

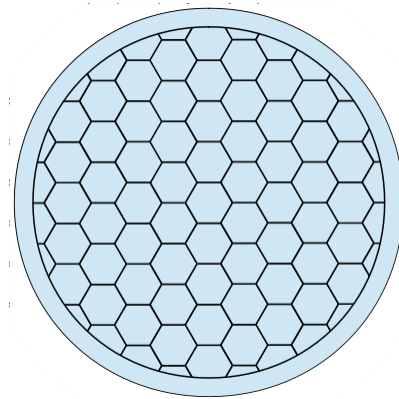
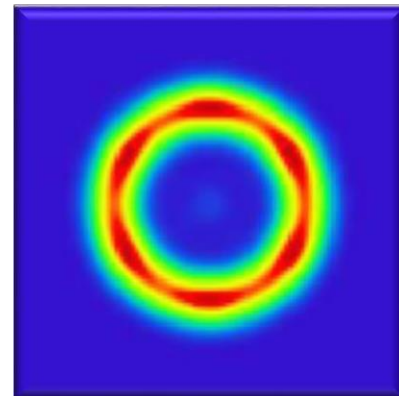


Overview

PowerPhotonic's axicon array homogenizing beamshapers use a unique freeform direct-write process to fabricate customized axicon array surfaces in fused silica.

These axicon array homogenizers are carefully designed to produce ring shaped spots at the focus of a lens; simultaneously maximizing performance and efficiency. The axicons are laid out in a hexagonal formation in order to maximize the uniformity of the intensity distribution around the ring.

Axicon array homogenizers are highly insensitive to input intensity distribution and positioning within the beam, unlike traditional axicon elements. PowerPhotonic's fabrication technology also offers the ability to change the thickness of the ring, as well as the extinction ratio in the ring center, by precisely altering the characteristics of the axicons within the array.



Key Features

- ⦿ All fused silica optics
- ⦿ Customizable ring width
- ⦿ Customizable ring thickness
- ⦿ Customizable central extinction
- ⦿ Low divergences achievable
- ⦿ Suitable for multi-mode lasers ($M^2 > 10$)

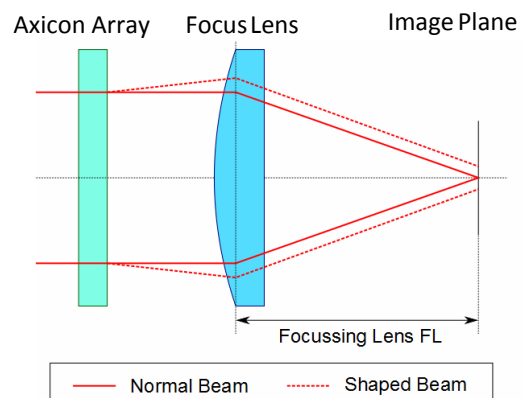
Target Applications

- ⦿ Materials processing: high power
 - Regime shift (thin <-> thick) laser cutting
 - PCB laser drilling
 - Solar cell manufacturing
- ⦿ Photonic crystal pumping

Benefits

- ⦿ Highest system efficiency possible >98%
- ⦿ Dramatic increase in beam uniformity
- ⦿ High power handling, >20kW CW
- ⦿ High laser damage threshold, >100J/cm²
- ⦿ No focal plane shift
- ⦿ Good through-focus performance
- ⦿ Insensitive to input beam properties

How they are Used

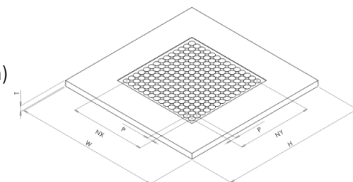


Standard Product Selection – Axicon Array Homogenizer

Part Number	Axicon Angle (degrees)	Flat-flat Pitch P (mm)	Width W (mm)	Height H (mm)	Thickness T (mm)	CA Width (mm)	CA Height (mm)
PP-AXHOM-D1-P1-V1	1.00	1.00	25.4	25.4	1.00	15	15
PP-AXHOM-D3-P1-V1	3.00	1.00	25.4	25.4	1.00	15	15
PP-AXHOM-D5-P1-V1	5.00	1.00	25.4	25.4	1.00	15	15
PP-AXHOM-DX-PX-V1	Custom	Custom	Custom	Custom	Custom	Custom	Custom

Optical coating on request at extra cost
All custom parameters can be customer specified




W: Width (+/-0.10mm)
H: Height (+/- 0.10mm)
T: Thickness (+/- 0.02mm)



Customization Program

Due to the unique nature of the PowerPhotonic manufacturing process, our standard products can be easily modified to meet specific requirements. Please contact PowerPhotonic for additional information.

Options

-  Clear Aperture Width and Height
-  Substrate Width, Height and Thickness
-  Divergence Angle

About Us

PowerPhotonic is a global leader in precision micro-optics products. Our business was founded with the objective of providing unsurpassed excellence in all aspects of design and manufacture of micro-optics for optical and laser applications. Our world-class design skills are supported by an innovative and flexible manufacturing process that allows the company to design both a broad range of state-of-the art standard micro-optics products and uniquely, to offer a low cost and rapid fabrication service for creating completely freeform optical surfaces

お問い合わせ先

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PowerPhotonic
Enhancing Beam Performance

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