760 - 830 nm

830 - 920 nm

920 - 1100 nm

1100 - 1300 nm

1300 - 1450 nm

1450 - 1650 nm

1650 - 1850 nm

1850 - 1900 nm

1900 - 2200 nm

2200 - 2600 nm

2600 - 2900 nm

2900 - 4000 nm

4000 - 4600 nm

4600 - 5300 nm

6000 - 14000 nm

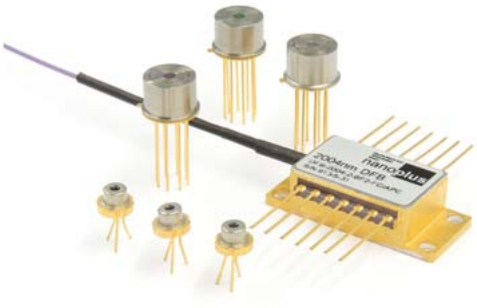
DFB laser diodes from 920 nm to 1100 nm

Nanosystems and Technologies GmbH
nanoplus

nanoplus single mode laser diodes

nanoplus is the only manufacturer worldwide routinely providing single and multi mode lasers at any wavelength from 760 to 6000 nm. At wavelengths up to 14 µm, QCLs complete nanoplus' laser portfolio. Our patented distributed feedback laser diodes deliver single mode emission with well defined optical properties enabling a wide range of applications.

nanoplus lasers operate reliably in tens of thousands of installations worldwide, including chemical and metallurgical industries, gas pipelines, power plants, medical systems, airborne and satellite applications.



key features

- ✓ very high spectral purity
- ✓ narrow linewidth typically < 3 MHz
- ✓ excellent reliability
- ✓ wide variety of packaging options
- ✓ customer-specific designs available

application areas

- ✓ high performance gas sensing for process and environmental control
- ✓ precision metrology
- ✓ atomic clocks
- ✓ spectroscopy
- ✓ space technology

nanoplus lasers with excellent performance are specifically designed and characterized to fit your needs. This data sheet summarizes typical properties of nanoplus DFB lasers in the range from 920 nm to 1100 nm. Overleaf data for lasers used for injection seeding of Nd:YAG lasers is given as an example. These lasers have applications in e.g. remote sensing of wind speeds, profiling of atmospheric molecules and aerosols and topographic mapping.

general ratings (T = 25 °C)	symbol	unit	typical
optical output power	P_{out}	mW	20
typical maximum operating voltage	V_{op}	V	2
forward current	I_f	mA	50
side mode suppression ratio (SMSR)		dB	> 35

On request, lasers with specifically optimized properties, e.g. higher output power, are available.

laser packaging options
TO5.6 header with or without cap
TO5 header with TEC and NTC
butterfly housing with SM or PM fiber

For dimensions and accessories, please see www.nanoplus.com
Further packaging options available on request.

device protected by
US patent 6.671.306
US patent 6.846.689
EU patent EP0984535

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REGISTERED COMPANY ISO 9001:2008

Rev. DFB1064.09

Nanosystems and Technologies GmbH
nanoplus

nanoplus DFB laser diodes at 1064 nm

A wide variety of gas molecules exhibit characteristic absorption lines in the near infrared. The wavelength of the main Nd:YAG laser transition is at 1064 nm.
The 1064 nm DFB laser diodes are used for injection seeding of Nd:YAG lasers, which have applications in remote sensing of wind speeds, profiling of atmospheric molecules and aerosols and topographical mapping. Applications of this type rely on Nd:YAG lasers, which are seeded with highly stable laterally and longitudinally single mode lasers. This data sheet reports performance data of nanoplus DFB lasers at this wavelength. Similar performance data are obtained in the entire wavelength range from 920 nm to 1100 nm. For examples of performance data of nanoplus lasers in other wavelength ranges, please see www.nanoplus.com or contact sales@nanoplus.com

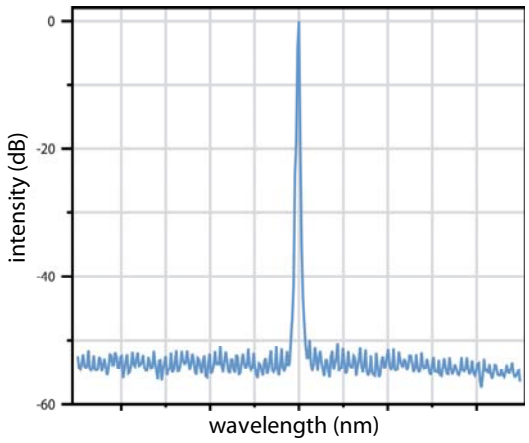

Fig. 1
Room temperature cw spectrum of a nanoplus DFB laser diode operating at 1064 nm

In many applications, temperature and/or current variations are used to adjust the laser emission precisely to the target wavelength.

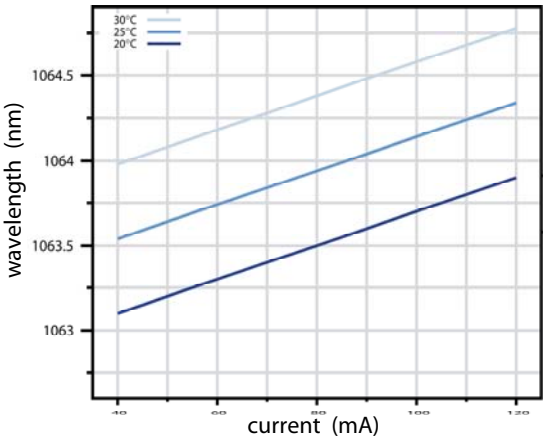

Fig. 2
Mode hop free tuning of 1064 nm based DFBs by current variation at different temperatures

electrooptical characteristics (T = 25 °C)	symbol	unit	min	typ	max
peak wavelength	λ	nm	1063	1064	1065
threshold current	I_{th}	mA	15	20	25
temperature tuning coefficient	C_T	nm / K	0.07	0.08	0.09
current tuning coefficient	C_I	nm / mA	0.01	0.02	0.025
slow axis (FWHM)		degrees	12	15	20
fast axis (FWHM)		degrees	35	40	45
emitting area	W x H	µm x µm	2.3 x 1.4	2.5 x 1.5	2.5 x 1.7
storage temperatures	T_S	°C	-40	20	80
operational temperature at case	T_c	°C	-20	25	50

We will be happy to answer further questions. Please contact us at sales@nanoplus.com

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