

**Ex ia IIA T3 IP67**

The KH3E-Ex is our flagship model. It is the brightest in our Cordless Miner's Caplamp Series and is charged through external electrodes. The KH3E-Ex has three LEDs. The Main LED, in the middle of the reflector, is used for both normal and high-beam illumination. The two Emergency LEDs, located on each side of the Main LED, operate for extended periods of time during an emergency. KH3E-Ex features superior illumination, weighs less than 150g, and is lighter than the headpiece of a traditional caplamp. It is highly suitable for underground applications in metalliferous mines.

## OPERATIONS

**Main Mode:** For normal working operation, delivering good illumination in excess of 14 hours duration.

**High-Beam Mode:** Strong light beam for long distance projection, spotting, etc. Should only be used for short periods because the heavier battery drain shortens light duration in this Mode to around 8 hours.

**Auxiliary Mode:** Power saving for long operation and low level illumination.

**Off Mode:** The Caplamp is switched off.

- ▲ Always starts up from the Main Mode when switched on.
- ▲ By toggling the operating button the Caplamp goes through:  
Main Mode > High-Beam Mode > Auxiliary Mode > Off Mode
- ▲ Holding the button down for 2 seconds switches the Caplamp off directly.
- ▲ If the lamp is kept in the High-beam Mode for 20 minutes, it will automatically go to the Main Mode.

## FEATURES

- ▲ Free you from the inconvenience of electrical cable and the burden of a battery pack, and also eliminates the possibility of any accident by bumping or snagging cable cord and increases working efficiency;
- ▲ Very light weight, even lighter than the headpiece only of traditional caplamps;
- ▲ Adjustable angle to point wherever you see, near or far ---- to read and write, repair equipment or check the ceiling, significantly reducing dead corners
- ▲ Multiple operating modes for different applications;
- ▲ Natural LED light for a comfortable light environment;
- ▲ IP67 housing with a fully integrated and sealed structure, and solid light source designed for the harshest underground mining environment;
- ▲ Free of charging socket for further enclosure protection;
- ▲ Extraordinary safety - no acid or any toxin to spill, no flammable materials exposed, no heat on lens surface, no danger for personnel at all;
- ▲ Various ways to wear, mount or attach for different applications, used as a caplamp, headlamp, torch or portable lamp;
- ▲ Easy to charge. Strong protection from over voltage, over current, over charge and over discharge;
- ▲ Various models of charging banks and single chargers available in different charging units and power input;
- ▲ Very low maintenance to significantly reduce your lamp room cost. Easy to clean; No cable, bulb and headpiece to check or change; No repairing; No dedicated staff required to look after charging.

### How SAFETY is improved

- ▲ No electric cord to be bumped or snagged;
- ▲ Significantly reduces miner's burden;
- ▲ No back pain and injury any more;
- ▲ No acid or toxin to spill;
- ▲ No heat on lens surface; no hot parts to cause fire;
- ▲ IP67 case for the harshest underground mine environment.

### How WORK EFFICIENCY is improved

- ▲ No cord and heavy battery that hinders work performance;
- ▲ Minimized size and weight reduces burden on miners;
- ▲ Adjustable angle and portability for extraordinary flexibility;
- ▲ Time saved in attaching light and moving to workplace; time saved in issuing light to miners;
- ▲ Less staff required in Lamp Room.

### STRUCTURE

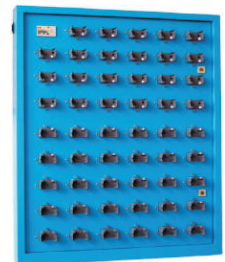
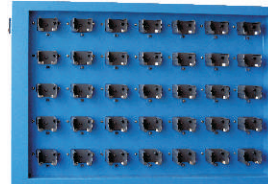
- 1) Main LED;
- 2) Auxiliary LED;
- 3) Light reflector;
- 4) Charging indicator;
- 5) Lamp clip;
- 6) Charging electrodes
- 7) Button switch;
- 8) Strap hole.



### CHARGING BANKS

KH3E-Ex is charged through two charging electrodes on the lamp without any charging socket, so that the lamp case is fully sealed and very rigid.

Charging electrodes



CB53E and CB35E are charging banks specifically designed to charge 53 and 35 units of KH3E-Ex caplamps together from mains power. 53 or 35 charging units are mounted on the front panel. They feature a low charging voltage and RCBO protection for ultimate safety, easy front access to internal circuit for convenient service, locking facility for every caplamp and locks available as accessories for theft prevention.

### HOW TO USE

**Caplamp:** Simply inserted in the lamp bracket on the helmet. The lamp clip is designed to fit in any Australian and American miner's helmet.

**Headlamp:** Worn on a plain hard cap using our *Cap Strap*, or worn on the head directly by removing 4 *Cap Hooks* on the *Cap Strap*.

**Mini-Torch:** Just hold in your hand, easily carried in a tool box, pocket or on your belt.

**Portable Lamp:** Clamped to an object or magnetically attached to a metal using our *Magnetic Lamp Bracket Clamp*, worn on the belt using our *Belt Worn Lamp Bracket*, or fixed to a location using our *Lamp Bracket*.

**Others:** Various accessories available for other ways to wear or mount the lamp, such as *Bar Bracket*, *Strap Bracket*, *Handle & Pocket Bracket*, *Tripod Bracket*, *Lanyard*, *Wrist Strap* and *Lamp Cluster*. Other accessories include, a handy *Mining Lanyard* to connect the lamp to your belt to prevent the helmet from falling away in such situations as in front of a ventilation machine, *Helmet Chin Strap* to hold your helmet in place in active situations.



### SPECIFICATIONS

Operating time:	14 hours (Main Mode)
Luminous intensity:	5000 cd (Main Mode)
Charging time:	8 hours
Battery:	2.8 AH, 3.7V
Battery lifetime:	80% C after 500 full charging cycles
LED lifetime:	30,000 hours
Weight:	148 g
Enclosure:	IP67
Warranty:	1 year replacement

### CERTIFICATION

**Intrinsically Safe**



**Ex Code: Ex ia IIA T3 IP67**

**Certificate #: IECEx TSA 10.0006X**

**ANZEx 10.3012X**