MICRO CABLE · DUCT APPLICATION · AIR BLOWN

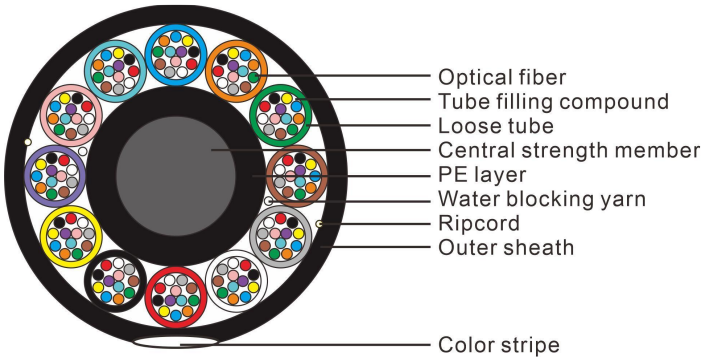
12-144F

AIR BLOWN

MODEL **GYCFHTY**

Air-blown micro cable for duct installation, 12 to 144 fibres on a 5.6-8.4 mm sheath profile.

FIBER COUNT	FIBER TYPE
12-144	**G.652D**
WEIGHT	OD
28-63 kg/km	**5.6-8.4 mm**



01 OVERVIEW

Scope & cable cross-section

This specification covers the design requirements and performance standard for the supply of air-blown micro optical fibre cable for duct installation. ZUOYEAL ensures a stable quality control system for our cable products through several programs including ISO 9001, ISO 14001 and ROHS.

The GYCFHTY is designed for installation into microducts by air blowing and follows the construction below.

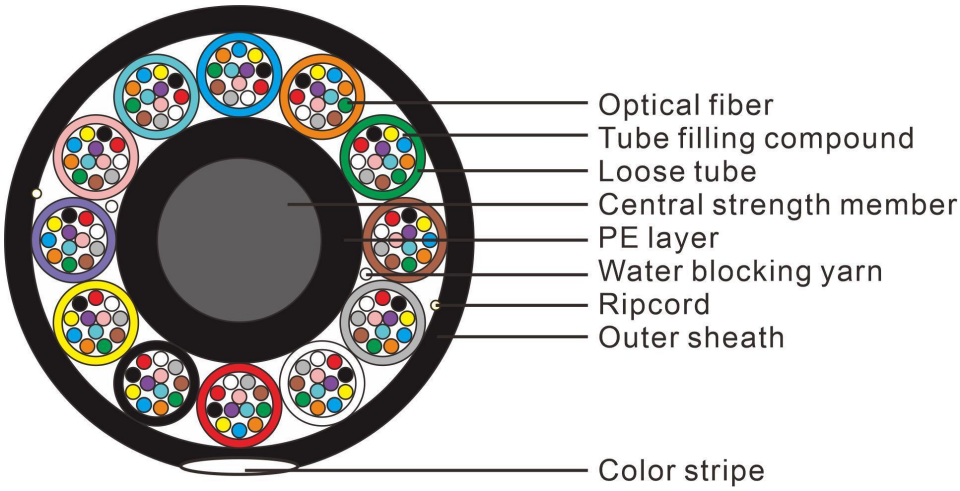


FIG. 1 Cable cross-section (not to scale)

- Optical fibres are housed in slim PBT loose tubes filled with waterproof compound.
- Tubes and PP fillers are stranded around a PE-jacketed FRP central strength member.
- Water blocking yarns prevent water ingress along the cable core.
- Two ripcords, a white stripe and a thin black PE sheath complete the micro cable.
- The small diameter and smooth sheath are designed for installation by air blowing.

AT A GLANCE

ITEM	VALUE	ITEM	VALUE
Fibre counts	12 · 24 · 48 · 72 · 96 · 144	Fiber type	G.652D
Cable diameter	5.6 - 8.4 mm	Cable weight	28 - 63 kg/km

02 STANDARDS

Reference standards

STANDARD	SCOPE
ITU-T G.652	Characteristics of a single-mode optical fibre
IEC 60794-1-1	Optical fibre cables — part 1-1: generic specification, general
IEC 60794-1-2	Optical fibre cables — part 1-2: basic optical cable test procedure
IEC 60794-3	Optical fibre cables — part 3: sectional specification, outdoor cables
IEC 60794-5	Microduct cabling for installation by blowing

03 IDENTIFICATION

Cable identification

3.1 FIBER COLOR CODE

1	2	3	4	5	6	7	8	9	10	11	12
Blue	Orange	Green	Brown	Grey	White	Red	Black	Yellow	Violet	Pink	Aqua

3.2 LOOSE TUBE (LT) & FILLER ROD (FR) COLOR CODE

FIBRE COUNT	ELEMENT NO.											
	1	2	3	4	5	6	7	8	9	10	11	12
12	LT	FR	FR	FR	FR	FR						
24	LT	LT	FR	FR	FR	FR						
48	LT	LT	LT	LT	FR	FR						
72	LT	LT	LT	LT	LT	LT						
96	LT	LT	LT	LT	LT	LT	LT	LT				
144	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT	LT

LT = loose tube, FR = filler rod.

04 CONSTRUCTION

Cable assembly & dimensions

ITEM	CONTENT	12/24/48/72	96	144
Loose tube	Number	1/2/4/6	8	12
Loose tube	Outer diameter (mm)	1.5 ± 0.1		
Loose tube	Thickness (mm)	0.15 ± 0.05		
Loose tube	Material	PBT		
Loose tube	Water blocking	Tube filling compound		
Filler	Number	5/4/2/0	0	0
Filler	Material	PP		
Max. fiber counts per tube	G.652.D	12		
Central strength member	Material	FRP		
Central strength member	Diameter (mm)	1.6 ± 0.1	2.6 ± 0.1	2.6 ± 0.1
Central strength member	PE layer diameter (mm)	–	–	4.4 ± 0.2
Cable core	Water blocking	Water blocking yarns		
Ripcord	Number	2		
Stripe	Color	White		
Outer sheath	Material / colour	PE / black		
Outer sheath	Thickness (mm)	Nominal 0.5, minimum 0.35		
Cable diameter	Approx.	5.6 ± 0.3	6.6 ± 0.3	8.4 ± 0.3
Cable weight	Approx.	28 ± 10%	41 ± 10%	63 ± 10%

05 OPTICAL

Performance of cabled optical fiber

The performance of cabled optical fiber (ITU-T Rec. G.652D).

ITEM	CONDITION	SPECIFICATION
Fiber type		Single mode
Fiber material		Doped silica
Attenuation coefficient	1310 nm	≤ 0.36 dB/km
Attenuation coefficient	1550 nm	≤ 0.22 dB/km
Cable cut-off wavelength		≤ 1260 nm
Zero-dispersion wavelength		1300 - 1324 nm
Zero-dispersion slope		≤ 0.092 ps/(nm²·km)
Chromatic dispersion	1288 - 1339 nm	≤ 3.5 ps/(nm·km)
Chromatic dispersion	1550 nm	≤ 18 ps/(nm·km)
Chromatic dispersion	1625 nm	≤ 22 ps/(nm·km)
PMD		≤ 0.2 ps/√km
Mode field diameter	1310 nm	9.2 ± 0.4 μm
Core / cladding concentricity error		≤ 0.6 μm
Cladding diameter		125.0 ± 1.0 μm
Cladding non-circularity		≤ 1.0 %
Primary coating diameter		245 ± 10 μm

06 PERFORMANCE

Performance of optical fiber cable

ITEM	SPECIFICATION
Bending radius	15 × cable diameter (static) · 20 × cable diameter (dynamic)
Operating temperature	−20 °C to +70 °C
Storage / transport temperature	−20 °C to +70 °C
Installation temperature	−10 °C to +60 °C

07 TESTING

Mechanical & environmental performance

S/N	ITEM	TEST METHOD	ACCEPTANCE
1	Tensile strength IEC 60794-1-21-E1	1 × W of 1 km cable · 50 m · ≥ 1 min	Δ loss ≤ 0.1 dB @1550 nm Fibre strain ≤ 0.6 % No fibre break, no sheath damage
2	Crush test IEC 60794-1-21-E3	500 N/100 mm · ≥ 1 min	Δ loss ≤ 0.1 dB @1550 nm No fibre break, no sheath damage
3	Impact resistance IEC 60794-1-21-E4	3 points · 1 impact each · 1 J	Δ loss ≤ 0.1 dB @1550 nm No fibre break, no sheath damage
4	Repeated bending IEC 60794-1-21-E6	20 × cable diameter · 25 cycles	Δ loss ≤ 0.1 dB @1550 nm No fibre break, no sheath damage
5	Torsion IEC 60794-1-21-E7	2 m · ±180° · 10 cycles	Δ loss ≤ 0.1 dB @1550 nm No fibre break, no sheath damage
6	Water penetration IEC 60794-1-22-F5B	1 m head · 3 m · 24 h	No water at the leaktight end
7	Temperature cycling IEC 60794-1-22-F1	−20 / +70 °C · 12 h per step · 2 cycles	Δ loss ≤ 0.1 dB/km @1550 nm No fibre break, no sheath damage
8	Compound flow IEC 60794-1-21-E14	30 cm · 70 ± 2 °C · 24 h	No compound flow

08 PACKING

Packing & delivery

DRUM	Each single cable length is wound on an iron stand-wooden composite or pure wooden drum.
STANDARD LENGTH	2,000 / 3,000 / 4,000 m per drum, ±2%.
PROTECTION	Covered by a plastic buffer sheet and sealed with strong wooden battens.
TEST ALLOWANCE	At least 3 m of the cable inner end is reserved for testing.

DRUM DIMENSIONS

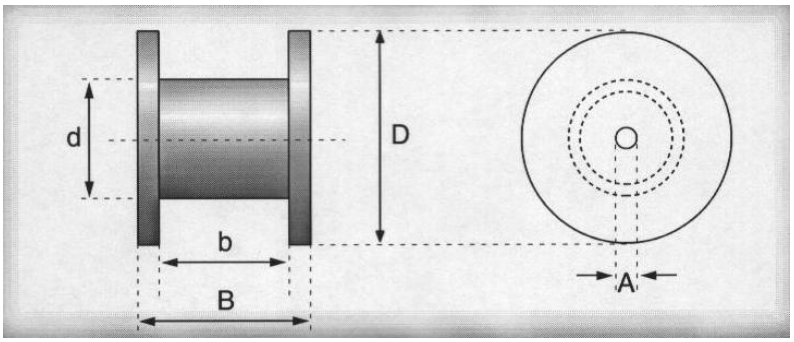


FIG. 2 Drum dimensions — D contains the seal dimension

CABLE TYPE	DRUM LENGTH (m)	D (mm)	d (mm)	B (mm)	b (mm)
GYCFHTY 12/24/48/72C	4,000	730	400	710	674
GYCFHTY 96C	4,000	930	580	710	660
GYCFHTY 144C	4,000	1,030	500	710	660

The value "D" contains the seal dimension.

ZUOYEAL

ZUOYEAL TECHNOLOGY

Connecting More, With Fiber

This datasheet describes the GYCFHTY air-blown micro cable series at the time of publication. Dimensions and configurations may change without notice; confirm current values with ZUOYEAL before ordering.

12-144F · G.652D · AIR BLOWN

Connecting More, With Fiber