

## Semi-telecentric Machine Vision Laser Line with uniform intensity distribution

Series 13LT/13LTM



### FEATURES

Semi-telecentric machine vision laser line with uniform intensity distribution. This includes lasers of series 13LT/13LTM. Both series are available as Micro (smaller line widths) or Macro version (extended depth of focus).

- Semi-telecentric
- Uniform intensity distribution
- Laser Line Generator series [13LT](#)
  - Line length 15 mm, Line widths starting at 12 µm
  - Wavelengths 405 - 940 nm
  - Laser powers up to 67 mW
- Laser Line Generator series [13LTM](#)
  - Depth of focus 7 to 35 times larger than for corresponding Micro Laser Line Generator
  - Line length 15 mm, Line widths starting at 39 µm
  - Wavelengths 405 - 940 nm
  - Laser powers up to 30 mW
- Optional Low Noise Version:
  - Series [LNC-13LT](#) (Micro) and series [LNC-13LTM](#) (Macro)

### DESCRIPTION

The laser diode beam sources series 13LT/13LTM produce semi-telecentric laser lines with a uniform intensity distribution along the laser line.

### 13LT/13LTM

The laser diode beam sources series 13LT/13LTM produce a semi-telecentric laser line with 15 mm line length. The intensity profile is approx. uniform in line direction. More precisely, it is Gaussian clipped by an aperture with an edge intensity of typ. 80%. The line width is constant along the laser line. Across the laser line the intensity distribution is Gaussian for lasers of series 13LT and [approx. Gaussian](#) for lasers of series 13LTM.

### Micro and Macro lasers

The lasers of series [13LT](#) are [Laser Micro Line Generators](#) designed to produce lines with small line width. They have a small depth of focus (in this case the depth of focus is the Rayleigh range). [Laser Macro Line Generators](#) like the corresponding lasers of series [13LTM](#) have common basic optical features but are designed to generate laser lines with an extended depth of focus.

### Electronics

The lasers have integrated electronics for control of the laser output power. The output power can be controlled using the modulation input ports (TTL and analog) or manually using the potentiometer. Optionally the lasers can be equipped with [RS232 serial interface](#) for laser control and data read-out.

### Adjusting the working distance

For lasers of series 13LT/13LTM the working distance is fixed. A fine-adjustment of the distance between laser and target is recommended for fine-focusing in order to achieve minimal line width.

### Optional: Low Noise Version

The laser series 13LT/13LTM is also available as a Low Noise version [LNC-13LT](#) (Micro) and [LNC-13LTM](#) (Macro). These lasers are [low noise](#) (typ. < 0.15% of  $P_o$  (RMS, Bandwidth < 1 MHz)) and operate mode-hopping free. Due to the reduced coherence length the speckle contrast is lowered. However this effect is smaller for smaller lines and spots. ( $P_o$  is the maximum specified output power.)

These high quality lasers can e.g. be used for machine vision applications, laser triangulation or laser light sectioning.

## TECHNOTES

- [Micro vs. Macro](#)  
[What does Micro or Macro Laser mean?](#)
- [Laser Modules with RS232 interface](#)  
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- [LNC Laser Modules](#)  
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[Gaussian intensity distribution and uniform intensity distribution along the laser line](#)
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[Laser diode based laser sources for high precision measurement and inspection systems](#)

## DOWNLOADS

[Article LaserLines.pdf](#)

**This downloads section only includes general downloads for the complete series.**

Please access the individual product pages (using the product configurator, the product list, order options or the search button if you have a complete order code). Here you will find specific downloads including technical drawings or stepfiles.

## RELATED PRODUCTS

### LASER MODULES SERIES 13LT

- Semi-telecentric Micro Line
- Uniform intensity distribution
- Constant line length **15 mm**

### LASER MODULES SERIES 13LTM

- Semi-telecentric Macro Line
- Uniform intensity distribution
- Constant line length **15 mm**
- Extended depth of focus

### LASER MODULES SERIES LNC-13LT

- Semi-telecentric Micro Line
- Uniform intensity distribution
- Constant line length **15 mm**
- Low noise

### LASER MODULES SERIES LNC-13LTM

- Semi-telecentric Macro Line
- Uniform intensity distribution
- Constant line length **15 mm**
- Extended depth of focus
- Low noise

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