Aerial with Micromodule O.F. Cable

Cable Design

Micro-Module Optical Fiber Cable-Dielectric-Single Sheath-G.652D Fiber

- **Micro Module:** thermoplastic material, containing **12** fiber.
- **Aramid yarns:** reinforcement members
- **Strength member:** GFRP inside the outer sheath.
- **Outer Sheath:** Black HDPE.

Cable Specification

Cable Cores		48	72	96	144
No. of Module		4	6	8	12
Fibers per Module		12	12	12	12
Module- Φ	mm	1.3			
Outer sheath	mm	2.0			
Nominal Cable Diameter	mm	9±0.5	10±0.5	11±0.5	12±0.5
Nominal Cable Weight	Kg/km	72	82	95	115
Max. Tensile load	daN	200	220	220	250
Max. Crush resistance	daN/cm	10	10	10	10
Min cable bending radius	mm	10xD	10xD	10xD	10xD
Coefficient of Thermal Expansion		2.1*10^-5/K	2.3*10^-5/K	2.5*10^-5/K	2.1*10^-5/K
Modulus of Elasticity	MPa (N/mm^2)	9100	7810	7500	7000

Cable Application

Temperature Range		Minimum Bend Radius	
Transportation & Storage	-40~+70℃	Load	20×D
Operation	-30~+70℃	Unload	10×D
Installation	-5~+40℃		

Main Mechanical and Environmental Characteristic

Test	Test Standard	Specified Value	Acceptance Criteria
Tensile	IEC 60794-1-2-E1	Max. Tensile load 5min	△α≤0.05dB, fiber strain≤0.33%
Crush	IEC 60794-1-2-E3	10daN/cm, 5min	△α reversible, no damage
Repeated Bending	IEC 60794-1-2-E6	R=20D, 40N, 20cycles	△α reversible, no damage
Impact	IEC 60794-1-2-E4	3J, R=300mm, 3times	△α reversible, no damage
Torsion	IEC 60794-1-2-E7	40N, 10cycles, +/-360^0	△α reversible, no damage
Temperature Cycling	IEC 60794-1-2-F1	-20~+70℃, 2cycles	△α≤0.05dB/km, no damage

Fiber and Tube Color

Color Identification of Fiber

No	1	2	3	4	5	6	7	8	9	10	11	12
Color	Red	Green	Yellow	Blue	Brown	White	Grey	Violet	Black	Orange	Aqua	Pink

Color Identification of Tube

No	1	2	3	4	5	6	7	8	9	10	11	12
Color	Red	Green	Yellow	Blue	Brown	White	Grey	Violet	Black	Orange	Aqua	Pink

Cabled Fiber Performance (G.652D)

Characteristic		Acceptance Value
Attenuation	@1310nm	≤0.35dB/km
	@1383nm	≤0.34dB/km
	@1490nm	≤0.23dB/km
	@1550nm	≤0.21dB/km
	@1625nm	≤0.24dB/km
Mode Field Diameter	@1310nm	9.2±0.4 μm
	@1550nm	10.4±0. 5μm
Dispersion	@1300 +30/-15nm	≤3.5ps/(nm·km)
	@1550nm	≤17ps/(nm·km)
	@1625nm	≤22ps/(nm·km)
Macrobend loss at 1550nm	Φ50mm,100 turns	≤0.05dB
Macrobend loss at 1625nm	Φ30mm,100 turns	≤0.10dB
Zero-Dispersion wavelength		1300nm～1324nm
Zero-Dispersion slope		≤0.092ps/(nm^2·km)
Cable cutoff wavelength λ_{cc}(nm)		≤1260nm
Polarization Mode Dispersion PMD	Max. individual	≤0.20ps/km$^{1/2}$
	Linked design	≤0.06ps/km$^{1/2}$
Cladding diameter		125±1.0μm
Cladding non-circularity		≤1.0%
Core/cladding concentricity error		≤0.6μm
Fiber Diameter with coating (un-colored)		245±10μm
Fiber Diameter with coating (colored)		250±15μm
Cladding/coating concentricity error		≤12.5μm
Proof stress		≥0.69GPa(100kpsi)
Dynamic stress corrosion susceptibility parameter (typical value)		≥20

Cabled Fiber Performance (G.657A1)

Characteristics		Acceptance Value
Attenuation	@1310nm	≤0.35dB/km
	@1383nm	≤0.34dB/km
	@1490nm	≤0.24dB/km
	@1550nm	≤0.21dB/km
	@1625nm	≤0.23dB/km
Mode Field Diameter	@1310nm	8.8±0.4µm
Dispersion	@1300 +30/-15nm	≤3.5ps/(nm·km)
	@1550nm	≤17ps/(nm·km)
	@1625nm	≤22ps/(nm·km)
Polarization Mode Dispersion	Max. individual	≤0.20ps/km$^{1/2}$
PMD	Linked design	≤0.06ps/km$^{1/2}$
Zero-Dispersion Wavelength		1300-1324nm
Zero-Dispersion Slope		≤0.092ps/(nm^2·km)
Cable Cutoff Wavelength λ_{cc}(nm)		≤1260nm
Cladding Diameter		125±0.7µm
Macrobend loss	30mm radius, 10 turn, @1550	≤0.25dB
	30mm radius, 10 turn, @1625	≤0.10dB
	20mm radius, 1 turn, @1550	≤0.75dB
	20mm radius, 1 turn, @1625	≤1.5dB
Cladding Non-circularity		≤0.7%
Core/Cladding Concentricity Error		≤0.5µm
Fiber Diameter with coating (un-colored)		245±10µm
Fiber Diameter with coating (colored)		250±15µm
Core/cladding concentricity error		≤0.5µm
Proof Test		≥0.69GPa (100kpsi)
Dynamic Fatigue		≥20

Sheath Marking, Delivery Length

The outer sheath is marked in 1 meter intervals as follows:

In Accordance with Custom's Requirement

Standard delivery length will be 4 km with -1+3% tolerance.