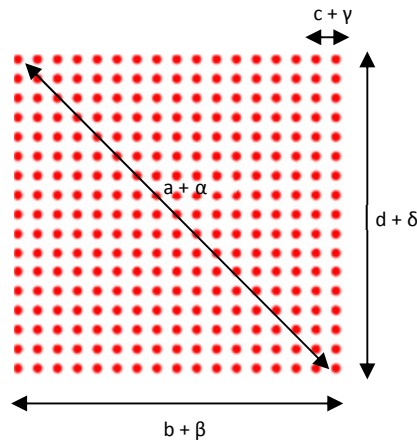


# DE-R 206 Diffractive Optical Element



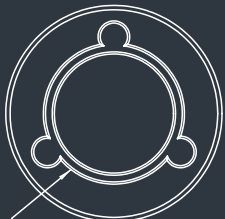
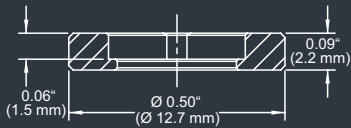
- **Element Number:** DE-R 206
- **Current Product Revision:** B
- **Description:** Matrix 17 x 17 Dots
- **Number of Dots:** 289 Dots
- **Substrate material:** Polycarbonate (PC)
- **Size (Ø x Thickness):** 8 x 1.2 mm
- **Design wavelengths:** 660 nm
- **Recommended wavelength range:** 590-730 nm
- **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 zeroth order has a similar power than the off-axis beams of the dot matrix.

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

## 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)

## COLLIMATED / CONVERGING LASER

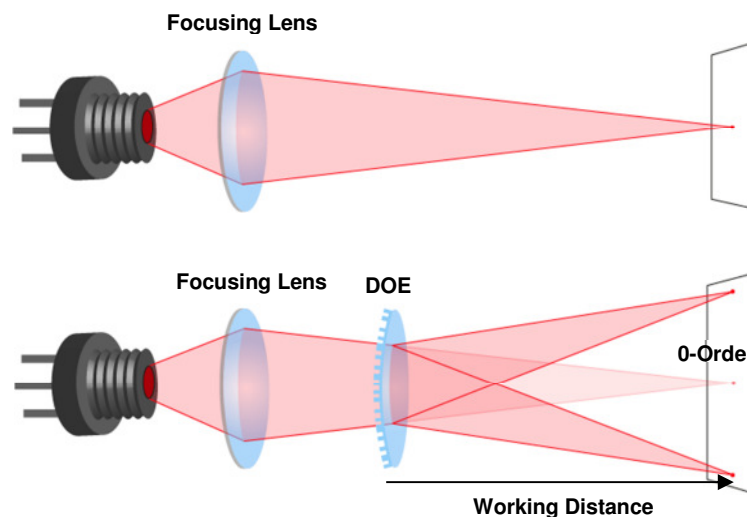
The laser can be collimated for long range use or converging for a fixed working distance.

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	b	c	d	α	β	γ	δ
488 nm	28 mm	19.6 mm	1.23 mm	19.6 mm	15.9°	11.2°	0.7°	11.2°
543 nm	31 mm	22 mm	1.37 mm	22 mm	17.7°	12.5°	0.8°	12.5°
594 nm	34 mm	24 mm	1.50 mm	24 mm	19.4°	13.7°	0.9°	13.7°
635 nm	37 mm	26 mm	1.60 mm	26 mm	21.0°	14.6°	0.9°	14.6°
650 nm	37 mm	26 mm	1.64 mm	26 mm	21.0°	15.0°	0.9°	15.0°
730 nm	42 mm	30 mm	1.85 mm	30 mm	24.0°	16.8°	1.1°	16.8°
780 nm	45 mm	32 mm	1.98 mm	32 mm	26.0°	18.0°	1.1°	18.0°

## Setup



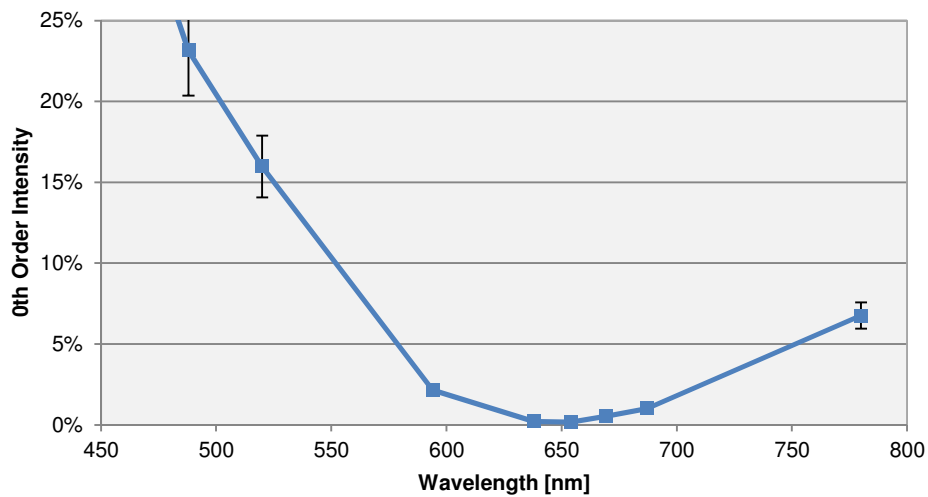
Laser diodes are the most common light source to be used with diffractive optical elements, but other laser light sources may also be used.

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
488	23%
520	16%
594	2%
638	0.2%
654	0.2%
669	0.5%
687	1.0%
780	7%



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