

Overview

PowerPhotonic's range of fast axis collimator (FAC) arrays is designed to interface to complete laser diode stacks. They allow the entire diode stack output to be collimated with a single element, providing an ultra-compact and robust solution that radically simplifies the cost and time of assembly of the complete system.

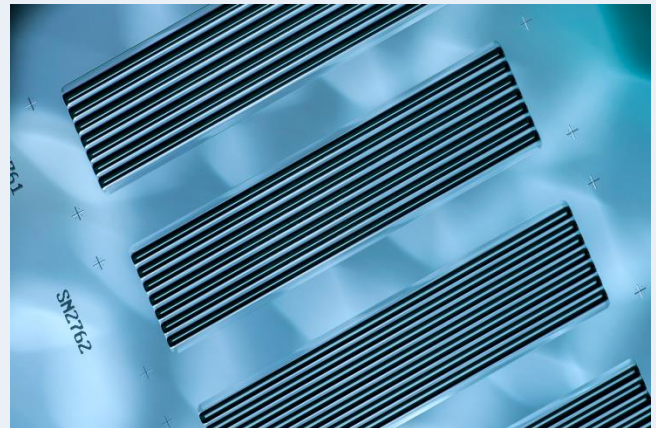
The FAC array can either be specified with a standard bar pitch or, for optimal performance, matched to the diode bar stack using bar pitch data provided by the customer. As a further optimisation, PowerPhotonic offers customers the ability to customise the FAC array to tailor the far field profile to meet specific application requirements.

Key Features

- Single monolithic FAC array
- High beam quality for QCW stack collimation and beam symmetrization
- Fixed pitch increments, for select-on-test use
- Matched-pitch, to optimise collimation of a specific stack
- Single FAC element for a diode stack
- UV-fused silica

Benefits

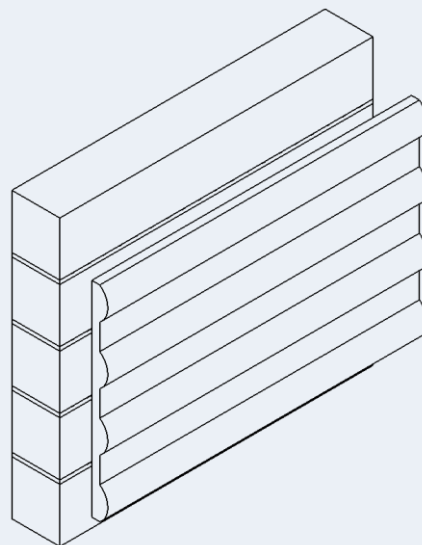
- Single optic collimates entire stack
- Minimizes assembly time and build complexity with single active align and attach
- Low mounted mass, minimum number of mechanical interfaces
- Mechanically robust monolithic solution



Target Applications

- QCW laser diode stacks
- Solid state laser pumping
- Illuminators
- Line generators
- Medical
- Materials processing

How it is Used



Standard Product Selection

Part Number	NA	Effective Focal Length EFL (um)	Design Working Distance B (um)	Length L (mm)	Height H (mm)	Thickness T (mm)	FA Nominal Pitch P (um)	#Bars	Slow Axis Clear Aperture C (mm)
PP-FACA-P350-N10-V1-AR1	0.60	300	50	11	5.5	0.35	350	10	10
PP-FACA-P350-N10-V2-AR1	0.60	300	50	6	5.5	0.35	350	10	5
PP-FACA-P350-N10-V3-AR1	0.60	300	50	4	5.5	0.35	350	10	3
PP-FACA-P400-N10-V1-AR1	0.60	300	50	11	6	0.35	400	10	10
PP-FACA-P400-N10-V1-AR1	0.60	300	50	6	6	0.35	400	10	5
PP-FACA-P400-N10-V1-AR1	0.60	300	50	4	6	0.35	400	10	3
PP-FACA-Pxxx-Nxx-Vx-ARx	tbd	tbd	tbd	tbd	tbd	tbd	tbd	tbd	tbd

AR1 optical coating: AR broadband 900-1100nm R<0.25%, others available on request

NA: Numerical aperture

P: Fast axis nominal pitch

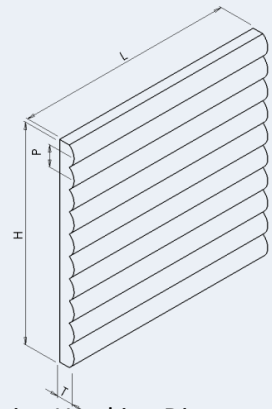
EFL: Effective focal length @ 808 nm

All tbd parameters can be customer specified

L: Length [+/-0.10 mm)

H: Height (+/- 0.05 mm)

T: Thickness (+/- 0.02 mm)



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, Conic Constant and Design Working Distance
- Length, Height and Thickness
- AR Coatings
- FA Bar Pitch
- Number of Bars
- Slow and Fast Axis Aperture
- Specified divergence profile
- Additional optical functions

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 micro-optics product design 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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