DFB laser diodes from 2600 nm to 2900 nm

nanoplus single mode laser diodes

nanoplus is the only manufacturer worldwide routinely providing single mode laser diodes at any wavelength from 750 nm to 2900 nm. Our patented distributed feedback laser diodes deliver single mode emission with well defined optical properties enabling a wide range of applications. At wavelengths from 7 to 12 µm, nanoplus manufactures quantum cascade lasers.

nanoplus lasers operate reliably in more than 5000 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 2600 nm to 2900 nm range. In this wavelength range e.g. H₂O, HF, CO₂ can be detected with particularly high sensitivity, since the detection sensitivity typically increases at long wavelengths. Overleaf data for DFB lasers optimized for H₂O detection is shown as an example.

<table>
<thead>
<tr>
<th>general ratings (T = 25 °C)</th>
<th>symbol</th>
<th>unit</th>
<th>typical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optical output power</td>
<td>P_{out}</td>
<td>mW</td>
<td>2</td>
</tr>
<tr>
<td>Reverse Voltage</td>
<td>V_r</td>
<td>V</td>
<td>1.8</td>
</tr>
<tr>
<td>Forward Current</td>
<td>I_f</td>
<td>mA</td>
<td>100</td>
</tr>
<tr>
<td>Side mode suppression ratio</td>
<td>SMR</td>
<td>dB</td>
<td>&gt;32</td>
</tr>
</tbody>
</table>

laser packaging options

- TO5.6 header with or without cap
- TO9 header with or without cap
- TO5 with TEC and NTC

For dimensions and accessories, please see www.nanoplus.com

Further packaging options available on request.
nanoplus DFB laser diodes at 2740 nm

A wide variety of gas molecules, defects in solids etc. exhibit characteristic absorption lines in the near infrared. DFB lasers emitting at 2740 nm are perfectly suited for highly sensitive detection of small H2O concentrations. For this application, highly stable laterally and longitudinally single mode lasers are required.

This data sheet reports performance data of nanoplus DFB lasers at this wavelength. Similar performance data are obtained in the entire wavelength range from 2600 nm to 2900 nm. For examples of performance data of nanoplus lasers in other wavelength ranges, please see www.nanoplus.com or contact sales@nanoplus.com.

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

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