中国华能
CHINA HUANENG

Huaneng Taian Optic-Electric Technology Co.,Ltd Product Introduction

Product Name: G.652.D Low Water Peak Non-Dispersion-Shifted Single-Mode Optical Fiber (B1.3)

1、Product Description:

HuaNeng Taian Optic-Electric low water peak non-dispersion-shifted single-mode optical fiber is suitable for optical transmission systems in the full wavelength band of 1260nm to 1625nm. It ensures low dispersion in the traditional 1310nm band and low water peak loss at 1383nm, fully utilizing the E-band (1360nm–1460nm) and expanding the spectral application bandwidth by nearly 100nm. The loss and dispersion in the full band of 1260nm–1625nm are optimized, while the bending loss in the L-band (1565nm–1625nm) is reduced, providing bandwidth resources for backbone networks, local area networks, and access networks.

2、Product Features:

(1) Specifications of the G.652.D fiber exceed the technical specifications of ITU-T G.652.D and IEC 60973-2-50 B1.3.

(2) Improves system transmission capacity, enables full-band transmission in 1260–1625nm, and significantly increases spectral application bandwidth..

(3) Excellent optical performance to meet the transmission requirements of high-rate DWDM and CWDM systems.

(4) Excellent PMD(Polarization Mode Dispersion) coefficient meets the requirements of long relay distance and high rate in transmission systems.

(5) Excellent equipment compatibility, compatible with existing 1310nm transmission equipments.

3、 Product Applications:

(1) Applicable to various structures of optical cables: central tube opticai cable, Layer Stranded Optical Cable, skeleton cable, ribbon optical cable, ADSS cable, OPGW cable, etc.

(2) With a wide spectral bandwidth and excellent optical characteristics, it supports different transmission technologies including Ethernet, long-distance trunk communication, Internet Protocol (IP), Asynchronous Transfer Mode (ATM), Synchronous Optical Network (SONET), and Wavelength Division Multiplexing (WDM) systems.

(3) Fiber optic systems requiring low loss and high bandwidth, especially suitable for Coarse Wavelength Division Multiplexing (CWDM), Dense Wavelength Division Multiplexing (DWDM) systems in the 1383nm band, and various special environments. The optical fiber undergoes special coating materials, coating processes, and post-processing to achieve superior mechanical characteristics and high-temperature resistance.

4、Product Standards

Optical Performance			
Performance	Conditions	Convention	Units
Attenuation	1310 nm	≤0.35	[dB/km]
	1383nm	≤0.34	[dB/km]
	1550 nm	≤0.21	[dB/km]
	1625 nm	≤0.24	[dB/km]
Attenuation wavelength characteristics	1285nm～1330nm compared to 1310nm	≤0.04	[dB/km]
	1525nm～1575nm compared to 1550nm	≤0.03	[dB/km]
Dispersion coefficient	1285-1339nm	≥-3.5 ≤3.5	[ps/(nm·km)]
	1271-1360nm	≥-5.3 ≤5.3	[ps/(nm·km)]
	1550 nm	≤18	[ps/(nm·km)]
	1625 nm	≤22	[ps/(nm·km)]

Zero dispersion		1312±12	[nm]
Zero dispersion slope		≤0.092	[ps/(nm2·km)]
Typical value		0.086	[ps/(nm2·km)]
Polarization mode dispersion	Maximum individual fiber	≤0.2	[ps/ √ km]
	Link design value (M=20,Q=0.01%)	≤0.2	[ps/ √ km]
	Typical value	0.04	[ps/ √ km]
Cut-off wavelength	Cable cut-off wavelength	≤1260	[nm]
	Fiber cut-off wavelength	1150-1330	[nm]
Mode-field diameter	1310 nm	9.2±0.4	[μm]
	1550 nm	10.4±0.8	[μm]
Effective group index of refraction	1310 nm	1.4672	
	1550 nm	1.4683	
Point discontinuities	1310 nm	≤0.05	[dB]
	1550 nm	≤0.05	[dB]
Geometrical Performance			
Cladding diameter		125.0±1.0	[μm]
Cladding non-circularity		≤1.0	[%]
Secondary Coating diameter		245±10	[μm]
Secondary Coating eccentricity		≤12.0	[μm]
Coating non-circularity		≤6.0	[%]
Core/Cladding eccentricity		≤0.6	[μm]
Fiber curl radius		≥4	[m]
Delivery length		2.1 - 50.4	[km/reel]
Environmental Behavior			
Temperature dependence induced attenuation	-60℃ to +85℃	≤0.03	[dB/km]
Water immersion dependence induced attenuation	23℃, for 30 days	≤0.03	[dB/km]
Damp heat dependence induced attenuation	85℃，85% relative humidity, for 30 days	≤0.03	[dB/km]
Dry heat aging induced attenuation	85℃，for 30 days	≤0.03	[dB/km]
Mechanical Behavior and Macro-bending Attenuation			
Proof test		≥9.2	[N]
		≥1.0	[%]
		≥100	[kpsi]
Macro-bending induced loss	1 turn 16 mm radius，1310 nm	≤0.05	[dB]
	100 turns 30 mm radius， 1550 nm	≤0.05	[dB]
	100 turns 30 mm radius， 1625 nm	≤0.05	[dB]
Coating strip force	Typical average value	1.0-5.0	[N]
	Peak value	1.3-8.9	[N]
Dynamic fatigue parameter		≥20	