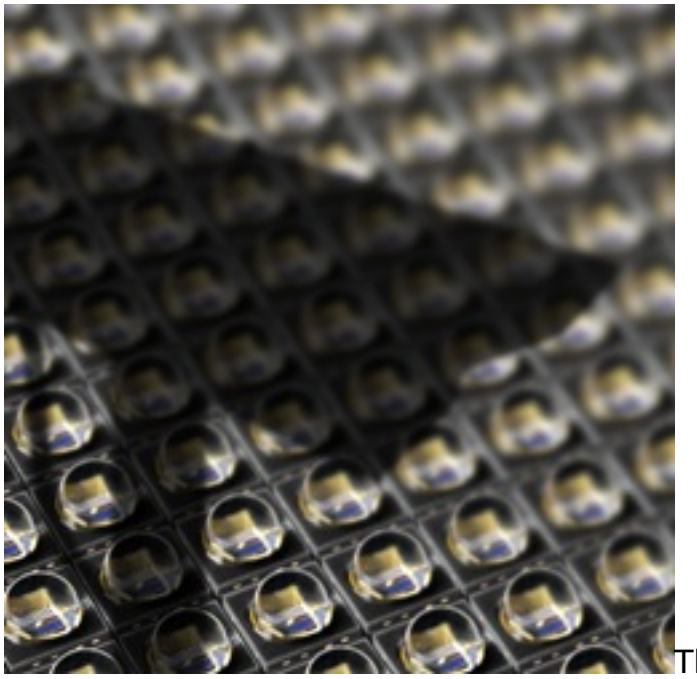
Compact IR LED Illuminates Camera Applications

 The new IR OSLON SFH 4715S from OSRAM Opto Semiconductors is presented as the smallest infrared LED on the market with more than one watt of optical power. Measuring only 3.75 x 3.75 mm², it enables the development of exceptionally compact illumination units for CMOS and CCD cameras. This record-breaking high performance in such a compact device is possible thanks to OSRAM's nanostack chip technology combined with a temperature-stable OSLON Black Series package.

The infrared OSLON typically provides 1070 mW optical power at 1 A operating current and features a typical thermal resistance of only 6.5 kW. A lens with a +/-45° emission angle is integrated into the device. With this outcoupling lens, the IR OSLON delivers 15 percent more output power than components without lens. With a wavelength of 850 nm, the IR OSLON is particularly well matched to the sensitivity range of CMOS and CCD camera sensors. The miniaturized package permits compact arrangements that enable a very high power density. This improved power is especially beneficial for
3D cameras since the IR-LED can be modulated up to very high operating currents of 5 A in the range
of 10 MHz.

To achieve this outstanding ratio of device size to power, OSRAM Opto Semiconductors has combined its nanostack chip technology with the temperature-stable OSLON Black Series package. The highly efficient stacked chips have two p-n junctions connected in series and generate nearly twice the optical power of conventional emitters. The OSLON Black Series package is based on a metal lead frame, and its thermal expansion exactly matches the thermal behavior of circuit boards. Thus, a good cycle stability is achieved, even at heavily fluctuating

temperatures as may occur outdoors, for example. The IR OSLON complies with the highest quality standards in other respects, too, including the automotive standard AEC-Q101. Together, this latest chip technology and the excellent package properties ensure an operating lifetime of up to 50,000 hours.

The IR OSLON is also fully compatible with its counterpart for the visible spectrum range. Manufacturers of street lighting or CCTV systems who combine visible and infrared LEDs can use their experience with OSLON Black Series LEDs and apply existing designs and board layouts.

With the IR OSLON, OSRAM Opto Semiconductors expands its position in the field of infrared illumination and complements its range of products with an additional power class. The new device addresses requirements of the security industry, in particular. Possible applications range from spotlights for IR cameras and CCTV systems via machine vision solutions to license plate number recognition. According to Dr. Joerg Heerlein, Marketing Manager for infrared devices at OSRAM Opto Semiconductors, the IR OSLON hallmarks the beginning of a new product family: “As our next move, we plan a 940 nm version,” he said. “The longer wavelength reduces the so-called red glow effect, counteracting the way humans perceive intensive infrared light as a faint red glow, so this IR OSLON is particularly effective for light sources that should not be seen by people.”

For more information go to www.osram-os.com [1]

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[1] file://www.osram-os.com/