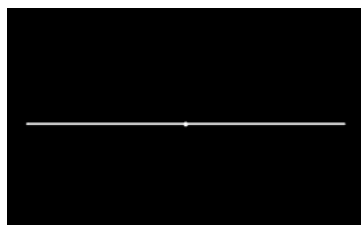


## DE-R 383 Diffractive Optical Element



- **Element Number: DE-R 383**
- **Current Product Revision: A**
- Description: Quasi Continuous Line - 51
- Number of Spots on Line: 1935
- Substrate Material: Polycarbonate (PC)
- Size (Ø x Thickness): 8 x 0.63 mm
- Design Wavelengths: 840 nm
- Recommended Wavelength Range: 790-880 nm
- Minimum Recommended Beam Diameter: 2 mm

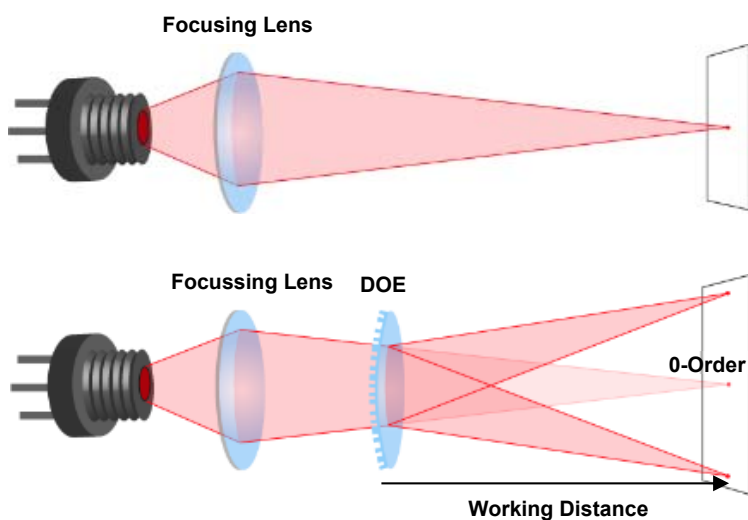
Within the recommended wavelength range, the zeroth order is not brighter than the rest of the line. Line width and line angle and the intensity in the undiffracted central spot ('zero order intensity', see reverse page) will vary most with the wavelength.

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

## Pattern Geometry and Diffraction Angles

Wavelength	Line Width @ 100 mm Distance	Spot spacing next to center @ 100 mm Distance	Spot spacing next to line end @ 100 mm Distance	Pattern Angle
$\lambda$ [nm]	a [mm]	[ $\mu\text{m}$ ]	[ $\mu\text{m}$ ]	$\alpha$ [°]
687	74.7	36	44	40.9
752	82.9	40	50	45.0
801	89.3	42	55	48.1
825	92.6	43	58	49.7
<b>840</b>	<b>94.6</b>	<b>44</b>	<b>60</b>	<b>50.6</b>
893	102.1	47	67	54.1
940	109.0	49	73	57.2
980	115.1	52	79	59.9
1064	128.9	56	94	65.6
1550	257.0	82	351	104.2

## Setup



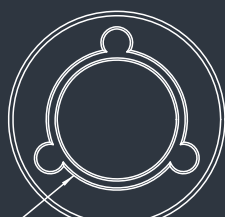
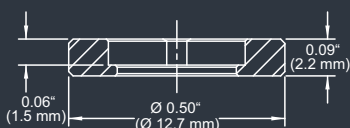
Laser diodes are the most common light source to be used with diffractive optical elements, but other laser light sources may also be used.

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.

### 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

## Diffraction Zero Order Intensity:

Wavelength	0-Order Intensity TM (min)	0-Order Intensity TM (typ.)	0-Order Intensity TM (max)	0-Order Intensity TE (min)	0-Order Intensity TE (typ.)	0-Order Intensity TE (max)
684	10.5%	11.0%	11.5%	13.8%	14.4%	14.7%
749	2.5%	2.9%	3.4%	4.8%	5.1%	5.4%
800	0.4%	0.5%	0.9%	1.2%	1.5%	1.7%
845	0.3%	0.3%	0.4%	0.4%	0.5%	0.7%
893	1.2%	1.4%	1.5%	0.7%	0.8%	1.0%
940	2.8%	3.4%	3.7%	1.7%	2.1%	2.3%
980	4.9%	5.2%	5.5%	3.2%	3.5%	3.7%

