

Brightest LED Puts Light Bulbs in the Shade

June 14 2005

Osram has developed the world's brightest white light-emitting diode. Known as Ostar Lighting, this LED supplies 200 lumens, thus literally putting light bulbs and neon lamps in the shade. Previously, the brightest LED from the Siemens subsidiary Osram had an output of 120 lumens. As far as its luminosity is concerned, Ostar Lighting can therefore compete with conventional lamps. The system has an average service life of 50,000 hours, or almost 18 years if used for eight hours a day. The new LED is currently being prepared for series production and is scheduled for market launch in early 2006.

The researchers at Osram Opto Semiconductors in Regensburg achieved this extraordinary level of brightness by channeling almost all of the light that is generated by a semiconductor chip at 700 milliamperes to the outside. A number of different techniques were used to accomplish this feat. The chip is coated with a metal reflector and a specially structured, microprismatic surface that steer light rays directly upward. The chip radiates blue light that is changed into white light by a second, yellow coating.

Because LED technology is still expensive, the extremely bright light-emitting diode will initially be used for special lighting applications such as spotlights, reading lamps, designer lamps and safety lamps. Since the Ostar Lighting system measures only 1 x 3 cm and has an installation depth of six millimeters, it opens up new design opportunities for using LEDs in furniture or buildings, for example.

Citation: Brightest LED Puts Light Bulbs in the Shade (2005, June 14) retrieved 26 April 2024
from <https://phys.org/news/2005-06-brightest-bulbs.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.