Lithium Batteries

Transport, Storage and End of Life



LiFe² 5120S · Kakadu 120 · All-In-One

Battery Handling Guide

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Document

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Audience
Owners, installers and carriers

Batteries
LiFe² 5120S · Kakadu 120 · All-In-One

Format
A4 · 12 pages

Foreword

A lithium-ion battery stores a lot of energy. One that is damaged, overheated or short-circuited can be dangerous, and one that is stored badly or left deeply discharged can be permanently damaged. This guide tells owners, installers and carriers how to store, handle and transport the batteries AERL supplies and supports, and what to do with them at the end of their life.

It brings together what the batteries' manuals and Safety Data Sheets (SDS) say. Where this guide and a product's manual or SDS differ, follow the manual and the SDS.

Damaged battery

If a battery is swollen, dented, hot, leaking, smoking or smells, stop using it. Keep people clear, and call 000 if there is a fire. Do not move, ship or post it. Isolate the system only if it is safe to do so, then contact AERL.

Batteries Covered

Products, read first

01

1.1 Products

Battery	What it is	Weight to handle
LiFe² 5120S	5.12 kWh, 51.2 V nominal LFP battery module	44 kg per module
Kakadu 120	88.4 kWh LFP battery cabinet, shipped with its battery modules and BMS units packed separately	See the Kakadu 120 User Manual
All-In-One	Solinteg E2BR battery cabinet with 16.1 kWh battery packs, installed in the cabinet	114 ± 5 kg per battery pack

All three use lithium iron phosphate (LFP) cells. They are classed as lithium-ion batteries for transport (Chapter 04).

1.2 Read First

- the product's installation or user manual, including its safety chapter
- the product's Safety Data Sheet (LiFe² 5120S and Kakadu 120), at aerl.com.au.

Storage

Where to store batteries, storage conditions by battery

02

2.1 Where to Store Batteries

For every battery:

- Store indoors, in a dry, cool, well-ventilated place, out of direct sunlight and rain, and away from heat, water and ignition sources.
- Keep batteries in their original packaging where you can.
- Store them away from oxidising agents and acids, and not with other chemicals.
- Avoid large swings in temperature.
- Keep them out of reach of children and animals.

2.2 Storage Conditions by Battery

	LiFe² 5120S	Kakadu 120	All-In-One
Orientation	Horizontal	—	Right way up, as marked on the box; the cabinet in its original packaging
Short-term storage	0 to 35 °C	0 to 35 °C	Up to 3 months: −20 to 45 °C, 90% RH max
Long-term storage	About 25 °C	As close as possible to 25 °C	More than 3 months: −10 to 45 °C, 90% RH max
Recommended	—	—	10 to 30 °C, 85% RH max
Not	In direct sunlight or high humidity	Outdoors, or in sunlight, high humidity, heat or water	With other electronic equipment or chemicals; stacked so high the lower layers are crushed

The SDS for the LiFe² 5120S and the Kakadu 120 recommends storing batteries at room temperature (no more than 40 °C), and keeping them between 25% and 75% state of charge for longer storage.

2.3 Keep Stored Batteries Charged

A lithium battery slowly discharges in storage. Left too long, it can fall so low that it is permanently damaged, and a battery left deeply discharged (5% state of charge or lower) for more than 30 days is not covered by the LiFe² or Kakadu warranty.

- **LiFe² 5120S:** after 6 months or more in storage, check each module's voltage. Above 51.6 V, the module is in good condition: check it again every 3 months. Below 51.6 V, charge it at 55 V DC and a constant 10 A for at least 30 minutes.
- **Kakadu 120:** recharge stored modules at least every six months.
- **All-In-One:** long-term storage is not recommended. If it cannot be avoided, recharge the batteries regularly. A battery stored for more than six months must be inspected and tested by a qualified person before use.

Storing an All-In-One battery at a high state of charge (55% or more) speeds up its natural capacity loss.

2.4 A Flat LiFe² Module

If a LiFe² module has shut down after a long time without charging, recharge it within 10 days (LiFe² 5120S Installation and Operation Manual, Recovering a Flat Battery).

Handling

Lifting and moving, working safely, if a battery leaks

03

3.1 Lifting and Moving

- Batteries are heavy. Lift a LiFe² 5120S module with at least two people, using lifting aids if necessary.
- Do not drop a battery, drag it along the ground or put heavy objects on it.
- Move an All-In-One cabinet only as its manual describes: by crane or forklift rated for at least 2 t, operated by licensed people, with the cabinet tilted no more than 10°.

3.2 Working Safely

- Handling, installation and maintenance must be done by a suitably qualified person.
- When handling battery packs over 50 V, wear appropriate insulation protection, such as insulated gloves.
- Never short-circuit the terminals. Keep metal objects away from them, and keep the terminals covered until you connect them.
- Never open, crush, puncture or burn a battery, or let water or other liquids into it.
- Do not install or use a battery that has been dropped, punctured or wet. Contact AERL.

3.3 If a Battery Leaks

Electrolyte from a damaged battery can cause breathing difficulties, skin irritation and chemical burns.

- **Eyes:** rinse with running water for at least 15 minutes and get medical help promptly.
- **Skin:** rinse under running water for more than 15 minutes, take off contaminated clothing and get medical attention.
- **Breathed in or swallowed:** move to fresh air and get medical help immediately.

Full first aid and firefighting information is in the Safety Data Sheet.

Transport

Dangerous Goods classification, before it moves

04

4.1 Dangerous Goods Classification

Lithium-ion batteries are **Class 9 dangerous goods**. The LiFe² 5120S and Kakadu 120 Safety Data Sheets classify them as follows:

UN number	UN3480
Proper shipping name	LITHIUM ION BATTERIES
Class	9 (miscellaneous dangerous substances and articles)
Label	9A
Hazchem code	2Y
Road and rail (Australia)	Australian Dangerous Goods (ADG) Code
Sea	IMDG Code (EMS F-A, S-I)
Air	IATA Dangerous Goods Regulations



Figure 4.1 Class 9 dangerous goods label.

The All-In-One cabinet contains lithium-ion batteries and is also Class 9 dangerous goods.

4.2 Before It Moves

- Use a carrier licensed to carry dangerous goods, and follow the Australian Dangerous Goods Code and any other regulations that apply.
- Check the packaging for damage, odour or leaks first. **Never transport a damaged battery.**
- Protect the battery from water and impact, and secure it so it cannot move or tip.

4.3 Packing LiFe² 5120S Modules

- Cover the terminals, to prevent contact with metal objects and short circuits.
- Ship modules in their original packaging wherever possible, horizontal and firmly fastened to a pallet.
- Do not ship modules on end, and do not stack more than six.

AERL discharges LiFe² 5120S batteries to a low state of charge before it ships them, to comply with international transport regulations.

4.4 Kakadu 120 and All-In-One

The Kakadu 120 is shipped as three consignments: the cabinet (with its accessories box inside), the BMS units and the battery modules. Move an All-In-One cabinet upright, never tilted more than 10°, as its manual describes.

4.5 Sending a Battery to AERL

Contact AERL before you send a battery back to AERL, under warranty or at the end of its life. Never post a battery, and never send a damaged one. See the AERL Warranty Claims and Returns Guide.

End of Life

Never in the bin, what to do with an AERL battery

05

5.1 Never in the Bin

A lithium battery must never go in household or general waste, or into the sewer. At the end of its life it must be recycled through an authorised company, in line with the regulations where you are.

Until it is collected, store an end-of-life battery as you would any battery (Chapter 02): dry, out of sunlight and away from heat, and not in a humid or corrosive place.

5.2 What to Do with an AERL Battery

Battery	At the end of its life
LiFe² 5120S	Contact AERL to return the battery for assessment. Batteries that can be refurbished are tested and refurbished for charitable, community or educational use; those that cannot are recycled to recover as much material as possible.
Kakadu 120	Return the unit to AERL, or follow your local regulations for electronic waste and used batteries. Contact AERL first.
All-In-One	Dispose of the cabinet and its batteries through a licensed e-waste or battery recycler, as your state or territory environmental regulator requires. Contact AERL for advice on returning or recycling the batteries.

5.3 Battery Recycling Schemes

Australia's national battery stewardship scheme, **B-cycle**, takes small, loose batteries at its drop-off points. Its drop-off points **do not** take home energy storage batteries, and do not take damaged or swollen batteries. Do not take an AERL battery module to a B-cycle drop-off point.

For a battery AERL is not taking back, ask your local council or waste transfer station which licensed recycler accepts it, or search **recyclingnearyou.com.au** (Planet Ark).

Electronics at End of Life

E-waste

06

6.1 E-Waste

AERL's charge controllers, inverters, gateways, monitors and other electronics are electronic waste (e-waste) at the end of their life. The crossed-out wheelie bin on a product's label means: do not put it in general waste.

- Recycle it through a licensed e-waste recycler, as your state or territory requires. Some states ban e-waste from landfill: in Victoria, anything with a plug, battery or cord.
- To find an e-waste drop-off point, ask your local council or search recyclingnearyou.com.au.

Have a suitably qualified person disconnect and remove the product before it is recycled.

Support

Contact, related documents, change log

07

7.1 Contact

1800 950 865 · **support@aerl.com.au** · aerl.com.au

AERL Pty Ltd, 1/75 Bluestone Circuit, Seventeen Mile Rocks QLD 4073, Australia

7.2 Related Documents

- the LiFe² 5120S Installation and Operation Manual and Safety Data Sheet
- the Kakadu 120 User Manual and Safety Data Sheet
- the All-In-One User Manual
- the AERL Warranty Claims and Returns Guide.

7.3 Change Log

Revision	Date	Change
1.0.0	11 / 2026	First issue.

Thank You for Choosing AERL

If you have any questions about storing, moving or recycling a battery, contact AERL.

Sincerely,

The AERL Team

AERL Pty Ltd · 1/75 Bluestone Circuit, Seventeen Mile Rocks QLD 4073 · 1800 950 865 · support@aerl.com.au · aerl.com.au



Australian Energy Research Laboratories

ADDRESS

1/75 Bluestone Circuit
Seventeen Mile Rocks QLD 4073
Australia

CONTACT

sales@aerl.com.au
support@aerl.com.au

aerl.com.au

Phone
1800 950 865

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