

Semi-telecentric Low Noise Laser Line with Gaussian intensity distribution

Machine Vision Laser Series LNC-5LT/LNC-5LTM

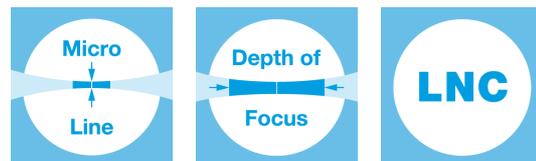


FEATURES

Semi-telecentric low noise machine vision laser line with Gaussian intensity distribution. This includes lasers of series LNC-5LT/LNC-5LTM. Both series are available as Micro (smaller line widths) or Macro version (extended depth of focus).

- Semi-telecentric
- Gaussian intensity distribution
- Low noise Laser Module (typ. $< 0.15\%$ of P_0 (RMS, Bandwidth < 1 MHz))
- Laser Line Generator series [LNC-5LT-1/LNC-5LTM-1](#)
- Line length ca. 4.8 mm
- Laser Line Generator series [LNC-5LT-2/LNC-5LTM-2](#)
- Line length ca. 2 mm
- Standard Version:
 - Series [5LT-1](#) (Micro) and series [5LTM-1](#) (Macro)
 - Series [5LT-2](#) (Micro) and series [5LTM-2](#) (Macro)

- Micro Line Generator for small laser line widths and high power density in the focal plane
- Macro Line Generator for extended depth of focus
- Low noise, low coherence laser module (typ. $< 0.15\%$ of P_0 (RMS, Bandwidth < 1 MHz))



DESCRIPTION

The low noise laser diode beam sources series LNC-5LT-1/LNC-5LTM-1 and LNC-5LT-2/LNC-5LTM-2 produce semi-telecentric laser lines with a Gaussian intensity distribution along the laser line. They differ in their line length and line width.

LNC-5LT-1 vs. LNC-5LT-2

The laser diode beam sources series LNC-5LT-1 produce a semi-telecentric laser line with a line length in the range of 4.8 mm. For most laser diodes the intensity profile is Gaussian in line direction clipped by an aperture at line length 4.8 mm with an edge intensity of typ. <40%. In some cases the line length is slightly smaller. In this case the line length is given on the 13.5%-level and the beam is Gaussian in line direction and truncated at 4.8 mm. The line width is constant along the laser line. Across the laser line the intensity distribution is Gaussian for series LNC-5LT-1 and [approx. Gaussian](#) for series LNC-5LTM-1.

The laser diode beam sources series LNC-5LT-2 produce a semi-telecentric laser line in the range of 2 mm line length. The line length is given on the 13.5%-level. The intensity profile is Gaussian in line direction. The line width is constant along the laser line. Across the laser line the intensity distribution is Gaussian for series LNC-5LT-2 and [approx. Gaussian](#) for series LNC-5LTM-2.

Micro and Macro lasers

The lasers of series [LNC-5LT-1](#) and [LNC-5LT-2](#) 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 [LNC-5LTM-1](#) and [LNC-5LTM-2](#) have common basic optical features but are designed to generate laser lines with an extended depth of focus.

Low noise

The lasers are [low noise](#) (typ. < 0.1 % of P_0^* (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. (* P_0 is the maximum specified output power.)

Electronics

The laser has 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.

Adjusting the working distance

For lasers of series LNC-5LT-1 and LNC-5LT-2 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.

Standard Version

The laser series LNC-5LT-1/LNC-5LTM-1 as well as LNC-5LT-2/LNC-5LTM-2 are also available as a standard version [5LT-1](#) (Micro), [5LTM-1](#) (Macro), [5LT-2](#) (Micro) and [5LTM-2](#) (Macro). Please note that these have a different electronics type, but are also available with [RS232 interface](#).

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

TECHNOTES

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- [LNC Laser Modules](#)
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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 LNC-5LT-1

- Semi-telecentric Micro Line
- Gaussian intensity distribution
- Constant line length ca. **4.8 mm**
- Low noise

LASER MODULES SERIES LNC-5LTM-1

- Semi-telecentric Macro Line
- Gaussian intensity distribution
- Constant line length ca. **4.8 mm**
- Extended depth of focus
- Low noise

LASER MODULES SERIES LNC-5LT-2

- Semi-telecentric Micro Line
- Gaussian intensity distribution
- Constant line length ca. **2 mm**
- Low noise

LASER MODULES SERIES LNC-5LTM-2

- Semi-telecentric Macro Line
- Gaussian intensity distribution
- Constant line length ca. **2 mm**
- Extended depth of focus
- Low noise

This is a printout of the page <https://sukhamburg.com/products/lasermodule/lnc/laserline/semi-telecentricshort.html>
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