

TOP Wavelengths

DFB: 1392.0 nm

TOP WAVELENGTH

760.8 nm

1278.8 nm

1392.0 nm

1512.2 nm

1560 - 1590 nm

1651 & 1654 nm

1742.0 nm

1854 & 1877 nm

2004.0 nm

2330 & 2334 nm

3240 & 3270 nm

3345 nm HP

3345 & 3375 nm

4524 & 4534 nm

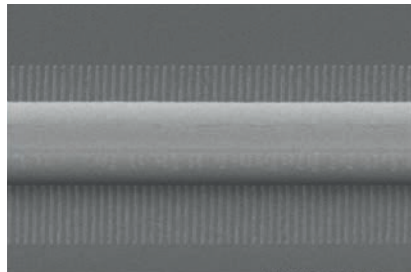
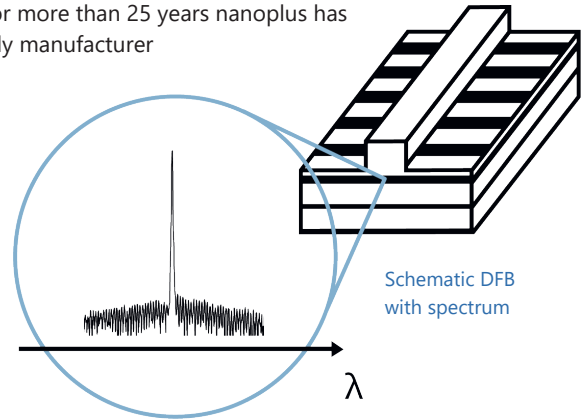
4565 nm HP

5184 & 5263 nm

nanoplus Distributed Feedback Lasers (**DFB**) are specifically designed for high-precision gas detection using tunable diode laser absorption spectroscopy (**TDLAS**). Our devices operate **reliably** in more than 50,000 installations worldwide. For more than 25 years nanoplus has set the standard for DFB laser technology and is the only manufacturer routinely providing DFB lasers at **any wavelength**.

Key features:

- MONOMODE
- CONTINUOUS WAVE
- ROOM TEMPERATURE
- MODE HOP FREE TUNING



Overgrowth-free DFB device proces-

Any **custom wavelength** is possible: You tell us what you need and we deliver it. With our patented DFB technology we design any wavelength **between 760 nm and 14 μm**.

Our excellent **spectral purity** is characterized by a large side mode suppression ratio (**SMSR**) of **> 35 dB**, giving your system a low signal to noise ratio against crossinterference.

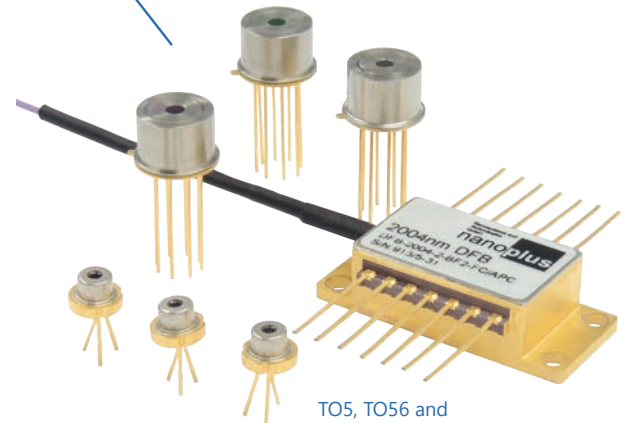
A **narrow linewidth below 3 MHz** guarantees ultra-precise scanning of the absorption line feature. The **high output power of several mW** yields a stronger signal and increases your measurement precision.

Fast and wide wavelength tuning is required for in situ systems. Most customers use a scan rate of 10 kHz and benefit from our very **large tuning coefficient**.

“Do not change your ideas, let us deliver a laser that fits your application.”

We offer **various packaging options**, e.g. several free space housings including TEC and NTC, fiber coupling, **collimation** and **custom designs**. What do you require?

If you require **custom specifications**, please contact us. Nearly 80 % of our devices are more or less customer-specific. As nanoplus is a **fully vertically integrated company**, we control the entire process chain from design to packaging. Both nanoplus production facilities are based in **Germany**. To guarantee consistent product quality we apply a strict and **ISO certified quality management system** at all levels.

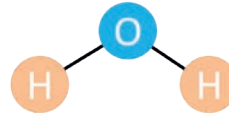


TO5, TO56 and fiber coupled butterfly package

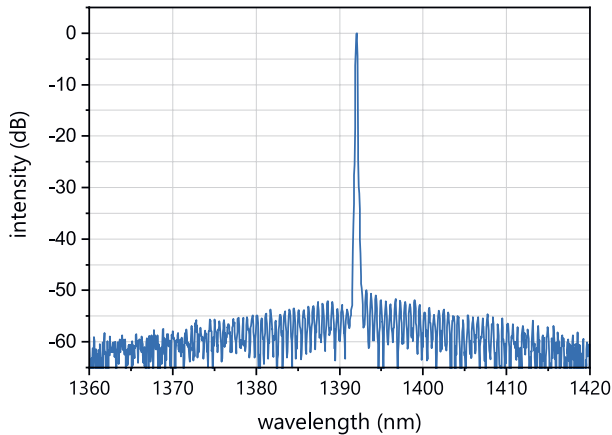
Our sales and R&D teams have long-standing experience in developing lasers. They will advise you in your design and realization phase as well as after-sales: **We make market leaders!**



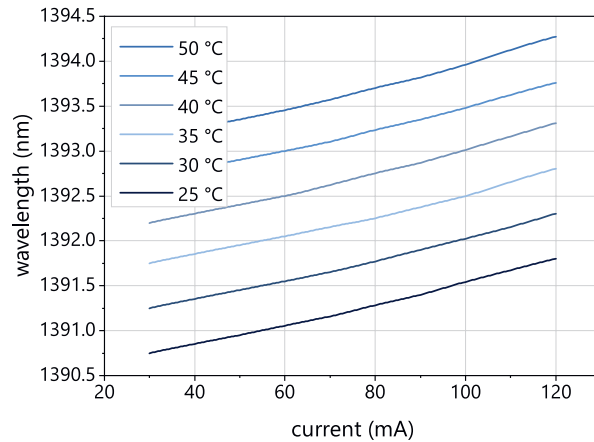
Superior Specifications: 1392.0 nm



This data sheet reports performance data of a **sample nanoplus DFB laser at 1392.0 nm with enhanced specifications**. Standard specifications are available at: <http://nanoplus-usa.com/products/dfb-laser>. These lasers are particularly suitable for water vapour (H₂O) detection.



Typical room temperature cw spectrum of a nanoplus DFB laser at 1392.0 nm



Typical mode hop free tuning of a nanoplus DFB laser at 1392.0 nm by current and temperature

| electro-optical characteristics | symbol | unit | min. | typ | max. |
|--|----------------|---------|------|--------|------|
| operating wavelength (at T_{op} , I_{op}) | λ_{op} | nm | | 1392.0 | |
| optical output power (at λ_{op}) | P_{op} | mW | | 8 | |
| operating current | I_{op} | mA | | 70 | |
| operating voltage | V_{op} | V | | 2 | |
| threshold current | I_{th} | mA | 10 | 25 | 30 |
| side mode suppression ratio | SMSR | dB | | > 35 | |
| current tuning coefficient | C_I | nm / mA | 0.01 | 0.02 | 0.03 |
| temperature tuning coefficient | C_T | nm / K | 0.07 | 0.10 | 0.14 |
| operating chip temperature | T_{op} | °C | +20 | +25 | +50 |
| operating case temperature* | T_c | °C | -20 | +25 | +50 |
| storage temperature* | T_s | °C | -40 | +20 | +80 |

* non-condensing

laser packaging options

TO5 with TEC and NTC, black cap, AR coated window

TO56 without TEC or NTC, sealed, window

c-mount without TEC or NTC

butterfly package with TEC and NTC, SM or PM fiber, FC/APC connector

chip on carrier without TEC, with NTC

Technical drawings & accessories are available at: <https://www.nanoplus-usa.com/products/packaging>

Please contact victor.perez@nanoplus.com for customized specifications, quotes and further questions. Visit the [nanoplus website](http://nanoplus.com) for technical notes, application samples or literature referrals.

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