linkedpro
SUPREME PERFORMANCE CABLES

# Model: LPDROPA21C/2KM

# 1 Core G.657 A2 Fiber Optic Drop Cable with White Stripes

## 1. General

### 1.1 Scope

This listed specification covers the design requirements and performance standard for the supply of optical fiber cable in the industry. It also includes Linkedpro premium designed cable with optical, mechanical and geometrical characteristics.

| Cable type | Application |
|---|---|
| SM FLAT DROP WIRE 1 Core G-657A2 | Indoor installation cable |

### 1.2 Cable Description

The Linkedpro Manufactured Cable possesses high tensile strength and flexibility in compact cable sizes. At the same time, it provides excellent optical transmission and physical performance.

### 1.3 Quality

The Linkedpro Manufactured Cable's excellent quality control is achieved through intense in-house quality check and stringent audit acceptance by ISO 9001.

### 1.4 Reliability

The Linkedpro Manufactured Cable's Initial and periodic product qualification tests for performance and durability are performed rigorously to ensure product reliability.

### 1.5 Reference

The cable which Linkedpro offered are designed, manufactured and tested according to international standards as follows

| | |
|---|---|
| IEC 60793-1 | Optical fiber Part 1: Generic specifications |
| IEC 60793-2 | Optical fiber Part 2: Product specifications |
| IEC 60794-2 | Optical fiber cables-part 2 indoor cables- sectional specification |
| IEC 60794-3-10 | Optical fiber cables- Part 3-10: outdoor cables-family specification for duct and directly buried optical telecommunication cables |
| ITU-T G.650 | Definition and test methods for the relevant parameters of single-mode fibers |
| ITU-T G.657 | Characteristics of a bending-loss insensitive single-mode optical fiber |

## 2. Optical Fiber

The optical fiber is made of high pure silica and germanium doped silica. UV curable acrylate material is applied over fiber cladding as optical fiber primary protective coating. The detail data of optical fiber performance are shown in the following table.

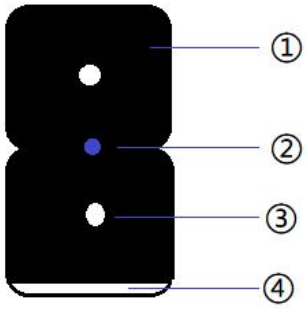
### G.657 A2 Fiber

| No. | Items | | | Unit | Specification |
|---|---|---|---|---|---|
| | | | | | G.657 A2 |
| 1 | Mode Field Diameter | 1310nm | | μm | 8.6±0.4 |
| | | 1550nm | | μm | 9.6±0.5 |
| 2 | Cladding Diameter | | | μm | 125.0±0.7 |
| 3 | Cladding Non-Circularity | | | % | ≤0.8 |
| 4 | Core-Cladding Concentricity Error | | | μm | ≤0.5 |
| 5 | Coating Diameter | | | μm | 245±5 |
| 6 | Coating Non-Circularity | | | % | ≤3.0 |
| 7 | Cladding-Coating Concentricity Error | | | μm | ≤12.0 |
| 8 | (PMD) | | | Ps/km 1/2 | ≤0.10 |
| 9 | Cable Cutoff Wavelength | | | nm | $\lambda_{cc}$≤1260 |
| 10 | Zero-Dispersion wavelength | | | nm | 1300~1322 |
| 11 | Zero-Dispersion slope | | | Ps/(nm$^2$.km) | ≤0.091 |
| 12 | Attenuation(max.) | 1310nm | | dB/km | ≤0.36 |
| | | 1383nm | | dB/km | ≤0.35 |
| | | 1550nm | | dB/km | ≤0.22 |
| | | 1310-1625nm | | dB/km | ≤0.36 |
| 13 | Attenuation with bending loss | 7.5mm diameter,1 turn | 1550nm | dB | ≤0.40 |
| | | 7.5mm diameter,1 turn | 1625nm | dB | ≤0.80 |
| | | 10mm diameter,1 turn | 1550nm | dB | ≤0.10 |
| | | 10mm diameter,1 turn | 1625nm | dB | ≤0.20 |
| | | 15mm diameter,15 turn | 1550nm | dB | ≤0.03 |
| | | 15mm diameter,15 turn | 1625nm | dB | ≤0.10 |

## 3. CABLE STRUCTURE

### 3.1 Cable Type: 1 Core G657A2 FLAT TYPE

The picture is only for reference




Construction:

①.Outer sheath (LSZH)

②.Colored Fiber(Blue)

③.Strength member (FRP)

④.White Stripes

**Technical Characteristics**

- With excellent mechanical and environmental properties
- Low weight, easy to install and joint

## Dimension and Properties

| | | |
|---|---|---|
| **Physical** | Fiber count | 1 Core * G.657 A2 |
| | Strength member diameter (FRP) | 0.5±0.05 mm*2 |
| | Cable OD | 2.0±0.05*3.0 ±0.05mm |
| | Outer Sheath | Black LSZH with White Stripes |
| | Cable weight | 10.0kg/km±8% |
| | Operation temperature range | -40℃ to + 70℃ @100% Humidity |
| | Installation temperature range | -10℃ to + 70℃ |
| | Transport and storage temperature range | -20℃ to +70℃ |
| | Max. tensile load | Short term: 200N, long term: 100N |
| **Mechanical** | Crush resistance | Installation:2200N/10cm, working: 1000N/10cm |
| | Minimal dynamic bending radius | 30mm |
| | Minimal static bending radius | 15mm |

### Color code scheme:

Fiber color: Blue

Sheath color: Black

Standard length: 2km/Wooden Reel/Carton, all cartons are in pallets

## 4.Test Requirements

Approved by various professional optical and communication product institution, Linkedpro also conduct various in-house testing in its third party Laboratory and Test Center. Linkedpro possess the technology to keep its fiber attenuation loss within Industry Standards.

The cable is in accordance with applicable standard of cable and requirement of customer. The following test items are carried out according to corresponding reference.

### Routine tests of optical fiber

| | |
|---|---|
| Mode field diameter | IEC 60793-1-45 |
| Core/clad concentricity | IEC 60793-1-20 |
| Cladding diameter | IEC 60793-1-20 |
| Cladding non-circularity | IEC 60793-1-20 |
| Attenuation coefficient | IEC 60793-1-40 |
| Chromatic dispersion | IEC 60793-1-42 |
| Cable cut-off wavelength | IEC 60793-1-44 |

## Test list

### 4.1 Tension Loading Test

| | |
|---|---|
| Test Standard | IEC 60794-1-2 E1 |
| Sample length | No less than 50 meters |
| Load | Max. tension load |
| Duration time | 1 minute |
| Test results | Additional attenuation:≤0.04dB |
| | No damage to outer jacket and inner elements |

### 4.2 Crush/Compression Test

| | |
|---|---|
| Test Standard | IEC 60794-1-2 E3 |
| Load | Crush load |
| Duration time | 1 minute |
| Test number | 1 |
| Test results | Additional attenuation:≤0.04dB |
| | No damage to outer jacket and inner elements |

### 4.3 Impact Resistance Test

| | |
|---|---|
| Test Standard | IEC 60794-1-2 E4 |
| Impact energy | 1J |
| Radius | 12.5mm |
| Impact points | 3 |
| Impact number | 1 |
| Test result | No obvious change after test |
| | No damage to outer jacket and inner elements |

### 4.4 Repeated Bending Test

| | |
|---|---|
| Test Standard | IEC 60794-1-2 E6 |
| Bending radius | 20 X diameter of cable |
| Cycles | 30 cycles |
| Test result | No obvious change after test |
| | No damage to outer jacket and inner elements |

### 4.5 Torsion/Twist Test

| | |
|---|---|
| Test Standard | IEC 60794-1-2 E7 |
| Sample length | 2m |
| Angles | ±180 degree |
| cycles | 5 |
| Test result | No obvious change after test |
| | No damage to outer jacket and inner elements |

### 4.6 Bend Test

| | |
|---|---|
| Test Standard | IEC 60794-1-2 E11A |
| Mandrel radius | 30mm |
| Turn number | 4 |
| Number of cycles | 3 |
| Test result | No obvious change after test |
| | No damage to outer jacket and inner elements |

## 5.Packing

Packed in carton, coiled on Wooden reel. Standard length of cable shall be 2,000m.The cable ends shall be securely fastened to the reel to prevent the cable from becoming loose in transit or during placing operations.Each reel shall be well packed in individual carton box.