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OSRAM LED produces warm white light, high efficiency, true colors

Out of the laboratory: High-flux LED prototype with a feel-good effect

OSRAM Opto Semiconductors has developed an LED that offers high efficiency, excellent color rendering and a pleasant warm white light. The prototype is the first to offer the three important properties that together are essential for general illumination applications, namely a color temperature of 3000 K, a color rendering index of 82 and an efficiency of 104 lm/W.

The pleasant light from this warm white LED is the result of an advanced conversion process. Not only is the quality of light excellent, but the efficiency with which it is produced is also ground-breaking. The combination of these properties is essential for the widespread use of LEDs for general illumination as the warm white light color is targeted specifically at the residential sector. Up to now, efficiencies exceeding 100 lm/W have been achieved only in the cold white spectrum. Dr. Frank Baumann, project manager for the development of warm white LEDs at OSRAM Opto Semiconductors, explains, "The successful combination of high quality of light and excellent energy efficiency will bring the commercial breakthrough for LED technology even closer. Efficient, pleasant light is no longer just a vision."

At 3000 K, the light color of the LED is similar to that of a halogen lamp. Its color location is precisely on the Planckian curve, and the light is exactly white showing no shift to the green spectral region. With an operating current of 350 mA and a chip surface of 1 mm², the prototype of the new single-chip LED achieves a brightness of 124 lm, which corresponds to an efficiency of 104 lm/W. These record results are based on in-depth OSRAM expertise in providing a new chip architecture in conjunction with improvements in silicon crystal growth technology, improvements in the converter mix, and a high-efficiency package. OSRAM will be gradually integrating the new technologies into production.

For more information, please contact OSRAM Opto Semiconductors at info@osram-os.com or call 866-993-5211.



Picture: OSRAM

<http://www.osram-os.com/press>

A new converter mix that OSRAM is currently testing in its development laboratory provides a pleasant warm white light.

ABOUT OSRAM OPTO SEMICONDUCTORS

OSRAM is part of the Industry sector of Siemens and one of the two leading lighting manufacturers in the world. Its subsidiary, OSRAM Opto Semiconductors GmbH in Regensburg (Germany), offers its customers solutions based on semiconductor technology for lighting, sensing and visualization applications. OSRAM Opto Semiconductors has production sites in Regensburg (Germany) and Penang (Malaysia). Its headquarters for North America is in Sunnyvale, CA (USA), and for Asia in Hong Kong. OSRAM Opto Semiconductors also has sales offices throughout the world. In the 2008 fiscal year (to the end of September) OSRAM Opto Semiconductors employed more than 4600 people and achieved sales totaling 529 million euros. For more information go to www.osram-os.com.

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