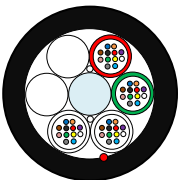
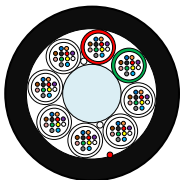

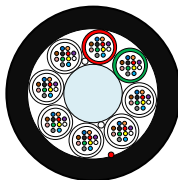


1. Application / Construction

Identification	GYCFHTY-48/96/144/216 G.657A1			
Application	Micro cable for blowing into microducts			
Cross Section (not to scale)	48 fibers	96 fibers	144 fibers	216 fibers
				
Recommended for microduct dimension (O/I-Ø in mm)	≥12/8	≥12/8	≥14/10	≥14/10
Configuration	<ul style="list-style-type: none"> - Loose tubes with 12 optical fibers, filled with thixotropic compound - Stranded loose tubes and fillers if necessary - Central strength member made of FRP or FRP with coating if necessary - Cable strand: dry, with water blocking materials - Outer sheath: HDPE, 1 ripcord under the sheath 			
Temperature Range	Storage and transport -20 to +60°C		Installation -5 to +50°C	Operation -20 to +60°C
Standards	IEC 60793-1, IEC 60793-2, IEC 60794-5, IEC 60793-1-52			
ZTT Specification	23-XJ30103-1-a			
Customer Reference	Common standard			

2. Dimensions

Number of fibers		48	96	144	216 200µm
Loose tubes x fibers		4x12	8x12	12x12	9x24
Loose tubes / Dummies		4/2	8/0	12/0	9/0
Loose tube Ø	mm	1.5	1.4	1.4	1.6
Central Strength Member	mm	1.7	2.3	4.2 (2.8)	3.2
Outer sheath thickness	mm	0.5	0.4	0.4	0.5
Outer diameter (± 0.3)	mm	5.7	5.9	7.8	7.4
Weight (± 20%)	kg	29	36	58	56

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

3. Mechanical Properties

Max. tensile load (Install.)	N	700	1000	1500	2000
Crush resistance / 10 cm	N	700			
Bending radius (installation)		20x cable Ø			
Bending radius (operation)		15x cable Ø			

See Point 6: Test Methods

4. Marking

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

Outer Sheath: black, ink jet or laser print, marking in 1 meter intervals as follows:

ZTT	OPTICAL CABLE	<cable type>	<batch ID>	<meter marking >
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5. Optical Fiber

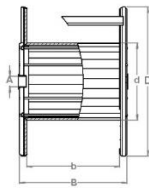
Standard	ITU-T G.657A1		
Optical	Fibre attenuation .. cabled	@ 1310 nm ≤0.38 dB/km	@ 1550 nm ≤0.23 dB/km
	Mode field diameter (MFD)	8.8 ± 0.4 μm	-
	Zero dispersion wavelength	1300~1324 nm	
	Zero dispersion slope	≤0.092 ps/nm ² ·km	
	Dispersion coefficient	@ 1310 nm ≤3.5 ps/nm.km	@ 1550 nm ≤19.0 ps/nm.km
	Cut-off wavelength	≤1260 nm	
	Macro bending loss .. 10 turns Ø30 mm .. 1 turn Ø20 mm	@1550 nm ≤0.25 dB ≤0.75 dB	@1625 nm ≤1.0 dB ≤1.5 dB
Geometric	Cladding diameter	125 ± 1.0 μm	
	Coating Diameter	250 ± 15 μm	200 ± 10 μm
	Core/clad concentricity error	≤0.5μm	
	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, Test duration: 1 min	- Fiber strain: ≤0.60%, Δα reversible - No damage
Crush resistance IEC 60794-1-2 E3	Crush: see Point 3 Test duration: 1 min, number of tests: 3	- Δα reversible - No damage
Impact IEC 60794-1-2 E4	Impact energy: 1 J R = 300 mm, number of places/tests: 3	- Δα reversible - No damage
Repeated bending IEC 60794-1-2 E6	Bending radius: 20x cable Ø 25 cycles, 100N load	- Δα reversible - No damage
Torsion IEC 60794-1-2 E7	Sample length: 2 m ± 180°, 10 cycles, 100N	- Δα reversible - No damage
Bend IEC 60794-1-2 E11A	Bending radius: 10x cable Ø 4 bends, 3 cycles	- Δα reversible - No damage
Temperature cycling IEC 60794-1-2 F1	-20°C .. +60°C 4 hours at each temperature step, 2 cycles	- Δα ≤ 0.1 dB/km - Δα 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	4 km -2% / +2%	 D*d*B in cm
GYCFHTY-48 G.657A1	Wooden drum Dimensions Weight	95*60*75 168 kg	
GYCFHTY-96 G.657A1		95*60*75 196 kg	
GYCFHTY-144 G.657A1		115*70*75 302 kg	
GYCFHTY-216 G.657A1		125*80*75 304 kg	

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