

Chalcogenide fibers mid-IR

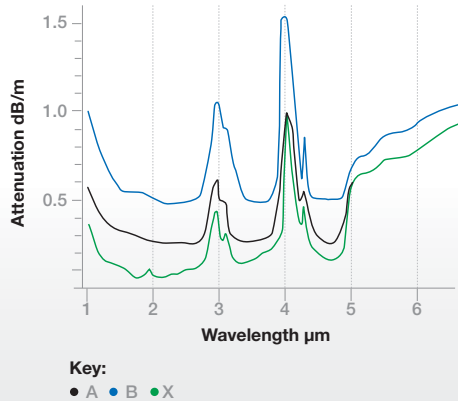
CHAL Series



OXFORD ELECTRONICS

Manufacture and supply of specialised optical fibers

- Mid-IR fiber
- Low loss
- Choice of attenuation



These multimode step-index chalcogenide fibers have a chalcogenide core and chalcogenide cladding of lower refractive index. They will transmit light from 1-6 µm. They are flexible and do not suffer from serious degradation by moisture ingress as with certain other types of fiber designed for this wavelength. Chalcogenide has a glass type structure and fibers can be epoxied into connectors and polished using similar techniques to those employed for silica fibers. Although chalcogenide fibers do not have the tensile strength of silica fibers, they are quite easy to handle if given a suitable jacket for protection. These fibers are now offered with a choice of attenuation selection, the lowest loss fibers now offered have losses of 0.1 dB at 2.5 µm which is less than the best 'dry' silica fibers can achieve.

Fiber specification

Fiber type

Step-index multimode

Core material

As₂S₃

Cladding material

As_xS_{1-x}

Primary coating

PTFE

Secondary coating

PVC

Numerical aperture

0.3-0.5*

Refractive index (core)

2.6

Minimum bend radius

<10 mm

Operating temperature

-200°C < T < 100°C

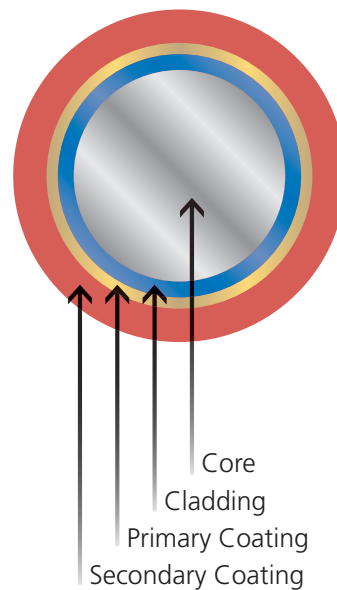
Radiation resistance

Good

Maximum intensity of transmitted power

10W (CW)

*For short lengths the measured NA will be higher.



| | CHAL250 | CHAL350 |
|-------------------------------|---------|---------|
| Core diameter µm | 250 | 350 |
| Cladding diameter µm | 300 | 420 |
| Primary coating diameter µm | 320 | 440 |
| Secondary coating diameter µm | 1000 | 1000 |

Ordering information

CHAL 250 A

Minimum attenuation. A = 0.3dB at 2.5µm
 B = 0.6dB at 2.5µm, X = 0.1dB at 2.5µm
 Core diameter µm