

Warnings

- Before using battery charger, read all instructions and caution markings on the charger, battery and device using battery.
- To reduce the risk of injury, charge only Li-Ion, IMR, Ni-MH, Ni-Cd, LiFePO4 rechargeable batteries.
- Do not charge primary cells like Alkaline, Zinc Carbon, Lithium or any batteries other than accepted above, as this could result in battery explosion, cracking or leaking, causing property damage and/or personal injury.
- The product should not be used immediately after it has been brought from an area of cold temperature to an area of warm temperature. Condensed water might destroy the product. Wait until the product adapts to the new ambient temperature before use.
- Keep batteries away from fire to prevent explosion.
- For proper insertion, please observe polarity indicators (+/-).
- For indoor use only. Do not expose to rain or snow.
- Do not place in or near water or extreme heat.
- Do not use charger with damaged cord or plug.
- Do not use charger if it has been severely damaged in any way.
- Do not disassemble charger.
- Disassembly may result in a risk of electric shock or fire.
- To reduce the risk of electric shock, unplug the charger from the outlet when not in use.
- Batteries should be removed from the device if it is not used for a long period of time to avoid damage through leaking. Leaking or damaged batteries might cause acid burns when in contact with skin, therefore use suitable protective gloves to handle corrupted batteries.
- Never charge or discharge any battery having evidence of leakage, expansion/swelling, damaged outer wrapper or case, color-change or distortion.
- Please make sure the correct settings are chosen. Incorrect settings may damage the charger or cause fire or explosion.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.
- For connection use an attachment plug adapter of the proper configuration.
- Do not expose the device to direct sunlight, heating devices, open flames; avoid extreme high or extreme low ambient temperatures and sudden temperature changes.
- Please operate the charger in a well-ventilated area. Do not operate or store it in damp area. Keep all the inflammable volatile substances away from operating area.
- Avoid mechanical vibration or shock as these may cause damage to the device.
- The safe operation temperature for the charger is between -10 to 40°C, and the safe storage temperature is -20 to 60°C.
- Do not short-circuit slots or other parts of the device. Do not allow metal objects come into contact with charger. May cause electric shock, excessive heat, or fire.
- Do not place heavy objects on top of the charger. Avoid unstable locations like areas with strong magnetic fields or dust. Excessive heat or fire may cause.
- Do not touch hot surfaces. The rechargeable batteries or the device may become hot at full load or high power charging/discharging.
- This power unit is intended to be correctly oriented in a vertical or floor mount position.

Service and Warranty

Armytek provides free warranty repair for 5 years from the date of purchase (excluding batteries, switches and connectors which have 2 years warranty). Warranty doesn't cover damage caused by improper usage, described above in Warnings section.

Armytek Optoelectronics Inc.

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Specifications are subject to change without notice.

Uni C2 Universal charger

THE MOST TECHNICALLY ADVANCED
FLASHLIGHTS AND CHARGERS IN THE WORLD

USER MANUAL

Thank you for choosing the products of Armytek Optoelectronics Inc., Canada.
Please read this manual carefully before using the flashlight.

Specifications

Armytek Optoelectronics Inc. is a Canadian manufacturer that produces smart and universal chargers designed especially for your needs. The components by the USA and Japan. **5 years no-hassle warranty.**

 AUTO DETECT	Intelligent automatic detection of battery type, charge level and optimal current	 MULTI-COLOR LED	Multi-color LED indication with Night mode and useful 5 LEDs per channel
 ALL TYPES	Supports IMR, Li-Ion 4.2V, Li-Ion 4.35V, Ni-MH, Ni-Cd and Li-FePO4 batteries	 ±C°	Designed for excellent heat dissipation and made with fire-proof materials
 2x1A	Quick charge with fully independent channels and 1A current for each	 AUTO TEST	Auto-detection of bad batteries, reverse polarity and primary batteries
 SIMPLE CONTROL	Easy selection of battery type and charge current with one button per each channel	 CAR ADAPTER	Monolithic design with AC 85-264V input and DC 9-14V car adapter inside
 0V START	Over-discharged and sleeping battery activation function with safe 0.1A current	 AUTO STOP	Automatically stops the charging when complete depending on the battery

Additional features:

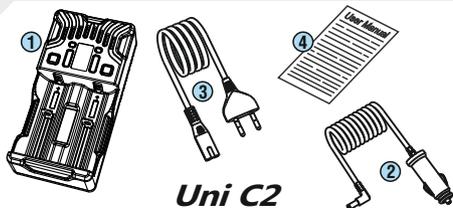
- Charging of the batteries with diameter 10..32mm and length 30..70mm, for example: AA, AAA, AAAA, C, D, 10440, 14500, 16340, 18350, 18650, 26650, 32650
- Digital control of precise charge algorithm and advanced safety features to extend battery lifespan
- Instant battery type and current indication upon installation and their easy individual settings per channel (after auto-detection of IMR/Li-Ion 4.2V or Ni-MH/Ni-Cd 1.5V)
- Capability of hand settings for battery type and low current, also charging of battery, which is recognized as bad
- Always visible LED indication of the current and battery charge level per each channel (without button touching)
- Auto-memorization of last used battery type
- Night mode of LED indication with lower brightness after 30 sec
- Short-circuit and overtime prevention to protect batteries (20 hours for 0.5/1A and 30 hours for 0.1A current)
- Soft-start function to avoid damage from high current
- Optimized charge algorithm for IMR and Li-Ion/Li-FePO4 batteries with Trickle charge and CC/CV stages
- Utilizes independent negative delta V control (dV/dt) for Ni-MH/ Ni-Cd batteries charging termination

Technical parameters:

Input: AC 85-264V / 0.5A (50/60Hz) or DC 9-14V / 1A
Output per each channel:
Voltage: 4.35V / 4.2V / 3.7V / 1.5V
Current: 1A / 0.5A / 0.1A
Low Cut-off current: 40mA (0.5A) or 80mA (1A)
Size / Weight: 145x72x37mm / 168g



Set description



Items included in the package:

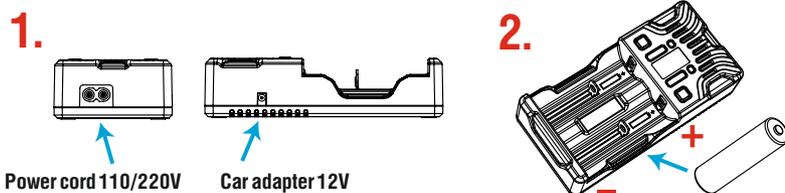
- 1 - Charger
- 2 - Car adapter 12V
- 3 - Power cord 110/220V
- 4 - Manual

Uni C2



- ✓ Your charger can inconsiderably differ from the pictures in the manual.
- ✓ The producer reserves the right to change the package at his own discretion without modifying this manual.

Initial Service



To start of charging:

1. Install power cord 110/220V or car adapter 12V into other socket.
2. Place the batteries with the positive contact (+) facing the top of the charger (the sign of battery is shown in each channel).

The charger is ready for operation.



We DO NOT RECOMMEND to leave batteries inside the charger for a long storage period, as batteries can leak for various reasons and damage the inner parts of the charger. If you have noticed any signs of batteries' defects then withdraw them from the charger and utilize.

Basic Operation

Initialization



When all slots are empty.

Initialization. All LEDs of each channel turn on with orange color one by one (after switching on the power). Then top LED turn on with green color, if the slot is empty. It means that the charger is ready.

When the battery is installed in the slot then the charging will start immediately.

Auto-start

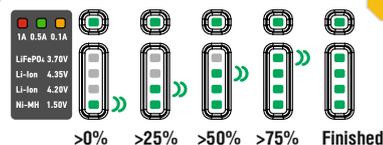


When left slot has Ni-MH battery and right slot has Li-Ion 4.2V battery.

Auto-start. There is an auto-detection of IMR/Li-Ion 4.2V or Ni-MH/Ni-Cd batteries, which will be shown by red LEDs in proper line. Top LED will blink by green to show charge current as 0.5A.

The charging will start automatically after 5 seconds.

Charging

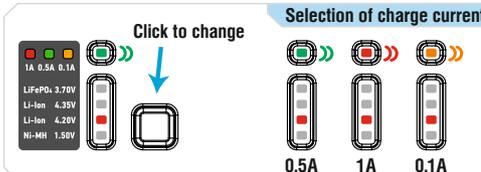


Charging. Top LED shows by green color that the charging goes with 0.5A current by default.

Always you can see an actual charge level (without button touching). The blinking shows which charge stage is going (>0%, >25%, >50% or >75%).

If the charge is finished then all LEDs will stay green and stop blinking.

Advanced Operation

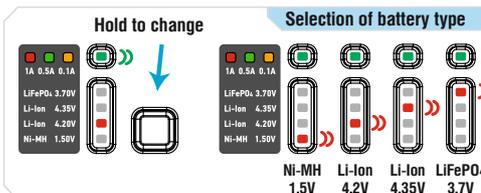


Selection of charge current

Selection of charge current. You can change the current during 5 seconds of Auto-start phase. Also while charging click the button of proper slot to see the type of battery. Anyway the blinking of top LED invites you to change the current.

Shortly click the button to change the current cyclically: 0.5A -> 1A -> 0.1A -> 0.5A etc. Leave the button for 3 seconds to finish the selection.

We recommend to use 1A current for batteries with capacity higher than 2000mAh. But 0.1A current is better for old batteries, also when capacity is less than 300mAh. Otherwise, 0.5A can be used as default current.



Selection of battery type

Selection of battery type. You can change the type of battery during 5 seconds of Auto-start phase. Also while charging click the button of proper slot. When you see the blinking of top LED, hold the button (it works for any charge current).

While pressing the button 4 LEDs will become red and start blinking cyclically, one by one. Leave the button for 3 seconds to finish the selection. When the voltage is higher than 1.7V then "Ni-MH" type will be passed during cycling.

Auto-memorizing of battery type. The last used type of battery is memorized for quick start at next switching on. Also it is convenient when the electricity is switched off temporary. Then the charger can continue the process with correct battery type.

How to prepare IMR/Li-Ion batteries for storage. When you need to keep your batteries for some months without usage then select the type of battery "LiFePO4 3.7V" during charging. The voltage 3.7V is accepted for storage of these batteries.

Night mode of LED indication. The brightness of LEDs will become lower after 30 seconds from last button touching. Click the button to return back maximal LED brightness.

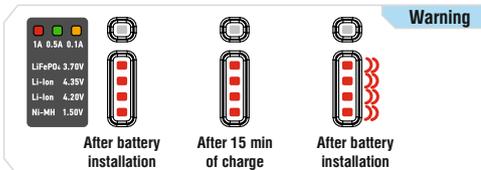
Overtime prevention. The charger protects the batteries by limitation of charge time (20 hours for 0.5/1A and 30 hours for 0.1A current).

The time of charging. Precise charge algorithm utilizes independent negative delta V control (dV/dt) for Ni-MH/ Ni-Cd batteries charging termination and optimized firmware for IMR and Li-Ion/Li-FePO4 batteries with Trickle charge and CC/CV stages. The charger automatically stops when complete depending on the type of battery and can vary on different conditions.

Active temperature control. The charger design is developed for excellent heat dissipation. Anyway when the temperature will stay much higher then the charge current will be reduced from 1A to 0.5A.

Battery stand-by charging. When the battery was left in the charger for a long time and the voltage was reduced below accepted level then the charging will start again. It can help to keep the battery charged.

Warning indication



Warning

Constant 4 red lights after battery installation. The battery has very high resistance and recognized as bad (it can be primary battery or have low-quality chemistry).

Constant 4 red lights after 15 minutes of charge. Li-Ion/LiFePO4 battery did not reach 3V during normal time for restoration because of weak chemistry. You could try again the charging, but we suggest to change this battery.

4 blinking red lights after battery installation. The battery is installed in wrong polarity or has short-cut connection. Eliminate these mistakes and try the charging again.

0V battery activation. This charger can activate over-discharged and sleeping batteries with safe 0.1A current automatically.

Auto-detection of abnormal situations. The charger recognizes bad batteries, reverse polarity and primary batteries.

It is restricted to charge primary batteries! The function of auto-detection for different primary batteries can work unstable.

Do not charge broken batteries, when the contacts can be short-cutted!

Handy start of bad battery. The charging of battery, which is recognized as bad, can be started by holding the button while installing this battery into proper slot. Also we recommend to select safe current 0.1A. You should understand that better is do not use bad batteries.