

Polycrystalline IR-Fibers & Cables



FlexiRay®

High transmittance from
4 μm up to 18 μm

High flexibility and no toxicity

Suitable for CO₂-laser power
delivery up to 50W

Low attenuation at 10.6 μm
(0.1-0.5 dB/m)

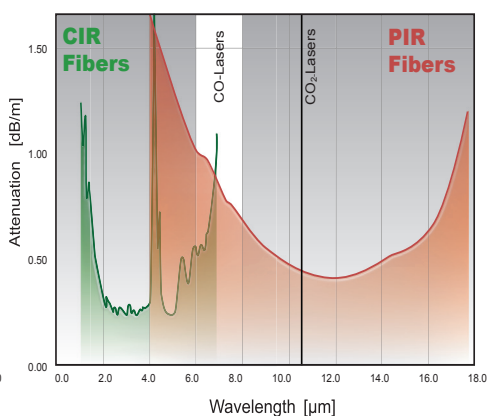
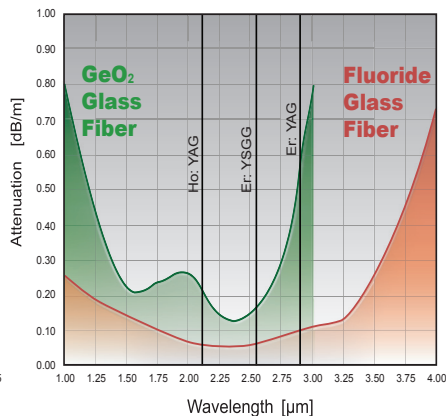
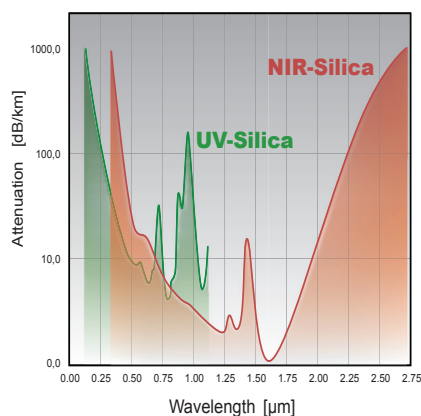
Standard fiber diameters from
0.3 to 1.0mm

No aging effect

art photonics development of specialty fibers for the Mid-Infrared region has resulted in a unique product - Core / Clad Polycrystalline Infra-Red (PIR-) fibers. The PIR-fibers are non-toxic, very flexible, transparent across a broad spectral range 4 -18 μm and capable for operating over the wide temperature range from 4K to 420K.

Applications:

- Spectroscopy Probes for Gases & Liquids
- Flexible Radiometry
- Flexible IR-imaging Systems
- Power delivery for CO & CO₂ - Lasers



Fiber Specification

Standard Fibers	PIR-240	PIR-400	PIR-630	PIR-900
Core diameter, μm	240	400	630	900
Cladding diameter, μm	300	500	700	1000
*other diameters are available on request				

Transmission Range	4 – 18 μm
Core material	$\text{AgCl}_{0.25} \text{Br}_{0.75}$
Cladding material	$\text{AgCl}_{0.50} \text{Br}_{0.50}$
Protective tubing	PEEK
Core Refractive Index	2.15
Effective NA	0.28 ± 0.03
Minimum bend radius	100 x Fiber diameter
Operating temperature, $^{\circ}\text{C}$	$-270 < T < 150$
Maximum transmitted Power, W	50 (CW)

Attenuation spectra of PIR fibres of standard and spectral grade

