



FIBER ARRAYS AND BEAM COMBINERS
FOR HIGH-POWER LASER SYSTEMS

COHERENT AND SPECTRAL BEAM COMBINING

MULTI-BEAM LASER APPLICATIONS

DYNAMIC LASER BEAM SHAPING

SOLID-STATE LASER PUMPING



FIBER ARRAYS AND BEAM COMBINERS FOR HIGH-POWER LASER SYSTEMS



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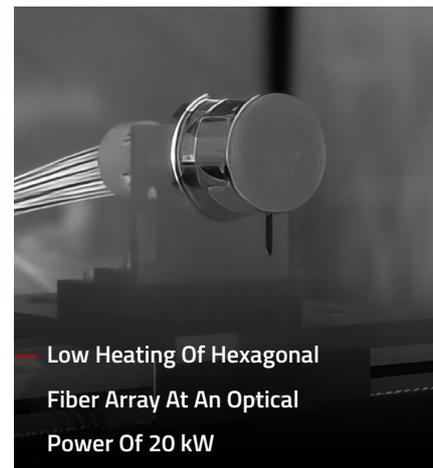
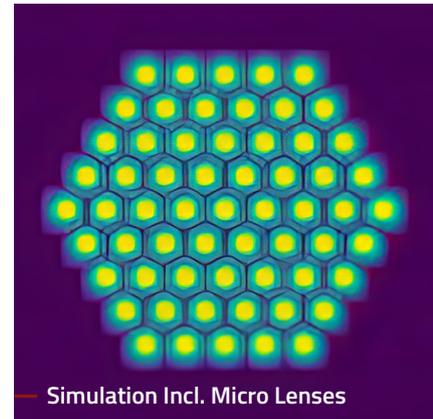
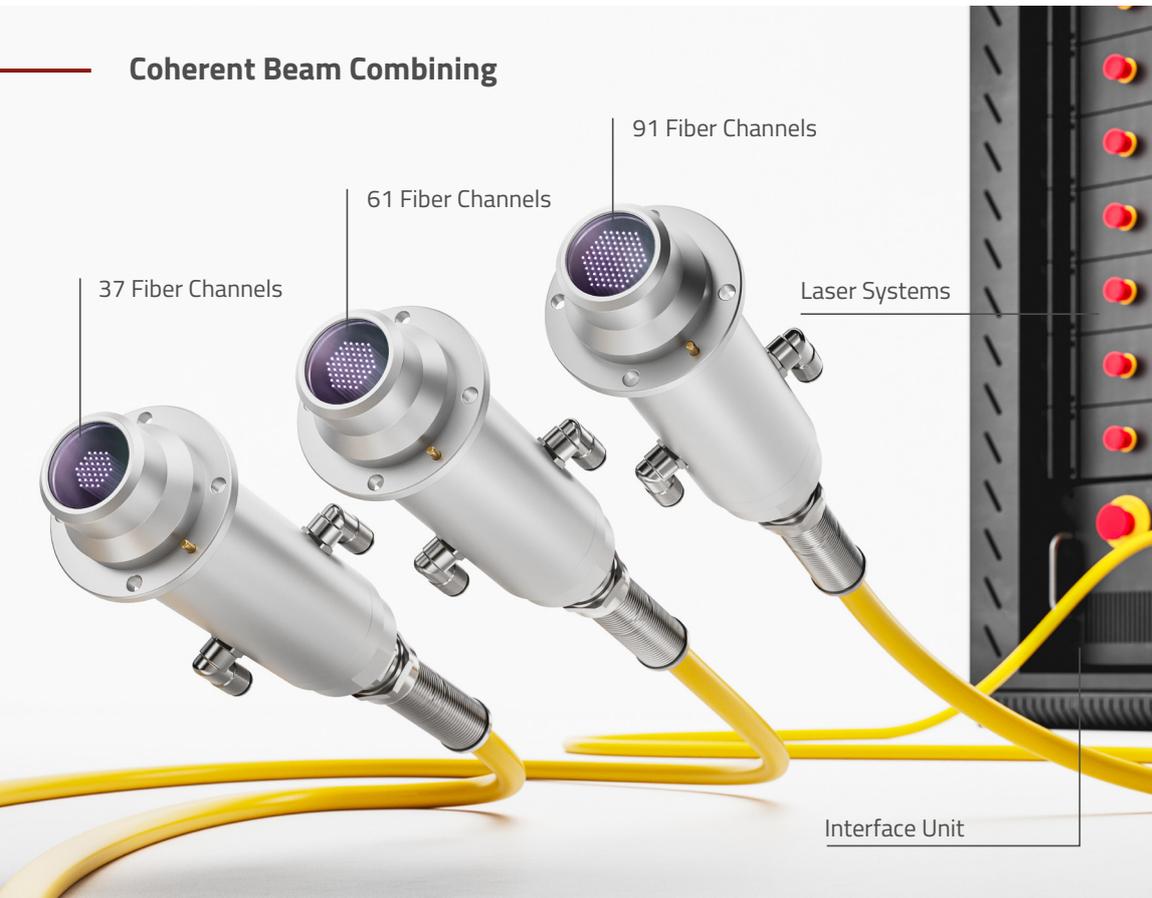
COHERENT BEAM COMBINING

BEAM COMBINER FOR HIGH-POWER LASER SYSTEMS AT 1, 1.5, AND 2 μ m

Key Features

- | 100+ Fiber Channels
- | For LMA Fibers (PM/Non-PM)
- | kW-Class Power Handling Capability
- | High Combining Efficiency
- | Monolithic All-Glass Solutions
- | Outstanding Beam Quality And PER
- | Low Position And Pointing Errors
- | Option: Integrated Micro Lenses

Coherent Beam Combining



Applications

- | Dynamic Beam Shaping
- | High-Power Space Applications
- | High-Energy Laser
- | 1, 1.5 μ m, And 2 μ m Beam Combining
- | Laser-Driven Fusion
- | Material Processing

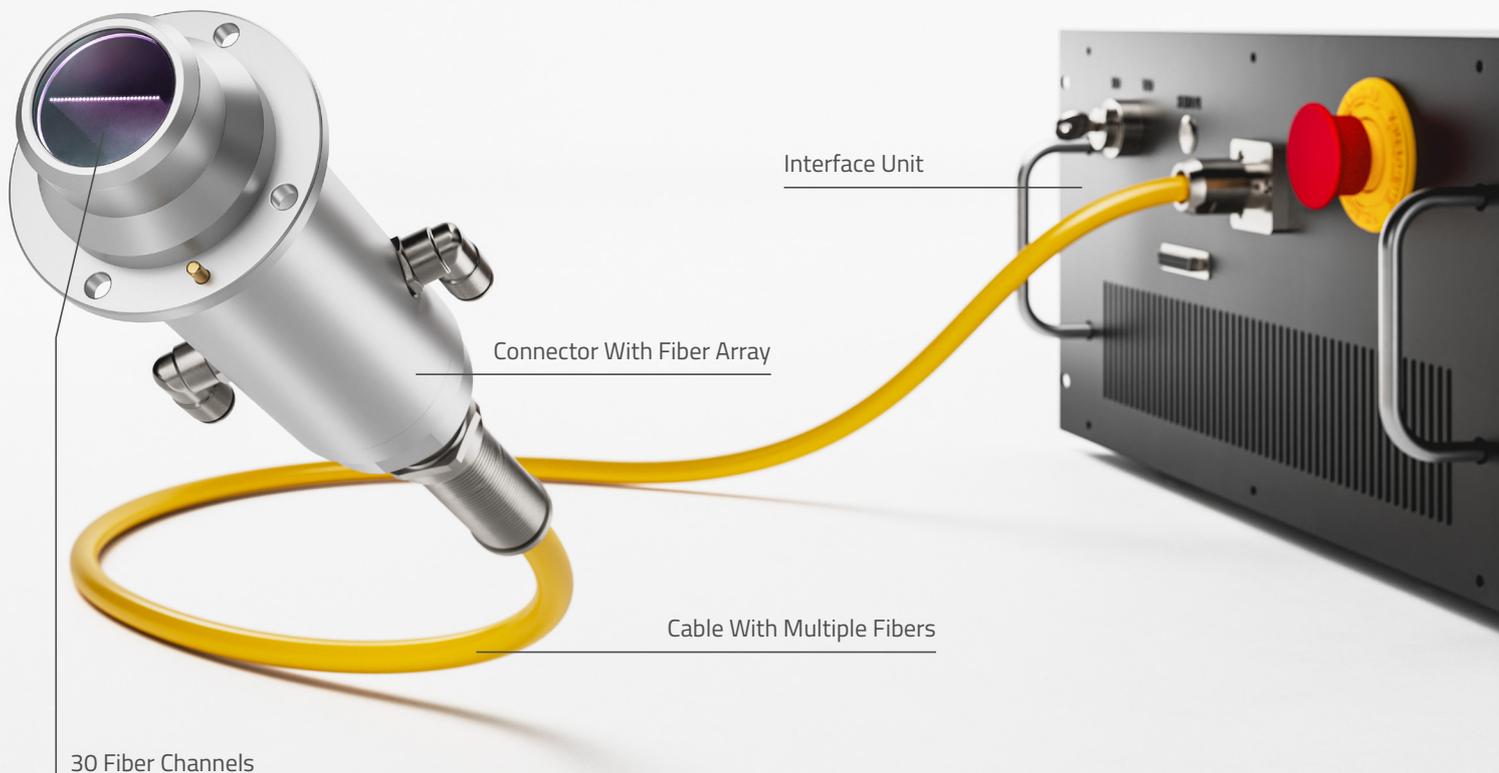
SPECTRAL BEAM COMBINING

LINEAR HIGH-POWER FIBER ARRAYS AND BEAM COMBINER SOLUTIONS FOR SBC

Key Features

- Up To 50 Fiber Channels
- For LMA Fibers (PM/Non-PM)
- kW-Class Power Handling Capability
- High Combining Efficiency
- Outstanding Beam Quality And PER
- Fiber Array Arrangement
For Use With Optical Grating
- Low Position And Pointing Errors
- Option: Integrated Micro Lenses

Spectral Beam Combining



End View Of Fiber Array



Side View Of Fiber Array



1D AND 2D FIBER ARRAYS

FIBER ARRAYS FOR HIGH-POWER kW APPLICATIONS

Key Features

- | 2-200 Fiber Channels
- | kW-Class Per Fiber Channel
- | For SM And MM Fibers
- | Flexible Fiber Array Arrangements
- | With Integrated Optics
- | With Industrial Connectors



Applications

- | Multi-Beam Material Processing
- | Direct-Diode Applications
- | Beam Shaping Solutions
- | Solid-State Laser Pumping
- | High-Energy Laser Pumping
- | Dynamic Beam Distributions

BUILT FOR THE NEXT GENERATION OF LASER SYSTEMS

HIGHEST PRECISION – HIGHLY COMPACT DESIGN
HIGH-POWER CAPABILITY

Our high-grade fiber arrays and beam combiners are capable of combining kW-class laser beams. The fiber arrays or beam combiners are manufactured as monolithic all-glass components and can therefore handle extremely high optical powers. Even under harsh environmental conditions, the arrangement of the optical beams remains optically stable.

FiberBridge Photonics develops and manufactures customer-specific solutions in collaboration with our customers. We provide support in designing beam

combiners necessary for each specific application. We also support our customers with integrating the beam combiner and take care of all the necessary interfaces with the laser sources. As a benefit to our customers, we can perform extensive testing of the configured fiber array cables with various high-power laser sources in our application lab. We additionally offer our customers comprehensive environmental tests for our products.



FIBER BRIDGE PHOTONICS

FROM DEVELOPMENT TO SERIES PRODUCTION

FiberBridge Photonics provides high-performance optical fiber components for the material processing, life sciences, quantum technology, and aerospace industries. Key products in our 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.

From Fiber Components To Laser Systems



Sectors

