

## FutureGuide™-LWP

Compliant with ITU-T G.652.D

We offer FutureGuide™-LWP with low (zero) water peak attenuation, fully compliant with ITU-T G.652.D recommendations.

Our optimized VAD (Vapor-phase Axial Deposition) method for preform manufacturing enables to reduce hydroxyl (OH) ions, which cause attenuation increase around 1383 nm (i.e., "water peak"), down to almost zero in optical fibers. The low(zero)-water-peak attenuation supports wide-range (full-band) transmission through E-band (1360 - 1460 nm).

Additionally, our superior coating technology makes it highly robust against harsh environments such as external stresses, temperature changes, and water immersion.

### Features

- Low(zero)-water-peak attenuation complying with ITU-T G.652.
- Improved robustness against harsh environment by superior coating technology.

### Customer's advantages

- Supports wide-range (full-band) transmission through E-band(1360 - 1460nm).
- Enables stable performance for longer time after installation.

### 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 turns 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 <sup>2</sup> ·km)
Polarization mode dispersion (PMD) *3	
Uncabled fiber PMD coefficient	≤ 0.1 ps/√km
Link design value PMD <sub>0</sub>	≤ 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  $\alpha$  or less compared to the reference wavelength (ref. λ).

\*3. This characteristic is guaranteed only in a virtually tension-free condition.



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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 <sub>d</sub> )	≥ 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 <sup>2</sup> ·km)
Effective group index of refraction N <sub>eff</sub> at 1310 nm	1.4675
Effective group index of refraction N <sub>eff</sub> at 1550 nm	1.4681
Effective group index of refraction N <sub>eff</sub> 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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