

LUPINE®

LIGHTING SYSTEMS



OTTO X

Instruction Manual

(Read before use!)



Content of package:

- 25 W+3 W Halogen-LED Hybrid Lamp with PCS V5 mounted on head belt
- Lithium-Ion rechargeable battery in soft case 6,8 Ah 7.2V
- Lupine microprocessor controlled "Micro-Charger"
- 12V input adaptor, Velcro straps, 120 cm extension cable
- Velcro straps, O - ring for handlebars with 22mm diameter
- Instruction Manual (this document)
- Technical Information PCS V5

1.) READ BEFORE USE!

General:

Congratulations! You have just bought the one and only Lupine LED Hybrid Lamp – no other will give you more light!

The light and charger are ready to use immediately. Please read this instruction manual carefully and completely to familiarise yourself with all the functions. Before hitting the trails, try the system at home first to prevent any surprises while riding. For further details about individual settings of the OTTO X please read "*Technical Informations PCS V5*".

As with any other electrical device, there is a slight chance of failure at any time. Please be aware and use with caution.

Lupine accepts no liability for any injuries or other damages arising from the use of this product.

Rechargeable Battery:

The battery is supplied with a very small amount of charge. Before use **it must be fully charged** (see chapter 4 "Charging"). The rechargeable Ni-MH battery will reach its full power after 2-3 charge/ discharge cycles.

It might become hot!

The OTTO X is not a simple torch. The lamp housing can become very hot if used without airflow. Do not touch the lamp during or immediately after use.

Dazzling:

The OTTO X is a powerful lighting system. Always use it with care and with respect for others (especially when mounted to a helmet). Do not look directly into the light.

Waterproof?

All components of the OTTO X are waterproof and will withstand even the most extreme conditions. However, it is not a diving lamp and therefore not suitable for use under water.

Warranty:

The two year warranty covers defects in materials or workmanship only. Bulbs and batteries are not covered by this warranty. Modifications to the light or improper use also voids this warranty.

2.) MOUNTING

The OTTO X is supplied already mounted to the head belt. However if you wish to use the OTTO X on a bicycle please read the mounting instructions below:

Lamp:

Mounting the lamp with the O - ring :

If you are feeling strong, use the finger hook method (see fig.1). For others, who prefer the less strenuous method, hold the O-ring with one finger, and push the lamp back until the O-ring can be secured on the hook of the lamp. (fig.2)

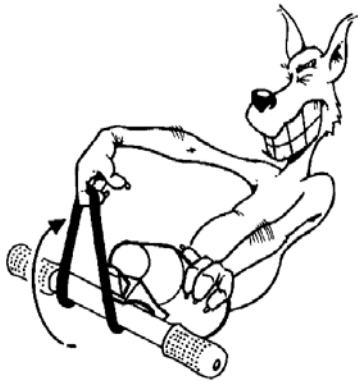


fig.1



fig.2

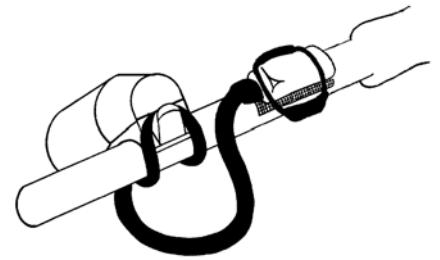


fig.3

PCS V5 switch :

The PCS V5 is designed for use on the right hand side of the lamp (see fig.3). Before attaching the velcro strip to the handle bar, ensure that the surface is free of dirt and oil. The velcro strip should be applied at room temperature, colder temperatures will cause the adhesive not to work.

For applying the O-Ring to fix the switch to the handlebar see the separate information sheet "*Technical Information PCS V5*".

An optional upgrade mounting bracket for the switch is also available (Peppi V3).

Battery:

Now connect the rechargeable battery to the lamp and your OTTO X is ready to go.

3.) USING THE LIGHT

Initialising:

After connecting the lamp to the rechargeable battery, the software will start a self-test (the three LEDs of the PCS will flash twice) The LEDs and then the halogen bulb will each flash once. Now the OTTO X is ready for use. (Please read also "*Technical Information PCS V5*")

Switch on:

By pressing the PCS switch for the first time, the beam starts running on maximum power. The blue and green LED will glow.

Halogen Low Power Mode:

By pressing the switch again briefly, you can choose between maximum power mode and low power mode of the halogen bulb. When on low power mode, only the green LED will glow.

LED Mode:

By pressing the switch longer than two seconds, you can switch to LED mode. Here, you can as well choose between maximum power mode and low power mode by pressing the switch briefly.

Switch off:

You can switch off the OTTO X by pressing the PCS button longer than four seconds.

Controlling the remaining light time:

The electronics of the PCS V5 not only control the high and low beam; they also protect the rechargeable battery against over-discharge and include a low battery indicator.

Low battery is signalled by the yellow and the red LEDs.

When the yellow LED lights:

Significant amount of the capacity is gone!

Red **and** yellow LEDs lights:

Light will automatically switch off
in a few minutes!

It is a matter of experience to interpret exactly how much time is left after the LEDs light up. Remaining burn time depends on the battery's age and capacity, the operating temperature and the capacity gauge program (Low, Middle, High; see "*Technical Information PCS V5*").

Hint: When the yellow and the red LEDs light up you can increase the remaining burn time with economical use of the high beam.

Reserve tank:

When the battery is almost empty (yellow **and** red LEDs have been lit for several minutes already) the lamp switches off automatically. By double clicking the switch the reserve tank is activated, which provides some additional hours of emergency light in LED modus. A flashing red LED indicates the reserve tank has been activated. The performance of the reserve tank also depends on the battery condition.

When the reserve tank is empty, the light will switch off and must not be restarted.

Caution! Switching on is not possible at this point. If you unplug the battery and then re-attach it, you will damage the battery by over-discharging it! The same is true for storing a discharged battery. Recharge your battery as soon as possible!

Explanation of the LEDs:

Blue LED lights:	High beam (Maximum Power)
Blue LED blinks:	Low beam LED
Green LED lights:	Low beam (Econo mode)
Green LED glows weakly:	Ready to switch on again
Yellow LED lights:	Significant amount of burn time consumed
Yellow + Red LED light:	Rechargeable battery almost empty Caution! Halogen- Light will switch off very soon without further notice – Stop!
Red LED flashes:	Reserve tank activated

4.) CHARGING THE RECHARGEABLE BATTERY

Components:

The charging system of the Otto 8 consists of two components:

- AC/DC adaptor
- Micro-Charger

The Micro-Charger was developed for use with Lupine's high current Li-Ion rechargeable batteries from AC/DC adaptor or with additional available 12 V car adaptor.

Connection:

Plug the AC/DC adaptor into the mains. Plug the adaptor into the socket of the Micro-Charger. After a short green flash the Micro-Charger flashes orange and will be now ready to charge.

Charging:

Plug the rechargeable battery into the Micro-Charger's connector and charging will start automatically. The orange LED and the blue LED light.

Keep the rechargeable battery plugged into the Micro-Charger until the green LED lights.

Charging is now complete; the battery is full and is now ready for use.

Reading the charged capacity:

After disconnecting the battery the Micro-Charger will indicate the charged capacity as follows:

First, the orange LED will blink 1 time per complete ampere hour, then the green LED will blink 1 time per 1/10 ampere hour.

Example: The orange LED blinks 3 times and the green LED 5 times = the charged capacity is around 3,5 Ah. This information will help you to judge the actual condition of your rechargeable battery before use.

Hint: You don't have to wait for the whole voltage information to be shown in order to use your charger again. You can stop the charge information at any time by connecting the battery.

5.) CARE AND STORAGE

Lamp:

All components should be cleaned with warm soapy water, but do not use a high pressure spray or hose to clean the system. To get all water out of the housing etc. turn the light on for a few minutes.

The bottle battery is water resistant. Unlike other lighting systems, it is easy to open. If used in very wet conditions, please open the bottle over night by squeezing and turning the top cap (snap mount).

If necessary, pull the battery out of the foam to remove all water. If you want to adjust the cable length, please open the bottle first.

Replacing the Halogen Bulb:

Open the casing. Please open the screw-on lid on the front of the casing: Hold the back part of the casing with one hand, with the other hand, turn the screw-on lid counter-clockwise. Having removed the lid, you can see the halogen bulb surrounded by the LED-ring. Both are kept in place by the blue silicone ring in between the two. Hold the LED-ring in its position when removing the halogen bulb from the holder. When doing so, use your finger nail or a small screwdriver as a lever.

Inserting the new bulb: Caution! Before inserting the new bulb, please make sure the blue silicone ring is in the right position: if viewed from the side, the ring must be on the same level as the LED-ring. Now cautiously insert the new bulb into the holder. You may need a little pressure to position the bulb as deep as possible in the silicone sealing of the holder. Hint: Moisturizing the silicone sealing just a little will reduce friction between glass and silicone and the bulb will slip into place more easily.

Re-sealing the casing: Please make sure the O-ring of the back part of the casing is in its correct position. Otherwise the casing will not be waterproof. Then, screw the lid onto the thread. Important: **The lid must be screwed onto the thread in the correct position. If the thread runs smooth, the lid is in the right position. Otherwise, please stop, re-screw the lid and try again or you might damage the thread. Please be cautious!** Seal the lid completely (you might feel more friction towards the end of the thread; this is normal). If you cannot close the lid fully, stop, open the lid again and re-check the position of the bulb and the silicone sealing. Since the front glass is pressed on the bulb and then turned around, scratches in the front glass cannot be avoided. They are, however, not visible and do not impair the light performance.

Connectors:

In normal conditions, the connectors do not need special attention. However if you use the light in very humid and/or corrosive conditions they should be greased with the included Dutch grease. **Do not** use contact-sprays or contact-greases! They contain corrosive ingredients that will damage the connectors.

Transport:

In case you transport your light in a bag or a box so that the PCS button might accidentally be pressed: **Always unplug the battery from the lamp unit.**

Storage:

For short periods of time, store the battery fully charged. **Disconnect it from the lamp unit.** Before using the system again, re-charge the battery fully. If you intend not to use it for a longer period (over 3 months), **we strongly recommend to keep the battery plugged to the charger!** This will prevent the battery from over-discharging. It will need just 2-3 charge/discharge cycles to reach full power again!

6.) TROUBLESHOOTING

Failure	Caused by	Solution
Halogen Lamp does not light <u>and</u> the LEDs on the PCS <u>do not</u> flash during initialisation.	Over discharged battery.	Charge!
	Battery is not or not correctly plugged into the light.	Check all connections
Lamp does not light, LEDs of the PCS <u>do</u> flash during initialisation.	Bulb has blown	Replace bulb
Burn times are too short.	Battery was not in use for a long time and has become "lazy"	After 2-3 cycles the battery will operate correctly
	Battery is new.	
	Battery is very old	Replace with new battery
	Cold temperatures	Keep the battery warm
	Charger is defective	Replace charger

7.) TECHNICAL DATA

Lamp:

Weight complete with rechargeable battery:	580g
Capacity of rechargeable battery / Voltage:	6,8 Ah 7.2 V NiMH
Burn time 25 W:	1 hours 50 Minutes
Burn time 9 W:	3 hours
Burn time 3 W:	16 hours
Burn time 1 W:	40 hours
Temperature range:	- 25°C - +70°C
Beam angle Halogen:	18°
Beam angle LED:	15°

Burn times may vary depending on battery's age, condition and temperature.

Charger:

Input:	100 – 240 V~, 50-60 Hz
Charging current:	2 A max.
Suitable batteries:	Li-Ion 2 cells 7,2 V
Display:	Control of charging by green and orange LED
Charge Time :	4 h

IMPORTANT NOTES:

Use of this lighting system might be limited differently from country to country depending on the purpose you use it for. Please do inform yourself about possible restrictions in your country.

The mounting device and the design of the OTTO X as well as of the PCS are protected by worldwide patents.

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