



# Fiber Coupling Lens Arrays



PowerPhotonic  
Enhancing System Performance

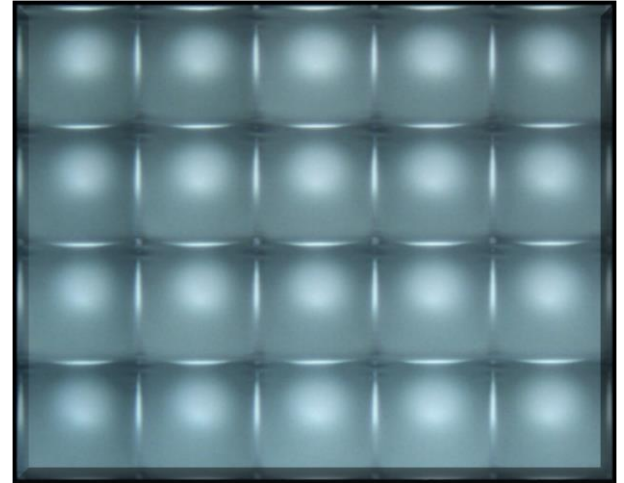
## Overview

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

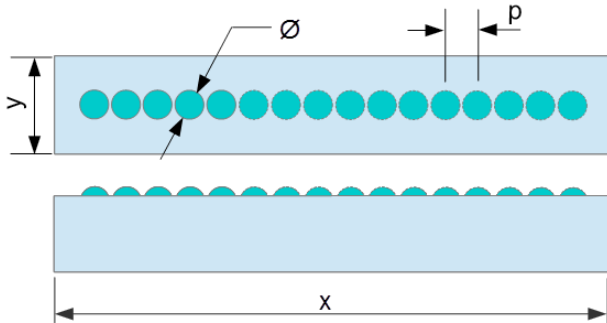
Due to the unique nature of the PowerPhotonic manufacturing process, our standard products can be easily modified to meet specific requirements. Please contact PowerPhotonic for additional information.

## 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

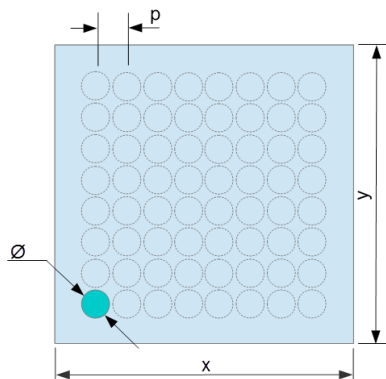
Array Pitch, Lens Diameter  
 Number of lenses, X and Y  
 Spherical, aspherical, anamorphic, biconic, cylindrical, acylindrical lenses  
 Substrate size (x, y, CT)

### 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            |



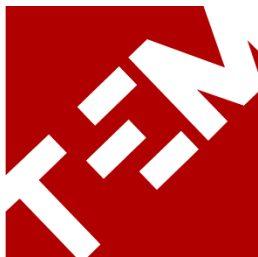
### Options

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

## お問い合わせ先



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