battery function and service life.
- Do not allow the battery to remain discharged. Re-charge battery when discharged.
- Use the correct battery charger for this battery.
- If battery emits an unusual odor, becomes hot or the case has distorted, stop using the battery immediately
- If eyes or skin are exposed to liquid leaking from the battery, rinse it with clean water and seek medical advice immediately.
- Do not disassemble the battery.