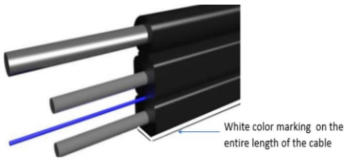
AERIAL DROP CABLE · SINGLE FIBRE · FRP

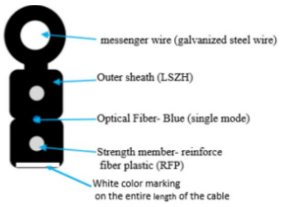
1F
FRP DROP

MODEL **DROP CABLE 1F**

Single-fibre FRP aerial drop cable with a galvanised steel messenger wire and outdoor LSZH sheath.

FIBER COUNT	FIBER TYPE
1	G.657.A1
SIZE	**DRUM**
2.0 × 5.0 mm	1,000 m





01 OVERVIEW

Scope & cable construction

The drop cable is designed for aerial installation and can serve for over 20 years without significant deterioration. Cables supplied by ZUOYEAL are designed, manufactured and tested in accordance with the standards below.

The figure-8 drop cable combines a single fibre with two FRP rods and a steel messenger wire for aerial spans.

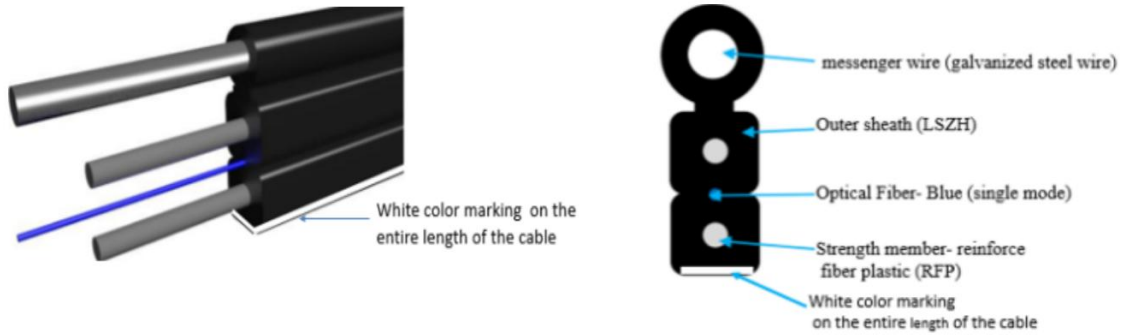


FIG. 1 Cable cross-section and sheath construction

- Single G.657.A1 fibre, coloured blue, in a non-jelly-filled loose structure.
- Two FRP strength members (Φ0.5 ± 0.05 mm) run beside the fibre as reinforcement.
- A Φ1.0 ± 0.1 mm galvanised steel messenger wire forms the bearer lobe of the figure-8 body.
- Outdoor LSZH sheath, black, with a white stripe on the entire cable length.
- Sheath marking in white: PROPERTY OF GLOBE, manufacturer, month/year, fibre count.

AT A GLANCE

ITEM	VALUE	ITEM	VALUE
Fibre count	1 (G.657.A1)	Sheath	Outdoor LSZH, black
Cable size	2.0 × 5.0 mm	Messenger	Φ1.0 mm galvanised steel

02 STANDARDS

Reference standards

STANDARD	SCOPE
ITU-T G.652	Characteristics of a single-mode optical fibre
IEC 60332	Tests on electric and optical fibre cables under fire conditions
IEC 60754	Test on gases evolved during combustion of cable materials
IEC 61034	Measurement of smoke density of cables burning under defined conditions
IEC 61249-2-21	Materials for printed boards — halogen-free base materials

03 CONSTRUCTION

Cable construction & materials

No.	ITEM	STRUCTURE	SPECIFICATION
2.2.1	Optical fiber	Type	Single mode, G.657.A1
2.2.1	Optical fiber	Colour	Blue
2.2.1	Optical fiber	Structure	Non jelly-filled
2.2.2	Messenger wire	Size	Φ1.0 ± 0.1 mm
2.2.2	Messenger wire	Material	Galvanised steel
2.2.2	Messenger wire	Breaking load	1,500 N
2.2.2	Messenger wire	Breaking stress	1,900 - 2,000 MPa
2.2.3	Strength member	FRP	(Φ0.5 ± 0.05) × 2 pcs
2.2.4	Outer sheath	Material	Outdoor LSZH
2.2.4	Outer sheath	Diameter	2.0 ± 0.05 × 5.0 ± 0.15 mm with bearer wire 2.0 ± 0.05 × 3.0 ± 0.1 mm without bearer wire
2.2.4	Outer sheath	Colour	Black
2.2.5	Marking (ink jet)	Content	Manufacturer name, month and year of manufacture, fibre count and type: PROPERTY OF GLOBE (printed every 1 m, 4 mm high)
2.2.5	Marking (ink jet)	Colour	White
2.2.7	Stripe	Colour	White
2.2.8	Cable weight		20 kg per 1,000 m drum

04 MECHANICAL

Cable diameter & construction details

FIBER COUNT	MIN. TENSILE LOAD	CRUSH RESISTANCE	JACKET WITH FRP BREAKING LOAD
Drop cable 1F	500 N	1,000 N / 10 cm	500 N - 600 N

05 ENVIRONMENT

Bending radius & temperature

ITEM	SPECIFICATION
Minimal dynamic bending radius	20 × cable diameter
Minimal static bending radius	10 × cable diameter
Operation temperature range	−10 °C to +80 °C
Installation temperature range	−10 °C to +80 °C
Storage temperature range	−10 °C to +80 °C
Humidity	95 %

06 FIBRE

Optical fibre properties (G.657.A1)

PARAMETER	CONDITION	SPECIFICATION
Attenuation coefficient	1310 / 1550 nm — before cable	0.350 / 0.210 dB/km
Attenuation coefficient	1310 / 1550 nm — after cable	0.360 / 0.220 dB/km
Dispersion coefficient	1288 - 1339 nm	3.5 ps/(nm·km)
Dispersion coefficient	1271 - 1360 nm	5.3 ps/(nm·km)
Dispersion coefficient	1550 nm	18 ps/(nm·km)
Dispersion coefficient	1625 nm	22 ps/(nm·km)
Zero-dispersion wavelength	—	1300 - 1324 nm
Zero-dispersion slope	—	≤ 0.092 ps/(nm²·km)
Macro bending loss	10 turns, Ø30 mm, 1550 nm	0.250 dB
Macro bending loss	10 turns, Ø30 mm, 1625 nm	1.000 dB
Macro bending loss	1 turn, Ø20 mm, 1550 nm	0.750 dB
Macro bending loss	1 turn, Ø20 mm, 1650 nm	1.500 dB
Cut-off wavelength	—	1260 nm
Mode field diameter	1310 nm	9.0 ± 0.4 μm
Cladding diameter	—	125 ± 1 μm
Cladding non-circularity	—	≤ 1.0 %
Core / cladding concentricity error	—	≤ 0.5 μm
Primary coating diameter	—	245 ± 10 μm
Proof test level	—	100 kpsi, 1.05 %
Proof stress	—	≥ 0.69 GPa

07 TESTING

Mechanical & environmental tests

No.	ITEM	TEST METHOD	SPECIFICATION
1	Tensile loading IEC 60794-1-2 E1	Sample ≥ 50 m · load: tensile load 1 min · length 150 m	Δ attenuation ≤ 0.4 dB No damage to jacket or inner elements
2	Crush test IEC 60794-1-2 E3	Load: crush load · 1 min 1 test point · length 150 m	Δ attenuation ≤ 0.4 dB No damage to jacket or inner elements
3	Impact resistance IEC 60794-1-2 E4	Energy 1.0 J · radius 12.5 mm ≥ 3 impacts, ≥ 500 mm apart	No fibre breakage No damage to jacket or inner elements
4	Bending IEC 60794-1-2 E6	Bending radius 10 mm · 10 turns · 10 cycles	No fibre breakage, no jacket damage Loss ≤ 0.22 dB/km @1550 nm · ≤ 0.36 dB/km @1310 nm
5	Other tests	Dimension · mandrel · FIC termination Slit test · jacket-to-fibre looseness	As per actual test result

08 PACKING

Packing, marking & documentation

PACKING	Cables are packed on a sturdy wooden spool wrapped with two overlapping layers of polyfilm; the metal screw with lock nut is secured with thread locking adhesive.
DRUM LENGTH	Standard drum length 1,000 m.
LABELLING	The QA test data sheet is placed on the side or top of the reel, showing attenuation (dB/km) at 1310 nm and 1550 nm.
STACKING	Reels are placed on a sturdy wooden pallet, maximum 5 layers, with hard carton braces at the corners, plywood between the 2nd / 3rd layer and polyfilm wrapping for waterproofing.

DRUM & PALLET DATA

ITEM	LENGTH	NET WEIGHT	GROSS WEIGHT	PACKING	GROSS / PALLET
Aerial drop cable 1F	1,000 m / drum	19 kg	20 kg	3 × 4 × 5 = 60 drums	1,200 kg

DRUM & PALLET MARKING

- Cable drum: supplier, manufacturer, cable details, PROPERTY OF GLOBE
- Label: product name, buyer details, bar code
- Cable quality certificate documents: test report

DELIVERY REFERENCE



Drum end with PROPERTY OF GLOBE marking



Finished drum with Bar code label



Drum ready for shipment



Drums stacked on pallets, maximum 5 layers

ZUOYEAL

ZUOYEAL TECHNOLOGY

Connecting More, With Fiber

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This datasheet describes the FRP drop cable 1F at the time of publication. Dimensions and configurations may change without notice; confirm current values with ZUOYEAL before ordering.

1F · G.657.A1 · AERIAL DROP

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