Laser line generating lens

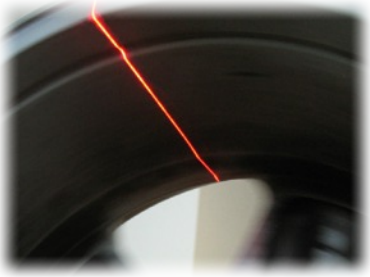
LNS-584

User's benefits

- Excellent line quality
- Beam tailored solutions
- Various wavelengths and fan angle available

Applications

- Alignment and positioning
- Machine vision
- 3D contour mapping
- High-speed industrial inspection
- Process control
- Measuring systems



EOPTIS offers a variety of aspherical **line generating lenses** able to transform a pointwise laser beam into a straight line with uniform intensity distribution across the entire length.

These lenses offer significative advantages compared to other optics:

- **Uniform-intensity distribution:** other refractive solutions like cylinder or rod lenses do not correct for the inherent Gaussian profile of a laser beam and therefore deliver a profile with "hot-spot" centre points and fading edge.
- **Continuous and crisp laser line:** diffractive optics obtain a line superimposing multiple patterns and therefore deliver a segmented line without additional faint lines.

The output line characteristics can be selected from a list of standard items as well as tailored to specific needs. The design specs affecting the line shape can be factory-controlled to deliver a cost-effective lens perfectly fitting the laser generator:

- Output fan angle and working distance
- Base material (refraction index)
- Input beam wavelength, divergence and diameter
- Uniformity acceptance level.

The lens is offered un-mounted for OEM applications.

Ordering information	Fan Angle	Beam ∅
LNS-584.P001A	90°	2.0mm
LNS-584.P004A	60°	2.0mm
LNS-584.P007A	45°	2.0mm
LNS-584.P010A	30°	2.0mm
LNS-584.P006A	60°	4.0mm

Fan angle specified at 660nm. Other wavelenghts and configurations are available: check web-site or contact us for non-listed options.

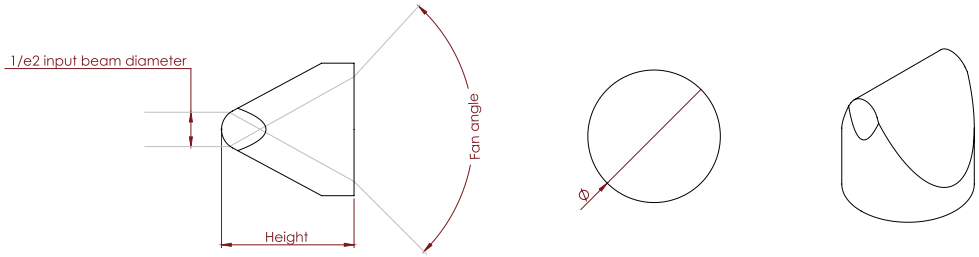
LNS-584

Technical Specifications

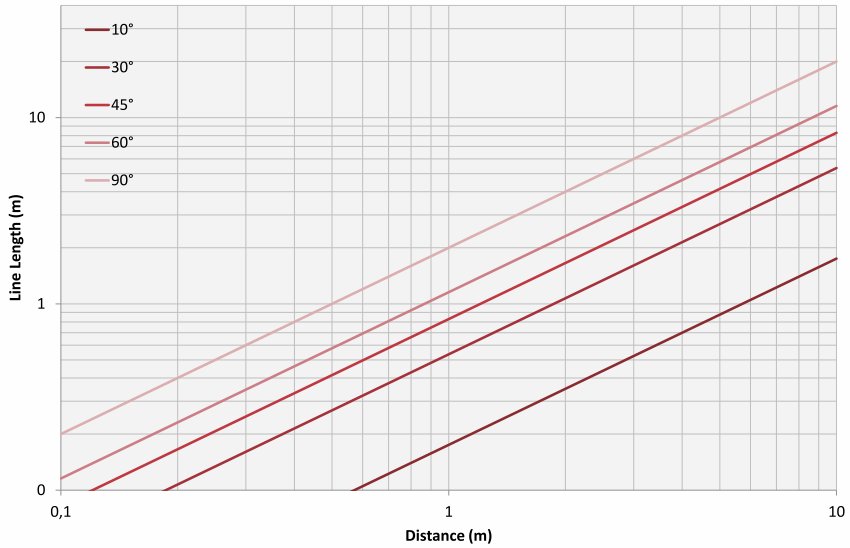
Fan angle	10° ÷ 90°
Substrate material	N-BK7 (nd=1.517) Borosilicate crown N-SF5 (nd=1.673) Dense flint N-SF6 (nd=1.805) Dense flint
Input beam diameter	0.8 ÷ 4.0mm @1/e2
Wavelength	532nm for green Diode-pumped solid-state (DPSS) lasers 635, 650, 670nm for red diode lasers others on request
Intensity distribution	Uniform lengthwise - Gaussian widthwise
Surface quality	80-50 Scratch/Dig (80/50µm max width)
Surface flatness	λ/2 @635nm
Diameter ∅	9.0±0.1mm
Height	7.0 ÷ 9.0mm
Clear aperture	~ 90%
Mass	~ 8g

Mechanical drawings

(dimensions mm)



Laser line length



EOPTIS designs and manufactures **innovative vision systems** for special applications and **optoelectronic instruments** for the in-line control of products and monitoring of manufacturing processes. Our customers use EOPTIS' products in the industrial, biomedical, security and food sectors. Our know-how in **electronics, optics, mechanics and analysis algorithms** is used to design products available off-the-shelf or for custom OEM solutions.

Via Alto Adige 152 – 38121 Trento (TN) – ITALY
Tel. +39 0461 260552 – Fax +39 0461 260617