



Machine vision laser module

ilumVISION industrial is a ruggedized laser module for machine vision applications.

The laser is offered as a fixed focus product with different optical patterns (diffractive optics) or as a homogeneous line.

An insulated structure as well as an integrated electronic protection circuit allow safe operation in harsh industrial environments.

In its basic configuration the laser can be operated with continuous wave mode or digitally modulated.

Optionally, a positive or negative analog modulation can be offered.

If required, the laser can be reliably integrated into moving systems thanks to its drag chain cable.

General	Value	Comment
Wavelength	405 nm, 450 nm, 520 nm, 660 nm ($\Delta\lambda$ max. 10 nm)	Additional on request
Output power (max.)	See page 3	Additional on request
Beam adjustment	Focus distance: 300 mm	Collimated beam & other focus distances on request
Fan angle	See page 3	
Line width (focussed @300 mm)	See page 3	
Operation temperature	0°C to +60°C	
Storage temperature	-40°C to +70°C	

Electronics	Value	Comment
Supply voltage	5 V to 36 V (660 nm), 9 V - 36 V (405/450/520 nm)	
Operating current	300 mA max. (@5 V)	
Modulation digital	Digital (5 V), max. 500 kHz	
Modulation analog		On request
ESD Rating	±8 kV contact discharge	61000-4-2 (Level 4)
Protection circuit	Reverse polarity protection, surge protection	
Cable	4 wires (AWG22), grey, $\varnothing = 4.9$ mm	Suitable for drag chains „Supertronic PURö“
Cable length / Connection	2 m (Standard), open end with stripped and tinned wires	Customized connector on request

Mechanics	Value	Comment
Module length	65 mm	
Diameter	12 mm	
Material	Aluminium, black anodized	

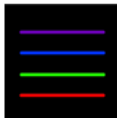



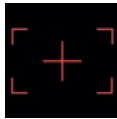
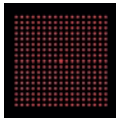
APPLICATIONS

- Machine vision
- Measuring systems

FEATURES

- **Patterns (Fan angles see table):**
 - > Cross
 - > Parallel lines
 - > Concentric rings
 - > Dot matrix
 - > Viewfinder
 - > More on request
- **Homogeneous laser line:**
 - > Homogeneity: $\leq 30\%$
 - > Fan angle: 60° (more on request)
- **Fixed focus**
- **Compact design for integration into larger systems**
- **Isolated module:** level 4
- **Operation mode:**
 - > Continuous operation (cw)
 - > Digital modulation (analog modulation optional)
- **Input voltage:** 5 - 36 V
- **Suitable for industrial use:**
 - > Robust design for harsh environments
 - > Cable suitable for drag chains

PRODUCT VARIANTS

No.	1	2	3	4	5	6
Pattern						
Description	Single homogeneous line	Cross	5 parallel lines	5 concentric rings	Viewfinder	17 x 17 dot matrix
Wavelength [nm]	405, 450, 520, 660	660	660	660	660	660
Typ. power [mW] (@exit aperture)	85 (405 nm) 50 (450 nm) 80 (520 nm) 85 (660 nm)	60	55	55	55	55
Fan angle [°]	60 ± 3% @ 660 nm	37	30.2	2.8	37.7 x 27.9	15.2
Beam adjustment	focussed	focussed	focussed	focussed	focussed	focussed
Focus distance [mm]	300	300	300	300	300	300
Line width (1/e²) (@Focus) [mm]	0.2 ± 0.1	not applicable	not applicable	not applicable	not applicable	not applicable
Operation modulation	cw / digital	cw / digital	cw / digital	cw / digital	cw / digital	cw / digital
Cable length [m]	2	2	2	2	2	2

All specifications @ T=25°C

Image Sources:

Cross: Standard DOE (Plastics) – HOLOEYE Photonics AG DE-R 299

5 parallel lines: Standard DOE (Plastics) – HOLOEYE Photonics AG DE-R 250

5 concentric rings: Standard DOE (Plastics) – HOLOEYE Photonics AG DE-R 259

Viewfinder: Standard DOE (Plastics) – HOLOEYE Photonics AG DE-R 288

17 x 17 dot matrix: Standard DOE (Plastics) – HOLOEYE Photonics AG DE-R 206

HOMOGENEOUS LINE – EXAMPLE OF AN INTENSITY PROFILE

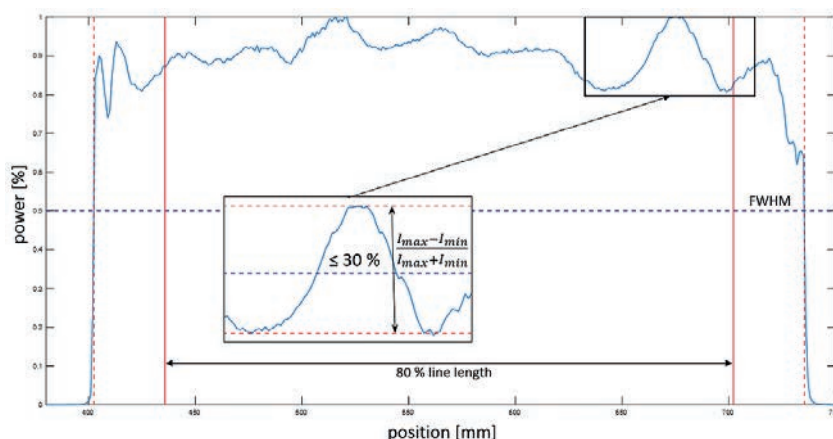


Figure 1: Calculation of homogeneity:

- Condition 1: $\leq 30\%$
- Condition 2: $80\% \pm 5\%$ laser power within 80% line length

NOTES

The above product specifications are subject to change without notice.
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