

# >> DE-R 240 - Standard Diffractive Optical Element

**Element Number: DE-R 240**

Description: 1 : 16 Dot Circle

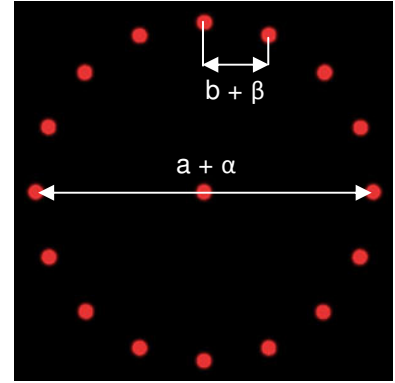
Number of Dots: 16 + 1 Dots

Material: Polycarbonate (PC)

Size ( $\varnothing$  x Thickness): 8 x 1.2 mm

Optimum Wavelength: **635 nm**

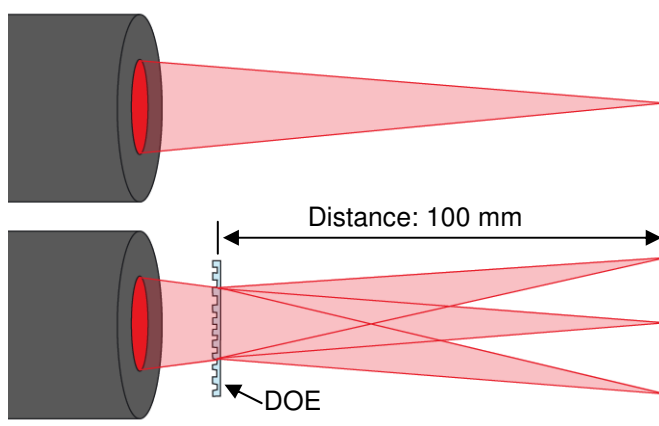
(The element is usable with a range of wavelengths, but the following parameters will vary most with the wavelength: pattern size (see table 1) and intensity in the undiffracted central spot ('zero order', see table 2). At the optimum wavelength given on this datasheet, the element shows the lowest intensity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



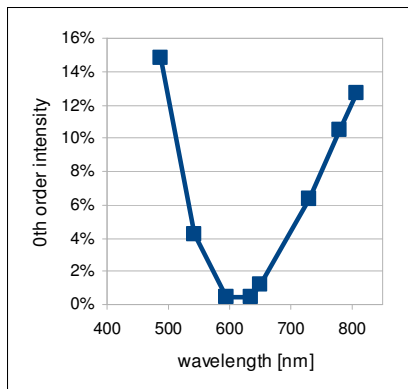
**Table 1**

Wavelength	Pattern Size @ 100 mm Distance		Pattern Angles	
	a	b	$\alpha$	$\beta$
488 nm	14.5 mm	2.9 mm	8.3°	1.63°
543 nm	16.2 mm	3.2 mm	9.2°	1.82°
594 nm	17.7 mm	3.5 mm	10.1°	1.99°
<b>635 nm</b>	<b>18.9 mm</b>	<b>3.7 mm</b>	<b>10.8°</b>	<b>2.1°</b>
650 nm	19.4 mm	3.8 mm	11.1°	2.2°
730 nm	22 mm	4.3 mm	12.4°	2.5°
780 nm	23 mm	4.6 mm	13.3°	2.6°
808 nm	24 mm	4.7 mm	13.8°	2.7°

## Setup:



## Diffraction Zero Order Intensity:



**Table 2**

Wavelength	0th Order Intensity
488	15%
543	4.3%
594	0.5%
<b>635</b>	<b>0.5%</b>
650	1.2%
730	7%
780	11%
808	13%