



# Fiber Coupling Lens Arrays



PowerPhotonic  
Enhancing Beam Performance

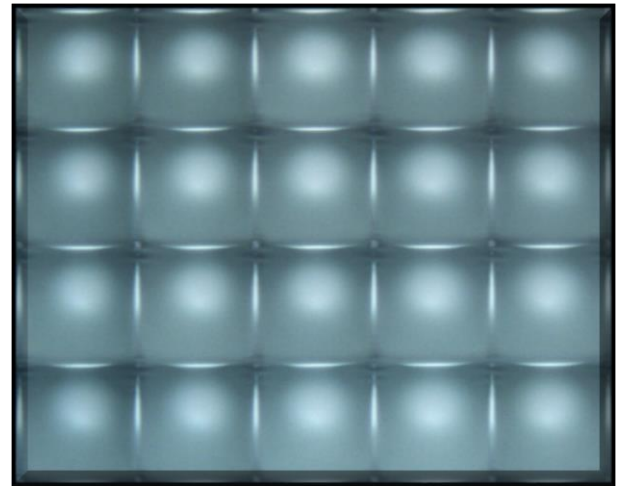
## Overview

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 250 $\mu$ m, 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

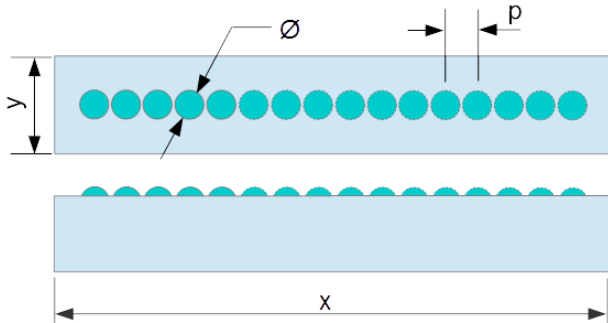
Due to the unique nature of the PowerPhotonic manufacturing process, our standard products can be easily modified to meet specific requirements. Please contact PowerPhotonic for additional information.

## 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

Part Number	Array Pitch p (um)	# Channels Per Array	Effective Focal Length (um)	Pitch Accuracy (um) typ.	Lens Profile	Numerical Aperture (N.A.)	Insertion Loss (dB), Fiber-to-Fiber	Surface Roughness (nm)	Substrate Size x (mm)	Substrate Size y (mm)	Thickness CT (mm)
PP-LAL-P250-N4-AR22	250	4	710	±0.2	Plano-Convex	0.15	<1	<1	1.35	1.10	1.0
PP-LAL-P250-N8-AR22	250	8	710	±0.2	Plano-Convex	0.15	<1	<1	2.35	1.10	1.0
PP-LAL-P250-N12-AR22	250	12	710	±0.2	Plano-Convex	0.15	<1	<1	3.35	1.10	1.0
PP-LAL-P250-N16-AR22	250	16	710	±0.2	Plano-Convex	0.15	<1	<1	4.35	1.10	1.0
PP-LAL-Pxxx-Nx-ARx	Custom	Custom	Custom	±0.2	Plano-Convex	Custom	<1	<1	Custom	Custom	Custom



### Options

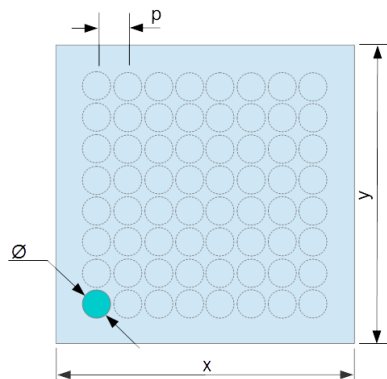
Array Pitch, Lens Diameter  
 Number of lenses, X and Y  
 Spherical, aspherical, anamorphic, biconic, cylindrical, acylindrical lenses  
 Substrate size (x, y, CT)

### Coatings

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

## Product Selection – Square Grid

Part Number	Array Pitch p (um)	Array Size	Effective Focal Length (um)	Pitch Accuracy (um) typ.	Lens Profile	Numerical Aperture (NA)	Insertion Loss (dB), Fiber-to-Fiber	Surface Roughness (nm)	Substrate Size x (mm)	Substrate Size y (mm)	Thickness CT (mm)
PP-LAS-P250-N4-AR22	250	4x4	710	±0.2	Plano-Convex	0.15	<1	<1	1.35	1.35	1.0
PP-LAS-P1000-N4-AR22	1000	4x4	3166	±0.2	Plano-Convex	0.15	<1	<1	5.85	5.85	1.0
PP-LAS-Pxxx-Nx-ARx	Custom	Custom	Custom	±0.2	Plano-Convex	Custom	<1	<1	Custom	Custom	Custom



### 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

**United Kingdom**  
 PowerPhotonic Ltd.  
 1 St. David's Drive  
 Dalgety Bay, Fife, KY11 9PF  
 United Kingdom

Tel: +44 1383 825 910  
 Fax: +44 1383 825 739

[sales@powerphotonic.com](mailto:sales@powerphotonic.com)

**North America**  
 PowerPhotonic, Inc.  
 4900 Hopyard Road, Suite 100  
 Pleasanton, CA 94588  
 USA

Tel: +1 925 463 4876  
 Fax: +1 925 475 7422

[sales@powerphotonic.com](mailto:sales@powerphotonic.com)

