FutureGuide™ series

FutureGuide™ series	FutureGuide™-Ace
	FutureGuide™-LWPplus-200
	FutureGuide™-BIS-B
	FutureGuide™-BIS-B-200
	FutureGuide™-SR15E
	FutureGuide™-SR15E-200
	FutureGuide™-LWP
	FutureGuide™-HSC-125

Fujikura Ltd. Telecommunication Systems Business Unit
Contact us
1-5-1, Kiba, Koto-ku, Tokyo 135-8512, Japan

FutureGuide™-Ace

Compliant with ITU-T G.657.A1 / G.652.D

FutureGuide™-Ace can be one of the best solutions, for its significantly improved bending loss performance, the same MFD as standard single mode fibers and reduced attenuation compared with conventional fibers.
Improved bending performance enables fiber storage with smaller diameter and space saving of fiber splicing points. Matched MFD brings full compatibility with conventional fibers and lower splice loss. Reduced attenuation characteristics gives more margin to optical loss budget of optical fiber networks.
FutureGuide™-Ace would contribute greatly to high-speed and high-capacity transmission in various networks from long-haul to access networks of 40G / 100Gbps and beyond.

Features

- Improved macro-bending loss exceeding ITU-T G.657.A1 and excellent micro-bending performance.
- Full compatibility with single mode fibers installed in existing optical fiber networks.
- Reduced attenuation characteristics compared with conventional fibers such as ITU-T G. 652 fibers.

Customer's advantages

- Provides consistent and stable performance in the field.
- Achieves lower splice loss with existing G.652 fibers maintaining excellent bending loss performance.
- Gives more margin for optical loss budget of optical fiber networks and is suitable for advanced modulation formats or extension of

Optical Characteristics

Attenuation	
Attenuation coefficient at 1310 nm	≤ 0.32 dB/km
Attenuation coefficient at 1383 nm	≤ 0.32 dB/km ***1**
Attenuation coefficient at 1550 nm	≤ 0.18 dB/km
Attenuation coefficient at 1625 nm	≤ 0.20 dB/km
Attenuation vs. wavelength ***2**	
1285 – 1330 nm ref. λ of 1310 nm	α ≤ 0.03 dB/km
1525 – 1575 nm ref. λ of 1550 nm	α ≤ 0.02 dB/km
Macro-bending loss	
Ø=50 mm, 100 turns at 1310, 1550, 1625 nm	≤ 0.01 dB
Ø =30 mm, 10 turns at 1550 nm	≤ 0.05 dB
Ø =30 mm, 10 turns at 1625 nm	≤ 0.30 dB
Ø =20 mm, 1 turn at 1550 nm	≤ 0.50 dB
Ø =20 mm, 1 turn at 1625 nm	≤ 1.5 dB
Point discontinuity at 1310 nm	≤ 0.05 dB
Point discontinuity at 1550 nm	≤ 0.05 dB
Cut off wavelength	
Cable cut-off wavelength	≤ 1260 nm
Chromatic dispersion	
Chromatic dispersion coefficient at 1285-1330 nm	≤ 3.5 ps/(nm·km)
Chromatic dispersion coefficient at 1550 nm	13.3 - 18 ps/(nm·km)
Chromatic dispersion coefficient at 1625 nm	17.2 - 22 ps/(nm·km)
Zero-dispersion wavelength	1302 - 1324 nm
Zero-dispersion slope	0.073 - 0.092 ps/(nm^2·km)
Polarization mode dispersion (PMD) ***3**	
Uncabled fiber PMD coefficient	≤ 0.1 ps/√km
Link design value PMD_Q	≤ 0.04 ps/√km

***1.** The attenuation at 1383nm after hydrogen aging in accordance with IEC60793-2-50

***2.** The attenuation within the specified wavelength range is limited to a difference of α or less compared to the reference wavelength (ref. λ).

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

Contact us

1-5-1, Kiba, Koto-ku, Tokyo 135-8512, Japan

Structural Characteristics

Mode field diameter at 1310 nm	9.2 ± 0.4 μm
Mode field diameter at 1550 nm	10.4 ± 0.5 μm
Cladding diameter	125.0 ± 0.7 μm
Coating diameter (uncolored)	240 ± 5 μm
Coating diameter (colored)	250 ± 10 μm
Core concentricity error	≤ 0.5 μm
Cladding non-circularity	≤ 0.7 %
Coating-Cladding concentricity	≤ 12 μm
Fiber curl radius	≥ 4.0 m

Mechanical Characteristics

Proof test ***4**	≥ 1 % (100 kpsi or 0.7 GPa)
Dynamic stress corrosion susceptibility parameter (n_d)	≥ 20
Coating strippability F	1.3 N ≤ F ≤ 8.9 N
Length (uncolored)	Up to 50.4 km
Length (colored)	Up to 63 km

***4.** The product is subjected to tensile testing throughout its entire length.

Environmental Characteristics

	Attenuation Change at 1310, 1550, 1625 nm
Temperature dependence -60 to 85 °C	≤ 0.05 dB/km Ref. temp. 23 °C
Temperature Humidity Cycling -10 °C to +85 °C up to 98 % R.H.	≤ 0.05 dB/km Ref. temp. 23 °C
Water immersion at 23 °C ± 2 °C	≤ 0.05 dB/km
Dry heat at 85 °C ± 2 °C	≤ 0.05 dB/km Ref. temp. 23 °C
Damp Heat 85 °C at 85 %R.H.	≤ 0.05 dB/km Ref. temp. 23 °C

Performance Characteristics

	Typical value
Attenuation coefficient at 1490 nm	0.20 dB/km
Zero dispersion wavelength	1313 nm
Zero dispersion slope	0.087 ps/(nm^2·km)
Effective group index of refraction N_{eff} at 1310 nm	1.4675
Effective group index of refraction N_{eff} at 1550 nm	1.4681
Effective group index of refraction N_{eff} at 1625 nm	1.4685

Note: This document is published for your reference purpose only and the specifications for commercial purpose will be issued upon agreement with customers.

Note: If you require more detailed information, please contact us by scanning the QR code below.

Contact us

1-5-1, Kiba, Koto-ku, Tokyo 135-8512, Japan

FutureGuide™-LWP plus-200

Compliant with ITU-T G.657.A1 / G.652.D

We offer the FutureGuide™-LWP plus-200 optical fiber with a coating diameter of 200 µm. This fiber has been designed to maintain a mode field diameter (MFD) of 9.2 µm at 1310 nm, with tolerable macrobend performance exceeding ITU-T G.657.A1. This is made possible by Fujikura's innovative optical fiber coating technology, and the fiber's ITU-T G.652.D compliant low (zero) water peak attenuation supports full-band transmission (O, E, S, C, and L-band).
FutureGuide™-LWP plus-200 helps not only designing high-density (e.g. higher fiber count and smaller diameter) optical fiber cables but also saving costs of manufacturing, transporting and installing cables. Furthermore, its compatible MFD with conventional ITU-T G.652 fibers would realize deployment of new cables into existing networks without any troubles.

Features

- Reduced coating diameter down to 200 µm with maintaining equivalent performance as 250 µm fibers.
- Reduced attenuation characteristics compared MFD compatibility with conventional G.652 fibers.
- Improved macrobending performance exceeding ITU-T G.657.A1.

Customer's advantages

- Realizes aggressive design for higher-density cable. (e.g. reduced-diameter and/or high fiber-count cables)
- Helps efficient deployment and replacement of cables into existing networks.
- Saves enclosing space at the point of connecting cables. Reduces momentary interruption during connecting work.

Optical Characteristics

Attenuation	
Attenuation coefficient at 1310 nm	≤ 0.34 dB/km
Attenuation coefficient at 1383 nm	≤ 0.34 dB/km ***1**
Attenuation coefficient at 1550 nm	≤ 0.20 dB/km
Attenuation coefficient at 1625 nm	≤ 0.22 dB/km
Attenuation vs. wavelength ***2**	
1285 – 1330 nm ref. λ of 1310 nm	α ≤ 0.03 dB/km
1525 – 1575 nm ref. λ of 1550 nm	α ≤ 0.02 dB/km
Macro-bending loss	
Ø =50 mm, 100 turns at 1310, 1550, 1625 nm	≤ 0.01 dB
Ø =30 mm, 10 turns at 1550 nm	≤ 0.05 dB
Ø =30 mm, 10 turns at 1625 nm	≤ 0.30 dB
Ø =20 mm, 1 turn at 1550 nm	≤ 0.50 dB
Ø =20 mm, 1 turn at 1625 nm	≤ 1.5 dB
Point discontinuity at 1310 nm	≤ 0.05 dB
Point discontinuity at 1550 nm	≤ 0.05 dB

Cut off wavelength	
Cable cut-off wavelength	≤ 1260 nm
Chromatic dispersion	
Chromatic dispersion coefficient at 1285-1330 nm	≤ 3.5 ps/(nm·km)
Chromatic dispersion coefficient at 1550 nm	13.3 - 18 ps/(nm·km)
Chromatic dispersion coefficient at 1625 nm	17.2 - 22 ps/(nm·km)
Zero-dispersion wavelength	1300 - 1324 nm
Zero-dispersion slope	0.073 - 0.092 ps/(nm^2·km)
Polarization mode dispersion (PMD) ***3**	
Uncabled fiber PMD coefficient	≤ 0.1 ps/√km
Link design value PMD_Q	≤ 0.06 ps/√km

***1.** The attenuation at 1383nm after hydrogen aging in accordance with IEC60793-2-50

***2.** The attenuation within the specified wavelength range is limited to a difference of α or less compared to the reference wavelength (ref. λ).

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

Contact us

1-5-1, Kiba, Koto-ku, Tokyo 135-8512, Japan

Structural Characteristics

Mode field diameter at 1310 nm	9.2 ± 0.4 μm
Mode field diameter at 1550 nm	10.4 ± 0.5 μm
Cladding diameter	125.0 ± 0.7 μm
Coating diameter (colored only)	190 - 210 μm
Core concentricity error	≤ 0.5 μm
Cladding non-circularity	≤ 0.7 %
Coating-Cladding concentricity	≤ 10 μm
Fiber curl radius	≥ 4.0 m

Mechanical Characteristics

Proof test ***4**	≥ 1 % (100 kpsi or 0.7 GPa)
Dynamic stress corrosion susceptibility parameter (n_d)	≥ 20
Coating strippability F	0.4 N ≤ F ≤ 8.9 N
Length (colored only)	Up to 50.4 km

***4.** The product is subjected to tensile testing throughout its entire length.

Environmental Characteristics

	Attenuation Change at 1310, 1550, 1625 nm
Temperature dependence -60 to 85 °C	≤ 0.05 dB/km Ref. temp. 23 °C
Temperature Humidity Cycling -10 °C to +85 °C up to 98 % R.H.	≤ 0.05 dB/km Ref. temp. 23 °C
Water immersion at 23 °C ± 2 °C	≤ 0.05 dB/km
Dry heat at 85 °C ± 2 °C	≤ 0.05 dB/km Ref. temp. 23 °C
Damp Heat 85 °C at 85 %R.H.	≤ 0.05 dB/km Ref. temp. 23 °C

Performance Characteristics

	Typical value
Attenuation coefficient at 1490 nm	0.21 dB/km
Zero dispersion wavelength	1311 nm
Zero dispersion slope	0.088 ps/(nm^2·km)
Effective group index of refraction N_{eff} at 1310 nm	1.4675
Effective group index of refraction N_{eff} at 1550 nm	1.4681
Effective group index of refraction N_{eff} at 1625 nm	1.4685

Note: This document is published for your reference purpose only and the specifications for commercial purpose will be issued upon agreement with customers.

Note: If you require more detailed information, please contact us by scanning the QR code below.

Contact us

1-5-1, Kiba, Koto-ku, Tokyo 135-8512, Japan

FutureGuide™-HSC-125

Compliant with ITU-T G.654.E

We offer the FutureGuide™-HSC-125, a leading-edge cut-off shifted fiber optimized for digital-coherent transmission in long-haul terrestrial networks. This fiber fully complies with ITU-T G.654.E standards.
The FutureGuide™-HSC-125 features extremely reduced attenuation, providing a larger network-designing margin. This enables the use of advanced modulation formats, extension of network spans, and improvement of OSNR gain, among other advantages.
With its combination of features, the FutureGuide™-HSC-125 offers various benefits for terrestrial long-haul networks, including higher transmission capacity, network system design flexibility, and cost-effective implementation.

Features

- Extremely reduced attenuation lower than existing conventional fibers.
- Optimized Mode field diameter (Effective area) complying with ITU-T G.654.E.

Customer's advantages

- Gives more network margin which allows advanced modulation formats, extension of the network span and OSNR gain etc.
- Suppresses signal degradation thanks to reduced power density in a fiber core.
- Provides higher transmission capacity, network system design flexibility and cost-effective implementation.

Optical Characteristics

Attenuation	
Uncolored and colored Attenuation coefficient at 1550 nm	≤ 0.17 dB/km
Uncolored and colored Attenuation coefficient at 1625 nm	≤ 0.20 dB/km
Ring-marked (1 ring / 200 mm pitch) Attenuation coefficient at 1550 nm	≤ 0.18 dB/km
Ring-marked (1 ring / 200 mm pitch) Attenuation coefficient at 1625 nm	≤ 0.21 dB/km
Attenuation vs. wavelength ***1**	
1525 – 1575 nm ref. λ of 1550 nm	α ≤ 0.02 dB/km
1550 – 1625 nm ref. λ of 1550 nm	α ≤ 0.03 dB/km
Macro-bending loss	
Ø = 60 mm, 100 turns at 1625 nm	≤ 0.01 dB

Cut off wavelength	
Cable cut-off wavelength	≤ 1520 nm
Chromatic dispersion	
Chromatic dispersion coefficient at 1550 nm	≤ 23 ps/(nm·km)
Chromatic dispersion coefficient at 1625 nm	≤ 26 ps/(nm·km)
Dispersion slope at 1550 nm	≤ 0.070 ps/(nm^2·km)
Polarization mode dispersion (PMD) ***2**	
Uncabled fiber PMD coefficient	≤ 0.1 ps/√km
Link design value PMD_Q	≤ 0.04 ps/√km

***1.** The attenuation within the specified wavelength range is limited to a difference of α or less compared to the reference wavelength (ref. λ).
***2.** This characteristic is guaranteed only in a virtually tension-free condition.

Contact us

1-5-1, Kiba, Koto-ku, Tokyo 135-8512, Japan

Structural Characteristics

Mode field diameter at 1550 nm	12.3 ± 0.5 μm
Cladding diameter	125.0 ± 0.7 μm
Coating diameter (uncolored)	242 ± 5 μm
Coating diameter (colored)	255 ± 10 μm
Core concentricity error	≤ 0.8 μm
Cladding non-circularity	≤ 0.7 %
Coating-Cladding concentricity	≤ 12 μm
Fiber curl radius	≥ 4.0 m

Environmental Characteristics

	Attenuation Change at 1550, 1625 nm
Temperature dependence -60 to 85 °C	≤ 0.05 dB/km Ref. temp. 23 °C
Water immersion at 23 °C ± 2 °C	≤ 0.05 dB/km
Dry heat at 85 °C ± 2 °C	≤ 0.05 dB/km Ref. temp. 23 °C
Damp Heat 85 °C at 85 %R.H.	≤ 0.05 dB/km Ref. temp. 23 °C

Mechanical Characteristics

Proof test ***4**	≥ 1 % (100 kpsi or 0.7 GPa)
Dynamic stress corrosion susceptibility parameter (n_d)	≥ 20
Coating strippability F	1.0 N ≤ F ≤ 8.9 N

***4.** The product is subjected to tensile testing throughout its entire length.

Performance Characteristics

	Typical value
Effective area (A_{eff})	125 μm^2
Attenuation coefficient at 1550 nm	0.164 dB/km
Attenuation coefficient at 1625 nm	0.179 dB/km
Dispersion slope at 1550 nm	0.060 ps/(nm^2·km)
Chromatic dispersion coefficient at 1550 nm	21 ps/(nm·km)
Effective group index of refraction N_{eff} at 1550 nm	1.4638
Effective group index of refraction N_{eff} at 1625 nm	1.4643

Note: This document is published for your reference purpose only and the specifications for commercial purpose will be issued upon agreement with customers.

Note: If you require more detailed information, please contact us by scanning the QR code below.

Contact us

1-5-1, Kiba, Koto-ku, Tokyo 135-8512, Japan

FutureGuide™-BIS-B

Compliant with ITU-T G.657.A2

We offer FutureGuide™-BIS-B with macro-bend performance compliant with ITU-T G.657.A2. Our optical fiber achieves a trench index profile through Fujikura's proprietary refractive index profile control technology, which has been developed to deliver superior bending performance.
With its exceptional bending characteristics, this fiber optic cable is suitable for various FTTx applications such as drop cables, slim indoor/outdoor cables, and patch cords for SDU and MDU applications, thereby expanding the lineup of FTTx solutions.
Furthermore, its outstanding bending performance allows for compact cable dimensions and flexible wiring, contributing to space-saving and reduced installation time. Handling the wiring also becomes easier.

Features

- Superior macrobend performance complying with ITU-T G.657.A2 performance.
- Zero(low)-water peak attenuation complying with ITU-T G.652.

Customer's advantages

- Helps flexible wiring and to save wiring space and installation time with easy handling.
- Allows for the reduction of cable dimensions and supports high-count cables. It enables high fiber density in networks while offering consistent and stable performance in the field.
- Helps full-band CWDM by its zero(low)-water peak technology.

Optical Characteristics

Attenuation	
Attenuation coefficient at 1310 nm	≤ 0.35 dB/km
Attenuation coefficient at 1383 nm	≤ 0.34 dB/km ***1**
Attenuation coefficient at 1550 nm	≤ 0.20 dB/km
Attenuation coefficient at 1625 nm	≤ 0.22 dB/km
Attenuation vs. wavelength ***2**	
1285 – 1330 nm ref. λ of 1310 nm	α ≤ 0.03 dB/km
1525 – 1575 nm ref. λ of 1550 nm	α ≤ 0.02 dB/km
Macro-bending loss	
Ø =30 mm, 10 turns at 1550 nm	≤ 0.03 dB
Ø =30 mm, 10 turns at 1625 nm	≤ 0.1 dB
Ø =20 mm, 1 turn at 1550 nm	≤ 0.1 dB
Ø =20 mm, 1 turn at 1625 nm	≤ 0.2 dB
Ø =15 mm, 1 turn at 1550 nm	≤ 0.5 dB
Ø =15 mm, 1 turn at 1625 nm	≤ 1.0 dB

Cut off wavelength	
Cable cut-off wavelength	≤ 1260 nm
Chromatic dispersion	
Chromatic dispersion coefficient at 1285-1330 nm	≤ 3.5 ps/(nm·km)
Chromatic dispersion coefficient at 1550 nm	13.3 - 18 ps/(nm·km)
Chromatic dispersion coefficient at 1625 nm	17.2 - 22 ps/(nm·km)
Zero-dispersion wavelength	1300 - 1324 nm
Zero-dispersion slope	0.073 - 0.092 ps/(nm^2·km)
Polarization mode dispersion (PMD) ***3**	
Uncabled fiber PMD coefficient	≤ 0.1 ps/√km
Link design value PMD_Q	≤ 0.08 ps/√km

***1.** The attenuation at 1383nm after hydrogen aging in accordance with IEC60793-2-50

***2.** The attenuation within the specified wavelength range is limited to a difference of α or less compared to the reference wavelength (ref. λ).

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

Contact us

1-5-1, Kiba, Koto-ku, Tokyo 135-8512, Japan

Structural Characteristics

Mode field diameter at 1310 nm	8.6 ± 0.4 μm
Cladding diameter	125.0 ± 0.7 μm
Coating diameter (uncolored)	240 ± 5 μm
Coating diameter (colored)	250 ± 10 μm
Core concentricity error	≤ 0.5 μm
Cladding non-circularity	≤ 1.0 %
Coating-Cladding concentricity	≤ 12 μm
Fiber curl radius	≥ 4.0 m

Mechanical Characteristics

Proof test ***4**	≥ 1 % (100 kpsi or 0.7 GPa)
Dynamic stress corrosion susceptibility parameter (n_d)	≥ 20
Coating strippability F	1.3 N ≤ F ≤ 8.9 N

***4.** The product is subjected to tensile testing throughout its entire length.

Environmental Characteristics

	Attenuation Change at 1310, 1550, 1625 nm
Temperature dependence -60 to 85 °C	≤ 0.05 dB/km Ref. temp. 23 °C
Water immersion at 23 °C ± 2 °C	≤ 0.05 dB/km
Dry heat at 85 °C ± 2 °C	≤ 0.05 dB/km Ref. temp. 23 °C
Damp Heat 85 °C at 85 %R.H.	≤ 0.05 dB/km Ref. temp. 23 °C

Performance Characteristics

	Typical value
Zero dispersion wavelength	1315 nm
Zero dispersion slope	0.086 ps/(nm^2·km)
Effective group index of refraction N_{eff} at 1310 nm	1.4681
Effective group index of refraction N_{eff} at 1550 nm	1.4687
Effective group index of refraction N_{eff} at 1625 nm	1.4691

Note: This document is published for your reference purpose only and the specifications for commercial purpose will be issued upon agreement with customers.

Note: If you require more detailed information, please contact us by scanning the QR code below.

Contact us

1-5-1, Kiba, Koto-ku, Tokyo 135-8512, Japan

FutureGuide™-BIS-B-200

Compliant with ITU-T G.657.A2

In urban optical fiber networks, effective utilization of space is crucial, often requiring the installation of high-density cables with small diameters and/or higher count. This demand is particularly increasing in access networks.
To meet this demand, we offer FutureGuide™-BIS-B-200, which utilizes an advanced fiber coating technology to achieve a coating diameter of 200 µm. This fiber maintains excellent bending performance while reducing the cross-sectional area by approximately 40%. FutureGuide™-BIS-B-200 not only allows for more efficient utilization of available space but also contributes significantly to cost reduction in cable manufacturing, transportation, and installation.

Features

- Reduced coating diameter down to 200 µm
- Superior macro-bending performance complying with ITU-T G.657.A2.
- Zero(low)-water peak attenuation complying with ITU-T G.652.D

Customer's advantages

- Enables design of reduced-diameter and high fiber-count cable.
- Helps flexible wiring and to save wiring space and installation time with easy handling.
- Helps full-band CWDM by its zero(low)-water peak technology.

Optical Characteristics

Attenuation	
Attenuation coefficient at 1310 nm	≤ 0.35 dB/km
Attenuation coefficient at 1383 nm	≤ 0.34 dB/km ***1**
Attenuation coefficient at 1550 nm	≤ 0.20 dB/km
Attenuation coefficient at 1625 nm	≤ 0.22 dB/km
Attenuation vs. wavelength ***2**	
1285 – 1330 nm ref. λ of 1310 nm	α ≤ 0.03 dB/km
1525 – 1575 nm ref. λ of 1550 nm	α ≤ 0.02 dB/km
Macro-bending loss	
Φ=30 mm, 10 turns at 1550 nm	≤ 0.03 dB
Φ=30 mm, 10 turns at 1625 nm	≤ 0.1 dB
Φ=20 mm, 1 turn at 1550 nm	≤ 0.1 dB
Φ=20 mm, 1 turn at 1625 nm	≤ 0.2 dB
Φ=15 mm, 1 turn at 1550 nm	≤ 0.5 dB
Φ=15 mm, 1 turn at 1625 nm	≤ 1.0 dB

Cut off wavelength	
Cable cut-off wavelength	≤ 1260 nm
Chromatic dispersion	
Chromatic dispersion coefficient at 1285-1330 nm	≤ 3.5 ps/(nm·km)
Chromatic dispersion coefficient at 1550 nm	13.3 - 18 ps/(nm·km)
Chromatic dispersion coefficient at 1625 nm	17.2 - 22 ps/(nm·km)
Zero-dispersion wavelength	1300 - 1324 nm
Zero-dispersion slope	0.073 - 0.092 ps/(nm^2·km)
Polarization mode dispersion (PMD) ***3**	
Uncabled fiber PMD coefficient	≤ 0.1 ps/√km
Link design value PMD_Q	≤ 0.08 ps/√km

***1.** The attenuation at 1383nm after hydrogen aging in accordance with IEC60793-2-50

***2.** The attenuation within the specified wavelength range is limited to a difference of α or less compared to the reference wavelength (ref. λ).

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

Contact us

1-5-1, Kiba, Koto-ku, Tokyo 135-8512, Japan

Structural Characteristics

Mode field diameter at 1310 nm	8.6 ± 0.4 μm
Cladding diameter	125.0 ± 0.7 μm
Coating diameter (colored)	190 - 210 μm
Core concentricity error	≤ 0.5 μm
Cladding non-circularity	≤ 0.7 %
Coating-Cladding concentricity	≤ 10 μm
Fiber curl radius	≥ 4.0 m

Mechanical Characteristics

Proof test ***4**	≥ 1.5 % (150 kpsi or 1.0 GPa)
Dynamic stress corrosion susceptibility parameter (n_d)	≥ 20
Coating strippability F	0.4 N ≤ F ≤ 8.9 N

***4.** The product is subjected to tensile testing throughout its entire length.

Environmental Characteristics

	Attenuation Change at 1310, 1550, 1625 nm
Temperature dependence -60 to 85 °C	≤ 0.05 dB/km Ref. temp. 23 °C
Water immersion at 23 °C ± 2 °C	≤ 0.05 dB/km
Dry heat at 85 °C ± 2 °C	≤ 0.05 dB/km Ref. temp. 23 °C
Damp Heat 85 °C at 85 %R.H.	≤ 0.05 dB/km Ref. temp. 23 °C

Performance Characteristics

	Typical value
Zero dispersion wavelength	1315 nm
Zero dispersion slope	0.086 ps/(nm^2·km)
Effective group index of refraction N_{eff} at 1310 nm	1.4681
Effective group index of refraction N_{eff} at 1550 nm	1.4687
Effective group index of refraction N_{eff} at 1625 nm	1.4691

Note: This document is published for your reference purpose only and the specifications for commercial purpose will be issued upon agreement with customers.

Note: If you require more detailed information, please contact us by scanning the QR code below.

Contact us

1-5-1, Kiba, Koto-ku, Tokyo 135-8512, Japan

FutureGuide™-SR15E

Compliant with ITU-T G.657.A1

FTTx service is now becoming one of the main applications in the world. In the FTTx networks including inside buildings at the end of these networks, bend performance of optical fibers becomes more important due to dense distribution of cables and components.
FutureGuide™-SR15E fully complies with ITU-T G.657.A1 Recommendation and is specifically designed to excel in bend performance. While adhering to the G.657.A1 recommendation, it notably excels in bend performance and as good compatibility with existent optical networks, because it is also designed to be compliant with ITU-T G.652.D recommendation.

Features

- Improved outstanding macro-bend performance while complying with ITU-T G.657.A1.
- Full compliance with ITU-T G.652 recommendation and Zero(low)-water peak attenuation complying with ITU-T G.652.D

Customer's advantages

- Enables design of reduced-diameter and/or high fiber-count cable etc. for FTTx (access) networks applications.
- Replace with SR15E for more stable performance in the fields.
- Helps full-band CWDM by its zero(low)-water peak technology.

Optical Characteristics

Attenuation	
Attenuation coefficient at 1310 nm	≤ 0.35 dB/km
Attenuation coefficient at 1383 nm	≤ 0.34 dB/km ***1**
Attenuation coefficient at 1550 nm	≤ 0.20 dB/km
Attenuation coefficient at 1625 nm	≤ 0.22 dB/km
Attenuation vs. wavelength ***2**	
1285 – 1330 nm ref. λ of 1310 nm	α ≤ 0.03 dB/km
1525 – 1575 nm ref. λ of 1550 nm	α ≤ 0.02 dB/km
Macro-bending loss	
Φ=30 mm, 10 turns at 1550 nm	≤ 0.25 dB
Φ=30 mm, 10 turns at 1625 nm	≤ 1.0 dB
Φ=20 mm, 1 turn at 1550 nm	≤ 0.75 dB
Φ=20 mm, 1 turn at 1625 nm	≤ 1.5 dB
Cut off wavelength	
Cable cut-off wavelength	≤ 1260 nm

Chromatic dispersion	
Chromatic dispersion coefficient at 1285-1330 nm	≤ 3.5 ps/(nm·km)
Chromatic dispersion coefficient at 1550 nm	13.3 - 18 ps/(nm·km)
Chromatic dispersion coefficient at 1625 nm	17.2 - 22 ps/(nm·km)
Zero-dispersion wavelength	1300 - 1324 nm
Zero-dispersion slope	0.073 - 0.092 ps/(nm^2·km)
Polarization mode dispersion (PMD) ***3**	
Uncabled fiber PMD coefficient	≤ 0.1 ps/√km
Link design value PMD_Q	≤ 0.08 ps/√km

***1.** The attenuation at 1383nm after hydrogen aging in accordance with IEC60793-2-50

***2.** The attenuation within the specified wavelength range is limited to a difference of α or less compared to the reference wavelength (ref. λ).

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

Contact us

1-5-1, Kiba, Koto-ku, Tokyo 135-8512, Japan

Structural Characteristics

Mode field diameter at 1310 nm	8.6 ± 0.4 μm
Cladding diameter	125.0 ± 0.7 μm
Coating diameter (Uncolored)	240 ± 5 μm
Coating diameter (colored)	250 ± 10 μm
Core concentricity error	≤ 0.5 μm
Cladding non-circularity	≤ 0.7 %
Coating-Cladding concentricity	≤ 12 μm
Fiber curl radius	≥ 4.0 m

Mechanical Characteristics

Proof test ***4**	≥ 1.5 % (150 kpsi or 1.0 GPa)
Dynamic stress corrosion susceptibility parameter (n_d)	≥ 20
Coating strippability F	1.3 N ≤ F ≤ 8.9 N

***4.** The product is subjected to tensile testing throughout its entire length.

Environmental Characteristics

	Attenuation Change at 1310, 1550, 1625 nm
Temperature dependence -60 to 85 °C	≤ 0.05 dB/km Ref. temp. 23 °C
Water immersion at 23 °C ± 2 °C	≤ 0.05 dB/km
Dry heat at 85 °C ± 2 °C	≤ 0.05 dB/km Ref. temp. 23 °C
Damp Heat 85 °C at 85 %R.H.	≤ 0.05 dB/km Ref. temp. 23 °C

Performance Characteristics

	Typical value
Zero dispersion wavelength	1315 nm
Zero dispersion slope	0.086 ps/(nm^2·km)
Effective group index of refraction N_{eff} at 1310 nm	1.4680
Effective group index of refraction N_{eff} at 1550 nm	1.4686
Effective group index of refraction N_{eff} at 1625 nm	1.4691

Note: This document is published for your reference purpose only and the specifications for commercial purpose will be issued upon agreement with customers.

Note: If you require more detailed information, please contact us by scanning the QR code below.

Contact us

1-5-1, Kiba, Koto-ku, Tokyo 135-8512, Japan

FutureGuide™-SR15E-200

Compliant with ITU-T G.657.A1

We use an innovative coating technology in the FutureGuide™-SR15E to provide ITU-T G.657.A1 fiber with a coating diameter of 200µm. FutureGuide™-SR15E-200 maintains macro-bend properties while significantly reducing the coating diameter, and its micro-bend properties greatly exceed those of conventional optical fibers (G.652.D).
This fiber has a reduced cross-sectional area of approximately 40%, which contributes to a more effective use of the available space and also saves costs on cable production, transportation and installation.

Features

- Reduced coating diameter down to 200µm with tolerable micro-bend performance
- Improved outstanding macro-bend performance while complying with ITU-T G.657.A1.
- Full compliance with ITU-T G.652 recommendation and Zero(low)-water peak attenuation complying with ITU-T G.652.D

Customer's advantages

- By utilizing this fiber, it becomes possible to increase the number of optical fibers in the cable and/or design the cable with a smaller diameter.
- Helps full-band CWDM by its zero(low)-water peak technology.

Optical Characteristics

Attenuation	
Attenuation coefficient at 1310 nm	≤ 0.35 dB/km
Attenuation coefficient at 1383 nm	≤ 0.34 dB/km ***1**
Attenuation coefficient at 1550 nm	≤ 0.20 dB/km
Attenuation coefficient at 1625 nm	≤ 0.22 dB/km
Attenuation vs. wavelength ***2**	
1285 – 1330 nm ref. λ of 1310 nm	α ≤ 0.03 dB/km
1525 – 1575 nm ref. λ of 1550 nm	α ≤ 0.02 dB/km
Macro-bending loss	
Φ=30 mm, 10 turns at 1550 nm	≤ 0.25 dB
Φ=30 mm, 10 turns at 1625 nm	≤ 1.0 dB
Φ=20 mm, 1 turn at 1550 nm	≤ 0.75 dB
Φ=20 mm, 1 turn at 1625 nm	≤ 1.5 dB
Cut off wavelength	
Cable cut-off wavelength	≤ 1260 nm

Chromatic dispersion	
Chromatic dispersion coefficient at 1285-1330 nm	≤ 3.5 ps/(nm·km)
Chromatic dispersion coefficient at 1550 nm	13.3 - 18 ps/(nm·km)
Chromatic dispersion coefficient at 1625 nm	17.2 - 22 ps/(nm·km)
Zero-dispersion wavelength	1300 - 1324 nm
Zero-dispersion slope	0.073 - 0.092 ps/(nm^2·km)
Polarization mode dispersion (PMD) ***3**	
Uncabled fiber PMD coefficient	≤ 0.1 ps/√km
Link design value PMD_Q	≤ 0.08 ps/√km

***1.** The attenuation at 1383nm after hydrogen aging in accordance with IEC60793-2-50

***2.** The attenuation within the specified wavelength range is limited to a difference of α or less compared to the reference wavelength (ref. λ).

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

Contact us

1-5-1, Kiba, Koto-ku, Tokyo 135-8512, Japan

Structural Characteristics

Mode field diameter at 1310 nm	8.6 ± 0.4 μm
Cladding diameter	125.0 ± 0.7 μm
Coating diameter (colored)	190 - 210 μm
Core concentricity error	≤ 0.5 μm
Cladding non-circularity	≤ 0.7 %
Coating-Cladding concentricity	≤ 10 μm
Fiber curl radius	≥ 4.0 m

Mechanical Characteristics

Proof test ***4**	≥ 1.5 % (150 kpsi or 1.0 GPa)
Dynamic stress corrosion susceptibility parameter (n_d)	≥ 20
Coating strippability F	0.4 N ≤ F ≤ 8.9 N

***4.** The product is subjected to tensile testing throughout its entire length.

Environmental Characteristics

	Attenuation Change at 1310, 1550, 1625 nm
Temperature dependence -60 to 85 °C	≤ 0.05 dB/km Ref. temp. 23 °C
Water immersion at 23 °C ± 2 °C	≤ 0.05 dB/km
Dry heat at 85 °C ± 2 °C	≤ 0.05 dB/km Ref. temp. 23 °C
Damp Heat 85 °C at 85 %R.H.	≤ 0.05 dB/km Ref. temp. 23 °C

Performance Characteristics

	Typical value
Zero dispersion wavelength	1315 nm
Zero dispersion slope	0.086 ps/(nm^2·km)
Effective group index of refraction N_{eff} at 1310 nm	1.4680
Effective group index of refraction N_{eff} at 1550 nm	1.4686
Effective group index of refraction N_{eff} at 1625 nm	1.4691

Note: This document is published for your reference purpose only and the specifications for commercial purpose will be issued upon agreement with customers.

Note: If you require more detailed information, please contact us by scanning the QR code below.

Contact us

1-5-1, Kiba, Koto-ku, Tokyo 135-8512, Japan

FutureGuide™-LWP

Compliant with ITU-T G.652.D

We offer FutureGuide™-LWP with low (zero) water peak attenuation, fully compliant with ITU-T G.652.D recommendations.
Our optimized VAD (Vapor-phase Axial Deposition) method for preform manufacturing enables to reduce hydroxyl (OH) ions, which cause attenuation increase around 1383 nm (i.e., "water peak"), down to almost zero in optical fibers. The low(zero)-water-peak attenuation supports wide-range (full-band) transmission through E-band (1360 - 1460 nm).
Additionally, our superior coating technology makes it highly robust against harsh environments such as external stresses, temperature changes, and water immersion.

Features

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

Customer's advantages

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

Optical Characteristics

Attenuation	
Attenuation coefficient at 1310 nm	≤ 0.35 dB/km
Attenuation coefficient at 1383 nm	≤ 0.34 dB/km ***1**
Attenuation coefficient at 1550 nm	≤ 0.20 dB/km
Attenuation coefficient at 1625 nm	≤ 0.22 dB/km
Attenuation vs. wavelength ***2**	
1285 – 1330 nm ref. λ of 1310 nm	α ≤ 0.03 dB/km
1525 – 1575 nm ref. λ of 1550 nm	α ≤ 0.02 dB/km
Macro-bending loss	
Φ=32mm, 1 turns at 1550 nm	≤ 0.05 dB
Φ=50mm, 100 turns at 1310, 1550, 1625 nm	≤ 0.01 dB
Φ=60mm, 100 turns at 1625 nm	≤ 0.05 dB

Cut off wavelength	
Cable cut-off wavelength	≤ 1260 nm
Chromatic dispersion	
Chromatic dispersion coefficient at 1285-1330 nm	≤ 3.5 ps/(nm·km)
Chromatic dispersion coefficient at 1550 nm	13.3 - 18 ps/(nm·km)
Chromatic dispersion coefficient at 1625 nm	17.2 - 22 ps/(nm·km)
Zero-dispersion wavelength	1302 - 1324 nm
Zero-dispersion slope	0.073 - 0.092 ps/(nm^2·km)
Polarization mode dispersion (PMD) ***3**	
Uncabled fiber PMD coefficient	≤ 0.1 ps/√km
Link design value PMD_Q	≤ 0.08 ps/√km

***1.** The attenuation at 1383nm after hydrogen aging in accordance with IEC60793-2-50

***2.** The attenuation within the specified wavelength range is limited to a difference of α or less compared to the reference wavelength (ref. λ).

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

Contact us

1-5-1, Kiba, Koto-ku, Tokyo 135-8512, Japan

Structural Characteristics

Mode field diameter at 1310 nm	9.2 ± 0.4 μm
Mode field diameter at 1550 nm	10.4 ± 0.5 μm
Cladding diameter	125.0 ± 0.7 μm
Coating diameter (uncolored)	240 ± 5 μm
Coating diameter (colored)	250 ± 10 μm
Core concentricity error	≤ 0.5 μm
Cladding non-circularity	≤ 0.7 %
Coating-Cladding concentricity	≤ 12 μm
Fiber curl radius	≥ 4.0 m

Mechanical Characteristics

Proof test ***4**	≥ 1 % (100 kpsi or 0.7 GPa)
Dynamic stress corrosion susceptibility parameter (n_d)	≥ 20
Coating strippability F	1.3 N ≤ F ≤ 8.9 N
Length	Up to 50.4 km

***4.** The product is subjected to tensile testing throughout its entire length.

Environmental Characteristics

	Attenuation Change at 1310, 1550, 1625 nm
Temperature dependence -60 to 85 °C	≤ 0.05 dB/km Ref. temp. 23 °C
Water immersion at 23 °C ± 2 °C	≤ 0.05 dB/km
Dry heat at 85 °C ± 2 °C	≤ 0.05 dB/km Ref. temp. 23 °C
Damp Heat 85 °C at 85 %R.H.	≤ 0.05 dB/km Ref. temp. 23 °C

Performance Characteristics

	Typical value
Zero dispersion wavelength	1315 nm
Zero dispersion slope	0.086 ps/(nm^2·km)
Effective group index of refraction N_{eff} at 1310 nm	1.4675
Effective group index of refraction N_{eff} at 1550 nm	1.4681
Effective group index of refraction N_{eff} at 1625 nm	1.4685

Note: This document is published for your reference purpose only and the specifications for commercial purpose will be issued upon agreement with customers.

Note: If you require more detailed information, please contact us by scanning the QR code below.

Contact us

1-5-1, Kiba, Koto-ku, Tokyo 135-8512, Japan