

1. Application / Construction

Identification	GYQFXTBY-4/6/8/12/16/24/48 G.652D/G.657A1		
Application	For installation on poles or walls, can be installed in pipelines		
Cross Section (not to scale)	<p style="text-align: center;">48 fibers</p>		
Configuration	<ul style="list-style-type: none"> - Loose tube with up to 24 optical fibers, jelly filled - Strength member: FRP*1 and aramid yarns - Ripcord*2 - Outer sheath: HDPE, Black, UV proof 		
Temperature Range	Storage and transport -40 to +70°C	Installation -15 to +55°C	Operation -40 to +70°C
Standards	IEC 60793-1, IEC 60793-2, IEC 60794-3		
ZTT Specification	XJ37156-2-A		
Customer Reference	DSH_AERO-DDF03-S_PE_EN		

2. Dimensions

Fiber count		4	6	8	12	16	24	48
Fiber No. per tube		4	6	8	12	8	12	24
No. of tubes/dummies		1/1	1/1	1/1	1/1	2/0	2/0	2/0
Loose tube Ø	mm	2.3						
Outer diameter	mm	(4.8±0.5)*(9.3±0.5)						
Weight (±5)	kg	50						

Sizes and values without tolerances are nominal values

3. Mechanical Properties

Max. tensile load	Short term: 1800N Long term: 500N
Crush resistance / 10 cm	5000 N
Min. bending radius	Without tension 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	grey	white	red	black	yellow	violet	pink	aqua
Fiber Colors	13	14	15	16	17	18	19	20	21	22	23	24
	blue	orange	green	brown	grey	white	red	nature	yellow	violet	pink	aqua

Tube Colors	1	2
	red	green

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

ZTT OPTICAL CABLE <cable type> <drum No.> XXXXM

5. Optical Fiber

Standard	ITU-T G.652D		
Optical	Fibre attenuation .. cabled	@1310 nm ≤0.36 dB/km	@1550 nm ≤0.25 dB/km
	Mode Field Diameter	9.2±0.4µm@1310nm	
	Zero Dispersion Wavelength	1300~1324 nm	

Geometric	Zero-Dispersion slope	$\leq 0.092 \text{ps}/(\text{nm}^2 \cdot \text{km})$
	Cable cut-off wavelength λ_{cc}	$\leq 1260 \text{nm}$
	Cladding Diameter	$125 \pm 1.0 \mu\text{m}$
	Cladding non circularity	$\leq 1.0\%$
	Core/clad concentricity error	$\leq 0.6 \mu\text{m}$
	Coating diameter	$245 \pm 10 \mu\text{m}$
Mechanical	Proof stress	$\geq 0.69 \text{GPa}$

Fiber type	ITU-T G.657A1		
Optical	Fibre attenuation .. cabled	@ 1310 nm $\leq 0.35 \text{dB/km}$	@ 1550 nm $\leq 0.25 \text{dB/km}$
	Mode field diameter (MFD)	$8.8 \pm 0.4 \mu\text{m}@1310\text{nm}$	
	Zero dispersion wavelength	1300–1324 nm	
	Zero dispersion slope	$\leq 0.092 \text{ps}/\text{nm}^2 \cdot \text{km}$	
	Cut-off wavelength	$\leq 1260 \text{nm}$	
Geometric	Outer diameter	$250 \pm 15 \mu\text{m}$	
	Cladding diameter	$125 \pm 0.7 \mu\text{m}$	
	Core/clad concentricity error	$\leq 0.5 \mu\text{m}$	
	Cladding non-circularity	$\leq 1.0 \%$	
Mechanical	Proof stress	$\geq 0.69 \text{Gpa}$	

6. Test Methods

Test	Conditions	Acceptance criteria
Tensile strength IEC 60794-1-2 E1	Tensile strength: see Point 3 Sample length: $\geq 50 \text{m}$ Test duration: 1 min	- $\Delta\alpha$ reversible - No damage
Crush resistance IEC 60794-1-2 E3	Crush: see Point 3 Test duration: 1 min, number of tests: 3	- $\Delta\alpha$ reversible - No damage
Repeated bending IEC 60794-1-2 E6	Bending radius: 20x cable \varnothing 10 cycles	- $\Delta\alpha$ reversible - No damage
Temperature cycling IEC 60794-1-2 F1	-40°C .. +70°C 8 hours at each temperature step, 2 cycles	- $\Delta\alpha \leq 0.05 \text{dB/km}$ after test - No damage
Water penetration IEC 60794-1-2 F5	Sample length: 3 m Water column height: 1 m, duration: 24 h	- No water leakage

All optical measurements at 1550 nm

7. Logistics

Cable type	Length (tolerance)	4000m (-3%, +3%)	
GYQFXTBY-4/6/8/12/16/24/48 G.652D/G.657A1	Drum Type Dimensions Weight	Wooden 105*60*75 266kg	<p>D*d*B in cm</p>

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

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A	April 28, 2024	Wright	Tim	Erica	
Version	Date	Prepared	Reviewed	Approved	Remarks