

## Mid-IR Fiber Products

### PRODUCT DESCRIPTION

CorActive delivers a full range of Infrared Transmission (IRT) optical fibers to address beam delivery requirements in the mid-IR region. CorActive's IRT series of infrared fiber solutions have been specifically designed to provide ultra low loss optical transmission while offering excellent mechanical properties. CorActive's mid-IR fibers enable significant performance improvements in many applications that have relied on free space optics, low quality fiber or other beam delivery methods.

CorActive mid-IR transmission fiber is manufactured under an exclusive license agreement with the U.S. Naval Research Laboratory (NRL). NRL holds several key patents on infrared fiber manufacturing technologies and processes.

Two chalcogenide glass compositions are offered:

IRT-SU: Sulphide glass ( $As_2S_3$ ) series offer the lowest absorption in the 2-6 $\mu m$  region.

IRT-SE: Selenide glass ( $As_2Se_3$ ) series features the broadest transmission range from 2 $\mu m$  up to 9 $\mu m$ .

### ADVANTAGES

- Lowest optical losses on the market
- High power handling
- Wide operating range (up to 9 $\mu m$ )
- Outstanding flexibility and strength
- Proof tested for increased long-term reliability
- Highly reliable and consistent manufacturing process allowing production runs in the km range

### APPLICATIONS

- IR Countermeasures
- FT-IR Spectroscopy
- Mid-IR Laser Beam Delivery
- Sensing and Environmental
- Non-Linear Applications

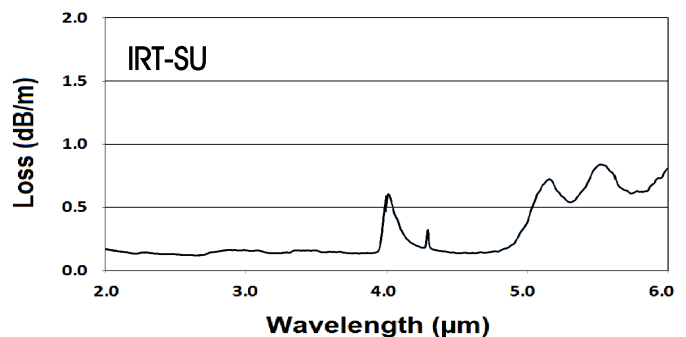
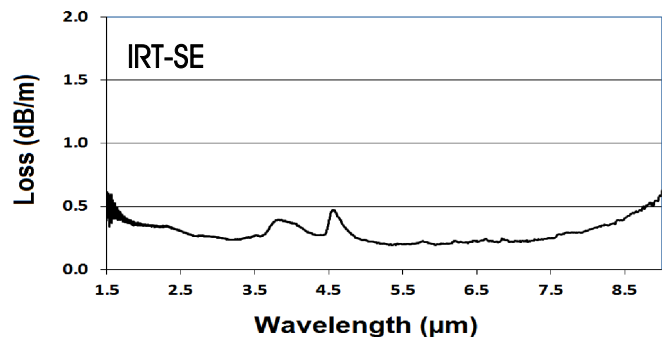
### SPECIFICATIONS

Optical	IRT-SU	IRT-SE
Transmission Range ( $\mu m$ )	2 to 6	2 to 9
Typical Core Refractive Index	2.4	2.7
Typical Attenuation (dB/m)	0.15 @ 2.7 $\mu m$	0.20 @ 6 $\mu m$
Typical Attenuation (dB/m)	0.7 @ 4.0 $\mu m$	0.5 @ 4.55 $\mu m$

Geometrical&Mechanical		
Core Non-Circularity (%)	< 1	< 1
Core/Clad Concentricity Error ( $\mu m$ )	< 5	< 5
Protective Coating Material	Single Coat Acrylate	Single Coat Acrylate
Tensile Proof Test (kpsi)	> 15	> 15

Environmental	
Chemical Resistance	Insoluble in water, concentrated hydrochloric acid, non-oxidizing acids, gasoline, toluol, alcohol and acetone

### TYPICAL TRANSMISSION SPECTRA



Note: IRT-SU transmission spectrum valid for 100/170 fiber only

## AVAILABLE MODELS

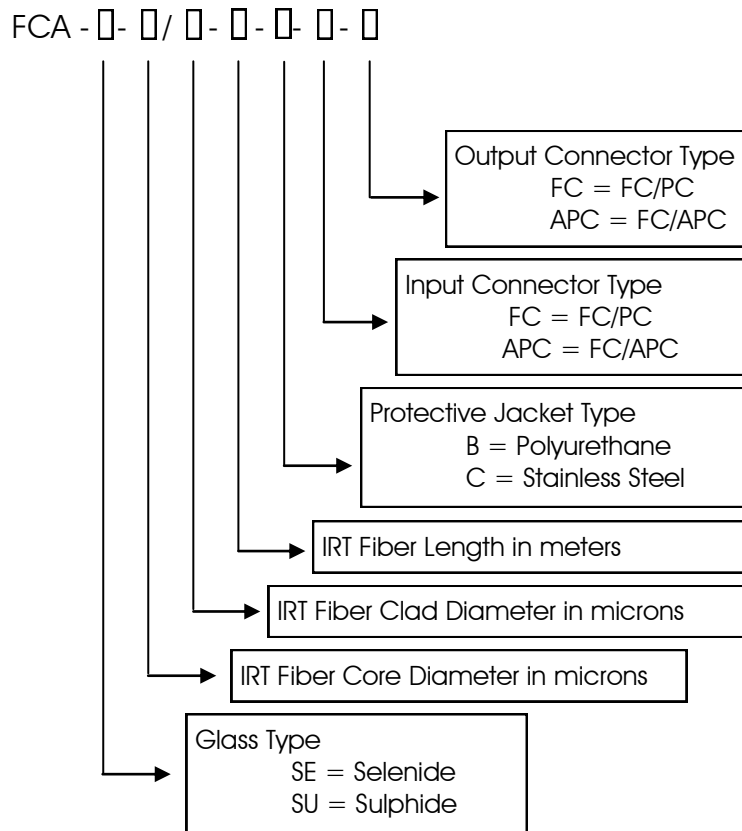
Model Number	Glass Composition	Core Diameter ( $\mu\text{m}$ )	Clad Diameter ( $\mu\text{m}$ )	Operating Wavelength ( $\mu\text{m}$ )
IRT-SE-6/170	As <sub>2</sub> Se <sub>3</sub>	6	170	1.5 to 2
IRT-SE-100/170	As <sub>2</sub> Se <sub>3</sub>	100	170	2 to 9
IRT-SU-7/170	As <sub>2</sub> S <sub>3</sub>	7	170	2 to 3
IRT-SU-70/170	As <sub>2</sub> S <sub>3</sub>	70	170	2 to 6
IRT-SU-100/170	As <sub>2</sub> S <sub>3</sub>	100	170	2 to 6

Other core/clad dimensions are available upon request.

## FIBER CABLE ASSEMBLIES

Cable assemblies are offered in different configurations.

## FIBER CABLE ORDERING INFORMATION



Other cable models are available upon request.

**Important Notice:** CorActive strongly recommends to use free-space coupling and does not recommend butt coupling to another optical fiber since it may damage the IRT fiber facet.

A proprietary optical fiber manufacturing method ensures that fiber impurities and optical defects are removed prior to fiber drawing. This ensures the lowest loss and highest quality optical transmission of mid-IR wavelengths in the 2 to 9  $\mu\text{m}$  range.

**CorActive**  
Specialty Optical Fiber Manufacturer

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