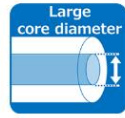




G.654.E

PureAdvance™-125

Advanced Pure Silica Core Single Mode Optical Fiber



- Ultra-low attenuation of ≤ 0.16 dB/km and enlarged effective area of $125 \mu\text{m}^2$
- For terrestrial long-haul 100 Gbit/s, 200 Gbit/s, 400 Gbit/s and beyond digital coherent transmission systems

General

Effective Area

Typical effective area at 1550 nm $125 \mu\text{m}^2$

Attenuation

Typical attenuation at 1550 nm 0.156 dB/km

Core Glass

Pure Silica

Optical Characteristics

Attenuation

Attenuation at 1550 nm ≤ 0.16 dB/km
 Attenuation at 1625 nm ≤ 0.19 dB/km
 Point discontinuity at 1550 nm ≤ 0.05 dB

Mode Field Diameter (MFD)

MFD at 1550nm $12.5 \pm 0.5 \mu\text{m}$

Chromatic Dispersion

Chromatic dispersion at 1550 nm $17\text{--}23$ ps/nm/km
 Chromatic dispersion slope at 1550 nm $0.050\text{--}0.070$ ps/nm²/km

Cable Cutoff Wavelength (λ_{cc})

λ_{cc} ≤ 1520 nm

Polarization Mode Dispersion (PMD)

Individual fiber PMD*¹⁾ ≤ 0.1 ps/r-km
 Fiber PMD link design value*²⁾ ≤ 0.06 ps/r-km

Geometrical Characteristics

Glass Geometry

Core-cladding concentricity error $\leq 0.8 \mu\text{m}$
 Cladding diameter $125.0 \pm 0.7 \mu\text{m}$
 Cladding non-circularity $\leq 1.0 \%$
 Fiber curl radius ≥ 4 m

Coating Geometry

Coating diameter (Natural) $242 \pm 5 \mu\text{m}$
 Coating diameter (Colored) $250 \pm 15 \mu\text{m}$
 Coating-cladding concentricity error $\leq 12 \mu\text{m}$

Mechanical Characteristics

Proof Test

Proof stress level 1.2% (0.86GPa)

Macrobending Loss

Bending radius	Number of turns	Wavelength	Induced Attenuation
30 mm	100	1550 nm	≤ 0.1 dB
30 mm	100	1625 nm	≤ 0.1 dB

Dynamic Fatigue (Nd)

Nd (Typical) 20

Environmental Tests

Condition	Induced Attenuation Change at 1550 nm and 1625 nm
-60 to +85°C temperature cycling (IEC60793-1-52)	≤ 0.05 dB/km
-10 to +85°C/98%RH temperature humidity cycling	≤ 0.05 dB/km
+23°C water immersion (IEC60793-1-53)	≤ 0.05 dB/km
+85°C heat aging (IEC60793-1-51)	≤ 0.05 dB/km
+85°C/85%RH damp heat (IEC60793-1-50)	≤ 0.05 dB/km

Packaging

Delivery Length

6.3 – 50.4 km

Performance Characteristics

Effective Group Index of Refraction

Effective group index of refraction at 1550 nm 1.462

*1) Measured on fiber with free tension.

*2) Since PMD value may change when fiber is cabled, actual PMD link design value in a cable shall be confirmed by cable manufacturer. Under appropriate cable design, PureAdvance-125 specification supports network design requirements for a 0.20 ps/r-km of maximum cable PMD link design value recommended by ITU-T G.654.E.