OPTICAL FIBER PRODUCTS MANUAL

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Company Proflie

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 ≤0.06 0.04	$ps/\sqrt{km}$ $ps/\sqrt{km}$ $ps/\sqrt{km}$
Cable Cutoff Wavelength (λcc)	-	≤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（Neff）	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 ℃～+85 ℃	≤0.05	dB/km
Temperature-Humidity Cycling	-10 ℃～+85 ℃, 98% RH	≤0.05	dB/km
Water-Soaked Dependence	23 ℃, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85 ℃ and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85 ℃, 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 Link Design Value（M=20，Q=0.01%) Typical Value	-	≤0.1 ≤0.06 0.04	ps/$\sqrt{km}$ ps/$\sqrt{km}$ ps/$\sqrt{km}$
Cable Cutoff Wavelength (λcc)	-	≤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℃～+85℃	≤0.05	dB/km
Temperature-Humidity Cycling	-10℃～+85℃, 4%~98% RH	≤0.05	dB/km
Water-Soaked Dependence	23℃, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85℃ and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85℃, 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

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/(nm² • km)
PMD Link Design Value（M=20，Q=0.01%) Typical Value	-	≤0.1 ≤0.06 0.04	ps/√km ps/√km ps/√km
Cable Cutoff Wavelength (λcc)	-	≤1260	nm
Mode Field Diameter (MFD)	1310nm	8.6±0.4	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℃～+85℃	≤0.05	dB/km
Temperature-Humidity Cycling	-10℃～+85℃, 4%~98% RH	≤0.05	dB/km
Water-Soaked Dependence	23℃, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85℃ and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85℃, 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

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 Link Design Value（M=20，Q=0.01%) Typical Value	-	≤0.1 ≤0.06 0.04	ps/$\sqrt{km}$ ps/$\sqrt{km}$ ps/$\sqrt{km}$
Cable Cutoff wavelength (λcc)	-	≤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（Neff）	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 ℃～+85 ℃	≤0.05	dB/km
Temperature-Humidity Cycling	-10 ℃～+85 ℃, 4%~98% RH	≤0.05	dB/km
Water-Soaked Dependence	23 ℃, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85 ℃ and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85 ℃, 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

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/(nm2.km)
PMD Link Design Value（M=20，Q=0.01%） Typical Value	-	≤0.1 ≤0.06 0.04	ps/$\sqrt{km}$ ps/$\sqrt{km}$ ps/$\sqrt{km}$
Cable Cutoff Wavelength (λcc)	-	≤1260	nm
Mode Field Diameter (MFD)	1310 nm	8.6±0.4	μm
Effective Group Index Of Refraction（Neff）	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 ℃～+85 ℃	≤0.05	dB/km
Temperature-Humidity Cycling	-10 ℃～+85 ℃, 4%~98% RH	≤0.05	dB/km
Water-Soaked Dependence	23 ℃, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85 ℃ and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85 ℃, 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

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（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	-	≤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℃ to +85℃	≤0.05	dB/km
Temperature-Humidity Cycling	-10 ℃～+85 ℃, 4%~98% RH	≤0.05	dB/km
Water-Soaked Dependence	23℃, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85℃ and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85℃, 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 TurnΦ 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 (λcc)	-	≤1260	nm
Mode Field Diameter (MFD)	1310nm	9.1±0.4	μm
	1550nm	10.3±0.5	μm
Effective Group Index Of Refraction （Neff）	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℃～+85℃	≤0.05	dB/km
Temperature-Humidity Cycling	-10℃～+85℃, 4%～98% RH	≤0.05	dB/km
Water-Soaked Dependence	23℃, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85℃ and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85℃, 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

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 (λcc)	-	≤1500	nm
Mode Field Diameter (MFD)	1550nm	12.5±0.5	μm
Effective Area	1550nm	130	μm^2
Effective Group Index Of Refraction（Neff）	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℃～+85℃	≤0.05	dB/km
Temperature-Hμmidity Cycling	-10℃～+85℃, 4%～98% RH	≤0.05	dB/km
Water-Soaked Dependence	23℃, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85℃ and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85℃, 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 (λcc)	-	≤1450	nm
Mode Field Diameter (MFD)	1550nm	9.5±0.6	μm
Effective Group Index Of Refraction （Neff ）	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℃～+85℃	≤0.05	dB/km
Temperature-Humidity Cycling	-10℃～+85℃, 4%～98% RH	≤0.05	dB/km
Water-Soaked Dependence	23℃, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85℃ and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85℃, 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-liner 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 (λcc)	-	≤1260	nm
Mode Field Diameter (MFD)	1550nm	9.0±0.6	μm
Effective Group Index Of Refraction（Neff）	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℃～+85℃	≤0.05	dB/km
Temperature-Humidity Cycling	-10℃～+85℃, 98% RH	≤0.05	dB/km
Water-Soaked Dependence	23℃, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85℃ and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85℃, 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/(nm² • km)
PMD Link Design Value（M=20，Q=0.01%) Typical Value	-	≤0.1 ≤0.06 0.04	$ps/\sqrt{km}$ $ps/\sqrt{km}$ $ps/\sqrt{km}$
Cable Cutoff Wavelength (λcc)		≤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（Neff）	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 ℃～+85 ℃	≤0.05	dB/km
Temperature-Humidity Cycling	-10 ℃～+85 ℃, 98% RH	≤0.05	dB/km
Water-Soaked Dependence	23 ℃, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85 ℃ and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85 ℃, 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 Link Design Value（M=20，Q=0.01%) Typical Value	-	≤0.1 ≤0.06 0.04	ps/$\sqrt{km}$ ps/$\sqrt{km}$ ps/$\sqrt{km}$
Cable Cutoff Wavelength (λcc)	-	≤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（Neff）	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 ℃～+85 ℃	≤0.05	dB/km
Temperature-Humidity Cycling	-10℃～+85℃, 4%~98% RH	≤0.05	dB/km
Water-Soaked Dependence	23 ℃, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85 ℃ and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85 ℃, 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.A1Single-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 Link Design Value（M=20，Q=0.01%) Typical Value	-	≤0.1 ≤0.06 0.04	ps/$\sqrt{km}$ ps/$\sqrt{km}$ ps/$\sqrt{km}$
Cable Cutoff Wavelength (λcc)	-	≤1260	nm
Mode Field Diameter (MFD)	1310 nm	8.6±0.4	μm
Effective Group Index Of Refraction（Neff）	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 ℃～+85 ℃	≤0.05	dB/km
Temperature-Humidity Cycling	-10℃～+85℃, 4%~98% RH	≤0.05	dB/km
Water-Soaked Dependence	23 ℃, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85 ℃ and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85 ℃, 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 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 Link Design Value（M=20，Q=0.01%) Typical Value	-	≤0.1 ≤0.06 0.04	ps/$\sqrt{km}$ ps/$\sqrt{km}$ ps/$\sqrt{km}$
Cable Cutoff wavelength (λcc)	-	≤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（Neff）	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 ℃～+85 ℃	≤0.05	dB/km
Temperature-Humidity Cycling	-10 ℃～+85 ℃, 4%~98% RH	≤0.05	dB/km
Water-Soaked Dependence	23 ℃, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85 ℃ and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85 ℃, 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/(nm2.km)
PMD Link Design Value（M=20，Q=0.01%） Typical Value	-	≤0.1 ≤0.06 0.04	ps/$\sqrt{km}$ ps/$\sqrt{km}$ ps/$\sqrt{km}$
Cable Cutoff Wavelength (λcc)	-	≤1260	nm
Mode Field Diameter (MFD)	1310 nm	8.6±0.4	μm
Effective Group Index Of Refraction（Neff）	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 ℃～+85 ℃	≤0.05	dB/km
Temperature-Humidity Cycling	-10 ℃～+85 ℃, 4%~98% RH	≤0.05	dB/km
Water-Soaked Dependence	23 ℃, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85 ℃ and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85 ℃, 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
180μm 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/(nm2.km)
PMD Link Design Value（M=20，Q=0.01%） Typical Value	-	≤0.1 ≤0.06 0.04	ps/$\sqrt{km}$ ps/$\sqrt{km}$ ps/$\sqrt{km}$
Cable Cutoff Wavelength (λcc)	-	≤1260	nm
Mode Field Diameter (MFD)	1310 nm	8.6±0.4	μm
Effective Group Index Of Refraction（Neff）	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	-	180±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 ℃～+85 ℃	≤0.05	dB/km
Temperature-Humidity Cycling	-10 ℃～+85 ℃, 4%~98% RH	≤0.05	dB/km
Water-Soaked Dependence	23 ℃, for 30 days	≤0.05	dB/km
Damp Heat Dependence	85 ℃ and 85% RH, for 30 days	≤0.05	dB/km
Dry Heat	85 ℃, 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	-	≥20	-

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

FiberHome® Multi-Mode Optical Fiber (OM1)

Description

FiberHome 62.5/125μm (A1-OM1) multimode optical fiber is a graded-index multimode optical fiber with a 62.5μm core diameter and a 125μm cladding diameter. The optical fiber is comprehensively optimized for performance at the 850nm and 1300nm operating wavelengths. The optical fiber has the high bandwidth and low attenuation, which is satisfying the sue at 850nm and 1300nm.

Application

Due to the low attenuation and high bandwidth, fiberhome 62.5/125μm multimode optical fiber can be widely applied in local area networks (LAN), video, voice and data services. It's suited to gigabit ethernet (IEEE802.3z) using laser or light emitting diode (LED) sources. Because of the advantages of the manufacturing process (PCVD), such as extremely refined refractive index (RI) profile control, stability, etc. FiberHome 62.5/125μm multimode fiber offer the highest bandwidth available in the market.

FiberHome 62.5/125μm multimode optical fiber is applicable in all cable types including ribbon cable, loose tube stranded cable, slotted core cable, central tube cable and tight-buffer cable.

Norms

FiberHome 62.5/125μm (A1-OM1) multimode fiber complies with or exceeds IEC60793-2-10 A1-OM1optical fiber specification.

FiberHome tightens many parameters so as to offer more conveniences to customers.

Characteristics

- Designed for use at 850nm and 1300nm
- Low attenuation and high bandwidth, which overfills the transmission demand of IEEE802.3z gigabit ethernet
- Good protection by dual layer UV coating
- Excellent strip force stability

Multimode Optical Fiber (OM1)			
Features	Conditions	Value	Unit
Optical Requirements			
Attenuation	850nm	≤2.9	dB/km
	1300nm	≤0.7	dB/km
Bandwidth	850nm	≥200	MHz • km
	1300nm	≥200	MHz • km
Numerical Aperture	-	0.275±0.015	-
Effective Group Index Of Refraction（Neff）	850nm	1.493	-
	1300nm	1.488	-
Zero Dispersion Wavelength	-	1320～1365	nm
Zero Dispersion Slope	1320～1348nm	≤0.11	ps/(nm^2 • km)
	1348～1365nm	≤0.001 （1458-λ_0）	ps/(nm^2 • km)
Geometrical Requirements			
Core Diameter	-	62.5±2.5	μm
Core Non-Circularity	-	≤5.0	%
Cladding Diameter	-	125±2	μm
Cladding Non-Circularity	-	≤1.0	%
Core-Cladding Concentricity Error	-	≤1.5	μm
Coating Diameter	-	245±7	μm
Coating-Cladding Concentricity Error	-	≤10	μm
Environmental Requirements（850nm & 1300nm）			
Temperature Dependence	-60℃～+85℃	≤0.1	dB/km
Water-Soaked Dependence	23℃, for 30 days	≤0.1	dB/km
Damp Heat Dependence	85℃ and 85% RH, for 30 days	≤0.1	dB/km
Dry Heat	85℃, for 30 days	≤0.1	dB/km
Mechanical Requirements			
Proof Test	-	≥100	kpsi
Macro-Bend Induced Attenuation 100 turns Φ 75mm	850nm	≤0.5	dB
	1300nm	≤0.5	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	1.1~16.8		km/reel

FiberHome® Multimode Optical Fiber (OM2/OM3/OM4)

Description

FiberHome multimode optical fiber (OM2/OM3/OM4) is designed specifically for high speed local area network (LAN) such as gigabit or higher speeds ethernet. With the extremely refined refractive index profile owing to the optimized PCVD process, fiberhome multimode optical fiber eliminates the differential mode delay (CMD) phenomenon observed on the conventional fibers in gigabit applications. Thus, there is no need for expensive CMC compensation. FiberHome multimode optical fiber satisfies the sue at 850nm and 1300nm. The maximum link distances (up to 2000 meter) for gigabit ethernet system are the longest distances available in the world.

Application

The outstanding optical performance of fiberhome multimode optical fiber makes it suitable for applications including not only high-speed LAN but also lower bit-rate systems such as FDDI, Ethernet, ATM, etc. FiberHome multimode optical fiber supports up to 2000 meter of link distances for lower bit-rate systems. A wide variety of light sources can be sued in combination with fiberhome multimode optical fiber, such as LEDs, 850nm VCSELs, 780nm CD lasers and 1300nm Fabry-Perot lasers.

FiberHome multimode optical fiber is applicable in all cable types including ribbon cable, loose tube stranded cable, slotted core cable, central tube cable and tight-buffer cable.

Norms

FiberHome multimode optical fiber complies with or exceeds IEC793-2-10 A1-OM2/OM3/OM4 optical fiber specifications.

Characteristics

- Designed for use at 850nm and 1300nm
- Suited to applications in gigabit ethernet and higher bit-rat systems
- No need to use expensive DMD compensation in gigabit ethernet
- Enabling the longest link distances compared with congener products
- Good protection by dual layer UV coating
- Excellent strip force stability
- Lower macro-bending loss

Multimode Optical Fiber (OM2)			
Features	Conditions	Value	Unit
Optical Requirements			
Attenuation	850nm	≤2.5	dB/km
	1300nm	≤0.8	dB/km
Effective Group Index Of Refraction（Neff）	850nm	1.475	-
	1300nm	1.473	-
Bandwidth	850nm	≥500	MHz • km
	1300nm	≥500	MHz • km
Numerical Aperture	-	0.20±0.015	-
Zero Dispersion Wavelength	-	1295～1340	nm
Zero Dispersion Slope	1295～1310nm	≤0.105	ps/(nm^2 • km)
	1310～1340nm	≤0.000375（1590-λ_0）	ps/(nm^2 • km)
Point Discontinuities	1300nm	≤0.10	dB
Geometrical Requirements			
Core Diameter	-	50±2.5	μm
Core Non-Circularity	-	≤5.0	%
Cladding Diameter	-	125±1	μm
Cladding Non-Circularity	-	≤1.0	%
Core-Cladding Concentricity Error	-	≤1.5	μm
Coating Diameter	-	245±7	μm
Coating-Cladding Concentricity Error	-	≤10	μm
Environmental Requirements（850nm & 1300nm）			
Temperature Dependence	-60℃～+85℃	≤0.1	dB/km
Water-Soaked Dependence	23℃, for 30 days	≤0.1	dB/km
Damp Heat Dependence	85℃ and 85% RH, for 30 days	≤0.1	dB/km
Dry Heat	85℃, for 30 days	≤0.1	dB/km
Mechanical Requirements			
Proof Test	-	≥9.0	N
Macro-Bend Induced Attenuation 2 turns Φ 30mm	850nm	≤0.1	dB
	1300nm	≤0.3	dB
Macro-Bend Induced Attenuation 2 turns Φ 15mm	850nm	≤0.2	dB
	1300nm	≤0.5	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	1.1~8.8		km/reel

Multimode Optical Fiber (OM3)			
Features	Conditions	Value	Unit
Optical Requirements			
Attenuation	850nm	≤2.5	dB/km
	1300nm	≤0.8	dB/km
Effective Group Index Of Refraction（Neff）	850nm	1.475	-
	1300nm	1.473	-
Bandwidth	850nm	≥1500	MHz • km
	1300nm	≥500	MHz • km
Effective Bandwidth	850nm	≥2000	MHz • km
Numerical Aperture	-	0.20±0.015	
DMD	-	complies with or exceeds IEC 60793-2-10	-
Zero Dispersion Wavelength	-	1295～1340	nm
Zero Dispersion Slope	1295～1310nm	≤0.105	ps/(nm^2 • km)
	1310～1340nm	≤0.000375（1590-λ_0）	ps/(nm^2 • km)
Point Discontinuities	1300nm	≤0.10	dB
Geometrical Requirements			
Core Diameter	-	50±2.5	μm
Core Non-Circularity	-	≤5.0	%
Cladding Diameter	-	125±1	μm
Cladding Non-Circularity	-	≤1.0	%
Core-Cladding Concentricity Error	-	≤1.5	μm
Coating Diameter	-	245±7	μm
Coating-Cladding Concentricity Error	-	≤10.0	μm
Environmental Requirements（850nm & 1300nm）			
Temperature Dependence	-60℃～+85℃	≤0.10	dB/km
Water-Soaked Dependence	23℃, for 30 days	≤0.10	dB/km
Damp Heat Dependence	85℃ and 85% RH, for 30 days	≤0.10	dB/km
Dry Heat	85℃, for 30 days	≤0.10	dB/km
Mechanical Requirements			
Proof Test	-	≥9.0	N
Macro-Bend Induced Attenuation 2 turns Φ 30mm	850nm	≤0.1	dB
	1300nm	≤0.3	dB
Macro-Bend Induced Attenuation 2 turns Φ 15mm	850nm	≤0.2	dB
	1300nm	≤0.5	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	1.1~8.8		km/reel

Multimode Optical Fiber (OM4)			
Features	Conditions	Value	Unit
Optical Requirements			
Attenuation	850nm	≤2.5	dB/km
	1300nm	≤0.8	dB/km
Effective Group Index Of Refraction（Neff）	850nm	1.475	-
	1300nm	1.473	-
Bandwidth	850nm	≥3500	MHz • km
	1300nm	≥500	MHz • km
Effective Bandwidth	850nm	≥4700	MHz • km
Numerical Aperture	-	0.20±0.015	-
DMD	-	complies with or exceeds IEC 60793-2-10	-
Zero Dispersion Wavelength		1295～1340	nm
Zero Dispersion Slope	1295～1310nm	≤0.105	ps/(nm^2 • km)
	1310～1340nm	≤0.000375（1590-λ_0）	ps/(nm^2 • km)
Point Discontinuities	1300nm	≤0.10	dB
Geometrical Requirements			
Core Diameter	-	50±2.5	μm
Core Non-Circularity	-	≤5.0	%
Cladding Diameter	-	125±1	μm
Cladding Non-Circularity	-	≤1.0	%
Core-Cladding Concentricity Error	-	≤1.5	μm
Coating Diameter	-	245±7	μm
Coating-Cladding Concentricity Error	-	≤10	μm
Environmental Requirements（850nm & 1300nm）			
Temperature Dependence	-60℃～+85℃	≤0.1	dB/km
Water-Soaked Dependence	23℃, for 30 days	≤0.1	dB/km
Damp Heat Dependence	85℃ and 85% RH, for 30 days	≤0.1	dB/km
Dry Heat	85℃, for 30 days	≤0.1	dB/km
Mechanical Requirements			
Proof Test	-	≥9.0	N
Macro-Bend Induced Attenuation 2 turns Φ 30mm	850nm	≤0.1	dB
	1300nm	≤0.3	dB
Macro-Bend Induced Attenuation 2 turns Φ 15mm	850nm	≤0.2	dB
	1300nm	≤0.5	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	1.1~8.8		km/reel

FiberHome® Multimode Optical Fiber (OM5)

Description

FiberHome multimode optical fiber reduces the differential mode delay (DMD) phenomenon observed on the conventional fibers in 10 gigabit applications. The bandwidth performance is extended to the 953 nm band, which can support multiple wavelength transmission applications. In addition, the OM5 / SWDM combination can better demonstrate the advantages of long-distance transmission in links with a transmission distance of 100G or higher speeds exceeding 100 m.

Application

FiberHome multimode optical fiber (OM5) can maximally support current and emerging high-speed Ethernet, fiber channel and fiber optic interconnection applications. In the data center design, it can fully support higher-speed (100Gb/s and 400Gb/s Ethernet, 16Gb/s and 32Gb/s Fiber Channel) data transmission requirements.

Norms

FiberHome multimode optical fiber (OM5) complies with or exceeds IEC 60793-2-10 A1-OM5 cabling standards.

Characteristics

- Suited to applications in 10 gigabit ethernet and higher bit-rat systems
- Precise control of refractive index profile
- Designed for use at 850nm and 1300nm, while supporting 850-950nm short-wavelength transmission
- Good protection by dual layer UV coating
- Excellent strip force stability
- Lower macro-bending loss
- Good mechanical and environmental performance

Next Generation Multimode Optical Fiber (OM5)			
Features	Conditions	Value	Unit
Optical Requirements			
Attenuation	850nm	≤2.5	dB/km
	953nm	≤1.8	dB/km
	1300nm	≤0.8	dB/km
Bandwidth	850nm	≥3500	MHz • km
	953nm	≥1850	MHz • km
	1300nm	≥500	MHz • km
Effective Bandwidth	850nm	≥4700	MHz • km
	953nm	≥2470	MHz • km
Numerical Aperture	-	0.20±0.015	-
Effective Group Index Of Refraction（Neff）	850nm	1.475	-
	1300nm	1.473	-
DMD	-	complies with or exceeds IEC 60793-2-10	-
Zero Dispersion Wavelength	-	1297～1328	nm
Zero Dispersion Slope	1295～1310nm	≤0.105	ps/(nm^2 • km)
	1310～1340nm	$S_0 \leq 4\,(-103)\,/\,840(1-(\lambda_0/840)^4)$	ps/(nm^2 • km)
Point Discontinuities	1300nm	≤0.10	dB
Geometrical Requirements			
Core Diameter	-	50±2.5	μm
Core Non-Circularity	-	≤5.0	%
Cladding Diameter	-	124.5±1	μm
Cladding Non-Circularity	-	≤1.0	%
Core-Cladding Concentricity Error	-	≤1.5	μm
Coating Diameter	-	245±7	μm
Coating-Cladding Concentricity Error	-	≤10	μm
Environmental Requirements（850nm & 1300nm）			
Temperature Dependence	-60℃～+85℃	≤0.1	dB/km
Water-Soaked Dependence	23℃, for 30 days	≤0.1	dB/km
Damp Heat Dependence	85℃ and 85% RH, for 30 days	≤0.1	dB/km
Dry Heat	85℃, for 30 days	≤0.1	dB/km
Mechanical Requirements			
Proof Test	-	≥9.0	N
Macro-Bend Induced Attenuation 2 turns Φ 30mm	850nm	≤0.1	dB
	1300nm	≤0.3	dB
Macro-Bend Induced Attenuation 2 turns Φ15mm	850nm	≤0.2	dB
	1300nm	≤0.5	dB
Coating Strip Force	Typical Average Force	1.0~5.0	N

	Peak Force	1.3~8.9	N
Delivery Length	1.1~8.8		km/reel

FiberHome® High Temperature Optical Fiber(HTF)

Description

Fiberhome adopts PCVD(plasma chemical vapor deposition) equipment and process technology with independent intellectual property right.Optical fiber refractive index distribution control is accurate and repeatable.High temperature optical fiber can be used in communication， sensing and other fields in high-temperature environments.High temperature resistant resin coating and polyimide coating can ensure the normal operation fiber below 150℃ and 300℃ respectively.

Application

Used in the mining industry、aerospace industry、military、oil and gas and other fields

Characteristics

- Excellent high-temperature working stability
- Excellent optical performance and geometric size
- Customizable optical fiber refractive index profile

HTSM-150

Type	HT 9/125-12/250-150(G.652.D)	HT 9/125-12/250-150(G.657.B3)	Unit
Optical Requirements			
Attenuation@1310nm	≤0.4	⩽0.4	dB/km
Attenuation@1550nm	⩽0.25	⩽0.25	dB/km
Mode Field Diameter (MFD)@1310nm	9.2±0.4	8.6±0.4	μm
Cable Cutoff Wavelength(λcc)	≤1300	≤1300	nm
Geometrical Requirements			
Cladding Diameter	125±1.0	125±1.0	μm
Cladding Non-Circularity	⩽1.0	⩽1.0	%
Core-Cladding Concentricity Error	⩽0.8	⩽0.8	μm
Coating Diameter	245±10	245±10	μm
Coating-Cladding Concentricity Error	⩽10.0	⩽10.0	μm
Mechanical Requirements			
Proof Test	≥100	≥100	kpsi
Operating Temperature Range	-65～+150	-65～+150	℃
Coating Materials	Special Polyester	Special Polyester	-

Note: According to customer needs，various core diameters and all kinds of refractive index profile optical fibers are processed with high-temperature coatings.

HTSM-300

Type	HT 9/125-12/250-300(G.652.D)	HT 9/125-12/250-300(G.657.B3)	Unit
Optical Requirements			
Attenuation@1310nm	≤1.0	≤1.0	dB/km
Attenuation@1550nm	≤0.8	≤0.8	dB/km
Mode Field Diameter (MFD)@1310nm	9.2±0.4	8.6±0.4	μm
Cable Cutoff Wavelength(λcc)	≤1300	≤1300	nm
Geometrical Requirements			
Cladding Diameter	125±2.0	125±2.0	μm
Cladding Non-Circularity	≤1.0	≤1.0	%
Core-Cladding Concentricity Error	≤0.8	≤0.8	μm
Coating Diameter	245±10	245±10	μm
Mechanical Requirements			
Proof Test	≥75	≥75	kpsi
Operating Temperature Range	-65～+300	-65～+300	℃
Coating Materials	Polyimide	Polyimide	-

Note: 1、The optical fiber needs to be wound on an optical fiber disk that diameter greater than 36cm with near-zero tension when performing attenuation tests.

2、According to customer needs，various core diameters and all kinds of refractive index profileoptical fibers are processed with high-temperature coatings.

HTMM-150

Type	HTG 62.5/125-27/250 -150(OM1)	HTG 50/125-20/250-150(OM2)	HTG 50/125-20/250-150(OM3)	HTG 50/125-20/250 -150(OM4)
Optical Requirements				
Attenuation@850nm (dB/km)	≤3.0	⩽3.0	⩽3.0	⩽3.0
Attenuation@1300nm (dB/km)	⩽1.0	⩽1.0	⩽1.0	⩽1.0
Bandwidth @850nm (MHz •km)	≥200	⩾500	⩾1500	⩾3500
Bandwidth @1300nm (MHz • km)	≥200	⩾500	⩾500	⩾500
Effective Bandwidth （MHz • km）	-	-	2000	4700
Numerical Aperture	0.275±0.015	0.20±0.015	0.20±0.015	0.20±0.015
Geometrical Requirements				
Core Diameter（μm）	62.5±2.5	50±2.5	50±2.5	50±2.5
Core Non-Circularity（%）	⩽5.0	⩽5.0	⩽5.0	⩽5.0
Cladding Diameter（μm）	125±1.0	125±1.0	125±1.0	125±1.0
Cladding Non-Circularity（%）	⩽1.0	⩽1.0	⩽1.0	⩽1.0
Core-Cladding Concentricity Error(μm）	⩽1.5	⩽1.0	⩽1.0	⩽1.0
Coating Diameter（μm）	245±10	245±10	245±10	245±10
Coating-Cladding Concentricity Error（μm）	⩽10.0	⩽10.0	⩽10.0	⩽10.0
Mechanical Requirements				
Proof Test (kpsi)	⩾100	⩾100	⩾100	⩾100
Operating Temperature Range(℃)	-65～+150	-65～+150	-65～+150	-65～+150
Coating Materials	Special Polyester	Special Polyester	Special Polyester	Special Polyester

Note: According to customer needs， various core diameters and all kinds of refractive index profile optical fibers are processed with high-temperature coatings.

HTMM-300

Type	HTG 62.5/125-27/250 -300(OM1)	HTG 50/125-20/250-300(OM2)	HTG 50/125-20/250-300(OM3)	HTG 50/125-20/250 -300(OM4)
Optical Requirements				
Attenuation@850nm (dB/km)	≤5.0	≤5.0	≤5.0	≤5.0
Attenuation@1300nm (dB/km)	≤2.0	≤2.0	≤2.0	≤2.0
Bandwidth @850nm (MHz • km)	≥200	≥500	≥1500	≥3500
Bandwidth @1300nm (MHz • km)	≥200	≥500	≥500	≥500
Effective Bandwidth （MHz • km）	-	-	2000	4700
Numerical Aperture	0.275±0.015	0.20±0.015	0.20±0.015	0.20±0.015
Geometrical Requirements				
Core Diameter（μm）	62.5±2.5	50±2.5	50±2.5	50±2.5
Core Non-Circularity（%）	≤5.0	≤5.0	≤5.0	≤5.0
Cladding Diameter（μm）	125±2.0	125±2.0	125±2.0	125±2.0
Cladding Non-Circularity（%）	≤1.0	≤1.0	≤1.0	≤1.0
Core-Cladding Concentricity Error（μm）	≤1.5	≤1.5	≤1.5	≤1.5
Coating Diameter（μm）	155±5.0	155±5.0	155±5.0	155±5.0
Mechanical Requirements				
Proof Test(kpsi)	≥75	≥75	≥75	≥75
Operating Temperature Range(℃)	-65～+300	-65～+300	-65～+300	-65～+300
Coating Materials	Polyimide	Polyimide	Polyimide	Polyimide

Note: 1、The optical fiber needs to be wound on an optical fiber disk that diameter greater than 36cm with near-zero tension when performing attenuation tests.

2、According to customer needs，various core diameters and all kinds of refractive index profile optical fibers are processed with high-temperature coatings.

FiberHome® Radiation Resistantl Optical Fiber(RRF)

Description

Radiation resistant optical fiber is a type of special optical fiber that has developed rapidly in recent years. It can effectively avoid the impact of harsh environments such as gamma rays and X- rays in radiation environments on the transmission of optical signals.

FiberHome radiation resistant fiber optic not only fully utilizes its advantages of electromagnetic interference resistance, light weight, small size and strong confidentiality, but also achieves mechanical and environmental adaptability in different irradiation environments (irradiation doses ranging from 10Gy to 250KGy), meeting the needs of different scenarios for use.Meet the usage needs in different conditions.

Application

FiberHome radiation resistant optical fibers can be applied to nuclear submarines, nuclear power detection, ground nuclear facilities, and space vehicles, etc.

Characteristics

- Low irradiation additional attenuation
- Low attenuation, low dispersion, meeting the working requirements of communication windows
- Accurate control of geometric dimensions, low welding loss
- Good coating protection and excellent peeling performance

Radiation Resistant Single-Mode Optical Fiber

Features	Conditions	RD SM-10Gy	RD SM-10KGy	RD SM-250KGy
Optical Requirements				
Attenuation（dB/km）	1310nm	≤0.40	≤0.45	≤0.45
	1550nm	≤0.25	≤0.40	≤0.40
Dispersion Coefficient（ps/(nm·km)）	1550nm	≤19	≤19	≤19
Zero Dispersion Slope（ps/(nm^2·km)）	-	≤0.092	≤0.092	≤0.092
PMD Maximum Individual Fiber（ps/$\sqrt{km}$）	-	≤0.125	≤0.125	≤0.125
Cable Cutoff Wavelength λcc（nm）	-	≤1330	≤1330	≤1330
Mode Field Diameter MFD（μm）	1310nm	9.2±0.4	9.0±0.6	9.0±0.6
	1550nm	10.1±0.5	10.0±0.7	10.0±0.7
Effective Group Index Of Refraction（Neff）	1310nm	1.463	1.462	1.462
	1550nm	1.463	1.462	1.462
Geometrical Requirements				
Cladding Diameter（μm）	-	125±1.0	125±1.0	125±1.0
Cladding Non-Circularity（%）	-	≤1.0	≤1.0	≤1.0
Coating Diameter（μm）	-	245±10	245±10	245±10
Coating-Cladding Concentricity Error（μm）	-	≤12.0	≤12.0	≤12.0
Core-Cladding Cconcentricity Error（μm）	-	≤0.6	≤0.6	≤0.6
Environmental Requirements（1310nm & 1550nm）				
Temperature Dependence（dB/km）	-60℃ ～+85℃	≤0.05	≤0.05	≤0.05
Temperature-Humidity Cycling（dB/km）	-10℃～+85℃, 98% RH	≤0.05	≤0.05	≤0.05
Water-Soaked Dependence（dB/km）	23℃, for 30 days	≤0.05	≤0.05	≤0.05
Damp Heat Dependence（dB/km）	85℃ and 85% RH, for 30 days	≤0.05	≤0.05	≤0.05
Dry Heat（dB/km）	85℃, for 30 days	≤0.05	≤0.05	≤0.05
Mechanical Requirements				
Proof Test（N）	-	≥9.0	≥9.0	≥9.0
Macro-Bend Induced Attenuation 10 turns Φ 30mm	1550nm	≤0.2	≤0.2	≤0.2
	1625nm	≤0.5	≤0.5	≤0.5
Macro-Bend Induced Attenuation 1 turn Φ 20mm	1550nm	≤0.2	≤0.2	≤0.2
	1625nm	≤0.5	≤0.5	≤0.5
Coating Strip Force（N）	Peak Force	1.3～8.9	1.3～8.9	1.3～8.9
Dynamic Stress Corrosion Susceptibility Parameter (N_d)	-	≥20	≥20	≥20
Delivery Length（km/reel）	-	2.1～25.2	2.1～25.2	2.1～25.2
Radiational Requirements				
Radiation Induced Attenuation（dB/km）, Dose: 1000 rad	1310nm	≤0.4	≤0.4	≤0.4
	1550nm	≤0.3	≤0.3	≤0.3
Radiation Induced Attenuation（dB/km）, Dose: 10000 Gy	1310nm	-	≤10	≤10
	1550nm	-	≤10	≤10
Radiation Induced Attenuation（dB/km）,	1310nm	-	-	≤18

Dose: 250000 Gy	1550nm	-	-	≤20

Radiation Resistant 50/125 μm Multimode Optical Fiber

Features	Conditions	RDG 50/125-10Gy	RDG 50/125-10KGy	RDG 50/125-250KGy
Optical Requirements				
Attenuation（dB/km）	850nm	≤3.0	≤3.0	≤3.0
	1300nm	≤1.0	≤1.0	≤1.0
Bandwidth（MHz·km）	850nm	≥1500	≥500	≥500
	1300nm	≥500	≥500	≥500
Numerical Aperture（NA）	-	0.20±0.015	0.20±0.015	0.20±0.015
Point Discontinuities（dB）	1300nm	≤0.10	≤0.10	≤0.10
Geometrical Requirements				
Core Diameter（μm）	-	50±2.5	50±2.5	50±2.5
Core Non-Circularity（%）	-	≤6.0	≤6.0	≤6.0
Cladding Diameter（μm）	-	125±1.0	125±1.0	125±1.0
Cladding Non-Circularity（%）	-	≤1.0	≤1.0	≤1.0
Coating-Cladding Concentricity Error（μm）	-	≤12.0	≤12.0	≤12.0
Coating Diameter（μm）	-	245±10	245±10	245±10
Core-Cladding Concentricity Error（μm）	-	≤1.5	≤1.5	≤1.5
Environmental Requirements（850nm & 1300nm）				
Temperature Dependence（dB/km）	-60℃ ～+85℃	≤0.20	≤0.20	≤0.20
Temperature-Humidity Cycling（dB/km）	-10℃～+85℃, 98% RH	≤0.20	≤0.20	≤0.20
Water-Soaked Dependence（dB/km）	23℃, for 30 days	≤0.20	≤0.20	≤0.20
Damp Heat Dependence（dB/km）	85℃ and 85% RH, for 30 days	≤0.20	≤0.20	≤0.20
Dry Heat（dB/km）	85℃, for 30 days	≤0.20	≤0.20	≤0.20
Mechanical Requirements				
Proof Test（N）	-	≥9.0	≥9.0	≥9.0
Macro-Bend Induced Attenuation 2 turns Φ 30mm	850nm	≤0.2	≤0.2	≤0.2
	1300nm	≤0.3	≤0.3	≤0.3
Coating Strip Force（N）	Typical Average Force	1.0~5.0	1.0~5.0	1.0~5.0
	Peak Force	1.3～8.9	1.3～8.9	1.3～8.9
Dynamic Stress Corrosion Susceptibility Parameter(N_d)	-	≥20	≥20	≥20
Delivery Length（km/reel）	-	2.2～8.8	2.2～8.8	2.2～8.8

Radiational Requirements				
Radiation Induced Attenuation（dB/km）, Dose: 1000 rad	1300nm	≤1.0	≤1.0	≤1.0
Radiation Induced Attenuation（dB/km）, Dose: 10000 Gy	1300nm	-	≤14	≤14
Radiation Induced Attenuation（dB/km）, Dose: 250000 Gy	1300nm	-	-	≤20

Radiation Resistant 62.5/125 μm Multimode Optical Fiber

Features	Conditions	RDG 62.5/125-10Gy	RDG 62.5/125-10KGy
Optical Requirements			
Attenuation（dB/km）	850nm	≤2.7	≤2.7
	1300nm	≤0.6	≤0.6
Bandwidth（MHz·km）	850nm	≥300	≥300
	1300nm	≥600	≥600
Numerical Aperture（NA）	-	0.275±0.015	0.275±0.015
Point Discontinuities（dB）	1300nm	≤0.10	≤0.10
Geometrical Requirements			
Core Diameter（μm）	-	62.5±2.5	62.5±2.5
Core Non-Circularity（%）	-	≤6.0	≤6.0
Cladding Diameter（μm）	-	125±1.0	125±1.0
Cladding Non-Circularity（%）	-	≤1.0	≤1.0
Coating-Cladding Concentricity Error（μm）	-	≤12.0	≤12.0
Coating Diameter（μm）	-	245±10	245±10
Core-Cladding Concentricity Error（μm）	-	≤1.5	≤1.5
Environmental Requirements（850nm & 1300nm）			
Temperature Dependence（dB/km）	-60℃ ～+85℃	≤0.20	≤0.20
Temperature-Humidity Cycling （dB/km）	-10℃～+85℃, 98% RH	≤0.20	≤0.20
Water-Soaked Dependence（dB/km）	23℃, for 30 days	≤0.20	≤0.20
Damp Heat Dependence（dB/km）	85℃ and 85% RH, for 30 days	≤0.20	≤0.20
Dry Heat（dB/km）	85℃, for 30 days	≤0.20	≤0.20
Mechanical Requirements			
Proof Test（N）	-	≥9.0	≥9.0
Macro-Bend Induced Attenuation 2 turns Φ 30mm	850nm	≤0.2	≤0.2
	1300nm	≤0.2	≤0.2
Coating Strip Force（N）	Typical Average Force	1.0~5.0	1.0~5.0

	Peak Force	1.3～8.9	1.3～8.9
Dynamic Stress Corrosion Susceptibility Parameter (N_d)	-	≥20	≥20
Delivery Length（km/reel）	-	2.2～8.8	2.2～8.8
Radiational Requirements			
Radiation Induced Attenuation（dB/km）, Dose: 1000 rad	1300nm	≤0.5	≤0.5
Radiation Induced Attenuation（dB/km）, Dose: 10000 Gy	1300nm	-	≤45

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FiberHome® Dispersion Compensatinf Fiber(DCF)

Description

PCVD equipment and technology with independent intellectual property rights of fiberhome was used to manufacture dispersion compensation fiber. The refractive index distribution of the fiber is precisely controlled and residual dispersion at compensated working wavelength can be optimized. The optical fiber has good repeatability, excellent optical properties and precise geometric dimensions, which can be customized to meet different central wavelength and dispersion requirements.

Application

DWDM networks

CATV cable television system

Dispersion accommodation

Single mode fiber communication system for long distance and metropolitan area networks based on recommendation G.652.D

Characteristics

- Precise geometry
- Accurate control of refractive index distribution and good optical performance
- Optimization of residual dispersion at compensated operating wavelength
- Can be customized to meet different center wavelength and dispersion requirements

Type	DCF-G.652.C/175	DCF-G.652.C/225	Unit
Optical Requirements			
Operating Wavelength@1550nm	1525~1565	1525~1565	nm
Mode Field Diameter (MFD)@1550nm	5.0±1.0	5.0±1.0	μm
Attenuation@1550nm	≤0.65	≤0.65	dB/km
Dispersion Coefficient@1545nm	-90～-190	-90～-190	ps/(nm • km)
Relative Dispersion Slope @1545nm	0.0036±20%	0.0036±20%	nm^{-1}
Geometrical Requirements			
Cladding Diameter	80～95	80～95	μm
Coating Diameter	175±15	225±15	μm
Cladding Non-Circularity	≤1.0	≤1.0	%

Core-Cladding Concentricity	⩽1.0	⩽1.0	μm

FiberHome® Step-Index Multi Mode Fiber (SIMMF)

Description

Fiberhome silica-cladding step index multi-mode fiber optimizes the optical properties of the 850nm and 1300nm operating wavelengths with very low attenuation. According to customer requirements to the greatest extent, a series of silica-cladding step index multi-mode fibers with different core diameters, cladding diameters and numerical apertures can be customized.

Fiberhome adopts PCVD (Plasma Chemical Vapor Deposition) equipment and process technology with independent intellectual property rights, which ensures accurate control of optical fiber refractive index distribution and good repeatability.

Application

Optical fiber sensing

Laser energy transmission

Data communication

LAN and cable TV

Medical device applications

Characteristics

- Good stripping performance
- Good dimensional uniformity
- High coupling efficiency between LED and laser sources

Step-Index Multi Mode Fiber					
Type	SI 50/125-22/250	SI 100/140-22/250	SI 105/125-15/250	SI 105/125-22/250	SI 110/125-20/250
Optical Requirements					
Numerical Aperture	0.22±0.02	0.22±0.02	0.15±0.02	0.22±0.02	0.20±0.02
Attenuation@850nm (dB/km)	≤3.0	≤3.0	≤8.0	≤4.0	≤15.0
Attenuation@1300nm (dB/km)	≤2.0	≤1.2	≤18.0	≤8.0	≤25.0
Geometrical Requirements					
Core Diameter (μm)	50.0±2.0	100.0±3.0	105.0±3.0	105.0±3.0	110.0±3.0
Cladding Diameter (μm)	125.0±2.0	140.0±3.0	125.0±2.0	125.0±2.0	125.0±2.0
Coating Diameter (μm)	250.0±10.0	250.0±10.0	250.0±10.0	250.0±10.0	250.0±10.0
Core-Cladding Concentricity (μm)	≤3.0	≤3.0	≤3.0	≤3.0	≤3.0
Core Non-Circularity (%)	≤3.0	≤3.0	≤3.0	≤3.0	≤3.0
Cladding Non-Circularity (%)	≤2.0	≤2.0	≤2.0	≤2.0	≤2.0
Core	Pure Silica Glass				
Cladding	F Doped Silica Glass				
Coating	Dual-Layer UV-Acrylate				
Mechanical Requirements					
Proof Test (kpsi)	100	100	100	100	100

Step-Index Multi Mode Fiber					
Type	SI 200/220-22/500	SI 200/240-22/500	SI 400/440-22/730	SI 600/660-22/960	SI 800/840-22/1400E
Optical Requirements					
Numerical Aperture	0.22±0.02	0.22±0.02	0.15±0.02	0.22±0.02	0.20±0.02
Geometrical Requirements					
Core Diameter (μm)	200.0±5.0	200.0±5.0	400.0±8.0	600.0±10.0	800.0±10.0
Cladding Diameter (μm)	220.0±5.0	240.0±5.0	440.0±8.0	660.0±10.0	840.0±10.0
Coating Diameter (μm)	500.0±20.0	500.0±20.0	730.0±30.0	960.0±30.0	1400.0±50.0
Core-Cladding Concentricity (μm)	≤3.0	≤3.0	≤3.0	≤3.0	≤3.0
Core	Pure Silica Glass				
Cladding	F Doped Silica Glass				
Coating	Dual-Layer UV-Acrylate Or ETFE				
Mechanical Requirements					
Proof Test (kpsi)	100	100	100	100	100

FiberHome® Graded-Index Multi Mode Fiber (GIMMF)

Description

Fiberhome silica-cladding graded index multi-mode fiber optimizes the optical properties of the 850nm and 1300nm operating wavelengths with very low attenuation and high bandwidth. According to customer requirements to the greatest extent, a series of silica-cladding graded index multi-mode fibers with different core diameters, cladding diameters and numerical apertures can be customized.

Fiberhome adopts PCVD (Plasma Chemical Vapor Deposition) equipment and process technology with independent intellectual property rights, which ensures accurate control of optical fiber refractive index distribution and good repeatability.

Application

Optical fiber sensing
Laser energy transmission
Data communication
LAN and cable TV
Medical device applications

Characteristics

- Good stripping performance
- Good dimensional uniformity
- High coupling efficiency between LED and laser sources

Graded-Index Multi Mode Fiber						
Type	GI 50/125-20/250	GI 80/125-30/250	GI 100/125-29/250	GI 100/140-29/250	GI 105/125-30/250	GI 100/125-14/250
Optical Requirements						
Numerical Aperture	0.20±0.015	0.30±0.02	0.29±0.02	0.29±0.02	0.30±0.02	0.14±0.02
Attenuation@850nm (dB/km)	≤2.45	≤3.5	≤3.5	≤3.2	≤4.0	≤20.0
Attenuation@1300nm (dB/km)	≤0.6	≤0.7	≤0.7	≤0.8	≤1.2	–
Bandwidth@850nm (MHz·km)	≥100	≥100	≥100	≥100	≥100	–
Bandwidth@1300nm (MHz·km)	≥200	≥200	≥200	≥200	≥200	–
Geometrical Requirements						
Core Diameter (μm)	50.0±2.0	80.0±3.0	100.0±3.0	100.0±3.0	105.0±3.0	100.0±3.0
Cladding Diameter (μm)	125.0±2.0	125.0±2.0	125.0±2.0	140.0±2.0	125.0±2.0	125.0±2.0
Coating Diameter (μm)	250.0±10.0	250.0±10.0	250.0±10.0	250.0±10.0	250.0±10.0	250.0±10.0
Core-Cladding Concentricity (μm)	≤3.0	≤3.0	≤3.0	≤3.0	≤3.0	≤3.0
Core Non-Circularity (%)	≤2.0	≤5.0	≤2.0	≤3.0	≤2.0	≤3.0
Cladding Non-Circularity (%)	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0	≤1.0
Core	Ge/F Doped Silica Glass					
Cladding	Pure Silica Glass					
Coating	Dual-Layer UV-Acrylate					
Mechanical Requirements						
Proof Test (kpsi)	100	100	100	100	100	100

Graded-Index Multi Mode Fiber					
Type	GI 105/125-24/250	GI 50/80-29/165	GI 300/330-25/500	GI 200/220-22/500	GI 230/250-22/500
Optical Requirements					
Numerical Aperture	0.24±0.02	0.29±0.02	0.25±0.02	0.22±0.02	0.22±0.02
Attenuation@850nm (dB/km)	≤3.5	≤4.0	≤3.5	≤3.2	≤4.0
Attenuation@1300nm (dB/km)	≤1.5	≤2.0	≤7.0	≤6.0	≤5.0
Bandwidth@850nm (MHz·km)	≥100	≥100	-	-	-
Bandwidth@1300nm (MHz·km)	≥200	≥200	-	-	-
Geometrical Requirements					
Core Diameter (μm)	105.0±3.0	50.0±3.0	300.0±10.0	200.0±4.0	230.0±5.0
Cladding Diameter (μm)	125.0±2.0	80.0±2.0	330.0±5.0	220.0±3.0	250.0±5.0
Coating Diameter (μm)	250.0±10.0	165.0±8.0	500.0±20.0	500.0±20.0	500.0±20.0
Core-Cladding Concentricity (μm)	≤3.0	≤3.0	≤3.0	≤3.0	≤3.0
Core Non-Circularity (%)	≤2.0	≤2.0	-	-	-
Cladding Non-Circularity (%)	≤1.0	≤1.0	-	-	-
Core	Ge/F Doped Silica Glass				
Cladding	Pure Silica Glass				
Coating	Dual-Layer UV-Acrylate				
Mechanical Requirements					
Proof Test (kpsi)	100	100	100	100	100

FiberHome® Hard Polymer-Cladding Fiber (HPCF)

Description

Fiberhome low-hydroxyl large-core hard polymer cladding optical fiber can be used in 650nm and 850nm devices and systems. The hard polymer cladding can provide higher tensile strength and better block the moisture, making this fiber widely used in communications, industrial fields and near-infrared spectroscopy environment.

Hard polymer cladding: made of fluoroacrylate, which protects the core of the fiber and acts as the fiber cladding. The HPCF will not break easily in strong bending conditions or in open construction environments.

Large core diameter: The fiber core diameter range of 200 μm~1000 μm provides high coupling efficiency and wide tolerance accuracy range in data connections or other connectors.

Application

High energy laser transmission

Medium and short distance communication

Electrical signal transmission

Medical sensing

Optical fiber lighting

Characteristics

- High coupling efficiency of LED and laser light source
- Outstanding fatigue resistance
- Excellent radiation resistance
- Good compatibility with various light sources

Hard Polymer-Cladding Fiber								
Type	HP 200/230-37/500E	HP 200/230-40/500	HP 200/230-46/500	HP 300/330-37/650E	HP 400/430-37/730E	HP 600/630-37/1040E	HP 600/630-37/750E	HP 1000/1100-37/1400E
Optical Requirements								
Numerical Aperture	0.37±0.2	0.40±0.2	0.46±0.2	0.37±0.2	0.37±0.2	0.37±0.2	0.37±0.2	0.37±0.2
Attenuation @850nm (dB/km)	≤8.0	≤5.0	≤8.0	≤8.0	≤8.0	≤8.0	≤8.0	≤8.0
OH Content	Low OH	Low OH	Low OH	Low OH	Low OH	Low OH	Low OH	Low OH
Refractive Index Profile	Step Index	Step Index	Step Index	Step Index	Step Index	Step Index	Step Index	Step Index
Geometrical Requirements								
Core Diameter (μm)	200.0±3.0	200.0±3.0	200.0±3.0	300.0±6.0	400.0±8.0	600.0±10.0	600.0±10.0	1000.0±20.0
Cladding Diameter (μm)	230+0/-8	230+0/-8	230+5/-10	330+5/-10	430+5/-10	630+5/-10	630+5/-10	1100+10/-30
Coating Diameter (μm)	500.0 ±25.0	500.0 ±25.0	500.0 ±25.0	650.0 ±30.0	730.0 ±30.0	1040.0 ±30.0	750.0 ±30.0	1400.0 ±50.0
Core-Cladding Concentricity (μm)	≤5.0	≤5.0	≤5.0	≤6.0	≤8.0	≤8.0	≤8.0	≤8.0
Core Material	Pure Silica Glass	Doped Silica Glass	Pure Silica Glass	Pure Silica Glass	Pure Silica Glass	Pure Silica Glass	Pure Silica Glass	Pure Silica Glass
Cladding Material	Fluoroacrylate							
Coating Material	ETFE	Acrylate	Acrylate	ETFE	ETFE	ETFE	ETFE	ETFE
Mechanical Requirements								
Short Term Bend Radius (mm)	≥10	≥10	≥10	≥16	≥29	≥58	≥58	≥73
Long Term Bend Radius (mm)	≥16	≥16	≥16	≥24	≥47	≥94	≥94	≥118
Operating Temperature (℃)	-60℃~+85℃							

Proof Test (kpsi)	100	100	75	100	75	75	75	85

FiberHome® Passive Fiber (PDF)

Description

Owing excellent laser damage resistance, lower attenuation and high light transmittance(range from 800 nm to 1600 nm), Fiberhome power delivery fiber can deliver high laser power.

Application

High power laser transmission, laser welding, laser cutting, laser medical treatment, spectral detection ,lighting,sensors,etc.

Characteristics

- Excellent optical properties
- Good geometric uniformity
- Lower attenuation
- High resistance to optical damage
- Product size can be customized

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Type	PDF-50/70/360	PDF-100/120/360	Unit
Optical Requirements			
Operating Wavelength（nm）	800～2100	800～2100	nm
Core NA	0.22±0.02	0.22±0.02	-
Attenuation@1200nm	≤10.0	≤10.0	dB/km
Geometrical Requirements			
Core Diameter	50.0±2.0	102.0±3.0	μm
Inner Clad Diameter	70.0±3.0	120.0±3.0	μm
Outer Clad Diameter	365.0±8.0	365.0±8.0	μm
Outer Coating Diameter	560.0±20.0	560.0±20.0	μm
Core-Clad Offset	≤3.0	≤3.0	μm
Core Non-Circularity	≤3.0	≤3.0	%
Material			
Outer Coating Material	Acrylate	Acrylate	-
Inner Coating Material	Low Index Acrylate	Low Index Acrylate	-
Mechanical Requirements			

Proof Test （kpsi）	⩾100	⩾100	kpsi

Pump Pigtail

Type	PDF-D-200/220	PDF-D-135/155	PDF-D-220/242
Optical Requirements			
Operating Wavelength（nm）	800～1600	800～1600	800～1600
Core NA	0.22±0.02	0.22±0.02	0.22±0.02
Attenuation@1200nm（dB/km）	⩽10.0	⩽10.0	⩽10.0
Geometrical Requirements			
Core Diameter（μm）	200.0±3.0	135.0±2.0	220.0±4.0
Cladding diamete（μm）	220.0±4.0	155.0±3.0	242.0±4.0
Coating diameter（μm）	320.0±15.0	320.0±20.0	360.0±20.0
Core-Clad Offset（μm）	⩽3.0	⩽3.0	⩽3.0
Core non-circularity（%）	⩽3.0	⩽3.0	⩽3.0
Material			
Outer Coating Material	Acrylate	Acrylate	Acrylate
Inner Coating Material	Low Index Acrylate	Low Index Acrylate	Low Index Acrylate
Mechanical Requirements			
Proof Test （kpsi）	⩾100	⩾100	⩾100

Pump Pigtail

Type	PDF-S-200/220	PDF-S-105/125	PDF-S-220/242	PDF-S-400/440
Optical Requirements				
Operating Wavelength（nm）	800～1600	800～1600	800～1600	800～1600
Core NA	0.22±0.02	0.22±0.02	0.22±0.02	0.22±0.02
Attenuation@1200nm（dB/km）	⩽10.0	⩽10.0	⩽10.0	⩽10.0
Geometrical Requirements				
Core Diameter（μm）	200.0±3.0	105.0±3.5	220.0±4.0	400.0±3.0
Cladding diameter（μm）	220.0±4.0	125.0±3.0	242.0±4.0	440.0±4.0
Coating diameter（μm）	320.0±15.0	245.0±15.0	360.0±20.0	560.0±20.0
Core-Clad Offset（μm）	⩽3.0	⩽3.0	⩽3.0	⩽3.0
Core non-circularity（%）	⩽3.0	⩽3.0	⩽3.0	⩽3.0
Material				
Outer Coating Material	Acrylate	Acrylate	Acrylate	Acrylate
Inner Coating Material	Acrylate	Acrylate	Acrylate	Acrylate
Mechanical Requirements				

Proof Test （kpsi）	≥100	≥100	≥100	≥100

FiberHome® FOG-UsingPolarization-Maintaining Fiber(F-PMF)

Description

Fiberhome PM fiber series are designed for FOG and other polarization devices, the structure of the series is panda geometry with patented stress applying part and precise geometry control. Good performance of extinction ratio can support your product well.

Application

Fiber optic gyroscope

Fused biconical tapered coupler

Polarization sensitive device

Fiber polarization sensor

FOG-Using PMF				
Type	PM1310A-80/135	PM1310A-80/165	PM1550B-80/135	PM1550B-80/165
Optical Requirements				
Operating Wavelength （nm）	1310	1310	1550	1550
Cutoff Wavelength （nm）	1100~1290	1100~1290	1290~1520	1290~1520
Mode Field Diameter （μm）	6.0±1.0	6.0±1.0	6.5±1.0	6.5±1.0
Attenuation （dB/km）	≤0.6	≤0.6	≤0.6	≤0.6
Beat Length （mm）	≤3.0	≤3.0	≤3.5	≤3.5
Crosstalk （dB@1000m）	≤－22	≤－22	≤－22	≤－22
Geometrical Requirements				
Cladding Diameter （μm）	80.0±1.0	80.0±1.0	80.0±1.0	80.0±1.0
Coating Diameter （μm）	135.0±3.0	165.0±5.0	135.0±3.0	165.0±5.0
Concentricity （μm）	≤1.0	≤1.0	≤1.0	≤1.0
Environmental Requirements（1310nm & 1550nm）				
Operating Temperature（℃）	－50～85	－50～85	－50～85	－50～85
Mechanical Requirements				
Proof Test (kpsi)	100	100	100	100

FiberHome® Ultra-Thin Diameter Polarization-Maintaining Fiber(U-PMF)

Description

Fiberhome ultra-thin diameter polarization-maintaining fiber products use the unique thin coating control technology to reduce the diameter of the outer coating from 135 μ m to 100 μ m, effectively increasing the length of the fiber optic ring under the same volume, and solving the miniaturization of the fiber optic gyro device for high precision.

Application

Fiber optic gyroscope

Fused biconical tapered coupler

Polarization sensitive device

Fiber polarization sensor

U-PMF			
Type	PM850E-60/100	PM1310A-60/100	PM1550B-60/100
Optical Requirements			
Operating Wavelength（nm）	850	1310	1550
Cutoff Wavelength（nm）	650~830	1100~1290	1290~1520
Mode Field Diameter（μm）	3.8±1.0	6.0±1.0	6.5±1.0
Attenuation（dB/km）	≤3.0	≤0.6	≤0.8
Beat Length（mm）	≤2.5	≤3.0	≤3.5
Crosstalk（dB@100m）	≤－25	≤－25	≤－25
Geometrical Requirements			
Cladding Diameter（μm）	60.0±1.0	60.0±1.0	60.0±1.0
Coating Diameter（μm）	102.0±3.0	102.0±3.0	102.0±3.0
Concentricity（μm）	≤1.0	≤1.0	≤1.0
Environmental Requirements（850nm & 1310nm &1550nm）			
Operating Temperature（℃）	－50～85	－50～85	－50～85
Mechanical Requirements			
Proof Test (kpsi)	100	100	100

FiberHome® Fluorine-Doped Capillary Tube(FDT)

Description

Fiberhome adopts PCVD (Plasma Chemical Vapor Deposition) equipment and process technology with independent intellectual property rights, which ensures accurate control of optical fiber refractive index distribution and good repeatability. FiberHome fluorine-doped capillary products have a multi-layer structure with low internal refractive index and high external refractive index, which is suitable for various application requirements such as high-power beam combiner and photonic lantern.

Application

High-power beam combiner

Photonic lantern

Characteristics

- Good optical performance
- Good dimensional uniformity
- Good temperature resistance

Fluorine-Doped Capillary Tube									
Type	FDT 775/425-11	FDT 775/425-22	FDT 1100/800-22	FDT 1250/980-22	FDT 1400/1100-22	FDT 1500/800-22	FDT 1650/1350-22	FDT 1700/1200-22	FDT 1800/1300-22
Length(nm)	1000+5								
NA	0.11	0.22							
Material Quality	Fluorine Doped Silica								
External Diameter(μm)	775±50	775±50	1100±50	1250±50	1400±50	1500±50	1650±50	1700±50	1800±50
Internal Diameter(μm)	425±50	425±50	800±50	980±50	1100±50	800±50	1350±50	1200±50	1300±50

Ratio Of External Diameter To Internal Diameter Of Fluorine Doped Layer	＞1.1

Note: According to customer needs, different sizes and specifications of products can be customized.

FiberHome—MCF

FiberHome® Multi-Core Fiber (MCF)

Description

Multi-core fiber(MCF) is a reasonable arrangement of multiple cores in an optical fiber, so that each core can independently and without interference to achieve the transmission of information, each core of this optical fiber can be considered to be able to carry the capacity of a single-mode fiber, which means that more cores can support a larger transmission capacity, is the optical fiber transmission system to achieve the best technical solutions to achieve the transmission of ultra-large capacity and ultra-high frequency spectral efficiency.

Fiberhome multi-core fiber adopts trench-assisted structure, which combines the characteristics of low crosstalk and low attenuation, and has typical application prospects in the fields of optical fiber communication, sensing and medical treatment.

Application

Fiber sensors

Utra large capacity transmission system

Characteristics

- Excellent geometrical consistency
- Low attenuation
- Low cross talk
- Customized to meet customer requirements

Multi-Core Fiber

Features	Conditions	MCF 4/125	MCF 7/150	MCF 7/200	MCF 8/150
Optical Requirements					
Adjacent Core Cross Talk(dB/km)	-	≤-45	≤-45	≤-45	≤-40
Attenuation(dB/km)	1310nm	≤0.45	≤0.45	≤0.45	≤0.45
	1550nm	≤0.25	≤0.25	≤0.25	≤0.25
Dispersion(ps/(nm·km))	1550nm	≤22	≤22	≤22	≤22
Zero Dispersion Wavelength(nm)	-	1300±20	1300±20	1300±20	1300±20
Cable Cutoff Wavelength (λcc)(nm)	-	≤1330	≤1330	≤1330	≤1330
Mode Field Diameter (MFD)(μm)	1310nm	8.5±0.5	8.5±0.5	8.5±0.5	8.5±0.5
	1550nm	9.4±0.6	9.4±0.6	9.4±0.6	9.4±0.6
Geometrical Requirements					
Cladding Diameter(μm)	-	125±1	150±2	200±2	150±1
Core-To-Core Distance(μm)	-	41.5±1.5	41.5±1.5	61±1	32±1.5
Coating Diameter(μm)	-	245±10	245±10	390±10	245±10
Mechanical Requirements					
Short Term Bend Radius(mm)	-	≥7.5	≥7.5	≥7.5	≥7.5
Long Term Bend Radius(mm)	-	≥15	≥15	≥15	≥15
Proof Test(N)	-	≥8.8	≥8.8	≥8.8	≥8.8
Dynamic Fatigue Parameter(N_d)	-	≥20	≥20	≥20	≥20

FiberHome® Few-Mode Fiber(FMF)

Description

FiberHome few-mode optical fiber (FMF) is a new type of optical fiber designed based on the concept of mode division multiplexing. FMFs are between single-mode fibers and multi-mode fibers, The transmission capacity of optical fibers is improved by introducing a controllable number of linear polarization mode multiplexing, and the refractive index design of few-mode fibers and the multiple-input, multiple-output digital signal processing (MIMO-DSP) of the receiver are used to limit and compensate for the adverse effects of mode coupling and inter-mode dispersion to ensure the transmission distance In addition, FMFs have a slightly larger core radius than single-mode fibers, resulting in a larger effective mode field area, which is advantageous in terms of nonlinearity tolerance.

FiberHome FMFs taking advantages of PCVD process, which can realize the accurate design of the complex guided wave structure of the optical fiber and the accurate control of the optical fiber size, realize the customization requirements of various types of core structure such as step-index, graded-index and auxiliary channel design can get various types of core layer structure. According to different design, 3-mode, 4-mode, 6-mode, 7-mode FMFs can be realized.

Application

Fiber optic sensing

Mode division multiplexing(MDM)

Characteristics

- Strictly controlled optical and geometrical parameters
- Low attenuation
- Customized waveguide is available
- Low DMD for graded index fiber
- High DMD for step index fiber

Four Mode Fiber

Optical Requirements@ 1550nm	Conditions	FM SI-4	FM GI-4	Unit
Dispersion	LP01	≤24	≤23	ps/(nm • km)
	LP11	≤27	≤23	ps/(nm • km)
	LP21	≤23	≤23	ps/(nm • km)
	LP02	≤5	≤23	ps/(nm • km)
Dispersion Slope	LP01	≤0.11	≤0.11	ps/(nm^2 • km)
	LP11	≤0.11	≤0.11	ps/(nm^2 • km)
	LP21	≤0.11	≤0.11	ps/(nm^2 • km)
	LP02	≤0.10	≤0.10	ps/(nm^2 • km)
Effective Area	LP01	≥120	≥100	μm^2
	LP11	≥145	≥100	μm^2
	LP21	≥160	≥100	μm^2
	LP02	≥100	≥100	μm^2
Attenuation	LP01	≤0.23	≤0.24	dB/km
	LP11	≤0.24	≤0.24	dB/km
	LP21	≤0.24	≤0.24	dB/km
	LP02	≤0.24	≤0.24	dB/km
Differential Group Delay	LP11-LP01	≤7	≤0.7	ps/m
	LP21-LP01	≤13	≤0.7	ps/m
	LP02-LP01	≤5	≤0.7	ps/m
Geometrical Requirements				
Cladding Diameter		125±1.0	125±1.0	μm
Core Diameter		15±0.3	12±0.3	μm
Cladding Non-Circularity		＜0.7	＜0.7	%
Operating Wavelength		1450 ～1700	1450 ～1700	nm
Coating Diameter		245±10	245±10	μm