

Dragon EX Caving and Mining Lamp.

Thank you for purchasing the Dragon EX (Dragon Extreme Use) 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

DO NOT attempt any dismantling of the headset or power pack under any circumstances. The power pack disconnects by the yellow xt60 plug, and the black nut is a cable gland

DO NOT attempt any dismantling of the power pack. 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.

DO NOT carry the lamp with cable connected. If carrying in a rucksack, please carry the battery cell disconnected. If the lamp comes on it can become damaged due to overheating. This consideration applies to all high power led lamps.

DO NOT deliberately and unnecessarily fully discharge and recharge the power packs. The life of the cells is not time related but relates to the number of charge/discharge cycles.

Description

This lamp utilises the latest Cree XP-L and XP-G2 technology to provide a lamp with a total light output of over 1600 lumens from a combination of four emitters. The beam power has a maximum of over 1500 lumens, and this is supplemented by two bare emitters running at low power mounted in the top of the reflector to give foot level lighting.

The headset switch has 2 positions; down position will drive the supplemented beams at standard mode, up will drive the emitters at full power. This is a completely analogue circuit with no resident firmware. The standard mode and downlighters are by a simple foolproof liner circuit.

Standard mode is capable of giving remarkable economy of use while outputting about 250 lumens, the 2 cell power pack has been duration tested to over 12 hours at this setting with a virtual full output, after this time the output will diminish but the lamp continue to burn for up to 24 hours. If on a high setting when the power pack runs low, the lamp will automatically power down, this is a warning of low battery.

All the circuits in this lamp are independent giving a degree of reliability not enjoyed by most other lamps.

Fitting

Lamp: Recreational helmets are no longer produced with lamp brackets, the Dragon 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 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, as is the vertical above the rim. This suits either Petzl Ecrin or smaller Elios size helmets, use your judgment based on trial.

It may be useful to remove the lamp from the fixing bracket to do this, however you will first have to remove the switch cover, be careful not to loose the O ring. The switch is IP 67 without the cover, the cover is provided as an extra protection against water ingress in line with our policy of continuous improvement.

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 about 60mm and drill two holes about 45 mm 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. Cable ties or similar can be used as an individual preference.



Left shows a 2 cell 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. Power pack shown my be different to as supplied.

Please note that this lamp has 2 totally independent wiring systems for reliability, something that most other high performance LED caplamps don't have.

The 2 cell helmet battery pack is a 3.5 ampere hour Lithium Ion pack that 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 power pack is filled with silicone and sealed to prevent ingress of water.

Recharging.

DO NOT Recharge the power pack in sub zero temperature

The power pack can be recharged or top up charged from the supplied mains adaptor charger anytime. Li Ions batteries do NOT suffer from memory effect but should always be charged 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 afterwards.

Simply plug in, connect the yellow connectors, and switch on. Red LED indicates charging, green is charged. Recharging can be done from a vehicle using a now commonly available voltage inverter or obtain one of our Pro Model twin pack chargers.

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, towards the end of the use cycle the lamp will be noticeably dimmer, if left on in that state it will eventually switch off. However, due to the design of the lamp this could be days.

Guarantee.

All lamps carry a 12 month guarantee, subject to reasonable use. The Li Ion battery pack is suitable for extended full immersion as it is filled with silicone and should therefore be considered fully waterproof, explosion proof and reasonably shockproof. The Dragon headset is waterproof to IP68 5 metre standard, subject to the note higher above.

Maintenance

Basically, none required except keeping the yellow connectors clean and lubricated with Vaseline. This is important to ensure good contact and prevent corrosion. The use of contact cleaner or WD 40 is highly recommended.