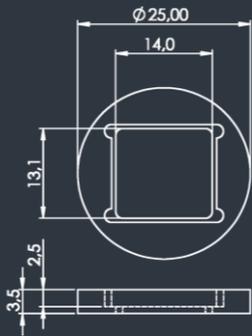


# DE 757 Diffractive Optical Element

## MOUNTED VERSION

For testing or setups under laboratory conditions, we offer a version mounted in a black anodized 25 mm aluminum frame for use with standard laboratory holders.



25 mm anodized aluminum mount with 14.0 x 13.1 mm clear aperture

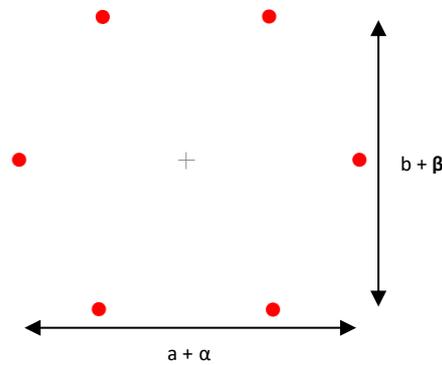
## COLLIMATED / CONVERGING LASER

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.

DE 757 Rev.A – v 0.1 – Specifications are subject to change without notice.

- **Element Number: DE 757**
- **Current Product Revision: A**
- Description: Hexagon, 6 dots
- Substrate material: Fused Silica
- Surface level number: 8
- AR coating on both sides of the substrate:  $R < 0.5\%$  at recommended wavelength range
- Substrate Size: 15.0 mm x 14.1 mm
- Thickness: 1.0 mm
- Design Wavelength: 1030 nm
- Recommended Wavelength Range: 980 nm – 1070 nm \*
- Typ. Diffraction Efficiency: 77% at design wavelength



Within the recommended wavelength range, the central spot / zeroth order (Z0) has a significant lower power than the desired off-axis orders of the hexagon. Pattern size and pattern angles, and the ratio between central spot / zeroth order and desired orders will vary most with the wavelength. Diffraction efficiencies given on this datasheet have been measured using elements of product revision A.

The zeroth order spot is equivalent in size and shape to the original beam, but its power is attenuated.

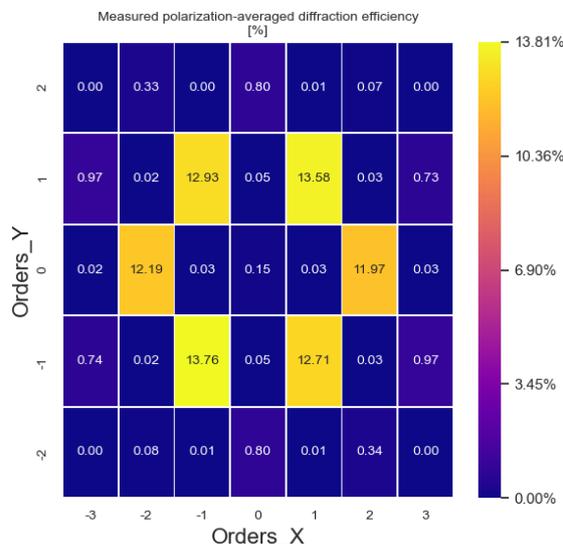
The DOEs are best used with collimated or convergent laser sources. The microstructure surface should be oriented towards the laser. The structured side has an L-shaped marker in the bottom left-hand corner for easy identification.

## Diffraction angles & efficiencies

Wavelength	Pattern Size @ 100 mm Distance		Pattern Angles	
$\lambda$ [nm]	a [mm]	b [mm]	$\alpha$ [°]	$\beta$ [°]
980	4.9	4.3	2.8	2.4
1030	5.2	4.5	3.0	2.6
1064	5.4	4.6	3.1	2.7

Table 1: Pattern size and pattern angle depending on the wavelength

### Orders at 1070nm



Upper image: pattern recorded by camera

Left image: Efficiencies measured by sensor

\*within the recommended wavelength range the zeroth order is  $\leq 1\%$



Pioneers in Photonic Technology

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