Single-mode Fibre

YOFC
Smart Link Better Life.

Yangtze Optical Fibre and Cable Joint Stock Limited Company

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YOFC
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Yangtze Optical Fibre and Cable Joint Stock Limited Company (also known as 'YOFC') was established in Wuhan, Hubei Province in May 1988. It's an innovative technology-driven enterprise specialized in manufacturing optical fibre preforms, optical fibres, optical fibre cables and providing integrated solution services.

YOFC was listed on the Main Board of Hong Kong Stock Exchange on December 10, 2014(Stock Code: 06869.HK), and listed on the Main Board of Shanghai Stock Exchange on July 20, 2018 (Stock Code: 601869.SH), which made YOFC the only A&H shares dual-listed company in China' s optical fibre and cable industry and the first one in Hubei Province.

YOFC mainly produces and sells different types of optical fibre preforms, optical fibres and optical fibre cables that are widely applied in telecommunications industry, customized optical modules, specialty optical fibres, active optical cables, submarine cables, RF coaxial cables and accessories, etc. YOFC is also equipped with some solutions and services such as system integration and communication engineering design. Providing a variety of different products and solutions for world' s telecommunications industry and other industries (e.g. Public utility, Transportation, Oil & Chemistry, Medication etc.) , YOFC has offered its products and services to over 70 countries and regions around the world.

It has made the great strides from the initial technology cooperation to the current self-innovation since its inception to contribute to revitalizing national industry. YOFC masters 3 major preform manufacturing techniques: PCVD/OVD/VAD, and has been honored with many awards & reputations such as National Enterprise Technical Center, National First Batch Smart Manufacturing Pilot Enterprise, Industrial Internet Platform Integrated Innovative Application Pilot Demonstration Project, the Second Class National Science and Technology Progress Award(3 times), the China Quality Award, the European Quality Award, etc. In addition, YOFC has obtained over 800 national-granted patents and several foreign invention patents from Europe, US and Japan, and boasted State Key Laboratory of Optical Fibre and Cable Manufacture Technology. It's also one of the members in ITU-T and IEC in setting international standards.

Guided by the mission of 'Smart Link Better Life' , YOFC devotes itself to becoming the leader in information transmission and smart link with its core values 'Client Focus Accountability Innovation Stakeholder Benefits' in the center of everything it does. YOFC builds its strategies in the following 5 aspects: Organic growth of the preform, optical fibre and cable business,technological innovation and smart manufacturing, internationalization, relevant diversification and capital optimization.

Contents



FullBand® Low Water Peak Single-mode Fibre

Yangtze Optical Fibre and Cable Joint Stock Limited Company

YOFC FullBand® low water peak dispersion unshifted Single-mode fibre is designed specially for optical transmission systems operating over the entire wavelength window from 1260 nm to 1625 nm. By suppressing the water peak that occurs near 1383 nm in conventional Single-mode fibre due to hydroxyl (OH^-) ions absorption, FullBand® fibre is able to open E-band (1360 -1460nm) for operation, and consequently provides 100 nm more usable wavelengths.

Applications

Thanks to its broad usable optical spectrum and outstanding optical performance, FullBand® fibre is the optimum choice that supports various applications such as Ethernet, Internet Protocol (IP), Asychronous Transfer Mode (ATM), Synchronous Optical Network (SONET) and Wavelength Division Multiplexing (WDM). FullBand® fibre provides more bandwidth for backbone, metropolitan area and access networks.

Norms

YOFC FullBand® fibre complies with or exceeds the ITU-T Recommendation G.652.D and the IEC 60793-2-50 type B1.3 Optical Fibre Specification.
YOFC tightens many parameters of fibre products so as to offer more conveniences to customers.

Characteristics

- Designed for operation over the full optical spectrum from 1260-1625 nm, which provides 50% more usable wavelengths and hence the transmission capacity is increased
- Outstanding optical performance supporting high-speed transmission technologies such as DWDM and CWDM
- Being compatible with existing 1310 nm equipment
- Good protection and excellent strip force stability
- Accurate geometrical parameters that insure low splicing loss and high splicing efficiency

Characteristics		Conditions	Specified values	Units
Optical Characteristics				
Attenuation		1310nm	⩽0.34	[dB/km]
		1383nm(after H_2-aging)	⩽0.34	[dB/km]
		1550nm	⩽0.20	[dB/km]
		1625nm	⩽0.24	[dB/km]
Attenuation vs. Wavelength Max. α difference		1285-1330nm, in reference to 1310nm	⩽0.03	[dB/km]
		1525-1575nm, in reference to 1550nm	⩽0.02	[dB/km]
Dispersion Coefficient		1285-1340nm	-3.5 to 3.5	[ps/(nm·km)]
		1550nm	⩽18	[ps/(nm·km)]
		1625nm	⩽22	[ps/(nm·km)]
Zero Dispersion Wavelength (λ_0)		--	1300-1324	[nm]
Zero Dispersion Slope (S_0)		--	⩽0.092	[ps/(nm²·km)]
Typical Value		--	0.086	[ps/(nm²·km]
PMD	Maximum Individual Fibre	--	⩽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)		1310nm	8.7- 9.5	[μm]
		1550nm	9.8- 10.8	[μm]
Effective Group Index of Refraction (N_{eff})		1310nm	1.466	--
		1550nm	1.467	--
Point Discontinuities		1310nm	⩽0.05	[dB]
		1550nm	⩽0.05	[dB]
Geometrical Characteristics				
Cladding Diameter		--	125.0±0.7	[μm]
Cladding Non-Circularity		--	⩽1.0	[%]
Coating Diameter		--	235- 250	[μm]
Coating-Cladding Concentricity Error		--	⩽12.0	[μm]
Coating Non-Circularity		--	⩽6.0	[%]
Core-Cladding Concentricity Error		--	⩽0.6	[μm]
Curl(radius)		--	⩾4	[m]
Delivery Length		--	Up to 50.4	[km/reel]
Environmental Characteristics		**1310nm, 1550nm & 1625nm**		
Temperature Dependence Induced Attenuation		-60℃ to +85℃	⩽0.05	[dB/km]
Temperature-Humidity Cycling Induced Attenuation		-10℃ to +85℃, 98% RH	⩽0.05	[dB/km]
Water Immersion Dependence Induced Attenuation		23℃, for 30 days	⩽0.05	[dB/km]
Damp Heat Dependence Induced Attenuation		85℃ and 85% RH, for 30 days	⩽0.05	[dB/km]
Dry Heat Aging		85℃, for 30 days	⩽0.05	[dB/km]
Mechanical Specifications				
Proof Test		--	⩾9.0	[N]
		--	⩾1.0	[%]
		--	⩾100	[kpsi]
Macro-bend Induced Loss	100 Turns Around a Mandrel of 30 mm Radius	1625nm	⩽0.05	[dB]
	100 Turns Around a Mandrel of 25 mm Radius	1310nm and 1550nm	⩽0.05	[dB]
	1 Turn Around a Mandrel of 16 mm Radius	1550nm	⩽0.05	[dB]
Coating Strip Force		typical average force	1.5	[N]
		peak force	1.3- 8.9	[N]
Dynamic Fatigue Parameter (n_d)		--	⩾20	--

FullBand® Plus Low Loss Single-mode Fibre

Yangtze Optical Fibre and Cable Joint Stock Limited Company

YOFC FullBand® Plus Low Loss Single-mode Fibre is designed specially for optical transmission systems*which operates over the entire wavelength window from 1260 nm to 1625 nm. By suppressing the water peak that occurs near 1383 nm in conventional Single-mode fibre due to hydroxyl (OH^-) ions absorption, FullBand® Plus Fibre is able to open E-band (1360 -1460nm) for operation, and consequently provides 100 nm more usable wavelengths. FullBand® Plus Fibre is effectively optimized for much lower attenuation level across the entire wavelength window from 1260 nm up to 1625 nm.

Applications

Thanks to its broad usable optical spectrum and outstanding attenuation performance, FullBand®Plus Low Loss Single-mode Fibre is the optimum choice that supports various applications such as Ethernet, Internet Protocol (IP), Asychronous Transfer Mode (ATM), Synchronous Distribution Network (SDH) and Wavelength Division Multiplexing (WDM). FullBand® Plus Low Loss Singlemode Fibre provides wider bandwidth and much lower signal attenuation for backbone, metropolitan area and access networks.

Norms

YOFC FullBand® Plus fibre complies with or even exceeds the ITU-T Recommendation G.652.D and the IEC 60793-2-50 type B1.3 Optical Fibre Specification.
YOFC tightens many parameters of fibre products.

Characteristics

- Designed for operation over the full optical spectrum from 1260-1625 nm, and hence the transmission capacity is increased
- Much lower attenuation over the full optical spectrum from 1260nm to 1625 nm, which meet the demand of extended long distance transmission
- Outstanding optical performance supporting high-speed transmission technologies such as DWDM and CWDM
- Being compatible with existing 1310 nm equipment
- Good protection and excellent strip force stability
- Accurate geometrical parameters that insure low splicing loss and high splicing efficiency

Characteristics		Conditions	Specified values	Units
Optical Characteristics				
Attenuation		1310nm	⩽0.32	[dB/km]
		1383nm(after H_2-aging)	⩽0.31	[dB/km]
		1550nm	⩽0.18	[dB/km]
		1625nm	⩽0.20	[dB/km]
Attenuation vs. Wavelength Max. α difference		1285-1330nm, in reference to 1310nm	⩽0.03	[dB/km]
		1525-1575nm, in reference to 1550nm	⩽0.02	[dB/km]
Dispersion Coefficient		1285-1340nm	-3.5 to 3.5	[ps/(nm · km)]
		1550nm	⩽18	[ps/(nm · km)]
		1625nm	⩽22	[ps/(nm · km)]
Zero Dispersion Wavelength (λ_0)		--	1300- 1324	[nm]
Zero Dispersion Slope (S_0)		--	⩽0.092	[ps/(nm² · km)]
Typical Value		--	0.086	[ps/(nm² · km)]
PMD	Maximum Individual Fibre	--	⩽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)		1310nm	8.7- 9.5	[μm]
		1550nm	9.8- 10.8	[μm]
Effective Group Index of Refraction (N_{eff})		1310nm	1.466	--
		1550nm	1.467	--
Point Discontinuities		1310nm	⩽0.05	[dB]
		1550nm	⩽0.05	[dB]
Geometrical Characteristics				
Cladding Diameter		--	125.0±0.7	[μm]
Cladding Non-Circularity		--	⩽1.0	[%]
Coating Diameter		--	235- 245	[μm]
Coating-Cladding Concentricity Error		--	⩽12.0	[μm]
Coating Non-Circularity		--	⩽6.0	[%]
Core-Cladding Concentricity Error		--	⩽0.6	[μm]
Curl(radius)		--	⩾4	[m]
Delivery Length		--	Up to 50.4	[km/reel]
Environmental Characteristics		**1310nm, 1550nm & 1625nm**		
Temperature Dependence Induced Attenuation		-60°C to +85°C	⩽0.05	[dB/km]
Temperature-Humidity Cycling Induced Attenuation		-10°C to +85°C, 98% RH	⩽0.05	[dB/km]
Watersoak Dependence Induced Attenuation		23°C, for 30 days	⩽0.05	[dB/km]
Damp Heat Dependence Induced Attenuation		85°C and 85% RH, for 30 days	⩽0.05	[dB/km]
Dry Heat Aging		85°C, for 30 days	⩽0.05	[dB/km]
Mechanical Specifications				
Proof Test		--	⩾9.0	[N]
		--	⩾1.0	[%]
		--	⩾100	[kpsi]
Macro-bend Induced Loss	100 Turns Around a Mandrel of 30 mm Radius	1625nm	⩽0.05	[dB]
	100 Turns Around a Mandrel of 25 mm Radius	1310nm and 1550nm	⩽0.05	[dB]
	1 Turn Around a Mandrel of 16 mm Radius	1550nm	⩽0.05	[dB]
Coating Strip Force		typical average force	1.5	[N]
		peak force	1.3- 8.9	[N]
Dynamic Fatigue Parameter (n_d)		--	⩾20	--

FullBand® Ultra Low Loss Single-mode Fibre

Yangtze Optical Fibre and Cable Joint Stock Limited Company

YOFC FullBand® Ultra low loss Single-mode fibre is made by YOFC unique core technology, it offers 15% lower attenuation than typical G.652.D fibres, with a maximum attenuation of 0.17 dB/km at 1550 nm.

Applications

YOFC FullBand® Ultra low loss Single-mode fibre, with trench-assisted profile.

YOFC FullBand® Ultra low loss Single-mode fibre, with special material design, it also offers excellent hydrogen aging characteristics, which guarantees stability of fibre applications.

Norms

YOFC FullBand® Ultra low loss Single-mode fibre is based on 9.1μm MFD that same as most standard Single-mode fibre, benefit for it seamless compliant with existing network. It fully meets the demands for transmitting signal with high speed, high capacity and extended networking distances over one single fibre. YOFC FullBand® Ultra loss fibre complies with ITU-T G.652.B and G.654.C.

Advantages

Due to the process innovation and technical breakthrough, Ultra Low Loss Single-mode Fibre has the following features and advantages:

Features	Advantages
• Ultra low attenuation	• Improved OSNR for upgrading to 100Gb/s, 400Gb/s and beyond • Further enhanced distance between amplifiers or regenerators • Increase system margins, decrease the system cost
• Low bending losses	• Smaller, lighter cable design • Reduced rework time from bends in installation or maintenance

Characteristics		Conditions	Specified values	Units
Optical Characteristics				
Attenuation		1310nm	⩽0.31	[dB/km]
		1550nm	⩽0.17	[dB/km]
		1625nm	⩽0.20	[dB/km]
Attenuation vs. Wavelength Max. α difference		1285-1330nm, in reference to 1310nm	⩽0.03	[dB/km]
		1525-1575nm, in reference to 1550nm	⩽0.02	[dB/km]
Dispersion Coefficient		1285-1340nm	-3.5 to 3.5	[ps/(nm·km)]
		1550nm	⩽18	[ps/(nm·km)]
		1625nm	⩽22	[ps/(nm·km)]
Zero Dispersion Wavelength		--	1300-1324	[nm]
Zero Dispersion Slope		--	⩽0.092	[ps/(nm²·km)]
PMD	Maximum Individual Fibre	--	⩽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)		1310nm	8.7-9.5	[μm]
		1550nm	9.8-10.8	[μm]
Effective Group Index of Refraction (N_{eff})		1310nm	1.463	--
		1550nm	1.464	--
Point Discontinuities		1310nm	⩽0.05	[dB]
		1550nm	⩽0.05	[dB]
Geometrical Characteristics				
Cladding Diameter		--	125.0±0.7	[μm]
Cladding Non-Circularity		--	⩽1.0	[%]
Coating Diameter		--	235-255	[μm]
Coating-Cladding Concentricity Error		--	⩽12.0	[μm]
Coating Non-Circularity		--	⩽6.0	[%]
Core-Cladding Concentricity Error		--	⩽0.6	[μm]
Curl(radius)		--	⩾4	[m]
Delivery Length[1]		--	Up to 25.2	[km/spool]
Environmental Characteristics		**1310nm, 1550nm & 1625nm**		
Temperature Dependence Induced Attenuation		-60°C to +85°C	⩽0.05	[dB/km]
Temperature-Humidity Cycling Induced Attenuation		-10°C to +85°C, 98% RH	⩽0.05	[dB/km]
Watersoak Dependence Induced Attenuation		23°C, for 30 days	⩽0.05	[dB/km]
Damp Heat Dependence Induced Attenuation		85°C and 85% RH, for 30 days	⩽0.05	[dB/km]
Dry Heat Aging		85°C, for 30 days	⩽0.05	[dB/km]
Mechanical Specifications				
Proof Test[2]		--	⩾9.0	[N]
		--	⩾1.0	[%]
		--	⩾100	[kpsi]
Macro-bend Induced Loss	100 Turns Around a Mandrel of 30 mm Radius	1625nm	⩽0.05	[dB]
	100 Turns Around a Mandrel of 25 mm Radius	1310nm and 1550nm	⩽0.05	[dB]
	1 Turn Around a Mandrel of 16 mm Radius	1550nm	⩽0.05	[dB]
Coating Strip Force		typical average force	1.5	[N]
		peak force	1.3-8.9	[N]
Dynamic Fatigue Parameter (n_d)		--	⩾20	--

Remark: 1.Other delivery lengths are available. 2.Higher proof test level is available.

EasyBand® Bending Insensitive Single-mode Fibre

Yangtze Optical Fibre and Cable Joint Stock Limited Company

YOFC EasyBand® bending insensitive single mode fibre encompasses all the features of FullBand® fibre and provides good resistance to macro-bending. It has low macro-bending sensitivity and low water-peak level. It is comprehensively optimized for use in O-E-S-C-L band (1260 -1625 nm).

It offers good resistance to additional losses due to low macro-bending in the 1625 nm wavelength region. This not only supports L-band applications but also allows for easy installation without excessive care when storing the fibre, for example, in splicing cassettes. For cable use inside buildings, the fibre supports installation with small cable bending radii and compact organizers.

Applications

- Short pitch cables for special applications
- 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

YOFC EasyBand® bending insensitive single mode fibre meets or exceeds the ITU-T Recommendation G.652.D/G.657.A1 including the IEC60703-2-50 type B1.3/B6.a1 Optical Fibre Specification.

Characteristics

- Low attenuation satisfying the operation demand in O-E-S-C-L band
- Good bending loss resistance at short radius bends
- Low 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 splicing loss and high splicing efficiency

Characteristics		Conditions	Specified values	Units
Optical Characteristics				
Attenuation		1310nm	⩽0.35	[dB/km]
		1383nm(after H_2-aging)	⩽0.35	[dB/km]
		1460nm	⩽0.25	[dB/km]
		1550nm	⩽0.21	[dB/km]
		1625nm	⩽0.23	[dB/km]
Attenuation vs. Wavelength Max. α difference		1285-1330nm, in reference to 1310nm	⩽0.03	[dB/km]
		1525-1575nm, in reference to 1550nm	⩽0.02	[dB/km]
Dispersion Coefficient		1285-1340nm	-3.5 to 3.5	[ps/(nm · km)]
		1550nm	⩽18	[ps/(nm · km)]
		1625nm	⩽22	[ps/(nm · km)]
Zero Dispersion Wavelength (λ_0)		--	1300-1324	[nm]
Zero Dispersion Slope (S_0)		--	⩽0.092	[ps/(nm² · km)]
Typical Value		--	0.086	[ps/(nm² · km)]
PMD	Maximum Individual Fibre	--	⩽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)		1310nm	8.4- 9.2	[μm]
		1550nm	9.3-10.3	[μm]
Effective Group Index of Refraction (N_{eff})		1310nm	1.466	–
		1550nm	1.467	–
Point Discontinuities		1310nm	⩽0.05	[dB]
		1550nm	⩽0.05	[dB]
Geometrical Characteristics				
Cladding Diameter		--	125.0±0.7	[μm]
Cladding Non-Circularity		--	⩽0.7	[%]
Coating Diameter		--	235-245	[μm]
Coating-Cladding Concentricity Error		--	⩽12.0	[μm]
Coating Non-Circularity		--	⩽6.0	[%]
Core-Cladding Concentricity Error		--	⩽0.5	[μm]
Curl(radius)		--	⩾4	[m]
Delivery Length		--	Up to 50.4	[km/reel]
Environmental Characteristics		**1310nm, 1550nm & 1625nm**		
Temperature Dependence Induced Attenuation		-60°C to +85°C	⩽0.05	[dB/km]
Temperature-Humidity Cycling Induced Attenuation		-10°C to +85°C, 98% RH	⩽0.05	[dB/km]
Watersoak Dependence Induced Attenuation		23°C, for 30 days	⩽0.05	[dB/km]
Damp Heat Dependence Induced Attenuation		85°C and 85% RH, for 30 days	⩽0.05	[dB/km]
Dry Heat Aging		85°C, for 30 days	⩽0.05	[dB/km]
Mechanical Specifications				
Proof Test		--	⩾9.0	[N]
		--	⩾1.0	[%]
		--	⩾100	[kpsi]
Macro-bend Induced Loss	10 Turns Around a Mandrel of 15 mm Radius	1550nm	⩽0.25	[dB]
	10 Turns Around a Mandrel of 15 mm Radius	1625nm	⩽1.0	[dB]
	1 Turn Around a Mandrel of 10 mm Radius	1550nm	⩽0.75	[dB]
	1 Turn Around a Mandrel of 10 mm Radius	1625nm	⩽1.5	[dB]
Coating Strip Force		typical average force	1.5	[N]
		peak force	1.3- 8.9	[N]
Dynamic Fatigue Parameter (n_d)		--	⩾20	–

EasyBand® Plus Bending Insensitive Single-mode Fibre

Yangtze Optical Fibre and Cable Joint Stock Limited Company

YOFC EasyBand® Plus bending insensitive single-mode fibre combines two attractive features: excellent low macro-bending sensitivity and low water-peak level. It is comprehensively optimized for use in O-E-S-C-L band (1260 -1625 nm).

The EasyBand® Plus's bending insensitive feature not only guarantees L-band applications but also allows for easy installation without excessive care when storing the fibre especially for FTTH networks applications. Bending radii in fibre guidance ports can be reduced as well as minimum bend radii in wall and corner mountings.

Applications

- All types of fibre cables with different structures
- High performance optical network operating in O-E-S-C-L band
- High speed optical routes for Fibre-to-the-Home networks
- Cables with extreme low bending requirements
- Small-sized fibre cable and optical component

Norms

YOFC EasyBand® Plus bending insensitive Single-mode fibre meets or exceeds the ITU-T Recommendation G.652.D/G.657.A1/G.657.A2/G.657.B2 including the IEC 60793-2-50 type B1.3/B6.a1/B6.a2/B6.b2 Optical Fiber Specification.

Characteristics

- Extremely high bending loss resistance in the 7.5 to 15mm bending radius range
- Full compatibility with all G.652 fibres for any applications
- Low attenuation satisfying the operation demand in O-E-S-C-L band
- Low PMD satisfying high bit-rate and long distance transmission requirements
- Low bending loss for highly demanding cable designs including ribbons
- Accurate geometrical parameters that insure low splicing loss and high splicing efficiency
- High n_d-value satisfying long operational lifetime in minimum bend radius

Characteristics		Conditions	Specified values	Units
Optical Characteristics				
Attenuation		1310nm	⩽0.35	[dB/km]
		1383nm(after H_2-aging)	⩽0.35	[dB/km]
		1460nm	⩽0.25	[dB/km]
		1490nm	⩽0.23	[dB/km]
		1550nm	⩽0.21	[dB/km]
		1625nm	⩽0.23	[dB/km]
Attenuation vs. Wavelength Max. α difference		1285-1330nm, in reference to 1310nm	⩽0.03	[dB/km]
		1525-1575nm, in reference to 1550nm	⩽0.02	[dB/km]
Zero Dispersion Wavelength (λ_0)		--	1300-1324	[nm]
Zero Dispersion Slope (S_0)		--	⩽0.092	[ps/(nm²·km)]
PMD	Maximum Individual Fibre	--	⩽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)		1310nm	8.4- 9.2	[μm]
		1550nm	9.3-10.3	[μm]
Effective Group Index of Refraction (N_{eff})		1310nm	1.466	--
		1550nm	1.467	--
Point Discontinuities		1310nm	⩽0.05	[dB]
		1550nm	⩽0.05	[dB]
Geometrical Characteristics				
Cladding Diameter		--	125.0±0.7	[μm]
Cladding Non-Circularity		--	⩽0.7	[%]
Coating Diameter		--	235-245	[μm]
Coating-Cladding Concentricity Error		--	⩽12.0	[μm]
Coating Non-Circularity		--	⩽6.0	[%]
Core-Cladding Concentricity Error		--	⩽0.5	[μm]
Curl(radius)		--	⩾4	[m]
Delivery Length		--	Up to 50.4	[km/reel]
Environmental Characteristics		**1310nm, 1550nm & 1625nm**		
Temperature Dependence Induced Attenuation		-60°C to +85°C	⩽0.05	[dB/km]
Temperature-Humidity Cycling Induced Attenuation		-10°C to +85°C, 98% RH	⩽0.05	[dB/km]
Watersoak Dependence Induced Attenuation		23°C, for 30 days	⩽0.05	[dB/km]
Damp Heat Dependence Induced Attenuation		85°C and 85% RH, for 30 days	⩽0.05	[dB/km]
Dry Heat Aging		85°C, for 30 days	⩽0.05	[dB/km]
Mechanical Specifications				
Proof Test		--	⩾9.0	[N]
		--	⩾1.0	[%]
		--	⩾100	[kpsi]
Macro-bend Induced Loss	10 Turns Around a Mandrel of 15 mm Radius	1550nm	⩽0.03	[dB]
	10 Turns Around a Mandrel of 15 mm Radius	1625nm	⩽0.1	[dB]
	1 Turn Around a Mandrel of 10 mm Radius	1550nm	⩽0.1	[dB]
	1 Turn Around a Mandrel of 10 mm Radius	1625nm	⩽0.2	[dB]
	1 Turn Around a Mandrel of 7.5 mm Radius	1550nm	⩽0.5	[dB]
	1 Turn Around a Mandrel of 7.5 mm Radius	1625nm	⩽1.0	[dB]
Coating Strip Force		typical average force	1.5	[N]
		peak force	1.3- 8.9	[N]
Dynamic Fatigue Parameter (n_d)		--	⩾20	--

EasyBand® Plus-Mini 200μm Reduced Diameter Bending Insensitive Single-mode Fibre

Yangtze Optical Fibre and Cable Joint Stock Limited Company

YOFC EasyBand® Plus-Mini fibre realized reduced fibre outer diameter with excellent bending performance thanks to its bending insensitive fibre design.

YOFC EasyBand® Plus-Mini fibre keeps the same glass part size as standard 245μm fibre (bare glass part diameter is still 125μm) and has the same MFD, cutoff and other optical parameters as 245μm fibre such as EasyBand® Plus (YOFC 's G.657.A2 fibre), and it inherits almost all the advantages of EasyBand® Plus standard 245μm diameter G.657.A2 fibre.

Applications

- All types of fibre cables with different structures
- High performance optical network operating in O-E-S-C-L band
- High speed optical routes for Fibre-to-the-Home networks
- Cables with extreme low bending requirements
- Small-sized fibre cable and optical component

Norms

YOFC EasyBand® Plus-Mini fibre fully complies with ITU-T G.652.D/G.657.A1/G.657.A2/ G.657.B2 specifications. It is also comprehensively optimized for use in the whole telecom wavelength window (1260 nm-1625 nm).

Characteristics

- Reduced cable size and weight for micro cable
- More suitable for applications in downsized optical fibre devices
- Reduce network deployments cost and total cost of ownership
- Compatible with standard cleaving and stripping tools
- Similar settings of the fusion splice program with that of G.652 fibre
- All bands utilization, from O to L band and ready for future systems evolutions

Characteristics		Conditions	Specified values	Units
Optical Specifications				
Attenuation		1310nm	⩽0.35	[dB/km]
		1383nm (after H_2-aging)	⩽0.35	[dB/km]
		1550nm	⩽0.21	[dB/km]
		1625nm	⩽0.23	[dB/km]
Attenuation vs. Wavelength Max. α difference		1285-1330nm, in reference to 1310nm	⩽0.03	[dB/km]
		1525-1575nm, in reference to 1550nm	⩽0.02	[dB/km]
		1460-1625nm, in reference to 1550nm	⩽0.04	[dB/km]
Zero Dispersion Wavelength (λ_0)		--	1300-1324	[nm]
Zero Dispersion slpoe (S_0)		--	⩽0.092	[ps/(nm² · km)]
PMD	Maximum Individual Fibre	--	⩽0.2	[ps/√km]
	Link Design Value (M=20, Q=0.01%)	--	⩽0.1	[ps/√km]
	Typical Value	--	0.04	[ps/√km]
Cable Cut-off Wavelength (λ_{cc})		--	⩽1260	[nm]
Mode Field Diameter (MFD)		1310nm	8.4-9.2	[μm]
		1550nm	9.3-10.3	[μm]
Effective Group Index (N_{eff})		1310nm	1.466	--
		1550nm	1.467	--
Point Discontinuities		1310nm	⩽0.05	[dB]
		1550nm	⩽0.05	[dB]
Geometrical Specifications				
Cladding Diameter		--	125.0±0.7	[μm]
Cladding Non-Circularity		--	⩽0.7	[%]
Coating Diameter		--	190-210	[μm]
Coating-Cladding Concentricity Error		--	⩽10	[μm]
Coating Non-Circularity		--	⩽6	[%]
Core-Cladding Concentricity Error		--	⩽0.5	[μm]
Curl(radius)		--	⩾4	[m]
Delivery Length		--	Up to 50.4	[km]
Environmental Specifications		**1310nm, 1550nm & 1625nm**		
Temperature Dependence Induced Attenuation		-60℃ to +85℃	⩽0.05	[dB/km]
Temperature-Humidity Cycling Induced Attenuation		-10℃ to +85℃, 98% RH	⩽0.05	[dB/km]
Watersoak Dependence Induced Attenuation		23℃, for 30 days	⩽0.05	[dB/km]
Damp Heat Dependence Induced Attenuation		85℃ and 85% RH, for 30 days	⩽0.05	[dB/km]
Dry Heat Aging		85℃, for 30 days	⩽0.05	[dB/km]
Mechanical Specificationss				
Proof Test		--	⩾9.0	[N]
		--	⩾1.0	[%]
		--	⩾100	[kpsi]
Macro-bend Induced Loss	10 Turn Around a Mandrel of 15 mm Radius	1550	⩽0.03	[dB]
	10 Turn Around a Mandrel of 15 mm Radius	1625	⩽0.1	[dB]
	1 Turn Around a Mandrel of 10 mm Radius	1550	⩽0.1	[dB]
	1 Turn Around a Mandrel of 10 mm Radius	1625	⩽0.2	[dB]
	1 Turn Around a Mandrel of 7.5 mm Radius	1550	⩽0.5	[dB]
	1 Turn Around a Mandrel of 7.5 mm Radius	1625	⩽1.0	[dB]
Dynamic Fatigue Parameter (n_d)		--	⩾20	--

EasyBand® Ultra Bending Insensitive Single-mode Fibre

Yangtze Optical Fibre and Cable Joint Stock Limited Company

YOFC EasyBand® Ultra fibre is designed specifically for Fibre-To-The-Home (FTTH), enterprise network and any other applications where ultra low bending-loss at small bending radii is needed.

Applications

- All types of fibre patch cord with different structures
- High speed optical routes for Fibre-To-The-Home networks (FTTH)
- Cables with extreme low bending requirements
- Small-sized optical component

Norms

YOFC EasyBand® Ultra fibre's macrobending performance and optical performance are superior to those recommended in ITU-T G.657.B3. and IEC 60793-2-50 B6.b3. Down to 5 mm bending radius, EasyBand® Ultra can meet the complex installation conditions in MDU and FTTH, such as wall corner, stapling, high load tension, etc.

Characteristics

- Superior to standard ITU-T G.657.B3 fibre, bending radius down to as small as 5mm and full compatibility with all G.652.D fibres
- Low attenuation satisfying the operation demand in O-E-S-C-L band
- Low bending loss for highly demanding cable designs including ribbons
- Accurate geometrical parameters and large MFD which insure low splicing loss and high splicing efficiency
- High n_d value satisfying long service life in minimum bend radius

Characteristics		Conditions	Specified values	Units
Optical Characteristics				
Attenuation		1310nm	⩽0.35	[dB/km]
		1383nm (after H_2-aging)	⩽0.35	[dB/km]
		1550nm	⩽0.21	[dB/km]
		1625nm	⩽0.23	[dB/km]
Attenuation vs. Wavelength Max. α difference		1285-1330nm, in reference to 1310nm	⩽0.03	[dB/km]
		1525-1575nm, in reference to 1550nm	⩽0.02	[dB/km]
Zero Dispersion Wavelength (λ_0)		--	1300-1324	[nm]
Zero Dispersion Slope (S_0)		--	⩽0.092	[ps/(nm²·km)]
PMD	Maximum Individual Fibre	--	⩽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)		1310nm	8.2-9.0	[μm]
		1550nm	9.1-10.1	[μm]
Effective Group Index of Refraction (N_{eff})		1310nm	1.468	--
		1550nm	1.469	--
Point Discontinuities		1310nm	⩽0.05	[dB]
		1550nm	⩽0.05	[dB]
Geometrical Characteristics				
Cladding Diameter		--	125.0±0.7	[μm]
Cladding Non-Circularity		--	⩽0.7	[%]
Coating Diameter		--	235-245	[μm]
Coating-Cladding Concentricity Error		--	⩽12.0	[μm]
Coating Non-Circularity		--	⩽6.0	[%]
Core-Cladding Concentricity Error		--	⩽0.5	[μm]
Curl(radius)		--	⩾4	[m]
Delivery Length		--	Up to 25.2	[km/reel]
Environmental Characteristics				
Temperature Dependence Induced Attenuation		-60℃ to +85℃	⩽0.05	[dB/km]
Temperature-Humidity Cycling Induced Attenuation		-10℃ to +85℃, 98% RH	⩽0.05	[dB/km]
Watersoak Dependence Induced Attenuation		23℃, for 30 days	⩽0.05	[dB/km]
Damp Heat Dependence Induced Attenuation		85℃ and 85% RH, for 30 days	⩽0.05	[dB/km]
Dry Heat Aging		85℃, for 30 days	⩽0.05	[dB/km]
Mechanical Specifications				
Proof Test		--	⩾9.0	[N]
		--	⩾1.0	[%]
		--	⩾100	[kpsi]
Macro-bend Induced Loss	1 Turn Around a Mandrel of 10 mm Radius	1550nm	⩽0.03	[dB]
	1 Turn Around a Mandrel of 10 mm Radius	1625nm	⩽0.1	[dB]
	1 Turn Around a Mandrel of 7.5 mm Radius	1550nm	⩽0.08	[dB]
	1 Turn Around a Mandrel of 7.5 mm Radius	1625nm	⩽0.25	[dB]
	1 Turns Around a Mandrel of 5 mm Radius	1550nm	⩽0.15	[dB]
	1 Turns Around a Mandrel of 5 mm Radius	1625nm	⩽0.45	[dB]
Coating Strip Force		typical average force	1.5	[N]
		peak force	1.3- 8.9	[N]
Dynamic Fatigue Parameter (n_d)		--	⩾20	--

EasyBand® Low Loss Bending Insensitive Single-mode Fibre

Yangtze Optical Fibre and Cable Joint Stock Limited Company

EasyBand® Low Loss Bending Insensitive Single-mode Fibre is suitable for optical transmission systems which operates over the entire wavelength window from 1260 nm to 1625 nm. It is an advanced product of YOFC bending insensitive fibre, which possesses all advantages of Low Loss Fibre, and also improves anti-bending properties, combines low loss and bending insensitive properties. EasyBand® Low Loss Bending Insensitive Single-mode Fibre is fully compatible with standard normal single-mode fibre, and thoroughly meets multiple demands of multi-channel, high bit-rate, long distance transmission and anti-bending properties.

Application

Due to its outstanding performance in both attenuation and bending resistance, EasyBand® Low Loss Bending Insensitive Single-mode Fibre is fully compatible with different cabling and differentiated systems in different installation environments of trunk network, metropolitan area network, access network and resident network.

Norms

EasyBand® Low Loss Bending Insensitive Single-mode Fibre meets and exceeds the ITU-T Recommendation G.652.D/G.657.A1 including the IEC 60793-2-50 type B1.3/B6.a1 Optical Fibre Specification.

Characteristics

- Possesses advanced anti-bending and low loss properties
- Achieved the operation over full optical spectrum from 1260-1625 nm, and increased the system transmission capacity
- Lower attenuation, which meets the demand of extended long distance transmission
- Good bending loss resistance at short radius bends
- Accurate geometrical parameters that insure low splicing loss and high splicing efficiency

Characteristics		Conditions	Specified values	Units
Optical Characteristics				
Attenuation		1310nm	⩽0.32	[dB/km]
		1383nm (after H_2 aging)	⩽0.31	[dB/km]
		1460nm	⩽0.31	[dB/km]
		1550nm	⩽0.18	[dB/km]
		1625nm	⩽0.20	[dB/km]
Attenuation vs. Wavelength Max. α difference		1285nm-1330nm, in reference to1310nm	⩽0.03	[dB/km]
		1525nm-1575nm, in reference to1550nm	⩽0.02	[dB/km]
Dispersion Coefficient		1285-1340nm	-3.5 to 3.5	[ps/(nm·km)]
		1550nm	⩽18	[ps/(nm·km)]
		1625nm	⩽22	[ps/(nm·km)]
Zero Dispersion Wavelength (λ_0)		--	1300-1324	[nm]
Zero Dispersion Slope (S_0)		--	⩽0.092	[ps/(nm²·km)]
Typical Value		--	0.086	[ps/(nm²·km)]
PMD	Maximum Individual Fibre	--	⩽0.1	[ps/√km]
	Link Design Value (M=20, Q=0.01%)	--	⩽0.06	[ps/√km]
	Typical Value	--	0.04	[ps/√km]
Cable Cut-off Wavelength (λ_{cc})		--	⩽1260	[nm]
Mode Field Diameter (MFD)		1310nm	8.7-9.5	[μm]
		1550nm	9.8-10.8	[μm]
Effective Group Index of Refraction (N_{eff})		1310nm	1.466	--
		1550nm	1.467	--
Point Discontinuities		1310nm	⩽0.05	[dB]
		1550nm	⩽0.05	[dB]
Geometrical Characteristics				
Cladding Diameter		--	125.0±0.7	[μm]
Cladding Non-Circularity		--	⩽0.7	[%]
Coating Diameter		--	235-245	[μm]
Coating-Cladding Concentricity Error		--	⩽12.0	[μm]
Coating Non-Circularity		--	⩽6.0	[%]
Core-Cladding Concentricity Error		--	⩽0.5	[μm]
Curl(radius)		--	⩾4	[m]
Delivery Length		--	up to 50.4	[km/reel]
Environmental Characteristics		**(1310 nm, 1550 nm & 1625 nm)**		
Temperature Dependence Induced Attenuation		-60°C to + 85°C	⩽0.05	[dB/km]
Temperature-Humidity Cycling Induced Attenuation		-10°C to + 85°C, 98% RH	⩽0.05	[dB/km]
Watersoak Dependence Induced Attenuation		23°C, for 30 days	⩽0.05	[dB/km]
Damp Heat Dependence Induced Attenuation		85°C and 85% RH, for 30 days	⩽0.05	[dB/km]
Dry Heat Aging		85°C	⩽0.05	[dB/km]
Mechanical Specifications				
Proof Test		--	⩾9.0	[N]
		--	⩾1.0	[%]
		--	⩾100	[kpsi]
Macro-bend Induced Attenuation	10 Turn Around a Mandrel of 15 mm Radius	1550nm	⩽0.05	[dB]
	10 Turn Around a Mandrel of 15 mm Radius	1625nm	⩽0.3	[dB]
	1 Turn Around a Mandrel of 10 mm Radius	1550nm	⩽0.5	[dB]
	1 Turn Around a Mandrel of 10 mm Radius	1625nm	⩽1.5	[dB]
Coating Strip Force		typical average force	1.5	[N]
		peak force	1.3-8.9	[N]
Dynamic Fatigue Parameter (n_d)		--	⩾20	--

FarBand® Cut-off Shifted Single-mode Optical Fibre

Yangtze Optical Fibre and Cable Joint Stock Limited Company

YOFC FarBand® fibre is designed specially for long-haul optical transmission systems. It makes performance optimization in both C band (1530-1565nm) and L band (1565-1625nm). Its enlarged effective area suppresses nonlinear effect in the process and increases nonlinear tolerance for transmission system. Meanwhile FarBand® fibre reduces attenuation in both C band and L band. The fibre fully meets the demands for transmitting signal with high speed, high capacity and extended networking distances over one single fibre.

Applications

Attributed to its large effective area and lower attenuation performance, FarBand® fibre is the optimum choice that supports various applications such as Ethernet, Internet Protocol (IP), Synchronous Optical Network (SONET) and Wavelength Division Multiplexing (WDM). FarBand® fibre enables high input power and minishes transmitted power distribution density because of its enlarged effective area, suppressing nonlinear effect, such as Brillouin scattering, self-phase modulation and cross phase modulation, thus it satisfys multi-channel DWDM system. Meanwhile FarBand® fibre provides low signal attenuation, which satisfys the optical fibre attenution requirement in long haul transmission, and provides more system redundancy.

Norms

FarBand® fibre complies with or even exceeds the ITU-T G.654.B/E recommendation and IEC 60793-2-50 B1.2 Optical Fibre Specification. YOFC tightens many parameters of fibre products.

Characteristics

- Designed for 40G/100G/ 100G beyond large capacity, long-haul Dense Wavelength Division Multiplexing (DWDM) system operation over C band (1530-1565nm) and L band (1565-1625nm)
- Large effective area reduces nonlinear effect in the transmission process, ensuring good system performance
- Lower attenuation level, which meets the demand of extended long distance transmission
- Lower bending induced loss at 1550nm and more sensitive 1625nm window.

Characteristics		Conditions	Specified values	Units
Optical Characteristics				
Nominal Effective Area		1550nm	125	[μm²]
Mode Field Diameter		1550nm	12.0 - 13.0	[μm]
Attenuation		1550nm	⩽0.19	[dB/km]
		1625nm	⩽0.21	[dB/km]
Attenuation vs. Wavelength Max. α difference		1525-1575nm, in reference to 1550nm	⩽0.02	[dB/km]
		1550-1625nm, in reference to 1550nm	⩽0.03	[dB/km]
Dispersion Coefficient		1550nm	⩽23	[ps/(nm·km)]
		1625nm	⩽27	[ps/(nm·km)]
Dispersion Slope		1550nm	0.050- 0.070	[ps/(nm²·km)]
PMD	Maximum Individual Fibre	--	⩽0.1	[ps/√km]
	Link Design Value (M=20, Q=0.01%)	--	⩽0.04	[ps/√km]
	Typical Value	--	0.03	[ps/√km]
Cable Cutoff Wavelength (λ_{cc})		--	⩽1520	[nm]
Effective Group Index of Refraction		1550nm	1.465	--
Point Discontinuities		1550nm	⩽0.05	[dB]
Geometrical Characteristics				
Cladding Diameter		--	125.0±1.0	[μm]
Cladding Non-Circularity		--	⩽1.0	[%]
Coating Diameter		--	235 - 255	[μm]
Coating-Cladding Concentricity Error		--	⩽12.0	[μm]
Coating Non-Circularity		--	⩽6.0	[%]
Core-Cladding Concentricity Error		--	⩽0.6	[μm]
Curl(radius)		--	⩾4	[m]
Delivery Length[1]		--	Up to 25.2	[km/reel]
Environmental Characteristics		**1550nm & 1625nm**		
Temperature Dependence Induced Attenuation		-60℃ to 85℃	⩽0.05	[dB/km]
Temperature-Humidity Cycling Induced Attenuation		-10℃ to 85℃, 98% RH	⩽0.05	[dB/km]
Watersoak Dependence Induced Attenuation		23℃, for 30 days	⩽0.05	[dB/km]
Damp Heat Dependence Induced Attenuation		85℃ , 85% RH, 30 days	⩽0.05	[dB/km]
Dry Heat Aging		85℃, for 30 days	⩽0.05	[dB/km]
Mechanical Specifications				
Proof Test[2]		--	⩾9.0	[N]
		--	⩾1.0	[%]
		--	⩾100	[kpsi]
Macro-bend Induced Loss	100 Turns Around a Mandrel of 30 mm Radius	1550nm	⩽0.10	[dB]
		1625nm	⩽0.10	[dB]
Coating Strip Force		typical average force	1.5	[N]
		peak force	1.3 -8.9	[N]
Dynamic Fatigue Parameter (n_d)		--	⩾20	--

Remark: 1.Other delivery lengths are available. 2.Higher proof test level is available.

FarBand® Ultra Low Loss and Large Effective Area Single-mode Fibre

Yangtze Optical Fibre and Cable Joint Stock Limited Company

For the next generation optical transmission network, lower attenuation or larger effective area of the fibre can help the system meet 3U (Ultra high speed, Ultra large capacity, Ultra long-haul) features. Now YOFC can deliver you larger effective area and lower attenuation within one fibre: FarBand® Ultra.

Advantages

- Larger effective area reduces nonlinear effect and enables higher signal power launched into the transmission system
- Enable higher transmission speeds with more wavelengths over ultra long-haul distances
- Lower attenuation level which meets the demand of extended long distance transmission
- Reduce number of repeaters and minimize CAPEX and OPEX
- Lower bending induced loss to meet complicated deployment conditions and cable structures

Norms

FarBand® Ultra fibre complies with or exceeds the ITU-T G.654.B/E recommendation and IEC 60793-2-50 B1.2 specification.

How to calculate the contribution of larger effective area and lower attenuation?

Based on the formula of OSNR, lower attenuation and larger effective area will increase OSNR of optical transmission system. And FOM (Figure of Merit) is established to calculate the contribution of effective area and attenuation. As shown in the table, YOFC ultra low loss and large effective area fibre can provide greater performance improvement than ultra low loss fibre below, or low loss and large effective fibre.

$$OSNR_{out}=\frac{P_{ch}}{S\cdot P_{ch}\cdot NF\cdot N_{spans}}$$

P_{ch}: $\propto A_{eff}/n_2$; $S\cdot P_{ch}\cdot NF\cdot N_{spans}$: $\propto$ attenuation α (dB/km)

$$\text{Fiber FOM(dB)}=10\log\left[\frac{A_{eff}/n_{2ref.}}{A_{eff\,ref.}\cdot n_2}\right]-[\alpha\,(\text{dB/km})-\alpha_{ref}\,(\text{dB/km})]\cdot L-10\log\left[\frac{L_{eff}}{L_{eff\,ref.}}\right]$$

Increase A_{eff} · Lower Att. · Increase L_{eff}

$$L_{eff}=\frac{1-e^{-\alpha L}}{\alpha}$$

$$\alpha=\frac{\ln 10}{10}\alpha_{dB/km}$$

Fibre Type	Att.	Aeff.	FOM
SSMF(Ref.)	0.2	80	/
LL	0.18	80	1.6
ULL	0.17	80	2.3
ULL	0.15	80	3.8
LL-LAF	0.18	130	4.9
ULL-LAF	0.16	110	5.8
ULL-LAF	0.16	130	6.4

Characteristics		Conditions	Specified values		Units
Optical Specifications					
Nominal Effective Area		1550nm	110	125	[μm²]
Mode Field Diameter		1550nm	11.4-12.2	12.0-13.0	[μm]
Attenuation		1550nm	⩽0.17		[dB/km]
		1625nm	⩽0.20		[dB/km]
Attenuation vs. Wavelength Max. α Difference		1525-1575nm, in reference to 1550nm	⩽0.02		[dB/km]
		1550-1625nm, in reference to 1550nm	⩽0.03		[dB/km]
Dispersion Coefficient		1550nm	⩽23		[ps/nm·km]
		1625nm	⩽27		[ps/nm·km]
Dispersion Slope		1550nm	0.050- 0.070		[ps/nm²·km]
PMD	Maximum Individual Fibre	--	⩽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})		--	⩽1520		[nm]
Effective Group Index of Refraction		1550nm	1.463	1.465	--
Point Discontinuities		1550nm	⩽0.05		[dB]
Geometrical Specifications					
Cladding Diameter		--	125.0±1.0		[μm]
Cladding Non-Circularity		--	⩽1.0		[%]
Coating Diameter		--	235- 255		[μm]
Coating-Cladding Concentricity		--	⩽12		[μm]
Coating Non-Circularity		--	⩽6		[%]
Core-Cladding Concentricity		--	⩽0.6		[μm]
Fibre Curl (Radius)		--	⩾4		[m]
Delivery Length[1]		--	Up to 25.2		[km/reel]
Environmental Specifications		**@1550nm & 1625nm**			
Temperature Dependence		-60°C to +85°C	⩽0.05		[dB/km]
Temperature-Humidity Cycling		-10°C to +85°C, 98% RH	⩽0.05		[dB/km]
Water Immersion		23°C, for 30 days	⩽0.05		[dB/km]
Damp Heat		85°C , 85% RH, for 30 days	⩽0.05		[dB/km]
Heat Aging		85°C, 30 days	⩽0.05		[dB/km]
Mechanical Specificationss					
Proof Test[2]		--	⩾9.0		[N]
		--	⩾1.0		[%]
		--	⩾100		[kpsi]
Macro-bend Induced Loss	100 Turns Around a Mandrel of 30 mm Radius	1550nm	⩽0.10		[dB]
		1625nm	⩽0.10		[dB]
Coating Strip Force		typical average force	1.5		[N]
		peak force	1.3- 8.9		[N]
Dynamic Fatigue Parameter (n_d)		--	⩾20		--

Remark: 1.Other delivery lengths are available. 2.Higher proof test level is available.


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LAPOSH® Large Effective Area High Capacity Positive Dispersion Shifted Single-mode Fibre

Yangtze Optical Fibre and Cable Joint Stock Limited Company

YOFC LAPOSH® fibre (Large Effective Area High Capacity Positive Dispersion Shifted Single-mode Fibre) is comprehensively optimized for attenuation and dispersion performance at the 1550 nm operating wavelength. The fibre has the lowest attenuation and moderate dispersion at 1550 nm, which enables excellent performance in multi-channel Dense Wavelength Division Multiplex (DWDM) systems traditionally operating in the C-band (1530 nm -1565 nm), as well as in emerging L-band (1565 nm -1625 nm) systems.

Applications

YOFC LAPOSH® fibre is the commercialized fibre that has the largest effective area in the G.655 series. The fibre is suitable for applications of high output power Erbium Doped Fibre Amplifier (EDFA) and multi-channel Dense Wavelength Division Multiplex (DWDM), and can be effectively applied in the high bit-rate both single-and multi-channel, long distance digital transmission links even without dispersion compensation.

Norms

YOFC LAPOSH® fibre complies with or exceeds the ITU-T G.655.C/D recommendation and IEC-60793-2-50 B4.c/d Optical Fibre Specification.

YOFC tightens many parameters of fibre products so as to offer more conveniences to customers.

Characteristics

- Being applicable in the high bit-rate operation across 1530-1565 nm and 1565-1625 nm band
- Large effective area ensures good economic return from the transmission system
- Low attenuation, low dispersion, low PMD and low zero dispersion slope that satisfy the demand of transmission links
- Low bending induced loss at 1550 nm and at the more sensitive 1625 nm wavelength

Characteristics		Conditions	Specified values	Units
Optical Characteristics				
Attenuation		1550nm	⩽0.22	[dB/km]
		1625nm	⩽0.24	[dB/km]
Attenuation vs. Wavelength Max. α Difference		1525-1575nm, in reference to 1550nm	⩽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 (λ_0)		--	⩽1520	[nm]
Dispersion Slope		1550nm	⩽0.084	[ps/(nm²·km)]
Typical dispersion slope		1550nm	0.075	[ps/(nm²·km)]
PMD	Maximum Individual Fibre	--	⩽0.2	[ps/√km]
	Link Design Value (M=20, Q=0.01%)	--	⩽0.08	[ps/√km]
	Typical Value	--	0.04	[ps/√km]
Cable Cutoff Wavelength (λ_{cc})		--	⩽1450	[nm]
Mode field diameter (MFD)		1550nm	9.1-10.1	[μm]
Effective Group Index of Refraction (N_{eff})		1550nm	1.469	--
		1625nm	1.469	--
Point Discontinuities		1550nm	⩽0.05	[dB]
Geometrical Characteristics				
Cladding Diameter		--	125.0±0.7	[μm]
Cladding Non-Circularity		--	⩽1.0	[%]
Coating Diameter		--	235- 255	[μm]
Coating-Cladding Concentricity Error		--	⩽12.0	[μm]
Coating Non-Circularity		--	⩽6.0	[%]
Core-Cladding Concentricity Error		--	⩽0.6	[μm]
Curl(Radius)		--	⩾4	[m]
Delivery Length		--	Up to 25.2	[km/reel]
Environmental Characteristics		**1550nm & 1625nm**		
Temperature Dependence Induced Attenuation		-60℃ to +85℃	⩽0.05	[dB/km]
Temperature-Humidity Cycling Induced Attenuation		-10℃ to +85℃, 98% RH	⩽0.05	[dB/km]
Watersoak Dependence Induced Attenuation		23℃, for 30 days	⩽0.05	[dB/km]
Damp Heat Dependence Induced Attenuation		85℃ , 85% RH, for 30 days	⩽0.05	[dB/km]
Dry Heat Aging		85℃, 30 days	⩽0.05	[dB/km]
Mechanical Specificationss				
Proof Test		--	⩾9.0	[N]
		--	⩾1.0	[%]
		--	⩾100	[kpsi]
Macro-bend Induced Loss	100 Turns Around a Mandrel of 30 mm Radius	1625nm	⩽0.05	[dB]
	100 Turns Around a Mandrel of 25 mm Radius	1550nm	⩽0.05	[dB]
	1 Turn Around a Mandrel of 16 mm Radius	1550nm	⩽0.05	[dB]
Coating Strip Force		typical average force	1.5	[N]
		peak force	1.3- 8.9	[N]
Dynamic Fatigue Parameter (n_d)		--	⩾20	--

HIPOSH® High Capacity Low Slope Dispersion Shifted Single-mode Fibre

Yangtze Optical Fibre and Cable Joint Stock Limited Company

HIPOSH® fibre of YOFC provides an ideal fibre solution for high bit-rate, explosive transmission capacity and long transmission distance. Several key factors affecting fibre performance: chromatic dispersion, dispersion slope, attenuation and effective area have been optimized. The transmission window is extended from C&L band to S-band. At the same time, the O-band of HIPOSH® fibre can be applied because the cable cut off wavelength is below to 1260 nm and dispersion is low in 1310 nm transmission window. With low attenuation, PMD value and appropriate chromatic dispersion value, HIPOSH® fibre is suitable for long distance and high bit-rate, such as 10 Gb/s and 40 Gb/s transmission system. Furthermore, the flatter dispersion slope provides an easy way to compensate the chromatic dispersion and dispersion slope using commercially available dispersion compensating devices.

Applications

YOFC HIPOSH® fibre is designed and manufactured according to the most advanced level in the world. It's applicable in all types including ribbon cable, loose tube stranded cable, slotted core cable, unitube cable and tight-buffer cable.

Norms

YOFC HIPOSH® fibre complies with or exceeds the ITU-T Recommendation G.655.E/G.656 and IEC 60793-2-50 B4.e/B5 Optical Fibre Specification.
YOFC tightens many parameters of fibre products so as to offer more conveniences to customers.

Characteristics

- Suitable for high bit-rate (10 Gb/s and 40 Gb/s) and long distance DWDM transmission system in S+C+L bands
- Supporting 1310 nm window transmission on the same fibre
- Lower dispersion compensation costs for metro networks, providing lowest first channel costs
- A relative low dispersion slope applicable for chromatic dispersion and dispersion slope compensation
- Low bending induced loss at 1550 nm and at the more sensitive 1625 nm wavelength

Characteristics		Conditions	Specified values	Units
Optical Characteristics				
Attenuation		1310nm	⩽0.38	[dB/km]
		1383nm	⩽1.00	[dB/km]
		1460nm	⩽0.28	[dB/km]
		1550nm	⩽0.21	[dB/km]
		1625nm	⩽0.24	[dB/km]
Attenuation vs. Wavelength Max. α Difference		1525-1575nm, in reference to 1550nm	⩽0.02	[dB/km]
Dispersion Coefficient		1460nm	⩾2.0	[ps/(nm·km)]
		1530-1565nm	5.5-10.0	[ps/(nm·km)]
		1565-1625nm	7.5-13.4	[ps/(nm·km)]
Zero Dispersion Wavelength (λ_0)		--	⩽1420	[nm]
Dispersion Slope		1550nm	⩽0.06	[ps/(nm²·km)]
Typical dispersion slope		1550nm	0.052	[ps/(nm²·km)]
PMD	Maximum Individual Fibre	--	⩽0.2	[ps/$\sqrt{km}$]
	Link Design Value (M=20, Q=0.01%)	--	⩽0.08	[ps/$\sqrt{km}$]
	Typical Value	--	0.04	[ps/$\sqrt{km}$]
Cable Cutoff Wavelength (λ_{cc})		--	⩽1260	[nm]
Mode field diameter (MFD)		1550nm	8.5-9.5	[μm]
Effective Group Index of Refraction (N_{eff})		1550nm&1625nm	1.469	--
Point Discontinuities		1550nm	⩽0.05	[dB]
Geometrical Characteristics				
Cladding Diameter		--	125.0±0.7	[μm]
Cladding Non-Circularity		--	⩽1.0	[%]
Coating Diameter		--	235-255	[μm]
Coating-Cladding Concentricity Error		--	⩽12.0	[μm]
Coating Non-Circularity		--	⩽6.0	[%]
Core-Cladding Concentricity Error		--	⩽0.6	[μm]
Curl (Radius)		--	⩾4	[m]
Delivery Length		--	Up to 25.2	[km/reel]
Environmental Characteristics		**1550nm & 1625nm**		
Temperature Dependence Induced Attenuation		-60°C to +85°C	⩽0.05	[dB/km]
Temperature-Humidity Cycling Induced Attenuation		-10°C to +85°C, 98% RH	⩽0.05	[dB/km]
Watersoak Dependence Induced Attenuation		23°C, for 30 days	⩽0.05	[dB/km]
Damp Heat Dependence Induced Attenuation		85°C and 85% RH, for 30 days	⩽0.05	[dB/km]
Dry Heat Aging		85°C, for 30 days	⩽0.05	[dB/km]
Mechanical Specifications				
Proof Test		--	⩾9.0	[N]
		--	⩾1.0	[%]
		--	⩾100	[kpsi]
Macro-bend Induced Loss	100 Turns Around a Mandrel of 30 mm Radius	1625nm	⩽0.05	[dB]
	100 Turns Around a Mandrel of 25 mm Radius	1310nm&1550nm	⩽0.05	[dB]
	1 Turn Around a Mandrel of 16 mm Radius	1550nm	⩽0.05	[dB]
Coating Strip Force		typical average force	1.5	[N]
		peak force	1.3-8.9	[N]
Dynamic Fatigue Parameter (n_d)		--	⩾20	--