Single-mode Fibre G.657.A1

单模光纤G.657.A1

Description 产品描述

Bending insensitive single-mode fibre encompasses all the features of fibre and provides good resistance to maro-bending. It has low macro-bending sensitivity and low water-peak level. It is comprehensively optimized for use in O-E-S-C-L band (1260 -1625 nm). It offers good resistance to additional losses due to low macro-bending in the 1625 nm wavelength region. This not only supports L-band applications but also allows for easy installation without excessive care when storing the fibre, for example, in splicing cassettes. For cable use inside buildings, the fibre supports installation with small cable bending radii and compact organizers.

弯曲不敏感单模光纤包含了光纤的所有特性，并提供了良好的抗微弯性能。它具有低的宏观弯曲灵敏度和低水峰水平。它针对 O-E-S-C-L 波段（1260 - 1625 nm）的使用进行了全面优化。由于 1625 nm 波长区域的低宏弯，它可以很好地抵抗额外损耗。这不仅支持 L 波段应用，而且在存储光纤（例如，在熔接盒中）时无需过度小心即可轻松安装。对于建筑物内的电缆使用，光纤支持小电缆弯曲半径和紧凑组织器的安装。

Applications 产品应用

- Short pitch cables for special application
  特殊应用的短节距电缆
- High performance optical network operating in O-E-S-C-L band
  在 O-E-S-C-L 波段运行的高性能光网络
- High speed optical routes in buildings (FTTx)
  建筑物内的高速光路由 (FTTx)
- Cables with low bending requirements
  弯曲要求低的电缆

Standards 产品标准

Bending insensitive single mode fibre meets or exceeds the ITU-T Recommendation G.652.D/G.657.A1 including the IEC 60793-2-50 type B1.3/B6.a1 Optical Fibre Specification.

弯曲不敏感单模光纤符合或超过 ITU-T 建议的 G.652.D/G.657.A1，包括 IEC 60793-2-50 类型 B1.3/B6.a1 光纤规范。

Characteristics 光学特性

- Low attenuation satisfying the operation demand in O-E-S-C-L band
  低衰减满足O-E-S-C-L频段运行需求
- Good bending loss resistance at short radius bends
  短半径弯曲时具有良好的抗弯曲损耗性
- Low bending loss for highly demanding cable designs including ribbons
  低弯曲损耗，适用于包括带状电缆在内的高要求电缆设计
- Low PMD satisfying high bit-rate and long-distance transmission requirement
  低PMD满足高码率和远距离传输要求
- Accurate geometrical parameters that insure low splicing loss and high splicing efficiency
  精确的几何参数，确保低熔接损耗和高熔接效率

Specifications 参数

Optical Characteristics 光学特性

Characteristics 特性	Conditions 条件	Specified values 数据	Units 单位
Attenuation 衰减	1310nm	≤0.35	[dB/km]
	1383nm (after H2-aging) 1383nm(氢老化后)	≤0.35	[dB/km]
	1460nm	≤0.25	[dB/km]
	1550nm	≤0.21	[dB/km]
	1625nm	≤0.23	[dB/km]
Attenuation vs. Wavelength Max. α difference 相对于波长的衰减变化	1285-1330nm, in reference to 1310nm 1285~1330nm, 相对于1310nm	≤0.03	[dB/km]
	1525-1575nm, in reference to 1550nm 1525~1575nm, 相对于1550nm	≤0.02	[dB/km]
Dispersion Coefficient 波长范围内的色散	1285-1340nm	-3.5 to 3.5	[ps/(nm·km)]
	1550nm	≤18	[ps/(nm·km)]
	1625nm	≤22	[ps/(nm·km)]
Zero Dispersion Wavelength(λ0) 零色散波长(λ0)		1300-1324	[nm]
Zero Dispersion Slope(S0) 零色散斜率(S0)		≤0.092	[ps/(nm2·km)]
Typical Value 零色散斜率典型值		0.086	[ps/(nm2·km)]
PMD 偏振模色散系数	Maximum Individual Fibre 单根光纤最大值	≤0.1	[ps/√km]
	Link Design Value (M=20, Q=0.01%) 光纤链路值	≤0.06	[ps/√km]
	Typical Value 典型值	≤0.04	[ps/√km]
Cable Cutoff Wavelength (λCC) 光缆截止波长 (λcc)		≤1260	[nm]
Mode Field Diameter (MFD) 模场直径 (MFD)	1310nm	8.4-9.2	[μm]
	1550nm	9.3-10.3	[μm]
Effective Group Index of Refraction (Neff) 有效群折射率 (Neff)	1310nm	1.466	--
	1550nm	1.467	--
Point Discontinuities 点不连续性	1310nm	≤0.05	[dB]
	1550nm	≤0.05	[dB]

Geometrical Characteristics 几何特性

Characteristics 特性	Specified values 数据	Units 单位
Cladding Diameter 包层直径	125.0±0.7	[μm]
Cladding Non-Circularity 包层不圆度	≤0.7	[%]
Coating Diameter 涂层直径	235-245	[μm]
Coating-Cladding Concentricity Error 涂层/包层同心度误差	≤12.0	[μm]
Coating Non-Circularity 涂层不圆度	≤6.0	[%]
Core-Cladding Concentricity Error 芯/包层同心度误差	≤0.5	[μm]
Curl(radius) 翘曲度（半径）	≥4	[m]
Delivery Length 交货长度	Up to 50.4	[km/reel]

Environmental Characteristics 环境特性 (1310nm, 1550nm & 1625nm)

Characteristics 特性	Conditions 条件	Specified values 数据	Units 单位
Temperature Dependence Induced Attenuation 温度附加衰减	-60°C to +85°C	≤0.05	[dB/km]
Temperature-Humidity Cycling Induced Attenuation 温度-湿度循环附加衰减	-10°C to +85°C, 98% RH -10°C 到85°C，98% 相对湿度	≤0.05	[dB/km]
Water Immersion Dependence Induced Attenuation 浸水附加衰减	23°C, for 30 days 23°C, 30 天	≤0.05	[dB/km]
Damp Heat Dependence Induced Attenuation 湿热附加衰减	85°C and 85% RH, for 30 days 85°C，85%相对湿度，30天	≤0.05	[dB/km]
Dry Heat Aging 干热老化	85°C, for 30 days 85°C，30天	≤0.05	[dB/km]

Mechanical Specifications 机械特性

Characteristics 特性	Conditions 条件		Specified values 数据	Units 单位
Proof Test 筛选张力	--		≥9.0	[N]
	--		≤1.0	[%]
	--		≥100	[kpsi]
Macro-bend Induced Attenuation 宏弯附加损耗	10 Turns Around a Mandrel of 15 mm Radius 10圈，半径15mm	1625nm	≤0.25	[dB]
	10 Turns Around a Mandrel of 15 mm Radius 10圈，半径15mm	1310nm and 1550nm	≤1.0	[dB]
	1 Turn Around a Mandrel of 10 mm Radius 1圈，半径10mm	1550nm	≤0.75	[dB]
	1 Turn Around a Mandrel of 10 mm Radius 1圈，半径10mm	1625m	≤1.5	[dB]
Coating Strip Force 涂层剥离力	typical average force 典型平均值		1.5	[N]
	peak force 峰值		1.3-8.9	[N]
Dynamic Fatigue Parameter (nd) 动态疲劳参数 (nd)			≥20	--