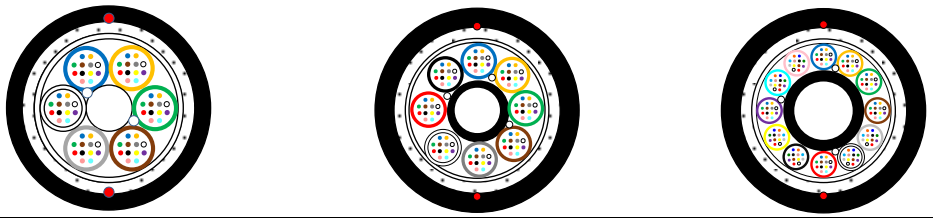
Duct Optical Fiber Cable

1. Application / Construction

Identification	GYFHT6Y-12/24/48/72/96/144/288 B1.3
Application	Pulling or blowing into the duct
Cross Section (not to scale)	
Configuration	- Loose tube with 12 optical fibers, filled with thixotropic compound - Stranded loose tubes and fillers - Central strength member made of fibre reinforced plastic (FRP) - Cable strand: dry, with water blocking yarns and tape - Glass yarns as additional strength member - Outer sheath: PE, black, two ripcords under the sheath

Temperature Range	Storage and transport	Installation	Operation
	-40 to +70°C	-10 to +50°C	-40 to +70°C

Standards	IEC 60793-1, IEC 60793-2, IEC 60794-3-10
ZTT Specification	21- 118269-2-A
Customer Reference	Common standard

2. Dimensions

Number of fibers		12	24	48	72	96	144	288
Loose tubes x fibers		1x12	2x12	4x12	6x12	8x12	12x12	Inner:9x12 Outer:15x12
Outer diameter (±5%)	mm	10.1				11.4	14.2	16.3
Weight/km	kg	97				110	169	230

Note: sheath thickness not consider ripcord portion, sizes and values without tolerances are nominal values

3. Mechanical Properties

Max. tensile load	2000 N
Crush resistance / 10 cm	1500 N
Bending radius (installation)	20x cable Ø
Bending radius (operation)	10x cable Ø

See Point 6: Test Methods

4. Marking

Fiber Colors	1	2	3	4	5	6	7	8	9	10	11	12
	blue	orange	green	brown	slate	white	red	black	yellow	violet	rose	aqua

Tube Colors	1	2	3	4	5	6	7	8	9
	blue	orange	green	brown	slate	white	red	black	yellow

Tube Colors	10	11	12	13	14	15	16	17	18	19	20	21
	blue	orange	green	brown	slate	white	red	black	yellow	violet	rose	aqua

Tube Colors	22	23	24
	blue	orange	green

For 288F cable:22~24th tubes with black tracer

Outer Sheath: black, ink jet, marking in 1 meter intervals as follows (for example):

ZTT OPTICAL CABLE GYFHT6Y-12 B1.3 <batch ID> <meter marking >

5. Optical Fiber

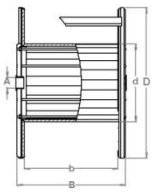
Standard	ITU-T G.652D ZTT-ALF®		
Optical	Fibre attenuation .. cabled	@ 1310 nm ≤0.36 dB/km	@ 1550 nm ≤0.22 dB/km
	Mode field diameter (MFD)	9.2 ± 0.5 µm	10.4 ± 0.6 µm
	Zero dispersion wavelength	1300~1324 nm	
	Zero dispersion slope	≤0.092 ps/nm² ·km	
	Polarisation mode dispersion (PMD)	≤0.2 ps/√km	
	Cut-off wavelength	≤1260 nm	
	Macro bending loss .. 100 turns Ø50 mm	@1550 nm ≤0.05 dB	@1625 nm ≤0.10 dB
Geometric	Outer diameter (colored)	250 ± 15 µm	
	Cladding diameter	125 ± 1.0 µm	
	Core/clad concentricity error	≤0.6 µm	
	Cladding non-circularity	≤1.0 %	
Mechanical	Proof stress	≥0.69 Gpa	

6. Test Methods

Test	Conditions	Acceptance criteria
Tensile strength IEC 60794-1-2 E1	Tensile strength: see Point 3 Sample length: ≥ 50 m, Duration: 1 min	- Fiber strain:≤0.60%, △α reversible - No damage
Crush resistance IEC 60794-1-2 E3	Crush: see Point 3 Test duration: 1 min, number of test: 3	- △α ≤0.05dB after test - No damage
Impact IEC 60794-1-2 E4	Impact energy: 1 J R = 300 mm, number of places/tests: 3	- △α ≤0.05dB after test - No damage
Repeated bending IEC 60794-1-2 E6	Bending radius: 20x cable Ø 25 cycles	- △α ≤0.05dB after test - No damage
Torsion IEC 60794-1-2 E7	Sample length: 2 m ± 180°, 10 cycles	- △α ≤0.05dB after test - No damage
Bend IEC 60794-1-2 E11A	Bending radius: 10x cable Ø 4 bends, 3 cycles	- △α ≤0.05dB after test - No damage
Temperature cycling IEC 60794-1-2 F1	-4℃→ +70℃ 12 hours at each step, 2 cycles	- △α≤0.15dB/km and reversible - No damage
Water penetration IEC 60794-1-2 F5	Sample length: 3 m Water column height: 1 m Test duration: 24 h	- No water leakage

All optical measurements at 1550 nm

7. Logistics

Cable type	Length Tolerance	4km -1% / +3%	
GYFHT6Y-12/24/48/72 B1.3	Drum Type Dimensions (tolerance: ±5cm) Weight (kg)	Wooden 125*60*75 472	 D*d*B in cm
GYFHT6Y-96 B1.3		Wooden 135*60*75 536	
GYFHT6Y-144 B1.3		Wooden 165*70*75 819	
GYFHT6Y-288 B1.3		Iron Wooden 165*80*105 1108	

Dimensions including protection. Indicative values, actually delivered drum sizes and weights may deviate. Cable ends sealed with caps