

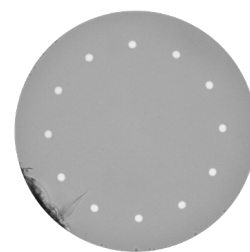
SPECIALTY OPTICAL FIBER

IXF-2CF-MC-12-EY-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.

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



Benefits & Features

- 12-core Er/Yb fiber
- Double clad, low-index acrylate coating
- Uncoupled cores
- Singlemode operation at 1550 nm
- Matching passive 12-core fibers available
- Custom designs possible

Applications

- Space division multiplexing (SDM)
- Multicore fiber amplifier

Related Products

- IXF-2CF-MC-12-PAS-6
- IXF-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 ROADMs," 2021 European Conference on Optical Communication \(ECOC\), Bordeaux, France, 2021, pp. 1-4, doi: 10.1109/ECOC52684.2021.9606073](#)
- [G. Melin 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
Core numerical aperture	0.19 ± 0.02
Cladding numerical aperture	≥ 0.46
Cladding absorption @915 nm (dB/m) *	3.5 ± 0.5
Cladding absorption @976 nm (dB/m), estimated	11.5 ± 2
Core absorption @1536 nm (dB/m) **	40 ± 10
Multimode background losses (dB/km)	< 50
Cladding diameter (μm)	187.5 ± 2.5
Cladding shape	Round
Coating diameter (μm)	355 ± 15
Proof test level (kpsi)	50

* measured value for the 12 cores

** value for one core, extrapolated from multimode absorption measurement

Design parameters

Coating material	Low-index dual acrylate
Operating temperature range ($^{\circ}\text{C}$)	-40 to +85

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contact.photonics@exail.com | www.exail.com
Europe +33 1 30 08 94 50 | Americas +1 508 745 3487 | APAC +60 11 1623 1698

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