# Mid-Infrared LED
(MIR LED): 2800 nm - 4000 nm

nanoplus Mid-Infrared LEDs **(MIR LED)** are specially designed and characterized to fit your requirements. For 25 years, nanoplus has been manufacturing Distributed Feedback and Fabry-Pérot Lasers with excellent performance. Our devices operate **reliably** in more than 50,000 installations worldwide.

nanoplus **MIR LED** are a broadband, incoherent and cost-effective alternative to lasers for e.g. many gas sensing applications in industry and research.

Key features:

— LOW POWER CONSUMPTION
— CW OPERATION
— BROADBAND
— INCOHERENT

Schematic MIR LED
with spectrum

λ
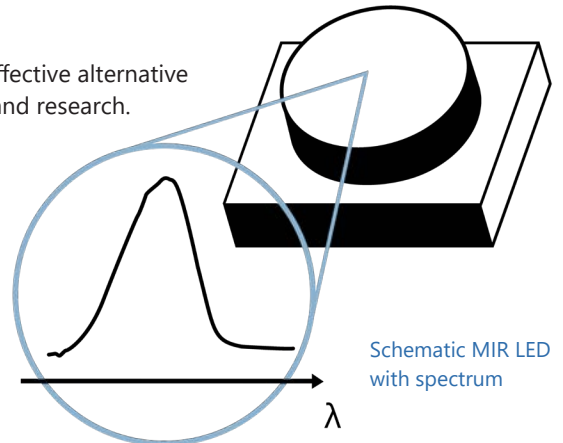
Any **custom wavelength** is possible: You tell us what you need and we deliver it. With our outstanding technology we design any wavelength **between 2800 nm and 6500 nm** within a spectral window where your desired emission wavelength reaches at least 95% of the maximum spectral intensity.

nanoplus MIR LED are the perfect light source **for mobile analyzers**, as they **consume little power**.

You can use our MIR LED in **true continuous wave operation** at **room temperature**.

The MIR LED's **output power** of **> 1 mW** leads to a strong signal and increases your measurement precision. Higher output power is available upon request.

We offer **various packaging options,** with or without TEC. You tell us what you need!

Long-term stability is what our customers really want! Even in **harsh environments** nanoplus devices perform excellently – low maintenance warranted.

"Do not change your ideas, let us deliver the MIR LED that fits your application."

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 whole 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.

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:
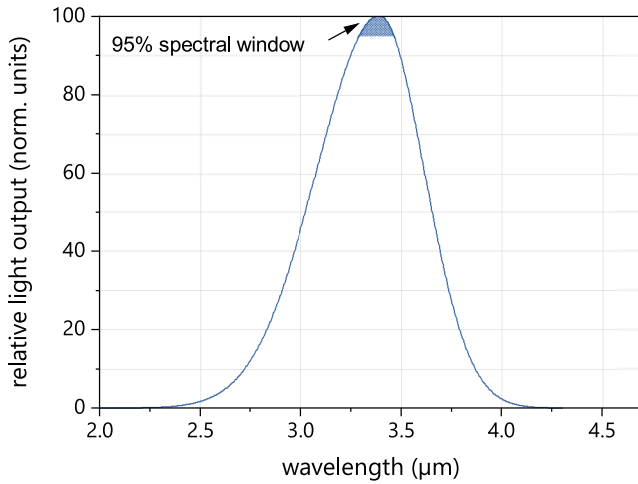
We make market leaders!
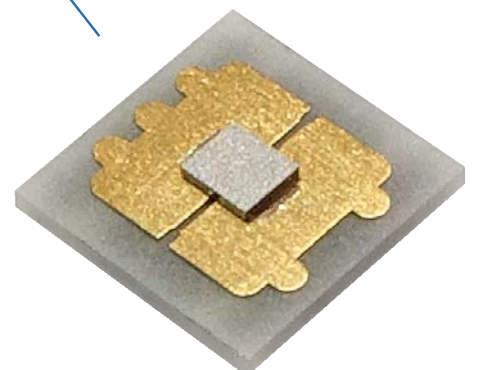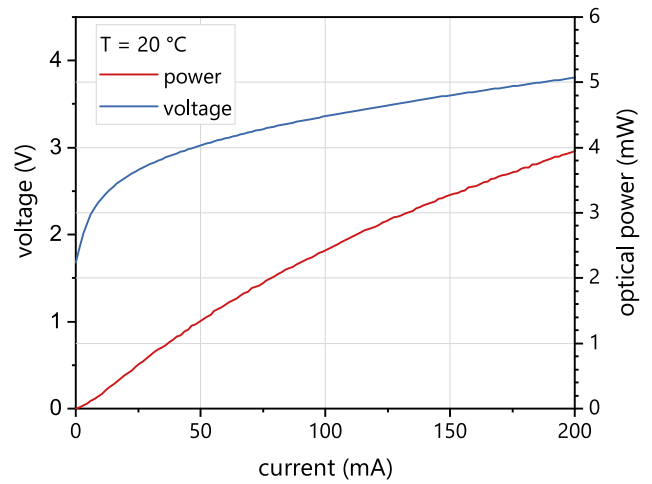
nanoplus MIR LED
on ceramic submount

Typical Specifications:
2800 nm - 4000 nm

This data sheet reports performance data of a **sample MIR LED at 3.4 µm,** which is representative for the entire wavelength range.

Typical room temperature cw spectrum
of a nanoplus MIR LED at 3.4 µm

Typical PI and VI curve
of a nanoplus MIR LED at 3.4 µm

electro-optical characteristics	symbol	unit	min.	typical	max.
operating wavelength (at T_{op}, I_{op})[1,2]	λ_{op}	µm	3.29	3.4	3.5
spectral bandwidth (FWHM)	$\Delta \lambda$	µm		0.8	
optical cw output power (at λ_{op})[3]	P_{op}	mW	2	3	
operating current	I_{op}	mA	150	200	
operating voltage	V_{op}	V		4	
operating case temperature[4]	T_{op}	°C	-10		50
storage temperature[4]	T_S	°C	-10		70

[1] ~ 20 nm peak-change per 10°C temperature-change
[2] spectral window defined as the range where the emission intensity reaches min. 95 % of max. spectral intensity
[3] power dissipation 1W [heatsink required]
[4] non condensing

**Pulsed operation for low power consumption is possible.
Other operating temperatures are available on request.**

packaging

ceramic submount

PCB mounted

Other packaging options may be discussed on request.

Technical drawings & accessories are available at: nanoplus.com/packaging

Please contact sales@nanoplus.com for customized specifications, quotes and further questions.
Visit our website for technical notes, application samples or literature referrals.

nanoplus.com