

# KL8M Miner's Cap Lamp Booklet

## TABLE OF CONTENTS

1. KL8M Cap Lamp Features .....	2
2. KL8M Cap Lamp Technical Specifications .....	2
3. KL8M Cap Lamp Structural Parts .....	3
4. KL8M User Guide.....	4
5. Troubles and Troubleshooting .....	6
6. Notes .....	6
7. Safety Warnings .....	6
8. Package .....	6

## 1. KL8M Cap Lamp Features

The innovatively designed KL8M LED Li-ion Cap Lamp combines the technologies of the latest 230lumens LED lighting and 8.8Ah Li-ion battery to build a brighter and lighter cap lamp. The cap lamp is designed to withstand the harshest underground conditions such as the coal mines and metal mines etc. The significant features are as the follows:

(1) Stable superior brightness

Advanced LED light source of 230Lumens and outstanding drive circuit are employed in the KL8M main light power to keep the lamp with brightness of stable and superior (11000Lux~16000lux in 1m). During the whole period from beginning to the end, more than 16h, the KL8M will hold the same brightness. Meticulous designed reflector and ultra-clear glass help reduce the light absorption, which optimize and increase the brightness.

(2) Safe, reliable and free maintenance

The Li-ion battery of the KL8M features free maintenance. Moreover, the PCB of the battery pack can protect the battery from over-charge, over-discharge, over current, and short circuit so that the battery won't explode or burn due to over charge, high temperature, short circuit and collision. As a result, the KL8M is guaranteed to be safe in usage.

(3) Small size, light weight and portable

The LED light source of KL8M is much smaller size and less heating than the bulb, therefore the lamp head can be made much smaller. Moreover, the Li-ion battery of KL8M is only 1/3 of the weight of the traditional lead acid miner's cap lamp.

(4) Explosion- proof and super impact resistance

Bulletproof PC material is used to make KL8M housing. The optimized mould design not only strengthens the hardness of the housing but also lessens the internal stress, which enable KL8M with stronger impact resistance and more durable with a longer service life.

(5) Super waterproof

The lamp globe head, battery box and button switch are all designed to be waterproof, metal parts such as cap lamp clip are made of stainless steel, which ensure the KL8M cap lamp with superior waterproof capacity and the ability to work stably under harsh working environment.

(6) Environmentally-friendly

The cap lamp 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.

(7) Longer Service Life

The KL8M cap lamp can work more than 16 hours with full charged capacity. Its main light source has a service life for more than 30000h after applied into the lamp, and Li-ion battery can be charged more than 1200 cycles if functioning in reasonable working condition. Therefore, there is no need to replace the light source and battery during the whole life of KL8M cap lamp.

## 2. KL8M Cap Lamp Technical Specifications

Features	KL8M Specifications
Rated capacity	≈ 8.8Ah
Rated voltage	3.8V
Continuous discharging time	≈ 16 hours
Main light LED Working voltage	3.0V
Main light LED Working current	550mA
Main light Power	1.5W
Main light Luminous flux	230Lm

Lamp lighting degree Initial Lighting degree	≈ 11000Lux (11000Lux~16000Lux) (distance in 1 m)
Lamp lighting degree Lighting degree in 16 hours	≈ 11000Lux (11000Lux~16000Lux) (distance in 1 m)
Main light life span	≈ 30000h
Auxiliary light Power	0.4W
Auxiliary light life span	≈ 20000h
Short circuit protect time	<320μS
Life span of the battery (recharges)	1200 cycles (in reasonable working condition)
Charging time	4~5 Hours
Dimensions	75 x 32 x 82mm (size of the battery box)
Main cable	1.4M / 1.65M
Weight	0.6kg

### 3. KL8M Cap Lamp Structural Parts

- A. Lamp Head
- B. Flexible cable
- C. Battery box



- A. Lamp Head
  - A1. Lamp Head Cover
  - A2. Tempered Glass
  - A3. Reflector
  - A4. Auxiliary LED Light
  - A5. Main LED Light



A6. Lamp Head Shell

A7. Lock Screw

A8. Switch Button

A9. Stainless steel clip

A10. Anode touch

A11. Cathode touch

(hidden in the cap lamp clip united parts)



B. Flexible cable

C Battery box

C1. Lid of the battery box

C2. Battery box

C3. Belt Buckle

C4. Fastening Nut



## 4. KL8M User Guide

### 4.1. Charging

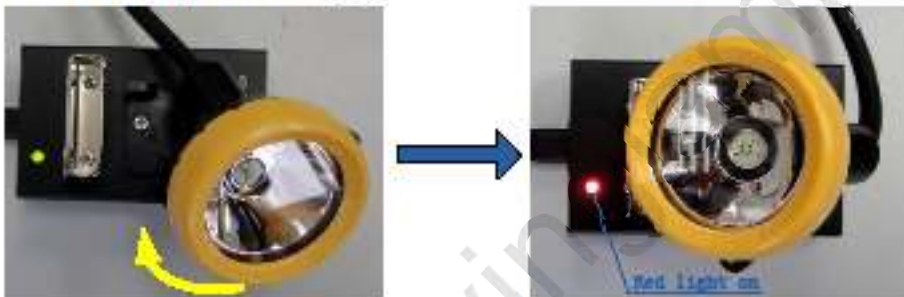
- (1) Connect the single unit charger to the power or switch on the charger rack, the indicator light of the charger turns green.



- (2) Put the KL8M cap lamp connect with the charger. Fix the brass pin (cathode) of the charger with the hole of the cap lamp clip united parts.



- (3) Rotate the head lamp for 180 degree clockwise, make sure the anode touch point of the head lamp closely connect to the connected metal base (anode), and then the indicator light turns red which means the lamp is in charging.



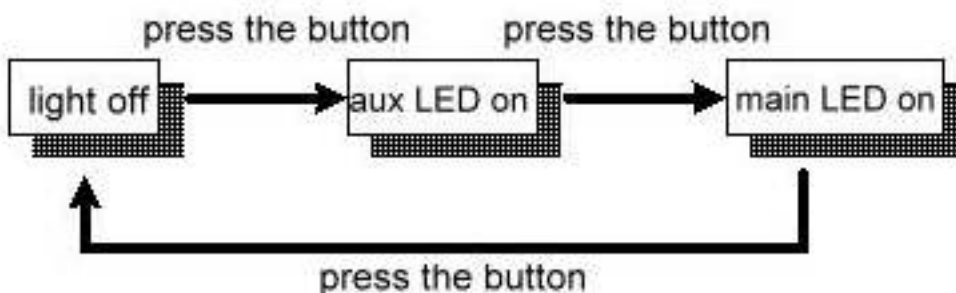
- (4) When the indicator light of the charger keep flashing from green to red, it means the battery is at least 90% charged. The KL8M can work for more than 14h continuously if stop charging at this moment.
- (5) If the indicator light of the charger flashes at green only, then the battery is fully charged.
- (6) Rotate the head lamp for 180 degree anti-clockwise; take it off from the charger for usage.



- (7) The matched chargers for KL8M are NWB-25 and series fast intelligent charger racks of NWCR-12, NWCR-24, NWCR-36, NWCR-60 and NWCR-102. Charging time is within 5hours.

#### 4.2. Switch

The Switch of KL8M is waterproof electric switch. It functions as follows:



#### 4.3 Low battery capacity warning

About 1h before the battery power is used up; the main light power of the KL8M will flash softly (light

will be off for every 5 seconds) so as to remind the user that the power nearly used up and needs to be recharged.

## 5. Troubles and Troubleshooting

Trouble description	Trouble analysis	troubleshooting
Light is not on when pressing the button	Battery power is used up	Charge the lamp
Discharging time is less than 16 hours	Battery is not fully charged	Making sure the lamp well connected to the charger when charging

## 6. Notes

- (1) The KL8M will be half charged before delivery, please charge it to be full before using.
- (2) Please use our own matched chargers to charge our lamps. If to use other charger which is not specially designed for the Li-ion battery to charge our lamps, then KL8M cap lamp will be damaged.
- (3) In order to get the best performance of the cap lamp, please clean the head lamp glass timely.
- (4) If the lamps will be stored for a long period, please repeat the following maintenance steps every two months: full charged→completely discharged→charged for 1hour.

## 7. Safety Warnings

- (1) Shooting at eyes directly must be avoided while the lamp is working since the light is so strong and it can hurt the eyes.
- (2) To disassemble the cap lamp into parts is not permitted. Working underground with the cap lamp without completed parts is not permitted because it is not safe or reliable.
- (3) Forbidden to crash and strike the lamp.
- (4) Not allowed to charge the lamp underground.
- (5) Keep the lamp away from fire sources.
- (6) Do not disassemble the lamp or change the part underground. All the maintenance and repair must be done on the surface! It is not allowed to change the structure of the cap lamp and the parts.
- (7) Do not repair by self-disassembly, otherwise the manufactures will not responsible for the warranty..
- (8) The discarded cap lamp should be disposed together, not to throw away without management.

## 8. Package

Each set of KL8M cap lamp is packed in an inner box of 170x 100x 83mm and weight 0.6kg.  
20 boxes are packed in one carton with the size 38 x 22.5x 44cm and weight 14kg.