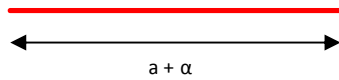


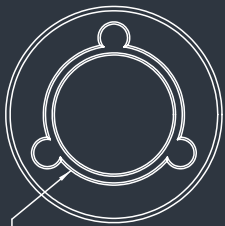
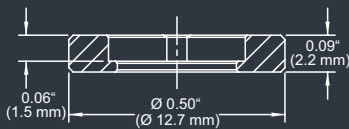
DE-R 283 Diffractive Optical Element



- **Element Number: DE-R 283**
- **Current Product Revision: A**
- Description: Quasi Continuous Line - 20
- Number of Spots on Line: 601
- Substrate Material: Polymethyl Methacrylate (PMMA)
- Size (Ø x Thickness): 8 x 1 mm
- Design Wavelengths: 633 nm
- Recommended Wavelength Range: 630-670 nm
- Minimum Recommended Beam Diameter: 0.5 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.



Ø 0.32" (Ø 8.0 mm)

Thorlabs 8 mm steel lens adapter

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

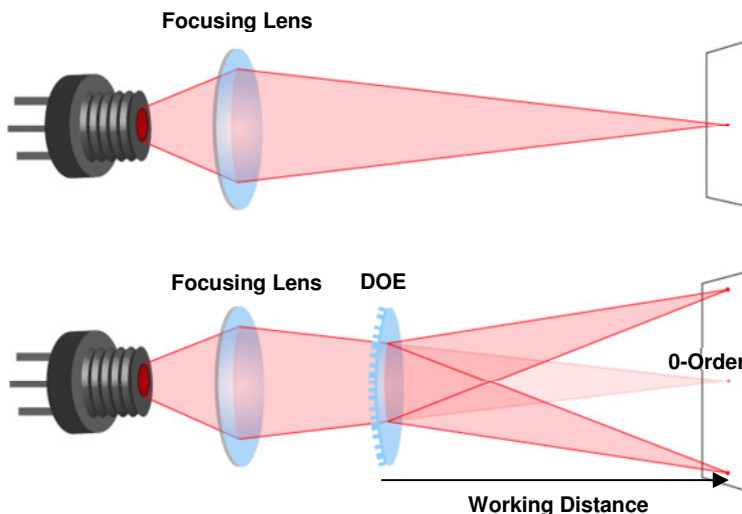
Within the recommended wavelength range, the zeroth order is not brighter than the rest of the line. Line width and line angle and the intensity in the undiffracted central spot ('zero order intensity', see reverse page) will vary most with the wavelength.

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

Pattern Geometry and Diffraction Angles

Wavelength	Line Width @ 100 mm Distance	Spot-to-spot spacing @ 100 mm Distance	Pattern Angle
	a		α
450	24.8 mm	41.3 μm	14.2°
488	27.0 mm	44.9 μm	15.4°
515	28.5 mm	47.4 μm	16.2°
532	29.4 mm	49.0 μm	16.8°
635	35.3 mm	58.7 μm	20.0°
650	36.2 mm	60.2 μm	20.5°
730	40.8 mm	67.9 μm	23.1°
780	43.7 mm	72.7 μm	24.7°
808	45.4 mm	75.5 μm	25.6°

Setup



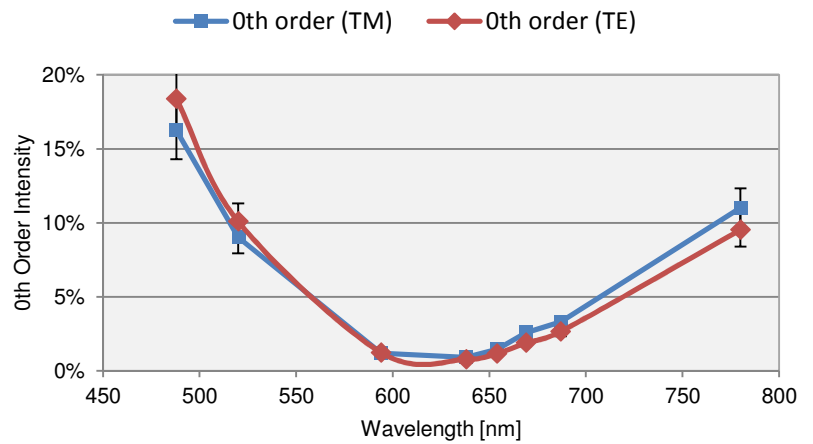
Laser diodes are the most common light source to be used with diffractive optical elements, but other laser light sources may also be used.

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.

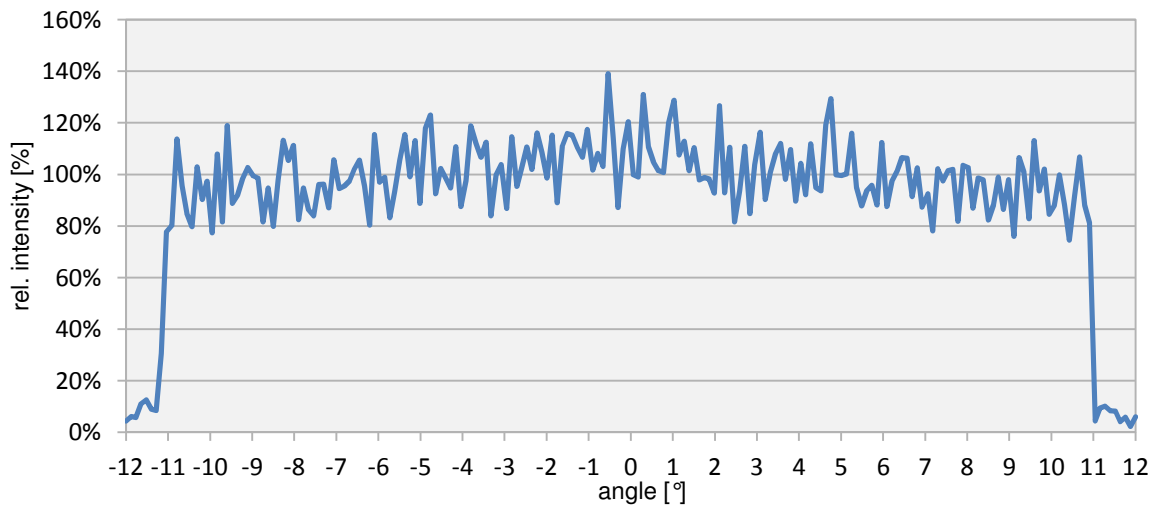
Diffraction Zero Order Intensity:

Wavelength	0-Order Intensity TM	0-Order Intensity TE
488	16.3%	18.4%
515	9.0%	10.1%
594	1.2%	1.2%
638	0.90%	0.8%
654	1.5%	1.2%
669	2.6%	1.9%
687	3.3%	2.7%
780	11.0%	9.5%



Line Power Profile

DE-R 283 (Rev. A) @ 638nm



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Pioneers in Photonic Technology