Optical Fiber

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Company Profile

Zhongtian Technology Advanced Materials Co., Ltd specialized in development and manufacture of optical fiber perform. In 22th Dec. 2010 regarding the quality system, ISO 9001:2008 approved by DNV Norway.

Zhongtian Technology Advanced Materials Co., Ltd now owns the annual production capacity of 200T G.652 and 10T G.657A2 fiber perform and has developed in G.655 and OM1/OM2/OM3.

ZTT Fibre Optics Co., Ltd , a subsidiary of Jiangsu Zhongtian Technology Co., Ltd, established inJanuary, 2003, is a high-tech manufacturer specialized in the manufacturing of optical fiber. Aim at a world-class optical fiber manufacturer and supplier by running under Quality, Environment, occupational health and safety standard three-Integration System requirements. So far, it has manufactured 50,000,000 core km fibers in all, and exported about 5,000,000 core km fibers.

ZTT Fibre Optics Co., Ltd now owns the annual production capacity over 18 million kilometers, keep improving product and service quality to satisfy the customer.

Poduction Type

- G.652 type Optical Fiber according to ITU-T G.652
- Low water peak and low attenuation loss G.652D type Optical Fiber (to be developed)
- G.657 type Optical Fiber according to ITU-T G.657
- G.655 type Optical Fiber according to ITU-T G.655 (to be developed)
- 50/125um type Optical Fiber according to IEC 60793-2-10 (to be developed)

Optical Fiber Characteristic

- ZTTG.652B fiber characteristics (ITU-G.652)

Category	Description		Specifications
Optical Specifications	Attenuation	@1310 nm	≤0.34 dB/km
		@1550 nm	≤0.21 dB/km
	Attenuation Non-uniformity	@1310 nm, 1550 nm	≤0.05dB
	Point Discontinuity	@1310 nm, 1550 nm	≤0.05 dB
	Attenuation vs. Wavelength	@1288 nm~1330 nm	≤0.05dB/km
		@1525~1575 nm	≤0.05 dB/km
	Zero Dispersion Wavelength		1300~1324 nm
	Zero Dispersion Slope		≤0.092 ps/nm^2·km
	Dispersion	@1288~1339 nm	≤3.5 ps/nm·km
		@1271~1360 nm	≤5.3 ps/nm·km
		@ 1550 nm	≤18 ps/nm·km
	Polarization Mode Dispersion (PMD)		≤0.2 ps/√km
	PMD Link Design value		≤0.2 ps/√km
	Cable Cutoff Wavelength (λcc)		≤1260 nm
	Macro bending Loss (100 turns; Φ50 mm)	@1550 nm	≤ 0.05 dB
	(100 turns; Φ50 mm)	@1625 nm	≤ 0.10 dB
	Mode Field Diameter	@1310 nm	9.2±0.4μm
		@1550 nm	10.4±0. 8μm
Dimensional Specifications	Fiber Curl Radius		≥4.0 m
	Cladding Diameter		125 ±1μm
	Core / Clad Concentricity		≤0.6μm
	Cladding Non-Circularity		≤1.0%
	Coating Diameter		245± 10μm
	Coating / Cladding Concentricity		≤12μm
	Coating Non-Circularity		≤6.0%
Mechanical Specifications	Proof Test		≥100kspi (0.69GPa)
	Fatigue Resistance Parameter (N_d)		≥ 20
	Peak Coating Strip Force		1.3~8.9 N

- ZTT G.652D fiber characteristics (ITU-G.652)

Category	Description		Specifications
Optical Specifications	Attenuation	@1310 nm	≤0.34 dB/km
		@1383 nm (after aged)	≤0.34 dB/km
		@1550 nm	≤0.20 dB/km
	Attenuation Non-uniformity	@1310 nm, 1550 nm	≤0.05dB
	Point Discontinuity	@1310 nm, 1550 nm	≤0.05 dB
	Attenuation vs. Wavelength	@1288 nm~1330 nm	≤0.05dB/km
		@1525~1575 nm	≤0.05 dB/km
	Zero Dispersion Wavelength		1300~1324 nm
	Zero Dispersion Slope		≤0.093 ps/nm^2·km
	Dispersion	@1288~1339 nm	≤3.5 ps/nm·km
		@1271~1360 nm	≤5.3 ps/nm·km
		@ 1550 nm	≤18 ps/nm·km
	Polarization Mode Dispersion (PMD)		≤0.2 ps/√km
	PMD Link Design value		≤0.2 ps/√km
	Cable Cutoff Wavelength (λcc)		≤1260 nm
	Macro bending Loss (100 turns; Φ50 mm)	@1550 nm	≤ 0.05 dB
	(100 turns; Φ50 mm)	@1625 nm	≤ 0.10 dB
	Mode Field Diameter	@1310 nm	9.2±0.4μm
		@1550 nm	10.4±0. 8μm
Dimensional Specifications	Fiber Curl Radius		≥4.0 m
	Cladding Diameter		125 ±1μm
	Core / Clad Concentricity		≤0.6μm
	Cladding Non-Circularity		≤1.0%
	Coating Diameter		245± 10μm
	Coating / Cladding Concentricity		≤12μm
	Coating Non-Circularity		≤6.0%
Mechanical Specifications	Proof Test		≥100kspi (0.69GPa)
	Fatigue Resistance Parameter (N_d)		≥ 20
	Peak Coating Strip Force		1.3~8.9 N

- ZTT Low water peak and low attenuation loss fiber characteristics (ITU-G.652)

Category	Description		Specifications
Optical Specifications	Attenuation	@1310 nm	≤0.32 dB/km
		@1383 nm (after aged)	≤0.32 dB/km
		@1550 nm	≤0.18 dB/km
		@1625 nm	≤0.20 dB/km
	Attenuation Non-uniformity	@1310 nm, 1550 nm	≤0.05dB
	Point Discontinuity	@1310 nm, 1550 nm	≤0.05 dB
	Attenuation vs. Wavelength	@1288 nm~1330 nm	≤0.05dB/km
		@1525~1575 nm	≤0.05 dB/km
	Zero Dispersion Wavelength		1300~1324 nm
	Zero Dispersion Slope		≤0.093 ps/nm^2·km
	Dispersion	@1288~1339 nm	≤3.5 ps/nm·km
		@1271~1360 nm	≤5.3 ps/nm·km
		@ 1550 nm	≤18 ps/nm·km
	Polarization Mode Dispersion (PMD)		≤0.2 ps/√km
	PMD Link Design value		≤0.2 ps/√km
	Cable Cutoff Wavelength (λcc)		≤1260 nm
	Macro bending Loss (100 turns; Φ50 mm)	@1550 nm	≤ 0.05 dB
	(100 turns; Φ50 mm)	@1625 nm	≤ 0.10 dB
	Mode Field Diameter	@1310 nm	9.2±0.4μm
		@1550 nm	10.4±0. 8μm
Dimensional Specifications	Fiber Curl Radius		≥4.0 m
	Cladding Diameter		125 ±1μm
	Core / Clad Concentricity		≤0.64μm
	Cladding Non-Circularity		≤1.0%
	Coating Diameter		245± 10μm
	Coating / Cladding Concentricity		≤12μm
	Coating Non-Circularity		≤6.0%
Mechanical Specifications	Proof Test		≥100kspi (0.69GPa)
	Fatigue Resistance Parameter (N_d)		≥ 20
	Peak Coating Strip Force		1.3~8.9 N

- ZTT Easy bend fiber characteristics (ITU-G.657A1)

Category	Description	Specifications
Optical Specifications	Attenuation @1310 nm	≤0.35 dB/km
	Attenuation @1383 nm(After aging hydrogenation)	≤0.35 dB/km
	Attenuation @1550 nm	≤0.21 dB/km
	Attenuation @1625 nm	≤0.23 dB/km
	Dispersion coefficient	@1288~1339nm ≤3.5ps/nm·km @1271~1360nm ≤5.3ps/nm·km @1550nm ≤18ps/nm·km @1625nm ≤22ps/nm·km
	Zero Dispersion Wavelength	1300~1324 nm
	Zero Dispersion Slope	≤ 0.092 ps/nm2·km
	PMD Link value (M=20cables Q=0.01%) maximum PMDQ	≤ 0.1 ps/√km
	Cable Cutoff Wavelength (λcc)	≤1260 nm
	Macro bending Loss (10 turns; Φ30 mm) @1550 nm (10 turns; Φ30 mm) @1625 nm (1 turns; Φ20 mm) @1550 nm (1 turns; Φ20 mm) @1625 nm	 ≤ 0.2 dB ≤ 0.5 dB ≤ 0.3 dB ≤ 1.0 dB
	Mode Field Diameter @1310 nm	8.8±0.4μm
Dimensional Specifications	Cladding Diameter	125±0.7μm
	Cladding non circularity	≤1.0%
	Coating diameter	245±7μm
	Coating non circularity	≤6%
	Cladding / coating concentricity error	≤12μm
	Core/clad concentricity error	≤0.54μm
	Cladding Non-Circularity	≤1.0%
	Fiber curl radius	≥4m
Mechanical Specifications	Proof stress	≥1.05%
	Fatigue Resistance Parameter (Nd)	≥22
	Peak Coating Strip Force	1.3~8.9N
Environment Specification	Fiber temperature dependence (-60℃ +85℃)	≤0.05dB/km
	Fiber temperature and humidity(+85±2℃ , 85% R.H. for 30 days)	≤0.05dB/km
	Heat Aging Induced Attenuation (85±2℃ ,for 30 days)	≤0.05dB/km
	Water Immersion Induced (23±2℃ ,for 30 days)	≤0.05dB/km

- ZTT Easy bend fiber characteristics (ITU-G.657A2)

Category	Description	Specifications
Optical Specifications	Attenuation @1310 nm	≤0.35 dB/km
	Attenuation @1383 nm(After aging hydrogenation)	≤0.35 dB/km
	Attenuation @1550 nm	≤0.21 dB/km
	Attenuation @1625 nm	≤0.23 dB/km
	Dispersion coefficient	@1288~1339nm ≤3.5ps/nm·km @1271~1360nm ≤5.3ps/nm·km @1550nm ≤18ps/nm·km @1625nm ≤22ps/nm·km
	Zero Dispersion Wavelength	1300~1324 nm
	Zero Dispersion Slope	≤ 0.092 ps/nm2·km
	PMD Link value (M=20cables Q=0.01%) maximum PMDQ	≤ 0.1 ps/√km
	Cable Cutoff Wavelength (λcc)	≤1260 nm
	Macro bending Loss (10 turns; Φ30 mm) @1550 nm (10 turns; Φ30 mm) @1625 nm (1 turns; Φ20 mm) @1550 nm (1 turns; Φ20 mm) @1625 nm (1 turns; Φ15 mm) @1550 nm (1 turns; Φ15 mm) @1625 nm	≤ 0.03 dB ≤ 0.1 dB ≤ 0.1 dB ≤ 0.2 dB ≤ 0.5 dB ≤ 1.0 dB
	Mode Field Diameter @1310 nm	8.6±0.4μm
Dimensional Specifications	Cladding Diameter	125±0.7μm
	Cladding non circularity	≤1.0%
	Coating diameter	245±7μm
	Coating non circularity	≤6%
	Cladding / coating concentricity error	≤12μm
	Core/clad concentricity error	≤0.54μm
	Cladding Non-Circularity	≤1.0%
	Fiber curl radius	≥4m
Mechanical Specifications	Proof stress	≥1.05%
	Fatigue Resistance Parameter (Nd)	≥22
	Peak Coating Strip Force	1.3~8.9N
Environment Specification	Fiber temperature dependence (-60℃ +85 ℃)	≤0.05dB/km
	Fiber temperature and humidity (+85±2℃ , 85% R.H. for 30 days)	≤0.05dB/km
	Heat Aging Induced Attenuation(85±2℃ ,for 30 days)	≤0.05dB/km
	Water Immersion Induced (23±2℃ ,for 30 days)	≤0.05dB/km

- ZTT Non-zero dispersion shifted fiber characteristics (ITU-G.655)

Fiber Attributes		
Attribute	Detail	Value
Mode field diameter	Wavelength	1550 nm
	Range of nominal values	8~11 um
	Tolerance	±0.7 um
Cladding Diameter	Nominal	125 um
	Tolerance	±1 um
Core concentricity error	Maximum	0.8 um
Cladding noncircularity	Maximum	2.0%
Cable cut-off wavelength	Maximum	1480 nm
Macrobend loss	Radius	37.5 mm
	Number of turns	100
	Maximum at 1550 nm	0.50 dB
Proof stress	Minimum	0.69 Gpa
Chromatic dispersion coefficient	λmin &λmax	1530 nm & 1565 nm
	Minimum value of Dmin	0.1 ps/nm.km
	Maximum value of Dmax	6.0 ps/nm.km
	Sign	Positive or negative
Cable attributes		
Attribute	Detail	Value
Attenuation coefficient	Maximum at 1550 nm	0.35dB/km

ZTT Multi-mode fiber characteristics (IEC 60793-2-10)

Category	Description	Specifications	
Optical Specifications	Attenuation @ 850 nm	≤2.3 dB/km	
	Attenuation @1300 nm	≤0.7 dB/km	
	Attenuation @1380 nm	≤2.0 dB/km	
	Numerical Aperture (NA)	0.200±0.015	
	Zero Dispersion Wavelength	1295~1340 nm	
	Zero Dispersion Slope	≤ 0.105 ps/nm2·km	
	Macro bending Loss (10 turns; Φ75 mm) @ 850 nm (10 turns; Φ75 mm) @1300 nm	≤ 0.5 dB ≤ 0.5 dB	
	Effective Group Index of Refraction @ 850nm @ 1300nm	1.483 1.478	
Transmission Specification	Standard bandwidth @ 850 nm @1300 nm	**OM2**	**OM3**
		≥700 MHz.km	≥1500 MHz.km
		≥500 MHz.km	≥500 MHz.km
	Effective Bandwidth	≥ 950 MHz.km	≥ 2000 MHz.km
	1 Gb/s Ethernet link length	750m	1000m
	10 Gb/s Ethernet link length	150m	300m
Dimensional Specifications	Core diameter	50±2.5um	
	Core non circularity	≤5%	
	Cladding Diameter	125±1μm	
	Cladding non circularity	≤1%	
	Core/clad concentricity error	≤1.0μm	
	Coating diameter	245±10μm	
	Coating non circularity	≤5%	
	Cladding / coating concentricity error	≤8.0μm	
Mechanical Specifications	Proof stress	≥100 Kpsi	
	Fatigue Resistance Parameter (Nd)	≥20	
	Coating Strip Force	≥1.9N	
Environment Specification	Fiber temperature dependence (-60℃ +85℃)	≤0.1dB/km	
	Fiber temperature and humidity cycling (-10~+85℃ , 4%~85% R.H.)	≤0.1dB/km	
	Fiber temperature and humidity (+85±2 ℃ , 85% R.H. for 30 days)	≤0.2dB/km	
	Heat Aging Induced Attenuation(85±2℃ ,for 30 days)	≤0.2dB/km	
	Water Immersion Induced (23±2℃， for 30 days)	≤0.2dB/km	

ZTT CABLE

ZTT is a leading and global manufacturer of cable systems, which provides package solutions for telecommunication and power applications around the world. With its rich heritage of highly advanced R&D results, ZTT owns the cutting-edge technology within the industry.

ZTT was established in 1992 and became a listed company in 2002. Up to now, ZTT has developed to be a Group Company with 26 subsidiaries in China. Our products are widely used in telecommunication industry, power transmission industry, mining cable industry, marine and submarine cable industry, railway industry, cable manufacturing and so on.

ZTT has always committed to be market-oriented, meeting various demands of our customers and providing economical & reliable solutions. With innovative product design, ZTT can also guarantee the high-end engineering capabilities and life cycle maintenance services.

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