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532nm, 20mm Dia., Stable Top-Hat Diffractive Beam Shaper

HOLO/OR Diffractive Beam Shapers

Stock **#14-679** **1 In Stock**

- 1 + **MRP ₹2,71,394**

Price inclusive of all taxes

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Physical & Mechanical Properties

Clear Aperture CA (mm):
17.5

Diameter (mm):
20.00 +0.05/-0.15

Thickness (mm):
3.00 ±0.1

Input Beam Diameter, $1/e^2$ (mm):
7

Optical Properties

Coating:
Laser V-Coat (532nm)

Design Wavelength DWL (nm):
532

Substrate:
Fused Silica (Corning 7980)

Input Beam Mode:
SM TEM_{00}, M^2<1.2

Output Shape:
Square

Full Angle At $1/e^2$ (mRad):
0.5

Transfer Region (mRad):
0.035

Overall Efficiency (%):
94

Damage Threshold, Reference:
See Link for More Details

Regulatory Compliance

RoHS 2015:
Compliant

Certificate of Conformance:
View

Reach 233:
Compliant

Country of Origin:
Israel

Imported By:
Edmund Optics India Private Limited
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Need different specs or modifications?

Edmund Optics offers comprehensive custom manufacturing services for optical and imaging components tailored to your specific application requirements. Whether in the prototyping phase or preparing for full-scale production, we provide flexible solutions to meet your needs. Our experienced engineers are here to assist—from concept to completion.

Our capabilities include:

- Custom dimensions, materials, coatings, and more
- High-precision surface quality and flatness
- Tight tolerances and complex geometries
- Scalable production—from prototype to volume

Learn more about our custom manufacturing capabilities or submit an inquiry here.

Product Details

- Shape Gaussian Beams to Top-Hat Profile
- Square Output Shape with Uniform Intensity
- Designs for 532nm Nd:YAG Lasers
- Compatible with Single Mode Beams

HOLO/OR Diffractive Beam Shapers are diffractive optical elements (DOE) that transform laser beams with a nearly-Gaussian profile into a defined 2D shape with uniform intensity distribution at the focal point of a lens. These diffractive beam shapers are available in two types, top-hat or stable top-hat. Top-hat beam shapers have a larger transfer region but better defocus behavior compared to stable top-hat beam shapers. HOLO/OR Diffractive Beam Shapers are used in materials processing applications, including laser cutting, scribing, and ablation, as well as illumination applications such as wafer inspection and lithography.

Note: Diffractive optical elements are not intended for use outside of their design wavelength. Diffractive optical elements will have decreased performance if their surfaces become dirty from oil or other substances. It is recommended to always use **gloves or finger cots** when handling these optics.

Edmund Optics offers a range of diffractive optical elements from HOLO/OR for laser applications, including:

- **Diffractive Diffusers**: used to convert an input laser beam to a defined shape with homogenized distribution
- **Diffractive Beamsplitters**: used to split an input laser beam into a 1D array or 2D matrix output
- Diffractive Beam Shapers: used to transform a nearly-Gaussian laser beam into a defined shape with uniform flat top intensity distribution
- **Diffractive Beam Samplers**: used to transmit an input laser beam while producing two higher order beams that can be used to monitor high power lasers
- **Diffractive Axicons**: used to transform an input laser beam to a Bessel beam that can be focused to a ring
- **Diffractive Vortex Phase Plates**: used to convert a Gaussian profile beam to a donut-shaped energy ring

Technical Information

OPERATION PRINCIPLE

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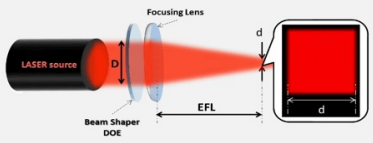
A Top Hat (TH) Beam Shaper is an optical element, mainly based on diffractive technology (Diffractive Optical Element – DOE), and used to transform a Gaussian (TEM00) incident laser beam into a uniform-intensity spot of either round, rectangular, square, line or other custom well defined shapes. The most canonic set-up in the Beam Shaper application consists of a laser, a Beam Shaper element, a focusing optics and a surface to be treated. A typical Set Up with Top Hat beam is shown in fig.1 below.

Figure 1: Typical Set Up



Each beam shaper is designed for use with a specific set of optical system parameters:

- Wavelength
- Input Beam Size (D)
- Output Spot Size (d)

Note: using values of these parameters that are outside of the recommended narrow tolerances will degrade the performance of the Top Hat Beam Shaper element, and possibly render it useless for the application.

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