

Product Information

Fiber-Optic Cross-Section Converters

Principles

The cross-section of an optical light guide is typically round whether it is a monofiber or a bundle. But bundles, consisting of many individual fibers, can be used to convert the cross section by geometrically rearranging the fibers at one end of the light guide, thus transforming a round cross section into a non-round one.



Example

A famous example used in thousands of spectrometer units so far is a converter from a round input to a line-shaped output. The latter is ideally suited to “squeeze” more light into a spectrometer: This technique is especially useful in case the spectrometer output – typically a detector array – has a large aspect ratio – large pixel height with a relatively small width (or pitch). E.g. in case of a detector array with pixels of the size $2500\ \mu\text{m} \times 25\ \mu\text{m}$ an improvement of throughput of an order of magnitude can be achieved.

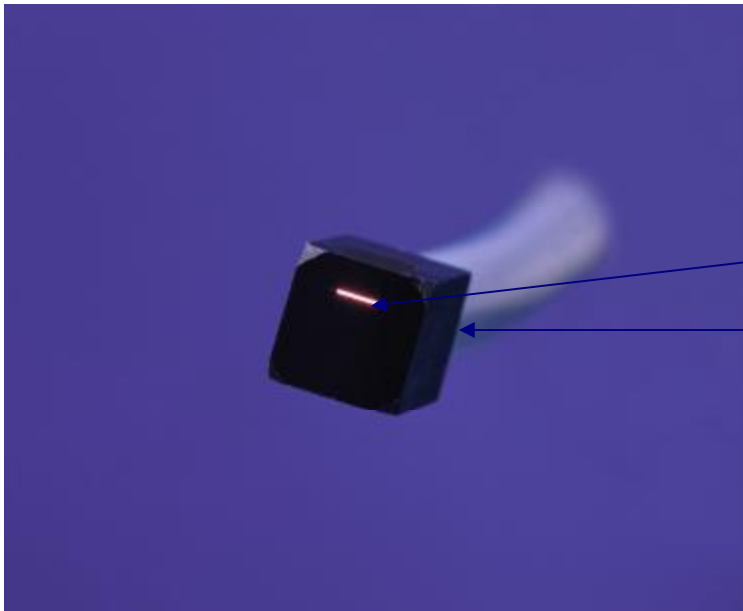
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Fibers / Material

In principle all kinds of fiber materials and diameters can be used. Accuracy is given by the parts used to align fibers.

Example for 2500 μm x 25 μm array:
30x 69/80 μm UV quality fibers

Lateral accuracy: + 2 μm , - 0 μm



Array of quartz fibers

High precision quartz block

Termination & Jackets

All kinds of connectors possible: SMA, FC/PC, etc.

All kinds of jackets available.

Rigid versions possible too.