

## Flexishaper Ring Shaping Module

Flexishaper is a diffractive optical module that modifies an input beam into a spot and a surrounding ring at the focus of the system, with the ability to adjust and control the power ratio between ring and spot over a full range. Flexishaper is made of 2 identical DOEs on the same optical axis, with adjustment by simple rotation of one DOE vs. the other.

**Figure 1** Flexishaper output at different rotation angles



Flexishaper module was designed for process developers to enable finding the optimal power ratio between the spot and the ring suitable for their unique process parameters and system set-up.

Once the optimal work point is established - HOLO/OR can manufacture a single custom DOE generating that output ratio for the series production, making Flexishaper even more cost effective.

### APPLICATIONS

**Laser Welding, Additive Manufacturing, Laser Cutting**

### SPECIFICATION RANGE

Illumination pattern	Central spot with surrounding concentric ring, adjustable controlled power ratio between ring and spot
Ring angle	0.2-20mRad
Wavelengths	1030nm-1080nm, 532nm, 515nm, 488nm, others by request
Input beam diameter after collimator	6-30mm ( $1/e^{-2}$ ), others by request
Laser Mode	Both SM and MM lasers
Polarization	Not sensitive
DOE Material	UV grade Fused Silica
DOE dimensions	25.4mm, 50.8mm up to 150mm diameter (square or round)
Full cycle rotation range	15 deg, manual. Other by request
Efficiency	From 80 % (maximum to ring) to 98 % (maximum to spot)
Coating	AR/AR

