# Chalcogenide Mid InfraRed Fiber Cable

art photonics
broad spectra fiber solutions

**art photonics**' offers ***FlexiRay®*** Fiber Cables for a Mid-Infrared spectral range 1.1 - 6.5 µm.
Based on Chalcogenide Infra-Red (CIR-) fibers, ***FlexiRay®*** fiber cables are used in a wide range of applications including power delivery of QCL, spectroscopy, Flexible IR-imaging systems, etc.
CIR- fiber cables are available with a variety of standard fiber diameters, SMA-905, FC/PC, FC/APC connectors, and several types of protective tubing.
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 a detailed Quality Control procedure.

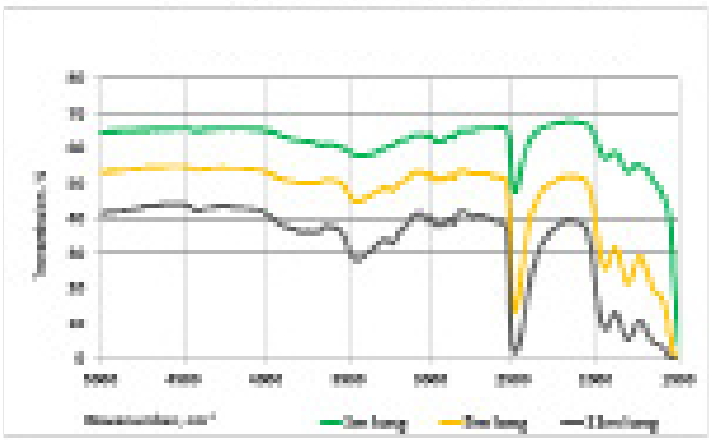



**Applications:**

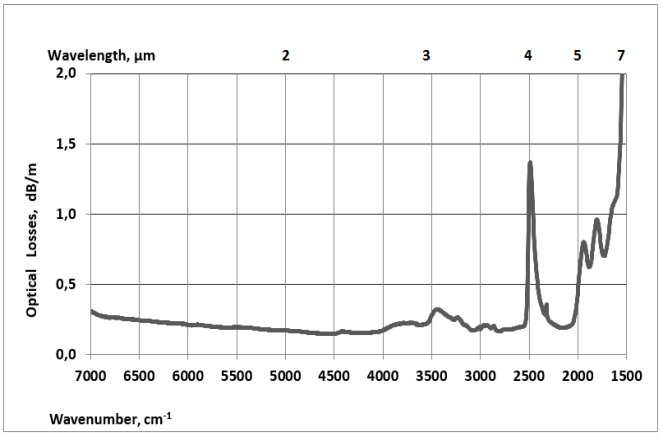
- Mid IR spectroscopy
- Flexible IR pyrometry
- Flexible IR-Imaging systems
- Power delivery for Quantum Cascade Lasers

**Features:**

- High transmittance in 1.1 - 6.5µm range
- Low optical losses 0.2 - 0.3 dB/m at 2.5 - 4 µm and 4.5 - 5 µm
- Core/Clad structure with core diameters span from 8 to 340 µm
- Temperature range from -50°C to 90°C



Transmission Spectra of CIR-Cables of Different Length




Optical Losses Spectrum of CIR- Fiber



## Product specifications

| | |
|---|---|
| Optical Fiber Type | Chalcogenide Step Index Multimode |
| Wavelengths range | 1.1 - 6.5 μm |
| Fiber Core/Cladding Sizes (μm) | see standard fiber parameters |
| Effective Numerical Aperture (NA) | see standard fiber parameters |
| Minimum bending radius depending on protective sheathing | PEEK tubing – 130mm<br>metal PVC coated tubing – 80mm<br>stainless steel tubing – 80mm<br>stainless steel silicone coated tubing – 130mm |
| Connectors | SMA-905; FC/PC or FC/APC |
| Temperature range | -50°C to + 90°C |

## Parameters of standard Chalcogenide fibers

| Code | Type | Core, μm | Cladding, μm | Protective Jacket, μm | NA | Min. bending Radius, mm |
|---|---|---|---|---|---|---|
| CIR8/300 | Step Index Singlemode | 8 ± 1 | 300 ± 15 | 400 ± 20 | 0.25 ± 0.02 | 60 |
| CIR50/250 | Step Index few modes | 50 ± 3 | 250 ± 10 | 410 ± 20 | 0.13 ± 0.02 | 50 |
| CIR250/300 | Step Index Multimode | 250 ± 10 | 300 ± 15 | 400 ± 30 | 0.30 ± 0.03 | 60 |
| CIR340/400 | Step Index Multimode | 340 ± 10 | 400 ± 15 | 510 ± 30 | 0.30 ± 0.03 | 80 |

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