

Lynx X2000 Mk2 Caving and Mining Lamp.

Thank you for purchasing the X2000 caving and mining lamp. It is strongly recommended that you familiarise yourself with the operation of the lamp before using it underground. Please read these instructions carefully.

DON'T'S

#1 DO NOT tinker with the lamp or power pack by attempting any dismantling other than adjustment of tilt or emergency removal of lamp front bezel. The lamp is dry air filled to prevent condensation on the glass and removal will allow ordinary moisture laden air into the lamp.

#2 DO NOT recharge the power packs from anything other than the provided dedicated charger. Power packs contain Li Ion cells which can be dangerous if charged in an incorrect manner. The power packs contain batteries. Interference with the cable gland such as an attempt to increase or decrease the length of the cable can cause a short circuit inside. Shorting batteries can cause fire and injury.

#3 DO NOT carry the lamp about with the power pack connected such as in the boot of a car. If the lamp comes on it can become damaged due to overheating or fully discharge the power pack. This consideration applies to all high power led lamps.

#4 DO NOT wantonly discharge and then recharge the power packs, their life span is related to the number of discharge/charge cycles. Li ion does not suffer from 'memory effect'. Duration testing especially indoors is not recommended as on high settings the lamp is liable to overheat, conditions indoors are vastly different to those underground.

#5 DO NOT use the lamp on full power if it feels noticeably hot.

i Power packs contain electronic circuits that prevent short circuit, accidental overcharge, and accidental over discharge and as such can be considered 'electronic goods' in their own right. If posting such as an RMA return the item description is "Electronic goods"

Description

This lamp utilises the latest Cree XM-L2 U2 technology to provide a lamp with a total light output of 2200 lumens from two emitters mounted behind good reflectors and supplemented by two more bare emitters up against the glass (Flood). The latter can be switched independently in the same way as the beams.

The headset switch has 2 positions; down position will drive the supplemented beams at 3 settings, 'walk mode', medium and high. Movement up and down the modes is achieved by quickly flicking the lamp on and off.

Switch up will power the floodlights in the same way as the beams but with a 'moonlight mode' low setting.

Please do not switch from beams to floods 'abruptly' but allow a slight pause in the off position, otherwise you may get a slight malfunction in the flood settings.

For normal use the standard 'walk mode' setting is optimum and is capable of giving remarkable economy of use, the 4 cell power pack has been duration tested to over 26 hours hours at this setting.

Fuel Gauge: This is in the form of a strip of blue LEDs, turning your helmet upside down and reading from left to right looking at the front of the lamp they are 25%, 50%, 75%, and 100%.

It is highly recommended that a purchaser familiarises him/her self with the lamp before venturing underground.

The electronics have a thermal shutdown built in which will shut down output to lowest setting, this will then flicker every 5 seconds until temperature falls and then resume last power setting. To clear, turn of the lamp or go to emergency light for short while to allow lamp to cool. Normal functioning will then resume.

i This lamp has 3 totally independent wiring systems for reliability, something that most other high performance LED caplamps don't have.

Fitting

Helmets are no longer produced with lamp brackets, the Lynx follows the modern trend of having a bracket designed to fit directly to the helmet. For this you will need to drill 2 holes using the bracket as a template. The bracket is designed so as to evenly distribute the strain on the helmet so as not to cause undue stress. Please remove the peel off cover from the adhesive strip and press firmly to make a bond. It may first be necessary to bend the bracket slightly to suit the shape of your helmet. The purpose of the strip is to prevent strain caused by up and down movement. The width of the holes is exactly the same as a Petzl lamp bracket which means that if your helmet has one of these you need simply drill out the existing rivets. The bracket can be replaced at a later date if required, Screws are supplied for fitting. The horizontal distance between holes is 40mm, the vertical is depedant on helmet design. As a rough guide Petzl Ecrin or similar helmets about 50mm above the rim, Elios or similar about 40mm. Use your judgment based on trial.

WARNING: DO NOT HAVE FINGERS ON THE INSIDE OF THE HELMET WHEN YOU DRILL THE HOLES!

Power pack

It attaches to the headset cable by means of a high quality XT60 connector that is securely attached to the cable and shrink wrapped. The connectors are corrosion proof gold plated.

Fitting is designed to be done with the two lengths of shockcord supplied which are about 300mm or a foot long in old money.

This applies to the larger Ecrin size helmets which are recommended for these larger lamps. Measure up from the helmet bottom rim 60mm and drill two holes about 50mm apart, each an equal distance from the centre of the back of the helmet. Pass the cord through and tie the ends, move it so that the knots are out of sight inside the helmet.

This arrangement will look neat and hold the power pack secure whilst enabling the pack to be easily changed underground. Excess length can be secured to lamp mounting bracket as shown below left.



Top right shows power pack neatly and securely fitted. I considered fancy clips etc but discounted it as we need to maintain the power pack as close to the helmet as possible whilst not adding and bulk

Estimated burn times

<i>Beams</i>	<i>Burn time (Hrs)</i>	<i>Lumens</i>
Standard	30	250
High	7	700
Turbo	2	2000+

Above burn times are estimated at nominal voltage and on the capacity of the battery and the draw of the lamp. In practice there will be a voltage drop on the battery under load which will cause the safety circuit to disconnect at a level below those shown above. Experiments have shown that the real burn time of the 2 X XM-L2 emitters on a 4 cell pack at Standard Mode is about 35 hours same as above, but on the High mode its about 6 hours due to the drop on voltage under this load. Turbo use is only recommended for occasional use, it is however sustainable for quite some time without over temperature problems.

Recharging.

DO NOT Recharge the power pack in sub zero temperature

Simply connect the yellow connector on the power pack to the corresponding yellow connector on the charger, plug into the mains and switch on. Red LED indicates charging, green indicates charged and ready. Always charge at a temperature above 10C as charge will probably fail below this for safety. This means inside the house in winter, not garden sheds. Also, be aware that burn time can be adversely affected if left overnight in a car in freezing weather and used immediately afterwards.

Charger is not suitable for underground use.

Charging is possible at any time as a 'top up', Li Ion cells do NOT suffer from memory effect

Expected Performance from Discharged Power Pack

The power packs are fitted with circuitry that prevents over discharge of the Lithium Ion cells and the subsequent damage. As the power packs become discharged it will eventually switch off to protect the cells. This will not however cause your lamp to go out abruptly, but will go into a slowly diminishing output. Please note that this does not apply to power packs sold before Nov 2015 which will abruptly go out.

Condensation

Air contains a certain amount of water vapour which under certain conditions can cause condensation inside the glass, this NOT a sign of water ingress. It can easily be cleared by turning the lamp to full power and placing your hand over the glass to cause it to warm up

Guarantee.

All lamps carry a 12 month guarantee, subject to reasonable use.

Maintenance

Basically, none required except keeping the connectors clean. The use of WD 40 and Vaseline or similar compound is recommended.

Description

The helmet battery pack is a 2 serial X 2 parallel cell Lithium Ion pack of 7 ampere hour capacity. It delivers a nominal voltage of 7.4 volts, however off the charger it will deliver just under 8.4 volts. It uses genuine Sanyo cells.

It attaches to the headset cable by means of a high quality XT60 connector that is securely attached to the cable and shrink wrapped. The battery pack attaches to the helmet by means of a short loop of the 4mm shock cord supplied.

The power pack is filled with silicone and sealed to prevent ingress of water.

Updated manuals available on line from our website www.ledcaplamps.com