

FutureGuide™-LWP

Compliant with ITU-T G.652.D

FutureGuide™-LWP is a widely deployed single-mode optical fiber with over 20 years of proven reliability. Its compliance with ITU-T G.652.D makes it suitable for a broad range of applications. Fujikura’s optimized VAD (Vapor-phase Axial Deposition) process minimizes hydroxyl (OH) ions, which cause attenuation near 1383 nm (“water peak”), enabling Low water peak attenuation. This low water peak attenuation enables wide-range (full-band) transmission through E-band (1360 - 1460 nm).

Fujikura has continuously advanced its coating technology over more than two decades, resulting in improved resistance to harsh environments such as mechanical stress, temperature fluctuations, and water immersion.

Features

- Built on advanced VAD technology, which Fujikura continues to enhance through ongoing research and development over two decades.
- Full-spectrum transmission from 1260 to 1625 nm, including E-band (1360–1460 nm).
- Versatile G.652.D-compliant fiber, applicable to various transmission formats and network architectures.

Customer’s advantages

- Widely deployed worldwide as a general-purpose optical fiber, FutureGuide™-LWP supports seamless network expansion across diverse communication areas.
- Its broad wavelength compatibility enables flexible network design and ensures adaptability to future transmission technologies.

Optical Characteristics

Attenuation	
Attenuation coefficient at 1310 nm	≤ 0.35 dB/km
Attenuation coefficient at 1383 nm	≤ 0.34 dB/km *1
Attenuation coefficient at 1550 nm	≤ 0.20 dB/km
Attenuation coefficient at 1625 nm	≤ 0.22 dB/km
Attenuation vs. wavelength *2	
1285 – 1330 nm ref. λ of 1310 nm	$\alpha \leq 0.03$ dB/km
1525 – 1575 nm ref. λ of 1550 nm	$\alpha \leq 0.02$ dB/km
Macro-bending loss	
Φ=32mm, 1 turn at 1550 nm	≤ 0.05 dB
Φ=50mm, 100 turns at 1310, 1550, 1625 nm	≤ 0.01 dB
Φ=60mm, 100 turns at 1625 nm	≤ 0.05 dB

Cut off wavelength	
Cable cut-off wavelength	≤ 1260 nm
Chromatic dispersion	
Chromatic dispersion coefficient at 1285-1330 nm	≤ 3.5 ps/(nm·km)
Chromatic dispersion coefficient at 1550 nm	13.3 - 18 ps/(nm·km)
Chromatic dispersion coefficient at 1625 nm	17.2 - 22 ps/(nm·km)
Zero-dispersion wavelength	1302 - 1324 nm
Zero-dispersion slope	0.073 - 0.092 ps/(nm ² ·km)
Polarization mode dispersion (PMD) *3	
Uncabled fiber PMD coefficient	≤ 0.1 ps/√km
Link design value PMD _α	≤ 0.08 ps/√km

*1. The attenuation at 1383nm after hydrogen aging in accordance with IEC60793-2-50

*2. The attenuation within the specified wavelength range is limited to a difference of α or less compared to the reference wavelength (ref. λ).

*3. This characteristic is guaranteed only under virtually tension-free conditions.



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Structural Characteristics

Mode field diameter at 1310 nm	9.2 ± 0.4 μm
Mode field diameter at 1550 nm	10.4 ± 0.5 μm
Cladding diameter	125.0 ± 0.7 μm
Coating diameter (uncolored)	240 ± 5 μm
Coating diameter (colored)	250 ± 10 μm
Core concentricity error	≤ 0.5 μm
Cladding non-circularity	≤ 0.7 %
Coating-Cladding concentricity	≤ 12 μm
Fiber curl radius	≥ 4.0 m

Mechanical Characteristics

Proof test *4	≥ 1 % (100 kpsi or 0.7 GPa)
Dynamic stress corrosion susceptibility parameter (n _d)	≥ 20
Coating strippability F	1.3 N ≤ F ≤ 8.9 N
Length	Up to 50.4 km

*4. The product is subjected to tensile testing throughout its entire length.

Environmental Characteristics

	Attenuation Change at 1310, 1550, 1625 nm
Temperature dependence -60 to 85 °C	≤ 0.05 dB/km Ref. temp. 23 °C
Water immersion at 23 °C ± 2 °C	≤ 0.05 dB/km
Dry heat at 85 °C ± 2 °C	≤ 0.05 dB/km Ref. temp. 23 °C
Damp Heat 85 °C at 85 %R.H.	≤ 0.05 dB/km Ref. temp. 23 °C

Performance Characteristics

	Typical value
Zero dispersion wavelength	1315 nm
Zero dispersion slope	0.086 ps/(nm ² ·km)
Effective group index of refraction N _{eff} at 1310 nm	1.4675
Effective group index of refraction N _{eff} at 1550 nm	1.4681
Effective group index of refraction N _{eff} at 1625 nm	1.4685

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Note: If you require more detailed information, please contact us by scanning the QR code below.



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