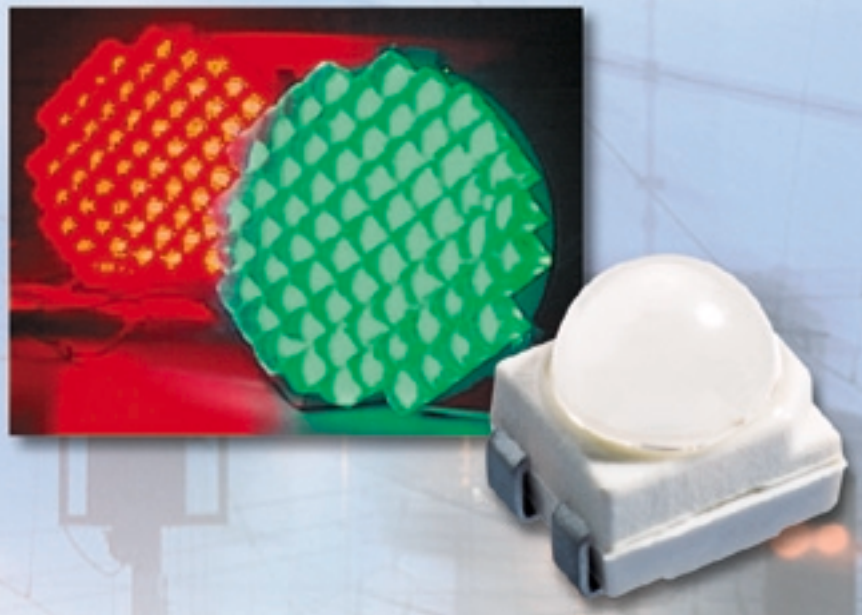
OSRAM OPTO SEMICONDUCTORS

WHERE RELIABILITY COUNTS: THE railLED FAMILIY



LED MODULES FOR HEAVY AND LIGHT RAIL

Light emitting diodes (LED) are being used more and more in a wide variety on the traffic market.

The railway signal modules from OSRAM OS are based on Power TOPLED® with lens, a new member of the TOPLED® family in highly reliable surface mount technology. Combined with high brightness AlInGaP and InGaN chips high optical output power is guaranteed. The LED are combined with high performance secondary optics based on a modular lens system that guarantees extremely high light intensities in axis.

Due to the modular lens system OSRAM OS is able to offer high performance, high flexibility and at the same time cost effective LED modules. The mechanical parts as well as the electronic interface is designed according to customer requests.

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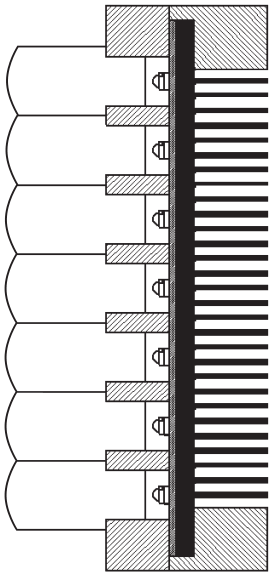
Advantages of an LED based railway signal compared to an incandescent based signal:

- reduced maintenance costs due to long LED lifetime
- higher safety and greater reliability
- low energy consumption due to high colour efficiency of the LED
- dimming without change of colour is possible (pulse width modulation)

Features of the railLED family:

- combined with advanced secondary optics
- extremely narrow viewing angle of 3°
- optimal visibility and highly uniform luminance at the front optics
- very low thermal resistance
- operating temperature range: -40°C to +85°C
- available in all relevant colours, white is in preparation
- for direct retrofit and new installations



Schematic view of the railLED 136 module consisting of the LED on a printed circuit board, the modular lens system and the heat sink.

Technical data:

railLED 136
diameter: ca. 140 mm

Type	Colour	Dominant wavelength (typ.)	Typ. luminous intensity (in axis) of LED module (all LED operated DC)	Spread angle of LED module	Power consumption (typ.)
OS-RS02A-S	Red	632 nm	6500 cd	3°	7 W
OS-RS02A-Y	Yellow	587 nm	8500 cd	3°	7 W
OS-RS02A-V	Green	505 nm	5500 cd	3°	7 W
OS-RS02A-B	Blue	470 nm	tbd	3°	7 W
OS-RS02A-W	White	–	tbd	tbd	7 W

railLED 210
diameter: ca. 210 mm

Type	Colour	Dominant wavelength (typ.)	Typ. luminous intensity (in axis) of LED module (all LED operated DC)	Spread angle of LED module	Power consumption (typ.)
OS-RS02B-S	Red	632 nm	> 10 000 cd	3°	14 W
OS-RS02B-Y	Yellow	587 nm	> 12 000 cd	3°	14 W
OS-RS02B-V	Green	505 nm	> 7 000 cd	3°	14 W
OS-RS02B-B	Blue	470 nm	tbd	3°	14 W
OS-RS02B-W	White	–	tbd	tbd	14 W

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OSRAM Opto Semiconductors is a joint venture of OSRAM and Infineon Technologies AG (formerly the Siemens Semiconductors Division) that combines the expertise of one of the world's three largest lighting manufacturers with the know-how of one of the world's three largest manufacturers of optical semiconductors. With such a powerful alliance you can be sure that our traffic LED cannot be beaten on quality.

OSR: OS 10017 E

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