

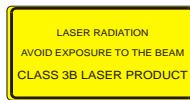
## Small Size Laser-Optic Line Generator

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

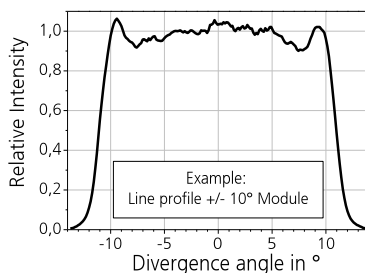


### Environmental Specifications:

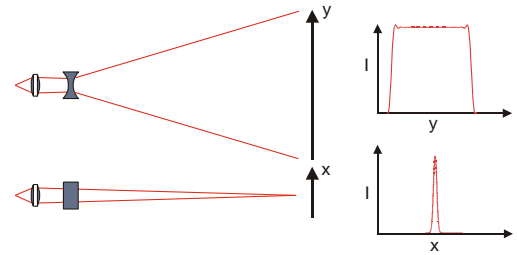
- Operating temperature: 0 ... 50°C
- Storage temperature: -20°C ... +70°C
- Resistance to vibrations: 2 g / 20 ... 500 Hz (acc. IEC68-2-6)
- Resistance to mechanical shock: 15 g / 6 ms (acc. IEC68-2-29)
- Laser safety class: depending on application and additional optics up to class 3B

### 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  $\mu\text{m}$  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.

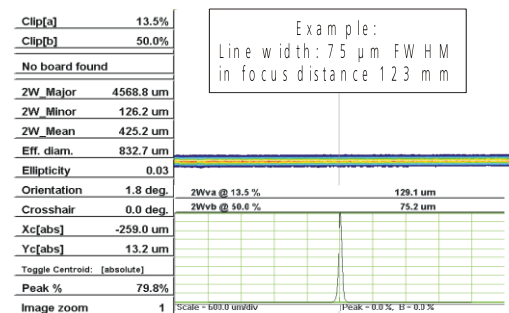
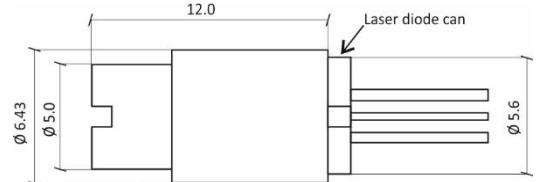


### Mechanical Specifications:

- 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)