

# >> DE-R 221 - Standard Diffractive Optical Element

**Element Number: DE-R 221**

Description: 1 : 72 Dot Circle

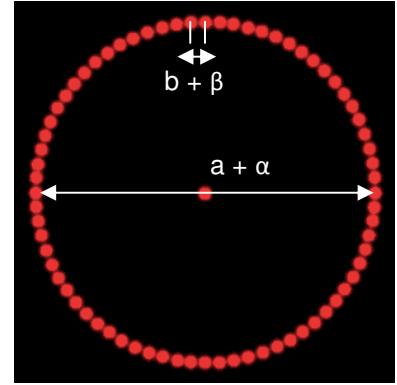
Number of Dots: 72 + 1 Dots

Material: Polymethyl Methacrylate (PMMA)

Size (Ø x Thickness): 8 x 1 mm

Optimum Wavelength: **488 nm**

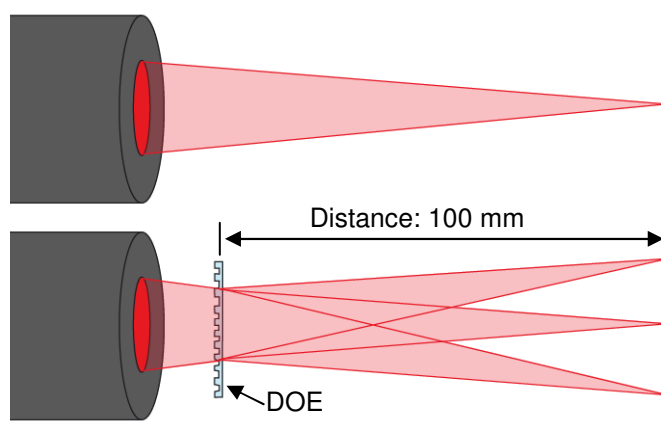
(The element is usable with a range of wavelengths, but the following parameters will vary most with the wavelength: pattern size (see table 1) and intensity in the undiffracted central spot ('zero order', see table 2). At the optimum wavelength given on this datasheet, the element shows the lowest intensity in the central spot.)



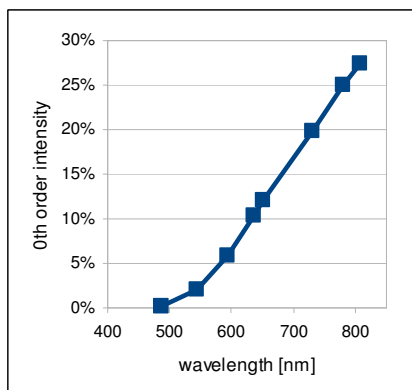
**Table 1**

Wavelength	Pattern Size @ 100 mm Distance		Pattern Angles	
	a	b	$\alpha$	$\beta$
<b>488 nm</b>	<b>34 mm</b>	<b>1.47 mm</b>	<b>19.2°</b>	<b>0.84°</b>
543 nm	38 mm	1.65 mm	21°	0.94°
594 nm	41 mm	1.81 mm	23°	1.03°
635 nm	44 mm	1.94 mm	25°	1.11°
650 nm	46 mm	1.98 mm	26°	1.14°
730 nm	51 mm	2.2 mm	29°	1.29°
780 nm	55 mm	2.4 mm	31°	1.38°
808 nm	57 mm	2.5 mm	32°	1.43°

## Setup:



## Diffraction Zero Order Intensity:



**Table 2**

Wavelength	0th Order Intensity
<b>488</b>	<b>0.2%</b>
543	2.0%
594	6%
635	11%
650	13%
730	20%
780	26%
808	28%