

Product Highlights

- ✓ **Fiber Type:** Single-mode optical fiber
- ✓ **Bandwidth:** Ranging from 1260 nm to 1625 nm
- ✓ **Performance:** Superior macro bend and reduced PMD losses
- ✓ **Special Characteristic:** Bend-insensitive
- ✓ **Attenuation:** Low attenuation losses after cabling
- ✓ **Compliance:** Meets ITU-T G.657.A2 and G.652.D standards

HFCL A2 190 Optical Fiber

G.657.A2 - 190µm

ISO 9001 | TL9000 Certified



Optical Characteristics

Attribute	Unit	Value
Attenuation @ 1310 nm	dB/km	≤ 0.35
Attenuation @ 1383 nm*	dB/km	≤ 0.35
Attenuation @ 1550 nm	dB/km	≤ 0.21
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 ² .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	≤ 0.1
PMD LDV	ps/√km	≤ 0.06
Macro bend loss Change in attenuation when fiber is wound with:		
1 turn around 15 mm diameter mandrel		≤ 0.50 dB at 1550 nm ≤ 1.0 dB at 1625 nm
1 turn around 20 mm diameter mandrel		≤ 0.10 dB at 1550 nm ≤ 0.20 dB at 1625 nm
10 turn around 30 mm diameter mandrel		≤ 0.03 dB at 1550 nm ≤ 0.10 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: 8.6 ± 0.4 1550 nm: 9.6 ± 0.5
Core clad concentricity error	µm	≤ 0.5
Cladding Non Circularity (Ovality)	%	≤ 0.7
Secondary Coating Diameter	µm	190 ± 10
Coating-cladding concentricity error	µm	≤ 10
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	≥ 100 (0.69 GPa) or 1% strain
Dynamic Tensile strength (un-aged)	GPa	≥ 3.8
Coating strip force (peak)	N	$0.4 \leq F \leq 8.9$
Fiber Curl	m	≥ 4
Stress corrosion susceptibility parameter (Dynamic Fatigue), Nd		≥ 20

Environmental Characteristics

Attribute	Value
Temperature Cycling Induced Attenuation at 1310 nm, 1550 nm, 1625 nm at -60°C to +85°C	≤ 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	≤ 0.05 dB/km
Water Immersion Induced attenuation at 1310 nm, 1550 nm, 1625 nm due to water immersion at $23 \pm 2^\circ\text{C}$	≤ 0.05 dB/km
Accelerated Aging (Temperature) Induced attenuation at 1310 nm, 1550 nm, 1625 nm due to Temperature aging at $85 \pm 2^\circ\text{C}$	≤ 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	≤ 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