

# ***Owner's Operating Manual***

## ***PULSAR VULGARES***



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## I Device Structure:

Your Pulsar lamp consists of a lamp head with 2 buttons, battery box and a charger. Operation of the headlamp is conducted by 2 buttons. The headlamp is designed for caving, diving and working under extreme conditions.

Your Pulsar lamp has two high powered LEDs with five brightness settings each + a SOS mode. In addition to these there is a third low power LED. Each LED is controlled independently. All LEDs maintain constant light level during the whole battery life.

LED 1 is a spot light – a focused light suitable for illuminating distant objects

LED 2 is an ambient light – an ambient light covering the human eye perception range suitable for walking

LED 3 (5mm or SMD) can be used as a camp light or as a back-up light

With the 2 buttons it has never been easier to carry out all the functions of the headlamp and control each LED independently! You can also set each LED at different brightness level at the same time. This gives you a great deal of combinations: you can use only LED 1, LED2 or LED 3 alone or you can use all LEDs simultaneously.

Each of the two powered LEDs has 5 brightness settings from 1-Low to 5-Strong. You can independently choose the stage of brightness by But 1 for LED1 and But 2 for LED 2.

**Note! If LED 1 and LED 2 work at stage 5, this might exhaust the battery faster or cause overheating of the headlamp and an automatic switch off.**

Your Pulsar also has a battery level indicator bar, with 5 red LEDs.

Pulsar has a microprocessor, controlling:

Battery protection

Temperature control - 3 sensors control this (2 for each powered LED, 1 for the internal temperature)

## II Basic Functions:

When the headlamp is turned off, NO energy is consumed from the battery.

When you turn Pulsar on, you have two modes: Operating Mode and Program Mode.

1. Operating mode:

1.1 Button 1 controls the spot LED 1

1.2 Button 2 controls the ambient LED 2

1.3 The combination of Button 1 and 2 pressed simultaneously activates additional functions such as:

1.3.1. Back-up LED

1.3.2. Battery indicator bar

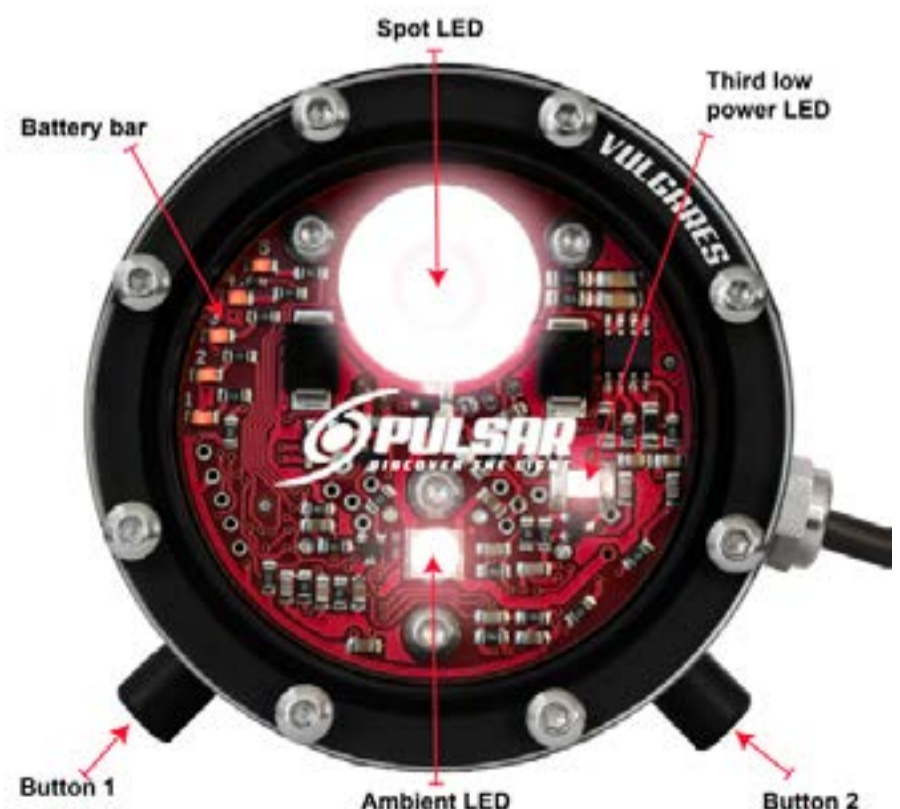
1.3.3. Switching off

1.3.4. A lock function (for diving)

1.3.5 Program mode

2. Program Mode:

You can set the brightness level for the two powered LEDs.



## III Operating mode:

### 1.1 Button 1 controls:

LED 1 – the ambient light - for walking

5 levels of brightness from 1 - low to 5 – strong

Turning off LED 1 by pressing and holding Button 1 for 1 second

Switching off the whole headlamp if no other functions have been activated.

### 1.2 Button 2 controls:

LED 2 - the spot light – suitable for illuminating distant objects

5 brightness settings from 1 - low to 5 – strong

Plus 1 SOS mode

Turning off LED 2 by pressing and holding Button 2 for 1 second

Switching off the whole headlamp if no other functions have been activated

### 1.3. Combination of Button 1 and Button 2 simultaneously:

The programming commands are received when these buttons are pressed for 0.5 of a second

**Note! The interval between 2 presses needs to be 0.5 of a second (approx) in order to activate the functions.**

1 push: holding for 1 second: the headlamp switches off regardless of the mode

1 push: holding for 0.5 seconds: low power LED turns on and off; when in Program mode 1 push saves the chosen setting

2 sequent pushes (0.5 seconds interval): the battery bar turns on . In this mode LED 1 and LED 2 turn off and you are able to check the battery status.

3 sequent pushes (0.5 second interval): the Program mode is activated/deactivated

5 sequent pushes (0.5 second interval): the Lock function is activated/deactivated

1.3.1 Low power LED can be turned on/off by pressing for up to 0.5 seconds BUT 1 and BUT 2 simultaneously. The low power LED can be used as a camp light or as a back-up light. You have only one brightness setting.

#### 1.3.2 Battery indicator bar

The battery bar consists of 5 red LEDs, indicating the battery level status:

Red LED 1 – if it blinks – the battery level is under 10%

Red LED 1 – 10-20%

Red LED 2 – 20-40%

Red LED 3 – 40-60%

Red LED 4 – 60-80%

Red LED 5 – 80-100% - if it blinks - the lamp is overheated, turns automatically off.

#### 1.3.3 Switching off

You can turn Pulsar off from any mode by pressing and holding either or both buttons for 1 second. You can always switch the whole headlamp off by pressing But 1 and But 2 simultaneously.

When the headlamp is properly switched off, the battery bar indicates the following pattern:

The red LEDs from the battery bar light up in an ascending order

Then the red LEDs turn off in a descending order

When the battery is fully discharged, the headlamp switches off following the pattern:

The powered LEDs blink 5 times

The red LEDs from the battery bar light up in a descending order

Then the red LEDs turn off in a descending order and the 100% red LED blinks continuously

When the headlamp switches off due to overheating over 65 °C:

The powered LEDs blink 5 times

The red LEDs from the battery bar light up in an ascending order

Then the red LEDs from the battery bar turn off again in an ascending order and the 100% red LED blinks continuously.

1.3.4 The lock function (for diving): is activated by pressing 5 times BUT 1 and BUT 2 simultaneously.

1.3.5 Program mode: enter/exit the by triple push up to(0.5 seconds interval)

## ***IV Program Mode:***

### **Selecting brightness settings via the programming mode:**

When you enter the Program Mode for the first time, you have initially 5 empty settings that you can easily program according to your specific needs and preferences and save the settings you have made.

These 5 settings correspond to the 5 red LEDs from the battery bar. (So, the red LEDs from the battery bar indicate the number of the setting.)

### **How can I choose or change a setting?**

You can change the settings from 1 to 5 by pressing the control buttons separately. Button 2 is for an ascending change, while Button 1 is for a descending change.

How can I program a selected setting?

You have to press once Button 1 and Button 2 simultaneously. Then (the current setting indicator) the red LEDs from the battery bar start to blink constantly to indicate that you can now program the setting. You can choose the level of brightness for each power LED by pressing Button 1 for LED 1 and Button 2 for LED 2.

### **How can I save the settings I have made for the particular slot?**

To save the setting, you have to press once Button 1 and Button 2 simultaneously.

The next time you enter the Program mode, the last used setting will be automatically activated.

In this mode, you can also check the battery level by pressing twice Button 1 and Button 2 simultaneously.

### **How can I exit the Program Mode?**

By pressing BUT 1 and BUT 2 3 times (0.5 second interval) simultaneously or by pressing and holding for 1 second BUT 1 and BUT 2 simultaneously.

BUT 1 and BUT 2 simultaneously: 3 pushes (0.5 second interval) - enter Program Mode

BUT 1 / 2 - choosing ascending/descending setting slot

BUT 1 and BUT 2 simultaneously: 1 push - enter the chosen slot and ready to be programmed

BUT 1 / 2 - choosing the brightness level of each of the two powered LEDs

BUT 1 and BUT 2 simultaneously: 1 push - saves the setting

BUT 1 and BUT 2 simultaneously: 3 pushes (0.5 second interval) OR pressing and holding for 1 second - exit the Program Mode

## ***V Protection :***

When the battery is discharged below 10%, the power LEDs blink 5 times with 8 Hz.

When the battery is fully discharged, the power LEDs blink 5 times with 8 Hz and then the headlamp switches off.

When the headlamp is overheating  $\geq 60$  °C, the power LEDs blink 5 times with 8 Hz and the brightness level drops automatically down by 1 level.

When the headlamp is overheating  $\geq 65$  °C, the power LEDs blink 5 times with 8 Hz and the headlamp switches automatically off.

The headlamp cannot be switched on until it cools down to 55°C internally. The exterior of the device functions as a cooling surface that transfers heat from inside the device to the cooler air outside.

## **SAFETY**

- Observe proper precautions when handling batteries. If lithium ion batteries are misused they may catch fire or explode. Be sure to observe the following precautions:
  - Never leave the battery charging when no one is around.
  - Only use the supplied charger indoors.
  - Do not short or disassemble the battery.
  - Do not expose the battery to flame or excessive heat.
  - Regularly check the battery casing for damage.
  - Always disconnect the battery when not in use.
- Do not disassemble. Should the product break open as the result of an accident, disconnect the battery immediately. The warranty will be void if the product has been opened at any time.
- Unplug immediately in the event of a malfunction. If you notice smoke or an unusual smell coming from the product or from the AC adaptor, unplug the adaptor and/or disconnect the battery pack Immediately.
- Avoid looking directly into the light. The light output of the product can be extremely high. Shining the light directly into your eyes or another persons eyes could result in an injury.
- Keep away from children
- Do not store empty batteries! 50% charged is good.
- Store battery pack in dry and cool place
- Keep out of reach of children.
- **Pulsar is not a Personal Protective Equipment (PPE)**
- Always carry additional independent backup light source
- Dispose of lithium and lithium-ion batteries at a battery recycling center. They are accepted at battery-recycling centers.

## **WARRANTY**

All parts of the lighting system are guaranteed against faults imanufacture for a period of one year from the purchase date. Except the charger.

Limited Lifetime Warranty: After one year, if the product fail, we provides a Limited lifetime Warranty for free labor on repairs. You just have to pay for the parts needed.

**Disclaimer:** As the PULSAR products are constantly updated and improved, your device may have a slightly different appearance or modified functionality then presented in this manual.