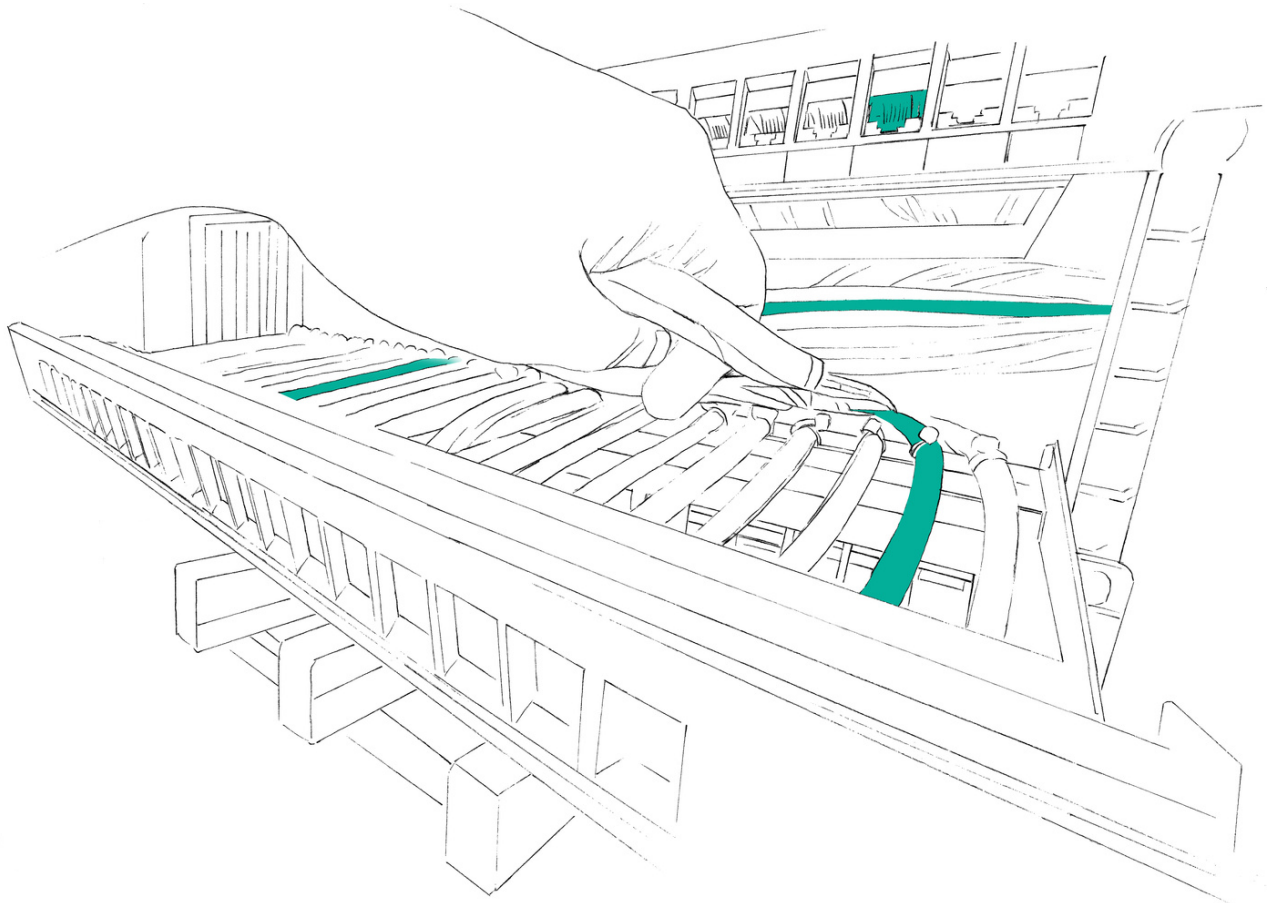




# Passive Network Technology

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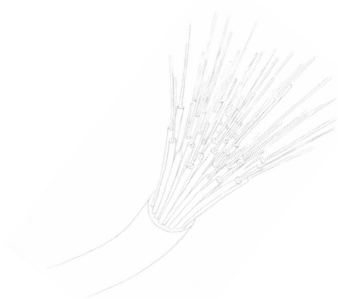
Structured Cabling 2021



# DOC's passive network technology

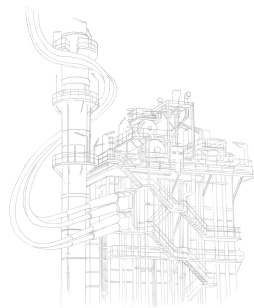
Data transmissions are essential for the modern world. Whether your future network is based on optical or electrical signals, we can help you with our wide range of products and passive components.

## This chapter is part of a three series catalogue



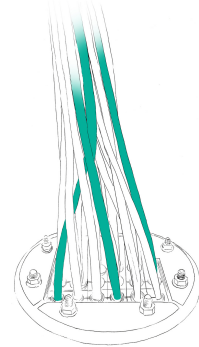
### FTTx products

Fiber to the X stands for communication networks with fiber optic connections all the way to the curb, down to the basement, and into the home



### Industrial Networks

These products are used for networking in industry or, e.g. in ski resorts for access points and require customised solutions for this purpose



### Structured cabling

We supply not only twisted pair networks but all products that give you high-speed connections and maximum reliability

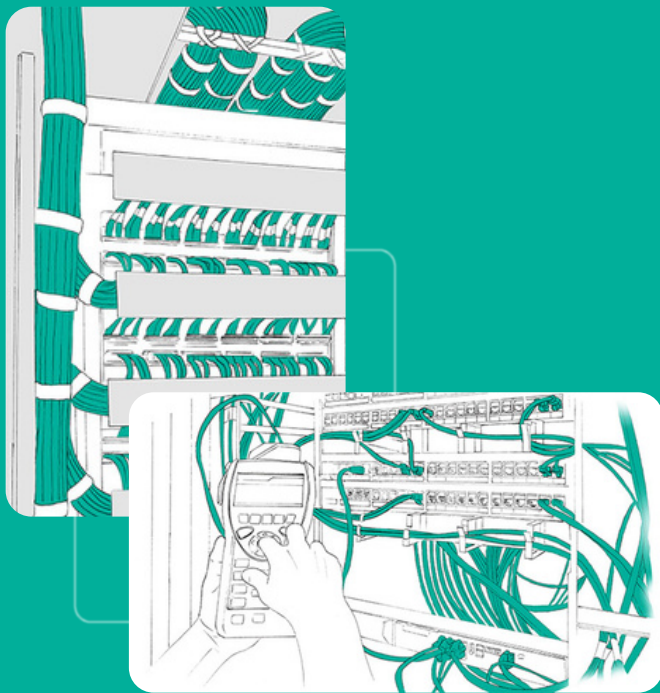
## Content

### Structured cabling

1. Twisted-pair cable
2. Universal cable
3. Patchfield & -panel
4. Patch cords & pigtails
5. Frontplate & module
6. Racks
7. Consumable material

# Structured Cabling

The center of every local network is located inside or between buildings. No matter if it's a twisted pair or a pre-terminated optical fiber - those products are basically the central system of every house, campus, hospital, or office building. The CABLEDOC team is especially proud of the 25 years system warranty. We are confident that our structured cable networks will deliver what they promise.



## Technology from the field

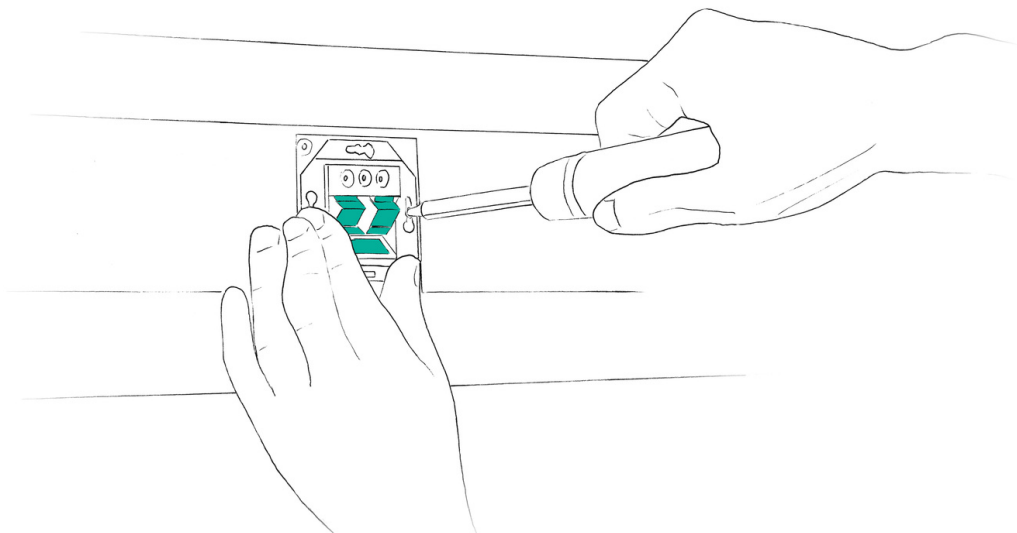
We know that network projects are often coming with tight schedules or budgets, which makes us also aware that the products need to be of perfect quality but also easy to install on the construction site. This helps the project manager and makes installation smooth for the team on site.

Challenges

## System warranty

We promise 25 years of warranty if all the products in combination are from CABLEDOC. Our product range provides customers everything needed for their projects, ranging from twisted pair cables to modules, racks and patchfields but we also have a full range of inhouse fiber applications.

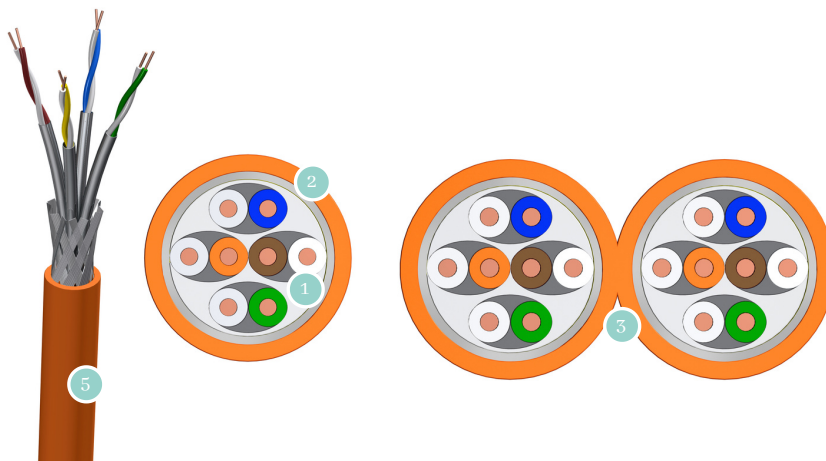
Portfolio



# 1. Twisted Pair cable

- 1000MHz Cat 7, LSHF sheath, Class Eca, AWG 23
- 4 pairs with bundle formation (PiMF), braid tin-plated shielding
- Primary (campus), secondary (riser), tertiary (horizontal)
- IEEE 802.3: 10Base-T; 100Base-T; 1000Base-T; 10GBase-T

Cable cross sections



Schematic representation: cable types available on request.

## Cable design

- ① 4 cores with pairs
- ② Simplex
- ③ Duplex
- ⑤ LSHF-sheath

Product data & Product ID

Cable type	Cat 7 installation cable S/FTP
Bending radius	8 x D (during installation), 4 x D (installed)
Tensile-load capacity	100 N (during the installation)
Max. loop resistance	165 Ω/km
Max. resistance asymmetry	2 %
Max. signal propagation time	535 ns/100 m
Nominal capacity	44 nF/km
Coupling attenuation	75 dB
Wrapping color	Orange
Operating temperature	-20 to + 60 °C
Installation temperature	0 to + 50 °C
Product-ID	TP-C7-[SI-DU]

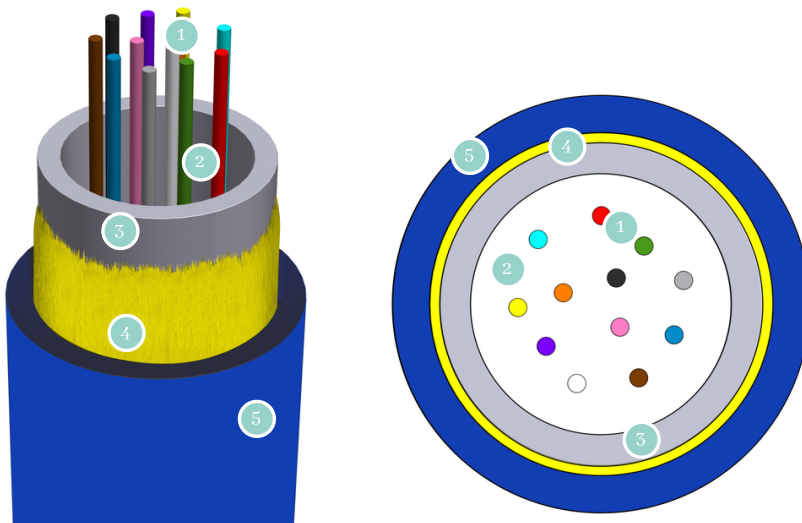
Description

The Cat 7 installation cable S/FTP has an excellent shielding, can be laid and installed. It is optimally suited for small and large installations and is besides a cost-efficient solution.

## 2. FO-Universal cable singlemode

- LSZH sheath, class Eca
- Cost-effective and thin cable construction
- 4 - 24 fiber
- G.657.A1 fiber

Cable cross sections



Schematic representation: color code according to DIN VDE 0888. Other color codes and cable types available on request.

### Cable design

- ① SM-Fiber
- ② Gel filling
- ③ Uni tube
- ④ Aramid yarn
- ⑤ LSZH sheath

Product data & Product ID

Type	4	8	12	24
Material outer sheath	LSZH	LSZH	LSZH	LSZH
Diameter [mm]	5.8	5.8	5.8	5.8
Tensile performance [N]	2000	2000	2000	2000
Cable weight [kg/km]	40	40	40	40
Crush [N/100mm]	2000	2000	2000	2000
Storage temperature [°C]	-40~+60	-40~+60	-40~+60	-40~+60
Installation temperature [°C]	-30~+40	-30~+40	-30~+40	-30~+40
Operating temperature [°C]	-30~+60	-30~+60	-30~+60	-30~+60
Product-ID	LK-UK-LZ-UA-[structure]-A1-250			

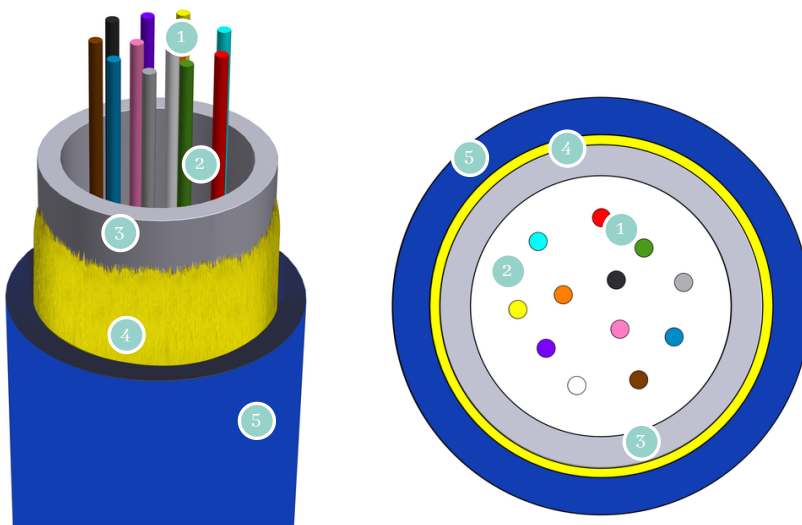
Description

Universal fiber optic indoor/outdoor cables with central loose tubes are used as house entry cables for direct buried or tube laying. It also used as flame retardant indoor riser cables. The central arrangement of the fibers allows a cost-effective and thin cable construction. The cables are UV-resistant, metal-free, tensile proof, halogen-free and flame-retardant.

## 2. FO-Universal cable Multimode

- LSZH sheath, class Eca
- Cost-effective and thin cable construction
- 4 - 24 fiber
- OM3 - OM5

Cable cross sections



Schematic representation: color code according to DIN VDE 0888.  
Other color codes and cable types available on request.

### Cable design

- 1 MM-Fiber
- 2 Gel filling
- 3 Uni tube
- 4 Aramid yarn
- 5 LSZH sheath

Product data & Product ID

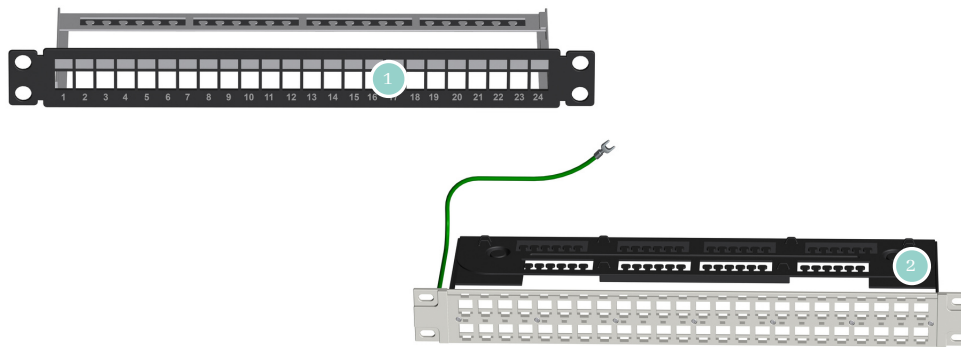
Type	4	8	12	24
Material outer sheath	LSZH	LSZH	LSZH	LSZH
Diameter [mm]	5.8	5.8	5.8	5.8
Tensile performance [N]	2000	2000	2000	2000
Cable weight [kg/km]	40	40	40	40
Crush [N/100mm]	2000	2000	2000	2000
Storage temperature [°C]	-40~+60	-40~+60	-40~+60	-40~+60
Installation temperature [°C]	-30~+40	-30~+40	-30~+40	-30~+40
Operating temperature [°C]	-30~+60	-30~+60	-30~+60	-30~+60
Product-ID	LK-UK-LZ-UA-[structure]-[OM3-OM5]			

Description

Universal fiber optic indoor/outdoor cables with central loose tubes are used as house entry cables for direct buried or tube laying. It also used as flame retardant indoor riser cables. The central arrangement of the fibers allows a cost-effective and thin cable construction. The cables are UV-resistant, metal-free, tensile proof, halogen-free and flame-retardant.

# 3. Patchpanel

- 1U 24 ports / 48 ports
- Electrostatic powder coating & port numbering
- High stability due to nickel-plated & cold-rolled carbon steel



Schematic representation: Other product variants available on request.

## Details

- ① 24 port
- ② 48 port

Product

	24 port	48 port
Panel (W x H x D)	482.6 mm x 29.5 mm x 151.5 mm	482.6 mm x 44.4 mm x 156 mm
Number of ports	24	48
Material	Bracket: nickel-plated steel frame: cold-rolled carbon steel	Bracket: nickel-plated steel frame: cold-rolled carbon steel
Sheath	Electrostatic powder coating	Electrostatic powder coating
Operating temperature	-40 to + 60 °C	-40 to + 60 °C
Product-ID	EPP-[24-48]RJ45-L-BK	

Product data & Product ID

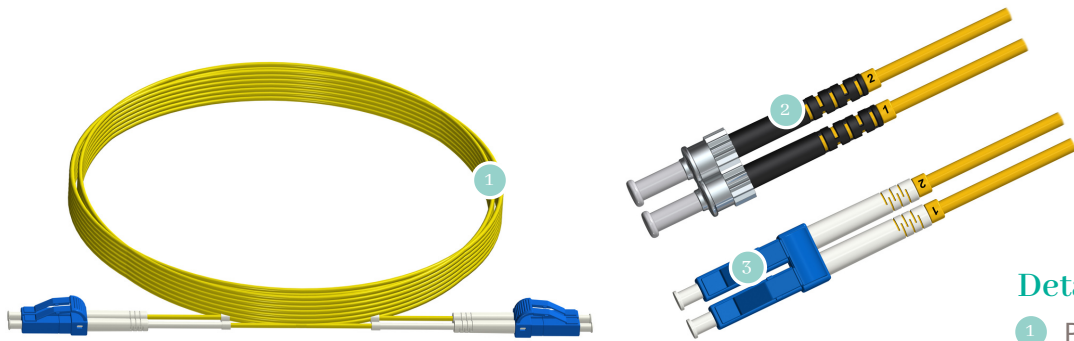
Description

CABLEDOC offers 24- and 48 patch port depending on the required capacity. The panels are made of steel, which provides high stability. With the 48 variant, an individual design is additionally possible through the separately mountable distribution panels and removable, retractable cable managers.

# 4. Fiber optic patch cable singlemode

- Low insertion and return loss
- High-temperature stability
- Available in various formats

Product



Schematic representation: Other product variants available on request.

### Details

- 1 Patch cable
- 2 FC-plug
- 3 LC-plug

Singlemode	Simplex	Duplex
Insertion loss	≤0.2 dB	≤0.3 dB
Return loss	≥55 dB (PC) / ≥75 dB (APC)	≥45 dB (PC) / ≥65 dB (APC)
Repeatability	≤0.1 dB	≤0.1 dB
Contact durability	>1000 cycles	>1000 cycles
Interferometry testing	Regarding IEC 61300-3-17	Regarding IEC 61300-3-17
Cable-diameter	Standard 2 mm, or 3 mm	Standard 2 mm, or 3 mm
Length [m]	Standard 0.5/1/2/3/5/7.5/10/20/30, other lengths on request	Standard 0.5/1/2/3/5/7.5/10/20/30, other lengths on request
Fiber	G.652D, G.655, G.657.A1	G.652D, G.655, G.657.A1
Sheathing	LSZH	LSZH
Cable variations	Simplex (OS2)	Duplex, duplex flat (OS2)
Operating temperature	-40 to +85 °C	-40 to +85 °C
Product-ID	FP[S/D/F][cable-diameter][fiber]-[E2000-ST]/[E2000-ST]-[length]	

Product data & Product ID

Description

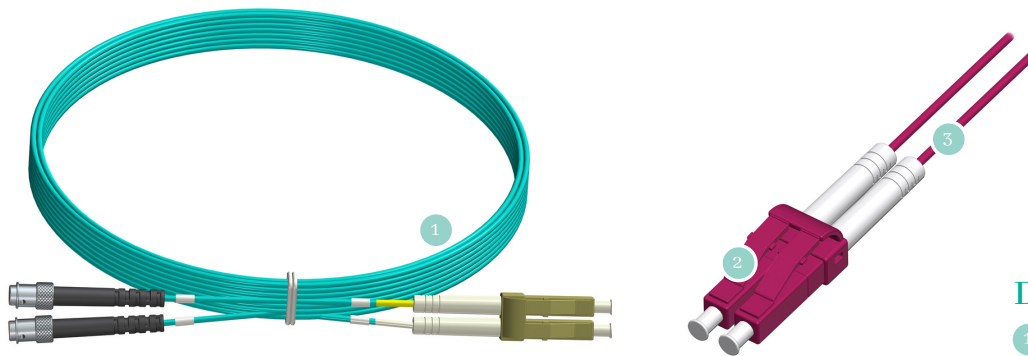
CABLEDOC offers a single-mode patch cable with a variety of termination options, including hybrid connectors. Besides, CABLEDOC has many years of experience in manufacturing high-quality fiber optic cables, which are released only after strict quality control procedures. Each cable is individually packaged with a unique serial number and test result.



# 4. Fiber optic patch cable multimode

- Low insertion and return loss
- High-temperature stability
- Available in various formats

Product



Schematic representation: Other product variants available on request.

### Details

- 1 Patch cable
- 2 LC-plug (Duplex)
- 3 OM4

Product data & Product ID

Multimode	OM1 to OM5
Insertion loss	≤0.25 dB
Return loss	≥30 dB
Repeatability	≤0.1 dB
Contact durability	>1000 cycles
Interferometry testing	Regarding IEC 61300-3-17
Cable-diameter	Standard 2 mm, or 3 mm
Length [m]	Standard 0.5/1/2/3/5/7.5/10/20/30m, other lengths on request
Sheath	LSZH
Cable variation	Simplex,Duplex, duplex flat
Operating temperature	-40 to +85 °C
Product-ID	FP[S/D/F][cable-diameter][fiber]-[E2000-ST]/[E2000-ST]-[length]

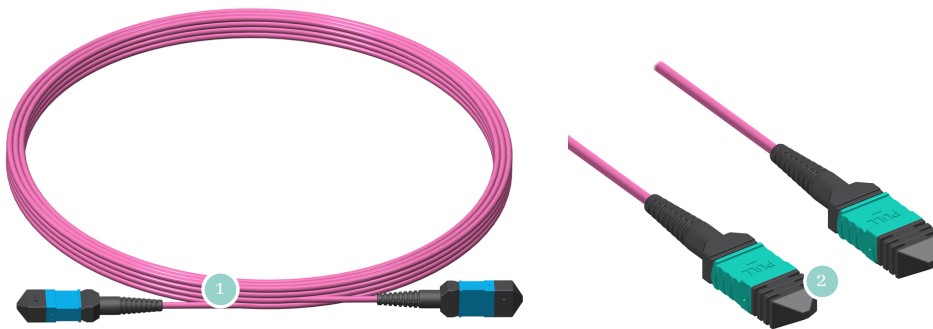
Description

CABLEDOC offers multimode patch cable with a variety of termination options, including hybrid connectors. Besides, CABLEDOC has many years of experience in manufacturing high-quality fiber optic cables, which are released only after strict quality control procedures. Each cable is individually packaged with a unique serial number and test result.

# 4. MPO-Patch cable

- Low insertion and return loss
- High-temperature stability
- Telcordia GR-1435-CORE compatible

Product



Schematic representation: Other product variants available on request.

## Details

- 1 Packed
- 2 MPO-connector

Product data & Product ID

Type	SM Standard	SM Low Loss	MM Standard	MM Low Loss
Insertion loss	≤0.5 dB	≤0.3 dB	≤0.35 dB	≤0.2 dB
Return loss	≥60 dB (APC)	≥60 dB (APC)	≥35 dB (PC)	≥35 dB (PC)
Repeatability	≤0.1 dB	≤0.1 dB	≤0.1 dB	≤0.1 dB
Contact durability	>1000 cycles	>1000 cycles	>1000 cycles	>1000 cycles
Operating temperature	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C
Tensile performance	>50 N	>50 N	>50 N	>50 N
Product-ID	FTC[cable-diameter][fiber]-[MPO-MPO/MPO-LC]-[12/24]-[length]-[fiber occupancy]			

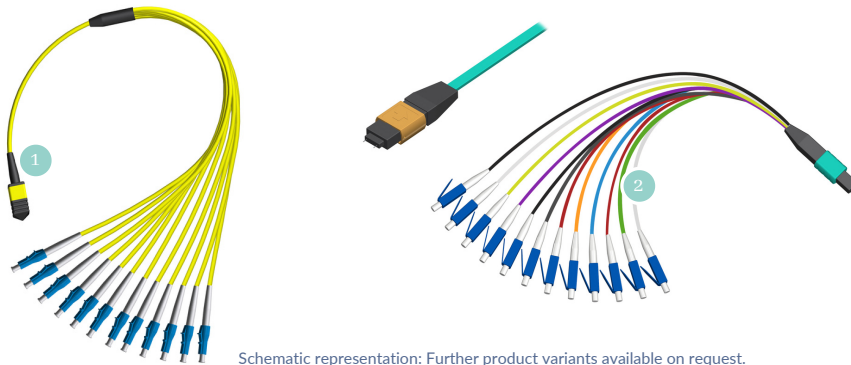
Description

The CABLEDOC MPO patch-cable facilitates rapid, high-density installation in data centers and other FTTx fiber-optic applications. Those applications can save money and time during a new installation or remodel. THE CABLEDOC MPO patch cords have low insertion loss and return loss, as well as excellent durability.

# 4. Fanout cable MPO-LC

- 12 - 24 fibers
- Singlemode & Multimode (OS2, OM3-OM5)
- Flexible whip and cable lengths possible
- OFNR, OFNP, LSZH compatible

Product



Design

- 1 MPO-plug
- 2 LC-splitter

Product data & Product ID

Type	SM Low Loss	MM Low Loss
Insertion loss (MPO)	≤0.35 dB	≤0.35 dB
Insertion loss (LC)	≤0.3 dB	≤0.3 dB
Return loss (MPO)	≥60 dB	≥30 dB
Return loss (LC)	≥50 dB	≥30 dB
Repeatability	≤0.2 dB	≤0.2 dB
Stability	>500 cycles	>500 cycles
Operating temperature	-40 to +85 °C	-40 to +85 °C
Product-ID	FTC3[OS-OM5]-MP/[MP/LC]-[12/24]-[length]-[fiber occupancy]	

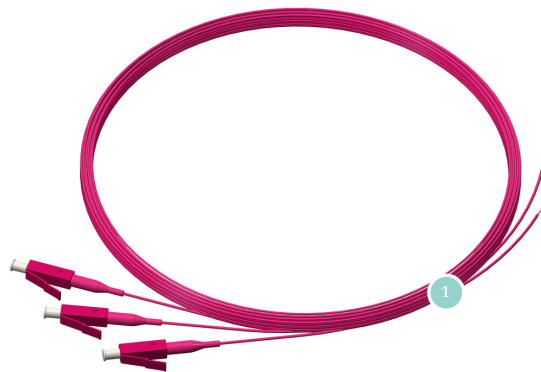
Description

CABLEDOC fanout cable MPO-LC can be used to connect a 12 or 24 fiber MPO connector with the LC connector on the trunk cable. In addition to the standard lengths, CABLEDOC also offers individual lengths according to customer requirements. The fanout cable allows flexible design and connection in the data cabinet.

# 4. OF-Pigtails

- Low insertion and return loss
- High-temperature stability & small packsize
- Available in various formats

Product



Schematic representation: Further product variants available on request.

## Details

1 Pigtails (exemplary)

Product data & Product ID

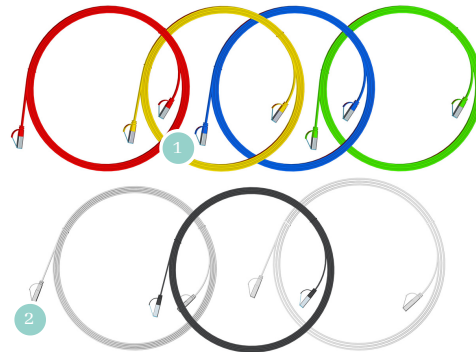
Pigtails (Example. LC)	Multimode	Singlemode PC	Singlemode APC 8°
Insertion loss (typ.)	<0.10 dB max:<0.20 dB	<0.10 dB max:<0.20 dB	<0.10 dB max:<0.20 dB
Return loss	>35 dB	>45 dB	>70 dB
Repeatability	≤0.1 dB	≤0.1 dB	≤0.1 dB
Contact durability	>500 cycles at max. 0.20 dB	>500 cycles at max. 0.20 dB	>500 cycles at max. 0.20 dB
Operating temperature	-40 to +75 °C	-40 to +75 °C	-40 to +75 °C
Product-ID	FPT9[OS2-OM5][optional multicolor]-[E2000-ST]-[1.5/2m]		

Description

The CABLEDOC pigtails are characterized by low insertion and return loss, good durability, and interchangeability. The new packaging type has an even higher packing density than before. They are used with CABLEDOC splice boxes or installations but are also available separately. Pigtails are available in all common connector types or PC/APC connectors and various classes and lengths. Each the package is delivered packed with a unique serial number and a test report.

# 4. Copper patch cord

- Class Cat 5e & Cat 6a
- High temperature stability
- ISO/IEC 11801 Class D (5e)/Ea (6A), IEC 60754-2 (5e), IEC 60332-1 (6A), RoHS 2.0 & REACH, IEC 61034



Schematic representation: Further product variants available on request.

### Details

- 1 Different colors and lengths available
- 2 RJ45 plug

Product

Category	Cat 5e	Cat 6a
Ethernet	2.5G-GBit	10G-GBit
Plug (A/B)	RJ45 male	RJ45 male
Plug color	Transparent	Transparent blue
IP protection class	IP20	IP20
Shielding	SF/UTP	S/FTP
Wires	CCA	100 % copper
Sheath	PVC	LSZH
POE	POE, POE+	POE, POE+, POE++
Color	Grey, red, yellow, blue, green, white, black	Grey, red, yellow, blue, green, white, black
Length	All common lengths	All common lengths
Operating temperature	-10 to +60 °C	-10 to +60 °C
Product-ID	C5E/C6A-416[color]-[length]	

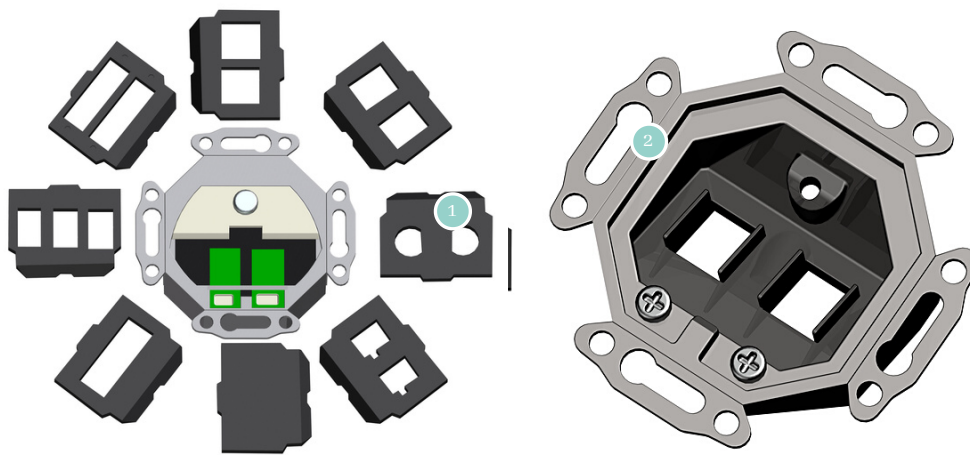
Product data & Product ID

Description

CABLEDOC offers high-quality copper patch cords in various colors and lengths. The wide selection makes it easy to find a suitable solution for the particular network connections (e.g., red for the server rooms, blue for the third floor, etc.). All our patch cords are built to the highest industry standards to meet our customers requirements.

# 5. Fiber optic faceplates

- Standardized 50x50mm plastic central plate with printed laser symbol
- Suitable for installation in parapet trunking and underfloor systems, as well as for flush-mounted and surface-mounted installation



Schematic representation: Further product variants available on request.

## Description

- 1 Adapter plates
- 2 Central plate

Product

Product data & Product ID

LWL-Dose	Details
Plates	Incl. 9 unequipped adapter plates for SC-simplex, SC-duplex, E2000®-simplex, MTRJ, AMP/MTRJ, ST, FC, DIN, LC-duplex and one bare plate
Product-ID	W45-LWL[/R]

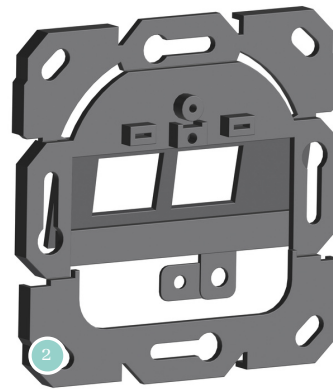
Description

The CABLEDOC faceplate is suitable for all common connector types of fibre optic technology. The scope of delivery of the connection box made of zinc die-cast includes central plates made of plastic, which can be equipped with various couplings. The supplied adapter plates can be fitted with fibre optic couplings at an angle of 35°.

## 5. CAT 6A faceplates

- Width x height x depth: 80 mm x 80 mm x 17.45 mm
- Supports PoE per IEEE 802.3af, PoE+ per IEEE 802.3at
- 360 degree shielding

Product



Schematic representation: Other product variants available on request.

### Description

- 1 Central plate
- 2 Cover-plate

Product data & Product ID

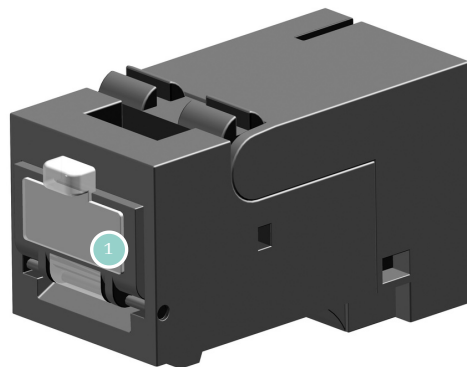
Faceplate	Details
Contact durability	≥ 750
Connector material	PIN gold plated
Housing material	Zinc alloy
Slots	2
Produkt-ID	W45-L[/R]

Description

The CABLEDOC STP faceplate network socket is a high-quality and high-performance network socket suitable for PoE applications. The 360-degree shielding provides all-around protection against external crosstalk.

# 6. RJ45 keystone module CAT 6A

- Incl. shield contact
- Suitable for Keystone socket with a width of less than 17.4mm
- PoE+ according to IEEE 802.3at
- Tool-free



Schematic representation: Further product variants available on request.

## Description

- 1 RJ45 connector

Product

Keystone Modul	CAT 6A
Protection class	IP 20
Operating temperature	-40 °C bis +70 °C
Contact resistance	≤20 mΩ
Insulation resistance	≥500 mΩ
Voltage-resistant (contact-contact)	≥1000 V (DC)
Voltage-resistant (contact shielding)	≥1500 V (DC)
Current carrying capacity at 50°C	1.25 A
PoE+ according to IEEE 802.3at	Appropriate
Transmission impedance at 80 MHz	≤1600 mΩ
10 Gigabit Ethernet according to IEEE 802.3an	Appropriate
Product-ID	CD-CKFEK000

Product data & Product ID

Description

The RJ45 socket module can be easily snapped onto the terminal. RJ45 Keystone module meets the standard ISO/IEC 11801 (EN 50173) for permanent links. The socket module made of nickel-plated die-cast zinc makes a compact design and a high packing density possible.



# 6. Standardracks - 19 inch

- 2 pair 19"-vertical profiles sliding and 1 pair of side walls with lock
- Front door safety glass (EN 12150-1) with swivel lever lock and rear panel with cable entry and lock
- 4 adjustable feet, GND/Grounding Set
- Incl. installation sets



### Details

- 1 Front door
- 2 Back wall
- 3 Safety glass (EN 12150-1) with swivelling lever locks
- 4 19 inch-L-profile adjustable

Schematic representation: Further product variants available on request.

Product

Type	19 inch-cabinet
Height	21, 27, 42 and 45 U
Width	600 or 800 mm
Depth	600, 800 and 1000 mm
Structure	Welded frame and sheet steel 1.5 mm
Vertical profiles	2 pair 19 inch-vertical profiles movable and adjustable from the inside
IP-protection class	Standard: IP30
Front door	Safety glass door with swing lever lock or optional sheet steel door
Back wall and side panels	Removable with break-out cable entry and lock and sheet steel door, side panels removable with locks
Color	Standard RAL7035 or RAL9005 and optionally other colours
Breakout openings	For cable entry and installation of the ventilation unit
Adjustable feet	Included
Product-ID	SK-SR-19-[21-45]-[600-800]-[600-1000]

Product data & Product ID

Description

Our rack series offers the customer an unbeatable ratio of price, benefit, and quality. These cabinets are ideal for installers and end customers who value straightforward cabinet ordering. The racks are perfect for network equipment, telecom cabinets, and computer rooms without critical requirements for load capacity, cable entries, or door/wall designs.

# 7. Consumable material

- Extensive, high-quality consumables on the subject of fiber optics are available
- Orderable in the partner webshop



Schematic representation: Further product variants available on request.

## Description

- 1 Materials and accessories

Product

Product data & Product ID

Description

Consumable material	Example
Fiber protection tubes 32 mm	Tube length approx. 86 cm, wire at one end, PG 16 nut at the other end
Fiber protection tubes 40 mm	Tube length approx. 86 cm, wire at one end, heat shrink tube at the other end
PG 16-screwing	Available in grey & black, screw connection + nut
Blind plugs	All common plug types, 100 piece packaging, smaller quantity also available
Cable holder	1000 piece packaging, smaller quantity also available
Product-ID	On demand

CABLEDOC offers a comprehensive portfolio about the topic of FTTx. Therefore, we also provide various accessories such as couplings, cable ties, or pull-in protection. The high-quality materials, some of which were developed in-house, are used for CABLEDOC products, but they are also available separately in the partner webshop.

# Notes



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