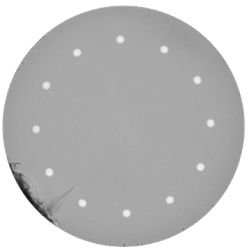
SPECIALTY OPTICAL FIBER

IXF-MC-12-PAS-6

Multicore fiber



The IXF-MC family of multicore fibers includes both passive and active fibers with 2, 4, 7 and 12 cores. Multicore fibers are used in a large variety of applications such as Space Division Multiplexing (SDM) and sensing (temperature, strain, or shape sensing). Passive multicore fibers have photosensitive cores, allowing Fiber Bragg Gratings (FBG) to be inscribed to the cores.
Fan-in and fan-out can be manufactured directly on the IXF-MC-12-PAS-6 multicore fiber either on a single side to inject (collect) the light to (from) the multicore fiber, or as a fan-in & fan-out pair.

Custom developments of passive, active, or spun multicore fibers are possible.

Benefits & Features

- 12-core passive fiber
- Single clad, high-index acrylate coating
- Uncoupled cores
- Singlemode operation at 1550 nm
- Matching Er/Yb doped 12-core fiber available
- Matchcing passive double-clad 12-core fiber available
- Custom designs possible

Applications

- Space division multiplexing (SDM)
- Multicore fiber amplifier
- Coherent beam combining
- Imaging

Related Products

- IXF-2CF-MC-12-EY-6
- IXF-2CF-MC-12-PAS-6

Related Publications

- E. Pincemin et al., "12-Core Erbium/Ytterbium-Doped Fiber Amplifier for 200G/400G Long-Haul, Metro-Regional, DCI Transmission Applications with ROADM," 2021 European Conference on Optical Communication (ECOC), Bordeaux, France, 2021, pp. 1-4, doi: 10.1109/ECOC52684.2021.9606073
- G. Mélin et al., "Power Efficient All-Fiberized 12-Core Erbium/Ytterbium Doped Optical Amplifier," 2020 Optical Fiber Communications Conference and Exhibition (OFC), San Diego, CA, USA, 2020, pp. 1-3

Parameters

Core number	12
Core spacing (µm)	35 ± 0.5
Core diameter (µm)	6 ± 0.5
Mode field diameter @1550 nm (µm)	6.5 ± 0.5
Numerical aperture	0.19 ± 0.02
Cladding diameter (µm)	187.5 ± 2.5
Coating diameter (µm)	355 ± 15
Proof test level (kpsi)	50

Design parameters

Coating material	Dual acrylate
Operating temperature range (°C)	-40 to +85

Fan-in / Fan-out (optional)

Design wavelength (nm)	1550
Fiber type	SMF28
Insertion loss @1550 nm (dB), per fan-in	< 1.5
PDL @1550 nm (dB), per fan-in	< 0.1
Crosstalk @1550 nm (dB)	> 60
Fiber length (m)	1.0
Connector type	FC, SC, LC. Angle or flat-polished

Multicore fiber with a single fan-in/out

Multicore fiber with a pair of fan-in and fan-out

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