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EN

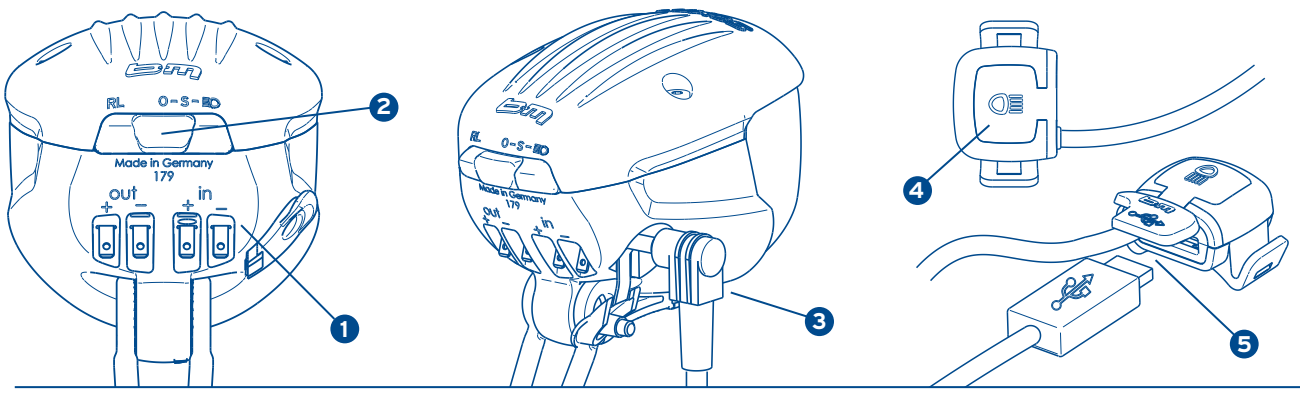
| Mounting and instruction manual

LUXOS U LUMOTEC IQ2

- Daytime running light with sensor
- Panorama light at close range
- Floodlight (90 Lux)
- Standlight
- USB out
- Handlebar button
- Cache battery
- Rear light monitor

LUXOS B LUMOTEC IQ2

- Daytime running light with sensor
- Standlight



LUXOS General instructions and information

Mounting

Mount the headlight to the bicycle securely using the pre-mounted stainless steel bracket or another suitable bracket. Adjust its height so oncoming traffic is not glared. The brightest section of the light field should be in ten metres distance. Tighten screws so the headlight cannot shift position by itself. After establishing the electrical connection and mounting, a plastic cable guide (two parts, included) can be clipped around the bracket to protect and hide the wires.
German traffic regulations require a white front reflector. To achieve this, the enclosed reflector can be clipped onto the bottom of the headlight.

! Please note: Always observe proper polarity: + = current, – = ground. Ground connection via the headlight's mounting bracket is not possible.

Connection to dynamo and rear light 1

Connect the cable coming from the dynamo to the push on contacts marked "in" on the headlight. If no cable is connected to the dynamo yet, use the included twin wires.
The push on contacts marked "out" are for connecting a rear light with twin wiring. This connection has to be done with twin wiring and without mass contact (i.e. no electrical connection to the bicycle frame). Rear lights offering mass contact via their mounting screws have to be mounted without electrical connection to the bicycle frame.

Daytime running light. LICHT24

The headlight is equipped with daytime running light and has two modes of operation. The headlight is controlled by a light/dark sensor. During bright conditions, the headlight functions in day mode. During dusk and darkness the headlight automatically switches in night mode.

Day mode The headlight shines dimmed onto the road, the additional daytime running LEDs shine with full intensity. Maximum visibility for oncoming traffic!

Night mode The headlight shines with full brightness (70 Lux) onto the road, the additional daytime running LEDs shine with diminished intensity. Maximum vision, additional visibility for oncoming traffic!

Further information

The overvoltage protection permanently guards the headlight, even if no rear light is connected.
! Please note: The headlight can only be powered by a dynamo (AC). Connection to a DC power source (battery) is not possible.
Only special e-bike versions of the LUXOS E can accept DC power from 15 to 75 V. Please ask your specialised retailer.

! Warning! Protect LUXOS against water damage: If the bicycle is transported upside down on a car during rain or cleaned with water, the headlight must be protected so that no moisture may enter via its bottom apertures (e.g. by covering it with a plastic bag).

Our rear light tip: LUXOS is ideally combined with an energy saving rear light – this leaves more energy for the various functions of the headlight! With light strip technology LineTec and standlight: TOPLIGHT Line plus, TOPLIGHT Flat S plus. Additionally with "brake light function" BrakeTec: TOPLIGHT Line brake plus.

LUXOS U Specific instructions and information

Efficient use of energy: Distribution of energy for light and functions

LUXOS U creates a homogenous field of light that is up to 800% brighter and 200% wider than required by German road traffic regulations.

! Please note: Lighting of the road varies depending on speed, operating mode and charging status of the integrated cache battery. The slower one cycles (below 15 km/h) the brighter the road immediately in front of the bicycle is lit (panorama light at close range, see below) while the far range is darker. When the velocity increases, the light distribution is reversed.
The LUXOS U offers functions and features that no other previous headlight had. Hub dynamo energy is used with maximum efficiency. Output of currently known hub dynamos might deviate by up to 40%. By nature, this energy is limited and insufficient to always power all functions of the LUXOS at full power simultaneously. Therefore, the energy use has to be controlled and distributed reasonably:

- **Headlight switched on**
  The integrated cache battery is charged during cycling while at the same time the light shines. During the short while it takes for the battery to charge, the light output is reduced. As soon as the cache battery is charged, the maximum energy is available to the light functions: panorama light at close range, floodlight, daytime running light, standlight. When the light is switched on, the battery is recharged when the velocity exceeds 15 km/h, while the use panorama light at close range, floodlight or standlight discharges the battery.
- **Headlight switched off**
  Only when the headlight is switched off, USB charging energy can continually be provided at more than 100 mA. (See below: USB charging.) Charging energy is stabilised by the cache battery, so even sensitive mobile devices may be charged. Due to the limited amount of energy, no light functions are available during charging.
- **Parked bicycle**
  If the integrated battery was charged during cycling, the stored energy can be used for charging or powering USB devices (limited energy).

Panorama light at close range

Two additional LEDs in the "forehead" of the LUXOS shine onto the road directly front and to the side of the bicycle and provide additional light width at absolute close range. Panorama light at close range is controlled automatically: When cycling slower than approx. 15 km/h, the panorama light at close range activates automatically. The slower one drives, the brighter this light gets. Floodlight mode also activates panorama light at close range (maximum light output, only possible when cache battery is charged).

Floodlight

When floodlight is activated, both the energy currently being provided by the dynamo and the energy stored in the cache battery are used in their entirety for maximum light output. Floodlight is ideal for rides in pitch darkness and when abruptly switching from bright to dark surroundings. It can also be used as a flashing headlight. Floodlight is aided by the lithium cache battery and shines as long as the energy reserve allows. (If the cache battery is fully charged and if one cycles at approx. 25 km/h, roughly 15 minutes of floodlight are available.) Floodlight is switched using the push buttons (quick push, ON/OFF). Floodlight duration is limited (available until the cache battery is exhausted).

Standlight

LUXOS U continues shining when the bicycle stands still. The technology: During cycling, part of the dynamo energy is stored in the lithium cache battery. When standing still, this energy powers the headlight's LEDs so that the headlight continues to shine. Standlight can be deactivated prematurely with a long push on any button.

Switching options

The LUXOS U has a push button on its casing as well as a separate handlebar push button. Connection of the handlebar button is optional. We recommend this connection, because only then USB charging is available and because floodlight and flashing headlight can easily be triggered while cycling.

The headlight push button and its indicator LEDs 2

0 = Headlight off. No LED indication.
S = YELLOW indication: headlight ON. Light/dark sensor activated – switches automatically between day and night mode.
≣○ = BLUE indication: 1. Floodlight activated. 2. Flashing headlight.
RL = GREEN indication: rear light monitor (see below)

The handlebar push button: mounting 3 4

The push button is mounted to the handlebar using a rubber band or cable strap. Open the rubber cap on the right side of the headlight casing. Firmly insert the cable (lug jack) as far as it will go.
The L-shaped lug jack has to point downwards for safe operation, this also forms a draining sling for rainy weather or splashing water.

! Please note: Ensure a proper fit of the lug jack in the headlight to prevent faulty operation! Guide the cable in a way so the lug jack may not inadvertently be pulled out of the connector.

! Please note: Keep rubber cap closed when not using the handlebar button – moisture on the lug jack or inside the connector compromise the headlight's functions. Liability for such damages is excluded.

The handlebar push button and its indicator LEDs 4

BLUE = 1. Floodlight activated 2. Flashing headlight
RED = USB charging energy available

Operation of handlebar and headlight push button

Long push (> 1 sec.)
- Headlight ON/OFF
- In standlight mode: standlight off

Quick push
- When headlight is switched on, during cycling: floodlight ON/OFF
- When headlight is switched on, during parking in standlight mode: switch between regular and super bright standlight
- When headlight is switched off, during cycling or parking: flashing light ON/OFF

USB charging energy 5

Integrated into the handlebar button below a rubber cap is a USB socket which can be used to charge or power USB devices. During rain, the USB socket cannot be used and the rubber cap has to remain closed (alternatively, the socket may be protected against moisture e.g. by sheathing it in plastic).

A red LED in the handlebar button indicates when USB charging power is available. This is the case when the integrated cache battery (see below) has sufficient energy available. Connected devices are provided with 5 V and up to 1 A current. The charged cache battery keeps the energy supply constant during slow rides and stops so that sensitive mobile devices may be charged. If the charge of the cache battery drops below a certain level, USB energy supply is interrupted (red LED ceases shining) until the battery is sufficiently charged once more.

Tip: Before a USB device is connected, cycle for some minutes with the light switched off so the cache battery has sufficient basic charge.

Permanent USB charging with more than 100 mA is only possible when all light functions are switched off. When the cache battery is charged, simultaneous charging and use of the light function is **temporarily possible.** The duration of this depends on the charging status of the cache battery, the cycling speed, the quality of the dynamo and the energy demand of the connected USB device. While the cache battery discharges, the light output diminishes. As soon as the light output drops below 20 Lux, the USB energy is interrupted. The light will not deactivate during cycling.

! It cannot be guaranteed that all connectable USB devices can be powered/charged. Please contact the device manufacturer.

! Please note: Most USB devices have an automatic charging deactivation which provides overloads. If such a deactivation is not available but the device shows the charging status, the device has to be disconnected from the handlebar button as soon as it is fully charged. If neither automatic deactivation nor charging status display are present, a warming battery is a sign for overloading.

Function and output of the integrated lithium cache battery

The lithium cache battery powers standlight, panorama light at close range and floodlight. It also ensures that the charging energy emitted via the USB socket is constant during slow rides and stops. When the cache battery's charge drops below a certain level, it ceases providing energy until it once more possesses sufficient charge.

If the cache battery is empty, it takes about ten minutes of cycling at 15 km/h to charge it completely, if the headlight is switched of and no USB devices is connected to the handlebar button.

While parking with the light system switched off, a fully charged cache battery can supply a connected USB device with energy for approx. 4 minutes. For energy preserving reasons, the energy supply is interrupted after that. By moving the bicycle, the USB energy supply can be reactivated.

! Please note: After longer periods of non-use, it may take several seconds of cycling in order for light to be available. If the cache battery is emptied and the headlight is not used for several months afterwards, it takes approx. 20 seconds of cycling for the cache battery to be charged so normal light function is possible. It is also possible that after a longer period of non-use it takes several seconds of cycling before light is available.
This can be prevented by charging the cache battery before a longer period of non-use (e.g. "hibernation"). To do this, it is sufficient to cycle for ten minutes without using either light or USB charging functions.

Rear light monitor

In the headlight push button, the green LED (RL) shines constantly when a rear light is connected to the headlight that functions properly. In case of a short circuit or increased energy consumption of the rear light, the green LED flashes. If the rear light fails, or if no rear light is connected, the green LED ceases to shine.
! Please note: If a rear light with standlight function is connected, an empty standlight capacitor may lead to temporarily increased energy consumption (green LED flashes).

LUXOS B Specific instructions and information

LUXOS B creates a homogenous field of light that is up to 600% brighter and 200% wider than required by German road traffic regulations.

ON/OFF switch 2

The LUXOS B is switched on or off using a push button on the rear of the headlight. If the headlight is switched on, a yellow LED shines inside the switch. If the bicycle is parked, the switching status is stored. After longer periods of non-use it may take up to five seconds of cycling for the switched-on headlight to shine.

Standlight

LUXOS B continues shining when the bicycle stands still. The technology: During cycling, part of the dynamo energy is stored in a capacitor. When standing still, this energy powers the headlight's LEDs so that the headlight continues to shine even if the dynamo supplies no energy. Standlight can be deactivated prematurely by pushing the button.

Please note: Never dispose of worn-out rechargeable batteries or electronic parts with your domestic waste but discard as hazardous waste!

Please note: The function of interference-prone wireless tachometers may be affected by LED headlights.

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