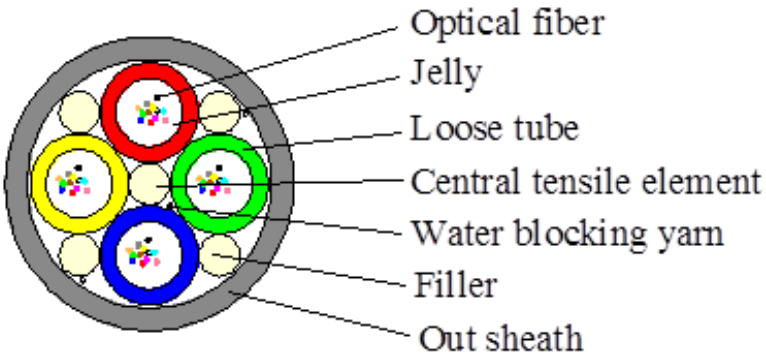
AIR BLOWING MICRO
GYCFN-48F, ITU-T G.657A1 200µm fibers



Technical Specifications for Optical Fiber Cable

1. General

1.1 This specification covers the requirements of the micro-duct optical fiber cable to be supplied to customer for installation by blowing.

1.2 The optical fiber cable shall comply with the requirements of this specification and generally meet or better latest standards:

ITU-T G.650: Definitions and test methods for linear, deterministic attributes of single-mode fiber and cable

ITU-T G.657: Characteristics of a bending loss insensitive single mode optical fibre and cable for the access network

IEC 60794-1-2: Optical Fiber Cables, Part 2, Generic Specifications-Basic optical cable test procedures.

IEC 60794-5-10: Optical fiber cables – Part 5.10: Family specification for outdoor micro-duct optical fiber cables, micro-ducts and protected micro-ducts for installation by blowing

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2. Optical Fiber Characteristics

The optical, geometrical, mechanical and environment characteristics of the G.657A1 200µm optical fiber shall be accordance with below table:

Characteristics			Specified Values	Units
Optical Characteristics				
Mode field diameter	at 1310nm		8.6±0.7	µm
	at 1550nm		9.8±0.8	µm
Attenuation coefficient	at 1310nm		≤0.35	dB/km
	at 1550nm		≤0.21	dB/km
Zero dispersion wavelength (λ0)			1300 ～1324	nm
Max zero dispersion sloupe (S0max)			≤0.092	ps/(nm2·km)
Polarization mode dispersion coefficient(PMDQ)			≤0.1	$ps/\sqrt{km}$
Cut-off wavelenght (λcc)			≤1260	nm
Geometric characteristic				
Cladding diameter			125.0±0.7	nm
Cladding non-circularity			≤0.7	%
Coating diameter			200.0±10.0	µm
Coating-cladding concentricity error			≤12.0	µm
Core-cladding concentricity error			≤0.5	µm
Mechanical characteristic				
Curling			≥4	m
Proof stress			≥0.69	GPa
Coating strip Force	Avenrage value		1.0-5.0	N
	Peak value		1.3-8.9	N
Macro bending loss	Φ20mm, 1 circles	at 1550nm	≤0.75	dB
		at 1625nm	≤1.5	dB
	Φ30mm, 10 circles	at 1550nm	≤0.25	dB
		at 1625nm	≤1.0	dB

3. Cable Construction and Parameter

Items		Descriptions
Optical fiber		48F
Loose tube	Material	PBT (Polybutylen Terephthalate
	Fibres per tube	12
	Numbers	4
Central streangth member	Material	KFRP
Water blocking material		Water blocking yarn
Additional strangth member		KFRP
Outer sheath	Material	Black Nylon
Cable nominal diameter (±0.3mm)		3.6
Cable approx. Weigth (kg/km)		12
Max. tensile strength	Short time	100N
	Long time	40N
Max. crush resistance	Short time	500N/100mm
Minimum Bending radius	Dynamic	30 times of cable diameter
	Static	15 times of cable diameter
Temperature range	Installation	-30°C～ +50°C
	Storage	-30°C ～+50°C
	Operation	-30°C ～+50°C

4. Fiber and Loose Tube Color Identification

The individual fiber and loose tubes shall accordance with standard TIA/EIA-598-A and the color code as below.

Fibers Colors

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

Tube Colors

NO.	1	2	3	4								
48 fiber	Red	Green	Blue	Yellow								

5. Mechanical and Enviromental Test

Item	Details
Tensile loadnig test	Test Method: Accordance with IEC60794-1-21-E1 Tensile force : 100 N Length: 50m Holding time : 1 minutes Diameter of mandrel: 30 x cable diameter Test result: Fiber strain ≤ 0.6% After test the fiber and cable no damage and no obvious change in attenuation
Crush / Compression test	Test Method: Accordance with IEC 60794-1-21-E3 Test Length: 100 mm Load: 500 N Holding time: 1 minutes Test result:After test no sheath cracking and no fiber breakage. After test additional attenuation ≤0.05dB/km at 1550nm.
Impact resistance test	Test Method: Accordance with IEC 60794-1-21-E4 Impact energy : According to Table 1 of EIA/TIA-455-25C Energy:2J Radius of hammer head: 300 mm Number of impacts: 3 Test result: After test no sheath cracking and no fiber breakage.
Flexing / Repeated Bending test	Test Method: Accordance with IEC 60794-1-21- E8/E6 Bending diameter : 40 x diameter of cable Impact rate : ≤ 2 sec / cycle Number of cycles : 25 Test result: After test no sheath cracking and no fiber breakage.
Twisted/ Torsion test	Test Method: Accordance with IEC 60794-1-21-E7 Sample length : 2 m Number of turn : ± 180 degrees Number of cycles : 5 Test result: After test no sheath cracking and no fiber breakage.
Temperature cycling test	Test Method: Accordance with IEC 60794-1-22-F1 Variation of temperature : -30℃ to +70℃ Number of cycles : 2 Holding time per each step :4 hours Test result: After test additional attenuation ≤0.05dB/km at 1550nm.
Water penetration test	Test Method: Accordance with IEC 60794-1-22-F5 Sample length: 3 m Water height : 1 m Holding time : 24 hours No water leak from end of cable.

6. Cable Marking

Unless otherwise required the sheath will be use inkjet marked at intervals of 1m, containing:

- Customer name
- Manufacture's name
- Date of manufacture
- Type and number of fiber cores
- Length marking
- Other requirements

7. Environmentally

Full comply with ISO14001, RoHS and OHSAS18001

8. Cable Packing

The cable shall be installed on hard plywood, wooden or steel-wooden drum with order length per drum. The both ends shall be fitted with a suitable cap to prevent ingress of moisture.