



## OPTICAL CABLE FIBER-LAN INDOOR\_OUTDOOR - EXP

### Construction

RoHS-3 Compliant
Dielectric
Tight Buffer
Singlemode or Multimode

### Description

Optical cable with singlemode or multimode optical fibers arranged in "tight buffer" design. Optical fibers are coated with acrylate resin and a secondary coating of thermoplastic material. Dielectric strength members surround the set of fibers and a black thermoplastic flame-retardant outer jacket provides enhanced protection.

### Application

Installation Environment	Indoor / Outdoor
Operation Environment	Installation in conduits and boxes of underground passage susceptible to temporary partial flooding and interconnection between lobby rooms

## Standard

- ITU-T G.651: "Characteristics of a 50/125  $\mu\text{m}$  multimode graded index optical fibre and cable";
- ITU-T G.652: "Characteristics of a single-mode optical fibre and cable";
- ITU-T G.657: "Characteristics of a bending loss insensitive single mode optical fibre and cable for the access network";
- ICEA S-83-596: "Standard for optical fiber cable premises distribution cable";
- ICEA S-104-696: "Indoor-outdoor optical fiber cable";
- Telcordia GR-409-CORE: "Generic requirements for premise fiber optic cable";
- Telcordia GR-20-CORE: "Generic requirements for optical fiber and optical fiber cable";
- ANSI/TIA-568.3-D: "Optical fiber cabling components standard";
- ISO/IEC 60794-1-1: "Optical fibre cables – Part 1-1: Generic Specification – General";
- CENELEC/EN 60794-1-1: "Optical fibre cables – Part 1-1: Generic Specification – General";
- RoHS-3 Compliant (Restriction of Hazardous Substances).
- ISO/IEC 11801-1:2017 - Information technology — Generic cabling for customer premises — Part 1: General requirements

## Optical Fiber

SM (Singlemode), BLI (Bending Loss Insensitive), MM (Multimode) OM1, OM2, OM3 and OM4.

## Optical Characteristics

Fiber	Characteristics
Single mode	According to technical specification 2000 (Annex A)
Multi mode (OM1, OM2, OM3, OM4 and OM5)	According to technical specification 1999 (Annex B)

## Fiber Coating

Acrylate

## Buffer Insulation

Flame retardant thermoplastic material, 900 microns outer diameter.

## Fiber Identification

Fiber	Color
01	Blue
02	Orange
03	Green
04	Brown
05	Slate
06	White
07	Red
08	Black
09	Yellow
10	Violet
11	Pink
12	Aqua

Other colors upon request.

Core	The core shall be dry, protected with water blocking material to prevent water intrusion.
Strength member	Dielectric yarns
Rip Cord	A ripcord should be included under the jacket.
Outer Jacket	Black thermoplastic flame-retardant material providing enhanced protection to the cable core. If necessary, cable jacket can be provided in low smoke zero halogen (LSZH) material.

## Cable Flammability Rating

Cable protection grade	Marking
Riser Optical Cable	OFNR
Optical Cable with Low Smoke Zero Halogen Jacket	LSZH

LSZH rated: the jacket meets the following LSZH specification: IEC 60332-3 ("Test On Electric Cables Under Fire Conditions"), IEC60754-2 (Acidity of smoke) and IEC 61034-2 ("Measurement of smoke density of cables burning under defined conditions").

OFNR rated: meets UL 1666 standard - "Test for Flame Propagation Height of Electrical and Optical-Fiber Cables Installed Vertically in Shafts".

Physical Characteristics	Minimum bending radius (mm)	- During Installation: 15 x outer diameter - After Installation: 10 x outer diameter	
	Maximum Tensile Loading during Installation (N)	1x Cable weight/km (Minimum 1850)	
	Installation Temperature	-10 °C to +60 °C	
	Storage Temperature	-40 °C to +70 °C	
	Operation Temperature	-20 °C to +70 °C	
Dimension	Nominal Outer Diameter (mm)	2 Fibras	4.8
		4 Fibras	5.2
		6 Fibras	5.6
		8 Fibras	6.0
		10 Fibras	6.3
		12 Fibras	6.5
	Nominal Mass (kg/km)	2 Fibras	19
		4 Fibras	21
		6 Fibras	24
		8 Fibras	34
		10 Fibras	38
		12 Fibras	40
	Jacket Thickness (mm)	0.95	

Mechanical and  
 Environmental  
 Characteristics

Test	Requirement	Unit	Singlemode Fiber	Multimode Fiber
Mechanical	Compression	Load: 1000 N length: 10cm	Attenuation variation ≤ 0.4 dB	Attenuation variation ≤ 0.6 dB
	Impact	20 cycles height: 150mm Impact Weight	Should not present rupture	
Environmental	Water tightness	24 hs x Water column 1 m	It should not leak	

Impact Weight	
Outer diameter (mm)	Impact Weight (kg)
0 < D 3.8	0.50
3.8 < D 5.3	1.00
5.3 < D 7.5	1.50
7.5 < D 13.0	2.00
13.0 < D 15.0	3.00
15.0 < D 16.6	3.50
16.6 < D 18.9	4.00
18.9 < D 21.4	4.50
21.4 < D	5.00

## Marking

**"FURUKAWA LIGHTERA FIBER-LAN INDOOR/OUTDOOR y wF z x month/year k LOTE nL (\*\*)"**

Where:

y = type of optical fiber

SM Singlemode fiber

BLI Singlemode bending loss insensitive fiber

MM Multimode fiber

w = fiber count

z = denomination for special fiber

G-652D For singlemode ITU-T G-652D fiber

G-657A1 For singlemode ITU-T G-657A1 fiber

G-657A2 For singlemode ITU-T G-657A2 fiber

(62.5) For multimode 62.5µm fiber

(50) For multimode 50µm fiber

(50)OM3 For multimode 50µm EIA/TIA 492AAAC fiber

(50)OM4 For multimode 50µm EIA/TIA 492AAAD fiber

(50)OM5 For multimode 50µm EIA/TIA 492AAAD fiber

x = Flame rate

month/year MM/YYYY

k = TYPE OFNR C(ETL)US

Note: ETL Listed certificate applicable only for cables with PVC jacket.

nL = Lot number

(\*\*) = Length marking xxxx

## Package Type

Wooden reel

Standard Length	2100m - Tolerance $\pm 5\%$ .
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[Part Numbers](#)