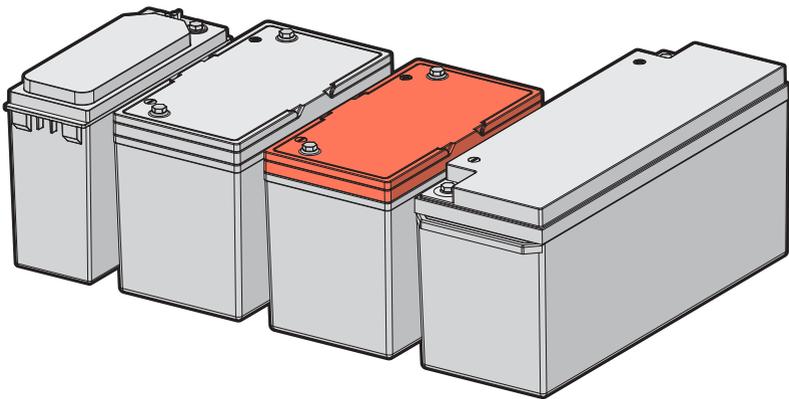


THE POWER OF

REDARC®

Lithium Deep Cycle Battery



LBAT12060
LBAT12100
LBAT12100-HD
LBAT12200



LITHIUM DEEP CYCLE BATTERY

REDARC Lithium Deep Cycle Batteries are the ultimate in deep-cycle battery technology delivering unrivaled performance and battery life.

REDARC Lithium Deep Cycle Batteries are equipped with an internal Battery Management System (BMS) that can monitor and optimise each cell during charge and discharge to protect the battery pack from over charge, over discharge and short circuit.

WARNING AND SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS — THIS MANUAL CONTAINS IMPORTANT SAFETY INSTRUCTIONS FOR THE LBAT SERIES LITHIUM DEEP CYCLE BATTERY.

DO NOT OPERATE THE BATTERY OR MODIFY THE INSTALLATION UNLESS YOU HAVE READ AND UNDERSTOOD THIS MANUAL AND THE BATTERY IS INSTALLED AS PER THESE INSTALLATION INSTRUCTIONS. REDARC RECOMMENDS THAT THE BATTERY BE INSTALLED BY A SUITABLY QUALIFIED PERSON.

WARNING

RISK OF FIRE, EXPLOSION AND BURNS:

WORKING IN VICINITY OF A LITHIUM BATTERY IS DANGEROUS.

- **DO NOT SHORT THE BATTERY TERMINALS**
- **DO NOT EXPOSE THE BATTERY TO TEMPERATURES BEYOND THE PUBLISHED LIMITS**
- **DO NOT ATTEMPT TO DISASSEMBLE THE BATTERY**
- **DO NOT CRUSH OR PUNCTURE THE BATTERY**
- **DO NOT SUBMERSE THE BATTERY IN LIQUID**
- **DO NOT OPERATE THE BATTERY BEYOND THE PUBLISHED RATINGS**

DOING SO MAY RESULT IN DAMAGE TO THE BATTERY, FIRE, EXPLOSION AND ULTIMATELY BURNS. FOR THIS REASON, IT IS OF UTMOST IMPORTANCE THAT YOU FOLLOW THE INSTRUCTIONS WHEN INSTALLING AND USING THE BATTERY.

CAUTION

1. The Battery should not be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they are supervised or have been instructed on how to use the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the Battery.
2. Do NOT alter or disassemble the Battery under any circumstances. Incorrect handling or reassembly may result in a risk of electric shock or fire and may void the unit warranty.
3. Cable and fuse sizes are specified by various codes and standards which depend on the type of vehicle the Battery is installed into. Selecting the wrong cable or fuse size could result in harm to the installer or user and/or damage to the Battery or other equipment installed in the system. The installer is responsible for ensuring that the correct cable and fuse sizes are used when installing this Battery.
4. NEVER smoke or allow a spark or flame in vicinity of battery or engine. This may cause the battery to explode.

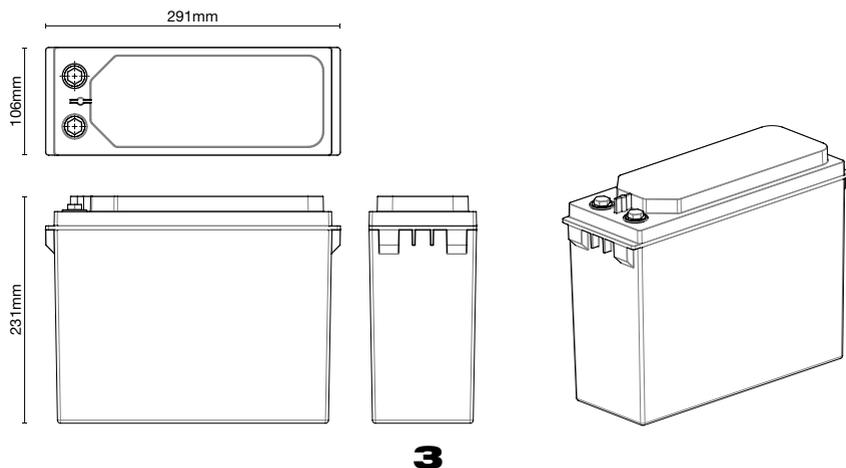
NOTICE

1. Do NOT use the battery for cranking/starting applications
2. Do NOT connect the batteries in series to increase the overall voltage
3. Do NOT dispose of in fire
4. The battery must be installed away from major heat sources, high voltage, and avoid exposed sunlight for long periods of time
5. Do NOT connect the positive and negative terminals of battery together
6. Do NOT allow the battery to sit in a discharged state ≤ 10.0 V
7. Do NOT use unregulated non-lithium LiFePO₄ battery chargers. Failure to install the correct battery charger will void all warranty
8. Do NOT mix lithium batteries with other types/chemistries or brands of batteries as they will not be compatible

LBAT12060

Part Number	LBAT12060
Nominal Capacity (C20, 25°C to 10.5 V)	60 Ah / 768 Wh
Nominal Voltage	12.8 V
Self-Discharge Rate per month	≤ 3%
Short Circuit Protection	200 to 500 μ s
Recommended Continuous Discharge (40 minutes)	85 A
Maximum Discharge (30 minutes)	100 A
Peak Discharge (5 seconds)	120 A
Discharge Cut-Off Voltage	10.0 V
Life Cycles 80% DOD	2000
Life Cycles 50% DOD	5000
Life Cycles 20% DOD	8000
Recommended Charge Current	≤ 30 A
Maximum Charge Current	30 A
Recommended Charge Voltage	14.6 V \pm 0.2 V
BMS Charge Cut Off Voltage	15.6 V
Dimension (L \times W \times H)	291 \times 106 \times 231 mm
Weight	8.0 kg
Cell Chemistry	LiFePO ₄
Case Material	Polycarbonate
Terminal Type	M8
Charge Temperature Range	0 ~ 60 °C
Discharge Temperature Range	-20 ~ 70 °C
Storage Temperature Range	-20 ~ 40 °C
Series Configuration	No
Parallel Configuration	Yes
Maximum Inverter Size	850 W per battery
Compliance	UN38.3

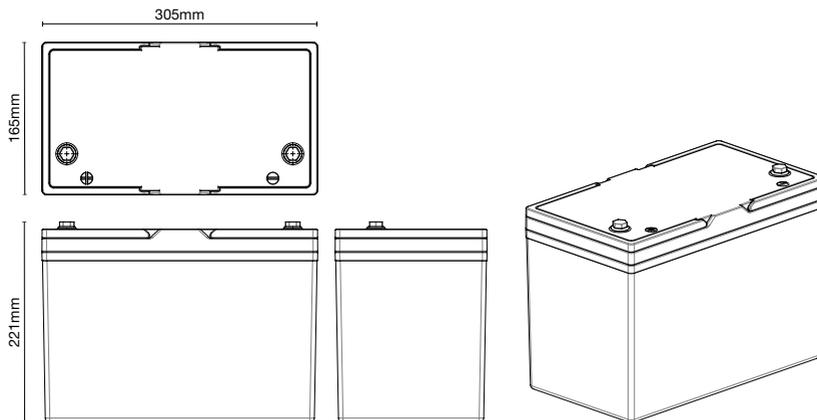
DIMENSIONS



LBAT12100 AND LBAT12100-HD

Part Number	LBAT12100	LBAT12100-HD
Nominal Capacity (C20, 25°C to 10.5 V)	100 Ah/1280 Wh	
Nominal Voltage	12.8 V	
Self-Discharge Rate per month	≤ 3%	
Short Circuit Protection	200 to 500 μs	
Recommended Continuous Discharge	50 A (120 minutes)	100 A (60 minutes)
Maximum Discharge	80 A (60 minutes)	170 A (30 minutes)
Peak Discharge (5 seconds)	120 A	400 A
Discharge Cut-Off Voltage	10.0 V	
Life Cycles 80% DOD	2000	
Life Cycles 50% DOD	5000	
Life Cycles 20% DOD	8000	
Recommended Charge Current	≤ 30 A	≤ 50 A
Maximum Charge Current	50 A	50 A
Recommended Charge Voltage	14.6 V ± 0.2 V	
BMS Charge Cut Off Voltage	15.6 V	
Dimension (L × W × H)	305 × 165 × 221 mm	
Weight	11.5 kg	12.5 kg
Cell Chemistry	LiFePO ₄	
Case Material	Polycarbonate	
Terminal Type	M8	
Charge Temperature Range	0 ~ 60 °C	
Discharge Temperature Range	-20 ~ 70 °C	
Storage Temperature Range	-20 ~ 40 °C	
Series Configuration	No	
Parallel Configuration	Yes	
Maximum Inverter Size	500 W per battery	1000 W per battery
Compliance	UN38.3	

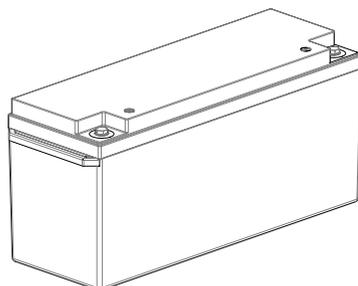
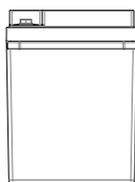
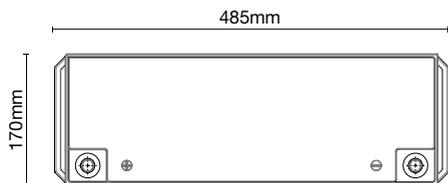
DIMENSIONS



LBAT12200

Part Number	LBAT12200
Nominal Capacity (C20, 25°C to 10.5 V)	200 Ah/2560 Wh
Nominal Voltage	12.8 V
Self-Discharge Rate per month	≤ 3%
Short Circuit Protection	200 to 500 μ s
Recommended Continuous Discharge (120 minutes)	100 A
Maximum Discharge (60 minutes)	170 A
Peak Discharge (5 seconds)	400 A
Discharge Cut-Off Voltage	10.0 V
Life Cycles 80% DOD	2000
Life Cycles 50% DOD	5000
Life Cycles 20% DOD	8000
Recommended Charge Current	≤ 50 A
Maximum Charge Current	100 A
Recommended Charge Voltage	14.6 V \pm 0.2 V
BMS Charge Cut Off Voltage	15.6 V
Dimension (L \times W \times H)	485 \times 170 \times 242 mm
Weight	25.5 kg
Cell Chemistry	LiFePO ₄
Case Material	Polycarbonate
Terminal Type	M8
Charge Temperature Range	0 ~ 60 °C
Discharge Temperature Range	-20 ~ 70 °C
Storage Temperature Range	-20 ~ 40 °C
Series Configuration	No
Parallel Configuration	Yes
Maximum Inverter Size	1000 W per battery
Compliance	UN38.3

DIMENSIONS



USER GUIDE

REDARC Lithium Deep Cycle Batteries ship with a low state of charge and should be recharged prior to first use. The batteries have a self-discharge rate of 3% per month @ 25°C. The battery should not be left for more than 30 days without checking its state of charge.

- Ensure that the battery is stored in a dry, clean, shaded and well-ventilated environment at a temperature range that does not exceed the published temperature range specifications
- Ensure all loads to the battery terminals are disconnected while the battery is in storage
- Keep the battery terminals clean at all times
- Ensure that the battery is free from damage from any force which may damage it, such as being dropped or being stored incorrectly
- Ensure that the battery is used in well-ventilated applications which does not place the battery at risk of exceeding its published charge and discharge temperature range specifications
- If shipping the batteries between locations, please check with local national and/or international authorities to ensure you are complying with transportation guidelines
- To dispose of the battery, please contact an authorised lithium battery recycling facility

Inverter Usage

If a 230 V inverter is to be installed on the battery, please follow the Maximum Inverter Size for your specific battery, these are outlined on pages 3, 4 and 5 in this manual. Using batteries in parallel can increase inverter size i.e.; $2 \times \text{LBAT12100-HD} = 2000 \text{ W}$ inverter. Fitting an inverter larger than the above listed can damage the Battery Management System (BMS), put undue stress on the cells and will void all warranty.

Parallel Connection

When connecting REDARC Lithium Deep Cycle Batteries in parallel, we recommend that the earth connection be made on the opposite end of the battery bank to the positive connection.

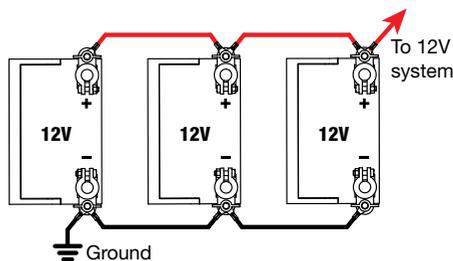
When the batteries are wired this way, the effects of resistance in the POS+ and NEG– wires cancel each other out and both batteries receive a more equal charge.

This is to minimise the effects around unequal charge and discharge rates whereby older/traditional wiring methods result in the first battery receiving more charge and uneven discharge than the second battery.

Make sure all cabling is not undersized for the battery system/charger and ensure the battery cables are connected to the terminals correctly. Batteries must be installed by a suitably qualified person.

Series Connection

Do not connect REDARC Lithium Deep Cycle Batteries in series. The BMS's used in the batteries, if connected in series, are unable to operate due to voltage differences.



THREE YEAR PRODUCT WARRANTY

Over the last four decades our company has established a reputation as the power conversion specialist.

A 100% Australian-owned company, we have met the needs of customers in transport and other industries through exciting, innovative thinking.

We believe in total customer satisfaction and practice this by offering our customers:

- Technical advice free of jargon and free of charge
- Prompt turnaround of orders throughout Australia and globally
- Friendly, personalised, professional service and product support

In the unlikely event that a technical issue arises with a Redarc product, customers are encouraged to initially contact the Redarc Technical Support Team on (08) 8322 4848 or power@redarc.com.au for prompt and efficient diagnosis and product support.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

The benefits of this Warranty are in addition to other rights and remedies available at law in respect of the Products and shall not derogate from any applicable mandatory statutory provisions or rights under the Australian Consumer Law.

Redarc Electronics Pty Ltd at the Redarc Trust trading as Redarc Electronics ("Redarc") offers a warranty in respect of its Products where the Products are purchased from an authorised distributor or reseller of Redarc by a person ("Purchaser"), on the terms and conditions, and for the duration, outlined below in this document ("Warranty").

1. In this Warranty, the term **Products** means:
 - 1.1 all products manufactured or supplied by Redarc (excluding its solar products which are covered by Redarc's Solar Product Warranty); and
 - 1.2 any component of or accessory for any product in clause 1.1 manufactured or supplied by Redarc.

Offer and duration of product warranties

2. Redarc warrants that its Products will be free, under normal application, installation, use and service conditions, from defects in materials and workmanship affecting normal use, for **3 years** from the date of purchase (**Warranty Period**).

3. Where a Product malfunctions or becomes inoperative during the Warranty Period, due to a defect in materials or workmanship, as determined by Redarc, then subject to further rights conferred by the Australian Consumer Law on the Purchaser, Redarc will, in exercise of its sole discretion, either:

- 3.1 repair the defective Product;
- 3.2 replace the defective Product; or
- 3.3 provide a refund to the Purchaser for the purchase price paid for the defective Product, without charge to the Purchaser.

4. The warranty given by Redarc in clause 3 covers the reasonable costs of delivery and installation of any repaired or replaced Products or components of Products to the Purchaser's usual residential address notified to Redarc, together with the reasonable costs of removal and return of any Products determined by Redarc to be defective.

5. If the Purchaser incurs expenses of the nature referred to in clause 4 in the context of making a claim pursuant to this Warranty that is accepted by Redarc, the Purchaser will be entitled to claim for reimbursement of those expenses which Redarc determines, in exercise of its sole discretion, to be reasonably incurred, provided that the claim is notified to Redarc in writing at the postal address or email address specified in clause 21 and includes:

- 5.1 details of the relevant expenses incurred by the Purchaser; and
- 5.2 proof of the relevant expenses having been incurred by the Purchaser.

Exclusions and limitations

6. This Warranty will not apply to, or include any defect, damage, fault, failure or malfunction of a Product, which Redarc determines, in exercise of its sole discretion, to be due to:

- 6.1 normal wear and tear or exposure to weather conditions over time;
- 6.2 accident, misuse, abuse, negligence, vandalism, alteration or modification;
- 6.3 non-observance of any of the instructions supplied by Redarc, including instructions concerning installation, configuring, connecting, commissioning, use or application of the Product, including without limitation choice of location;
- 6.4 failure to ensure proper maintenance of the Product strictly in accordance with Redarc's instructions or failure to ensure proper maintenance of any associated equipment or machinery;
- 6.5 repairs to the Product that are not strictly in accordance with Redarc's instructions;
- 6.6 installation, repairs or maintenance of the Product by, or under the supervision of, a person who is not a qualified auto electrician or technician, or if non-genuine or non-approved parts have been fitted;
- 6.7 faulty power supply, power failure, electrical spikes or surges, lightning, flood, storm, hail, extreme heat, fire or other occurrence outside the control of Redarc;
- 6.8 use other than for any reasonable purpose for which the Product was manufactured;
- 6.9 any indirect or incidental damage of whatever nature outside the control of Redarc.

7. Warranty claims in respect of a Product must be made in writing to Redarc at the postal address or email address specified in clause 21 within the Warranty Period. Such claims must include the following:

- 7.1 details of the alleged defect or fault and the circumstances surrounding the defect or fault;
- 7.2 evidence of the claim, including photographs of the Product (where the subject of the claim is capable of being photographed);
- 7.3 the serial number of the Product, specified on the label affixed to the Product; and
- 7.4 proof of purchase documentation for the Product from an authorised distributor or reseller of Redarc, which clearly shows the date and place of purchase.

The return of any Products without the prior written instructions of Redarc will not be accepted by Redarc.

8. Without limiting any other clause in this Warranty, Redarc has the right to reject any Warranty claim made by a Purchaser pursuant to this Warranty where:

- 8.1 the Purchaser does not notify Redarc in writing of a Warranty claim within the Warranty Period;
 - 8.2 the Purchaser does not notify Redarc in writing of a Warranty claim within 1 month of becoming aware of the relevant circumstances giving rise to the claim, so that any further problems with the Product are minimised;
 - 8.3 the serial number of the Product has been altered, removed or made illegible without the written authority of Redarc;
 - 8.4 the Purchaser is unable to provide proof of purchase documentation in accordance with clause 7.4 or evidence that the Product was properly installed and removed (if relevant), and that proper maintenance has been performed on the Product, by, or under the supervision of, a qualified auto electrician or technician, in accordance with the instructions of Redarc.
9. If the Product is found to be working satisfactorily on return to Redarc or upon investigation by Redarc, the Purchaser must pay Redarc's reasonable costs of testing and investigating the Product in addition to shipping and transportation charges. Where Redarc is in possession of the Product, the Product will be returned to the Purchaser on receipt of the amount charged.
10. Any replaced Products or components of Products shall become the property of Redarc.
11. Redarc may, in exercise of its sole discretion, deliver another type of Product or component of a Product (different in size, colour, shape, weight, brand and/or other specifications) in fulfilling its obligations under this Warranty, in the event that Redarc has discontinued manufacturing or supplying the relevant Product or component at the time of the Warranty claim, or where such Product or component is superior to that originally purchased by the Purchaser.

Other conditions of Warranty

12. If the Purchaser acquired a Product for the purpose of resupply, then this Warranty shall not apply to that Product.
13. In particular, the sale of a Product via an online auction, online store or other internet website by a party that is not an authorised distributor or reseller of the Product will be deemed to be a resupply within the meaning of the Australian Consumer Law and will render this Warranty void, as Redarc has no control over the storage, handling, quality or safety of Products sold by such persons.
14. A Purchaser shall only be entitled to the benefit of this Warranty after all amounts owing in respect of the Product have been paid.
15. While Redarc warrants that the Products will be free from defects in materials and workmanship in the circumstances set out in this Warranty, to the maximum extent permitted by law Redarc does not warrant that the operation of the Products will be uninterrupted or error-free.
16. To the maximum extent permitted by law, Redarc's determination of the existence of any defect and the cause of any defect will be conclusive.
17. Spare parts or materials for the Products are guaranteed to be available for a period of at least 3 years after purchase of the Products.
18. The agents, officers and employees of any distributor or reseller of the Products and of Redarc are not authorised to vary or extend the terms of this Warranty.
19. Redarc shall not be responsible or liable to the Customer or any third party in connection with any non-performance or delay in performance of any terms and conditions of this Warranty, due to acts of God, war, riots, strikes, warlike conditions, plague or other epidemic, fire, flood, blizzard, hurricane, changes of public policies, terrorism and other events which are beyond the control of Redarc. In such circumstances, Redarc may suspend performance of this Warranty without liability for the period of the delay reasonably attributable to such causes.
20. If a clause or part of a clause in this Warranty can be read in a way that makes it illegal, unenforceable or invalid, but can also be read in a way that makes it legal, enforceable and valid, it must be read in the latter way. If any clause or part of a clause in this Warranty is illegal, unenforceable or invalid, that clause or part is to be treated as removed from this Warranty, but the rest of this Warranty is not affected.

Redarc's contact details

21. Redarc's contact details for the sending of Warranty claims under this Warranty are:

Redarc Electronics Pty Ltd
23 Brodie Road (North), Lonsdale SA 5160
Email: power@redarc.com.au
Telephone: +61 8 8322 4848

FREE TECHNICAL ASSISTANCE

For product and technical support contact your regional distributor,
call our head office between 8:00 a.m. to 5:30 p.m. Australian Central
Standard Time, Monday to Friday, or send us an e-mail.



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