Fiber Coupling Array

Overview:

Collimation and coupling of fibers can be made simple with the use of a PowerPhotonic fiber array. PowerPhotonic standard lens arrays are designed for coupling or collimation of SMF-28 single mode fibers.

Multi-channel optical communication systems require microlens arrays for coupling between laser sources, fiber and waveguide arrays, optical multiplexing and optical switching.

Made from fused silica, these microlens arrays entirely avoid the need for polymer or epoxy in the optical path, offering a high-reliability solution for demanding optical communications applications. Each lenslet in an array can be completely freeform, including toroidal shapes.

The PowerPhotonic effect:

<3%
Radius of Curvature Tolerance

<5um
Lens Centration Accuracy

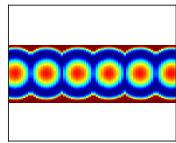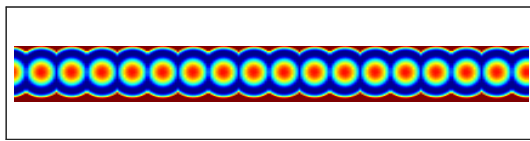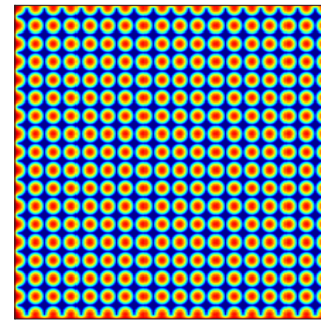### <0.25%
Reflectance (Coated Side)

Example Layouts:

PP-LAL-P250-N4-AR

PP-LAL-P250-N16-AR

PP-LAS-P250-N16-AR

Key Features:

- High uniformity of RoC, conic and pitch
- High Transmission
- Very Low Scatter

Target Applications:

- Fiber Array Collimation
- Wavefront Selective Switching
- High Performance Telecoms

PowerPhotonic
Enhancing Beam Performance

Standard Product: Linear Array

Part Number	Design Wavelength (nm)	Number of Lenslets (X)	Lenslet Pitch (um)	Radius of Curvature (mm)
PP-LAL-P250-N4-AR	1550	4	250	0.315
PP-LAL-P250-N8-AR	1550	8	250	0.315
PP-LAL-P250-N12-AR	1550	12	250	0.315
PP-LAL-P250-N16-AR	1550	16	250	0.315

Standard Product: Square Array

Part Number	Design Wavelength (nm)	Number of Lenslets (X and Y)	Lenslet Pitch (µm)	Radius of Curvature (mm)
PP-LAS-P250-N16-AR	1550	16	250	0.315

General Specification:

Parameter	Value
Line Array Length (mm)	1.35-4.35±0.05
Line Array Width (mm)	1.10±0.05
Square Array Length (mm)	4.35±0.05
Square Array Width (mm)	4.35±0.05
Thickness (mm)	1.01±0.01

Functional Performance:

Parameter	Value
Radius of Curvature Tolerance (%)	<3
RMS Form Error (nm)	<100

RMS Form Error: Application Note AN0001.
All Line Arrays and Square Arrays have AR coating at 1260-1620 R<0.25 on processed side only.

Custom Options:

Square Arrays can be configured to different number of lenslet in X and Y.
Standard product designs can be readily modified for specific applications. Custom options include: different lenslet pitch, different wavelength (in the window between 350nm and 2µm), different radius of curvature, different number and shape of lenslets, different part diameter & thickness.

Sales and Technical:

Japan
yoshiyuki.mori@powerphotonic.com
+81 80 1398 0331

www.powerphotonic.com
sales@powerphotonic.com

North America
PowerPhotonic Inc.
16220
S. La Cañada Drive
Sahaurita
AZ 85629
United States

United Kingdom
PowerPhotonic Ltd.
5A St. David's Drive,
Dalgety Bay
Fife
KY11 9PF
+44 1383 825 910

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