

NEW KID ON THE BLOCK INVICTA LITHIUM BATTERY

BMPRO
INVICTA
A BETTER BATTERY



Lithium batteries have been around for a while, and here at BMPRO, we've just started supplying Invicta LiFePO₄ and they are a winner in the RV industry.

Many will be aware of lithium batteries for smaller applications, such as the back of a mobile phone, or in AA and AAA size batteries used in toys. But there is a difference in Lithium technologies depending on the application.

For example, the batteries used in mobile phones are a Lithium-Cobalt Oxide whereas the chemistry used in RVs is a Lithium Iron Phosphate (LiFePO₄). There are several other types of Lithium batteries and they all have slightly different properties in specific energy and power, cost, life span, performance, and safety. Generally, though they are just lumped together as Lithium batteries.

The LiFePO₄ batteries are the most suitable to replace deep cycle 12V batteries as we know them in RVing and have even been configured to be close, in some case identical, to the same shape and size.

Internally a lead acid battery is quite crude and most testing will prove that when you purchase a 100Ahr lead acid battery it rarely provides this full capacity. It is a sealed black box in which obviously no-one can see into and is a primitive chemical reaction that has been used to create energy effectively for decades. Lead acid batteries effectively generate energy by creating a chemical reaction between the cathode and anode where lithium batteries are about the movement of the lithium ions which are stored in the separator from the positive (anode) to the negative (cathode). When the battery is charging the ions move from one electrode to the other and when it is discharging and supply power the lithium ions move the opposite direction.

Internally a standard lead acid battery has 6-2V cells, whereas a lithium battery has 4-3.2V cells to create a 12V battery which are in parallel and are managed by a critical set of electronics called a Battery Management System (BMS). This BMS manages all the cells to ensure that they are being charged and discharged evenly and are all balanced. It is inherently safe with this BMS electronics providing a range of safety features including a shutdown process if the battery is discharged fully so that it can be recovered with a suitable charger.

This series of Lithium stories will showcase a range of fantastic features in comparison to the lead acid alternatives of yesteryear. Yes, we certainly understand that upfront it is an investment, however the advantages are substantial.



**SAVE
50%
IN KG**

Lithium batteries are less than half the weight of lead acid batteries which makes it obviously a better choice – carry more refreshments!



**60%
MORE
AVAILABLE**

Available energy in the same space means that if you discharge a Lithium battery to 20% depth of discharge (DOD) and a Lead Acid to 50% (DOD) you receive 60% more energy



**10X
MORE
CYCLES**

Lithium batteries have superior lifetime – you would have replaced the lead acid battery 5x before replacing the Lithium



**5X
FASTER**

Faster charge and discharge means you can recharge batteries faster with available sources such as AC/DC/Solar and they are perfect for those using inverters to power that coffee machine

Follow our series on Lithium batteries to get all the facts behind the hype and can make the right decisions for your RV adventures.

