



Multicore Fiber

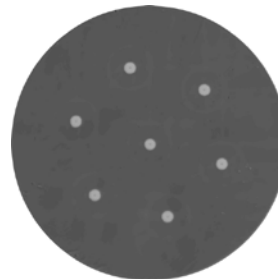
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Datasheet

Multicore Fiber

Multicore fibers provide a platform for the next generation telecommunication devices and sensor systems. In the telecoms sector, multicore fibers can be used to dramatically reduce the amount of space required for cables and connectors in data centers and exchanges. By combining multiple signal lines into a single connector space, space division multiplexing schemes can be utilized to save space and give high bandwidth cables. For the biomedical sector, the fiber has photosensitive cores, allowing Fiber Bragg Grating (FBG) inscription into each core, giving the ability to use the fiber as a 3D shape sensor, as deployed in catheters and other medical tools for minimally invasive procedures.

Fibercore use a highly customizable technique for manufacturing multicore fibers, so unique designs can be considered, for example combining SM and MM cores, different core numbers, different core positions. If you have a custom design, please contact our design team.



Advantages:

- Simultaneous transmission of different signals down different cores
- Photosensitive core designs for FBG inscription
- Suitable for biomedical catheter shape sensing applications
- Can be used as the transmission line for high data rate cables in data centers
- Custom designs possible: more cores, mismatched cores, different core positions

Typical applications:

- Shape sensing
- Data center transmission cables
- Temperature and strain sensors
- Structural Health Monitoring (SHM)

Product Variants:

- **SM-4C1500(8.0/125)/001** Four SM cores within a standard 125 μ m cladding diameter, designed for use at 1550nm in data cables and shape sensing probes
- **SM-7C1500(6.1/125)** 7 core SM fiber with a 125 μ m cladding diameter, designed for 1550nm
- **SSM-7C1500(6.1/125)** Spun 7 core SM fiber with a 125 μ m cladding diameter, designed for use at 1550nm in 3D shape sensing applications



Specifications

	SM-4C1500(8.0/125)/001	SM-7C1500(6.1/125)	SSM-7C1500(6.1/125)
Operating Wavelength (nm)	1520 - 1650		
Cut-Off Wavelength (nm)	1300 - 1500		
Numerical Aperture	0.14 - 0.17	0.20 - 0.22	
Mode Field Diameter (µm)	7.4 - 8.5 @1550nm	5.7 - 6.5 @1550nm	
Proof Test (%)	1 (100 kpsi)		
Cladding Diameter (µm)	125 ± 1		
Core Spacing (µm)	50 (nominal)	35 (nominal)	
Core Position Shape	Square	Hexagon plus central core	Hexagon plus central core Spun
Coating Diameter (µm)	245 ± 12		200 ± 7
Coating Type	Dual Acrylate		
Operating Temperature (°C)	-55 to +85		