

## Presse Press

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### **Homogeneous illumination for facial recognition thanks to VCSEL technology from Osram**

Osram, one of the world's leading LED manufacturers, presents its first VCSEL

**Osram Opto Semiconductors is launching a new product family with Bidos PLPVQ 940A, its first Vertical Cavity Surface Emitting Laser, or VCSEL for short. This is another future technology that Osram is adding to its product portfolio, paving the way for new areas of application such as 3D sensing. Shortly after the acquisition of US specialist [Vixar](#), the company is setting new standards with this VCSEL, including facial recognition for mobile devices. The VCSEL acts as a light source, illuminating the face evenly with infrared light. A camera is used to capture the significant features of the user. The image is then compared with the image of the user stored in the system – if the two match the device will be unlocked.**

VCSEL combines the outstanding properties of two lighting technologies – the high power density and simple packaging of an IRED coupled with the spectral width and speed of a laser. Unlike laser diodes (edge emitters), Bidos is a surface emitter which emits its light perpendicular to the surface of the semiconductor chip and, in terms of its wavelength, is much less sensitive to temperature fluctuations. A VCSEL chip is also much easier to install in the end application – it can be glued into the package like an LED chip and can be used for example as an array (consisting of several hundred individual apertures per VCSEL chip).

“Compared with other infrared technologies, VCSEL offer better beam quality, excellent focusing and a very small footprint”, said Bianka Schnabel, Marketing Manager for the Emitter Laser Sensor segment at Osram Opto Semiconductors. “Customers can now

choose the best solution for their specific application from our extended infrared portfolio – whether it's IRED, laser or VCSEL.”

With a wavelength of 940 nm, PLPVQ 940A offers a maximum efficiency of 27 percent and an output of 300 mW. Two bond wires supply the laser diode uniformly and rapidly with energy. The angle within which the VCSEL provides illumination is 65° x 78°. Its package is extremely small, measuring just 1.90 mm x 2.20 mm x 0.85 mm.

Possible applications for VCSEL products are many and varied. In addition facial recognition, the components are suitable for applications in robotics, drones, augmented reality and virtual reality.

**Press contact:**

Simon Thaler  
Phone +49 941 850 1693  
Email: [simon.thaler@osram-os.com](mailto:simon.thaler@osram-os.com)

**Technical information:**

Phone +49 941 850 1700  
Fax +49 941 850 3305  
Email: [support@osram-os.com](mailto:support@osram-os.com)  
Sales contacts:  
[www.osram-os.com/sales-contacts](http://www.osram-os.com/sales-contacts)



Osram Opto Semiconductors presents its first VCSEL in the new Bidos family. The VCSEL combines the outstanding technical properties of an IRED with those of a laser.  
Picture: Osram



PLPVQ 940A can be used, for example, in mobile devices as a light source for facial recognition, providing uniform illumination for the entire face.  
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 26,400 employees worldwide as of end of fiscal 2017 (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). Further information can be found at [www.osram.com](http://www.osram.com).