



## Direct Green Laser Diodes

**Imagine green laser light directly from a semiconductor. Now it becomes reality.**

OSRAM Opto Semiconductors is one of the first worldwide leading suppliers of direct green laser diodes. Mounted in a tiny TO38icut package, the two laser diodes with an optical output power of 30 and 50 milliwatts combine an unbeatable form factor with an excellent beam quality. It also makes them particularly suitable as light sources for projectors, showlasers as well as point and line lasers.



**OSRAM**  
Opto Semiconductors

## Direct Green Laser Diodes



Showlaser



Pico projection

### Advantages

#### High-temperature range

Compared to frequency-doubled lasers, direct green lasers have a high operating temperature range of more than 60° C without active cooling. This particular quality makes them ideal for outdoor application.

#### High beam quality in a small package

With its excellent beam quality, the lasers are well suited for optical imaging of light. In addition, their small package size is particularly advantageous for very compact systems like pico projectors.

#### High efficiency and long lifetime

Thanks to their good efficiency, the temperature increase of the lasers during operation is minimized. A long lifetime and high reliability at continuous operation is guaranteed.

### Applications

#### Line and dot lasers

Its high temperature stability make direct green lasers the ideal solution for point and line lasers. Unlike red laser light, the green spectrum is the most sensitive to the human eye. To achieve the same laser output, and thus the same laser safety class, green light is perceived more easily by the eye than red light. This means that rangefinders, such as those used by builders, can be used over larger distances.

### Projection

Direct green laser diodes are an important step toward powerful embedded projectors. The laborious way of producing green light by doubling the frequency of infrared laser is no longer needed. In particular, pico projectors based on MEMS mirror (micro-electromechanical system) will benefit from the small size and the high beam quality of the single mode lasers. The laser diodes produce the right green wavelength for projection and offer a sufficient efficiency of typically 5-6% for battery driven applications.

#### Showlaser

For show lasers, direct green lasers open up new possibilities as light sources. Their high beam quality enables extremely fine structures to be displayed even over large distances.

#### Other applications

- Medical applications
- Biotechnology
- Spectroscopy

### Technical Data (at 25°C)

Description	PL 520	PL 515
Output Power:	50 mW	30 mW
Emission Wavelength:	515-530 nm	510-530 nm
Operating Temperature	0-60° C	
Typical Threshold Current:	45 mA	50 mA
Typical Operating Current:	150 mA	120 mA
Typical Operating Voltage:	7.0 V	6.7 V
Typical Efficiency:	6%	5%
Package Type:	TO38icut	

### Direct Green Laser Diodes on the Internet:

[www.osram-os.com/green-laser](http://www.osram-os.com/green-laser)

For further information on the available products, please visit our product catalog at <http://catalog.osram-os.com>

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