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

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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 ($\lambda_0$) | | -- | ≤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/√km] |
| | Link Design Value (M=20, Q=0.01%) | -- | ≤0.08 | [ps/√km] |
| | Typical Value | -- | 0.04 | [ps/√km] |
| Cable Cutoff Wavelength ($\lambda_{cc}$) | | -- | ≤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 | -- |