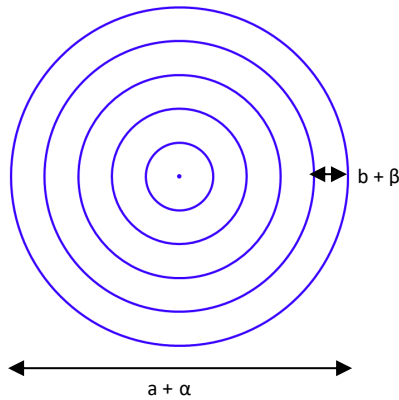


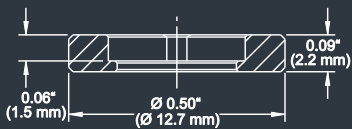
DE-R 399 Diffractive Optical Element



- **Element Number: DE-R 399**
- **Current Product Revision: A**
- Description: 5 Rings
- Substrate material: Polycarbonate (PC)
- Size (Ø x Thickness): 8 x 0.63 mm
- Design wavelengths: 450 nm
- Recommended wavelength range: 400-500 nm
- Minimum recommended beam diameter: 2-3 mm

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.

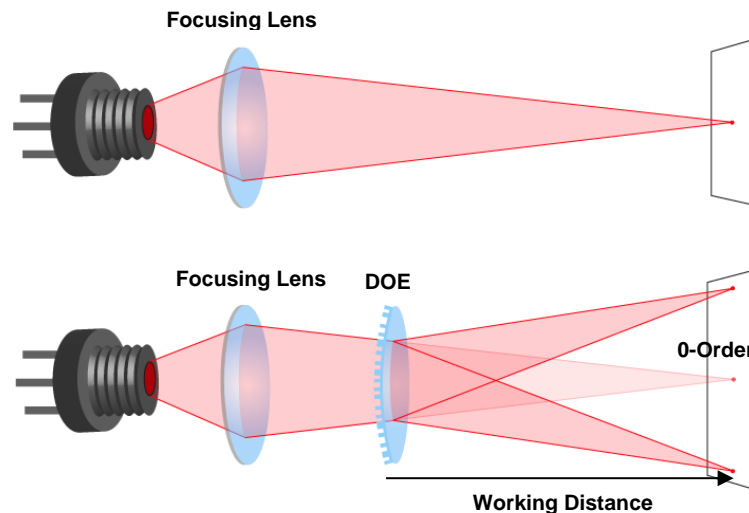
Pattern size and pattern angles and the intensity in the undiffracted central spot ('zero order intensity', see reverse page) will vary most with the wavelength. Within the recommended wavelength range, the element shows the lowest intensity in the central spot.

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

Geometry and Diffraction Angles

Wavelength	Pattern Size @ 100 mm Distance		Pattern Angles	
	λ [nm]	a [mm]	b [mm]	α [°]
405	65	6.5	36	3.6
450	73	7.3	40	4.0
488	80	8.0	44	4.4
520	86	8.6	47	4.7
532	89	8.9	48	4.8
594	102	10.2	54	5.4
635	111	11.1	58	5.8
650	114	11.4	59	5.9

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 used 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.

Zero Order Diffraction Intensity

Wavelength	0-Order Intensity
402	3.8%
447	0.03%
515	5.1%
640	23.1%

