

EASTAR

RECHARGEABLE ENERGY

Rechargeable Li-Ti AA Battery & USB-C Charger Set

[User Manual](#) | [Instruction Booklet](#)

Set Model: EA-LTC4

Battery Model: LT-AA500 (1.5V, 500mAh, Li-Ti rechargeable cell)

Charger Model: EA-DC04 (USB-C input, 4-slot)

Please read this manual carefully before first use and keep it for future reference.

Welcome to EASTAR

Thank you for choosing the EASTAR Rechargeable Li-Ti AA Battery & Charger Set. This set uses lithium-titanate (Li-Ti) cell technology, which is designed for a long cycle life, fast charging, and stable performance across a wide temperature range. Please read this manual fully before first use, and keep it for future reference.

Package Contents

Item	Qty	Description
Li-Ti AA Rechargeable Battery	4	Model LT-AA500, 1.5V / 500mAh
USB-C 4-Slot Battery Charger	1	Model EA-DC04
USB-C Charging Cable	1	For connecting charger to a 5V USB power source
User Manual	1	This booklet

Note: A USB power adapter (wall plug) is **not included**. The charger can be powered from any standard 5V USB-C power source, such as a computer USB port or a USB wall adapter.

Key Features

- Lithium-titanate (Li-Ti) chemistry for long cycle life and enhanced safety versus standard NiMH cells
- Standard AA size and 1.5V nominal voltage — compatible with most AA-powered devices
- USB-C input charger — charge from a laptop, power bank, or USB wall adapter
- Individual per-slot charging with LED status indicators (red = charging, green = fully charged)
- Built-in protections: overcurrent, overtemperature, short-circuit, reverse-polarity, and automatic shut-off when full

The Li-Ti Advantage: Built for High-Drain Devices

Standard lithium-ion AA rechargeable batteries offer solid energy density, but their capacity fades with repeated cycling and their voltage sags under heavy load or in cold weather. EASTAR's Li-Ti (lithium-titanate) cells trade some of that raw capacity for a highly stable crystal structure — delivering steady 1.5V output, strong continuous-current handling, and reliable performance in conditions that stop standard batteries cold.

Why Choose EASTAR Li-Ti Technology?

Feature	EASTAR LTO	Std Li-ion	Ni-MH
Lifespan Cycles	10x Longer*	1x (Baseline)	1.5x
Max Discharge Rate	5C (2.5A Cont.)	1C – 2C	0.5C – 1C
Operating Temp†	-40°C to 60°C	0°C to 45°C	-10°C to 40°C
Safety Profile	Ultra Safe	Thermal Risk	Safe

* Based on general lifespan characteristics of lithium-titanate (LTO) chemistry versus standard lithium-ion chemistry; this cell's own factory testing is validated to 1000 cycles (≥80% capacity retention).

Discharge range shown; charging is rated -20°C to 45°C (see Specifications).

EASTAR LTO cells passed abuse testing (short-circuit, overcharge, crush, and 130°C heating) with no fire or explosion; standard lithium-ion cells are more prone to thermal runaway under comparable abuse conditions.

Up to 10x Longer Cycle Life*

Lithium-titanate chemistry is widely recognized across the battery industry for cycle life far exceeding standard lithium-ion cells, thanks to its highly stable crystal structure. This cell is factory-validated to retain ≥80% of its original capacity after 300 full charge/discharge cycles — see full test conditions on the Specifications page.

*Based on the general cycle-life characteristics of lithium-titanate (LTO) chemistry compared to standard lithium-ion chemistry. Actual results depend on usage conditions.

Optimized for High-Drain, Real-World Devices

A 500mAh cell provides a shorter single-charge runtime than a high-capacity NiMH battery in low-drain devices such as remote controls. EASTAR AA cells are instead optimized for devices where steady voltage, high continuous current, and temperature resilience matter more than raw capacity:



Wireless Microphones & Audio Gear

Stable 1.5V output helps maintain a consistent signal, reducing the static and audio dropouts that can occur as a standard battery's voltage sags near the end of its charge.



Wireless Gaming Mice & Controllers

A flatter discharge curve helps reduce the cursor lag and input inconsistency caused by voltage sag in standard cells. This cell has also passed a 7-day leakage-resistance test (60°C / 85% RH), helping protect sensitive internal electronics from cell leakage.



High-Drain RC Vehicles & Motors

Rated for 2.5A (5C) continuous discharge, supporting sustained motor torque under heavy load without the steep voltage drop common in standard AA cells.



Outdoor Trail & Security Cameras

Rated for stable discharge down to -40°C, for dependable operation through winter conditions where standard batteries commonly fail.

Compatibility note: Because Li-Ti cells have a different voltage/discharge profile than standard alkaline or NiMH batteries, they are **not recommended for smoke detectors, medical devices, or other equipment that depends on a precise voltage reading**. For most other 1.5V AA devices, performance will match or exceed standard rechargeable batteries.

Product Specifications

Battery Specifications — Model LT-AA500

Item	Specification
Chemistry	Rechargeable lithium-titanate (Li-Ti)
Cell size	AA (Ø14.3 mm x 50.2 mm)
Nominal voltage	1.5V
Rated capacity	500 mAh @ 0.2C
Nominal energy	0.75 Wh
Charge voltage limit	1.76V maximum
Discharge cut-off voltage	0.0V
Max. continuous discharge current	2.5A (5C)
Cell weight	Approx. 17.3g
Operating temperature (charge)	-20°C to 45°C
Operating temperature (discharge)	-40°C to 60°C
Cycle life	≥80% of original capacity after 1000 charge/discharge cycles

Charger Specifications — Model EA-DC04

Item	Specification
Input	USB-C, 5V / 2A (10W max)
Output	1.76V / 250mA per slot (up to 4 batteries at once)
Charging slots	4 x AA
Total charging current	Approx. 1.0A – 1.4A (all 4 slots active)
Full charging time (per battery)	Approx. 2 hours from empty
Dimensions	76.8 x 66 x 23.5 mm
Weight	Approx. 35g
Operating environment	-20°C to 70°C, 20%-90% RH, non-condensing
Storage environment	-10°C to 35°C, 10%-65% RH, non-condensing
Housing material	Flame-retardant plastic (UL94 V-0 rated)

For indoor use only. Keep away from moisture, dust, and condensation.

Getting Started

1. Before first use

New batteries, or batteries that have been stored for a long period, should be fully charged before use.

2. Insert the batteries

Open the charger slots and insert the AA batteries, matching the + and - markings shown inside each slot. The charger is designed so batteries can only make contact when inserted correctly.

3. Connect power

Plug the USB-C cable into the charger, then connect the other end to a 5V USB power source (computer, power bank, or USB wall adapter, sold separately).

4. Charging begins

On power-up, all four LEDs will briefly light green for about 2 seconds as a self-check. Any slot without a battery will then turn off. Slots with a battery will show a steady red light while charging. A full charge from empty takes approximately 2 hours.

5. Charging complete

When a battery is fully charged, its LED turns steady green and that slot automatically stops charging. You can remove finished batteries at any time — the remaining slots will keep charging independently.

LED Indicator Guide

LED Status	Meaning
Green — flashes ~2s then off	Power-on self-check (no fault)
LED off	No battery inserted in that slot
Red — steady	Battery is charging normally
Green — steady	Battery is fully charged
Red — flashing (single slot)	That slot's current is too high; remove and reinsert the battery to reset
Red — flashing (all slots)	Total charging current too high, or PCB over-temperature; unplug and reconnect power, or allow the charger to cool

Built-in protections: The charger automatically stops charging if it detects overcurrent, overtemperature ($\geq 75^{\circ}\text{C}$), a short circuit, or reversed battery polarity, and resumes normal operation once the condition clears.

Important Safety Information

Please read and follow these precautions to prevent battery leakage, overheating, fire, or explosion.

Battery Warnings

- Only charge these batteries using the included EASTAR charger or another charger specifically qualified for Li-Ti AA cells.
- Do not charge batteries at temperatures below -20°C or above 45°C.
- Never disassemble, crush, puncture, bend, or deform the battery, and do not insert foreign objects into it.
- Do not short-circuit the battery or allow metal objects to touch the terminals.
- Do not expose batteries to fire, water, seawater, or other liquids (including drinks).
- Do not mix these batteries with other brands, chemistries (e.g. alkaline or zinc-carbon), or with partially used batteries.
- Keep batteries out of reach of young children. Battery use by children should be supervised, and a battery should never be swallowed — seek medical attention immediately if this occurs.
- If a battery leaks, avoid skin or eye contact with the electrolyte. If contact occurs, rinse thoroughly with clean water and seek medical advice.
- Stop using a battery immediately if it produces an odor, becomes hot, changes shape or color, or otherwise appears abnormal.
- Insulate the terminals of a used or depleted battery (e.g. with tape) before disposal to prevent short-circuiting.

Charger Warnings

- For indoor, dry use only. Do not place the charger in water, rain, or high-humidity environments.
- Do not place the charger in high-temperature environments, near open flame, or in direct sunlight.
- Do not disassemble the charger. It contains no user-serviceable parts.
- Use only a standard 5V USB-C power source. Do not use a damaged USB cable or power adapter.
- Keep the charger clean and free of dust; wipe the contacts with a dry cloth if dirty to maintain a good connection.

Disclaimer: EASTAR is not responsible for damage or injury resulting from use that does not follow the instructions and precautions in this manual, or from use of non-qualified chargers or batteries.

Storage & Care

- Store batteries and the charger in a cool, dry place, ideally 20°C-25°C and below 50% relative humidity, away from dust and corrosive gases.
- If storing batteries for an extended period, keep their charge level between 1.45V and 1.76V, and recharge them at least once every 6 months to maintain battery health.
- Do not leave a battery unused for longer than 6 months without recharging, as this can affect safe recharging afterward.
- Keep the charger's storage environment between -10°C and 35°C with 10%-65% relative humidity, non-condensing.
- Avoid dropping the batteries or charger, especially onto hard surfaces. If you suspect impact damage, stop use and have it inspected.

Troubleshooting

Issue	Possible Cause / Solution
LED does not light when battery inserted	Check the battery is inserted with correct polarity, and that the charger is receiving USB power.
Single LED flashing red	That slot detected a charging-current fault. Remove and reinsert the battery to reset.
All LEDs flashing red	Total current or temperature limit reached. Unplug the charger, let it cool, and reconnect power.
Battery drains faster than expected	Avoid charging below 0°C, and avoid mixing new and partially used batteries.
Charger feels warm during use	Mild warmth during charging is normal. If it becomes hot to the touch or an odor is present, unplug immediately and discontinue use.

Frequently Asked Questions

Q: Can I charge these batteries in a standard NiMH or alkaline charger?

A: No. Use only the included EASTAR charger, or another charger specifically qualified for Li-Ti AA cells. Standard NiMH/alkaline chargers use different voltage and current profiles and are not compatible.

Q: Why is the voltage 1.5V instead of the 1.2V common on rechargeable batteries?

A: Most rechargeable AA batteries (NiMH) run at 1.2V nominal, which can undercharge or run slightly weak in devices calibrated for 1.5V alkaline batteries. This Li-Ti cell outputs a true 1.5V, so it behaves more like a standard alkaline battery in most devices.

Q: Do I need to fully charge new batteries before first use?

A: Yes. Fully charge new batteries, or any batteries that have been stored for a long period, before using them for the first time.

Q: How long does a full charge take?

A: Approximately 2 hours per battery from empty, using the included USB-C charger.

Q: Can I mix these batteries with other brands or battery types?

A: No. Do not mix Li-Ti batteries with other brands, chemistries (such as alkaline or NiMH), or with partially used batteries in the same device, as this can cause uneven discharge.

Q: Are these batteries safe for smoke detectors or medical devices?

A: We do not recommend using Li-Ti batteries in smoke detectors, medical devices, or other equipment that depends on a precise voltage reading, due to differences in discharge profile versus standard batteries.

Warranty

This product is covered by a 12-month limited warranty from the date of purchase, covering manufacturing defects under normal use. This warranty does not cover damage caused by misuse, unauthorized disassembly, use of non-qualified chargers, or failure to follow the instructions in this manual. For warranty service, please contact EASTAR customer support or your Amazon seller account for this product.

Disposal & Recycling

This product contains a rechargeable battery. Do not dispose of it in regular household waste. Please recycle or dispose of used batteries and electronic components according to your local regulations. Insulate the battery terminals with tape before disposal or recycling.

Contact Us

Brand: EASTAR

Support email: sales@eastarbattery.com

For questions about this product, please reach out through your Amazon order page or the contact details on the product packaging.