FIBRAIN®

PRODUCTS OVERVIEW

EAC

solution for MDU application

→ www.fibrain.com

Basic information

Easy Access Cable System is a complete fiber optic solution for a multi-storey building using EAC cables.

A special design gives the possibility to easy access cables by cutting a hole in the outer sheath without the need to connect at the branching point. This method permits removing a fiber optic module at the distance of 25m and, depending on the installation method, place a cable to the customer outlet. The system is complemented by specifically designed tools, equipment and the possibility of ordering a pre-connectorized EAC cable, allowing easy and quick preparation of the whole network in a building.

EAC system advantages

- Fast and flexible method of connecting users in multi-storey buildings
- Optimization of the workforce, cost and installation time
- Direct branching to subscribers without performing splices
- Flexible system that can be easily developed in the future
- Customization of cables and equipment to minimise the costs
- Support team from Design Department throughout the whole investment

EAC

EAC system elements

1 EAC vertical cables

2 VC drop cables
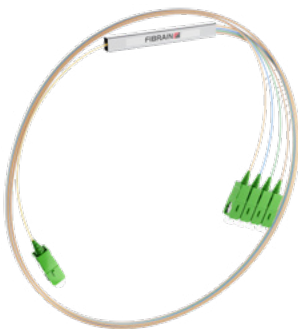
3 Duct cables

4 Distribution cabinets

5 Distribution wall boxes

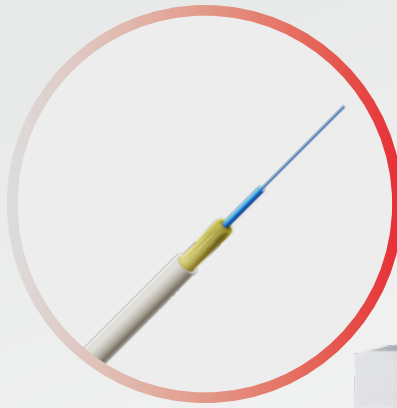**6** Customer outlets

7 Optical splitters

8 Patch cords

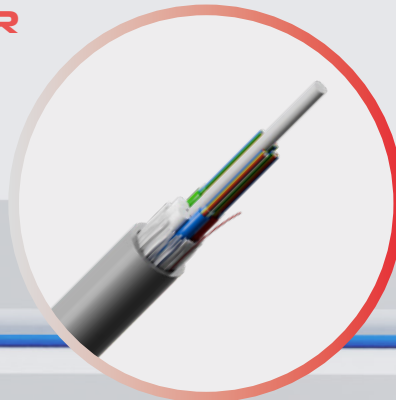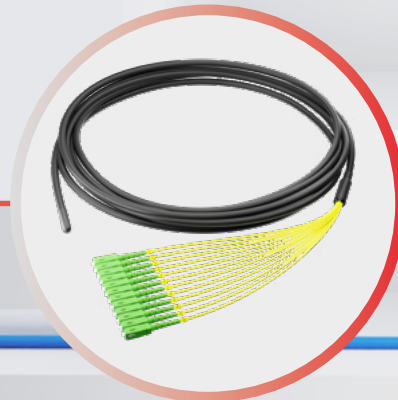**9** Cable reserve boxes

10 GPON terminals
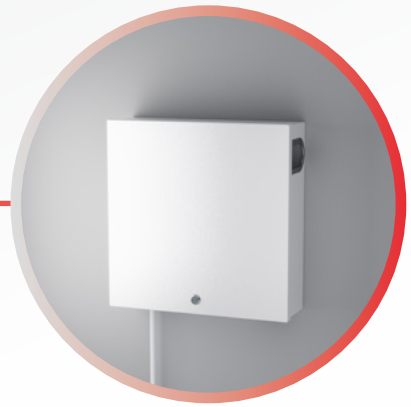
DROP CABLE

CUSTOMER
OUTLET

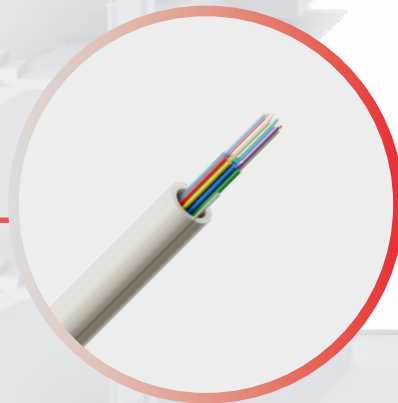GPON/XGS-PON
TERMINAL

OPTICAL
SPLITTER

DUCT
CABLE

PRE-CONNECTORIZED
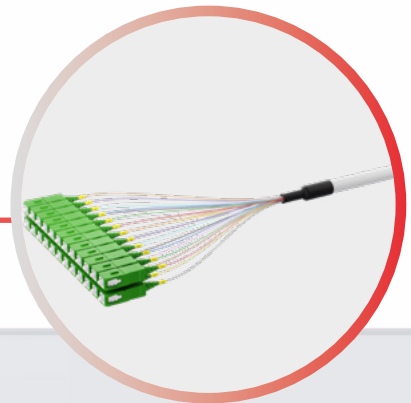DUCT CABLE

FIBRAIN

**CABLE
RESERVE BOX**

**DISTRIBUTION
WALL BOX**

**EAC
VERTICAL CABLE**

**PRE-CONNECTORIZED
EAC CABLE**

**DISTRIBUTION
CABINET**

EASY ACCESS CABLE

EAC

Internal connection possibilities – between an ONT and a customer outlet

OPTION 1.
Connection via VC-D30 drop cable

GPON/XGS-PON TERMINAL

VC-D30 DROP CABLE

VFTO-E1

OPTION 2.
Connection via I-Drop patch cord

GPON/XGS-PON TERMINAL

I-DROP PATCH

iDrop*

VFTO-E1

OPTION 3.
Direct connection from VFTO-R1 with internal spool with I-Drop fiber to ONT

GPON/XGS-PON TERMINAL

VFTO-R1 WITH I-DROP CABLE

iDrop*

EAC

EAC
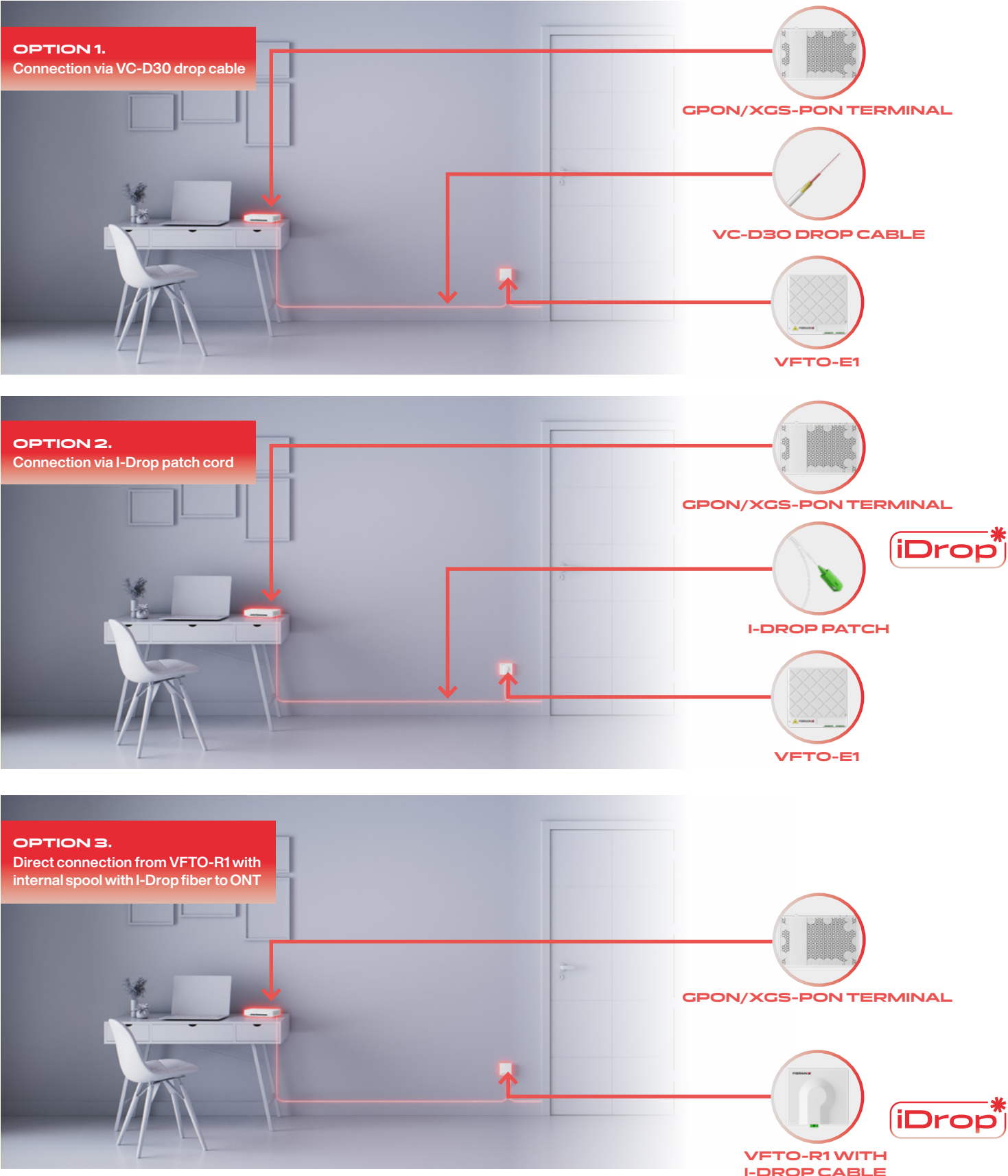
CPR classification

Ensuring fire safety in buildings is paramount, and one crucial aspect is the classification of cable fire performance as per the Construction Products Regulation (CPR). Under CPR, cables are categorized into several fire performance classes, each indicating their behavior in fire conditions.

CPR
B2$_{CA}$

$B2_{CA}$ **class**
- Low flammable
- Very high fire protection
- Self extinguishing

CPR
C$_{CA}$

C_{CA} **class**
- Reduced flammable reaction
- Higher requiments
- Self extinguishing

CPR
D$_{CA}$

D_{CA} **class**
- Improved flammable reaction
- Moderate requirements
- Limited emissions

CPR
E$_{CA}$

E_{CA} **class**
- Basic fire protection
- Low requirements

CPR
F$_{CA}$

F_{CA} **class**
- Flammable
- No requirements
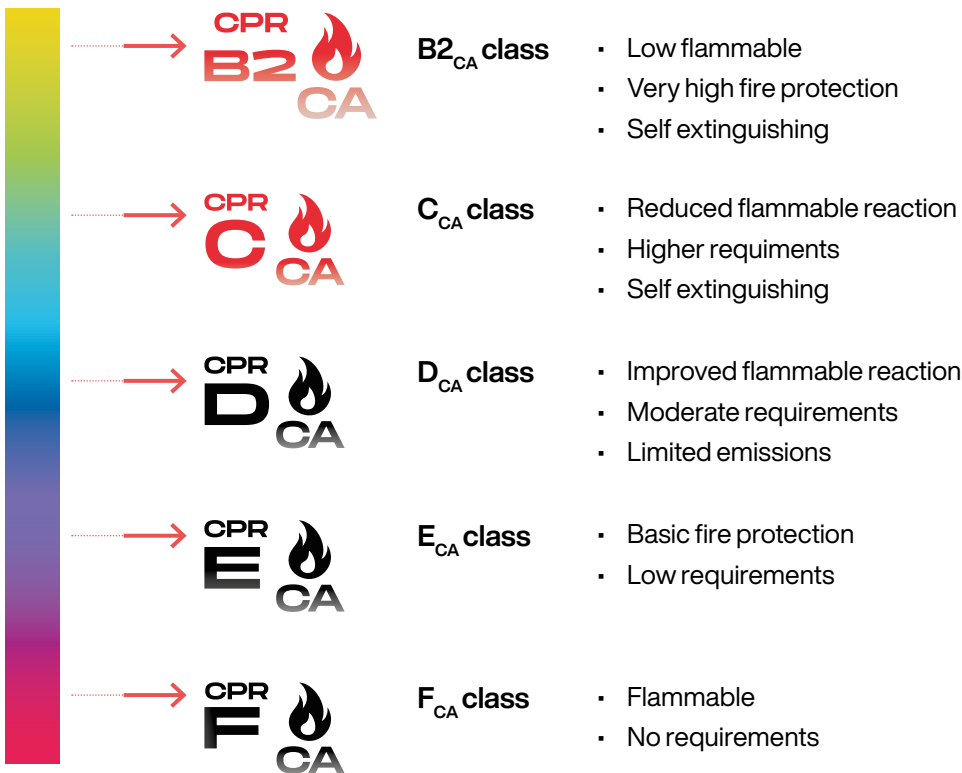
Popular recommendations to use:

NEW
$B2_{CA}$ & C_{CA} CPR class cables now in FIBRAIN products portfolio

CPR
B2$_{CA}$
- Hospitals
- Airports
- Multi-storey buildings
- Fire exits in public buildings
- High density of people

CPR
C$_{CA}$
- Public buildings
- Hotels
- Schools
- Office buildings
- Medium density of people

CPR
D$_{CA}$
- Commercials buildings: restaurants, sports bars etc.
- Residential (medium density)

CPR
E$_{CA}$
- Residential (low density)
- General installations in some areas

CPR
F$_{CA}$
- Outdoor aplications

FIBRAIN

EAC ⌂

EAC vertical cables

They guarantee easy fiber distribution and reduce the number of required connections. At the same time due to carefully selected materials provide necessary fire-fighting safety.
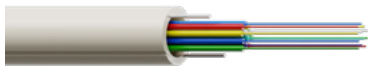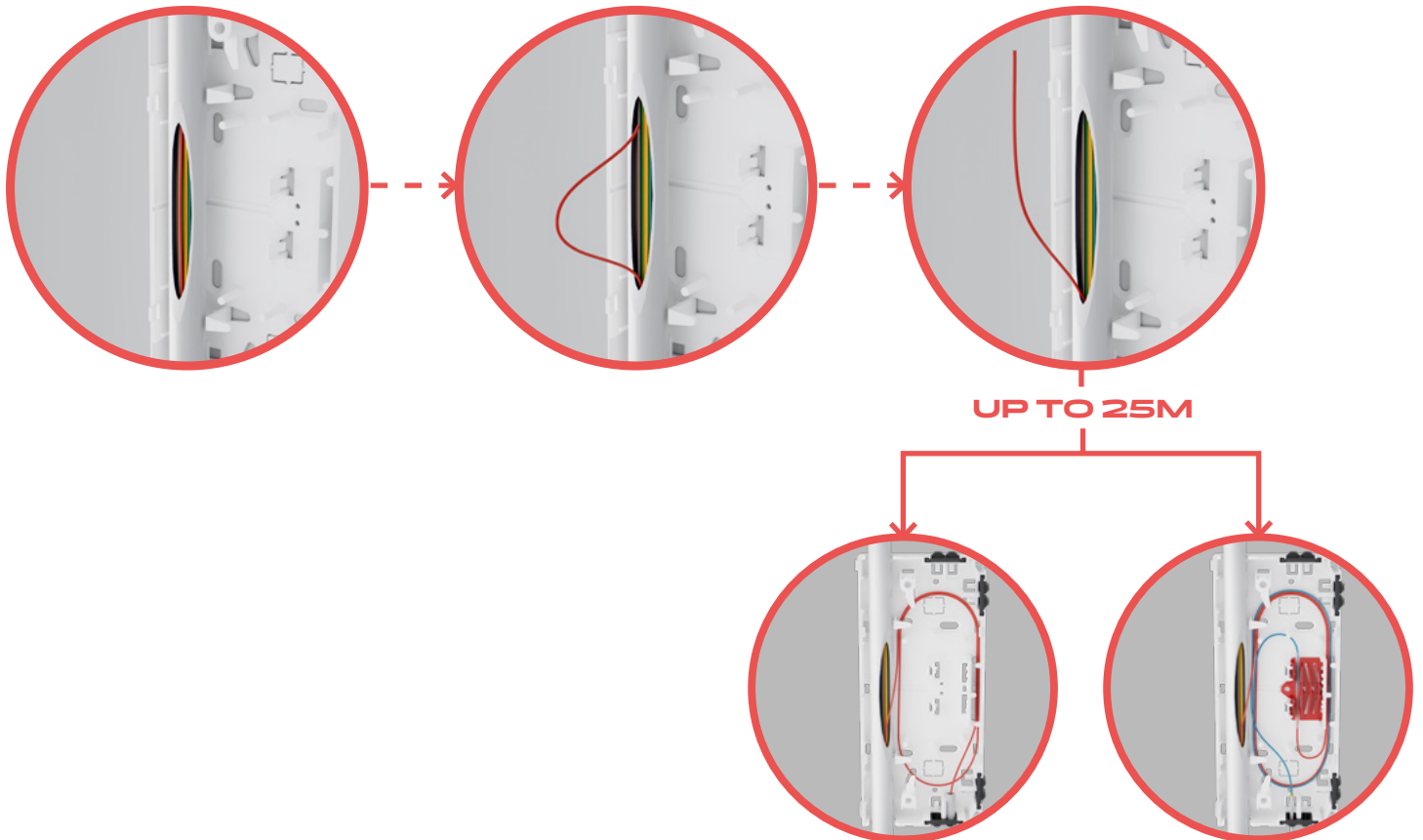
Fiber extraction up to 25 m
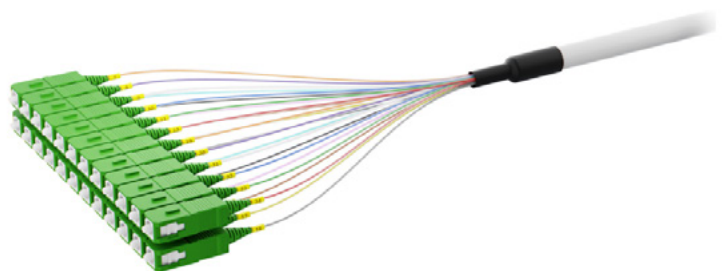
ESM

CPR

LSOH

Up to 144 fibers

EAC-RAS CPR D CA
2-24F

EAC-RAM CPR D CA
2-144F

Possibility of fiber extraction

UP TO 25M

FIBRAIN®

EAC pre-connectorized cables

Protection tubes Ø0.9mm

Furcation point Ø10mm ± 1mm, L_{FR} 50mm ± 4mm

Markers

Fanouts length, 0.6m ±50mm

Total length

Markers

Fiber colour identification

Mini-flex tube protection Ø5mm

Main furcation point length L_{MF}

Furcation points A–D – change to 900µm protection of the fibers

Furcation A

Furcation B

Fiber colour identification

Furcation C

Elastic spiral wrap

Furcation D

Main furcation point filled with epoxy

Fanout length in 900µm tube L2

Fanout length in mini-flex protection L1

Total length

Duct cables

Cables with single and multitube construction with higher optical fibers capacity, which connect distribution point in a building with a core network. Due to the use of LSOH sheath and CPR class, they meet all the necessary indoor cables requirement.
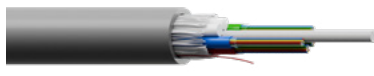
ESM

CPR

LSOH

Up to 288 fibers

BDC-MSA LSOH CPR E CA
2-144F

BDC-M015B LSOH CPR E CA
12-288F

MDC-FM LSOH CPR D CA
12-144F

EXO-D0 CPR D CA
2-24F

EXO-FD75 CPR B2 CA
2 / 24F

EXO-FD75C CPR C CA
2-24F

EXO-G0 CPR E CA
2-24F

DC-PRIM 12-24F

Pre-connectorized duct cables

Available in TCF or TEF series. Fully customized.

FIBRAIN

EAC

Drop cables

FIBRAIN drop cables due to their design, including high mechanical strength, flexibility and reduced memory effect ensure quick and simple installation in FTTX networks.

ESM **Resibend Plus** **CPR** **LSOH** **Up to 4 fibers**

VC-Dxx 1F
  VC-D30 3.0 mm CPR D CA
  VC-D40 4.0 mm CPR D CA

VC-Dxx 2F
  VC-D40 4.0 mm CPR D CA

VC-Dxx ESM 2F
  VC-D21 2.15 mm CPR B2 CA
  VC-D21C 2.15 mm CPR C CA
  VC-D30 3.0 mm CPR D CA
  VC-D40 4.0 mm CPR D CA

VC-Dxx ESM 4F
  VC-D21 2.15 mm CPR B2 CA
  VC-D21C 2.15 mm CPR C CA
  VC-D30 3.0 mm CPR D CA
  VC-D40 4.0 mm CPR D CA

VC-DCY 1-4F

Resibend Plus

Cables with Resibend Plus fibers fit perfectly into FTTH application needs. Due to the minimization of bending losses, they can be installed directly around corners in apartments and offices, compact cabinets and customer outlets.

EAC ⌂
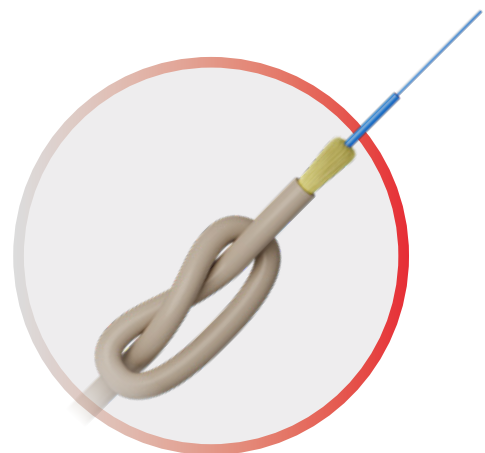
Patch cords

Patch cords and pigtails are used to connect subscribers of FTTH networks and connections between a customer outlet and ONT equipment. These patch cords are based on cables with reinforced construction, thus they are resistant to mechanical damages, comparing to standard patch cords. Therefore, each cable is constructed from slow-burning materials that don't emit any poisonous floodlight and LSOH smoke. Available in various constructions (PA0-PA4 series).

LSOH

Resibend

Resistance to mechanical damage

Diameter range 2.0-4.0 mm

PAx family series

Direct cable termination (one connector) or with small fanouts (up to 4 connectors) with different diameters of the protection tube – PA1 Ø0.9mm, PA2 Ø2.0mm, PA3 Ø3.0mm. PA4 type – version with armored fanouts. Available as a coil or on a cardboard drum. Patch cords can be prepared for installation with additional protection with a pulling sock.
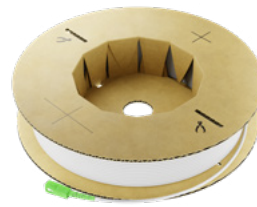
PA0
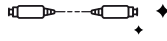
PA1-PA3

PA4

Additional pulling sock

RP-PAx – for fast and easy installation without the cable getting tangled

FIBRAIN ®

EAC ⌂

I-Drop patch cords

I-Drop system allows fast, easy, virtually invisible fiber deployment in dwelling or businesses between the ONT and a customer outlet.

Invisible I-Drop cable with simplex construction and diameter Ø900µm

One-side or two-side termination

SC
LC
E2000
SC/LC/E2000 connector available

G657A1
G657A2
657B3
Single-mode fiber – G657A1/ G657A2/657B3

Available as a coil that is wound on a cardboard drum or as a ready set with PTO box (Customer outlet section, page 17).

Easily Pullable Pre-connectorized cable EPP

EPP

An ideal solution when pulling a subscriber cable from the staircase to the apartment through a wall feedthrough. The FIBRAIN's EPP is based on a ready-made pre-connectorized cable kit with a special ending for direct pulling operation. Available with LCA and SCA connector type.
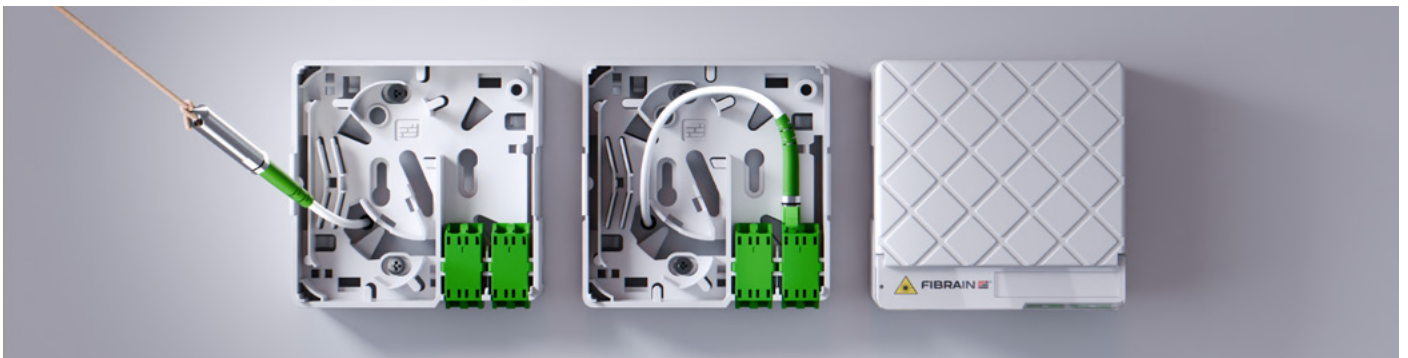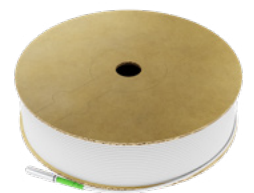
EPP variants

SC APC Pullable pigtail & patch cord

LC APC Pullable pigtail & patch cord

Also available on a cardboard drum

EAC

Distribution cabinets

Distribution cabinets are specifically designed as a distribution point inside a building for optical fibers installed with the use of EAC and FTTH systems. Preconnectorized connections and fiber splicing can be performed inside.

Wall mounting

Up to 48 SC adapters

Lock secured

Metal housing

IFDT-B0

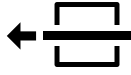**IFDT-F0**

IFDT-G0

NSR-L

NSR-XL

FIBRAIN

EAC

Distribution boxes

Distribution boxes provide in-line cable installation and fiber branching in various directions. Fiber optic transmission to end users is guaranteed by a spliced connection, patch cord or an optical fiber extracted from the EAC cable.

Adapter panel

Quick installation

In-line cable installation
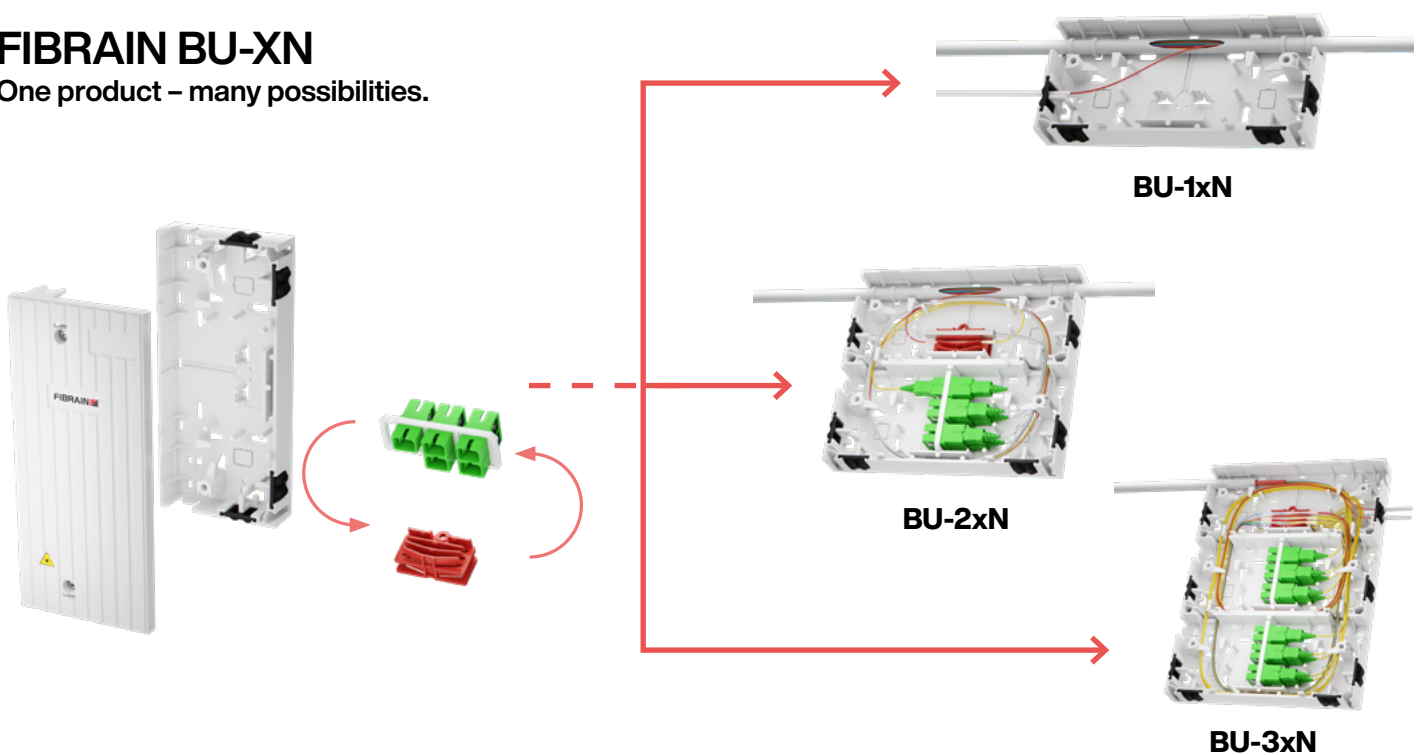
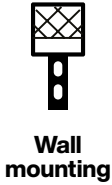**Light plastic housing**

BU-XN

NSR-S

NSR-M

FIBRAIN BU-XN

One product – many possibilities.

BU-1xN

BU-2xN

BU-3xN

FIBRAIN

EAC

Customer outlets

Compact housing is specifically designed for terminating optical line with max. 4 fibers inside a house and business applications. It is also available as a customer outlet with preconnectorized cable coil.

Wall mounting

Pre-connectorized option

2/4 x SC adapter
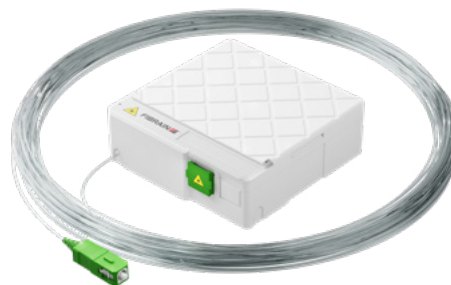
Customer outlets

VFTO-E1
2xSC customer outlet

VFTO-F1
4xSC customer outlet

Customer outlet with pre-terminated drop cable in coil

VFTO-E1 / F1
customer outlets
　Cable types: VC-D21/D30/D40

VFTO-E1
I-drop customer outlet
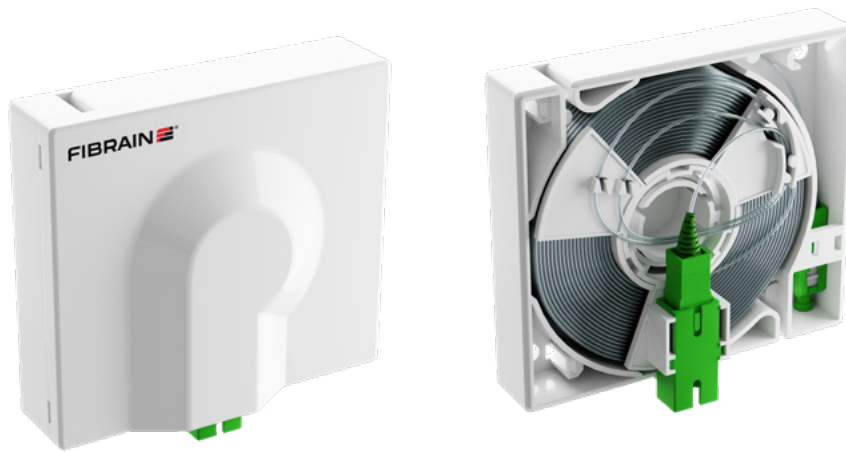
iDrop*

FIBRAIN

EAC

Customer outlets

NEW

VFTO-R1
Customer outlet integrated with up to 40m pre-connectorized 900µm LSOH cable
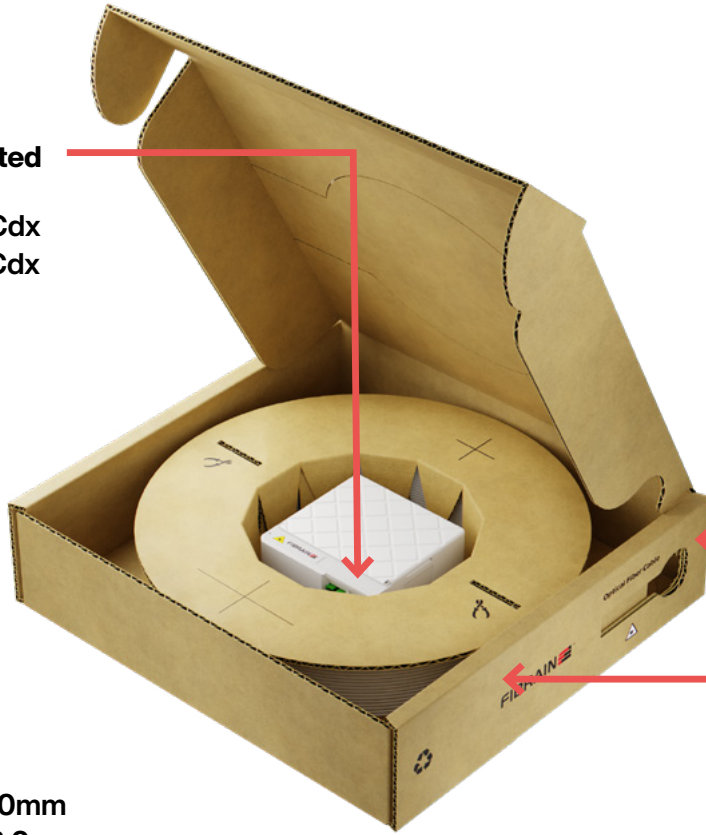

unwind the fiber optic cable from internal spool to the desired length

EAC ⌂

RapidBox

Customer outlet with factory terminated drop cable
VFTO-E1 – 2xSC/LCdx
VFTO-F1 – 4xSC/LCdx

Rapid box solution with a smart holder and few mounting option for easy unwinding

Capacity
70m cable with Ø4.0mm
130m cable with Ø3.0mm
300m cable with Ø2.0mm

Pre-connectorized drop cable 1-4FO

ARB-E1

ARB-F1

VFTO-E1 I-Drop Rapid box

iDrop*

FIBRAIN

Cable reserve boxes

Cable reserve box is specifically designed as a middle and final point of EAC system.

Easy access to the cables

Lock secured

Max. cable capacity 80 m
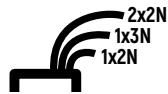
SZB-A-40

SZB-A-60

SZB-EAC

Optical splitters

FIBRAIN FPLC splitters are used to split the optical power transmitted in the fiber optic line. FIBRAIN FLPC and GOLD splitters have unique APT® technology eliminating undesirable signal reflection from disconntected splitter's outputs.
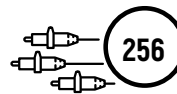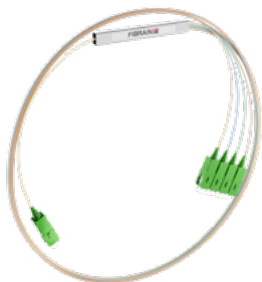
APT® technology

2x2N
1x3N
1x2N

1x2N / 1x3N / 2x2N

Stable temperature

256

Up to 256 output ports

Alubox splitter

Blackbox splitter

EAC

HALNy Networks GPON/XGS-PON terminals and Ethernet routers

Interoperable FTTH/PON subscriber terminals and Ethernet routers with a wireless access point support MESH networks, Dual Band WiFi6.

HALNY

High Availability Local Networks

Wall mounting	Pre-connectorized option	Wi Fi 6 — 2/4 x SC adapter	IPTV support	10 Gb/s — Up to 10Gb/s

DESIGNED AND DEVELOPED IN POLAND

- **Customized CPEs and ONTs** (hardware and software)
- **Interoperable ONTs with adaptive OMCI stack**
- **Proven interoperability** with over **11 OLT vendors**
- **Universal provisioning methods** (XML / TR-069 / DHCP / OTT / API) same for ONTs and CPEs
- **EtherWAN support** (change mode between PON and Ethernet) **to simplify migration to GPON**
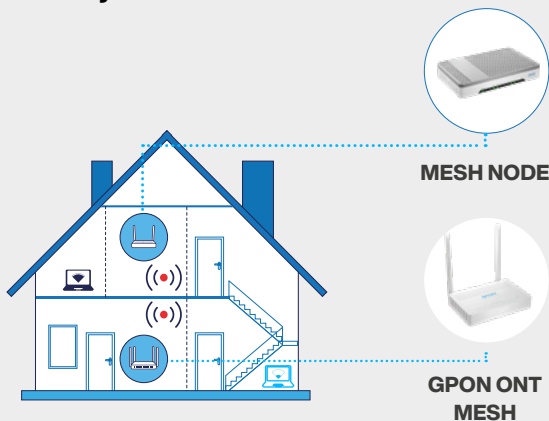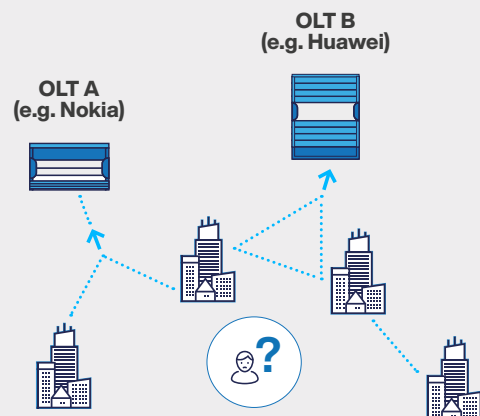- **2.5 Gigabit Ethernet LAN port**

SUPPORT

- **Free of charge**
- **New firmware versions free of charge (no licence needed)**
- **Knowledge base**
- **Helpdesk system**
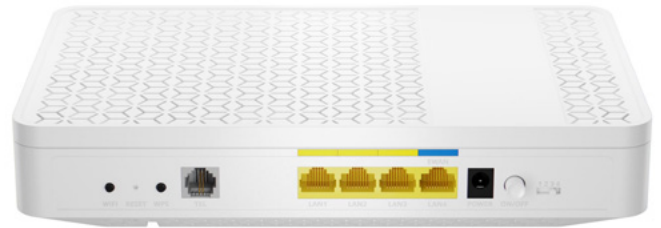

1 — Extend WIFI network with HALNy EasyMESH

MESH NODE

GPON ONT MESH

2 — Interoperable GPON ONTs

OLT B (e.g. Huawei)

OLT A (e.g. Nokia)

FIBRAIN

HALNy Networks

HALNy customized housing

Features

→ Possibility to use LAN4 port as an Ethernet WAN port, like a normal Ethernet router

→ The only thing to use this mode is to switch the transfer mode button on the device

→ Same housing for new generation GPON / XGS-PON ONTs and CPE

→ All functionality like VLAN, VOIP and others remain

→ Based on one-touch provisioning. You can easily migrate from your actual technology (for example DOCSIS) to GPON, without visits to the subscriber

Top cover housing available in additional colors

HALNY customized software

→ HALNy WEB interface with ISP logo and colours

→ WIFI Prefix with ISP name

→ Possibility to customize device with ISP default settings (like ACS, WAN, VLANs etc.)

→ Device ready OUT-OF-THE-BOX to install

→ Possibility to provision customization by ISP

Tools and accessories

Set of tools necessary for EAC system.

EAC-TLS-RT-A0   FIBRAIN EAC cable window tool

VC-TUB-SF53-LSRF.W   Fiber protective tube with pilot

RC01   FIBRAIN Rapid Connector
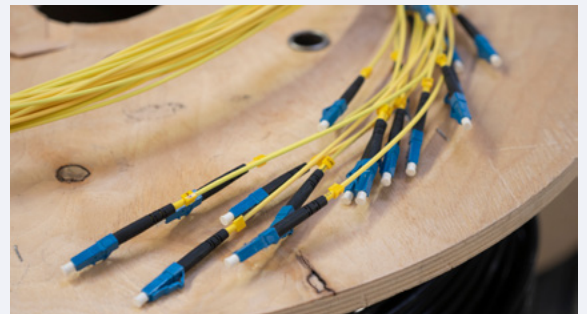SC PC / SC APC / LC PC / LC APC
for 0.9-3.0 mm cables and VC-DCY
cable

FB7187P   Suitcase with tools and
accessory set

FIBRAIN

Polish independent producer of integrated and value-added solutions

FIBRAIN®

From a single fiber
to millions
of satisfied customers
around the world