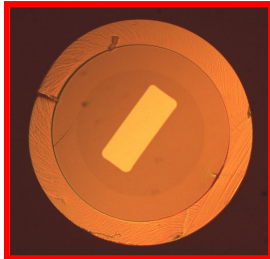
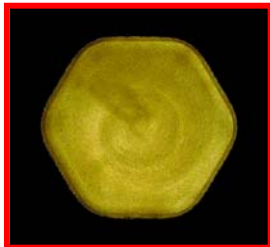


j-NCS Non-Circular Shape Fiber Step Index Fiber series

Customized fiber core and/or clad cross section shaped



Rectangular core / round clad fiber



Hexagonal core/clad shaped fiber



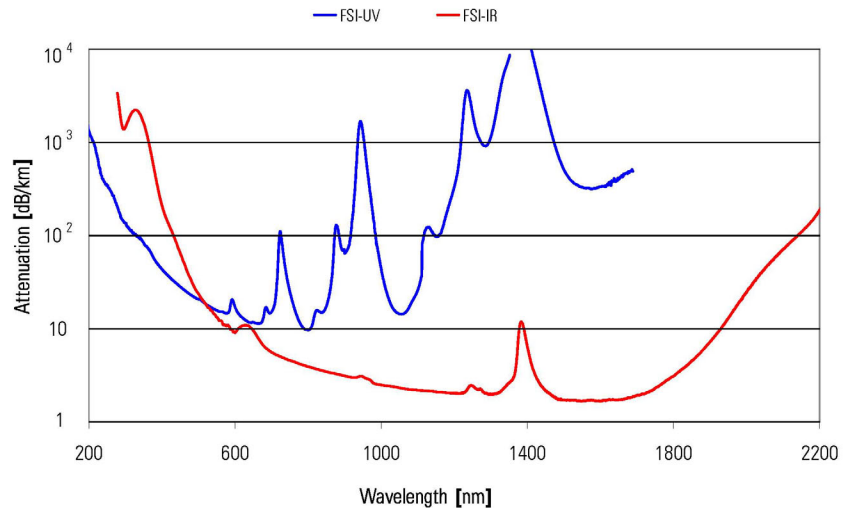
Octagonal core round clad shaped fiber

High-performance fibers with non-circular cross sections of core and/or cladding

j-NCS fiber is the new fiber series of Fluorine doped step index (FSI) multimode fibers. The fiber design consists of an undoped synthetic fused silica core and a fluorine doped silica cladding. j-NCS FSI Fiber series has been developed for special applications, mainly in laser technology, high power transmission, imaging, spectroscopy, and medical applications.

j-NCS fibers can be customized to meet certain critical applications and offer innovative solutions for special requirements. Key fiber characteristics such as performance at UV/VIS, VIS/NIR and VIS/IR wavelengths are optimized by specifying the OH content of the core glass. Furthermore j-fiber offers a large variety of fiber designs defining the cladding thickness, cladding structure (single or double layer cladding) and numerical aperture (NA).

Typical Spectral Attenuation



Performance Characteristics and Available Configurations

Fiber Characteristics

	Spec. Value Range
Core material	Undoped silica
Cladding material	F-doped silica
CCDR	1.05 – 1.2
Numerical Aperture	$(0.10 - 0.26) \pm 0.02$
OH content	High or Low
Operating Wavelength	UV/VIS; VIS/NIR; VIS/IR
Coating Material	Acrylate, HTC200 (High Temperature Coating), PI300 (Polyimide)

For further information about our Specialty Fiber and other j-fiber products and services, please contact us:

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Customized Core or/and Clad Fiber Shapes.






- High-performance step index Multimode fibers
- Variety of custom fiber core and cladding shape designs
- Perfect fiber geometries



Application Specific Benefits

j-NCS fiber innovative core and/or clad cross section shape designs provide for several benefits and allow to individually adapt the fiber to specific custom design requirements for use in critical applications:

- **Hexagonal shaped** step index fibers are advantageous for compact fiber bundle packaging. Compared to commercial standard round shaped fibers they improve bundle transmission efficiency in industry and medical applications.
Innovative fiber shapes in fiber optic cables can optimize laser light transportation to the work piece and may provide for cost efficient system designs, such as by reducing the need for beam shaping optics.
- **A square shaped fiber** core delivering a square formed near field beam is attractive for various high power applications. A square shaped diode laser output will couple light more efficiently into a square formed fiber. In welding and heat treatment applications a square formed beam will treat the material more uniformly than a circular beam as it moves laterally along the surface.
- **Rectangular shaped fibers** are also suited to enhance signal output efficiency in fiber laser applications. The rectangular cross section minimizes energy density reduction at the output end of the fiber core, which occurs when a rectangular output of a solid state laser is coupled to a circular cross section fiber core. Improved dimensional matching allows the delivery of light from laser diodes at energy densities particularly useful for medical treatments.

Geometrical Characteristics

Standard circular cladding					
Core shape		Core dimension ^{1,2}	Cladding diameter ¹	Coating diameter ¹	Unit
Round		200	220	400	μm
Square		55x55	300	380	μm
Rectangular		55x150	300	380	μm
Hexagonal		100	125	245	μm
Octagonal		190	200	400	μm

Non-circular cladding					
Core shape		Core dimension ^{1,2}	Cladding dimension ^{1,2}	Coating diameter ¹	Unit
Hexagonal		100	125	245	μm
Octagonal		190	200	400	μm

¹ Other dimensions are available upon request.

² flat-to-flat

Ordering Information

To order our j-NCS fiber please call, fax or email us and specify the following parameters when ordering:

Fiber Type:	j-NCS fiber
Fiber Quantity:	m
Shape of Core:	rectangular; square, octagonal; hexagonal
Shape of Cladding:	round; octagonal; hexagonal
NA:	
Attenuation at Application Wavelength	dB/m
Coating Material:	Acrylate, HTC200; PI300
Other:	desired shipment date, special requests

All fibers and preforms are subject to j-fiber's ongoing process and quality improvement programs ensuring excellent performance and high reliability. We reserve the right to make changes to the above specification without notice.

DB-FSI-006-01-0512 Issued May 2012

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