

### Product Highlights

- ✓ **Fiber Type:** Low water peak single-mode optical fiber
- ✓ **Special Characteristic:** Suited for transmission across 1260 nm to 1625 nm wavelengths
- ✓ **Applications:** Ideal for metro, access networks, and high-speed DWDM and CWDM technologies
- ✓ **Compliance:** Meets ITU-T G.652.D and IEC 60793-2-50 type B-652.D standards
- ✓ **Durability:** Features dual-layer acrylate coating for high reliability and stable strip force stability

# HFCL 2D Optical Fiber

**G.652.D - 250µm**

ISO 9001 | TL9000 Certified



### Optical Characteristics

Attribute	Unit	Value
Attenuation @ 1310 nm	dB/km	≤ 0.34
Attenuation @ 1383 nm*	dB/km	≤ Value at 1310 nm
Attenuation @ 1550 nm	dB/km	≤ 0.20
Attenuation @ 1625 nm	dB/km	≤ 0.23
Point Discontinuities at 1310 nm and 1550 nm	dB	≤ 0.05
Zero Dispersion Wavelength	nm	1300 to 1324
Zero Dispersion Slope	ps/nm <sup>2</sup> .km	≤ 0.092
Max Dispersion 1285 nm-1330 nm	ps/nm.km	≤ 3.5
Dispersion @ 1550 nm	ps/nm.km	≤ 18
Dispersion @ 1625 nm	ps/nm.km	≤ 22
PMD coefficient (Individual Fiber)	ps/√km	≤ 0.2
PMD LDV	ps/√km	≤ 0.06
Macro bend loss Change in attenuation when fiber is wound with:		
100 turns on 60 mm diameter mandrel		≤ 0.05 dB at 1550 nm ≤ 0.10 dB at 1625 nm
100 turns on 50 mm diameter mandrel		≤ 0.05 dB at 1310 nm ≤ 0.05 dB at 1550 nm
1 turn around 32 mm diameter mandrel		≤ 0.50 dB at 1550 nm ≤ 1.00 dB at 1625 nm

### Geometrical Characteristics

Attribute	Unit	Value
Cable Cutoff Wavelength	nm	≤ 1260
Cladding Diameter	µm	125 ± 0.7
Mode Field Diameter	µm	1310 nm: 9.2 ± 0.4 1550 nm: 10.4 ± 0.5
Core clad concentricity error	µm	≤ 0.5
Cladding Non Circularity (Ovality)	%	≤ 0.8
Secondary Coating Diameter	µm	242 ± 5
Coating-cladding concentricity error	µm	≤ 12
Coating Non Circularity (Ovality)	%	≤ 4

\* After Hydrogen aging according to IEC 60793-2-50. for B 1.3 fiber category.

## Mechanical Characteristics

Attribute	Unit	Value
Proof stress level	kpsi	$\geq 100$ (0.69 GPa) or 1% strain
Dynamic Tensile strength (un-aged)	GPa	$\geq 3.8$
Coating strip force (peak)	N	$1.3 \leq F \leq 8.9$
Fiber Curl	m	$\geq 4$
Stress corrosion susceptibility parameter (Dynamic Fatigue), Nd		$\geq 20$

## Environmental Characteristics

Attribute	Value
Temperature Cycling Induced Attenuation at 1310 nm, 1550 nm, 1625 nm at -60°C to +85°C	$\leq 0.05$ dB/km
Temperature-Humidity Cycling Induced attenuation at 1310 nm, 1550 nm, 1625 nm at -10°C to +85°C and upto 98% relative humidity	$\leq 0.05$ dB/km
Water Immersion Induced attenuation at 1310 nm, 1550 nm, 1625 nm due to water immersion at $23 \pm 2^\circ\text{C}$	$\leq 0.05$ dB/km
Accelerated Aging (Temperature) Induced attenuation at 1310 nm, 1550 nm, 1625 nm due to Temperature aging at $85 \pm 2^\circ\text{C}$	$\leq 0.05$ dB/km
Damp Heat Induced attenuation at 1310 nm, 1550 nm, 1625 nm due to Temperature & Humidity aging at +85°C and 85% relative humidity	$\leq 0.05$ dB/km

## Coating Finish

All HFCL Optical Fibers can be supplied as natural, coloured and coloured & ring-marked.

### Inspection Certificate

HFCL shall provide in-house test certificate which include optical, geometrical and mechanical parameters as per customer requirements.

### Material Properties

Group refractive index of fiber:  
 1.466 @ 1310 nm  
 1.467 @ 1550 nm  
 1.470 @ 1625 nm