

Machine Vision Laser Focus with an elliptical beam profile

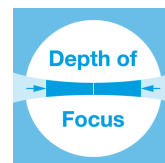
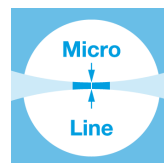
Series 13M/13MM and RS232 interface



FEATURES

Machine vision laser focus with elliptical Gaussian beam profile. They are available as Micro (smaller line widths) or Macro version (extended depth of focus).

- Spot with elliptical beam profile
 - RS232 interface
 - Laser Focus Generator series [13M](#)
 - Also available in blue or green
 - Spot diameter starting at $9 \times 21 \mu\text{m}$
 - Wavelengths 405 - 940 nm
 - Laser powers up to 114 mW
 - Laser Focus Generator series [13MM](#)
 - Depth of focus 7 to 35 times larger than for corresponding Micro Focus Generator
 - Spot diameter starting at $20 \mu\text{m}$
 - Wavelengths 405 - 940 nm
 - Laser powers up to 89 mW
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- Micro Line Generator for small laser line widths and high power density in the focal plane
 - Macro Line Generator for extended depth of focus
 - With RS232 interface



DESCRIPTION

The laser diode beam sources series 13M/13MM produces an elliptical laser spot.

13M/13MM

The laser diode beam source series 13M produces an elliptical laser spot with elliptical Gaussian intensity distribution. The laser diode beam source series 13MM produces an often circular (sometimes slightly elliptical) laser spot with extended depth of focus. The beam profile is [approx. Gaussian](#). More precisely it has an elliptical intensity distribution clipped by a circular aperture.

Micro and Macro lasers

The lasers of series 13M and 5M are [Laser Micro Focus Generators](#) designed to produce spots with small spot size. They have a small depth of focus (in this case the depth of focus is the Rayleigh range). [Laser Macro Focus Generators](#) like the corresponding lasers of series 13MM have common basic optical features but are designed to generate laser spots 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.

RS232 interface

The lasers are equipped with an [RS232 interface](#) for laser control and data read-out. It provides e.g. control of laser power or allows to switch the laser ON and OFF and it allows to read and store critical data, like the hours of operation or the laser current for maintenance planning purposes.

Adjusting the working distance

For lasers of series 13M/13MM the working distance can be adjusted by adjusting the focus setting. Please note that the spot diameter increases proportionally to the working distance. A fine-adjustment of the distance between laser and target is recommended for fine-focusing in order to achieve minimal spot size.

These high quality lasers can e.g. be used for machine vision applications.

TECHNOTES

- [Micro vs. Macro](#)
[What does Micro or Macro Laser mean?](#)
- [Laser Modules with RS232 interface](#)
[Features of Laser Modules with RS232 interface](#)
- [LNC Laser Modules](#)
[Low noise Laser Modules vs. regular Laser Modules](#)
- [Electronic features \(9\)](#)
[Detailed electronic features for all electronics types](#)
 - [Overview Electronics Types](#)
[Overview over all Electronics Types](#)
 - [Electronics Type C](#)
[Electronic features for electronics type C](#)
 - [Electronics Type P](#)
[Electronic features for electronics type P](#)

[Electronics Type H](#)

[Electronic features for electronics type H](#)

▪ [Electronics Type HP](#)

[Electronic features for electronics type HP](#)

▪ [Electronics Type CS with RS232 interface](#)

[Electronic features for electronics type CS](#)

▪ [Electronics Type PS with RS232 interface](#)

[Electronic features for electronics type PS](#)

▪ [Electronics Type S](#)

[Electronic features for electronics type S](#)

▪ [Electronics Type B](#)

[Electronic features for electronics type B](#)

▪ [Laser Line Basics \(7\)](#)

[Line geometry, intensity distribution, definition of line length and working distance, definition of line width and machine vision applications.](#)

▪ [Laser Line geometries](#)

[Fan angle vs. semi-telecentric.](#)

▪ [Intensity distribution](#)

[Gaussian intensity distribution and uniform intensity distribution along the laser line](#)

▪ [Laser Line length and working distance](#)

[Line length and working distance definition](#)

▪ [Laser Line Width and Depth of Focus / Rayleigh Range](#)

[Line width definition](#)

▪ [Laser Speckle](#)

[When do they appear and how to prevent them](#)

▪ [Wavelengths of diode based lasers](#)

[What wavelengths are available for diode based laser modules?](#)

▪ [Cable orientation](#)

[Straight and angled cable exit](#)

▪ [Article - Laser Sources for Metrology and Machine Vision](#)

[Laser diode based laser sources for high precision measurement and inspection systems](#)

RELATED PRODUCTS

LASER MODULES SERIES 13M

- Micro Focus Generator
- Elliptical Gaussian beam profile

**LASER MODULES
SERIES 13MM**

- Macro Focus Generator
- **Circular** beam profile
- Extended depth of focus

**LASER MODULES
SERIES 5M**

- **Compact** Laser Micro Focus Generator
- Elliptical Gaussian beam profile

**LASER MODULES
SERIES LNC-13M**

- Micro Focus Generator
- Elliptical Gaussian beam profile
- Low noise

**LASER MODULES
SERIES LNC-13MM**

- Macro Focus Generator
- **Circular** beam profile
- Extended depth of focus
- Low noise

This is a printout of the page https://sukhamburg.com/products/laserm_modules/rs232/laserfocus/elliptical.html from 5/7/2024

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