



# Microlens Arrays



PowerPhotonic  
Enhancing Beam Performance

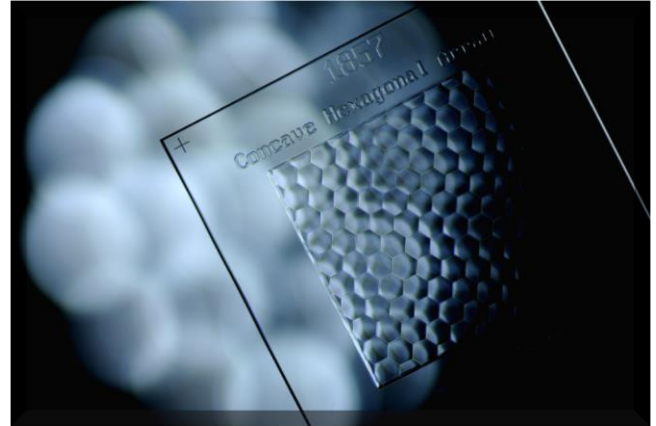
## Overview

PowerPhotonic's microlens array products offer a wide range of lens configurations, focal lengths, and forms.

One-dimensional arrays are available as either cylinder or acylinder lenses, to standard or customer-specified lens prescription.

Two-dimensional arrays are available with spherical, aspherical, or astigmatic lenses, on rectangular, hexagonal or customer-specified grids.

The lens array can be fabricated within a larger planar substrate to enable ease of mounting, without the mount impinging on the clear aperture of the lens array.



## Key Features

- UV-fused silica
- Large range of standard microlens arrays possible
- Linear, square or hexagonal grid
- High uniformity of RoC, conic and pitch
- Free choice of lens form: Cylinder, Acylinder, Sphere, Asphere, Astigmatic

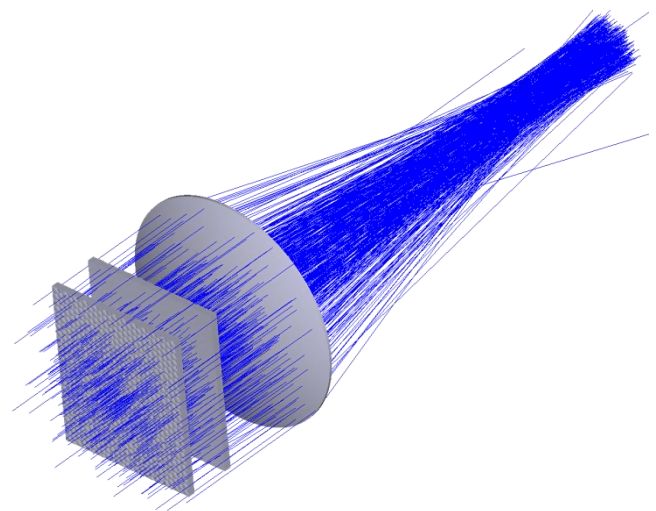
## Benefits

- Application-specific microlens arrays – avoids the design compromises required from use of catalog parts
- Optimized lens profile for best performance
- High CW and short-pulse power handling capability
- Low scatter

## Target Applications

- Homogenizers (Single Optic or Fly's Eye)
- Beam shapers
- Fiber array collimators
- High power diode lasers
- Solid-state laser pumping
- Laser material processing

## How they are Used



## Standard Product Selection – Square Arrays

Part Number	Effective Focal Length EFL (mm)	Pitch P (mm)	Width W (mm)	Height H (mm)	Thickness T (mm)	# Lenses X NX	# Lenses Y NY
PP-LA-S-F800-P100-V1	8.00	1.00	25.4	25.4	1.00	15	15
PP-LA-S-F500-P100-V1	5.00	1.00	25.4	25.4	1.00	15	15
PP-LA-S-F200-P50-V1	2.00	0.50	25.4	25.4	1.00	30	30
PP-LA-S-Fxxx-Pxx-Vx-ARx	Custom	Custom	Custom	Custom	Custom	Custom	Custom

## Standard Product Selection – Hexagonal Arrays

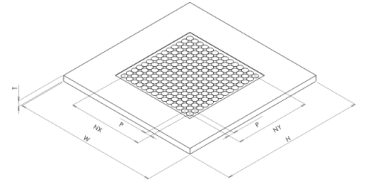
Part Number	Effective Focal Length EFL (mm)	Pitch P (mm)	Width W (mm)	Height H (mm)	Thickness T (mm)	# Lenses X NX	# Lenses Y NY
PP-LA-H-F332-P65-V1	3.32	0.65	25.4	25.4	1.00	30	30
PP-LA-H-Fxx-Pxx-Vx-ARx	Custom	Custom	Custom	Custom	Custom	Custom	Custom

## Standard Product Selection – Cylinder Arrays

Part Number	Effective Focal Length EFL (mm)	Pitch P (mm)	Width W (mm)	Height H (mm)	Thickness T (mm)	# Lenses X NX	# Lenses Y NY
PP-LA-C-F220-P50-V1	2.20	0.50	25.4	25.40	1.00	30	1
PP-LA-C-F400-P50-V1	4.00	0.50	25.4	25.40	1.00	30	1
PP-LA-C-F800-P100-V1	8.00	1.00	25.4	25.40	1.00	15	1
PP-LA-C-Fxx-Pxx-Vx-ARx	Custom	Custom	Custom	Custom	Custom	Custom	Custom

Optical coatings available on request  
 EFL: Effective focal length @ 808nm  
 P: Pitch of lens  
 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

- EFL, Pitch, Width, Height and Thickness
- Number of lenses, X and Y
- Aspherical and acylindrical lenses
- Non-uniform, chirped or randomized grid
- Dual-surface lenses: BCX/BCV/meniscus

## About Us

PowerPhotonic is a global leader in precision laser machined 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.

## For Sales and Technical Support

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**PowerPhotonic**  
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