



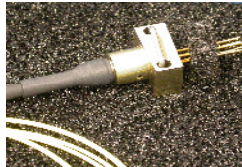
Lasers for GREEN Photonics in Optical Communications and Spectroscopy
Very High Performance – Ultra Low Power Consumption

Long Wavelength InP VCSELs for GREEN Photonics

VERTILAS GmbH, headquartered in Garching (near Munich), Germany, develops, produces and markets innovative laser diodes for optical communications and tunable diode laser spectroscopy (TDLS).

VERTILAS' unique Buried Tunnel Junction (BTJ) laser diode technology offers a wavelength range of 1.3 μm to 2.3 μm . VERTILAS is one of the leading global providers in the field of **long wavelength InP Vertical Cavity Surface Emitting Laser diodes** (VCSEL), deploying reliable and cost efficient production methods. VERTILAS' VCSEL technology has been proven in several applications, including a variety of demanding spectroscopy and communications applications. Furthermore, VERTILAS has excelled in a range of core competencies for components development and manufacturing, including wafer processing, assembly and test and package design.

The company is **ISO 9001** certified and has developed a wide range of product solutions to address various markets.



The photos above show VERTILAS VCSELs in highly integrated packages for communications and spectroscopy applications.



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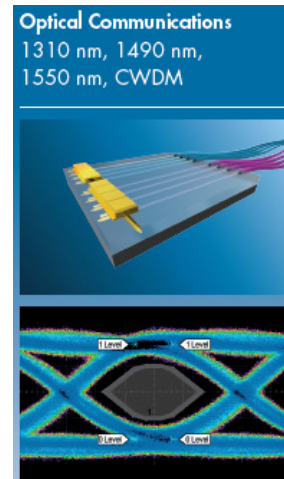




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Innovative Laser Solutions for Optical Communications from 1.27 to 1.61 μm

- ◆ Lasers from 1.3 μm to 1.6 μm
- ◆ 10 Gbps to 100 Gbps Interface Solutions
- ◆ Significantly reduce system cost
- ◆ Increase system integration: Up to 64 channels
- ◆ Reduce module power consumption by up to 50%
- ◆ 1-14 Gbps and 25 Gbps VCSELs performance



The latest generation of communication systems and modules require components with extremely low power dissipation, small form factors and high performance. VERTILAS offers innovative laser solutions for 1310 nm, 1490 nm, 1550 nm, CWDM and DWDM. VERTILAS' TOSA (Transmit Optical Sub Assembly) packaging with LC receptacle features an integrated monitoring diode and a typical power dissipation of less than 30 mW.

Innovative Laser Solutions for NIR Gas Analysis from 1.3 μm to 2.3 μm

- ◆ Tunable 1.3 μm to 2.3 μm single mode lasers
- ◆ Significantly reduce system cost and size
- ◆ Reduce module power consumption by up to 50%
- ◆ Accomplish sensitivity in the ppm and ppb range
- ◆ High speed data readings
- ◆ Low operating expenditure, long lifetime



VERTILAS offers a unique product portfolio to address the fast growing market need for tunable diode laser spectroscopy (TDLS). This portfolio includes both standard and applications specific products and provides lasers to detect gases such as H_2O , NH_3 , CO , CO_2 , H_2S , CH_4 , HCl and **many more**. VERTILAS has developed a wide range of packaging solutions that include a peltier (TEC) and thermistor, hermetically sealed caps and fiber coupled connectors.

