
HIGH POWER FIBER ARRAYS

MULTI BEAM LASER APPLICATIONS

LASER BEAM COMBINING

LASER BEAM SHAPING



FIBER ARRAYS FOR HIGH-POWER APPLICATIONS

1D AND 2D FIBER ARRANGEMENTS WITH HIGH PRECISION

Our high-grade FIBER ARRAYS are capable of combining kW-class laser beams from different fibers in specific geometrical arrangements. For this purpose, several glass fibers are welded in a compact and monolithic arrangement to an optical window, which can have almost any size and shape.

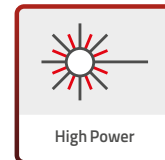
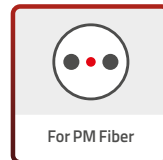
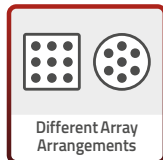
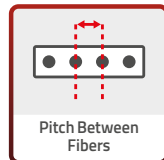
The welding process is carried out with high precision so that beam quality and the polarization of large mode area (LMA) glass fibers are preserved. This contamination-free splicing process results in very low signal insertion losses, which enables power scaling of the individual fiber channels.

Multi Beam Processing And Laser Beam Combining



Key Features

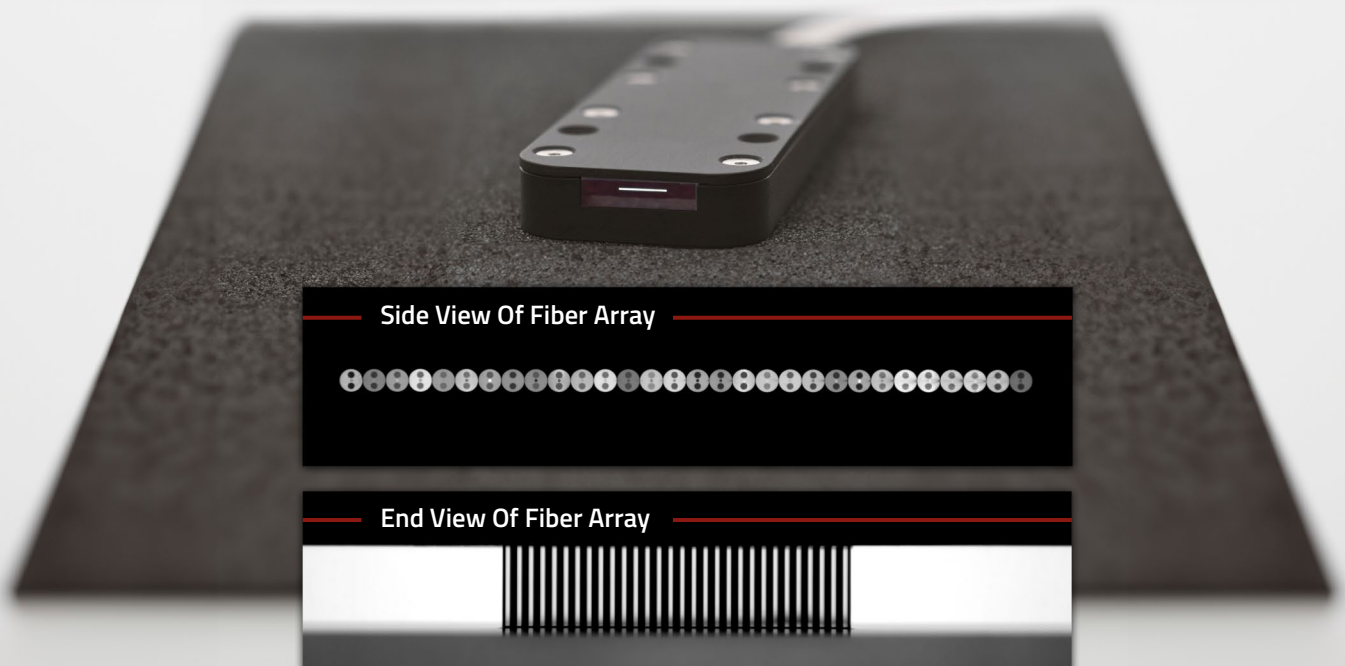
- | End-capped fiber arrays
- | For LMA Fibers (PM/non-PM)
- | 1D and 2D arrays
- | kW-class power handling capability
- | 100+ fiber channels
- | Outstanding beam quality and PER
- | High precision position of the fiber channels
- | Option: Integrated micro lenses



Applications

- | Multi beam processing
- | Laser material processing
- | Selective laser melting
- | Spectral beam combining
- | Coherent beam combining
- | Direct diode laser processing

For Laser Beam Combining And Multi Beam Applications



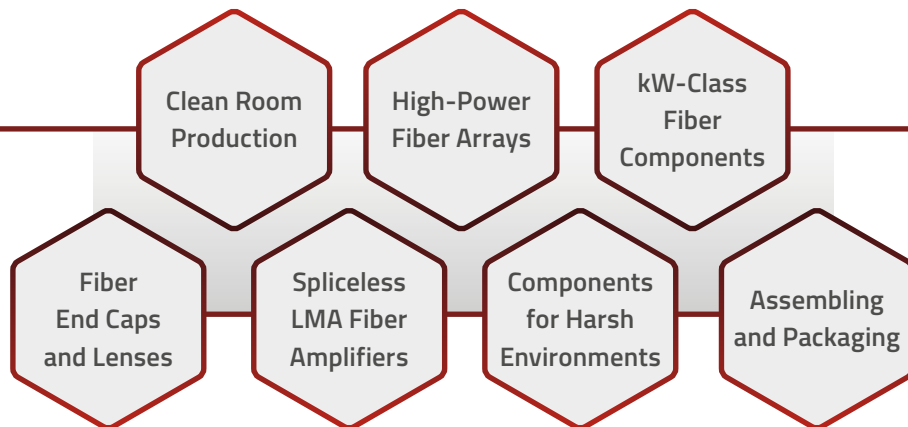
A fiber array for beam-combining applications with 30 PM-LMA fibers. The pictures show 30 LMA fibers with a core/clad diameter of 25/250µm. The fibers are welded to an optical window (16mm x 4.2mm).

FROM DEVELOPMENT TO SERIES PRODUCTION

FiberBridge Photonics provides high-performance optical fiber components for material processing, life sciences, quantum technology and aerospace industries. Key products in the portfolio include high power fiber components for lasers and amplifiers, such as pump combiners, fiber end caps, fiber end lenses, high-power capable fiber arrays and spliceless LMA fiber amplifier modules.

All fiber components and photonic production lines are developed and manufactured in Germany according to ISO 9001. This level of production control enables us to offer our customers tailored solutions for fiber optic components and assemblies, from design to volume production – including harsh environment applications, for example in the aerospace industry.

Capabilities



Sectors

