

Part No. DSSM



Cable Description

Dispersion Shifted Single-mode Fiber

Uninet's Dispersion Shifted Single-mode Fiber (DSSM) is comprehensively optimized for attenuation and dispersion performance at the 1550 nm operating wavelength. The fiber has the low attenuation and low dispersion at 1550 nm, which is satisfying the demand of new generation transmission system.

Application

Uninet DSSM fiber is suitable for the application of Erbium Doped Fiber Amplifier (EDFA) and can be effectively applied in the high bit-rate, long distance transmission links. DSSM fiber is applicable in all cable type including ribbon cable, loose tube stranded cable, slotted core cable, unitube cable and tight-buffer cable. Uninet optical fibers are compatible with fibers manufactured with other processes.

Cable Norms

DSSM fiber complies with or exceeds the ITU recommendation G.655.B Optical Fiber Specification. Uninet tightens many parameters of fiber products.

Process and Coating

Uninet fibers are manufactured using the advanced Plasma Activated Chemical Vapor Deposition (PCVD) process. Because of the inherent advantages of the process, Uninet fibers show extremely refined refractive index (RI) profile control, excellent geometrical performance, low attenuation, etc. The optical fiber is coated with a double layer UV curable acrylate, type DLPC7, which gives the fiber a good protection. Designed for more stringent tight-buffer cable application, the fiber also performs perfectly in loose buffer constructions and demonstrates a high resistance to micro-bending. The coating offers an excellent stable coating strip force over a wide range of environmental conditions and the coating stripping leaves no residues on the bare glass fiber. Ribbon tests show excellent performance in 60°C water soak tests, exceeding 100 days. The DLPC7 coated optical fibers show high and stable values for dynamic stress corrosion susceptibility parameter (nd), Which offers a greatly improved applicability to the fiber when used in harsh environments.

Cable Characteristic

- Low attenuation and low dispersion satisfying the operation demand at 1550nm
- DLPC7 coating offering good protection and excellent strip force stability
- Accurate geometrical parameters that insure low splicing loss and high splicing efficiency

DSSM

Fiber Core Performance

Characteristics	Conditions	Specified Values		Units
Optical characteristics				
Attenuation	1310 nm	≤0.40	≤0.45	[dB/km] [dB/km]
	1550 nm	≤0.21	≤0.22	
Dispersion coefficient	1525-1575 nm	-3.5~3.5		[ps/(nm·km)]
Zero dispersion wavelength		1530~1570		[nm]
Zero dispersion slope		≤0.085		[ps/(nm·km)]
Cut-off wavelength λ_c		1100 ≤ λ_c ≤ 1350		[nm]
Mode field diameter (MFD)	1550 nm	8.4±0.6		[μ m]
Effective group index of refraction (N_{eff})	1310 nm/1550 nm	1.472/1.471		
Backscatter characteristics		1310 nm, 1550 nm		
Step (mean of bidirectional measurement)		≤0.05		[dB]
Irregularities over fiber length and point discontinuity		≤0.10		[dB]
Difference in backscatter coefficient (bidirectional measurement)		≤0.05		[dB/km]
Geometrical characteristics				
Cladding diameter		125.0±1.0		[μ m]
Cladding non-circularity		≤1.0		[%]
Coating diameter		245±10		[μ m]
Coating/cladding concentricity error		≤12		[μ m]
Coating non-circularity		≤6.0		[%]
Core/cladding concentricity error		≤0.8		[μ m]
Curl		≥4		[m]
Delivery length (Other fiber lengths available on request)		2.1 to 25.2		[km/reel]
Environmental characteristics		1310 nm, 1550 nm		
Temperature dependence	$\Delta\alpha$ (-40°C to +85°C)	≤0.01		[dB/km]
	$\Delta\alpha$ (-60°C to +85°C)	≤0.04		
Damp heat dependence Induced attenuation	85°C, 85% R.H., 30 days	≤0.05		[dB/km]
Water soak dependence Induced attenuation	20°C for 30 days	≤0.05		[dB/km]
Mechanical characteristics				
Proof test	off line	≥9.0		[N]
		≥100		[KPSI]
Macro-bend Dependence Induced Attenuation	1310 nm, 1550 nm	≤0.01		[dB]
	100 turns, 75 mm diameter	≤0.05		[dB]
Coating strip force (typical)		1.4		[N]
Dynamic stress corrosion susceptibility parameter (n_d , Typical)		≥27		