



OPTICAL FIBER PRODUCTS MANUAL

FiberHome Telecommunication Technologies Co., Ltd.

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➤ **Thin Diameter Single-Mode Fiber /**

- 200 μm G.652.D Single-Mode Optical Fiber
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- 200 μm G.657.A2 Single-mode Optical Fiber
- 180 μm G.652.A2 Single-Mode Optical Fiber

Company Profile

FiberHome Communications Technologies Ltd. is a leading equipment supplier and global solution provider in the field of information technology and telecommunications. This high-tech enterprise is under the State-owned Assets Supervision and Administration Commission of the State Council. It is also the largest enterprise located in Wuhan Optical Valley, China. FiberHome was founded in 1974, formerly known as Wuhan Post and Telecommunications Research Institute. After 50 years of continuous and in-depth development, its business has been extended to research and development, manufacturing, marketing and sales, and engineering services in four major fields, namely, fiber optic communications, data network communications, wireless communications and intelligent applications. In particular, the company has provided end-to-end solutions in opto-electronic devices, optical pre-fabricated rods, fiber optic cables and optical communication systems to many countries around the world.

FiberHome® Low Water Peak Single-Mode Optical Fiber (G.652.D)

Description

FiberHome G.652.D single-mode optical fiber is designed for transmission systems covering the entire wavelength range of 1260 to 1625nm. This single-mode fiber effectively mitigates water peak losses associated with hydrogen and hydroxide ion absorption near 1383nm, extending the operational window into the E-band (1360 to 1460 nm) and thereby increasing the spectral bandwidth by approximately 100 nm. The G.652.D single-mode optical fiber comprehensively optimizes attenuation and dispersion performance across the entire wavelength range of 1260 to 1625nm, meeting the demands for high-speed, multi-channel transmission on a single fiber. Therefore, the G.652.D single-mode optical fiber stands out as one of the best choices for constructing networks.

Application

The G.652.D single-mode optical fiber is not only widely used for voice transmission, data, video, and other services, providing customers with high-cost performance and quality products, but it also extensively serves major telecommunications carriers. It is suitable for building backbone networks, local networks, access networks, and large enterprise networks.

Norms

FiberHome G.652.D optical fiber complies with or exceeds the ITU-T G.652.D and IEC 60793-2-50 B1.3 optical fiber technical specifications and Chinese national standard GB/T 9771.3.

Characteristics

- Lower water peak value
- Exhibits lower PMD (Polarization Mode Dispersion) values
- Operates within an extended wavelength range to the E-band
- Suitable for low-cost coarse wavelength division multiplexing (CWDM) systems
- Supports upgrades from CWDM to dense wavelength division multiplexing (DWDM) systems
- Precise control of geometric dimensions, resulting in low fusion splice losses
- Excellent coating protection with superior stripping performance

Low Water Peak Single-Mode Optical Fiber (G.652.D)			
Features	Conditions	Value	Unit
Optical Requirements			
Attenuation	1310 nm	≤ 0.34	dB/km
	1383 nm	≤ 0.32	dB/km
	1550 nm	≤ 0.20	dB/km
	1625 nm	≤ 0.22	dB/km
Dispersion Coefficient	1550 nm	≤ 18	ps/(nm · km)
	1625 nm	≤ 22	ps/(nm · km)
Zero Dispersion Wavelength	-	1300~1324	nm
Zero Dispersion Slope	-	≤ 0.092	ps/(nm ² · km)
PMD Link Design Value (M=20, Q=0.01%) Typical Value	-	≤ 0.1	ps/ \sqrt{km}
		≤ 0.06	ps/ \sqrt{km}
		0.04	ps/ \sqrt{km}
Cable Cutoff Wavelength (λ_{cc})	-	≤ 1260	nm
Mode Field Diameter (MFD)	1310 nm	9.2 ± 0.4	μm
	1550 nm	10.4 ± 0.5	μm
Effective Group Index Of Refraction (N_{eff})	1310 nm	1.4683	-
	1550 nm	1.4688	-
Point Discontinuities	1310 nm	≤ 0.05	dB
	1550 nm	≤ 0.05	dB
Geometrical Requirements			
Cladding Diameter	-	125 ± 0.7	μm
Cladding Non-Circularity	-	≤ 1.0	%
Coating Diameter	-	245 ± 10	μm
Coating-Cladding Concentricity Error	-	≤ 10.0	μm
Core-Cladding Concentricity Error	-	≤ 0.6	μm
Curl (radius)	-	≥ 4.0	m
Environmental Requirements (1310nm & 1550nm & 1625nm)			
Temperature Dependence	-60 °C ~ +85 °C	≤ 0.05	dB/km
Temperature-Humidity Cycling	-10 °C ~ +85 °C, 98% RH	≤ 0.05	dB/km
Water-Soaked Dependence	23 °C, for 30 days	≤ 0.05	dB/km
Damp Heat Dependence	85 °C and 85% RH, for 30 days	≤ 0.05	dB/km
Dry Heat	85 °C, for 30 days	≤ 0.05	dB/km
Mechanical Requirements			
Proof Test	-	≥ 9.0	N
Macro-Bend induced Attenuation 100 turns Φ 60 mm	1550 nm	≤ 0.1	dB
	1625 nm	≤ 0.1	dB
Coating Strip Force	Typical Average Force	1.0~5.0	N
	Peak Force	1.3~8.9	N

Dynamic Stress Corrosion Susceptibility Parameter (N_d)	-	≥ 20	-
Delivery Length	2.1~75.6		km/reel

Note: For ease of measurement, using 1 turn Φ 32 mm replaces 100 turns Φ 60 mm.

FiberHome® Bending Insensitive Single-Mode Optical Fiber (G.657)

Description

FiberHome G.657 single-mode optical fiber offers superior resistance to macro-bending, presenting as a bend-insensitive, low water peak fiber that can effectively utilize the O+S+C+L bands (1260 to 1625nm) for transmission. It features lower polarization mode dispersion (PMD), meeting the requirements for high-speed, long-distance transmission. At present, there are five types of G.657 single-mode optical fibers: G.652.D+G.657.A1, G.657.A1, H-G.657.A1, G.657.A2 and G.657.B3.

It offers good resistance to additional losses due to low macro-bending in the 1600nm wavelength region. This not only supports L-band applications but also allows for easy installation without excessive care when storing the fiber, for example, in splicing cassettes. For cable use inside buildings, the fiber supports installation with small cable bending radius and compact organizers. Excellent bending resistance within 5 to 15 mm bending radius.

Application

Short pitch cables for special application

High performance optical network operating in O-E-S-C-L band

High speed optical routes in buildings (FTTX)

Cables with low bending requirements

Norms

FiberHome G.657 optical fiber complies with or exceeds the ITU-T G.657 and IEC 60793-2-50 G.657 optical fiber technical specifications and chinese national standard GB/T 9771.3.

Characteristics

- Low attenuation satisfying the operation demand in O-E-S-C-L band
- Good bending loss resistance at short radius bends
- Low micro-bending loss for highly demanding cable designs including ribbons
- Low PMD satisfying high bit-rate and long-distance transmission requirements
- Accurate geometrical parameters that insure low slicing loss and high splicing efficiency
- Compatible with other G.652 single-mode optical fibers

G.652.D+G.657.A1 Single-Mode Fiber			
Features	Conditions	Value	Unit
Optical Requirements			
Attenuation	1310 nm	≤ 0.34	dB/km
	1383 nm (After H2-aging)	≤ 0.32	dB/km
	1550 nm	≤ 0.20	dB/km
	1625 nm	≤ 0.22	dB/km
Zero Dispersion Wavelength	-	1300~1324	nm
Zero Dispersion Slope	-	≤ 0.092	ps/(nm ² · km)
PMD	-	≤ 0.1	ps/ $\sqrt{\text{km}}$
Link Design Value (M=20, Q=0.01%)		≤ 0.06	ps/ $\sqrt{\text{km}}$
Typical Value		0.04	ps/ $\sqrt{\text{km}}$
Cable Cutoff Wavelength (λ_{cc})	-	≤ 1260	nm
Mode Field Diameter (MFD)	1310nm	9.2 ± 0.4	μm
	1550nm	10.4 ± 0.5	μm
Effective Group Index Of Refraction (Neff)	1310nm	1.4683	-
	1550nm	1.4688	-
Point Discontinuities	1310nm	≤ 0.05	dB
	1550nm	≤ 0.05	dB
Geometrical Requirements			
Cladding Diameter	-	125 ± 0.7	μm
Cladding Non-Circularity	-	≤ 0.7	%
Coating Diameter	-	245 ± 10	μm
Coating-Cladding Concentricity Error	-	≤ 12.0	μm
Core-Cladding Concentricity Error	-	≤ 0.5	μm
Curl (radius)	-	≥ 4.0	m
Environmental Requirements (1310nm & 1550nm & 1625nm)			
Temperature Dependence	-60°C~+85°C	≤ 0.05	dB/km
Temperature-Humidity Cycling	-10°C~+85°C, 4%~98% RH	≤ 0.05	dB/km
Water-Soaked Dependence	23°C, for 30 days	≤ 0.05	dB/km
Damp Heat Dependence	85°C and 85% RH, for 30 days	≤ 0.05	dB/km
Dry Heat	85°C, for 30 days	≤ 0.05	dB/km
Mechanical Requirements			
Proof Test	-	≥ 9.0	N
Macro-Bend Induced Attenuation 10 turns Φ 30mm	1550nm	≤ 0.25	dB
	1625nm	≤ 1.0	dB
Macro-Bend Induced Attenuation 1 turn Φ 20mm	1550nm	≤ 0.75	dB
	1625nm	≤ 1.5	dB
Coating Strip Force	Typical Average Force	1.0~5.0	N
	Peak Force	1.3~8.9	N
Dynamic Stress Corrosion	-	≥ 20	-

Susceptibility Parameter(N_d)		
Delivery Length	2.1~50.4	km/reel

G.657.A1 Single-Mode Fiber			
Features	Conditions	Value	Unit
Optical Requirements			
Attenuation	1310 nm	≤ 0.34	dB/km
	1383 nm (After H ₂ -aging)	≤ 0.32	dB/km
	1550 nm	≤ 0.20	dB/km
	1625 nm	≤ 0.22	dB/km
Zero Dispersion Wavelength	-	1300~1324	nm
Zero Dispersion Slope	-	≤ 0.092	ps/(nm ² · km)
PMD		≤ 0.1	ps/ $\sqrt{\text{km}}$
Link Design Value (M=20, Q=0.01%)	-	≤ 0.06	ps/ $\sqrt{\text{km}}$
Typical Value		0.04	ps/ $\sqrt{\text{km}}$
Cable Cutoff Wavelength (λ_{cc})	-	≤ 1260	nm
Mode Field Diameter (MFD)	1310nm	8.6±0.4	μm
Effective Group Index Of Refraction (N_{eff})	1310nm	1.4683	-
	1550nm	1.4688	-
Point Discontinuities	1310nm	≤ 0.05	dB
	1550nm	≤ 0.05	dB
Geometrical Requirements			
Cladding Diameter	-	125±0.7	μm
Cladding Non-Circularity	-	≤ 0.7	%
Coating Diameter	-	245±10	μm
Coating-Cladding Concentricity Error	-	≤ 12.0	μm
Core-Cladding Concentricity Error	-	≤ 0.5	μm
Curl (radius)	-	≥ 4.0	m
Environmental Requirements (1310nm & 1550nm & 1625nm)			
Temperature Dependence	-60°C~+85°C	≤ 0.05	dB/km
Temperature-Humidity Cycling	-10°C~+85°C, 4%~98% RH	≤ 0.05	dB/km
Water-Soaked Dependence	23°C, for 30 days	≤ 0.05	dB/km
Damp Heat Dependence	85°C and 85% RH, for 30 days	≤ 0.05	dB/km
Dry Heat	85°C, for 30 days	≤ 0.05	dB/km
Mechanical Requirements			
Proof Test	-	≥ 9.0	N
Macro-Bend Induced Attenuation 10 turns Φ 30mm	1550nm	≤ 0.25	dB
	1625nm	≤ 1.0	dB
Macro-Bend Induced Attenuation 1 turn Φ 20mm	1550nm	≤ 0.75	dB
	1625nm	≤ 1.5	dB
Coating Strip Force	Typical Average Force	1.0~5.0	N
	Peak Force	1.3~8.9	N

Dynamic Stress Corrosion Susceptibility Parameter(N_d)	-	≥ 20	-
Delivery Length	2.1~50.4		km/reel

H-G.657.A1 Single-Mode Fiber			
Features	Conditions	Value	Unit
Optical Requirements			
Attenuation	1310 nm	≤ 0.34	dB/km
	1383 nm (After H2-aging)	≤ 0.32	dB/km
	1550 nm	≤ 0.20	dB/km
	1625 nm	≤ 0.22	dB/km
Zero Dispersion Wavelength	-	1300~1324	nm
Zero Dispersion Slope	-	≤ 0.092	ps/(nm ² · km)
PMD		≤ 0.1	ps/ $\sqrt{\text{km}}$
Link Design Value (M=20, Q=0.01%)	-	≤ 0.06	ps/ $\sqrt{\text{km}}$
Typical Value		0.04	ps/ $\sqrt{\text{km}}$
Cable Cutoff wavelength (λ_{cc})	-	≤ 1260	nm
Mode Field Diameter (MFD)	1310 nm	9.2±0.4	μm
	1550 nm	10.4±0.5	μm
Effective Group Index Of Refraction (N_{eff})	1310 nm	1.4683	-
	1550 nm	1.4688	-
Point Discontinuities	1310 nm	≤ 0.05	dB
	1550 nm	≤ 0.05	dB
Geometrical Requirements			
Cladding Diameter	-	125±0.7	μm
Cladding Non-Circularity	-	≤ 0.7	%
Coating Diameter	-	245±10	μm
Coating-Cladding Concentricity Error	-	≤ 10.0	μm
Core-Cladding Concentricity Error	-	≤ 0.5	μm
Curl (radius)	-	≥ 4.0	m
Environmental Requirements (1310nm & 1550 nm & 1625 nm)			
Temperature Dependence	-60 °C~+85 °C	≤ 0.05	dB/km
Temperature-Humidity Cycling	-10 °C~+85 °C, 4%~98% RH	≤ 0.05	dB/km
Water-Soaked Dependence	23 °C, for 30 days	≤ 0.05	dB/km
Damp Heat Dependence	85 °C and 85% RH, for 30 days	≤ 0.05	dB/km
Dry Heat	85 °C, for 30 days	≤ 0.05	dB/km
Mechanical Requirements			
Proof Test	-	≥ 9.0	N
Macro-Bend Induced Attenuation 10 turns Φ 30mm	1550 nm	≤ 0.15	dB
	1625 nm	≤ 0.5	dB
Macro-Bend Induced Attenuation 1 turn Φ 20mm	1550 nm	≤ 0.5	dB
	1625 nm	≤ 1.5	dB
Coating Strip Force	Typical Average Force	1.0~5.0	N
	Peak Force	1.3~8.9	N
Dynamic Stress Corrosion Susceptibility Parameter(N_d)	-	≥ 20	-

Delivery Length	2.1~50.4	km/reel
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G.657.A2 Single-Mode Fiber			
Features	Conditions	Value	Unit
Optical Requirements			
Attenuation	1310 nm	≤ 0.34	dB/km
	1383 nm (After H2-aging)	≤ 0.32	dB/km
	1550 nm	≤ 0.20	dB/km
	1625 nm	≤ 0.21	dB/km
Zero Dispersion Wavelength	-	1300~1324	nm
Zero Dispersion Slope	-	≤ 0.092	ps/(nm ² .km)
PMD		≤ 0.1	ps/ $\sqrt{\text{km}}$
Link Design Value (M=20, Q=0.01%)	-	≤ 0.06	ps/ $\sqrt{\text{km}}$
Typical Value		0.04	ps/ $\sqrt{\text{km}}$
Cable Cutoff Wavelength (λ_{cc})	-	≤ 1260	nm
Mode Field Diameter (MFD)	1310 nm	8.6±0.4	μm
Effective Group Index Of Refraction (N_{eff})	1310 nm	1.4683	-
	1550 nm	1.4688	-
Point Discontinuities	1310 nm	≤ 0.05	dB
	1550 nm	≤ 0.05	dB
Geometrical Requirements			
Cladding Diameter	-	125±0.7	μm
Cladding Non-Circularity	-	≤ 0.7	%
Coating Diameter	-	245±10	μm
Coating-Cladding Concentricity Error	-	≤ 12.0	μm
Core-Cladding Concentricity Error	-	≤ 0.5	μm
Curl (radius)	-	≥ 4.0	m
Environmental Requirements (1310nm & 1550nm & 1625nm)			
Temperature Dependence	-60 °C~+85 °C	≤ 0.05	dB/km
Temperature-Humidity Cycling	-10 °C~+85 °C, 4%~98% RH	≤ 0.05	dB/km
Water-Soaked Dependence	23 °C, for 30 days	≤ 0.05	dB/km
Damp Heat Dependence	85 °C and 85% RH, for 30 days	≤ 0.05	dB/km
Dry Heat	85 °C, for 30 days	≤ 0.05	dB/km
Mechanical Requirements			
Proof Test	-	≥ 9.0	N
Macro-Bend Induced Attenuation 10 turns Φ 30mm	1550 nm	≤ 0.03	dB
	1625 nm	≤ 0.1	dB
Macro-Bend Induced Attenuation 1 turn Φ 20mm	1550 nm	≤ 0.1	dB
	1625 nm	≤ 0.2	dB
Macro-Bend Induced Attenuation 1 turn Φ 15mm	1550 nm	≤ 0.5	dB
	1625 nm	≤ 1.0	dB
Coating Strip Force	Typical Average Force	1.0~5.0	N
	Peak Force	1.3~8.9	N
Dynamic Stress Corrosion Susceptibility Parameter (N_d)	-	≥ 20	-

Delivery Length	2.1~50.4	km/reel
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G.657.B3 Single-Mode Fiber			
Features	Conditions	Value	Unit
Optical Requirements			
Attenuation	1310nm	≤0.35	dB/km
	1383nm (After H2-aging)	≤0.40	dB/km
	1550nm	≤0.21	dB/km
	1625nm	≤0.23	dB/km
Zero Dispersion Wavelength	-	1300-1324	nm
Zero Dispersion Slope	-	≤0.1	ps/(nm ² ·km)
Cable Cutoff Wavelength (λ_{cc})	-	≤1260	nm
Mode Field Diameter (MFD)	1310nm	8.6±0.4	μm
	1550nm	9.8±0.5	μm
Effective Group Index Of Refraction (N_{eff})	1310nm	1.4683	-
	1550nm	1.4688	-
Point Discontinuities	1310nm	≤0.05	dB
	1550nm	≤0.05	dB
Geometrical Requirements			
Cladding Diameter	-	125±0.7	μm
Cladding Non-Circularity	-	≤1.0	%
Coating Diameter	-	245±10	μm
Coating-Cladding Concentricity Error	-	≤12	μm
Core-Cladding Concentricity Error	-	≤0.5	μm
Curl (radius)	-	≥4.0	m
Environmental Requirements (1310nm & 1550nm & 1625nm)			
Temperature Dependence	-60°C to +85°C	≤0.05	dB/km
Temperature-Humidity Cycling	-10 °C ~ +85 °C, 4%~98% RH	≤0.05	dB/km
Water-Soaked Dependence	23°C, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85°C and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85°C, for 30 days	≤0.05	dB/km
Mechanical Requirements			
Proof Test	-	≥9.0	N
Macro-Bend Induced Attenuation 1 Turn Φ 20mm	1550nm	≤0.03	dB
	1625nm	≤0.1	dB
Macro-Bend Induced Attenuation 1 Turn Φ 15mm	1550nm	≤0.08	dB
	1625nm	≤0.25	dB
Macro-Bend Induced Attenuation 1 Turn Φ 10mm	1550nm	≤0.15	dB
	1625nm	≤0.45	dB
Coating Strip Force	Typical Average Force	1.0-5.0	N
	Peak Force	1.3-8.9	N

Dynamic Stress Corrosion Susceptibility Parameter(N _d)	-	≥20	-
Delivery Length	-	2.1-50.4	km/reel

FiberHome® Ultra Low Loss Single-Mode Optical Fiber (ULL)

Description

FiberHome ultra low loss single-mode optical fiber has the lowest attenuation loss of the series single-mode in the 1550nm wavelength window, with attenuation within 0.17dB/km. The optical fiber attenuation caused by water peak is significantly suppressed, and the optimized fiber refractive index profile also provides excellent macro-/micro-bending resistance to the fiber, which is suitable for the design and manufacture of lighter optical cables.

Application

FiberHome ultra low loss single-mode optical fiber is mainly used in ethernet, internet protocol (IP), asynchronous transfer mode (ATM), synchronous optical network (SONET) and wavelength division multiplexing system (WDM) and other transmission technologies.

Norms

The attenuation performance of the ultra low loss single-mode fiber is significantly better than that of the G.652 fiber, and its performance fully meets and exceeds the IEC 60793-2-50 fiber technical specification and complies with the ITUT G.652.B and G.654.C fiber standards.

Characteristics

- Accurate geometric control and low welding loss
- Good protection and excellent strip force stability
- excellent macro-bend resistance and flexibly adjusted use range
- Significantly reduce the attenuation level, improve the redundancy of system design and fully meet the high-speed and large-capacity requirements
- Large capacity transmission of 40G/100G and ultra 100G long distance dense wavelength division multiplexing for C-band and L-band

Ultra Low Loss Single-Mode Optical Fiber (ULL)			
Features	Conditions	Value	Unit
Optical Requirements			
Attenuation	1310nm	≤0.31	dB/km
	1550nm	≤0.17	dB/km
	1625nm	≤0.20	dB/km
Attenuation Vs Wavelength @1310nm	1285~1330nm	≤0.03	dB/km
Attenuation Vs Wavelength @1550nm	1525~1575nm	≤0.02	dB/km
Dispersion Coefficient	1550nm	≤18	ps/(nm • km)
	1625nm	≤22	ps/(nm • km)
Zero Dispersion Wavelength	-	1300~1324	nm
Zero Dispersion Slope	-	≤0.092	ps/(nm ² • km)
PMD	-	≤0.1	ps/ \sqrt{km}
Cable Cutoff Wavelength (λ_{cc})	-	≤1260	nm
Mode Field Diameter (MFD)	1310nm	9.1±0.4	μm
	1550nm	10.3±0.5	μm
Effective Group Index Of Refraction (N _{eff})	1310nm	1.463	-
	1550nm	1.463	-
Point Discontinuities	1310nm	≤0.05	dB
	1550nm	≤0.05	dB
Geometrical Requirements			
Cladding Diameter	-	125±0.7	μm
Cladding Non-Circularity	-	≤1.0	%
Coating Diameter	-	245±10	μm
Coating-Cladding Concentricity Error	-	≤12.0	μm
Core-Cladding Concentricity Error	-	≤0.6	μm
Curl (radius)	-	≥4	m
Environmental Requirements (1310nm & 1550nm & 1625nm)			
Temperature Dependence	-60°C~+85°C	≤0.05	dB/km
Temperature-Humidity Cycling	-10°C~+85°C, 4%~98% RH	≤0.05	dB/km
Water-Soaked Dependence	23°C, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85°C and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85°C, for 30 days	≤0.05	dB/km
Mechanical Requirements			
Proof Test	-	≥9.0	N
Macro-Bend Induced Attenuation 100 turns Φ 60mm	1550nm	≤0.05	dB
	1625nm	≤0.05	dB
Coating Strip Force	Typical Average Force	1.0~5.0	N
	Peak Force	1.3~8.9	N
Dynamic Stress Corrosion Susceptibility Parameter (N _d)	-	≥20	-

Delivery Length	2.1~25.2	km/reel
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Note: For ease of measurement, using 1 turn Φ 32 mm replaces 100 turns Φ 60 mm..

FiberHome® Ultra Low Loss and Large Effective Area Optical Fiber (G.654.E)

Description

FiberHome ultra low loss and large effective area (G.654.E) optical fiber has a larger effective area, reduces the nonlinear effect in the process of fiber transmission, guarantees a good system transmission performance, has a lower loss, longer transmission distance. The optical fiber meets the future super 100G communication optical fiber application.

Application

FiberHome G.654.E single-mode optical fiber is mainly used for different transmission technologies such as ethernet, internet protocol (IP), asynchronous transmission mode (ATM), synchronous optical network (SONET) and wavelength division multiplexing (WDM). It is suitable for high entry power, and can effectively suppress the nonlinear effects such as Brillouin scattering, self-phase modulation and cross-phase modulation.

Norms

FiberHome G.654.E single-mode optical fiber complies with or exceeds the requirements of IEC 60793-2-50 G.654.E and ITU-T G.654.

Characteristics

- Accurate geometric control and low welding loss
- Good protection and excellent strip force stability
- excellent macro-bend resistance and flexibly adjusted use range
- Significantly reduce the attenuation level, improve the redundancy of system design and fully meet the high-speed and large-capacity requirements
- Large capacity transmission of 40G/100G and ultra 100G long distance dense wavelength division multiplexing for C-band and L-band

Ultra Low Loss And Large Effective Area Optical Fiber (G.654.E)			
Features	Conditions	Value	Unit
Optical Requirements			
Attenuation	1550nm	≤0.17	dB/km
	1625nm	≤0.20	dB/km
Dispersion Coefficient	1550nm	≤23	ps/(nm • km)
	1625nm	≤27	ps/(nm • km)
Dispersion Slope	1550nm	0.05~0.07	ps/(nm ² • km)
PMD	-	≤0.1	ps/ \sqrt{km}
Cable Cutoff Wavelength (λ_{cc})	-	≤1500	nm
Mode Field Diameter (MFD)	1550nm	12.5±0.5	μm
Effective Area	1550nm	130	μm ²
Effective Group Index Of Refraction (N _{eff})	1550nm	1.463	-
Point Discontinuities	1310nm	≤0.05	dB
	1550nm	≤0.05	dB
Geometrical Requirements			
Cladding Diameter	-	125±1	μm
Cladding Non-Circularity	-	≤1.0	%
Coating Diameter	-	245±10	μm
Coating-Cladding Concentricity Error	-	≤12.0	μm
Core-cladding Concentricity Error	-	≤0.6	μm
Curl (radius)	-	≥4.0	m
Environmental Requirements (1550nm & 1625nm)			
Temperature Dependence	-60°C ~ +85°C	≤0.05	dB/km
Temperature-Humidity Cycling	-10°C ~ +85°C, 4% ~ 98% RH	≤0.05	dB/km
Water-Soaked Dependence	23°C, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85°C and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85°C, for 30 days	≤0.05	dB/km
Mechanical Requirements			
Proof Test	-	≥9.0	N
Macro-Bend Induced Attenuation 100 turns Φ 60mm	1550nm	≤0.1	dB
	1625nm	≤0.1	dB
Coating Strip Force	Typical Average Force	1.0~5.0	N
	Peak Force	1.3~8.9	N
Dynamic Stress Corrosion Susceptibility Parameter (N _d)	-	≥20	-
Delivery Length	2.1~25.2		km/reel

Note: For ease of measurement, using 1 turn Φ 32 mm replaces 100 turns Φ 60 mm..

FiberHome® Non-Zero Dispersion-Shifted Single-Mode Optical Fiber (G.655)

Description

FiberHome non-zero dispersion shifted single-mode optical fiber (G.655) is comprehensively optimized for attenuation and dispersion performance at the 1550nm operating wavelength. The optical fiber has minimal attenuation and small and non-zero dispersion at 1550nm, which reduces the influence of four-wave mixing, and is suitable for high rate multi-channel dense wavelength division multiplexing (DWDM) system.

Application

FiberHome non-zero dispersion shifted single-mode optical fiber has moderate dispersion and large, and effectively suppress the four-wave mixing, self-phase modulation, modulation instability and cross phase modulation, thus satisfy the demand of high output power erbium-doped fiber amplifier (EDFA) and multi-channel dense wavelength division multiplexing system (DWDM), and can be effectively applied in the high bit-rate both single-and multi-channel and long distance digital transmission systems.

Norms

FiberHome non-zero dispersion shifted single-mode optical fiber complies with or exceeds the ITU-T recommendation G.655.C/D, IEC 60793-2-50 type G.655.C/D optical fiber specification and national standard GB/T 9771.5.

Characteristics

- Good protection and excellent strip force stability
- Accurate geometric control and low welding loss
- Large effective area, reducing the nonlinear effect in the fiber transmission process
- Low attenuation, dispersion, polarization mode dispersion and zero dispersion slope meet the transmission requirements of the system
- Suitable for high speed transmission of C band (1525 to 1565nm) and L band (1565 to 1625nm)

Non-Zero Dispersion-Shifted Single-Mode Optical Fiber (G.655)			
Features	Conditions	Value	Unit
Optical Requirements			
Attenuation	1550nm	≤0.22	dB/km
	1625nm	≤0.24	dB/km
Attenuation Vs Wavelength @1550nm	1525~1575nm	≤0.02	dB/km
Dispersion Coefficient	1530~1565nm	2.0~6.0	ps/(nm • km)
	1565~1625nm	4.5~11.2	ps/(nm • km)
Zero Dispersion Wavelength	-	≤1520	nm
Zero Dispersion Slope	-	≤0.084	ps/(nm ² • km)
PMD	-	≤0.2	ps/ \sqrt{km}
Cable Cutoff Wavelength (λ_{cc})	-	≤1450	nm
Mode Field Diameter (MFD)	1550nm	9.5±0.6	μm
Effective Group Index Of Refraction (N _{eff})	1550nm	1.469	-
	1625nm	1.469	-
Point Discontinuities	1550nm	≤0.05	dB
Geometrical Requirements			
Cladding Diameter	-	125±1	μm
Cladding Non-Circularity	-	≤1	%
Coating Diameter	-	245±10	μm
Coating-Cladding Concentricity Error	-	≤12.0	μm
Core-Cladding Concentricity Error	-	≤0.6	μm
Curl (radius)	-	≥4	m
Environmental Requirements (1550nm & 1625nm)			
Temperature Dependence	-60°C~+85°C	≤0.05	dB/km
Temperature-Humidity Cycling	-10°C~+85°C, 4%~98% RH	≤0.05	dB/km
Water-Soaked Dependence	23°C, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85°C and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85°C, for 30 days	≤0.05	dB/km
Mechanical Requirements			
Proof Test	-	≥9.0	N
Macro-Bend Induced Attenuation 100 turns Φ 60mm	1550nm	≤0.05	dB
	1625nm	≤0.1	dB
Coating Strip Force	Typical Average Force	1.5	N
	Peak Force	1.3~8.9	N
Dynamic Stress Corrosion Susceptibility Parameter (N _d)	-	≥20	-
Delivery Length	2.1~25.2		km/reel

Note: For ease of measurement, using 1 turn Φ 32 mm replaces 100 turns Φ 60 mm..

FiberHome® Non-Zero Dispersion-Shifted Fiber For Wideband Optical Transport (G.656)

Description

FiberHome G.656 non-zero dispersion shift single-mode optical fiber optimized dispersion performance over the entire wavelength window from 1460nm to 1625nm. Through the profile structure design of optical fiber and the utilization of the precise control of PCVD technology, this type of optical fiber is fully optimized through all S+C+L wave band, and also possesses excellent macro-bend resistance and attenuation performance.

Application

FiberHome G.656 non-zero dispersion shift single-mode optical fiber overcomes the defects in conventional G.652.D, G.653 and G.655 optical fiber. The dispersion coefficient over S+C+L wave band is larger than 2.0ps/(nm • km), and the largest dispersion is no more than 13.4ps/(nm • km). These performances can effectively restrain the non-linear effect in the optical signal transmission process and used in dense wave division multiplexing technology in S+C+L wave band. This type of optical fiber possesses excellent dispersion coefficient and dispersion slope, greatly reduced the cost of dispersion compensation in long-distance trunk. Besides, the attenuation value of G.656 optical fiber across the entire wavelength window from 1450nm to 1625nm is smaller than 0.3dB/km and the attenuation value at 1550nm is smaller than 0.22dB/km. Thanks to these outstanding characteristics, the G.656 optical fiber can be widely used in long-distance backbone network and metropolitan area network.

Norms

FiberHome G.656 non-zero dispersion shift single-mode optical fiber exceeds the ITU-T G.656 type optical fiber technical specifications and the national standard GB/T9771.6.

Characteristics

- Outstanding macro-bend resistance
- Accurate geometric control and low welding loss
- Can be used in long-distance trunk network and metropolitan area network
- Lower dispersion coefficient in S, C and L wave band, and wider available wavelength range

Non-Zero Dispersion-Shifted Fiber For Wideband Optical Transport(G.656)			
Features	Conditions	Value	Unit
Optical Requirements			
Attenuation	1550nm	≤0.22	dB/km
	1625nm	≤0.24	dB/km
Dispersion Coefficient	1530nm~1565nm	5.5~10	ps/(nm • km)
	1565nm~1625nm	7.5~13.4	ps/(nm • km)
	1460nm~1625nm	2.0~13.4	ps/(nm • km)
Zero Dispersion Wavelength	-	≤1420	ps/(nm ² • km)
Zero Dispersion Slope	-	≤0.06	nm
PMD	-	≤0.2	ps/ \sqrt{km}
Cable Cutoff Wavelength (λ_{cc})	-	≤1260	nm
Mode Field Diameter (MFD)	1550nm	9.0±0.6	μm
Effective Group Index Of Refraction (N_{eff})	1550nm	1.469	-
Point Discontinuities	1550nm	≤0.05	dB
Geometrical Requirements			
Cladding Diameter	-	125±1	μm
Cladding Non-Circularity	-	≤1.0	%
Coating Diameter	-	245±10	μm
Coating-Cladding Concentricity Error	-	≤12.0	μm
Core-Cladding Concentricity Error	-	≤0.6	μm
Curl (radius)	-	≥4.0	m
Environmental Requirements (1550nm & 1625nm)			
Temperature Dependence	-60°C~+85°C	≤0.05	dB/km
Temperature-Humidity Cycling	-10°C~+85°C, 98% RH	≤0.05	dB/km
Water-Soaked Dependence	23°C, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85°C and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85°C, for 30 days	≤0.05	dB/km
Mechanical Requirements			
Proof Test	-	≥9.0	N
Macro-Bend Induced Attenuation 100 turns Φ 60mm	1550nm	≤0.1	dB
	1625nm	≤0.1	dB
Coating Strip Force	Typical Average Force	1.0~5.0	N
	Peak Force	1.3~8.9	N
Dynamic Stress Corrosion Susceptibility Parameter(N_d)	-	≥20	-
Delivery Length	2.1~25.2		km/reel

Note: For ease of measurement, using 1 turn Φ 32 mm replaces 100 turns Φ 60 mm..

FiberHome® 200µm Low Water Peak Single-Mode Optical Fiber (200µm G.652.D)**Description**

FiberHome G.652.D reduced diameter single-mode optical fiber (coating outer diameter 200µm) features a fiber glass core with a size of 125 µm, aligning with the dimensions of conventional 250µm outer diameter fibers widely used today. It shares the same optical parameters, including mode field diameter and cutoff wavelength, as the standard G.652.D single-mode optical fiber. Additionally, the reduced diameter G.652.D single-mode optical fiber preserves the inherent advantages of the conventional 250µm outer diameter G.652.D single-mode optical fiber.

Application

The reduced diameter G.652.D single-mode optical fiber is extensively deployed by major telecommunications carriers and is suitable for small-sized optical cables and fiber devices.

Norms

Fiberhome reduced diameter G.652.D single-mode optical fiber complies with or exceeds the ITU-T G.652.D and IEC 60793-2-50 B1.3 optical fiber technical specifications and chinese national standard GB/T 9771.3.

Characteristics

- Exhibits a lower water peak value
- Demonstrates lower PMD (Polarization Mode Dispersion) values
- Compatible with other G.652 single-mode optical fibers
- Compatible with stripping and fusion splicing equipment for 250µm outer diameter fibers
- Particularly suitable for applications in miniaturized fiber devices
- Features excellent coating protection and superior stripping performance

200μm Low Water Peak Single-Mode Optical Fiber (200μm G.652.D)			
Features	Conditions	Value	Unit
Optical Requirements			
Attenuation	1310 nm	≤0.34	dB/km
	1383 nm	≤0.32	dB/km
	1550 nm	≤0.20	dB/km
	1625 nm	≤0.22	dB/km
Dispersion Coefficient	1550 nm	≤18	ps/(nm • km)
	1625 nm	≤22	ps/(nm • km)
Zero Dispersion Wavelength	-	1300~1324	nm
Zero Dispersion Slope	-	≤0.092	ps/(nm ² • km)
PMD Link Design Value (M=20, Q=0.01%) Typical Value	-	≤0.1	ps/√km
		≤0.06	ps/√km
		0.04	ps/√km
Cable Cutoff Wavelength (λ _{cc})		≤1260	nm
Mode Field Diameter (MFD)	1310 nm	9.2±0.4	μm
	1550 nm	10.4±0.5	μm
Effective Group Index of Refraction (N _{eff})	1310 nm	1.4683	-
	1550 nm	1.4688	-
Point Discontinuities	1310 nm	≤0.05	dB
	1550 nm	≤0.05	dB
Geometrical Requirements			
Cladding Diameter	-	125±0.7	μm
Cladding Non-Circularity	-	≤0.7	%
Coating Diameter	-	200±10	μm
Coating-Cladding Concentricity Error	-	≤10.0	μm
Core-Cladding Concentricity Error	-	≤0.5	μm
Curl (radius)	-	≥4.0	m
Environmental Requirements (1310nm & 1550nm & 1625nm)			
Temperature Dependence	-60 °C~+85 °C	≤0.05	dB/km
Temperature-Humidity Cycling	-10 °C~+85 °C, 98% RH	≤0.05	dB/km
Water-Soaked Dependence	23 °C, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85 °C and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85 °C, for 30 days	≤0.05	dB/km
Mechanical Requirements			
Proof Test	-	≥9.0	N
Macro-Bend Induced Attenuation 100 turns Φ 60mm	1550 nm	≤0.1	dB
	1625 nm	≤0.1	dB
Coating Strip Force	Typical Average Force	1.0~5.0	N
	Peak Force	1.3~8.9	N

Dynamic Stress Corrosion Susceptibility Parameter (N_d)	-	≥ 20	-
Delivery Length	2.1~75.6		km/reel

Note: For ease of measurement, using 1 turn Φ 32 mm replaces 100 turns Φ 60 mm..

FiberHome® 200µm Bending Insensitive Single-Mode Optical Fiber(200µm G.657.A1)

Description

FiberHome reduced diameter G.657 single-mode optical fiber (with a coating outer diameter of 200µm) seamlessly combines the characteristics of bend insensitivity. The fiber glass core size is 125µm, aligning with the dimensions of widely used conventional 250µm outer diameter fibers. It shares identical optical parameters, including mode field diameter and cutoff wavelength, with G.657 fibers. Furthermore, the reduced diameter G.657 single-mode optical Fiber inherits the inherent advantages of G.657 fibers.

Application

The reduced diameter G.657 single-mode optical fiber is suitable for optical cables of various structures, small-sized optical cables, fiber devices, and high-speed FTTX optical pathways. It exhibits excellent performance in the O+S+C+L bands.

Norms

The reduced diameter G.657 single-mode optical fiber complies with and surpasses the specifications outlined in ITU G.657 and IEC 60793-2-50 standards, particularly meeting the criteria set for ITU-T G.657.A1/G.657.A2.

Characteristics

- Effectively reduces the size and weight of optical cables, making it more suitable for micro-cables and miniaturized optical cables
- Particularly well-suited for applications in miniaturized fiber devices
- Low attenuation suitable for the O+S+C+L operating bands
- Compatible with other G.657 single-mode optical fibers
- Compatible with stripping and fusion splicing equipment for 250µm outer diameter fibers

200μm G.652.D+G.657.A1 Single-mode Optical Fiber			
Features	Conditions	Value	Unit
Optical Requirements			
Attenuation	1310 nm	≤0.34	dB/km
	1383 nm(After H2-aging)	≤0.32	dB/km
	1550 nm	≤0.20	dB/km
	1625 nm	≤0.22	dB/km
Zero Dispersion Wavelength	-	1300~1324	nm
Zero Dispersion Slope	-	≤0.092	ps/(nm ² •km)
PMD	-	≤0.1	ps/√km
Link Design Value (M=20, Q=0.01%)		≤0.06	ps/√km
Typical Value		0.04	ps/√km
Cable Cutoff Wavelength (λ _{cc})	-	≤1260	nm
Mode Field Diameter (MFD)	1310 nm	9.2±0.4	μm
	1550 nm	10.4±0.5	μm
Effective Group Index Of Refraction (N _{eff})	1310 nm	1.4683	-
	1550 nm	1.4688	-
Point Discontinuities	1310 nm	≤0.05	dB
	1550 nm	≤0.05	dB
Geometrical Requirements			
Cladding Diameter	-	125±0.7	μm
Cladding Non-Circularity	-	≤0.7	%
Coating Diameter	-	200±10	μm
Coating-Cladding Concentricity Error	-	≤12.0	μm
Core-Cladding Concentricity Error	-	≤0.5	μm
Curl (radius)	-	≥4.0	m
Environmental Requirements (1310nm & 1550 nm & 1625 nm)			
Temperature Dependence	-60 °C~+85 °C	≤0.05	dB/km
Temperature-Humidity Cycling	-10°C~+85°C, 4%~98% RH	≤0.05	dB/km
Water-Soaked Dependence	23 °C, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85 °C and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85 °C, for 30 days	≤0.05	dB/km
Mechanical Requirements			
Proof Test	-	≥9.0	N
Macro-Bend Induced Attenuation 10 turns Φ 30mm	1550 nm	≤0.25	dB
	1625 nm	≤1.0	dB
Macro-bBend Induced Attenuation 1 turn Φ 20mm	1550 nm	≤0.75	dB
	1625 nm	≤1.5	dB

Coating Strip Force	Typical Average Force	1.0~5.0	N
	Peak Force	1.3~8.9	N
Dynamic Stress Corrosion Susceptibility Parameter(N _d)	-	≥20	-
Delivery Length	2.1~50.4		km/reel

200μm G.657.A1 Single-mode Fiber			
Features	Conditions	Value	Unit
Optical Requirements			
Attenuation	1310 nm	≤0.34	dB/km
	1383 nm(After H2-aging)	≤0.32	dB/km
	1550 nm	≤0.20	dB/km
	1625 nm	≤0.22	dB/km
Zero Dispersion Wavelength	-	1300~1324	nm
Zero Dispersion Slope	-	≤0.092	ps/(nm ² ·km)
PMD		≤0.1	ps/√km
Link Design Value (M=20, Q=0.01%)	-	≤0.06	ps/√km
Typical Value		0.04	ps/√km
Cable Cutoff Wavelength (λ _{cc})	-	≤1260	nm
Mode Field Diameter (MFD)	1310 nm	8.6±0.4	μm
Effective Group Index Of Refraction (N _{eff})	1310 nm	1.4683	-
	1550 nm	1.4688	-
Point Discontinuities	1310 nm	≤0.05	dB
	1550 nm	≤0.05	dB
Geometrical Requirements			
Cladding Diameter	-	125±0.7	μm
Cladding Non-Circularity	-	≤0.7	%
Coating Diameter	-	200±10	μm
Coating-Cladding Concentricity Error	-	≤12.0	μm
Core-Cladding Concentricity Error	-	≤0.5	μm
Curl (radius)	-	≥4.0	m
Environmental Requirements (1310nm & 1550 nm & 1625 nm)			
Temperature Dependence	-60 °C~+85 °C	≤0.05	dB/km
Temperature-Humidity Cycling	-10°C~+85°C, 4%~98% RH	≤0.05	dB/km
Water-Soaked Dependence	23 °C, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85 °C and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85 °C, for 30 days	≤0.05	dB/km
Mechanical Requirements			
Proof Test	-	≥9.0	N
Macro-Bend Induced Attenuation 10 turns Φ 30mm	1550 nm	≤0.25	dB
	1625 nm	≤1.0	dB
Macro-bBend Induced Attenuation 1 turn Φ 20mm	1550 nm	≤0.75	dB
	1625 nm	≤1.5	dB
Coating Strip Force	Typical Average Force	1.0~5.0	N
	Peak Force	1.3~8.9	N
Dynamic Stress Corrosion Susceptibility Parameter(N _d)	-	≥20	-

Delivery Length	2.1~50.4	km/reel
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200μm H-G.657.A1 Single-Mode Fiber			
Features	Conditions	Value	Unit
Optical Requirements			
Attenuation	1310 nm	≤0.34	dB/km
	1383 nm (After H2-aging)	≤0.32	dB/km
	1550 nm	≤0.20	dB/km
	1625 nm	≤0.22	dB/km
Zero Dispersion Wavelength	-	1300~1324	nm
Zero Dispersion Slope	-	≤0.092	ps/(nm ² · km)
PMD	-	≤0.1	ps/√km
Link Design Value (M=20, Q=0.01%)		≤0.06	ps/√km
Typical Value		0.04	ps/√km
Cable Cutoff wavelength (λ _{cc})	-	≤1260	nm
Mode Field Diameter (MFD)	1310 nm	9.2±0.4	μm
	1550 nm	10.4±0.5	μm
Effective Group Index Of Refraction (N _{eff})	1310 nm	1.4683	-
	1550 nm	1.4688	-
Point Discontinuities	1310 nm	≤0.05	dB
	1550 nm	≤0.05	dB
Geometrical Requirements			
Cladding Diameter	-	125±0.7	μm
Cladding Non-Circularity	-	≤0.7	%
Coating Diameter	-	200±10	μm
Coating-Cladding Concentricity Error	-	≤10.0	μm
Core-Cladding Concentricity Error	-	≤0.5	μm
Curl (radius)	-	≥4.0	m
Environmental Requirements (1310nm & 1550 nm & 1625 nm)			
Temperature Dependence	-60 °C~+85 °C	≤0.05	dB/km
Temperature-Humidity Cycling	-10 °C~+85 °C, 4%~98% RH	≤0.05	dB/km
Water-Soaked Dependence	23 °C, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85 °C and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85 °C, for 30 days	≤0.05	dB/km
Mechanical Requirements			
Proof Test	-	≥9.0	N
Macro-Bend Induced Attenuation 10 turns Φ 30mm	1550 nm	≤0.15	dB
	1625 nm	≤0.5	dB
Macro-Bend Induced Attenuation 1 turn Φ 20mm	1550 nm	≤0.5	dB
	1625 nm	≤1.5	dB
Coating Strip Force	Typical Average Force	1.0~5.0	N
	Peak Force	1.3~8.9	N
Dynamic Stress Corrosion	-	≥20	-

Susceptibility Parameter(N_d)			
Delivery Length	2.1~50.4		km/reel

200μm G.657.A2 Single-Mode Fiber			
Features	Conditions	Value	Unit
Optical Requirements			
Attenuation	1310 nm	≤0.34	dB/km
	1383 nm (After H2-aging)	≤0.32	dB/km
	1550 nm	≤0.20	dB/km
	1625 nm	≤0.21	dB/km
Zero Dispersion Wavelength	-	1300~1324	nm
Zero Dispersion Slope	-	≤0.092	ps/(nm ² .km)
PMD		≤0.1	ps/√km
Link Design Value (M=20, Q=0.01%)	-	≤0.06	ps/√km
Typical Value		0.04	ps/√km
Cable Cutoff Wavelength (λ _{cc})	-	≤1260	nm
Mode Field Diameter (MFD)	1310 nm	8.6±0.4	μm
Effective Group Index Of Refraction (N _{eff})	1310 nm	1.4683	-
	1550 nm	1.4688	-
Point Discontinuities	1310 nm	≤0.05	dB
	1550 nm	≤0.05	dB
Geometrical Requirements			
Cladding Diameter	-	125±0.7	μm
Cladding Non-Circularity	-	≤0.7	%
Coating Diameter	-	200±10	μm
Coating-Cladding Concentricity Error	-	≤12.0	μm
Core-Cladding Concentricity Error	-	≤0.5	μm
Curl (radius)	-	≥4.0	m
Environmental Requirements (1310nm & 1550nm & 1625nm)			
Temperature Dependence	-60 °C~+85 °C	≤0.05	dB/km
Temperature-Humidity Cycling	-10 °C~+85 °C, 4%~98% RH	≤0.05	dB/km
Water-Soaked Dependence	23 °C, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85 °C and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85 °C, for 30 days	≤0.05	dB/km
Mechanical Requirements			
Proof Test	-	≥9.0	N
Macro-Bend Induced Attenuation 10 turns Φ 30mm	1550 nm	≤0.03	dB
	1625 nm	≤0.1	dB
Macro-Bend Induced Attenuation 1 turn Φ 20mm	1550 nm	≤0.1	dB
	1625 nm	≤0.2	dB
Macro-Bend Induced Attenuation 1 turn Φ15mm	1550 nm	≤0.5	dB
	1625 nm	≤1.0	dB
Coating Strip Force	Typical Average Force	1.0~5.0	N

	Peak Force	1.3~8.9	N
Dynamic Stress Corrosion Susceptibility Parameter (N_d)	-	≥ 20	-
Delivery Length	2.1~50.4		km/reel
180 μ m G.657.A2 Single-Mode Fiber			
Features	Conditions	Value	Unit
Optical Requirements			
Attenuation	1310 nm	≤ 0.34	dB/km
	1383 nm (After H2-aging)	≤ 0.32	dB/km
	1550 nm	≤ 0.20	dB/km
	1625 nm	≤ 0.21	dB/km
Zero Dispersion Wavelength	-	1300~1324	nm
Zero Dispersion Slope	-	≤ 0.092	ps/(nm ² .km)
PMD		≤ 0.1	ps/ $\sqrt{\text{km}}$
Link Design Value (M=20, Q=0.01%)	-	≤ 0.06	ps/ $\sqrt{\text{km}}$
Typical Value		0.04	ps/ $\sqrt{\text{km}}$
Cable Cutoff Wavelength (λ_{cc})	-	≤ 1260	nm
Mode Field Diameter (MFD)	1310 nm	8.6 \pm 0.4	μ m
Effective Group Index Of Refraction (N_{eff})	1310 nm	1.4683	-
	1550 nm	1.4688	-
Point Discontinuities	1310 nm	≤ 0.05	dB
	1550 nm	≤ 0.05	dB
Geometrical Requirements			
Cladding Diameter	-	125 \pm 0.7	μ m
Cladding Non-Circularity	-	≤ 0.7	%
Coating Diameter	-	180 \pm 10	μ m
Coating-Cladding Concentricity Error	-	≤ 12.0	μ m
Core-Cladding Concentricity Error	-	≤ 0.5	μ m
Curl (radius)	-	≥ 4.0	m
Environmental Requirements (1310nm & 1550nm & 1625nm)			
Temperature Dependence	-60 °C ~ +85 °C	≤ 0.05	dB/km
Temperature-Humidity Cycling	-10 °C ~ +85 °C, 4%~98% RH	≤ 0.05	dB/km
Water-Soaked Dependence	23 °C, for 30 days	≤ 0.05	dB/km
Damp Heat Dependence	85 °C and 85% RH, for 30 days	≤ 0.05	dB/km
Dry Heat	85 °C, for 30 days	≤ 0.05	dB/km
Mechanical Requirements			
Proof Test	-	≥ 9.0	N
Macro-Bend Induced Attenuation 10 turns Φ 30mm	1550 nm	≤ 0.03	dB
	1625 nm	≤ 0.1	dB
Macro-Bend Induced Attenuation	1550 nm	≤ 0.1	dB

1 turn Φ 20mm	1625 nm	≤ 0.2	dB
Macro-Bend Induced Attenuation 1 turn Φ 15mm	1550 nm	≤ 0.5	dB
	1625 nm	≤ 1.0	dB
Coating Strip Force	Typical Average Force	1.0~5.0	N
	Peak Force	1.3~8.9	N
Dynamic Stress Corrosion Susceptibility Parameter (N_d)	-	≥ 20	-
Delivery Length	2.1~50.4		km/reel