



Microlens Arrays



PowerPhotonic
Enhancing Beam Performance

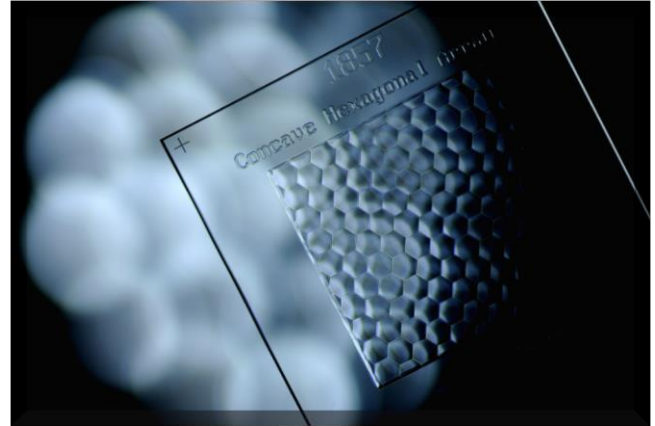
Overview

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

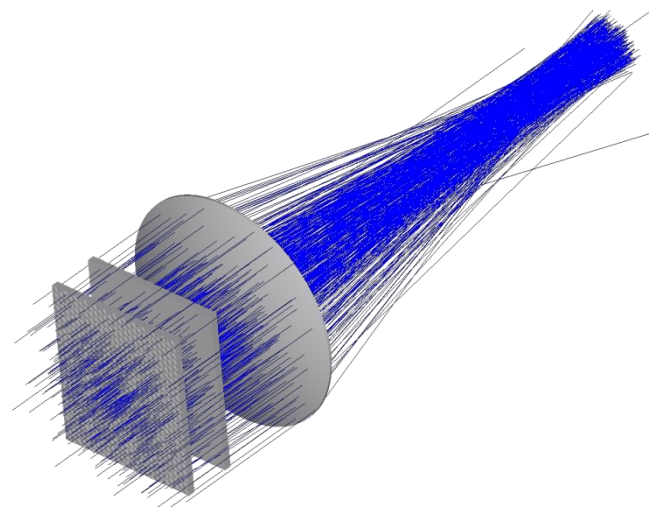
Benefits

- 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

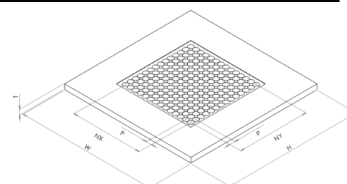
| Part Number | Effective Focal Length EFL (mm) | Pitch P (mm) | Width W (mm) | Height H (mm) | Thickness T (mm) | # Lenses X NX | # Lenses Y NY |
|------------------------|---------------------------------|--------------|--------------|---------------|------------------|---------------|---------------|
| 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

- ① EFL, Pitch, Width, Height and Thickness
- ② Number of lenses, X and Y
- ③ Aspherical and acylindrical lenses
- ④ Non-uniform, chirped or randomized grid
- ⑤ 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.

お問い合わせ先

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