

## Focusing Module optimized for Beam Shaper

For applications requiring an aberration-free image in focus plane, with a high precision, HOLO/OR developed a new optimized focusing module to be used with our Beam Shapers.

A standard focusing lens (or objective) is normally optimized for focusing a Gaussian beam and is not optimized to work with a Beam Shaper. Thus, the use of standard focusing lens with Beam-Shapers often causes aberrations of the Top-Hat image and requires special design of a focusing lens or module. These aberrations will normally occur at small focal lengths, short wavelength and large input beam.

In order to solve this problem, HOLO/OR designed a focusing module (with focal length 50 [mm]) adapted to our Beam Shaper working at 355 [nm].

The module contains 5 lenses, and the Top-Hat output is obtained at the back focal length of the module.

HOLO/OR offers customization of the module for other wavelengths and focal length.

The focusing module presents the following features:

Free-aberrations module

Focal lengths: 30 and 50 [mm]

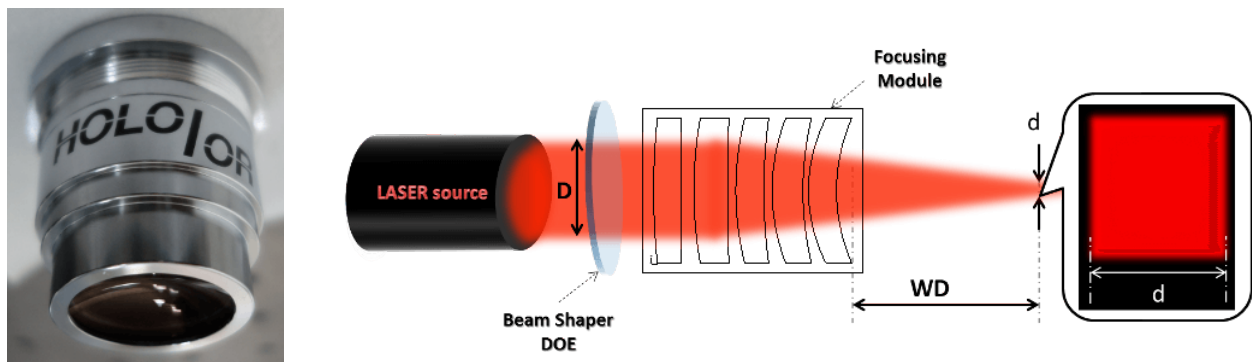
Wavelength (optimized): 355 [nm]

Material: Fused Silica

Max. input beam size = 12 [mm]

Optional - Objective correction collar

Typical set-up



Comparison between Square Top-Hats result at image plane obtained by different focusing elements / objectives:

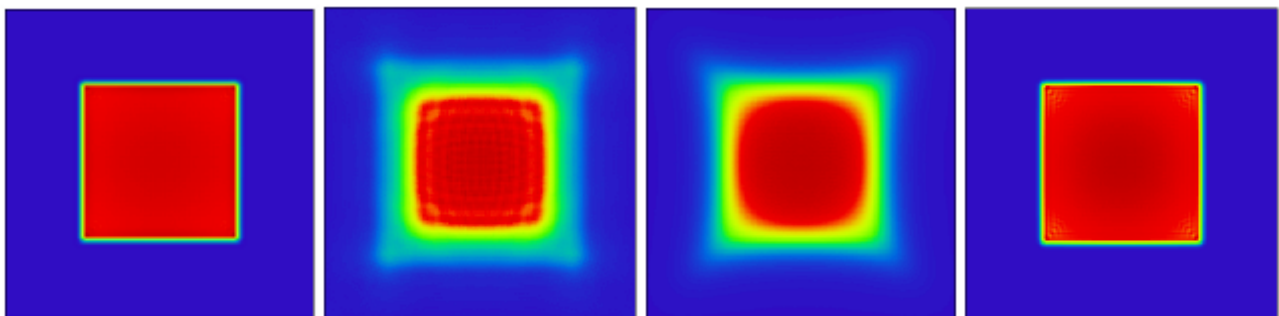


Table parameters of Beam Shaping Focusers:

Part Number	Focal Length (mm)	Outer Diameter (mm)	Max input beam (mm)	Material	module length(mm)
Objective-001-U	50	45	12	Fused Silica	38.5
Objective-002-U	30	45	12	Fused Silica	31