

SPECIALTY OPTICAL FIBER

# IXF-ARF Series

## Anti-Resonant Hollow Core Fibers

Optical signal in hollow core anti-resonant fibers 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 these fibers design record material non-linearity.



Partnership with

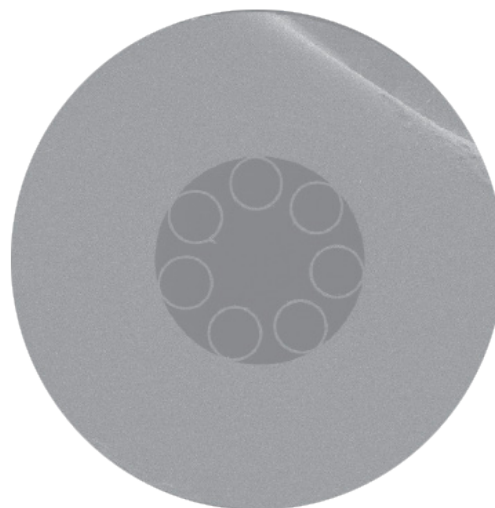
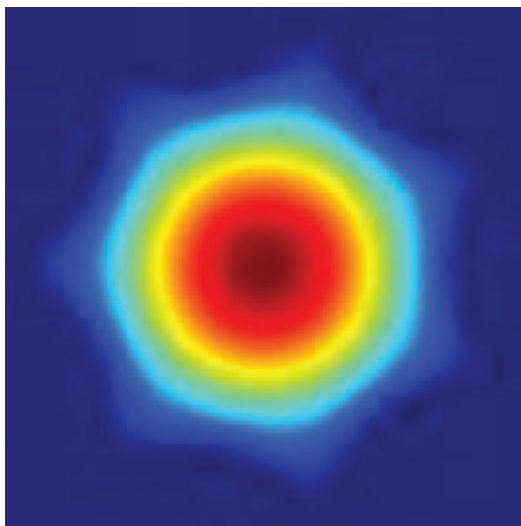


### Benefits & Features

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

### Applications

- Low latency data transmission
- Gas-filled AR hollow core fibre laser
- Molecular tracing, gas detection
- High power delivery for pico- and sub-picoseconds optical pulses



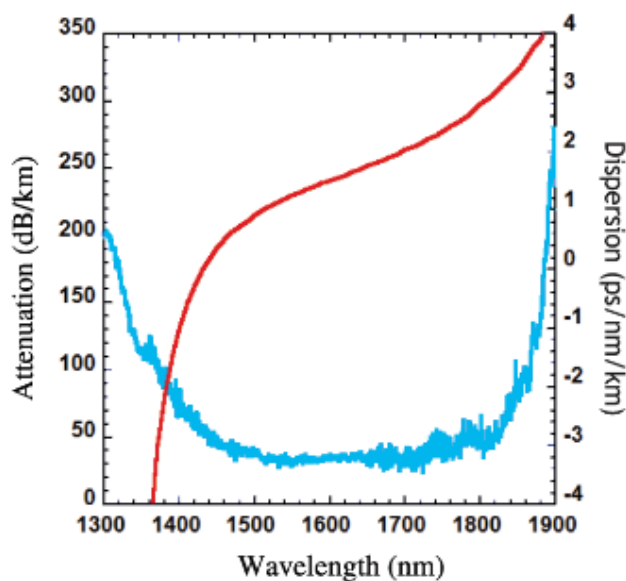
# IXF-ARF Series

## TECHNICAL SPECIFICATIONS

### Parameters

P/N: IXF-ARF-	40-240	33-160-V1	45-240-V1	40-230	120-400
Optimized for (nm)	750	1064	1550	2000	3000
Material	air core				
Core diameter ( $\mu\text{m}$ )	$38 \pm 2$	$33 \pm 2$	$46 \pm 2$	$40 \pm 2$	$119 \pm 2$
Cladding diameter ( $\mu\text{m}$ )	$71 \pm 3$	$66 \pm 3 \mu\text{m}$	$99 \pm 3$	$105 \pm 3$	$233 \pm 3$
Fiber diameter ( $\mu\text{m}$ )	$242 \pm 5$	$160 \pm 5$	$239 \pm 5$	$230 \pm 5$	$404 \pm 5$
Coating outside diameter ( $\mu\text{m}$ )	$398 \pm 10$	$325 \pm 10$	$395 \pm 10$	$340 \pm 10$	$492 \pm 10$
Coating type	dual coat high index acrylate				
Attenuation* (dB/km)	< 50	< 50	< 35	< 80	< 70
Transmission bandwidth (nm) (< 100 dB/km)	700 – 915	1000 – 1260	1450 – 1750	1600 – 2200	2900 – 3150
Mode field diameter* ( $\mu\text{m}$ )	29	26	37	33.5	90
Dispersion* (ps/nm/km), typical	0.8	2	1	2	0.8
Mode overlap with core (%)	> 99.99				
Numerical aperture	0.02	0.03	0.03	0.03	0.03
HOM suppression (dB)	N/A	10 (after 3 m)	10 (after 5 m)	> 25 (after 5 m)	N/A
3 dB Bend loss radius* (cm)	$4 \pm 1$	$4 \pm 1$	$6 \pm 1$	$8 \pm 1$	$11 \pm 1$

\* at specified optimised wavelength



Typical measured attenuation and dispersion of IXF-ARF-45-240

Exail reserves the right to change, at any time and without notice, the specifications, design, function or form of its products described herein.

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