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

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

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

How they are Used
Standard Product Selection – Square Arrays

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Effective Focal Length EFL (mm)</th>
<th>Pitch P (mm)</th>
<th>Width W (mm)</th>
<th>Height H (mm)</th>
<th>Thickness T (mm)</th>
<th># Lenses X</th>
<th># Lenses Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>PP-LA-S-F800-P100-V1</td>
<td>8.00</td>
<td>1.00</td>
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<td>30</td>
</tr>
<tr>
<td>PP-LA-S-Fxxx-Pxx-Vx-ARx</td>
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Standard Product Selection – Hexagonal Arrays

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<th>Part Number</th>
<th>Effective Focal Length EFL (mm)</th>
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<th>Height H (mm)</th>
<th>Thickness T (mm)</th>
<th># Lenses X</th>
<th># Lenses Y</th>
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<tr>
<td>PP-LA-H-Fxx-Pxx-Vx-ARx</td>
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Standard Product Selection – Cylinder Arrays

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<th>Effective Focal Length EFL (mm)</th>
<th>Pitch P (mm)</th>
<th>Width W (mm)</th>
<th>Height H (mm)</th>
<th>Thickness T (mm)</th>
<th># Lenses X</th>
<th># Lenses Y</th>
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</thead>
<tbody>
<tr>
<td>PP-LA-C-F220-P50-V1</td>
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<tr>
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<tr>
<td>PP-LA-C-Fxx-Pxx-Vx-ARx</td>
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</table>

Optical coatings available on request
EFL: Effective focal length @ 808nm
P: Pitch of lens
All custom parameters can be customer specified

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, chirpped 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.

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