Overview

PowerPhotonic’s fiber coupling lens array products offer a wide range of configurations, focal lengths, and forms. Using PowerPhotonic’s unique laser direct-write process, we can create a wide range of lens array optics without the need for a mask or mold tooling.

One-dimensional arrays are available with a standard lens pitch of 250µm, or can be supplied with customer-specified pitch.

Two-dimensional arrays are available with sphere, asphere, astigmatic, cylindrical or acylindrical lenses on a regular or customer specified grid.

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 lens arrays possible
- One or two dimensional grid
- High uniformity of RoC, conic and pitch
- Free choice of lens form; spherical, aspherical, anamorphic, biconic, cylindrical, acylindrical

Target Applications

- Fiber array collimators
- WSS systems
- R/OADM systems
- Optical interconnects
- High performance optical communications

Benefits

- Application-specific lens arrays – avoids the design compromises imposed by the use of catalog parts
- Optimized lens profile for best performance
- Low scatter and low crosstalk

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.

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.
### Product Selection – Linear Array

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Array Pitch p (um)</th>
<th># Channels Per Array</th>
<th>Effective Focal Length (um)</th>
<th>Pitch Accuracy (um) typ.</th>
<th>Lens Profile</th>
<th>Numerical Aperture (N.A.)</th>
<th>Insertion Loss (dB), Fiber-to-Fiber</th>
<th>Surface Roughness (nm)</th>
<th>Substrate Size x (mm)</th>
<th>Substrate Size y (mm)</th>
<th>Thickness CT (mm)</th>
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</thead>
<tbody>
<tr>
<td>PP-LAL-P250-N4-AR22</td>
<td>250</td>
<td>4</td>
<td>710</td>
<td>±0.2</td>
<td>Plano-Convex</td>
<td>0.15</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>1.35</td>
<td>1.10</td>
<td>1.0</td>
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<td>4.35</td>
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<td>Plano-Convex</td>
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<td>&lt;1</td>
<td>Custom</td>
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</tbody>
</table>

#### Options
- Array Pitch, Lens Diameter
- Number of lenses, X and Y
- Spherical, aspherical, anamorphic, biconic, cylindrical, acylindrical lenses
- Substrate size (x, y, CT)

#### Coatings
- Anti-Reflectance Coating: 1260-1620nm, R<0.5% per side, other coatings on request

### Product Selection – Square Grid

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Array Pitch p (um)</th>
<th>Array Size</th>
<th>Effective Focal Length (um)</th>
<th>Pitch Accuracy (um) typ.</th>
<th>Lens Profile</th>
<th>Numerical Aperture (NA)</th>
<th>Insertion Loss (dB), Fiber-to-Fiber</th>
<th>Surface Roughness (nm)</th>
<th>Substrate Size x (mm)</th>
<th>Substrate Size y (mm)</th>
<th>Thickness CT (mm)</th>
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</thead>
<tbody>
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<td>&lt;1</td>
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<td>Custom</td>
</tr>
</tbody>
</table>

#### Options
- Array Pitch, Lens Diameter
- Number of lenses, X and Y
- Spherical, aspherical, anamorphic, biconic, cylindrical, acylindrical lenses
- Substrate size (x, y, CT)

#### Coatings
- Anti-Reflectance Coating: 1260-1620nm, R<0.5% per side, other coatings on request

### For Sales and Technical Support

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