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LiitoKala LII-M4

LiitoKala LII-M4 Universal Battery Charger User Manual

Model: LII-M4

Brand: LiitoKala

1. Introduction

Thank you for choosing the LiitoKala LII-M4 4-Bay Universal Battery Charger. This intelligent charger is designed to provide efficient and safe charging for a wide range of cylindrical rechargeable batteries, including various Li-ion and NiMH/Cd types. It features an intuitive LCD display for real-time monitoring, multiple operating modes, and advanced safety features to protect your batteries and devices.

2. Safety Precautions

- Read this manual carefully before use to ensure proper operation and prevent damage.
- This charger is designed for cylindrical Li-ion (3.7V) and NiMH/Cd (1.2V) batteries only.**Do not attempt to charge LiFePO4 batteries or 1.5V AA/AAA batteries.**
- Ensure the input power supply is 5V/2A. Using an inadequate power supply may affect performance.
- Observe correct polarity (+/-) when inserting batteries to prevent short-circuiting or damage.
- Do not exceed the recommended charging current for your batteries. Refer to your battery's specifications.
- Provide adequate ventilation during charging to prevent overheating. Do not cover the charger.
- Keep the charger away from water, moisture, and high temperatures.
- Do not disassemble or modify the charger. This will void the warranty and may cause harm.
- Keep out of reach of children. Adult supervision is recommended.

3. Product Overview



Figure 3.1: LiitoKala LII-M4 Charger and accessories.

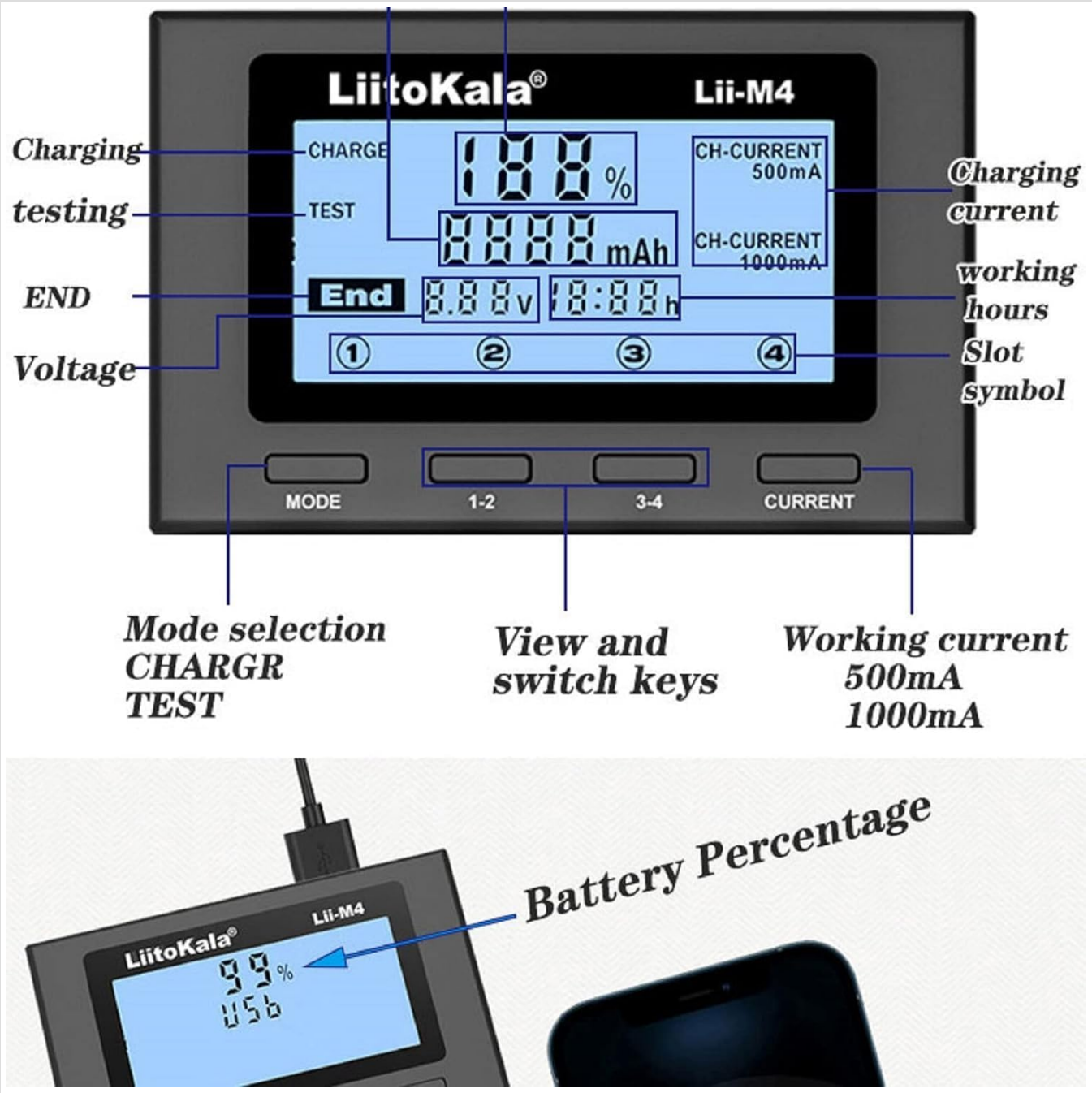


Figure 3.2: Detailed view of the LCD display and control buttons.

3.1. Components

- **4 Independent Charging Bays:** Each bay can charge and monitor batteries independently.
- **LCD Display:** Shows real-time information for each battery.
- **Control Buttons:** MODE, 1-2, 3-4, CURRENT.
- **USB Type-C Input Port (IN: 5V/2A):** For connecting the charger to a power source.
- **USB Output Port (OUT: 5V/1A):** Functions as a power bank when a battery is in the 4th slot.

3.2. LCD Display Information

The LCD display provides comprehensive information for each charging bay:

- **Operating Mode:** Displays 'CHARGE' or 'TEST'.
- **Battery Voltage (V):** Current voltage of the battery.
- **Working Current (mA):** Selected or actual charging/discharging current.

- **Charging Time (H):** Elapsed time for the current operation.
- **Battery Capacity (mAh):** Accumulated capacity during charging or measured capacity during testing.
- **Power Percentage (%):** Estimated charge level of the battery.
- **Slot Symbol (1, 2, 3, 4):** Indicates the active bay.

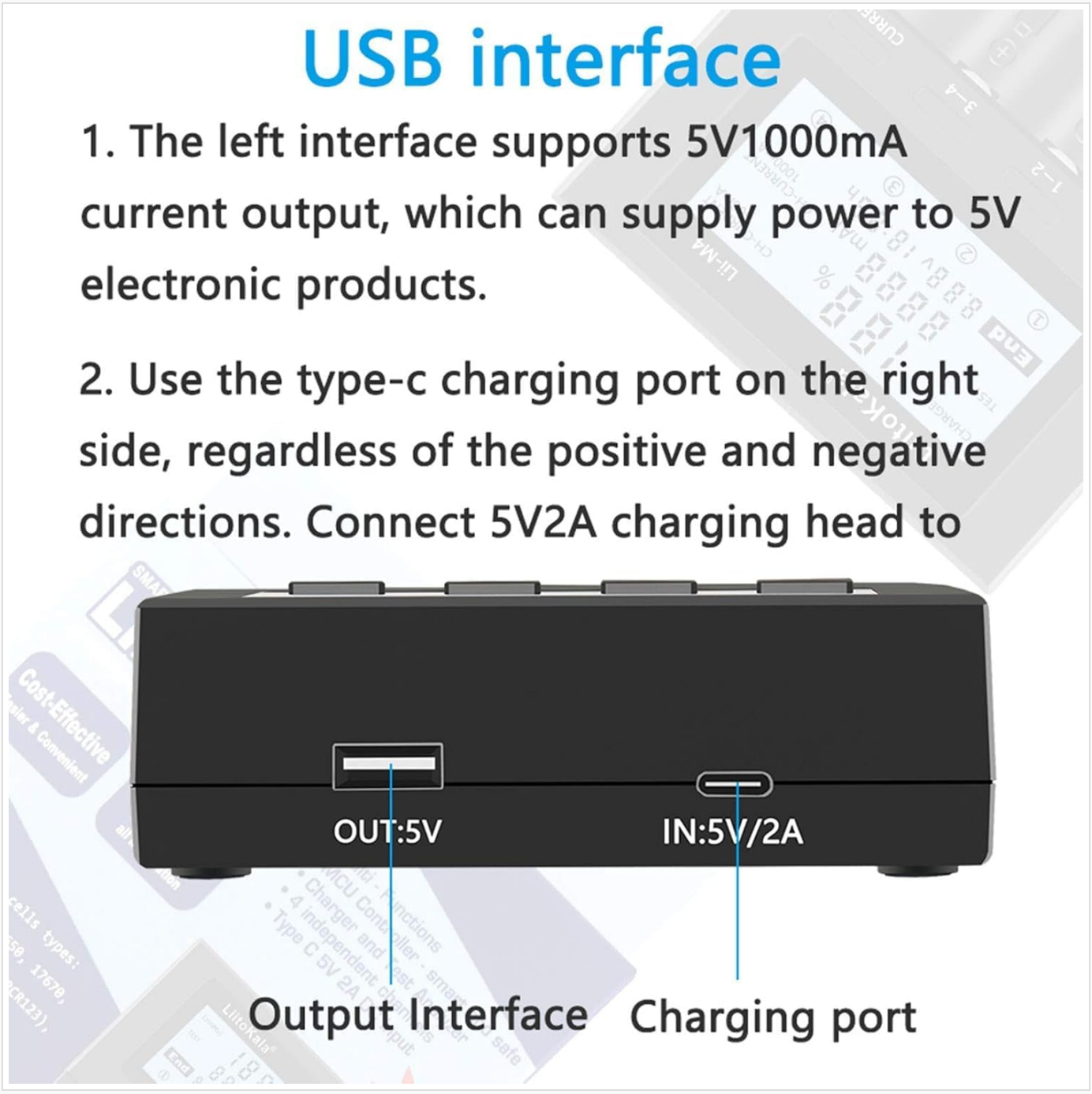


Figure 3.3: USB Type-C input and USB-A output ports.

4. Setup

1. **Connect Power:** Plug the provided USB Type-C cable into the 'IN: 5V/2A' port on the charger and connect the other end to a compatible 5V/2A USB power adapter (not included). The LCD display will light up.
2. **Insert Batteries:** Carefully insert your rechargeable batteries into the charging bays, ensuring correct polarity (+/-). The charger will automatically detect the battery type and begin charging in 'CHARGE' mode by default.

5. Operating Modes

5.1. Charge Mode

In 'CHARGE' mode, the charger will automatically charge the inserted batteries. You can adjust the charging current:

- Press the 'CURRENT' button to cycle between 500mA and 1000mA charging currents.
- The selected current will apply to all active charging bays.



Figure 5.1: The charger can accommodate two 26650 batteries simultaneously.



Figure 5.2: Compatible with various Li-ion and NiMH/Cd battery sizes.

5.2. Test Mode (Capacity Detection)

The 'TEST' mode allows you to determine the true capacity of your batteries. The process involves three steps:

1. **Full Charge:** The battery is charged to its maximum capacity.
2. **Full Discharge:** The battery is then discharged while the charger measures the discharged capacity (mAh).
3. **Full Charge:** Finally, the battery is recharged to full capacity.

To activate 'TEST' mode:

- Insert the battery into a bay.
- Press the 'MODE' button to cycle through 'CHARGE' and 'TEST' modes. Select 'TEST'.
- The test process will begin automatically. The measured capacity will be displayed on the LCD.

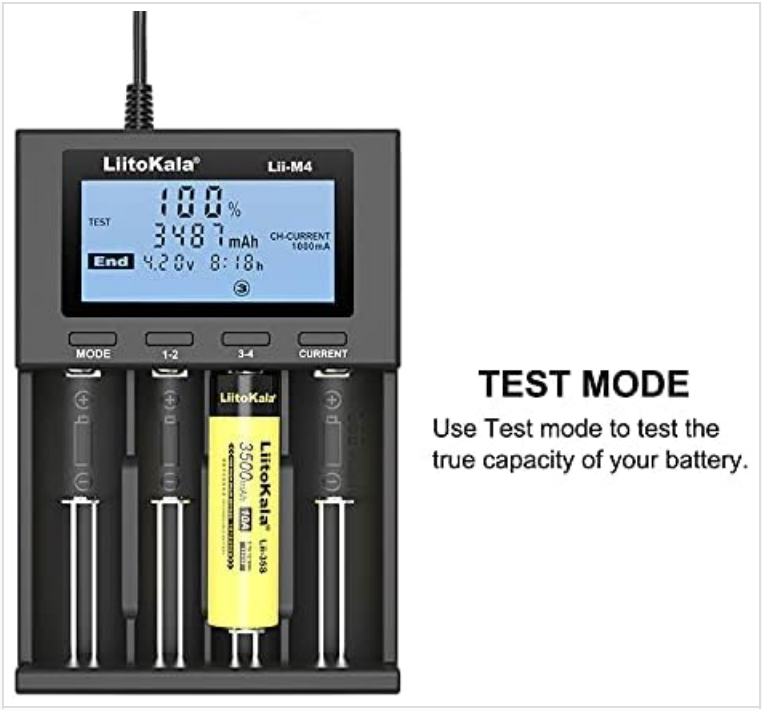


Figure 5.3: Charger displaying information in Test Mode.

5.3. USB Output (Power Bank Function)

The LII-M4 can function as a power bank to charge external devices (e.g., smartphones) using the USB output port.

- Insert a charged Li-ion battery into the **4th slot** (rightmost bay).
- Connect your device to the 'OUT: 5V' USB port using a compatible USB cable.
- The charger will provide a 5V/1A output. Note that NiMH batteries are not supported for USB output.



Figure 5.4: Using the USB output to charge a mobile phone.

5.4. Operational Demonstration Video

Video 5.1: Official demonstration of the LiitoKala LII-M4 charger's features, including battery insertion, mode selection, and USB output functionality.

6. Compatible Battery Types

The LiitoKala LII-M4 charger supports a wide range of cylindrical rechargeable batteries:

- **3.7V Li-ion Batteries:** 18650, 26650, 22650, 20700, 18490, 18500, 18700, 17335, 17670, 17500, 16340 (RCR123), 14500, 10440, 14650, 25500, 32650.
- **1.2V NiMH/Cd Batteries:** AA, AAA, SC, C Size.

Important Note:

- This charger cannot charge 1.5V AA/AAA batteries.
- It is not compatible with LiFePO4 batteries.
- For 21700 batteries, only flat-top versions can be charged. Other 21700 battery types are not supported.

7. Maintenance

- Clean the charger and charging bays regularly with a dry, soft cloth. Do not use abrasive cleaners or solvents.
- Ensure the charging contacts are free from dust and debris for optimal performance.
- Store the charger in a cool, dry place away from direct sunlight and extreme temperatures when not in use.
- Disconnect the power supply before cleaning or when not in use for extended periods.

8. Troubleshooting

- **Charger not powering on:** Ensure the USB Type-C cable is securely connected to a 5V/2A power source. Try a different cable or power adapter.
- **Battery not detected/charging:** Check if the battery is inserted with correct polarity. Ensure the battery is a compatible type (Li-ion 3.7V or NiMH/Cd 1.2V). The charger has battery zero voltage activation, which may revive deeply discharged batteries.
- **Slow charging:** Verify that the selected charging current is 1000mA if faster charging is desired. Ensure your power adapter provides sufficient current (5V/2A).
- **Error message on LCD:** Refer to the specific error code (if any) in the full manual. Common protections include anti-reverse connection, short-circuit protection, and overcharge protection. If an error persists, remove the battery and try again.
- **USB output not working:** Ensure a charged Li-ion battery is inserted in the 4th slot. NiMH batteries do not support USB output.

9. Specifications

Feature	Specification
Model	LII-M4
Input Voltage	DC 5V/2A (min)
Output Voltage (Li-ion)	DC 4.20V 1000mA*2 / 500mA*4

Output Voltage (NiMH/Cd)	DC 1.48V 500mA*4
USB Output	DC 5V 1000mA
Compatible Battery Types	3.7V Li-ion (26650, 22650, 20700, 18650, 18490, 18500, 18700, 17335, 17670, 17500, 16340, 14500, 10440, 14650, 25500, 32650), 1.2V NiMH/Cd (AA, AAA, C, SC)
Product Dimensions	5.6 x 1.2 x 3.9 inches
Item Weight	9.1 ounces
Certifications	CE, FCC, UL

10. Warranty and Support

LiitoKala products are manufactured with high standards of quality and durability. For warranty information or technical support, please refer to the official LiitoKala website or contact your retailer. You can also visit the LiitoKala Store on Amazon for more information and product updates.

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