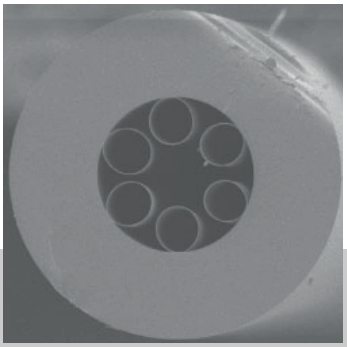
PHOTONICS BRETAGNE
Photonics Innovation Hub

SPECSHEET
09/2026

MICROSTRUCTURED FIBRES | HOLLOW-CORE ANTI-RESONANT FIBRES



Product line PERFOS

Optical signal in a hollow core anti-resonant fibre 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 $2x10^{-5}$, added to the mode effective area, confers to this fibre design ultra-low nonlinearity. Fibres transmitting at other wavelengths up to 3µm and mode field adaptors (MFA) for optimizing light coupling are available on request.

MAIN CHARACTERISTICS

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

APPLICATIONS

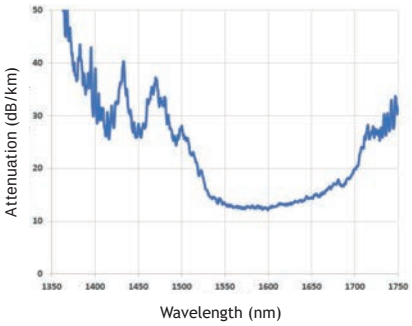
- Low latency data transmission
- Gas-filled AR hollow core fibre laser
- Molecular tracing, gas detection
- High power delivery for pico- and sub-picoseconds optical pulses

FIBRE SPECIFICATIONS *Optimised for*	ARF-24-130 *633 nm*	ARF-40-240 *750 nm*	ARF-24-130 *920 nm*	ARF-33-160 *1064 nm*	ARF-48-330 *1550 nm*
Optical Parameters					
Attenuation (dB/km) (1)	< 100 @ 633 nm	< 50 @ 750 nm	< 100 @ 920 nm	< 55 @ 1064 nm	< 13 @ 1550 nm
Transmission Bandwidth (nm)	560 – 640 (< 150 dB/km)	700 – 900 (< 80 dB/km)	850 - 1050 (< 150 dB/km)	1030 - 1200 (< 80 dB/km)	1530 - 1625 (< 25 dB/km)
Mode Field Diameter (µm) (2)	19 @ 633 nm	29 @ 750 nm	19 @ 920 nm	26 @ 1064 nm	39 @ 1550 nm
Dispersion (ps/nm/km) (2)	10 @ 633 nm	1@ 750 nm	4 @ 920 nm	2 @ 1064 nm	1@ 1550 nm
Numerical Aperture (2)	0.07	0.02	0.07	0.03	0.03
3 dB Bend Loss Radius (cm)	≤ 3 @ 633 nm	≤ 5 @ 750 nm	≤ 3 @ 920 nm	≤ 5 @ 1064 nm	≤ 7 @ 1550 nm
Physical/Material Parameters					
Fibre Material	Air Core surrounded by Pure Silica				
Core Diameter (µm)	24 +/- 3	38 +/- 3	24 +/- 3	33 +/- 3	49 +/- 3
Fibre Diameter (µm)	132 +/- 5	242 +/- 5	132 +/- 5	160 +/- 5	321+/- 5
Coating Outside Diameter (µm)	270 +/- 10	398 +/- 10	270 +/- 10	325 +/- 10	460 +/- 10
Coating Type	Dual coat high index coating acrylate				
Proof- Testing (kpsi)	> 20	> 20	> 20	> 20	NA

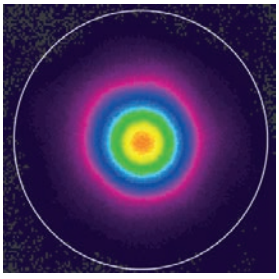
(1) Measured on a large diameter spool (32 cm) - lower when deployed

(2) Calculated typical value from simulation

Typical measured attenuation for ARF-48-330



Measured fundamental mode profile of the ARF-24-130@1µm



Sales: contact@cybel-llc.com | Web: www.cybel-llc.com | 62 Highland Ave., Bethlehem, PA 18017, USA | Tel: +1 (610) 691-7012

Copyright © 2024 Photonics Bretagne. All rights reserved. Photonics Bretagne reserves the right to modify the specifications without prior notice.

All our optical fibres and components are manufactured according to our ISO certified quality management system, which places the needs and values of customers and partners at the heart of our organization. Throughout the manufacturing process, our components and systems are subjected to rigorous tests and inspections, which guarantees their robustness and reliability in the most demanding environments.