

Polycrystalline Mid-InfraRed Fiber Cable

art photonics offers *FlexiRay*[®] Fiber Cables for a broad Mid-Infrared spectral range 3 - 17 μm . Based on Polycrystalline InfraRed (PIR-) fibers, *FlexiRay*[®] fiber cables are used in a wide range of applications including Mid-IR light delivery, spectroscopy, remote temperature sensing, etc. PIR-fiber cables are available with a variety of standard fiber diameters, with different connectors (SMA-905, FC/PC, and FC/APC), and several types of protective sheathing. Our manufacturing technologies assure precise fiber position inside the connector ferrule and a perfect surface quality of the fiber end. Before shipping, each fiber cable passes through the detailed Quality Control procedure.

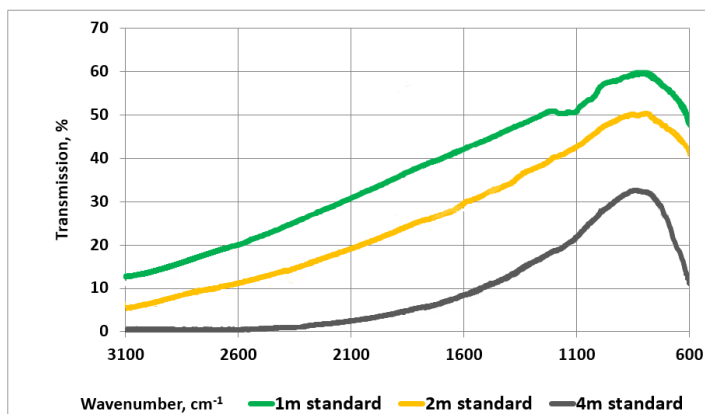


Applications:

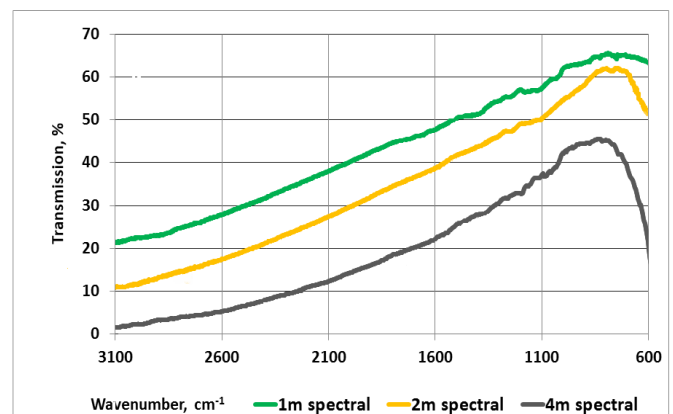
- ✓ Mid-IR spectroscopy
- ✓ Flexible IR pyrometry
- ✓ Flexible IR-Imaging systems
- ✓ Power delivery for Quantum Cascade Lasers
- ✓ Power delivery for CO- and CO₂-Lasers

Features:

- ✓ High transmittance in 3 - 17 μm range
- ✓ Low optical losses 0.2 - 0.3 dB/m at 9 - 13 μm
- ✓ Core/Clad structure with core diameters span from 240 to 860 μm
- ✓ Minimal aging effect
- ✓ Non-hydroscopic and non-toxic



Transmission Spectra of Polycrystalline Fibers of Different Length (Standard Quality Grade)



Transmission Spectra of Polycrystalline Fibers of Different Length (Spectral Quality Grade)

UV

VIS

NIR

MIR

Working Range

3-17 μm

Product specifications

Optical Fiber Type	Polycrystalline Step Index Multimode
Wavelengths range	3 - 17 μm
Fiber Core/Cladding Sizes (μm)	see standard fiber parameters
Effective Numerical Aperture (NA)	0.30 \pm 0.03
Minimum bending radius depending on protective sheathing	PEEK tubing – 130mm metal PVC coated tubing – 80mm stainless steel tubing – 80mm stainless steel silicone coated tubing – 130mm
Connectors	SMA-905, FC-PC or FC-APC with Titanium ferrule
Temperature range	-50°C to + 80°C <small>*For high- or cryogenic temperature application please send a custom inquiry, the temperature range for cables is not the same as for fibers</small>
Length	\leq 15m depending on fiber diameter

Parameters of standard Polycrystalline fibers

Code	Type	Core, μm	Cladding, μm	Protective Jacket, μm	NA**	Min. bending Radius, mm
PIR240/300	Step Index Multimode	240 \pm 15	300+0/-15	no	0.30 \pm 0.03	45
PIR400/500	Step Index Multimode	410 \pm 15	500+0/-15	no	0.30 \pm 0.03	75
PIR600/700	Step Index Multimode	600 \pm 20	700+0/-15	no	0.30 \pm 0.03	100
PIR900/1000	Step Index Multimode	860 \pm 20	1000+0/-25	no	0.30 \pm 0.03	150

** effective value