



LBS LITHIUM
BATTERY
SYSTEMS
Powering Freedom™

Product Catalogue – 12V



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Lithium Battery Storage Pty Ltd (Lithium Battery Systems) is a Brisbane based company specialising in the design, engineering and local manufacture of lithium batteries tailored to applications that power freedom for the user. LBS manufactures 12-volt lithium batteries for the RV, marine, 4×4 and camping markets in Australia.

While every effort is made to ensure the accuracy of information contained in this catalogue, Lithium Battery Systems does not accept responsibility for any inaccuracies. All images in this catalogue are for illustration purposes only, the final product may differ in appearance and specifications are subject to change without notice.

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Why switch to LBS?



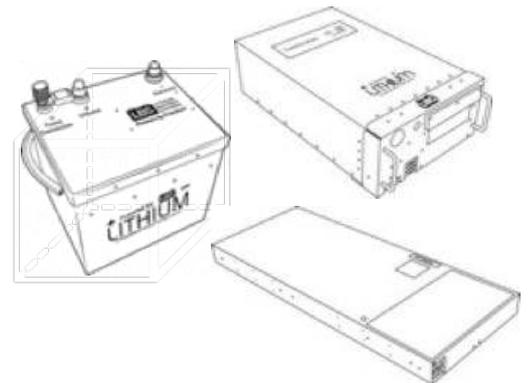
Light weight

Our batteries are between 2 and 3 times lighter than lead-acid batteries of the same Amp Hour capacity.



Flexible shapes & dimensions

We manufacture batteries in a variety of enclosure shapes and sizes with dimensions sure to fit your application.



Stock on hand

Batteries are manufactured from our Brisbane factory and we carry stock of our most popular range ready for immediate road transport.



Proudly Australian

All our batteries are CAD designed, engineered, built and supported from our Brisbane premises.



Verified Designs

We don't just make batteries, we make systems. We ensure our batteries are compatible with popular chargers and inverters.



We have designed and engineered a 12V battery range to provide solutions in the outdoor leisure and recreation space - including RV, 4x4, marine and camping.

Our Vision is **Powering Freedom™**, ensuring all Australians can go wherever they want, whenever they want with all the power that they need to live life to the fullest in the Great Outdoors.



RV, caravan, motorhomes, camper trailers, campervans, fifth wheelers.



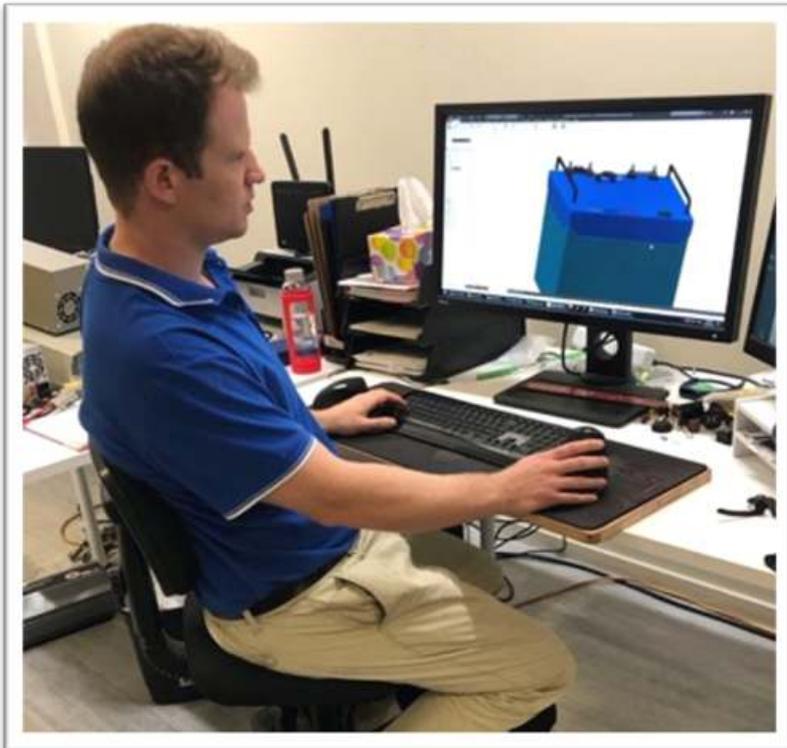
4x4, utes and off-road vehicles, dual battery systems.



Marine, yachts, cruisers, house boats, pleasure craft, fishing boats, trolling motors.



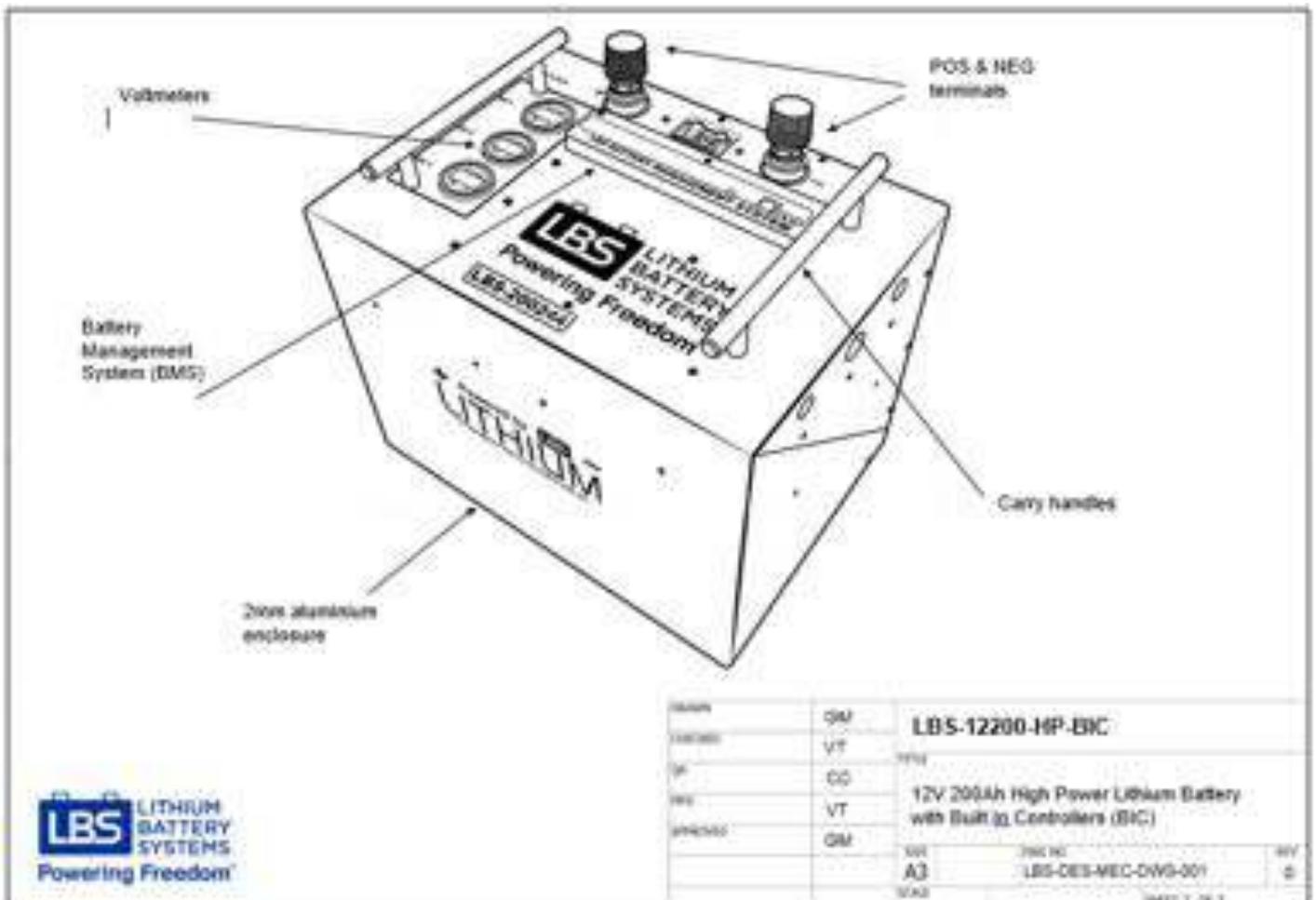
Camping, outdoor recreation, fishing, beach, emergency power.

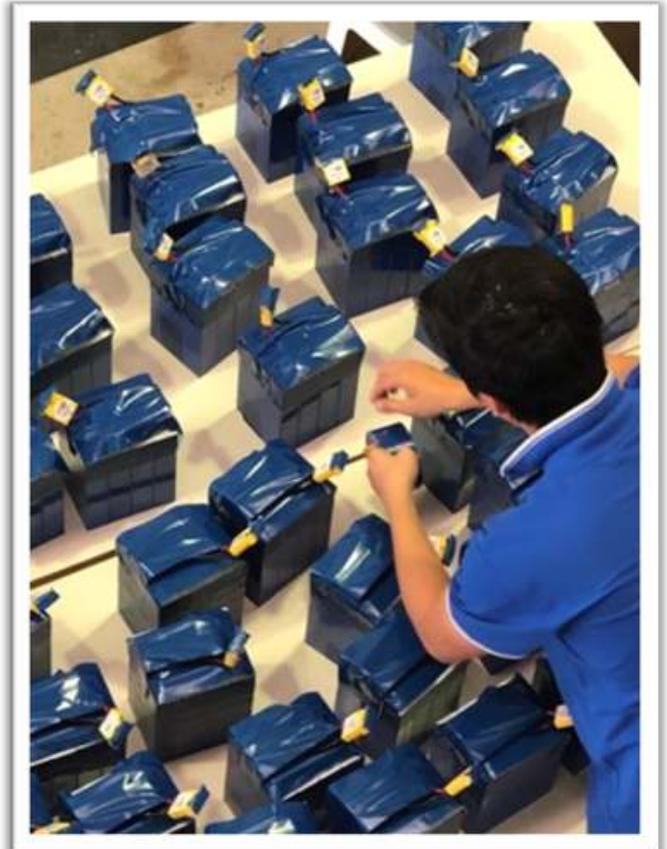
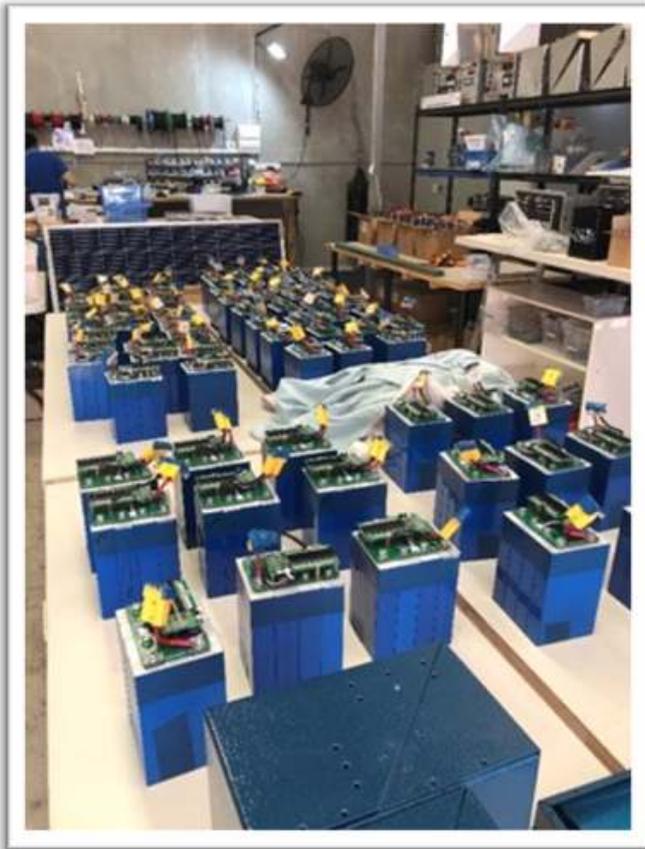


All LBS batteries are designed using CAD software and engineered for Australian conditions.

Our 2mm aluminium plate enclosures provide robust mechanical protection as well as a sink for heat dissipation.

Every battery goes through a design review process to ensure it is fit for purpose and functional for the end user.





All LBS batteries are manufactured from our Brisbane premises by qualified electrical engineers and battery technicians.

We take pride in ensuring that no battery leaves the factory before it has been through our QA/QC process and thoroughly tested.

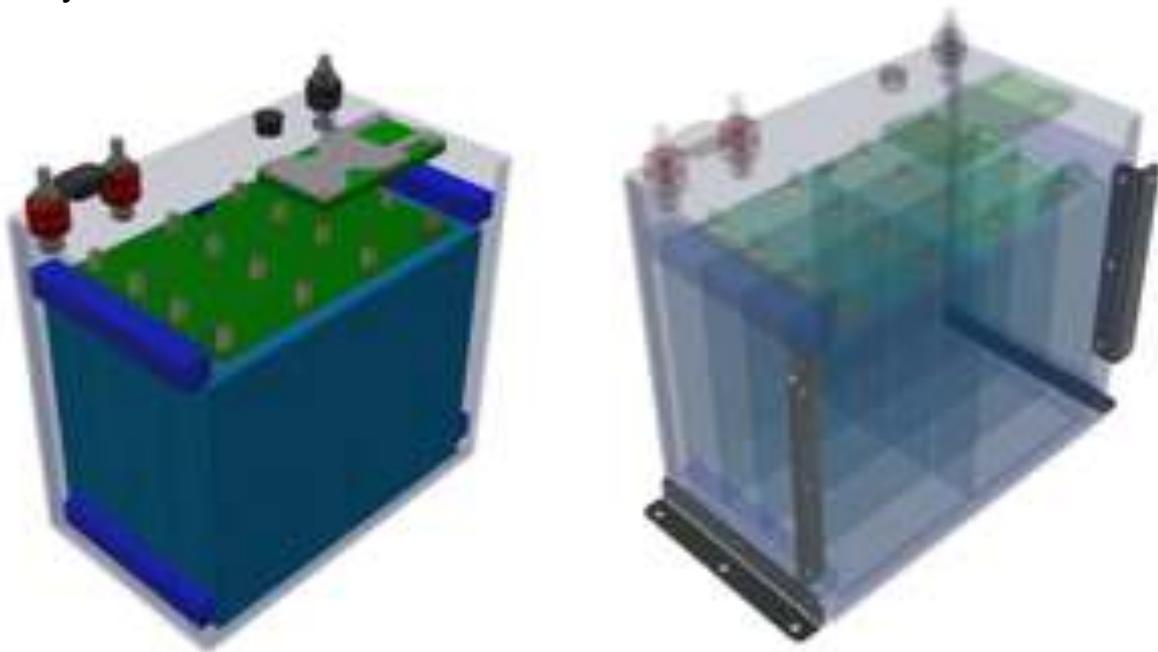
What's Inside the Box

Unlike other battery manufacturer's we don't shy away from what's inside the aluminium enclosure.

We design each battery using CAD software so that each internal component can be fitted using the best available use of space and so that the batteries can be assembled millimetre perfect over and over again.



Inside each battery is the cell pack, with cells arranged and connected in series and parallel to produce the correct battery voltage and amp hour storage capacity. We also install the BMS, cell connector board and a cable harness to connect all the components together into a working battery.



We also include a bracket kit made up of aluminium brackets and screws so that the battery can be safely installed using the enclosure pre-drilled holes.

Ever attempted a jigsaw puzzle and tried to fit the wrong pieces together? It just doesn't work, and neither does a battery system with components that are incompatible with each other.

A battery system is comprised of chargers (AC and/or DC), the battery and possibly an inverter if AC power is required, and they all must work seamlessly together.

It is even more important with lithium batteries because some chargers on the market which have been designed to charge lead acid batteries simply don't work with a lithium battery.



So, we came up with the concept of a 'verified design' to ensure all components work seamlessly together.

An **LBS Verified Design** is an integrated system of compatible components which have been tested together. Wherever you see the logo below, rest assured that the battery and system components have been tested as one complete system.





DESCRIPTION

The Freedom Power Pack (FPP) is a 12V 50Ah/75Ah portable lithium battery with convenient built in USB ports, ciga sockets & Anderson plugs.

The FPP is a must-have in the great outdoors. At just 12kg, it is ideal for camping or to keep in the back of the 4x4 and RV for remote or emergency power use.

Keep it charged via the 50A grey Anderson plugs. Charge with up to 2 sources from regulated solar, DC or AC charger inputs (total not to exceed 50A). Use the ports and sockets to recharge smart devices, run LED lights, compressor fridges or any 12V appliance.

SPECIFICATIONS

Models	LBS-1250-FPP LBS-1275-FPP
Capacity	50Ah / 75Ah
Charge voltage	13.8-14.6V
Charge current	50A max
Discharge current	50A continuous 200A surge
Weight	12kg
Operating Temp (charge)	0-45°C
Dimensions L x D x H1*	165x135x315mm

*H1 is to top of battery lid

FEATURES

- ✓ 2 x dual USB ports (1A, 2.1A)
- ✓ 2 x ciga sockets 10A max load
- ✓ LED illuminated voltmeter
- ✓ On/off rocker switch
- ✓ 2 x grey Anderson plugs (bidirectional)
- ✓ 3 x external replaceable blade fuses
- ✓ Steel carry handle
- ✓ Power coated aluminium enclosure
- ✓ Internal Battery Management System

Dual 50A Anderson plugs

Ciga socket

On/off switch

Dual USB port

LED voltmeter



2x 30A blade fuses in parallel (protects 50A Anderson plugs)

15A blade fuse (protects sockets & ports)

110Ah Slimline Battery



✓ MOST POPULAR



Photo – DCS model

FEATURES

- ✓ Only 50mm thick
- ✓ Only 11kg in weight
- ✓ DCS model has internal DC-DC charger with Volt Sensing Relay
- ✓ Power coated aluminium enclosure
- ✓ Internal Battery Management System
- ✓ Bracket mounting kit

DESCRIPTION

Fast becoming our most popular 12V battery, the 110Ah Slimline (SL) battery is ideal for those tight and difficult spaces in which conventional size batteries just don't fit. At just 11kg, it is ideal for camping or to keep in the back of the 4x4 and RV to power portable fridge/freezers, LED lighting or for emergency power use.

Charge from regulated solar, AC charger or direct from vehicle alternator, start battery or cigarette sockets (DCS model only).

SPECIFICATIONS

Models	LBS-12110-SL	LBS-12110-SL-DCS
Capacity	110Ah	110Ah
Charge voltage	13.8-14.6V	13.8-14.6V
Charge current	100A max	100A max
Discharge current	100A continuous 200A surge	100A continuous 200A surge
Connectors	2 x grey Andersons	1 x grey Anderson; 1 x blue Anderson
Internal DC-DC charger	Not included	20A max charge
Weight	11kg	11kg
Operating temp (charge)	0-45°C	0-45°C
Operating temp (discharge)	-20 to 60°C	-20 to 60°C
Dimensions L x D x H	635 x 265 x 50mm	635 x 265 x 50mm



DESCRIPTION

Constructed using the latest lithium iron phosphate prismatic cells of the highest quality in a metal hard case.

The battery has an inbuilt Battery Management System (BMS) to protect and manage the cells.

At just 8kg, this rugged light weight battery has around double the usable capacity at up to a quarter of the weight of the comparable lead acid or AGM equivalent.

The 1275-SP provides up to 100A of continuous discharge or charge and up to 200A surge. The battery presents a 1m fly lead to a grey Anderson plug for easy and convenient connection.

The strong aluminium outer enclosure delivers a safe, lightweight and powerful unit which is the perfect building block for next generation battery systems.

SPECIFICATIONS

Model	LBS-1275-SP
Capacity	75Ah
Charge Voltage	13.8-14.6V
Charge Current	100A max
Discharge Current	100A continuous 200A surge
Operating Temp (charge)	0-45°C
Operating Temp (discharge)	-20 to 60°C
Weight	8kg
Life at 80% DoD	2,000 cycles
Life at 50% DoD	5,000 cycles
Dimensions L x D x H	175 x 125 x 230mm

FEATURES

- ✓ Internal Battery Management System
- ✓ Powder coated aluminium enclosure
- ✓ Light weight only 8kg
- ✓ Soft carry handles
- ✓ Parallel connect capable
- ✓ 1m fly lead cable with external 50A grey Anderson connector
- ✓ Designed and fully assembled in Australia
- ✓ Bracket mounting kit



DESCRIPTION

Constructed using the latest lithium iron phosphate prismatic cells of the highest quality in a metal hard case.

The battery has an inbuilt Battery Management System (BMS) to protect and manage the cells.

This light weight battery has around double the usable capacity at up to a third of the weight of a lead acid or AGM equivalent.

Designed to fit within the footprint of a standard N70 battery, a second battery compartment or standard battery box for direct lead acid replacement.

The strong aluminium outer enclosure delivers a safe, lightweight and powerful unit which is the perfect building block for next generation battery systems.

FEATURES

- ✓ Internal Battery Management System
- ✓ Powder coated aluminium enclosure
- ✓ External 100A maxi fuse
- ✓ Fused & Unfused Positive Terminal
- ✓ Light weight 12kg to 29kg
- ✓ Soft carry handles
- ✓ Parallel connect capable
- ✓ LBS Triple Guard Safety Protection
- ✓ Designed and fully assembled in Australia
- ✓ Bracket mounting kit

SPECIFICATIONS

Models	LBS-12110-SP	LBS-12150-SP	LBS-12225-SP	LBS-12300-SP
Capacity	110Ah	150Ah	225Ah	300Ah
Charge Voltage	13.8-14.6V	13.8-14.6V	13.8-14.6V	13.8-14.6V
Charge Current	100A max	100A max	100A max	100A max
Discharge Current	100A continuous 200A surge	100A continuous 200A surge	100A continuous 200A surge	100A continuous 200A surge
Op. Temp (charge)	0-45°C	0-45°C	0-45°C	0-45°C
Op. Temp (discharge)	-20 to 60°C	-20 to 60°C	20 to 60°C	-20 to 60°C
Weight	12kg	16kg	23kg	29kg
Life at 80% DoD	2,000 cycles	2,000 cycles	2,000 cycles	2,000 cycles
Life at 50% DoD	5,000 cycles	5,000 cycles	5,000 cycles	5,000 cycles
Dims (L x D x H1)	257 x 177 x 190mm	326 x 245 x 260mm	326 x 245 x 260mm	326 x 245 x 260mm



DESCRIPTION

Constructed using the latest lithium iron phosphate prismatic cells of the highest quality in a metal hard case.

The battery has an inbuilt Battery Management System (BMS) to protect and manage the cells.

This light weight battery has around double the usable capacity at up to a third of the weight of a lead acid or AGM equivalent.

Designed to fit within the footprint of a standard N70 battery, a second battery compartment or standard battery box for direct lead acid replacement.

Includes an internal DC-DC charge so that the battery can be charged from a vehicle alternator, start battery or cigarette socket. Comes with VSR and reverse switch so the battery can be used to charge a dead start battery.

FEATURES

- ✓ Internal Battery Management System
- ✓ Powder coated aluminium enclosure
- ✓ External 100A maxi fuse
- ✓ Fused & Unfused Positive Terminal
- ✓ Light weight 12kg to 29kg
- ✓ Internal DC-DC charger
- ✓ Soft carry handles
- ✓ Parallel connect capable
- ✓ Designed and fully assembled in Australia
- ✓ Bracket mounting kit

SPECIFICATIONS

Models	LBS-12110-SP-DCS	LBS-12150-SP-DCS	LBS-12225-SP-DCS	LBS-12300-SP-DCS
Capacity	110Ah	150Ah	225Ah	300Ah
Charge Voltage	14.6V max	14.6V max	14.6V max	14.6V max
Charge Current	100A max	100A max	100A max	100A max
Discharge Current	100A continuous 200A surge	100A continuous 200A surge	100A continuous 200A surge	100A continuous 200A surge
Op. Temp (charge)	0-45°C	0-45°C	0-45°C	0-45°C
Op Temp (discharge)	-20 to 60°C	-20 to 60°C	-20 to 60°C	-20 to 60°C
Weight	12kg	16kg	23kg	29kg
Life at 80% DoD	2,000 cycles	2,000 cycles	2,000 cycles	2,000 cycles
Life at 50% DoD	5,000 cycles	5,000 cycles	5,000 cycles	5,000 cycles
Dims. (L x D x H1)	257 x 177 x 190mm	326 x 245 x 260mm	326 x 245 x 260mm	326 x 245 x 260mm
DC-DC charger	20A	40A	40A	40A



DESCRIPTION

Constructed using the latest lithium iron phosphate prismatic cells of the highest quality in a metal hard case. The battery has an inbuilt solid-state Battery Management System (BMS) which offers sophisticated internal management, balancing and diagnostics.

The battery can power larger loads up to 200A of continuous discharge and 500A surge. It can also be charged at up to 150A, replenishing the battery in less than 2 hours. These high-power units can be placed into parallel for capacity increase and power large loads including air-conditions.

The strong aluminium enclosure delivers a safe, lightweight and powerful unit which is the perfect building block for next generation battery systems.

FEATURES

- ✓ Internal BMS with state of charge LEDs & user interface
- ✓ Charge at up to 150A max
- ✓ Discharge at 200A continuous
- ✓ Powder coated aluminium enclosure
- ✓ Convenient positive & negative terminals
- ✓ Light weight just 13kg to 29kg
- ✓ Parallel connect capable
- ✓ LBS Triple Guard Safety Protection
- ✓ Designed and fully assembled in Australia
- ✓ Bracket mounting kit
- ✓ Steel carry handles

SPECIFICATIONS

Models	12110-HP-REG	12150-HP-REG	12225-HP-REG	12300-HP-REG
Capacity	110Ah	150Ah	225Ah	300Ah
Charge Voltage	13.8-14.6V	13.8-14.6V	13.8-14.6V	13.8-14.6V
Charge Current	150A max	150A max	150A max	15050A max
Discharge Current	200A continuous 500A surge	200A continuous 500A surge	200A continuous 500A surge	200A continuous 500A surge
Op Temp (charge)	0-45°C	0-45°C	0-45°C	0-45°C
Op Temp (discharge)	-20 to 60°C	-20 to 60°C	-20 to 60°C	-20 to 60°C
Weight	13kg	16kg	23kg	29kg
Life at 80% DoD	2,000 cycles	2,000 cycles	2,000 cycles	2,000 cycles
Life at 50% DoD	5,000 cycles	5,000 cycles	5,000 cycles	5,000 cycles
Dims L x D x H1	335 x 250 x 260mm			



BIC – Built In Controllers

DESCRIPTION

Constructed using the latest lithium iron phosphate prismatic cells of the highest quality in a metal hard case. The battery has an inbuilt solid-state BMS which offers sophisticated internal management, balancing and diagnostics.

The battery can power larger loads up to 200A of continuous discharge and 500A surge. It can also be charged at up to 150A, replenishing the battery in less than 2 hours. These high-power units can be placed into parallel for capacity increase and power large loads including air-conditions.

This BIC model has a convenient built-in solar controller for up to 800W solar input via the red Anderson. It also can receive a DC input on the blue Anderson and an external AC charger on the black Anderson.

FEATURES

- ✓ Internal BMS with state of charge LEDs & user interface
- ✓ Powder coated aluminium enclosure
- ✓ Convenient positive & negative terminals
- ✓ Bracket mounting kit
- ✓ Steel carry handles
- ✓ Light weight just 13kg to 29kg
- ✓ Grey Anderson – input/output 50A max
- ✓ Blue Anderson – DC input 40A max
- ✓ Red Anderson – solar input 800W max
- ✓ Black Anderson – AC charger input 40A max

SPECIFICATIONS

Models	12110-HP-BIC	12150-HP-BIC	12225-HP-BIC	12300-HP-BIC
Capacity	110Ah	150Ah	225Ah	300Ah
Charge Voltage	13.8-14.6V	13.8-14.6V	13.8-14.6V	13.8-14.6V
Charge Current	150A max	150A max	150A max	15050A max
Discharge Current	200A continuous 500A surge	200A continuous 500A surge	200A continuous 500A surge	200A continuous 500A surge
Op Temp (charge)	0-45°C	0-45°C	0-45°C	0-45°C
Op Temp (discharge)	-20 to 60°C	-20 to 60°C	-20 to 60°C	-20 to 60°C
Weight	13kg	16kg	23kg	29kg
Life at 80% DoD	2,000 cycles	2,000 cycles	2,000 cycles	2,000 cycles
Life at 50% DoD	5,000 cycles	5,000 cycles	5,000 cycles	5,000 cycles
Dims L x D x H1	335 x 250 x 260mm			



BIC – Built In Controllers

DCS – Internal DC-DC charge controller

DESCRIPTION

Constructed using the latest lithium iron phosphate prismatic cells of the highest quality in a metal hard case. The battery has an inbuilt solid-state BMS which offers sophisticated internal management, balancing and diagnostics.

The battery can power larger loads up to 200A of continuous discharge and 500A surge. It can also be charged at up to 150A, replenishing the battery in less than 2 hours.

This BIC model has a convenient built-in solar controller for up to 800W solar input via the red Anderson. It also can receive a DC input on the blue Anderson and an external AC charger on the black Anderson.

The DCS model has an internal 40A DC-DC charge controller to take raw DC input from an alternator.

FEATURES

- ✓ Internal BMS with state of charge LEDs & user interface
- ✓ Powder coated aluminium enclosure
- ✓ Convenient positive & negative terminals
- ✓ Bracket mounting kit
- ✓ Steel carry handles
- ✓ Light weight just 13kg to 29kg
- ✓ Grey Anderson – input/output 50A max
- ✓ Blue Anderson – DC input 40A max
- ✓ Red Anderson – solar input 800W max
- ✓ Black Anderson – AC charger input 40A max
- ✓ Internal 40A DC-DC charge controller

SPECIFICATIONS

Models	12110-HP-BIC-DCS	12150-HP-BIC-DCS	12225-HP-BIC-DCS	12300-HP-BIC-DCS
Capacity	110Ah	150Ah	225Ah	300Ah
Charge Voltage	13.8-14.6V	13.8-14.6V	13.8-14.6V	13.8-14.6V
Charge Current	150A max	150A max	150A max	15050A max
Discharge Current	200A continuous 500A surge	200A continuous 500A surge	200A continuous 500A surge	200A continuous 500A surge
Op Temp (charge)	0-45°C	0-45°C	0-45°C	0-45°C
Op Temp (discharge)	-20 to 60°C	-20 to 60°C	-20 to 60°C	-20 to 60°C
Weight	13kg	16kg	23kg	29kg
Life at 80% DoD	2,000 cycles	2,000 cycles	2,000 cycles	2,000 cycles
Life at 50% DoD	5,000 cycles	5,000 cycles	5,000 cycles	5,000 cycles
Dims L x D x H1	335 x 250 x 260mm			

INVERTERS

- ✓ Pure sine wave inverters, 12V DC to 240V AC;
- ✓ 600W, 1200W, 3300W, 4000W.



CHARGERS

- ✓ 12V 20A & 40A AC chargers;
- ✓ DC-DC battery charger with VSR function & reversing switch, 20A, LBS designed.



SOLAR PANELS

- Fixed and folding 12V solar panels;
- 100W, 120W, 140W, 160W, 200W.



MONITORING

- ✓ Remote monitoring display screen with 5m cable length, displays battery voltage, amps in/out, cell health, state of charge, touch pad menu;
- ✓ Voltage monitor, colour LED indicator.



CABLE KITS

- ✓ 2 x 4mm² twin core solar cable;
- ✓ 3m long lengths;
- ✓ TUV approved UV protected;
- ✓ Grey, red, blue, black Anderson connectors.

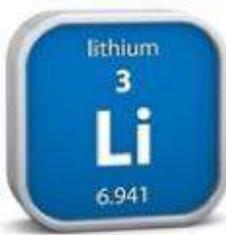


Lithium Batteries have been used for years in smart phones and power tools because they are powerful and lightweight.

Companies like Tesla and Lithium Battery Systems have developed the control systems to bring the power of lithium chemistry into batteries designed for cars, boats, RV's, caravans and home storage.

Lithium batteries are revolutionising the sector and here we explore why all the smart users are switching to lithium.

What is lithium?



Lithium is the lightest known metal and highly reactive which makes it perfect for storing electrical charge. Lithium is found combined with other elements in ores around the world and Australia has vast high-quality deposits.

Australia is not only one of the largest lithium miners in the world but is also starting to process more of it here before exporting it to countries like China and the USA, to be made into battery cells.

Why is lithium used in batteries?

Batteries have an anode and a cathode that allows the transfer of electrons to store and provide electrical energy. Lead and acid have been the chemical mix that have been used for decades.

Lithium has physical, thermal and electro-chemical properties that make it ideal for use in batteries. Physically, lithium is the least dense solid element known to man, which means batteries made using lithium are much lighter.

Lithium also has the highest specific heat of any solid element, making it an efficient heat transfer agent. But perhaps the greatest advantage of lithium is that because it is highly reactive it can pack more power than other battery types.

Lithium cells can produce a voltage up to 3.6V and are linked together to create batteries that are 12V, 24V and 48V systems.

What lithium cells are best and why?

There are several types of lithium-ion chemistry on the market, including lithium cobalt oxide, lithium manganese oxide, lithium nickel manganese cobalt oxide and lithium iron phosphate.

The cells come in different packages including cylindrical and prismatic. Lithium iron phosphate is the safest chemistry and prismatic cells are the most efficient and mechanically robust way to package the stored energy.



Why Lithium?



MORE POWER 	Lithium batteries allow you to pull far more amps out of the same size battery. This allows you to run all of your appliances that require a lot of power. Good quality lithium batteries are capable of 200A continuous output and can peak at 500A which is ample for all household appliances and even air conditioning systems.
LIGHT WEIGHT 	Lithium batteries are less than half the weight of the equivalent lead acid battery. This is an important consideration for recreational vehicles and boats. Light weight portable lithium batteries are also an advantage when camping. Carrying a 12kg battery is a lot easier than carrying a 32kg of lead!
MORE CAPACITY 	Lithium batteries provide more usable capacity than lead acid batteries. Deep discharging does not affect the life of a lithium battery the way it does with lead acid batteries. You can use the battery longer before needing to recharge, without damage to the battery
LONGER LIFE 	Lithium batteries are rated for 2,000 – 5,000 cycles and much more if used carefully, giving you several times the life expectancy of standard lead acid batteries.
COST EFFECTIVE OVER LIFE CYCLE 	When considering the usable capacity and lifespan of lithium batteries, they work out cheaper than lead acid. When you add the cost and inconvenience of refitting new lead-based batteries every few years the total cost of ownership over the long term is far better with lithium batteries.
FASTER CHARGING 	Lithium batteries charge more efficiently, and don't require as many stages during charging. Therefore, they will charge faster, and hold more of the energy from solar panels and other charging devices.
DIRECT REPLACEMENT	In most cases lithium batteries can be a direct replacement to AGM batteries. Some chargers and controllers might need a different mode but in almost all cases the reconfiguration to lithium is something that can be done with minimal disruption to existing systems.



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