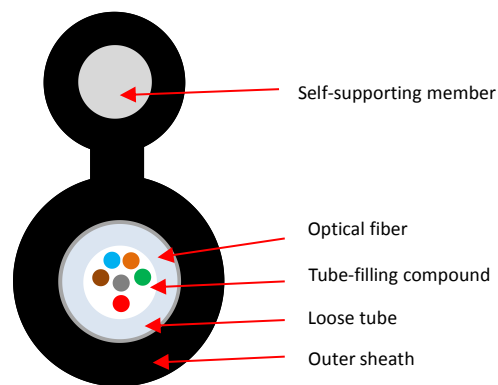


**DESIGN on 2020-3-25-C1**

## Aerial Optical Cable

### GYXC8H-12B6a1

#### 1. Structure Diagram



#### 2. The properties of single mode fiber

ITU-T G .657A1

| Category                | Items                                          | Unit                     | Description   |              |
|-------------------------|------------------------------------------------|--------------------------|---------------|--------------|
|                         |                                                |                          | Before cabled | After cabled |
| Optical Characteristics | Attenuation at 1310 nm                         | dB/km                    | ≤ 0.35        | ≤0.40        |
|                         | Attenuation at 1383 nm                         | dB/km                    | ≤ 0.35        | ≤0.40        |
|                         | Attenuation at 1550 nm                         | dB/km                    | ≤ 0.21        | ≤0.30        |
|                         | Attenuation at 1625 nm                         | dB/km                    | ≤ 0.23        | ≤0.30        |
|                         | Zero dispersion wavelength                     | nm                       | 1300~1324     |              |
|                         | Zero dispersion slope                          | ps/(nm <sup>2</sup> ·km) | ≤ 0.092       |              |
|                         | Cable cut-off wavelength $\lambda_{cc}$        | nm                       | ≤ 1260        |              |
|                         | Mode field diameter (MFD) at 1310 nm           | μm                       | 8.4~9.2       |              |
|                         | Mode field diameter (MFD) at 1550 nm           | μm                       | 9.3~10.3      |              |
|                         | Group Index of Refraction (Typical) at 1310 nm | /                        | 1.466         |              |
|                         | Group Index of Refraction (Typical) at 1550 nm | /                        | 1.467         |              |
|                         | Macro-bend loss(1 turn, 10mm radius) at 1550nm | dB                       | ≤ 0.75        |              |

|                             |                                                 |               |               |
|-----------------------------|-------------------------------------------------|---------------|---------------|
|                             | Macro-bend loss(10turns, 15mm radius) at 1550nm | dB            | $\leq 0.25$   |
| Geometrical Characteristics | Cladding diameter                               | $\mu\text{m}$ | $125 \pm 0.7$ |
|                             | Cladding non-circularity                        | %             | $\leq 0.7$    |
|                             | Coating diameter                                | $\mu\text{m}$ | $245 \pm 5$   |
|                             | Coating/cladding concentricity error            | $\mu\text{m}$ | $\leq 12.0$   |
|                             | Coating non-circularity                         | %             | $\leq 6.0$    |
|                             | Core/cladding concentricity error               | $\mu\text{m}$ | $\leq 0.5$    |

### 3. Cable Dimensions and Constructions

| Items                  |                       | Descriptions                               |
|------------------------|-----------------------|--------------------------------------------|
| Optical Fiber          | Fiber type            | G.657A1                                    |
|                        | Fiber counts          | 12                                         |
| Loose tube             | Material              | PBT                                        |
|                        | Tube-filling compound | Gel-filled                                 |
|                        | Diameter              | $2.5 \pm 0.1\text{mm}$                     |
| Self-supporting Member | Material              | Steel wire                                 |
|                        | Diameter              | 1.4mm                                      |
| Outer Sheath           | Material              | LSZH                                       |
|                        | Color code            | Black                                      |
| Cable Diameter         |                       | $(4.5 \sim 4.8) * (7.0 \sim 7.5)\text{mm}$ |
| Cable Weight           |                       | Approx. 41kg/km                            |

### 4. Mechanical and Environmental Characteristics

| Items               |                  | Descriptions                                   |
|---------------------|------------------|------------------------------------------------|
| Tensile performance | IEC 60794-1-2-E1 | short-term load:1500N                          |
| Crush resistance    | IEC 60794-1-E3   | short-term load:1000N/100mm                    |
| Cable Impact        | IEC 60794-1-E4   | No obvious change after test                   |
| Repeat Bending      | IEC 60794-1-E6   |                                                |
| Torsion             | IEC 60794-1-E7   |                                                |
| Cable Bend          | IEC 60794-1-E11  |                                                |
| Waterproof test     | IEC 60794-1-2-F5 | 1m water column,3m sample length, 24h          |
| Temperature Range   | IEC 60794-1-2-F1 | $-10^{\circ}\text{C} \sim +60^{\circ}\text{C}$ |
| Bending Radius      | Static           | 10D                                            |
|                     | Dynamic          | 20D                                            |

### 5. Packing

Wooden or Plastic Drums Protection

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**6. Delivery Length**

Standard delivery length is 1km/drum