

Specialty Fibre for Sensing

DTS Multi-mode Fibre

The YOFC distributed temperature system-multimode fibre (DTS-MMF) is manufactured using the advanced PCVD process, featuring accurate control of the refractive index profile, perfect implementation of a preset waveguide structure, and parabolic graded-index distribution. The optimized profile design and process control ensure that the optical fibre exhibits excellent optical and geometrical characteristics across long wavelengths (1,300 nm and 1,550 nm). With special coating materials and processes, the optical fibre demonstrates high temperature resistance.

Features

- Low attenuation at DTS operating wavelengths (1,450 nm, 1,550 nm, and 1,650 nm)
- High bandwidth in the C-band (especially at 1,550 nm)
- High temperature resistance
- Low splicing loss
- Excellent bending insensitivity

Applications

- Distributed temperature system

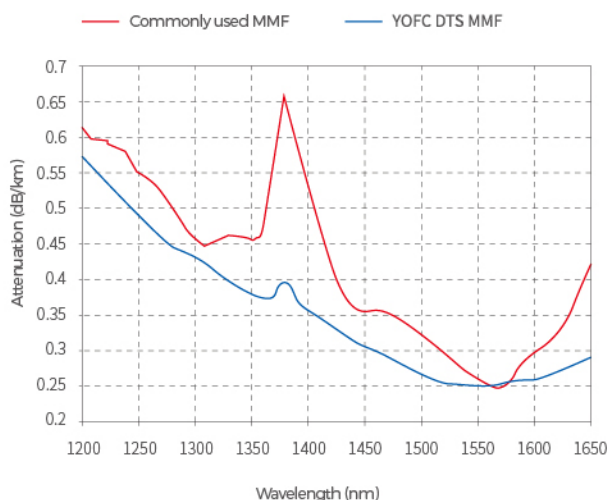
Compared to the Communication Multi-mode Fibre, the DTS-MMF has the Following Advantages:

1. Low attenuation at DTS operating wavelength

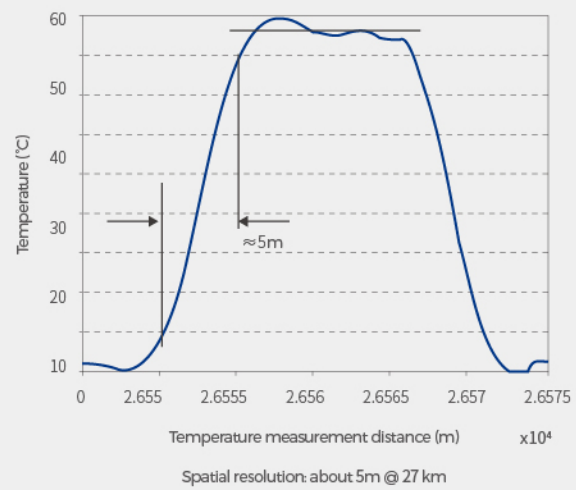
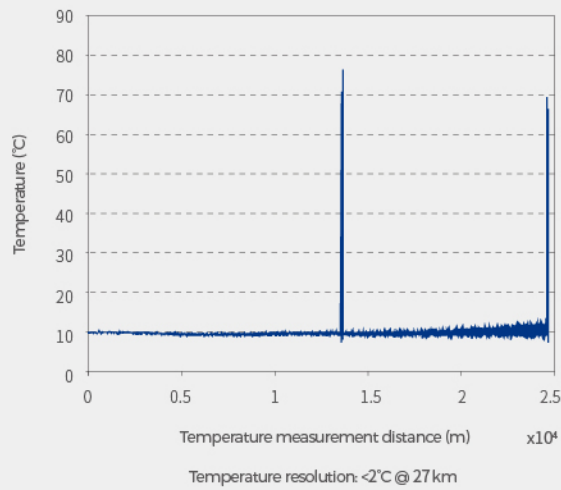
With optimized attenuation at 1,450 nm, 1,550 nm, and 1,650 nm, the YOFC DTS-MMF is suitable for longer-distance temperature measurement systems.

2. High bandwidth at 1,550 nm

According to IEC 60793-1-41-2010 (bandwidth), with improved bandwidth test equipment, the measured bandwidth of the YOFC DTS-MMF at 1,550 nm can reach more than 1,000 MHz·km, effectively improving the spatial resolution of long-distance distributed temperature measurement systems.



Test Results of YOFC DTS and DTS Host



Specifications

Fibre type		GI62.5/125-27/250DTS	GI50/125-20/250DTS
Part No.		GI2015-B	GI2012-B
Optical properties			
NA		0.275±0.020	0.195±0.020
Loss	@1300nm (dB/km)	≤0.60	≤0.60
	@1450nm (dB/km)	≤0.50	≤0.50
	@1550nm (dB/km)	≤0.40	≤0.40
	@1650nm (dB/km)	≤0.50	≤0.50
Splicing loss (dB)		≤0.1	≤0.1
Bandwidth	@1300nm (MHz·km)	≥200	≥200
	@1550nm (MHz·km)	≥800	≥500
Geometrical properties			
Core diameter of optical fibre (μm)		62.5±2.0	50.0±2.0
Cladding diameter (μm)		125.0±1.0	125.0±1.0
Outer diameter of optical fibre (μm)		245.0±7.0	245.0±7.0
Core/cladding concentricity (μm)		≤1.5	≤1.5
Core non-circularity (%)		≤5.0	≤5.0
Cladding non-circularity (%)		≤1.0	≤1.0
Mechanical properties			
Proof test level (kpsi)		≥100	≥100
Environmental properties			
Operating temperature range (°C)		-40 ~ 85	-40 ~ 85

• 010028 Version No. 202506