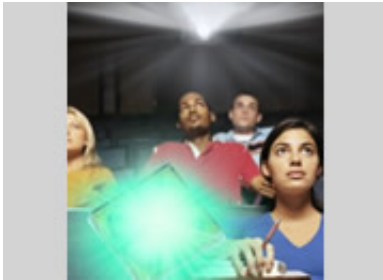


Green LED is bright enough for large projector

March 17 2011



Osram Opto Semiconductors has developed an extremely bright, green light-emitting diode (LED) that makes LED projectors in office environments possible. Projectors in conference rooms have to be very bright for viewers to easily see the large images even in daylight. So far, LED light sources have therefore been used primarily in pocket projectors, cell phones, or home cinema systems. The new diode, which is based on the Ostar product platform, shines twice as brightly as before and its luminous area is very uniform. Beginning in mid-2011 it will be used to open up the office projector market. The first components are now being delivered to customers.

Projectors superimpose images in the three primary colors red, green, and blue in rapid succession. Conventional devices use a special halogen lamp behind a rotating color wheel. LED projectors do without a color

wheel because the diodes emit red, green, and blue light directly. What's more, LEDs generate brilliant images with high contrast and high color saturation. They require less power and have a service life of about 30,000 hours, more than seven times as long as conventional lamps. In the past, however, LEDs have not been bright enough for office projectors, which have to supply about 2,000 lumens of light. The brightest pocket projectors now provide between 50 and 100 lumens.

The brightness of an LED [projector](#) depends to a large extent on the output of the green LED, because green light accounts for more than two thirds of the white light produced in such projectors. The new diode emits 410 lumens of light at a wavelength of 520 nanometers, which is twice as bright as lamps used in the past. This means it is now possible to build systems of multiple LEDs that have a brightness of 2,000 lumens, enough for office projectors with image diagonals of up to several meters. The component is based on the latest chip technology for high-performance LEDs. Blue light is transformed into green light by means of phosphor converters. This allows the developers to achieve twice as much light as with directly generated green light.

The Osram subsidiary Osram Opto Semiconductors, which is owned by Siemens Industry, is the only manufacturer to offer LED solutions for projectors in every performance class — from home cinema systems with an image diagonal of over 79 inches to tiny units that can be integrated directly into cell phones or MP4 players. Highly efficient [LED](#) lighting is part of the Siemens Environmental Portfolio, which generated around €28 billion in sales for the company in fiscal year 2010.

Source: Siemens

Citation: Green LED is bright enough for large projector (2011, March 17) retrieved 30 April

2024 from <https://phys.org/news/2011-03-green-bright-large-projector.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.