

Distributed Feedback Lasers

760 nm - 830 nm

WAVELENGTH

760-830 nm

830-920 nm

920-1100 nm

1100-1300 nm

1300-1650 nm

1650-1850 nm

1850-2200 nm

2200-2600 nm

2600-2900 nm

2800-4000 nm

4000-4600 nm

4600-5300 nm

5300-5800 nm

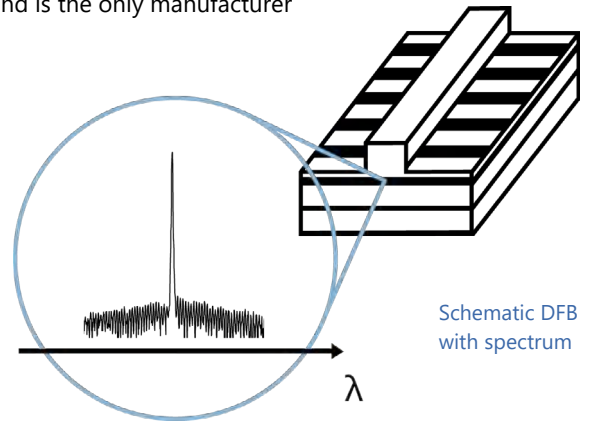
5800-6500 nm

6000-14000 nm

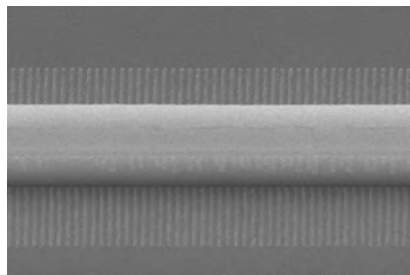
nanoplus Distributed Feedback Lasers (**DFB**) are specifically designed for high-precision gas detection using tunable diode laser absorption spectroscopy (**TDLAS**). Our devices operate **reliably** in more than 50,000 installations worldwide. For more than 20 years nanoplus has set the standard for 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



Schematic DFB with spectrum



Overgrowth-free DFB device processing

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.

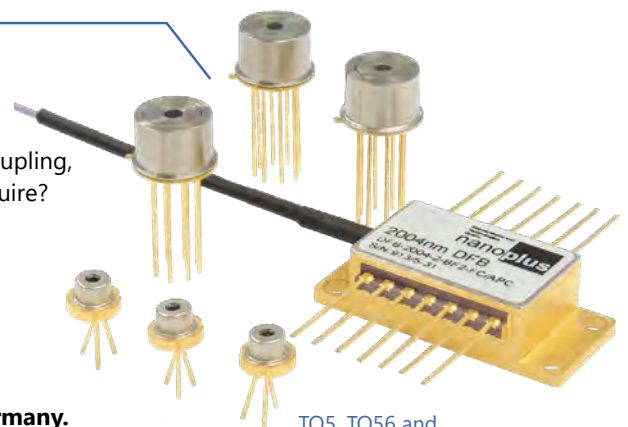
A **narrow linewidth below 3 MHz** guarantees ultra-precise scanning of the absorption line feature. The **high output power of several mW** yields a stronger signal and increases your measurement precision.

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 the 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

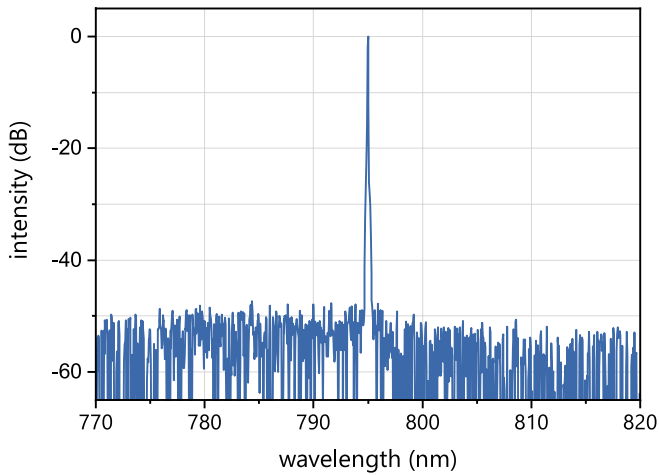
Our sales and R&D teams have long-standing experience in developing lasers. They will advise you in your design and realization phase as well as after-sales: **We make market leaders!**



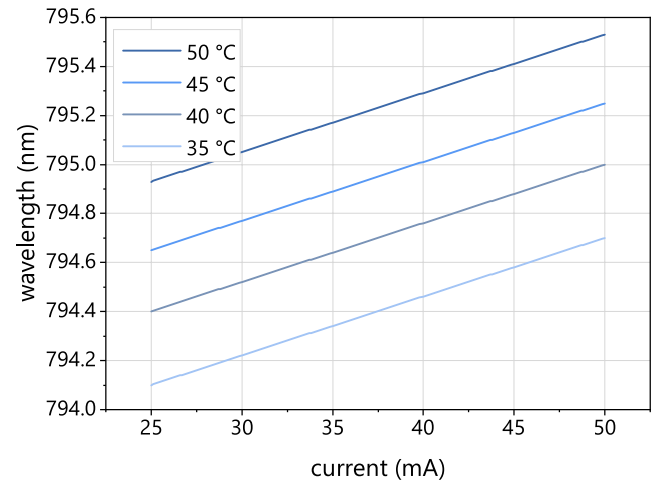
Typical Specifications: 760 nm - 830 nm

This data sheet reports performance data of a **sample nanoplus DFB laser at 795 nm**, which is representative for the entire wavelength range. We offer enhanced specifications for 760.8 nm.

Please refer to our **TOP Wavelengths** for further details: <https://nanoplus.com/products/distributed-feedback-laser/760-8nm>.



Typical room temperature cw spectrum of a nanoplus DFB laser at 795 nm



Typical mode hop free tuning of a nanoplus DFB laser at 795 nm by current and temperature

electro-optical characteristics	symbol	unit	min.	typical	max.
operating wavelength (at T_{op} , I_{op})	λ_{op}	nm		Please specify to 0.1 nm.	
optical output power (at λ_{op})	P_{op}	mW		5	
operating current	I_{op}	mA		30	
operating voltage	V_{op}	V		3	
threshold current	I_{th}	mA	5	15	30
side mode suppression ratio	SMSR	dB		> 35	
current tuning coefficient	C_I	nm / mA	0.010	0.020	0.025
temperature tuning coefficient	C_T	nm / K	0.04	0.05	0.07
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 fiber, FC/APC connector

chip on carrier without TEC, with NTC

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

Please contact sales@nanoplus.com for customized specifications, quotes and further questions.

Visit our website for technical notes, application samples or literature referrals.

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