# Blackprint multichip LEDs designed for large-format outdoor displays

Osram Opto Semiconductors developed the new Displix black and Displix blackprint multichip LEDs to meet the unique environmental demands of large-format outdoor displays typically used at rock concerts, sporting events or for perimeter advertising. These robust, high-contrast and high-power LEDs can withstand high humidity levels, wide fluctuations in temperature, and even torrential rain.

The high-quality multichip LED is available as Displix black in a completely black package and as Displix blackprint in a white package with black overprinting and a white reflector. Displix black offers excellent contrast even in direct sunlight and maintains precise color rendering no matter how long it's been in operation. Both LED packages produce high levels of brightness. The typical light intensity at the Illuminant D65 white point (at a color temperature of 6504 Kelvin), is 1450 millicandela (mcd) at an operating current of 20 milliamps, which appears very bright in the black package. Under the same operating conditions Displix blackprint is even more intense at 2950 mcd with good contrast.

The 4.5 x 4.5 x 2.1 mm package for both Displix versions contains three chips with typical wavelengths of 625 nm (red), 528 nm (green) and 470 nm (blue). This means individual LEDs do not need to be combined into an RGB cluster, reducing the pixel spacing and improving the resolution for the same area. Michael Godwin, NA Director LED Business Unit, at Osram Opto Semiconductors, said: “People are more accustomed  to seeing HD images in their homes and on HD-compatible

devices, so the requirements for outdoor displays are changing. The two new Displix LED versions enable long-life displays with high resolution, high intensity, high reliability and excellent contrast to be produced for a wide variety of applications."

Thanks to SMT technology the Displix LEDs can be processed at reduced cost. With a height of 2.1 mm there is enough space for further standard processes such as silicon encapsulation for added protection against harsh outdoor conditions. Special shading elements can also be easily fitted. Both of these measures extend the life of the LED, which may be more than 100,000 hours depending on the ambient temperature. At the same time they provide the basis for long-term stability, as evidenced by the approval of the components for exposure to harsh ambient conditions such as special corrosive gases, direct sunlight and heavy rain.

The Displix LEDs can be seen for the first time at electronica 2012 (November 13 to 16 in Munich) at Booth 107 in Hall A3.

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

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