

Structured Light Diffractive Optical Elements (DOE)

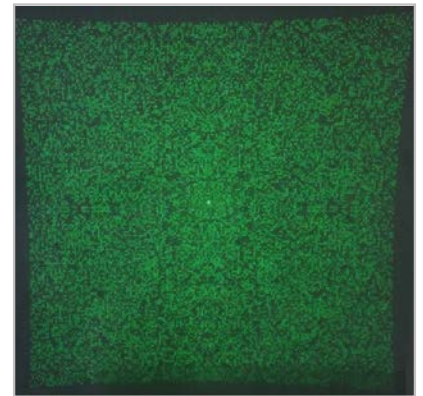
Structured light diffractive optical elements (DOE) are specially designed to split or shape a single laser beam to cover a large field of view.

By upgrading the production facilities, Holo/Or now can offer high-angle, high-quality, high-efficiency beam splitters and beam shapers for both low and high-power applications ranging from mW to kW range.

Our DOE are made of either UV-grade Fused Silica, or low cost option such as polymer on glass or injection molded plastic. The main plastic types are: Polycarbonate, PMMA, Zeonex and Zoner.

Typical applications include structured light 3D sensing, LIDAR and light projection.

Holo/Or is happy to launch this new High-angle Diffractive Optical Elements (DOE) product line to meet our customers' demands.



Specification Range

Possible multi-spot (dot/line generator) patterns	Random spots, Spot array (1xM), Spot matrix (MxN), Multi-line, Grid
Possible diffuser (homogenizer) patterns	Circle, Square, Rectangle, Line, Custom
Wavelength	266 – 2200 nm
Full angle @ 850 nm	Up to 80 x 80 degrees
Zero Order	Angle dependent, can be optimized for eye-safety
Material	UV grade fused silica, Polymer on Glass or Plastic
Dimension	From 2 x 2 mm up to 150 mm diameter (square or round)

Standard High Angle Structured Light DOE

- Our standard list of structured light DOE is constantly growing with new DOE available for mass production.
- Standard thickness for Fused Silica/ polymer on glass is 1.5 mm.
- Standard thickness for plastic is 0.6 mm; All standard plastic DOEs do not have antireflective coating.
- All dimensions can be adjusted as per customer specifications.

Beam Splitter

Target DOEs

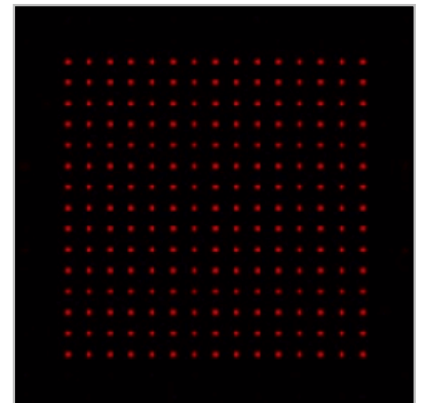
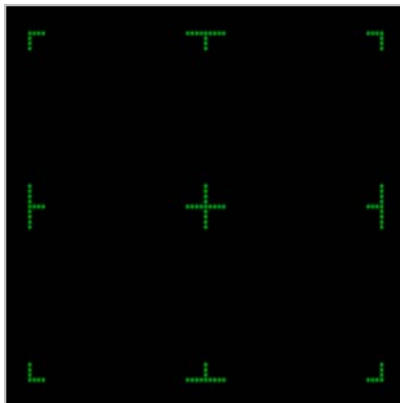
Multispot DOEs with the remark "target" is an element that produces a number of spots building a typical target, refer also to below image.

Random DOEs

Multispot DOEs with the remark "random" have a random pattern of spots, when 50% of the dot matrix are potential spots and will be "on", and this is determined by a randomizing algorithm.

Standard MS DOEs

Multispot DOEs without any additional remark, show a homogenous distribution of the spots, as shown in the image below:



Type	Wavelength [nm]	Dimensions [mm]	Full angle [deg]	Number of spots	Efficiency (%)
MS-447-Q-N-X	532	6 x 8	33.3x38.7	164 [target]	64.3
MS-466-Q-N-X	532	6 x 8	33.3x38.7	92 [target]	63.4
MS-467-Q-N-X	532	10x10	30.77x30.77	181x181 [random]	67
MS-469-850-N-X	850	10x10	32x32	101x101 [random]	66.8
MS-470-850-N-A	850	20x20	33.02x33.02	128x128 [standard MS]	69.5
MS-509-915-N-X	915	20x20	35.91x35.91	127x127 [standard MS]	80
MS-543-905-N-A	905	10x10	4.994x4.994	12x12 [standard MS]	82.2

Diffuser / Homogenizer

Type	Wavelength [nm]	Dimensions [mm]	Diffusion angle [deg]	Output shape	Efficiency [%]
HM-293-Q-N-A	532	10x10	5x5	Square	67
HM-297-915-N-A	915	20x20	0.955x1.91	Rectangular	67.7
HM-298-915-N-A	915	20x20	0.955x1.91	Rectangular	82.2
RD-217-850-N-A	850	10x10	25.56	Round	67.7