

2 μm Anti-Resonant Hollow Core Fiber

IXF-ARF-40-230

Optical signal in a hollow core anti-resonant fiber propagates in an air core surrounded by single ring of anti-resonant tube elements. Guidance is based on an anti-resonance from the thin glass membranes constituted by the non-touching tubes surrounding the hollow core. The extremely low overlap of guided power with the surrounding silica, less than 2×10^{-5} , added to the mode effective area, confers to this fiber design record material non-linearity. In addition, anti-resonant fibers provide, a broad range of opportunities for applications such as low latency data transmission, gas-based non-linear optics, as well as gas/chemical and environmental sensing.



Partnership with Photonics Bretagne



BENEFITS & FEATURES

- High damage threshold
- Nearly single mode guidance
- Ultra low dispersion in the transmission bands

APPLICATIONS

- Pulse compression and shaping
- Laser machining
- Gas-filled AR hollow core fibre laser
- Molecular tracing
- Gas detection
- High power delivery for pico- and sub-picoseconds optical pulses

IXF-ARF-40-230 TECHNICAL SPECIFICATIONS

Parameter	Unit
Core diameter	40 +/- 2 μm
Cladding diameter	105 +/- 5 μm
Fiber diameter	230 +/- 10 μm
Coating outside diameter	340 +/- 10 μm
Numerical aperture	~ 0.03
Material	air core
Coating type	dual coat high index coating
Proof test level	50 kpsi
Attenuation @ 2 μm	< 80 dB/km
Transmission bandwidth (< 100 dB/km)	1600 - 2200 nm
Mode field diameter @ 2 μm	33.5 μm
Dispersion @ 2 μm	~ 2 ps/nm/km
Mode overlap with core	> 99.99 %
HOM suppression	> 25 dB (after 3 m)
Bend loss @ 2 μm (@ 5 cm bend radius)	< 0.5 dB

Specifications are subject to change without notice