~~DEVICE FOR PRODUCING LASER RADIATION~~

The present invention relates to a device for shaping laser radiation according to the preamble of claim 1.

Definitions: In the direction of propagation of the laser radiation refers to an average propagation direction of the laser radiation, in particular if the laser radiation is not a plane wave, or is at least partially divergent. Laser beam, light beam, partial beam or beam does not, unless expressly stated otherwise, refer to an idealized beam of geometrical optics, but to a real light beam, such as a laser beam with a Gaussian profile or a top-hat profile, which has not an infinitesimally small, but rather an extended beam cross section. Light shall not only refer to the visible spectrum, but also to the infrared and ultraviolet spectral region, respectively. Wedge-shaped shall not imply that flat surfaces are present, but that the extent of a wedge-shaped structure decreases or increases, when advancing in one direction, in one or two directions perpendicular or inclined to that one direction. The term wedge-shaped should therefore cover both flat surfaces such as faces of wedges and pyramids, as well as curved surfaces such as partial surfaces of cones.

A device of the aforementioned type is known, for example, from EP 2 309 309 A2. This device is particularly well suited to produce a homogeneous near field at a fiber output, which is advantageous for pumping solid state lasers. The monolithic fiber coupler described in EP 2 309 309 A2 takes advantage of the fact that the theoretically possible brilliance from a laser diode bar is not needed in some applications, but that a smaller brilliance suffices. The individual emitters of the laser diode bar can then be imaged with an optical system onto the optical fiber. However, the optical fiber must be able to convey the beam parameter product of the entire laser diode bar in the slow axis.

The problem to be solved by the present invention is thus to provide a device of the aforementioned kind, which achieves a higher brilliance and/or is constructed more effectively, wherein in particular the product of the core diameter and the numerical

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