

Presse Press

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The future of quality control. Osram's new broadband infrared LED helps farmers plan the best time for harvest

Oslon Black SFH 4736 has more than double the radiant intensity of its predecessor

One of the most important decisions that farmers and vineyard owners have to make involves getting the timing right for the harvest. This not only ensures that the produce has the best possible taste but also means that precious time and money can be saved at the subsequent processing and shipment stages. To make it easier for farmers and vineyard owners to gauge the right time for the harvest, Osram now presents its new Oslon Black SFH 4736 near-infrared LED (NIRED). Simply scanning fruit or cereal crops with the NIRED installed in a smartphone or tablet produces reliable information about the sugar, water and fat content.

Determining ripeness in this way is made possible by [near-infrared spectroscopy](#). This involves "scanning" the content of various types of fruit and vegetables. The system makes use of the absorption behavior of certain molecular compounds. The NIRED irradiates a specimen with a defined spectrum of light and a spectrometer is used to measure the wavelength distribution of the reflected light. These measurements indicate the existence and quantity of certain ingredients. The farmer in the field or the vineyard owner at the vine can therefore take samples and easily monitor the progress of their crops in real time so they can plan the ideal time for the harvest.

With the SFH 4736 Osram Opto Semiconductors has added a version with a narrow beam angle to its portfolio of broadband emitting infrared LEDs. The lens ensures strong directional light, improving overall system efficiency. The primary optics bundle 90 percent of the generated light within a beam angle of +/-40°, providing considerably more optical power per unit area on the target object – in other words focusing the light precisely where it is needed. As a result, more light is reflected to the spectrometer, leading to a stronger measured signal. Up to now, separate optics were needed to focus

the light. With this new emitter this is no longer necessary, which reduces the costs for assembly, adjustment and design in the overall system.

Like its SFH 4735 predecessor, the SFH 4736 is based on a highly efficient, blue-emitting chip in UX:3 technology. A phosphor converter specially developed for this application converts the blue into infrared light with a wavelength range of 650 nm to 1050 nm. SFH 4736 is 2.3 mm high and has a footprint of 3.75 mm x 3.75 mm, comparable to that of the SFH 4735.

“Compared to SFH 4735 without a lens we are achieving more than twice the output with the SFH 4736 in a solid angle of 80 degrees,” said Carola Diez, Senior Marketing Manager at Osram Opto Semiconductors. “The SFH 4736 therefore marks another step toward even more efficient broadband NIREDs for spectroscopy applications.”

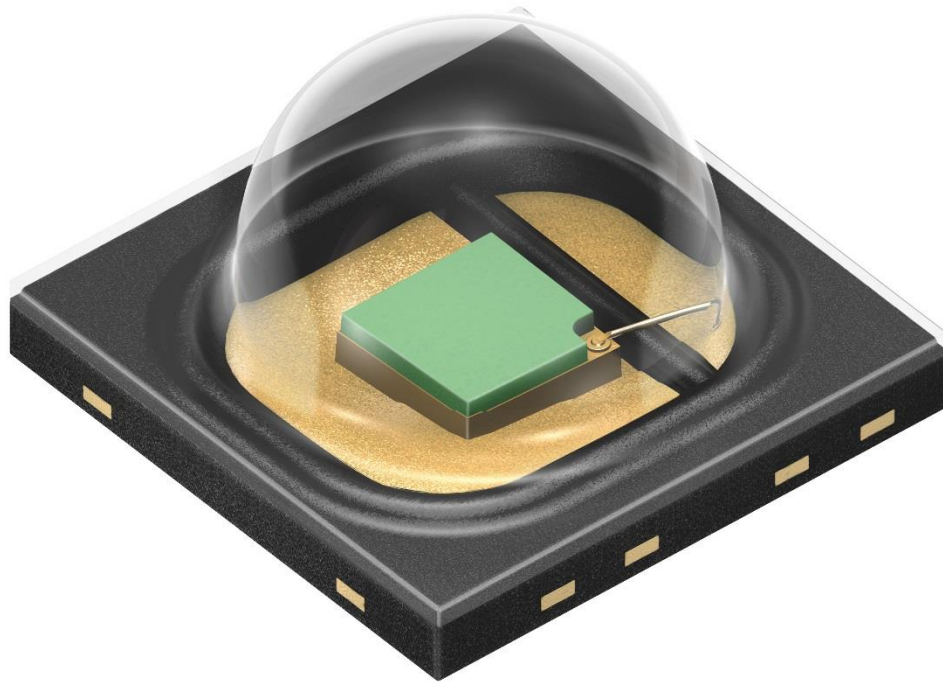
Back in late 2016, Osram Opto Semiconductors unveiled the predecessor to the current NIREd as the world’s first broadband emitter of this kind. The predecessor model is being used in various applications including in [Scio](#), one of the first near-infrared microspectrometers from Israeli startup Consumer Physics. Resembling a matchbox in shape and size, the device was developed for the end consumer sector. The successor model is also suitable for use in the professional sector and can provide valuable assistance to farmers.

Press contact:

Simon Thaler
Phone +49 941 850 1693
Email: simon.thaler@osram-os.com

Technical information:

Phone +49 941 850 1700
Fax +49 941 850 3305
Email: support@osram-os.com
Sales channels:
www.osram-os.com/sales-contacts



Osram has added to its family of broadband emitting infrared LEDs. New phosphor technology and an integrated lens produce more than twice the output compared to the predecessor model.

Picture: Osram



SFH 4736 helps farmers monitor the growth of their crops and plan the ideal time for harvest.

Picture: Osram

ABOUT OSRAM

OSRAM, based in Munich, is a leading global high-tech company with a history dating back more than 110 years. Primarily focused on semiconductor-based technologies, our products are used in highly diverse applications ranging from virtual reality to autonomous driving and from smartphones to smart and connected lighting solutions in buildings and cities. OSRAM uses the endless possibilities of light to improve the quality of life for individuals and communities. OSRAM's innovations enable people all over the world not only to see better, but also to communicate, travel, work and live better. OSRAM has approximately 27,400 employees worldwide as of end of fiscal 2018 (September 30) and generated revenue of more than €4.1 billion. The company is listed on the stock exchanges in Frankfurt and Munich (ISIN: DE000LED4000; WKN: LED 400; trading symbol: OSR). Additional information can be found at www.osram.com.