

## Machine Vision Collimator with Gaussian beam profile

Series 25CM and 55CM/55CR



Machine Vision Laser Collimator 55CM  
Representative product images. Individual product images are found on the individual product pages.

### FEATURES

Laser Diode Collimators with elliptical or circular Gaussian beam profile

- Laser Diode Collimator [55CM/55CR](#)
- Collimated beam diameters (truncated below the 13.5%-level) max. 13 mm
- Angled version: 55CR
- Laser Diode Collimator [25CM](#)
- Compact collimator Ø 12 mm for smaller beam diameters
- Collimated beam diameters (truncated below the 13.5%-level) max. 4.8 mm
- Optional Low Noise Version:
- Series [LNC-56CM/LNC-56CR](#)

### DESCRIPTION

Laser Diode Collimators transform the divergent light of a laser diode into a collimated beam, while maintaining the Gaussian intensity distribution and the intensity profile of the laser diode. They differ in max. diameter of the collimated beam and in their outer diameter (Ø 12 mm for series 25CM and Ø 25 mm for series 55CM/55CR ).

#### 25CM vs. 55CM

The Laser Diode Collimators all have a Gaussian intensity profile. The 25CM and 55CM/55CR produce elliptical collimated beams with Gaussian beam profile. The maximum beam diameter available is smallest for the series 25CM.

#### 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. Optionally the lasers can be equipped with [RS232 serial interface](#) for laser control and data read-out. Please note that the electronic features are different for the compact series 25CM.

### Adjustment of collimation settings

The collimation can be adjusted by using a hex key for series 55CM/55CR and an eccentric key for series 25CM. Please note that this affects beam parameters like collimated beam diameter and beam divergence.

### Optional: Low Noise Version

The laser series 55CM/55CR are also available as a Low Noise version [LNC-56CM/LNC-56CR](#). These lasers are low noise (typ. < 0.15 % 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 beam diameters. (\*  $P_0$  is the maximum specified output power.)

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

## TECHNOTES

- [Laser Modules with RS232 interface](#)  
[Features of Laser Modules with RS232 interface](#)
- [LNC Laser Modules](#)  
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- [Laser Line Basics \(7\)](#)  
[Line geometry, intensity distribution, definition of line length and working distance, definition of line width and machine vision applications.](#)

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[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](#)  
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- [Machine vision applications of Laser Lines \(1\)](#)  
[Laser triangulation, laser light sectioning, particle measurement etc.](#)
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- [Article - Laser Sources for Metrology and Machine Vision](#)  
[Laser diode based laser sources for high precision measurement and inspection systems](#)

## ACCESSORIES

**SWITCHBOXES FOR  
LASER MODULES**

**POWER SUPPLIES FOR  
LASER MODULES**

**ADJUSTMENT TOOLS  
LASER MODULES**

This is a printout of the page <https://sukhamburg.com/products/lasermodules/series/colli.html> from 9/8/2025

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