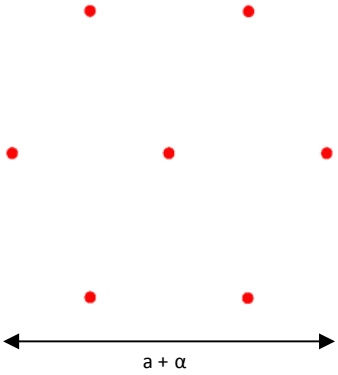
DE-R 285 Diffractive Optical Element



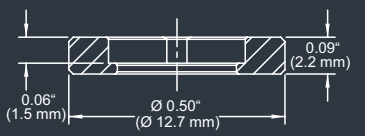
- **Element Number: DE-R 285**
- **Current Product Revision: A**
- Description: Hexagon
- Substrate material: Polycarbonate (PC)
- Size (Ø x Thickness): 8 x 1.2 mm
- Design wavelengths: 780 nm
- Recommended wavelength range: 520-800 nm
- Minimum recommended beam diameter: 0.5 mm

Pattern size and pattern angles and the intensity in the undiffracted central spot ('zero order intensity', see reverse page) will vary most with the wavelength. Within the recommended wavelength range, the element shows either the lowest intensity in the central spot (between 600 and 700 nm) or an equal intensity to the off-axis spots (around 570 nm and 770 nm).

Diffraction efficiencies given on this datasheet have been measured using elements of product revision A.

MOUNTED VERSION

For testing or setups under laboratory conditions we offer a version mounted in 12.7 mm stainless steel frame for use with standard laboratory holders.



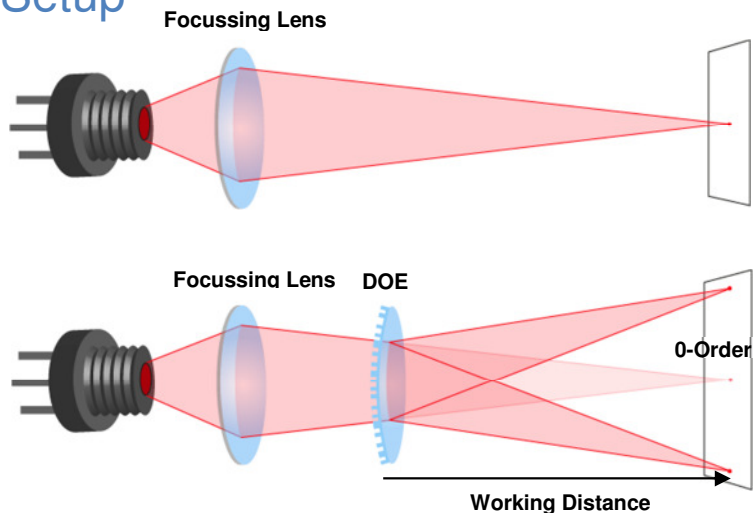
COLLIMATED / CONVERGING LASER

The laser can be collimated for long range use or converging for a fixed working distance. Please note that the size/thickness of each spot or line depends on the focusing of the laser.

Geometry and Diffraction Angles

Wavelength	Pattern Size @ 100 mm Distance	Pattern Angles
	a	**α**
488 nm	8.2 mm	4.7°
543 nm	9.1 mm	5.2°
594 nm	10.0 mm	5.7°
635 nm	10.7 mm	6.1°
650 nm	10.9 mm	6.3°
730 nm	12.3 mm	7.0°
780 nm	13.1 mm	7.5°
808 nm	13.6 mm	7.8°

Setup



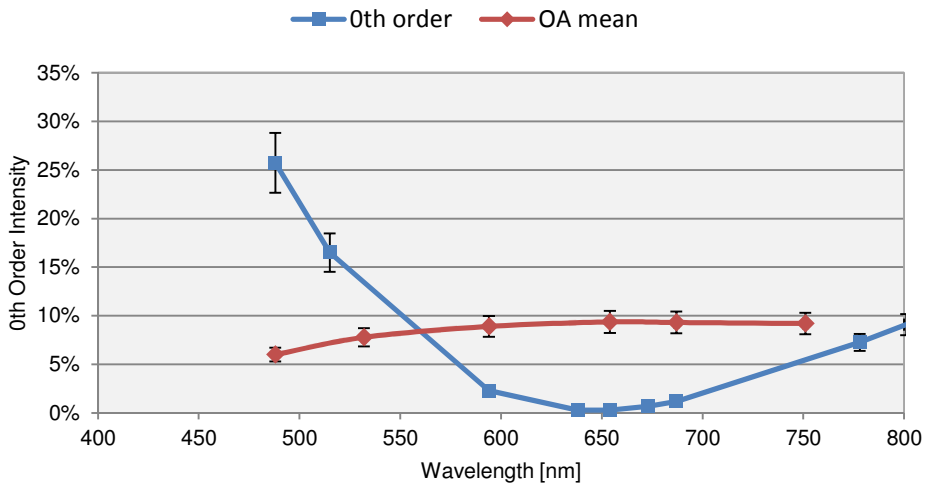
Laser diodes are the most common light source to be used with diffractive optical elements, but other laser light sources may also be used.

The DOEs are best with collimated or convergent laser sources. The microstructure surface should be oriented towards the laser.

The 0-order spot is equivalent in size and shape to the original beam, but its power is attenuated.

Diffraction Zero Order Intensity:

Wavelength	0-Order Intensity
488	26%
515	16.5%
594	2.3%
638	0.3%
654	0.3%
673	0.7%
687	1.2%
778	7.3%



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