

Sales Catalog of HNK Telecommunication Products

Fiber Optic Cable

Single Mode 9/125 G657A2

This single mode fiber encompasses all the features of G652D fiber and provides good resistance to macro-bending. It 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 (1260-1625nm). Bending insensitive feature not only guarantees L-band applications but also allows for easy installation without excessive care when storing the fiber especially for Fiber-to-the-Home networks application. Bending radii in fiber guidance ports can be reduced as well as minimum bend radii in wall and corner mountings.

The single mode fiber 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.

Optical Characteristics for Single Mode 9/125 μm (G657A2)

CHARACTERISTIC	CONDITION	SPECIFIC VALUE	UNIT
Optical Characteristics			
Attenuation	1310 nm	≤ 0.35	[dB/km]
	1383 nm (after H ₂ -aging)	≤ 0.35	
	1460 nm	≤ 0.25	
	1490 nm	≤ 0.23	
	1550 nm	≤ 0.21	
	1625 nm	≤ 0.23	
Attenuation vs. Wavelength Max. α Difference	1285-1330 nm	≤ 0.03	[dB/km]
	1525-1575 nm	≤ 0.02	
Dispersion Coefficient	1285-1340 nm	$\geq -3.4 \leq 3.4$	[ps/(nm.km)]
	1550 nm	≤ 18	
	1625 nm	≤ 22	
Zero Dispersion Wavelength		1300-1324	[nm]
Zero Dispersion Slope		≤ 0.092	[ps/(nm ² .km)]
PMD	Maximum Individual Fiber	≤ 0.10	[ps/ $\sqrt{\text{km}}$]
	Link Design Value (M=20, Q=0.01%)	≤ 0.06	
	Typical Value	0.04	
Cable Cutoff Wavelength λ_{cc}		≤ 1260	[nm]
Mode Field Diameter (MFD)	1310 nm	8.4~9.2	[μm]
	1550 nm	9.3~10.3	[μm]
Effective Group Index of Refraction (N_{eff})	1310 nm	1.466	
	1550 nm	1.467	
Point Discontinuities	1310 nm	≤ 0.05	[dB]
	1550 nm	≤ 0.05	[dB]
Macro Bending Induced Attenuation			
10 Turns Around a Mandrel @ 15mm Radius	1550 nm	≤ 0.03	[dB]
10 Turns Around a Mandrel @ 15mm Radius	1625 nm	≤ 0.1	[dB]
1 Turn Around a Mandrel @ 10mm Radius	1550 nm	≤ 0.1	[dB]
1 Turn Around a Mandrel @ 10mm Radius	1625 nm	≤ 0.2	[dB]
1 Turn Around a Mandrel @ 7.5mm Radius	1550 nm	≤ 0.2	[dB]
1 Turn Around a Mandrel @ 7.5mm Radius	1625 nm	≤ 0.5	[dB]
Geometrical Characteristics			
Cladding Diameter		125.0 \pm 0.7	[μm]
Cladding Non-Circularity		≤ 0.7	[%]
Coating Diameter		245 \pm 5	[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		2.1 to 50.4	[km/reel]
Environmental Characteristics			
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]
Damp Heat Dependence (Induced Attenuation)	85°C and 85% RH, for 30days	≤ 0.05	[dB/km]
Water Soak Dependence (Induced Attenuation)	23°C, for 30days	≤ 0.05	[dB/km]
Dry Heat Aging	85°C, for 30days	≤ 0.05	[dB/km]
Mechanical Characteristics			
Proof Test		≥ 9.0	[N]
		≥ 1.0	[%]
		≥ 100	[Kpsi]
Coating Strip Force	Typical Average Force	1.5	[N]
	Peak Force	≥ 1.3 & ≤ 8.9	[N]
Dynamic Stress Corrosion Susceptibility Parameter (N_d , Typical)		≥ 27	