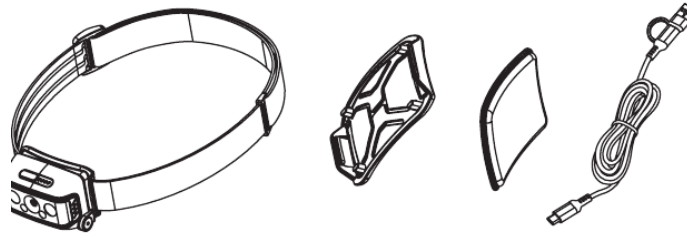


# Zweibrüder **ZB3H** Headlamp

Operating Manual · English



Thank you for choosing a Zweibrüder headlamp. This manual explains step by step how to set up, operate, maintain, and safely use your **ZB3H**. Please read this manual fully before first use and keep it for future reference.

|                                   |                                      |
|-----------------------------------|--------------------------------------|
| <b>Model</b>                      | ZB3H                                 |
| <b>Lumens</b>                     | 30 – 600 lm                          |
| <b>Range</b>                      | 10 – 150 m                           |
| <b>Runtime</b>                    | 3 – 35 h                             |
| <b>Rechargeable battery</b>       | Li-Po, 3.7 V, 2000 mAh (replaceable) |
| <b>Charging time</b>              | approx. 3 h                          |
| <b>Protection / impact rating</b> | IP67 / IK07                          |
| <b>Weight</b>                     | 124 g                                |

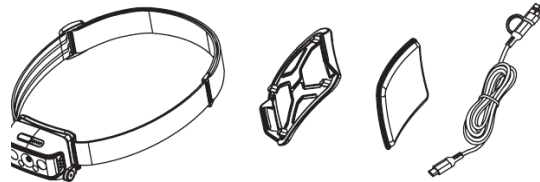
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## 1. Scope of Delivery

After unpacking, please check that the contents are complete. If anything is missing or damaged, contact your retailer or Zweibrüder directly.

- **ZB3H Rechargeable Headlamp** with replaceable Li-Po battery
- **Headband** (adjustable, with forehead and cross strap)
- **Helmet mount** for attaching to helmets
- **Comfort Pad** for soft contact on the forehead
- **USB-C charging cable** with multi-connector
- **Storage pouch**



Overview of the box contents.

## 2. Safety Information

Please read these instructions carefully before using the headlamp. Failure to comply may result in injury, property damage, or loss of warranty.

### Do not shine into eyes

The ZB3H is a powerful LED headlamp delivering up to 600 lumens. Never point the light beam directly at the eyes of people or animals. Avoid prolonged looking into the active beam – also indirectly via reflective surfaces.

### Handling the Li-Po battery

The battery of the ZB3H is replaceable and removable. Do not open the battery, short-circuit it, throw it into fire, or expose it to high temperatures. If the headlamp or battery is damaged, stop using it and return the headlamp to Zweibrüder. Use only original replacement batteries from Zweibrüder.

### Charge only within the permitted temperature range

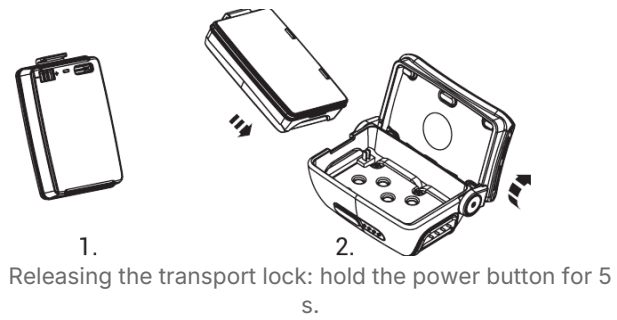
Charge the headlamp only between 0 °C and 40 °C (32 °F to 104 °F). Use a USB power adapter rated 5 V, min. 2 A. Do not leave the headlamp unattended while charging.

- Operating temperature range: **-20 °C to +40 °C** (-4 °F to 104 °F).
- Protection rating **IP67**: short-term immersion up to 1 m for max. 30 minutes – not a diving device.
- The housing may become warm at high brightness levels. Do not operate the headlamp in direct contact with heat-sensitive materials.
- Keep the headlamp and accessories out of reach of children under 3 years (small parts).
- Do not modify the headlamp. Repairs may only be carried out by Zweibrüder or an authorized service partner.

### 3. Before First Use

The ZB3H is shipped from the factory in a **transport lock mode** that protects the headlamp against unintentional switching on and deep discharge. Before first use, you must release this lock once:

- Hold the power button for approx. **5 s** – the LED blinks to confirm.
- After that, the headlamp responds normally to the button.
- We recommend a **full charge** before first use (approx. 3 h, see section 10).
- Adjust the headband comfortably to your head circumference and check that the headlamp is securely attached to the mount.



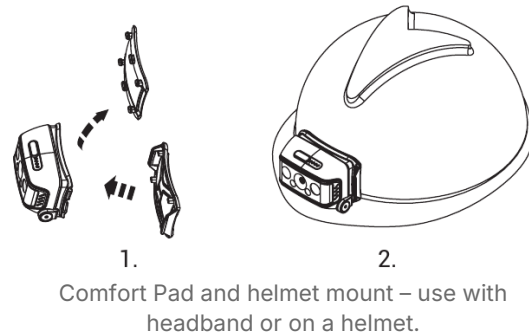
## 4. Headband, Helmet Mount and Comfort Pad

The ZB3H can be worn in two ways: with the supplied **headband** directly on the head, or with the **helmet mount** on a safety helmet. For extra wearing comfort, the **Comfort Pad** can be added as a soft cushion between the headlamp and forehead.

### Adjusting the headband

- Snap the headlamp into the headband mount (click).
- Adjust the forehead and cross strap via the hook-and-loop sliders to fit your head circumference.
- The headlamp can be tilted downward in the mount to direct the beam optimally.
- Attach the Comfort Pad to the inner side of the headband with hook-and-loop – ideal for extended use.

Helmet Mount



### Fitting the helmet mount

- Clean, degrease, and allow the adhesive surface on the helmet to dry completely.
- Attach the helmet mount to the helmet using the 3M adhesive tape and allow to cure for 24 h.
- Snap the headlamp into the adapter mount.
- Tilt the headlamp downward to direct the beam.
- Check that the mount is secure before each use.

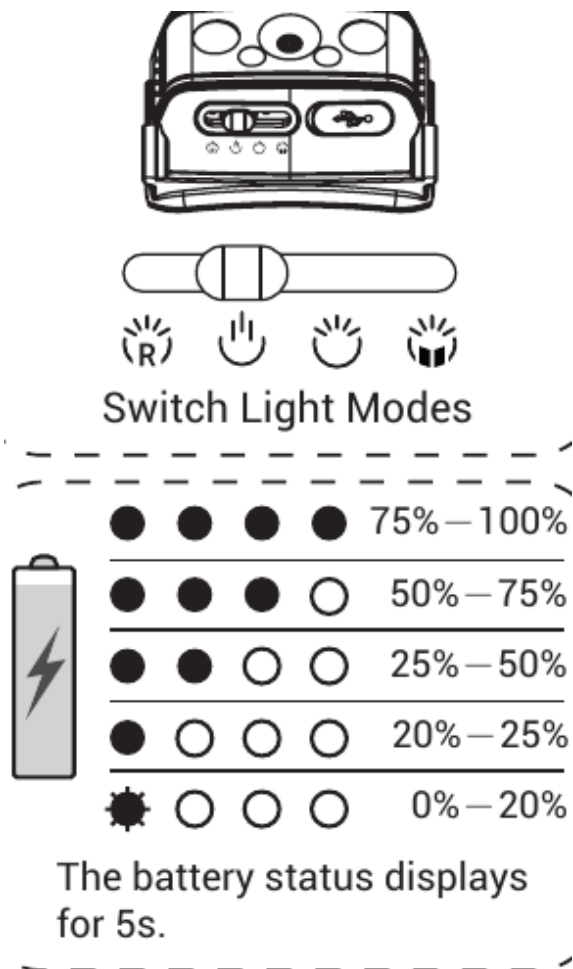
## 5. Operation – Switching On and Off

The ZB3H has two controls: the central **Power Switch** (push-button) on the top of the headlamp (on/off and brightness) and the **Focus Switch** (slide switch) at the bottom of the housing (mode selection).

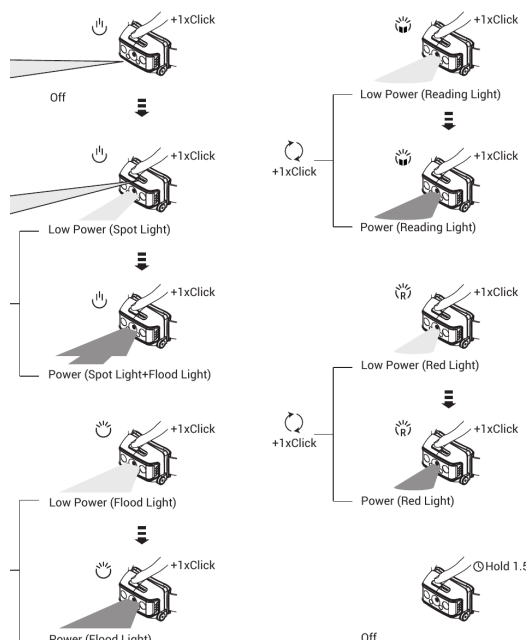
### Basic operation

- **Switch on:** press the Power Switch once briefly – the headlamp starts in the last selected mode.
- **Change brightness:** press the Power Switch again briefly (Low > High > Low ... in a loop).
- **Change mode:** slide the Focus Switch at the bottom of the housing left or right – mode sequence: Red light > High beam > Floodlight > Reading light. Mode pre-selection also works when the headlamp is switched off.
- **Switch off:** hold the Power Switch for approx. **1 s**.

- **Battery indicator:** displayed for approx. 5 s when switching on (see section 8).



Off position and 5-stage battery indicator when switching on.



Operation diagram: Low / High brightness per mode; change mode with Focus Switch.

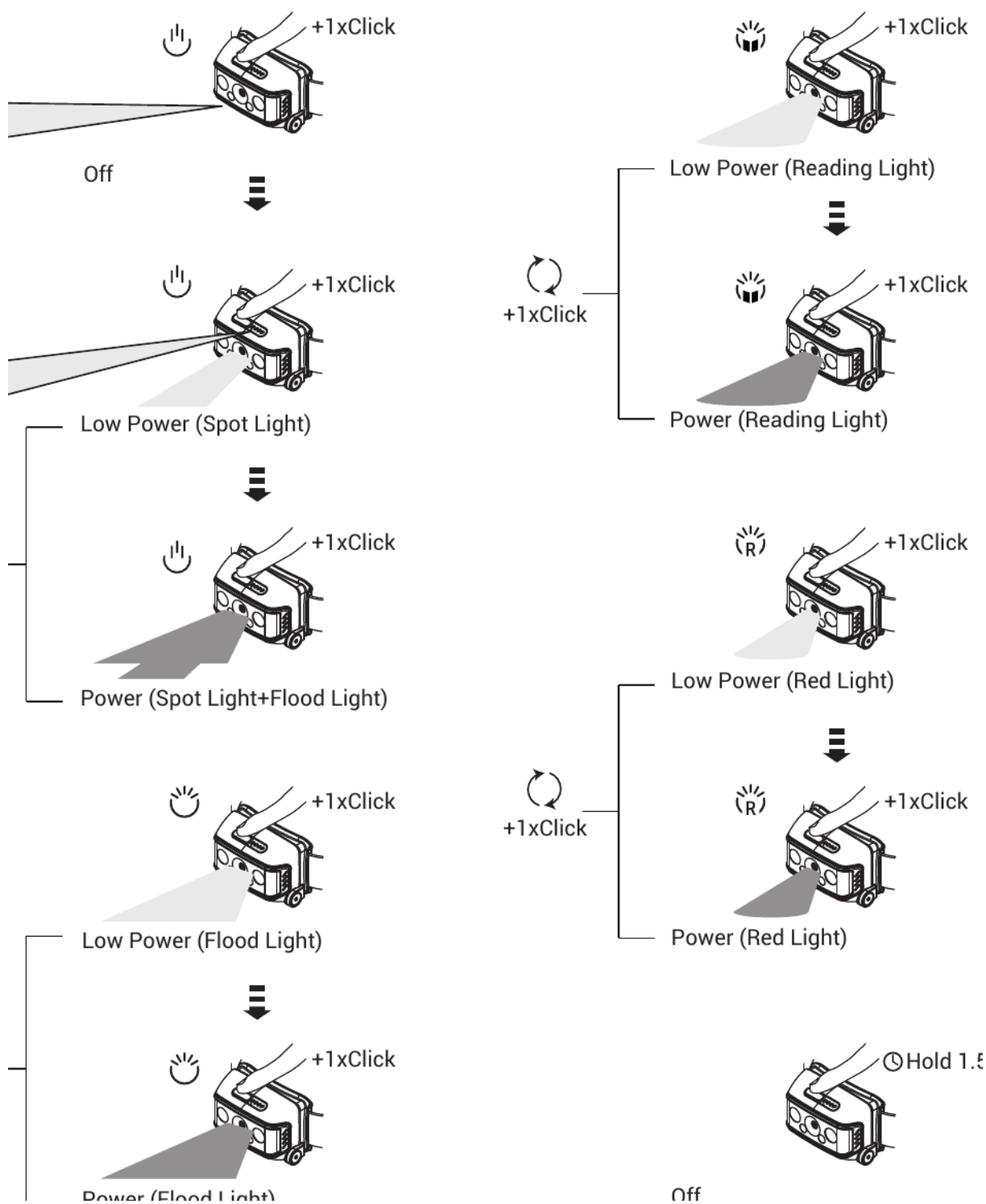
## 6. Light Modes

The **Multiple Optic Technology (MOT)** of the ZB3H creates several distinct beam patterns – electronically, without moving parts. Use the central **Focus Switch** (slide switch) at the bottom of the housing to select between the modes.

| Mode          | Beam pattern                   | Typical use                              |
|---------------|--------------------------------|------------------------------------------|
| Red light     | Red light                      | Preserving night vision, stargazing      |
| High beam     | Long throw, narrow beam        | Trail finding, long-distance orientation |
| Floodlight    | Flood, wide and even           | Camp, close range, garage, workshop      |
| Reading light | Glare-free, soft reading light | Maps, books, repairs                     |

### Changing modes

- Slide the Focus Switch to advance to the next mode: **Red light › High beam › Floodlight › Reading light**.
- Within each mode, **two brightness levels** (Low / High) are available – switch with a brief press of the Power Switch on the top of the headlamp.
- To switch off, hold the Power Switch for **1 s**.
- When switching on again, the headlamp starts in the last used mode.



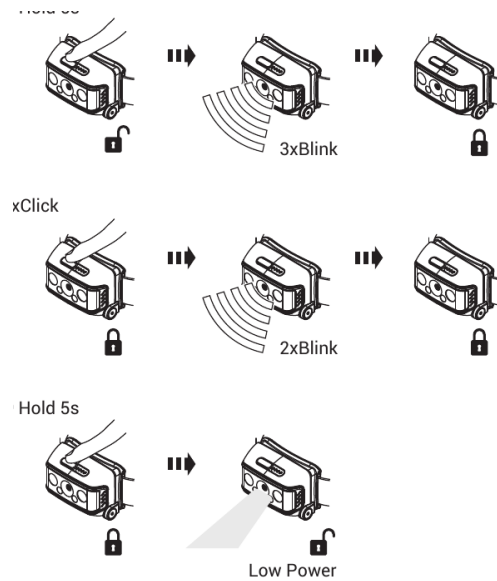
### Tip: Start with Red light

Since the headlamp starts in the last used mode, it is worth switching to Red light mode before leaving a dark environment – this preserves night vision when next switching on.

## 7. Button Lock

To prevent accidental switching on in a bag or backpack, the ZB3H features an electronic **keypad lock**. It also serves as a transport lock.

- **Lock:** with the headlamp *off*, hold the button for approx. **5 s** – the LED blinks **3x** to confirm, a lock symbol appears.
- **Unlock:** hold the button again for **5 s** – the LED blinks **2x**, the lock is released.
- While locked, the headlamp does not respond to brief button presses.



Lock / unlock: hold the button for 5 s.

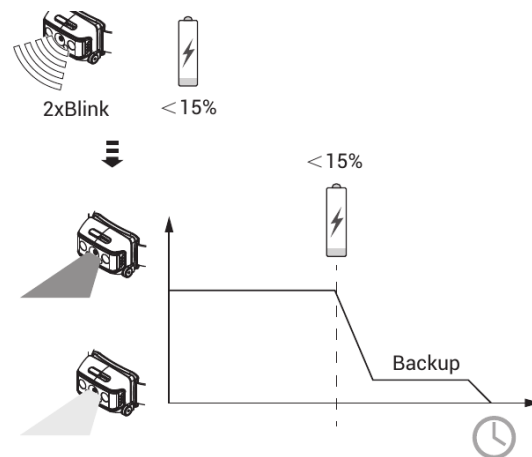
### Recommendation

Always lock the headlamp before placing it in a backpack or jacket pocket. This preserves the battery and prevents unwanted heating.

## 8. Battery Status and Warnings

Each time the headlamp is switched on, the LED indicator shows the current charge level for **approx. 5 seconds**:

- **75 – 100 %:** 4 dots lit
- **50 – 75 %:** 3 dots lit
- **25 – 50 %:** 2 dots lit
- **20 – 25 %:** 1 dot lit
- **0 – 20 %:** 1 dot blinks
- **Below 15 %:** the headlamp **blinks 2x** as a warning and automatically switches into **Backup mode** with reduced brightness to avoid deep discharge.



Warning below 15 %: 2x blink, automatic Backup mode.

## 9. Overheat Protection (HPS)

The **Heat Protection System** protects the LED and battery from excessively high temperatures. If the headlamp becomes too hot – for example when running at maximum brightness less than 3 cm from a surface – it automatically dims down or switches off after a short time.

- Minimum clearance: at least **3 cm** of free space in front of the optic window.
- If the headlamp is **completely covered**, it switches off automatically after approx. **5 seconds**.
- After cooling down it can be used normally again – this function has no effect on service life.

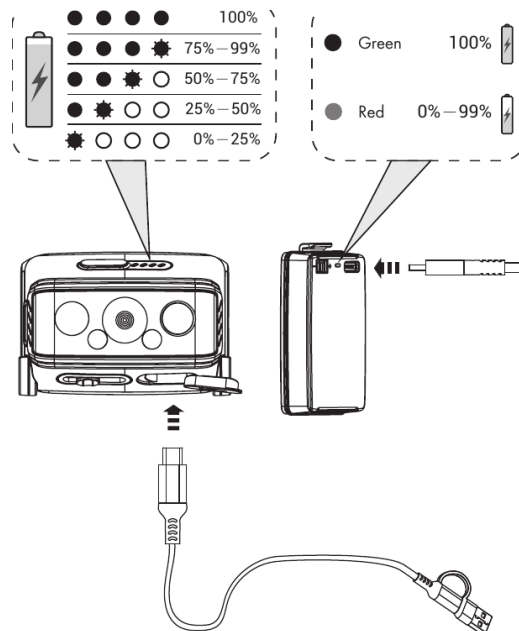


## 10. Charging the Battery

The Li-Po battery of the ZB3H can be charged in two ways: **directly inside the headlamp** via the **USB-C port** on the underside, or by removing the battery and charging it externally – the battery has its own USB-C port. A full charge takes approx. **3 hours** in either case.

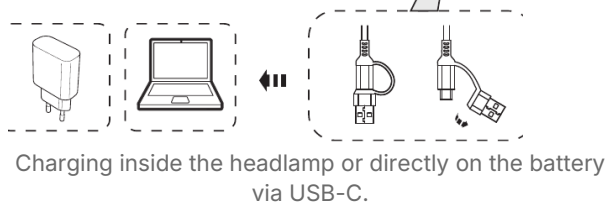
### Charging inside the headlamp

- Open the sealing cap of the USB-C port on the underside.
- Connect the supplied USB-C cable.
- Connect the other end to a USB power adapter (5 V, min. 2 A) or a computer / laptop.
- The status LED glows **red** during charging and switches to **green** once 100 % is reached.
- After charging, close the sealing cap fully again – this is the only way to maintain IP67 protection.



### Charging the battery externally

- Remove the battery from the headlamp housing.
- Connect the USB-C cable directly to the battery's own USB-C port.
- Re-insert the charged battery into the headlamp – ensure correct orientation.



**Mind the charging temperature**

Charge the headlamp only between 0 °C and 40 °C. At very cold or very warm temperatures, charging may be slowed down or interrupted by the protection circuit.

## 11. Cleaning and Care

- Switch the headlamp **off** before cleaning.
- Wipe with a **soft, slightly damp cloth**. Do not use harsh cleaners, acetone, or high-pressure water.
- Clean the optic window only with a soft microfiber cloth – avoid scratching.
- Keep the USB-C port sealing cap free of sand and salt. After use in salty environments, rinse thoroughly with fresh water and dry completely.
- The headband can be detached from the headlamp and hand-washed in lukewarm water. The Comfort Pad should also be hand-washed, not machine-washed.

## 12. Storage and Transport

- For longer storage (more than 1 month), charge the headlamp to **approx. 50 %** and store it in a dry, cool place (10 – 25 °C).
- Check and recharge every 3 – 6 months if needed to avoid deep discharge.
- For travel, we recommend the supplied **storage pouch**. Also activate the **keypad lock** so the headlamp cannot be switched on accidentally.
- Lithium batteries are subject to transport regulations – on **aircraft**, always carry them in hand luggage, never in checked baggage.

## 13. Troubleshooting

| Observation                                   | Possible cause                                                          | Remedy                                                                          |
|-----------------------------------------------|-------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Headlamp does not react to button press       | Keypad lock / transport lock active                                     | Hold the button for 5 s – blinking confirms unlock.                             |
| Headlamp will not switch on                   | Battery empty                                                           | Charge for at least 30 min and try again.                                       |
| Brightness drops after a short time           | Battery below 15 % or overheat protection active                        | Charge the headlamp or let it cool down; ensure adequate ventilation.           |
| Headlamp blinks 2× and dims down              | Battery below 15 % (Backup mode)                                        | Charge the battery soon.                                                        |
| Headlamp switches off by itself               | Optic completely covered (auto-off after 5 s)                           | Remove the obstruction or take the headlamp out of the bag.                     |
| Charging takes unusually long                 | Low ambient temperature, weak power adapter                             | Charge at 0 – 40 °C, use a power adapter rated min. 2 A.                        |
| No mode change when pressing the Power Switch | Trying to change mode with the Power Switch instead of the Focus Switch | Select mode using the Focus Switch (slide switch at the bottom of the housing). |

## 14. Technical Specifications

|                                    |                                                                |
|------------------------------------|----------------------------------------------------------------|
| <b>Model</b>                       | ZB3H                                                           |
| <b>Lumens</b>                      | 30 – 600 lm                                                    |
| <b>Range</b>                       | 10 – 150 m                                                     |
| <b>Runtime</b>                     | 3 – 35 h (ANSI FL1)                                            |
| <b>Color temperature</b>           | 5700 K                                                         |
| <b>Color rendering index (CRI)</b> | 70 / 80                                                        |
| <b>Light modes</b>                 | Red light, High beam, Floodlight, Reading light                |
| <b>Rechargeable battery</b>        | Li-Po, 3.7 V, 2000 mAh (replaceable)                           |
| <b>Charging port</b>               | USB-C (headlamp) + USB-C (battery) · 5 V, min. 2 A recommended |
| <b>Charging time</b>               | approx. 3 h                                                    |
| <b>Protection rating</b>           | IP67                                                           |
| <b>Impact rating</b>               | IK07                                                           |
| <b>Operating temperature</b>       | -20 °C to +40 °C                                               |
| <b>Charging temperature</b>        | 0 °C to 40 °C                                                  |
| <b>Material</b>                    | Aluminum (anodized), glass, polymer                            |
| <b>Weight</b>                      | 124 g                                                          |

## 15. Disposal

Help protect the environment by not disposing of the headlamp in household waste.

- **Headlamp:** dispose of via municipal collection points or recycling centers as electrical waste (WEEE).
- **Li-Po battery:** remove the battery before disposing of the headlamp and return it separately via battery take-back points (retailers, recycling centers). Never dispose of in household waste.
- **Packaging:** separate cardboard, paper, and plastic for recycling.
- Within the EU, you can also return end-of-life electrical appliances free of charge to retailers with a corresponding take-back obligation.



Symbol 'Do not dispose of in household waste' – return to collection point.

## 16. Warranty and Contact

Zweibrüder provides the **statutory warranty** on the ZB3H. Damage caused by improper use, falls from significant height, or tampering with the housing is excluded. For warranty claims, please contact your retailer or our service team with proof of purchase.

|                   |                                                                  |
|-------------------|------------------------------------------------------------------|
| Manufacturer      | Zweibrüder GmbH, Solingen, Germany                               |
| Web               | <a href="http://www.zweibruder.de">www.zweibruder.de</a>         |
| Service / Support | <a href="mailto:Service@zweibruder.de">Service@zweibruder.de</a> |
| Article number    | ZB-7403                                                          |

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