Nanosystems and Technologies GmbH
nanoplus

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

WAVELENGTH

2800–4000 nm

4000–5300 nm

5300–6500 nm

TOP WAVELENGTH

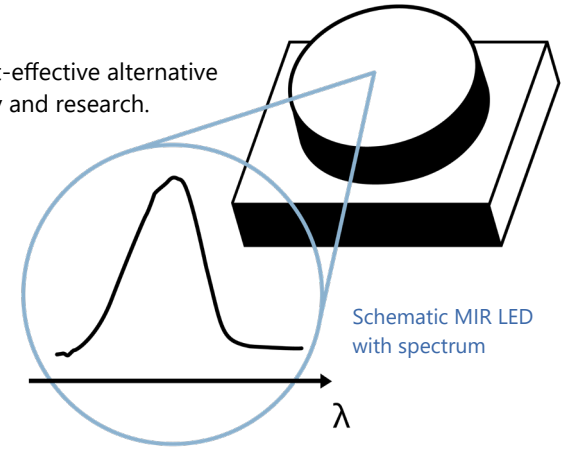
3400 nm

4300 nm

5200 nm

nanoplus **MIR LEDs** are specially designed and characterized to fit your requirements. For more than 20 years, nanoplus has been manufacturing Distributed Feedback and Fabry-Pérot Lasers with excellent performance. Our devices operate **reliably** in more than 30,000 installations worldwide.

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



Schematic MIR LED with spectrum

Key features:

- LOW POWER CONSUMPTION
- CW OPERATION
- BROADBAND
- INCOHERENT

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** with an accuracy of +/- 100 nm.

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

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

The MIR LEDs' **output power** of **> 1 mW** leads to a strong signal and increases your measurement precision.

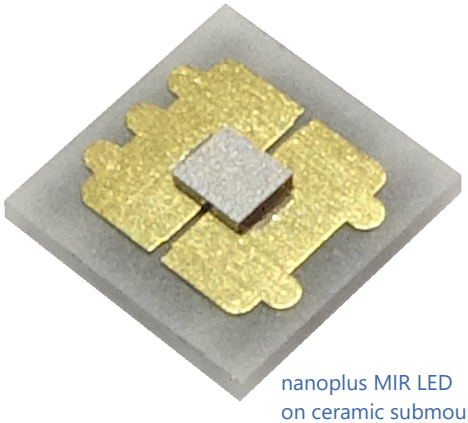
We offer **various packaging options,** with or without TEC. You tell us what you need!

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 a 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

REGISTERED COMPANY ISO 9001 14001

ATTENTION OBSERVE PRECAUTION FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

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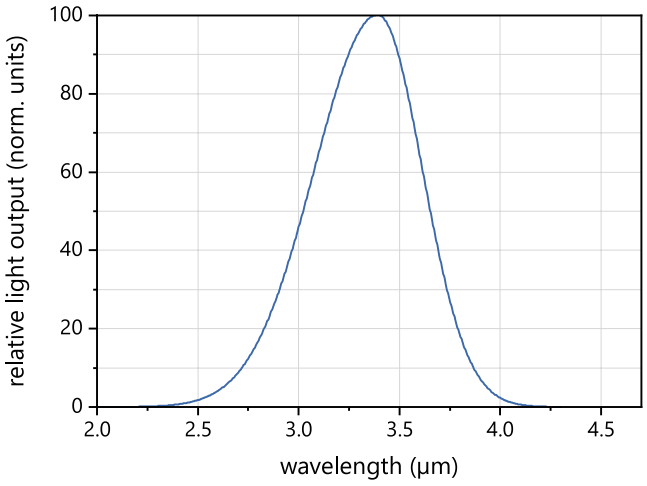
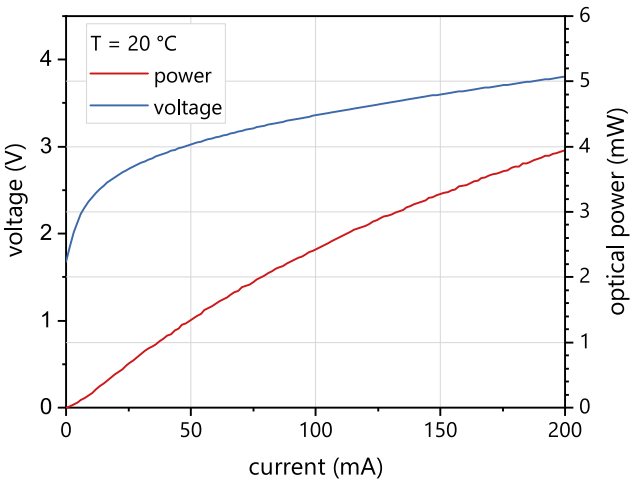
Typical Specifications: 2800 nm - 4000 nm

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.	typ	max.
operating wavelength (at T_{op}, I_{op})	λ_{op}	µm	3.3	3.4	3.5
spectral bandwidth (FWHM)	$\Delta\lambda$	µm		0.8	
optical cw output power** (at λ_{op})	P_{op}	mW	2	3	
operating current	I_{op}	mA	150	200	
operating voltage	V_{op}	V		4	
operating case temperature*	T_{op}	°C	10		40
storage temperature*	T_S	°C	10		40

* non condensing ** power dissipation 1W [heatsink required]

packaging options

ceramic submount

PCB mounted

Other packaging options may be discussed on request.

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