

# NWCR-102

## Charging rack



Faster • More reliable



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# 1 NWCR-102 Charger Rack Features

NWCR-60 Charger Rack is double side charger rack with 60 charging ports. Each charging port is a fast intelligent charger specially designed for New Wisdom KL8M/ KL5M series Lithium battery LED light cap lamp. As a new generation charger rack of New Wisdom, it has the following significant features:

## **Faster charging**

After applying the intelligent fast charging technology, the time to full charge the lamp is much less than before. For the KL5M cap lamp, it takes only 3hours to get full charge; while for the KL8M, less than 5hours is enough.

## **Higher efficiency, less heat**

Compared with the past generations of the chargers, the Charger PCB of NWCR-60 is improved to be more efficient. Even charged in full power, it generates only a little heat.

## **Wide Range of Voltage**

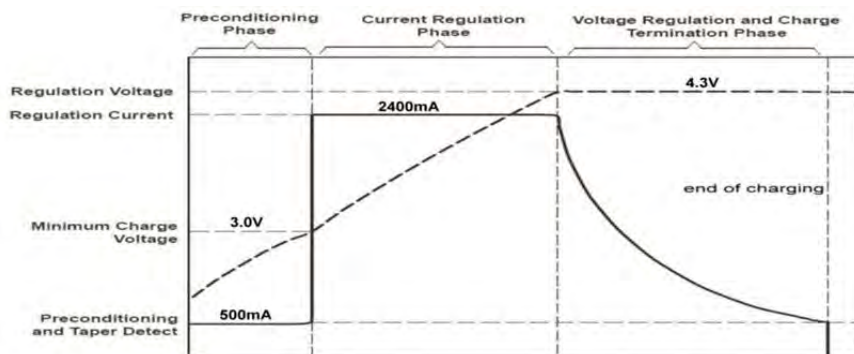
Voltage range of the AC power Supply is: 85V~265V

The wide range makes the charger applicable to specific voltage standard in all countries.

## **Environmentally-friendly**

The charger rack is designed in accordance with the Restriction of Hazardous Substances Directive (RoHS). RoHS standard is strictly followed in the whole process, from choosing the material to designing the production technical.

## 2 Battery Charging Mechanism



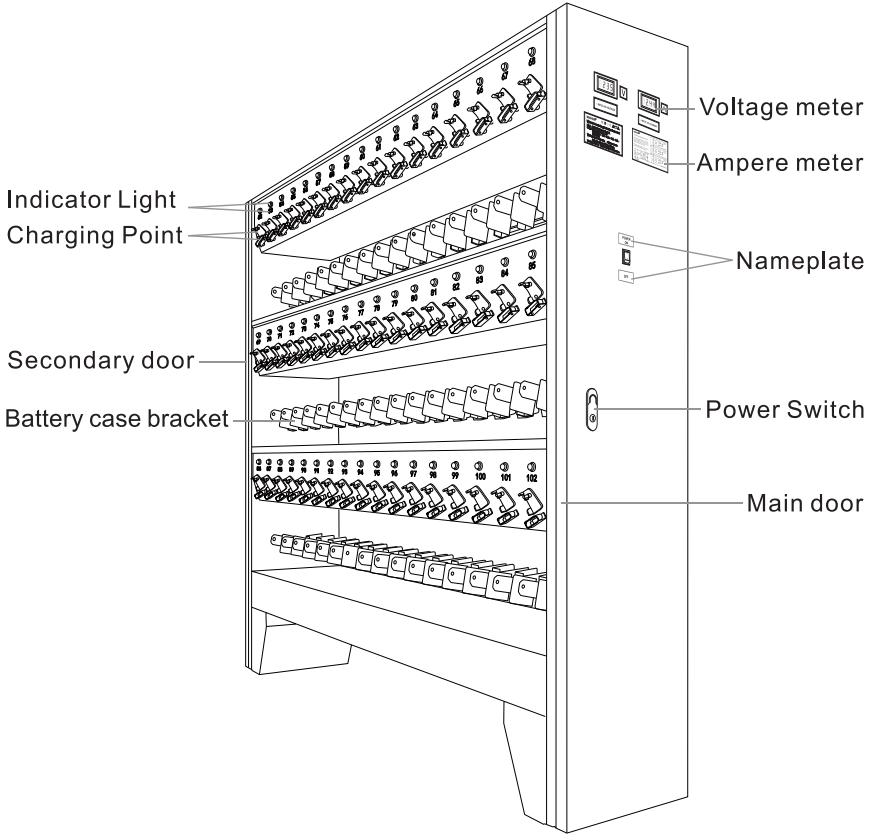
The Lithium-ion battery makes use of both constant current and constant voltage charging methods. The charging current is  $2200\text{mA} \pm 100\text{mA}$  (Max) for MSHA KL5M cap lamp /  $2400\text{mA} \pm 100\text{mA}$  (Max) for non-MSHA cap lamp; voltage is  $4.30\text{V} \pm 0.05\text{V}$  with approximately 3-4hours for charging. The circuit is designed with a steady state charging and control system which automatically regulates the charging process. The circuit we design is near the theoretical charging requirement of the Li-ion battery. For a discharged battery a constant current charge is employed at  $2400\text{mA}$ (or  $2200\text{mA}$ )  $\pm 100\text{mA}$  (the charger indicator light is red). When the battery voltage reaches  $4.30\text{V}$ , the battery switches to a constant voltage charge (at this point the battery is approximately 80% charged) and the current gradually decreases. When the battery is sufficiently charged it automatically cuts off the circuit to protect the battery from over charging (the charger indicator light flashes at green).

**Note:** It is not necessary to wait until the battery is completely discharged before charging. Charging can be undertaken at any stage of the battery capacity and actually it prolongs the life span of the battery if charging is taken before complete discharge.

### 3 Technical specifications

Features	NWCR-60 Specifications
AC input voltage	85~265V , 50~60Hz, 1300VA
DC output voltage	4.80V±0.05V (Max)
DC output current	2200mA±100mA (Max) for MSHA KL5M cap lamp 2400mA±100mA (Max)
Size	115 x 36 x 171cm
Weight	125kg

# 4 Structural Parts

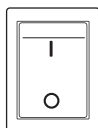
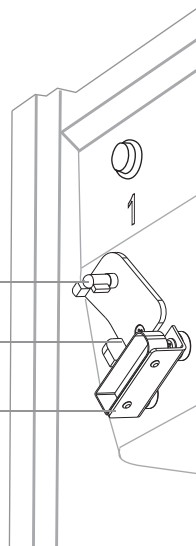




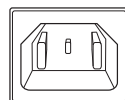
Brass pin (Cathode of the charger)

Charger Base

Connected metal base  
(Anode Spring Metal Piece)



Power Switch



Electrical Outlet

**WISDOM®**



### NWCR-102 Li-ion battery mining lamp charger rack

Input: AC85V-265V,50-60Hz,2.0A

Output: Voltage DC4.30±0.05V

Current 3.0A ■ 2.5A ■ 2.0A ■ 1.5A ■ 1.0A ■

Unit 102Unit

Working style: continuously

ID:NWCR211012626C

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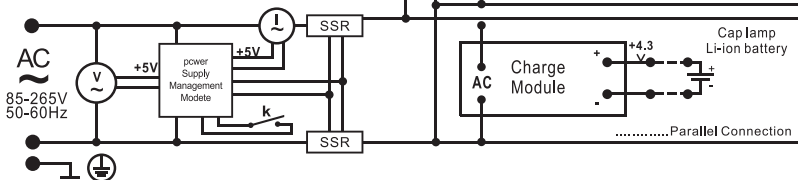
Nameplate

**WISDOM®**

#### NWCR Series Charger rack circuit

NWCR Series Charger rack circuit is workable in the world wide power ner werk, with wide inprnt voltage 85-265V,50-60Hz, work very well and reliable in the instable power net work.

NOTE:input cable cross section  $\geq 2.5\text{mm}^2$ , and well connect the charger rack with ground prtction

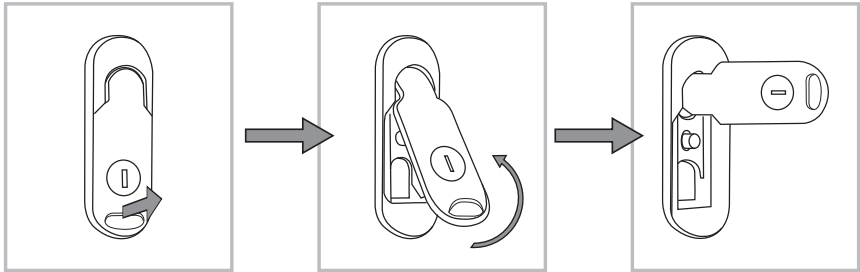


# 5 Installation instructions

Remove the wooden boards of the outer packing.  
Remove the protecting film of NWCR-30 Charging rack.  
Install the 4 foots of the charging rack.



Place the charging rack to right location.  
Unlock and open the main door.



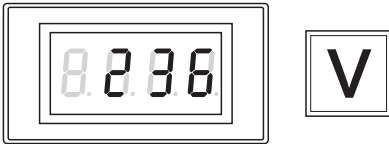
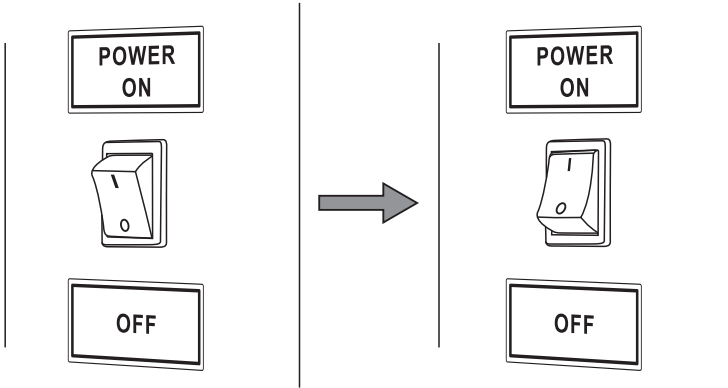
Connect AC cable into the junction box.



**Warning: make sure the cable is without electricity and switch off the power when connect the AC cable!**

# 6 User Guide

Switch the button to “ON” to launch the charging rack and supply power to AC cable. In this situation, the indicator lights of each charging point turns green, the Voltmeter shows the voltage and ammeter shows the current.

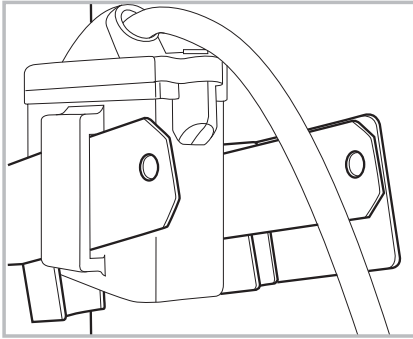


~ INPUT AC VOLTAGE

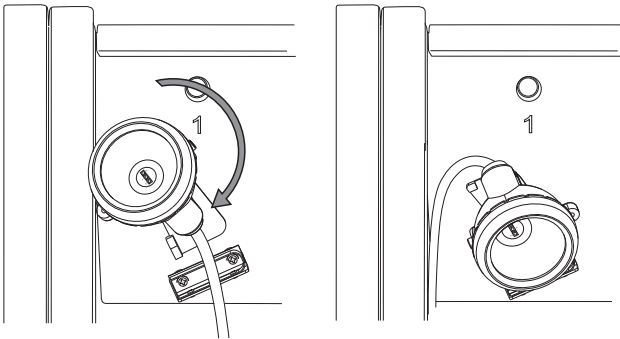


~ INPUT AC CURRENT

Put the KL5M/KL8M cap lamp's battery case into the bracket.



Put the KL5M/KL8M cap lamp connected with the charging port. Fix the brass pin (cathode) of the charger to the hole of the cap lamp clip



Rotate the cap lamp 180 degree clockwise, making sure the anode touch point of the head lamp closely connect to the connected metal base (anode spring metal piece), and then the indicator becomes red showing the lamp is in charging. The value of the ampere meter will go up as the charging cap lamps increased.

When the indicator of the charger flashes between green and red, it means the battery is at least 90% charged. The KL5M/KL8M can work for more than 14h continuously if stop charging at this moment. If the indicator of the charger flashes at green only, then the battery is fully charged.

Rotate the cap lamp 180 degree anti-clockwise; take it off from the charger.

## 7 Meaning of the Indicator Signal

Indicator signal	Meaning
Indicator off	Charger is switched off without power
Green on	Charger is in working condition without load
Red on	Charger is in working condition with load(fast charging)
Flash between green and red	Small currency charging and the battery is at least 90% charged.
Flash at green	Battery is fully charged
Flash at red	Charger is out of function

# 8 Troubles and Troubleshooting

Indicator signal	Meaning	Indicator signal
Indicator off Green on	Charger is switched off without power	Indicator off
	Charger is in working condition without load	Green on
Red on	Charger is in working condition with load(fast charging)	Red on
Flash between green and red	Small currency charging and the battery is at least 90% charged.	Flash between green and red
Flash at green	Battery is fully charged	Flash at green

## 9 Notes

Strictly follow the voltage range during usage.

The NWCR-60 charger rack is specially designed for the New Wisdom KL5M/ KL8M series cap lamp, hence it's better not to charge other lamps; otherwise the battery may damage.

Turn off the cap lamp when charging.

Regularly clean the connected metal base (anode spring metal piece) and the brass pin (cathode) to make sure they can be in good connection.

It's better to turn off the charger rack when the charging is finished.



# 10 Safety Warnings

Prohibited to pour water on the charger rack and use it in humid environment otherwise it will run into short circuit.

Prohibited to crash or strike the charger rack, it may cause the nut loosen and the inside circuit board damage.

The junction box must be covered well. It is forbidden to touch the junction box while the charging rack is working, otherwise it will pose a risk of electric shock.

# 11 Package

Use wooden case as outer packing. size:192x41x176cm, weight 250kg.