



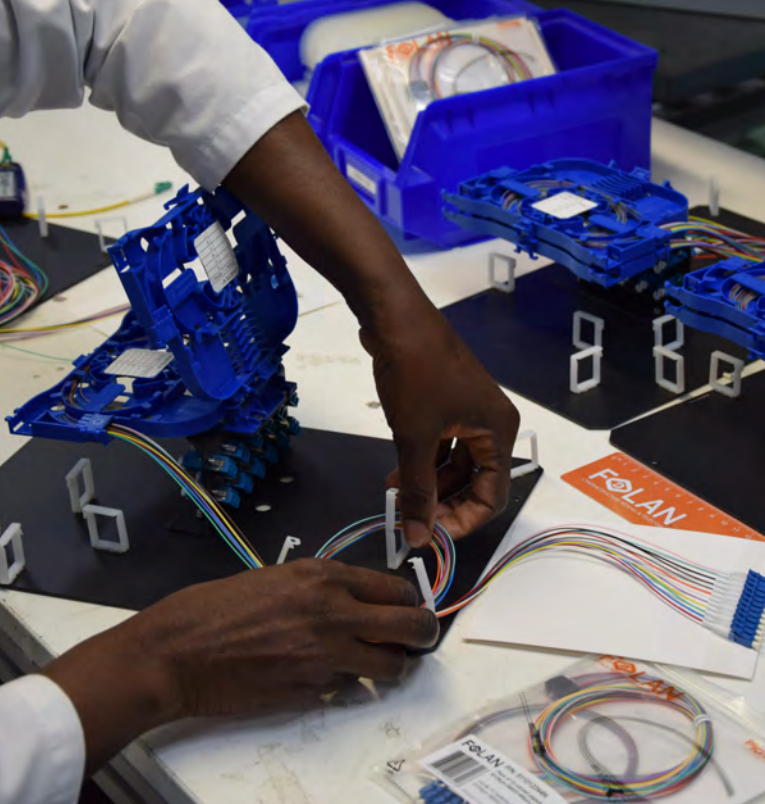
CATALOG

ÉDITION N°24



04	PRESENTATION OF FOLAN
08	DIDACTIC PAGES
18	ENCLOSURES
40	PATCH PANELS
60	BOXES
82	AERIAL EQUIPMENT
90	CABLES & PRE-TERMINATED CABLES
100	PATCHCORDS & PIGTAILS
106	COPPER
114	COMPONENTS
134	TECHNICIAN EQUIPMENT
142	TECHNICAL DATA
146	GENERAL CONDITIONS OF SALE
148	GLOSSARY
152	APPLICATIONS INDEX





FOR OVER 35 YEARS, FOLAN, THE FRENCH SPECIALIST IN DATA, TELECOM, ENERGY AND SECURITY INFRASTRUCTURES, HAS BEEN AT YOUR SERVICE!

Founded in 1988 in Lyon, France, FOLAN has established itself as a leading player in the design and manufacture of passive solutions for fibre optic networks: FTTx, core networks, data centers, smart cities, and industrial environments. With over 35 years of experience, FOLAN relies on a comprehensive range of products covering all markets: patch panels, cabinets and boxes, cables and pre-terminated cables, cords and pigtails, copper solutions, and more.

A proven expertise developed over the years and a culture firmly focused on innovation have enabled us to expand into related markets such as renewable energy, broadcast, video surveillance, and defence.

«Technical excellence guides every one of our designs. At FOLAN, we incorporate innovation from the development phase to ensure reliable, durable solutions that are perfectly suited to the most demanding fibre optic infrastructures.»
- Ludovic Robert, President of FOLAN

OUR STRENGTH? FLEXIBLE AND RESPONSIVE TEAMS THAT ARE ATTENTIVE TO OUR CLIENTS' NEEDS!

Our design office develops and tests our equipment, supported by the laboratory that validates their performance. Our production teams then manufacture the products efficiently. Each production batch is inspected by our quality teams, ensuring full compliance with standards. Finally, our sales teams, consisting of field and office-based staff in France and internationally, are here to support you in your projects:
contact@folan.net
+33 (0)4 78 800 810



FOLAN IN 5 DIVISIONS



TECHNICAL DIVISION

Design office, testing laboratory, quality control



PRODUCTION DIVISION

Three production centres, handling small, medium, and large series



COMMERCIAL DIVISION

Client support, availability, technical expertise to guide and advise, responsiveness



MARKETING DIVISION

Client project management, development of solutions and communication tools



LOGISTICS DIVISION

Stock management, quality control, shipping services, delivery optimisation

A STRONG COMMITMENT TO RESPONSIBLE GROWTH

At FOLAN, we believe that sustainable growth is built on a balance between economic performance, social responsibility, and environmental stewardship. This vision guides our strategy and daily actions.

Our commitment is reflected in an integrated management system certified to ISO 9001 (quality), ISO 14001 (environment), and OHSAS 18001 (occupational health and safety). But we go far beyond mere compliance with QSE standards: our continuous improvement approach incorporates a genuine societal perspective, driven by management and shared across all employees.

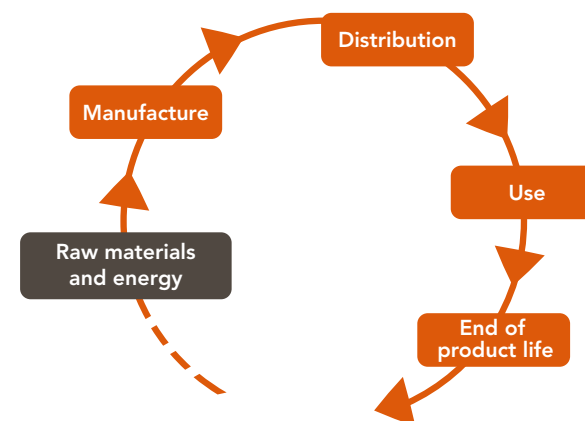
A pioneer in its sector, FOLAN joined the United Nations Global Compact initiative in 2013, becoming one of the first French SMEs to voluntarily commit to its ten fundamental principles. This commitment has been recognised by the EcoVadis platform, which for over a decade has praised our positive impact, ambition, and the alignment of our actions with the highest international standards.

We also build long-term, trust-based relationships with committed and rigorously selected suppliers. Our goal: to create a virtuous circle benefiting our clients, partners, and the planet.

Every day, FOLAN teams work to promote a more circular economy by integrating eco-design, product lifecycle management, and carbon footprint reduction at the core of our innovation processes.



CSR COMMITMENT: CONCRETE INITIATIVES THAT MAKE A DIFFERENCE



LIFE CYCLE ANALYSIS: DRIVING ECO-DESIGN

Each product is designed with a comprehensive view of its environmental impact. From the design phase through to industrialisation, we integrate strict eco-design criteria, including end-of-life management and equipment recycling.

We assess the carbon footprint of our products by analysing their entire life cycle: materials, components, manufacturing processes, and transportation methods. This approach allows us to identify continuous improvement opportunities to optimise environmental performance while meeting our clients' technical requirements.

A CROSS-FUNCTIONAL COMMITMENT FOR CONTROLLED CARBON IMPACT

We optimise our flagship products to meet both economic and environmental requirements. Our approach encompasses the revision of design, aesthetics, industrialisation, and packaging, while maintaining full functionality. We explore component reduction, material standardisation to reduce weight, and prioritise single-material (mainly cardboard) and compact packaging to optimise transport. Our goal is to minimise the carbon footprint by eliminating unnecessary materials and promoting recyclability. Since implementing this procedure, the packaging weight of a box has been reduced by 26%.

BEFORE



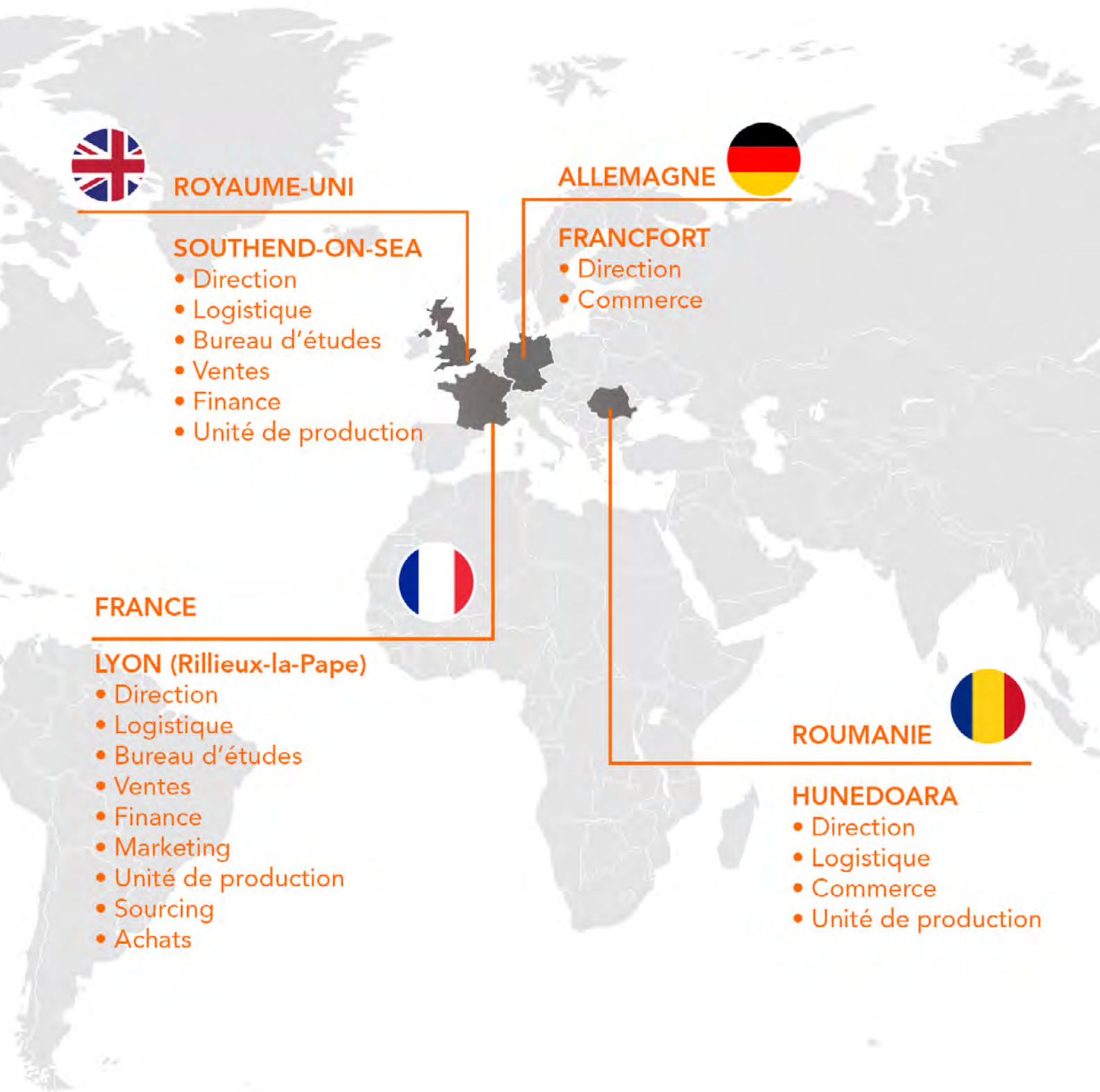
AFTER



READ OUR CSR REPORT



4 PRODUCTION SITES WORLDWIDE,
TO MEET ALL OUR CLIENTS' NEEDS



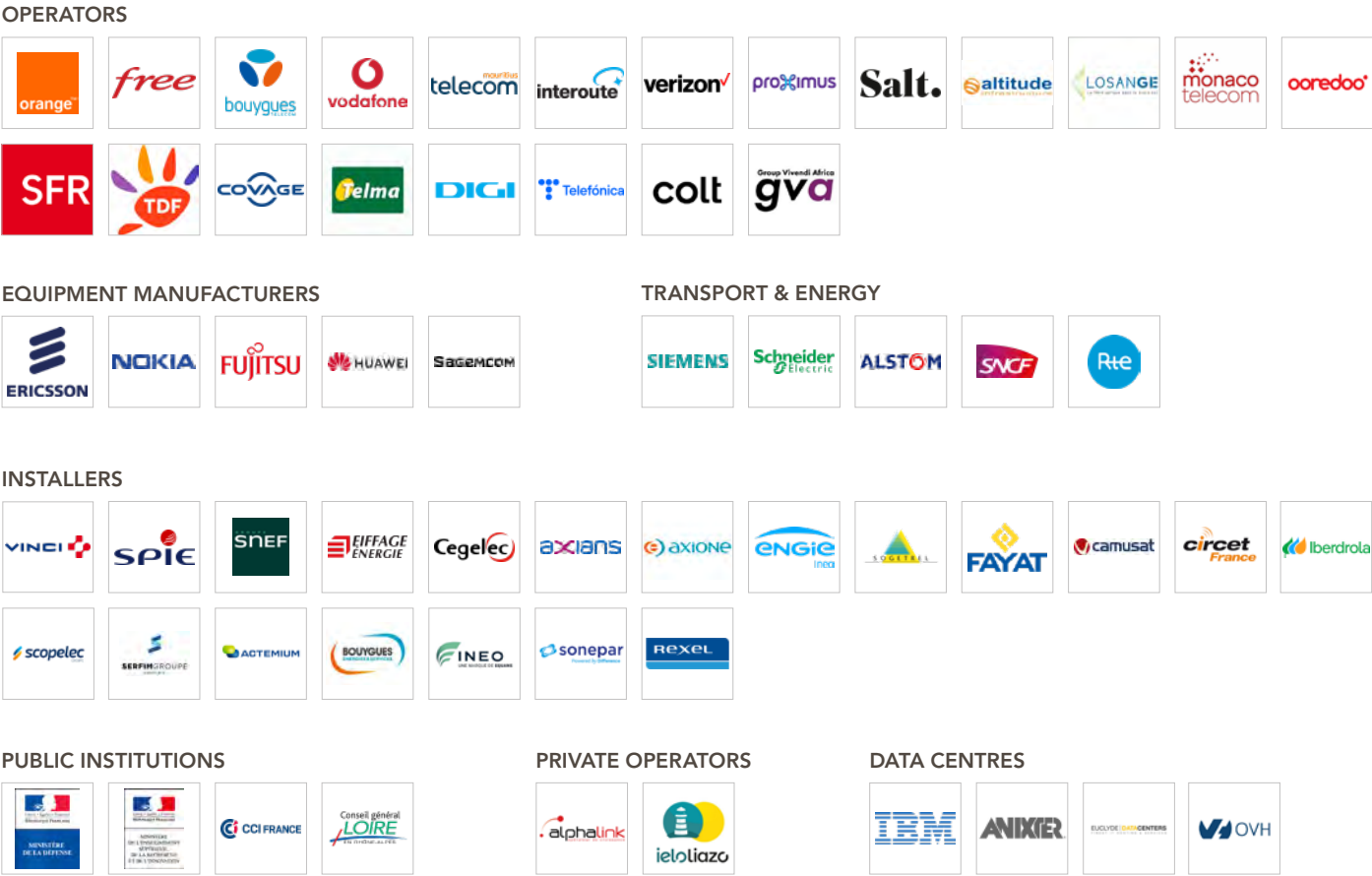
FOLAN IS A MEMBER OF SEVERAL INDUSTRY ASSOCIATIONS



IN FRANCE
ARCEP: Regulatory Authority for Electronic Communications and Posts. FOLAN contributes to ARCEP's work as a Fibre Optic Expert.
INFRANUM: Federation of Companies Partnering with Connected Territories

INTERNATIONALLY
FTTH COUNCIL EUROPE: Promoting FTTH development in Europe
BREKO: Promoting fibre optic network development in Germany
VATM: Promoting telecommunications development in Germany

THEY TRUST US



FOLAN BARE FIBRE

WHICH SELECTION CRITERIA?

1BANDWIDTH	2DISTANCE
1 Gigabit	Short
10 Gigabit	Long

SINGLE-MODE BARE FIBRE

Developed to meet the growing bandwidth demands of telecommunications, the single-mode fibre range is designed to satisfy user requirements. The standard single-mode fibre is G652, a specification that has evolved into several variants.

G.652.D SINGLE-MODE FIBRE	G.655 SINGLE-MODE FIBRE	G.657.A2 SINGLE-MODE FIBRE
The highest-performing and most common fibre in this range. (IEC 60793-2-50 / B-652.D standard)	Non-Zero Dispersion Shifted (NZDS) fibre, used for long-distance DWDM multiplexing networks. (IEC 60793-2-50 / B-655 standard)	Bend-Insensitive Fibre, designed to facilitate cabling, particularly within buildings. (IEC 60793-2-50 / B-657.A2 and B-657.B2 standards)

MULTIMODE BARE FIBRE

Characterised by a doped silica core with a refractive index that gradually increases towards the centre, there are two main families of multimode fibre: 50/125 µm and 62.5/125 µm.

GRADED-INDEX FIBRE	
Available in 62.5/125 µm (OM1) or 50/125 µm (OM2, OM3, OM4), it is primarily used in LAN networks.	
The 50/125 µm fibres (OM3 and OM4) are mainly used for high-speed local area networks, particularly for 10 Gb/s applications (IEC 60793-2-10 (ITU-G651) and TIA/EIA-492 AAAC/492 AAAD standards).	

Wavelength	APPLICATION	OPTICAL FIBRE PERFORMANCE*				
		9/125 µm	62,5/125 µm	50/125 µm		
		G652D OU G657A2	OM1	OM2	OM3	OM4
850 nm	1 Gigabit	-	275 m	550 m	550 m	550 m
	10 Gigabits	-	33 m	82 m	300 m	400 m
1300 nm	1 Gigabit	5 000 m	550 m	550 m	550 m	550 m
	10 Gigabits	10 000 m	82 m	82 m	82 m	82 m

All our bare optical fibres are available on reels of 500, 1000, 2000, 3000, and 4000 m.
(*) According to IEC 11801 standard

COLOUR CODES

FRANCE TÉLÉCOM

1	2	3	4	5	6	7	8	9	10	11	12
Red	Blue	Green	Yellow	Purple	White	Orange	Grey	Brown	Black	Light Blue	Pink

FOTAG IEEE 802.8

1	2	3	4	5	6	7	8	9	10	11	12
Blue	Orange	Green	Brown	Grey	White	Red	Black	Yellow	Purple	Pink	Light Blue

FOLAN CABLING

Our «Cabling» range includes all equipment designed to house patch panels, supporting the deployment of FTTH, FTTA, and FTTO fibre networks, while providing solutions tailored to the modularity requirements of data centres.

WHICH SELECTION CRITERIA?

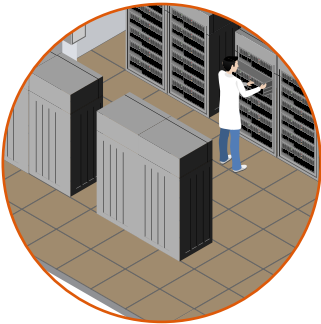
DESTINATION	ENVIRONMENT	DIMENSIONS
FTTH Fibre To The Home	Indoor installation in premises such as NRO, SRO, shelters, or dedicated rooms	The number of subscribers to be connected is a key factor in determining the appropriate solution size.
FTTA Fibre To The Antenna		
FTTO Fibre To The Office		
DATA CENTER	Outdoor installation in PM (Distribution Point)	
LAN-CABLING		



OUTDOOR OPTICAL DISTRIBUTION FRAMES, STREET CABINETS

FOLAN offers street cabinets equipped with patch panels and accessories, configurable and adaptable to meet all FTTH requirements.

Two models are available: PM100, serving up to 100 subscribers, and PM360, serving up to 360 subscribers.



INDOOR OPTICAL DISTRIBUTION FRAMES

The RIGA optical distribution frames developed by FOLAN are perfectly suited for installation in NROs, SROs, and shelters, and can meet all types of requirements thanks to built-in cord management trays that allow optical cords to exit from the top or bottom. These frames are available in our FTTH, FTTA, and data centre offerings.

To meet modularity needs, RIGA optical distribution frames are available in two versions: single and double.



EQUIPPED CABINETS AND BOXS

To suit all types of installations, FOLAN offers customised solutions of partially or fully equipped cabinets and boxes. Designed to accommodate both active and passive equipment, FOLAN walls and cabinets can also house a full range of accessories (electrical, cable management, etc.). These products are particularly recommended for FTTA and FTTO deployments.

FOLAN offers a wide range of sizes, from 6 to 22 U for walls and from 22 to 42 U for cabinets.

FOLAN TERMINAL EQUIPMENT

Terminal equipment refers to all devices and accessories used to manage the end of a cable and to connect (or patch) it to active equipment (transmitters, receivers, converters, etc.) or to another cable. FOLAN offers two types of terminal equipment:

PATCH PANELS

Installation in a cabinet, wall, or distribution frame

OPTICAL BOXES

Wall, DIN rail, or pole-mounted application

WHICH SELECTION CRITERIA?

1 ENVIRONMENT



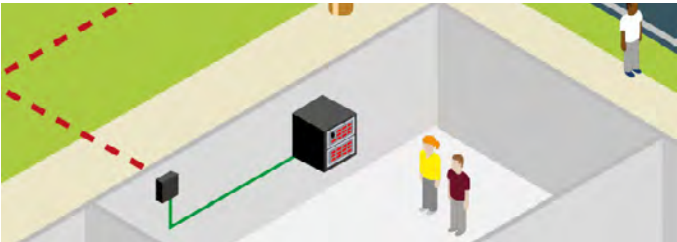
OUTDOOR

Requires a specific level of ingress protection

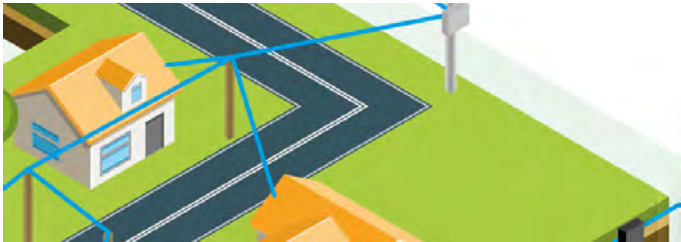


INDOOR

2 INSTALLATION



In a cabinet, wall, or distribution frame



Wall, pole-mounted, in a manhole, or directly buried

3 CONNECTION METHOD

DIRECT CONNECTORISATION
«PLUG & PLAY»

Each fibre in the cable is connectorised (either in the factory or on-site), and each connector is linked to a coupler for deployment at a patch panel.

The equipment is delivered with couplers only.

SPLICING ONTO A PIGTAIL
«PIGTAILING»

Each fibre is spliced onto a 900 µm pigtail, with the other end factory-connectorised and linked to a coupler at the patch panel. This method combines the quality of a factory-mounted connector with the speed and reliability of splicing.

The terminal equipment is delivered complete with couplers, pigtails, and splice cassettes.

4 DIMENSIONS

Weight
in kg
(bare or equipped)

Height
From 1 to 4 U for patch
panels
(1 U = 44.45 mm)

Width
19" (ETSI) or 21" for patch
panels

Depth
250 or 450 mm for patch
panels

5 MATERIAL

METAL

PLASTIC

6 OPTICAL FIBRE CAPACITY

6 F

12 F

24 F

36 F

48 F

72 F

96 F

144 F

This number refers to the fibres that can be managed within the patch panel or box and varies depending on the connection method: direct connectorisation or splicing onto pigtails.

7 TYPE OF ADAPTER SLOTS



ST

Round format:
for ST or FC connectors



SCD

Rectangular format:
for SCD or LC Quadruplex connectors



SC

Rectangular format:
for SC, LC-D, or E2000
connectors

8 NUMBER AND TYPE OF INLETS/OUTLETS

Depending on the technique used (continuity, tapping, or cable branching), the number of cables to be connected and the type of inlets/outlets have a significant impact on the choice of terminal equipment.

Open entry

Cable gland cover

Brush cable entry enhanced
dust protection

Gland enhanced water
and dust protection

9 LES CÂBLES

Acceptable cable diameter and type

Cable fastening using plastic or metal cable ties, or via a gland

10 AVAILABLE OPTIONS

Din Rail

Lockable with key or padlock

Patchcord security

Earthing

Terminal equipment
identification area

Optical fibre identification

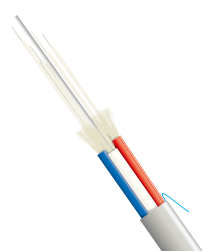
Cable management
system

FOLAN CABLES

The environment in which an optical fibre cable will be installed is a key factor in determining its structure and armouring. To ensure optimal cable performance, several aspects must be considered.

WHICH SELECTION CRITERIA?

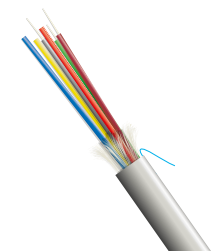
1 STRUCTURE



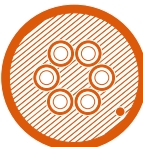
BREAKOUT



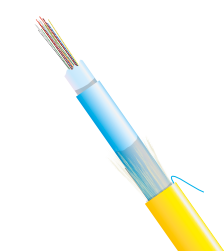
Connector assembly on 2 mm strands



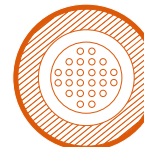
DISTRIBUTION



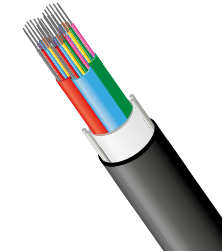
Splicing or plug assembly on 900 µm strands



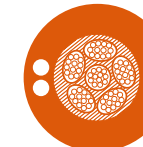
CENTRAL TUBE



Splicing on 250 µm strands from 2 to 48 OF maximum



MICROMODULE



Mass splicing from 12 to 288 OF

2 NUMBER OF OPTICAL FIBRES



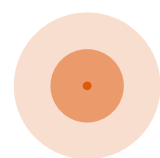




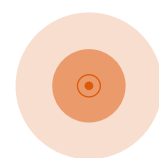


From 1 to 288 fibres depending on the cables

3 THE TYPE OF OPTICAL FIBRES



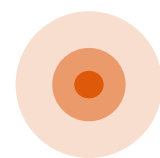
SINGLE-MODE FIBRE G652D
9/125 µm - OS2



G657A2 SINGLE-MODE FIBRE
9/125 µm - LOW BEND RADIUS



MULTIMODE FIBRE
62.5/125 µm - OM1



MULTIMODE FIBRE 50/125 µm - OM2 - OM3 - OM4 - OM5

4 INSTALLATION LOCATION

It is essential to know whether the cable will be installed indoors and/or outdoors. The type of protection required must also be taken into account, depending on the constraints of the installation environment.



OUTDOOR

Cable with high mechanical strength, with a black HDPE sheath.

PEHD









INDOOR

Cable with fire-resistant properties thanks its flexible LSZH sheath in various colours (white, yellow, orange, grey, magenta, turquoise).

LSZH

RPC



INDOOR/OUTDOOR

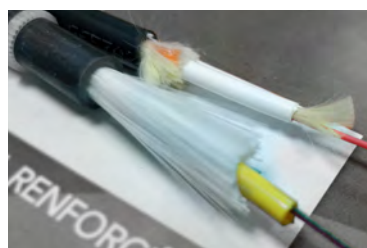
Cable with good fire resistance properties while withstanding outdoor environments thanks to its black LSZH sheath.

LSZH

RPC



5 PROTECTION



GLASS/ARAMID STRANDS

These provide basic protection for optical cables.





GLASS FIBRE BRAID

The fibreglass braid maintains the dielectric structure of the cable and provides excellent protection.





METAL ARMOR

This provides optimum protection against rodents and also protects the cable from crushing.



6 LENGTH AND PACKAGING





UP TO 100 METRES IN REELS

ON REEL OFR LENGTHS OVER 100 METRES*

(*) For certain types of cable, the use of a reel for lengths greater than 50 metres is recommended.

FOLAN PRE-TERMINATED CABLES

A cable is said to be pre-terminated when it is supplied with connectors already mounted on the fibre optic strands. For this type of application, the most commonly used cables are breakout and distribution cables, as the diameter of their strands (2 mm and 900 µm) allows for direct fibre connection. Other multi-fibre cables (micromodules) can also be pre-terminated but require a cable splitting device and re-tubing of the multi-fibres.

Pre-terminated cables offer significant advantages:

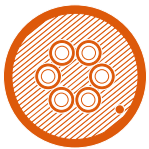
- Optimised optical values thanks to factory-installed connectors and measurements;
- Time savings during installation by eliminating the need for tools to insert the plugs;
- Simplified installation and management of cabling in cabinets and cable trays;
- Customised solutions according to customer specifications and requirements.

WHAT ARE THE SELECTION CRITERIA?

1 STRUCTURE



BREAKOUT



DISTRIBUTION



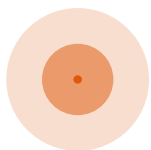
MICROMODULES

2 THE NUMBER OF OPTICAL FIBRES

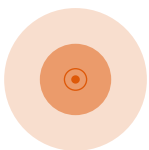


FROM 1 TO 144 FIBRES

3 LE TYPE DE FIBRES OPTIQUES



SINGLE-MODE FIBRE G652D
9/125 µM - OS2



G657A2 SINGLE-MODE FIBRE
9/125 µM - LOW BEND RADIUS



MULTIMODE FIBRE
62.5/125 µM - OM1



MULTIMODE FIBRE 50/125
µM - OM2 - OM3 - OM4 - OM5

4 LE DIAMÈTRE DES FIBRES OPTIQUES

Ø 900 µm
Cable entry at the rear or inside an end device

Ø 2 mm
Cable entry at the front of an end device for crossconnecting

5 THE TYPE OF CONNECTORS



SC / SC-APC



ST



LC / LC-APC



E2000



FC / FC-APC



MTP® OR MPO
MÂLE OR FEMALE

Other connectors are available on request.

6 TYPE OF PROTECTION

SIMPLE PROTECTION

This protection consists of a black expandable braided sleeve, fire and smoke rated according to NF F16-101/ NF F16-102, which covers the preconnected ends of the cable.



STANDARD PROTECTION

In addition to the simple protection, this includes a black, unsplit, spiral PVC reinforcement sheath covering the sock sheath and a black cap protecting the ends.



ADVANCED PROTECTION

In addition to the standard protection, this protection features a pull system mounted on one end of the pre-terminated cable, thus avoiding stress on the fibres during pulling.



7 LENGTH AND PACKAGING



UP TO 100 METRES ON REELS

ON REEL OFR LENGTHS OVER 100 METRES*
(*) for certain types of cable, the use of a reel for L > 50 metres is recommended

8 AVAILABLE OPTIONS

Reflectometry

Fibre identification (colours, numbered rings, etc.)

Additional accessories (labels, duplex rings, elbow sleeves, etc.)

Fibre offset

FOLAN CORDS AND PIGTAILS

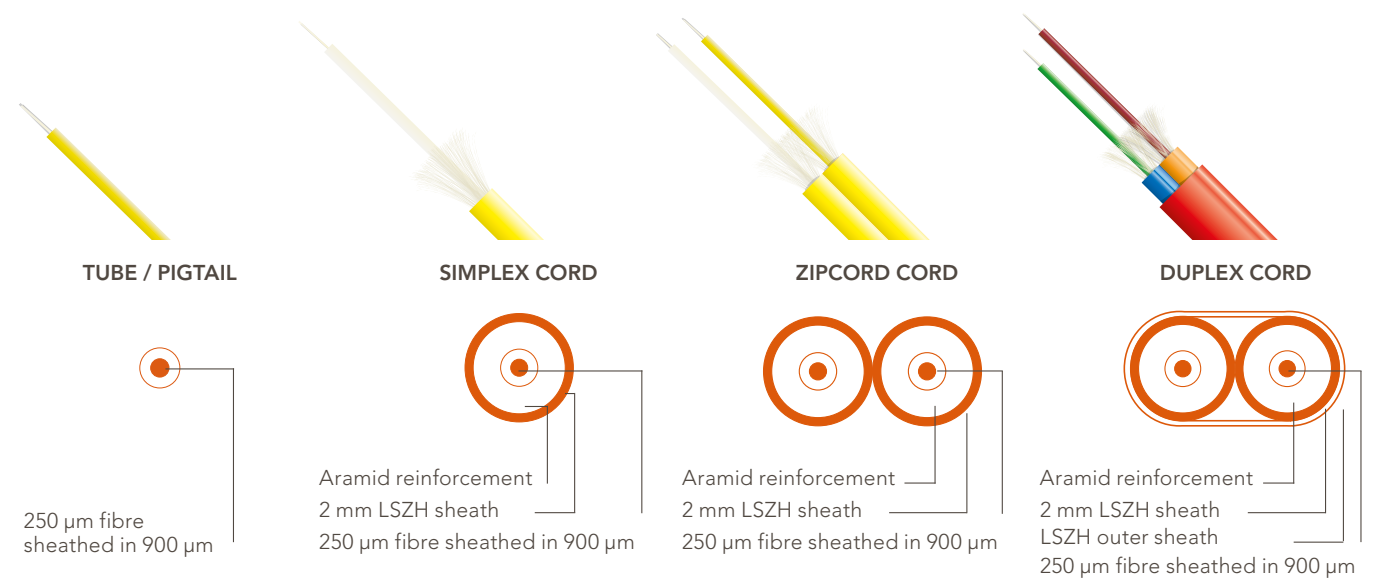
FOLAN optical cords or jumpers connect the various components of your installation: cable heads, optical patch panels, walls and active components.

Available in various lengths and made from the most widely used fibres and connectors on the market, they are particularly useful for short-distance indoor connections.

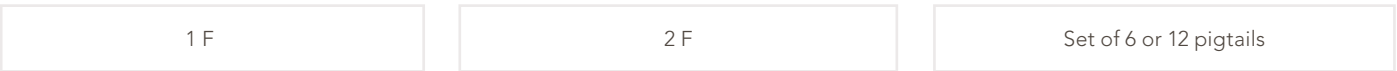
FOLAN cords and pigtails consist of a length of tube or cable with 1, 2 or 4 wired points.

WHAT ARE THE SELECTION CRITERIA?

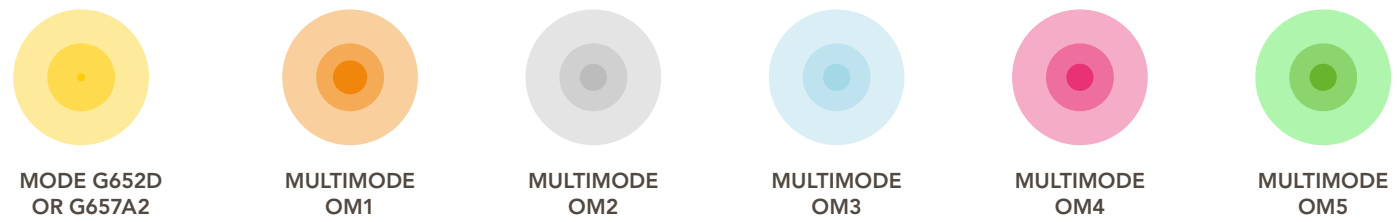
1 STRUCTURE



2 THE NUMBER OF OPTICAL FIBRES



3 TYPE OF OPTICAL FIBRES



FT and OFTAG colour codes can be used for pigtails in sets of 6 or 12.

4 LE TYPE DE CONNECTEURS

	SC	FC	ST	LC	MU	E2000	MTRJ
							
Standards	IEC 61754-4	IEC 61754-13	IEC 61754-2	IEC 61754-20	IEC 61754-6	PR IEC 61754-35	IEC 61754-18
Ferrule diameter	2,5 mm			1,25 mm			-
Clip-on Mounting	Push-Pull	Vis	Baïonnette	Push-Pull			
Body colour	SM APC: Green	Corps métallique Al/Zn		SM APC: Green	SM APC: Green	SM APC: Green	Noir
	SM UPC: Blue			SM UPC: Blue	SM UPC: Brown	SM UPC: Blue	
	MM PC: Beige			MM PC: Beige	MM PC: Brown	MM PC: Beige	
Sleeve type	Long or Short	Long		Short	Long		
Sleeve colour	SM APC: Green	SM APC: Green	Black	White	SM APC: Green	SM APC: Green	Black
	SM UPC: Black	SM UPC: Black			SM UPC: Lavender	SM UPC: Black	
	MM PC: Black	MM PC: Black			MM PC: Lavender	MM PC: Black	

5 OPTICAL PERFORMANCE

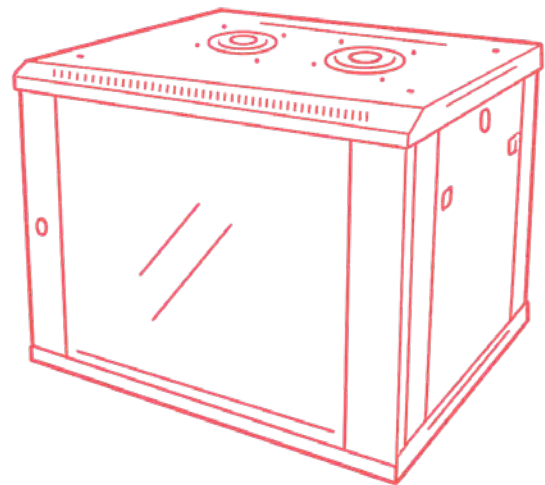
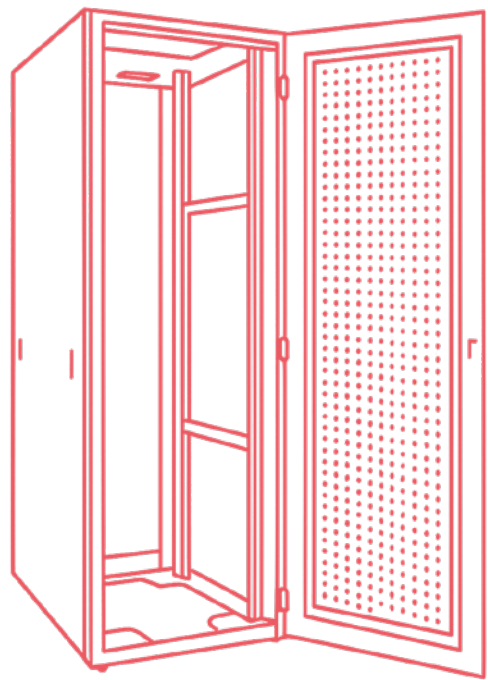
	SM APC	SM UPC	MM PC
Maximum attenuation - IL (IEC 61300-3-4)	≤ 0,25 dB	≤ 0,25 dB	≤ 0,50 dB
Reflectance - RL (IEC61300-3-6)	≥ 60 dB	≥ 50 dB	≥ 35 dB



6 LENGTH AND PACKAGING

	PIGTAILS	CORDS
PACKAGING	Individual In sets of 6, monochrome or coloured In sets of 12, monochrome or coloured	Individual
STANDARD LENGTHS	2 m	0,5 to 20 m*

* Other lengths are available on request.



20	STREET CABINETS
21	ACTIVE CABINETS
22	RIGA OPTICAL DISTRIBUTORS
23	CABLE SPLITTING BOXES
24	PROTECTIVE SHEATHING
26	CABINETS
29	DISTRIBUTION FRAMES
30	BOX KITS
31	19" WALL BOX
32	10" WALL NETWORK BOX
33	CABINETS ACCESSORIES
34	ACCESSORIES



ENCLOSURES

STREET CABINETS



Drawing on its experience in fibre optic network solutions, FOLAN offers a comprehensive range of street cabinets equipped with patch panels and accessories that can be configured and adapted to meet all FTTH network requirements in terms of distribution points (DP) and optical sub-distribution frames (OSDF).

The street cabinets offered can be completely dismantled and reassembled without interrupting service.



PASSIVE OPTICAL DISPATCHER PM100

Simple skin street cabinet that can serve 100 households in a moderately dense area.



PASSIVE OPTICAL DISPATCHER PM360

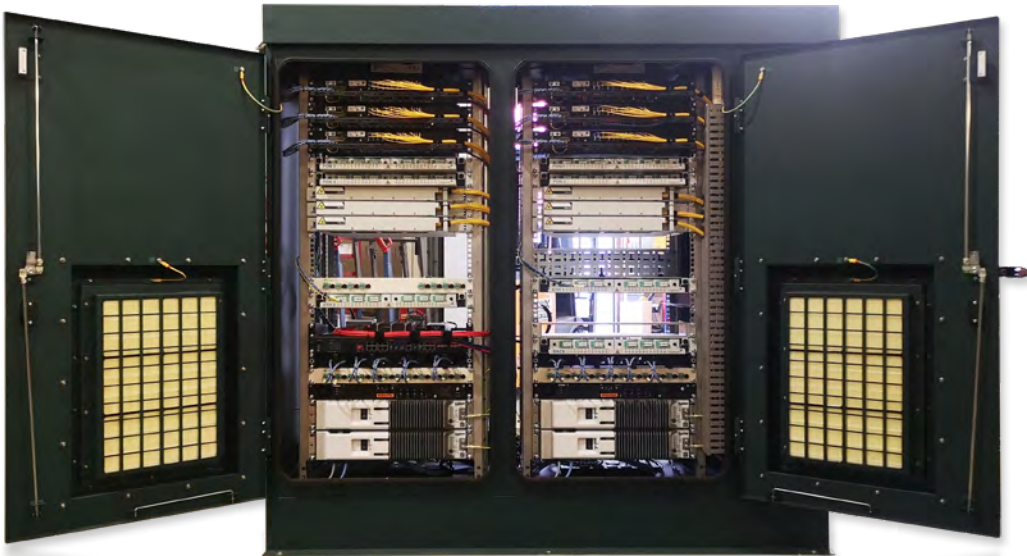
Simple skin street cabinet that can serve 360 households in a moderately dense area.

FEATURES		
	PM100	PM360
19" zones	1	2
19" capacity	15 U	28 U
Serviced slots	100	360
Dimensions (W x H x D mm)	800 x 1050 x 350 - Including 200 mm base	1600 x 1625 x 350 - Socle 200 mm included
Empty weight (kg)	40	110
Material/Colour	Aluminium / Grey or Ivory	
BEC support from 1 to 1728 OF	1 integrated plate in the lower section	2 integrated plates in the lower section
Cable and cord guides	Integrated guide hooks in the base	
Roof / Door(s) / Side panels	Removable	
Absorbers	Verticals on the left	Verticals in the centre
Protection rating	IP55	
Impact resistance rating	IK10	
Options	Template for fixing in a concrete foundation slab with sleeve recess Prefabricated base in CCV (Cement, Composite, Glass)	
Fixing	On the ground	

ACTIVE CABINETS



FOLAN supports you in integrating your network solutions with a range of services tailored to your needs. We help you select the cabinet best suited to your project and ship it directly to you. Enjoy a customised installation with the options of your choice (PDU, fans, etc.). We manufacture and equip your cabinets using factory components, guaranteeing robustness and performance. Your cabinets are wired, labelled, tested and ready to use, for simplified commissioning. Our experts design the internal components, create the wiring diagrams and ensure optimal management. A tailor-made solution developed from A to Z to meet your specific needs. Finally, we carry out tests and configurations in real conditions to guarantee an operational installation upon delivery.



FEATURES	
Supply only	Selection and delivery of the cabinet suited to your needs
Configuration	Installation of selected options (PDUs, fans, etc.)
Cabling & Pre-equipment	Complete assembly with components supplied or provided by the customer
Complete integration	Wiring, labelling, testing and validation. Ready to use
Computer-aided design	Study of internal diagrams, cable routes, management and supervision plans
100% customised solution	Development of a complete solution, designed from A to Z according to your specific needs
Testing and validation platform	Testing of equipment in real conditions prior to delivery

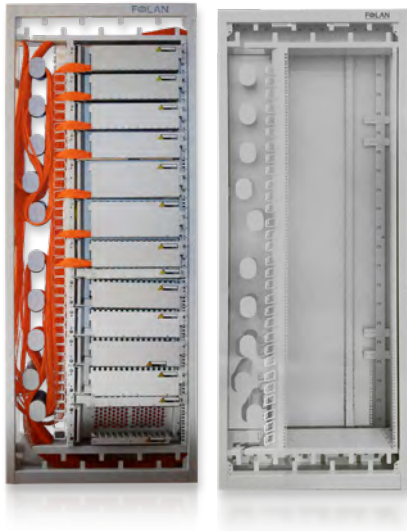
RIGA - OPTICAL DISTRIBUTORS



RIGA indoor optical splitters have been designed to fit perfectly into the technical rooms of FTTH infrastructures (such as NROs, SROs, shelters, etc.) or data centre infrastructures in Meet-Me Rooms.

Depending on the available space and the number of fibres to be connected, FOLAN offers two products: a single optical splitter and a double optical splitter. They can be installed using wall mounts or directly on the floor to meet every need.

Compact RIGA splitters offer high connection density. Their design makes them compatible with pivoting optical patch panels (such as PORTO and NIAGARA patch panels) and cable expansion boxes.



RIGA SINGLE

The RIGA single optical distributor consists of:

- vertical cylinder absorbers on the left-hand side, allowing optical cords to be mixed inside the distributor and exiting at the top or bottom;
- channels at the top and bottom of the distributor that allow horizontal communication between several juxtaposed distributors;
- a 19" section that can accommodate all types of equipment compatible with this format (optical patch panels, active equipment, etc.), including the NIAGARA family of pivoting patch panels.
- an opening at the top allowing cables to exit from the top.

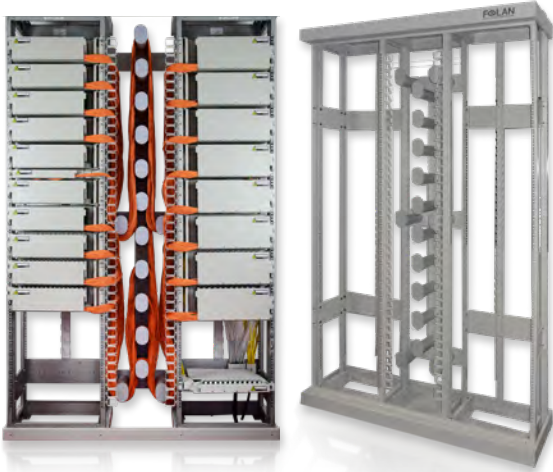
Single RIGA optical splitters can be easily juxtaposed to serve several thousand subscribers

RIGA DOUBLE

The RIGA double optical splitter consists of:

- a central area for managing the cross-connections of optical cords using cylinders inside the distributor. This structure allows cross-connections to be managed with a single cord length of 4 m;
- two 19" sections that can accommodate all types of equipment compatible with this format (optical patch panels, active equipment, etc.), including the Porto and Niagara families of pivoting patch panels.

Each 19" area includes a device for managing re-tubing sheaths and allows for a thirdfixing point for pivoting patch panels from the FOLAN range.



FEATURES		
	RIGA SINGLE	RIGA DOUBLE
19" zones	1	2
19" capacity	41 U	42 U
Dimensions (W x H x D mm)	800 x 2200 x 300	1400 x 2200 x 305
Empty weight (kg)	55	50
Material/Colour	Steel / Grey	
BEC support from 1 to 1728 OF	2 integrated plates at the top and bottom 3 integrated plates on the side	4 integrated plates at the bottom 4 integrated plates on the side
Cable and cord guides	Integrated guide hooks in the bottom	
Cord lengths	Defined according to wiring chart	4 m
Roof/Floor	Open for cable passage	
Resorbers	Vertical on the left	Vertical in the centre
Options	Removable side and rear panels Front door with lock	-
Mounting	Must be fixed to the floor, then wall, back-to-back or side-by-side	

CABLE SPLITTING BOXES



Mainly used in optical distribution frames, cable splitter boxes (CSBs) are installed in optical distribution frames and ensure excellent support for incoming cables, as well as safe fibre distribution thanks to a simple and robust mounting system.

CBDs consist of a secure steel box. They contain the fasteners and reinforcements necessary for the stability and support of the carriers, as well as the incoming cable with a stress relief system using aramid strands.

The protective sleeves, with diameters of 4.3, 5 or 10 mm, are held securely in place by a comb at the end of the expansion box



CSB 2 : 96 FIBRES

CSB 3 : 288 FIBRES

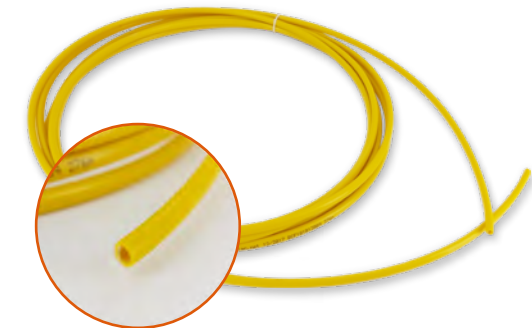
CSB 4 : 1728 FIBRES

MATERIAL/COLOUR			
	CSB 2	CSB 3	CSB 4
Capacity	96 OF	288 OF	1728 OF
Expansion	Up to 6 translucent white PP corrugated conduits, Ø 5 mm 399021082	Up to 24 yellow fire-retardant PVC sleeves Ø 4.3 mm 139991022	Up to 12 black corrugated PP conduits, Ø 10 mm 399021182
Dimensions (W x H x D mm)	44 x 151 x 32,2	54 x 157 x 35	80 x 165,5 x 48
Material/Colour	Steel / Grey		
Fixing centre distance (mm) (and screws)	30 for the FOLAN strip (2 sheet metal screws supplied) 20 in street cabinets (4 M3 screws supplied)	30 for the FOLAN strip (2 sheet metal screws supplied) 40 in street cabinets (4 M3 screws supplied)	30 for the FOLAN strip (2 sheet metal screws supplied) 40 in street cabinets (2 M3 screws supplied) 70 (2 screws + M4 nuts supplied)
Securing the cover	using screws (supplied) or 2 plastic cable ties (not supplied)		
Cable diameter (mm)	8 to 13		14 to 22
Cable retention	2 metal clamps		
Carrier retention	Aramid strands and flange support		

PROTECTIVE SHEATHING



Protective sheaths are flexible sleeves used to protect cables, tubes, micro-modules and optical fibres from possible impact, crushing or tearing in the environment in which they are installed. FOLAN offers a wide range of sheaths to ensure cable protection according to their application and environment in FTTH deployments.



YELLOW SHEATH

The yellow sheath has excellent mechanical strength. With its fire-retardant PVC sheath, it is perfectly suited to the requirements of FTTH applications for the re-tubing of 250 µm fibres.

- Colour: Yellow
- Material: Fire-retardant PVC
- Outer diameter: 4.3 mm
- Inner diameter: 1.8 x 2.5 mm

TRANSLUCENT WHITE CORRUGATED SHEATH

Lightweight and crush-resistant, the translucent white corrugated sheath protects cables from rodents and insects. The translucent white polypropylene makes it easy to locate fibre optic tubes or micromodules during FTTH deployment.

- Colour: White
- Material: Polypropylene PP
- Outer diameter: 5 mm
- Inner diameter: 3.1 mm



BLACK CORRUGATED SHEATH

The black corrugated sleeve can hold a large number of tubes or micromodules while remaining lightweight and flexible. It also has very good crush resistance and protects the fibres from rodents and insects.

- Colour: Black
- Material: Polypropylene PP
- Outer diameter: 10 mm
- Inner diameter: 6.5 mm

UNSCRATCHED SPIRAL SHEATH

The uncut spiral sleeve protects and identifies fibre optic cables during installation. It guarantees optimal cable protection.

- Colour: Black
- Material: PVC
- Outer diameter: 22 to 50 mm
- Inner diameter: 20 to 48 mm



SPIRAL SHEATH

The split spiral sheath protects fibre optic cables and tubes while ensuring quick, simple and effective installation.

- Colour: Green (Black for 12 mm diameter)
- Material: PVC for 30 m reels - LSZH for 50 m reels
- Outer diameter: 12 to 23 mm
- Inner diameter: 10 to 21 mm



PLIOSPIRE SHEATH

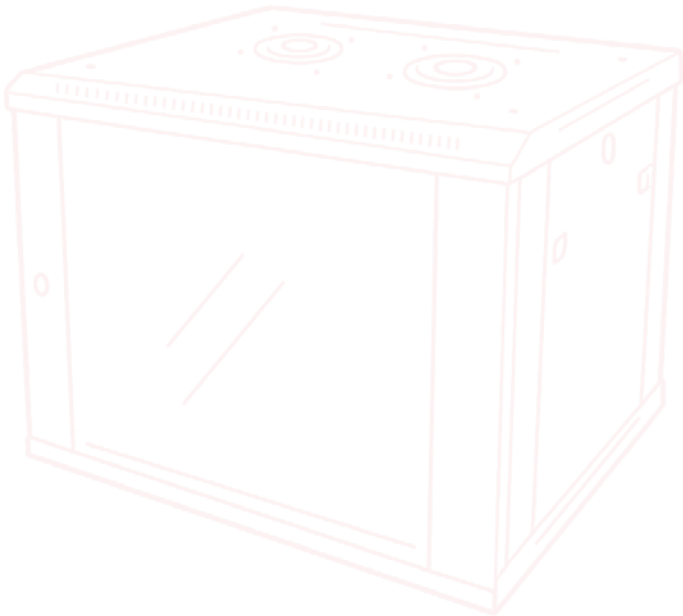
This spiral sheath holds and groups together cable or fibre assemblies. Its design makes it quick and easy to install, while offering great adaptability.

- Colour: Natural
- Material: PE
- Outer diameter: 6 to 41 mm
- Inner diameter: 5 to 40 mm



CAGE NUTS

For cabinets and cabinets
Set of 50 M6 Phillips screws; plastic washers and 9.5 mm square cage nuts



NETWORK CROSS-CONNECT CABINETS



For your copper and fibre network deployments, cabinets are the ideal solution for integrating your end equipment and active equipment (switches, servers, etc.). Available in heights of 22U, 27U, 37U and 42U, with widths of 600 or 800 mm and depths of 600, 800 and 1000 mm, cabinets can be used for all your applications.

Thanks to the presence of four uprights, 19" compatible equipment can be installed on either side of the cabinet. To facilitate the management of patchcords and cables, cabinets with a width of 800 mm can be equipped with vertical cable guides on either side of the 19" uprights, allowing for better cable management.



FEATURES					
Material (structure)	Tôle d'acier				
Material thickness (structure)	1,2mm				
Format	19"				
Coulour	RAL 9005				
Maximum load	800 Kg				
Protection	Standard IP30				
DIMENSIONS AND WEIGHT					
Height (U)	Overall dimensions (mm)			Weight (kg)	
	Height	Width	Depth	Net	Gross
22	1166	600	600	52	57
27	1388	600	600	54	59
27	1388	600	800	75	80
37	1833	600	600	78	83
37	1833	600	800	73	88
42	2055	600	600	88	93
42	2055	600	800	90	95
42	2055	800	800	130	136
42	2055	800	1000	130	138

ECONOMICAL CROSS-CONNECT CABINETS



For your copper and fibre network deployments, economical patch panels are the ideal solution for installing your various IT equipment, whether active (switches, servers, etc.) or passive. Available in different heights (22U, 27U to 42U), these economical assembled patch panels offer a width of 600 or 800 mm and a variable depth of 600 to 800 mm.

Please note that for kit versions, this range is complemented by cabinets with a height of 36/37U and a depth of 1000 mm for 42U. They are designed to suit a wide range of applications.



Available as a kit or assembled



FEATURES		
Material (structure)	Sheet steel	
Material thickness (structure)	1,2mm	
Format	19"	
Colour	RAL 9005	
Maximum loads	400 kg (except 22U: 300 kg)	
Protection	Standard IP30	
Height (U)	DIMENSIONS (MM)	
	Width	Depth
22	600	600
27	600	600
27	600	800
27	800	800
*36/37	600	600
*36/37	600	800
*36/37	800	800
42	600	600
42	600	800
42	800	800
*42	800	1000

* : Only available for economical patch panels in KIT form.

SERVER CABINETS



When deploying IT networks, server cabinets are the ideal solution for securely integrating active equipment (switches, servers, etc.) as they can support very heavy loads of up to 1000 kg. Available in heights of 42U, with widths of 600 or 800 mm and depths of 800 and 1000 mm, server cabinets can be used for all your applications. Thanks to the presence of four adjustable uprights, you can install your 19" compatible equipment on either side of the cabinet or at four fixing points. To facilitate the management of patchcords and cables, the server cabinets are equipped with vertical cable guides. Natural ventilation is optimised thanks to the honeycomb-perforated front door and the cut-outs in the roof and bottom of the cabinet.



FEATURES					
Material (structure)	Steel sheet				
Material thickness (structure)	1,5mm				
Format	19''				
Coulour	RAL 9005				
Maximum load	1000 Kg				
Protection	Standard IP20				
DIMENSIONS AND WEIGHT					
Height (U)	Overall dimensions (mm)			Weight (kg)	
	Hauteur	Largeur	Profondeur	Net	Brut
42	2000	600	800	52	57
42	2000	800	800	54	59
42	2000	600	1000	75	80
42	2000	800	1000	78	83



DISTRIBUTION FRAMES

When deploying networks, distribution frames are the ideal solution for integrating your end equipment for high-density cabling applications. Perfectly suited for high-frequency installations, 42U distribution frames offer unrivalled accessibility to equipment but require a controlled, dust-free environment. The single cabinet is equipped with two 19" uprights, while the double version allows up to four 19" uprights to be installed, facilitating the integration of compatible equipment on each side of the cabinet.



FEATURES		
Type	SINGLE	DOUBLE
Height	42U	
Colour	RAL 9005	
9" upright	2 adjustable	4 adjustable
Material Horizontal profiles	Aluminium	Aluminium
Material Vertical profiles	2 mm steel sheet	
Dimensions (WxDxH)	559 x 600 x 2005 mm	600 x 595 x 2028 mm
Maximum load	200 kg	
Delivery	With legs	With castors

BOX KITS



10" NETWORK STARTER KITS AND BOXES



KIT CONTENTS:

x 1: 7U cabinet
x 1: 10U cabinet

x 16: 7U
x 32: 10U
CAT6A FTP
illuminated sockets

x 1: ELFI RJ45 tester

x 8: 7U
x 16: 10U
RJ45 CAT6A SFTP LSZH
grey cables, 30 cm

x 8: 7U
x 16: 10U
45x45mm faceplates
1 RJ45 port

x 1: Bag of 20 cage
nuts

x 1: 1U modem panel

x 1: 7U x
2: 10U Bare 12-port
FTP patch panel

x 1: Electrical strip
3 sockets

x 1: 7U 8-port switch
Ref: 61 004
x 1: 10U 16-port
switch

FEATURES

Type	Height (U)
Grey network starter kit	7
Grey network starter kit	10

COMPLETE 10" ACCESSORY KIT



KIT CONTENTS:

x 1: 6U Box

x 24: RJ45 CAT6A
FTP Keystone
sockets

x 12: RJ45 CAT6A
SFTP LSZH cords
grey 30cm

x 12: 1-port
RJ45 faceplates

x 1: Bag of 20 cage
nuts

x 1: Modem panel 1U

x 1: Bare 12-port FTP
patch panel

x 1 Electrical strip
3 sockets

x 1: 16-port Gigabit
switch

x 1: Cable grommet
with 3 hooks

19" WALLS



For your copper and fibre network deployments requiring the integration of a small number of cables or their distribution across different points, we recommend 19" boxes. These walls are available in different heights, namely 6U, 9U, 12U, 15U, 18U, and 22U, with depths of 450 and 600 mm and a width of 600 mm.

boxes can be used in the most congested environments and can accommodate most of your 19" equipment, even the deepest items. The side panels are removable and can be taken off if necessary, making it easy to access the equipment installed in your boxes.

This product range is available in assembled versions (with or without castors) or as a self-assembly kit (with assembly instructions for intuitive assembly).

Available as a kit or assembled



FEATURES

Material (structure)	Cold-rolled steel		
Format	19"		
Coulour	RAL 9005		
Maximum load	40kg		
Protection	IP20		
Standards	CE, RoHS		
Components	Smoked safety glass front door with key lock - Removable side panels with lock 4 adjustable 19" posts 2 L-shaped rails - Pre-cut holes for cable routing (base and roof) - Multiple ground connection - Wall mounting system		
OVERALL DIMENSIONS (MM)			
Height (U)	Height	Width	Depth
6	370	600	450 ou 600
9	500	600	450 ou 600
12	635	600	450 ou 600
15	770	600	450 ou 600
18	905	600	450 ou 600
22	1085	600	450 ou 600

10" WALL NETWORK BOX



The 10" network cabinet is ideal for housing all your IT and telephone network components. It is designed for installation in small commercial premises (small offices, shops and residential areas).

Available as a kit or preassembled



FEATURES				
Material (structure)	1.2 mm steel sheet			
Format	10''			
Coulour	RAL 7035			
Maximum load	20kg			
Protection	IP30			
Standards	CE, RoHS			
Components	Front door: • Smoked safety glass door • Reversible door with spring latch system • Key lock Rear panel: • Fixed panel • Pre-cut holes for cable passage Side panels: • Removable panels Uprights: • 2 removable uprights • Unpainted steel for grounding			
OVERALL DIMENSIONS (MM) AND WEIGHT (KG)				
Height (U)	Height	Width	Depth	Weight
7	415	310	300	8
10	545	310	300	10.8

CABINETS ACCESSORIES



RAISERS OFR NETWORK CABINETS

This riser provides greater stability and prevents dust from accumulating under the cabinet. It also prevents foreign objects from falling under the cabinet. The front grille ensures good air circulation under the cabinet. It is equipped with a rear cable passage.

FEATURES		
Dimensions (mm)	Compatibility	Coulour
600x600 600x800 800x800 800x1000	19" network cabinets	Black

SET OF 4 CASTORS OFR CABINETS AND BOXS

This set of 4 castors makes it easy to move your economical cabinets. The castors are fitted with rubber tyres to facilitate manoeuvring during installation. They are attached to the underside of the cabinet with a screw system.



VERTICAL CABLE GUIDES OFR CABINET

Allow you to organise your cables vertically inside your cabinets. These ducts are attached between the side panels and the uprights of the network cabinet. They are only compatible with 800 mm wide cabinets.

FEATURES		
Height (U)	Application	Coulour
42	800 mm deep cabinets	Black

OPTIONAL DOORS OFR NETWORK CABINETS

These improve air circulation and optimise the opening of your 19" cabinet door. The doors are equipped with a spring latch to reverse the direction of the door according to your installation. The key lock with pivoting handle secures access to your 19" cabinet. Depending on the model, the doors are suitable for 600 or 800 mm wide cabinets for installation at the front or rear of your cabinet. (see comparison table below).



STANDARD HONEYCOMB DOOR



HONEYCOMB CURVED DOOR



HONEYCOMB SALOON DOOR



SOLID SALOON DOOR

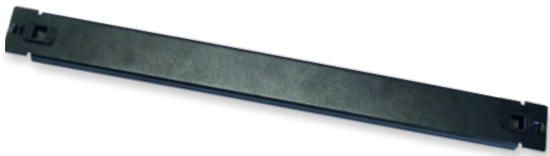
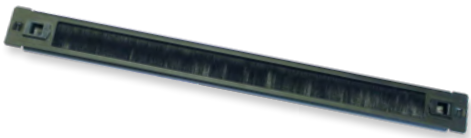
FEATURES					
Type	Door	Height (U)	Width (mm)	Material	Coulour
CURVED HONEYCOMB	Front	42	600 / 800	1.2 mm steel sheet	RAL 9005
STANDARD HONEYCOMB	Front/Rear		600 / 800		
FULL SALOON	Front/Rear		600 / 800		
HONEYCOMB SALOON	Front/Rear		600 / 800		

ACCESSORIES



QUICK SHUTTER

- Instant assembly without screws or screwdrivers.
- Attaches to 19" uprights.
- Saves time on your construction sites.



QUICK BRUSH CABLE PASS

Equipped with push buttons, this quick brush cable pass-through is easy to install on the uprights of your 19" Cabinet or cabinet. Ideal for facilitating regular maintenance on construction sites.

- Instant installation without screws or screwdrivers.

SHUTTER

- Attaches to 19" uprights.
- Galvanised steel sheet with lacquered finish.



SMART BRUSH CABLE PASS-THROUGH

With 3 sides instead of 4, this brush cable pass-through can be removed and repositioned without having to disconnect your cables. Ideal for facilitating regular maintenance and saving time on your construction sites.

CABLE PASS-THROUGH RINGS + BRUSH

Combined cable grommets and brushes ensure optimal cable management.

- Mounting on 19" uprights (Cabinets or cabinets).



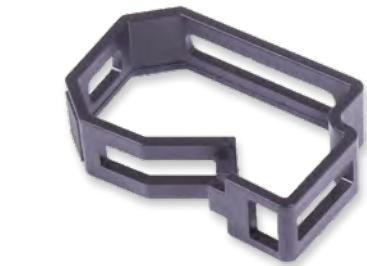
BRUSH CABLE PASS-THROUGH

Ensures better cable management and gives your cross-connections a tidy appearance.

- Attaches to 19" uprights (Cabinets or cabinets).

RING CABLE PASS-THROUGHS

Allows you to gather your cables together, promoting good organisation of your network infrastructure.



CABLE PASS-THROUGH RING

Allows you to gather your cables together, promoting good organisation of your network infrastructure.

- Supplied with a fixing screw and cage nut.

SINGLE FAN OFR CABINET

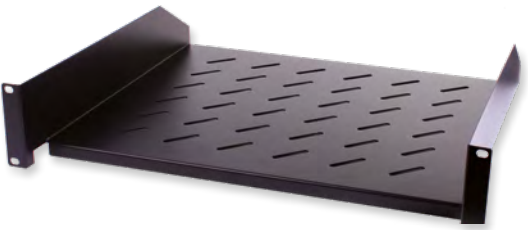
Regulates the internal temperature of your cabinets by ensuring air circulation, thus preventing equipment overheating. This fan is only compatible with 19" cabinets.

- Fan supplied with a bare wire to connect to a terminal block.



MODEM PANEL

The trays are perforated across their entire surface to allow for effective ventilation. Mounts on front uprights.



FEATURES			
Height (U)	Compatibility	Depth (mm)	Maximum load (kg)
1U	For cabinet	250	10
1U	For cabinets or walls	350	10
2U	For cabinets or walls	350	20

FIXED PLATFORM WITH 4 ANCHOR POINTS 1U

The 4 anchor points provide high stability and can support heavier loads.



1U SLIDING PANEL

Brings all your equipment within easy reach for simplified access. Mounts on front and rear rails.

10» PATCH PANEL AND ACCESSORIES

This RJ45 patch panel allows for the organisation and centralisation of network connections in a 10" cabinet. It allows for the installation of up to 12 Keystone-mounted RJ45 cores.



10" OPTICAL PATCH PANEL AND FRONTS

This optical patch panel is designed to organise, protect and connect up to 8 fibres in a 10" patch panel. It can be supplied with different front panels for 8 SC Simplex / LC Duplex connections.

ACCESSORIES



RAILS L

Allows you to mount your equipment on the vertical uprights of your 19" walls and cabinets. Ideal for bulky and heavy equipment.



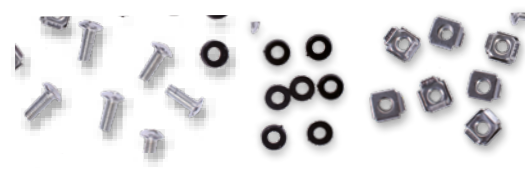
HORIZONTAL CABLE GUIDE CHANNEL

These channels are attached to the Cabinet uprights. They allow you to organise your cables horizontally inside your cabinets.

VERTICAL CABLE GUIDE CHANNEL

The channel allows you to organise your cables vertically inside your Cabinets. These channels are attached between the side panels and the uprights of the network cabinet.

Compatible only with 800 mm wide economy cabinet.



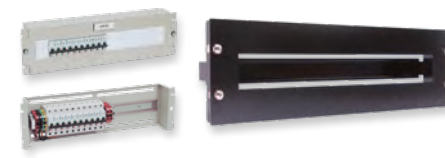
SCREW KITS

Screw kits with cage nuts in 9.5 mm format. The kits include screws, PVC washers and cage nuts.

DIN RAIL

Standard 19" box for housing a modular device. Equipped with a DIN rail and a 402.5 x 45.5mm opening.

- Depth: 60mm



10" ELECTRICAL SOCKET STRIP

This Cabinetable strip with 3 sockets allows you to power the various devices in your 10" cabinet.

8-OUTLET CABINET-MOUNTABLE POWER STRIP WITH SWITCH

- Adjustable 19" legs allowing the sockets to be lowered.
- Aluminium casing
- Protective cover to prevent accidental cuts
- Red indicator light to show whether the sockets are powered or not.



CABINETABLE STRIP WITHOUT SWITCH

- Adjustable 19" bCabinetets for recessing sockets.
- Aluminium casing



6-OUTLET CABINET-MOUNTABLE POWER STRIP WITH RESIDUAL CURRENT DEVICE

- Adjustable 19" feet allowing the sockets to be recessed.
- Aluminium casing
- Protective cover to prevent accidental cuts
- Red indicator light to show whether the sockets are powered or not.
- 19" mounting bCabinetets
- 30mA residual current device
- 16A circuit breaker
- Ensures ideal safety in the event of a leakage current.

8-OUTLET CABINET-MOUNTABLE POWER STRIP WITHOUT CABLE WITH TERMINAL B

Strip equipped with a terminal block (domino) at one end for connecting the type and length of cord of your choice.



STRIP EQUIPPED WITH A TERMINAL BLOCK (DOMINO) AT ONE END FOR CONNECTING THE TYPE AND LENGTH OF CORD OF YOUR CHOICE.

Legs can be positioned by rotating them 45° - 12 positions

- Adjustable 19" legs for recessing the sockets
- Aluminium housing
- The C14 socket allows connection to a UPS.

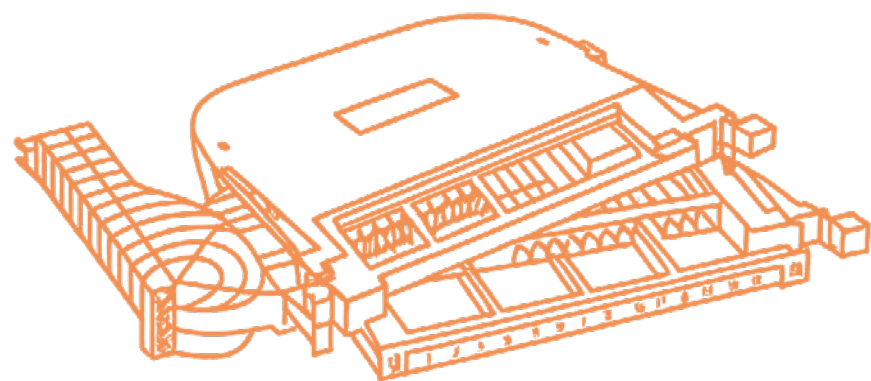
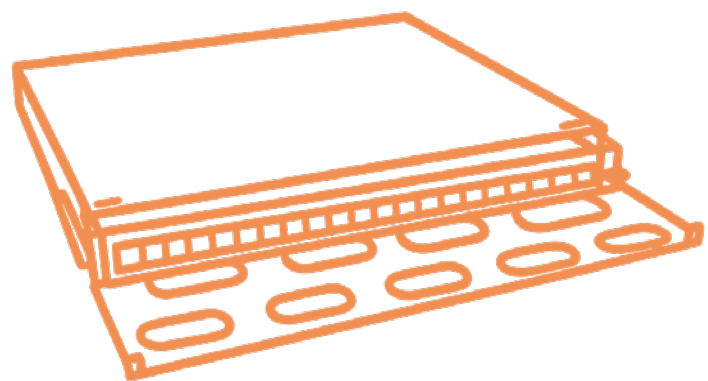
8-OUTLET CABINET-MOUNTABLE POWER STRIP WITH INDICATOR

LIGHT AND SURGE PROTECTOR
This power strip is equipped with a surge protector that trips in the event of a power surge to protect the equipment connected to it.



CABINETABLE C13 SOCKET STRIP WITH C14 CORD

Enables power supply to active components such as switches, servers, etc.



PATCH PANELS



40

SLIDING OPTICAL PATCH PANELS

47

PIVOTING OPTICAL PATCH PANELS

54

FIXED PATCH PANEL

55

FITTING ACCESSORIES

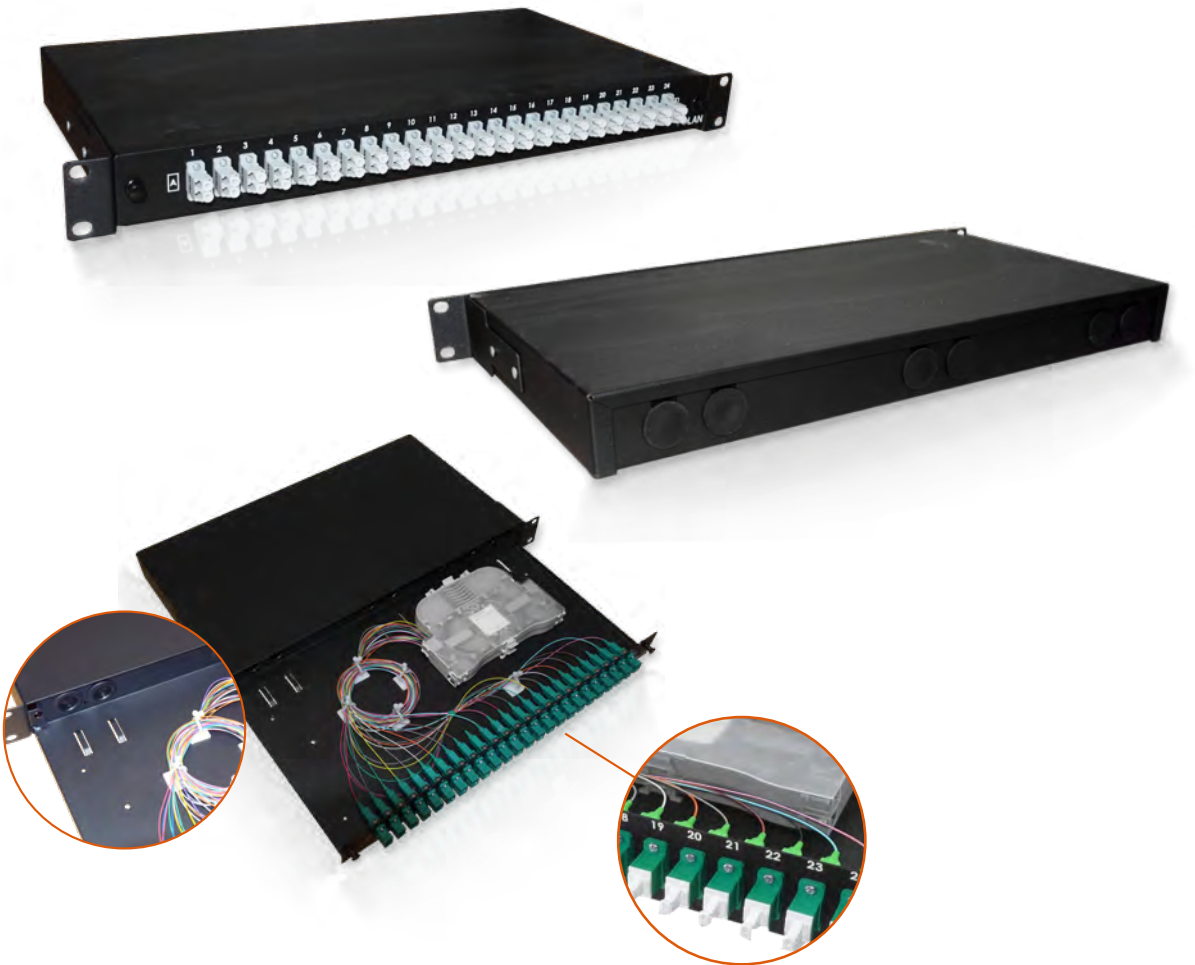


SLIDING OPTICAL PATCH PANEL - MILANO



The MILANO patch panel is a sliding optical patch panel developed to meet the needs of direct connectorisation connections of 48 fibres on 1 U. It can be installed in 19" Cabinets and cabinets and enables the connection between different indoor and/or outdoor networks in FTTO architectures.

Configurable and economical, it is also available with connectors, pigtails and cassettes for pigtail connections (welded pigtails) of up to 36 optical fibres in 1U.



FEATURES	
Height	1 U
Dimensions (W x H x D mm)	480 x 44 x 240
Weight (kg) excluding screws	2,25
Material/Colour	Steel / Black
Mounting centre distance	19" ETSI - 21" optional
Direct connection capacity	48 OF
Splicing capacity	36 splices (3 cassettes x 12 OF)
Identification	In-line
Gartering	Online
Imprints	12 SC 24 SC 12 ST 24 ST 12 SC Duplex 24 SC Duplex
Panel construction	• Fixed frame, recessable up to 50 mm to protect front panel cables • Sliding pull-out tray with end-of-travel stop • 6 membrane grommets at the rear for cable entry • 2 push buttons for closing the tray • 12-splice FOLAN cassettes (max. 3) • Identification system on front panel • 2 mounting bCabinetets (installation with 4 screws and cage nuts)

SLIDING OPTICAL PATCH PANEL - MILANO GANGWAY TRAY



In order to optimise patch management in Cabinets and cabinets and thus secure connections and interventions, FOLAN has also developed an independent patch tray patch panel.

It attaches directly to 19" uprights with 4 cage nuts and its 1U height takes up little space in Cabinets. The sliding inner tray provides easy access to excess patchcord lengths, which can be stored around the integrated coiling areas.



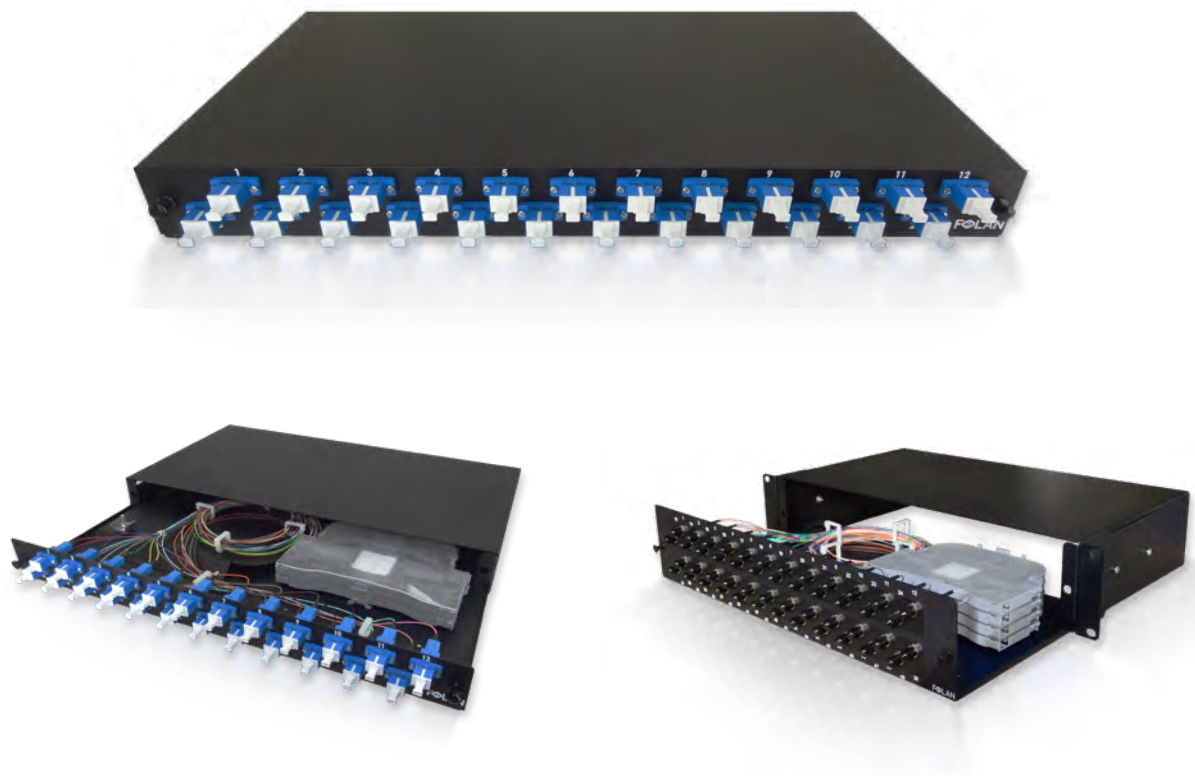
FEATURES	
Height	1 U
Dimensions (W x H x D mm)	480 x 44 x 270
Weight (kg) excluding screws	2.25
Material/Colour	Steel / Black
Mounting centre distance	19" ETSI - 21" optional
Maximum capacity	72 Ø 2 mm, 1 m long cable ties
Patch panel construction	• Fixed frame, recessable up to 50 mm • Sliding tray with end-of-travel stop • 3 plastic cable management zones (24 cable ties Ø 2 mm x 1 m per zone) • Anti-dust brush on the front for passing through the cable ties • 2 cable entries at the rear for securing with cable ties • 2 push buttons for closing the tray • 2 mounting bCabinetets (installation with 4 screws and cage nuts)

SLIDING OPTICAL PATCH PANEL - DELPHI



DELPHI FOLAN optical patch panels are 19" sliding patch panels that are particularly suitable for splicing connections. They offer numerous possibilities for securing incoming fibres to ensure optimal integration into all your installations. They consist of a fixed frame and a sliding tray that houses the patching interface, allowing up to 48 fibres to be connected on 1U and 96 fibres on 2U.

In addition to the basic version, the FOLAN range offers various pre-equipped versions, providing real time savings on site.



FEATURES		
	T1D	T2D
Height	1 U	2 U
Dimensions (W x H x D mm)	480 x 44 x 240	480 x 88 x 240
Weight (kg) excluding screws	2,7	3,5
Material/Colour	Steel / Black	
Mounting centre distance	19" ETSI - 21" and 23" optional	
Direct connection capacity	48 OF	96 OF
Splicing capacity	48 splices (4 cassettes 12 OF)	96 splices (8 cassettes, 12 OF)
Identification	In-line	
Garter	In-line	
Imprints	12 SC 24 SC 12 ST 24 ST 12 SC Duplex 24 SC Duplex	48 SC 48 ST 24 SC Duplex

SLIDING OPTICAL PATCH PANEL - GENEVA



The GENÈVE optical patch panel is a 19" sliding patch panel designed to accommodate optical couplers in various configurations, ranging from 2 x 1x32 couplers to 22 x 1x2 couplers or 11 x 1x4 couplers. Designed to provide the connection between the operator's OLT and the passive FTTH distribution network, the GENÈVE patch panel is a modular solution that is easy to install and perfectly suited to the demanding environments of fibre networks.



FEATURES	
Format	1U 19"
Dimensions (W x H x D mm)	480 x 267 x 42,5 mm
Patch panel type	Sliding
Installation	Patch panel mounting from the rear or front with 19" mounting centre distance
Material/finish	Steel with black epoxy paint
Weight	2,2 kg
Cable management	2 side cable guides on the front panel
Accessories	Fixing screws and cage nuts supplied
Delivery	Drawer delivered with its cable guides unassembled and its mounting brackets unattached
Available option	An adaptation kit for ETSI and 21" format equipment

SLIDING OPTICAL PATCH PANEL - BARI



The BARI patch panel is a sliding metal optical patch panel designed with a retaining device. Removable tray with tilt angle (30°). The BARI patch panel will simplify infrastructure implementation, particularly connection to FTTA (Fibre To The Antenna) networks.

Connection operations are performed by direct connectorisation via a plate that can accommodate up to 24 fibres (12 blue LC/PC Duplex connectors).



FEATURES	
Capacity	24 OF
Fibre optic type	Duplex
Dimensions (W x H x D)	430 x 210 x 44 mm
Weight	2,8 kg (vide)
Material	Metal
Cashout	Up to 50 mm
Colour	Black RAL 9005
Connectors	12 LC-PC Duplex blue (mounted on plate)
Cable entries	2 free entries at the rear (right and left)
Fibre management	Front panel, depth ~70 mm
Outputs	Garter Ø 5 ± 0.5 mm
Closure	Plastic rivets
Port numbering	1 à 12
Cable fastening	With plastic cable ties on sliding tray



DATA CENTER SLIDING OPTICAL PATCH PANEL - DATAMAX

The OPTiLite DCS DataMax patch panel is a high-density fibre optic solution designed for modern data centres. It features three sliding plastic trays, each equipped with four MPO modules, allowing the panel to accommodate a total of 12 MPO modules. This configuration supports up to 144 fibre connections, providing efficient and scalable optical distribution.

The rear of the patch panel incorporates a cable management plate with mounting holes, ensuring orderly and secure fibre routing. This reduces the risk of damage and facilitates maintenance.



FEATURES	
Maximum capacity	144 OF
Material	Cold-rolled steel + ABS
Installation standards	19" Cabinet rail
Dimensions (H×W×D)	483 mm × 493 mm × 1U



DATA CENTRE SLIDING OPTICAL PATCH PANEL - HIGH DENSITY
NETSTREAM



The OPTiLite DCS NetStream patch panel, with a capacity of 96 fibres, is designed for installation in a cabinet or Cabinet. Made of highstrength cold-rolled steel, it features an electrostatic spray coating that withstands a 48-hour salt spray test, providing optimal protection against corrosion. Its smooth-gliding rails ensure smooth and easy operation, while the cable management system is carefully designed to guarantee reliable and efficient connection organisation.



CARACTÉRISTIQUES	
Maximum capacity	96 OF
Material	Cold-rolled steel + ABS
Installation standards	19" Cabinet rail
Dimensions (HxWxD)	483 mm × 353 mm × 1U

METAL PIVOTING OPTICAL PATCH PANEL - ROMA



The ROMA patch panel has been designed to meet the requirements of modern fibre optic installations, combining compactness, securityand ease of use. Thanks to its dual-zone design, one zone dedicated to patching and the other for splicing, it allows for targeted maintenance without the risk of error or accidental manipulation of the unaffected area.

Its secure pivoting opening provides full and quick access to the splicing cassettes, while ensuring optimal user comfort for the operator. In addition, direct access to the connectors is possible without completely opening the patch panel, making it a particularlyergonomic solution for confined environments.

Ideal for 19" 1U or 2U Cabinets, this patch panel is compatible with single-mode SC-APC or multi-mode SC-PC connectors. It is made of thick sheet metal for maximum robustness and incorporates a cable or braid earthing system.

Designed and assembled in France, this product complies with European standards (CE, RoHS 2), guaranteeing quality, safety and reliability.



FEATURES	
Format	1U or 2U in 19" format
Depth	284 mm (250 mm at the rear of the 19" uprights + 34 mm at the front of the 19" uprights)
Footprint type	24 SC on 1U and 48 SC on 2U
Mounting	Patch panel secured to 19" Cabinet using 4 screws and cage nuts
Cable management and protection	Cable duct on the outside of the pivot for transferring cables from the rear to the front of the patch panel and managing excess cable length. Pivoting flap on the front of the patch panel to protect connectors and fittings
Splicing	2 pivoting cassettes with 12 splices in 1U and 4 pivoting cassettes with 12 splices in 2U. Cassette accepts heat-shrinkable splices 30 to 60 mm long and 2.5 mm in diameter after shrinking
Fibre	Patch panel and cassette comply with a bending radius of 30mm
Pigtails	Colours comply with French colour coding (12 colours from red to pink) Connected to the connectors, stripped and prepared in the cassettes
Patching interface	At the front of the patch panel, protected by a pivoting flap equipped with a label indicating the positions of the fittings
Material/Finish	Steel / grey RAL 7035
Weight	1U = 3.4kg / 2U = 5.6kg
Accessories	• Cage nuts • Cable splitter box • 2m of Ø5mm sheath • Heat-shrinkable splices, length 45mm • Earthing kit

ENCLOSURES

PATCH PANELS

BOXES

AERIAL EQUIPMENT

CABLES & PRE-TERMINATED CABLES

PATCHCORDS & PIGTAILS

COPPER

COMPONENTS

TECHNICIAN EQUIPMENT

ENCLOSURES

PATCH PANELS

BOXES

AERIAL EQUIPMENT

CABLES & PRE-TERMINATED CABLES

PATCHCORDS & PIGTAILS

COPPER

COMPONENTS

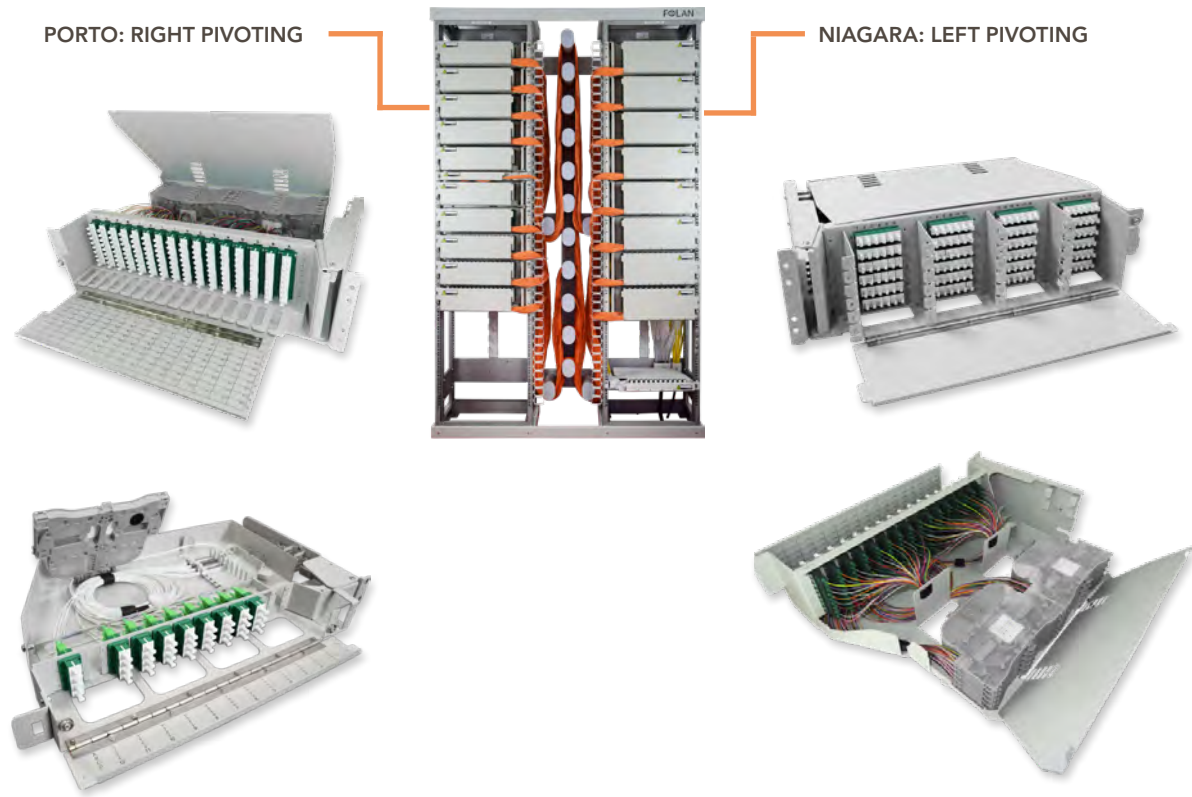
TECHNICIAN EQUIPMENT

PIVOTING OPTICAL PATCH PANELS - PORTO AND NIAGARA



NIAGARA patch panels are 19" pivoting optical patch panels with shallow depth and high density. They fit perfectly into spacesaving 19" equipment such as indoor and outdoor splitters, at Optical Connection Nodes (OCNs), Optical Sub-Distributors (OSDs) and Mutualisation Points (MPs). They are essential for fast, easy and reliable FTTH network deployment.

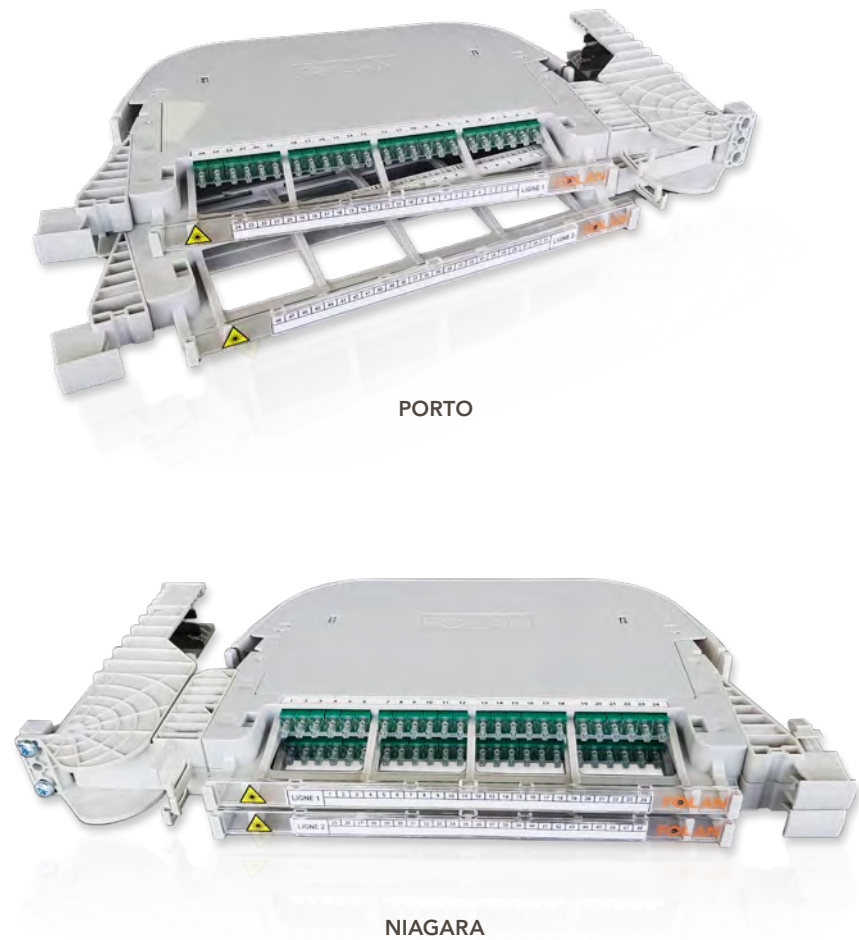
METAL PIVOTING OPTICAL PATCH PANELS



FEATURES						
	T1P	T1N	T3P	T3N	T3N M6	T4N
Pivot	Right	Left	Right	Left		
Height	1 U		3 U			4 U
Dimensions (W x H x D mm)	480 x 44 x 274		480 x 128.5 x 272			480 x 176 x 274
Weight (kg) excluding screws	2.7	2	4.5			5.2
Material/Colour	Steel / Light grey					
Mounting centre distance	19" ETSI - 21" optional					
Direct connection capacity	48 OF		144 OF			
Splicing capacity	48 splices (4 cassettes x 12 OF)		144 splices (12 cassettes x 12 OF)			
Identification	4 lines 12 connectors		9 lines 16 connectors		6 lines 24 connections	12 lines 12 connectors
Garter	In column				In line	Column
Imprints	12, 24, 36, 48 SC 12, 24 LCD		72, 96, 144 SC 48, 72 LCD		72, 96, 144 SC	72, 96, 144 SC 48, 72 LCD 96 FC
PON compatibility	8 PLC 1x4 4 PLC 1x8 2 PLC 1x16 1 PLC 1x32		16 PLC 1x8 8 PLC 1x16 4 PLC 1x32 2 PLC 1x64		NA	

PLASTIC PIVOTING OPTICAL PATCH PANELS

The PORTO & NIAGARA plastic optical patch panels are designed to meet the requirements of 19" cabinet deployments. Compact, functional and easy to install without tools, they enable clear, fast and secure management of optical fibres. Thanks to their ergonomic and modular design, they ensure efficient organisation of cross-connections while simplifying maintenance and network upgrades.

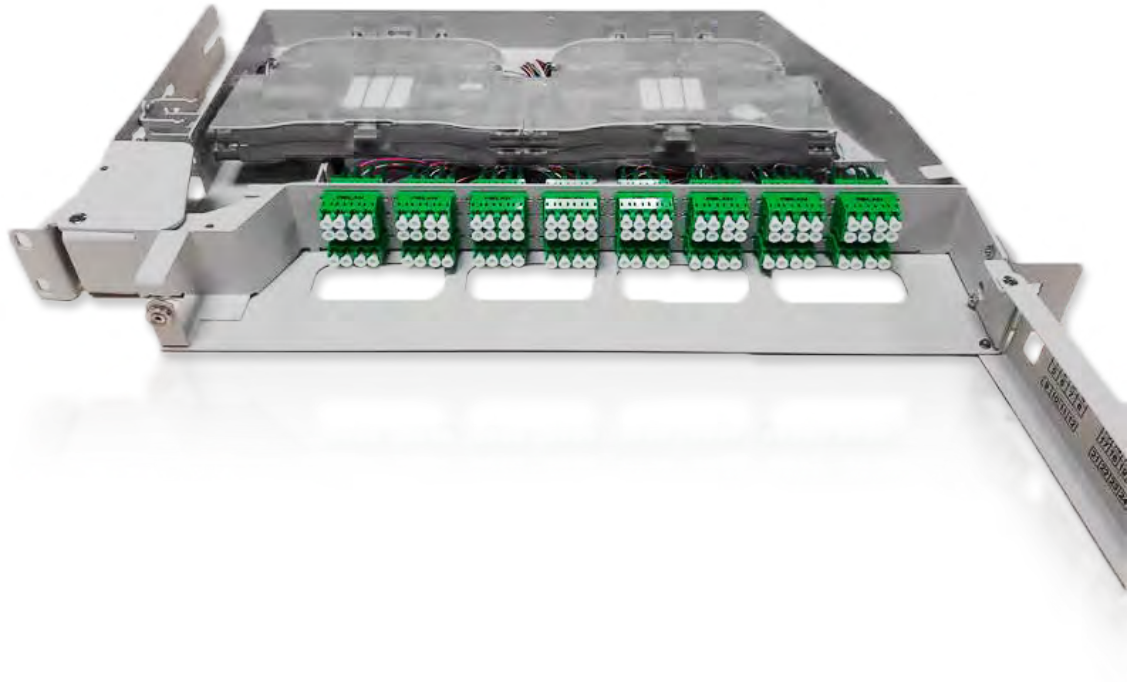


FEATURES				
	T1P PL	T1N PL	T3P PL	T3N PL
Pivot	Right	Left	Right	Left
Height	1 U (2 x 0.5 U)		3 U (6 x 0.5 U)	
Dimensions (W x H x D mm)	480 x 44 x 260		480 x 128.5 x 260	
Weight (kg) excluding screws	1.75		3.4	
Material / Colour	Plastic / Light grey			
Mounting centre distance	19" (9.5 mm square) ETSI - 21" optional			
Direct connection capacity	48 OF		144 OF	
Splicing capacity	48 splices (2 cassettes x 24 OF)		144 splices (6 cassettes x 24 OF)	
Identification	2 trays 24 connectors		6 trays 24 connectors	
Garter belt	Online			
Imprints	48 SC		144 SC	
PON compatibility	4 PLC 1x8 2 PLC 1x16 1 PLC 1x32		8 PLC 1x16 4 PLC 1x32 2 PLC 1X64	

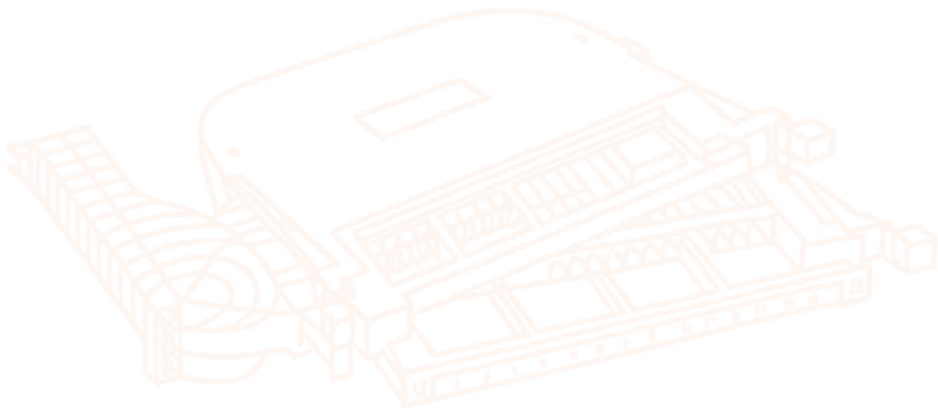
PIVOTING PATCH PANELS - PORTO AND NIAGARA 96FO



This 19" 1U patch panel allows the connection of 96 optical fibres. It is perfectly suited to FTTH deployments, particularly PON networks. Thanks to its shallow depth (only 236 mm behind the mounting bCabinetets) and easy access via its pivot, it fits easily into street cabinets, ODFs and other distribution point boxes.



FEATURES	
Format	19", 1U
Connection capacity	96FO
Depth	236 mm behind mounting bCabinetets
Installation	Street cabinets, ODFs, distribution point boxes
Access	Pivot for easy access



PIVOTING OPTICAL PATCH PANEL - NIAGARA CABLE TRAY



The NIAGARA storage tray patch panel allows for the management of excess lengths of micromodules, re-tubing sheaths (access from the rear of the patch panel) or patchcords (access from the front).

Capacity: up to 9 Ø 4.3 mm conduits, 6 Ø 5 mm conduits (held in place at two points by a comb), 200 m of Ø 1.6 mm cords and 130 m of Ø 2 mm cords.



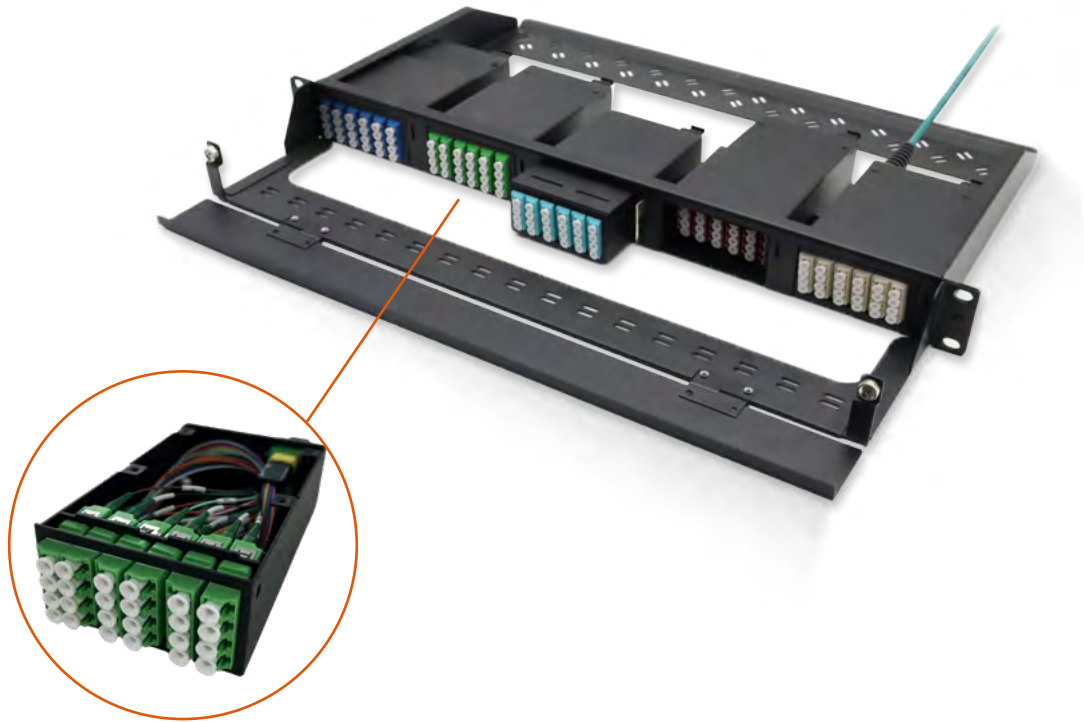
FEATURES	
Pivot	Left
Height	1 U
Dimensions (W x H x D mm)	480 x 44 x 235
Weight (kg) excluding screws	1.8
Material/Colour	Steel / Light grey
Mounting centre distance	19" ETSI - 21" optional



DATA CENTRE PATCH PANEL - ULTRAFLEX HIGH DENSITY



The OPTiLite DCS UltraFlex patch panel features a unique design that allows for the integration of 5 cassettes, which can be inserted from either the front or the rear, ensuring quick and easy installation. It functions as an interconnection or cross-connection point between the backbone cables and active equipment, while reducing clutter in Cabinets and cabinets. This system is suitable for installation in various locations within data centres, technical rooms or telecoms exchanges, including above Cabinets, inside Cabinets or directly in cabinets.

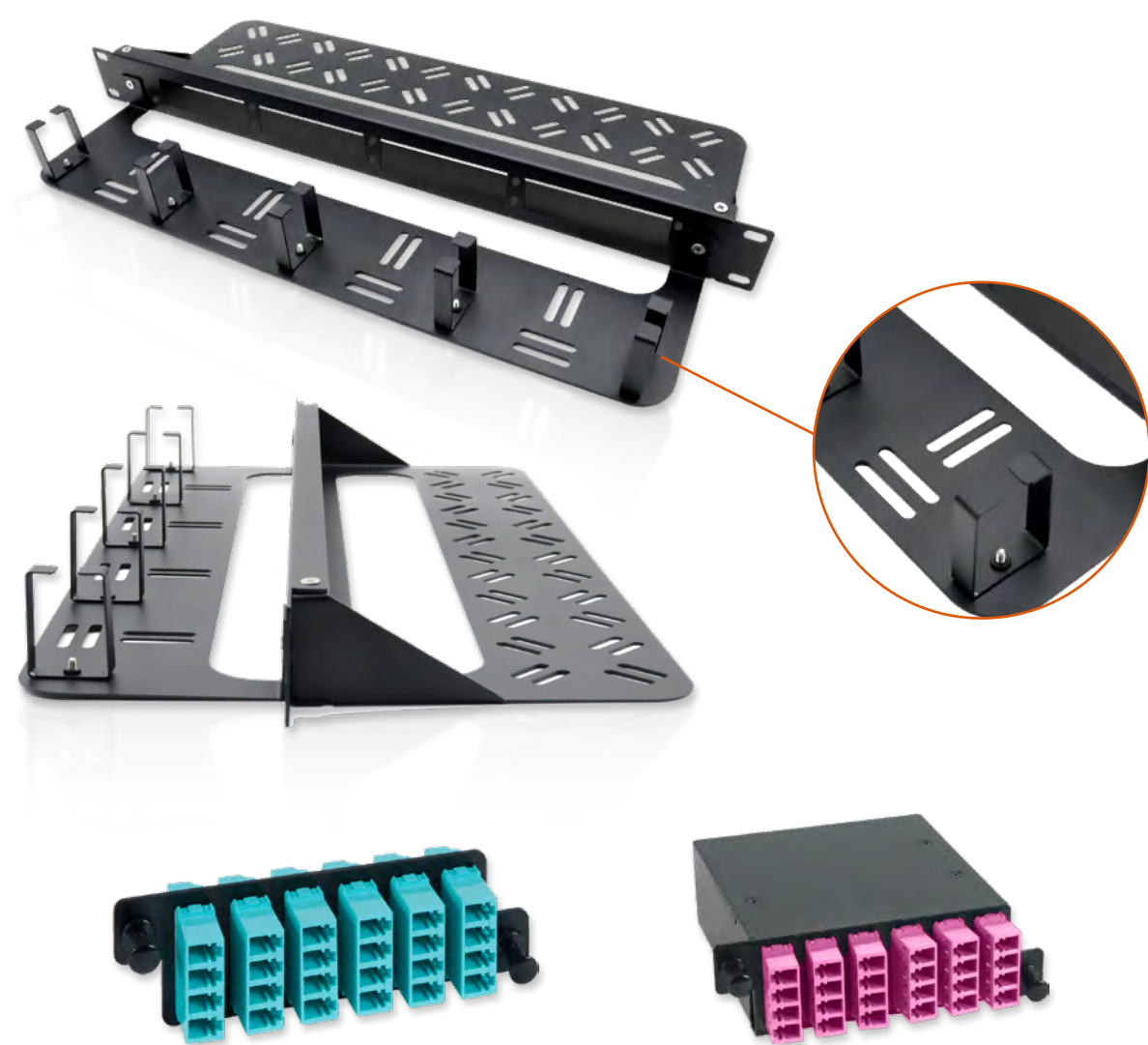


FEATURES	
Maximum capacity	120 OF
Material	Cold-rolled steel
Installation standards	19" Cabinet rail
Dimensions (H×W×D)	483 mm × 358 mm × 1U
Operating temperature	-40 °C to 75 °C (or -40 °F to 167 °F)
CASSETTE	
Maximum capacity	24
Material	Cold-rolled steel
Adapter type (front)	LC Aqua
Adapter type (rear)	MTP®/MPO adapter
Breakout cable type	2 x 12F MTP®/MPO to LC cables or 1 x 24F MTP®/MPO to LC cable
Connection cord polarity	A

DATA CENTRE PATCH PANEL - HIGH-DENSITY ECODENSE



The OPTiLite DCS EcoDense high-density patch panel is ideal for users who want to control their budget while optimising their network infrastructure. Compatible with adapter modules and high-density cassettes, it allows you to organise and protect your fibre optic connections in a simple and reliable way. Whether for adapter panels dedicated to specific interfaces or for cassettes, the OPTiLite DCS EcoDense patch panel offers a stable and high-performance solution. This optical patch panel simplifies cable management in data centres. It reduces clutter, improves network reliability and optimises the overall performance of the data centre network.



PANNEAU ADAPTATEUR HD

CASSETTES HD MPO

FEATURES	
Maximum capacity	96 OF
Material	Cold-rolled steel
Installation standards	19" Cabinet rail
Dimensions (H×W×D)	483 mm × 251.5 mm × 1U
Operating temperature	-40 to 75 °C (-40 to 167 °F)

ENCLOSURES

PATCH PANELS

BOXES

AERIAL EQUIPMENT

CABLES & PRE-TERMINATED CABLES

PATCHCORDS & PIGTAILS

COPPER

COMPONENTS

TECHNICIAN EQUIPMENT

FIXED MODEM PATCH PANEL

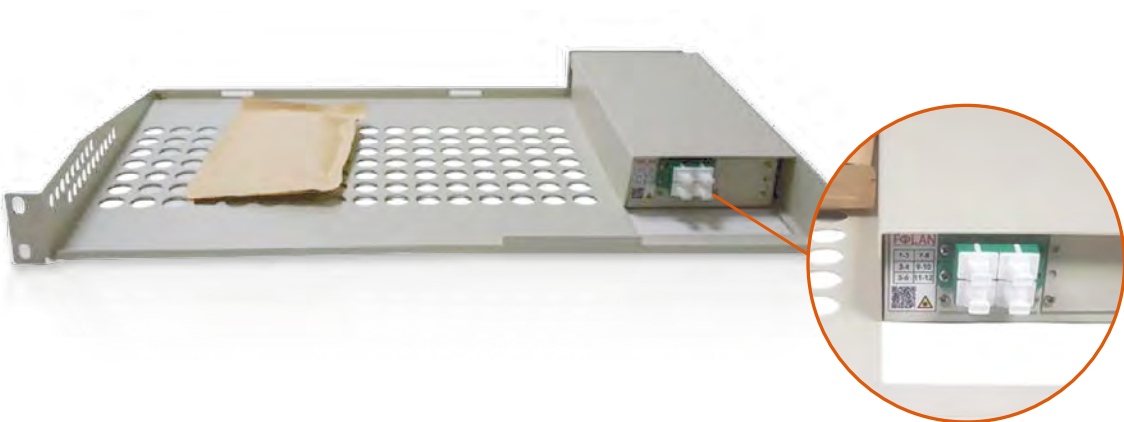


To complement the functionality of FOLAN Cabinets and cabinets, our range also includes fixed 19" modem trays.

Ideal for your FTTO deployments, this modem tray allows you to connect a fibre optic cable and manage active equipment on 1U.

Thanks to its fibre entry options, this modem tray is guaranteed to fit perfectly regardless of the cable routing in the Cabinet or integration cabinet.

The optimised dimensions of the modem section (+35 mm in width) ensure easy integration of a wide range of modems and routers. The new design of the rear section allows for unrestricted management of the power supply to these active components.



FEATURES	
Format	19" (optional ESTI or 21" adapter kit)
Dimensions	479 x 260.5 x 44 mm
Material/Finish	Steel with epoxy paint (RAL 7035)
Weight	1.240 kg (excluding screws)
Permissible cable diameter	Rear entry: Ø 9 mm / Side entry: Ø 12 mm
Fibre optic cable fastening	At 2 points using plastic cable ties (supplied)
Patching interface	6 SC Duplex compatible slots
Splicing cassette	1 fixed 12fo R15mm cassette
Supplied accessories	Plastic cable ties, M6 screws, splice protectors, cassette entry devices
Active element space: Dimensions/permissible load	335 x 255 x 40mm / 4.4kg

ENCLOSURES

PATCH PANELS

BOXES

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COPPER

COMPONENTS

TECHNICIAN EQUIPMENT

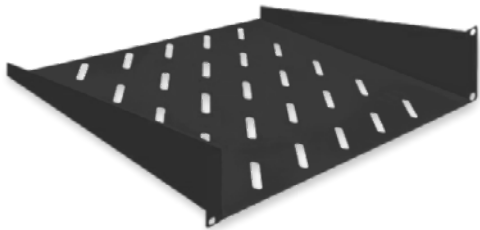
FITTING ACCESSORIES



FIXED PLATFORM

For integrating equipment that is not compatible with the 19" format.

- Mounting: 4 points
- Format: 19" / 1 U
- Depth: 300, 500 or 700 mm
- Maximum load: 60 kg



MODEM TRAY

Allows active equipment to be installed in a Cabinet or cabinet.

- Mounting: 2 points
- Format: 19" / 2 U
- Depth: 300 mm or 350 mm
- Maximum load: 25 kg

SLIDING TRAY

Allows you to easily and securely install equipment that is not compatible with the 19" format (e.g. a computer).

- Mounting: 4 points
- Format: 19" / 1 U
- Depth: 300, 500 or 700 mm
- Maximum load: 40 kg



CABLE MANAGEMENT TRAY

For securing cables or cords at the rear and managing excess length.

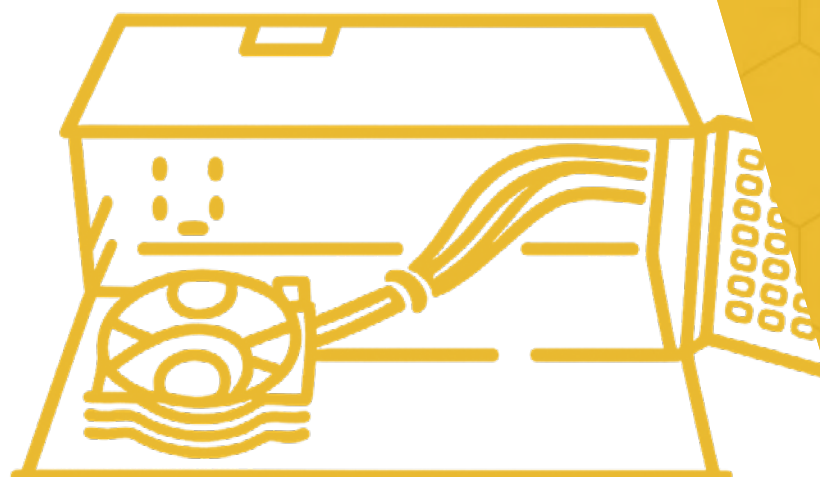
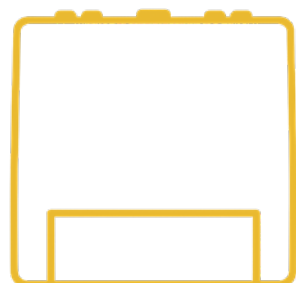
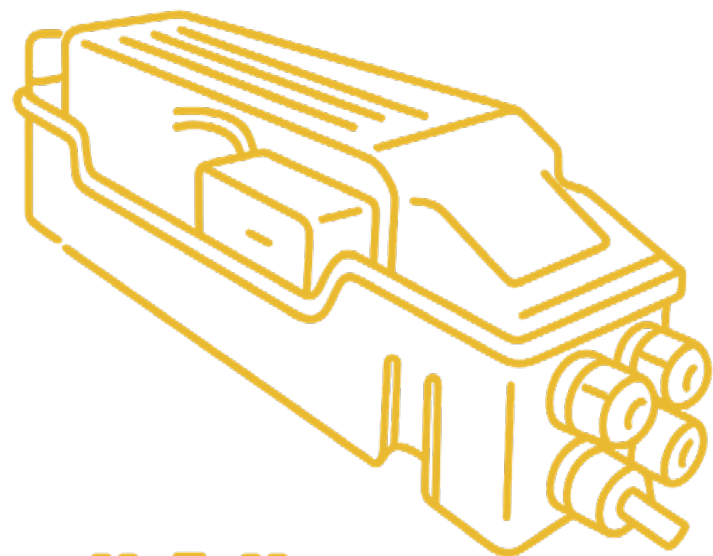
- Mounting: 2 points
- Format: 19" / 1 U
- Depth: 265 mm
- Maximum load: 20 kg

STORAGE PATCH PANEL

Allows equipment to be stored in a compartment that can be secured with a key.

- Mounting: 4 points
- Format: 19" / 2 U
- Depth: 300 mm
- Maximum load: 40 kg





BOXES



58

SEALED BOXES

62

OUTDOOR BOXES

70

INDOOR METAL BOXES

74

INDOOR PLASTIC BOXES



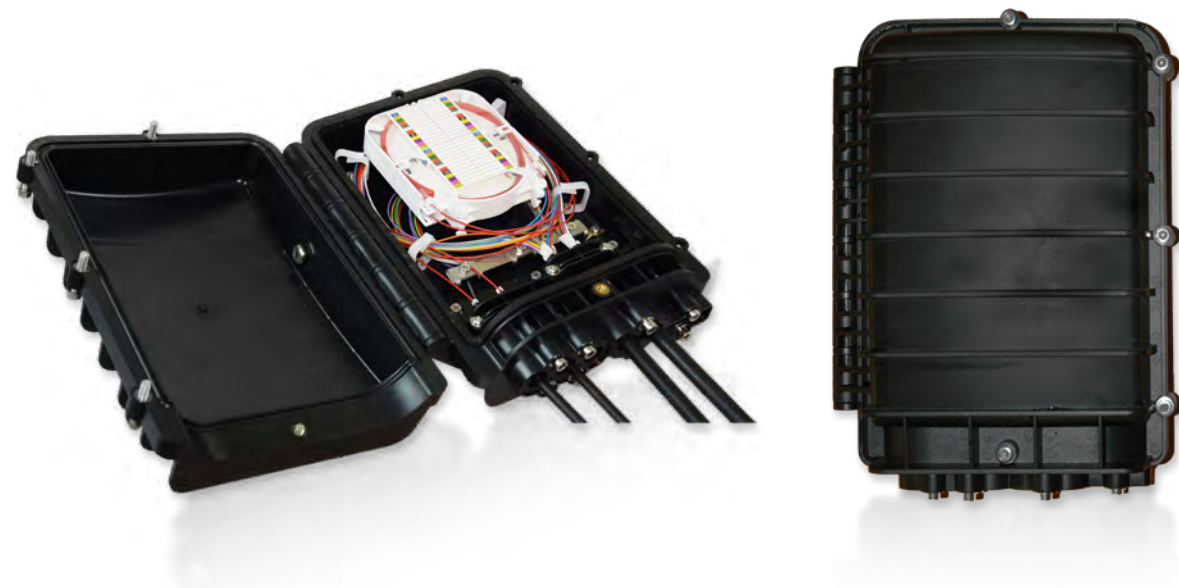
SEALED BOX - FLAT



Used as a flexible point between the transport and distribution parts of FTTH networks, waterproof boxes can be installed in pull chambers, on poles or on walls, with or without couplers.

They are designed to accommodate, manage and protect 12 to 96 splices. The indoor configuration is modular, with stackable pivoting cassettes, each of which can accommodate up to 24 fibres.

Compact, waterproof and highly resistant, FOLAN boxes can be easily integrated into small underground spaces. The body/cover and cable entry/exit seals are ensured by compression seals (mechanical sealing). The cables pass through various ports on one side of the box.



FEATURES	
Dimensions (W x H x D mm)	220 x 100 x 300
Empty weight (kg)	2.7
Material/Colour	ABS-PC plastic / Black
Operating temperature	-40°C / +55°C
Protection rating	IP68 - Mechanical compression - Pressurisation valve
Service life	Over 25 years
Earthin	Integrated
Inputs/Outputs Cable diameter	• 1 oval port 3 inputs: for 3 cables Ø 8 to 15 mm or 6 cables Ø 4 to 8 mm • 1 oval port 2 inputs: for 2 cables Ø 8 to 11 mm or 4 cables Ø 4 to 8 mm • 1 oval port with 5 inputs: for 1 cable Ø 6 mm + 4 pigtails Ø 2 mm
Cable fastening	Using cable glands and fastening system (outer sheath) Using fastening plate (cable reinforcement elements)
Accessories included	Plastic cylinders for sealing unused ports Plastic cable ties Splice protectors
Options	Additional cassette with splice protectors
Mounting	Wall, aerial & post

SEALED BOX - DOME



DOME SEALED BOX - 12-144 OF



DOME SEALED BOX - 12-288 OF



WATERPROOF SEALED BOX - COUPLERS

The waterproof dome box with couplers (BED Cpl) is designed to accommodate up to 120 splices and incorporates 1x8, 1x16 or 1x32 PLC couplers and up to 33 SC-PC or SC-APC connectors. The indoor configuration is modular, with 24-fibre pivoting cassettes that can be stacked.

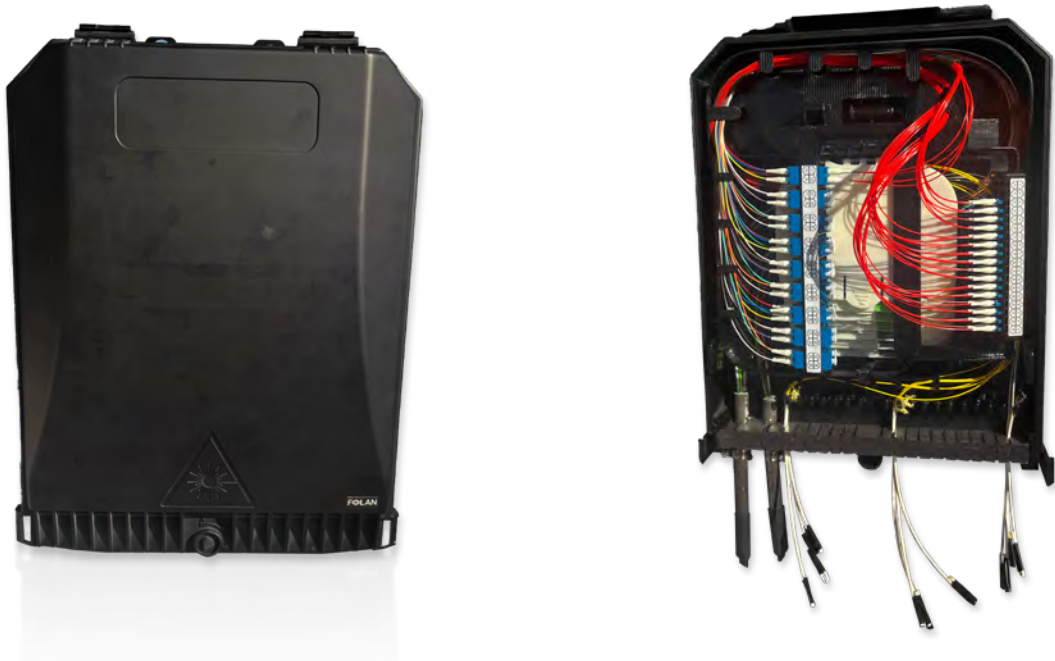


FEATURES			
	DSC 144	DSC 288	DSC COUPLERS
Dimensions (W x H x D mm)	450 x Ø 230	480 x Ø 260	478 x Ø 260
Empty weight (kg)	4.8	6.5	5.8 to 6.2
Material/Colour	ABS-PC plastic / Black		
Operating temperature	-40°C / +65°C		
Protection rating	IP68 - Mechanical compression - Pressurisation valve		
Service life	Over 25 years		
Earthing	Integrated		
Inputs/Outputs Cable diameter	• 1 oval port: for 2 cables Ø 10 to 17.5 mm or 16 cables Ø 5 to 7 mm • 4 single ports: for 1 cable Ø 12 to 17.5 mm or 1 cable Ø 8 to 12 mm or 4 cables Ø 5 to 7 mm	• 1 oval port: for 2 cables Ø 10 to 16 mm or 2 cables Ø 16 to 22 mm • 2 double ports: for 2 cables Ø 10 to 17.5 mm or 16 cables Ø 5 to 7 mm • 2 single ports: for 1 cable Ø 12 to 17.5 mm or 1 cable Ø 8 to 12 mm or 4 cables Ø 5 to 7 mm	• 1 oval port: for 2 cables Ø 10 to 22 mm or 2 cables Ø 10 to 17 mm • 2 double ports: for 2 cables Ø 10 to 17.5 mm • 2 single ports: for 1 cable Ø 10 to 17.5 mm
Cable lashing	By cable gland and fastening system (outer sheath) By fastening plate (cable reinforcement elements)		
Options	Additional cassette with splice protectors		
Mounting	Wall, overhead & post		Wall & post
Accessories included	Plastic cylinders for sealing unused ports Plastic cable ties Splice protectors	Re-tubing sheath Insulating tape Hexagonal key Wall mounting kit, aerial (except BED Cpl) and plastic post	

SEALED BOX - OUTDOOR OPTICAL CONNECTION POINT



Optical connection point allowing 32 subscribers to be connected to a single fibre in the distribution cable. In the case of GPON deployment, this outdoor cabinet incorporates one or more splitters, such as a 1x32 splitter, a 1x16 splitter or two 1x16 splitters, depending on the configuration.



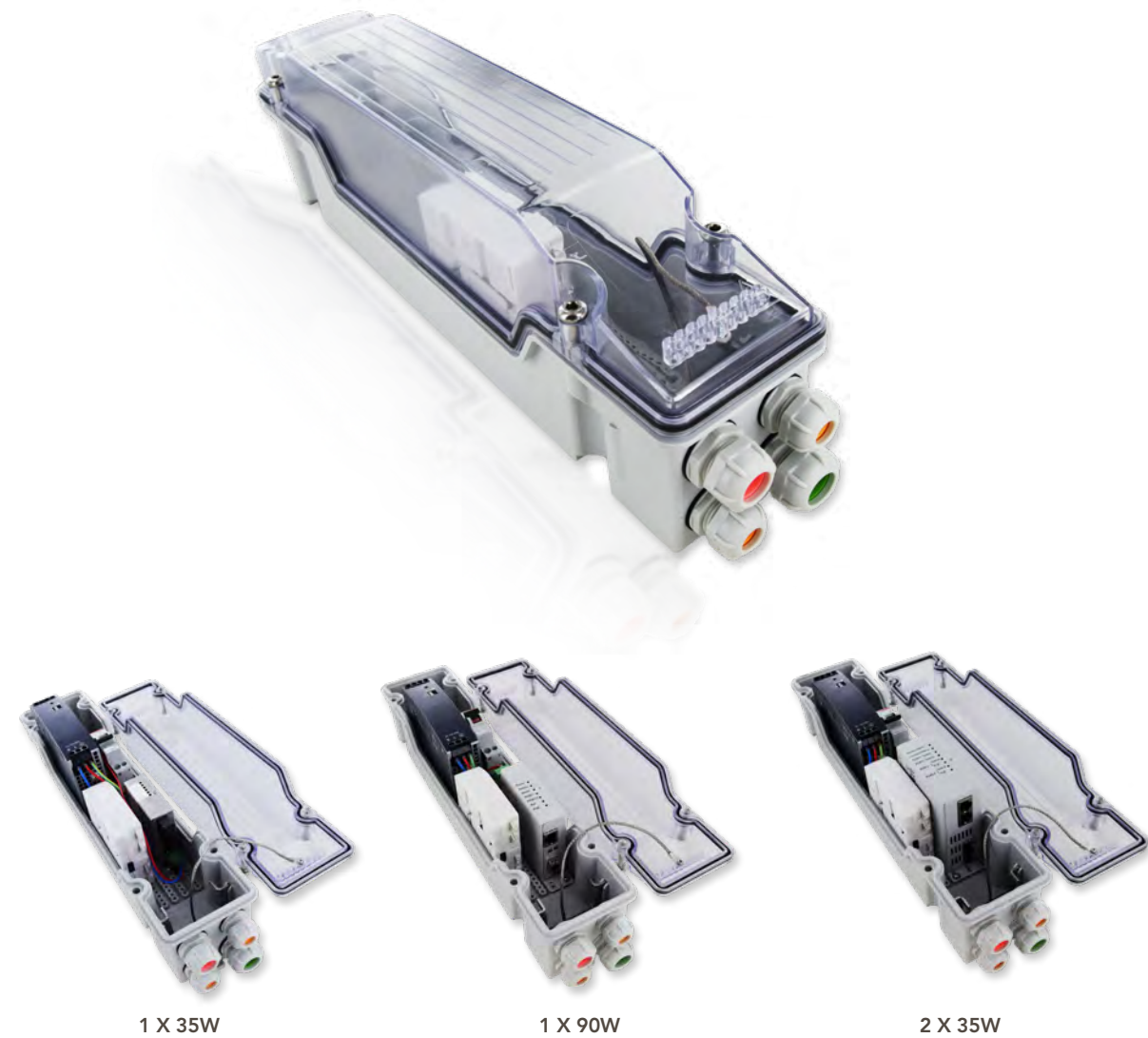
FEATURES	
Dimensions (W×H×D)	275 × 355 × 111 mm
Material	Thermoplastic, UV resistant
Colour	Black RAL 9005
Mount	Wall (4 x Ø6 mm screws not supplied) or pole-mounted (20 mm stainless steel clamp not supplied)
Distribution cable entries	4×Ø18 mm: 2 for distribution cables (branch) + 2 for secondary cables (termination)
Subscriber cable entries	16 channels / 32 Pre-terminated cables (2×8 mm)
Cable fastening	Steel tray supplied + metal comb for subscriber cables
Splicing	2 trays (12 fibres each), expandable
Splicing tray	12F heat-shrinkable tube (Ø60 mm max Ø2.4 mm after shrinking), G652 compliant (radius 30 mm), combs for Ø2.4 mm tubes
Bend radius	30 mm
Optical couplers	1×32 or 1×16
Adapter plate	8 SC simplex slots
1×32 coupler	Input: x1 without connector (1.5 m) Output: x32 Pre-terminated SC-APC (1 m) G657A2/B2e fibre Dimensions: 80×20×6 mm
1×16 coupler	Input: x1 without connector (1.5 m) Output: x16 Pre-terminated SC-APC (1 m) G657A2/B2e fibre Dimensions: 60×12×6 mm
Protection rating	IK09 (impact), IP55 (dust/water)
Operating temperature	-40°C to +70°C
Shipping	Version 1: OTB + 1×32 Pre-terminated + 32 SC-APC + 2 splice trays Version 2: OTB + 1×16 Pre-terminated + 16 SC-APC + 2 splice trays Coupler outputs connected to adapters, inputs welded to trays
Weight	2 kg

SEALED BOX - SEALBOX



The Sealbox box is an IP68 box for connecting urban video protection or video surveillance cameras. Its IP68 waterproof rating allows for any type of installation while ensuring a high level of protection for the electrical and electronic equipment installed inside.

The Sealbox box is available in two versions: one with a transparent front panel allowing maintenance teams to quickly identify faults, and one with an opaque front panel to prevent light pollution when installed on a façade. This equipped version will meet the connection needs of any equipment operating in PoE and PoE+. This version incorporates an industrial PoE+ media converter powered by a 120W power supply.



FEATURES	
Waterproof	IP68
Impact resistance	IK10
Material	UL94 V-0 certified
Colour	Grey RAL 7035
Weight	1.4 kg
External dimensions	375 x 85 x 120 mm
Operating temperature	-20°C to +60°C
PoE compatibility	IEEE 802.3af and IEEE 802.3at
Tested	EMC and Electrical Safety
Certification	CE

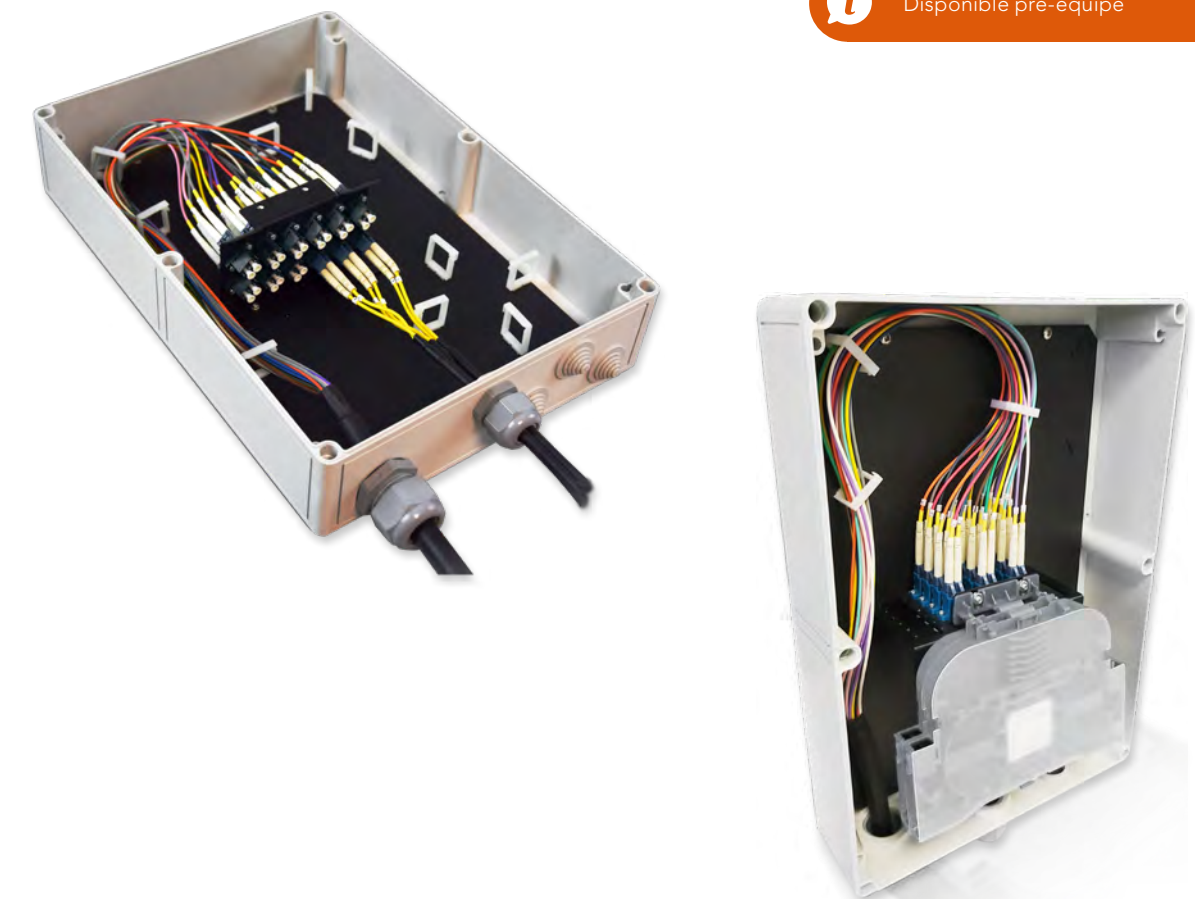
OUTDOOR BOX - CLASSIC PANAMA



Very easy to use, the PANAMA cabinet includes an M32 cable entry gland and up to 4 cable outlets via M25 cable glands. Connection operations are performed by direct connectorisation via a plate that can accommodate up to 24 fibres (12 LC Duplex connectors).

Depending on requirements, the PANAMA cabinet can also be managed by splicing via the integration of one or two 12-splices FOLAN cassettes.

Disponible pré-équipé



FEATURES		
Dimensions (W x H x D mm)	215 x 360 x 111	
Empty weight (kg)	2.8	
Material/colour	ABS-PC / Light grey	
Operating temperature	-40 to +70°C	
Protection rating	IP66	
Impact resistance rating	IK08	
Direct connection capacity	24 OF	
Splicing capacity	24 splices (2 cassettes x 12 OF)	
Footprints	12 SC (12 LC Duplex)	
Inputs/Outputs Cable diameter	1 M32 cable gland for cables Ø 12 - 20 mm	4 M25 cable glands with multi-hole ring for 3 cables Ø 5 - 7 mm
Cable fastening	Via cable glands	
Included accessories	Cable guides	
Options	Pole mounting kit	
Mounting	Wall mounting with 4 screws (not supplied) or pole mounting (optional)	

OUTDOOR BOX - PANAMA COMPACT



The PANAMA COMPACT cabinet includes a PG16 cable entry gland and two M25 cable outlets with multi-hole glands.

Available pre-equipped



FEATURES		
Dimensions (W x H x D mm)	154 x 250 x 90	
Empty weight (kg)	0.8	
Material/Colour	ABS-PC / Light grey	
Operating temperature	-40 to +70°C	
Protection rating	IP54	
Impact resistance rating	IK10	
Direct connection capacity	12 OF	
Splicing capacity	12 splices (1 cassette x 12 OF)	
Pins	12 SC (6 LC Duplex)	
Inputs/Outputs Cable diameter	1 PG16 cable gland for cables Ø ≤ 14 mm	2 M25 cable glands with multi-hole ring for 3 cables Ø 5 - 7 mm
Cable fastening	Via cable glands	
Accessories included	Cable guides Plastic cable ties Wall mounting kit	
Options	Pole mounting kit	
Mounting	Wall mounting with 4 screws (supplied) or pole mounting (optional)	

ENCLOSURES

PATCH PANELS

BOXES

AERIAL EQUIPMENT

CABLES & PRE-TERMINATED CABLES

PATCHCORDS & PIGTAILS

COPPER

COMPONENTS

TECHNICIAN EQUIPMENT

OUTDOOR BOX - PANAMA HYBRID



To optimise the implementation of antenna connection infrastructure, FOLAN has developed the PANAMA range of cabinets. Particularly compact and lightweight, the PANAMA HTTA-PTTA hybrid cabinet provides the optical link between the RRUs (Remote Radio Units) and the base station/BBU (BaseBand Unit), as well as powering the RRUs thanks to two separate fibre and power management areas.

The «power» section can accommodate circuit breakers and electrical terminal blocks. On the «fibre» side, connection operations are simplified by direct connectorisation via a plate that can accommodate up to 24 fibres (12 LC Duplex connectors) and a coiling area.



FEATURES	
Dimensions (W x D x H mm)	400 x 180 x 300 mm
Type of slots	12 SC / 12 LCD
Mounting	Wall / Pole (optional)
Material/finish	ABS PC
Weight when equipped	6kg
Closure/locking	Key lock (type 1242E)
Accessories supplied	1 wall mounting kit 2 M25 multi-hole gland seals (24OF version box) 1 comb and 4 comb covers (circuit breaker bridging)
Available options	Pole mounting kit Circuit breakers + junction block
Protection rating	IP55
Impact resistance	IK10

ENCLOSURES

PATCH PANELS

BOXES

AERIAL EQUIPMENT

CABLES & PRE-TERMINATED CABLES

PATCHCORDS & PIGTAILS

COPPER

COMPONENTS

TECHNICIAN EQUIPMENT

OUTDOOR BOX - PANAMA COILING UNIT



Depending on the constraints of certain installations, it is sometimes necessary to manage excess cable length in a protected manner.

The PANAMA cabinet is available as a coiling cabinet to meet this need. The lower entry of the PANAMA cabinet has been modified to allow the integration of cable loops.

The cables are then coiled inside the cabinet using half-cylinders to ensure a minimum bending radius. The cables are also held in place using fasteners.



FEATURES	
Dimensions (W x H x D mm)	254 x 360 x 111
Empty weight (kg)	2.5
Material/Colour	ABS-PC / Light grey
Operating temperature	-40 to +70°C
Impact resistance rating	IK08
Maximum capacity	70 m of Ø 5 mm cable
Inputs	2 main inputs for direct cable passage
Cable fastening	With hook-and-loop fasteners
Options	Pole mounting kit Entry closure
Fixing	Wall mounting with 4 screws (not supplied) or pole mounting (optional)

ENCLOSURES

ENCLOSURES

PATCH PANELS

BOXES

AERIAL EQUIPMENT

CABLES & PRE-TERMINATED CABLES

PATCHCORDS & PIGTAILS

COPPER

COMPONENTS

TECHNICIAN EQUIPMENT

OUTDOOR BOX - MANAGUA OPTICAL



Dedicated to the implementation of FTTA infrastructure, FOLAN has developed the MANAGUA range of cabinets for managing passive connections and storing excess connection cable lengths. For fibre connections only, the MANAGUA cabinet enables the connection between base stations/BBUs (Baseband Units) and the distribution of fibres to RRUs/RRHs. The MANAGUA Optical cabinet has one input for optical cable and four outputs for RRU/RRH patchcords. Each of these four outputs can manage three patchcord connections. The indoor layout features a 24-fibre patch panel with LC connectors for quick and easy direct connection.



FEATURES	
Dimensions (H x W x D mm)	380 x 250 x 122.5 mm
Capacity	24 OF
Type of footprints	12 SC / 12 LCD
Mounting	Wall, Pole
Installation	Direct connection
Material/finish	Steel / epoxy RAL 7035
Operating temperature	-40°C to +70°C
Weight	~2.3 kg
Permissible cable diameter	PG21 Ø 10 to 16 mm PG21 with multi-hole glands: Ø5mm
Number of cable entries/exits	1 PG21 cable gland 4 PG21 cable glands with multi-hole ring 3x Ø5mm
Cable lashing	Using cable glands
Closure/locking	Key lock Type 1242 E
Accessories supplied	2x Din rail 2x screwless electrical terminal blocks, 70mm ² cross-section 10x screwless electrical terminal blocks, 16mm ² cross-section (connected in 2x5 blocks)
Protection rating	P55
Impact resistance rating	IK10

ENCLOSURES

PATCH PANELS

BOXES

AERIAL EQUIPMENT

CABLES & PRE-TERMINATED CABLES

PATCHCORDS & PIGTAILS

COPPER

COMPONENTS

TECHNICIAN EQUIPMENT

OUTDOOR BOX - EXTENSION MANAGUA



In the context of electrical connections, the MANAGUA EXTENSION cabinet enables the electrical connection between base stations and BBUs (Baseband Units).

The «power» section can accommodate circuit breakers and electrical terminal blocks. The MANAGUA EXTENSION box is designed to handle a maximum power of 2500W at a minimum voltage of 39Vdc, and has two electrical cable inputs and four outputs for powering remote equipment.



FEATURES	
Dimensions (H x W x D mm)	380 x 250 x 122.5 mm
Capacity	24 OF
Mounting	Electrical connection
Installation	Direct connectorisation
Material/finish	Steel / epoxy RAL 7035
Operating temperature	-40°C to +70°C
Weight	~2.3 kg
Number of cable entries/exits	1 PG21 cable gland Ø 10–16 mm 1 PG36 cable gland Ø 15–22 mm Ø 22–33 mm 4 PG29 cable glands Ø 13–18 mm Ø 18–25 mm
Cable fastening	Using cable glands
Closure/locking	Key lock Type 1242 E
Accessories supplied	2x DIN rail 2x Screwless electrical terminal blocks, 35mm ² cross-section 5x Screwless electrical terminals, 16 mm ² cross-section (connected)
Protection rating	IP55
Impact resistance rating	IK10

ENCLOSURES

PATCH PANELS

BOXES

AERIAL EQUIPMENT

CABLES & PRE-TERMINATED CABLES

PATCHCORDS & PIGTAILS

COPPER

COMPONENTS

TECHNICIAN EQUIPMENT

OUTDOOR BOX - MANAGUA HYBRID



For fibre and electrical connections, the MANAGUA HYBRID cabinet connects base stations/BBUs (Baseband Units) and distributes fibre to RRU/RRHs. The «power» section can accommodate circuit breakers and electrical terminal blocks. On the fibre side, the indoor layout features a 24-fibre patch panel with LC connectors for quick and easy direct connection. The MANAGUA HYBRID cabinet is designed to handle a maximum power of 4500W at a minimum voltage of 39Vdc, and has one input for optical cable and four outputs for RRU/RRH patchcords. Each of these four outputs can manage three patchcord connections, as well as three inputs for electrical cables and nine outputs for powering remote equipment.



FEATURES	
Dimensions (W x H x D mm)	400 x 300 x 162.5
Capacity	24 OF
Type of footprints	12 SC / 12 LCD
Mounting	Wall, Pole
Installation	Direct connection
Material/finish	Steel / epoxy RAL 7035
Operating temperature	-40°C to +70°C
Weight	~4.8 kg
Number of cable entries/exits	2 PG21 cable glands Ø 10 to 16 mm 1 PG36 cable gland Ø 15 to 33 mm 10 PG29 cable glands Ø 13 to 25 mm 4 PG21 cable glands with multi-hole ring 3x Ø5mm
Cable fastening	Via cable glands
Closure/locking	Key lock Type 1242 E
Accessories supplied	2x DIN rail 2x screwless electrical terminal blocks, 70mm ² cross-section 10x screwless electrical terminal blocks, 16mm ² cross-section (connected in 2x5 blocks)
Protection rating	IP55
Impact resistance rating	IK10

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COPPER

COMPONENTS

TECHNICIAN EQUIPMENT

OUTDOOR BOX - MANAGUA COILING UNIT



The MANAGUA cable storage box is designed for storing excess lengths of optical cables and optical patchcords. The indoor layout of the cabinet ensures secure coiling via cylinders that comply with the minimum bending radius of the optical cable. The cable can also be secured using fasteners if necessary.



FEATURES	
Dimensions (H x W x D mm)	204 x 203 x 84.5 mm
Capacity	Up to 5 m - cable Ø 7.8 mm
Mount	Wall, Pole
Material/finish	Steel / epoxy RAL 7035
Weight	~2.8 kg
Number of cable entries	2 entries at the bottom of the box (gland integration possible)
Closure/locking	Lever system
Protection rating	IP55
Impact resistance rating	IK10

INDOOR METAL BOX - IMB ATLAS



Usually located at the foot of a building, this box connects the operator cables coming from outside to the riser cables serving the dwellings via connection points.

This modular box can accommodate 48 fibres. It is used as a customer module for connecting riser cables installed by the building operator (BO) or as an operator module for connecting commercial operator (CO) cables, in point-to-point or PON configurations.

The BMI FOLAN can be managed by multiple operators via independent inputs in the modules. Adding several modules provides a scalable sharing point that combines ease of connection, security and separation of the BO and CO parts.



FEATURES	
Dimensions (W x H x D mm)	450 x 160 x 150
Empty weight (kg)	5.1
Material/Colour	Steel / Light grey
Impact resistance rating (IK)	IK07
Direct connection capacity	48 OF
Splicing capacity	48 splices (4 cassettes x 12 OF)
Pins	48 SC
Inputs/Outputs Cable diameter	1 input/output on the main compartment with brush protection 2 top/bottom openings for inter-cabinet distribution for Ø 7 - 15 mm cables
Cable fastening	Using plastic cable ties
Options	Coupler support Secondary spark gap support
Mounting	Wall mounting with screws (4 fixing points or rail mounting)
Plastic version*	Technical information available on request

INDOOR METAL BOX - FIDJI



FIDJI boxes offer the option of entering the cable from the top or bottom, ensuring they fit well into their environment and are easy to use. Highly compact, durable and lockable, they can also accommodate different types of connectors in the same box, thanks to their connector plate configuration. Where the coiling areas ensure compliance with the fibre bending radius, FOLAN pivoting cassettes offer easy and convenient access to fibres and splices, while providing effective protection.

On request, the cabinets can be equipped with a module protecting the connectors and pigtails, also lockable with a padlock, incorporating outlets at the top or bottom. They can be sold bare or pre-equipped with connectors and pigtails.

FIDJI BOX SET OF 12 SPLICES



FIDJI BOX SET 24 SPLICES



FIDJI 24 HIGH-DENSITY SPLICE BOX



FEATURES			
	FIDJI 12	FIDJI 24	FIDJI 24 HD
Dimensions (W x D x H mm) With protection module	Without protection module: 180 x 80 x 150 mm With protection module: 255 x 80 x 150 mm	Without protection module: 250 x 90 x 240 mm With protection module: 325 x 90 x 240 mm	
eight (kg) excluding screws With protection module	1 1,5	2 2,5	
Material/colour	Steel / Black		
Direct connection capacity	24 OF	48 OF	96 OF
Splicing capacity	24 splices (2 cassettes x 12 OF)	48 splices (4 cassettes x 12 OF)	96 splices (4 cassettes x 24 OF)
Imprints	6 SC Duplex 12 SC 12 ST 24 LC Duplex	24 SC Duplex 24 SC 24 ST 48 LC Duplex	24 LC-Qd
Inputs/Outputs Cable diameter	Pre-cuts at top and bottom 2 cables ≤ 15 mm to 6 cables ≤ 8 mm		
Cable fastening	Using plastic cable ties and cable stops		
Accessories included	Cable guides, cable ties, SC or ST plugs		
Options	Protection module, DIN rail mounting		
Mounting	Wall mounting with 4 screws (not supplied) and nylon spacers (supplied)		

INDOOR METAL BOX - QINA



With its capacity for 12 optical fibres and compact size, the Qina FOLAN box is ideal for deploying an FTTO network. This box is suitable as a termination point for fibre optic cables in small technical rooms where a Cabinet or cabinet cannot be installed.

A slim solution for connection boxes, the QINA box adapts to all installation configurations. A pigtail connection (welded pigtails) is possible via the 12-splice FOLAN cassette, as is a direct connection via the connection support plate, protected in a compact compartment that can be secured with a padlock.

Available pre-equipped

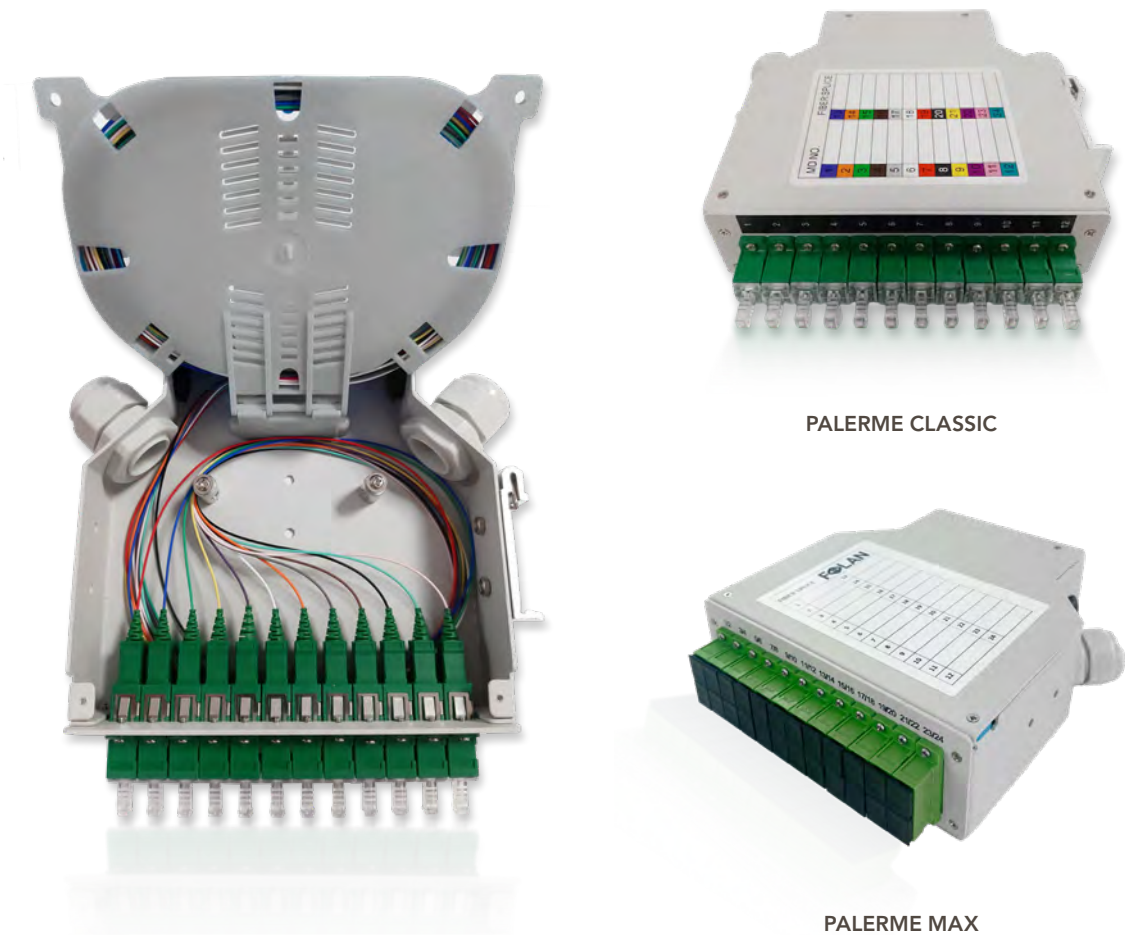


FEATURES	
Dimensions (W x H x D mm)	180 x 197 x 47,5
Weight (kg)	1,1
Material/Colour	Steel / Light grey
Direct connection capacity	12 OF
Splicing capacity	12 splices (1 cassette x 12 OF)
Footprints	12 SC 8 ST
Inputs/Outputs Cable diameter	1 input/output at the bottom of the cabinet For cables with a diameter ≤ 15 mm
Cable fastening	Using plastic cable ties
Accessories included	Plastic cable ties, cable guides, re-tubing sheath
Options	DIN rail mounting
Mounting	Wall mounting with 4 screws (not supplied)

INDOOR METAL BOX - PALERMO



The PALERME metal box offers a versatile solution for secure fibre optic management in all types of environments. Flexible and compact, this box can be easily mounted on a DIN rail in an box and allows cables to be routed from four different entry points. The box is equipped with two cable glands and two plugs, as well as a pivoting splice cassette with a capacity of 12 optical fibres. In this pre-terminated version, it also includes six LCAD connectors with digital identification.



FEATURES		
	PALERME CLASSIC	PALERME MAX
Dimensions (W x H x D mm)	133 × 136,6 × 35 mm	133 × 136,6 × 48 mm
Material	Compact grey aluminium	
Splicing cassette	Pivoting, blue ABS, capacity for 12 fibres	
Cable entries	4 entries: 2 with M20 × 1.5 PE cable glands, 2 with plastic plugs	
Connection interface	• 12 SC-APC connectors or 6 LCD connectors • Or 8 ST-UPC connectors with digital identification	12 SCD connectors
Capacity	12 OF	24 OF
Accessories supplied	1 bag containing 12 smoooves and 2 rilsan cable ties	1 bag containing 24 smoooves and 2 rilsan cable ties
Mounting	Mounting bCabinetet for installation on a DIN rail	

INDOOR PLASTIC BOX - PBO ANGARA



Designed for vertical FTTH applications, the Indoor PLASTIC BOX - PBO ANGARA or landing box connects the riser cable to the various subscriber connection cables. It is easy to install in the common areas of a building, inside a service duct or cable tray.



FEATURES	
Dimensions (W x H x D mm)	125 x 288 x 42
Empty weight (kg)	0,43
Material/Colour	ABS-PC plastic / White
Welding capacity	32 splices (8 cassettes x 4 OF)
Inputs/Outputs	Inputs (side) for riser cable Ø 4 to 15 mm, Outputs (6 at the top, 6 at the bottom) for indoor subscriber connection cables with a diameter of 2.5 to 6 mm
Cable diameter	
Cable fastening	Using plastic cable ties (inputs) using secure clips (outputs)
Options	Protective skirts
Mounting	Wall, with screws

PLASTIC INNER BOX - PTO V5.3



The PLASTIC INNER BOX - PTO V5.3 has been developed for residential applications related to FTTH deployment requiring high implementation flexibility. This socket has been designed to meet Orange's current specifications. This PTO is located in the subscriber's home and allows fibre optic management via an SC APC interface.



FEATURES			
Dimensions	Width	Height	Depth
	80mm	80mm	28mm (mur) / 25mm (rail Din)
Coulor	White - RAL 9010		
Mounting	• Wall mounting with screws (not supplied) or adhesive • On flush-mounted box: 2 holes with a diameter of 60 mm for horizontal or vertical mounting + 4 offset holes if necessary • On DIN rail without additional parts, horizontal or vertical positioning possible		
Cable entries	WELDING CONFIGURATION		PRE-TERMINATED CABLE CONFIGURATION
	4 entries: right, left, bottom and rear. Compatible with connection cables up to 5.2 mm in diameter		3 inputs: left, bottom and rear. Compatible with Pre-terminated cable with connector mounted on Ø 4.2mm sheath
Connector output	1 SC connector (standard without lug)		
Fibre routing	Minimum bend radius: 15 mm (front of splicing cassette in main compartment) / 20 mm (rear of main compartment to ensure the bend radius of the connection cable)		
Coiling/absorption area for excess length	1.0m for 250µm bare fibre / 900µm tubed fibre		
Splice support	Individual heat-shrinkable protection, length 40 mm or 45 mm, Ø 2.3 mm after shrinking		
IP (dust)	IP50 (wall) / IP40 (DIN rail)		
IK (impact)	IK05		
Operating temperature	-5°C à +45°C		

INDOOR PLASTIC BOX - PTO V6.3



The V6.3 optical terminal box has been developed for indoor applications in FTTH deployments, offering great flexibility of use. It has been designed in accordance with the specifications of European telecommunications operators. It is the optical termination point located within the subscriber's premises, allowing the connection of up to 4 LC format optical ports.

The design of this PTO allows it to be installed in several configurations thanks to different mounting options:

- wall mounting (surface-mounted or on a flush-mounted box),
- on DIN rail without additional accessories.

It offers good mechanical performance: resistance to vibrations, impacts (IK), crushing and tearing of the main part, as well as protection against dust penetration (IP rating).



FEATURES	
Number of optical ports	Up to 4 optical ports with LC/PC or LC/APC duplex connectors
Connection mode	Fusion splicing with ANT protection
Mounting types	• Wall (surface-mounted or on Ø 60 mm flush-mounting box) • On DIN rail (no additional accessories required)
Cable entries	6 entry options for subscriber cables (left, right, top, bottom, rear, etc.)
Compatible cables	G.657 fibres with minimum bending radius management and excess length
Convenient cabling	Functional compartment independent of the mounting base, allowing connection set back from the wall
Dust and impact protection	Dust-tight, resistant to mechanical shocks, vibrations, crushing and tearing
Protective flap	Integrated pivoting shutter for the labelling area; integrated spring-loaded shutter for automatic closure
Multi-zone compartment	Main compartment separate from the base, removable without tools
Dimensions (W x H x D)	80 x 80 x 26.8 mm - Format suitable for integration into a GTL or communication box
Packaging	Single box containing: • PTO V6.3 equipped with an LC duplex FOLAN adapter + pigtail • Accessory kit (2 plastic cable ties) • Instructions via QR code

INDOOR PLASTIC BOX - PTO V6.2



As the point of arrival for fibre optics at the subscriber's premises, Optical Terminal Boxes (OTBs) must meet all the quality, reliability and aesthetic requirements found in a domestic environment. Their compact size allows for easy and discreet integration into the subscriber's home.

FOLAN offers 1, 2 and 4 fibre optic terminal outlets that are easy to install in existing and new homes, commercial premises and businesses (FTTH / FTTO).



FEATURES	
Usage	Déploiement FTTH en Zone Très Dense (ZTD) - Résidentielle
Dimensions (W x H x D mm)	80 x 80 x 28
Material/Colour	Plastique ABS-PC / Blanc
Capacity	4 OF
Splicing capacity	4 épissures thermorétractables
Imprints	SC Simplex
Cable entries Cable diameter	4 for cables with a diameter of 3.5 to 5.2 mm
Cable fastening	Plastic cable tie on retaining device
Fixing	Wall mounting with screws and plugs included
	On flush-mounted box (Ø 60 mm)
	On DIN rail
Port protection	FOLAN self-protected connector or sealing cap
Easy wiring	Detachable front panel
Identification	Protected identification area / Colour coding for multi-fibre applications

INDOOR PLASTIC BOX - PTO V6.2 REEL KIT



To facilitate the installation of the Fibre Optic Terminal Outlet, FOLAN has developed an eco-designed reel kit made entirely of cardboard, which allows the PTO and its Pre-terminated cable to be unwound quickly.



FEATURES			
Capacity	1 OF	2 OF	4 OF
PTO type	V6.2		
Cable type	Indoor subscriber connection cable		
Structure	900 µm distribution		Micromodule 250 µm
Dimensions (W x H x D mm)	265 x 255 x 52		
Cable length (m)	25 or 40		
Weight (kg)	25 m: 0.70 - 40 m: 0.94		
Box/flange material	Micro-fluted cardboard		
Cable specifications	Ø 4 mm - LSZH-FR (Dca)		

 Available in stranded kit

FEATURES	
Usage	FTTH deployment in less dense areas (LDA), residential application
Installation	Wall mounting or mounting on flush-mounted box
Cable entries	7 entries: 2 on the left, 2 on the right, 2 below, 1 at the rear
Subscriber outputs	1 or 2 optical ports with SC Simplex footprint
Port protection	FOLAN self-protected connector or sealing plug
Access to the box	Opens and closes without tools
Customisation	Customisable with customer logo
Coiling area	1.5 m in 250 µm / 1 m in 900 µm

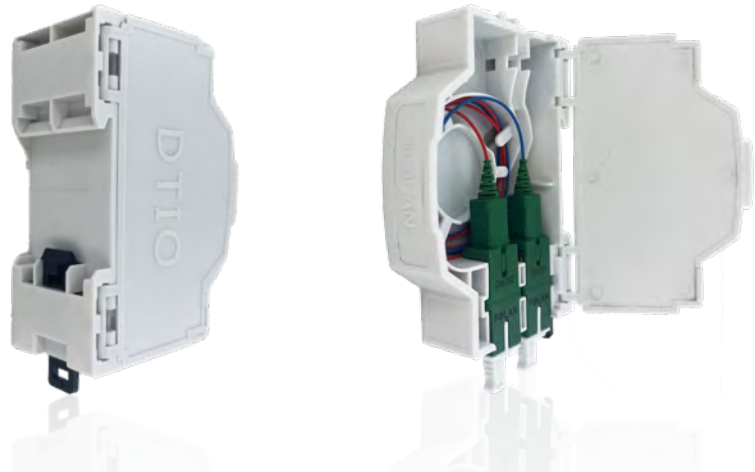


INDOOR PLASTIC BOXS - DTIO / BMO / BMO



INDOOR OPTICAL TERMINATION DEVICE (DTIO)

The Indoor PLASTIC BoxS - DTIO / BMO is a modular solution for indoor optical networks. It enables the connection, protection and distribution of optical fibres in residential or commercial environments. Designed to be compact and attractive, it offers simple, quick and secure installation, while ensuring efficient cable management and protection of splices and connectors.



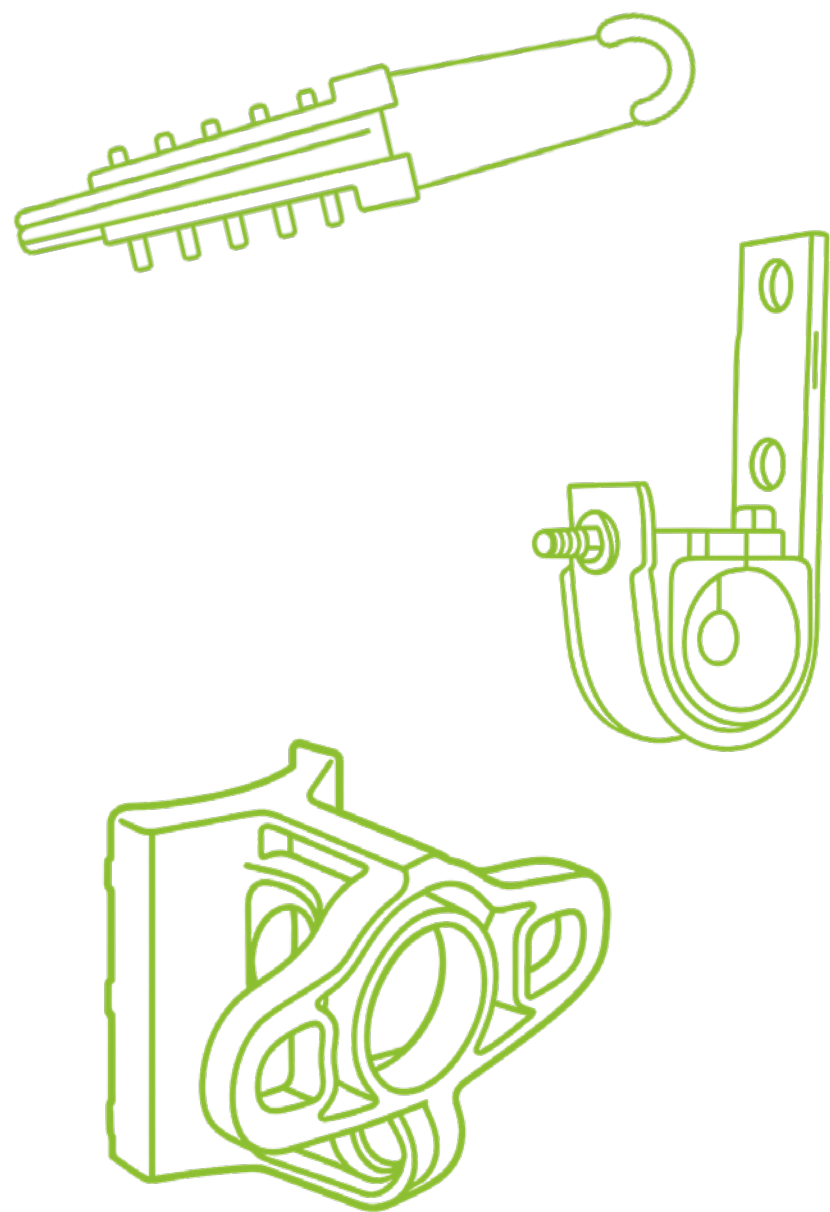
FEATURES	
Number of ports	2 or 4
Installation method	DIN rail mounting
Fibre management capacity	2 or 4 optical fibres
Supported connector types	SC/APC or SC/UPC
Cable management	Internal guides for bending radius
Material	High-strength flame-retardant plastic
Operating temperature	-40 °C to +85 °C
Protection rating	IP20 (indoor use)

OPTICAL WALL (BMO)

The Optical Wall (OWB) is the ideal solution for any installation of end equipment at the end of an optical network. This box is the last distribution point in the fibre network before conversion to copper for connection to peripherals.



FEATURES	
Dimensions (W x H x D mm)	150 x 110 x 32
Material/Colour	ABS-PC plastic / White
Capacity	4 OF
Splicing capacity	4 splices (1 cassette x 4 OF)
Imprints	SC Simplex, FC, E2000
Inputs/Outputs Cable diameter	2 For Ø 4 mm cable on the right and Ø 10 mm cable at the rear
Cable fastening	Plastic cable ties (not supplied)
Wall mounting	Wall mounting with screws and plugs (not included)



A AERIAL EQUIPMENT



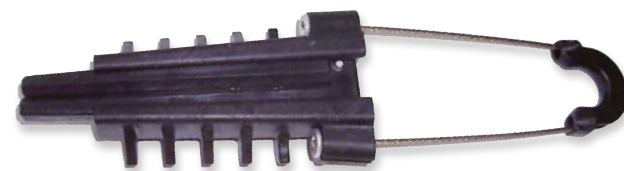
82	ANCHOR CLAMPS
83	SUSPENSION CLAMPS
84	ACCESSORIES
86	FASTENING AND PROTECTIVE ACCESSORIES



ANCHOR CLAMPS



Anchor clamps are used to keep optical cables taut during aerial deployments.



PLASTIC ANCHOR CLAMP

- Conical clamp for short-range ADSS cables < 60M
- Compatible with cables from 5 to 9 mm in diameter
- Cable length: 120 or 300 mm and UV-resistant thermoplastic

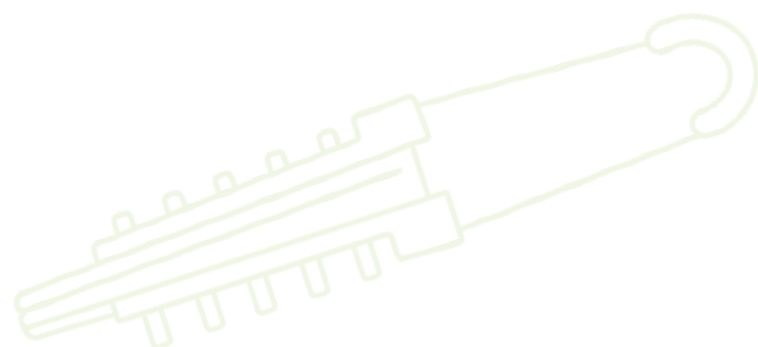
ALUMINIUM ANCHOR CLAMP

- Conical clamp for short-range ADSS cables < 100 m
- Compatible with cables from 7 to 19 mm in diameter
- Cable length: 400 mm
- Made of high-strength aluminium alloy and UV-resistant thermoplastic



ANCHOR CLAMP OFR FIBRE OPTIC CABLE CONNECTION

- Compatible with cables from 4 to 7 mm in diameter
- Range up to 50 - 70 m
- UV-resistant thermoplastic
- Cable length: 245 mm
- For fibre optic or copper cables, round or flat cross-section
- Quick and easy installation
- Opening hook with clip closure that can be inserted into a hole with a minimum diameter of 12 mm
- Non-detachable components



SUSPENSION CLAMPS



Suspension clamps are installed on the lengths between two anchor clamps to support the cable, either in a straight line or with a maximum deflection angle of 20°.

SUSPENSION CLAMPS OFR ADSS CABLES

- Fastened to a hook or pigtail bCabinetet, using a strap or bolt
- Maximum span: 150 m
- Compatible with cables from Ø 6.5 to 15 mm or Ø 15 to 23 mm
- Thermoplastic elastomer and hot-dip galvanised steel



RIGID SUSPENSION CLAMP

- Fixing:
- With 20 mm stainless steel strap
 - On pole with bolt
 - On crossbar with bolt
- Maximum range: 150 m
 - Compatible with cables from 8 to 20 mm in diameter
 - High-strength aluminium alloy and UV-resistant thermoplastic

SUSPENSION CLAMP OFR TELECOMMUNICATIONS CONNECTION CABLE

- Compatible with cables from 5 to 8 mm in diameter
- UV-resistant thermoplastic
- Tensile strength: 120 daN
- Range up to 50 - 70 m
- Quick and easy installation
- Dimensions: L 80 mm, W 16 mm, H 85 mm



ACCESSORIES



Located at the end of the distribution cable, between the PBO and the last fixing point, aerial connection accessories enable the deployment of fibre optic cables serving subscribers.

ANCHORING AND CONNECTION HOOKS

- Stainless steel
- Tensile strength: 180 daN
- Diameter: 5 mm



WOOD SCREWS OFR FRAMING



EXPANSION SCREWS OFR CONCRETE WALLS

TELESCOPIC LOVAGE CROSSES

Telescopic cable reels are devices used to manage overhead fibre optic cable reels. Each branch length can be adjusted during installation, allowing you to:

- create round or oval loops and optimise the management of excess length;
- comply with cable installation recommendations;
- adapt to the environment by minimising clutter and visual impact.



FEATURES							
	Bending radius		Storage coil R=20D		Blocking radius R=10D		Approximate weight
	Minimum	Maximum	Minimum cable diameter	Maximum cable diameter	Minimum cable diameter	Maximum cable diameter	
Size S	135 mm	200 mm	6,75 mm	10 mm	13,5 mm	20 mm	1,51 kg
Size M	200 mm	300 mm	10 mm	15 mm	20 mm	30 mm	1,64 kg
Size L	275 mm	480 mm	13,75 mm	24 mm	-	-	1,82 kg

UNIVERSAL ANCHORING CONSOLE

- Double or single anchor
- High-strength aluminium alloy
- Fastened with stainless steel strap (20 x 0.7 mm) or through bolt (Ø 14 or 16 mm)
- For all types of posts
- Fastening of crossbars and clamps



CROSSBEAM

- Hot-dip galvanised steel
- Bolt fastening

FASTENERS OFR CROSSBEAMS



FASTENING PLATE
Lightweight model Designed for wooden posts Galvanised steel



FASTENING BCABINETET
More resistant model Designed for wooden posts Galvanised steel



FASTENING BCABINETET
Designed for concrete posts Galvanised steel



EXTENSION OFR TELECOM POLES

Enables fibre optic cable to be deployed on existing telecoms poles, above the copper cable.

- Approved by Orange
- Installation on wooden and metal poles, either opposite existing reinforcements or perpendicular to them, depending on the space available and the fixing facilities
- The use of optional clamps ensures a secure fastening with strapping and allows the pole extension to be moved away to straddle a strap
- Hot-dip galvanised steel.



EXTENSION BODY



OPTIONAL MOUNTING BCABINETET

**STRIP OF POLES**

50-metre stainless steel band (20 x 0.7 mm), corrosion-resistant and suitable for fixing accessories to poles in fibre optic deployments.

STRAP CLIP

Stainless steel clip for 10 and 20 mm wide strapping, used to close and securely hold stainless steel strapping on poles in fibre optic deployments.

**PROTECTIVE STRIP**

UV-protected PVC protective strip designed to cover stainless steel strapping and prevent wear and tear caused by weather conditions and prolonged outdoor exposure.

STRAP CUTTING PLIERS

Reinforced steel cutting pliers, specially designed to cleanly cut stainless steel strapping during pole fastening operations.

**LEVER CLAMP**

Allows you to tension, mark and cut stainless steel strapping safely, facilitating the fastening of cables and accessories to poles and supports in fibre optic installations.

NUT - SPACER

Ensures stable and durable fastening of components to poles and supports during fibre optic cabling work.

**CURVED SUPPORT PLATE**

Curved support plate made of hot-dip galvanised steel, providing reinforced support and corrosion protection for installations on posts and supports.

SQUARE HEAD WOOD SCREW

Ensures a solid fastening on wooden supports, thanks to its square head that allows for secure screwing.

**DESCENT CRADLE**

Guides and holds cables with a diameter of 7 to 30 mm as they descend along poles, adapting to the straps already in place.

DESCENT CRADLE

Holds cables with a diameter of 7 to 30 mm on the posts to be nailed, facilitating their attachment and guidance along the support.

**THROUGH FASTENING BOLT**

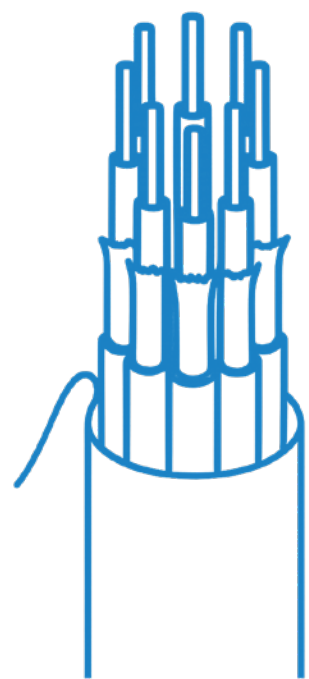
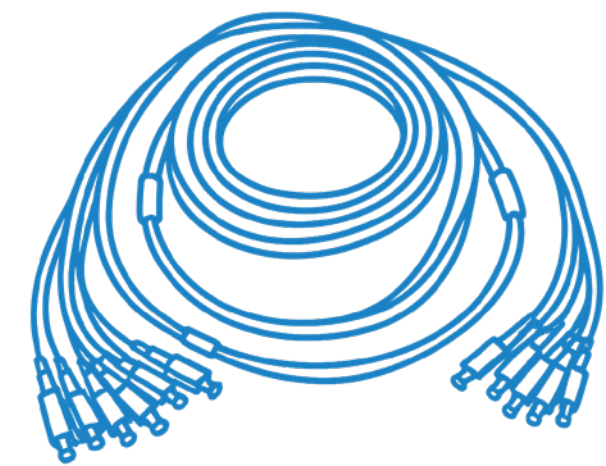
Allows elements to be securely fastened to posts or supports using a screw, nut and plate assembly for a 14 x 225/145 mm through fastening.

ASSEMBLY BOLTS

Used to assemble extension flanges, providing stable and secure fastening with a diameter of 14 x 60 mm.

**ASSEMBLY BOLTS**

Securely fasten the crossbars, ensuring stability and support with a diameter of 14 x 30 mm.



CABLES & PRE-TERMINATED CABLES



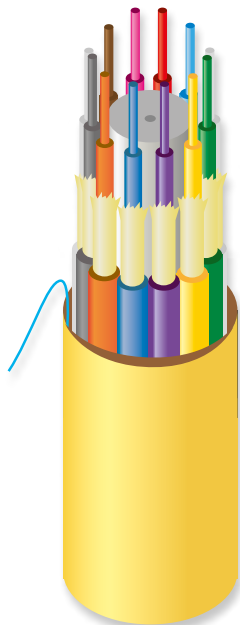
- 90 BREAKOUT CABLES
- 91 DISTRIBUTION CABLES
- 92 CENTRAL TUBE (UNITUBE) CABLES
- 93 SUBSCRIBER DROP CABLES
- 94 FOLAN CABLES OFR FTTA APPLICATIONS
- 95 MICROMODULE CABLE - GCMG
- 96 MINICORE PRE-TERMINATED CABLES
- 97 OUTDOOR PRE-TERMINATED CABLE - 12 TO 24 OF
- 98 MPO/MTP® PRE-TERMINATED CABLES



BREAKOUT CABLES



Generally used to connect active equipment to the front panel of passive equipment, breakout cables consist of a set of 2 mm patchcords (same diameter range as standard patchcords) grouped together in an outer sheath, the material of which may vary depending on the application.



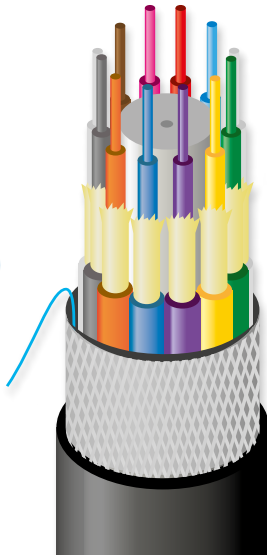
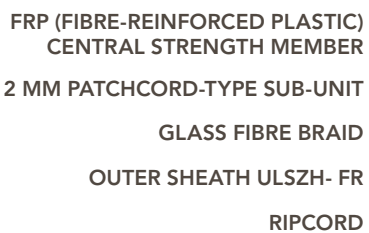
BREAKOUT CABLE (GCB)

Recommended for indoor connections, ideally installed in cable trays and risers.



REINFORCED BREAKOUT CABLE (GCBR)

Rodent-resistant thanks to its glass fibre braid, this cable is suitable for indoor and outdoor use and is particularly recommended for horizontal and vertical links in inter- and intra-building solutions.

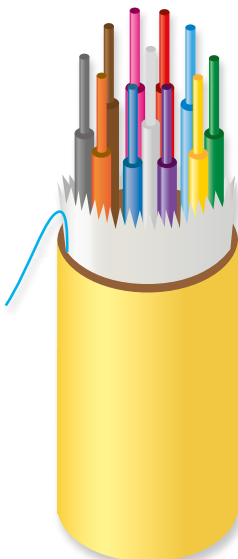


FEATURES		
	BREAKOUT CABLE (GCB)	REINFORCED BREAKOUT CABLE (GCBR)
Diameter	8,5 to 15 mm	8,2 to 15,4 mm
2 mm strand structure	Tight-buffered structure	
Outer sheath	LSZH-FR (flame-retardant, compliant with IEC 60332-1)	LSZH-FR with UV protection (flame-retardant, compliant with IEC 60332-1 and 60332-3 standards)
Outer sheath colour	SM G652D: yellow MM 62.5/125 µm OM1: orange MM 50/125 µm OM2: grey MM 50/125 µm OM3: turquoise MM 50/125 µm OM4: magenta	Black
2 mm sheath colour	FOTAG – EI / TIA 598	According to France Télécom
Optical fibre count	2 to 24 optical fibres	2 to 24 optical fibres
RPC	On request (for indoor cables)	

DISTRIBUTION CABLES

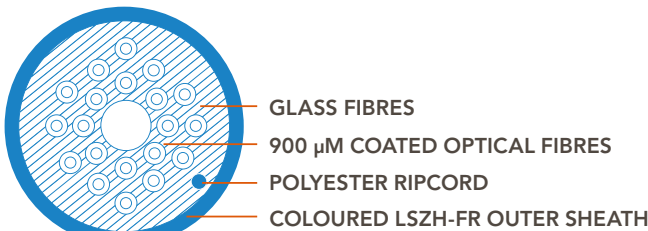


They are installed directly into end equipment (such as racks, enclosures, or drawers) and are generally used to connect two passive devices over short to medium distances. Composed of a set of 900 µm fibres, they are typically reinforced with glass or aramid fibres and grouped within an outer sheath. Their 900 µm structure allows for quick and easy on-site connector termination.



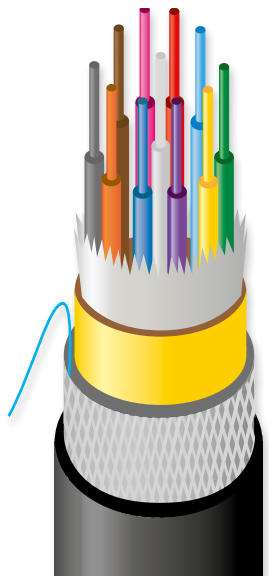
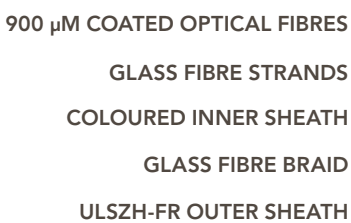
DISTRIBUTION CABLE (GCD)

Flexible and compact, they are suitable for establishing indoor optical links from one passive device to another.



REINFORCED DISTRIBUTION CABLE (GCDR)

Extremely flexible, it allows routing through indoor and outdoor conduits with minimal space requirements and also supports direct connectorization. The dual reinforcement provided by the braid and glass fibre strands ensures excellent mechanical strength and optimally protects the fibres against rodents.

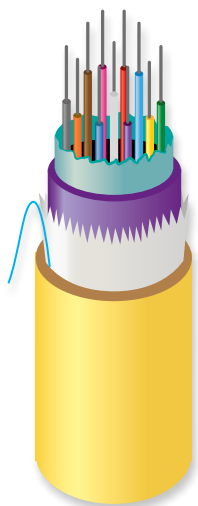


FEATURES		
	DISTRIBUTION CABLE (GCD)	REINFORCED DISTRIBUTION CABLE (GCDR)
Diameter	7 to 10.5 mm	8.8 to 12.2 mm
2 mm strand structure	Tight-buffered structure	
Outer sheath	LSZH-FR (flame-retardant, compliant with IEC 60332-1)	LSZH-FR with UV protection: flame-retardant (compliant with IEC 60332-1 and 60332-3-24 standards) and fire-resistant (compliant with IEC 60331-25 and Fe-180, i.e., 3 hours at 750 °C)
Outer sheath colour	SM G652D: yellow MM 62.5/125 µm OM1: orange MM 50/125 µm OM2: grey MM 50/125 µm OM3: turquoise MM 50/125 µm OM4: magenta	Black
2 mm sheath colour	FOTAG –EI/TIA 598	According to France Télécom
Optical fibre count	2 to 24 fibres optiques	2 to 12 Fibres optiques
RPC	Sur demande (pour câbles intérieurs)	

CENTRAL TUBE (UNITUBE) CABLES

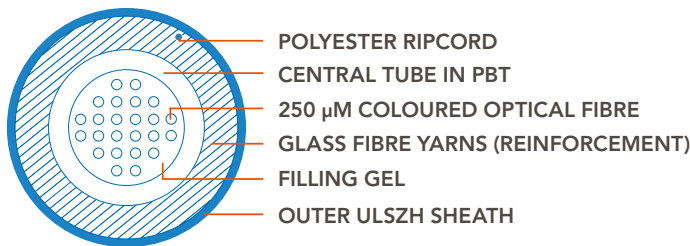


These cables combine compactness and a simple structure, making them more cost-effective. They consist of coloured 250 µm fibres protected by a single gel-filled tube, which provides effective moisture protection, reinforced with glass fibre strands, and grouped within an outer sheath. They can be used over longer distances for inter-building links, connecting two passive devices. Thanks to their structure, this type of cable is particularly suited for fusion splicing. They are typically routed to the rear of a drawer, where the fibres are then spliced with pigtails into splice cassettes.



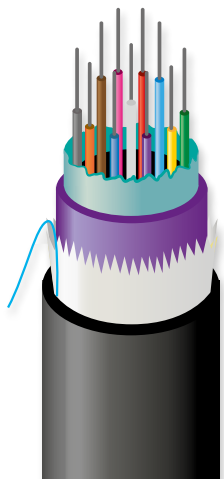
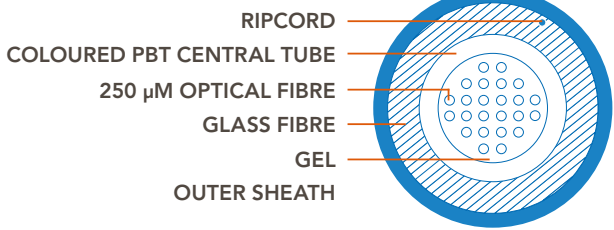
CENTRAL TUBE CABLE (GCTC)

This cable is used to establish inter-building links, connecting two passive devices.



CENTRAL TUBE REINFORCED CABLE (GCTCR)

This cable offers numerous advantages, particularly for extreme environments, for indoor applications (thanks to its lszh sheath), or for outdoor use through ducts or conduits (uv-resistant sheath). Its glass fibre reinforcement provides effective protection against rodents, and the presence of a pbt tube combined with filling gel ensures optimal protection of the fibres.

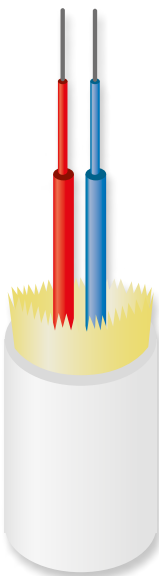


FEATURES		
	CENTRAL TUBE CABLE (CTC)	CENTRAL TUBE REINFORCED CABLE (CTCR)
Diameter	5.8 to 6.2 mm	
Strand Structure: 2 mm	loose structure	
Outer Sheath	LSZH-FR with UV protection; flame retardant (compliant with IEC 60332-1)	LSZH-FR with UV protection; flame retardant (compliant with IEC 60332-1 and 60332-3)
Outer Sheath Colour	SM G652D: Yellow MM 62.5/125 µm OM1: Orange MM 50/125 µm OM2: Grey MM 50/125 µm OM3: Turquoise MM 50/125 µm OM4: Magenta	Black
Tube Colour	-	SM G652D: Yellow MM 62.5/125 µm OM1: Orange MM 50/125 µm OM2: Grey MM 50/125 µm OM3: Turquoise MM 50/125 µm OM4: Magenta
2 mm Sheath Colour Code	FOTAG –EI/TIA 598	-
Optical Fibre Count	2 to 24 fibres optiques	2 to 12 fibres optiques
RPC	On request (for indoor cables)	

SUBSCRIBER DROP CABLES

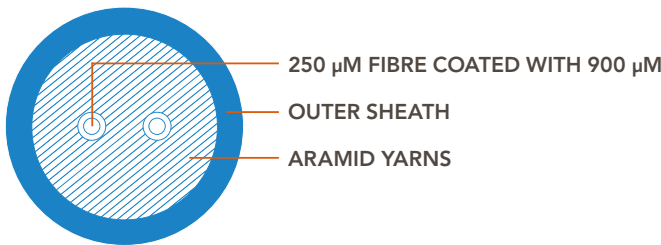


Also known as subscriber cables, they are used to connect the optical terminal outlet inside the dwelling to the distribution point located on the landing or, depending on the network architecture, directly to the building's ground-level termination box. To meet installation requirements, these cables are flexible and equipped with single-mode fibres with a low bending radius, G657A2.



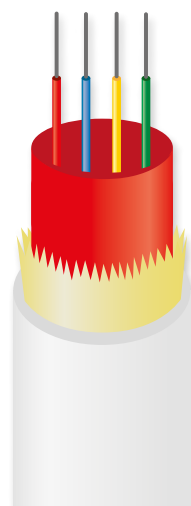
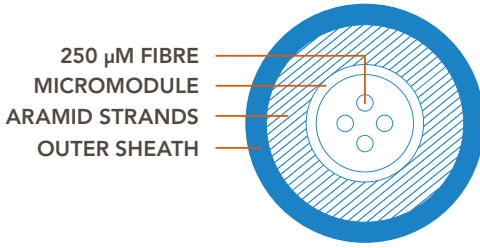
SUBSCRIBER DROP DISTRIBUTION CABLE (CBD)

This subscriber drop cable features G657A2 fibres, each coated with 900 µm, and meets the installation requirements of indoor FTTH applications. Its structure makes it suitable for direct connection from the optical terminal outlet to the distribution point.



SUBSCRIBER DROP MICROMODULE CABLE (CBMG)

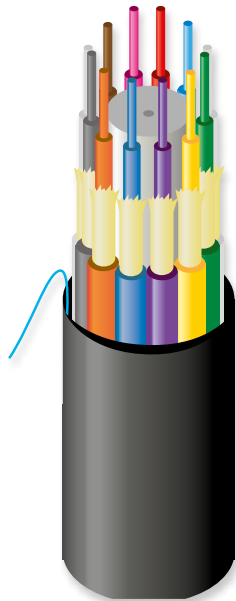
This subscriber drop cable features 250 µm G657A2 fibres, all protected within a single 1.1 mm diameter micromodule. It is therefore recommended for splicing to the pigtails in the optical terminal outlet on one end and the distribution point on the landing on the other.



FEATURES		
	SUBSCRIBER DROP DISTRIBUTION CABLE (CBD)	SUBSCRIBER DROP MICROMODULE CABLE (CBMG)
Diameter	4.8mm	4.2mm
Strand Structure	Semi-tight structure	Loose structure
Outer Sheath	LSZH-FR (flame retardant: compliant with IEC 60332-1-2)	LSZH-FR (flame retardant: compliant with IEC 60332-1)
Outer Sheath Colour	White	
Colour of 900 µm strands and 250 µm fibres	According to France Télécom	
Optical Fibre Count	1 to 2 optical fibres	4 optical fibres
RPC	On request (for indoor cables)	

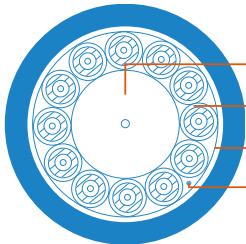


Essential components in FTTA architectures, this type of cable is generally pre-connectorized to allow quick connection between different equipment. Continuously exposed to weather conditions, they must withstand wide temperature variations and mechanical stresses.



FTTA BREAKOUT CABLE

Like standard breakout cables, it consists of a set of 2 mm diameter pigtails reinforced with aramid and arranged around a reinforced central strength member. The assembly is then protected by a black, uv-resistant LSZH sheath.



- CENTRAL STRENGTH MEMBER
- 2 MM PIGTAIL-TYPE SUBASSEMBLY
- BLACK ULSZH-FR OUTER SHEATH
- RIPCORD

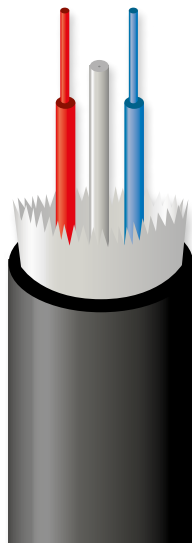
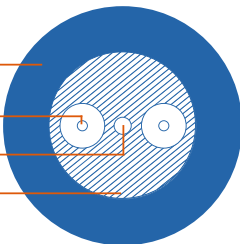


FTTA DISTRIBUTION CABLE

This 2-OF distribution cable, featuring a PE ULZH-FR outer sheath, is perfectly suited for outdoor applications, particularly for the production of cords dedicated to the video surveillance market. Its excellent mechanical performance and high resistance to severe stresses allow installation both aerially and via pulling through indoor and outdoor ducts, with minimal space requirements.



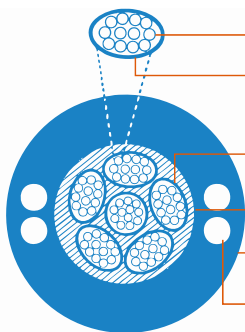
- PE ULSZH-FR OUTER SHEATH
- 250 µM FIBRE WITH 900 µM COLOURED G657A2 COATING
- FRP REINFORCEMENT
- GLASS FIBRE REINFORCEMENTS



FEATURES		
	FTTA BREAKOUT CABLE	FTTA DISTRIBUTION CABLE
Diameter	12 or 15 mm	5.5mm
Outer Sheath	Black ULSZH-FR	PE ULSZH-FR (flame retardant: compliant with IEC 60332-1)
Outer Sheath Colour	Black	
Pigtail / Fibre Colour	FOTAG - IEA EI/TIA 598	Red and Blue
Optical Fibre Count	-	2 optical fibres
RPC	On request (for indoor cables)	



FOLAN micromodule cables feature a lightweight and compact ADSS structure to provide ease of handling. This makes them particularly suitable for aerial deployment over short spans (less than 60 m) as well as for installation in ducts by pulling or carrying.



- 250 µM OPTICAL FIBRE
- WATERPROOF MICROMODULE CONTAINING 6 OR 12 OPTICAL FIBRES
- OPTICAL FIBRES GROUPED IN MICROMODULES
- GLASS FIBRE OR ARAMID
- BLACK HDPE OUTER SHEATH
- FRP REINFORCEMENT



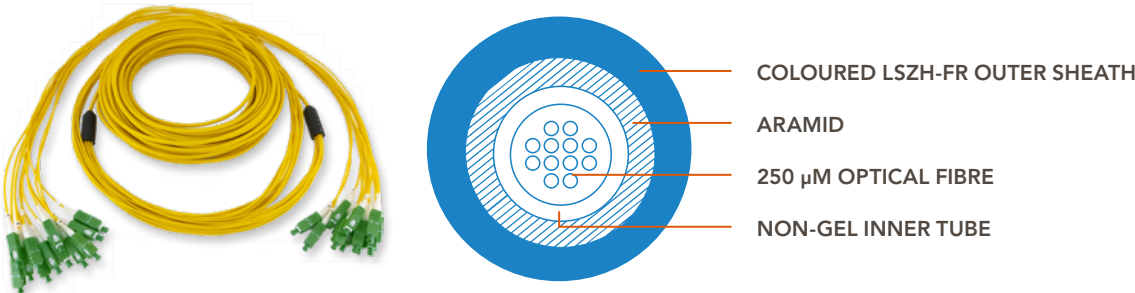
FEATURES	
Installation	In ducts by pulling or carrying (air or water) and aerial for spans ≤ 60 m
Structure	6 or 12 OF micromodule
Capacity	12 to 288 OF
Armour	Dielectric
Diameter (mm)	6,5 to 16,5
Weight (kg/km)	32 to 160
Outer Sheath	Black HDPE
Colour Code (fibre and micromodule)	Red, Blue, Green, Yellow, Violet, White, Orange, Grey, Brown, Black, Turquoise, and Pink



MINICORE PRE-TERMINATED CABLES



Thanks to their small diameter, the MINICORE PRECONNECTED CABLES, also known as «Mini Breakout,» allow the connection of various equipment. Installation and cable management in distribution frames and cable trays thus become faster and easier. They are the ideal solution for extremely dense indoor environments typical of the FTTH market, particularly at the Central Office.



CABLE FEATURES		
Capacity	12 OF	24 OF
Diameter (mm)	4,3	4,6
Weight (kg/km)	18,6	21
Operating Temperature	-25 to + 70° C	
Maximum Tensile Strength	500 N	
Outer Sheath	LSZH-FR	
Sheath Colour	Single-mode G657A2: Yellow Multimode OM3: Turquoise Multimode OM4: Magenta	

Depending on the cable capacity and the desired retubing diameter, FOLAN offers four types of splitters, making this solution adaptable to all types of installation. The splitters are mechanical devices that allow a cable to be fanned out by placing the optical fibres into 2 mm or 900 µm tubes, thereby facilitating connector assembly.

PRE-CONNECTORIZED CABLE FEATURES				
Capacity	12 OF		24 OF	
Retubing Diameter	900 µm	2 mm	900 µm	2 mm
Retubing Colour	FT Code	Monochrome	FT Code	Monochrome
Splitter Dimensions (Ø x L) mm	10 x 34,2	14 x 40,3	14 x 40	18,6 x 50
Identification Type	Numbered rings (1 to 12 or 24)			
Connectors	Compatible with all connector types			
Protection Type	Single			
Photometric Test Report	Included			

Loose-structure, central tube, unitube, and micromodule cables contain 250 µm bare fibres that do not allow direct connector assembly. They therefore require a cable fanning and fibre retubing device, also called a splitter, to enable pre-termination with all types of connectors.



SINGLE-STAGE SPLITTER

DEC2 : The DEC2 allows connector assembly on a loose-structure cable with up to 48 OF.

- Fanning Capacity:
- 24 and 36 OF retubed in Ø 2 mm
 - 24, 36, and 48 OF retubed in Ø 900 µm

For lower capacities, the retubing sheath slots are blocked.

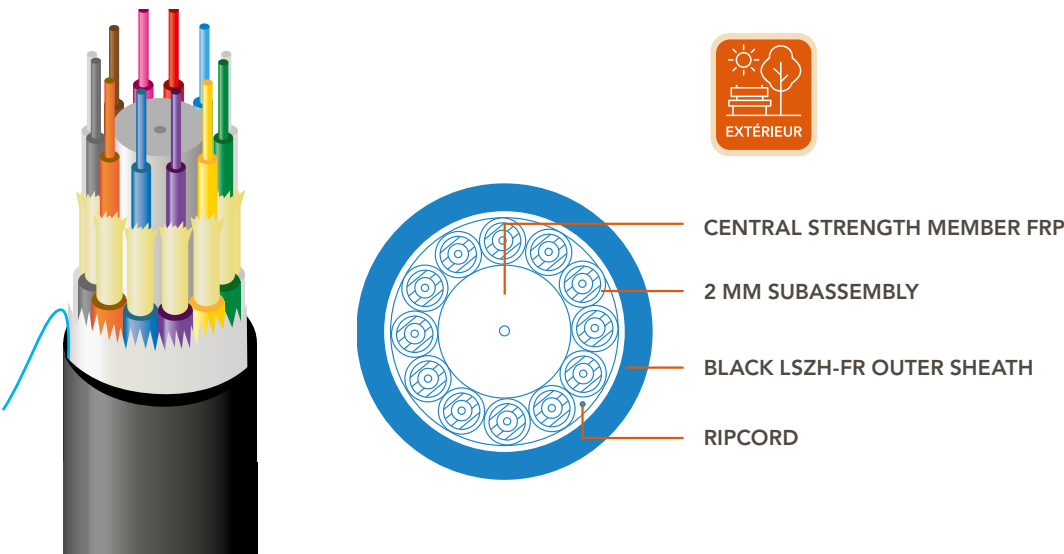
Available in double-stage

OUTDOOR PRE-TERMINATED CABLE - 12 TO 24 OF



the 12–24 of outdoor pre-terminated cable is used in indirect fttA architectures upstream of the 2 of outdoor patch cords. it provides the link between the optical drawers integrated in the 19” bays and cabinets of bts (base stations) and the distribution boxes (panama cabinet range) installed as close as possible to the antennas.

this pre-terminated cable, which enables quick connection of the various equipment, is continuously exposed to weather conditions and must withstand wide temperature variations and high mechanical stress. like standard breakout cables, the 12–24 of outdoor cable used is made up of a bundle of 2 mm diameter patch cords, reinforced with aramid and arranged around a reinforced central strength member. the whole assembly is then protected by a black lszh sheath with uv resistance.



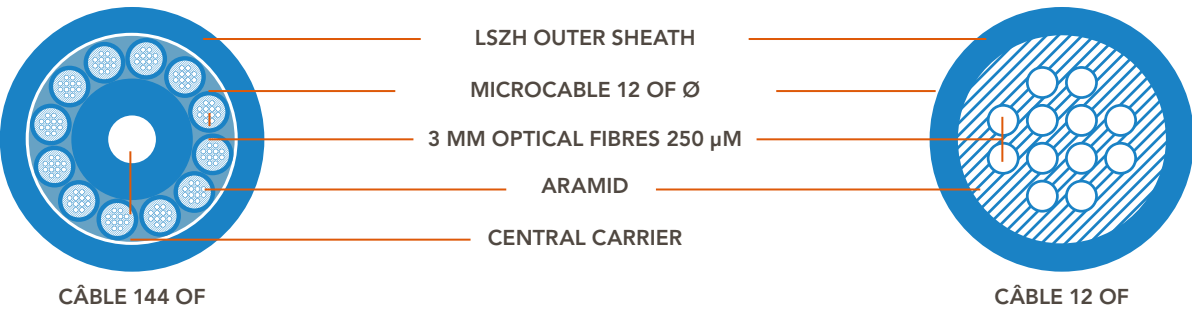
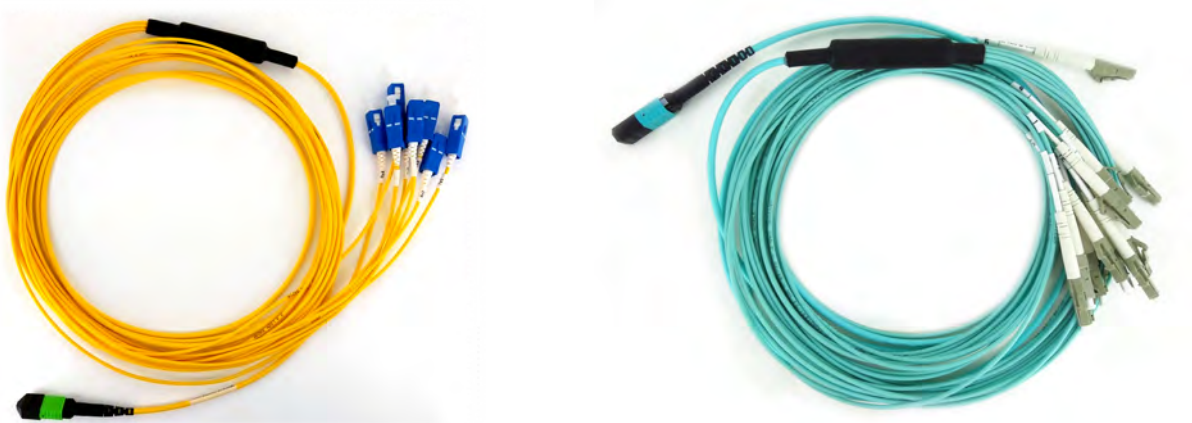
FEATURES	
Installation	Cable tray installation
Structure	Breakout
Capacity	12 to 24 OF
Armour	Dielectric
Operating temperature	-20 à + 70° C
Diameter (mm)	13 to 15
Weight (kg/km)	128 to 200
Outer sheath	LSZH-FR black
Color code	Blue, Orange, Green, Brown, Grey, White, Red, Black, Yellow, Violet, Pink, and Turquoise
Euroclasse	Fca



MPO/MTP® PRE-TERMINATED CABLES

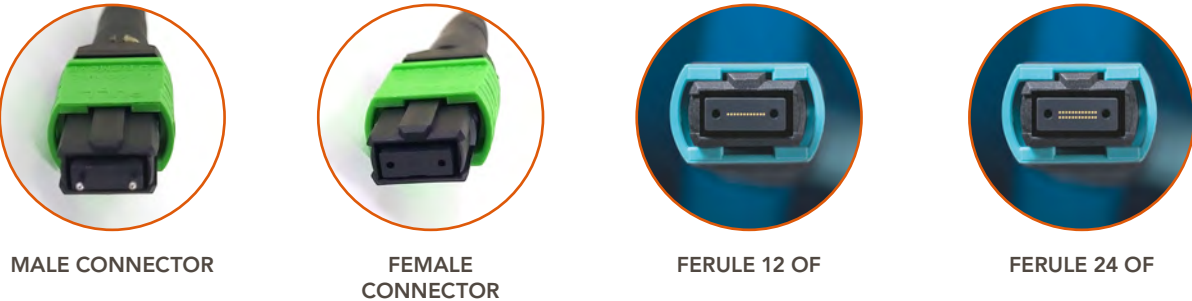


To meet ever-increasing bandwidth requirements and connection density, FOLAN offers high-density pre-terminated cable solutions with MPO connectors. Also known as «harnesses,» they enable connections between cassettes or plates and active equipment. Designed for rapid and reliable deployment, they are tailored to market requirements and perfectly meet the demands of high-density networks and various data centre applications.



CABLE FEATURES	
Capacity	12 to 144 OF
Diameter (mm)	3 to 17,5
Weight (kg/km)	7,8 to 285
Operating temperature	-20 to +70°C
Maximum traction	150 to 1000 N
Outer sheath	LSZH
Sheath colour	Single mode: Yellow Multimode OM3: Turquoise Multimode OM4: Magenta

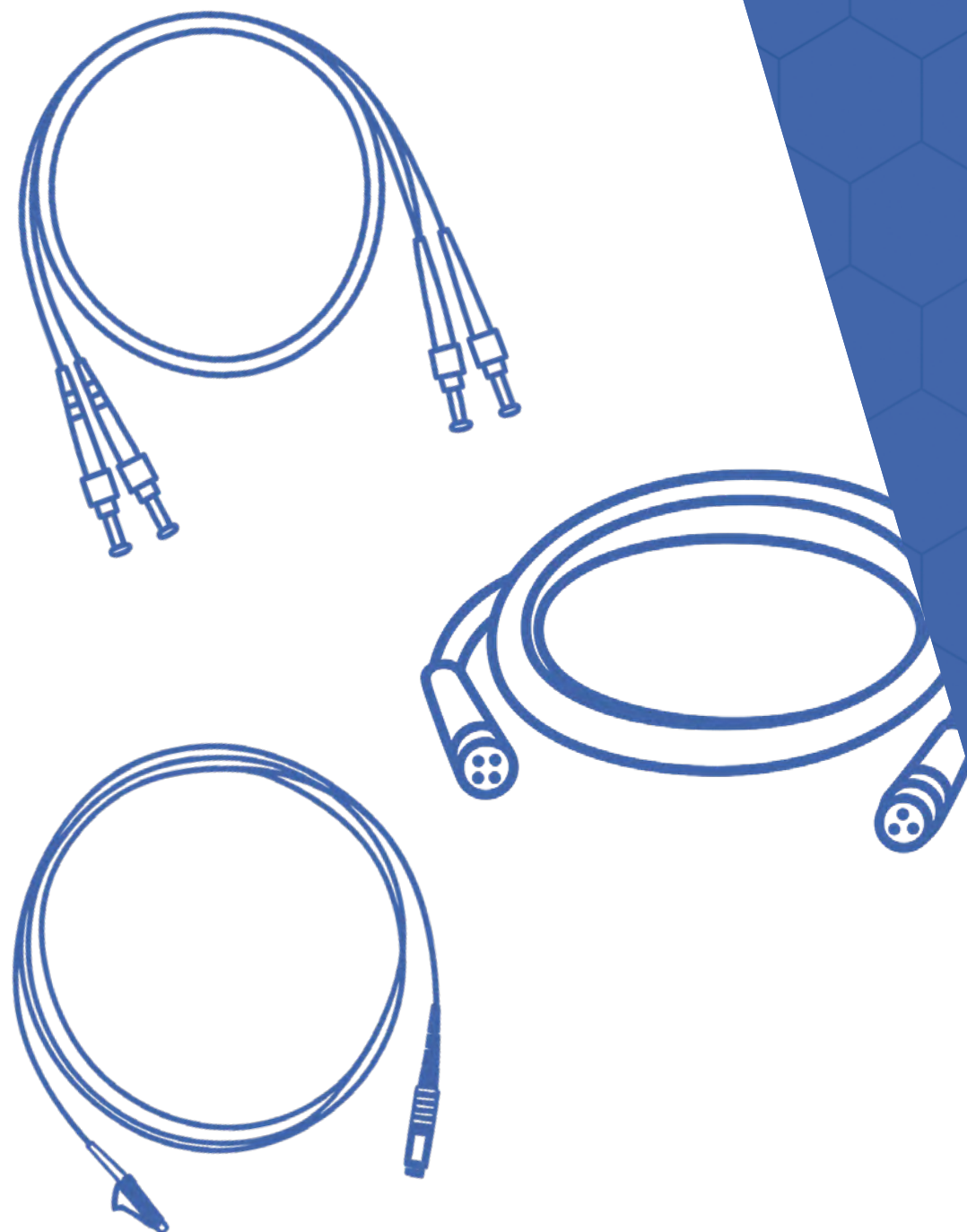
The MPO is a practical, high-performance multi-fibre connector with two precision guide pins to ensure fibre alignment. Unlike other fibre optic connectors, it is available in male and female versions and in two ferrule models, 12 and 24 OF:



CONNECTOR FEATURE				
Connectors		LC	SC	MPO / MTP®*
				
Standard		IEC 61754-20	IEC 61754-4	IEC 61754-7
Body colour		SM APC: Green SM UPC: Blue MM PC: Beige		SM standard: Yellow SM premium: Green MM OM3: Turquoise MM OM4: Magenta
Sleeve		Short white		Long black
Optical performance				
Maximum attenuation (IEC 61300-3-4)	Standard version	≤ 0,25 dB		≤ 0,7 dB
	Premium version	-		≤ 0,35 dB 24 OF SM ≤ 0,50 dB
Reflectance (IEC 61300-3-6)	Single-mode SM	UPC : ≥ 50 dB APC : ≥ 60 dB		≥ 55 dB
	Multimode MM	≥ 35 dB		≥ 20 dB

FEATURES OF THE PRECONNECTED CABLE				
Capacity	12 OF		24 OF	
Re-tubing diameter	900 µm	2 mm	900 µm	2 mm
Retubing colour	FOTAG	Monochrome	FOTAG	Monochrome
Spacer dimensions (Ø x L)	8,5 x 50 mm	13,5 x 90 mm	12 x 75 mm	19,5 x 100 mm
Marking type	Numbered rings (1 to 12 or 24)			
Standard wiring	Straight - Polarity A: 1-side MPO fibre to 1-side LC or SC fibre ... 12-side MPO fibre to 12-side LC or SC fibre			
Type of protection	Single			
Photometric test report	Included			





PATCHCORDS & PIGTAILS

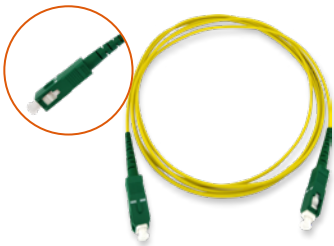
- 102 OPTICAL PATCHCORDS
- 103 RET CONTROL CABLES
- 104 SUBSCRIBER OPTICAL PATCHCORDS & EXTENSIONS
- 105 OUTDOOR 2 OF FTTA PATCHCORD
- 106 MPO/MTP® PATCHCORDS
- 107 PRE-TERMINATED COPPER TRUNK CABLE

OPTICAL PATCHCORDS

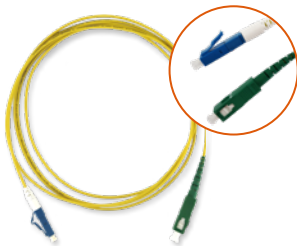


Installed in technical bays at the entrance to buildings, FOLAN cords enable the interconnection of operator cables and private networks. Patchcords provide the connection between several optical patch panels or between patch panels and active equipment. To meet the specific needs of FTTO networks requiring a gigabit throughput over short distances, the cords are available in multimode fibre as well as single-mode fibre.

SC-APC / SC-APC PATCHCORDS



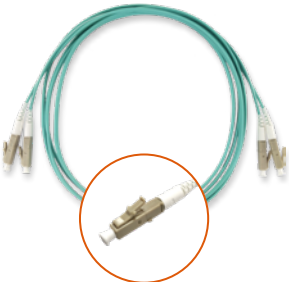
LC-UPC / SC-APC PATCHCORDS



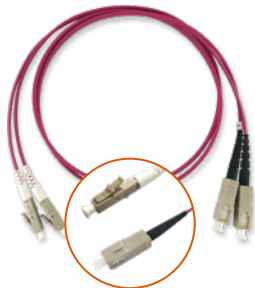
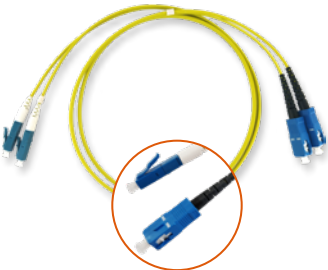
SC-PC / SC-PC PATCHCORDS



LC-PC / LC-PC PATCHCORDS



LC-PC / SC-PC PATCHCORDS



RET CONTROL CABLES



These multi-pair copper cables are essential for the deployment of FTTA networks. They are positioned between the RRU (Remote Radio Unit), which converts the optical signal into radio frequency, and the antenna's RET (Remote Electrical Tilt) module. RET cables are used to electrically control the tilt of the signal coming from the antenna.

Withstanding wide temperature variations and mechanical stresses, they are perfectly suited to outdoor applications inherent to FTTA networks.

Two types of cables are available with different male connectors on the RRU side. ERICSSON or NOKIA RRUs use Din8 connectors and HUAWEI RRUs use DB9 connectors.



DIN8 MALE / DIN8 FEMALE PATCHCORDS



DB9 MALE / DIN8 FEMALE PATCHCORDS

FEATURES	
Outer diameter	6,7 mm
Outer sheath materia	Black LSZH
Temperature range	-40 to +70° C
Maximum voltage	300 V DC
Connector type	• RRU male side: Din 8-pin or DB 9-pin • Female antenna side: 8-pin DIN
Available lengths	0,5 to 70 m



SUBSCRIBER OPTICAL PATCHCORDS

Subscriber patchcords provide the end of the optical connection at the subscriber's premises. They connect the Optical Terminal Outlet (OTO/Indoor PLASTIC BoxS - DTIO / BMO) to the subscriber's active equipment (ONT or Box).

Given their installation in confined indoor spaces, FOLAN subscriber cables are always equipped with G657A2 single-mode fibre with a low bending radius and a reinforced sheath with a diameter of 2.8 mm to prevent any stress or fibre breakage and thus ensure a reliable connection for the subscriber.

Available in two types of connectors, they are 100% compatible with the various boxes on the market.



FEATURES	
Tensile strength (IEC 61300-2-4)	100 N
Operating temperature	-25 to +70° C
Mechanical endurance (IEC 61300-2-2)	500 connections
Outer sheath	UV-resistant LSZH-FR
Sheath colour	Ivory
Diameter	2,8 mm
Fibre type	Single mode 9/125 µm G657A2



SUBSCRIBER EXTENSIONS

Like subscriber cords, FOLAN FTTH subscriber extensions provide the end of the optical connection at the subscriber's premises. Available in various lengths, they consist of a Distribution 1 or 2 OF subscriber connection cable pre-terminated on one or both sides with SC-APC or SC-UPC connectors.

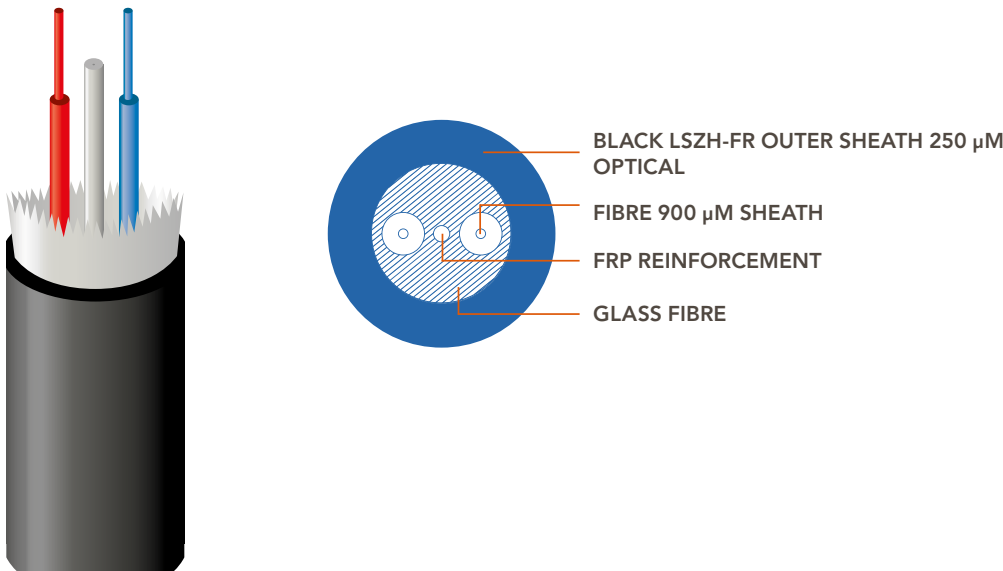
Available in a range of lengths



Essential to the FTTH network, the FOLAN 2-fibre outdoor cable enables optical data to be transmitted as close as possible to the antennas before being converted into radio frequency and broadcast by them.

Depending on the network architecture, it can come either from a distribution box (PANAMA range) fixed directly to the antenna (indirect architecture), or from technical Cabinets in the BTS (base stations) at the foot of the antennas (direct architecture). It then provides the connection to a bidirectional SFP integrated into the RRU (Remote Radio Unit).

The Distribution 2 OF outdoor patchcord has a UV-resistant LSZH-FR outer sheath and excellent mechanical performance, making it particularly suitable for outdoor applications.



FEATURES	
Installation	Cable tray installation
Structure	Distribution
Capacity	2 OF
Armour	Dielectric
Operating temperature	-40 to +90° C
Diameter (mm)	5,5
Weight (kg/km)	50
Outer sheath	Black LSZH-FR
Colour code	Red and blue
Euroclass	Fca





MPO optical patchcord enable a permanent link to be created in a connection chain by connecting two cassettes or two patch panels. This multi-fibre connector, available in male or female versions, offers up to 12 times the density of standard connectors, resulting in significant savings and space savings, which are essential in the data centre market.



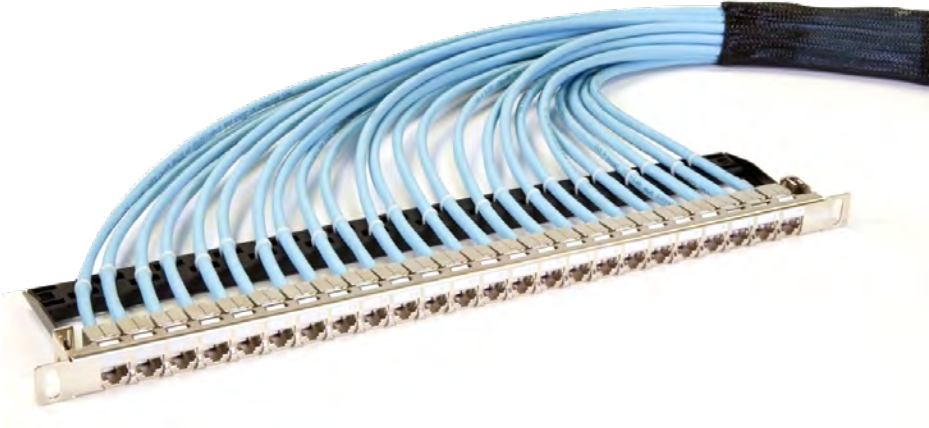
FEATURES	
Operating temperature	-20 to +70° C
Mechanical endurance (IEC 61300-2-2)	500 connections (MTP®) 250 connections (MPO)
Outer sheath	LSZH
Jacket colour	Single mode: Yellow Multimode OM3: Turquoise Multimode OM4: Magenta
Diameter	12 OF: 3.0 ± 0.15 mm 24 OF: 3.5 ± 0.1 mm

SELECTION CRITERIA	
Capacity	8, 12 or 24 OF
Fibre type	Single mode 9/125 µm G652D or G657A2 Multimode 50/125 µm OM3 and OM4
Connector type	MPO or MTP®
Connector gender	Male or female
Optical performance	Standard or Low Loss / Premium
Length	On request
Cabling	Polarity A, B or C



OPTiLite DCS pre-terminated copper trunk cables are widely used in data centres, particularly for point-to-point connections. They provide reliable connectivity between switches, servers, optical patch panels and distribution areas. Equipped with factory-terminated connectors for optimal reliability, they feature 12 free jack modules at each end, enabling simple plug-and-play installation while reducing service interruptions and maintenance costs.

Designed using high-performance cabling systems, these cables support data rates of up to 1 Gbit/s. Three types of standard terminations are available: plug-to-plug, jack-to-jack and plug-to-jack. This cable is available in various certified CPR classes (Dca, Cca, B2ca), with lengths ranging from 1 to 30 metres. Each patchcord is guaranteed to comply with the Fluke test.



PRE-TERMINATED
UNSHIELDED
COPPER TRUNK CABLE WITH
PLUG TO JACK TERMINATION

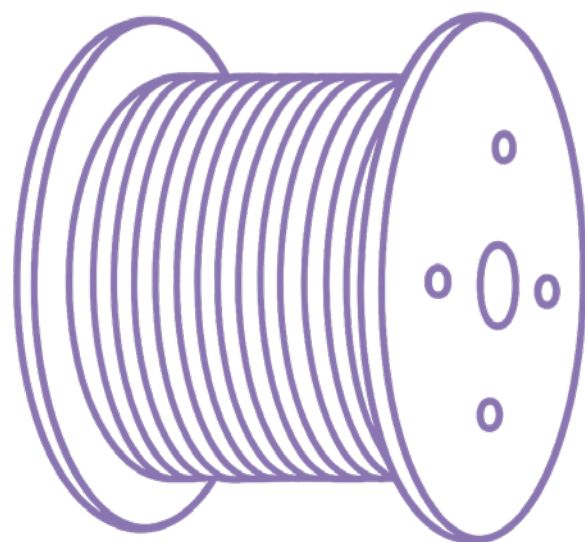
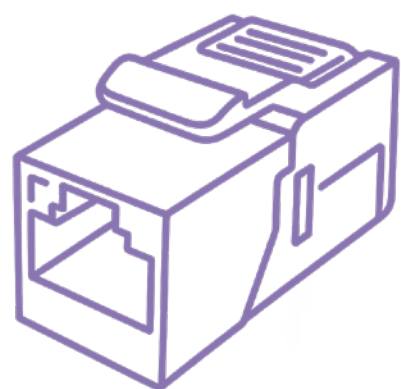
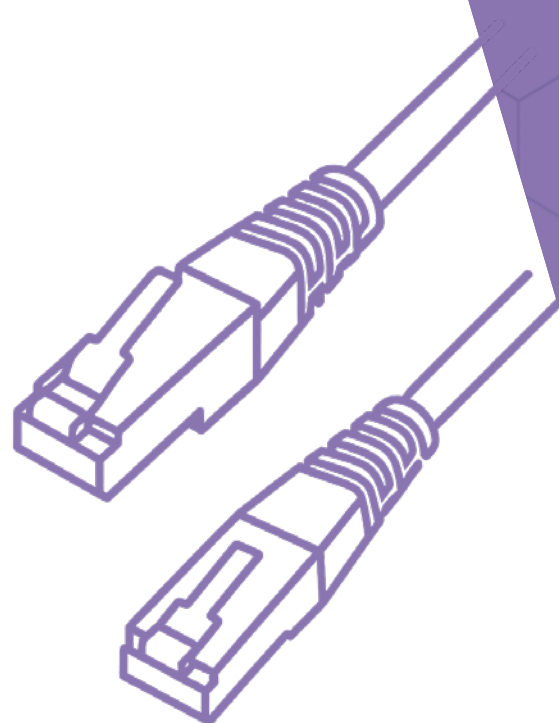


PRE-TERMINATED
UNSHIELDED
COPPER TRUNK CABLE WITH
JACKTO-JACK TERMINATION



PRE-TERMINATED SHIELDED
COPPER
TRUNK CABLE WITH JACK-
TO-JACK TERMINATION

FEATURES	
Compliance and Quality	100% cut, assembled and tested in-house
Cable Types	Certified CAT6/CAT6A cables, available in packs of 6, 8, 12, or 24 units
RJ45 Connectors	Shielded and unshielded RJ45 connectors, plugs and connectors available
Easy to install	Main line running through the cabinet for simplified installation
Identification	Digital coding system for quick identification and easy installation



COPPER



110	KEYSTONE
112	RJ45 ETHERNET CABLES
113	SPECIFIC RJ45 CABLES
114	COPPER CABLES





KEYSTONE RJ45 EMBASE WITH LIGHT INDICATOR

allows instant identification of network connections thanks to an integrated LED, which can be activated with a standard tester. The system works in both directions, eliminating connection errors. A practical solution that saves time, without labelling or tools.



UNIFORMATIC CONNECTOR UP TO 29% SMALLER THAN A TRADITIONAL CONNECTOR

Compact, quick to install and high-performance, the Uniformatic RJ45 base is ideal for confined environments. Up to 29% smaller than a conventional base, it can be installed without tools and features light identification compatible with standard testers.



PROFESSIONAL CAT6 AND CAT6A FTP KEYSTONE BASES - ACCESS

This professional Cat6/Cat6A FTP keystone patch panel guarantees quick, tool-free installation. It ensures a high-performance, secure connection thanks to its self-stripping contacts.



EXTRA SHORT PROFESSIONAL CAT6A FTP KEYSTONE JACK - ACCESS

This keystone jack is designed with a shallow depth, making it ideal for installation in cable ducts and faceplates. It allows for a better cable bend radius, optimising cable management in confined spaces.



PROFESSIONAL CAT8 FTP KEYSTONE JACK WITH 360° SHIELDING - ACCESS

This professional Cat8 FTP keystone base offers full 360° shielding for optimal protection. It guarantees a fast and reliable connection thanks to its self-stripping contacts and tool-free installation.

FEATURES					
	RJ45 KEYSTONE SOCKET WITH LIGHT INDICATOR	UNIFORMATIC SOCKET	CAT6 AND CAT6A KEYSTONE SOCKET	EXTRA SHORT CAT6A FTP KEYSTONE JACK	CAT8 KEYSTONE JACK
Category	Cat6 et Cat6A	Cat6A	Cat6 / Cat6A	Cat6A	CAT8
PoE	Oui		-	-	-
Shielding	FTP 360°		-	-	FTP 360°
Tester compatibility	Yes (standard & illuminated testers)	Integrated light marking	-	-	-
Type of assembly	Quick and easy without tools				
Contacts	-	-	Self-stripping		
Compatible connectors	Cordon RJ45 standard, câble monobrin	-	-	-	-
Special features	-	Up to 29% smaller	-	Shallow depth, ideal for confined spaces	-

KEYSTONE ADAPTER OFR DIN RAIL

Allows a keystone base to be mounted on a 35mm DIN rail. Numbering label. Compatible with all our keystone bases (base not included).



KEYSTONE ADAPTERS OFR OPTICAL FEED-THROUGHS

These allow you to mount an optical feed-through in a keystone port on your bare patch panel (in the same way as a keystone base). Supplied without optical feed-through.



SC



LC



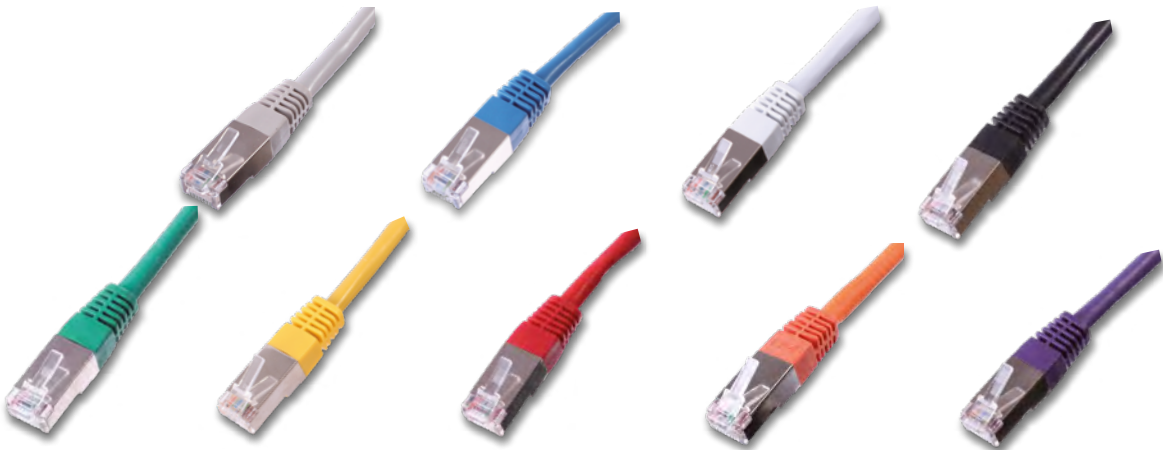
ST

RJ45 ETHERNET CABLES

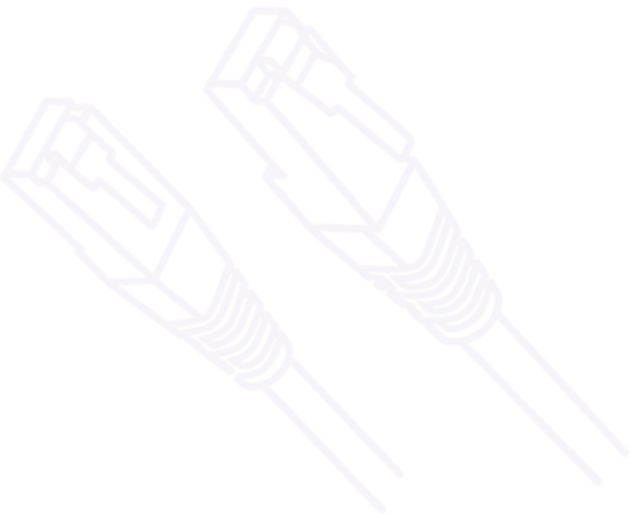


sockets, etc.). They ensure signal continuity in copper infrastructures and guarantee transmission quality in both residential and professional environments.

Available in different categories, lengths, types of shielding and sheathing, these cables can be adapted to all needs: high performance, compatibility with sensitive environments, or installation in confined spaces. Their design meets the requirements of robustness, reliability and security imposed by modern networks.



FEATURES				
	FTP LSZH SHIELDED CAT6 CABLES	FTP PVC SHIELDED CAT6 CABLES	CAT6A SHIELDED SFTP LSZH CABLE	CAT6A SHIELDED SFTP PVC CAB
Max. frequency	250 MHz		500 MHz	
Impedance	100 Ω			
Conductor	100% copper			
Cable structure	AWG 26/7 strands			
Shield	General shielding with foil		360° shielding	
Separation of pairs	Pair separation cross		Double braided + foil shielding	
Connectors	Shielded with offset pitch and gold-plated contacts			
Sheath	LSZH	PVC	LSZH	PVC

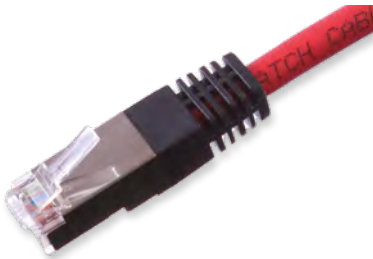


SPECIFIC RJ45 CABLES



CAT6 CROSSED RED CORD

Ideal for connecting two PCs together, or a router to a PC, or two devices operating at the same OSI layer (a hub and a switch, for example). The black sleeve distinguishes a standard cable from a crossover cable.



1 PAIR TELEPHONE CABLE

Designed for telephone installations, this 1-pair cord stands out for its compactness, offering optimal space savings in patching environments. Its design ensures stable performance and easy integration into existing infrastructures.

CAT 6A PATCHCORD

Allows you to instantly locate the end of your cable with a light indicator.



CAT8 SHIELDED FTP PVC CABLE

This high-performance network cable is designed to ensure optimal data transmission up to 1000 MHz. It is equipped with robust staggered connectors with gold-plated contacts for improved durability and reliable connectivity. Its reinforced architecture with full double shielding guarantees effective protection against electromagnetic interference, even in the most demanding environments.

RJ45 CAT6A S-FTP ANGLED CABLE

Angled cables allow you to connect equipment with RJ45 ports that are difficult to access.



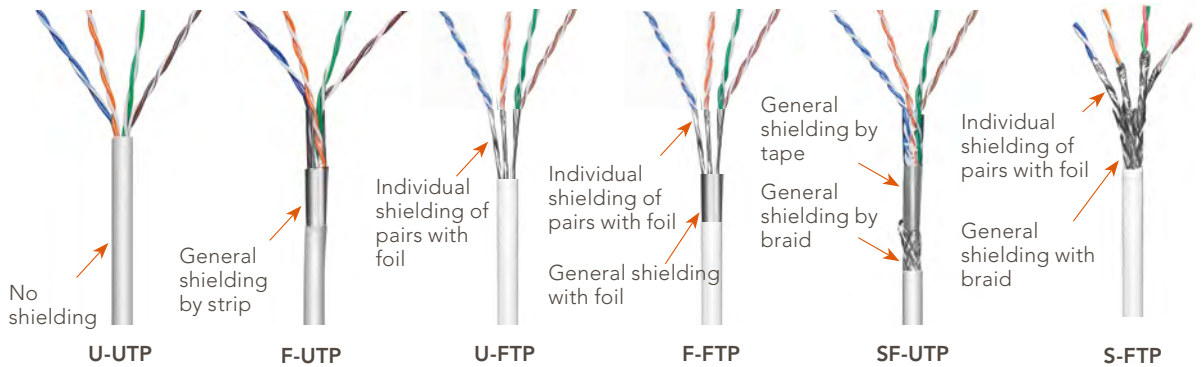
 We have a manufacturing workshop with extensive experience and the latest production tools to produce all types of customised cables.

COPPER CABLES



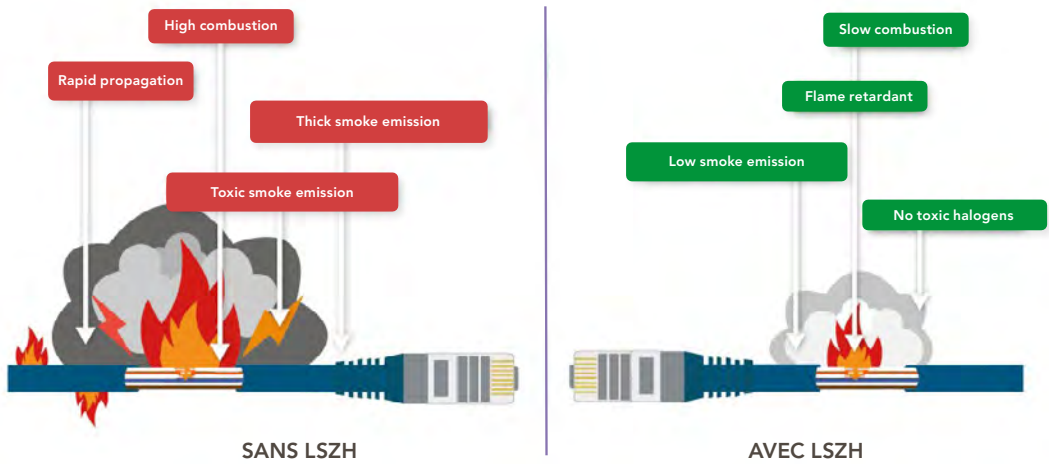
TIPS

The choice of shielding is not an economic choice between an expensive product and a cheaper one. It is a choice that must be made based on the infrastructure already in place in the building.



DIFFERENT SHEATHES

Nearly 90% of buildings in France are equipped with shielded cable because, on the one hand, its performance is much better and, on the other hand, the shielding also serves as grounding for the network installation.



The plastic sheathing of LSZH cables is made from more fire-resistant materials, reducing the amount of toxic and corrosive gases emitted during combustion. This allows more time to evacuate a building in the event of a fire.

LSZH SHEATHING

Or LSOH (Low Smoke Zero Halogen) significantly reduces the amount of smoke and toxic gases emitted when an RJ45 cable or cord burns. Since 1 January 2014, the law has made it compulsory to use LSZH cables and cords to meet safety standards in all buildings open to the public (ERP). The complete list of establishments concerned is available on the following website: www.developpement-durable.gouv.fr - Section: Establishments open to the public

PVC SHEATH

(Polyvinyl chloride), on the other hand, produces thick black smoke, hydrochloric acid and other toxic gases when burned.

DIFFERENT CATEGORIES

The performance of your network depends above all on the quality of the cabling. It is therefore important to choose the most suitable category of cable for your configuration.

FEATURES				
	CAT 6	CAT 6A	CAT 7	CAT 8
Max. speed		1 Gbps		40 Gbps
Frequency	250 MHz	500 MHz	600 MHz	1 000 MHz
Note	Best-selling and most common category	Category offering better protection against interference for fast speeds	Category rarely or never used in the UK	Category generally reserved for data centres (not very useful for office use)

FOLAN offers a wide range of LAN cables that meet the requirements of current and future networks. Available in categories 6, 6A, 7 and 8, our cables ensure optimal performance for your telecom and data infrastructures.

To suit all your needs, they are available in several lengths and packaged in specially designed packaging to facilitate transport, storage and installation, depending on the length chosen.



CAT6 FTP LSZH MULTISTRAN CABLE

Flexible cable designed for the manufacture of network cords. It features reinforced shielding: general braided shielding and individual foil shielding. Composed of 100% copper multi-strand conductors (AWG 26/7), it ensures excellent signal transmission. LSZH sheath, compliant with ERP standards.

CAT6A / CAT7 S-FTP LSZH MULTIPLE-STRAND CABLE

Flexible cable suitable for manufacturing high-performance CAT6A and CAT7 cords. It has optimal shielding: overall braid and foil on each pair. Composed of 100% copper multi-strand conductors (AWG 27/7), it guarantees reliable transmission. LSZH sheath, compliant with ERP standards.

LENGTH: 305 METRES

CAT 6 F-UTP LSZH SINGLE-STRAND CABLE

Rigid Cat 6 F-UTP single-strand cable, specially designed for network installations. Shielded by foil with pair separation cross, it offers an impedance of 100 Ohms and supports frequencies up to 250 MHz. Made of 100% pure copper, it is equipped with an LSZH sheath, which is mandatory for public buildings, guaranteeing safety and performance.



CAT 6A U-FTP LSZH SINGLE-STRAND CABLE

Rigid Cat 6A U-FTP single-strand cable, ideal for economical and high-performance network installations. Each pair is shielded by a braid with a separation cross, guaranteeing an impedance of 100 Ohms and a frequency of up to 500 MHz. 100% pure copper conductor and LSZH sheath, compliant with public building safety requirements.

CAT 6A F-FTP LSZH SINGLE-STRAND CABLE

Rigid Cat 6A F-FTP single-strand cable, designed for high-performance network installations. Each pair is shielded by foil, with additional overall shielding, offering 100 Ohms impedance and a frequency up to 500 MHz. 100% pure copper conductor, LSZH sheath compliant with ERP standards, CTS and CPR certified for enhanced safety.



CAT6 FTP LSZH MULTISTRAN CABLE STARTER KIT

Ideal for making cables, this complete kit includes everything you need to get started with your CAT6 network installations. The cable provided is flexible, with an LSZH sheath suitable for ERP environments.

KIT CONTENTS:



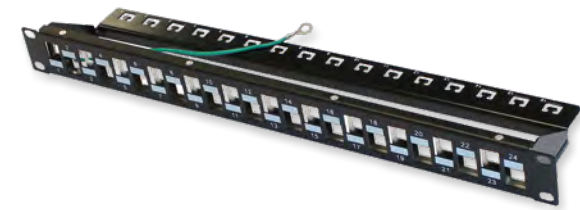
We can supply any type of shielding and cable category. Please contact us for further information.

RJ45 CROSS-CONNECT PANELS



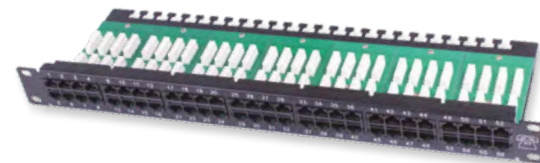
FTP CHASSIS PANEL

- Compatible with all RJ45 keystone jacks.
- Removable rear cable support.
- Supplied with rear cable support with integrated cable clamp system and ground connection.



FTP STRIPED PATCH PANEL WITH OFFSET PINS

- Specially designed for Category 6A and 8 cabling, this patch panel with staggered pins reduces crosstalk and improves the quality of your network.
- Compatible with all RJ45 keystone jacks.
 - Removable rear cable support.
 - Supplied with earth connection and cable clamps.



CAT3 TELEPHONE PATCH PANEL

- Supplied with rear cable support with cable clamp system.
- Self-stripping contacts (CAD)



KRONE AND POUYET INSERTION TOOLS

Allows you to insert your cable wires into the self-stripping connectors.



PROFESSIONAL CRIMPING PLIERS

- Allows you to crimp all your RJ connectors.
- Ideal for everyday use.



UNIVERSAL CRIMPING PLIERS

- Allows you to crimp all your RJ connectors.
- Ideal for repeated use.

ECO KRONE INSERTION TOOL AND UNIVERSAL STRIPPING TOOL

- Allows you to strip your cables.
- Adjustable cutting diameter.



CUTTING PLIERS

- Ideal for cutting excess wire when wiring self-stripping keystone jacks.
- The curved blades ensure a clean, flush cut on your wires.



ECONOMICAL RJ45 CRIMPING PLIERS

- Allows you to crimp your RJ45 connectors.
- Ideal for occasional use.

NETWORK TESTERS

- Allows you to test network cables and telephone cables: RJ11, RJ12, RJ45 and BNC.
- Essential for installing and maintaining your network.



RJ45 CAT6 CONNECTORS

- Allows you to make your RJ45 cables to CAT6 standard
- For use with patch cables only
- Shielded or unshielded RJ45 connectors
- Gold-plated contacts
- Packaged in bags of 50 or 100 pieces

COAX CLAMP

- Case supplied complete with everything you need to crimp your connectors onto coaxial cable.
- The coaxial case consists of a clamp and 4 jaws (RG6, 8, 11, 58, 59, 62, 174, 179, 213 and fibre optic).



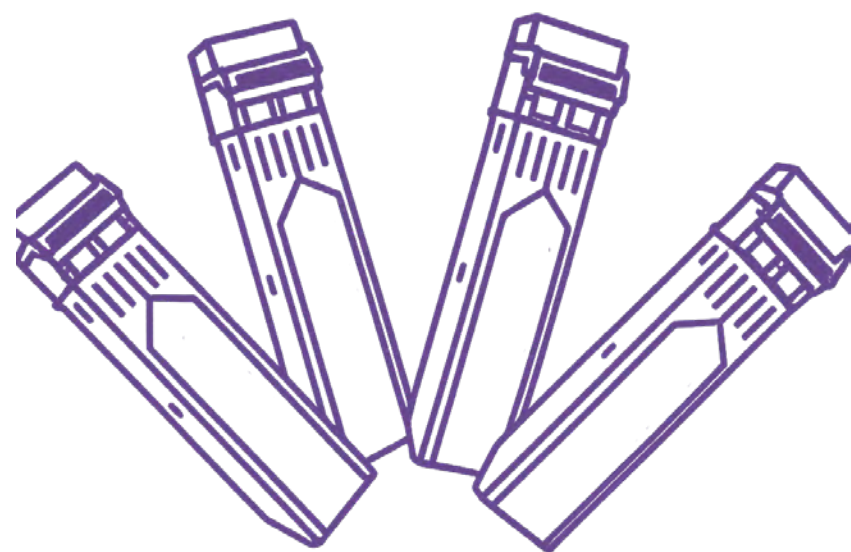
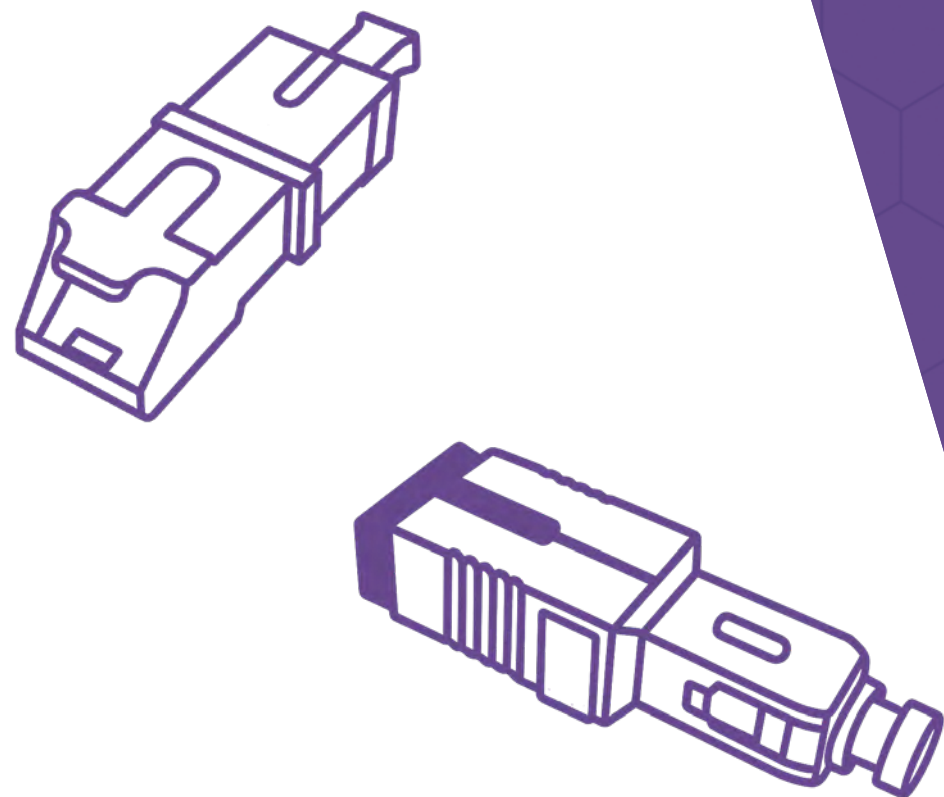
HIROSE RJ45 CAT6 AND 6A FTP CONNECTORS AND CLAMP

- Allow you to make your own CAT6 and 6A standard RJ45 cables.
- Ideal for round cables (AWG 24/7, AWG 26/7, AWG 27/7)
- The set consists of an RJ plug with tab, an anti-twist sleeve and a guide plate
- Core insulation: approx. 0.9 to 1.0 mm
- Maximum cable diameter: 6.6 mm

RJ45 SLEEVES

- Used to secure and protect your RJ45 connectors.
- Bump type: economical solution
- Overmoulded: excellent cable retention in the connector
- Overmoulded with tab: excellent cable retention in the connector and easy connector removal.





COMPONENTS



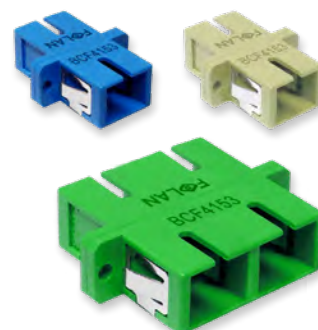
120	PASSIVE COMPONENTS
125	OPTICAL COUPLERS
128	MALE-FEMALE ATTENUATORS
129	ACTIVE COMPONENTS
132	CABINET MANAGEMENT SYSTEM (CMS)



SC CONNECTORS

Like all connectors incorporating a pre-crimped optical face of the Physical Contact type, SC connectors incorporate a sleeve that ensures better alignment and therefore better performance. For single-mode applications, the sleeve (alignment sleeve) will be ceramic. For multimode applications, a metal sleeve will suffice.

SC connectors are available in simplex and duplex versions. Depending on the colour of their body, they are designed for multimode (beige), single-mode (blue) or APC (green) applications.



SELF-PROTECTED SC-APC CONNECTORS

Always at the forefront of research and innovation, FOLAN has developed its own self-protected SC-APC connector. It provides protection against laser emission and dust, without the need for a liftable cover or additional external cap. A patent has been filed for this specific connector.

The internal flap, combined with an ultra-thin spring blade, automatically opens or closes the connector when the subscriber cord is inserted or removed. The absence of a cap makes the connector safe, particularly for children who might be tempted to put it in their mouths. Two-tone in colour, it blends in as discreetly as possible with the optical terminal sockets, while maintaining the colour coding of the SC-APC connectors and allowing light from a fault locator to pass through.

The subscriber cord can be connected and disconnected with a single movement.



LC CONNECTORS

LC connectors have ceramic sleeves for single-mode applications and metal sleeves for multi-mode applications. Their colours are also standardised: blue for single-mode, green for APC and beige for multi-mode.

Duplex connectors have the same dimensions as SC simplex connectors. As a result, they can be installed in all SC footprint end equipment.

Similarly, LC connectors are available in quadruplex versions and are compatible with SC duplex connector footprints.



MPTO/MTP CONNECTORS

An MTP/MPO connector is a multi-fibre connector designed to group several optical fibres into a single end piece. The most common types are available in 12 or 24 fibres. They are mainly used in data centres for high density applications.



ST CONNECTORS

ST connectors can be used for all your corporate network connections.

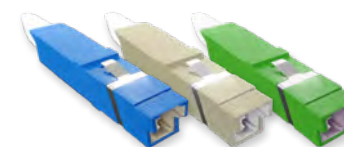
They incorporate ceramic sleeves for single-mode or multimode applications to ensure better performance. Metal sleeves are only intended for multimode applications.



E2000 CONNECTORS

E2000 connectors are based on the same principle as SC connectors. They have a polymer body and are blue for single mode, green for APC and beige for multimode. They can be installed on all end equipment with an SC footprint.

To optimise their characteristics, particularly alignment and insertion loss, all E2000 connectors incorporate a ceramic sleeve.



FEMALE/FEMALE ADAPTER CONNECTORS

FOLAN offers a wide range of adapters for converting from one connector type to another. These female/female adapters or adapter connectors are available for single-mode or multimode applications.

The difference lies in the choice of sleeve material, which is necessary for optical alignment: it will be ceramic (single-mode) or metal (multimode).

These adapters are available in simplex or duplex versions, with metal or plastic bodies.



MALE/FEMALE HYBRID ADAPTERS

For applications requiring quick and functional transition from one connection to another, we offer single-mode or multi-mode male/female adapters.

They replace an adapter cord and a connector or bulkhead. They can therefore be easily inserted into your optical connection or onto your starter reels.

They are available in SC/ST, SC/FC, LC/MU, SC/LC, etc.



FIELD-MONTABLE CONNECTORS

FOLAN field mountable connectors are designed for optical terminations, particularly in FTTH environments.

Field mountable connectors save technicians time in the field. They do not require an oven, polishing or any special tools for assembly.

It takes only 1 to 2 minutes instead of 5 to assemble a connector. These connectors work on the same principle as mechanical splicing. Packaged in boxes of 10, they come with assembly instructions to facilitate installation.



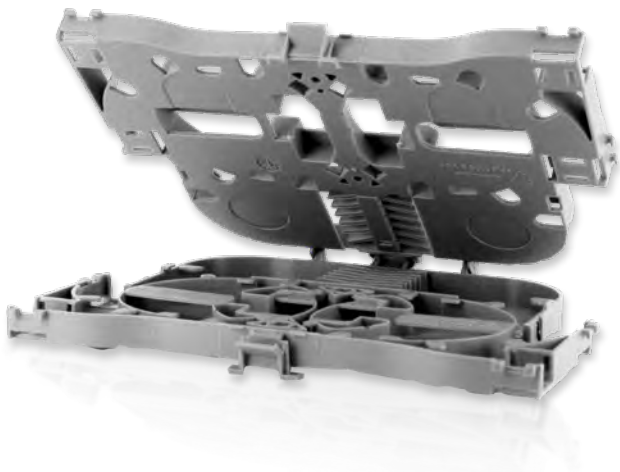
FEATURES	
Fibre type	Single-mode & Multimode
Connectors	SC and LC
Insertion Loss (dB) max	≤ 0,5 dB
Reflectance (dB) min	≥ 40-50 dB (PC/UPC) ≥ 50-60 dB (APC)
Installation temperature	-30 to +75° C

12-FIBRE FOLAN SPLICE CASSETTE

The FOLAN 12 OF splicing cassette has been developed to facilitate fibre optic splicing operations. Removable combs ensure optimal fibre retention at the cassette inlet and outlet. They are available in several versions depending on the diameter of the tube or sheath to be retained.

This cassette can hold up to 18 standard splice protectors (12 recommended). It is also possible to use Fibrlok™-type mechanical splice protectors and couplers.

It can store up to 1.5 m of excess 250 µm bare fibre and reverse the direction of the fibres. With FOLAN splicing cassettes, the 30 mm bend radius is maintained at all times.



Assembling multiple cassettes by clipping them together is quick and easy. No tools or additional parts are required. In addition, a locking system secures the splicing phase and ensures easy access to each of the cassettes in the assembly.

FEATURES	
Capacity	12 welds recommended 18 welds maximum
Dimensions (W x H x D mm)	165 x 112 x 10
Weight (g)	45
Material/colour	Plastic / Grey
Mounting	With M3 or M4 screws and nuts (not included)
Available combs	12 x Ø 900 µm 12 x Ø 1.6 mm 12 x Ø 2 mm 6 x Ø 2.4 mm 6 x Ø 2.8 mm 2 x Ø 4.3 mm Foam comb (for micromodules)





SPLICE PROTECTORS

Necessary for protecting splices between two optical fibres, heat-shrinkable splice protectors, also known as smoooves, can be used on all types of cables.

They consist of a heat-shrinkable tube and a metal reinforcement that provides mechanical protection for the fibre optic splice point. They fit all splice cassettes and are available in several lengths. They are colourless and sold in packs of 100.

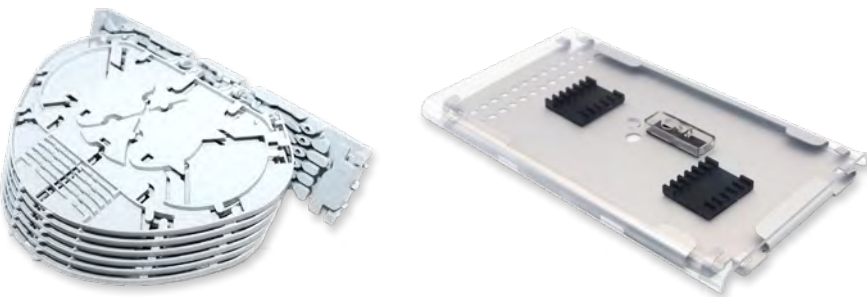
MECHANICAL SPLICE: FIBRLOK™

Fibrlok™ splicing allows two optical fibres to be mechanically connected and «welded» together, ensuring an insertion loss of less than 0.2 dB.

It requires no glue, only a support tool and a precision cleaver. It can be used on 250 or 900 µm coated fibre 900 µm coated fibre and is ideal for quick fixes and repairs. It is sold in packs of 6.



OTHER TYPES OF SPLICING CASSETTES AVAILABLE ON REQUEST



OPTICAL COUPLERS



FOLAN optical couplers are passive components that are integrated into an optical link and do not require a power supply to operate.

They enable the optical signal from a single fibre to be distributed to several fibres. The light power is distributed or derived from 1 to 2 optical fibres at the inputs or coupler trunks to 2 to 128 optical fibres at the outputs or branches.

They are particularly useful for integration into PON architectures of FTTH networks. They generate low insertion losses and polarisation-dependent losses (PDL) while maintaining high-quality optical performance over a wide wavelength range.

There are two ranges of optical couplers:

- FOLAN PLC couplers;
- FBT FOLAN fusion couplers.

PLC COUPLERS

Single-mode PLC (Planar Lightwave Circuit) couplers are optical components that provide an optimal solution for splitting the signal from 1 to 2 fibres at the inputs to 128 fibres at the outputs. They are available with 250 µm, 900 µm or 2 mm inputs/outputs, with or without connectors. PLC couplers can be integrated, on request, into splice cassettes, patch panels or optical boxes.



MICROMODULE OFRAT



MINIMODULE OFRAT



ABS BOX OFRAT

FEATURES - 1XN SINGLE-MODE PLC COUPLERS							
Coupleur PLC GRADE P	1x2	1x4	1x8	1x16	1x32	1x64	1x128
Wavelength (nm)	1260 to 1650						
Fibre type	G657A2 (G652D compatible)						
Insertion Loss (dB) max without connector	≤ 4,0	≤ 7,1	≤ 10,5	≤ 13,7	≤ 17	≤ 21,0	≤ 25,5
Uniformity (dB) max	≤ 0,5	≤ 0,8	≤ 0,8	≤ 1,4	≤ 1,5	≤ 2,0	≤ 2,6
Reflectance (dB) min	≥ 55						
PDL (dB)	≤ 0,2	≤ 0,3	≤ 0,3	≤ 0,3	≤ 0,3	≤ 0,5	≤ 0,8
Directivity (dB) min	≥ 55						
Temperature (installation and storage)	-40 to +85° C						

Couplers can be fitted with the desired connectors on request; insertion loss will be approximately 0.3 dB per connector. Couplers with more stringent optical properties are available on request.

FORMATS - PLC SINGLE-MODE 1XN COUPLERS								
Format (mm)	Fibre	1x2	1x4	1x8	1x16	1x32	1x64	1x128
Micromodule	250 µm	40 x 4 x 4			45 x 4,5 x 4	50 x 7 x 4	60 x 12 x 4	-
Minimodule	900 µm	45 x 4,5 x 4		60 x 7 x 4	60 x 12 x 4	80 x 20 x 6	100 x 40 x 6	141 x 115 x 18* ABS BOX in 900 µm
ABS BOX	2 mm	90 x 20 x 9,5	100 x 80 x 10		120 x 80 x 18		141 x 115 x 18	

FEATURES - PLC SINGLE-MODE 2XN COUPLERS							
Coupleur PLC GRADE P	2x2	2x4	2x8	2x16	2x32	2x64	2x128
Wavelength (nm)	1260 to 1650						
Fibre type	G657A2 (G652D compatible)						
Insertion Loss (dB) max without connector	≤ 4,5	≤ 7,5	≤ 11,0	≤ 14,3	≤ 17,7	≤ 21,1	≤ 25,8
Uniformity (dB) max	≤ 0,8	≤ 1,0	≤ 1,2	≤ 1,5	≤ 1,8	≤ 2,5	≤ 3,0
Reflectance (dB) min	≥ 55						
PDL (dB)	≤ 0,2	≤ 0,3				≤ 0,5	≤ 1,0
Directivity (dB) min	≥ 55						
Temperature (installation and storage)	-40 to +85° C						

FORMATS - SINGLE-MODE PLC COUPLERS 2XN								
FORMAT (mm)	Fibre	2x2	2x4	2x8	2x16	2x32	2x64	2x128
Micromodule	250 µm	40 x 4 x 4	45 x 4,5 x 4		60 x 7 x 4	65 x 7 x 4	60 x 12 x 4	-
Minimodule	900 µm	45 x 4,5 x 4	60 x 7 x 4		80 x 12 x 4	90 x 20 x 6	100 x 40 x 6	141 x 115 x 18*
ABS BOX	2 mm	90 x 20 x 9,5	100 x 80 x 10		120 x 80 x 18		141 x 115 x 18	ABS BOX in 900 µm

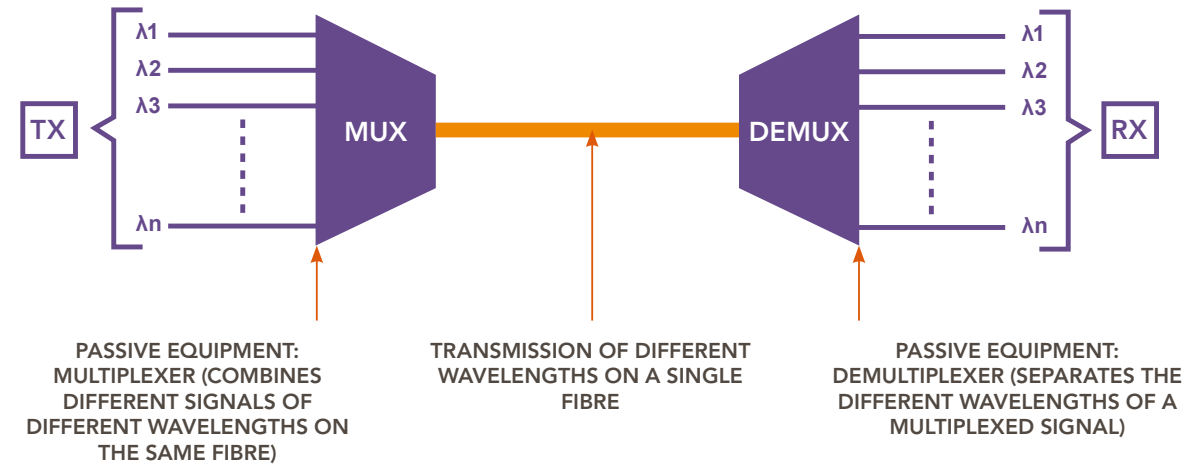
*The inputs and outputs of the couplers are on opposite sides, except for the 1x128, where they are on the same side.

WAVELENGTH MULTIPLEXING



FOLAN WDMs allow 2 or 3 signals of different wavelengths to be combined on the same fibre.

FOLAN also offers a range of passive CWDM components that can be easily integrated into patch panels or cabinets.



FBT FUSION COUPLERS

Fused Bi-conical Taper couplers, designed using fusion/drawing technology, enable the light power in an optical fibre to be split or combined.

By default, they are balanced, but they can be supplied with the desired power ratio. We offer the following standard ratios: balanced (50/50, 33/33/33, 25/25/25/25) or unbalanced (40/60, 30/70, 20/80, 10/90, 5/95 and 1/99).

FBT FOLAN 1-to-2, 1-to-3 and 1-to-4 couplers operate in single or dual window mode (1 or 2 wavelengths).

The couplers can be fitted with the desired connectors on request; insertion loss will be approximately 0.3 dB per connector.



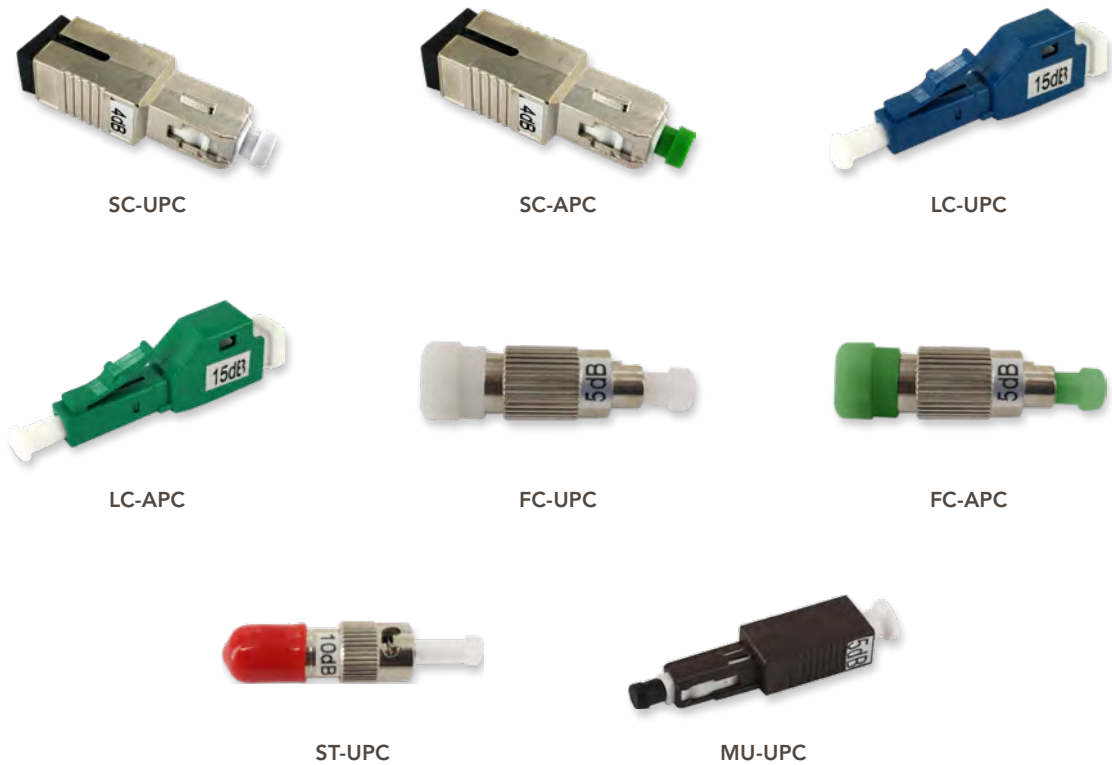
FEATURES - FBT SINGLE-MODE COUPLERS							MULTIMODE	
Balanced FBT coupler	Single window			Double window				
Grade P coupler	1x2	1x3	1x4	1x2	1x3	1x4	1x2	2x2
Wavelength	1310 or 1550 nm			1310 and 1550 nm			850 or 915 or 1300 or 850/1300	
Bandwidth	± 40 nm						± 40 nm	
Fibre type	G652D G657A2						62,5/125 - OM1 50/125 - OM2 - OM3 - OM4	
Directivity (dB)	≥ 55						≥ 40	
Reflectance (dB)	≥ 55						≥ 40	
INSERTION LOSS (DB) MAX								
Balanced	≤ 3,3	≤ 5,5	≤ 7,1	≤ 3,5	≤ 5,7	≤ 7,2	≤ 3,7	
40 / 60	≤ 4,4 / 2,5	-	-	≤ 4,7 / 2,7	-	-	≤ 4,7 / 2,7	
30 / 70	≤ 5,6 / 1,8	-	-	≤ 6,0 / 1,9	-	-	≤ 6 / 2,1	
20 / 80	≤ 7,6 / 1,2	-	-	≤ 7,9 / 1,2	-	-	≤ 7,8 / 1,4	
10 / 90	≤ 10,8 / 0,6	-	-	≤ 11,3 / 0,6	-	-	≤ 11,2 / 0,9	
5 / 95	≤ 14,0 / 0,4	-	-	≤ 15,0 / 0,4	-	-	≤ 14,5 / 0,7	
1 / 99	≤ 21,0 / 0,2	-	-	≤ 23,5 / 0,3	-	-	≤ 22,0 / 0,5	
PDL (dB)	≤ 0,1	≤ 0,15	≤ 0,2	≤ 0,15	≤ 0,15	≤ 0,3		
Uniformity (dB)	≤ 0,4	≤ 0,8	≤ 0,8	≤ 0,6	≤ 1,2	≤ 1	≤ 0,5	
Operating temperature	-20 to +80° C						-20 to +80° C	
Fibre length	Standard : 1 m - Maximum : 1,5 m						Standard : 1 m - Maximum : 1,5 m	
COUPLER SIZE (MM)								
CIGARETTE 250 µm 900 µm	Ø 3 x 60						Ø 3 x 54	
ABS BOX 900 µm 2 mm	10 x 20 x 90	10 x 80 x 100		10 x 20 x 90	10 x 80 x 100		10 x 20 x 90	
Inputs/ Outputs	Opposite	Same side	Same side	Opposite	Same side	Same side	Opposite	

MALE-FEMALE ATTENUATORS



FOLAN fixed male-female attenuators are used to attenuate the power of an optical signal. They are necessary, for example, when using SFPs that are too powerful on a short link to avoid saturation (or degradation) at the receiver.

They offer more stable attenuation values across a wide spectral range. Compact in size, they can be quickly and easily integrated between the plug of a cord or pre-terminated cable and the connector or base of active equipment.



FEATURES	
Fibre type	Single mode 9/125 µm
Wavelength	1310 nm, 1550 nm
Material	Metal (SC, FC, ST) or Plastic (LC, MU)
Attenuation	From 1 to 30 dB
Compatible with all standard connectors and fittings	

ACTIVE COMPONENTS



SFP

Enabling fibre links between active components, SFPs are integrated directly into RRUs (Remote Radio Units) located as close as possible to the antennas, as well as into active BBU (Base Band Unit) equipment installed in BTS (Base Station) technical Cabinets.

SFPs (Small Form-Factor Pluggable) or mini-Gbic are media conversion modules that provide optical connectivity to switch and router equipment equipped with a host port. This makes it possible to enjoy all the benefits of fibre optic transmission: bandwidth, range and security.

FOLAN 1 Gbps single-mode SFPs meet the needs of FTTA networks. Compliant with the MSA (Multi Source Agreement), they are compatible with equipment from all manufacturers that adhere to this standard.

SFP (Small Form-Factor Pluggable) or mini-Gbic modules are media conversion modules that provide optical connectivity to switch and router equipment equipped with a host port. This allows you to enjoy all the benefits of fibre optic transmission: bandwidth, range and security.

The 100 Mbps and 1 Gbps FOLAN SFPs are available in single-mode and multi-mode versions to meet the needs of LANs and remote networks. Compliant with the MSA (Multi Source Agreement), they are compatible with equipment from all manufacturers that adhere to this standard.

Mini-GBCls are available in bidirectional versions, allowing a single fibre to be used for both sending and receiving signals. They are characterised by their different transmission and reception wavelengths.



FEATURES	
Fibre type	Single mode: 1300, 1310, 1550 nm depending on reference and range
Range	500 m to 2 km
Compatibility	Compatible with most major brands of active equipment
Connectivity	LC Duplex or SC Duplex
Operating temperature	0 to + 70° C
Power supply	3,3 V
Standard SFP	Compliant with SFP MSA
ESD protection	CEI 61000-4-2 GR-1089-CORE
EMI	EN55022 Classe B (CISPR 22B), VCCI Classe B
Compliance with environmental standards	RoHS 2002/95/CE et 2005/747/CE
Optical output	Telcordia GR-253-CORE, ITU-T G.957
s IEC 60825-1.2 Laser Class 1	IEC 60825-1.2 Laser Classe 1
Network standards	IEEE 802.3z (Gigabit Ethernet), ANSI Fibre Channel
Low power dissipation	Yes



5- AND 8-PORT FAST ETHERNET DESKTOP SWITCHES

- External power supply: 5V
- Speed: 10/100 Mbps
- AUTO Negotiation/AUTO MDI/MDIX
- Plug&Play
- Format: desktop
- Casing: plastic

16- AND 24-PORT GIGABIT CABINETMOUNT SWITCHES

- Internal power supply: 220V
- Speed: 10/100/1000 Mbps
- AUTO Negotiation/AUTO MDI/MDIX
- Plug & Play
- Format: 19" Cabinet-mountable
- Casing: metal



5 AND 8-PORT GIGABIT DESKTOP SWITCHES

- External power supply: 5V
- Speed: 10/100/1000 Mbps
- AUTO Negotiation/AUTO MDI/MDIX
- Plug & Play
- Format: desktop
- Casing: plastic

48-PORT GIGABIT CABINETMOUNTABLE SWITCHES

- Internal power supply: 220V
- Speed: 10/100 and 10/100/1000 Mbps
- AUTO Negotiation/AUTO MDI/MDIX
- Plug&Play
- Format: 19" Cabinet-mountable
- Casing: metal
- Lifetime warranty



5- AND 8-PORT GIGABIT DESKTOP SWITCHES

- External power supply: 48V
- Speed: 10/100/1000 Mbps
- AUTO Negotiation/AUTO MDI/MDIX
- Plug&Play
- Format: desktop
- Casing: metal
- Lifetime warranty

16 AND 24-PORT GIGABIT DESKTOP/CABINET-MOUNTABLE SWITCHES

- Internal power supply: 220V
- Speed: 10/100/1000 Mbps
- AUTO Negotiation/AUTO MDI/MDIX
- Plug & Play
- Format: desktop / 19" Cabinet-mountable
- Casing: metal
- Lifetime warranty



5- AND 8-PORT FAST ETHERNET DESKTOP POE SWITCHES

- External power supply: 48V
- Speed: 10/100Mbps
- AUTO Negotiation/AUTO MDI/MDIX
- Plug & Play
- Format: desktop
- Casing: metal
- Lifetime warranty



5- AND 8-PORT GIGABIT DESKTOP POE SWITCHES

- External power supply: 48V
- Speed: 10/100/1000Mbps
- AUTO Negotiation/AUTO MDI/MDIX
- Plug & Play
- Format: desktop
- Casing: metal
- Lifetime warranty



DESKTOP/CABINETABLE POE+ 8-PORT GIGABIT SWITCH

- External power supply: 48V
- Speed: 10/100/1000 Mbps
- AUTO Negotiation/AUTO MDI/MDIX
- Plug & Play
- Format: desktop/19" Cabinet-mountable
- Casing: metal
- Lifetime warranty



DESKTOP/CABINETMOUNTABLE POE+ SWITCH 16 GIGABIT PORTS

- Internal power supply: 48V
- Speed: 10/100/1000Mbps
- AUTO Negotiation/AUTO MDI/MDIX
- Plug&Play
- Format: desktop / 19" Cabinetmount
- Casing: metal
- Lifetime warranty



FULL POE 8-PORT + 2 SFP GIGABIT DESKTOP SWITCH

- External power supply: 48V
- Speed: 10/100/1000Mbps
- AUTO Negotiation/AUTO MDI/MDIX
- Plug&Play
- Format: desktop
- Casing: metal
- Lifetime warranty

24-PORT POE+ CABINETMOUNTABLE SWITCH + GIGABIT SFP

- Internal power supply: 220V
- Speed: 10/100 or 10/100/1000Mbps
- AUTO Negotiation/AUTO MDI/MDIX
- Plug&Play
- Format: 19" Cabinet-mountable
- Casing: metal
- Lifetime warranty



POE INJECTOR



- External power supply: 5, 9 and 12V
- 2 RJ45 ports 10/100/1000 Mbps
- AUTO Negotiation/AUTO MDI/MDIX
- Plug&Play

POE SPLITTER



- External power supply: 48V
- 2 RJ45 ports 10/100/1000Mbps
- AUTO Negotiation/AUTO MDI/MDIX
- Plug&Play

CABINET MANAGEMENT SYSTEM (CMS)



The Cabinet Management System (CMS) is an intelligent solution designed to monitor, control and maintain the performance of network cabinets, whether they contain active or passive equipment. It automatically detects anomalies related to the environment (temperature, humidity, flooding, particles), connectivity and security. Thanks to its sensors, dual SIM 3/4G router and internal PC with SD-WAN capabilities, the CMS provides continuous monitoring, even in the event of a network failure. It enables remote equipment management, energy monitoring and real-time visualisation via a centralised software interface. In short, it is the engineer in the cabinet, guaranteeing reliability, security and operational efficiency.

Advantages of the CMS:

- Comprehensive, proactive monitoring: early detection of environmental, energy or hardware failures.
- Remote maintenance: out-of-band access to diagnose and resolve incidents without on-site intervention.
- Reduced operating costs: fewer field trips and optimised technical resources.
- Improved network resilience: guaranteed service continuity thanks to SD-WAN connectivity and real-time alerts.
- Centralisation of data and management: unified monitoring and accurate analysis via an intuitive cloud platform.



SURVEILLANCE ENVIRONNEMENTALE ET ÉNERGÉTIQUE

GESTION HORS BANDE

PREND EN CHARGE MODBUS (TCP ET RTU)

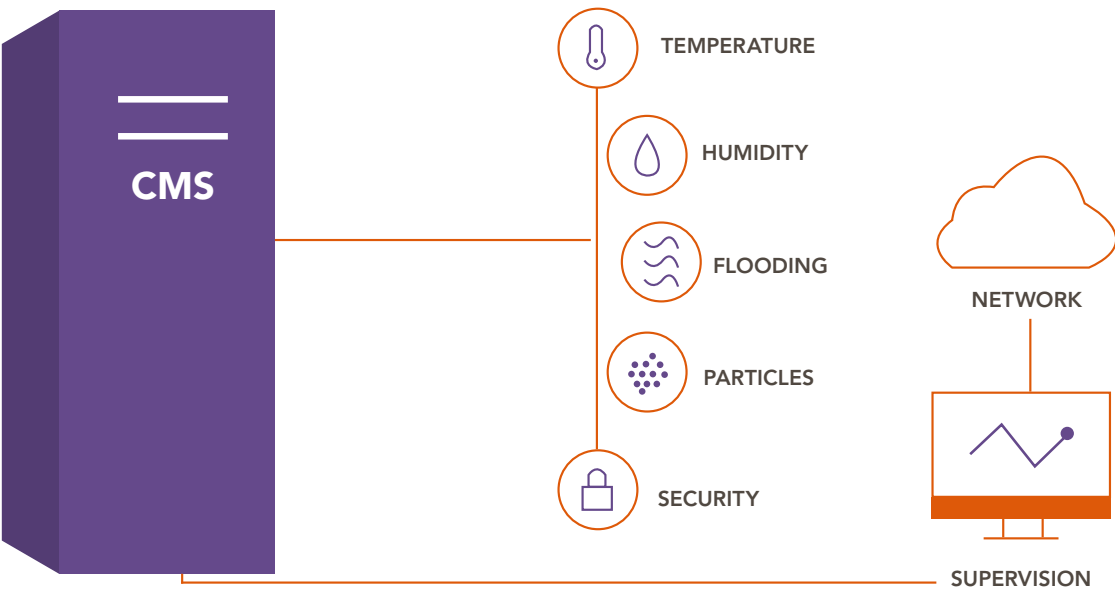
GESTION DU RÉSEAU/MATÉRIEL

TESTS DE VITESSE

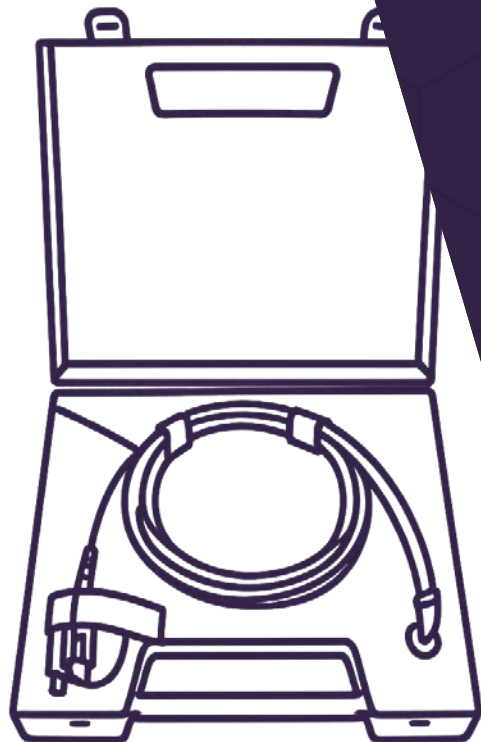
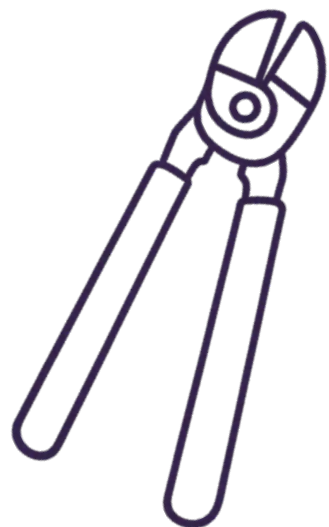
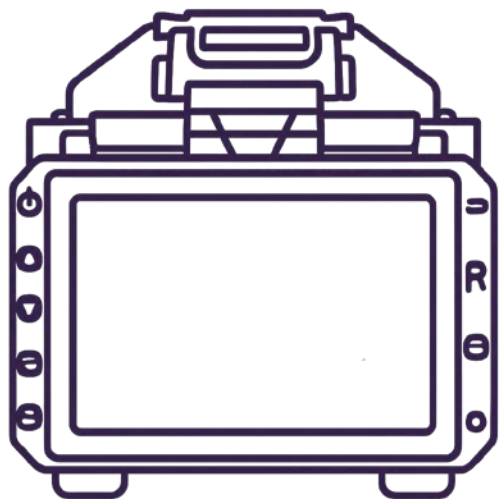
PC INTERNE AVEC CAPACITÉS SDWAN

ROUTEURS DOUBLE SIM (OOB) 3/4G

How the CMS works:



FEATURES	
Size	1RU - 350 mm depth (350 x 440 x 44 mm)
Power	Dual DC input -48VDC (90W max, 22W normal), optional AC input
OOB/WAN/VPN access	Integrated dual SIM OOB (out of band) 3G/4G router, Ethernet WAN connectivity, ultrastable VPN via RazorLink™
Network	Internal L2 switch, 4 x 10/100/1000Mbps management ports, environmental MODBUS servers and ONT testing
Environmental monitoring	Up to 8 temperature sensors, 1 humidity sensor, 1 flood sensor, 4 particle sensors (internal/external), door contact sensors and handle sensor
Power management	2x internal DC monitor for dual 48V system analysis, optional AC analysis for main cabinet
MODBUS protocol	MODBUS TCP/RTU support, BMS battery monitoring, rectifier and generator, additional I/O card for sensors and control
Internal PC	Integrated PC (7/8 GB RAM, 256 GB M2 SSD), USB ports for local connection, local logging, ONT speed test, Ubuntu (or other OS on request)
Supervision & Software	SPG (Single Pane of Glass) graphical interface, SAMI software, site visualisation, alert and event management, reporting, system & device control
Ventilation	Ventilation control based on environmental profiles and multiple sensors
Security	On-board video surveillance camera, H&S monitoring, remote engineer assistance, temperature reading and door contact
Connectivity & options	Additional 1U PDU box, mains power supply, 40A/6-socket distribution, L3/OOB network architecture extension
Cost reduction	Reduction in field interventions and optimisation of technical resource allocation
Centralisation	Intuitive cloud platform, centralised monitoring and detailed analytics



TECHNICIAN EQUIPMENT



136	CLEANING
138	ACCESSORIES
139	TESTS AND MEASUREMENTS
140	WELDERS
141	STRIPPING PLIERS



CLEANING



NEOCLEAN-M® CLEANING PEN

Designed for MTP®, the Neoclean-M® cleaning pen is compact and very easy to use. Thanks to its «one click» mechanism, this pen can be used for up to 600 cleanings. It uses microfibres specially designed to remove all contamination from optical connectors.



FOLAN CLEANING CASSETTE

The FOLAN cleaning cassette allows for high-quality dry cleaning of optical terminations, more specifically on the ferrules of optical connectors. It is specially designed to remove debris, stubborn grease, dust and any other contaminants.

The FOLAN cleaning cassette is refillable. Refills, sold separately, are quick and easy to install and allow for up to 500 cleanings.



CLETOP-S CLEANING CASSETTE

The CLETOP-S cleaning cassette has been designed to clean connectors quickly and efficiently. This compact tool is robust and easy to use.

Its push button allows the cleaning strip to be rolled out. The strip is made of 2 µm fibre fabric that captures dirt and removes all impurities from the connector: oil, grease, dust and other substances adhering to the optical surfaces.



FOLAN CLEANING STICKS

Cleaning sticks are particularly effective for cleaning all hard-to-reach surfaces.

Their elongated shape allows for cleaning optical connectors with a 2.5 mm or 1.25 mm sleeve.



ACT CLEANING STICKS

Made from the same fabric as CLETOP-S, ACT swabs can be used to clean connectors with a 1.25 mm sleeve, as well as the optical surface of the associated connectors.



FOLAN DRY CLOTHS

Non-woven and white to prevent colour transfer, they have remarkable absorption capacity.

They are particularly effective for cleaning optical fibres and electronic components.



KIMWIPE™ DRY CLOTHS

Soft, non-abrasive and dry, KIMWIPE™ wipes can be used on delicate surfaces such as the optical face of connectors, or directly on fibres.



FOLAN PRE-IMPREGNATED WIPES

Pre-moistened wipes containing isopropyl alcohol remove dust, fingerprints and all other contaminants that may be present on the optical surfaces of connectors.

TRIJELT 13E DEGREASER

This powerful degreaser, used specifically for telecommunications, is designed for all electrical and electronic equipment.

It can be used with a brush or as a directed spray to decontaminate all surfaces before use. Thanks to its rapid evaporation, it leaves no residue and removes all types of dirt. It is therefore ideal for cleaning optical fibres and connectors.



FOLAN DEGREASER

Specially recommended for cleaning resistant materials, FOLAN degreaser has the particularity of drying very quickly. Highly effective on cables with sealing gel, it works on any type of grease.

To use, dip the fibres directly into the degreaser until the dirt is completely removed, then dry with a dry cloth.



FOLAN ISOPROPYL ALCOHOL

Isopropyl alcohol is the most commonly used solvent for cleaning optical fibres.

It cleans effectively without leaving any residue and without risk of damaging the fibre.

ACCESSORIES



PLASTIC & METAL CABLE TIES

For securing cables, Rilsan-type plastic cable ties, with or without an adhesive base, are very practical because they can be used on all cables without the need for special tools.

For a more secure fastening with metal Serflex cable ties, a screwdriver or suitable flat spanner is required during installation.

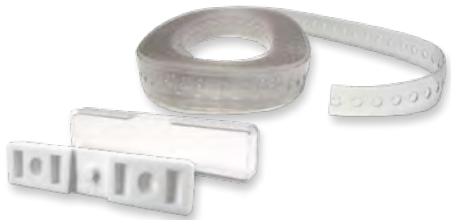


MARKING LABELS

Stamping labels allow PBO (optical connection point) subscriber cables to be identified by punching or laser marking as part of an FTTH deployment. Made of UV-resistant HDPE, these labels measure 73 x 50 mm and can be attached with strapping, nails or plastic cable ties.

LABEL HOLDER

These label holders with perforated flanges (minimum Ø 8 mm) enable the identification of tubes or cables. They are packaged in boxes of 55 or 60 label holders and are supplied with 5 m of flange.



SELF-PROTECTED LABELS

FOLAN self-protected labels enable quick and easy identification. They are ideal for labelling cords, pigtails and, in general, all fibre optic cables with a diameter of less than 6 mm.

The label consists of a white area for writing and a transparent film that wraps around and protects the text from moisture, oils and other contaminants.



TESTS AND MEASUREMENTS



FAULT LOCATOR

The laser diode integrated into the FOLAN fault locator emits a continuous or pulsed red light beam at 650 nm. This tool allows you to quickly and accurately locate poor-quality splices, faulty connectors, breaks and all areas of stress responsible for signal loss in the optical fibre.

Efficient and easy to use, the fault locator is an essential tool for identifying optical fibre at each end of a connection. Robust and lightweight, it is ideal for field work.



FEATURES	
Wavelength	650 nm
Connector	2.5 mm (1.25 mm optional)
Transmission power	1 mW
Operating mode	Continuous and pulsed (3 Hz and 9 Hz)
Power supply	2 AAA batteries
Battery life	60 hours



LEAD COILS

Reflectometry requires the use of launch and end leader reels for accurate and reliable measurements.

That is why FOLAN offers practical launch and termination reels that are easy to transport thanks to their compact, shock-resistant case. The fibre is perfectly protected by the internal foam or metal tray and by the 2 or 2.8 mm diameter end caps.

The starter reels can be configured according to the desired lengths and connectors: from 1 to 3 km in single mode (G652D or G655) and from 500 m for multimode (OM1, OM2, OM3 or OM4).

They can also be doubled with two separate fibre strands and thus work with MTRJ connectors or for simultaneous use of single-mode and multimode.

STARTING REEL CASE

This case is equipped with 18 single-mode 500 m stub reels, connected with SCAPC connectors, and allows reflectometric measurement by looping the fibres on the PMZ (Zone Sharing Point) collection patch panel, in a street cabinet or distributor.

This loopback facilitates measurement from the OCN (Optical Connection Node) without the need for a technician to be permanently stationed at the ZMP, thereby increasing productivity.

The metal case has a carrying handle and a padlockable cover with an opening that allows the reels to be removed and used with the cover closed.



FEATURES	
Dimensions (W x H x D mm)	380 x 250 x 150
Weight (kg)	4,75
Fibre type	Single-mode G652D or Single-mode G657A2
Material/Colour	Metal / Black
Output cords	2 x 18 zipcord wires Ø 2 mm - length 2.5 mm - protected by black textile sheathing



MINI 3S SPLICER

The Mini 3S is an ultra-compact splicer for jacketed fibres. Thanks to its active alignment technology, the Mini 3S ensures fast, high-quality fusion. This splicer is perfectly suited to FTTx connection projects. Easy to transport and reliable, it offers unrivalled working comfort. Designed for both experienced technicians and beginners, it can be used in all weather conditions.

MINI 4S+ SPLICER

The Mini 4S+ splicer is an ultra-compact tube-to-tube splicer. With its 4 motors, it uses active alignment technology to ensure fast, high-quality splicing. This splicer is ideal for FTTx connection work. Combining mobility and performance, it offers ideal working conditions. It is suitable for both expert technicians and novices, and can be used in all weather conditions.



MINI 6S+ SPLICER

The Mini 6S+ splicer stands out for its compact size, reliability and ease of transport. It is ideal for both expert and novice technicians and can be used in all weather conditions.

FEATURES			
	MINI 3S	MINI 4S+	MINI 6S+
Supported fibre types	SM, MM, DS, NZDS	SM, MM, OS, NZDS	SM, MM, OS, NZDS
Outer sheath diameter	250–900 µm	100–3000 µm	100–3000 µm
Cleaving length	8–16 mm	5–16 mm	10–16 mm
Alignment	Active (DAA)	Sheath-to-sheath (DAA)	Core to core (AOAQT)
Average losses (SM)	≤ 0,03 dB	≤ 0,03 dB	≤ 0,02 dB
Soldering time	8 s	6–8 s	6–10 s
Welding modes	8	140	166
Heating time	18 s	10 s	10 s
Screen	LCD 4,3", tactile	LCD 4,3", tactile	LCD 4,3", touchscreen
Maximum zoom	300x	320x	320x
Battery life	200 cycles	300 cycles	300 cycles
Splices/images storage	Not specified	10 000 / 2 000	10 000 / 2 000
Weight (with battery)	1,2 kg	1,8 kg	1,8 kg
Dimensions (mm)	124 x 189 x 76	124 x 123 x 138	124 x 123 x 138
Operating conditions	10 à 50 °C / ≤ 95 % HR	20 à 50 °C / ≤ 95 % HR	20 à 50 °C / ≤ 95 % HR



In order to work on bare fibre, it is necessary to remove the various layers that protect it (250 µm, 900 µm, 2 mm or 3 mm). This process is called stripping.



MILLER® 103-S STRIPPING PLIERS

Stripping diameter: 250 µm and 900 µm

It allows precise stripping of coatings without risk of damaging the optical fibre.

MILLER® 103-TSTRIPPING PLIERS

Stripping diameter: 250 µm, 900 µm, and 3 mm

Equipped with 3 jaws for stripping bare fibres, pigtails and cords, it was designed based on the traditional 103-S pliers with the addition of extra jaws.



MILLER® 721 STRIPPING PLIERS

Stripping diameter: 0.6 to 2.6 mm

This compact, lightweight plier has a spring that makes it easier to use. Its anti-corrosion finish makes this plier one of the most resistant and durable tools available.



TECHNICAL DATA

OPTICAL CONNECTORS / GRADES

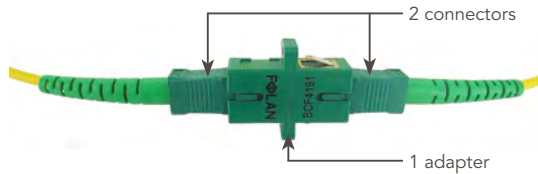
The huge growth in high-performance optical fibre networks brings with it the need for increasingly stringent criteria for selecting the passive components that make up network infrastructures. While optical fibre is itself a source of signal transmission losses (line losses or attenuation), the parts that are most prone to losses are the connection points.

Reducing connection losses remains the principal objective for connections and makes the use of high-quality connectors increasingly vital. The long-term performance and reliability of the network depend on them.

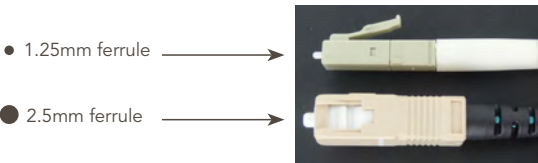
Knowing the fundamentals of the grades applicable to optical connectors is essential to understanding the choice of components used to make the connections. The standards are common to all component manufacturers and ensure they are compatible with each other.

OPTICAL CONNECTORS: THE MAIN SOURCE OF LOSSES IN OPTICAL NETWORKS

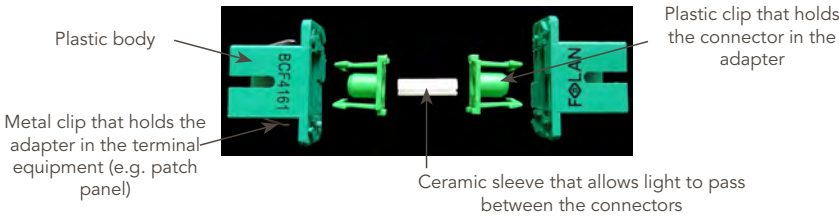
Optical connectors are made up of an adapter and two connectors.



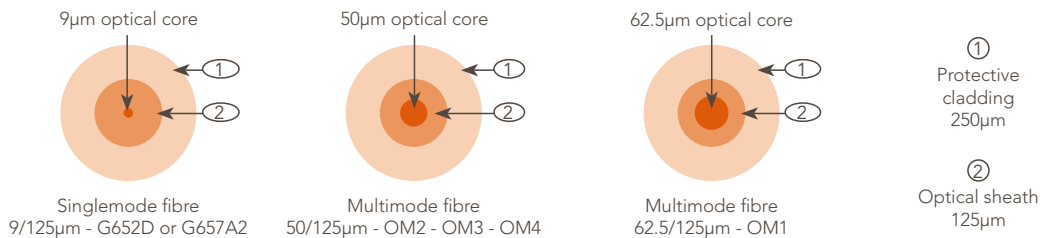
Optical connectors provide the connection and contain 1.25 or 2.5mm ferrules to accurately hold the two fibre ends in place.



The optical connectors are connected via an adapter that lines them up.



To limit transmission losses (or, in other words, reduce light losses at the connection points), the two ferrules must be lined up with great precision. The extremely small dimensions of the fibre cores (where transmission takes place) call for very high mechanical and optical precision for optical components (connectors/adapters) connecting the fibres together.



INTRINSIC AND EXTRINSIC LOSSES

Intrinsic losses are generated solely by the fibres and usually derive from core diameter differences, materials with different refraction indices, or fibre eccentricity (poorly centered cores).

Extrinsic losses result from a large number of connector-specific (connector/adapter) parameters:

- Connector ferrule geometry accuracy - Fig 2
- Adapter sleeve geometry, elasticity and material
- Surface state of the connector's optical contact (roughness, dirt, moisture, etc.) - Fig. 1
- Centering of the fibre in the connector ferrule, eccentricity
- Fibre core adjustment area dimensions - Fig 3
- Angular alignment faults - Fig 4

Over 70% of transmission losses are linked to extrinsic losses in optical fibre networks. Hence the need to reduce them as much as possible by, for example, polishing the connectors properly to minimize losses due to roughness and dust, the two main causes of light dispersion and absorption in the connector.

Fig 1 - Inspection of the surface state of a connector (with an inspection scope)

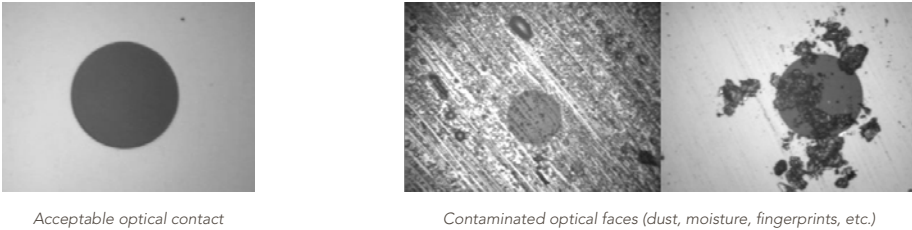


Fig 2 - Inspection of the 3D geometry of the fibre end and connector ferrule (using an interferometer):

- Inspection of the radius of the convex surface
- APEX: fibre axis eccentricity compared to the highest point of of the ferrule
- Angular position of the Apex
- Difference in roughness between the fibre and the ferrule, etc.
- Height of the fibre

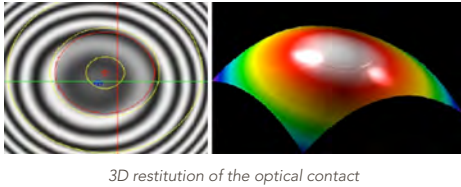
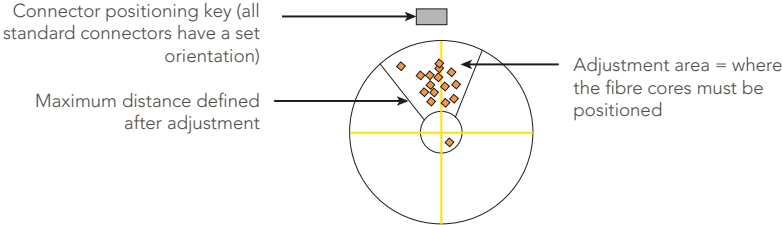


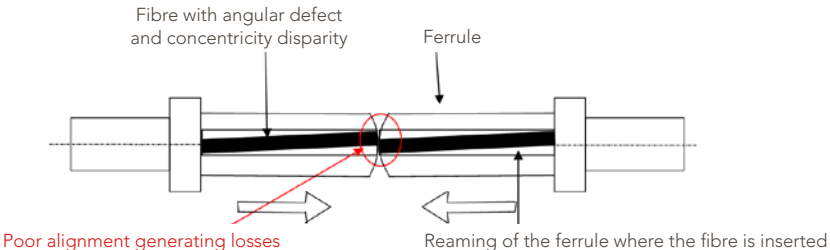
Fig 3 - Ferrule adjustment area

Ferrule adjustment is an important operation in the production phase for obtaining optimal results; it is also known as tuning. To optimize attenuation due to extrinsic losses, the fibre core has to be positioned in an area described as follows:



Adjustment does not alter the position of the fibre in the ferrule, rather the ferrule holder rotates within the connector to maneuver the fibre into the area described above. Adjustment is aimed at minimizing fibre core alignment disparities when the connectors are coupled together.

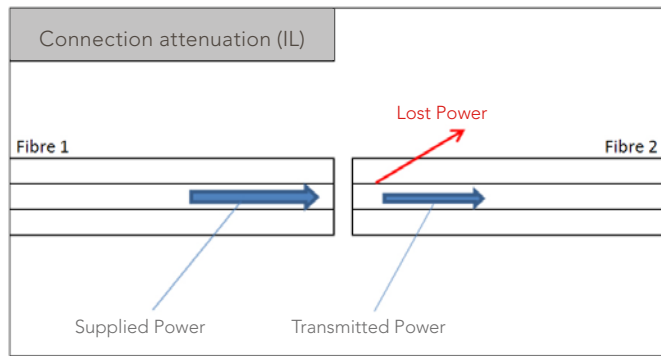
Fig 4 - Alignment and concentricity faults



CONNECTION POINT CHARACTERISTICS

The two parameters that characterize a connection are:

1. IL: Insertion Loss (in dB, decibel)

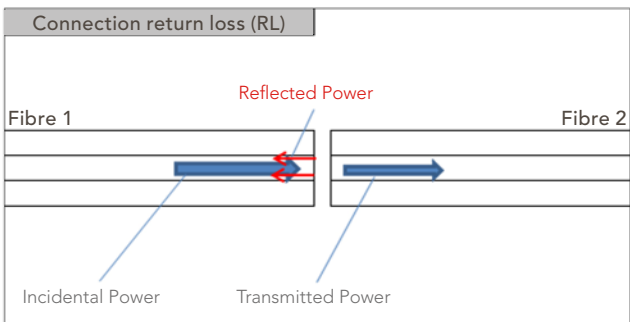


The insertion loss is generated at the connection point (due to core misalignment, optical contact quality or core gaps).

It is calculated on the basis of the difference between emitted power and received power after the connection point. The lower the IL value, the better the connection.

2. RL: Return Loss = Loss of reflection or reflectance (in dB or decibels)

Reflectance is the quantity of light reflected back towards its source in a connection.



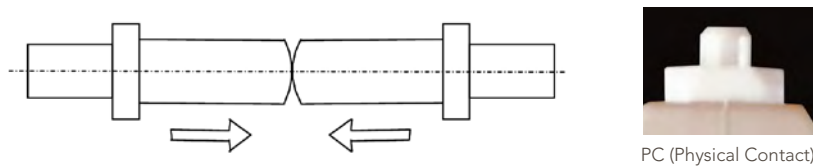
Whenever two fibres are connected, any eccentricity, scratches, change of index or dirt will cause parts of the emitted light to be reflected (red arrows).

The higher the RL value, the better the connection.

Return Loss and reflectance are values relating to the reflection of light, but one will be expressed as a positive value (RL = 60dB) and the other as a negative value (reflectance = -60dB).

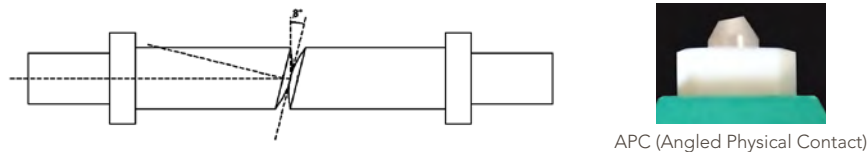
The reflectance value is closely linked to the quality of optical contact polishing techniques used:

- **PC polishing: Physical Contact** whereby the ferrule is polished into a convex shape to ensure that the 2 fibres make contact at the highest point of the ferrule.



- **UPC polishing: Ultra Physical Contact polishing** whereby the ferrule has a convex shape and polishing quality is higher still (optimized contact point).

- **APC polishing: Angled Physical Contact polishing** This polishing technique provides an even higher quality of connection, whereby the convex surface is polished to an angle of 8° perpendicular to the fibre. Although part of the light signal is still reflected, the fact that the angle used is greater than the angle of acceptance means that this part of the light (also known as a mode) is dispersed by refraction and not returned to the emitter through the fibre.



PERFORMANCE GRADES

FOLAN keeps a range of different grades of connection components to help manufacturers, operators, installers, etc. choose components that are best-suited to their applications. However, even the best connectors can only perform properly if they are coupled with high-performance adapters.

These grades or classes defined in standard IEC 61753-1:2018 classify the connectors according to the performances of the insertion loss IL (Grade A to D) and reflectance RL (Grade 1 to 4) compared to standardized measurement methods:

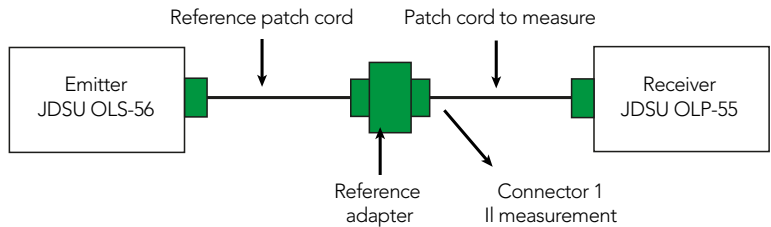
TESTS	REQUIREMENTS			
	SINGLEMODE		MULTIMODE	
Insertion loss (IL) (IEC 61300-3-34)	Classes/Grades	Attenuation at 1310, 1550 and 1625nm	Classes/Grades	Attenuation at 850nm
	Class A	Not currently specified	Class A _m	Not currently specified
	Class B	≤ 0.12dB on average ≤ 0.25dB max. for ≥ 97% of connections	Class B _m	≤ 0.3dB on average ≤ 0.6dB max. for ≥ 97% of connections
	Class C	≤ 0.25dB on average ≤ 0.50dB max. for ≥ 97% of connections	Class C _m	≤ 0.5dB on average ≤ 1.0dB max. for ≥ 97% of connections
	Class D	≤ 0.50dB on average ≤ 1dB max. for ≥ 97% of connections	Class D _m	Not currently specified
Return loss (RL) (IEC 61300-3-6)	Class 1	≥ 60dB (paired) and ≥ 55dB (unpaired)	Class 1 _m	Not currently specified
	Class 2	≥ 45dB		
	Class 3	≥ 35dB	Class 2 _m	≥ 20dB (paired)
	Class 4	≥ 26dB		

Although FOLAN can manufacture all the standardized grades, to provide the best value for money, it has chosen to standardize production based on the values set out below:

	Insertion loss (IEC 61300-3-4 method B)	IL MAX
SINGLEMODE	FOLAN Grade B	IL ≤ 0.25dB
MULTIMODE	FOLAN Grade M	IL ≤ 0.50dB

According to the random distribution method (IEC 61300-3-34), the attenuation measurement (IL) defines manufacturing quality on a batch (10 patchcords or 20 connectors or 360 measurements) according to two parameters: the average over all measurements and the maximum value over 97% of all measurements.

As this distribution IL measurement is difficult to apply in the field, FOLAN uses the connector-to-connector measurement method to calculate Insertion Losses in accordance with the procedure set out in standard IEC 61300-3-4, Method B. The diagram below illustrates the setup needed to carry out these types of measurement:



Readings are taken at 1310 or 1550nm for singlemode (SM) connectors and 810 or 1300nm for multimode (MM) connectors. The patchcord used for measurement is a reference patchcord with optimized centering and negligible attenuation. A reference measurement is first carried out with this patchcord as well as with a reference adapter and then the patchcord to be measured is integrated.

With regard to the reflectance measurement (RL), FOLAN does not define performance with Grades 1 to 4 as specified in the above standard. The values are directly expressed through the type of polishing, which is more restrictive than the standard itself: PC, UPC, APC. Tuned or adjusted connectors manufactured by FOLAN are certified as having an IL ≤ 0.25dB.

	Return loss (IEC 61300-3-6)	RL value
SINGLEMODE	FOLAN Grade B	APC: RL ≥ 60dB UPC: RL ≥ 50dB
MULTIMODE	FOLAN Grade M	PC: RL ≥ 35dB

GENERAL CONDITIONS OF SALE

Application of the general terms and conditions of sale

These Terms and Conditions apply to sales made in France and to those made outside mainland France, the latter being subject to certain specific and/or additional provisions appearing in italics and in square bCabinetets [...]. These general terms and conditions of sale apply to all sales (equipment and services). By placing an order, the purchaser fully and unreservedly agrees to these General Terms and Conditions of Sale.

No special conditions may prevail over the General Terms and Conditions of Sale unless formally accepted in writing by FOLAN's senior management.

Any contrary condition imposed by the buyer shall therefore, in the absence of express acceptance, be unenforceable against FOLAN, regardless of when it may have been brought to its attention.

The fact that FOLAN does not invoke any of these terms and conditions at a given time cannot be interpreted as a waiver of its right to invoke any of these terms and conditions at a later date. Our terms and conditions of sale shall cease to apply if, during a previous order, the purchaser has failed to fulfil their obligations. A refusal to sell shall then be validly applied, unless the purchaser provides sufficient guarantees or cash payment, without the possibility of a discount. In the latter case, it is specified that no discount shall be granted.

1. Order taking

FOLAN is only bound by orders taken by its representatives or employees subject to written and signed confirmation from the customer (purchase order, letter by post or email, or countersigned quotation with written acceptance). A handling fee of €30 excluding VAT will be applied to all orders under €100.00 excluding VAT. An administration fee of €20 excluding VAT will be applied to all orders under €200 excluding VAT. Free shipping and packaging in mainland France is fixed at €800 excluding VAT per delivery (excluding cables, Cabinets, etc.) for standard transport from Rillieux-La-Pape (69). Shipping costs will be applied to all orders under €800.

For shipments outside mainland France, shipping costs in accordance with ICC Incoterms® 2020 are payable by the customer, with transport being organised either by the customer or by FOLAN.

2. Order modifications

In the case of manufactured products, and if production has already begun, the initial order cannot be modified in any way.

3. Delivery terms

Delivery is made either by direct delivery of the product to the purchaser, by simple notice of availability, or by delivery to a shipper or carrier at our workshops. [For sales outside mainland France, the transfer of risks and costs will be carried out in accordance with the ICC Incoterm provided for in the contract, the latest version in force at the time the offer is made].

4. Delivery times

Delivery times are given for information purposes only and any delays do not entitle the purchaser to cancel the sale, refuse the goods or claim compensation or damages. The following are considered cases of force majeure releasing FOLAN from its obligation to deliver: pandemic, war, riot, fire, flood, strikes, accidents, inability to obtain supplies. In any event, delivery within the agreed time frame can only take place if the buyer is up to date with their obligations to FOLAN, regardless of the cause.

5. Delivery risks

In all cases, the products are transported at the recipient's risk, and in the event of damage or loss, it is the recipient's responsibility to make all necessary observations and confirm their reservations by extrajudicial document or by registered letter with acknowledgement of receipt (LR/AR) to the carrier (presumed liable under C.com. art.103) within three days of receipt of the goods.

[For sales to foreign countries, the transfer of risks and costs shall be carried out in accordance with the ICC Incoterm provided for in the contract, the latest version in force at the time of the offer or the confirmed order].

6. Receipts

Customers are strongly advised to check their parcels in the presence of the carrier because, in the event of material damage, no replacement will be accepted if the facts have not been clearly noted on the carrier's receipt.

No returns of defective products will be accepted if the precautions for use have not been followed. It is the buyer's responsibility to provide proof of the defects or anomalies observed. They must allow FOLAN every opportunity to verify these defects and remedy them. They must refrain from intervening themselves or involving a third party for this purpose. The seller reserves the right to deliver quantities ordered with a tolerance for cables of 0% to 10%.

7. Return policy

Any return of products must be formally agreed between FOLAN and the purchaser. Any product returned without this agreement will be held at the purchaser's disposal and will not give rise to a credit note but to handling costs. The costs and risks of the return are always borne by the purchaser. Standard products held in our stock may be returned to us within 10 days of delivery, with the prior agreement of our sales department (return number to be requested). The equipment will be taken back with a 30% deduction for inspection and storage costs.

8. Consequences of returns

Any return accepted by FOLAN will result in a credit note being issued to the purchaser, after the quality and quantity of the returned products have been checked and restocking costs have been deducted. In the event of an apparent defect in the delivered products, duly noted by FOLAN under the conditions set out in Article 8, the purchaser may obtain a free replacement or a refund for the products, at FOLAN's discretion, to the exclusion of any compensation or damages.

9. Warranty

FOLAN's liability under the warranty is limited solely to the goods supplied by FOLAN and does not apply to damage, injury or loss resulting from a defective item. The warranty for products manufactured by FOLAN is one year from the date of shipment or collection. For other distributed products, the warranty is that defined by the manufacturer of said products. The warranty is expressly limited, at FOLAN's discretion, to the repair or replacement of parts recognised as defective by FOLAN, including labour, or to the issuance of a credit note for the purchase price. Interventions under the warranty shall not extend the warranty period if the downtime is less than or equal to 6 days. However, any period of immobilisation of the equipment of at least 7 days (inclusive) shall be added to the remaining warranty period on the date of the customer's request for intervention or the date on which the equipment in question is made available for repair, if this availability is subsequent to the request for intervention. A photocopy of the purchase invoice must be presented when the warranty is invoked. Products must be returned in their original packaging to our workshops at the purchaser's sole expense. All complaints must include details of the use of the item, its place of use, frequency of use or any other information that may be relevant to the return of the item.

10. Repair

Beyond the warranty period, the cost of repairing returned equipment shall be borne by the purchaser. If the returned product is deemed repairable by FOLAN, a quote will be sent to the purchaser. The cost of return shipping shall be borne by the purchaser.

11. Exclusion of warranties

Defects and damage caused by natural wear and tear or by external accidents (incorrect assembly, faulty maintenance, abnormal use, etc.), or by technical intervention by a third party are excluded from the warranty. FOLAN cannot under any circumstances be held liable for the loss or alteration of data or programmes on computer equipment, whether the products are under warranty or not. It is reminded that it is the customer's sole responsibility to regularly check their equipment. Similarly, the warranty will only apply if the purchaser is up to date with their payments to FOLAN, regardless of the cause.

12. Prices

Our prices are net, excluding tax, in euros or dollars. By express agreement between the parties, it is stipulated that the prices of products sold by FOLAN are subject to revision at any time. The buyer will be notified of any revision as soon as possible.

The products negotiated and manufactured by FOLAN are supplied at the price in force at the time of placing the order, with the exception of any derogations from the General Terms and Conditions of Sale provided for in written offers. Prices are ex-works, including packaging, except for special or unusual packaging for FOLAN, which will be invoiced separately. Any taxes, duties or other charges payable under French regulations or those of an importing country or transit country shall be borne by the purchaser.

13. Terms of payment

From the second order onwards, the client company must request an account opening and provide FOLAN with its bank details, a K-Bis extract, its latest simplified balance sheet, and a letterhead stating its SIRET number for France and its intra-Community VAT number for the European Union. FOLAN will review the application and issue an "account opening" document indicating the maximum credit limit assigned to the customer, the required payment method, and the payment terms granted. All payments must be made payable to FOLAN. The delivery of a commercial bill creating an obligation to pay does not constitute cash

payment. No discount is accepted for cash payments.

14. Late or non-payment

In the event of late payment, FOLAN may suspend all orders in progress, without prejudice to any other course of action. For any late payment, FOLAN will apply an interest rate equal to the European Central Bank's refinancing rate in force on the invoice due date, plus 10 points applied from the due date of the unpaid amount until the date of full payment of that amount. This interest will accrue from the due date until payment is made. In the event of non-payment, after formal notice has been given and has remained unsuccessful, the sale shall be terminated automatically by the seller, who may apply for an injunction to have the products returned, without prejudice or any other damages against him. Similarly, where payment is made in instalments, failure to pay a single instalment shall result in the entire debt becoming immediately payable, without formal notice. In addition, in the event of formal notice for recovery, the fixed compensation to be paid by the customer in this respect shall be €40. If these collection costs (in particular bailiff and solicitor's fees) exceed €40, they may, upon presentation of supporting documents, be invoiced to the customer at the actual amount. Under no circumstances may payments be suspended or subject to any compensation without the prior written consent of FOLAN.

15. Method of payment

Cash payments are not accepted. For France: cheque, bill of exchange, money order or bank transfer. For other countries: SWIFT transfer or written bank document that has been accepted by FOLAN.

16. Application of retention of title

The transfer of ownership of the item sold is subject to full payment of the price by the purchaser on the due date. However, the risks are transferred upon delivery. The buyer therefore undertakes to take out, as of now, an insurance policy covering the risks of loss, theft, total or partial destruction of the designated goods. In the event of non-payment within the period agreed by the parties, the seller reserves the right to take back the delivered goods and, if it sees fit, to terminate the contract as of right (Law No. 80-335 of 12 May 1980 - ownership clause). In the event of seizure of the goods by third parties, the buyer is required to inform FOLAN immediately. The goods remain the property of FOLAN until full payment of the price. The purchaser is prohibited from disposing of them for resale or processing. However, as a concession and solely for the purposes of its business, FOLAN authorises the purchaser to resell or transform the designated goods, provided that the purchaser pays the balance in accordance with Article 2071 of the Civil Code, with the purchaser becoming a simple custodian of the price.

17. Confidentiality

Studies, plans, drawings and other documents submitted or sent by FOLAN remain its property: they are transmitted under the seal of confidentiality even if this is not explicitly stated on the document itself. They may not therefore be communicated to third parties for any reason whatsoever by the purchaser, unless expressly authorised in writing by FOLAN's management.

18. Limits of liability

Neither FOLAN nor any third party directly or indirectly involved in the design, manufacture, transport and marketing of the equipment may under any circumstances be held liable for any irregularities committed by the purchaser. In the case of assembly of CE-marked active electrical/electronic components in a product subcontracted to FOLAN, responsibility for the assembly of a compliant product, testing or assessment of compliance and CE marking on the final product lies with the customer, as FOLAN cannot be held responsible for CE compliance.

19. Jurisdiction

All contracts and orders accepted by the seller are governed by French law. By express agreement, the courts of Lyon shall have sole jurisdiction, even in the event of incidental claims, warranty claims or multiple defendants. The various methods of shipment or payment, the provisions or acceptances of payment, as well as the place of delivery, cannot constitute a novation or derogation from this jurisdiction clause. [Within the European Union, Council Regulation (EC) No 44/2001 of 22 December 2000 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters, which entered into force on 1 March 2002. Article 33 is applicable and stipulates: "Judgments given in a Member State shall be recognised in the other Member States without any further procedure being required."] [All disputes arising out of or in connection with this contract shall be finally settled under the Arbitration Rules of the International Chamber of Commerce by one or more arbitrators in accordance with those Rules. If both parties decide not to resort to arbitration, the dispute shall first be brought before the commercial court of (seller's registered office) and the applicable law shall be French law. Nevertheless, the seller reserves the right to bring the dispute before a court in the buyer's country, the applicable law being, where applicable, the law of the debtor's country, or a neutral law, such as Swiss law, for example.

20. Waste Management Electrical and Electronic Equipment

FOLAN has implemented processes in accordance with Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE). These products must not be disposed of in any public landfill but must be collected separately and disposed of in accordance with the regulations of your country. In France, all equipment purchased from FOLAN after 13 August 2005 can be returned for disposal at the end of its useful life. As a manufacturer of professional electrical and electronic equipment, FOLAN has joined the Ecologic ecoorganisation, membership number M2668, which acts on our behalf to collect and process, at our expense: a- Waste from professional equipment placed on the market after 13 August 2005 / b- Waste from professional equipment placed on the market up to that date when it is replaced by equivalent equipment or equipment performing the same function. Outside of these two cases, the end of life of professional WEEE is the responsibility of the user.

21. Management of waste batteries and accumulators

As an equipment manufacturer and in accordance with Directive No. 2006/66/EC of 6 September 2006 on batteries and accumulators and waste batteries and accumulators (WBA), FOLAN has joined the SCRELEC eco-organisation for the collection and treatment of used WBA. Member No. 18/058.

22. Data protection

Personal information collected by the company via quotes or orders (surname, first name, address, telephone number, email address, etc.) is stored in its customer database and used primarily for the purposes of customer relationship management and order processing. The personal information collected will be kept for as long as necessary until the contract is fulfilled, unless: - GDPR regulations require that data may no longer be used for marketing purposes more than three years after the end of the customer relationship, unless the customer has given their prior consent. If the data has been transmitted by a third party with the customer's prior consent, it must not be kept for more than three years from the date of transmission or the last contact with the customer. • A longer retention period is permitted or required by law or regulation. • The customer has exercised, under the conditions set out below, one of the rights granted to them by law. Access to personal data is strictly limited to employees and agents of the company who are authorised to process it due to their duties. The information collected may be communicated to third parties linked to the company by contract for the performance of subcontracted tasks necessary for the management of the order without the customer's authorisation being required. It is specified that, in the context of the performance of their services, third parties have only limited access to the data and are contractually obliged to use it in accordance with the provisions of the applicable legislation on the protection of personal data. Apart from the cases set out above, the company undertakes not to sell, rent, transfer or give access to the data to third parties without the customer's prior consent, unless compelled to do so for a legitimate reason (legal obligation, combating fraud or abuse, exercising rights of defence, etc.).

23. FOLAN Ethics and Conduct Charter

This charter, available on our website <https://www.folan.net>, describes our commitments, our values, the rights and obligations of all our stakeholders, and the whistleblowing process.

GLOSSARY

A

ADAPTER: Mechanical component used to connect 2 connectors together.

ADAPTER: Mechanical part for connecting two connectors with different standards; also referred to as an inter-series adapter (e.g. SC / ST).

ADSL (Asymmetric Digital Subscriber Line): High-speed data transmission over subscriber line technology. Transfer rates are asymmetrical, i.e. download speeds for data received by the subscriber are faster than those transmitted by them (e.g. 640/1500kbps).

ANCHORING CLAMP: Component used to fix ADDS or Figure-8 optical fibre or copper cables aerially on a number of different support structures, including poles.

APC: Connector finish type. The optical fibre is polished at an 8° angle to yield return losses better than -60dB. Note: APC finishes are not compatible with PC or UPC finishes.

ATTENUATION or SIGNAL DROP-OFF: Signal drop-off between two points (e.g. due to connectors, splices, optical fibre lengths, faults, etc.). Fibre attenuation is expressed in dB/km (0dB = zero attenuation). Spectral losses are related to the wavelength used. Example: 3dB/km @ 850nm and 1dB/km @ 1300nm over the same fibre-optic cable.

ATTENUATOR: Component for reducing optical power by creating a loss.

B

BACKBONE CABLE: Cable used to connect distribution frames and sub-distribution frames together in cabling systems.

BACKBONE: The backbone of a computer network to which all the networks and sub-networks are connected.

BANDWIDTH: Optical fibre bandwidth is defined as the maximum transmission frequency in MHz at which transmitted signal attenuation is 3dB. The wider the bandwidth, the greater the capacity for high-speed transmission. Expressed in MHz.km or GHz.km. Depends on the transmission wavelength and the physical attributes of the fibre such as its core diameter, materials, etc.

BENDING RADIUS: The lowest bending radius an optical fibre or cable can be subjected to without damaging the optical fibre.

BOOT: Generally designates a protective mechanical component. Depending on the manufacturer, the term can be used to designate the rear part of a connector that slides onto the tube or cable and is held in place by a press-fitting or dimensional shrinkage technique (mechanical, thermal, etc.).

BREAKOUT: Type of cable in which patchcords (usually 2mm in diameter) are protected by a single sheath.

C

CFO: Cable Fan-Out, grips the cables and provides fibre fulfillment.

CLADDING: 125µm silica cladding covering the fibre core to achieve a low refraction index.

CLEAVER: Tool for cleaving (i.e. squarely cutting) the optical fibre in preparation for splicing.

COATING: 250µm protective coating providing mechanical protection; usually made of plastic and applied directly to the optical fibre cladding during extrusion.

COAXIAL CABLE: Cable with a concentric structure and a central conductor (single or multistrand wire), and surrounded by dielectric material, conductor shielding and an insulated outer sheath. The shielding either comes as braid or metal foil.

CONCENTRATOR: Hardware for grouping transmission channels together. Generally refers to an Ethernet HUB or Token Ring MAU.

CONNECTOR: Mechanical endpoint component including a connection ferrule that may be ceramic, metal or glass.

CONNECTOR: Optical connectors provide a non-destructive means of connecting and disconnecting one or more optical fibres (multi-fibre connectors) to/from one optical cable to another or an optical cable to/from a device. Generally included of two connectors and an adapter (or feedthrough).

CRIMPING: Operation used to fasten an optical connector to a cable or protective fibre tube.

D

DEAD ZONE: Measurement area close to the reflectometer where the signal is prone to interference caused by the return loss of the measuring device.

DECIBEL or dB: Unit for measuring optical power (dB=10log (power ratio)).

DETECTOR: Photodiode that converts light signals into electrical signals.

DIELECTRIC: Does not conduct (or poorly conducts) electricity, but is nevertheless permeable to electrostatic forces.

Distribution: Changing how upstream optical fibres fitted with connectors are assigned by connecting them to a connector panel linked to a downstream network.

DISPERSION: Temporary separation of the wavelength circulating in a component (different modes or propagation speeds).

DISTRIBUTION FRAME: Equipment used to bundle, dispatch and distribute optical cables in OCNs. Distribution frames are available in two formats, farms and distribution cabinets, and receive the local loop cable heads (transport heads) and the active equipment mirror heads (operator heads).

DISTRIBUTION: Type of cable in which several 900µm cladded fibres are surrounded by Kevlar and enveloped in a protective sheath.

DP (Distribution Point box): Location at which the connection between the subscribers' optical fibres (in other words, those for which the building operator is responsible) and the optical fibres of the commercial operators is made. This connection can either be achieved by splicing or distribution.

DROPPED PAIR: Wiring error that creates a false pair with two wires from different pairs.

DUPLEX: Term used to designate optical connectors or connectors with two optical channels (connectors with two ferrules, adapters that take two ferrules).

DWDM (Dense WDM or Wavelength Division Multiplexing): Optical multiplexing technique operating in the 1550nm range.

E

ETHERNET: Copper networks with bandwidths of 10 to 1000Mbps, as defined in the IEEE 802 standard.

EUROCLASSES: European Union materials fire resistance classification system. The five Euroclass requirement categories are more comprehensive than in the old French classification system and also encompass the smoke released and droplets projected.

F

FAN-OUT: Component or assembly providing mechanical protection continuity between tubes or cables containing several fibres and N number of tubes or cables protecting one or more fibres.

FDDI (Fibre Optic Distributed Data Interface): ISO standard. Ring network providing high-speed (100Mbps) data transfer over optical fibre.

FERRULE: Ceramic part located at the end of a connector that holds the fibre in place.

Fibre CORE: Central part of an optical fibre, generally made of silica, inside which the optical signal and data are propagated. Several diameters are available, depending on fibre type (e.g. 9µm for singlemode fibres and 50 or 62.5µm for multimode fibres).

FOTAG: OFTAG IEEE 802.8 tube/micro module and optical fibre color code providing marking and identification.

FRP: Fibre-Reinforced Plastic = fibre-reinforced polymer; composite materials comprising resin and fine fibres (fibreglass, aramid or carbon fibres); their excellent mechanical properties combine with their low density to make them an ideal replacement for metals.

FTTx, Fibre to the...: Subscriber distribution network architectures providing an optical fibre infrastructure from the Central Office to an endpoint at varying distances from the end subscriber, depending on type.

- **FTTA (Fibre To The Antenna):** Fibre to the antenna.
- **FTTB (Fibre To The Building):** Fibre to the foot of the building.
- **FTTH (Fibre To The Home):** Fibre to the end subscriber's home.
- **FTTO (Fibre To The Office):** Fibre to the office.

FULL DUPLEX: Simultaneous transmission on two channels in both directions.

FUSION SPLICER: Splice obtained by joining the ends of two optical fibres using a heat source. Accurate positioning and correct alignment of the two optical fibre cores are critical to fusion splice quality and reducing attenuation to a minimum.

FUSION SPLICER: Electrical equipment used to fuse two optical fibres together using an electrical arc.

G

G652D: Although the basic singlemode optical fibre standard is G652, a number of variants have evolved from it. G652D fibres have the highest performance and are the most common in this family of fibres. Performance is defined in accordance with standard IEC 60793-2-50, type B.1.3.

G655: G655 fibres are shifted dispersion fibres with a zero-dispersion wavelength shifted to 1450nm. Also known as NZDS, or Non-Zero-Dispersion Shifted fibre, came about as a result of the use of DWDM long-haul networks that needed slight chromatic dispersion to prevent interaction between the wavelengths.

G657: Developed to respond to operators' technical and financial requirements, G657 singlemode fibre has many benefits: low bending radius, flexibility and ease of installation, all very useful cabling attributes, especially inside buildings.

GIGABIT ETHERNET: Term used to describe a variety of technologies used to implement the Ethernet standard at data transfer rates of 1 gigabit per second (1000 megabits per second). Technology that enables data to be transferred at the rate of 1 gigabit per second over twisted pair copper cable.

H

HFC: Hybrid Fibre Coaxial transmission.

HIGH SPEED: High-speed networks are the preferred solution when marketing xDSL, cable and local radio or optical fibre access offers. Speeds range from 128 Kbps to several Mbps. Very-High-Speed networks also exist thanks to optical fibre and can reach speeds of several Gbps.

HUB: Star configuration hub for connecting several workstations to the network using twisted pair cables.

I

IMPEDANCE: In coaxial cables, this refers to the equivalent impedance; in alternating current, to the resistance. Measured in Ohms.

INDEX MATCHING GEL: Fluid with the same refraction index as the two fused fibres that reduces return and insertion losses.

INSERTION LOSS: Loss caused by adding components such as splices, connectors, etc. to the optical link.

L

LAN (Local Area Network): Local network - covering a few hundred meters to several kilometers. Sometimes referred to as an Enterprise LAN.

LASER: Light Amplification by Stimulated Emission of Radiation. Lasers are used as light sources for fibre-optic communications.

LAUNCH Fibre: Fibre length used for taking reflectometer readings, connected either side of the cable being tested. Used to overcome the dead zone (dazzling) caused by the light path created by the reflectometer's power.

LED (Light Emitting Diode): Semiconductor light source that converts electrical signals into visible light or infrared radiation.

LSZH (Low Smoke Zero Halogen): Describes a cable's sheath or type of plastic as not being prone to releasing toxic fumes when burning.

M

MAN (Metropolitan Area Network): Network with a distance between the two furthest points that can reach several dozen kilometers; used to connect the devices and departmental networks of large companies or campuses. Often employs fibre-optic technology.

MECHANICAL SPLICER: Creates a permanent connection between two centrally aligned fibres using mechanical techniques based principally on crimping.

MEDIA CONVERTER: Media converters enable two network segments using different physical media such as coaxial cables, twisted pair cables and singlemode or multimode optical fibres to communicate with each other. A highly practical solution, they are ideal for extending copper segments over optical fibre to distant buildings or rooms, for example.

MHZ and MBPS: MHz = millions of cycles per second - Mbps = millions of bits per second. There is no direct correlation between Mbs and MHz because the data can be coded using different models (Manchester, NRZI, MLT 3, etc.). 10Mbps Ethernet and Token Ring use Manchester coding which brings the MHz and Mbps values close

together. 100Mbps Ethernet and ATM use MLT3 coding which makes the MHz value approximately 3 times greater than the Mbps value.

MODES: Paths certain light rays can take within a fibre.

MODULE: Subassembly of cladde fibres forming part of a fibre-optic cable. The optical fibres contained in a fibre-optic cable can be grouped together within modules. For example, a 144-fibre cable might include 12 modules, each containing 12 optical fibres.

MULTIMODE: Optical fibre in which several beams of light rays (also known as modes) can be maintained. Multimode fibres are characterized by core diameters that can range from a few tens to a few hundred micrometers (multimode cores are either 50 or 62.5µm). They are used to connect up private networks with short cable runs. There are several types of multimode fibre such as OM1, OM2, OM3, OM4, etc.

MULTIPAIR CABLE: Consists of several twisted or untwisted pairs of copper wires.

MULTIPLEXER: Device that combines several wavelengths and transmits them over a single fibre and separates them at the other end.

N

NANOMETER: Unit used to measure wavelengths. 1nm = 0.000000001m.

NETWORK: Interconnection of systems, terminals or data transmission equipment.

10BaseT / 100BaseT NETWORK: Network adopting the IEEE 802 standard. 3. Uses twisted pair cables.

NUMERICAL APERTURE: Value corresponding to the propensity of an optical fibre to collect the light and propagate it.

O

OCN - OPTICAL CONNECTION NODE: Fibre-optic network concentration point, where active and passive equipment is installed from which the commercial operator can activate access for their subscribers.

OF: Abbreviation for Optical Fibre.

OM1, OM2, OM3, OM4: Multimode optical fibres have a doped silica core with a gradually increasing refraction index approaching the center. There are 2 main families of multimode optical fibres: 50/125µm (OM2, OM3, OM4) fibres and 62.5/125µm (OM1) fibres. 62.5/125µm (OM1) and 50/125µm (OM2) index gradient multimode fibres meet the industry standards for local networks. The 50/125µm OM3 and OM4 fibres are mainly used for local broadband networks. By way of example, 50/125µm OM4 fibre is designed for 10Gb/s applications.

OPTICAL Fibre: Signal transmission medium using light pulses. Optical fibres are extremely thin and included of flexible plastic or silica.

OPTICAL POWER BUDGET: Difference between the emitter power and the receiver power.

OPTICAL POWER: Light power at the emitter.

OPTICAL REPEATER: Device that regenerates the signal between two fibre-optic segments. Used to increase the length and expand the topology of the network.

OTDR or OPTICAL REFLECTOMETER: Measuring device for performing detailed analyses of optical links and locating events, impurities or breaks in the optical fibre.

OTO: Optical Telecommunication Outlet, a generic name for the fibre-optic entry point in the subscriber's home.

P

P2P: Point to Point. This type of architecture requires a continuous fibre to be installed that is not shared between the OCN (Optical Connection Node)

and the user. Each network termination is supplied with its own dedicated fibre. This technology has the advantage of allowing all the potentially available bandwidth on an optical fibre to be assigned to the subscriber.

PATCH PANEL: Container installed in a distribution cabinet or case and designed to provide optical fibre fulfillment, connection and distribution, irrespective of the structure of the cable (indoor or outdoor cable, singlemode or multimode fibres, etc.). Designed to take storage, splice and splitter trays.

PATCHCORD: Cable used for linking connection points and terminals, workstations (distribution), etc. Patchcords are included of one or two connectors at either end of a simplex, zipcord or duplex cable.

PIGTAIL: Usually a 900µm optical fibre, preconnectorized at one end and connected at the other by a splice; also known as a semi-patchcord.

PMD (Polarization Mode Dispersion): One of the physical phenomena inherent in optical fibres and other optical components that causes light pulses to disperse when traveling along an optical fibre. This phenomenon affects signal transmission.

POF: Plastic Optical Fibre.

POLISHING: Operations involved in preparing the optical contacts of fibres at the tip of the connector ferrule. Different abrasives using a variety of materials, sizes and shapes are recommended by different manufacturers. There are two distinct types of polishing: rough polishing and finish polishing.

POLYETHYLENE (PE): Sheathing material with excellent mechanical properties. HDPE refers to High Density Polyethylene.

PON (Passive Optical Network): Passive optical network characterized by a passive point-multipoint architecture (several users share the same fibre and there is no active equipment between the central office and the subscribers). There are various different PON standards, including GPON and EPON.

POWER METER: Device that measures link attenuation in dB.

PRECONNECTORIZED (CABLE): Cable in which all the fibres have fittings at either end (connectors, mechanical splices, etc.) that allow them to be connected directly to passive or active components.

PREFORM: Silica tube used for producing fibres.

R

REFRACTION INDEX: Ratio of the speed of light in a vacuum to that in the medium in question.

RET: Remote Electrical Tilt, copper interconnection cable linking the RRU to the antenna, allowing the signal orientation in particular to be controlled.

RETUBING SHEATH: Plastic sheath with a different diameter for re-tubing 250µm structure fibres.

RETURN LOSS: Ratio of the reflected power over the incidental reflection power, expressed in dB. Reflected power is linked to events that cause attenuation of wave propagation through lines (for example: mechanical splices, connector signal rejection, etc.). It is especially important to keep return losses to a minimum in singlemode networks.

RRU: Remote Radio Unit, remote radio transceiver forming part of a wireless network radio station system.

S

SFP: Small Form factor Pluggable. Media conversion modules used to provide switch and router equipment with optical connectivity.

SHIELDING: Protective cable covering that eliminates electromagnetic and radio interference.

SILICA: Material produced by melting sand and used as the basis for manufacturing optical fibres.

SIMPLEX: Characteristic of a fibre patchcord with only a single fibre or

connector, as opposed to Duplex, which has two fibres or two connectors.

SINGLEMODE: Optical fibre in which only a single beam of light rays (also known as a mode) can be maintained. This is because singlemode cores are extremely thin and can only support one mode of propagation in the most direct way possible, namely along the axis of the fibre. Singlemode is used for long distances and/or higher speeds. There are several types of singlemode fibre such as G652D, G657, G655, etc.

SLEEVE: Central part of an adapter used to align the ferrules of the two connectors.

SOURCE: Laser or emitter creating an optical signal.

SPLICE PROTECTOR or SMOOVE: Heat-shrink tube with metal strip or dielectric armor for protecting the spliced fibres.

SPLICE: Connection between 2 single fibres known as strands to form a permanent link. Splices can either be accomplished by side-by-side mechanical splicing or by fusing 2 fibres together using a fusion splicer.

SPLICING TRAY: Box or patch panel component designed to accommodate a defined number of spliced fibres, with optional coiling facility.

SPLITTER: Passive device used in PON networks. When used in the downstream direction, splitters replicate the optical signal from a fibre and direct it towards a defined number of other fibres (referred to as 1 to 8 splitters, 1 to 4 splitters and so on). When used in the upstream direction, splitters combine the optical signals from several clients.

STRIPPING: Operation consisting of removing a fibre's protective mechanical coating, usually by mechanical means (calibrated pliers).

SUSPENSION CLAMP: Component used to support aerial ADDS or Figure-8 optical fibre or copper cables at intermediate points between the anchoring clamps.

SWITCH: Box with a given number of ports (4, 8, 16 or 24) used to connect devices. Its purpose is to interconnect two local network segments.

T

TOPOLOGY: Layout of a network's constituent parts (computers, cables and other devices). Networks can use mesh, bus, ring and star topologies.

V

VDI: Voice-Data-Images.

W

WAN: Wide Area Network using operator services and media and covering an extremely wide geographical area that is not distance-limited and sits above MANs and LANs.

WAVELENGTH: Wave oscillation measurement. Defined as: The speed of the wave divided by its frequency. Wavelengths are represented by the symbol λ (Lambda) and expressed in units of length (µm or nm).

APPLICATIONS INDEX



STREET CABINETS	20
ACTIVE CABINETS	21
RIGA - OPTICAL DISTRIBUTORS	22
CABLE SPLITTER BOXES	23
PROTECTIVE SHEATHING	24
NETWORK CROSS-CONNECT CABINETS	26
ECONOMICAL CROSS-CONNECT CABINETS	27
CABINETS ACCESSORIES	30
SLIDING OPTICAL PATCH PANEL - GENEVE	43
PIVOTING OPTICAL PATCH PANELS - PORTO AND NIAGARA	48
PIVOTING OPTICAL PATCH PANELS - PORTO AND NIAGARA 96FO	50
PIVOTING OPTICAL PATCH PANEL - NIAGARA CABLE TRAY	51
WATERPROOF BOXS - FLAT	58
WATERPROOF BOXS - DOME	59
WATERPROOF BOXS - OUTDOOR OPTICAL CONNECTION POINT	60
INDOOR METAL BOX - BMI ATLAS	70
INDOOR PLASTIC BOX - PBO ANGARA	74
PLASTIC INNER BOX - PTO V5.3	75
INDOOR PLASTIC BOX - PTO V6.3	76
INDOOR PLASTIC BOX - PTO V6.2	77

INDOOR PLASTIC BOX - PTO V6.2 REEL KIT	78
INDOOR PLASTIC BOXS - DTIO / BMO	79
ANCHOR CLAMPS	82
SUSPENSION CLAMPS	83
AERIAL EQUIPMENT ACCESSORIES	84
FASTENING AND PROTECTION ACCESSORIES	86
SUBSCRIBER CONNECTION CABLES	93
GCMG MICROMODULE CABLES	95
OPTICAL PATCHCORDS	102
PASSIVE COMPONENTS	120
OPTICAL COUPLERS	125
MALE-FEMALE ATTENUATORS	128
ACTIVE COMPONENTS	129
CABINET MANAGEMENT SYSTEM (CMS)	132
CLEANING	136
TECHNICIAN ACCESSORIES	137
TESTS AND MEASUREMENTS	139
WELDERS	140
STRIPPING PLIERS	141



NETWORK CROSS-CONNECT CABINETS	26
ECONOMICAL MIXING CABINET	27
19" WALL BOX	32
BOX ACCESSORIES	34
ACCESSORIES OFR CROSS-CONNECTION PANELS AND PATCH PANELS	36
CABINETABLE STRIPS	37
SLIDING OPTICAL PATCH PANEL - MILANO	40
SLIDING OPTICAL PATCH PANEL - DELPHI	42
METAL PIVOTING OPTICAL PATCH PANEL - ROMA	47
SEALED BOX - SEALBOX	61

OUTDOOR BOX - CLASSIC PANAMA	62
OUTDOOR BOX - PANAMA COMPACT	63
INDOOR METAL BOX - FIDJI SET	71
INDOOR METAL BOX - QINA	72
INDOOR METAL BOX - PALERME	73
BREAKOUT CABLES	90
MINICORE PRECONNECTED CABLES	96
OPTICAL PATCHCORDS	102
CABINET MANAGEMENT SYSTEM (CMS)	132



PROTECTIVE SLEEVES	24
NETWORK CROSS-CONNECT CABINETS	26
ECONOMICAL CROSS-CONNECT CABINETS	27
CABINETS ACCESSORIES	30
BOX KITS	31
19" WALL BOX	32
10" NETWORK WALL BOX	33
BOX ACCESSORIES	34
ACCESSORIES OFR CROSS-CONNECTION PANELS AND PATCH PANELS	36
CABINETABLE STRIPS	37
SLIDING OPTICAL PATCH PANEL - MILANO	40
SLIDING OPTICAL PATCH PANEL - MILANO GANGWAY TRAY	41
SLIDING OPTICAL PATCH PANEL - DELPHI	42
SLIDING OPTICAL PATCH PANEL - BARI	44
PIVOTING OPTICAL PATCH PANELS - PORTO AND NIAGARA	48
PIVOTING OPTICAL PATCH PANELS - PORTO AND NIAGARA 96FO	50
PIVOTING OPTICAL PATCH PANEL - NIAGARA CABLE TRAY	51
WATERPROOF BOXS - FLAT	58
WATERPROOF BOXS - DOME	59
WATERPROOF BOXS - OUTDOOR OPTICAL CONNECTION POINT	60
SEALED BOX - SEALBOX	61
OUTDOOR BOX - CLASSIC PANAMA	62
OUTDOOR BOX - PANAMA COMPACT	63
OUTDOOR BOX - PANAMA HYBRID	64

OUTDOOR BOX - PANAMA COILING UNIT	65
OUTDOOR BOX - MANAGUA OPTICAL	66
OUTDOOR BOX - MANAGUA EXTENSION	67
OUTDOOR BOX - MANAGUA HYBRID	68
OUTDOOR BOX - MANAGUA COILING UNIT	69
DISTRIBUTION CABLES	91
CENTRAL TUBE OR UNITUBE CABLES	92
FOLAN CABLES OFR FTTA APPLICATIONS	94
GCMG MICROMODULE CABLE	95
MINICORE PRECONNECTED CABLES	96
OUTDOOR PRECONNECTED CABLE 12-24FO	97
OPTICAL PATCHCORDS	102
RET CONTROL CABLE	103
SUBSCRIBER OPTICAL PATCHCORDS & EXTENSIONS	104
OUTDOOR 2-FIBER FTTA PATCHCORD	105
PASSIVE COMPONENTS	120
MALE-FEMALE ATTENUATORS	128
ACTIVE COMPONENTS	129
CABINET MANAGEMENT SYSTEM (CMS)	132
CLEANING	136
TECHNICIAN ACCESSORIES	137
TESTS AND MEASUREMENTS	139
WELDERS	140
STRIPPING PLIERS	141



PROTECTIVE SHEATHING	24
NETWORK CROSS-CONNECT CABINETS	26
ECONOMICAL CROSS-CONNECT CABINETS	27
DISTRIBUTION FRAMES	29
CABINETS ACCESSORIES	30
BOX KITS	31
19" WALL BOX	32
10" WALL NETWORK BOX	33
BOX ACCESSORIES	34
ACCESSORIES OFR CROSS-CONNECTION PANELS AND PATCH PANELS	36
CABINETABLE STRIPS	37
SLIDING OPTICAL PATCH PANEL - MILANO	40
SLIDING OPTICAL PATCH PANEL - MILANO GANGWAY TRAY	41
SLIDING OPTICAL PATCH PANEL - DELPHI	42
FIXED MODEM PATCH PANEL	54
FITTING ACCESSORIES	55
SEALED BOX - SEALBOX	61
INDOOR METAL BOX - FIDJI	71
INDOOR METAL BOX - QINA	72
INDOOR METAL BOX - PALERME	73



RIGA - OPTICAL DISTRIBUTORS	22
CABLE SPLITTER BOXES	23
SERVER CABINETS	28
SLIDING OPTICAL PATCH PANEL - MILANO GANGWAY TRAY	41
SLIDING OPTICAL PATCH PANEL - DELPHI	42
DATA CENTER SLIDING OPTICAL PATCH PANEL - DATAMAX	45
DATA CENTRE SLIDING OPTICAL PATCH PANEL - HIGH DENSITY NETSTREAM	46
METAL PIVOTING OPTICAL PATCH PANEL - ROMA	47
PIVOTING OPTICAL PATCH PANELS - PORTO AND NIAGARA	48
PIVOTING OPTICAL PATCH PANELS - PORTO AND NIAGARA 96FO	50
PIVOTING OPTICAL PATCH PANEL - NIAGARA CABLE TRAY	51
DATA CENTRE PATCH PANEL - ULTRAFLEX HIGH DENSITY	52
DATA CENTRE PATCH PANEL - HIGH-DENSITY ECODENSE	53
FITTING ACCESSORIES	55
DISTRIBUTION CABLES	91
MINICORE PRECONNECTED CABLES	96



INDOOR PLASTIC BOXS - DTIO / BMO	79
BREAKOUT CABLES	90
DISTRIBUTION CABLES	91
CENTRAL TUBE OR UNITUBE CABLES	92
GCMG MICROMODULE CABLE	95
OPTICAL PATCHCORDS	102
KEystone	110
RJ45 ETHERNET CABLES	112
SPECIAL RJ45 CABLES	113
COPPER CABLES	114
RJ45 PATCH PANELS	116
PASSIVE COMPONENTS	120
MALE-FEMALE ATTENUATORS	128
ACTIVE COMPONENTS	129
CABINET MANAGEMENT SYSTEM (CMS)	132
CLEANING	136
TECHNICIAN ACCESSORIES	137
TESTS AND MEASUREMENTS	139
WELDERS	140
STRIPPING PLIERS	141

MPO/MTP® PRECONNECTED CABLES	98
OPTICAL PATCHCORDS	102
MPO/MTP® PATCHCORDS	106
PRE-TERMINATED COPPER TRUNK CABLE	107
KEystone	110
RJ45 ETHERNET CABLES	112
SPECIAL RJ45 CABLES	113
COPPER CABLES	114
PANNEAUX DE BRASSAGE RJ45	116
PASSIVE COMPONENTS	120
MALE-FEMALE ATTENUATORS	128
ACTIVE COMPONENTS	129
CLEANING	136
TECHNICIAN ACCESSORIES	137
TESTS AND MEASUREMENTS	139
WELDERS	140
STRIPPING PLIERS	141



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