

LED-Headlight *Edelux*

- Evenly distributed illumination across a large area of road surface
- 3 times as much light as the best halogen headlight
- Capacitor standlight and automatic light sensor
- Rugged mechanical and electrical design
- Watertight switch and housing
- heat sink of solid copper makes LED run efficiently and prevents damage by optimal cooling



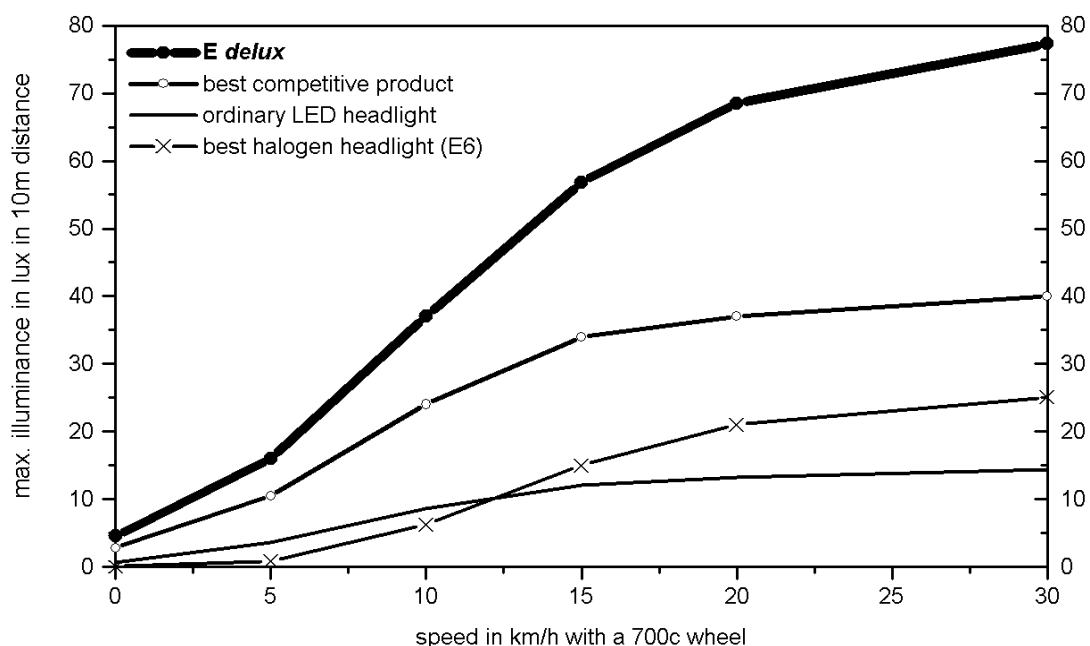
Edelux is the result of consistent optimization.

The basic concept of the well known E6 headlight had been: An efficient and robust construction dedicated to convert all the electrical power of the hub dynamo into useful light on the road.

The **Edelux** is the continued further development of the E6 using the characteristics of white high performance LEDs. We tapped the full potential of LED-technology and fully optimized the cooling and optical systems. The **Edelux** is designed to match the round shape of the new SON 20 R, but it functions perfectly well with any other 6 volt hub dynamo.

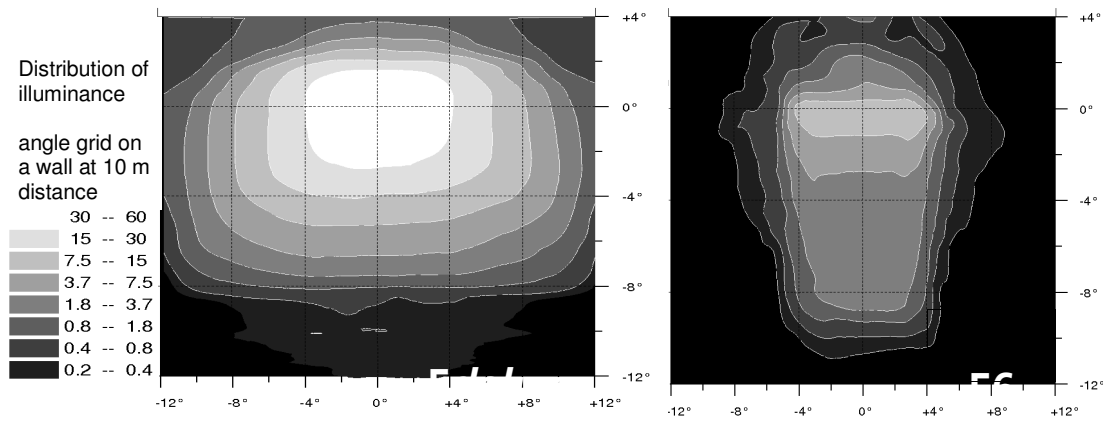
Optical system

In the **Edelux** we use the offset mirror IQ-Tec by Busch & Müller. Unlike conventional optical systems for headlights it utilizes quite a large percentage of the emitted light and provides a wide, evenly and brightly lit road surface. Since the leading edge (top) of the light field is exactly defined, blinding of oncoming cyclists and motorists is avoided. Little scattered light radiates upwards, eliminating most of the glare the cyclist would ordinarily see in foggy weather conditions. The black ring around the mirror protects the rider's night vision against direct blinding. The anti-reflective front glass lens is scratch resistant and transmits 6% more light than a plastic lens.



Illuminance of a choice of headlights run with a SON28 hub dynamo, taillight Busch & Müller DToplight connected, blower cooling

Light distribution in comparison: wall projection of **Edelux** and halogen headlight E6 at 2.4 Watt



Heat flow / Mechanics / Electrical system

An LED's efficiency and durability are mainly determined by its cooling. This is why we placed the LED on a massive copper heat sink, which in turn conducts the heat to the aluminum housing, and then to the outside air. It weighs more, but in a typical plastic housing, the LED itself can reach more than 100° Celsius (210°F). At high speed the effective cooling in the **Edelux** enables the LED to run 20% brighter than otherwise identical systems, since the LED in the **Edelux** is operating at least 30° Celsius cooler. An O-ring seal protects all interior parts of the headlight (incl. switch contact) against ingress of water and dirt. Electrical contacts are soldered and encapsulated with cast resin. The switching ring contains a magnet in its large nose which operates a well protected reed switch inside the housing. The ring allows "blind" switching even when wearing thick gloves. In sensor mode the light turns on automatically in approaching darkness, uninfluenced by street lamps or car headlights. The robust, low-loss coaxial cable resists even rough treatment.

Electronics

The switching regulator of the **Edelux** as well as the reflector come from Busch & Müller. The electronics transforms the electrical power of the hub dynamo to the lower voltage of the light-emitting diode. Even at very high speed it works at low loss and does not harm the LED. The voltage at the output connector is limited to protect the taillight. The taillight is switched together with the headlight. When stopped a maintenance-free double layer capacitor provides for up to 4 minutes light.

Guarantee

We offer a 5 year faultless function guarantee on the **Edelux**.

Availability

The **Edelux** is expected to be available in June 2008.

Edelux: Technical data

Light source:	3 Watt high-performance-LED (>100 lm/W)
German mark of conformity:	requested
Feed cable:	coaxial cable, PVC-free, 3 mm diameter, cable length 60 cm, connectors fitted for SON, alternatively, 140 cm with loose connectors
Connection for Taillight:	blade connector 2.8 mm and 6 mm eyelet connector (enclosed)
Switch:	switch ring with magnet, Reed-contact
Seal:	O-ring
Housing:	aluminum 6082 T6, polished or black anodized
Weight:	85 g
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