

# >> DE-R 254 - Standard Diffractive Optical Element

**Element Number: DE-R 254**

Description: 25 Lines (Square)

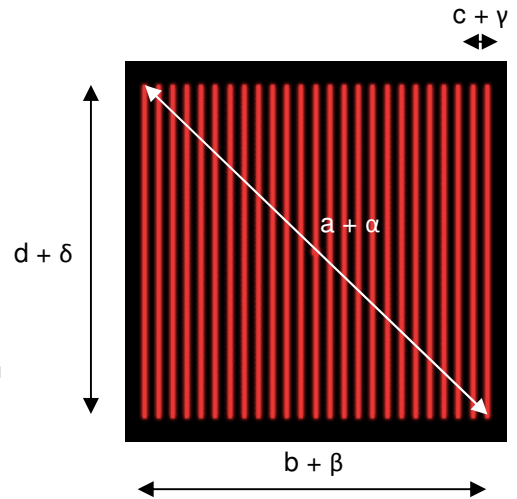
Number of Lines: 25 Lines

Material: Polycarbonate (PC)

Size (Ø x Thickness): 8 x 1.2 mm

Optimum Wavelength: **594 nm**

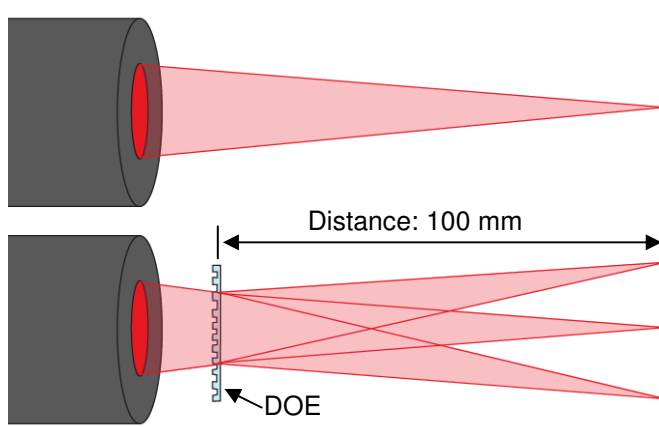
(The element is usable with a range of wavelengths, but the following parameters will vary most with the wavelength: pattern size (see table 1) and intensity in the undiffracted central spot ('zero order', see table 2). At the optimum wavelength given on this datasheet, the element shows the same intensity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



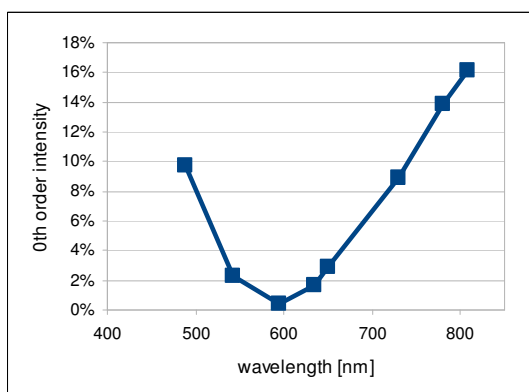
**Table 1**

Wavelength	Pattern Size @ 100 mm Distance				Pattern Angles			
	a	b	c	d	$\alpha$	$\beta$	$\gamma$	$\delta$
488 nm	49 mm	35 mm	1.47 mm	35 mm	28°	20°	0.83°	20°
543 nm	55 mm	39 mm	1.64 mm	39 mm	31°	22°	0.93°	22°
<b>594 nm</b>	<b>61 mm</b>	<b>43 mm</b>	<b>1.80 mm</b>	<b>43 mm</b>	<b>34°</b>	<b>24°</b>	<b>1.02°</b>	<b>24°</b>
635 nm	66 mm	46 mm	1.93 mm	46 mm	36°	26°	1.09°	26°
650 nm	67 mm	48 mm	1.98 mm	48 mm	37°	27°	1.11°	27°
730 nm	77 mm	54 mm	2.2 mm	54 mm	42°	30°	1.25°	30°
780 nm	83 mm	58 mm	2.4 mm	58 mm	45°	32°	1.34°	32°
808 nm	86 mm	60 mm	2.5 mm	60 mm	47°	33°	1.39°	33°

## Setup:



## Diffraction Zero Order Intensity:



**Table 2**

Wavelength	0th Order Intensity
488	10%
543	2.3%
<b>594</b>	<b>0.5%</b>
635	1.7%
650	3.0%
730	9%
780	14%
808	17%