

# 1064 nm Anti-Resonant Hollow Core Fiber

IXF-ARF-33-160

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  $2 \times 10^{-5}$ , 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-33-160 TECHNICAL SPECIFICATIONS

Parameter	Unit
Core diameter	33 +/- 2 $\mu\text{m}$
Cladding diameter	66 +/- 2 $\mu\text{m}$
Fiber diameter	160 +/- 2 $\mu\text{m}$
Coating outside diameter	325 +/- 5 $\mu\text{m}$
Numerical aperture	~ 0.03
Material	air core
Coating type	dual coat high index coating
Proof test level	50 kpsi
Attenuation @ 1064 nm	< 50 dB/km
Transmission bandwidth (< 100 dB/km)	1000 - 1350 nm
Mode field diameter @ 1064 nm	26 $\mu\text{m}$
Dispersion @ 1064 nm	~ 2 ps/nm/km
Mode overlap with core	> 99.99 %
HOM suppression	10 dB (after 3 m)
Bend loss @ 1064 nm (@ 5 cm bend radius)	< 0.5 dB

*Specifications are subject to change without notice*