

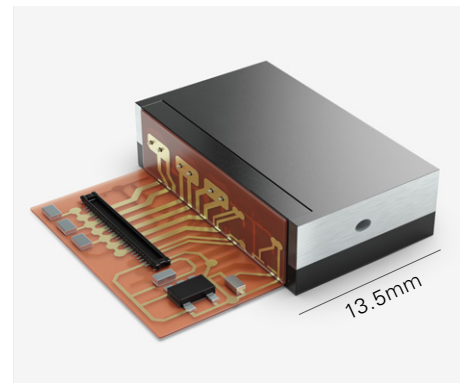
Micro Laser Modules

For a wide range of applications

Customized with precise alignment, adaptable wavelength and power.

Your Benefits

- **Customized to your application:** Selected laser sources and wavelengths
- **Experienced partner:** Decades of experience in dealing with micro-optical and mechanical systems
- **Single partner:** From design to prototyping to volume production, entire process under one roof
- **Operational excellence:** Most recent technologies from adhesive bonding to alignment



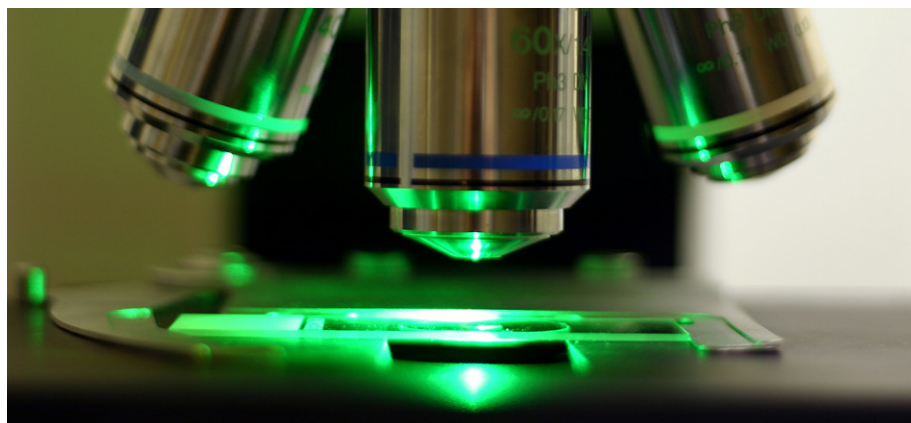
Laser Module with free space propagation

Technology Expertise

- Free space beam shaping
- Single-mode or multi-mode fiber coupling
- Active polarization alignment
- Light combining with color coordinate control
- Adhesive bonding of active and passive electro-optical and optical components
- Active positioning and bonding of optical components
- Power control by closed loop architecture



Micro Laser Module fiber-coupled



Applications

- Microscopy
- Flow Cytometry
- Holography
- Head-up Displays

Micro Laser Modules

Example technical specifications for RGBeam-Laser

| Optical parameters | Free space propagation (FS) | | | Single-mode optical fiber (SM) | | |
|---|------------------------------------|--------------------|--------------------|---|--------------------|--------------------|
| | Laser 1 | Laser 2 | Laser 3 | Laser 1 | Laser 2 | Laser 3 |
| Laser source | Laser diode | | | Laser diode | | |
| Typical wavelength (RGB) | R: 638 nm | G: 520 nm | B: 450 nm | R: 638 nm | G: 520 nm | B: 450 nm |
| Laser class | 3B | | | 3B | | |
| Numerical aperture | n/a | | | 0.12 | | |
| Typical optical power from fiber end (r/g/b) | n/a | | | 60 mW | 30 mW | 40 mW |
| Typical optical power from output beam | 90 mW | 80 mW | 70 mW | n/a | | |
| Spot diameter at 1m distance 1/e ² | 1.2 mm | 1.1 mm | 1.1 mm | n/a | | |
| Typical beam divergence approximately | 0.6 mrad | 0.4 mrad | 0.35 mrad | n/a | | |
| Beam alignment accuracy | 0.3 mrad | | | n/a | | |
| Luminous flux (6500K) | up to 40 lm | | | up to 20 lm | | |
| Electrical parameters | typical/max | typical/max | typical/max | typical/max | typical/max | typical/max |
| Operating current in mA | R: 165/200 | G: 200/240 | B: 100/165 | R: 165/200 | G: 200/240 | B: 100/165 |
| Mechanical parameters | Free space propagation (FS) | | | Single-mode optical fiber (SM) | | |
| Dimensions length x width x height excl. FCB | 22.5 mm x 13.5 mm x 9 mm | | | 30 mm x 15.5 mm x 9 mm | | |
| Operating temperature | between +15 °C and +30 °C | | | between +22 °C and ±1 °C operating on TEC | | |
| Fiber connector | n/a | | | FC/PC or FC/APC | | |
| Fiber type | n/a | | | Single-mode or single-mode polarisation maintaining fiber | | |
| Weight | 3.5 g | | | | | |
| Storage temperature | - 10°C to + 60 °C | | | | | |

Customized designs available upon request.
Contact us for Whitelight and LED solutions.