

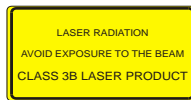
Small Size Laser-Optic Line Generator

GRINTECH's Gradient-Index Micro-Optic Components with plane optical surfaces generate a homogeneous laser line from a Gaussian beam of a single-mode laser diode. The extraordinary small module size of $\varnothing 6.43 \text{ mm} \times 10.5 \text{ mm}$ and a weight of only 1.5 g are combined with a line uniformity of approx. $\pm 8\%$ and a diffraction-limited focus size.

Applications: 3D contour mapping
Optical alignment
Machine vision
Biomedical

Standard Options:

- Line divergence (Fan angle): $\pm 10^\circ, \pm 15^\circ, \pm 20^\circ$ (see ordering information below)
- Line focus position can be specified between 80 mm and infinity (collimation) when ordering. Please see remarks below for focus size and depth of focus.
- Red laser diode: QDLaser – QLF063A-AA, $\lambda = 660 \text{ nm}$, $P_{LD} = 50 \text{ mW}$, TO-18 ($\varnothing 5.6 \text{ mm}$) package (driver on request)
- Input laser beam specification for laser diodes TO-18:
Slow axis divergence: 9 deg. (+ 1.5 / - 0.5 deg.) @ FWHM

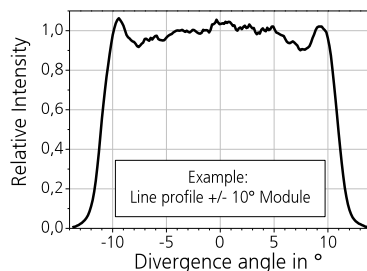


Environmental Specifications:

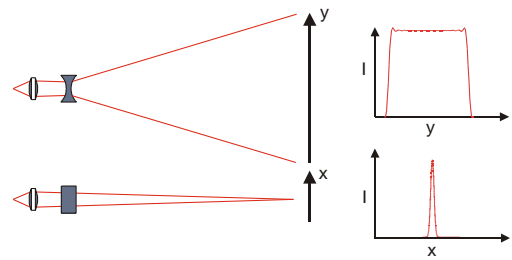
- Operating temperature: 0 ... 50°C
- Storage temperature: -20°C ... +70°C
- Resistance to vibrations: 2 g / 20 ... 500 Hz (acc. IEC68-2-6)
- Resistance to mechanical shock: 15 g / 6 ms (acc. IEC68-2-29)
- Laser safety class: depending on application and additional optics up to class 3B

Optical Specifications:

- Fan divergence angles : $\pm 10^\circ, \pm 15^\circ, \pm 20^\circ$
- Focus distance: 80 mm – infinity, Gaussian shape
- Line width in focus: FWHM/Distance = 0.60 $\mu\text{m}/\text{mm}$,
Example: approx. 120 μm line width (FWHM) in 200 mm distance
- Far field divergence depending on line widths, approx. according to Gaussian beam laws
 - Squint angle: $\leq 2^\circ$
 - Transmission efficiency: $P_{out} / P_{LD} = 90 - 95\%$



Variations due to modifications of the production process are possible. It is the user's responsibility to determine suitability for the user's purpose.

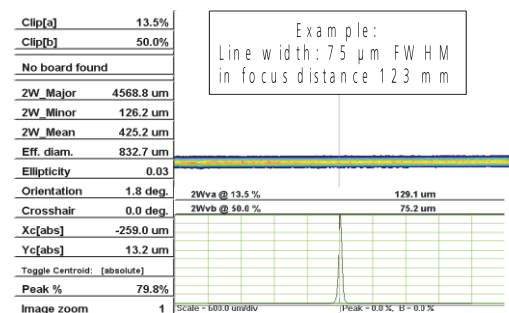
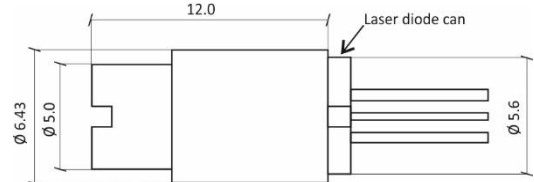


Mechanical Specifications:

- Weight: 1.5 g
- Dimensions version 1: $\varnothing 6.43 \text{ mm} \times 12.0 \text{ mm}$
- Dimensions version 2: $\varnothing 8.00 \text{ mm} \times 12.0 \text{ mm}$
- Package material: anodised aluminium



Dimensions Version 1:



Order example:

| | |
|---------------------------|---|
| GT – LLGM – 643 – DA – FD | |
| GT | GRINTECH |
| LLGM | Laser Line Generator Modul |
| 643 | Diameter: 6.43 mm |
| DA | Divergence Angle: 10 for $\pm 10^\circ$ 15 for $\pm 15^\circ$ 20 for $\pm 20^\circ$ |
| FD | Focus distance in mm (between 80mm and infinity) |