Fast Axis Collimator (Blue FAC 300) for High Power Blue Diode Laser

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Focuslight has announced the release of fast axis collimators for high power blue diode laser (Blue FAC 300). This new FAC has an effective focal length of 0.3mm, a plano-convex design, and is designed for fast axis collimation purposes for high power blue diode laser.

Blue diode lasers continue to revolutionize the processing of different materials such as copper and aluminum. The **high absorption** of blue light compared to infrared light results in a great advantage for typical industrial applications such as cutting or welding. The shorter wavelength also opens new fields of applications with thin film processing because the penetration depth of the blue photons is much smaller than in IR. Other applications in **medicine (bacterial treatment and surgery)**, **lighting**, or **pumping** also attract much attention.

Focuslight offers optimized optics for the blue diode laser. A material with **low absorption** is the key to preventing heating and its detrimental effects. To make use of the diode laser brightness, the collimation of the fast-axis (perpendicular to the junction of the diode chip) is the first and most important step in bringing blue diode laser light to the applications. A diffraction limited collimation performance with a simple plano-convex FAC lens is the proven solution used already with IR diode laser. Thanks to this performance advantage of the new FAC 300 lens in combination with the shorter wavelength, the divergence of light with an EFL=300μm is twice smaller than in IR. Therefore, high brightness applications can be addressed even with **direct diode laser** designs.

The design and footprint of this new blue FAC 300 are very similar to the FAC300 for IR application, and the overall design is **very compact** with 4mm in the length (other lengths customizable), 0.5mm in the width and 0.41mm in the thickness. The alignment and assembling can be done with the same equipment used for **the typical IR FAC lenses.**

This blue FAC 300 is originally designed for blue diode laser in CoS (chip-on-submount), and similar FAC at different EFL can also be customized. Besides FACs, Focuslight also offers SACs (slow axis collimators)， Monolithic collimators/couplers and many other blue optics for similar applications and they can be found following this link Blue Diode Laser Optics (focuslight.com)

The production of the new blue FAC 300 lenses is powered by the Focuslight wafer-based production technology, which produces wafers up to 300 x 300 mm^2, making it possible to produce tens of thousands of lenses in a two-step process with a consistently high level of quality. It is a scalable and cost-effective production technology for very high quantities, making it affordable for massive applications. Focuslight also adopts precise and optimized coating design, production, and processes for blue laser applications to ensure product performance and long-term reliability. Focuslight can also offer an overall optical solution for blue laser application.

About Focuslight

Focuslight is a fast-growing company that develops and manufactures **high-power diode laser components and materials** (photon generation) and **laser optics** (photon control) used in various industries and applications. Business scope is being extended by developing and manufacturing **photonic application modules, assemblies, and sub-systems** (photonics application solutions) with a focus on automotive, pan-semiconductor, and medical & health application solutions.