



# CABLING Solutions

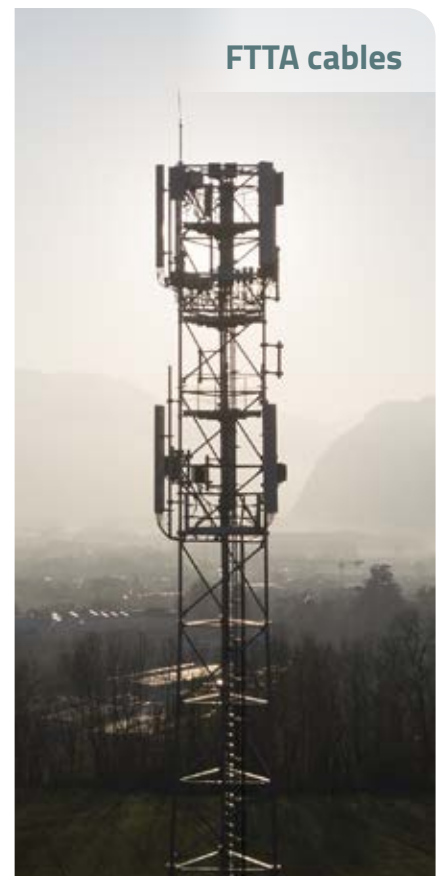
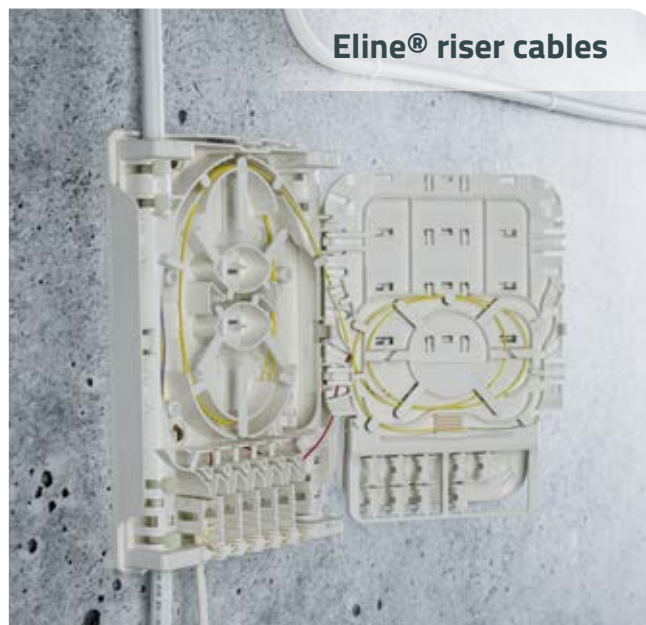
Developing tomorrow's networks, today

# DISCOVER YOUR CABLE CATALOGUE

Telenco' cables are, in general, dedicated to the direct or indirect connection of subscribers to high-speed broadband networks, fixed or mobile, public or private.

Technically, these cable ranges cover all cables with a diameter less than 6.0mm and containing a maximum of 24 fibres (with some exceptions).

Telenco' drop cables offer consists of three product families:



# TABLE OF CONTENTS

<b>REMINDER OF STRUCTURES, FIBRES, TESTS .....</b>	<b>5</b>
The different cable structures.....	6
The specific characteristics of single-mode optical fibres .....	7
The particularities of overhead cables.....	9
Cable characterisation tests .....	11
The CPR standards .....	12
Captions and pictograms.....	14
<b>ELINE® RISER CABLES .....</b>	<b>15</b>
Façade cables .....	17
Riser cables.....	18
<b>DROPTIC® CABLES.....</b>	<b>19</b>
LM cables with micro-module structure .....	21
LX cables with tight or semi-tight buffer structure .....	29
LC cables with central loose tube structure .....	30
LS cables with central microloose tube structure .....	31
Anchor clamps compatible with the Droptic® family.....	32
<b>FTTA CABLES .....</b>	<b>33</b>
Breakout cables.....	35
<b>PACKAGING AND RELATED SERVICES .....</b>	<b>37</b>
The different types of packaging.....	38
Related services.....	40
Cable preparation .....	42
<b>INDEX .....</b>	<b>46</b>



## **Robust fibre optic cables and designed for future-proof FTTH and FTTA networks**

Thanks to its historical position in the FTTH market, the Telenco Group has developed extensive knowledge of cables, on the one hand through the development of a wide range of wedge clamps or spiral devices for overhead cables, and on the other hand, through the design and manufacture of drop cables for FTTH connections to all premises. This gives Telenco strong skills and expertise in the design, production, packaging and delivery of cables in drums, reels or integrated in pre-connected solutions. Flexible and proficient in all cable technologies, Telenco can also adapt the design of its cables to your specific needs.

The purpose of this catalogue is to present the Telenco Group's cable portfolio. Whatever your needs, you will find in Telenco's cable offer solutions for all types of FTTx connections and installation techniques:

- Inside buildings: pulling, pushing, gluing, stapling
- Outside: duct, façade, overhead

Aware that infrastructures are being built today for decades to come, the Telenco Group:

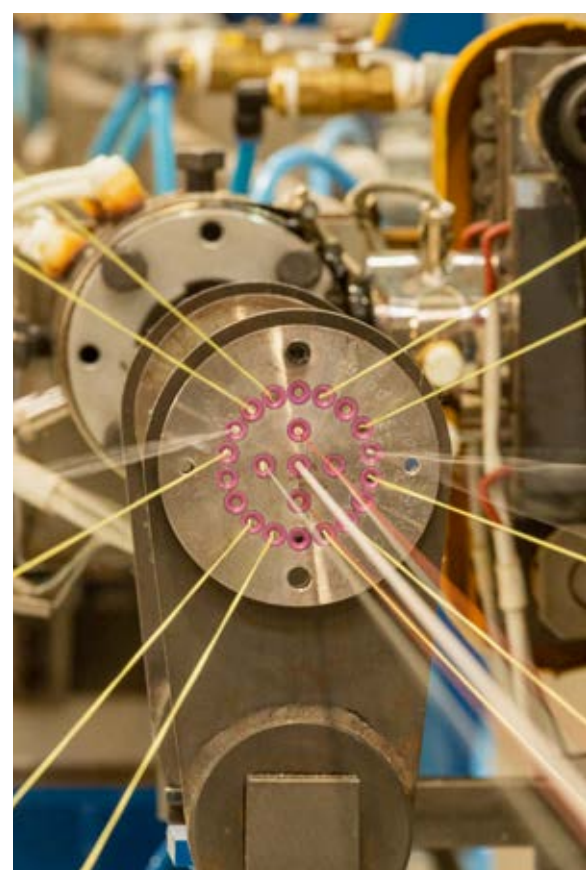
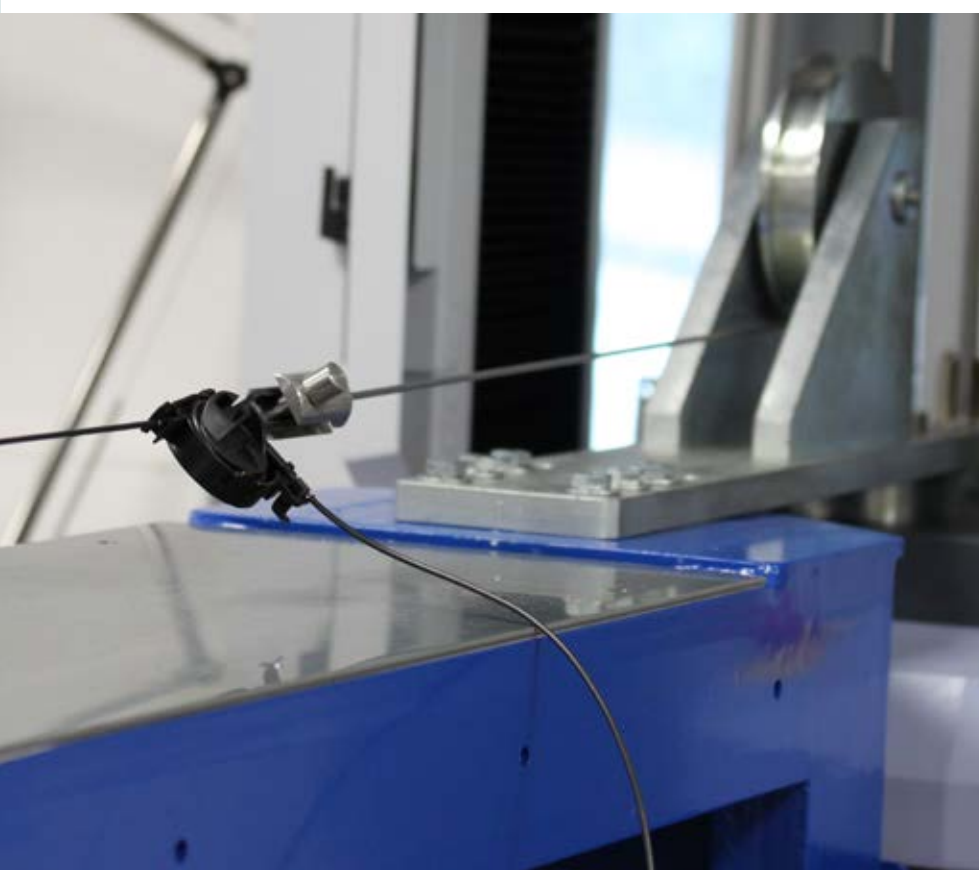
- Is committed to providing the highest quality products
- Always refers to international cable standards
- Chooses the best raw materials and as much as possible locally
- Takes into account all environmental aspects through product life cycle analysis in order to reduce the overall ecological footprint of its products and packaging

**Let's develop tomorrow's sustainable and reliable networks, today!**



# Reminder of Structures, Fibres, Tests

The different cable structures	6
The specific characteristics of single-mode optical fibres	7
The particularities of overhead cables	9
Cable characterisation tests	11
The CPR standards	12
Captions and pictograms	14



# REMINDER OF STRUCTURES, FIBRES, TESTS

## The different cable structures

### Drop, Droptic® and Eline® cables

For Telenco Group, the notion of drop cable is broader than just the family of drop cables for FTTH applications. Indeed, a drop cable meets very specific criteria in terms of size and fibre count. Its primary function is to connect subscribers to an optical distribution network at very high speed, whatever the conditions.

Thus, the Droptic® cable family now includes a large number of different technical solutions for making these connections of any kind:

- Overhead, underground, façade
- Indoor, outdoor or both
- Pullable, pushable, stapleable, glueable, blowable

And meeting the technical criteria:

- $\varnothing \leq 6\text{mm}$
- Number of optical fibres  $\leq 24$

The Eline® cable family consists mainly of multi-fibre distribution cables, and is associated with the distribution of the optical network in buildings or on building façades. It includes indoor or indoor/outdoor cables enabling the fibre extraction directly from the cable in order to connect a dwelling.

This cable family is an integral part of Telenco's Eline® range, which includes building entry points, floor boxes and splice boxes.

## The different cable technologies

Several cable technologies form the technical basis of the Droptic® range. They are highlighted in the designation of the cables and meet the challenges of cable uses depending on the application, the network architecture and the installation method. There are 4 cable technologies, all of which are mastered by Telenco.



The module technology used for each cable is known immediately as it is identified in the cable designation.

### LM

#### Micro-module structure

Droptic® LM families are built on the basis of micro-modules made of LSZH-FR material, with diameters ranging from 0.9 to 1.6mm, which can contain up to 24 optical fibres. These micro-modules are finger tearable and do not contain any sealing jelly to facilitate access to the fibres and their preparation for fusion.

As soon as they are manufactured, 100% of the modules are tested for strippability, i.e. stripping 1 meter in maximum 1 minute depending on the fibre count.



### LC

#### Central loose tube structure

The LC families are central-tube cable families with a diameter of up to 2.5mm. The central tube can contain up to 24 fibres depending on its size. Around this tube are deployed the reinforcement elements and the cable protection sheaths. Either sealing jelly or swelling ropes are used for waterproofing the structure.

In terms of construction, LC cables are slightly stiffer than LM drop cables.



### LX

#### Tight or semi-tight buffer structure

Droptic® LX cables are cables made up of tight or semi-tight modules with 1 fibre of 900µm diameter. These solutions allow the storage of fibres or buffers in the interconnection boxes directly in junction boxes. In addition, this technology is also used in combination with field-mountable connectors (FMC), directly on the 900µm.

These modules with tight or semi-tight fibres are 100% tested for strippability at the time of manufacture, based on stripped length criteria in a single clamp operation.



### LS

#### Central microloose tube structure

Similar to the LC family, the LS family is distinguished by tubes with a maximum diameter of 1.6 mm. LS structures are therefore small cables suitable for blowing into microtubes with internal diameters of 3.5mm to 6 mm.



# The specific characteristics of single-mode optical fibres

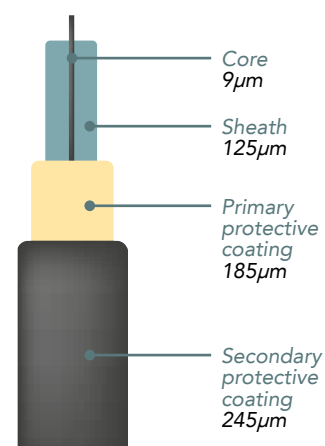
Droptic® cables are mainly cables with single-mode optical fibres.

These fibres are composed of:

- A **glass optical guide** of 125µm diameter at the centre of which we find the optical core of approximately 9µm diameter. This constitutes the part in which the light propagates.
- A **primary and secondary protective coating** for preserving the fibre mechanically, enabling it to be handled and allowing the identification it thanks to a thin coloured layer or a colouring in the mass of the secondary coating.

The propagation of light within the core takes place by successive reflection at the core/sheath interface. Several light rays propagate through the core.

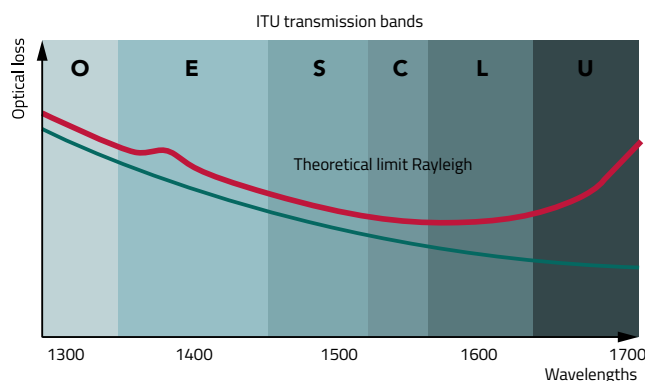
With a step-index profile and a small core diameter, only one light ray propagates: the fibre is said to be single mode.



## Bandwidth

For long-distance telecommunications and data transport applications, the optical spectrum or wavelength band that can be used (see graph opposite) is in the near infrared (light that cannot be seen with the naked eye) and extends over the range 1260 - 1675nm. The bandwidth is then almost infinite (> 60THz).

In order to facilitate its exploitation, the bandwidth is subdivided into optical bands. Initially used in the O-band (Original) due to the availability of optical sources, optical fibre was soon used in the L-band due to its low line attenuation. Today, for data rate purposes, all bands are used by PON technologies. Therefore, all cables defined by Telenco are controlled as standard at 1310nm, 1550nm and 1625nm, to guarantee the use in all wavelength bands.



## Fibre specifications

The International Telecommunication Union (ITU) has issued a series of ITU-T recommendations G.652D, G.657A1, G.657A2, G.657B3 on the specifications of the different categories of single-mode fibres in cables and the associated characterisation methods.

The International Electrotechnical Commission (IEC) has published a series of standards IEC 60793-1-50 describing the technical specifications for measurement and testing of Category B optical fibres. These standards supplement the ITU recommendations by adding performance in terms of the mechanical and environmental resistance of the fibre.

Equivalent in terms of optical properties, the different categories of fibre differ in their:

- **Bending performance**
- **Splicing compatibility with G.652D fibres**

## Splicing compatibility

Splicing compatibility is ensured when the mode fields' diameters of the fibres to be spliced are close. In this case, there is full compatibility between G.652D, G.657A1 and G.657A2 fibres. The mode field diameter is the diameter in which at least 99% of the transmitted light power is contained.

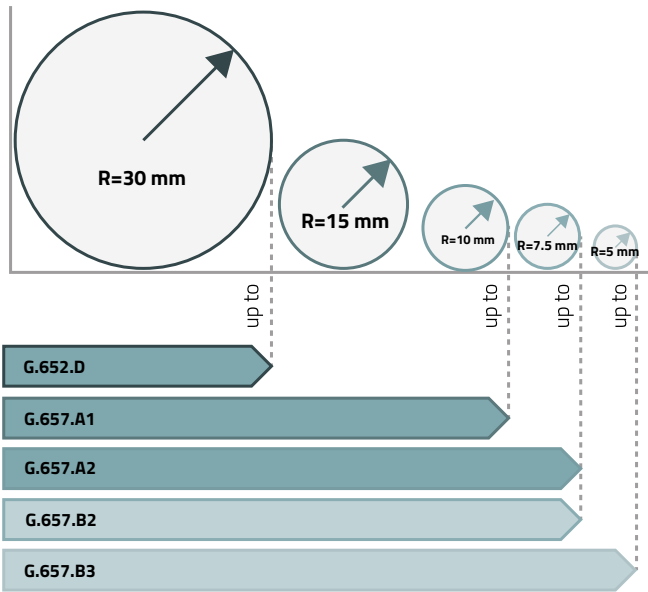
The adjacent table shows the different normative ranges of mode field diameter depending on the type of fibre.

As a result, Telenco has chosen to deploy ITU-T G.657A2 and G.657B3 compliant fibres whose mode field diameter remains compatible with that of the G.652D fibre, i.e. in the 8.6 - 9.5 µm range.

ITU	Designation	MDF <sub>1310</sub> In µm
G.652D	Non-dispersion shifted fibre, optimised at 1383nm without OH peak with low PMD	8.6-9.5 (+/-0.6)
G.657A1	Single-mode optical fibres insensitive to bending losses for access networks	8.6-9.5 (+/-0.4)
G.657A2		8.6-9.5 (+/-0.4)
G.657B2		6.3-9.5 (+/-0.4)
G.657B3		6.3-9.5 (+/-0.4)

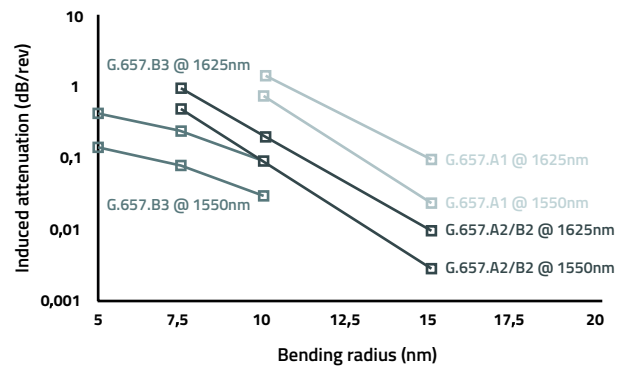


## Bending performance



The macro-bending performance of the fibre subcategories of recommendation G.657 compared to the fibre G.652D

G.657	
For access networks	For end-of-access networks (e.g. inside/near buildings)
Compliant with the G.652.D standard All bands 1260-1625nm	G.652.D compatible All bands 1260-1625nm
<b>A1</b> R mini. = 10.0mm	<b>B2</b> R mini. = 7.5mm
<b>A2</b> R mini. = 7.5mm	<b>B3</b> R mini. = 5.0mm



## Fibre identification

To differentiate fibres and modules in cables, there is a colour code based on 12 different colours.

This distinction must still be effective after a few years of use of the fibres and cables.

When designing the products, Telenco systematically performs ageing tests on the cables to ensure that there is no degradation of the colours and that the fibres are still identifiable.

The order of the colours differs according to the standards.

EIA598-A colour code		DIN VDE 0888 colour code		IEC 60794-2 colour code		AFNOR XPC 93-850 colour code	
Position of the fibre	Colour	Position of the fibre	Colour	Position of the fibre	Colour	Position of the fibre	Colour
1	Blue	1	Red	1	Blue	1	Red
2	Orange	2	Green	2	Yellow	2	Blue
3	Green	3	Blue	3	Red	3	Green
4	Brown	4	Yellow	4	White	4	Yellow
5	Grey	5	White	5	Green	5	Purple
6	White	6	Grey	6	Purple	6	White
7	Red	7	Brown	7	Orange	7	Orange
8	Black	8	Purple	8	Grey	8	Grey
9	Yellow	9	Turquoise	9	Turquoise	9	Brown
10	Purple	10	Black	10	Black	10	Black
11	Pink	11	Orange	11	Brown	11	Turquoise
12	Turquoise	12	Pink	12	Pink	12	Pink

As standard, Telenco uses the AFNOR XPC 93-850 or DIN VDE 0888 colour code. However, we can work with you on all your fibre and cable identification needs.



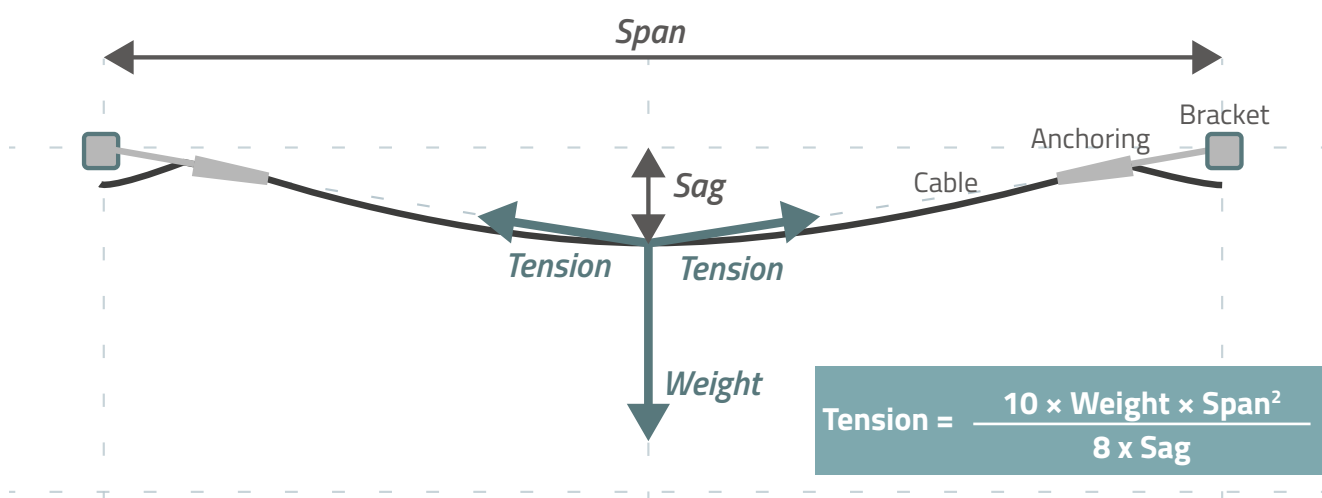
## The particularities of overhead cables

### The dimensioning of overhead drop cables and their anchoring compatibility

Sizing an overhead cable is a complex operation. This consists into establishing the tensile performance of the cable tby taking into account the installation parameters between two poles and environmental factors such as temperature, wind, ice.

The maximum permissible tightness, which must be higher than the tension induced on the cable under extreme conditions, is determined depending on the amount of reinforcement in the cable. Without taking into account the climatic conditions, the calculated tension is the installation tightness.

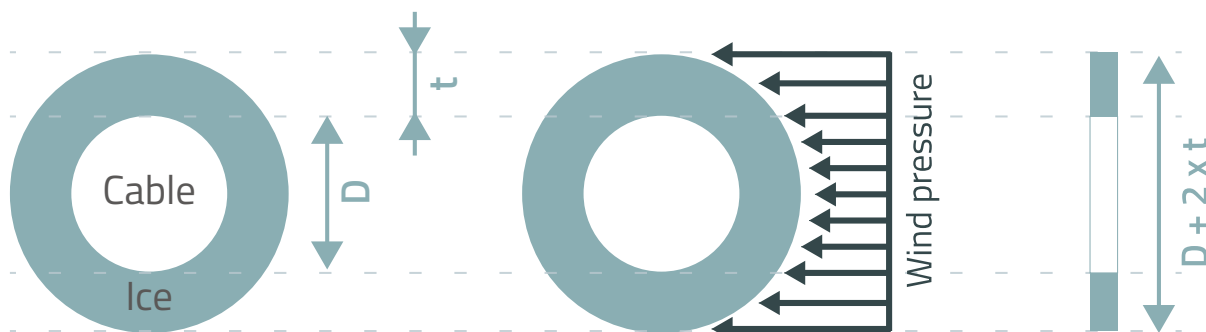
The tension on the cable is calculated as follows:



**Weight (kg/m):** apparent weight of 1 metre of cable  
**Tension (N):** calculated tension on the cable

**Span (m):** distance between two poles  
**Sag (m):** vertical distance to the centre of the span, usually 1% of the span

### Taking into account additional reference load due to climatic conditions



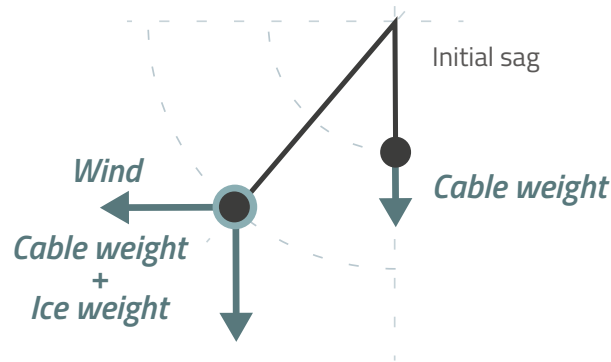
Bad weather conditions cause additional load on the overhead infrastructure.

The load caused by ice increases the weight of the cable as well as the total surface area exposed to the wind.

## REMINDER OF STRUCTURES, FIBRES, TESTS

To account for weather conditions in the formula below, wind load and ice load are included in the calculation of the apparent cable weight:

$$\text{Apparent weight} = \sqrt{(\text{Ice weight} + \text{cable weight})^2 + (\text{Wind pressure})^2}$$



Data relating to the cables is provided by cable manufacturers, and climatic data can usually be found in national standards for buildings/infrastructures.

For example, in the United States, the National Electric Safety Code (NEC) Rule 250B defines 3 regions with typical values for ice thickness, temperature and wind pressure.

	Temperature	Ice thickness	Wind pressure
High	-18°C	12.70mm	192 Pa
Medium	-10°C	6.35mm	192 Pa
Low	-1°C	0.0mm	431 Pa

In France, it is commonly accepted that the additional reference loads due to climatic conditions are 3 times higher than the installation tensions. The table below lists the installation tensions calculated for different overhead drop cables for different spans and the maximum permissible tension for each cable.

Droptic® family	Cable weight (kg/km)	Maximum allowable tension	Span between two poles with 1% deflection			
			30m	40m	50m	70m
Installation tension/Tension under reference conditions						
LM4	20	800N	75N/225N	100N/300N	125N/375N	175N/525N
LM2BK	13	400N	49N/146N	65N/195N	81N/244N	114N/341N
LX030PU	9	300N	34N/101N	45N/135N	56N/169N	79N/236N
LM030HDPE	8	250N	30N/90N	40N/120N	50N/150N	70N/210N

Droptic® drop cables therefore offer performances that fully meet the conditions for deployment in France.

A good knowledge of the topographical parameters (span, terrain gradient) and climatic parameters makes it possible to anticipate loads and overloads on the overhead infrastructure, and helps to choose the right equipment, cables and clamps, adapted to the area under consideration for a sustainable network.



## Cable characterisation tests

All cables are tested according to the international standards EN 60794-1-21 and EN 60794-1-22. These standards define the test conditions for which the performance of cables is stated. The essential characteristics for a cable are as follows:

Test	Test family	Standard	Standard method
Maximum allowable tension	Mechanical	NF EN 60794-1-21	E1
Tensile strength	Mechanical	NF EN 60794-1-21	E1
Crush	Mechanical	NF EN 60794-1-21	E3
Kink	Mechanical	NF EN 60794-1-21	E10
Static bending	Mechanical	NF EN 60794-1-21	E11
Temperature cycling	Environmental	NF EN 60794-1-22	F1
UV resistance	Environmental	NF EN 60794-1-22	F14
Fire reaction	Environmental	EN50575	
Resistance to wind vibrations	Mechanical	NF EN 60794-1-21	E19

For overhead drop cables, in addition to the characterisation of the cable itself, the mechanical link between the anchor and the cable is an important issue in the quality of the overhead network. The compatibility of anchors and cables is therefore systematically checked by carrying out the following qualification tests:

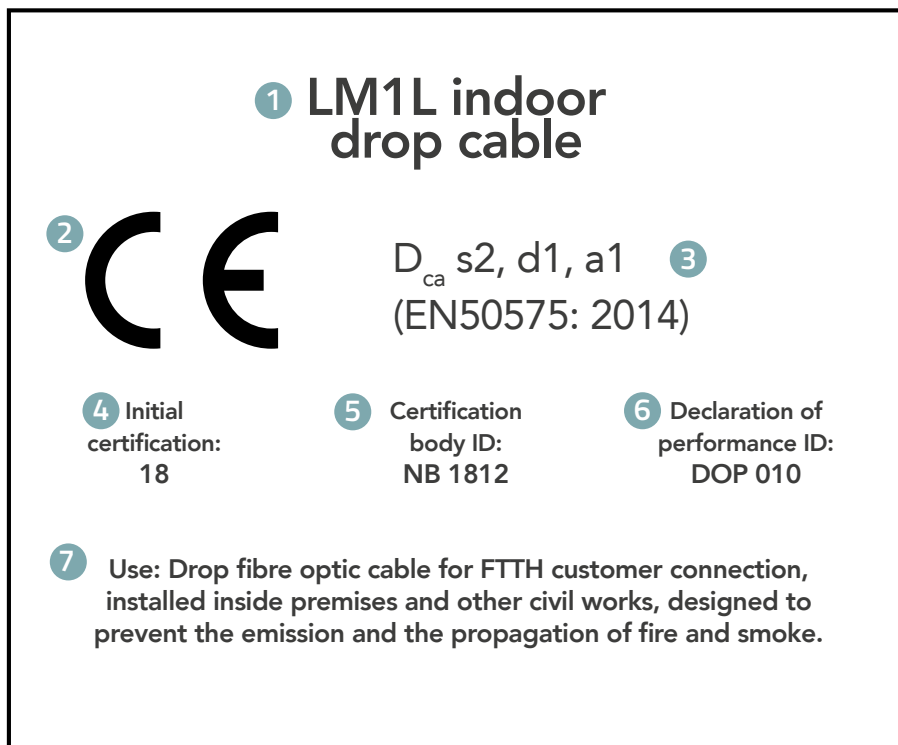
- Tensile tests** at the short-term tensile load of the cable (Maximum Allowable Tension) according to the modified E1 method of EN 60794-1-2, involving a couple of anchoring devices over a cable length of more than 1 meter. There shall be no slippage of the cable within the anchor clamps, no deterioration of the cable and no deterioration of the signal (attenuation less than 0.1dB).
- Galloping test** of anchor clamps according to method E19 of EN 60794-1-2, and applying 10 undulations for cables up to 6mm diameter, 3 undulations for cables over 6mm diameter (distribution and feeder cables) and an optical loss measurement for 300 hours. The optical losses must then be less than 0.1dB during the test.



## The CPR standards

The CPR (Construction Products Regulation) standards harmonise test methods to define the reaction-to-fire performance of cables permanently installed in buildings. These are the essential fire requirements for cables. Cables must therefore be tested according to these standards.

The fire reaction is the way a material behaves as a combustible. It is defined by organisations that have carried out various tests. In Europe, CE marked products are identified by Euroclasses for fire reaction. This identification code appears on the cable labels.



**1** Type of cable that will be installed inside a construction work

**2** Standardised CE marking

**3** Level of performance and standard used to assess performance

**4** Year of product qualification

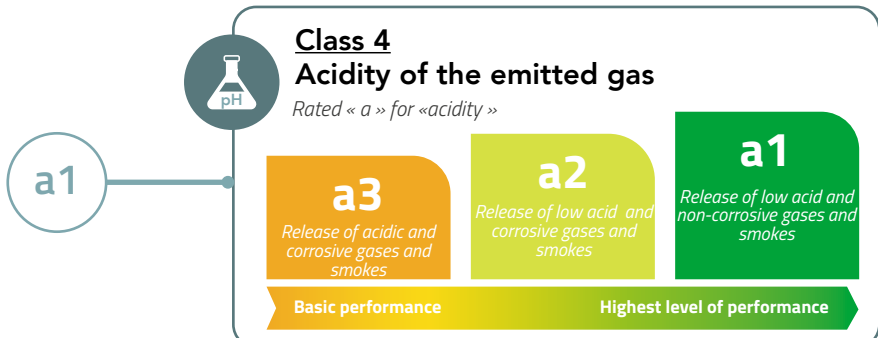
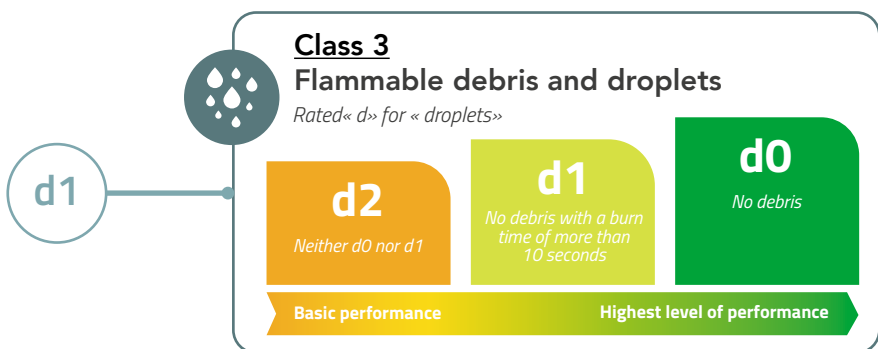
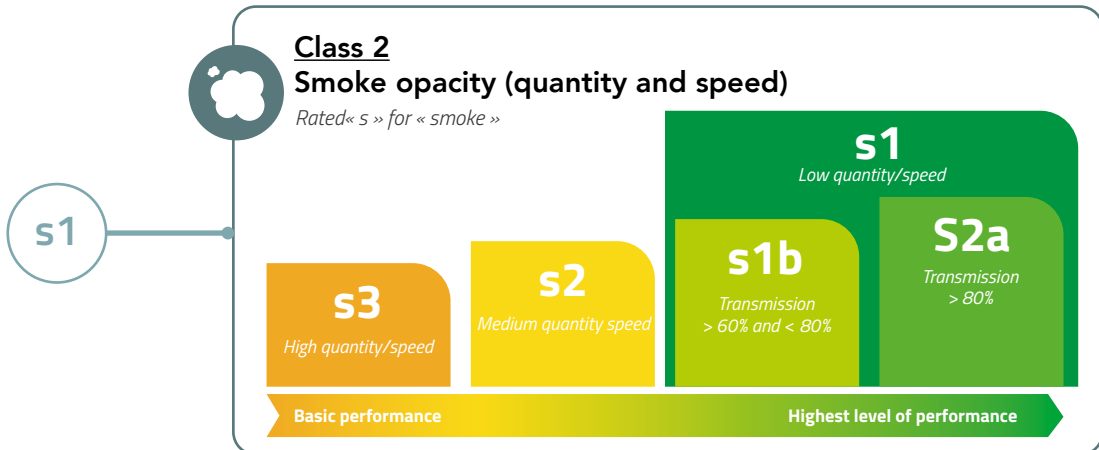
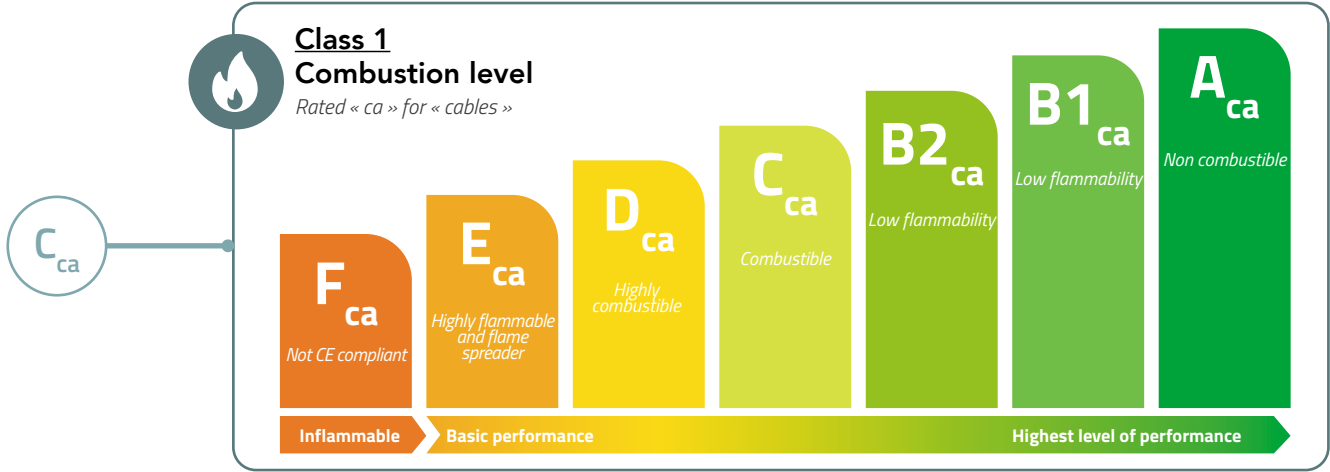
**5** Certification body ID

**6** Telenco Declaration of Performance number for this product, available at [www.telenco-networks.com](http://www.telenco-networks.com)

**7** Intended use of the product

# Euroclasses

## Example of classification



## Droptic® and SYCABEL classification

All Telenco indoor cables are qualified according to the test standards described in EN50575. For this reason, cable families for indoor use are classified according to their fire reaction performance level.

The table below from SYCABEL (Professional trade union of electrical, communication wire and cable manufacturers) defines three levels of classification:

- Optimal
- Improved
- Basic

By default, all indoor cables of the DROPTIC® family comply with the SYCABEL Basic classification.

Droptic® FLAME RETARDANCY cables have a performance equivalent to the Improved classification. Finally, the Droptic® FLAME RETARDANCY+ cable families have a fire performance equivalent to the Optimal classification. Telenco Group offers different possibilities, to date, represented in the table.

SYCABEL classification	Euroclasses	Droptic® Classification	LM2	LM1L	LM1	LM7	LM8
Optimal	B2 <sub>ca</sub> - s1, d1, a1	DROPTIC® Flame Retardancy +	X				
Improved	C <sub>ca</sub> - s1, d1, a1	DROPTIC® Flame Retardancy	X	X			
Basic	D <sub>ca</sub> - s2, d2, a2 E <sub>ca</sub>	DROPTIC® Standard	X	X	X	X	X

## Captions and pictograms

### APPLICATIONS



Indoor

Outdoor

Façade

Overhead

Duct

FTTA

### PERFORMANCES



UV-resistance

Good temperature resistance

High mechanical strength

Watertight

Low wind grip

Low smoke emission

Halogen-free

Fire reaction

### INSTALLATION



Installation with cable clips

Glue-down installation

Dowel installation

Staple installation

Blow-in installation

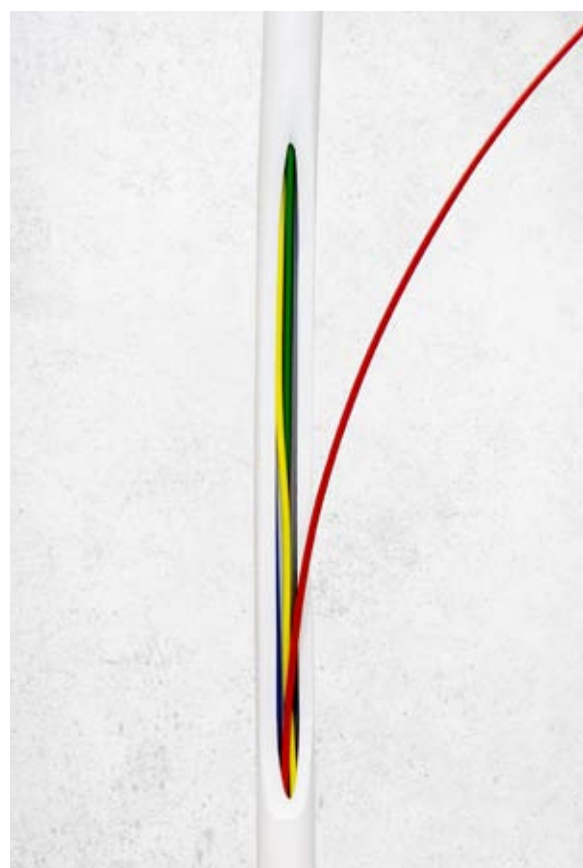
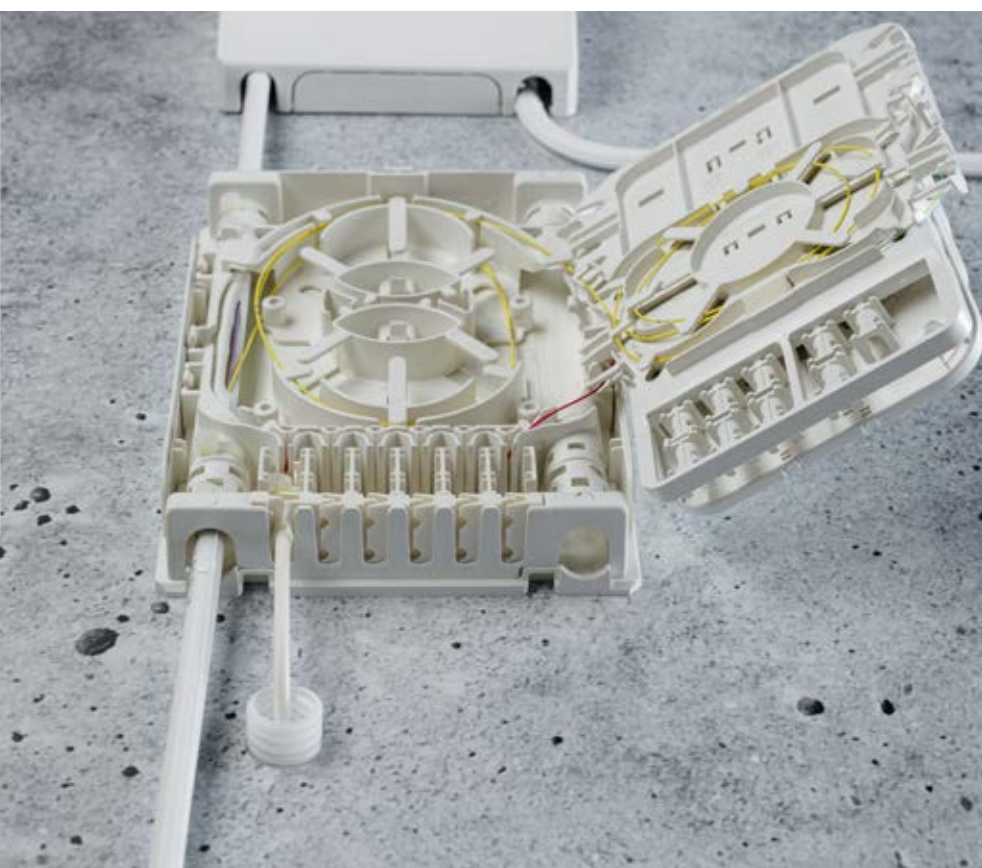


# Eline® riser cables

| Façade cables  
| Riser cables

17  
18

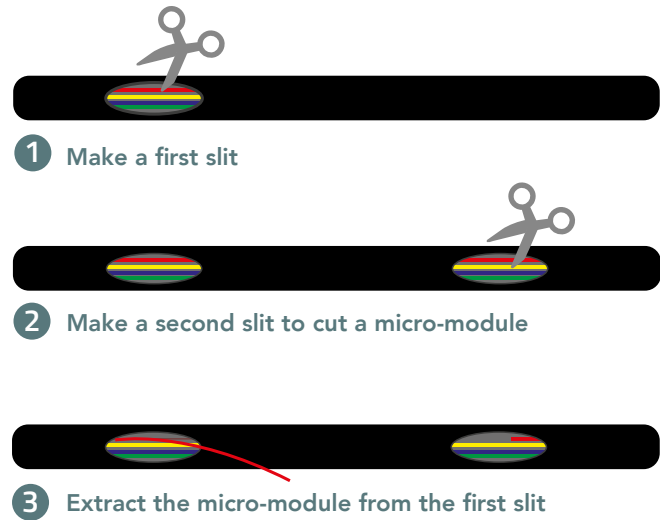
Eline® riser cables



Eline® cables are specially designed for the vertical and/or horizontal distribution of optical fibre outside buildings. They can be deployed on façade, laid in cable trays or pulled into ducts. Thanks to their black LSZH-FR outer sheath, these cables are UV-resistant. In addition, they are equipped with FRP reinforcements, for an optimal mechanical performance.

Thanks to their large internal diameter and unassembled micro-modules, Eline® cables' fibres are easy to access by making two slits in the outer sheath.

Below are the steps to be taken:



The fibre extracted from this micro-module is used to make a connection, either by splicing or by installing 900µm field-mountable connectors, with a patch cable inside a transition box.

### Fibre optic connection in a single dwelling unit using an Eline® façade cable



- 1 Eline® façade cable
- 2 Eline® Optical Distribution Point
- 3 Eline® Optical Transition Box

### Fibre optic connection in a multi-dwelling unit using an Eline® riser cable



- 1 Eline® riser cable
- 2 Eline® Building Entry Point
- 3 Eline® Floor Distribution Box
- 4 Eline® drop cable Droptic® LM1



# ELINE® RISER CABLES

## Façade cables

### Eline® façade cable

Eline® façade cables are manufactured with a black LSZH FR outer sheath that provides UV protection. In addition, they are equipped with two swelling cords ensuring a watertight seal inside the cable cavity.

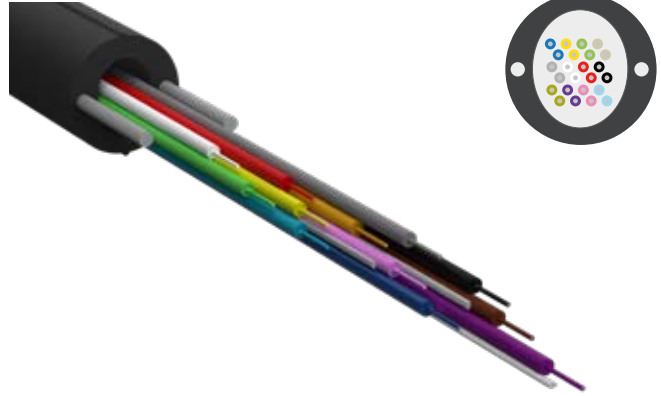
These cables enable an easy, quick and secure access to the fibre thanks to the longitudinal marking indicating the position of the FRP reinforcements, their large internal diameter and their construction in unassembled micro-modules.

#### Product advantages:

- + Fast, easy and secure access to fibre
- + Longitudinal sealing
- + Good mechanical performance

Categories	Characteristics
Tensile strength	200N
Crush resistance	50N/cm
Bending radius	R mini. = 25.0mm

Telenco reserves the right to change specifications without notice



PN	Fibre count per micro-module	Diameter	Packaging	Weight
	6 / 12 FO	Ø 8.0mm	1000m	55.0kg/km
On request	16 / 24 FO	Ø 11.5mm	cable drum	94.0kg/km

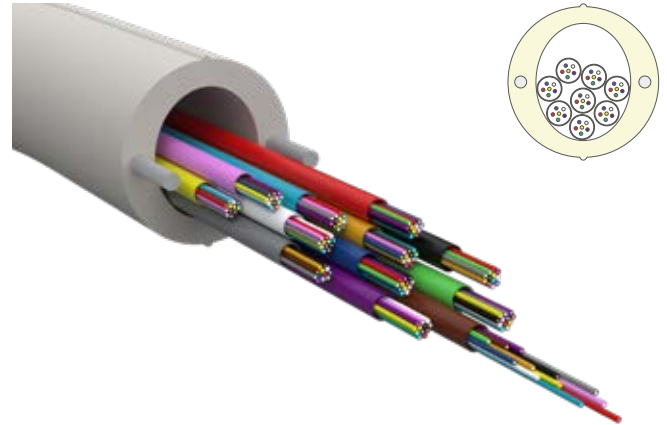


## Riser cables

### Eline® riser cable

The Eline® riser cable is specially designed for the vertical distribution of optical fibre inside buildings. It can also be laid in cable trays or pulled into ducts. The cable is manufactured with a white, halogen-free, low-smoke, flame retardant outer sheath. It has a longitudinal mark indicating the position of the FRP reinforcements.

With a large inner diameter and a non-stranded micro-module construction, the Eline® riser cable enables easy access to the optical fibre by making a slit in the outer sheath. The fibre extracted from a micro-module is then used to make a spliced connection to a drop cable within a Building Entry Point.



#### Product advantages:

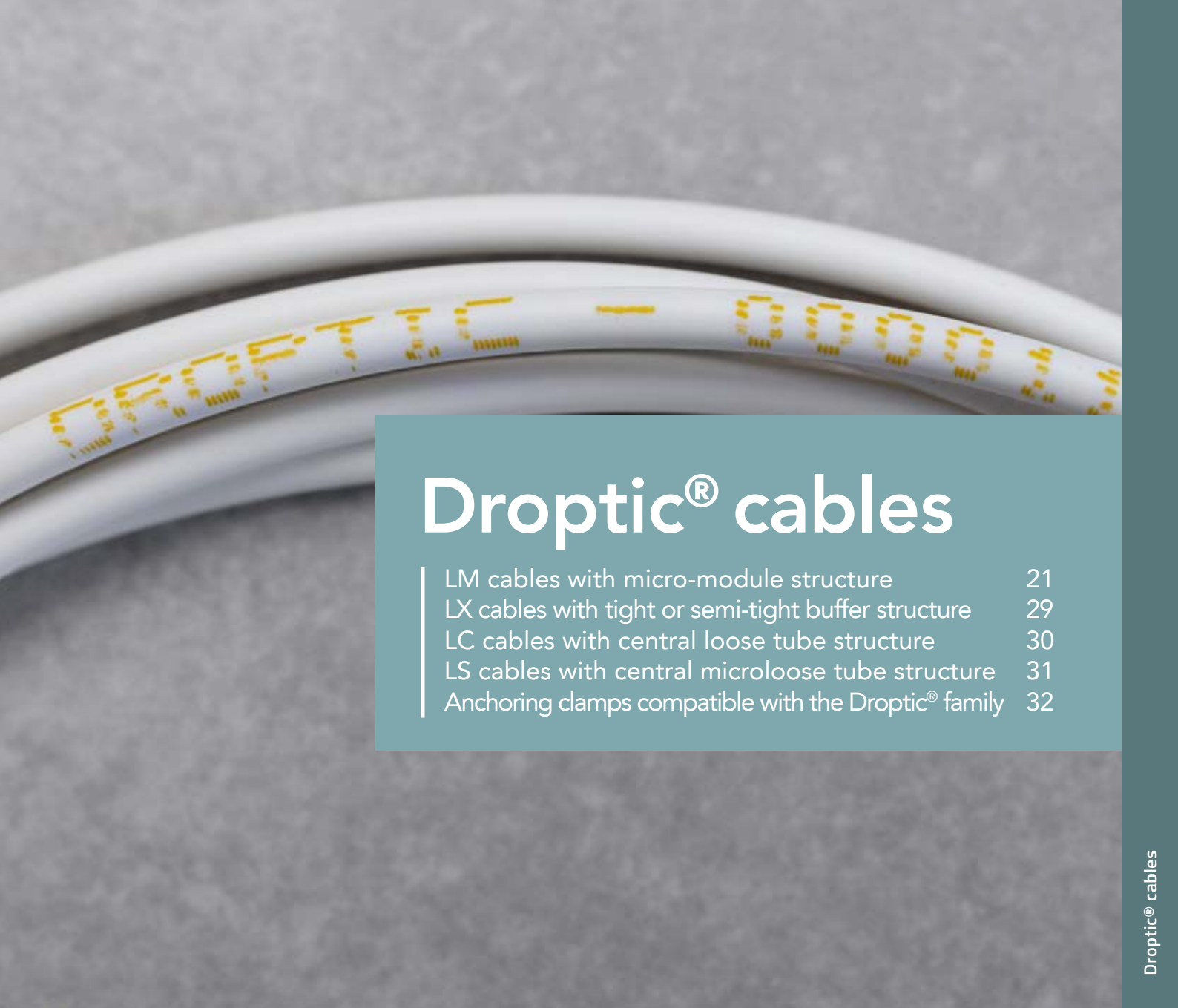
- + Simple, fast and secure access to fibre
- + Waterproof micro-module containing up to 12 optical fibres
- + Halogen-free, low-smoke, flame-retardant white sheath
- + Good mechanical performance



PN	Fibre count per micro-module	Fibre count	Diameter	Packaging	Weight
91890	4 FO	12	Ø 7.5mm	4000m cable drum	54.0kg/km
91240		24	Ø 8.5mm		64.0kg/km
91891		36	Ø 9.5mm	2000m cable drum	70.0kg/km
91243		48	Ø 9.5mm		77.0kg/km
91239		72	Ø 10.5mm	1000m cable drum	89.0kg/km
91324		96	Ø 11.5mm		102.0kg/km
91236		144	Ø 12.0mm		115.0kg/km
91238	6 FO	12	Ø 7.5mm	4000m cable drum	54.0kg/km
91231		24	Ø 7.5mm		55.0kg/km
91892		36	Ø 8.5mm	2000m cable drum	64.0kg/km
91233		48	Ø 9.0mm		70.0kg/km
92893		72	Ø 9.5mm		77.0kg/km
91235		96	Ø 10.5mm	1000m cable drum	88.0kg/km
91237		144	Ø 11.5mm		102.0kg/km

Categories	Characteristics
Tensile strength	480N
Crush resistance	30N/cm
Bending radius	R mini. = 12.5mm
Fire reaction	D <sub>ca</sub> - s1, d0, a1

Telenco reserves the right to change specifications without notice



# Droptic® cables

LM cables with micro-module structure	21
LX cables with tight or semi-tight buffer structure	29
LC cables with central loose tube structure	30
LS cables with central microloose tube structure	31
Anchoring clamps compatible with the Droptic® family	32



The Droptic® range includes a range of cables with a diameter of less than 6 mm and a fibre count 24. This range is available in 4 different structures:

- 1 LM cables with micro-module structure
- 2 LX cables with tight or semi-tight buffer structure
- 3 LC cables with central loose tube structure
- 4 LS cables with central microloose tube structure

The Droptic® range has been developed to meet all network configurations for FTTH fibre deployments:



Into ducts



In cable trays



On façade



Overhead



Indoor



Outdoor



Indoor/  
Outdoor

Made from high quality fibre and materials, Droptic® cables are sustainable solutions for building high speed broadband networks.



**Indoors**, Droptic® patch cables are designed as solutions to improve the daily life of field engineers. They offer easy access to the fibre and mechanical performance that makes installation easy and comfortable.

These cables ensure an optimised deployment of the optical fibre from the connection point to the subscriber's terminal outlet. Depending on the chosen model, they can be laid in cable trays, pulled, pushed, routed inside occupied ducts or simply stapled or glued along skirting boards.

These indoor drop cables are fully compliant with the European Construction Products Regulation (CPR). They are manufactured with LSZH sheaths: halogen-free, low-smoke, and flame retardant.

**For indoor/outdoor use**, Droptic® cables are made either with a double sheath or an UV-resistant LSZH sheath. They are designed to be multi-application, allowing for convenient and quick installations during FTTH deployments.

The HDPE outer sheath is easily and quickly stripped to provide access to a Construction Products Regulations compliant inner cable. No intermediate splice is required.



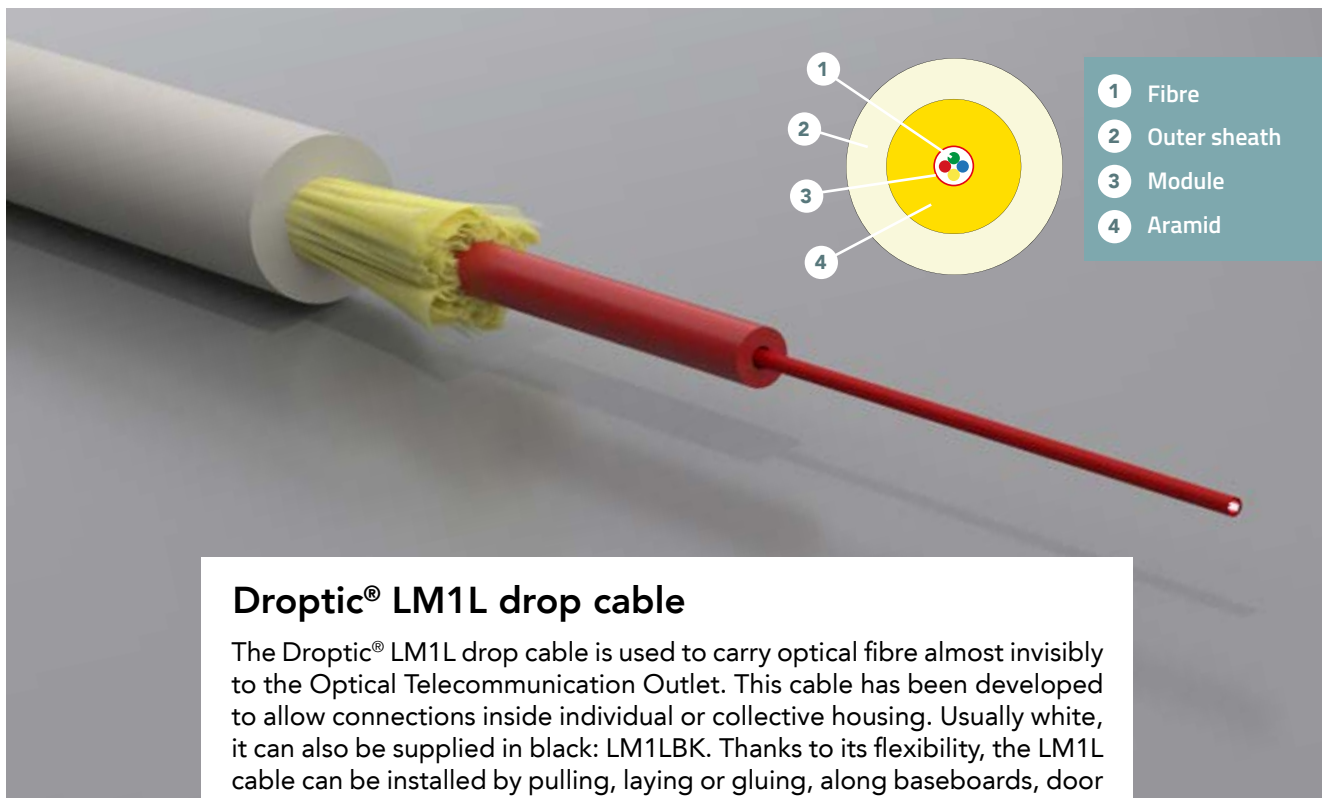
Droptic® **outdoor** drop cables great versatility. They can be installed both overhead and underground, using pulling techniques, over several hundred metres. These cables enable flexibility in network deployments, while offering optimal optical performance.

Droptic® outdoor feeder cables are manufactured with black polyurethane outer sheaths that are UV, wear and tear resistant. This results in a high mechanical performance.



# DROPTIC® CABLES

## LM cables with micro-module structure



### Droptic® LM1L drop cable

The Droptic® LM1L drop cable is used to carry optical fibre almost invisibly to the Optical Telecommunication Outlet. This cable has been developed to allow connections inside individual or collective housing. Usually white, it can also be supplied in black: LM1LBK. Thanks to its flexibility, the LM1L cable can be installed by pulling, laying or gluing, along baseboards, door or window surrounds.

#### Product advantages:

- + Small diameter for quick and discreet connections
- + Flexible for easy installation
- + Good bending performance

Categories	Characteristics
Tensile strength	100N
Crush resistance	100N/cm ( $\Delta\alpha \leq 0.1\text{dB}$ ) Optical reversibility verified at 200N/cm
Bending radius	R mini. = 12.5mm
Fire reaction	D <sub>ca</sub> - s2, d1, a1

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Rzf	Fibre count per micro-module	Diameter	Packaging	Weight
90923	1 FO			13.0kg/km
90925	2 FO	Ø 2.8mm	250m reel or 2000m cable drum	13.7kg/km
90927	4 FO			15.1kg/km



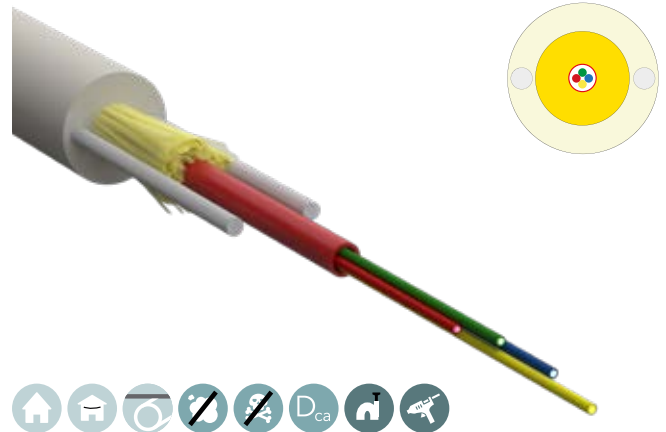


### Droptic® LM1 drop cable

The Droptic® LM1 drop cable is specially designed for FTTH deployments inside buildings. It can be installed by pulling or gluing. Thanks to its small diameter, this cable is suitable for installations in already occupied or congested ducts. It has optimal mechanical performance thanks to the presence of two FRP reinforcements.

**Product advantages:**

- + Small diameter
- + Easy installation
- + Good crush and tensile strength due to the two FRP reinforcements placed in the sheath



Categories	Characteristics
<b>Tensile strength</b>	150N
<b>Crush resistance</b>	100N/cm ( $\Delta\alpha \leq 0,1\text{dB}$ ) Optical reversibility verified at 200N/cm
<b>Bending radius</b>	R mini. = 15mm
<b>Fire reaction</b>	D <sub>ca</sub> - s2, d1, a1

PN	Fibre count per micro-module	Diameter	Packaging	Weight
90364	1 FO	Ø 3.3mm	250m reel or 1500/2000m cable drum	13.0kg/km
90365	2 FO			13.7kg/km
90366	4 FO			15.1kg/km

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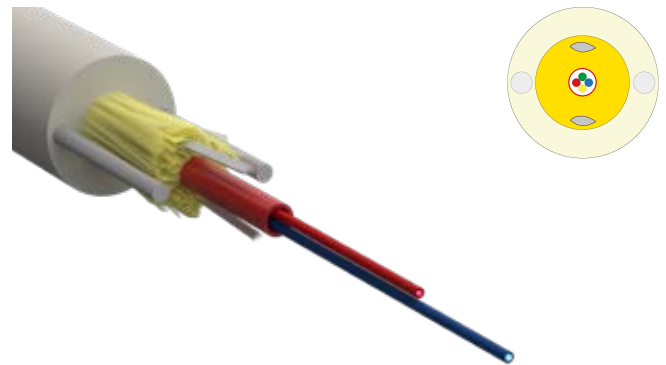
### Droptic® LM2 drop cable

The Droptic® LM2 drop cable is designed to meet a wide range of requirements encountered during FTTH deployments, whether indoors or outdoors, on façades, overhead or in ducts. Indoors, this cable is compatible with all types of installation: pulling, gluing or stapling and is fully compliant with the Construction Products Regulations.

Outdoors, the LM2 cable can be installed in ducts over short distances (less than 50 metres). UV-resistant and equipped with two FRP reinforcements and two swelling cords wicks, it offers very good temperature resistance and watertightness.

**Product advantages:**

- + UV-resistant
- + Extended operating temperature range
- + Good crush and tensile strength due to the two FRP reinforcements in the sheath



Categories	Characteristics
<b>Tensile strength</b>	400N
<b>Crush resistance</b>	150N/cm ( $\Delta\alpha \leq 0.1\text{dB}$ ) Optical reversibility verified at 200N/cm
<b>Bending radius</b>	R mini. = 15mm
<b>Fire reaction</b>	D <sub>ca</sub> - s2, d1, a1

PN	Fibre count per micro-module	Diameter	Packaging	Weight
90338	1 FO	Ø 4.0mm	250m reel or 1500m cable drum	13.0kg/km
90340	4 FO			15.1kg/km

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## Droptic® LM2BK drop cable

The Droptic® LM2BK drop cable is a solution for FTTH deployment in overhead configurations over short distances (up to 50 metres), on façades or in ducts. Its black, UV-resistant outer sheath with two FRP reinforcements allows for use over a wide range of temperatures.

In addition, the LM2BK is fully compliant with the Construction Products Regulations and can also be deployed indoors.

### Product advantages:

- + UV-resistant
- + Extended operating temperature range
- + Optimal mechanical performance due to two FRP reinforcements inside the sheath



Categories	Characteristics
<b>Tensile strength</b>	400N
<b>Crush resistance</b>	100N/cm ( $\Delta\alpha \leq 0.1$ dB) Optical reversibility verified at 200N/cm
<b>Bending radius</b>	R mini. = 20mm
<b>Fire reaction</b>	D <sub>ca</sub> - s2, d1, a1

PN	Fibre count per micro-module	Diameter	Packaging	Weight
90521	1 FO	Ø 4.0mm	1000/1500m cable drum	17.0kg/km
90929	2 FO		2000m cable drum	
91579	4 FO			19.0kg/km

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## Droptic® LM3 drop cable

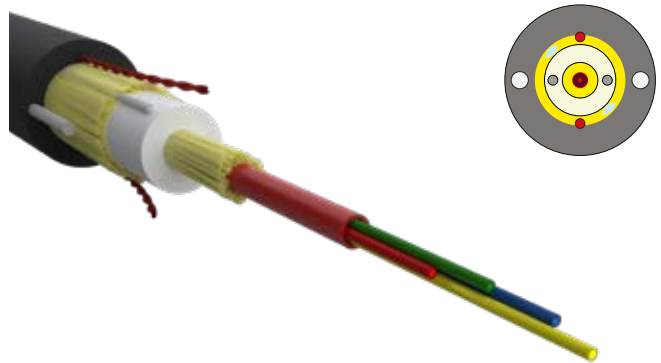
The Droptic® LM3 drop cable is a multi-purpose cable for simple, fast and reliable outdoor/indoor transitions. The cable is robust and waterproof and offers high mechanical performance. It is designed for overhead deployments (spans up to 70 metres) but can also be pulled into ducts over several hundred metres.

With a double sheath construction, LM3 drop cable has two ripcords that allow the outer HDPE sheath to be stripped in seconds. This allows a halogen-free, low-smoke, flame-retardant LM1 sheathed cable to be installed indoors. No splicing is required between the outer and inner cable.

The Droptic® LM3 cable allows the transmission of the optical signal from a distribution point to the Optical Terminal Outlet without straining the optical budget.

### Product advantages:

- + Enables quick, simple and reliable outdoor/indoor transitions
- + Extended operating temperature range
- + High mechanical performance

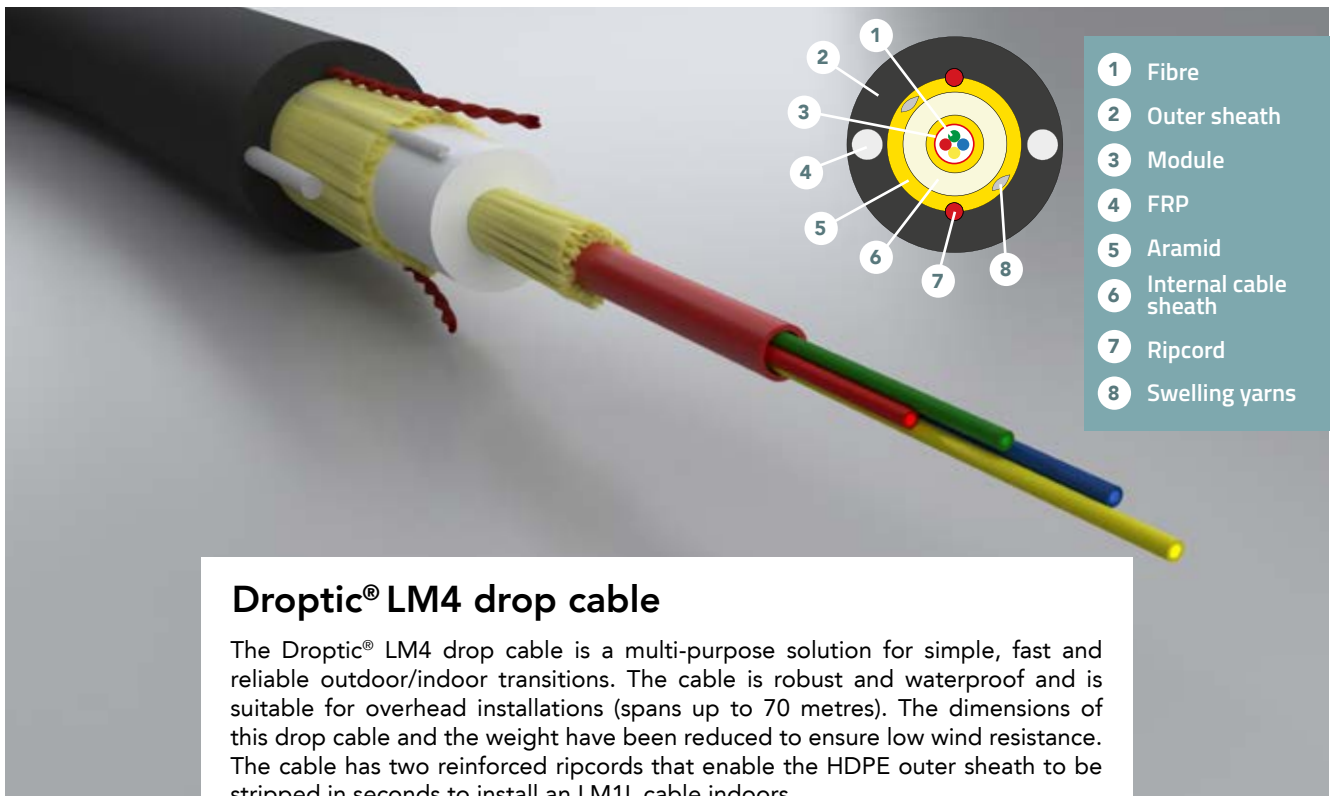


Categories	Characteristics
<b>Tensile strength</b>	800N
<b>Crush resistance</b>	200N/cm ( $\Delta\alpha \leq 0.1$ dB) Optical reversibility verified at 300N/cm
<b>Bending radius</b>	R mini. = 60mm
<b>Fire reaction</b>	D <sub>ca</sub> - s2, d1, a1

PN	Fibre count per micro-module	Diameter	Packaging	Weight
90367	1 FO	Ø 6.0mm	500/1000m cable drum	29.0kg/km
90368	2 FO			
90369	4 FO			

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### Droptic® LM4 drop cable

The Droptic® LM4 drop cable is a multi-purpose solution for simple, fast and reliable outdoor/indoor transitions. The cable is robust and waterproof and is suitable for overhead installations (spans up to 70 metres). The dimensions of this drop cable and the weight have been reduced to ensure low wind resistance. The cable has two reinforced ripcords that enable the HDPE outer sheath to be stripped in seconds to install an LM1L cable indoors.

#### Product advantages:

- + Enables quick, simple and reliable outdoor/indoor transitions
- + Optimised dimensions for low wind load
- + High mechanical performance

Categories	Characteristics
Tensile strength	800N
Crush resistance	200N/cm ( $\Delta\alpha \leq 0.1\text{dB}$ ) Optical reversibility verified at 300N/cm
Bending radius	R mini. = 50mm
Fire reaction	D <sub>ca</sub> - s2, d1, a1

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PN	Fibre count per micro-module	Diameter	Packaging	Weight
90531	1 FO	Ø 5.0mm	500/1000m cable drum	21.0kg/km
90533	2 FO			22.0kg/km
90535	4 FO			22.0kg/km

## Droptic® LM7 drop cable

The Droptic® LM7 drop cable allows a quick and easy connection between an Optical Terminal Outlet and a distribution point, placed at the floor's level or on the ground floor of the building. Its compact and rectangular design has been specifically designed to be pushed into an already occupied ICTA corrugated duct and thus facilitate the installation inside the ducts. This cable is equipped with two FRP reinforcements for high mechanical performance.

### Product advantages:

- + Rectangular and compact design for easy installation in occupied ducts and sheath
- + Flexible and rigid at the same time
- + Optimal mechanical performance

Categories	Characteristics
<b>Tensile strength</b>	150N
<b>Crush resistance</b>	100N/cm ( $\Delta\alpha \leq 0.1$ dB) Optical reversibility verified at 200N/cm
<b>Bending radius</b>	R mini. = 15mm
<b>Fire reaction</b>	Eca

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PN	Fibre count per micro-module	Diameter	Packaging	Weight
90541	1 FO	2.6mm x 1.8mm	250m coil or 2000m cable drum	6.0kg/km
90543	2 FO			
90545	4 FO			

## Droptic® LM8 drop cable

The Droptic® LM8 drop cable is a modular solution. Its robust design meets the different requirements of FTTH deployments between distribution points and subscribers. The cable is dielectric and can be installed indoors or outdoors for the connection of SDUs or MDUs. Thanks to its watertight construction, Droptic® LM8 drop cable can also be installed in ducts over short distances (less than 50 metres). Its two FRP reinforcements ensure good temperature resistance.

Indoors, this cable is compatible with all types of installation: pulling, gluing or stapling and is fully compliant with the Construction Products Regulations.

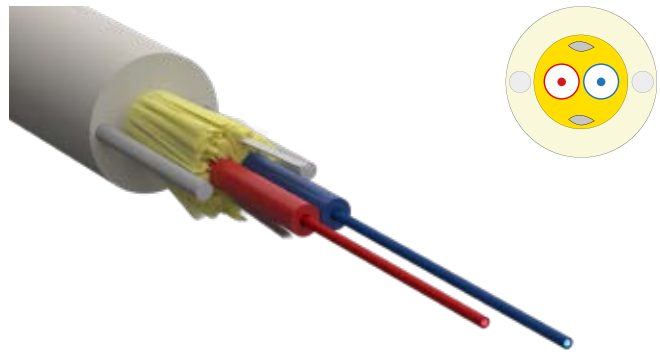
The Droptic® LM8 patch cable features two optical fibres in two separate modules for differentiated management of the two modules.

### Product advantages:

- + A single drop cable for indoor FTTH configurations, façade deployment or short distance ducting
- + Extended operating temperature range
- + Compatible with all types of cable laying

Categories	Characteristics
<b>Tensile strength</b>	400N
<b>Crush resistance</b>	150N/cm ( $\Delta\alpha \leq 0,1$ dB) Optical reversibility verified at 200 N/cm
<b>Bending radius</b>	R mini. = 20mm
<b>Fire reaction</b>	D <sub>ca</sub> - s2, d1, a1

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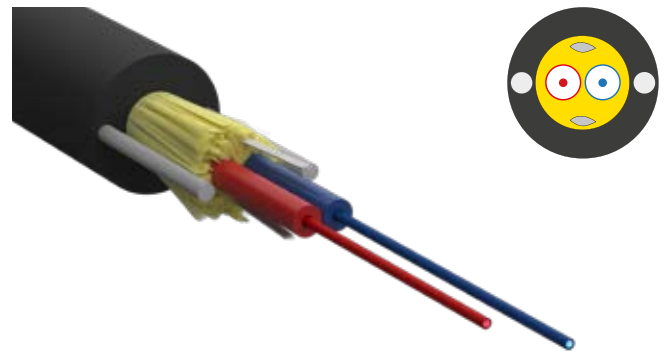


PN	Fibre count per micro-module	Diameter	Packaging	Weight
90341	2 FO	4.0mm	250m reel or 1500m cable drum	13.7kg/km



**Droptic® LM8BK drop cable**

The Droptic® LM8BK drop cable is a solution for FTTH deployments on façades or underground over short distances (up to 50 meters). Consisting of a black, UV-resistant LSZH-FR sheath with two FRP reinforcements, the LM8BK cable can be used over a wide temperature range. In addition, it is fully compliant with the Construction Products Regulations and can also be deployed indoors. The Droptic® LM8BK patch cable features two optical fibres in two separate modules. This enable differentiated management of the two modules.



**Product advantages:**

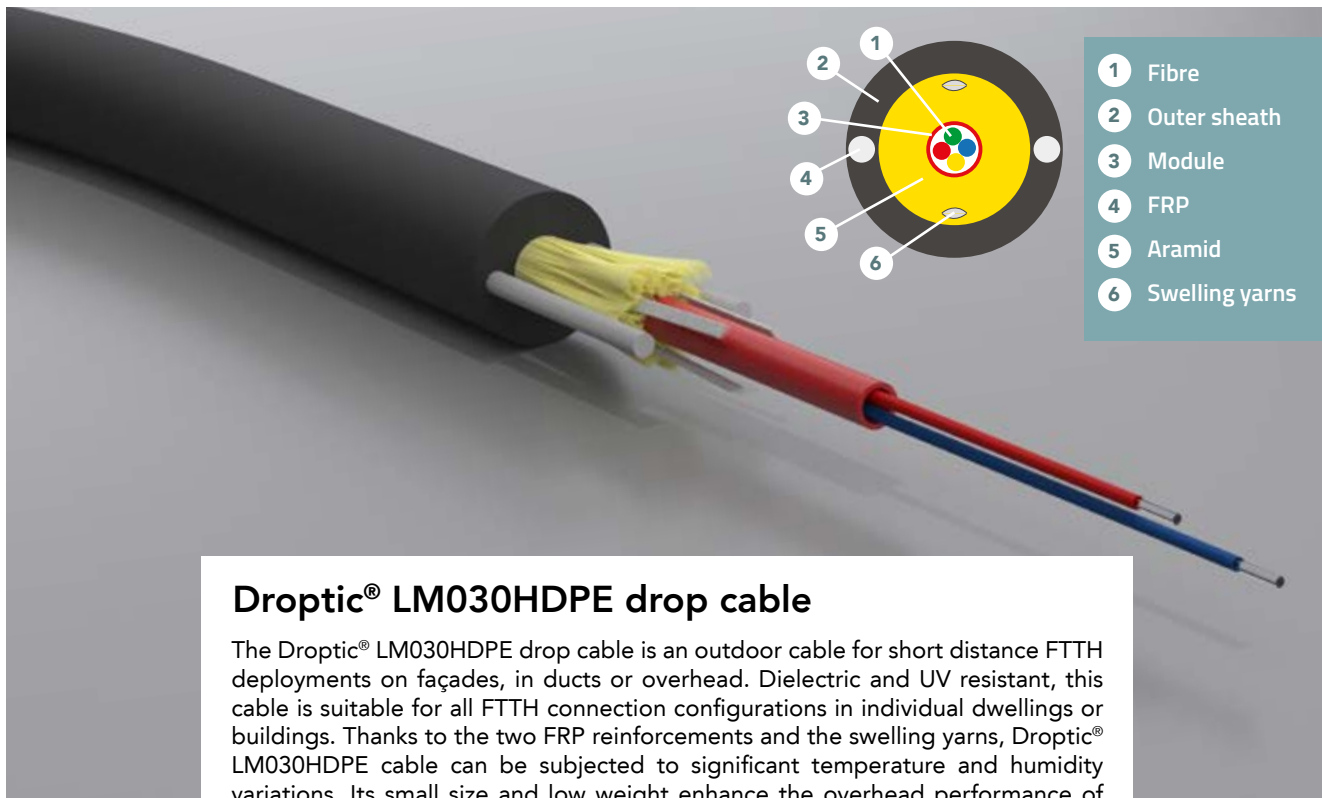
- + A single drop cable for indoor FTTH configurations, façade deployment or short distance ducting
- + UV-resistant
- + Compatible with all types of cable laying



Categories	Characteristics
<b>Tensile strength</b>	400N
<b>Crush resistance</b>	100N/cm ( $\Delta\alpha \leq 0,1\text{dB}$ ) Optical reversibility verified at 200N/cm
<b>Bending radius</b>	R mini. = 20mm
<b>Fire reaction</b>	D <sub>ca</sub> - s2, d1, a1

PN	Fibre count per micro-module	Diameter	Packaging	Weight
90523	2 FO	Ø 4.0mm	1000/1500/2000m cable drum	19.0kg/km

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- 1 Fibre
- 2 Outer sheath
- 3 Module
- 4 FRP
- 5 Aramid
- 6 Swelling yarns

## Droptic® LM030HDPE drop cable

The Droptic® LM030HDPE drop cable is an outdoor cable for short distance FTTH deployments on façades, in ducts or overhead. Dielectric and UV resistant, this cable is suitable for all FTTH connection configurations in individual dwellings or buildings. Thanks to the two FRP reinforcements and the swelling yarns, Droptic® LM030HDPE cable can be subjected to significant temperature and humidity variations. Its small size and low weight enhance the overhead performance of this cable. It can be exposed to continuous wind of up to 115km/h over spans inferior or equal to 50 metres.

### Product advantages:

- + Dielectric and UV-resistant
- + Small size and light weight
- + Very good overhead performance

Categories	Characteristics
Tensile strength	250N, cable elongation < 0.5 %, fibre elongation < 0.3 %
Crush resistance	200N/cm ( $\Delta\alpha < 0.05\text{dB}$ ) Optical reversibility verified at 250N
Bending radius	R mini. = 15mm

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PN	Fibre count per micro-module	Diameter	Packaging	Weight
93461	1 FO			
93462	2 FO	Ø 3.3mm	2000m cable drum	8.0kg/km
93463	4 FO			



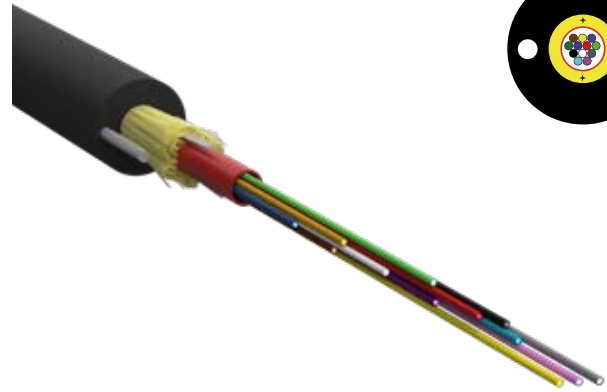
### Droptic® LM040BK adducting cable

The Droptic® LM040BK adducting cable is an indoor/outdoor building drop cable for FTTH deployments on façades or in ducts. It can also be used overhead for short distances (spans of up to 50 meters).

Dielectric and UV-resistant, this cable is suitable for outdoor installations for all FTTH connectivity configurations in SDUs or MDUs. Available in black or ivory, its LSZH sheath allows it to be deployed inside the building via riser ducts or horizontal cable trays.

Thanks to the two FRP reinforcements and the swelling yarns, the Droptic® LM040BK cable can be subjected to significant temperature variations.

Its small size, light weight and structure make it easy to install and access the fibre.



**Product advantages:**

- + Dielectric and UV-resistant
- + Easy installation
- + Easy and quick access to the fibre



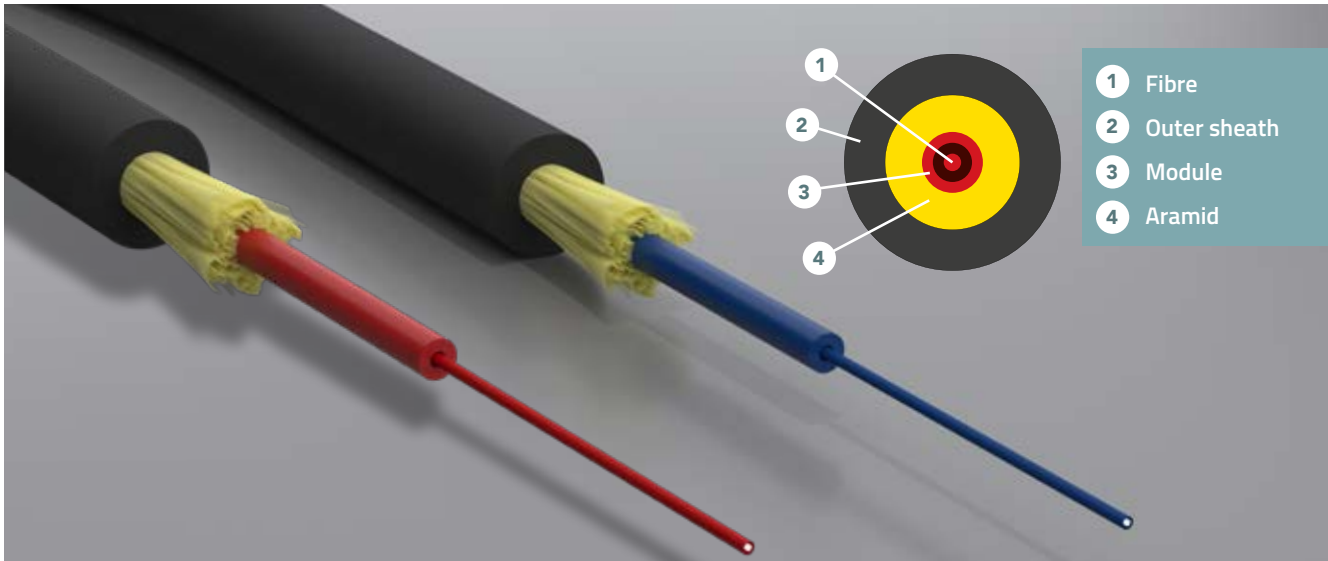
Categories	Characteristics
<b>Tensile strength</b>	400N, cable elongation < 0.5 %, fibre elongation < 0.3 %
<b>Crush resistance</b>	100N/cm, $\Delta\alpha < 0.05\text{dB}$ to 1550nm Optical reversibility verified at 150N
<b>Bending radius</b>	R mini. = 20mm, $\Delta\alpha < 0.1\text{dB}$ at 1550nm
<b>Fire reaction</b>	D <sub>ca</sub> - s2, d1, a1

PN	Fibre count per micro-module	Diameter	Packaging	Weight
93467	6 FO	Ø 4.1mm	1500m cable drum	19.0kg/km
93468	8 FO			
93469	12 FO			

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# LX cables with tight or semi-tight buffer structure



## Droptic® LX030PU and LX030PUK drop cables

Droptic® LX030PU and LX030PUK drop cables are specially designed for FTTH deployments, either overhead or on façades, over spans of up to 70 metres. They can also be laid in ducts over several hundred metres.

Thanks to their small diameter, these cables have good wind resistance. The black polyurethane outer sheath provides high UV protection and improved mechanical performance in terms of flexibility, traction, crushing and abrasion.

### Product advantages:

- + UV-resistant
- + Light weight
- + Small diameter for low wind load
- + High mechanical performance

Categories	Characteristics	
Cable	LX030PU	LX030PUK
Tensile strength	300N	400N
Crush resistance	100N/cm ( $\Delta\alpha \leq 0.1\text{dB}$ ) Optical reversibility verified at 200N/cm	
Bending radius	R mini. = 12.5mm	

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Designation	PN	Fibre count per micro-module	Diameter	Packaging	Weight
LX030PU	09289	1 FO	Ø 3.0mm	2000m cable drum	8.0kg/km
LX030PUK	On request				9.0kg/km



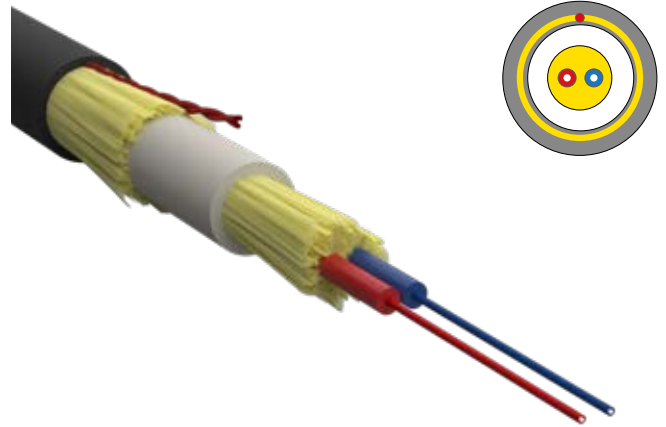
### Droptic® LX048DS drop cable

The Droptic® LX048DS drop cable is specifically designed to be deployed in overhead configurations with spans of up to 70 metres, either on façade or in conduit. Thanks to its small diameter, this cable is a real discreet solution for the FTTH deployment.

Thanks to its double sheath and the presence of a ripcord, Droptic® LX048DS cable allows convenient and fast installations for indoor and outdoor applications.

**Product advantages:**

- + Discreet connection
- + Highly versatile
- + Light weight



Categories	Characteristics
Tensile strength	500N
Crush resistance	100N/cm ( $\Delta\alpha \leq 0.1\text{dB}$ ) Optical reversibility verified at 200N/cm
Bending radius	R mini. = 15mm
Fire reaction	D <sub>ca</sub> - s1, d0, a1

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PN	Fibre count per micro-module	Diameter	Packaging	Weight
92440	1 FO	Ø 4.8mm	500m cable drum	23.0kg/km
91835	2 FO			

## LC cables with central loose tube structure

### Droptic® LC050HDPE drop cable

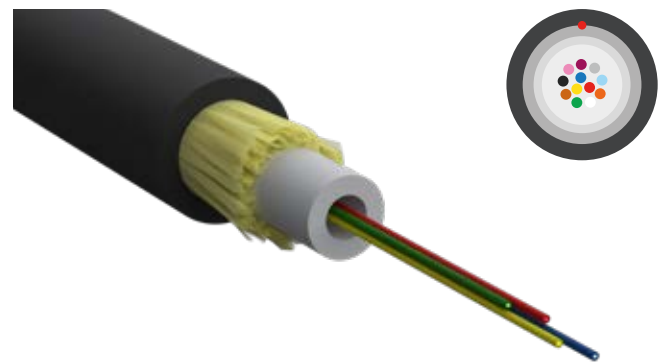
The Droptic® LC050HDPE drop cable is used to interconnect buildings. Its HDPE sheath facilitates pulling in different types of conduits, especially in concrete.

This cable has a light and robust structure with central loose tube. Thanks to its ripcords, the LC050HDPE cable provides for an easy access to the fibre.

Fully dielectric and equipped with glass yarns around the central tube, this cable ensures good mechanical performance and improved protection against rodents.

**Product advantages:**

- + Easy installation
- + Fully dielectric
- + High mechanical performance
- + Protection against rodents



Categories	Characteristics
Tensile strength	900N
Crush resistance	1000N
Bending radius	R mini. = 20mm

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PN	Fibre count per micro-module	Diameter	Packaging	Weight
On request	12 FO	Ø 5.2mm	4000m cable drum	23.0kg/km

# LS cables with central microloose tube structure

## Droptic® Nano blowable cables

Droptic® Nano blowable cables are used for outdoor applications. Their black HDPE outer sheath provides good sealing and UV resistance, ensuring optimum mechanical performance. These cables are specially designed to be blown in microducts with a diameter from 3.5mm up to 6mm.

### Product advantages:

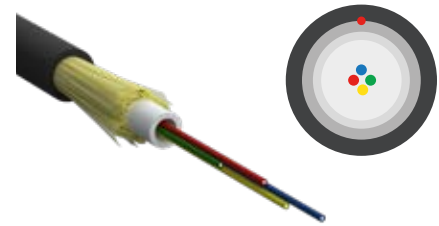
- + UV-resistant
- + Waterproof
- + Blowable over long distances, up to 2000m

Categories	Characteristics		
Cable	LS024HDPE 4 FO	LS035HDPE 12 FO	LS038HDPE 24 FO
Tensile strength	200N		300N
Crush resistance	100N/cm		
Bending radius	R mini. = 15mm		

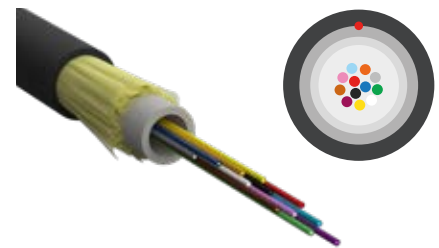
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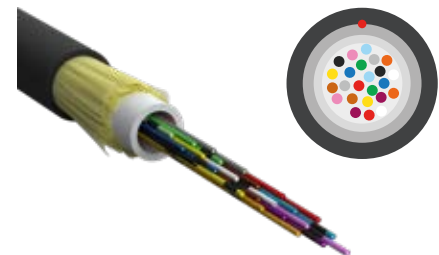
Designation	PN	Fibre count per micro-module	Diameter	Packaging	Weight
LS024HDPE		4 FO	Ø 2.4mm		5.0kg/km
LS035HDPE	On request	12 FO	Ø 3.5mm	4000m cable drum	10.4kg/km
LS038HDPE		24 FO	Ø 3.8mm		12.7kg/km



LS024HDPE 4 FO G.657A2



LS035HDPE 12 FO G.657A2



LS038HDPE 24 FO G.657A2



## Anchoring clamps compatible with the Droptic® family



Droptic® overhead drop cables are combined with anchoring devices designed and developed by Telenco. The compatibility of the cables with these anchoring devices is verified in Telenco's laboratories by applying international test methods IEC 60794-1-21.

Type of cable	Type of anchoring clamp
LX030PU LM030HDPE	
LM2BK LX048DS	
LM4	
Flat cable ROC™ Corning	
Flat cable Easy Access™ Commscope	



# FTTA cables

| Breakout cables

35



The 3rd generation mobile technology, 3G, was able to offer speeds of around 1.9 Mbit/s. The 4G technology, based on the LTE standard, offers speeds of up to 150 Mbit/s. With theoretical speeds of 6 to 60 times higher and virtually no latency, the fifth generation, 5G, is once again opening up the field of possibilities.

The challenge of today's mobile networks, well beyond the simple exchange of voice or data, opens up opportunities for use in all areas: industry, health, mobility, the economy, Smart Cities, machine learning, services, etc. But it is also a real bridge towards access to new technologies for many territories that are poorly served or not served at all by cabled networks.

It is in this context of digital revolution and based on its expertise in outdoor optical telecom networks that Telenco has taken up the challenge of 4G/5G FTTA. By applying the principles of eco-design and taking into account the climatic conditions and harsh mechanical environments, Telenco designs, manufactures and markets reliable and quality 4G/5G FTTA optical products. Considering all technical, economical and environmental aspects, Telenco offers real solutions for all 4G/5G cabling configurations whatever the given architecture.



## Glossary

- **BTS** = Base Transceiver Stations
- **BBU** = Base Band Unit
- **RRU** = **RRH** = Remote Radio Unit = Remote Radio Head
- **FTTA** = Fiber To The Antenna
- **HTTA** = Hybrid To The Antenna
- **PTTA** = Power To The Antenna
- **Breakout** = Trunk  
or pre-connected or semi-preconnected  
optical cable





# FTTA CABLES

## Breakout cables

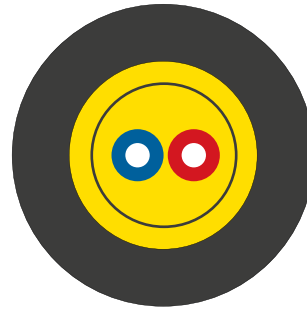
### Outdoor pre-connected breakout cable 2 FO

The outdoor pre-connected breakout cable 2 FO is specifically designed to connect the BTS/BBU to the RRU/RRH in the 4G/5G direct cabling structure, or the junction box (FTTA or HTTA) to the RRU in the 4G/5G indirect cabling structure.

Using its expertise in overhead cable deployment, Telenco has developed a solution that withstands harsh environments while maintaining a light weight but highly durable cable structure. The outdoor pre-connected breakout cable 2 FO has a diameter of 5.0mm, which ensures flexibility and ease of installation.

#### Product advantages:

- + Premium optical quality
- + Excellent mechanical performance
- + Easy to install and set up
- + Flexible and light weight cable



Categories	Characteristics
Tensile strength	450N
Crush resistance	100N/cm
Twist	$\pm 180^\circ/\text{m}$ , L = 120N $\leq 0.1\text{dB}/\text{km}$

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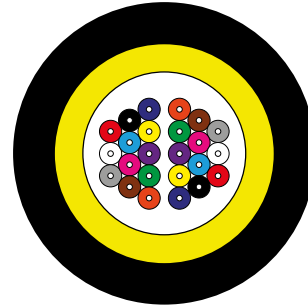
PN	Fibre count per micro-module	Diameter	Packaging	Weight
On request	2 FO	$\varnothing 5.0\text{mm}$	2000m cable drum	22.0kg/km



## Outdoor pre-connected breakout cable 12-24 FO

The outdoor pre-connected breakout cable 12-24 FO is specially designed to connect the BTS/BBU to the junction box (FTTA or HTTA) in the 4G/5G indirect cabling structure. It is subject to harsh climatic conditions and can withstand temperature changes and high mechanical stress.

Thanks to its expertise in the deployment of overhead cables, Telenco has developed a solution that withstands harsh environments by keeping a light but very resistant cable structure to adapt to different installations. This cable is available in 2 capacities, 12 FO and 24 FO, in pre-connected 1 side or 2 sides versions.



### Product advantages:

- + Premium optical quality
- + FTTA specific design
- + Excellent mechanical performance
- + Easy to install and set up
- + Small diameter cable

Categories	Characteristics
<b>Tensile strength</b>	Installation: 660N Operating : 330N
<b>Crush resistance</b>	Long: 30N/cm Short: 100N/cm
<b>Twist</b>	± 180°/m, L = 120N ≤ 0.1dB/km

Telenco reserves the right to change specifications without notice



PN	Fibre count per micro-module	Diameter	Packaging	Weight
On request	12 FO	Ø 6.4mm	1000m cable drum	41.0kg/km
	24 FO	Ø 8.0mm		69.0kg/km

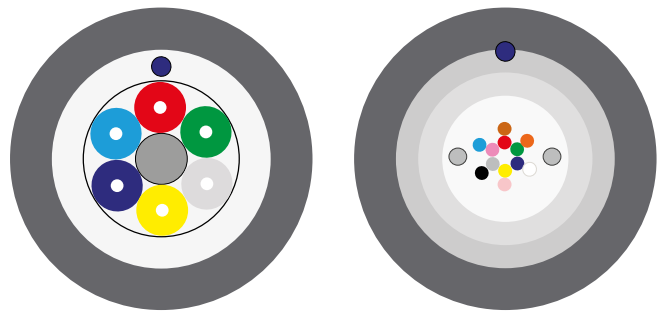
## Xtrem Fire drop cables

Xtrem Fire drop cables are designed for indoor/outdoor installations. These cables are very robust for outdoor applications due to their dielectric, waterproof and rodent resistant properties.

They also provide high protection for indoor applications thanks to their high fire resistant LSZH thermoplastic outer sheath. In addition, these cables are light weight and flexible, which makes them easy to install.

### Product advantages:

- + High resistance to fire
- + Anti-rodent protection
- + Flexible and easy to install cable



Categories	Characteristics	
Cable	CDG Xtrem Fire 2 FO	NEXO Xtrem Fire 2-24 FO
<b>Tensile strength</b>	Installation: 1100N Operating: 650N	2200N
<b>Crush resistance</b>	130N/cm	150N/cm
<b>Bending radius</b>	20 x Ø 6.2mm	Installation: 15 x Ø 8,2mm Operating: 10 x Ø 8,2mm
<b>Fire reaction</b>	C <sub>ca</sub> - s1a, d0, a1	C <sub>ca</sub> - s1a, d0, a1

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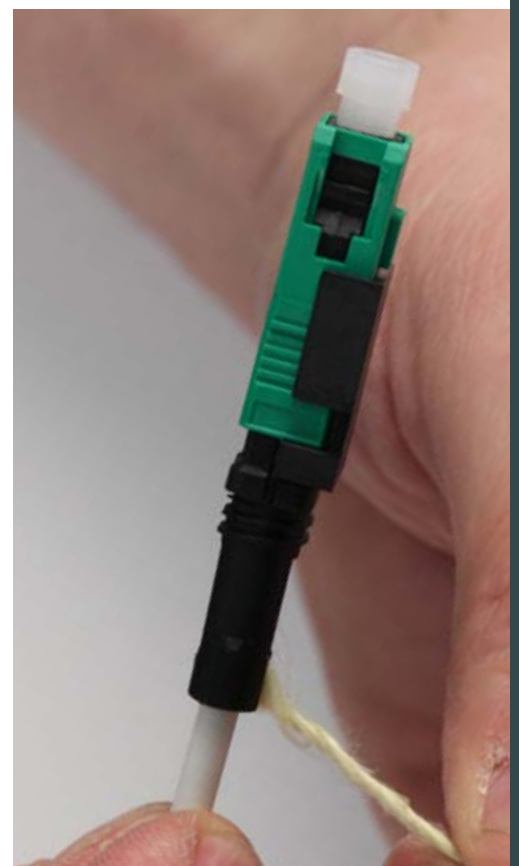
Designation	PN	Fibre count per micro-module	Diameter	Packaging	Weight
CDG Xtrem Fire 2 FO	On request	2 FO	Ø 6.2mm	2000m	38.0kg/km
NEXO Xtrem Fire 2-24 FO		2 to 24 FO	Ø 8.2mm	cable drum	72.0kg/km



# Packaging and related services

The different types of packaging  
Related services  
Cable preparation

38  
40  
42



# PACKAGING AND RELATED SERVICES

## The different types of packaging

Eline® cables are supplied in cable drums or coils when pre-connected.

Droptic® drop cables are offered in three types of packaging:

- Cable drum
- Coil
- Cardboard dispenser

On request, the packaging can be customised and the cardboard can be printed with the visual of your choice.

### Cable drum

Categories	Values
Type of cable	Standard delivery length
Eline® façade cable Eline® riser cable	1000m
	2000m
	4000m
LM1L	1000m 2000m
LM1	1500m
LM2	1500m
LM4	500m
LX030PU	2000m

### Coil

The coils are available in several versions:

- Bare cable
- Pigtail: pre-ended on one side of the cable
- Cord: pre-connectorised at both cable ends on both sides of the cable

The lengths available are variable from 25m to 250m.





## Cardboard dispenser

For an easiest field installation, Droptic® cables can be packaged in cardboard dispenser on request. Due to their construction and strength, the reels allow the cable to be unwound and rewound without effort. In addition, the reels can be reused.

A reel is constructed as follows (for a maximum weight of 15kg):

- Two rectangular frames
- Two flanges
- A central tube with a defined diameter

The length of cable wound on the reel is adjustable depending on the encountered needs and the type of chosen cable. Three sizes of reels are available: XS, S and XL. The delivery details of these reels are shown in the table below.



Categories	Values		
Reel size	XS	S	XL
Box size	205 x 195 x 65mm	260 x 270 x 60mm	260 x 260 x 160mm



Type of cable	Cable diameter	XS	S	XL
		Maximum delivery length		
 LM1L	Ø 2.8mm	50m	100m	400m
 LX030PU	Ø 3.0mm	50m	100m	400m
 LM1	Ø 3.3mm	30m	50m	300m
 LM2	Ø 4.0mm	25m	50m	250m
 LM4	Ø 5.0mm	10m	30m	100m
 LM7	2.6mm x 1.8mm	30m	50m	300m



## Related services

Telenco provides pre-connectivity services for Eline® riser cables and Droptic® drop cables with several types of connectors, depending on the network configuration and requirements.

### Specific connectors

To provide customers with ever more innovative solutions, Telenco offers and assembles specific connectors designed to ensure the security and durability of fibre optic networks.

#### Telenco® Secure SC connectors



Telenco® Secure SC connectors are high-end, self-locking fibre optic cabling systems. They are used to protect sensitive networks from disconnection errors or vandalism.

#### SC connectors with permanent protection



SC connectors with permanent protection enable connectors to be kept on standby. Multiple connections/disconnections can be made without risk to the optical sides and with time savings for the users, while bringing a real ecological gain to installations requiring intensive patching.

#### Telenco® field mountable connectors



Droptic® cables are compatible with field mountable connectors.

Field mountable connectors offer similar optical performance to standard connectors. They are quick and easy to install on site, while ensuring high reliability. These connectors can be installed on 250µm, 900µm or 3mm fibre optic cables.

#### OptiTap® Corning hardened connectors



Telenco has the licence to install OptiTap® Corning hardened connectors.

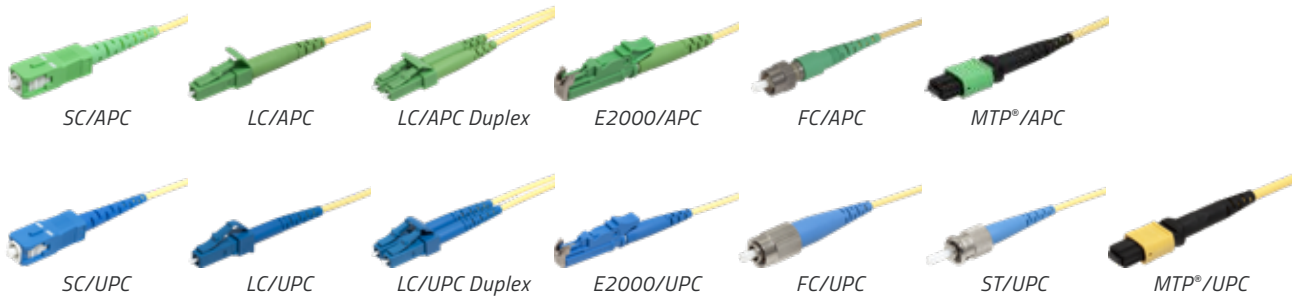
OptiTap® Corning hardened connectors can be fitted to Droptic® LM4, LX030PU and LX030PUK drop cables when packaged in a coil.





## Standard connectors

### Single-mode (SM) connectors



### Multi-mode (MM) connectors



## Cable protection

Telenco also provides expertise in cable protection. This is very important to maintain the cables' properties and ensure efficient optical performance.

### Eline® and Droptic® cable protective end caps

Telenco offers specific protective end caps with a pull end to preserve the ends of pre-connected cables during installation. The length of the protective end cap can be adjusted on request, from 30cm to 1m.



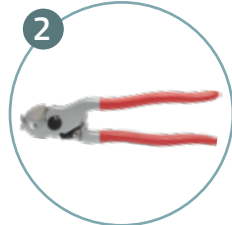
## Cable preparation

To prepare the cables and access the optical fibre, these tools are essential.

### Eline® riser cable:



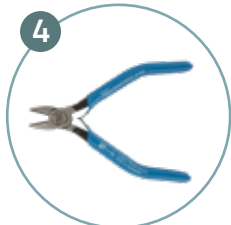
1  
Optima cut resistant gloves tactile  
PN. 17558



2  
Cable cutters copper-aluminium Ø20mm  
PN. 0397



3  
TED Equipment® Cable riser mid span splitter  
PN. 34001

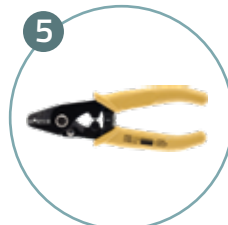


4  
TED Equipment® Diagonal cutting pliers  
PN. 31028

OR



4  
Kevlar shears  
PN. 4907



5  
Three hole fibre optic stripper  
Ø 3mm - 900µm - 250µm  
PN. 4906

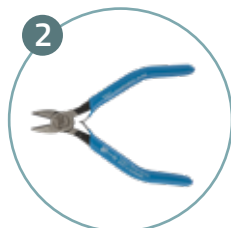


6  
Decontamination kit cable & fibre  
PN. 18397

### Droptic® drop cable:

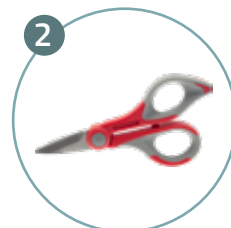


1  
Optima cut resistant gloves tactile  
PN. 17558



2  
TED Equipment® Diagonal cutting pliers  
PN. 31028

OR



2  
Kevlar shears  
PN. 4907

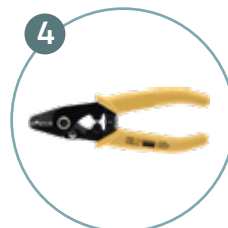


3  
TED Equipment® Cable riser mid span splitter  
PN. 34001

OR



3  
TED Equipment® Cable opening tool for distribution cables Ø 5,8 - 12mm  
PN. 34005



4  
Three hole fibre optic stripper  
Ø 3mm - 900µm - 250µm  
PN. 4906



5  
Decontamination kit cable & fibre  
PN. 18397



# TELENCO: INNOVATION AT THE SERVICE OF WORLDWIDE NETWORKS

Telenco is a group of entities specialised in the design, manufacture and global marketing of future-proof solutions for telecom and connectivity infrastructures. Since 1999, the Group has organized its business activity on offering innovative solutions meeting the field challenges of each specific market.

## A PROVEN EXPERTISE

### DESIGN



Over **20 years** of R&D expertise and an integrated test laboratory

### MANUFACTURE



**18 000 m<sup>2</sup>** of production units in Europe and Tunisia

### LOGISTICS



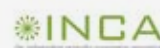
**21 000 m<sup>2</sup>** of storage area in the world

## A CERTIFIED INDUSTRIAL PLAYER...



## ...AT THE CORE OF A NETWORKS OF EXPERTS IN TELECOMMUNICATIONS

Member of ARCEP expert committee





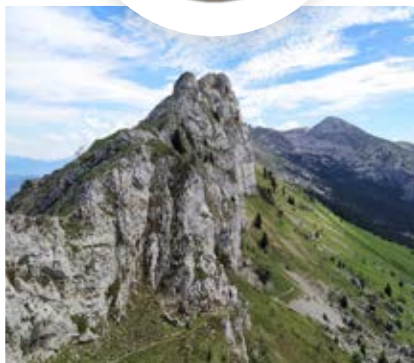
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## A RESPONSIBLE & SUSTAINABLE COMPANY

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# PRODUCT INDEX

## D

Droptic® LC050HDPE drop cable.....	30
Droptic® LM1 drop cable.....	22
Droptic® LM1L drop cable.....	21
Droptic® LM2BK drop cable.....	23
Droptic® LM2 drop cable.....	22
Droptic® LM3 drop cable.....	23
Droptic® LM4 drop cable.....	24
Droptic® LM7 drop cable.....	25
Droptic® LM8BK drop cable.....	26
Droptic® LM8 drop cable.....	25
Droptic® LM030HDPE drop cable.....	27
Droptic® LM040BK adducting cable.....	28
Droptic® LX030PU and LX030PUK drop cables.....	29
Droptic® LX048DS drop cable.....	30
Droptic® Nano blowable cables.....	31

## E

Eline® and Droptic® cable protective end caps.....	41
Eline® façade cable.....	17
Eline® Riser cable.....	18

## M

Multi-mode (MM) connectors.....	41
---------------------------------	----

## O

OptiTap® Corning hardened connectors.....	40
Outdoor pre-connected breakout cable 2 FO.....	35
Outdoor pre-connected breakout cable 12-24 FO.....	36

## S

SC connectors with permanent protection.....	40
Single-mode (SM) connectors.....	41

## T

Telenco® field mountable connectors.....	40
Telenco® Secure SC connectors.....	40

## X

Xtrem Fire drop cables.....	36
-----------------------------	----





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- Custom FO patch cable configurator
- Technical and product focus

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