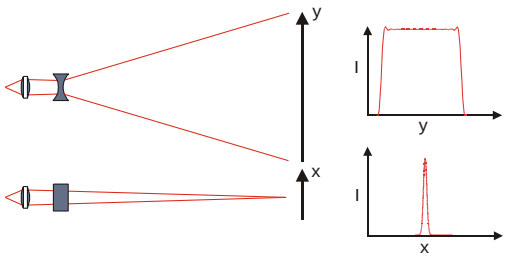
Small Size Laser-Optic Line Generator

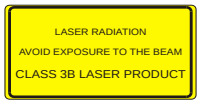
GRINTECH's Gradient-Index Micro-Optic Components with plane optical surfaces generate a homogeneous laser line from a Gaussian beam of a single-mode laser diode. The extraordinary small module size of ∅ 6.43 mm x 10.5 mm and a weight of only 1.5 g are combined with a line uniformity of approx. ± 8% and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



Applications: 3D contour mapping
Optical alignment
Machine vision
Biomedical

Standard Options:

- Line divergence (Fan angle): ± 10°, ± 15°, ± 20° (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, λ = 660 nm, P_{LD} = 50 mW, TO-18 (∅ 5.6 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



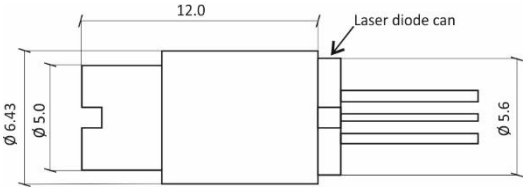
Mechanical Specifications:

- Weight: 1.5 g
- Dimensions version 1: ∅ 6.43 mm x 12.0 mm
- Dimensions version 2: ∅ 8.00 mm x 12.0 mm
- Package material: anodised aluminium

Environmental Specifications:

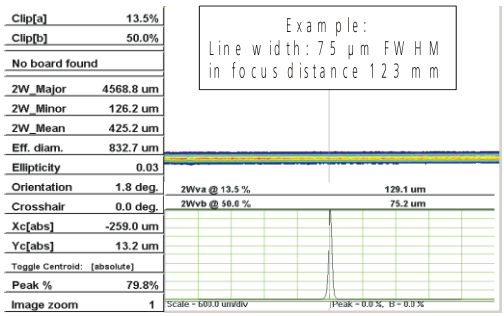
- Operating temperature: 0 ... 50°C
- Storage temperature: -20°C ... +70°C
- Resistance to vibrations: 2 g / 20 ... 500 Hz (acc. IEC68-2-6)
- Resistance to mechanical shock: 15 g / 6 ms (acc. IEC68-2-29)
- Laser safety class: depending on application and additional optics up to class 3B

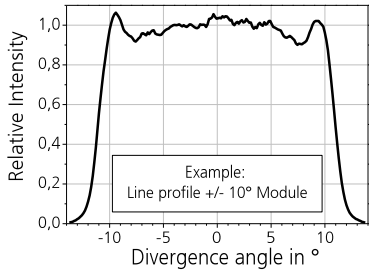
Dimensions Version 1:



Optical Specifications:

- Fan divergence angles : ± 10°, ± 15°, ± 20°
- Focus distance: 80 mm – infinity, Gaussian shape
- Line width in focus: FWHM/Distance = 0.60 µm/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: ≤ 2°
- 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.

Order example:

GT – LLGM – 643 – DA – FD	
GT	GRINTECH
LLGM	Laser Line Generator Modul
643	Diameter: 6.43 mm
DA	Divergence Angle: 10 for ±10° 15 for ±15° 20 for ±20°
FD	Focus distance in mm (between 80mm and infinity)