Mid-Infrared LEDs (MIR LED): 5300 nm - 6500 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.

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!
Typical Specifications: 5300 nm - 6500 nm

This data sheet reports performance data of a sample MIR LED at 5.6 µm, which is representative for the entire wavelength range.

<table>
<thead>
<tr>
<th>electro-optical characteristics</th>
<th>symbol</th>
<th>unit</th>
<th>min.</th>
<th>typ</th>
<th>max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>operating wavelength* (at T_{op}, I_{op})</td>
<td>λ_{op}</td>
<td>µm</td>
<td>5.5</td>
<td>5.6</td>
<td>5.7</td>
</tr>
<tr>
<td>spectral bandwidth (FWHM)</td>
<td>Δ λ</td>
<td>µm</td>
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<td></td>
<td>1.5</td>
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<tr>
<td>optical cw output power** (at λ_{op})</td>
<td>P_{op}</td>
<td>mW</td>
<td>1</td>
<td>1.5</td>
<td>200</td>
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<tr>
<td>operating current</td>
<td>I_{op}</td>
<td>mA</td>
<td>150</td>
<td></td>
<td>200</td>
</tr>
<tr>
<td>operating voltage</td>
<td>V_{op}</td>
<td>V</td>
<td></td>
<td></td>
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<tr>
<td>operating case temperature***</td>
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<tr>
<td>storage temperature***</td>
<td>T_S</td>
<td>°C</td>
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</tr>
</tbody>
</table>

* ~ 20 nm peak-change per 10°C temperature-change  
** power dissipation 1W [heatsink required]  
*** non condensing

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

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.