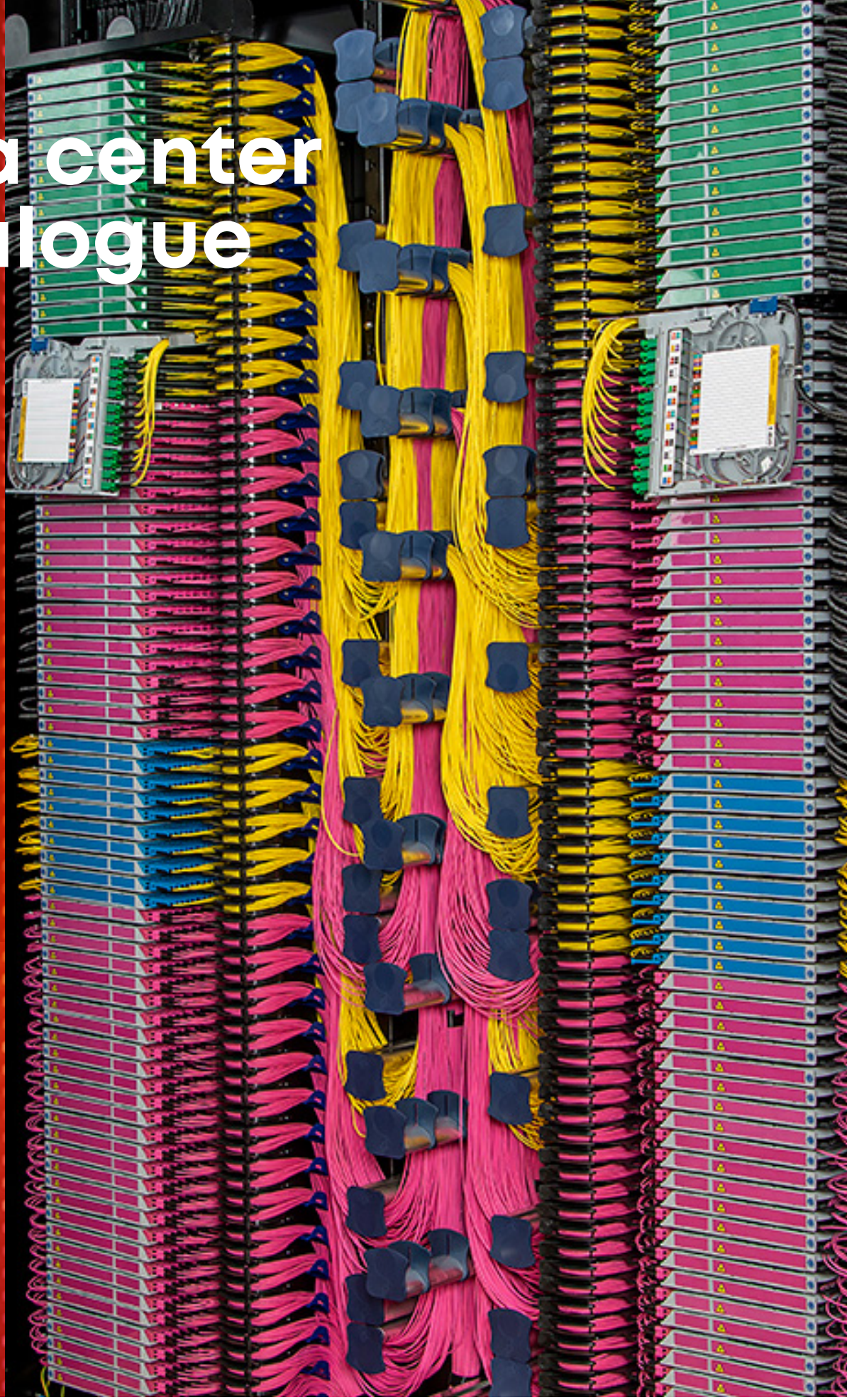
Data center catalogue

Edition 2025/05



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HUBER+SUHNER

Connect your data center to growth

Your data center serves as the operating core of networked-based services for your company. As such, it must guarantee stable operations and answer to high demands on uptime, speed, security and quality. And in a world where new technologies such as IoT, virtual reality and Industry 4.0 are on the rise, the data center must quickly scale up to offer room to grow.

HUBER+SUHNER offers the passive fiber optic equipment and solutions needed to build a strong and scalable physical layer that lasts. Our technical consultants support you in doing more with less space by designing and setting up an immaculate system that delivers optimal performance – today and in the future.



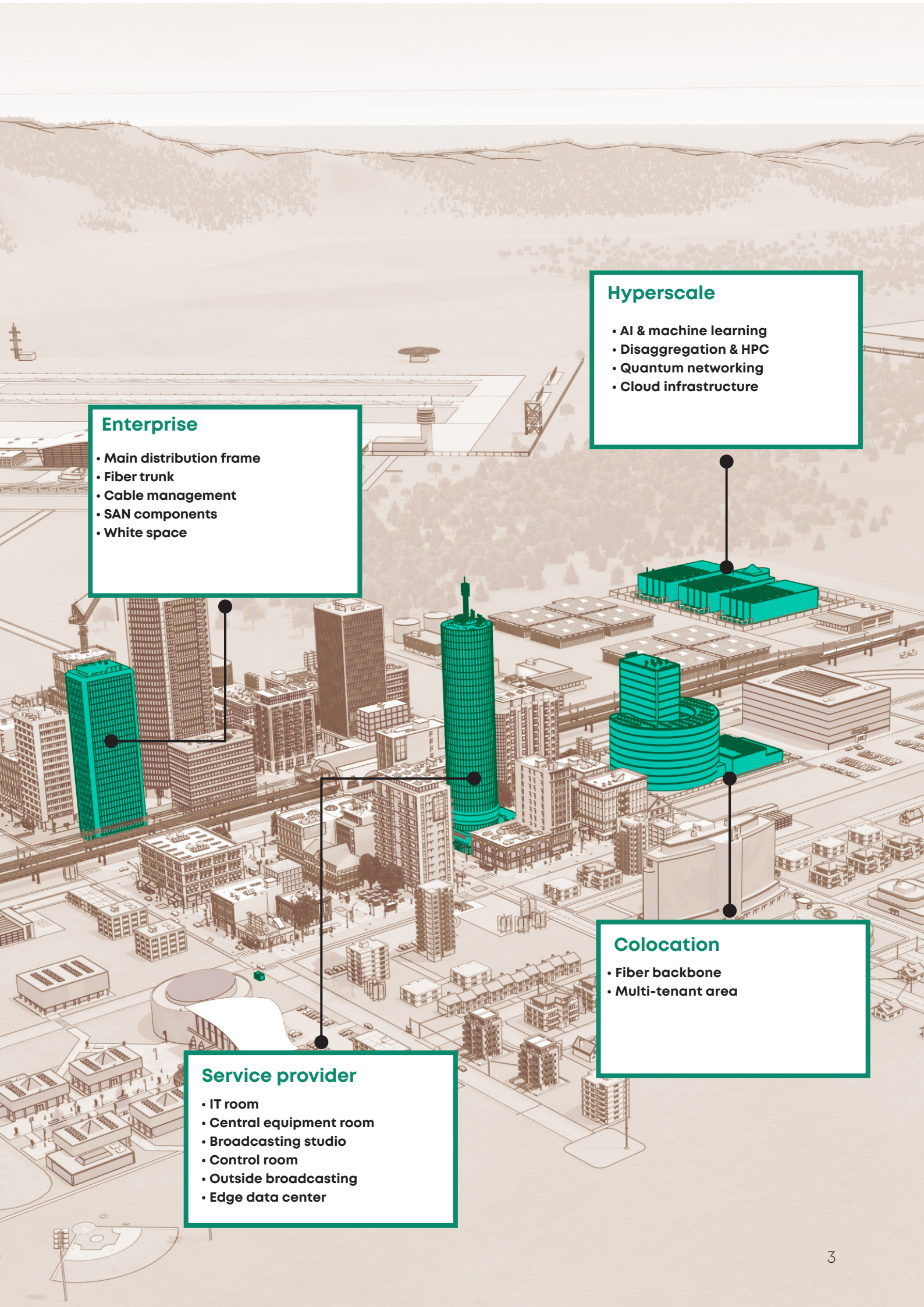
Structure
Set up your data center with fiber optic equipment that makes the most out of available space and requires less manual operation.



Enhance
By fully structuring your data center, you will free up crucial space and valuable time that you can redirect to enhance your current offering.



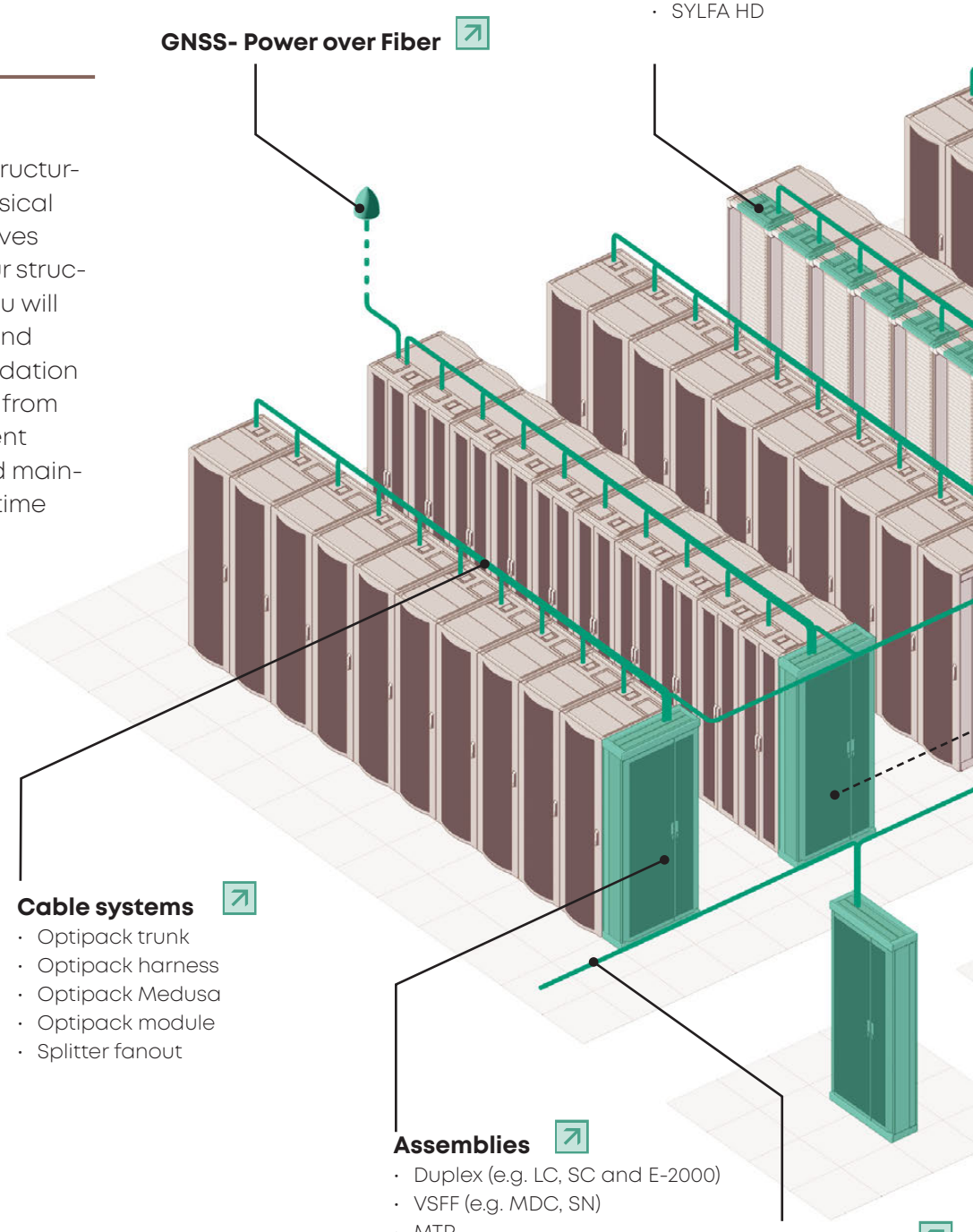
Drive
With a fast, secure and efficient system, you can focus on new investments and revenue-driving activities.

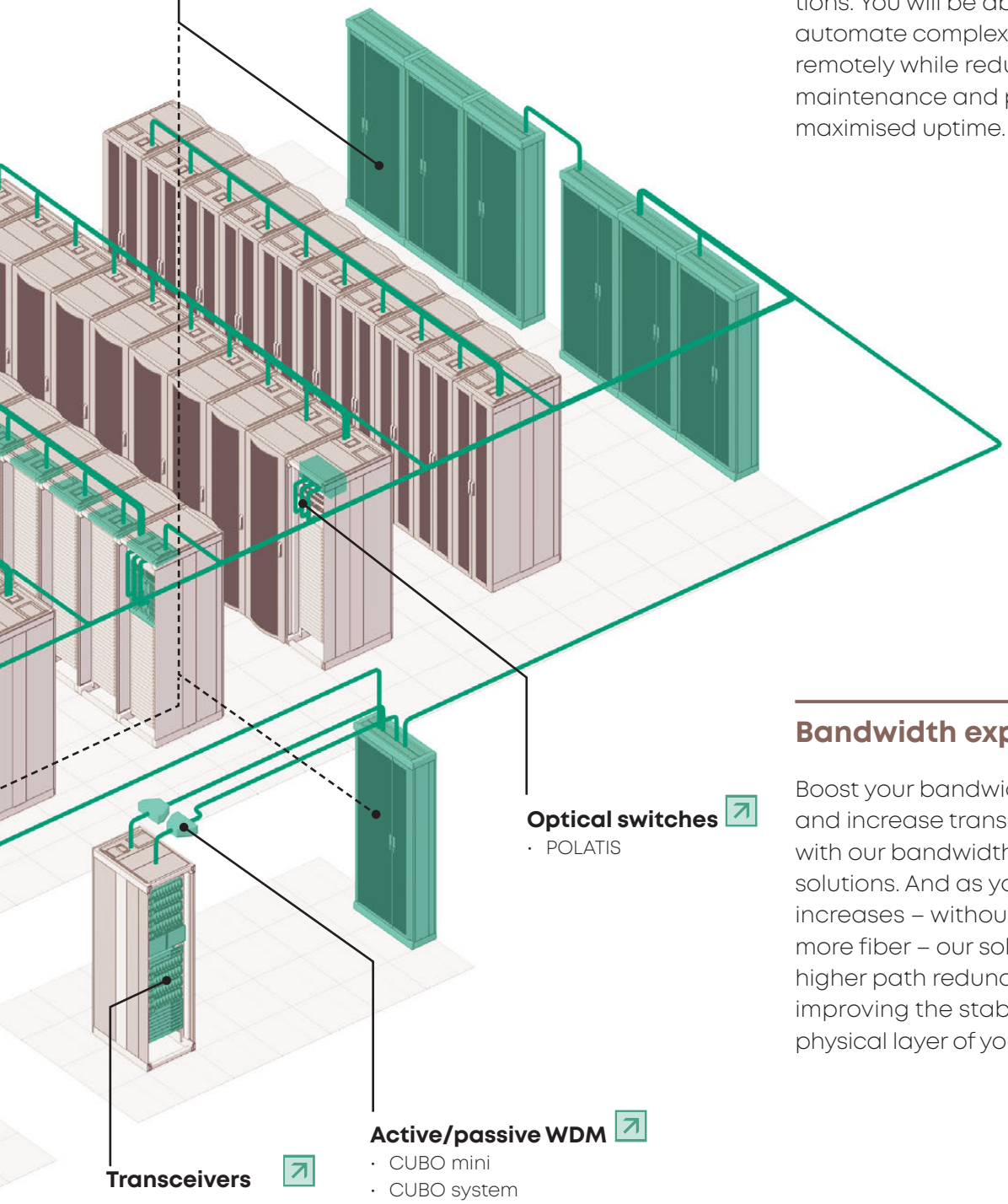

Hyperscale
• AI & machine learning
• Disaggregation & HPC
• Quantum networking
• Cloud infrastructure
Enterprise
• Main distribution frame
• Fiber trunk
• Cable management
• SAN components
• White space
Colocation
• Fiber backbone
• Multi-tenant area
Service provider
• IT room
• Central equipment room
• Broadcasting studio
• Control room
• Outside broadcasting
• Edge data center

Within our data center portfolio, we offer structured cabling, all-optical switching and bandwidth expansion solutions that work together to ensure a strong, stable and lasting physical layer.

Structured cabling

Save space and time by structuring your data center's physical layer with cabling that leaves nothing to chance. With our structured cabling solutions, you will set up a strong, efficient and scalable data center foundation once. You will then benefit from maximised uptime, excellent performance and reduced maintenance needs for a long time to come.





All-optical switching

Ensure full software control and secure cross-connects of network components in the fiber layer with our all-optical switching solutions. You will be able to efficiently automate complex connections remotely while reducing manual maintenance and providing maximised uptime.

Bandwidth expansion

Boost your bandwidth capacity and increase transmission reach with our bandwidth expansion solutions. And as your data flow increases – without adding more fiber – our solutions ensure higher path redundancy, further improving the stability of the physical layer of your data center.

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Icon Definition

Lead time reference

Preferred products
Recomennded to use: improved lead time and technical fit

Standard products
Recurrent items produced according to forecast

On-demand products
Products available on request

Fiber type

Singlemode / APC
Products containing singlemode fibers with APC connectivity

Singlemode / UPC
Products containing singlemode fibers with UPC connectivity

Multimode / OM4
Products containing multimode fibers OM4 with PC connectivity

Multimode / OM3
Products containing multimode fibers OM3 with PC connectivity

Base types

Base type Base-2
Base-2 connectivity method, products containing only duplex connectors

Base type Base-8
Base-8 MTP connectivity method, products containing MTP connectors with 8 fibers and with defined polarity methods. Uses polarity B, male to male trunks.

Base type Base-12 “enhanced”
Base-12 MTP connectivity method, products containing MTP connectors with 12 fibers and with defined polarity methods. Uses polarity B, male to male trunks.

Base type Base-12 “legacy”
Base-12 MTP connectivity method, products containing MTP connectors with 12 fibers and with defined polarity methods. Uses polarity A, female to female trunks.

Base type Base-24
Base-24 MTP connectivity method, products containing MTP connectors with 24 fibers and with defined polarity methods. Uses polarity A, male to male trunks.

Base type Base-24 (16)
Base-24 MTP connectivity method, products containing MTP connectors with 16 fibers and with defined polarity methods. Trunks are same as in Base-24 method.

Transmission technology

FO
Fiber optic technology

RF
Radio frequency technology

Colour

Grey or Black
Products with grey or black primary colour

Cables – CPR rating

B2ca, C2ca, D2ca, E2ca
Products containing CPR B2ca, C2ca, D2ca and E2ca rated cable

Cables – Construction

Singlemode
Singlemode cables, containing 8-, 12-, 16- or 24- fibers or sub units with respective number of fibers

Multimode
Multimode OM4 cables, containing 8-, 12-, 16- or 24- fibers or sub units with respective number of fibers

Jelly filled
Cables using jelly, preventing moisture or water to enter the cable.

Jelly free
Cables using dry block, preventing moisture or water to enter the cable.

UL approved
Cables that have been tested and approved by UL and meet the requirements of the National Electrical Code (NEC)

Orientation

Left or right
Products designated to use in either left or right part, for example LISA chassis

Other

Reference
Link to another part of catalogue or external document

Power supply
Active devices, requiring power supply

Other

Reference to other pages

Jump to another page

Reference to external document (e.g. application note, video or contact form)

Go to external document/link

See video about subject

Contact form

Abbreviated description of material

`DESCRIPTIVE CODE`

Navigation

If you are using the Adobe Acrobat Reader and Windows OS use these keys to change between views (jump between pages)

Previous view

ALT + ←

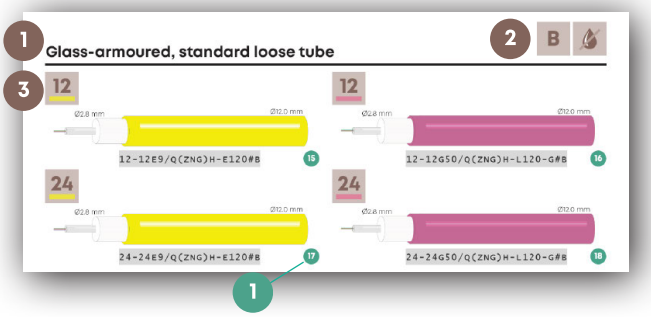
Arrow left

Next view

ALT + →

Arrow right

Informative blocks arrangement



1. Product name
2. Icons applicable to the entire product group
3. Icons applicable to the particular product
1. Tracking number for order information



Introduction



MTP base methods and links

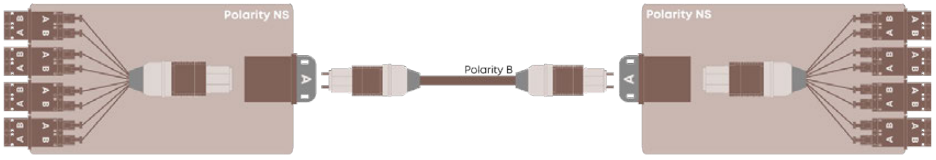
MTP base methods

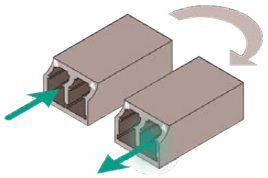
8

Base-8 method includes:
- 8-fiber MTP male to MTP male trunk, polarity B
- Transition module with 4 duplex ports, MTP female and polarity NS



The result permanent link is A-B



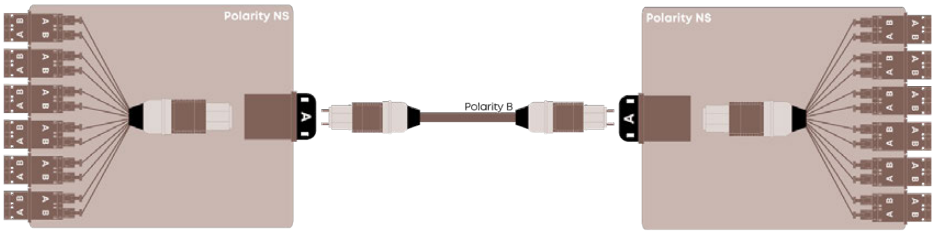


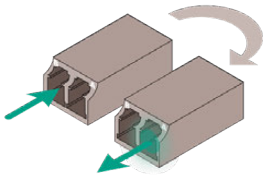
12

Base-12e “enhanced” method includes:
- 12-fiber MTP male to MTP male trunk, polarity B
- Transition module with 6 duplex ports, MTP female and polarity NS



The result permanent link is A-B



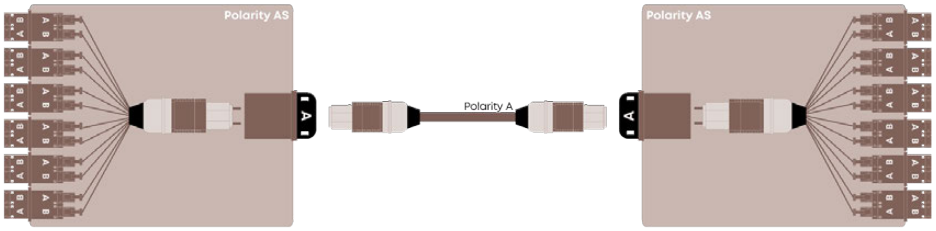


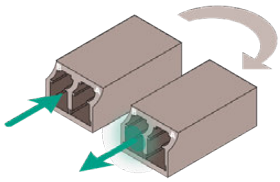
12

Base-12 “legacy” method includes:
- 12-fiber MTP female to MTP female trunk, polarity A
- Transition module with 6 duplex ports, MTP male and polarity AS*



The result permanent link is A-A





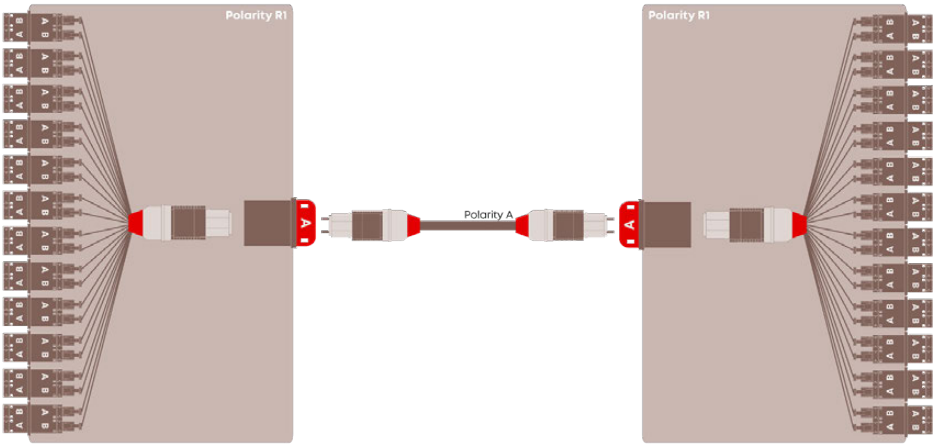
* Replacing one of transition modules from polarity AS to AP converts permanent link A-A to A-B

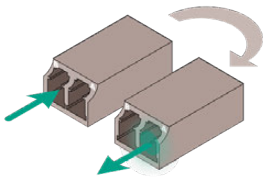
24

Base-24 method includes:
- 24-fiber MTP male to MTP male trunk, polarity A
- Transition module with 12 duplex ports, MTP female and polarity R1

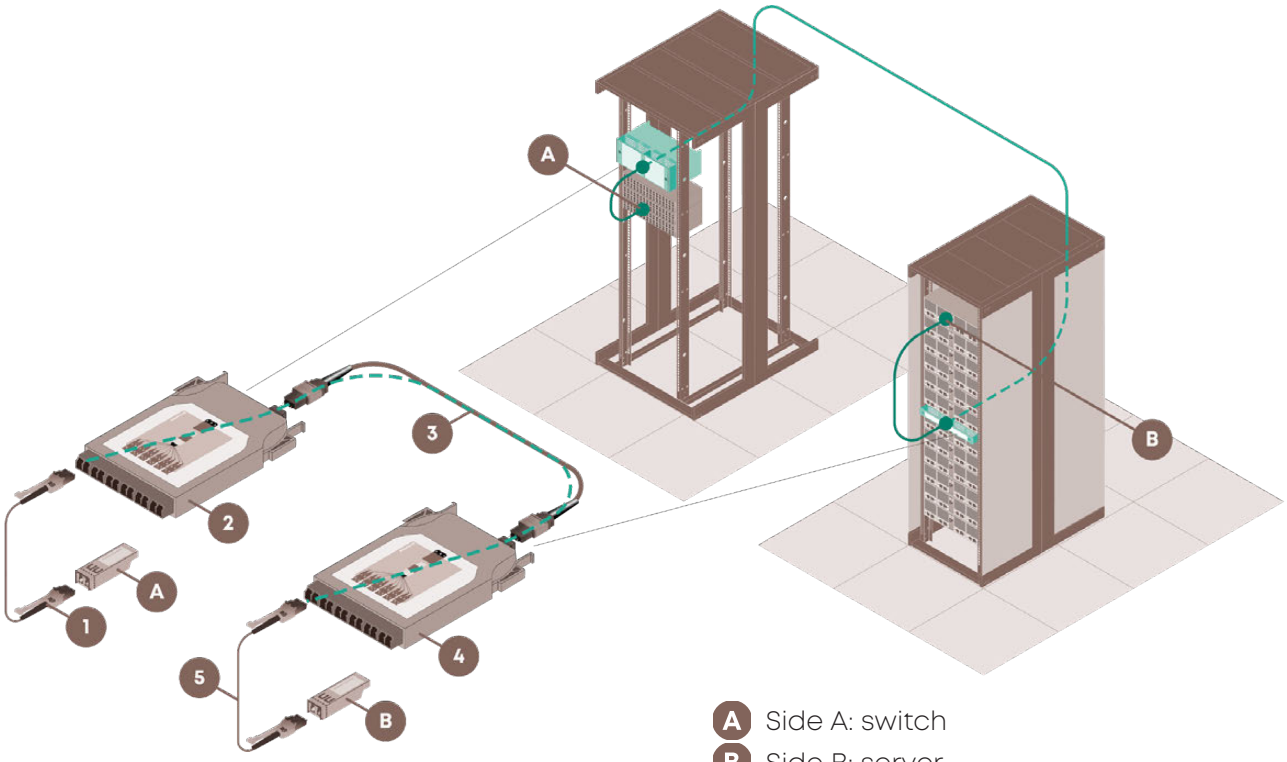


The result permanent link is A-B





Data center typical link



A Side A: switch
B Side B: server
(1) Patch cord on switch side
Permanent link
(2) Transition module
(3) MTP trunk
(4) Transition module
(5) Patch cord on server side

In the **permanent link type A-B** the light sent to port A on one side is received on port B on another side. Same duplex patch cord A-B/B-A required on both ends.



Permanent link A-B

In the **permanent link type A-A** the light sent to port A on one side is received on port A on another side. One side requires A-B/B-A patch cord while another side requires A-A/B-B.



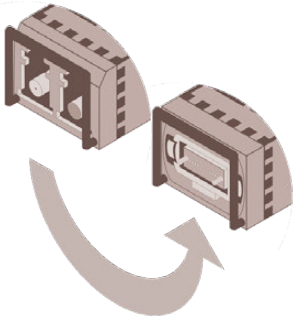
Permanent link A-A

Upgrade path and conversions

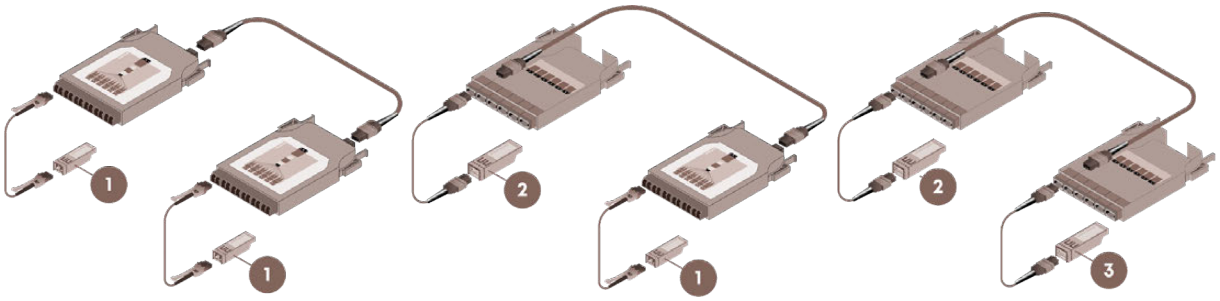
Upgrade path methods

Allow to re-utilize fiber infrastructure in future upgrade of transceiver technology. Depending on the deployed MTP base method different methods may apply.

(1) Duplex transceivers on both ends
(2) Switch transceiver upgraded from duplex to MPO
(3) Server transceiver upgraded from duplex to MPO



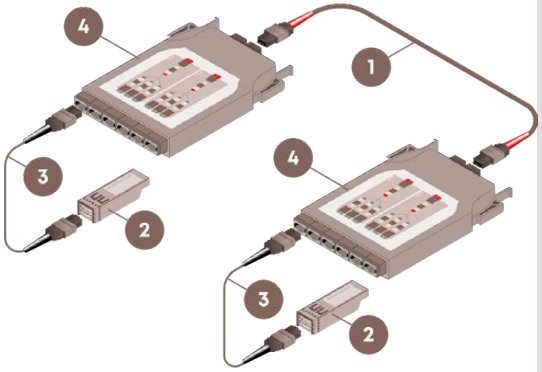
TODAY **TOMORROW** **BEYOND**



Conversion methods

Conversion methods required when the MTP trunk is not matching the MPO transceiver.

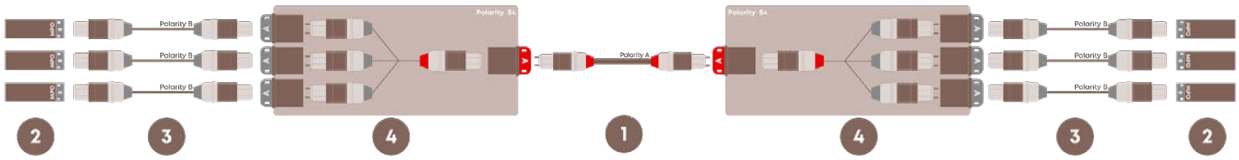
(1) MTP Base-24 trunk
(2) MPO 8-fiber transceiver
(3) MTP Base-8 patch cord
(4) Conversion module



Conversion examples

Trunk	Transceiver	Trunk	Transceiver
24	8	12	8
24	12	12	24
8	24	12	8
12	24	8	16

Example of conversion link:

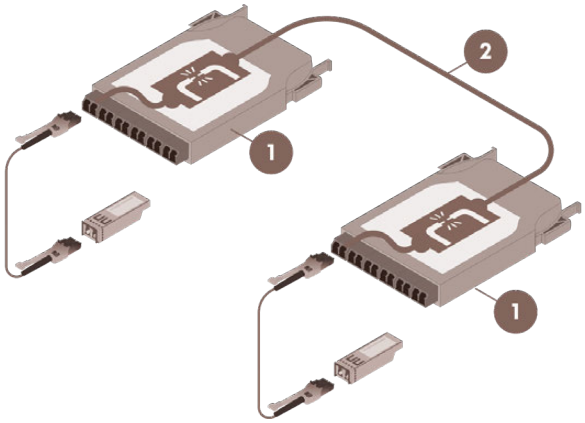


Splicing and patching

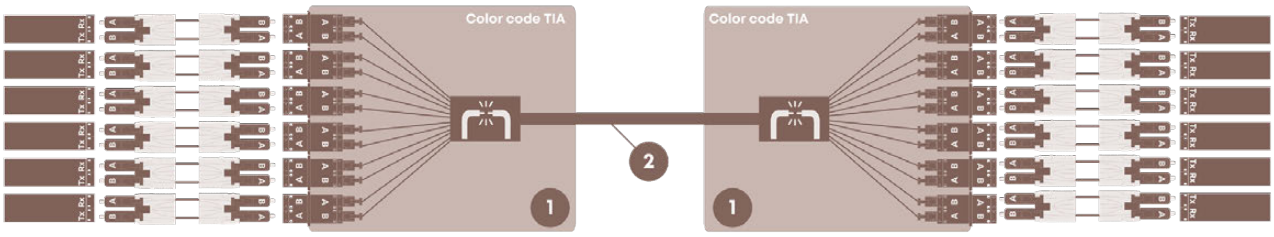
Splicing

Trunk (FO cable) spliced to a pigtail.

(1) Splice module
(2) FO cable



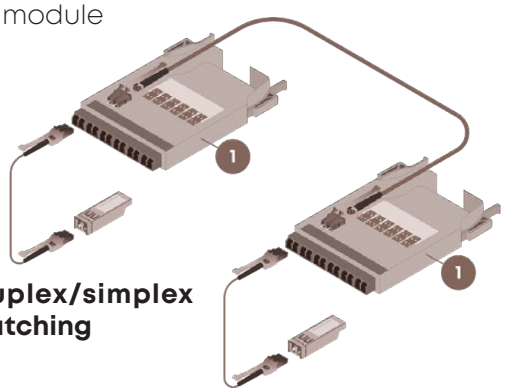
Example of splicing link, 12x fibers



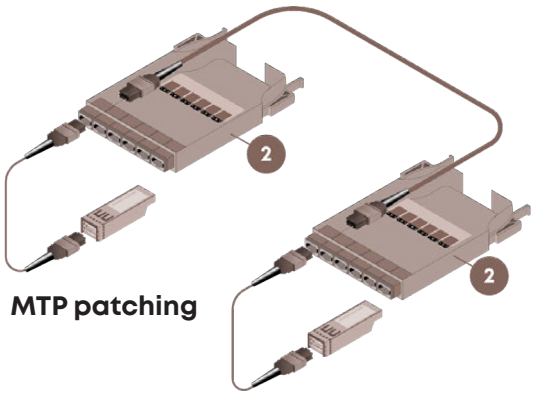
Patching

Trunk has the same connector as the patch cord

(1) Duplex patch module
(2) MTP patch module



Duplex/simplex patching

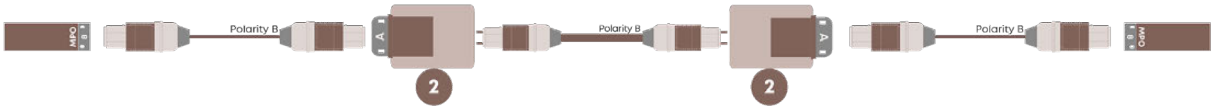


MTP patching

Example of duplex patching

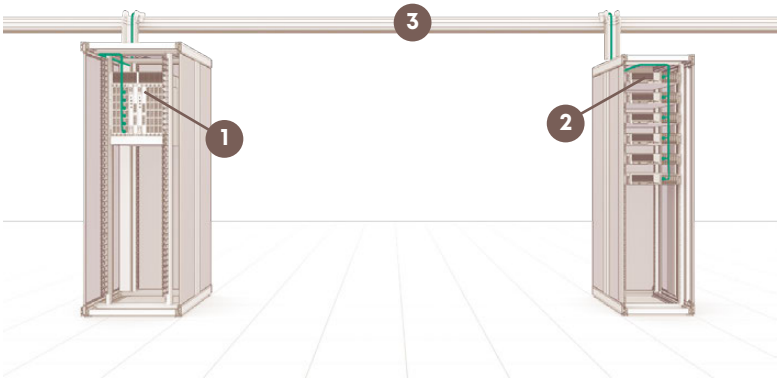


Example of MTP Base-8 patching



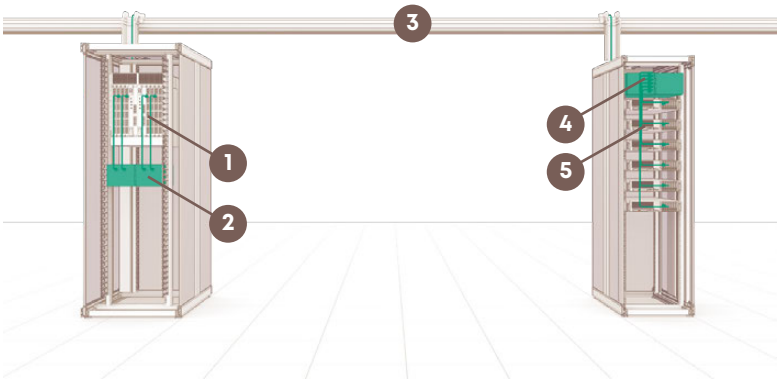
Connection methods

Direct-connect



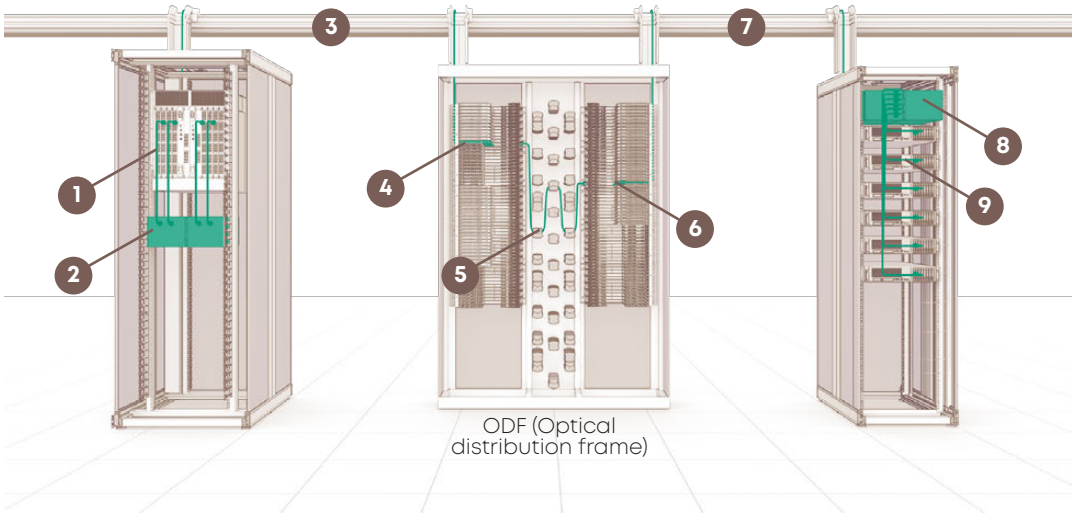
(1) Switch
(2) Server
(3) Patch cord

Inter-connect



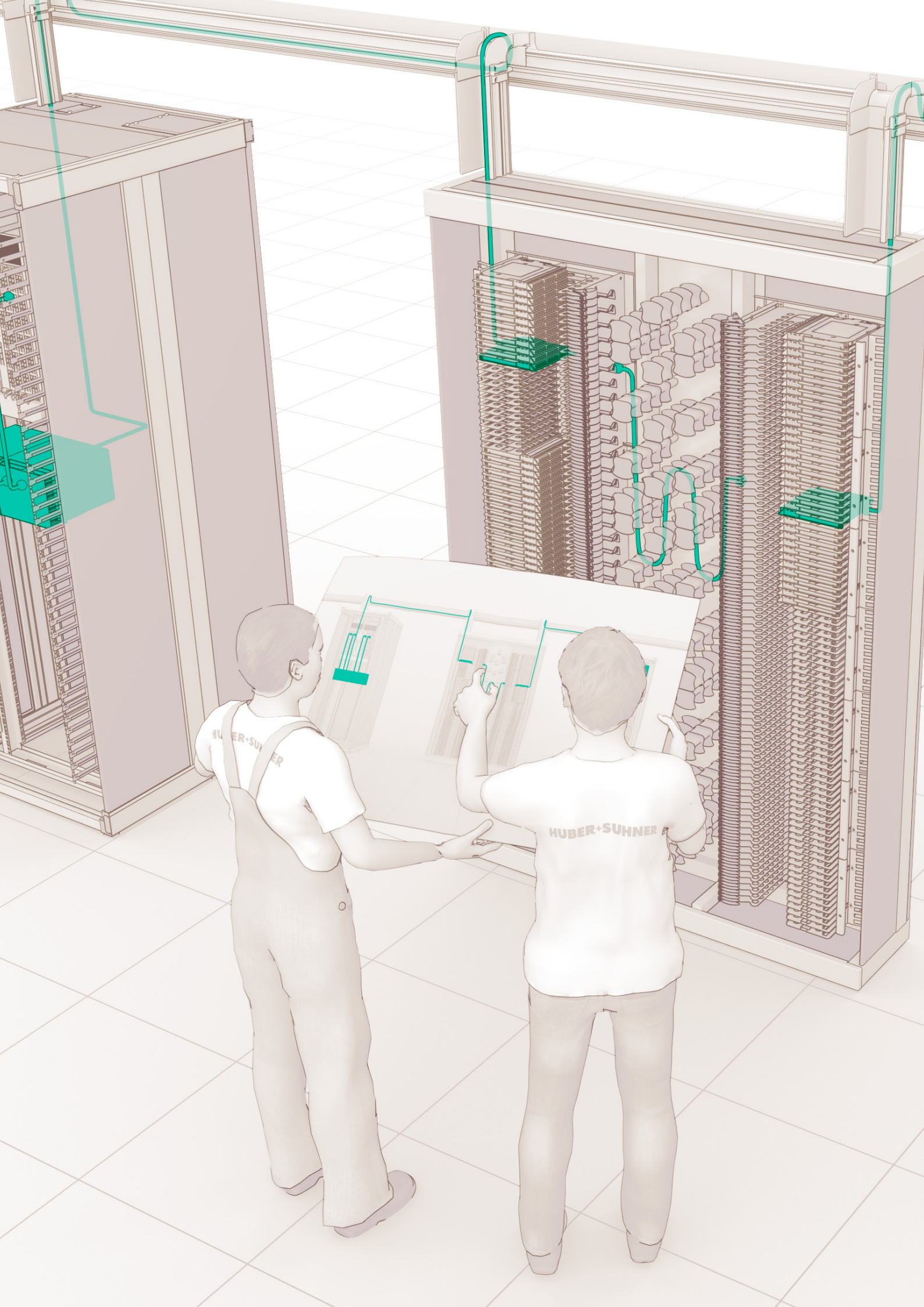
Permanent link
(1) Patch cord, switch side
(2) Module, switch side
(3) Trunk or cable
(4) Module, server side
(5) Patch cord, server side

Cross-connect



Permanent link
(1) Patch cord, switch side
(2) Module, switch side
(3) Trunk or cable
(4) Module in ODF, switch replication
(5) Patch cord, cross-connect

Permanent link
(6) Module in ODF, server replication
(7) Trunk or cable
(8) Module, server side
(9) Patch cord, server side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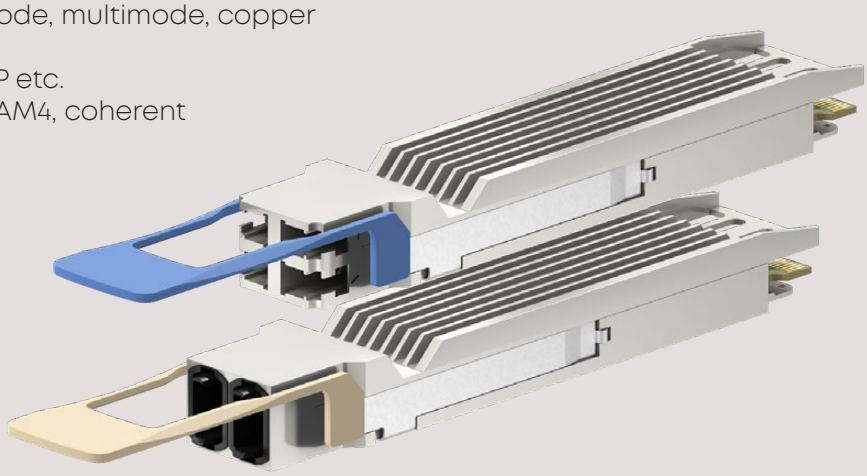
Transceivers



Transceiver overview

Transceiver types

(1) Form factor: QSFP, QSFP28, QSFP-DD, OSFP, SFP+, SFP, XFP; CFP ...
(2) Data rate: 800G 400G, 100G, 40G, 25G, 10G ...
(3) Protocol: Ethernet, Fiber Channel, Infiniband ...
(4) Power Budget: 4 dBm to 50 dBm
(5) Wavelength / WDM Grid: CWDM and DWDM (C14-C60)
(6) Transport media: singlemode, multimode, copper
(7) Coding: Cisco, Juniper ...
(8) Physical interface: LC, MTP etc.
(9) Signal modulation: NRZ, PAM4, coherent



Data center Ethernet transceivers overview

#	Technology	Connector type	Form factor	Duplex or parallel	Number of optical lanes	Speed per lane	Fiber type	Average distance (depends on used fiber)
1	100G	MPO	QSFP28	Parallel	4	25G	MM	100 m
2	100G LR4	LC	QSFP28	Duplex	4	25G	SM	10 km
3	100G LR4 OTU	LC	QSFP28	Duplex	4	25G	SM	10 km
4	100G CWDM4	LC	QSFP28	Duplex	4	25G	SM	2 km
5	100G PSM4	MPO	QSFP28	Parallel	4	25G	SM	2 km
6	100G DR1	LC	QSFP28	Duplex	1	100G	SM	500 m
7	400G DR4	MPO-12	QSFP112	Parallel	4	100G	SM	500 m
8	400G DR4	MPO-12	OSPF 112(flat top)	Parallel	4	100G	SM	500 m
9	800G DR8	2 x MPO-12	OSPF112 (finned top)	Parallel	8	100G	SM	500 m
10	800G DR8	2 x MPO-12	OSPF112 (flat top)	Parallel	8	100G	SM	500 m

Transceivers overview

Popular transceivers and supported cabling deployment methods

100GBase-SR4

`CQM-900A0400xx-85`



1

100GBase-LR4

`CQS-900A0700xx-13`



2

100GBase-LR4 OTU

`CQS-929A0700xx-13`



3

100GBase-CWDM4

`CQS-901A0500xx-13`



4

100GBase-PSM4

`CQS-929A0700xx-13`



5

100GBase-DR1

`CQS-937A0300xx-13`



6

400GBase-DR4

`CQS-110A0300xx-13`



7

400GBase-DR4

`COS-101A0300xx-13`



8

800GBase-DR8

`COS-202A030xx-13`



9

800GBase-DR8

`COS-201A0300xx-13`



10

Transceiver selector

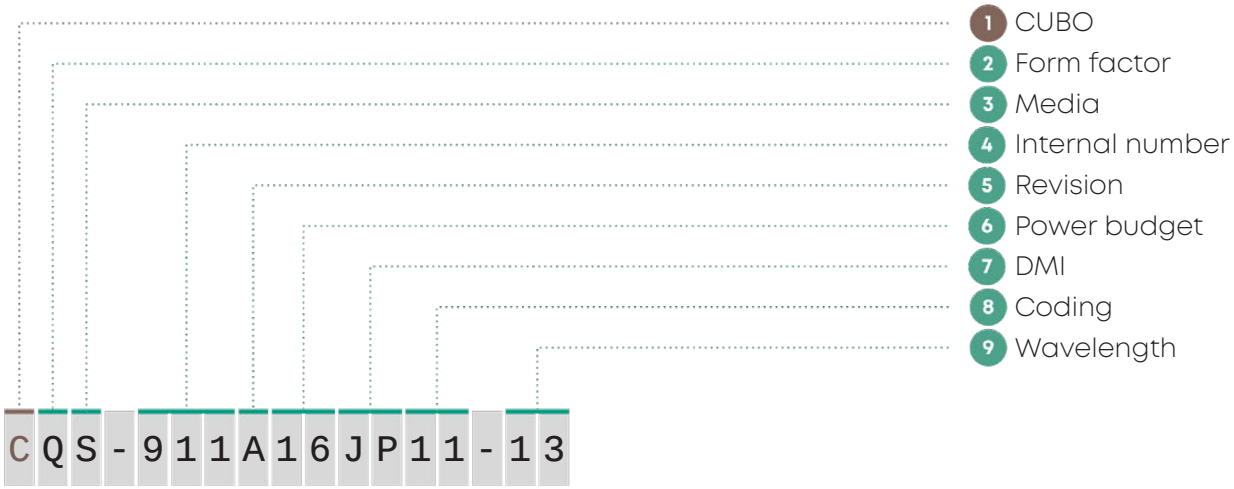
Order code transceivers

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	on request	CQM-900A0400xx-85	100G QSFP28 SR4, MPO, Multimode, 4dB		
2	on request	CQS-900A0700xx-13	100G QSFP28 LR4, LC, Singlemode, 7dB		
3	on request	CQS-929A0700xx-13	100G QSFP28 LR4 OTU, LC, Singlemode, 7dB		
4	on request	CQS-901A0500xx-13	100G QSFP28 CWDM4, LC, Singlemode, 5dB		
5	on request	CQS-929A0700xx-13	100G QSFP28 PSM4, MPO, Singlemode, 7dB		
6	on request	CQS-937A0300xx-13	100G QSFP28 DR1, LC, Singlemode, 3dB		
7	on request	CQS-110A0300xx-13	400G QSFP112 DR4, MPO, Singlemode, 3dB		
8	on request	COS-xxxA0300xx-13	400G OSPF, MPO, Singlemode, 3dB		
9	on request	COS-201A0300xx-13	800G OSPF, 2xMPO12, Singlemode, Finned Top, 3dB		
10	on request	COS-202A0300xx-13	800G OSPF, 2xMPO12, Singlemode, Flat Top, 3dB		



Order code transceivers



2 Form factor

S	SFP, SFP+ or SFP28
X	XFP
C	CFP, CFP2, CFP4 or CFP8
O	OSFP
Q	QSFP+, QSFP28 or QSFP-DD

3 Media

S	Singlemode
M	Multimode
E	Copper
B	Bi-directional(singlemode or multimode)
D	Double density(singlemode or multimode)

4 Internal number

900	Consecutive number to distinguish between transeiver types

5 Revision

A	Revision A

6 Power budget

05	5 dB

7 Diagnostic monitoring

D	Includes DMI functionality

8 Coding

X	various codings, according the table below

AL	Alcatel	ER	Ericsson	NO	Nokia
BR	Brocade	HP	HP	QL	Qlogic
CX	Calix	HU	Huawei	RC	Raisecom
CI	Ciena	IB	IBM	RD	RAD
CO	Cisco	IL	Intel	ZT	ZTE
DL	Dell	IN	Inferna	ZY	Zyxel
EX	Extreme	JP	Juniper		

* other coding available on request

9 Wavelength

85	850 nm
13	1310 nm
15	1550 nm
xx	Channel number for DWDM or middle 2 digits for CWDM wavelength

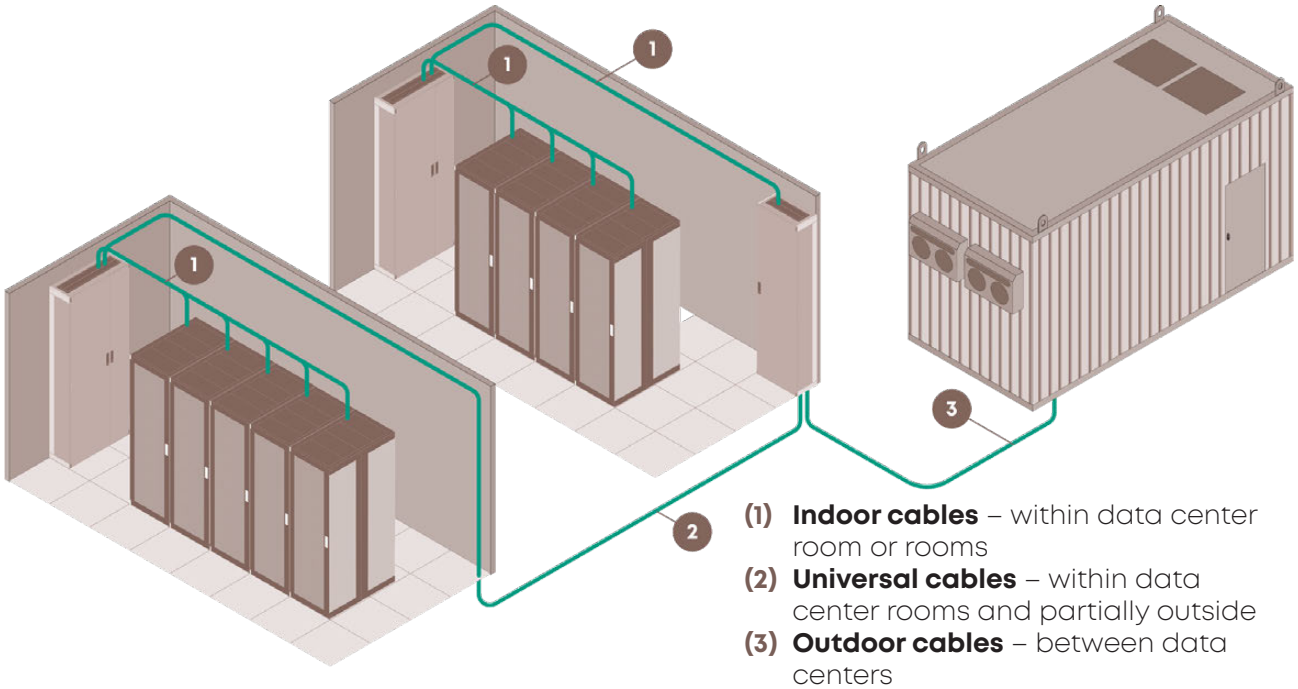


Fiber optic cables



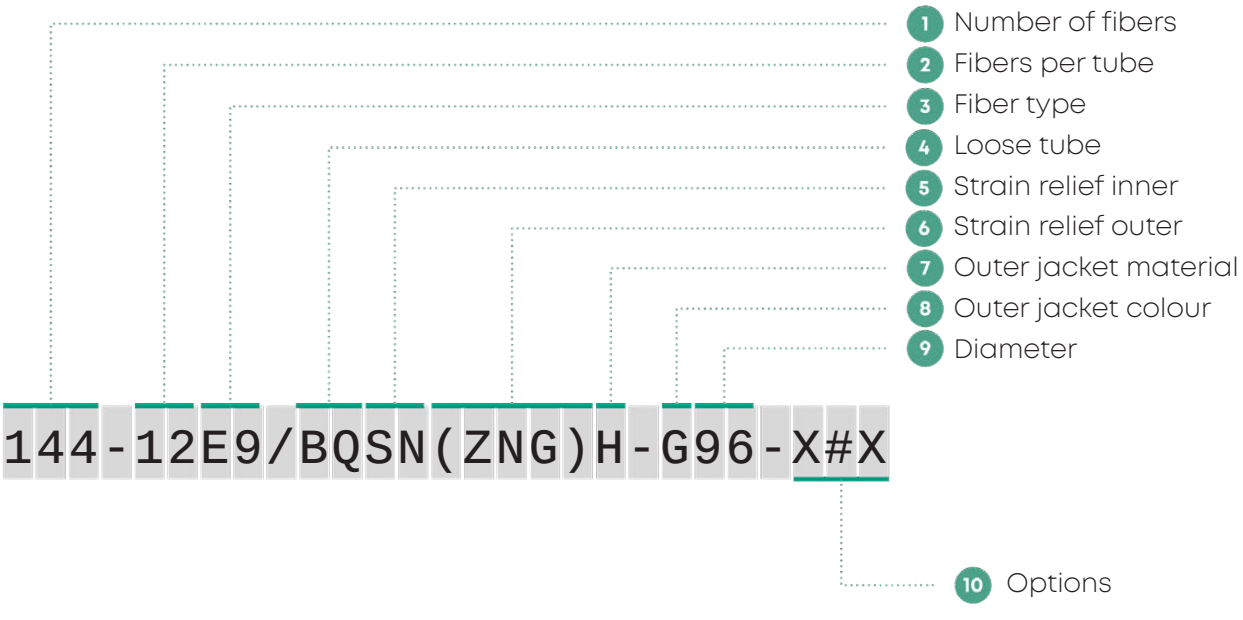
Fiber optic cables overview

Fiber optic cables in data centers



(1) **Indoor cables** – within data center room or rooms
(2) **Universal cables** – within data center rooms and partially outside
(3) **Outdoor cables** – between data centers

Order code fiber optic cables



Order code cables

1 Total number of fibers

XX or XXX	Total number of fibers in a cable Always indicated with two or three digits

2 Number of fibers per tube

08	8 fibers per inner cable or per loose tube	
12	12 fibers per inner cable or per loose tube	
16	16 fibers per inner cable or per loose tube	
24	24 fibers per inner cable or per loose tube	

3 Fiber type

E9	Singlemode fiber 9/125/245 µm
E9A1	Singlemode fiber low-bend 9/125/245 µm A1
E9A2	Singlemode fiber low-bend 9/125/245 µm A2
G50	Multimode fiber 50/125/245 µm

4 Loose tube

__	No loose tube (skip)	
BQ	Mini multifiber loose tube, jelly-free – dry block Ø2.2 mm	
Q	Standard multifiber loose tube, jelly-free – dry block Ø2.8 mm	
BW	Mini multifiber loose tube, jelly-filled – Ø2.2 mm	
W	Standard multifiber loose tube, jelly-filled – Ø2.8 mm	

5 Strain relief inner

__	No strain relief (skip)
SN	Central strength member, non-metallic

6 Strain relief outer

(ZN)	Strain-relief, non-metallic (aramide)
(ZNG)	Glass roving for strain relief/rodent protection

7 Outer jacket material

H	Outer jacket material LSFH™
HH	Outer jacket material of inner and outer cable – material LSFH™
SNH	Outer jacket material LSFH™ with strength member
HAH	Outer jacket material of inner and outer – LSFH™ with steel wire armouring
Y	Outer jacket material PE (LD-PE)
V	Outer jacket material PE (HD-PE)
YAY	Outer jacket material or inner and outer – PE (LD-PE) with steel wire armouring
VAV	Outer jacket material or inner and outer – PE (HD-PE) with steel wire armouring

8 Outer jacket colour

E		Yellow
L		Heather violet
G		Black
Z		Black with orange stripes

9 Diameter

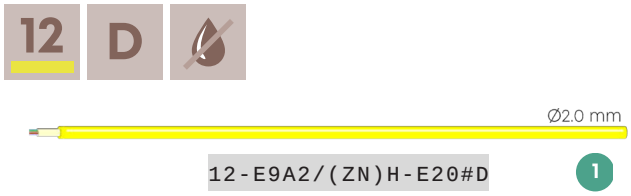
XXX	Diameter of the cable (1/10mm), e.g.
49	Ø4.9 mm
150	Ø15.0 mm

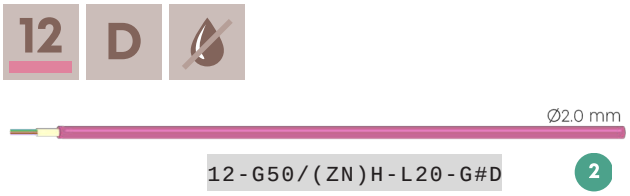
10 Options

G		OM4 fiber 3500/500 MHz x km
UR		UL-listed OFNR: Riser cable UL1666
#B	B	
#C	C	
#D	D	
#E	E	

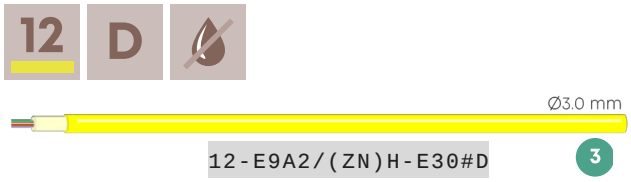
Go to external document/link

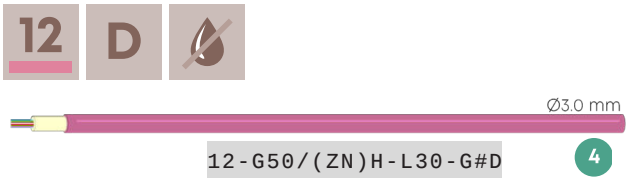
Non-ruggedised patch cable



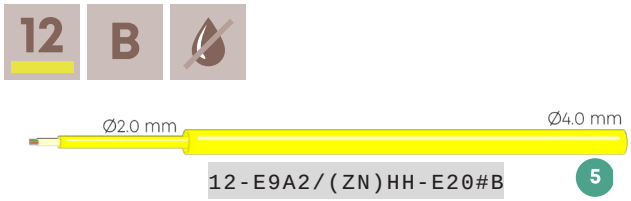


Ruggedised trunk cable



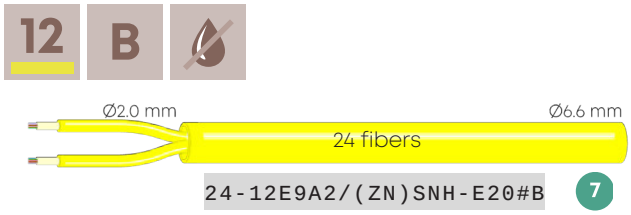


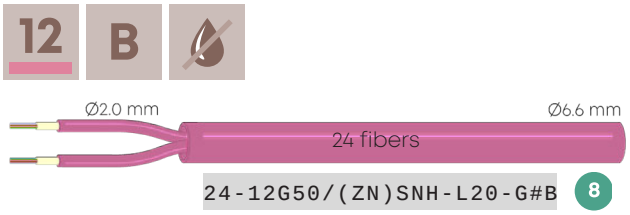
Double jacket trunk cable

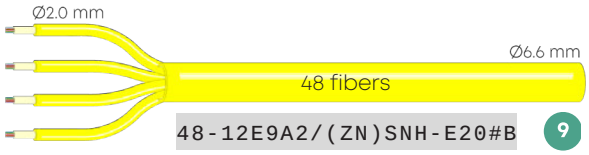


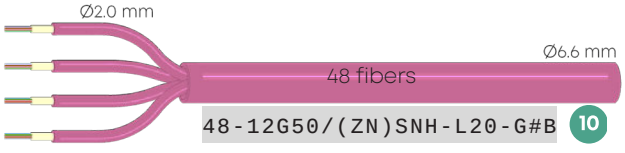


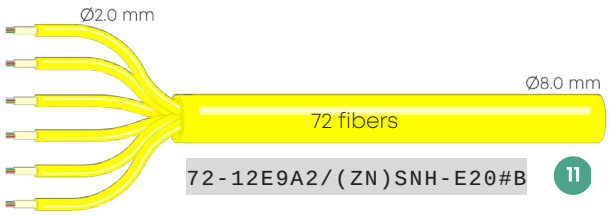
Breakout cables

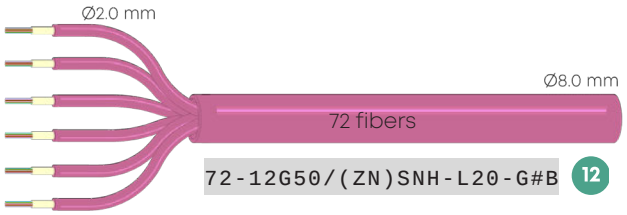




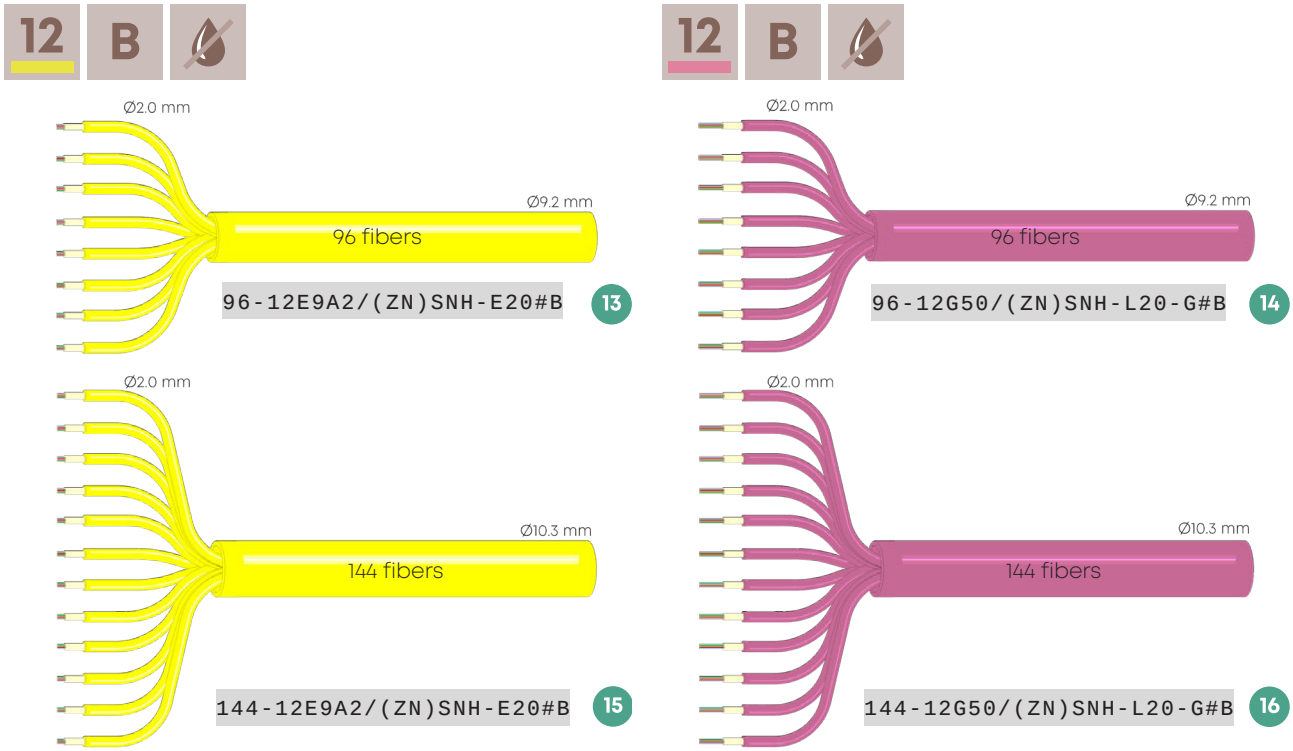








Breakout cables



Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85065690	12-E9A2/(ZN)H-E20#D	Optipack non-ruggedised patch cable Ø2.0 mm, 12xSM G.657.A2, LSFH Yellow, CPR D	★	
2	85068194	12-G50/(ZN)H-L20-G#D	Optipack non-ruggedised patch cable Ø2.0 mm, 12xOM4, LSFH Heather violet, CPR D	★	
3	84138650	12-E9A2/(ZN)H-E30#D	Optipack ruggedised trunk cable Ø3.0 mm, 12xSM G.657.A2, LSFH Yellow, CPR D	★	
4	84144927	12-G50/(ZN)H-L30-G#D	Optipack ruggedised trunk cable Ø3.0 mm, 12xOM4, LSFH Heather violet, CPR D	★	
5	85137705	12-E9A2/(ZN)HH-E20#B	Optipack double jacket trunk cable Ø4.0 mm, 12xSM G.657.A2, LSFH Yellow, CPR B	★	
6	85120659	12-G50/(ZN)HH-L20-G#B	Optipack double jacket trunk cable Ø4.0 mm, 12xOM4, LSFH Heather violet, CPR B	★	
7	85092254	24-12E9A2/(ZN)SNH-E20#B	Optipack breakout cable Ø6.6 mm / 2.0 mm, 24xSM G.657.A2, LSFH Yellow, CPR B	★	
8	85093504	24-12G50/(ZN)SNH-L20-G#B	Optipack breakout cable Ø6.6 mm / 2.0 mm, 24xOM4, LSFH Heather violet, CPR B	★	
9	85089314	48-12E9A2/(ZN)SNH-E20#B	Optipack breakout cable Ø6.6 mm / 2.0 mm, 48xSM G.657.A2, LSFH Yellow, CPR B	★	
10	85092256	48-12G50/(ZN)SNH-L20-G#B	Optipack breakout cable Ø6.6 mm / 2.0 mm, 48xOM4, LSFH Heather violet, CPR B	★	
11	85092006	72-12E9A2/(ZN)SNH-E20#B	Optipack breakout cable Ø8.0 mm / 2.0 mm, 72xSM G.657.A2, LSFH Yellow, CPR B	★	
12	85111308	72-12G50/(ZN)SNH-L20-G#B	Optipack breakout cable Ø8.0 mm / 2.0 mm, 72xOM4, LSFH Heather violet, CPR B	★	
13	85092007	96-12E9A2/(ZN)SNH-E20#B	Optipack breakout cable Ø9.2 mm / 2.0 mm, 96xSM G.657.A2, LSFH Yellow, CPR B	★	
14	85112192	96-12G50/(ZN)SNH-L20-G#B	Optipack breakout cable Ø9.2 mm / 2.0 mm, 96xOM4, LSFH Heather violet, CPR B	★	
15	85089316	144-12E9A2/(ZN)SNH-E20#B	Optipack breakout cable Ø10.3 mm / 2.0 mm, 144xSM G.657.A2, LSFH Yellow, CPR B	★	
16	85092017	144-12G50/(ZN)SNH-L20-G#B	Optipack breakout cable Ø10.3 mm / 2.0 mm, 144xOM4, LSFH Heather violet, CPR B	★	

Non-ruggedised patch cable



24-E9A2/(ZN)H-E30#D 1

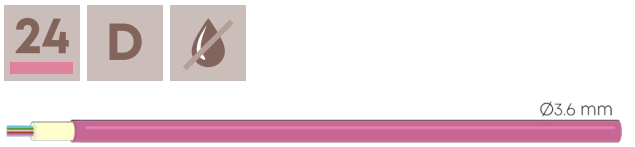


24-G50/(ZN)H-L30-G#D 2

Ruggedised trunk cable



24-E9A2/(ZN)H-E36#D 3



24-G50/(ZN)H-L36-G#D 4

Double jacket trunk cable



24-E9A2/(ZN)HH-E30#B 5



24-G50/(ZN)HH-L30-G#B 6

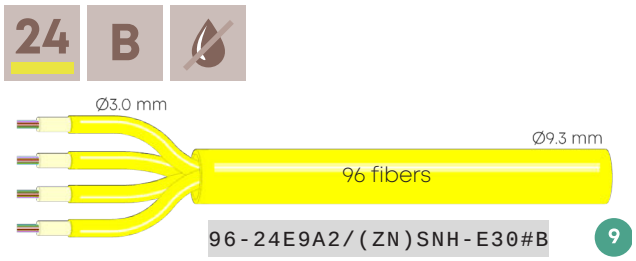


24-E9A2/(ZN)HH-E30#C 7

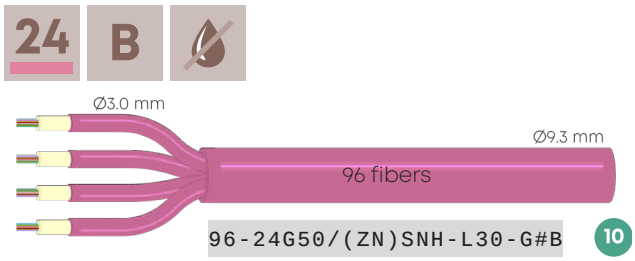


24-G50/(ZN)HH-L30-G#C 8

Breakout cables

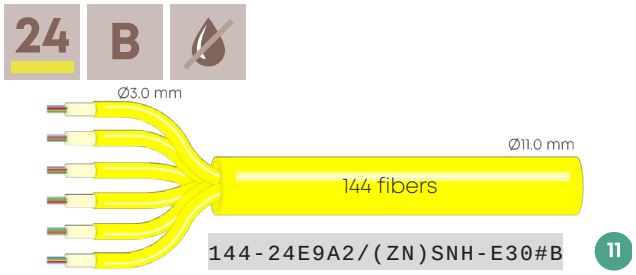


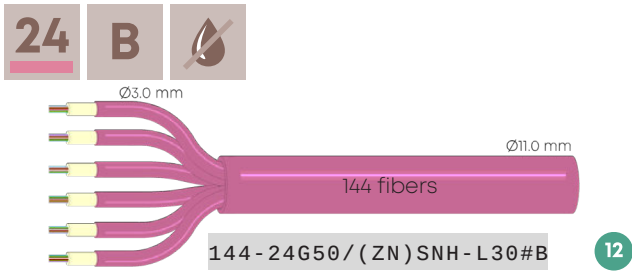
96-24E9A2/(ZN)SNH-E30#B 9

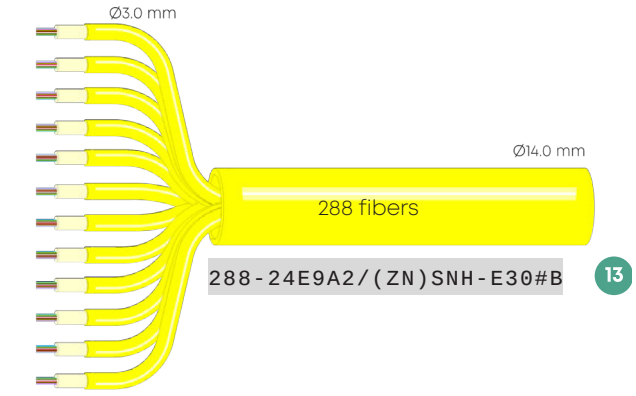


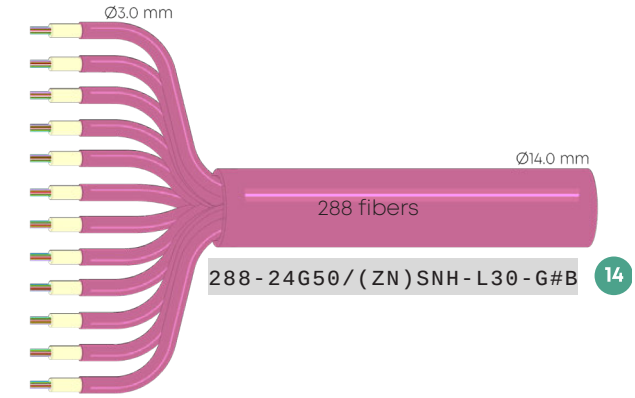
96-24G50/(ZN)SNH-L30-G#B 10

Breakout cables









Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85067999	24-E9A2/(ZN)H-E30#D	Optipack non-ruggedised patch cable Ø3.0 mm, 24xSM, G.657.A2, LSFH Yellow, CPR D	★	
2	85068196	24-G50/(ZN)H-L30-G#D	Optipack non-ruggedised patch cable Ø3.0 mm, 24xOM4, LSFH Heather violet, CPR D	★	
3	85001254	24-E9A2/(ZN)H-E36#D	Optipack ruggedised trunk cable Ø3.6 mm, 24xSM G.657.A2, LSFH Yellow, CPR D	★	
4	85001256	24-G50/(ZN)H-L36-G#D	Optipack ruggedised trunk cable Ø3.6 mm, 24xOM4, LSFH Heather violet, CPR D	★	
5	85102544	24-E9A2/(ZN)HH-E30#B	Optipack double jacket trunk cable Ø4.9 mm, 24xSM G.657.A2, LSFH Yellow, CPR B	★	
6	85103329	24-G50/(ZN)HH-L30-G#B	Optipack double jacket trunk cable Ø4.9 mm, 24xOM4, LSFH Heather violet, CPR B	★	
7	85114654	24-E9A2/(ZN)HH-E30#C	Optipack double jacket trunk cable Ø4.9 mm, 24xSM G.657.A2, LSFH Yellow, CPR C	★	
8	85114655	24-G50/(ZN)HH-L30-G#C	Optipack double jacket trunk cable Ø4.9 mm, 24xOM4, LSFH Heather violet, CPR C	★	
9	85089597	96-24E9A2/(ZN)SNH-E30#B	Optipack breakout cable Ø9.3 mm / 3.0 mm, 96xSM G.657.A2, LSFH Yellow, CPR B	★	
10	85096647	96-24G50/(ZN)SNH-L30-G#B	Optipack breakout cable Ø9.3 mm / 3.0 mm, 96xOM4, LSFH Heather violet, CPR B		
11	85092021	144-24E9A2/(ZN)SNH-E30#B	Optipack breakout cable Ø10.8 mm / 3.0 mm, 144xSM G.657.A2, LSFH Yellow, CPR B		
12	on request	144-24G50/(ZN)SNH-L30#B	Optipack breakout cable Ø10.8 mm / 3.0 mm, 144xOM4, LSFH Heather violet, CPR B		
13	85089610	288-24E9A2/(ZN)SNH-E30#B	Optipack breakout cable Ø14.0 mm / 3.0 mm, 288xSM G.657.A2, LSFH Yellow, CPR B		
14	85096655	288-24G50/(ZN)SNH-L30-G#B	Optipack breakout cable Ø14.0 mm / 3.0 mm, 288xOM4, LSFH Heather violet, CPR B		

Optipack universal breakout cable



24-12E9A2/(ZN)SN(ZNG)H-G20#C 1



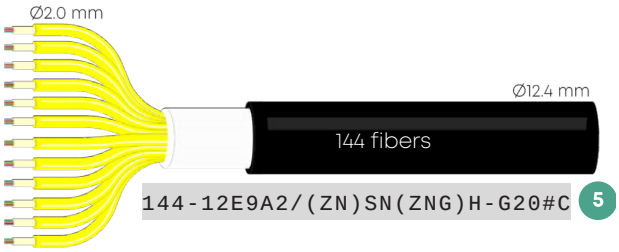
48-12E9A2/(ZN)SN(ZNG)H-G20#C 2



72-12E9A2/(ZN)SN(ZNG)H-G20#C 3



96-12E9A2/(ZN)SN(ZNG)H-G20#C 4



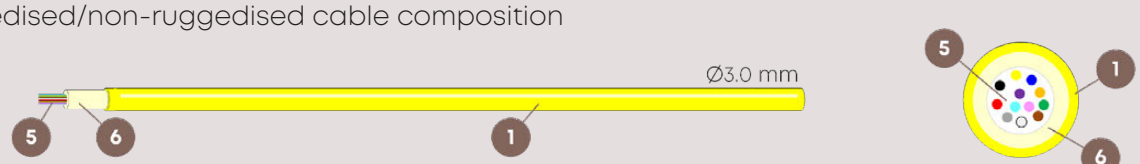
144-12E9A2/(ZN)SN(ZNG)H-G20#C 5

Ordering information

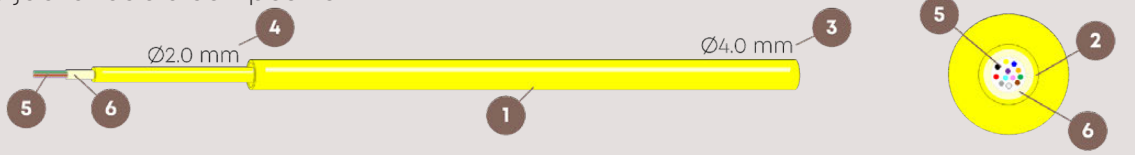
#	Item number	Descriptive code	Item text	LT	URL
1	on request	24-12E9A2/(ZN)SN(ZNG)H-G20#C	Optipack universal breakout cable Ø8.8 mm / 2.0 mm, 24xSM G.657.A2, LSFH Black, CPR C		
2	85137891	48-12E9A2/(ZN)SN(ZNG)H-G20#C	Optipack universal breakout cable Ø9.8 mm / 2.0 mm, 48xSM G.657.A2, LSFH Black, CPR C		
3	85137977	72-12E9A2/(ZN)SN(ZNG)H-G20#C	Optipack universal breakout cable Ø10.8 mm / 2.0 mm, 72xSM G.657.A2, LSFH Black, CPR C		
4	85137978	96-12E9A2/(ZN)SN(ZNG)H-G20#C	Optipack universal breakout cable Ø11.9 mm / 2.0 mm, 96xSM G.657.A2, LSFH Black, CPR C		
5	85117733	144-12E9A2/(ZN)SN(ZNG)H-G20#C	Optipack universal breakout cable Ø12.4 mm / 2.0 mm, 144xSM G.657.A2, LSFH Black, CPR C		

Cable system variations based on Optipack cables

Ruggedised/non-ruggedised cable composition

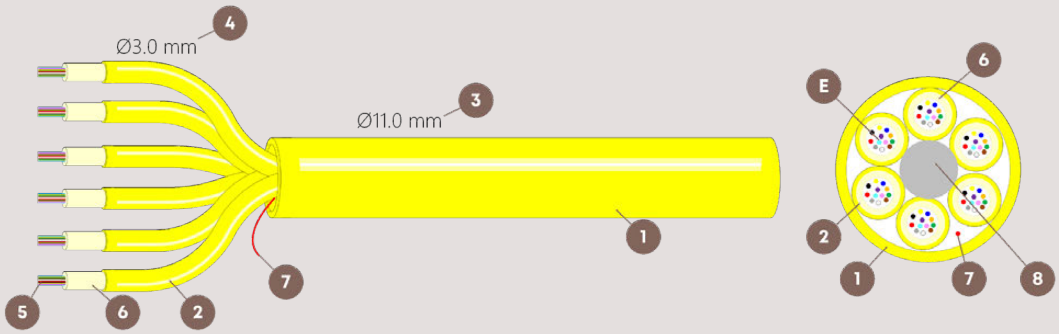


Double jacket cable composition



MTP assemblies ↗ | **Optipack harness** ↗ | **Optipack module** ↗

Breakout / universal breakout cables

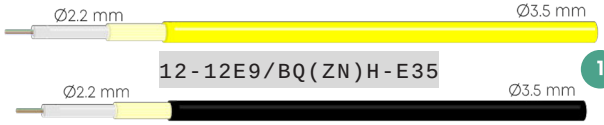


Optipack trunk ↗ | **Optipack Medusa** ↗

(1) Outer cable
(2) Inner cables
(3) Diameter of outer cable
(4) Diameter of inner cable
(5) Bundle of 12 or 24 fibers
(6) Aramide yarns
(7) Ripcord, allows to remove outer jacket
(8) Central strength element

Non-armoured, mini loose tube

12



12-12E9/BQ(ZN)H-E35 — 1

12-12E9/BQ(ZN)H-G35 — 2

12



12-12G50/BQ(ZN)H-L35-G — 3

Non-armoured, standard loose tube

12



12-12E9/Q(ZN)H-E50 — 4

24



24-24E9/Q(ZN)H-E50 — 6

12



12-12G50/Q(ZN)H-L50-G — 5

24



24-24G50/Q(ZN)H-L50-G — 7

Glass-armoured, standard loose tube

12 D UL



12-12E9/Q(ZNG)H-G70#D — 8

12-12E9A2/Q(ZNG)H-G70#D

12-12E9A2/Q(ZNG)LH-G70-UR

12 D UL



12-12G50/Q(ZNG)H-G70-G#D — 9

12-12G50/Q(ZNG)H-G70-G-UR

12 C



12-12E9/Q(ZNG)H-E70#C — 10

12 C



12-12G50/Q(ZNG)H-L70-G#C — 11

24 D



24-24E9/Q(ZNG)H-G70#D — 12

24-24E9A2/Q(ZNG)H-G70#D

24 C



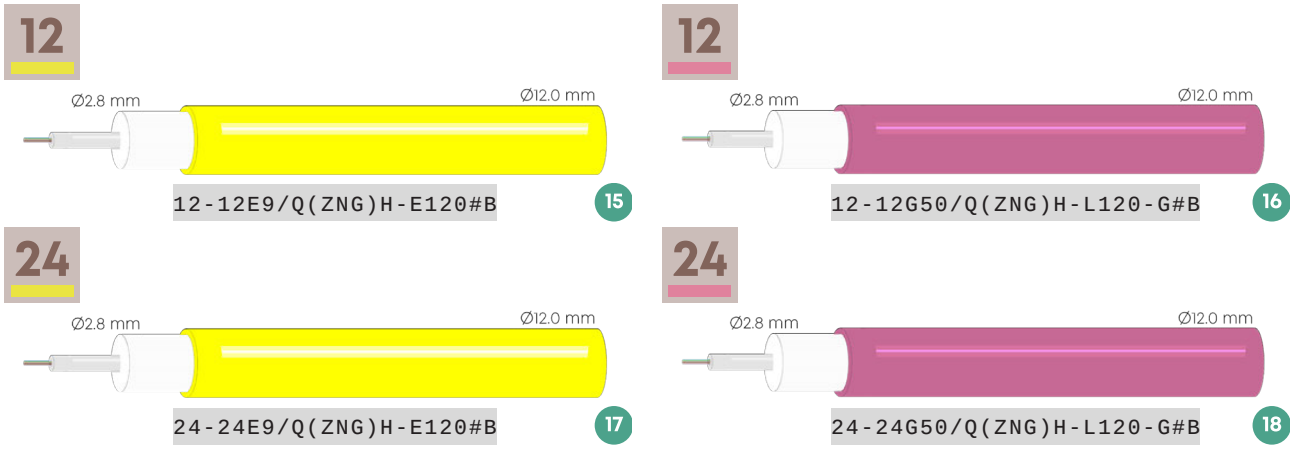
24-24E9/Q(ZNG)H-E70#C — 13

24 C



24-24G50/Q(ZNG)H-L70-G#C — 14

Glass-armoured, standard loose tube



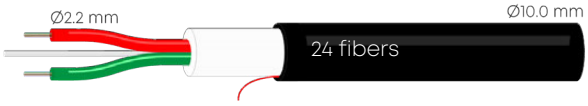
Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	84097664	12-12E9/BQ(ZN)H-E35	Jelly-free non-armoured cable Ø3.5 mm, 12xSM G.652.D, loose tube 2.2 mm, LSFH Yellow, not rated		
2	84078243	12-12E9/BQ(ZN)H-G35	Jelly-free non-armoured cable Ø3.5 mm, 12xSM G.652.D, loose tube 2.2 mm, LSFH Black, not rated		
3	84121860	12-12G50/BQ(ZN)H-L35-G	Jelly-free non-armoured cable Ø3.5 mm, 12xOM4, loose tube 2.2 mm, LSFH Heather violet, not rated		
4	22523600	12-12E9/Q(ZN)H-E50	Jelly-free non-armoured cable Ø5.0 mm, 12xSM G.652.D, loose tube 2.8 mm, LSFH Yellow, not rated		
5	85017189	12-12G50/Q(ZN)H-L50-G	Jelly-free non-armoured cable Ø5.0 mm, 12xOM4, loose tube 2.8 mm, LSFH Heather violet, not rated		
6	85030580	24-24E9/Q(ZN)H-E50	Jelly-free non-armoured cable Ø5.0 mm, 24xSM G.652.D, loose tube 2.8 mm, LSFH Yellow, not rated		
7	85030583	24-24G50/Q(ZN)H-L50-G	Jelly-free non-armoured cable Ø5.0 mm, 24xOM4, loose tube 2.8 mm, LSFH Heather violet, not rated		
8	85020587	12-12E9/Q(ZNG)H-G70#D	Jelly-free glass-armoured cable Ø7.0 mm, 12xSM G.652.D, loose tube 2.8 mm, LSFH Black, CPR D		
	85008099	12-12E9A2/Q(ZNG)H-G70#D	Jelly-free glass-armoured cable Ø7.0 mm, 12xSM G.657.A2, loose tube 2.8 mm, LSFH Black, CPR D		
	85026736	12-12E9A2/Q(ZNG)LH-G70-UR	Jelly-free glass-armoured cable Ø7.0 mm, anti-rodent, 12xSM G.657.A2, loose tube 2.8 mm, LSFH Black, UL rating		
9	85026278	12-12G50/Q(ZNG)H-G70-G#D	Jelly-free glass-armoured cable Ø7.0 mm, 12xOM4, loose tube 2.8 mm, LSFH Black, CPR D		
	85026739	12-12G50/Q(ZNG)H-G70-G-UR	Jelly-free glass-armoured cable Ø7.0 mm, 12xOM4, loose tube 2.8 mm, LSFH Black, UL rating		
10	85103602	12-12E9/Q(ZNG)H-E70#C	Jelly-free glass-armoured cable Ø7.0 mm, 12xSM G.652.D, loose tube 2.8 mm, LSFH Yellow, CPR C		
11	85103604	12-12G50/Q(ZNG)H-L70-G#C	Jelly-free glass-armoured cable Ø7.0 mm, 12xOM4, loose tube 2.8 mm, LSFH Heather violet, CPR C		
12	85030630	24-24E9/Q(ZNG)H-G70#D	Jelly-free glass-armoured cable Ø7.0 mm, 24xSM G.652.D, loose tube 2.8 mm, LSFH Black, CPR D		
	85029988	24-24E9A2/Q(ZNG)H-G70#D	Jelly-free glass-armoured cable Ø7.0 mm, 24xSM G.657.A2, loose tube 2.8 mm, LSFH Black, CPR D		
13	85103605	24-24E9/Q(ZNG)H-E70#C	Jelly-free glass-armoured cable Ø7.0 mm, 24xSM G.652.D, loose tube 2.8 mm, LSFH Yellow, CPR C		
14	85103607	24-24G50/Q(ZNG)H-L70-G#C	Jelly-free glass-armoured cable Ø7.0 mm, 24xOM4, loose tube 2.8 mm, LSFH Heather violet, CPR C		
15	85078322	12-12E9/Q(ZNG)H-E120#B	Jelly-free glass-armoured cable Ø12.0 mm, 12xSM G.652.D, loose tube 2.8 mm, LSFH Yellow, CPR B		
16	85091346	12-12G50/Q(ZNG)H-L120-G#B	Jelly-free glass-armoured cable Ø12.0 mm, 12xOM4, loose tube 2.8 mm, LSFH Heather violet, CPR B		
17	85091343	24-24E9/Q(ZNG)H-E120#B	Jelly-free glass-armoured cable Ø12.0 mm, 24xSM G.652.D, loose tube 2.8 mm, LSFH Yellow, CPR B		
18	85091347	24-24G50/Q(ZNG)H-L120-G#B	Jelly-free glass-armoured cable Ø12.0 mm, 24xOM4, loose tube 2.8 mm, LSFH Heather violet, CPR B		

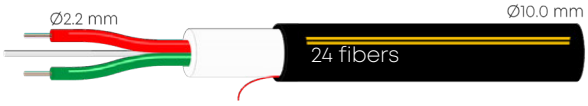
Jelly-free, multifiber loose tube CPR C

Glass-armoured, mini loose tube, 24 fibers

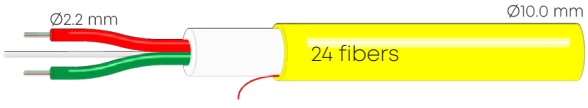
12



24-12E9/BQSN(ZNG)H-G100#C 1

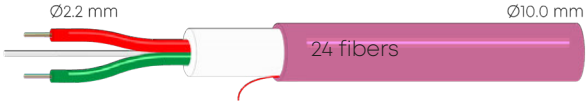


24-12E9/BQSN(ZNG)H-Z100#C 2



24-12E9/BQSN(ZNG)H-E100#C 3

12



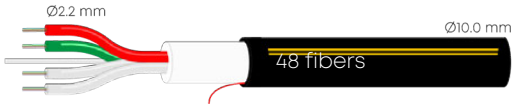
24-12G50/BQSN(ZNG)H-L100-G#C 4

Glass-armoured, mini loose tube, 48 fibers

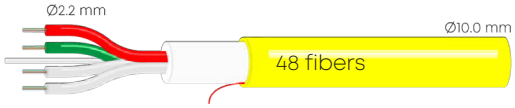
12



48-12E9/BQSN(ZNG)H-G100#C 5

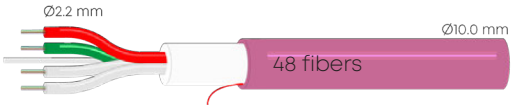


48-12E9/BQSN(ZNG)H-Z100#C 6



48-12E9/BQSN(ZNG)H-E100#C 7

12



48-12G50/BQSN(ZNG)H-L100-G#C 8

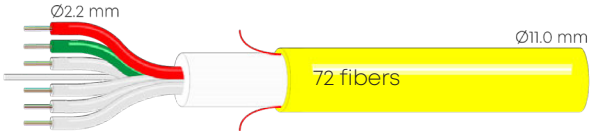
Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85118114	24-12E9/BQSN(ZNG)H-G100#C	Jelly-free glass-armoured cable Ø10.0 mm, 24xSM G.652.D, LT 2.2 mm, LSFH Black, CPR C		
2	85128546	24-12E9/BQSN(ZNG)H-Z100#C	Jelly-free glass-armoured cable Ø10.0 mm, 24xSM G.652.D, LT 2.2 mm, LSFH Black/orange, CPR C		
3	85115193	24-12E9/BQSN(ZNG)H-E100#C	Jelly-free glass-armoured cable Ø10.0 mm, 24xSM G.652.D, LT 2.2 mm, LSFH Yellow, CPR C		
4	85115194	24-12G50/BQSN(ZNG)H-L100-G#C	Jelly-free glass-armoured cable Ø10.0 mm, 24xOM4, LT 2.2 mm, LSFH Heather violet, CPR C		
5	85103930	48-12E9/BQSN(ZNG)H-G100#C	Jelly-free glass-armoured cable Ø10.0 mm, 48xSM G.652.D, LT 2.2 mm, LSFH Black, CPR C		
6	85137884	48-12E9/BQSN(ZNG)H-Z100#C	Jelly-free glass-armoured cable Ø10.0 mm, 48xSM G.652.D, LT 2.2 mm, LSFH Black/orange, CPR C		
7	85115191	48-12E9/BQSN(ZNG)H-E100#C	Jelly-free glass-armoured cable Ø10.0 mm, 48xSM G.652.D, LT 2.2 mm, LSFH Yellow, CPR C		
8	85115192	48-12G50/BQSN(ZNG)H-L100-G#C	Jelly-free glass-armoured cable Ø10.0 mm, 48xOM4, LT 2.2 mm, LSFH Heather violet, CPR C		

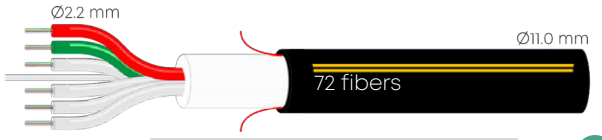
Glass-armoured, mini loose tube



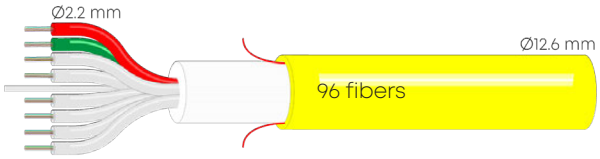
72-12E9/BQSN(ZNG)H-G110#C 1



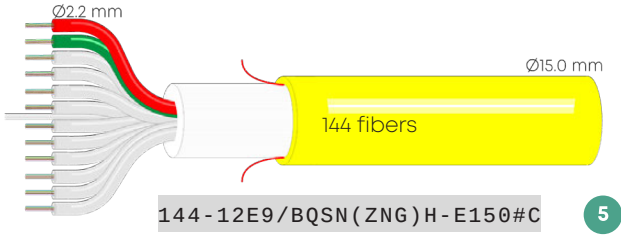
72-12E9/BQSN(ZNG)H-E110#C 3



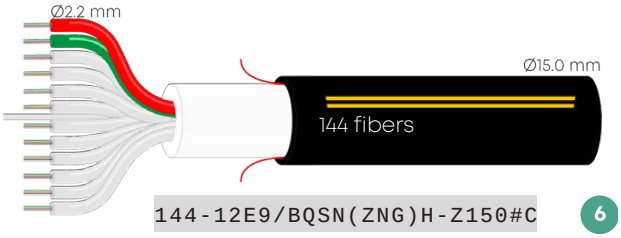
72-12E9/BQSN(ZNG)H-Z110#C 2



96-12E9/BQSN(ZNG)H-E126#C 4



144-12E9/BQSN(ZNG)H-E150#C 5



144-12E9/BQSN(ZNG)H-Z150#C 6

Ordering information

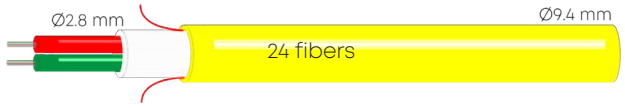
#	Item number	Descriptive code	Item text	LT	URL
1	85125938	72-12E9/BQSN(ZNG)H-G110#C	Jelly-free glass-armoured cable Ø11.0 mm, 72xSM G.652.D, LT 2.2 mm, LSFH Black, CPR C		
2	85125547	72-12E9/BQSN(ZNG)H-Z110#C	Jelly-free glass-armoured cable Ø11.0 mm, 72xSM G.652.D, LT 2.2 mm, LSFH Black/orange, CPR C		
3	85112820	72-12E9/BQSN(ZNG)H-E110#C	Jelly-free glass-armoured cable Ø11.0 mm, 72xSM G.652.D, loose tube 2.2 mm, LSFH Yellow, CPR C		
4	85112821	96-12E9/BQSN(ZNG)H-E126#C	Jelly-free glass-armoured cable Ø12.6 mm, 96xSM G.652.D, LT 2.2 mm, LSFH Yellow, CPR C		
5	85112819	144-12E9/BQSN(ZNG)H-E150#C	Jelly-free glass-armoured cable Ø15.0 mm, 144xSM G.652.D, LT 2.2 mm, LSFH Yellow, CPR C		
6	85127962	144-12E9/BQSN(ZNG)H-Z150#C	Jelly-free glass-armoured cable Ø15.0 mm, 144xSM G.652.D, LT 2.2 mm, LSFH Black/orange, CPR C		

Jelly-free, multifiber loose tube

Glass-armoured, standard loose tube, TWINTUBE, 24 fiber

D

12



24-12E9/Q(ZNG)H-E94#D 1

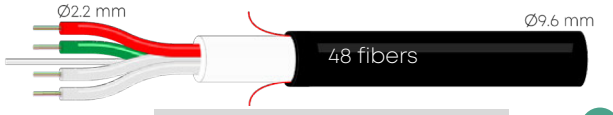
12



24-12G50/Q(ZNG)H-L94-G#D 2

Glass-armoured, mini loose tube

12 D



48-12E9/BQSN(ZNG)H-G96#D 3



48-12E9/BQSN(ZNG)H-E96#D 4

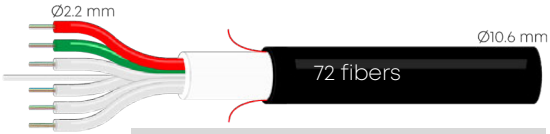
12 D



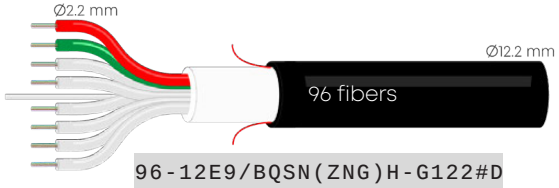
48-12G50/BQSN(ZNG)H-L96-G#D 5



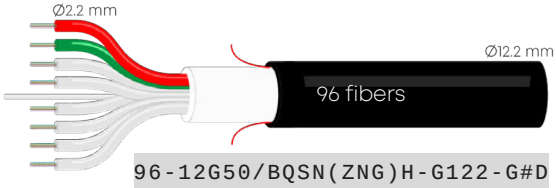
72-12E9/BQSN(ZNG)H-G106#D 6



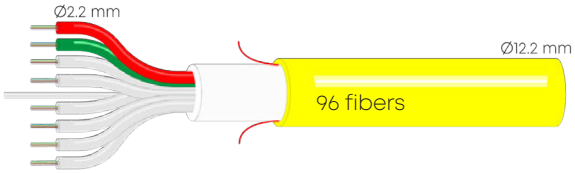
72-12G50/BQSN(ZNG)H-G106-G#D 7



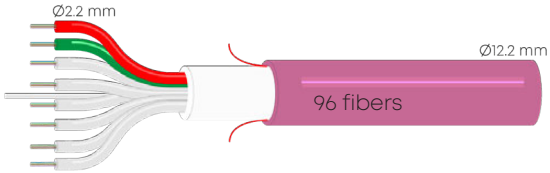
96-12E9/BQSN(ZNG)H-G122#D 8



96-12G50/BQSN(ZNG)H-G122-G#D 9

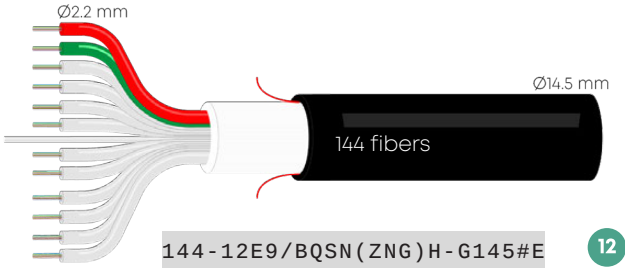


96-12E9/BQSN(ZNG)H-E122#D 10



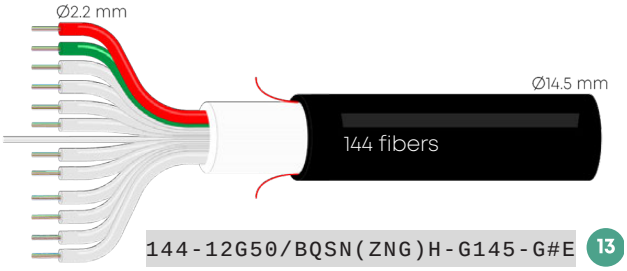
96-12G50/BQSN(ZNG)H-L122-G#D 11

12 E



144-12E9/BQSN(ZNG)H-G145#E 12

12 E



144-12G50/BQSN(ZNG)H-G145-G#E 13

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85085349	24-12E9/Q(ZNG)H-E94#D	Jelly-free glass-armoured TWINTUBE cable Ø9.4 mm, 24xSM G.652.D, loose tube 2.2 mm, LSFH Yellow, CPR D	★	
2	85085351	24-12G50/Q(ZNG)H-L94-G#D	Jelly-free glass-armoured TWINTUBE cable Ø9.4 mm, 24xOM4, loose tube 2.2 mm, LSFH Heather violet, CPR D	★	
3	85065362	48-12E9/BQSN(ZNG)H-G96#D	Jelly-free glass-armoured cable Ø9.6 mm, 48xSM G.652.D, loose tube 2.2 mm, LSFH Black, CPR D	★	
4	85087167	48-12E9/BQSN(ZNG)H-E96#D	Jelly-free glass-armoured cable Ø9.6 mm, 48xSM G.652.D, loose tube 2.2 mm, LSFH Yellow, CPR D	★	
5	85087169	48-12G50/BQSN(ZNG)H-L96-G#D	Jelly-free glass-armoured cable Ø9.6 mm, 48xOM4, loose tube 2.2 mm, LSFH Heather violet, CPR D	★	
6	85065360	72-12E9/BQSN(ZNG)H-G106#D	Jelly-free glass-armoured cable Ø10.6 mm, 72xSM G.652.D, loose tube 2.2 mm, LSFH Black, CPR D	◕	
7	85065361	72-12G50/BQSN(ZNG)H-G106-G#D	Jelly-free glass-armoured cable Ø10.6 mm, 72xOM4, loose tube 2.2 mm, LSFH Black, CPR D	◕	
8	85064348	96-12E9/BQSN(ZNG)H-G122#D	Jelly-free glass-armoured cable Ø12.2 mm, 96xSM G.652.D, loose tube 2.2 mm, LSFH Black, CPR D	◕	
9	85065359	96-12G50/BQSN(ZNG)H-G122-G#D	Jelly-free glass-armoured cable Ø12.2 mm, 96xOM4, loose tube 2.2 mm, LSFH Black, CPR D	◕	
10	85071047	96-12E9/BQSN(ZNG)H-E122#D	Jelly-free glass-armoured cable Ø12.2 mm, 96xSM G.652.D, loose tube 2.2 mm, LSFH Yellow, CPR D	◕	
11	85080531	96-12G50/BQSN(ZNG)H-L122-G#D	Jelly-free glass-armoured cable Ø12.2 mm, 96xOM4, loose tube 2.2 mm, LSFH Heather violet, CPR D	◕	
12	85030405	144-12E9/BQSN(ZNG)H-G145#E	Jelly-free glass-armoured cable Ø14.5 mm, 144xSM G.652.D, loose tube 2.2 mm, LSFH Black, CPR E	★	
13	85064347	144-12G50/BQSN(ZNG)H-G145-G#E	Jelly-free glass-armoured cable Ø14.5 mm, 144xOM4, loose tube 2.2 mm, LSFH Black, CPR E	◕	

Jelly-filled, single loose tube

Non-armoured, mini loose tube

12



12-12E9/BW(ZN)H-G35 1

Non-armoured, standard loose tube

12



12-12E9A1/W(ZN)H-G50 2

Glass-armoured, standard loose tube

12 UL D



12-12E9/W(ZNG)H-G70#D 3



12-12E9/W(ZNG)H-G85#D 4

12 D



12-12G50/W(ZNG)H-G85-G#D 5



12-12G50/W(ZNG)H-L85-G#D 6



12-12E9/W(ZNG)H-Z120 7

Steel-armoured, standard loose tube

12



12-12E9/W(ZN)HAH-G80 8

Non-armoured, standard loose tube



24-24E9A1/W(ZN)H-G50 9

Glass-armoured, standard loose tube



24-24E9/W(ZNG)H-G70#D 10



24-24E9/W(ZNG)H-G85#D 11

24-24E9/W(ZNG)H-G85-UR



24-24G50/W(ZNG)H-G85-G#D 12

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	84041870	12-12E9/BW(ZN)H-G35	Jelly-filled non-armoured cable Ø3.5 mm, 12xSM G.652.D, loose tube 2.2 mm, LSFH Black, not rated		
2	84132158	12-12E9A1/W(ZN)H-G50	Jelly-filled non-armoured cable Ø5.0 mm, 12xSM G.652.D, loose tube 2.8 mm, LSFH Black, not rated		
3	85002413	12-12E9/W(ZNG)H-G70#D	Jelly-filled glass-armoured cable Ø7.0 mm, 12xSM G.652.D, loose tube 2.8 mm, LSFH Black, CPR D		
4	22523654	12-12E9/W(ZNG)H-G85#D	Jelly-filled glass-armoured cable Ø8.5 mm, 12xSM G.652.D, loose tube 2.8 mm, LSFH Black, CPR D		
5	84098491	12-12G50/W(ZNG)H-G85-G#D	Jelly-filled glass-armoured cable Ø8.5 mm, 12xOM4, loose tube 2.8 mm, LSFH Black, CPR D		
6	84121676	12-12G50/W(ZNG)H-L85-G#D	Jelly-filled glass-armoured cable Ø8.5 mm, 12xOM4, loose tube 2.8 mm, LSFH Heather violet, CPR D		
7	84021028	12-12E9/W(ZNG)H-Z120	Jelly-filled glass-armoured cable Ø12.0 mm, 12xSM G.652.D, LT 2.8 mm, LSFH Black/orange, not rated		
8	84126592	12-12E9/W(ZN)HAH-G80	Jelly-filled steel-armoured cable Ø8.0 mm, 12xSM G.652.D, loose tube 2.8 mm, LSFH Black, not rated		
9	85001237	24-24E9A1/W(ZN)H-G50	Jelly-filled glass-armoured cable Ø5.0 mm, 24xSM G.657.A1, loose tube 2.8 mm, LSFH Black, not rated		
10	85003102	24-24E9/W(ZNG)H-G70#D	Jelly-filled glass-armoured cable Ø7.0 mm, 24xSM G.652.D, loose tube 2.8 mm, LSFH Black, CPR D		
11	84127251	24-24E9/W(ZNG)H-G85	Jelly-filled glass-armoured cable Ø8.5 mm, 24xSM G.652.D, loose tube 2.8 mm, LSFH Black, CPR D		
	84134851	24-24E9/W(ZNG)H-G85-UR	Jelly-filled glass-armoured cable Ø8.5 mm, 24xSM G.652.D, loose tube 2.8 mm, LSFH Black, UL rating		
12	85013188	24-24G50/W(ZNG)H-G85-G	Jelly-filled glass-armoured cable Ø8.5 mm, 24xOM4, loose tube 2.8 mm, LSFH Black, CPR D		

Jelly-filled, multifiber loose tube

Glass-armoured, standard loose tube, TWINTUBE

D

12



24-12E9/W(ZNG)H-G94#D 1

12

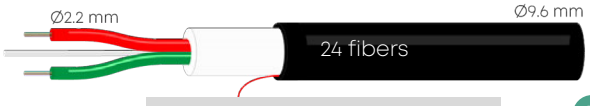


24-12G50/W(ZNG)H-L94-G#D 2

Glass-armoured, standard loose tube

D

12



24-12E9/BWSN(ZNG)H-G96#D 3



48-12E9/BWSN(ZNG)H-G96#D 4

12



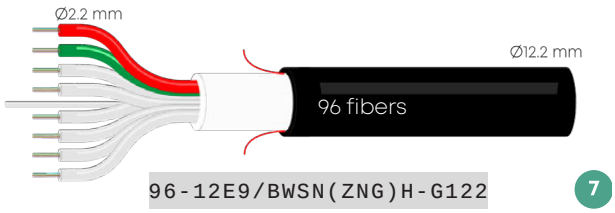
48-12G50/BWSN(ZNG)H-G96-G#D 5

Glass-armoured, standard loose tube

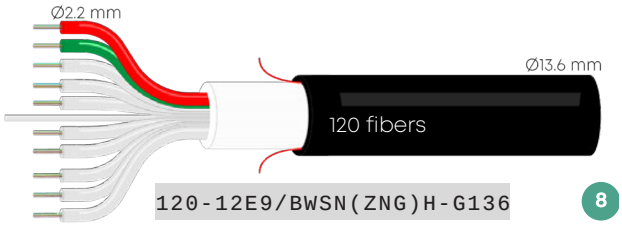
12



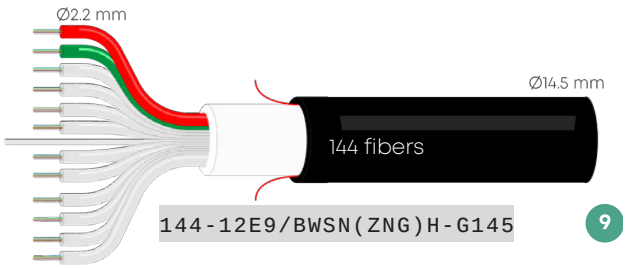
72-12E9/BWSN(ZNG)H-G106 6



96-12E9/BWSN(ZNG)H-G122 7

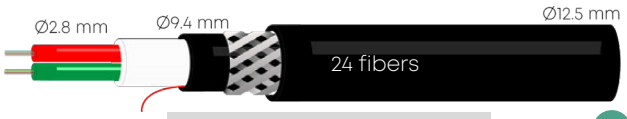


120-12E9/BWSN(ZNG)H-G136 8



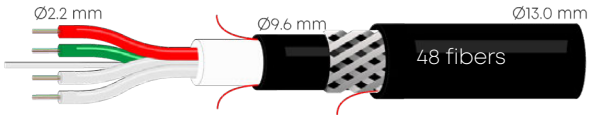
144-12E9/BWSN(ZNG)H-G145 9

Steel-armoured, standard loose tube, TWINTUBE

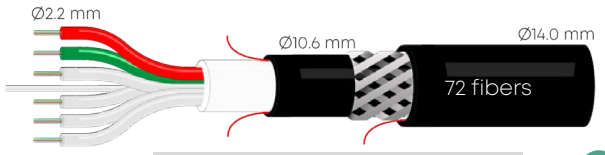


24-12E9/W(ZNG)HAH-G125 10

Steel-armoured, standard loose tube, TWINTUBE



48-12E9/BWSN(ZNG)HAH-G130 11



72-12E9/BWSN(ZNG)HAH-G140 12

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	23041032	24-12E9/W(ZNG)H-G94#D	Jelly-filled glass-armoured TWINTUBE cable Ø9.4 mm, 24xSM G.652.D, loose tube 2.8 mm, LSFH Black, CPR D		
2	84121635	24-12G50/W(ZNG)H-L94-G#D	Jelly-filled glass-armoured TWINTUBE cable Ø9.4 mm, 24xOM4, loose tube 2.8 mm, LSFH Heather violet, CPR D		
3	85030051	24-12E9/BWSN(ZNG)H-G96#D	Jelly-filled glass-armoured cable Ø9.6 mm, 24xSM G.652.D, loose tube 2.2 mm, LSFH Black, CPR D		
4	85020262	48-12E9/BWSN(ZNG)H-G96#D	Jelly-filled glass-armoured cable Ø9.6 mm, 48xSM G.652.D, loose tube 2.2 mm, LSFH Black, CPR D		
5	85032252	48-12G50/BWSN(ZNG)H-G96-G#D	Jelly-filled glass-armoured cable Ø9.6 mm, 48xOM4, loose tube 2.2 mm, LSFH Black, CPR D		
6	85029362	72-12E9/BWSN(ZNG)H-G106	Jelly-filled glass-armoured cable Ø10.6 mm, 72xSM G.652.D, loose tube 2.2 mm, LSFH Black, not rated		
7	85029364	96-12E9/BWSN(ZNG)H-G122	Jelly-filled glass-armoured cable Ø12.2 mm, 96xSM G.652.D, loose tube 2.2 mm, LSFH Black, not rated		
8	85029363	120-12E9/BWSN(ZNG)H-G136	Jelly-filled glass-armoured cable Ø13.6 mm, 120xSM G.652.D, loose tube 2.2 mm, LSFH Black, not rated		
9	85023058	144-12E9/BWSN(ZNG)H-G145	Jelly-filled glass-armoured cable Ø14.5 mm, 144xSM G.652.D, loose tube 2.2 mm, LSFH Black, not rated		
10	84075229	24-12E9/W(ZNG)HAH-G125	Jelly-filled steel-armoured TWINTUBE cable Ø12.5 mm, 24xSM G.652.D, loose tube 2.8 mm, LSFH Black, not rated		
11	85030099	48-12E9/BWSN(ZNG)HAH-G130	Jelly-filled steel-armoured cable Ø13.0 mm, 48xSM G.652.D, loose tube 2.2 mm, LSFH Black, not rated		
12	85030100	72-12E9/BWSN(ZNG)HAH-G140	Jelly-filled steel-armoured cable Ø14.0 mm, 72xSM G.652.D, loose tube 2.2 mm, LSFH Black, not rated		

Jelly-filled, single loose tube

Non-armoured, mini loose tube

12



12-12E9/BW(ZN)V-G35 — 1

Non-armoured, standard loose tube

12



12-12E9/W(ZN)Y-G50 — 2

24



24-24E9/W(ZN)Y-G50 — 3

Non-armoured, standard loose tube

12



12-12E9/W(ZNG)Y-G70 — 4



12-12E9/W(ZNG)Y-G85 — 6



12-12E9/W(ZNG)Y-Z120 — 8

24



24-24E9/W(ZNG)Y-G70 — 5



24-24E9/W(ZNG)Y-G85 — 7



24-24E9/W(ZNG)Y-Z120 — 9

Non-armoured, standard loose tube

12



12-12E9/W(ZN)YAY-G80 — 10

24



24-24E9/W(ZN)YAY-G80 — 11

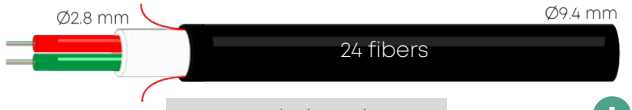
Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	84098852	12-12E9/BW(ZN)V-G35	Jelly-filled non-armoured cable Ø3.5 mm, 12xSM G.652.D, loose tube 2.2 mm, LDPE Black		
2	84150192	12-12E9/W(ZN)Y-G50	Jelly-filled non-armoured cable Ø5.0 mm, 12xSM G.652.D, loose tube 2.8 mm, LDPE Black		
3	85001052	24-24E9/W(ZN)Y-G50	Jelly-filled non-armoured cable Ø5.0 mm, 24xSM G.652.D, loose tube 2.8 mm, LDPE Black		
4	85108006	12-12E9/W(ZNG)Y-G70	Jelly-filled glass-armoured cable Ø7.0 mm, 12xSM G.652.D, loose tube 2.8 mm, LDPE Black		
5	85108007	24-24E9/W(ZNG)Y-G70	Jelly-free glass-armoured cable Ø7.0 mm, 24xSM G.652.D, loose tube 2.8 mm, LDPE Black		
6	22521756	12-12E9/W(ZNG)Y-G85	Jelly-filled glass-armoured cable Ø8.5 mm, 12xSM G.652.D, loose tube 2.8 mm, LDPE Black		
7	84024359	24-24E9/W(ZNG)Y-G85	Jelly-free glass-armoured cable Ø8.5 mm, 24xSM G.652.D, loose tube 2.8 mm, LDPE Black		
8	22523657	12-12E9/W(ZNG)Y-Z120	Jelly-filled glass-armoured cable Ø12.0 mm, 12xSM G.652.D, loose tube 2.8 mm, LDPE Black/orange		
9	84072782	24-24E9/W(ZNG)Y-Z120	Jelly-free glass-armoured cable Ø12.0 mm, 24 x SM G.652.D, loose tube 2.8 mm, LDPE Black/orange		
10	22523660	12-12E9/W(ZN)YAY-G80	Jelly-filled steel-armoured cable Ø8.0 mm, 12xSM G.652.D, loose tube 2.8 mm, LDPE Black		
11	85145938	24-24E9/W(ZN)YAY-G80	Jelly-filled steel-armoured cable Ø8.0 mm, 24xSM G.652.D, loose tube 2.8 mm, LDPE Black		

Jelly-filled, multifiber loose tube

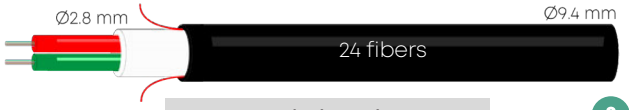
Glass-armoured, standard loose tube, TWINTUBE

12



24-12E9/W(ZNG)Y-G94 1

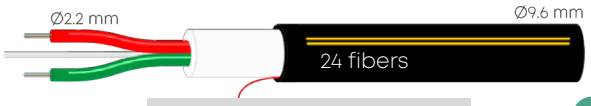
12



24-12G50/W(ZNG)Y-G94-G 2

Glass-armoured, mini loose tube

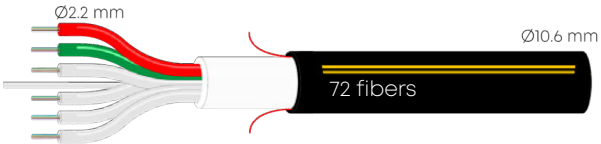
12



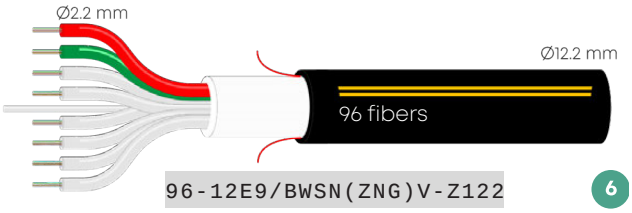
24-12E9/BWSN(ZNG)V-Z96 3



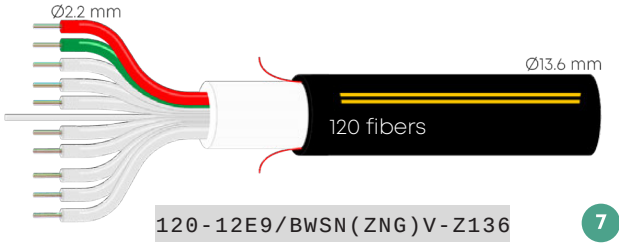
48-12E9/BWSN(ZNG)V-Z96 4



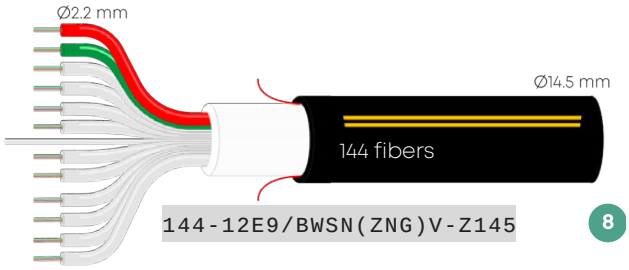
72-12E9/BWSN(ZNG)V-Z106 5



96-12E9/BWSN(ZNG)V-Z122 6



120-12E9/BWSN(ZNG)V-Z136 7



144-12E9/BWSN(ZNG)V-Z145 8

Steel-armoured, standard loose tube, TWINTUBE

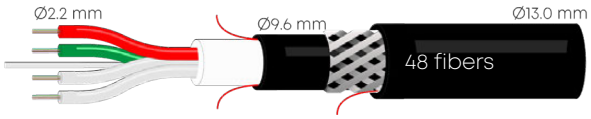
12



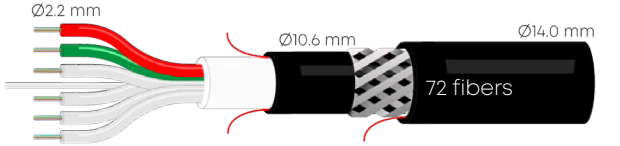
24-12E9/W(ZNG)Y-G94 9

Steel-armoured, mini loose tube

12



48-E9/BWSN(ZNG)VAV-G130 10



72-E9/BWSN(ZNG)VAV-G140 11

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	23038137	24-12E9/W(ZNG)Y-G94	Jelly-filled glass-armoured TWINTUBE cable Ø9.4 mm, 12xSM G.652.D, loose tube 2.8 mm, LDPE Black	★	
2	84118482	24-12G50/W(ZNG)Y-G94-G	Jelly-filled glass-armoured TWINTUBE cable Ø9.4 mm, 24xOM4, loose tube 2.8 mm, LDPE Black		
3	85030052	24-12E9/BWSN(ZNG)V-Z96	Jelly-filled glass-armoured cable Ø9.6 mm, 24xSM G.652.D, loose tube 2.8 mm, HDPE Black/orange		
4	85022307	48-12E9/BWSN(ZNG)V-Z96	Jelly-filled glass-armoured cable Ø9.6 mm, 48xSM G.652.D, loose tube 2.8 mm, HDPE Black/orange		
5	85025379	72-12E9/BWSN(ZNG)V-Z106	Jelly-filled glass-armoured cable Ø10.6 mm, 72xSM G.652.D, loose tube 2.8 mm, HDPE Black/orange		
6	85025378	96-12E9/BWSN(ZNG)V-Z122	Jelly-filled glass-armoured cable Ø12.2 mm, 96xSM G.652.D, loose tube 2.8 mm, HDPE Black/orange		
7	85025390	120-12E9/BWSN(ZNG)V-Z136	Jelly-filled glass-armoured cable Ø13.6 mm, 120xSM G.652.D, loose tube 2.8 mm, HDPE Black/orange		
8	85025391	144-12E9/BWSN(ZNG)V-Z145	Jelly-filled glass-armoured cable Ø14.5 mm, 144xSM G.652.D, loose tube 2.8 mm, HDPE Black/orange		
9	on request	24-12E9/W(ZNG)YAY-G125	Jelly-filled steel-armoured TWINTUBE cable Ø12.5 mm, 24xSM G.652.D, loose tube 2.2 mm, HDPE Black		
10	85030101	48-E9/BWSN(ZNG)VAV-G130	Jelly-filled steel-armoured cable Ø13.0 mm, 48xSM G.652.D, loose tube 2.2 mm, HDPE Black		
11	85030102	72-E9/BWSN(ZNG)VAV-G140	Jelly-filled steel-armoured cable Ø14.0 mm, 72xSM G.652.D, loose tube 2.2 mm, HDPE Black		

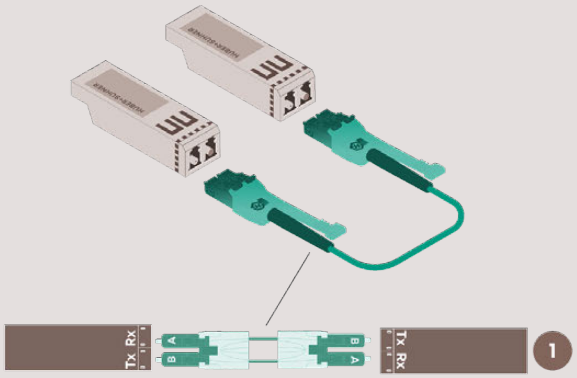


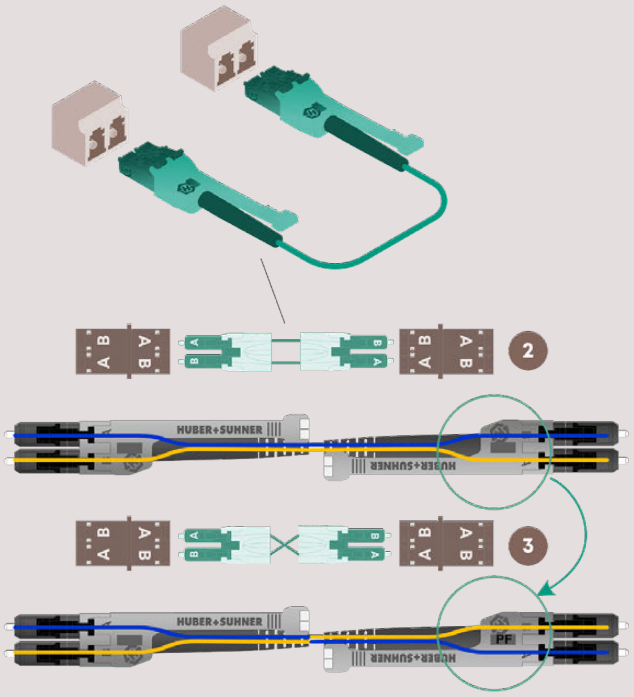
Assemblies



Duplex assemblies overview

Duplex assembly applications



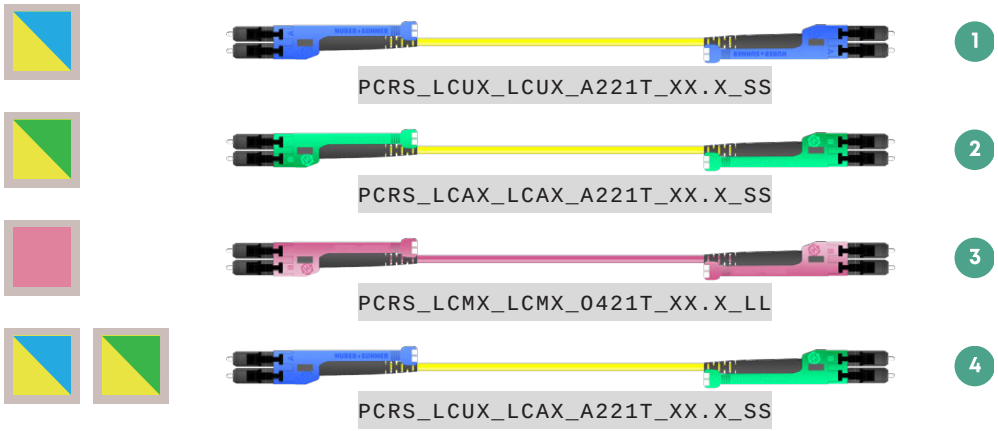


(1) Direct-connect duplex transceivers with A-B/B-A duplex assembly (light goes from Tx to Rx)
(2) Interconnect duplex adapters with A-B/B-A duplex assembly (light goes from A to B)
(3) Interconnect duplex adapters with A-A/B-B duplex assembly (light goes from A to A)

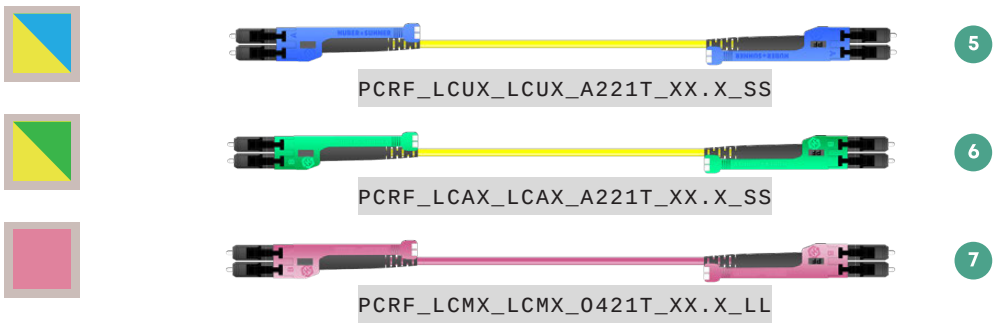
Duplex assembly polarity can be adjusted if required by structured cabling link design.
PF indicates pairs flipped.

LC-XD to LC-XD, figure-0 uniboot cable, Ø2.1 mm

Polarity A-B/B-A



Polarity A-A/B-B

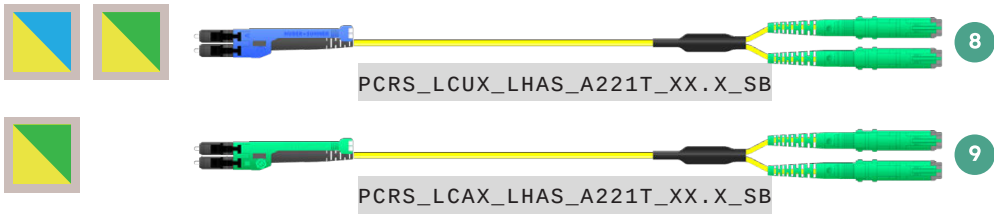


Ordering information

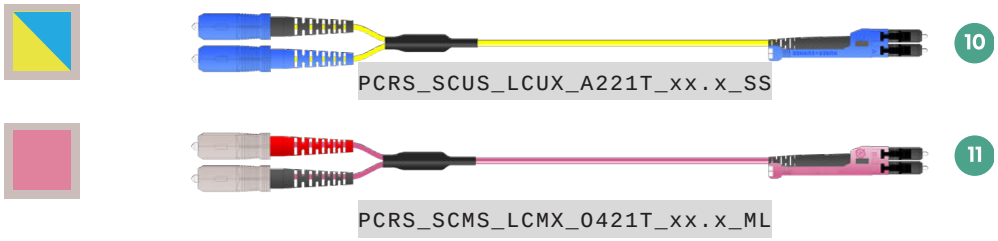


Length	Item number	LT	URL	Item number	LT	URL	Item number	LT	URL
1 m	85016597	★	↗	85020987	◔	↗	85011862	★	↗
2 m	85016599	★	↗	85020988	◔	↗	85019837	★	↗
3 m	85016600	★	↗	85020989	◔	↗	85019838	★	↗
3.5 m	85020818	★	↗	85020990	◔	↗	85021394	★	↗
4 m	85019951	★	↗	85124214	◔	↗	85019950	★	↗
5 m	85016601	★	↗	85020991	★	↗	85019839	★	↗
6 m	85020819	★	↗	85020992	◔	↗	85021395	★	↗
7 m	85020820	★	↗	85020993	◔	↗	85021396	★	↗
8 m	85074243	★	↗	85087442	◔	↗	85086496	◔	↗
9 m	85098855	◔	↗	85087443	◔	↗	85086497	☑	↗
10 m	85016602	★	↗	85020994	◔	↗	85019840	★	↗
11 m	85119362	◔	↗	85121187	◔	↗	85103030	☑	
12 m	85085713	★	↗	85121190	◔	↗	85126556	◔	
13 m	85143485	◔	↗	85121192	◔	↗	85153271	◔	
14 m	85143487	◔	↗	85121194	◔	↗	85147029	◔	
15 m	85020821	★	↗	85020995	◔	↗	85021397	★	↗
16 m	85142891	☑	↗	85121197	◔	↗	85126557	◔	
17 m	85144374	◔	↗	85167237	◔	↗	85153272	◔	
18 m	85098540	◔	↗	85167238	◔	↗	85145248	◔	
19 m	85144375	◔		on request	◔		85153273	◔	
20 m	85020822	★	↗	85020996	◔	↗	85021398	★	↗
25 m	85025976	★	↗	85156249	☑		85025988	◔	↗
30 m	85025977	★	↗	on request	◔		85025989	◔	↗

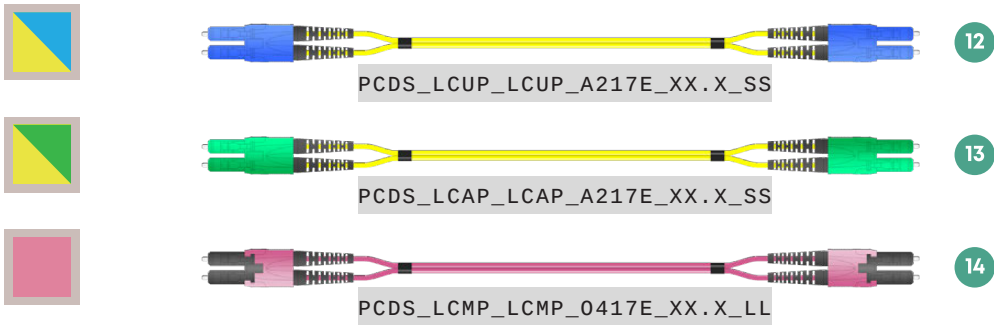
LC-XD to E-2000, figure-0 uniboot cable, Ø2.1 mm



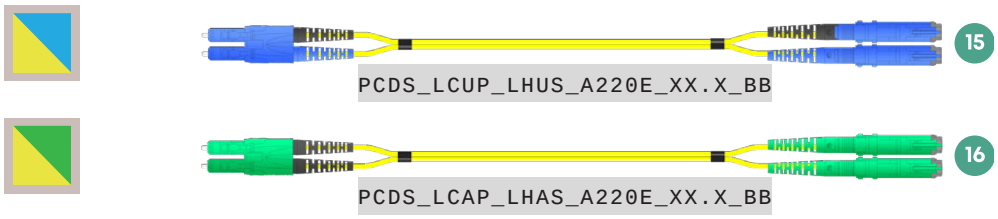
SCd to LC-XD, figure-0 uniboot cable, Ø2.1 mm



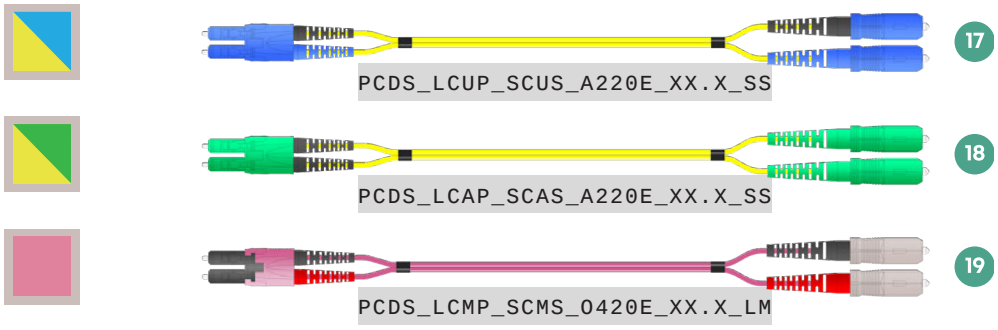
LCd push-pull, figure-8 cable, 2x Ø1.7 mm



LCd push-pull to E-2000, figure-8 cable, 2x Ø2.0 mm



LCd push-pull to SCd, figure-8 cable 2x Ø2.0 mm



E-2000 to E-2000, figure-8 cable, 2x Ø2.0 mm

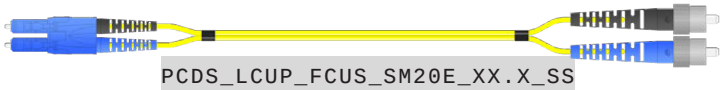


PCDS_LCUP_LHUS_A220E_XX.X_BB 20



PCDS_LCAP_LHAS_A220E_XX.X_BB 21

LCd push-pull to FC, figure-8 cable, 2x Ø2.0 mm



PCDS_LCUP_FCUS_SM20E_XX.X_SS 22

SCd to SCd, figure-8 cable, 2x Ø2.0 mm



PCDS_SCUS_SCUS_A220E_XX.X_SS 23



PCDS_SCAS_SCAS_A220E_XX.X_SS 24



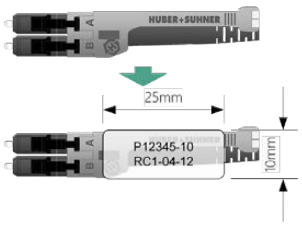
PCDS_SCUS_SCAS_A220E_XX.X_SS 25

Accessories for duplex assemblies

LC-XD label clip



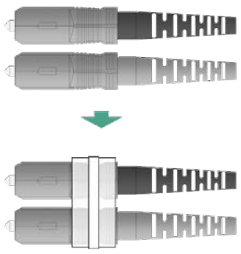
26



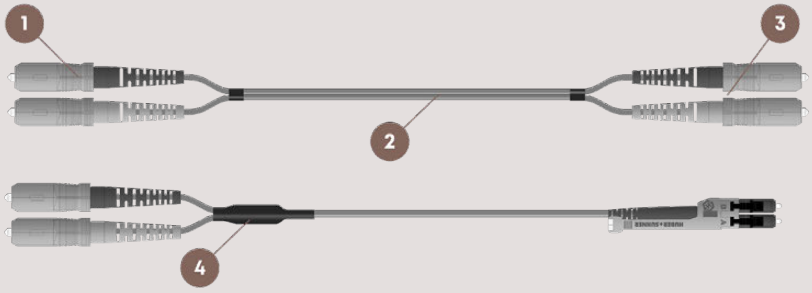
SC duplex clip



27



Duplex assembly drawing



(1) Connector A
(2) Cable
(3) Connector B
(4) Mini-divider for figure-0 cables for non-uniboot connectors

Overview duplex assemblies

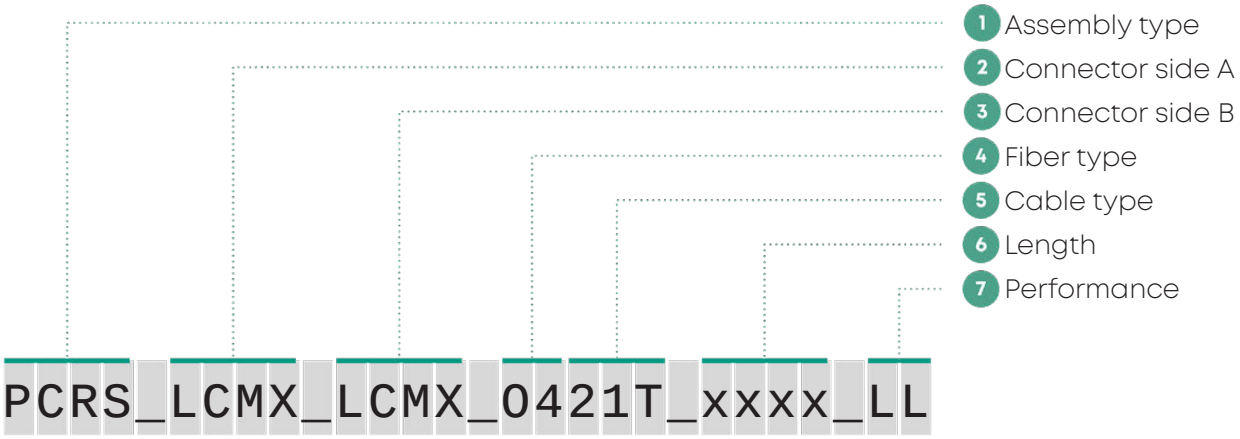
#	Descriptive code	Cable type	Polarity	Connector A	Connector B	Fiber	Cable	Performance
1	PCRS_LCUX_LCUX_A221T_xx.x_SS	Figure-0 (round)	A-B/B-A	LC-XD UPC uniboot	LC-XD UPC uniboot	G.657.A2	Ø2.1 mm	SS
2	PCRS_LCAX_LCAX_A221T_xx.x_SS		A-B/B-A	LC-XD APC uniboot	LC-XD APC uniboot	G.657.A2		SS
3	PCRS_LCMX_LCMX_O421T_xx.x_LL		A-B/B-A	LC-XD uniboot	LC-XD uniboot	OM4		LL
4	PCRS_LCUX_LCAX_A221T_xx.x_SS		A-B/B-A	LC-XD UPC uniboot	LC-XD APC uniboot	G.657.A2		SS
5	PCRF_LCUX_LCUX_A221T_xx.x_SS		A-A/B-B	LC-XD UPC uniboot	LC-XD UPC uniboot	G.657.A2		SS
6	PCRF_LCAX_LCAX_A221T_xx.x_SS		A-A/B-B	LC-XD APC uniboot	LC-XD APC uniboot	G.657.A2		SS
7	PCRF_LCMX_LCMX_O421T_xx.x_LL		A-A/B-B	LC-XD uniboot	LC-XD uniboot	OM4		LL
8	PCRS_LCUX_LHAS_A221T_xx.x_SB		A-B/B-A	LC-XD UPC uniboot	E-2000 APC	G.657.A2		SB
9	PCRS_LCAX_LHAS_A221T_ xx.x_SB		A-B/B-A	LC-XD APC uniboot	E-2000 APC	G.657.A2		SB
10	PCRS_SCUD_LCUX_A221T_xx.x_SS		A-B/B-A	SC UPC	LC-XD UPC uniboot	G.657.A2		SS
11	PCRS_SCMS_LCMX_O421T_xx.x_ML		A-B/B-A	SC	LC-XD uniboot	OM4		ML
12	PCDS_LCUP_LCUP_A217E_xx.x_SS	Figure-8 (duplex)	A-B/B-A	LC UPC push-pull	LC UPC push-pull	G.657.A2	2x Ø1.7 mm	SS
13	PCDS_LCAP_LCAP_A217E_xx.x_SS		A-B/B-A	LC APC push-pull	LC APC push-pull	G.657.A2		SS
14	PCDS_LCMP_LCMP_O417E_xx.x_LL		A-B/B-A	LC push-pull	LC push-pull	OM4		LL
15	PCDS_LCUP_LHUS_A220E_xx.x_SB		A-B/B-A	LC UPC push-pull	E-2000 UPC duplex	G.652.D	2x Ø2.0 mm	SB
16	PCDS_LCAP_LHAS_A220E_xx.x_SB		A-B/B-A	LC APC push-pull	E-2000 APC duplex	G.652.D		SB
17	PCDS_LCUP_SCUS_A220E_xx.x_SS		A-B/B-A	LC UPC push-pull	SC UPC	G.657.A2		SS
18	PCDS_LCAP_SCAS_A220E_xx.x_SS		A-B/B-A	LC APC push-pull	SC APC	G.657.A2		SS
19	PCDS_LCMP_SCMS_O420E_xx.x_MM		A-B/B-A	LC push-pull	SC	OM4		MM
20	PCDS_LHUS_LHUS_SM20E_xx.x_BB		A-B/B-A	E-2000 UPC	E-2000 UPC	G.652.D		BB
21	PCDS_LHAS_LHAS_SM20E_xx.x_BB		A-B/B-A	E-2000 APC	E-2000 APC	G.652.D		BB
22	PCDS_LCUP_FCUS_SM20E_xx.x_SS		A-B/B-A	LC push-pull	FC	G.652.D		SS
23	PCDS_SCUS_SCUS_A220E_xx.x_SS		A-B/B-A	SC UPC	SC UPC	G.657.A2		SS
24	PCDS_SCAS_SCAS_A220E_xx.x_SS		A-B/B-A	SC APC	SC APC	G.657.A2		SS
25	PCDS_SCUS_SCAS_A220E_XX.X_SS		A-B/B-A	SC UPC	SC APC	G.657.A2		SS

Ordering information – patch cord accessories

#	Item number	Descriptive code	Item text	LT	URL
26	85141483	FLC-LAB-CLP-XD_100-P	LC-XD labelling clip, 100 pcs per pack	✓	
27	84031089	FSC-DUP-CLIP_1000-P	SC duplex clip, transparent, 1000 pcs per pack	★	

Order code duplex assemblies

Order code duplex assemblies



1 Assembly type

PCRS	Patch cord figure-0 (uniboot) straight (A-B/B-A)
PCDS	Patch cord figure-8 (duplex) straight (A-B/B-A)
PCRF	Patch cord figure-0 (uniboot) flipped (A-A/B-B)
PCDF	Patch cord figure-8 (duplex) flipped (A-A/B-B)

2 3 Connector side A or B

LCUX	LC-XD SM UPC	
LCAX	LC-XD SM APC	
LCMX	LC-XD multimode	
LCUP	LC push-pull SM UPC	
LCAP	LC push-pull SM APC	
LCMP	LC push-pull multimode	
SCUS	SC SM UPC	
SCAS	SC SM APC	
SCMS	SC multimode	
FCUS	FC SM UPC	
LHUS	LSH (E-2000) UPC	
LHAS	LSH (E-2000) APC	

4 Fiber type

A2	Singlemode G.657.A2 (low-bend)
SM	Singlemode G.652.D
04	Multimode 50/125 fiber OM4

5 Cable type

21T	Ø2.1 mm figure-0 cable, tight buffered (600 µm tube) - used with LC uniboot connectors
20E	Ø2.0 mm figure-8 cable, easy strip tube - used with SC, FC, E-2000 connectors
17E	Ø1.7 mm figure-8 cable, easy strip tube - used with LC push-pull connectors

6 Length

XXXX Length in meters, 4 characters allowed, e.g.:

00.5	0.5 meters	05.0	5 meters
03.5	3.5 meters	0100	100 meters

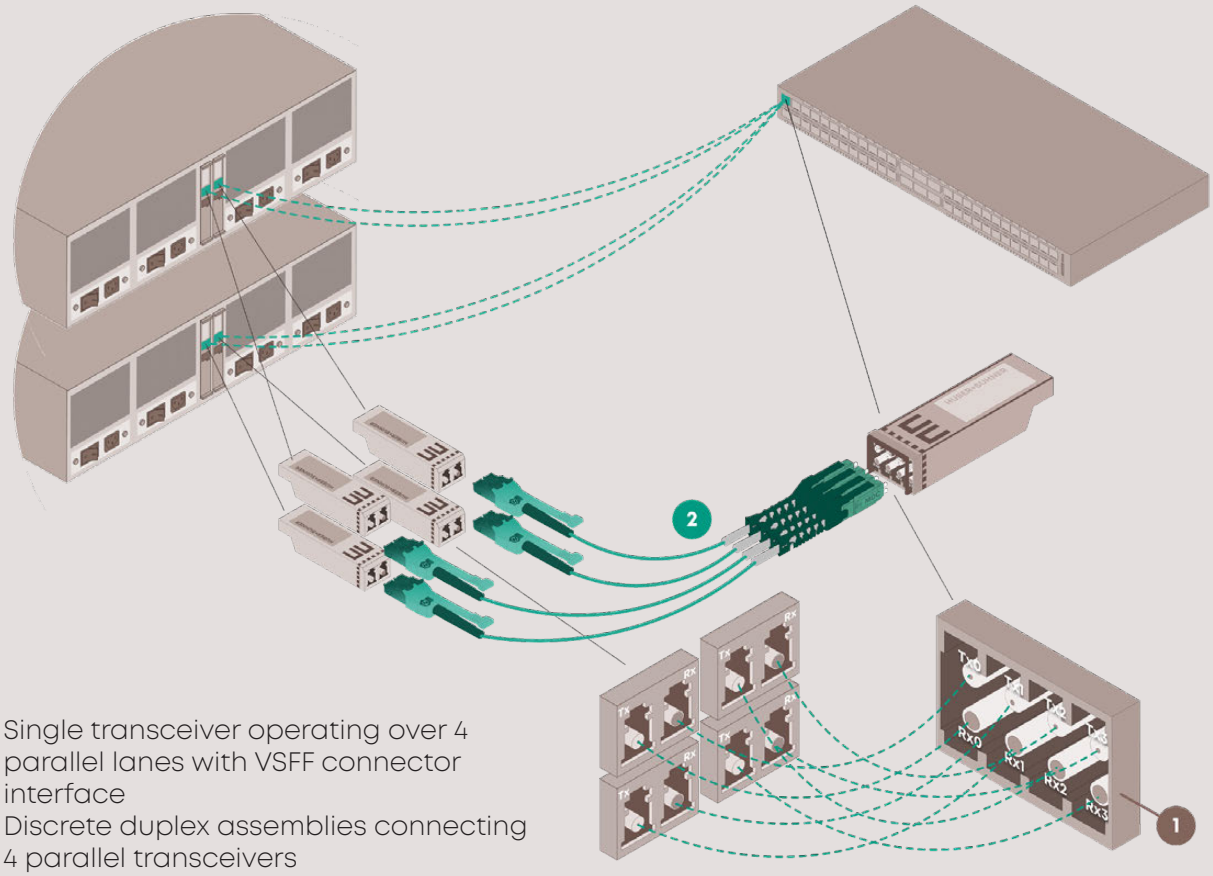
7 Performance

SS	Class S – singlemode standard
BB	Class B – singlemode grade B
LL	Class L – multimode low-loss
MM	Class M – multimode standard

Go to external document/link

VSFF duplex assemblies overview

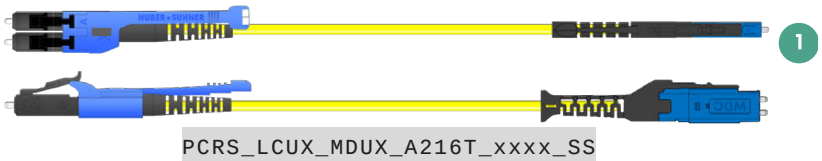
VSFF (very small form factor) duplex assembly application



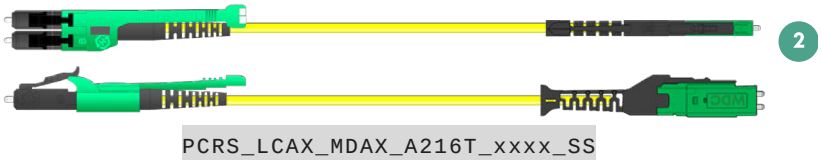
(1) Single transceiver operating over 4 parallel lanes with VSFF connector interface
(2) Discrete duplex assemblies connecting 4 parallel transceivers

B

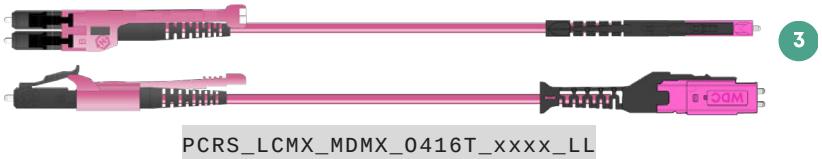
LC-XD to MDC, uniboot cable Ø1.6 mm



PCRS_LCUX_MDUX_A216T_xxxx_SS



PCRS_LCAX_MDAX_A216T_xxxx_SS



PCRS_LCMX_MDMX_0416T_xxxx_LL

MDC to MDC, uniboot cable Ø1.6 mm

B



4

PCRS_MDUX_MDUX_A216T_xxxx_SS



5

PCRS_MDAX_MDAX_A216T_xxxx_SS



6

PCRS_MDMX_MDMX_0416T_xxxx_LL

LC-XD to SN, uniboot cable Ø1.6 mm

B



7

PCRS_LCUX_SNUX_A216T_xxxx_SS



8

PCRS_LCAX_SNAX_A216T_xxxx_SS

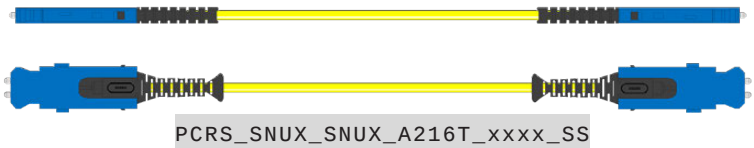


9

PCRS_LCMX_SNMX_0416T_xxxx_LL

SN to SN, uniboot cable Ø1.6 mm

B



10

PCRS_SNUX_SNUX_A216T_xxxx_SS



11

PCRS_SNAX_SNAX_A216T_xxxx_SS



12

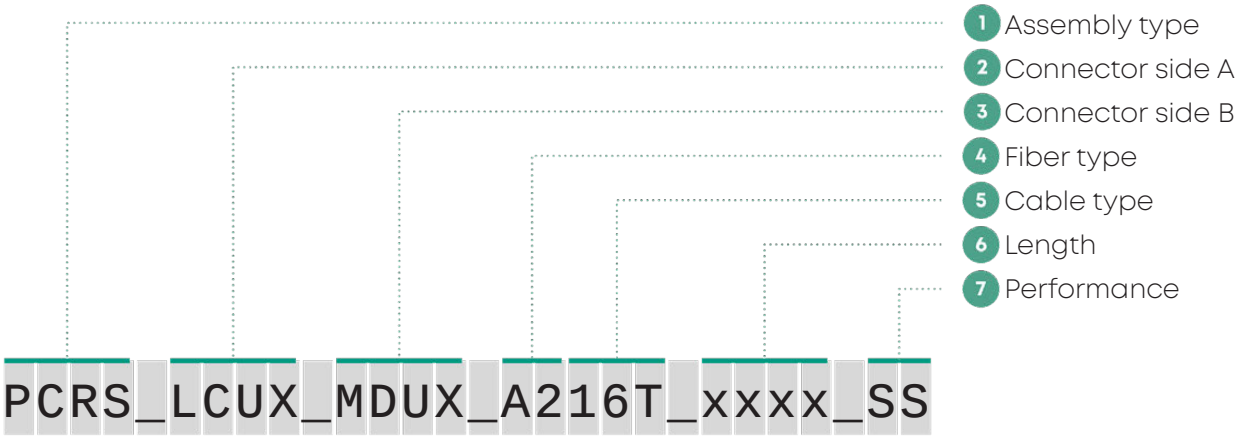
PCRS_SNMX_SNMX_0416T_xxxx_LL

VSFF duplex assemblies order code

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85160983	PCRS_LCUX_MDUX_A216T_03.5_SS	Duplex patch cord uniboot, LC-XD UPC to MDC UPC, cable 1.6 mm round, 3.5 m, SM, A-B/B-A	✓	
	85169083	PCRS_LCUX_MDUX_A216T_10.0_SS	Duplex patch cord uniboot, LC-XD UPC to MDC UPC, cable 1.6 mm round, 10 m, SM, A-B/B-A	✓	
2	85160984	PCRS_LCAX_MDAX_A216T_03.5_SS	Duplex patch cord uniboot, LC-XD APC to MDC APC, cable 1.6 mm round, 3.5 m, SM, A-B/B-A	✓	
	85169085	PCRS_LCAX_MDAX_A216T_10.0_SS	Duplex patch cord uniboot, LC-XD APC to MDC APC, cable 1.6 mm round, 10 m, SM, A-B/B-A	✓	
3	85160985	PCRS_LCMX_MDMX_O416T_03.5_LL	Duplex patch cord uniboot, LC-XD PC to MDC PC, cable 1.6 mm round, 3.5 m, OM4, A-B/B-A	✓	
	85169086	PCRS_LCMX_MDMX_O416T_10.0_LL	Duplex patch cord uniboot, LC-XD PC to MDC PC, cable 1.6 mm round, 10 m, OM4, A-B/B-A	✓	
4	85160976	PCRS_MDUX_MDUX_A216T_03.5_SS	Duplex patch cord uniboot, MDC UPC to MDC UPC, cable 1.6 mm round, 3.5 m, SM, A-B/B-A	✓	
	85160980	PCRS_MDUX_MDUX_A216T_10.0_SS	Duplex patch cord uniboot, MDC UPC to MDC UPC, cable 1.6 mm round, 10 m, SM, A-B/B-A	✓	
5	85160977	PCRS_MDAX_MDAX_A216T_03.5_SS	Duplex patch cord uniboot, MDC APC to MDC APC, cable 1.6 mm round, 3.5 m, SM, A-B/B-A	✓	
	85160981	PCRS_MDAX_MDAX_A216T_10.0_SS	Duplex patch cord uniboot, MDC APC to MDC APC, cable 1.6 mm round, 10 m, SM, A-B/B-A	✓	
6	85160979	PCRS_MDMX_MDMX_O416T_03.5_LL	Duplex patch cord uniboot, MDC PC to MDC PC, cable 1.6 mm round, 3.5 m, OM4, A-B/B-A	✓	
	85160982	PCRS_MDMX_MDMX_O416T_10.0_LL	Duplex patch cord uniboot, MDC PC to MDC PC, cable 1.6 mm round, 10 m, OM4, A-B/B-A	✓	
7	85160966	PCRS_LCUX_SNUX_A216T_03.5_SS	Duplex patch cord uniboot, LC-XD UPC to SN UPC, cable 1.6 mm round, 3.5 m, SM, A-B/B-A	✓	
	85169079	PCRS_LCUX_SNUX_A216T_10.0_SS	Duplex patch cord uniboot, LC-XD UPC to SN UPC, cable 1.6 mm round, 10 m, SM, A-B/B-A	✓	
8	85160967	PCRS_LCAX_SNAX_A216T_03.5_SS	Duplex patch cord uniboot, LC-XD APC to SN APC, cable 1.6 mm round, 3.5 m, SM, A-B/B-A	✓	
	85169080	PCRS_LCAX_SNAX_A216T_10.0_SS	Duplex patch cord uniboot, LC-XD APC to SN APC, cable 1.6 mm round, 10 m, SM, A-B/B-A	✓	
9	85160968	PCRS_LCMX_SNMX_O416T_03.5_LL	Duplex patch cord uniboot, LC-XD PC to SN PC, cable 1.6 mm round, 3.5 m, OM4, A-B/B-A	✓	
	85169081	PCRS_LCMX_SNMX_O416T_10.0_LL	Duplex patch cord uniboot, LC-XD PC to SN PC, cable 1.6 mm round, 10 m, OM4, A-B/B-A	✓	
10	85160948	PCRS_SNUX_SNUX_A216T_03.5_SS	Duplex patch cord uniboot, SN UPC to SN UPC, cable 1.6 mm round, 3.5 m, SM, A-B/B-A	✓	
	85160962	PCRS_SNUX_SNUX_A216T_10.0_SS	Duplex patch cord uniboot, SN UPC to SN UPC, cable 1.6 mm round, 10 m, SM, A-B/B-A	✓	
11	85160949	PCRS_SNAX_SNAX_A216T_03.5_SS	Duplex patch cord uniboot, SN APC to SN APC, cable 1.6 mm round, 3.5 m, SM, A-B/B-A	✓	
	85160963	PCRS_SNAX_SNAX_A216T_10.0_SS	Duplex patch cord uniboot, SN APC to SN APC, cable 1.6 mm round, 10 m, SM, A-B/B-A	✓	
12	85160961	PCRS_SNMX_SNMX_O416T_03.5_LL	Duplex patch cord uniboot, SN PC to SN PC, cable 1.6 mm round, 3.5 m, OM4, A-B/B-A	✓	
	85160965	PCRS_SNMX_SNMX_O416T_10.0_LL	Duplex patch cord uniboot, SN PC to SN PC, cable 1.6 mm round, 10 m, OM4, A-B/B-A	✓	

Order code VSFF duplex assemblies



1 Assembly type

PCRS	Patch cord figure-0 (uniboot) straight (A-B/B-A)
PCRF	Patch cord figure-0 (uniboot) flipped (A-A/B-B)

2 3 Connector side A or B

LCUX	LC-XD SM UPC	
LCAX	LC-XD SM APC	
LCMX	LC-XD multimode	
MDUX	MDC SM UPC	
MDAX	MDC SM APC	
MDMX	MDC multimode	
SNUX	SN SM UPC	
SNAX	SN SM APC	
SNMX	SN multimode	

4 Fiber type

A2	Singlemode G.657.A2 (low-bend)	
04	Multimode 50/125 fiber OM4	

5 Cable type

16T	Ø1.6 mm figure-0 cable, tight buffered (600 µm tube)	B

6 Length

XXXX	Length in meters, 4 characters allowed, e.g.:

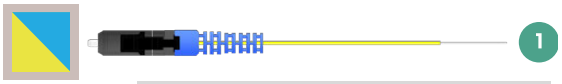
00.5	0.5 meters	05.0	5 meters
03.5	3.5 meters	0100	100 meters

7 Performance

SS	Class S – singlemode standard	
LL	Class L – multimode low-loss	

Pigtails overview

LC pigtails



PT01_LCUS_0000_SM09E_02.0_S0
PS12_LCUS_0000_SM09E_02.0_S0
PS24_LCUS_0000_SM09E_02.0_S0

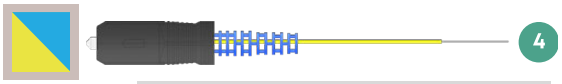


PT01_LCMS_0000_O409E_02.0_L0
PT12_LCMS_0000_O409E_02.0_L0



PT01_LCAS_0000_SM09E_02.0_S0
PS12_LCAS_0000_SM09E_02.0_S0
PS24_LCAS_0000_SM09E_02.0_S0

SC pigtails



PT01_SCUS_0000_SM09E_02.0_S0
PS12_SCUS_0000_SM09E_02.0_S0
PS24_SCUS_0000_SM09E_02.0_S0



PT01_SCMS_0000_O409E_02.0_L0
PS12_SCMS_0000_O409E_02.0_L0



PT01_SCAS_0000_SM09E_02.0_S0
PS12_SCAS_0000_SM09E_02.0_S0
PS24_SCAS_0000_SM09E_02.0_S0

E-2000 pigtails



PT01_LHUS_0000_SM09E_02.0_B0
PS12_LHUS_0000_SM09E_02.0_B0



PT01_LHMS_0000_O409E_02.0_M0
PS12_LHMS_0000_O409E_02.0_M0



PT01_LHAS_0000_SM09E_02.0_B0
PS12_LHAS_0000_SM09E_02.0_B0

Ordering information

#	Item number	Descriptive code	Fiber	Connector A	Item text	LT	URL
1	84130960	PT01_LCUS_0000_SM09E_02.0_S0	G.652.D / G.657.A1	LC UPC	Pigtail, LC UPC, SM, Ø0.9 mm, 2 m, yellow		
	84148655	PS12_LCUS_0000_SM09E_02.0_S0			12 pigtails set, LC UPC, SM, Ø0.9 mm, 2 m, colours per TIA		
	84150493	PS24_LCUS_0000_SM09E_02.0_S0			24 pigtails set, LC UPC, SM, Ø0.9 mm, 2 m, colours per TIA		
2	84130959	PT01_LCAS_0000_SM09E_02.0_S0		LC APC	Pigtail, LC APC, SM, Ø0.9 mm, 2 m, yellow		
	84148656	PS12_LCAS_0000_SM09E_02.0_S0			12 pigtails set, LC APC, SM, Ø0.9 mm, 2 m, colours per TIA		
	84150494	PS24_LCAS_0000_SM09E_02.0_S0			24 pigtails set, LC APC, SM, Ø0.9 mm, 2 m, colours per TIA		
3	84151045	PT01_LCMS_0000_O409E_02.0_L0	OM4	LC	Pigtail, LC, OM4, Ø0.9 mm, 2 m, heather violet		
	84151048	PS12_LCMS_0000_O409E_02.0_L0			12 pigtails set, LC, OM4, Ø0.9 mm, 2 m, colours per TIA		
4	85004546	PT01_SCUS_0000_SM09E_02.0_S0	G.652.D / G.657.A1	SC UPC	Pigtail, SC UPC, SM, Ø0.9 mm, 2 m, yellow		
	85010938	PS12_SCUS_0000_SM09E_02.0_S0			12 pigtails set, SC UPC, SM, Ø0.9 mm, 2 m, colours per TIA		
	85019807	PS24_SCUS_0000_SM09E_02.0_S0			24 pigtails set, SC UPC, SM, Ø0.9 mm, 2 m, colours per TIA		
5	85004547	PT01_SCAS_0000_SM09E_02.0_S0		SC APC	Pigtail, SC APC, SM, Ø0.9 mm, 2 m, yellow		
	85019806	PS12_SCAS_0000_SM09E_02.0_S0			12 pigtails set, SC APC, SM, Ø0.9 mm, 2 m, colours per TIA		
	85019808	PS24_SCAS_0000_SM09E_02.0_S0			24 pigtails set, SC APC, SM, Ø0.9 mm, 2 m, colours per TIA		
6	85012804	PT01_SCMS_0000_O409E_02.0_L0	OM4	SC	Pigtail, SC, OM4, Ø0.9 mm, 2 m, heather violet		
	85015782	PS12_SCMS_0000_O409E_02.0_L0			12 pigtails set, SC, OM4, Ø0.9 mm, 2 m, colours per TIA		
7	85108035	PT01_LHUS_0000_SM09E_02.0_B0	G.652.D / G.657.A1	E-2000 UPC	Pigtail, E-2000 UPC, SM, Ø0.9 mm, 2 m, yellow		
	85108036	PS12_LHUS_0000_SM09E_02.0_B0			12 pigtails set, E-2000 UPC, SM, Ø0.9 mm, 2 m, colours per TIA		
8	85108037	PT01_LHAS_0000_SM09E_02.0_B0		E-2000 APC	Pigtail, E-2000 APC, SM, Ø0.9 mm, 2 m, yellow		
	85108038	PS12_LHAS_0000_SM09E_02.0_B0			12 pigtails set, E-2000 APC, SM, Ø0.9 mm, 2 m, colours per TIA		
9	85108040	PT01_LHMS_0000_O409E_02.0_M0	OM4	E-2000	Pigtail, E-2000, OM4, Ø0.9 mm, 2 m, yellow		
	85108041	PS12_LHMS_0000_O409E_02.0_M0			12 pigtails set, E-2000, OM4, Ø0.9 mm, 2 m, colours per TIA		

Pigtail colour codes

Colour code

04 TIA colour code

1	blue	13	blue
2	orange	14	orange
3	green	15	green
4	brown	16	brown
5	grey	17	grey
6	white	18	white
7	red	19	red
8	black	20	black
9	yellow	21	yellow
10	violet	22	violet
11	pink	23	pink
12	turquoise	24	turquoise

01 Swisscom colour code

1	red	13	red
2	green	14	green
3	yellow	15	yellow
4	blue	16	blue
5	white	17	white
6	violet	18	violet
7	orange	19	orange
8	black	20	black
9	grey	21	grey
10	brown	22	brown
11	pink	23	pink
12	turquoise	24	turquoise

02 DIN colour code

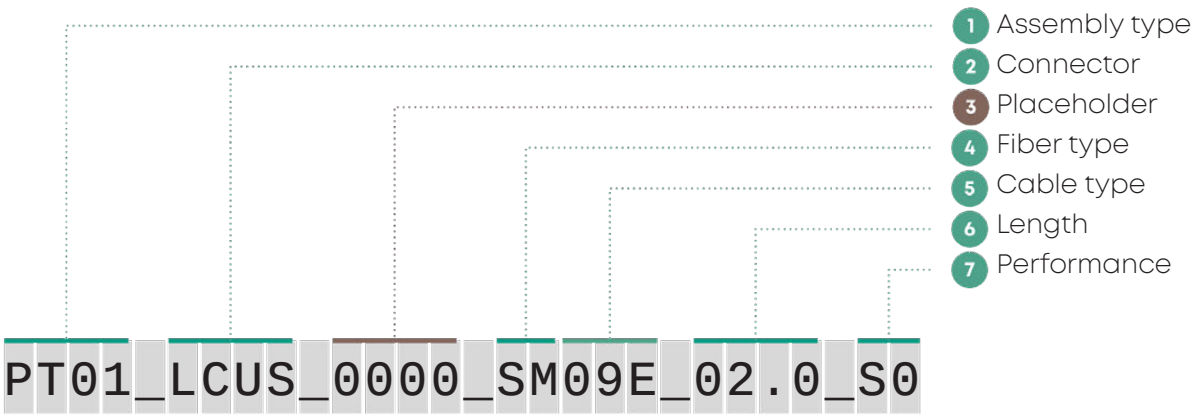
1	red	13	red
2	green	14	green
3	blue	15	blue
4	yellow	16	yellow
5	white	17	white
6	grey	18	grey
7	brown	19	brown
8	violet	20	violet
9	turquoise	21	turquoise
10	black	22	black
11	orange	23	orange
12	pink	24	pink

03 ISO colour code

1	blue	13	blue
2	orange	14	orange
3	green	15	green
4	red	16	red
5	grey	17	grey
6	yellow	18	yellow
7	brown	19	brown
8	violet	20	violet
9	white	21	white
10	black	22	black
11	pink	23	pink
12	turquoise	24	turquoise

Order code pigtails

Order code pigtails



1 Assembly type

PT01	Single pigtail, colour according fiber type
PS12	Pigtail set 12 pcs, 12 colours per TIA colour code*
PS24	Pigtail set 24 pcs, 2 times 12 colours per TIA colour code*

* Same pigtail set is used in all other colour codes

2 3 Connector side A or B

LCUS	LC UPC BTW*	
LCAS	LC APC BTW	
LCMS	LC BTW	
SCUS	SC UPC BTW	
SCAS	SC APC BTW	
SCMS	SC BTW	
LHUS	E-2000 UPC BTW	
LHAS	E-2000 APC BTW	
LHMS	E-2000 BTW	

*BTW – behind the wall, connector with short boot

4 Fiber type

SM	Singlemode G.652.D
04	Multimode 50/125 fiber OM4

5 Cable type

09E	Ø0.9mm (900µm) round cable, easy strip tube

Tube and fiber coating have same colour

6 Length

XXXX	Pigtail length in meters, 4 characters allowed, e.g.:

01.0 1 meter 02.0 2 meters

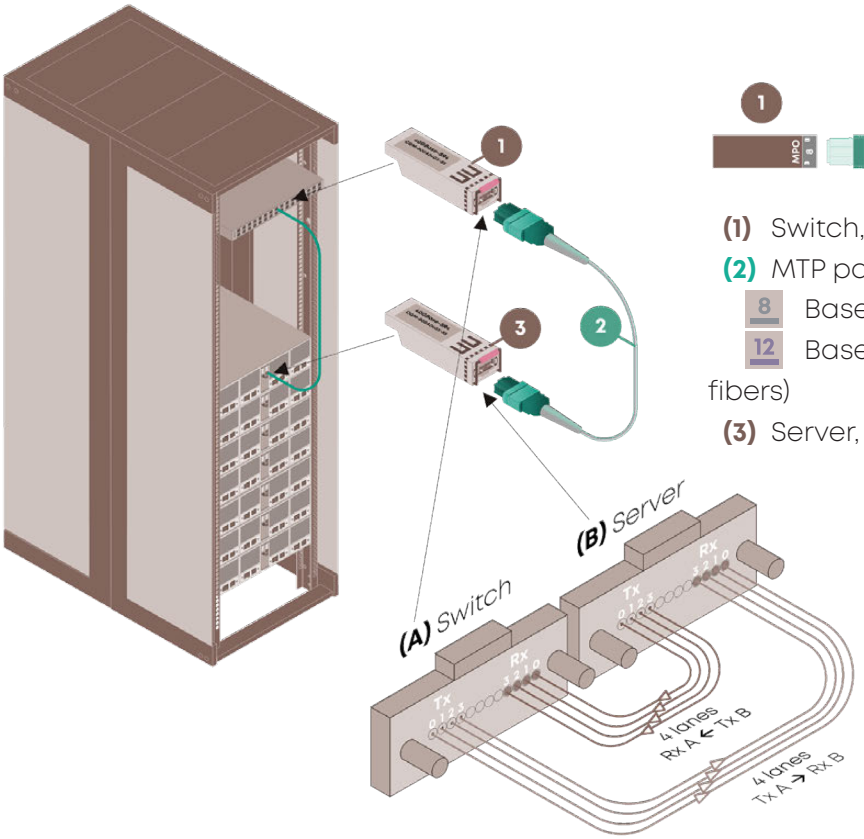
7 Performance

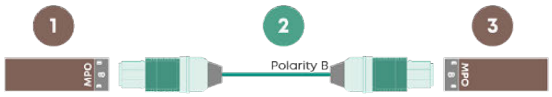
S0	Class S – singlemode standard
B0	Class B – singlemode grade B
L0	Class L – multimode low-loss
M0	Class M – multimode standard

MTP patch cords overview

Direct-connect MPO 8-fiber transceivers

8 12

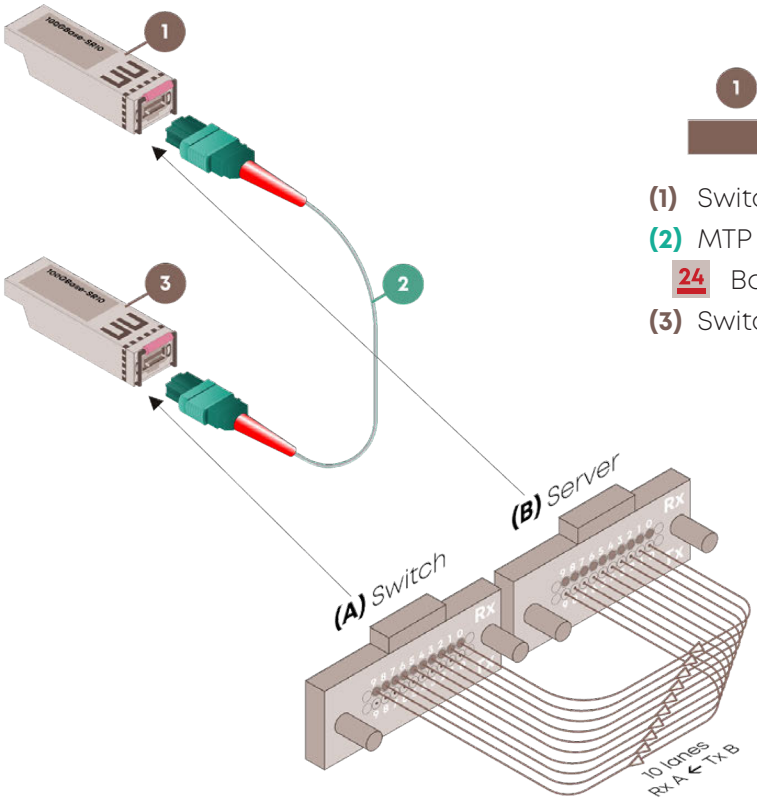


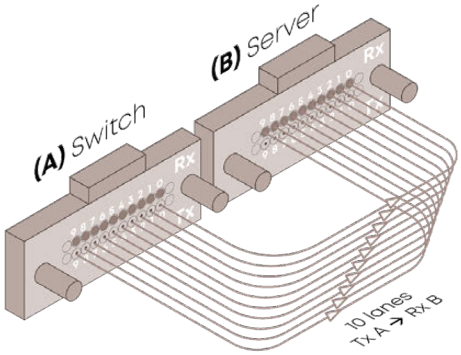


(1) Switch, transceiver MPO 8-fiber
(2) MTP patch cord, female to female
8 Base-8, polarity B
12 Base-12e, polarity B (4 unused fibers)
(3) Server, transceiver MPO 8-fiber

Direct-connect MPO 20-fiber transceivers

24



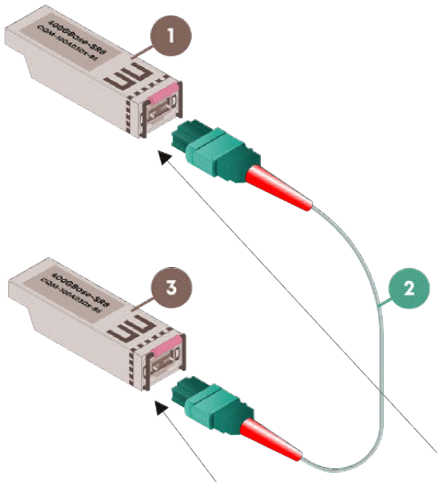


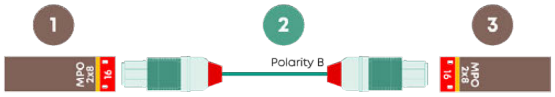


(1) Switch, transceiver MPO 20-fiber
(2) MTP patch cord, female to female
24 Base-24, polarity A (4 unused fibers)
(3) Switch, transceiver MPO 20-fiber

Direct-connect MPO 16-fiber (MPO-24 interface) transceivers

16

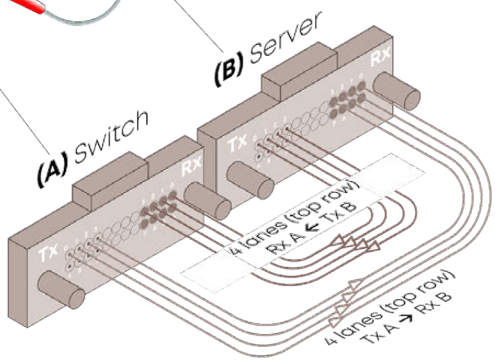


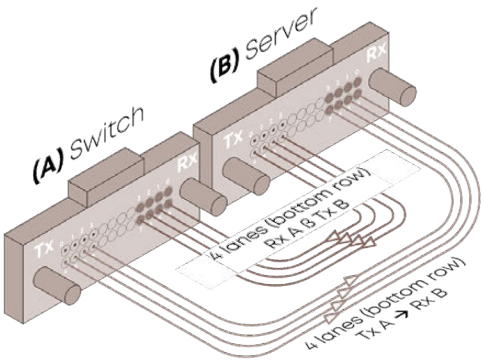


(1) Switch, transceiver MPO 16-fiber
(2) MTP patch cord, female to female
16 Base-16, polarity modifed B*
24 Base-24, polarity modifed B* (8 unused)

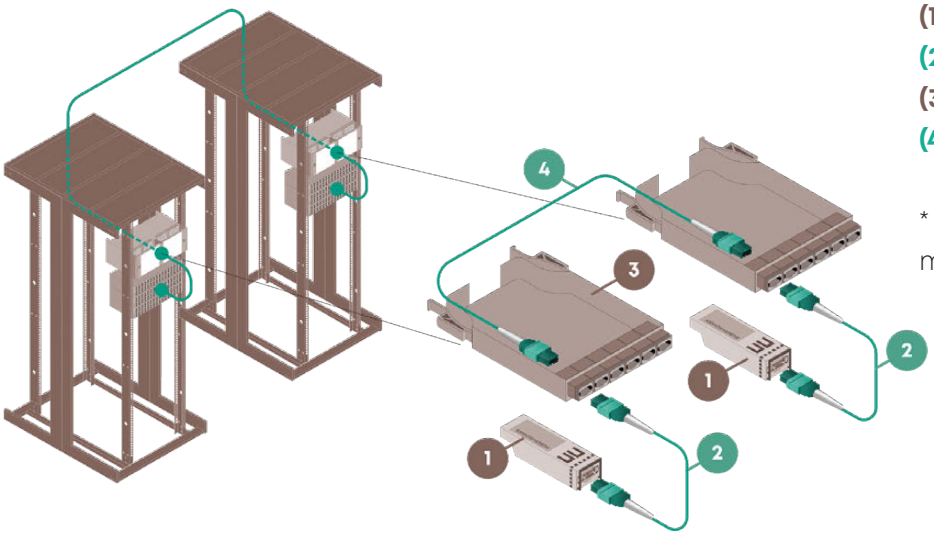
* modifed B requires no fiber rows flipping

(3) Switch, transceiver MPO 16-fiber



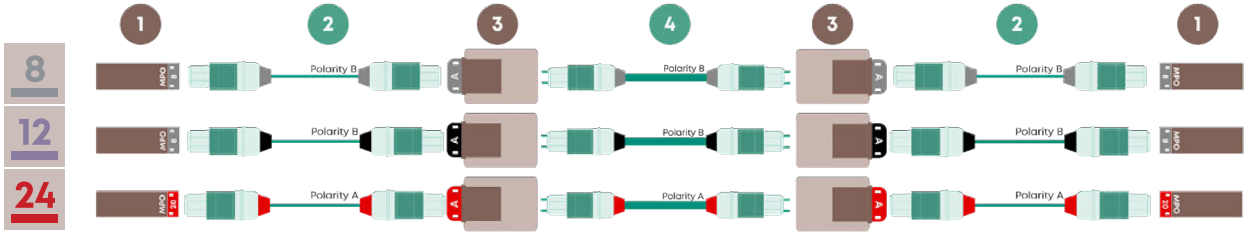


Recommended inter-connect of MPO transceivers



(1) Transceiver
(2) MTP patch cord
(3) Adapter
(4) MTP jumper or trunk

* see required IANOS modules



MTP patch cords Base-8 and -12e

MTP patch cords Base-8



MB08_MTAF_MTAF_A220y_xxxx_BB



MB08_MTMF_MTMF_O420y_xxxx_LL

Ordering information

Length	Item number	Descriptive code	LT	URL	Item number	Descriptive code	LT	URL
1 m	85071917	MB08_MTAF_MTAF_A220y_01.0_BB	✓		85072139	MB08_MTMF_MTMF_O420y_01.0_LL	✓	
2 m	85071918	MB08_MTAF_MTAF_A220y_02.0_BB	✓		85072140	MB08_MTMF_MTMF_O420y_02.0_LL	✓	
3 m	85071919	MB08_MTAF_MTAF_A220y_03.0_BB	✓		85072141	MB08_MTMF_MTMF_O420y_03.0_LL	✓	
3.5 m	on request	MB08_MTAF_MTAF_A220y_03.5_BB	◔		85152504	MB08_MTMF_MTMF_O420y_03.5_LL	✓	
4 m	85071920	MB08_MTAF_MTAF_A220y_04.0_BB	✓		85072142	MB08_MTMF_MTMF_O420y_04.0_LL	✓	
5 m	85071921	MB08_MTAF_MTAF_A220y_05.0_BB	✓		85072143	MB08_MTMF_MTMF_O420y_05.0_LL	✓	
6 m	85071922	MB08_MTAF_MTAF_A220y_06.0_BB	✓		85072144	MB08_MTMF_MTMF_O420y_06.0_LL	✓	
7 m	85071923	MB08_MTAF_MTAF_A220y_07.0_BB	✓		85072145	MB08_MTMF_MTMF_O420y_07.0_LL	✓	
8 m	85071924	MB08_MTAF_MTAF_A220y_08.0_BB	✓		85072146	MB08_MTMF_MTMF_O420y_08.0_LL	✓	
9 m	85071925	MB08_MTAF_MTAF_A220y_09.0_BB	✓		85072147	MB08_MTMF_MTMF_O420y_09.0_LL	✓	
10 m	85071926	MB08_MTAF_MTAF_A220y_10.0_BB	✓		85072148	MB08_MTMF_MTMF_O420y_10.0_LL	✓	
11 m	85071928	MB08_MTAF_MTAF_A220y_11.0_BB	✓		85072149	MB08_MTMF_MTMF_O420y_11.0_LL	✓	
12 m	85071929	MB08_MTAF_MTAF_A220y_12.0_BB	✓		85072150	MB08_MTMF_MTMF_O420y_12.0_LL	✓	
13 m	85071930	MB08_MTAF_MTAF_A220y_13.0_BB	✓		85072151	MB08_MTMF_MTMF_O420y_13.0_LL	✓	
14 m	85071932	MB08_MTAF_MTAF_A220y_14.0_BB	✓		85072152	MB08_MTMF_MTMF_O420y_14.0_LL	✓	
15 m	85071934	MB08_MTAF_MTAF_A220y_15.0_BB	✓		85072153	MB08_MTMF_MTMF_O420y_15.0_LL	✓	

MTP Pro patch cords Base-8



MB08_MPAF_MPAF_A220y_xxxx_BB



MB08_MPMF_MPMF_O420y_xxxx_LL

MTP patch cords Base-12e



MB12_MTAF_MTAF_A220y_xxxx_BB



MB12_MTMF_MTMF_O420y_xxxx_LL

Ordering information

Length	Item number	Descriptive code	LT	Item number	Descriptive code	LT
1 m	on request	MB12_MTAF_MTAF_A220y_01.0_BB		on request	MB12_MTMF_MTMF_O420y_01.0_LL	
2 m	85084469	MB12_MTAF_MTAF_A220y_02.0_BB		85084593	MB12_MTMF_MTMF_O420y_02.0_LL	☑
3 m	85097226	MB12_MTAF_MTAF_A220y_03.0_BB		on request	MB12_MTMF_MTMF_O420y_03.0_LL	
3.5 m	on request	MB12_MTAF_MTAF_A220y_03.5_BB			MB12_MTMF_MTMF_O420y_03.5_LL	
4 m		MB12_MTAF_MTAF_A220y_04.0_BB			MB12_MTMF_MTMF_O420y_04.0_LL	
5 m	85084470	MB12_MTAF_MTAF_A220y_05.0_BB		85084594	MB12_MTMF_MTMF_O420y_05.0_LL	
6 m	on request	MB12_MTAF_MTAF_A220y_06.0_BB		on request	MB12_MTMF_MTMF_O420y_06.0_LL	
7 m		MB12_MTAF_MTAF_A220y_07.0_BB			MB12_MTMF_MTMF_O420y_07.0_LL	
8 m		MB12_MTAF_MTAF_A220y_08.0_BB			MB12_MTMF_MTMF_O420y_08.0_LL	
9 m		MB12_MTAF_MTAF_A220y_09.0_BB			MB12_MTMF_MTMF_O420y_09.0_LL	
10 m	85084579	MB12_MTAF_MTAF_A220y_10.0_BB		85084595	MB12_MTMF_MTMF_O420y_10.0_LL	
11 m	on request	MB12_MTAF_MTAF_A220y_11.0_BB		on request	MB12_MTMF_MTMF_O420y_11.0_LL	
12 m		MB12_MTAF_MTAF_A220y_12.0_BB			MB12_MTMF_MTMF_O420y_12.0_LL	
13 m		MB12_MTAF_MTAF_A220y_13.0_BB			MB12_MTMF_MTMF_O420y_13.0_LL	
14 m		MB12_MTAF_MTAF_A220y_14.0_BB			MB12_MTMF_MTMF_O420y_14.0_LL	
15 m	85084580	MB12_MTAF_MTAF_A220y_15.0_BB		85084596	MB12_MTMF_MTMF_O420y_15.0_LL	

MTP Pro patch cords Base-12e



MB12_MPAF_MPAF_A220y_xxxx_BB



MB12_MPMF_MPMF_O420y_xxxx_LL

MTP patch cords Base-24

MTP patch cords Base-24

24 D



MA24_MTAF_MTAF_A230y_xxxx_BB



MA24_MTMF_MTMF_O430y_xxxx_LL

Ordering information

Length	Item number	Descriptive code	LT	URL	Item number	Descriptive code	LT	URL
1 m	85072011	MA24_MTAF_MTAF_A230y_01.0_BB	✓	↗	85072192	MA24_MTMF_MTMF_O430y_01.0_LL	✓	↗
2 m	85072012	MA24_MTAF_MTAF_A230y_02.0_BB	✓	↗	85072193	MA24_MTMF_MTMF_O430y_02.0_LL	✓	↗
3 m	85072014	MA24_MTAF_MTAF_A230y_03.0_BB	✓	↗	85072194	MA24_MTMF_MTMF_O430y_03.0_LL	✓	↗
3.5 m	on request	MA24_MTAF_MTAF_A230y_03.5_BB	◔		on request	MA24_MTMF_MTMF_O430y_03.5_LL	◔	
4 m	on request	MA24_MTAF_MTAF_A230y_04.0_BB	◔		85072195	MA24_MTMF_MTMF_O430y_04.0_LL	✓	↗
5 m	85072016	MA24_MTAF_MTAF_A230y_05.0_BB	✓	↗	85072196	MA24_MTMF_MTMF_O430y_05.0_LL	✓	↗
6 m	85072017	MA24_MTAF_MTAF_A230y_06.0_BB	✓	↗	85072197	MA24_MTMF_MTMF_O430y_06.0_LL	✓	↗
7 m	85072018	MA24_MTAF_MTAF_A230y_07.0_BB	✓	↗	85072198	MA24_MTMF_MTMF_O430y_07.0_LL	✓	↗
8 m	85072019	MA24_MTAF_MTAF_A230y_08.0_BB	✓	↗	85072199	MA24_MTMF_MTMF_O430y_08.0_LL	✓	↗
9 m	85072020	MA24_MTAF_MTAF_A230y_09.0_BB	✓	↗	85072200	MA24_MTMF_MTMF_O430y_09.0_LL	✓	↗
10 m	85072021	MA24_MTAF_MTAF_A230y_10.0_BB	✓	↗	85072201	MA24_MTMF_MTMF_O430y_10.0_LL	✓	↗
11 m	85072023	MA24_MTAF_MTAF_A230y_11.0_BB	✓	↗	85072202	MA24_MTMF_MTMF_O430y_11.0_LL	✓	↗
12 m	85072024	MA24_MTAF_MTAF_A230y_12.0_BB	✓	↗	85072203	MA24_MTMF_MTMF_O430y_12.0_LL	✓	↗
13 m	85072025	MA24_MTAF_MTAF_A230y_13.0_BB	✓	↗	85072204	MA24_MTMF_MTMF_O430y_13.0_LL	✓	↗
14 m	85072026	MA24_MTAF_MTAF_A230y_14.0_BB	✓	↗	85072205	MA24_MTMF_MTMF_O430y_14.0_LL	✓	↗
15 m	85072028	MA24_MTAF_MTAF_A230y_15.0_BB	✓	↗	85072206	MA24_MTMF_MTMF_O430y_15.0_LL	✓	↗

MTP Pro patch cords Base-24

24 D



MA24_MPAF_MPAF_A230y_xxxx_BB



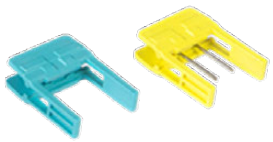
MA24_MPMF_MPMF_O430y_xxxx_LL

MTP Pro accessories

Field tool 1



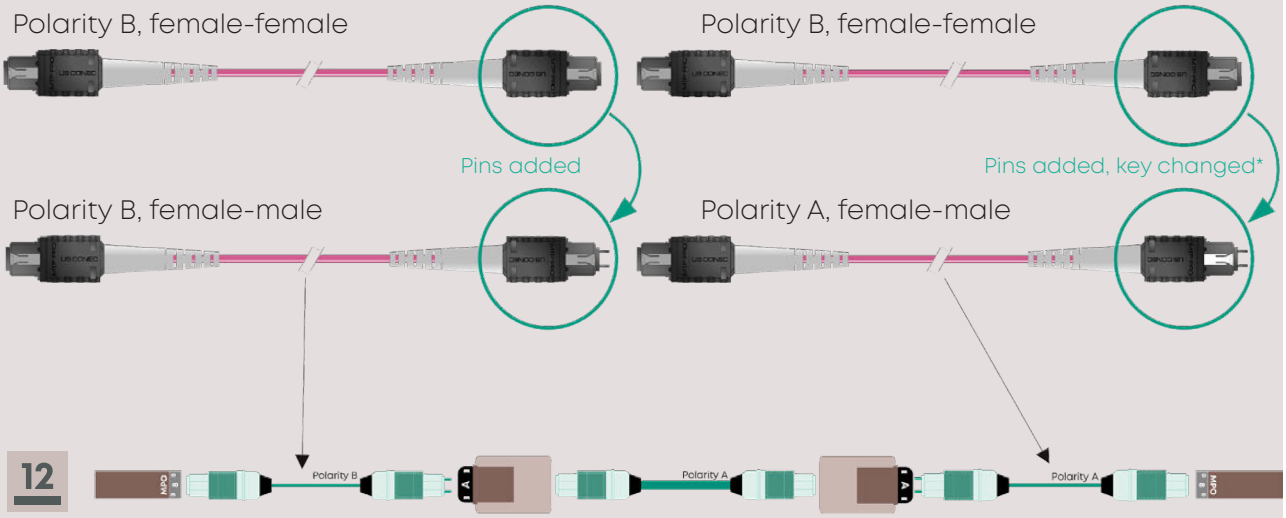
Pin exchanger 2



Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85096933	FIELD_TOOL_MT_PRO	MTP Pro field tool for polarity and pin change	✓	
2	85096881	PIN_EX_MT_PRO_TQ_10-P	MTP Pro pin exchanger (without pins) for multimode, turqoise colour, 10 pcs	✓	↗
	85096882	PIN_EX_MT_PRO_YE_10-P	MTP Pro pin exchanger (without pins) for singlemode, yellow colour, 10 pcs	✓	↗
	85096883	PIN_EX_MT_PRO_MME_TQ_10-P	MTP Pro pin exchanger (with pins) for multimode, turqoise colour, 10 pcs	✓	↗
	85096884	PIN_EX_MT_PRO_SME_YE_10-P	MTP Pro pin exchanger (with pins) for singlemode, yellow colour, 10 pcs	✓	↗

Changing gender and polarity of MTP Pro connector for legacy support



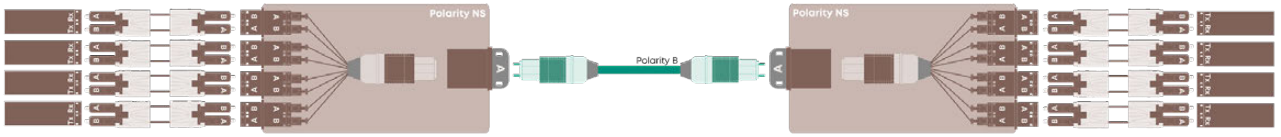
Inter-connect of MPO 8-fiber transceivers using legacy trunk (polarity A, female to female)

* key change for polarity adjustment possible only for multimode patch cords and jumpers

MTP jumpers overview

Inter-connect of 4 duplex transceivers with Base-8 trunk

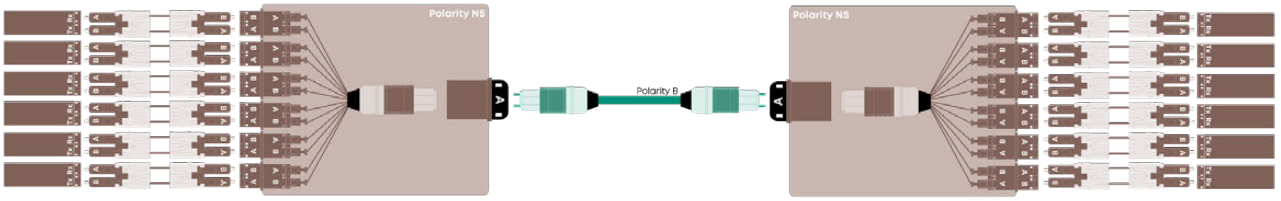
8



Duplex transceiver
Duplex patch cord A-B/B-A
Transition female Base-8 polarity NS
MTP jumper or trunk male to male Base-8, polarity B
Transition female Base-8 polarity NS
Duplex patch cord A-B/B-A
Duplex transceiver

Inter-connect of 6 duplex transceivers with Base-12e trunk

12



Duplex transceiver
Duplex patch cord A-B/B-A
Transition female Base-12e polarity NS
MTP jumper or trunk male to male Base-12e, polarity B
Transition female Base-12e polarity NS
Duplex patch cord A-B/B-A
Duplex transceiver

Inter-connect of 6 duplex transceivers with Base-12 trunk

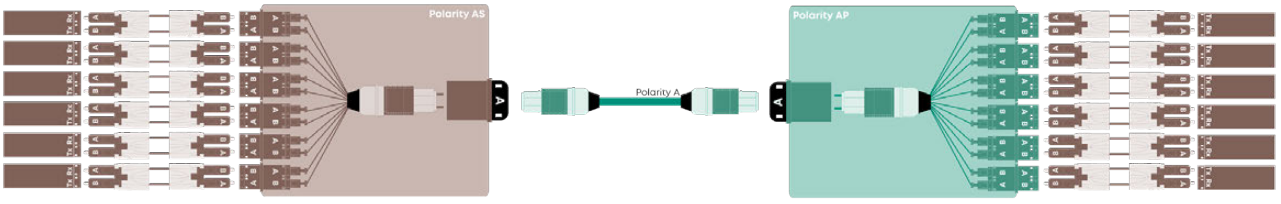
12

Option 1



Duplex transceiver
Duplex patch cord A-B/B-A
Transition male Base-12 polarity AS
MTP jumper or trunk female to female Base-12, polarity A
Transition male Base-12 polarity AS
Duplex patch cord A-A/B-B
Duplex transceiver

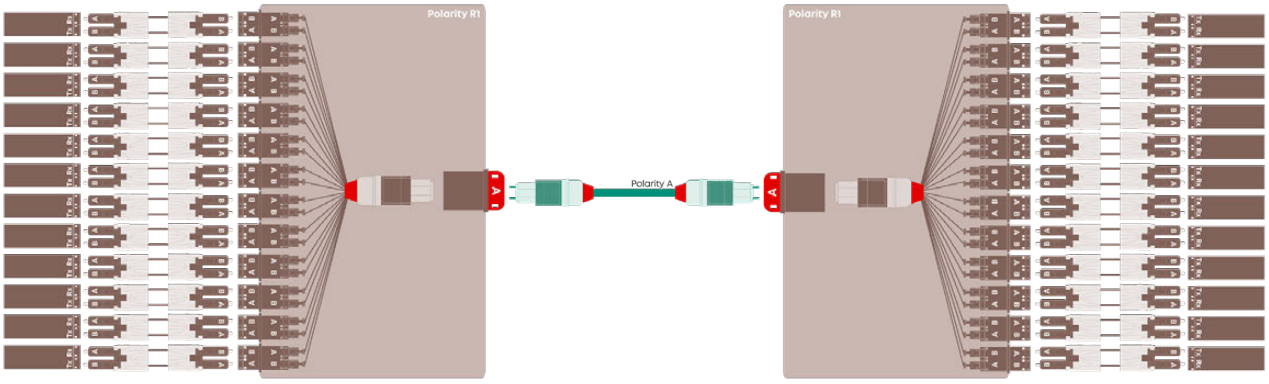
Option 2



Duplex transceiver
Duplex patch cord A-B/B-A
Transition, male Base-12 polarity AS
MTP jumper or trunk female to female Base-12, polarity A
Transition, male Base-12 polarity AP
Duplex patch cord A-B/B-A
Duplex transceiver

Inter-connect of 6 duplex transceivers with Base-24 trunk

24



Duplex transceiver

Duplex patch cord A-B/B-A

Transition female Base-24 polarity R1

MTP jumper or trunk male to male Base-24, polarity A

Transition female Base-24 polarity R1

Duplex patch cord A-B/B-A

Duplex transceiver

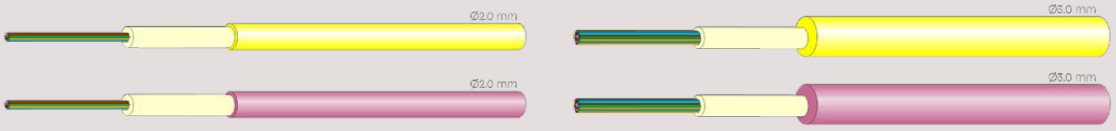
Patch cords, ruggedised and double jacket cables

8 8 12 12

24 24

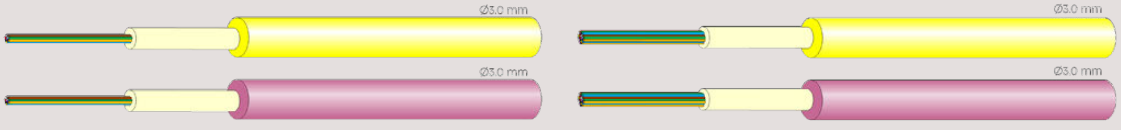
Patch cords

D



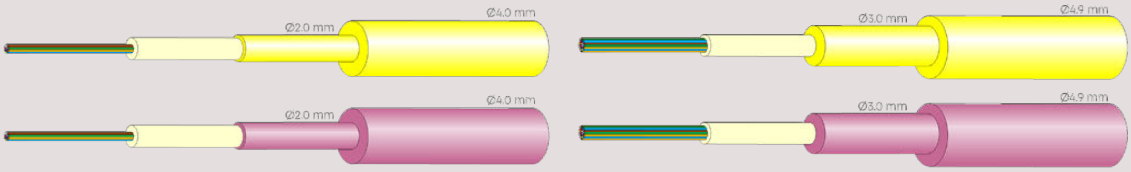
Ruggedised trunks

D



Double jacket trunks

B



MTP jumpers Base-8 and -12e

MTP ruggedised jumper Base-8



MB08_MTAM_MTAM_A230y_xxxx_BB



MB08_MTMM_MTMM_O430y_xxxx_LL

Ordering information

Length	Item number	Descriptive code	LT	URL	Item number	Descriptive code	LT	URL
5 m	85123611	MB08_MTAM_MTAM_A230y_05.0_BB	✓		on request	MB08_MTMM_MTMM_O430y_05.0_LL	◔	
10 m	85071892	MB08_MTAM_MTAM_A230y_10.0_BB	✓		85072121	MB08_MTMM_MTMM_O430y_10.0_LL	✓	↗
15 m	85071894	MB08_MTAM_MTAM_A230y_15.0_BB	✓		85072122	MB08_MTMM_MTMM_O430y_15.0_LL	✓	↗
20 m	85071896	MB08_MTAM_MTAM_A230y_20.0_BB	✓		85072123	MB08_MTMM_MTMM_O430y_20.0_LL	✓	↗
25 m	85071898	MB08_MTAM_MTAM_A230y_25.0_BB	✓		85072124	MB08_MTMM_MTMM_O430y_25.0_LL	✓	↗
30 m	85071900	MB08_MTAM_MTAM_A230y_30.0_BB	✓		85072125	MB08_MTMM_MTMM_O430y_30.0_LL	✓	↗
35 m	85071901	MB08_MTAM_MTAM_A230y_35.0_BB	✓		85072126	MB08_MTMM_MTMM_O430y_35.0_LL	✓	↗
40 m	85071902	MB08_MTAM_MTAM_A230y_40.0_BB	✓		85072127	MB08_MTMM_MTMM_O430y_40.0_LL	✓	↗
45 m	85071903	MB08_MTAM_MTAM_A230y_45.0_BB	✓		85072128	MB08_MTMM_MTMM_O430y_45.0_LL	✓	↗
50 m	85071904	MB08_MTAM_MTAM_A230y_50.0_BB	✓		85072129	MB08_MTMM_MTMM_O430y_50.0_LL	✓	↗

MTP double jacket jumper Base-8



MB08_MTAM_MTAM_A240y_xxxx_BB



MB08_MTMM_MTMM_O440y_xxxx_LL

Ordering information

Length	Item number	Descriptive code	LT	URL	Item number	Descriptive code	LT	URL
5 m	on request	MB08_MTAM_MTAM_A240y_05.0_BB	◔		on request	MB08_MTMM_MTMM_O440y_05.0_LL	◔	↗
10 m		MB08_MTAM_MTAM_A240y_10.0_BB	◔		85118607	MB08_MTMM_MTMM_O440y_10.0_LL	✓	↗
15 m		MB08_MTAM_MTAM_A240y_15.0_BB	◔		85118619	MB08_MTMM_MTMM_O440y_15.0_LL	✓	↗
20 m		MB08_MTAM_MTAM_A240y_20.0_BB	◔		85118886	MB08_MTMM_MTMM_O440y_20.0_LL	✓	↗
25 m		MB08_MTAM_MTAM_A240y_25.0_BB	◔		85118887	MB08_MTMM_MTMM_O440y_25.0_LL	✓	↗
30 m		MB08_MTAM_MTAM_A240y_30.0_BB	◔		85118888	MB08_MTMM_MTMM_O440y_30.0_LL	✓	↗
35 m		MB08_MTAM_MTAM_A240y_35.0_BB	◔		85118889	MB08_MTMM_MTMM_O440y_35.0_LL	✓	↗
40 m		MB08_MTAM_MTAM_A240y_40.0_BB	◔		85118895	MB08_MTMM_MTMM_O440y_40.0_LL	✓	↗
45 m		MB08_MTAM_MTAM_A240y_45.0_BB	◔		85118896	MB08_MTMM_MTMM_O440y_45.0_LL	✓	↗
50 m		MB08_MTAM_MTAM_A240y_50.0_BB	◔		on request	MB08_MTMM_MTMM_O440y_50.0_LL	◔	

MTP ruggedised jumper Base-12e

12 D



MB12_MTAM_MTAM_A230y_xxxx_BB



MB12_MTMM_MTMM_O430y_xxxx_LL

Ordering information

Length	Item number	Descriptive code	LT	URL	Item number	Descriptive code	LT	URL
5 m	84329619	MB12_MTAM_MTAM_A230y_05.0_BB	◔	↗	85115289	MB12_MTMM_MTMM_O430y_05.0_LL	✓	↗
10 m	85144698	MB12_MTAM_MTAM_A230y_10.0_BB	◔	↗	85031010	MB12_MTMM_MTMM_O430y_10.0_LL	✓	↗
15 m	85144699	MB12_MTAM_MTAM_A230y_15.0_BB	◔	↗	85031014	MB12_MTMM_MTMM_O430y_15.0_LL	◔	↗
20 m	85144700	MB12_MTAM_MTAM_A230y_20.0_BB	◔	↗	85031015	MB12_MTMM_MTMM_O430y_20.0_LL	◔	↗
25 m	on request	MB12_MTAM_MTAM_A230y_25.0_BB	◔	↗	85031016	MB12_MTMM_MTMM_O430y_25.0_LL	◔	↗
30 m	85157445	MB12_MTAM_MTAM_A230y_30.0_BB	✓	↗	85031017	MB12_MTMM_MTMM_O430y_30.0_LL	✓	↗
35 m	85157446	MB12_MTAM_MTAM_A230y_35.0_BB	✓	↗	85031018	MB12_MTMM_MTMM_O430y_35.0_LL	✓	↗
40 m	85157447	MB12_MTAM_MTAM_A230y_40.0_BB	✓	↗	85031019	MB12_MTMM_MTMM_O430y_40.0_LL	✓	↗
45 m	85157448	MB12_MTAM_MTAM_A230y_45.0_BB	✓	↗	85031020	MB12_MTMM_MTMM_O430y_45.0_LL	✓	↗
50 m	85157449	MB12_MTAM_MTAM_A230y_50.0_BB	✓	↗	85031021	MB12_MTMM_MTMM_O430y_50.0_LL	✓	↗

MTP double jacket jumper Base-12e

12 B



MB12_MTAM_MTAM_A240y_xxxx_BB



MB12_MTMM_MTMM_O440y_xxxx_LL

Ordering information

Length	Item number	Descriptive code	LT	URL	Item number	Descriptive code	LT	URL
5 m	85122687	MB12_MTAM_MTAM_A240y_05.0_BB	✓		85209304	MB12_MTMM_MTMM_O440y_05.0_LL	◔	
10 m	85143132	MB12_MTAM_MTAM_A240y_10.0_BB	✓		85139870	MB12_MTMM_MTMM_O440y_10.0_LL	✓	
15 m	85125078	MB12_MTAM_MTAM_A240y_15.0_BB	✓		85143126	MB12_MTMM_MTMM_O440y_15.0_LL	✓	
20 m	85125082	MB12_MTAM_MTAM_A240y_20.0_BB	✓		85134372	MB12_MTMM_MTMM_O440y_20.0_LL	✓	
25 m	85125226	MB12_MTAM_MTAM_A240y_25.0_BB	✓		85165621	MB12_MTMM_MTMM_O440y_25.0_LL	✓	
30 m	85134353	MB12_MTAM_MTAM_A240y_30.0_BB	✓		85196550	MB12_MTMM_MTMM_O440y_30.0_LL	◔	
35 m	85125682	MB12_MTAM_MTAM_A240y_35.0_BB	✓			MB12_MTMM_MTMM_O440y_35.0_LL	◔	
40 m	85134357	MB12_MTAM_MTAM_A240y_40.0_BB	✓			MB12_MTMM_MTMM_O440y_40.0_LL	◔	
45 m	85125231	MB12_MTAM_MTAM_A240y_45.0_BB	✓			MB12_MTMM_MTMM_O440y_45.0_LL	◔	
50 m	85125233	MB12_MTAM_MTAM_A240y_50.0_BB	✓			MB12_MTMM_MTMM_O440y_50.0_LL	◔	

MTP jumpers Base-12 and -24

MTP ruggedised jumper Base-12

12 D



MA12_MTAF_MTAF_A230y_xxxx_BB



MA12_MTMF_MTMF_O430y_xxxx_LL

Ordering information

Length	Item number	Descriptive code	LT	URL	Item number	Descriptive code	LT	URL
5 m	84116129	MA12_MTAF_MTAF_A230y_05.0_BB			84116114	MA12_MTMF_MTMF_O430y_05.0_LL		
10 m	84110257	MA12_MTAF_MTAF_A230y_10.0_BB			84116115	MA12_MTMF_MTMF_O430y_10.0_LL		
15 m	84110252	MA12_MTAF_MTAF_A230y_15.0_BB			84116116	MA12_MTMF_MTMF_O430y_15.0_LL		
20 m	84112341	MA12_MTAF_MTAF_A230y_20.0_BB			84116117	MA12_MTMF_MTMF_O430y_20.0_LL		
25 m	84116130	MA12_MTAF_MTAF_A230y_25.0_BB			84116118	MA12_MTMF_MTMF_O430y_25.0_LL		
30 m	84112342	MA12_MTAF_MTAF_A230y_30.0_BB			84116119	MA12_MTMF_MTMF_O430y_30.0_LL		
35 m	84116131	MA12_MTAF_MTAF_A230y_35.0_BB			84116120	MA12_MTMF_MTMF_O430y_35.0_LL		
40 m	84112343	MA12_MTAF_MTAF_A230y_40.0_BB			84116121	MA12_MTMF_MTMF_O430y_40.0_LL		
45 m	84116132	MA12_MTAF_MTAF_A230y_45.0_BB			84116122	MA12_MTMF_MTMF_O430y_45.0_LL		
50 m	84112344	MA12_MTAF_MTAF_A230y_50.0_BB			84116123	MA12_MTMF_MTMF_O430y_50.0_LL		

MTP double jacket jumper Base-12

12 B



MA12_MTAF_MTAF_A240y_xxxx_BB



MA12_MTMF_MTMF_O440y_xxxx_LL

Ordering information

Length	Item number	Descriptive code	LT	URL	Item number	Descriptive code	LT	URL
5 m	85121909	MA12_MTAF_MTAF_A240y_05.0_BB	✓		85191773	MA12_MTMF_MTMF_O440y_05.0_LL	✓	
10 m	85122693	MA12_MTAF_MTAF_A240y_10.0_BB	✓		85122742	MA12_MTMF_MTMF_O440y_10.0_LL	✓	
15 m		MA12_MTAF_MTAF_A240y_15.0_BB	✓		85122745	MA12_MTMF_MTMF_O440y_15.0_LL	✓	
20 m	85122696	MA12_MTAF_MTAF_A240y_20.0_BB	✓		85122747	MA12_MTMF_MTMF_O440y_20.0_LL	✓	
25 m	85122697	MA12_MTAF_MTAF_A240y_25.0_BB	✓		on request	MA12_MTMF_MTMF_O440y_25.0_LL	✓	
30 m	85122698	MA12_MTAF_MTAF_A240y_30.0_BB	✓			MA12_MTMF_MTMF_O440y_30.0_LL	✓	
35 m	on request	MA12_MTAF_MTAF_A240y_35.0_BB	✓			MA12_MTMF_MTMF_O440y_35.0_LL	✓	
40 m	85122700	MA12_MTAF_MTAF_A240y_40.0_BB	✓			MA12_MTMF_MTMF_O440y_40.0_LL	✓	
45 m	85122701	MA12_MTAF_MTAF_A240y_45.0_BB	✓			MA12_MTMF_MTMF_O440y_45.0_LL	✓	
50 m	85122702	MA12_MTAF_MTAF_A240y_50.0_BB	✓			MA12_MTMF_MTMF_O440y_50.0_LL	✓	

MTP ruggedised jumper Base-24



MA24_MTAM_MTAM_A230y_xxxx_BB



MA12_MTMF_MTMF_O430y_xxxx_LL

Ordering information

Length	Item number	Descriptive code	LT	URL	Item number	Descriptive code	LT	URL
5 m	85089475	MA24_MTAM_MTAM_A230y_05.0_BB	✓		85091866	MA24_MTMM_MTMM_O430y_05.0_LL	✓	
10 m	85071906	MA24_MTAM_MTAM_A230y_10.0_BB	✓	↗	85072130	MA24_MTMM_MTMM_O430y_10.0_LL	✓	↗
15 m	85071907	MA24_MTAM_MTAM_A230y_15.0_BB	✓	↗	85072131	MA24_MTMM_MTMM_O430y_15.0_LL	✓	↗
20 m	85071908	MA24_MTAM_MTAM_A230y_20.0_BB	✓	↗	85072132	MA24_MTMM_MTMM_O430y_20.0_LL	✓	↗
25 m	85071909	MA24_MTAM_MTAM_A230y_25.0_BB	✓	↗	85072133	MA24_MTMM_MTMM_O430y_25.0_LL	✓	↗
30 m	85071911	MA24_MTAM_MTAM_A230y_30.0_BB	✓	↗	85072134	MA24_MTMM_MTMM_O430y_30.0_LL	✓	↗
35 m	85071913	MA24_MTAM_MTAM_A230y_35.0_BB	✓	↗	85072135	MA24_MTMM_MTMM_O430y_35.0_LL	✓	↗
40 m	85071914	MA24_MTAM_MTAM_A230y_40.0_BB	✓	↗	85072136	MA24_MTMM_MTMM_O430y_40.0_LL	✓	↗
45 m	85071915	MA24_MTAM_MTAM_A230y_45.0_BB	✓	↗	85072137	MA24_MTMM_MTMM_O430y_45.0_LL	✓	↗
50 m	85071916	MA24_MTAM_MTAM_A230y_50.0_BB	✓	↗	85072138	MA24_MTMM_MTMM_O430y_50.0_LL	✓	↗

MTP double jacket jumper Base-24



MA24_MTAM_MTAM_A249y_xxxx_BB



MA24_MTMM_MTMM_O449y_xxxx_LL

Ordering information

Length	Item number	Descriptive code	LT	URL	Item number	Descriptive code	LT	URL
5 m	on request	MA24_MTAM_MTAM_A249y_05.0_BB			on request	MA24_MTMM_MTMM_O449y_05.0_LL		
10 m		MA24_MTAM_MTAM_A249y_10.0_BB				MA24_MTMM_MTMM_O449y_10.0_LL		
15 m		MA24_MTAM_MTAM_A249y_15.0_BB				MA24_MTMM_MTMM_O449y_15.0_LL		
20 m		MA24_MTAM_MTAM_A249y_20.0_BB				MA24_MTMM_MTMM_O449y_20.0_LL		
25 m		MA24_MTAM_MTAM_A249y_25.0_BB				MA24_MTMM_MTMM_O449y_25.0_LL		
30 m		MA24_MTAM_MTAM_A249y_30.0_BB				MA24_MTMM_MTMM_O449y_30.0_LL		
35 m		MA24_MTAM_MTAM_A249y_35.0_BB				MA24_MTMM_MTMM_O449y_35.0_LL		
40 m		MA24_MTAM_MTAM_A249y_40.0_BB				MA24_MTMM_MTMM_O449y_40.0_LL		
45 m		MA24_MTAM_MTAM_A249y_45.0_BB				MA24_MTMM_MTMM_O449y_45.0_LL		
50 m		MA24_MTAM_MTAM_A249y_50.0_BB				MA24_MTMM_MTMM_O449y_50.0_LL		

MTP Pro jumpers Base-12e

MTP Pro double jacket jumper Base-12e

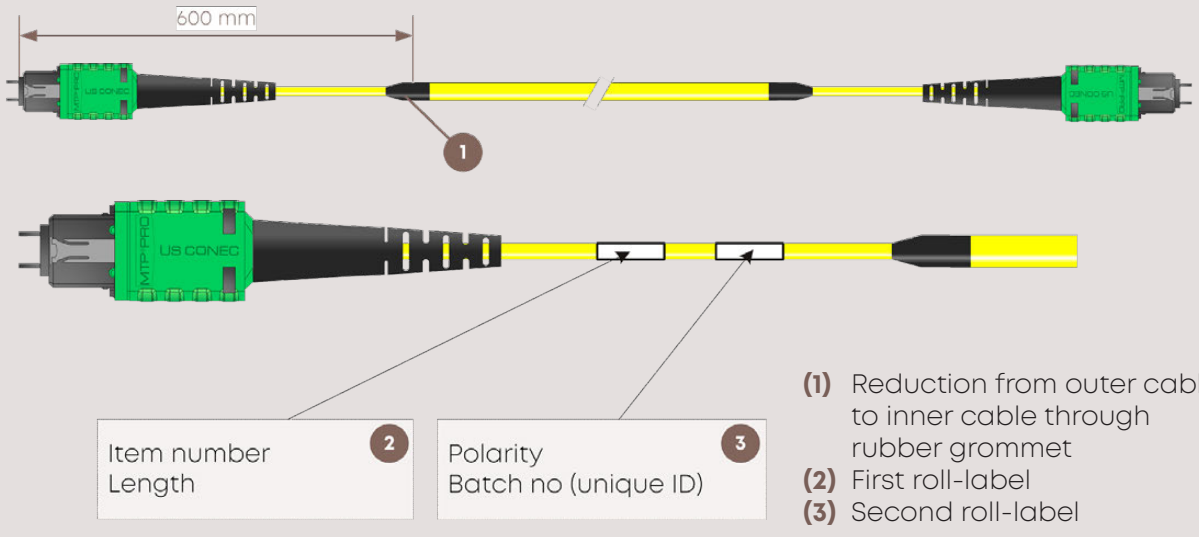


MB12_MPAM_MPAM_A240y_xxxx_BB

Ordering information

Length	Item number	Descriptive code	LT	URL	Length	Item number	Descriptive code	LT	URL
3 m	on request	MB12_MPAM_MPAM_A240y_03.0_BB			35 m	85166297	MB12_MPAM_MPAM_A240y_35.0_BB		
5 m	85166291	MB12_MPAM_MPAM_A240y_05.0_BB			37 m	85184257	MB12_MPAM_MPAM_A240y_37.0_BB		
7 m	85184251	MB12_MPAM_MPAM_A240y_07.0_BB			40 m	85166298	MB12_MPAM_MPAM_A240y_40.0_BB		
10 m	85166292	MB12_MPAM_MPAM_A240y_10.0_BB			42 m	85184258	MB12_MPAM_MPAM_A240y_42.0_BB		
12 m	85184252	MB12_MPAM_MPAM_A240y_12.0_BB			45 m	85184309	MB12_MPAM_MPAM_A240y_45.0_BB		
15 m	85166293	MB12_MPAM_MPAM_A240y_15.0_BB			47 m	85184310	MB12_MPAM_MPAM_A240y_47.0_BB		
17 m	85184253	MB12_MPAM_MPAM_A240y_17.0_BB			50 m	85166299	MB12_MPAM_MPAM_A240y_50.0_BB		
20 m	85166294	MB12_MPAM_MPAM_A240y_20.0_BB			60 m	85166300	MB12_MPAM_MPAM_A240y_60.0_BB		
22 m	85184254	MB12_MPAM_MPAM_A240y_22.0_BB			70 m	85166301	MB12_MPAM_MPAM_A240y_70.0_BB		
25 m	85166295	MB12_MPAM_MPAM_A240y_25.0_BB			80 m	85166302	MB12_MPAM_MPAM_A240y_80.0_BB		
27 m	85184255	MB12_MPAM_MPAM_A240y_27.0_BB			90 m	85166303	MB12_MPAM_MPAM_A240y_90.0_BB		
30 m	85166296	MB12_MPAM_MPAM_A240y_30.0_BB			100 m	85166304	MB12_MPAM_MPAM_A240y_0100_BB		
32 m	85184256	MB12_MPAM_MPAM_A240y_32.0_BB							

MTP/MTP Pro jumper generic drawing



(1) Reduction from outer cable to inner cable through rubber grommet
(2) First roll-label
(3) Second roll-label

MTP Pro double jacket jumper Base-12e

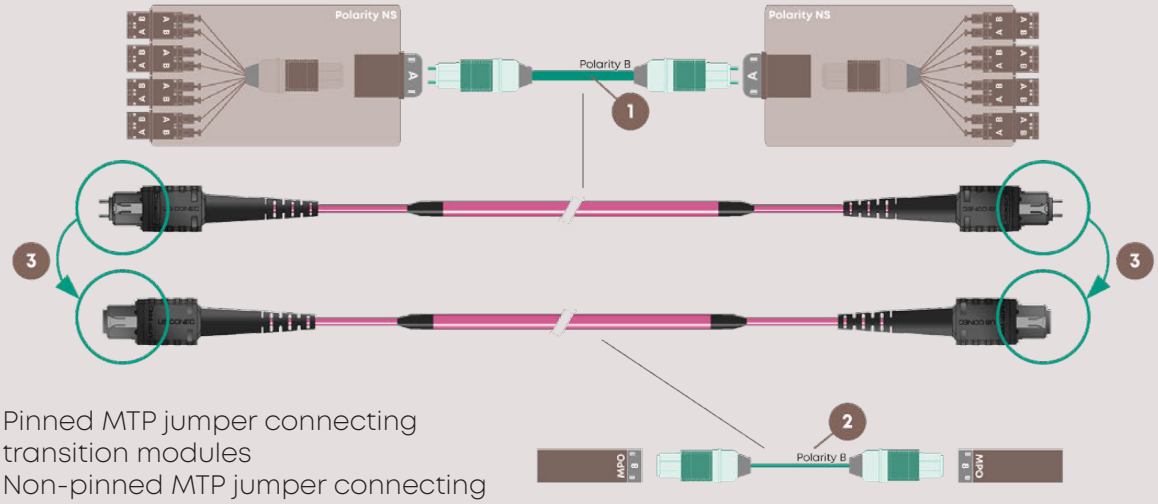


MB12_MPMM_MPMM_O440y_xxxx_BB

Ordering information

Length	Item number	Descriptive code	LT	URL	Length	Item number	Descriptive code	LT	URL
3 m	85166274	MB12_MPMM_MPMM_O440y_03.0_LL			27 m	85184367	MB12_MPMM_MPMM_O440y_27.0_LL		
5 m	85166275	MB12_MPMM_MPMM_O440y_05.0_LL			30 m	85166286	MB12_MPMM_MPMM_O440y_30.0_LL		
7 m	85166280	MB12_MPMM_MPMM_O440y_07.0_LL			32 m	85184368	MB12_MPMM_MPMM_O440y_32.0_LL		
10 m	85166281	MB12_MPMM_MPMM_O440y_10.0_LL			35 m	85166287	MB12_MPMM_MPMM_O440y_35.0_LL		
12 m	85166282	MB12_MPMM_MPMM_O440y_12.0_LL			37 m	85184369	MB12_MPMM_MPMM_O440y_37.0_LL		
15 m	85166283	MB12_MPMM_MPMM_O440y_15.0_LL			40 m	85166288	MB12_MPMM_MPMM_O440y_40.0_LL		
17 m	85179962	MB12_MPMM_MPMM_O440y_17.0_LL			42 m	85184370	MB12_MPMM_MPMM_O440y_42.0_LL		
20 m	85166284	MB12_MPMM_MPMM_O440y_20.0_LL			45 m	85166289	MB12_MPMM_MPMM_O440y_45.0_LL		
22 m	85184366	MB12_MPMM_MPMM_O440y_22.0_LL			47 m	85184385	MB12_MPMM_MPMM_O440y_47.0_LL		
25 m	85166285	MB12_MPMM_MPMM_O440y_25.0_LL			50 m	85166290	MB12_MPMM_MPMM_O440y_50.0_LL		

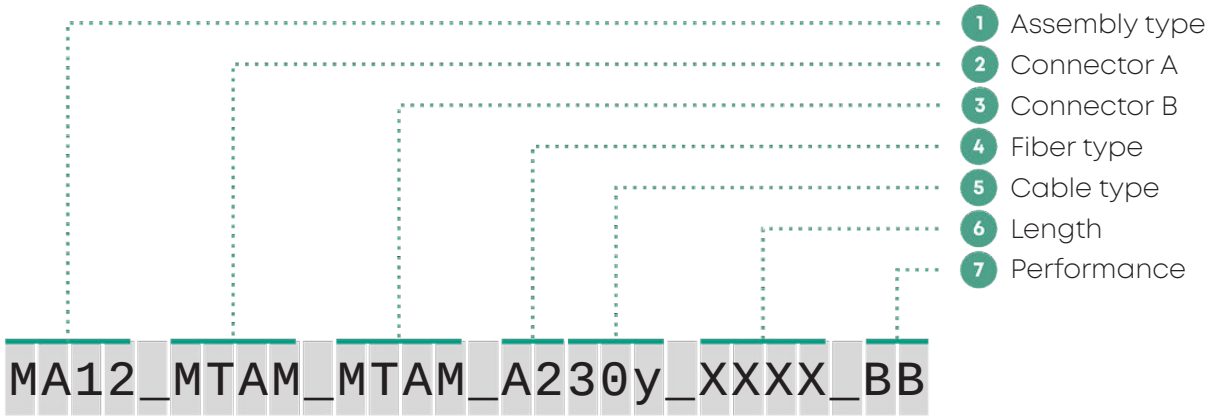
Convert MTP Pro jumper to patch cord



(1) Pinned MTP jumper connecting transition modules
(2) Non-pinned MTP jumper connecting transceivers
(3) Pins removed

Order code MTP assemblies

Order code MTP assemblies



1 Assembly type

MB08	Polarity B, Base-8, grey boot	8
MA12	Polarity A, Base-12, black boot	12
MB12	Polarity B, Base-12, black boot	12
MA24	Polar ity A, Base-24, red boot	24
MX24	Polar ity modified B, Base-24 (16), red boot	16

2 3 Connector side A or B

MTAF	MTP APC, SM, female	
MTAM	MTP APC, SM, male	
MTMF	MTP MM, female	
MTMM	MTP MM, male	
MPAF	MTP Pro APC, SM, female	
MPAM	MTP Pro APC, SM, male	
MPMF	MTP Pro MM, female	
MPMM	MTP Pro MM, male	

MTP boot colour defined by product type

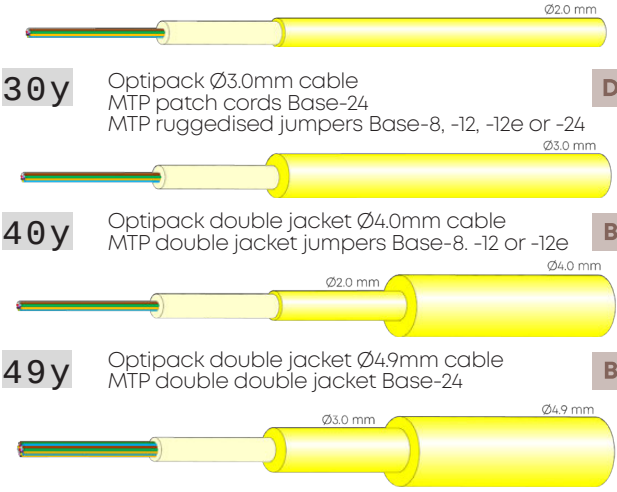


4 Fiber type

A2	Singlemode G.657.A2 (low-bend)	
04	Multimode 50/125 fiber OM4	

5 Cable type

20y	Optipack Ø2.0mm cable MTP patch cords Base-8, -12 or -12e	D
30y	Optipack Ø3.0mm cable MTP patch cords Base-24 MTP ruggedised jumpers Base-8, -12, -12e or -24	D
40y	Optipack double jacket Ø4.0mm cable MTP double jacket jumpers Base-8. -12 or -12e	B
49y	Optipack double jacket Ø4.9mm cable MTP double double jacket Base-24	B



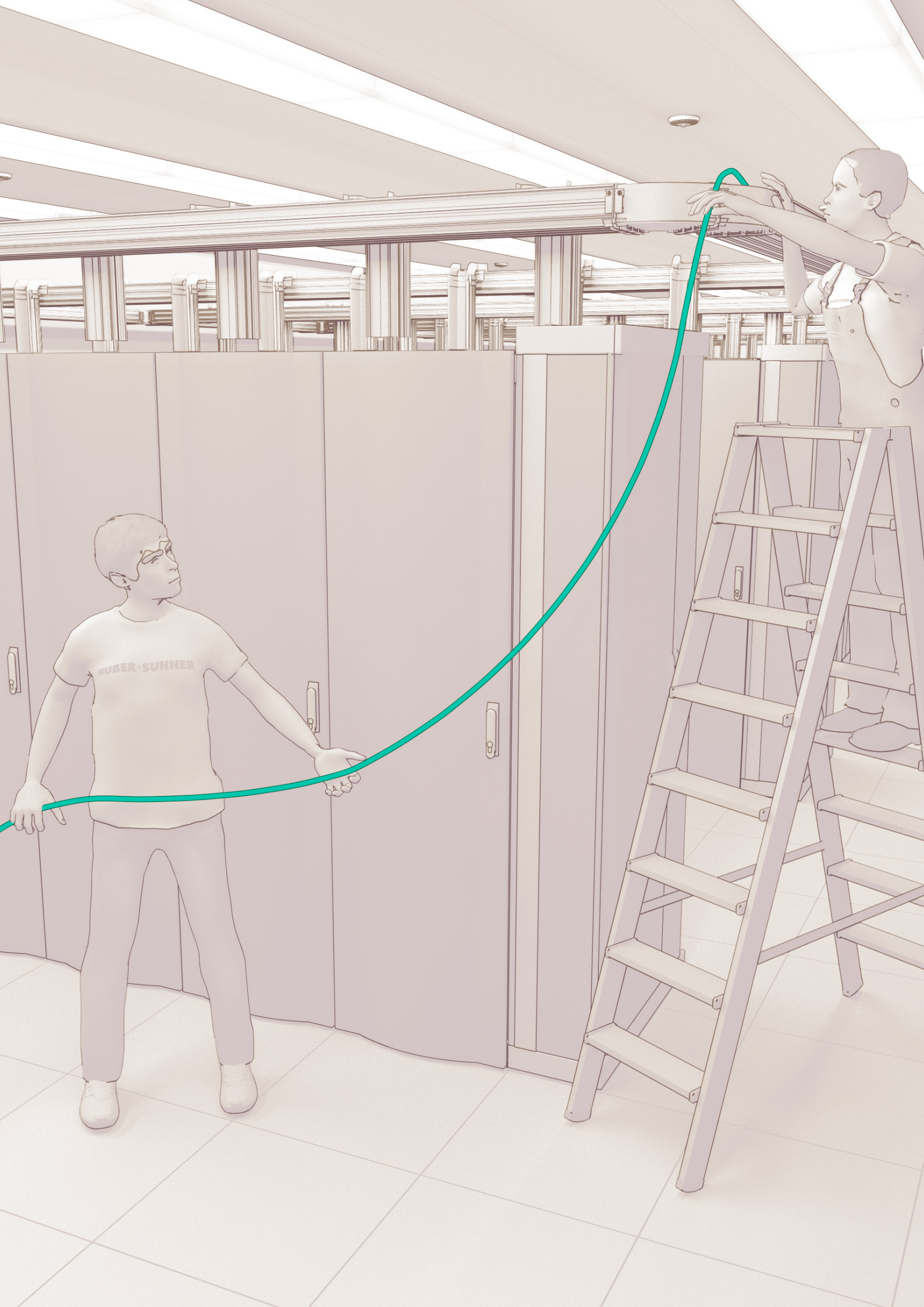
Cable jacket colour depends on fiber type

6 Length

XXXX	Pigtail length in meters, 4 characters allowed, e.g.:				
00.5	0.5 meters	05.0	5 meters	0100	100 meters

7 Performance

SS	Class S – singlemode standard
BB	Class B – singlemode Elite (default)
LL	Class L – multimode Elite (default)


HUBER+SUHNER

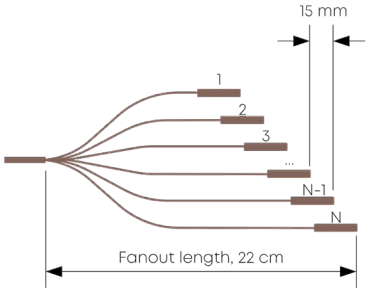


Cable systems

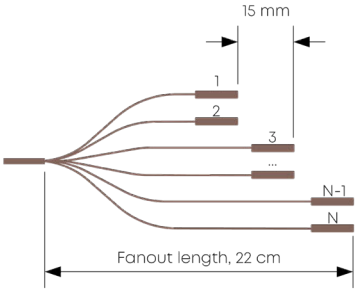


Fanout and breakout

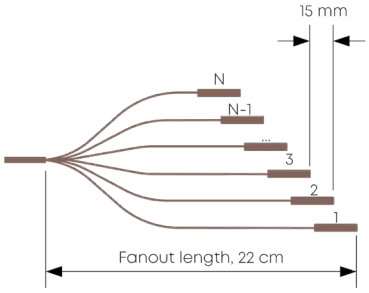
Fanout patterns



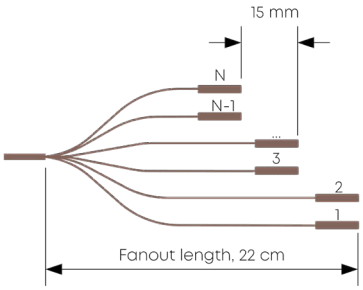
Fanout type 1
#1 on shortest leg
Switch connection



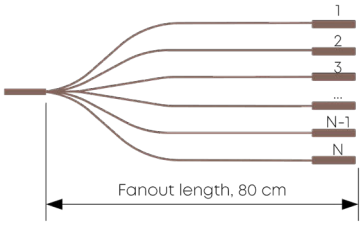
Fanout type 2
#1 on shortest leg
Switch connection



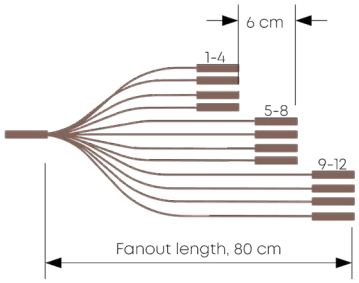
Fanout type 3
#1 on longest leg
Switch connection



Fanout type 4
#1 on longest leg
Switch connection

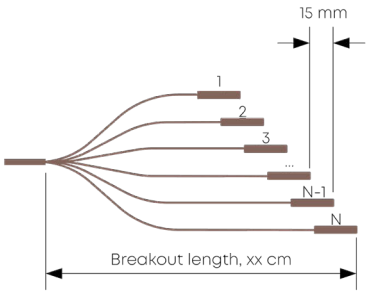


Fanout type 5
Equal lengths
IANOS patching
LISA patching / 6 connectios
SYLFA HD patching

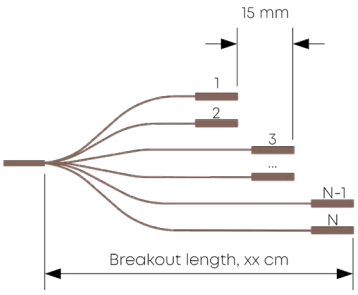


Fanout type 6
LISA patching / 12 connections

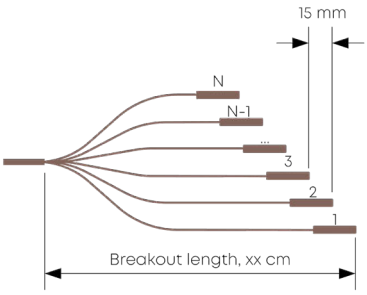
Breakout patterns



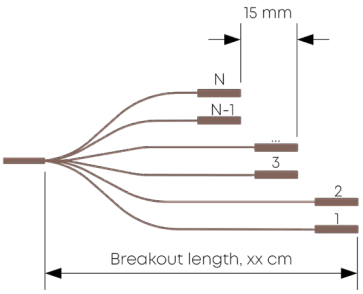
Breakout type 1
#1 on shortest leg



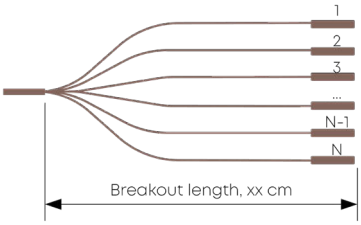
Breakout type 2
#1 on shortest leg



Breakout type 3
#1 on longest leg

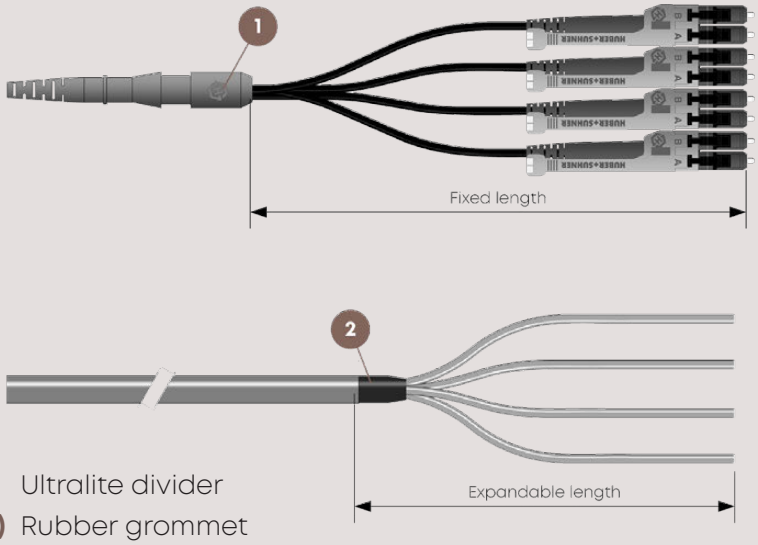


Breakout type 4
#1 on longest leg



Breakout type 5
Equal lengths

Fanout and breakout example



(1) Ultralite divider
(2) Rubber grommet

Optipack harness ↗

Optipack module ↗

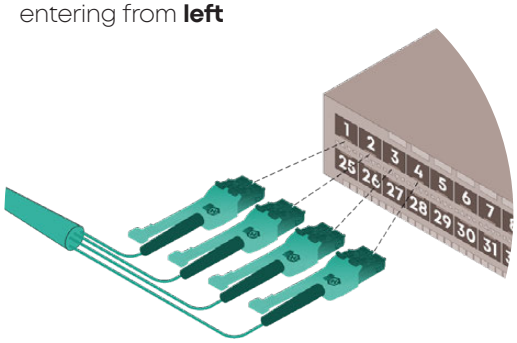
Optipack Medusa ↗

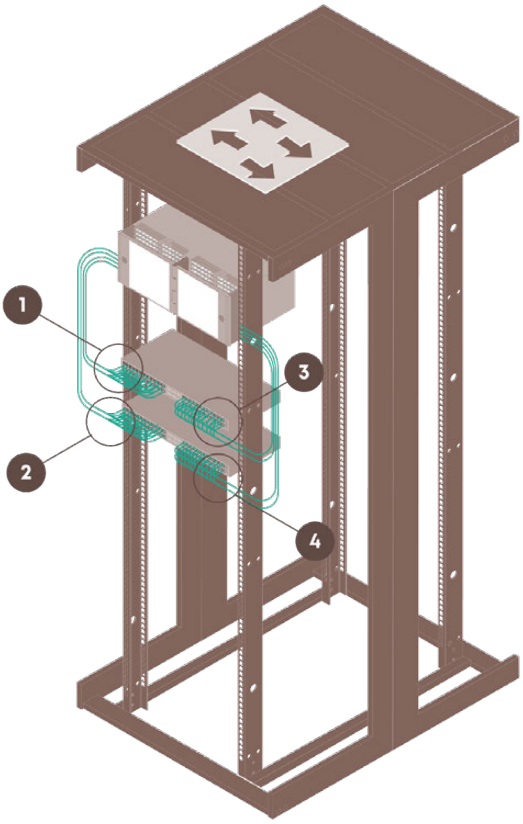
Optipack trunk ↗

Optipack harness applications

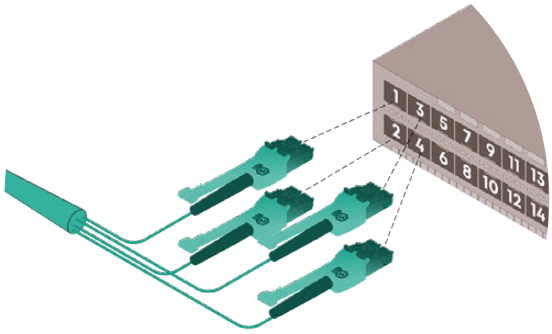
Switch connections with different fanout types

(1) Fanout type 1
Connect **in-line** numbered equipment entering from **left**

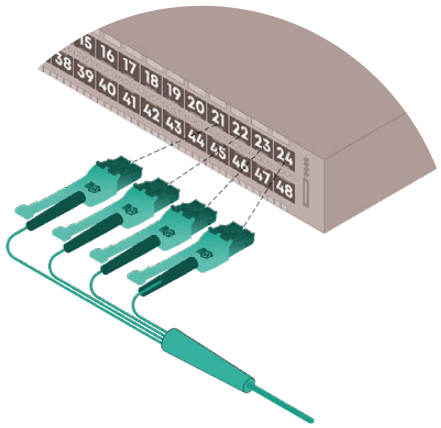




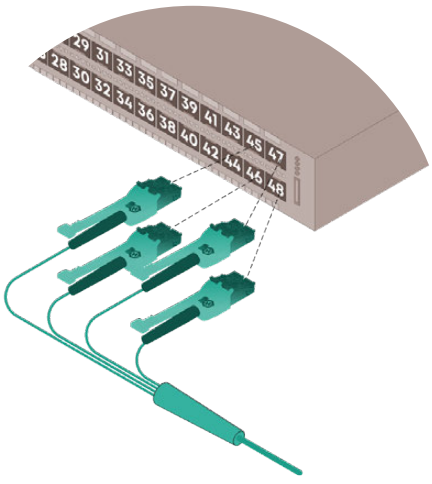
(2) Fanout type 2
Connect **pair-wise** numbered equipment entering from **left**



(3) Fanout type 3
Connect **in-line** numbered equipment entering from **right**



(4) Fanout type 4
Connect **pair-wise** numbered equipment entering from **right**



Examples of inter-connect links with Optipack harness Base-8 and -24

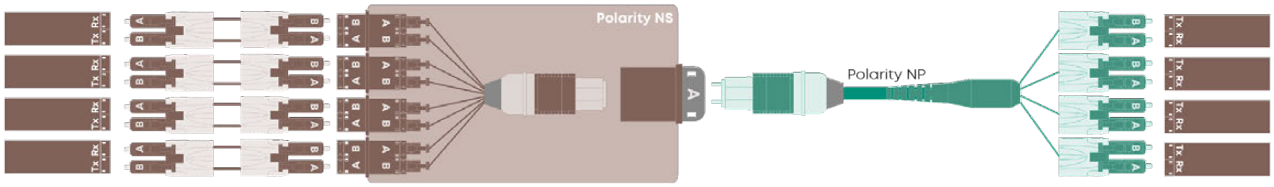
8 Optipack LCd to LCd harness



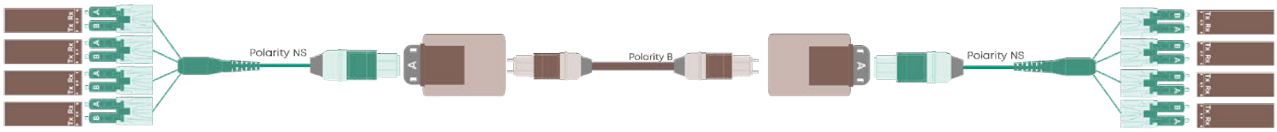
Optipack MTP to LCd in-rack harness



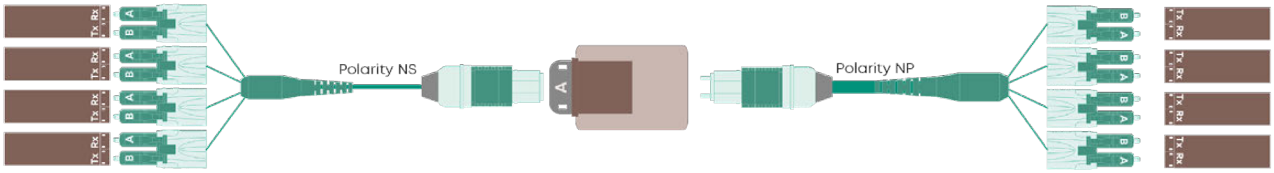
Optipack MTP to LCd trunk harness



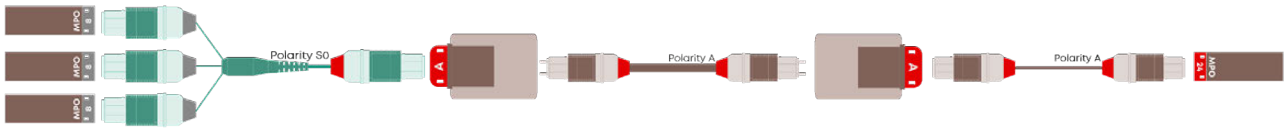
Optipack MTP to LCd in-rack harness on both sides



Optipack MTP to LCd in-rack harness on both sides

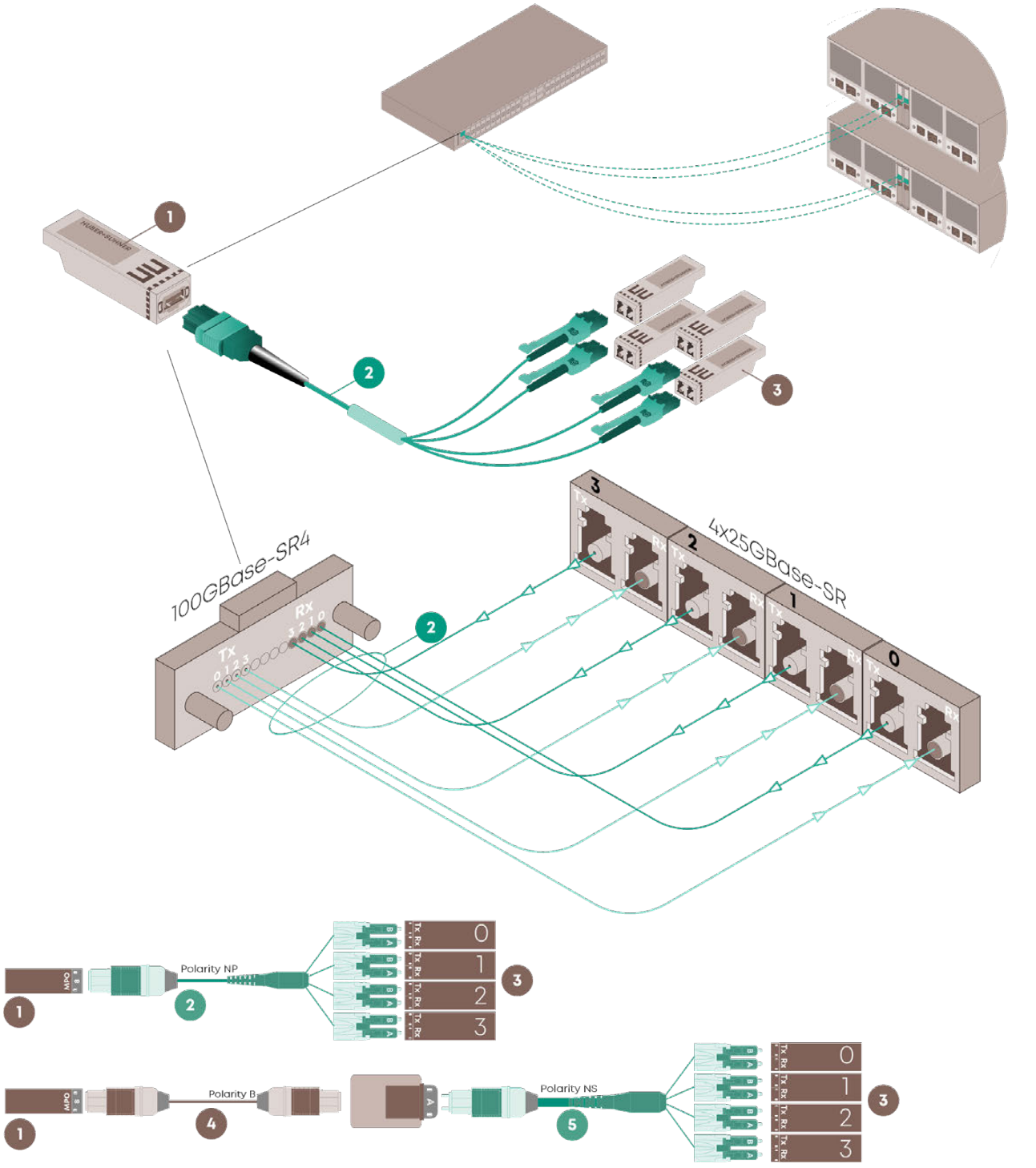


24 Optipack conversion harness



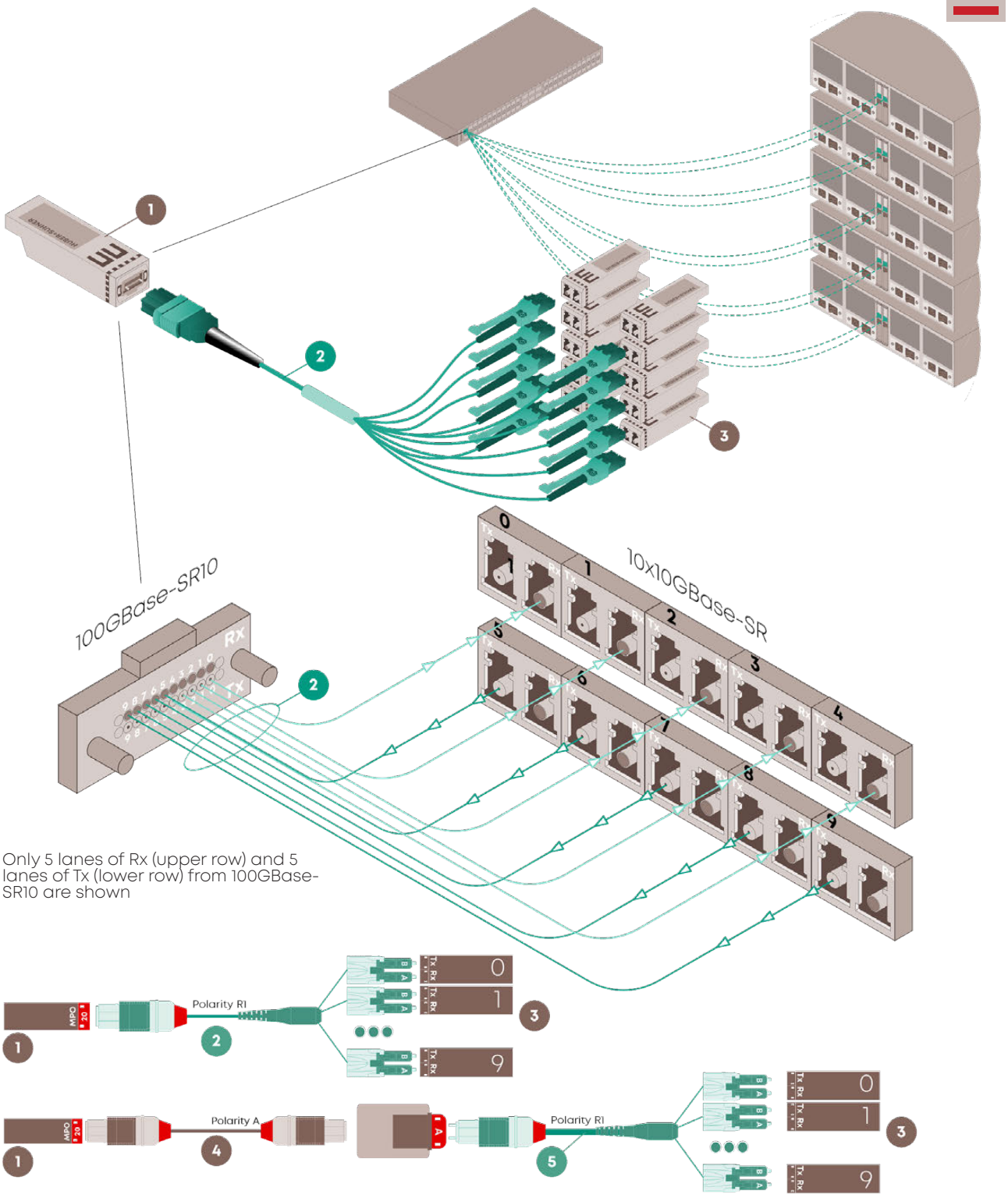
Transceiver breakout application 100G to 4x25G

8 12



(1) MPO 8-fiber transceiver
(2) Optipack in-rack harness polarity NP, female
(3) Duplex transceivers
(4) MTP patch cord, polarity B, female to female
(5) Optipack trunk harness polarity NS, male

Transceiver breakout application 100G to 10x10G



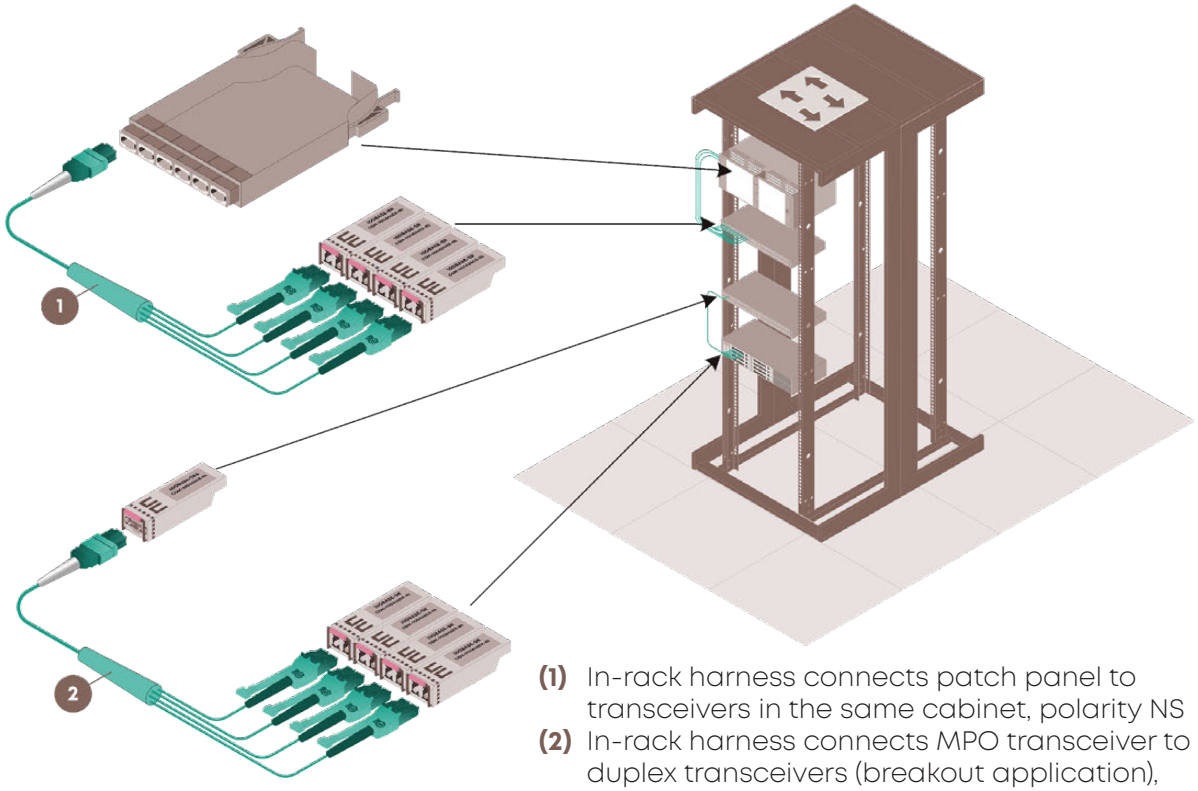
Only 5 lanes of Rx (upper row) and 5 lanes of Tx (lower row) from 100GBase-SR10 are shown

(1) MPO 20-fiber transceiver
(2) Optipack in-rack harness* polarity R1, female
(3) Duplex transceivers
(4) MTP patch cord, polarity A, female to female
(5) Optipack trunk harness* polarity R1, male

* 1 and 12 connectors of harness are not used in this case

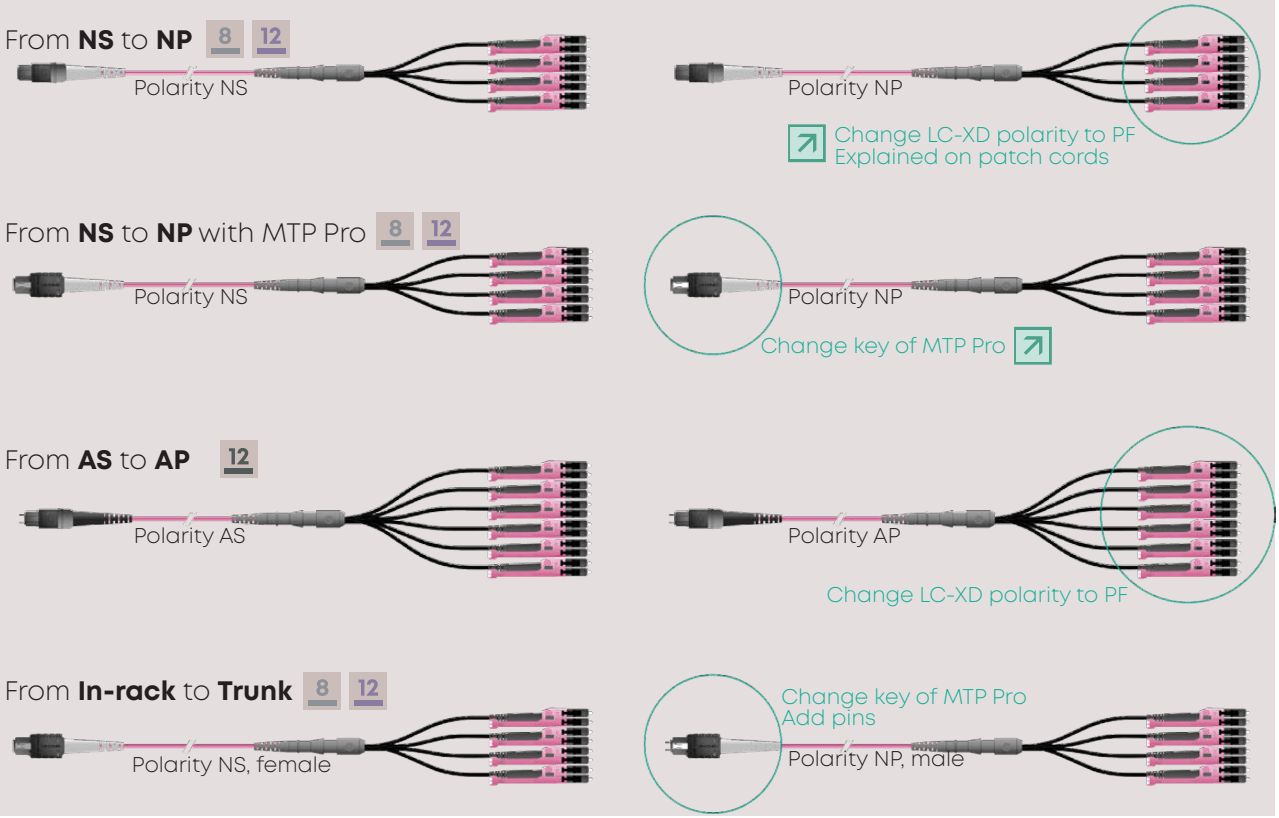
In-rack harness MTP to duplex

Optipack in-rack harness application example



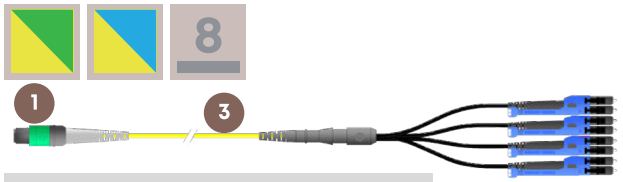
(1) In-rack harness connects patch panel to transceivers in the same cabinet, polarity NS
(2) In-rack harness connects MPO transceiver to duplex transceivers (breakout application), polarity NP

Optipack in-rack harness polarity change examples



Optipack harness in-rack MTP to LC-XD

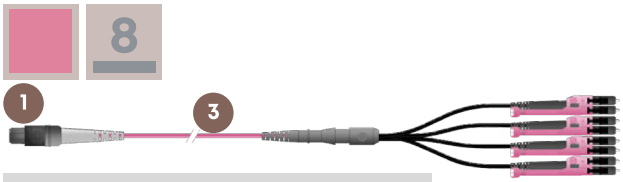
D



OH08NxL_DA0xxxD_0000MF_x080LP



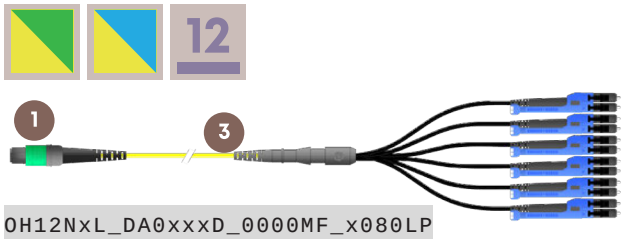
OH08NxL_DA0xxxD_0000PF_x080LP



OH08NxL_DA4xxxD_0000MF_x080LP



OH08NxL_DA4xxxD_0000PF_x080LP



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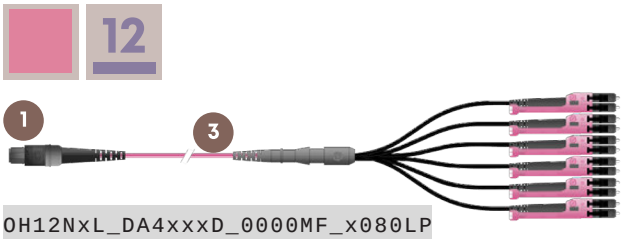
OH12NxL_DA0xxxD_0000PF_x080LP



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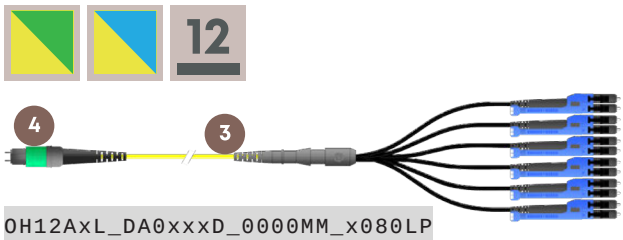
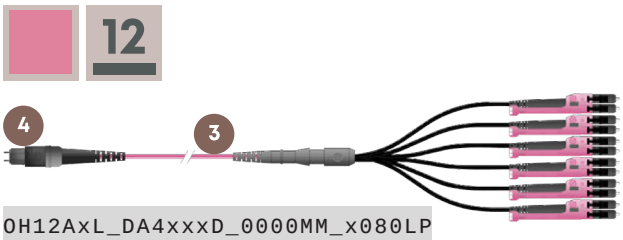
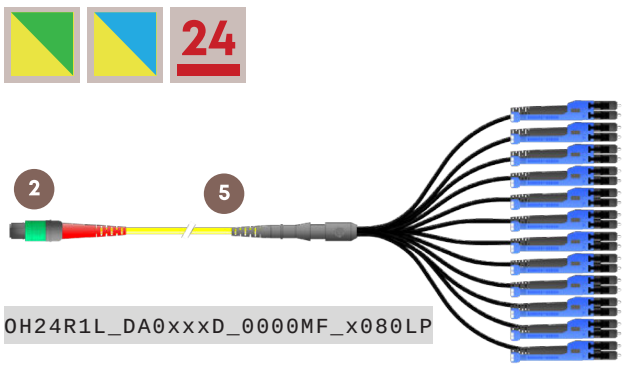
OH12NxL_DA4xxxD_0000PF_x080LP



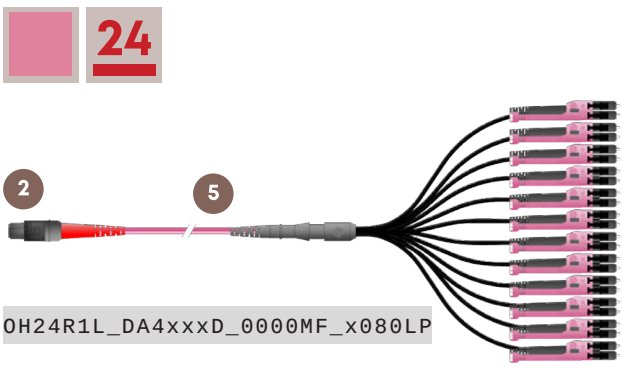
OH12AxL_DA0xxxD_0000MM_x080LP



OH12AxL_DA4xxxD_0000MM_x080LP



OH24R1L_DA0xxxD_0000MF_x080LP

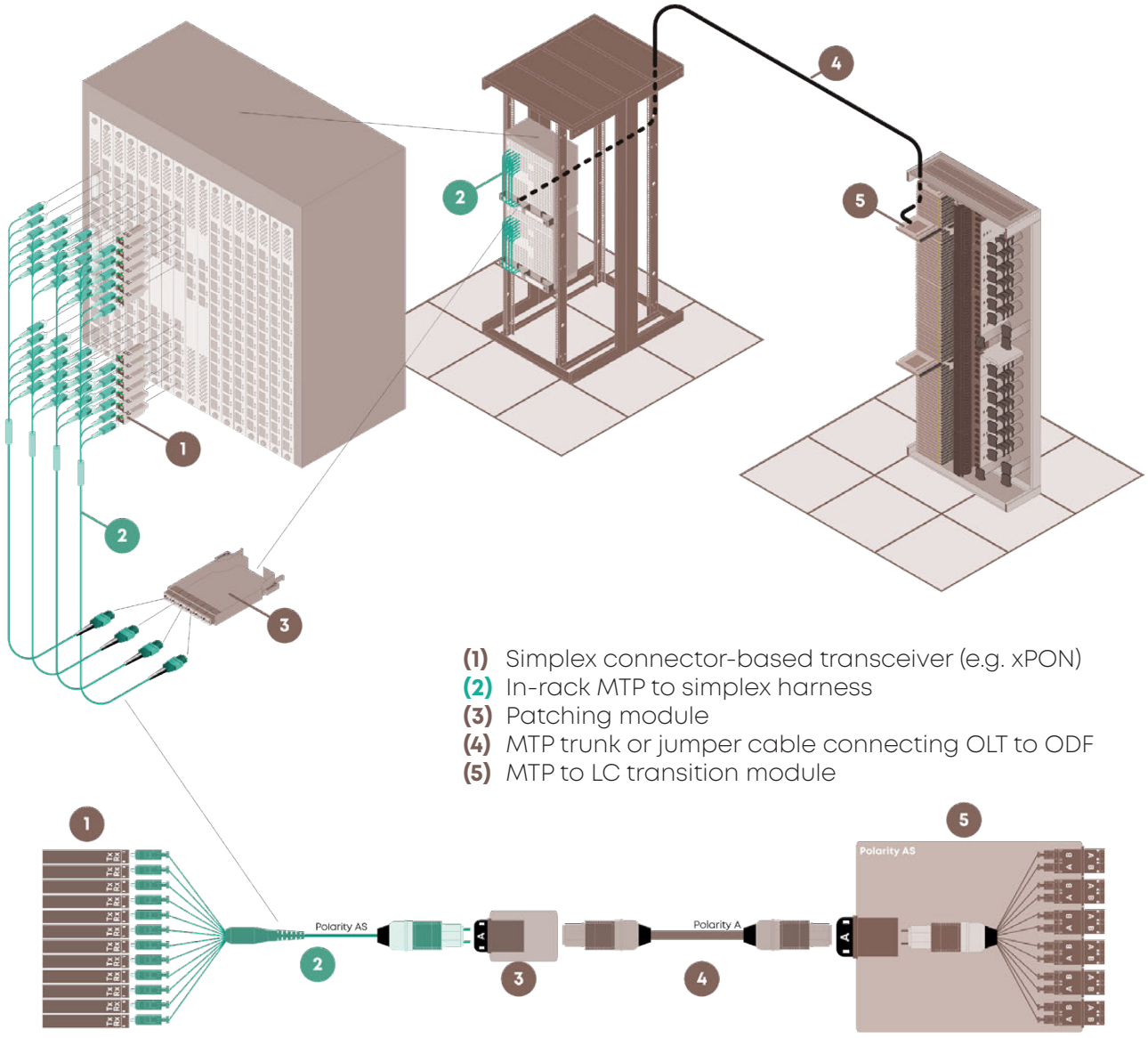


OH24R1L_DA4xxxD_0000MF_x080LP

(1) MTP female connector
(2) MTP Pro female connector
(3) Patch cable, Ø2 mm
(4) MTP male connector
(5) Patch cable, Ø3 mm

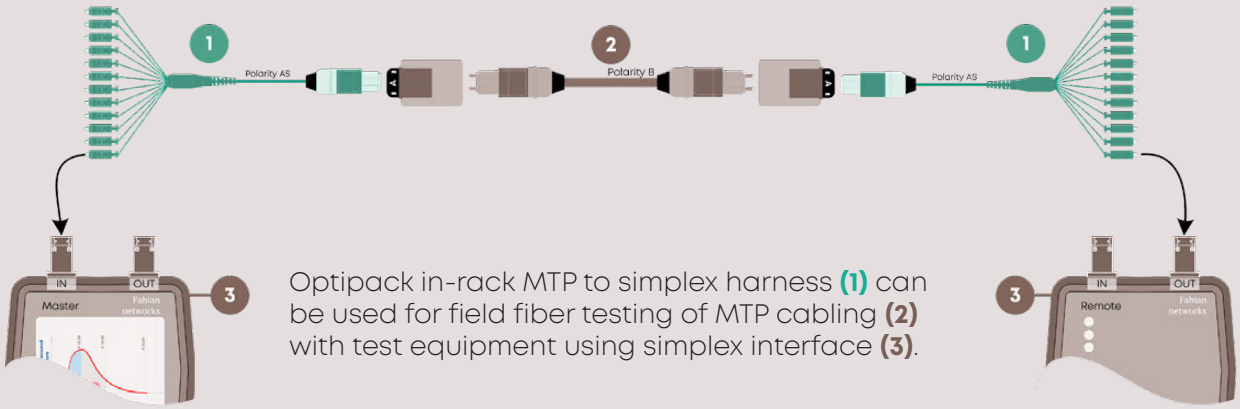
In-rack harness MTP to simplex

Optipack in-rack MTP to simplex harness application example



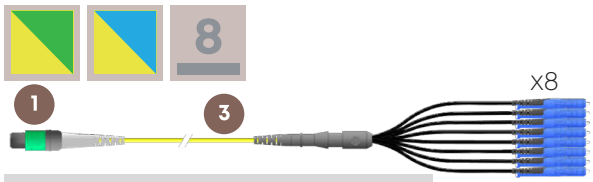
(1) Simplex connector-based transceiver (e.g. xPON)
(2) In-rack MTP to simplex harness
(3) Patching module
(4) MTP trunk or jumper cable connecting OLT to ODF
(5) MTP to LC transition module

Optipack in-rack MTP to simplex harness for field fiber testing

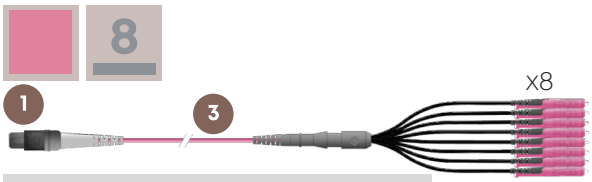


Optipack in-rack MTP to simplex harness **(1)** can be used for field fiber testing of MTP cabling **(2)** with test equipment using simplex interface **(3)**.

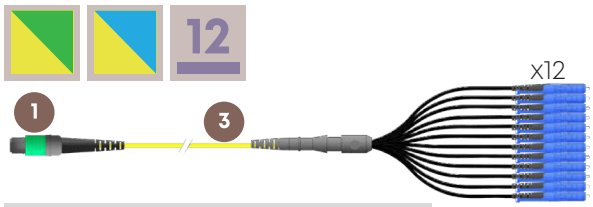
Optipack harness in-rack MTP to LC push-pull simplex



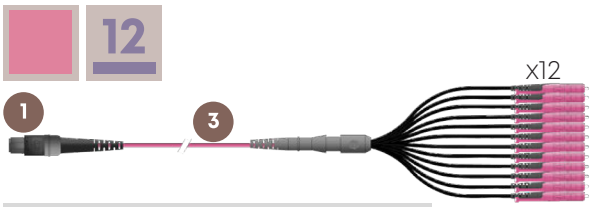
OH08ASL_DA0xxxD_0000MF_x080KP



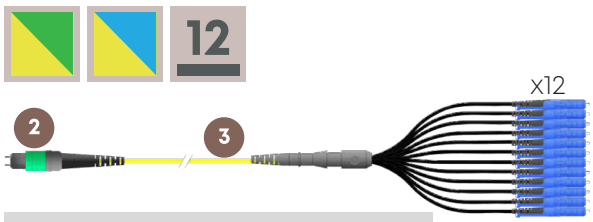
OH08ASL_DA4xxxD_0000MF_x080KP



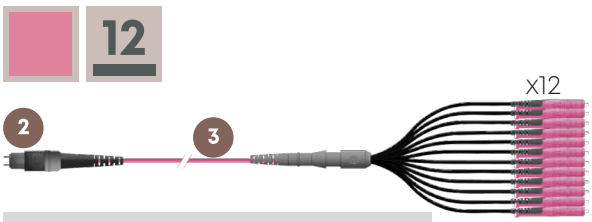
OH12ASL_DA0xxxD_0000MF_x080KP



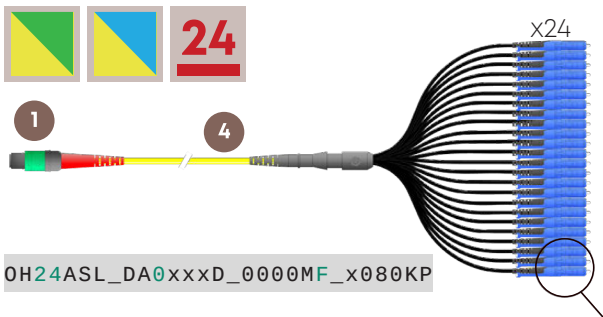
OH12ASL_DA4xxxD_0000MF_x080KP



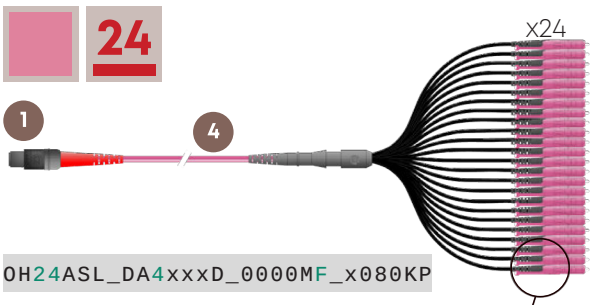
OH12ASL_DA0xxxD_0000MM_x080KP



OH12ASL_DA4xxxD_0000MM_x080KP



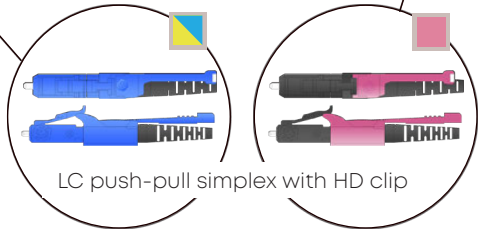
OH24ASL_DA0xxxD_0000MF_x080KP



OH24ASL_DA4xxxD_0000MF_x080KP

(1) MTP female connector
(2) MTP male connector

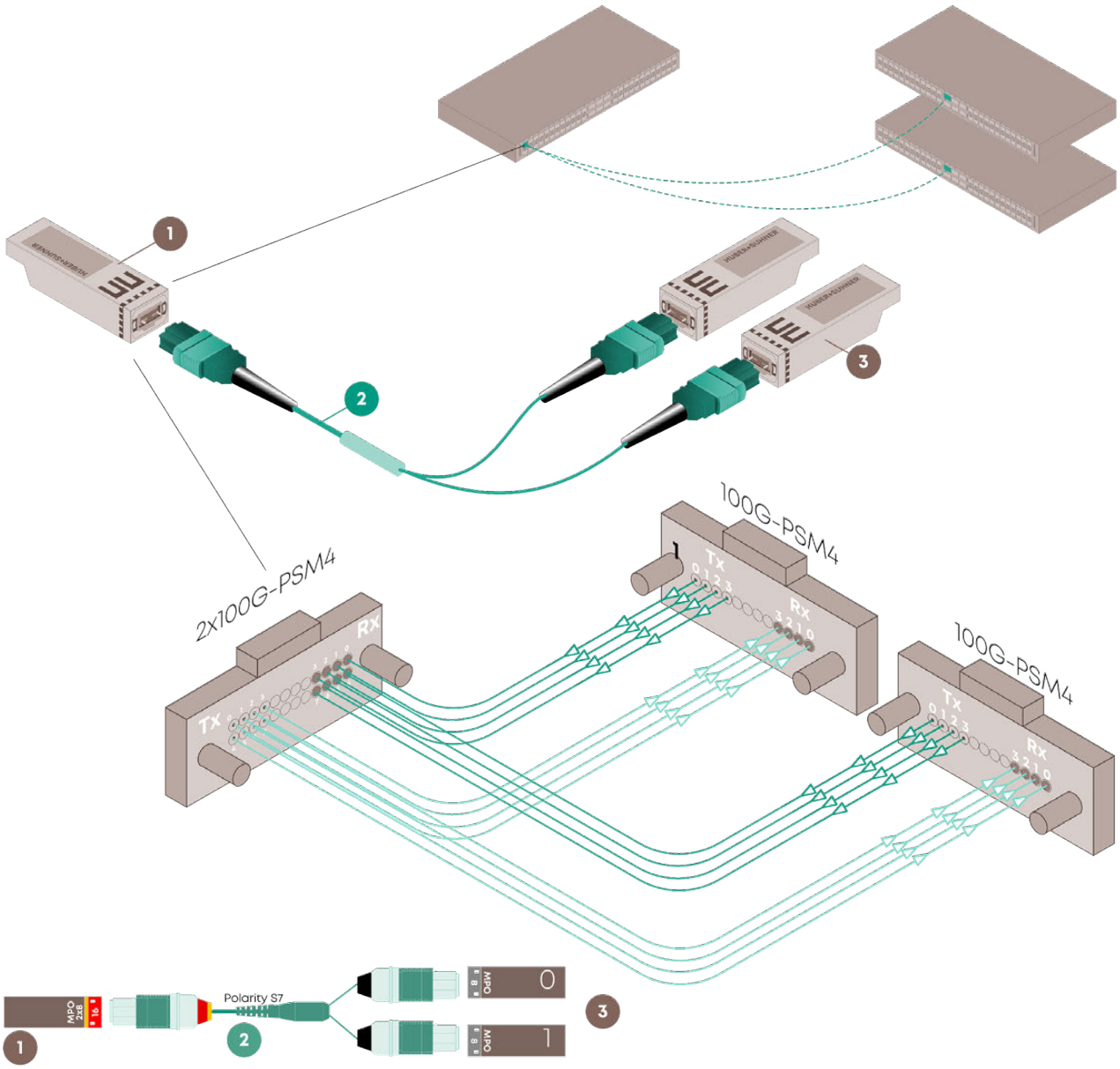
(3) Patch cable, Ø2mm
(4) Patch cable, Ø3mm



In-rack conversion harness

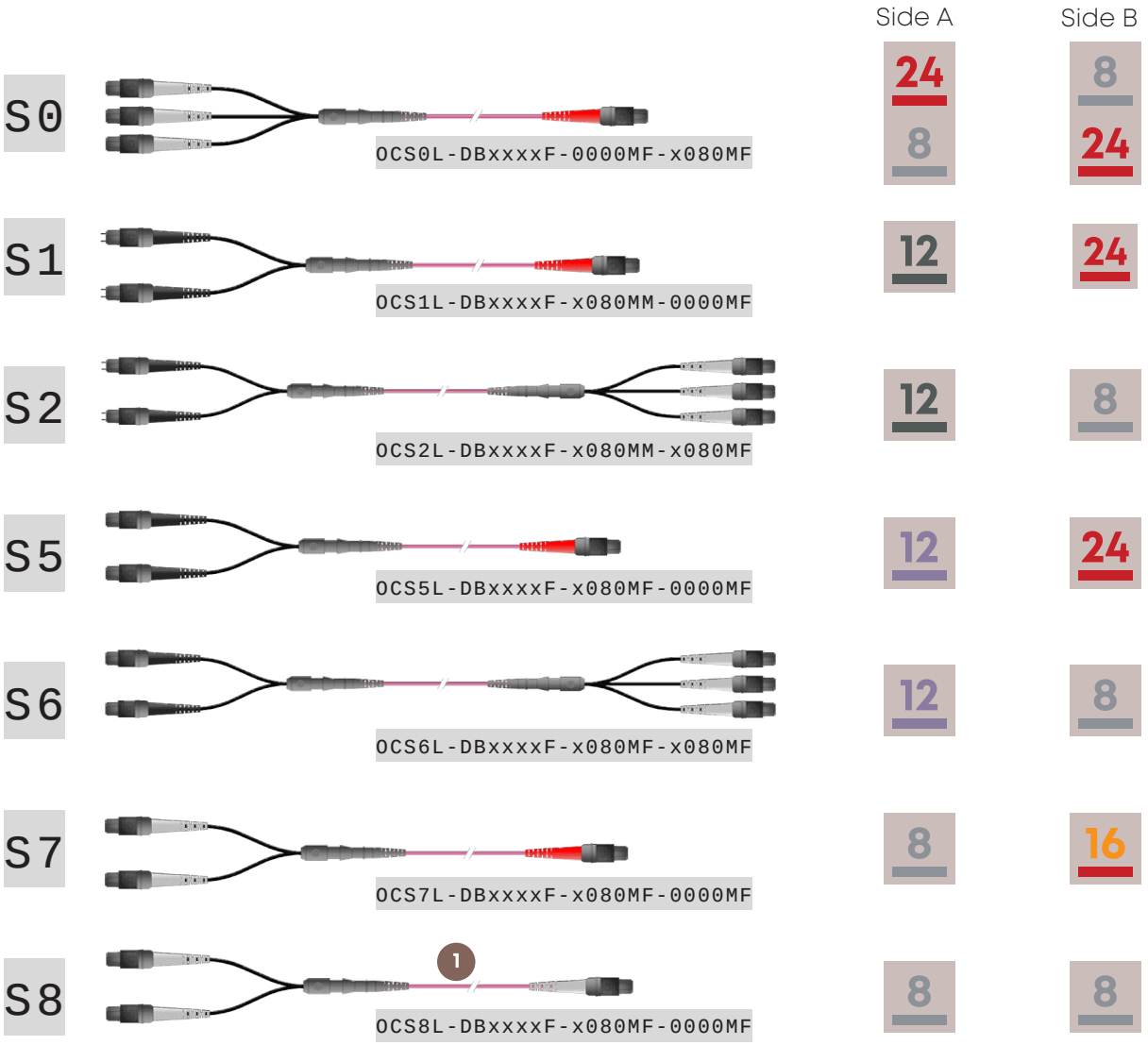
Optipack in-rack conversion harness application example

16 8



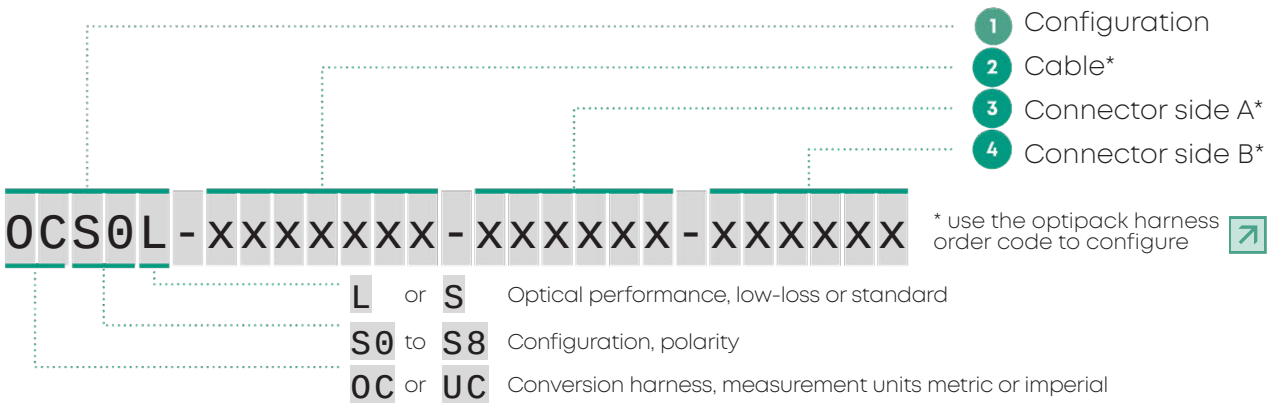
(1) MPO 16-fiber transceiver, requiring MPO 24-fiber connector
(2) Optipack in-rack conversion harness, polarity S7, female to female
(3) MPO 8-fiber transceiver, requiring MPO 8-fiber connector

Optipack in-rack conversion harness options



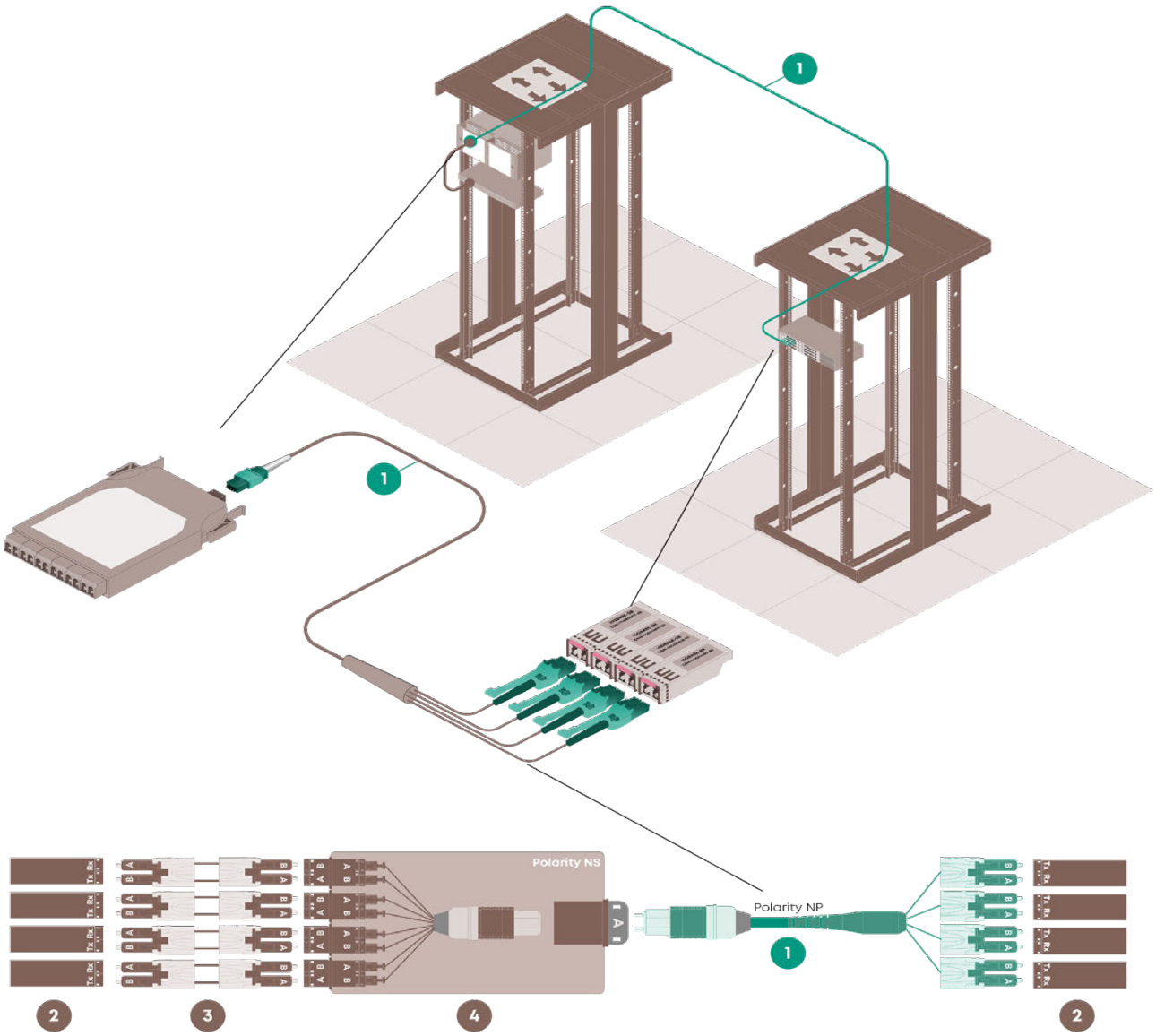
(1) Y-cable for TAP applications

Optipack conversion in-rack harness order code



Trunk harness MTP to duplex

Optipack trunk harness application example

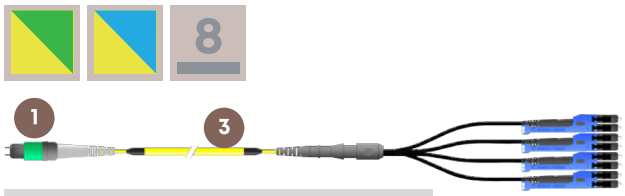


(1) Trunk harness connects transceivers or patch panels in one cabinet to transceivers or patch panels located in another cabinet, polarity NP

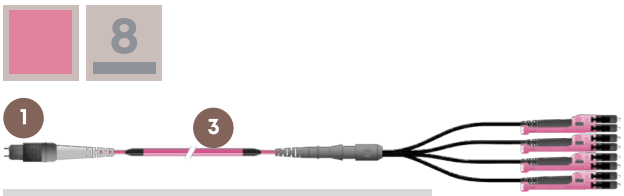
(2) Duplex transceiver
(3) Duplex assembly, A-B-B-A
(4) Transition module MTP to LCd, polarity NS

B

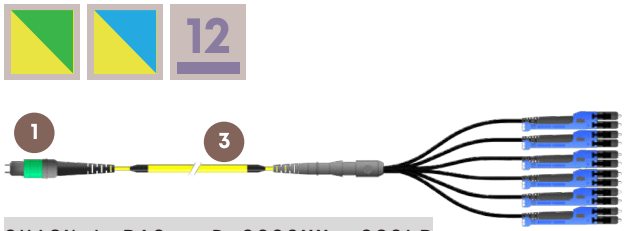
Optipack trunk harness MTP to LC-XD Base-8, -12 and -12e



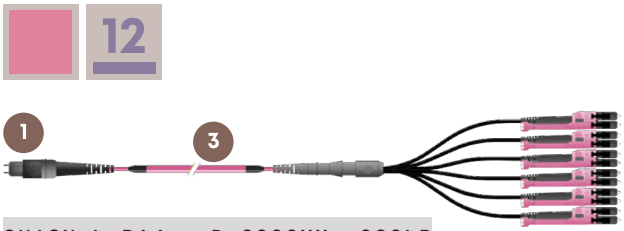
OH08NxL_BA0xxxD_0000MM_x080LP



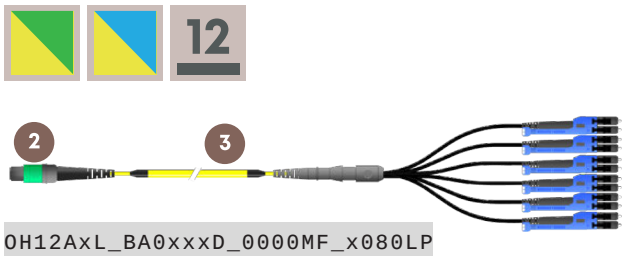
OH08NxL_BA4xxxD_0000MM_x080LP



OH12NxL_BA0xxxD_0000MM_x080LP



OH12NxL_BA4xxxD_0000MM_x080LP



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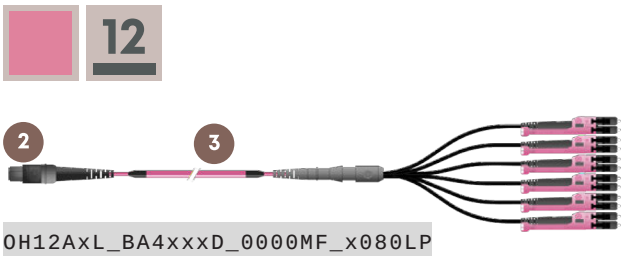

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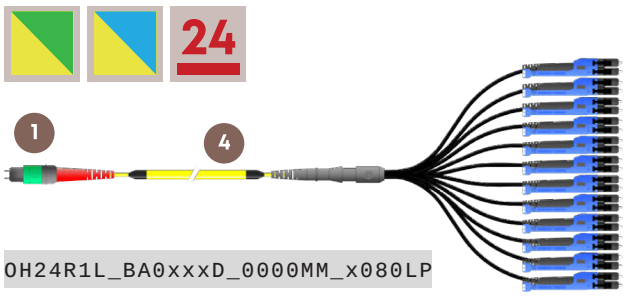
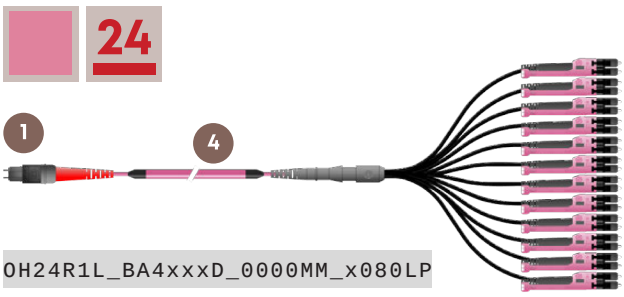


OH24R1L_BA0xxxD_0000MM_x080LP



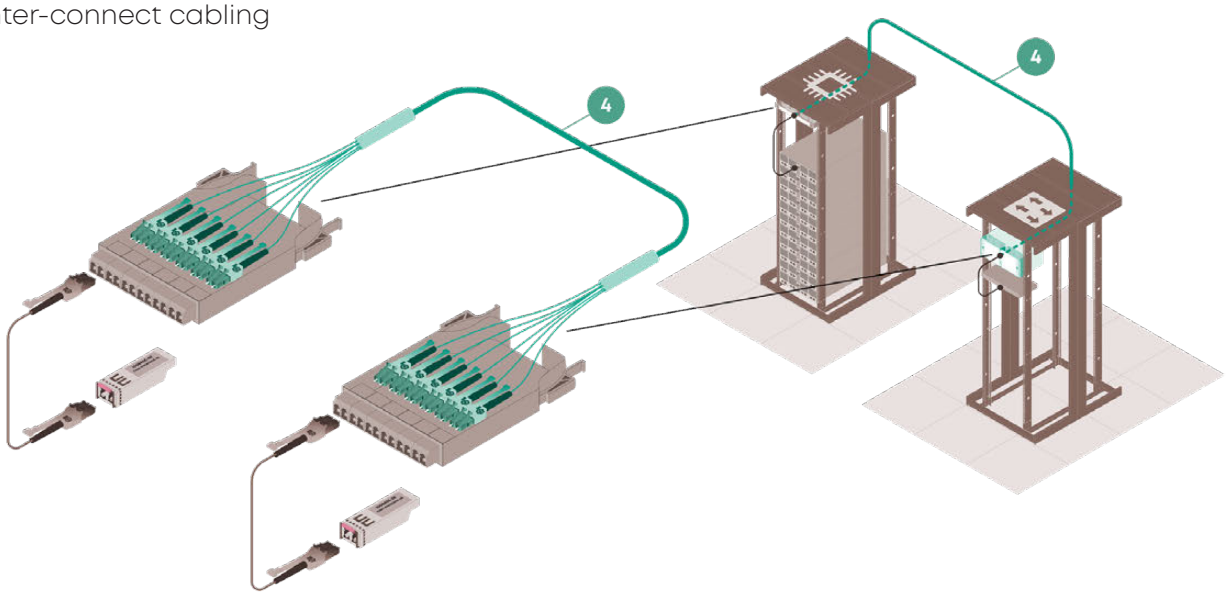
OH24R1L_BA4xxxD_0000MM_x080LP

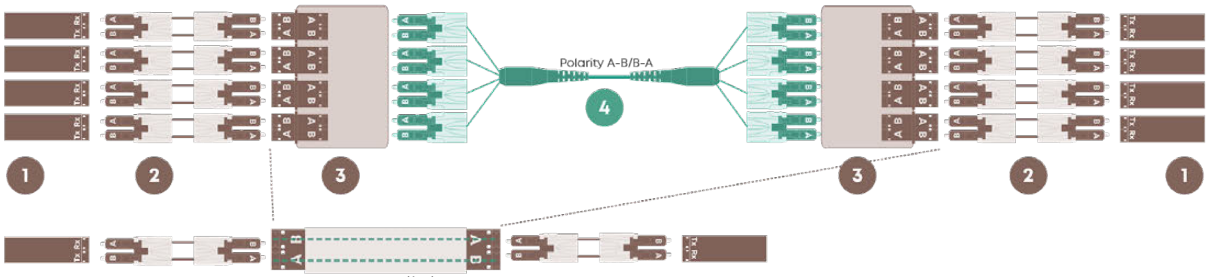
(1) MTP male connector
(2) MTP female connector
(3) Double jacket trunk cable, Ø4.0 mm
(4) Double jacket trunk cable, Ø4.9 mm

Trunk harness duplex to duplex

Cabling variants with LCd to LCd harness

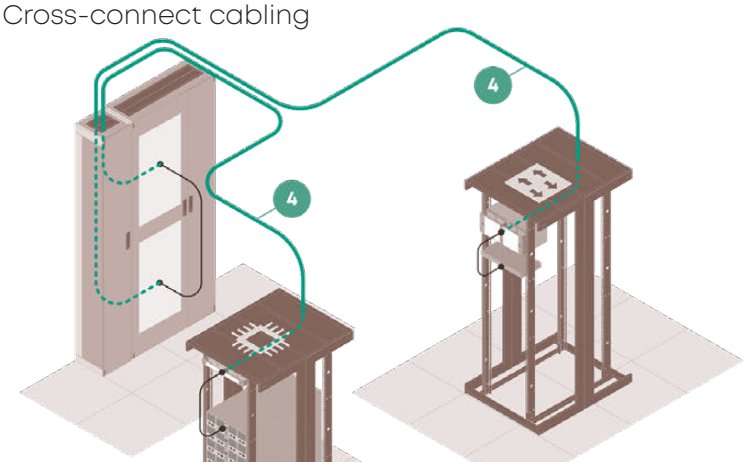
Inter-connect cabling





Permanent link A-B

Cross-connect cabling





(1) Duplex transceiver
(2) Duplex assembly A-B/B-A
(3) Patch module or adapter
(4) Optipack trunk duplex to duplex harness, polarity A-B/B-A

Optipack trunk harness LC-XD to LC-XD

2 B

8



OH08ABL_BA0xxxD_x080LP_x080LP

8



OH08ABL_BA4xxxD_x080LP_x080LP

12



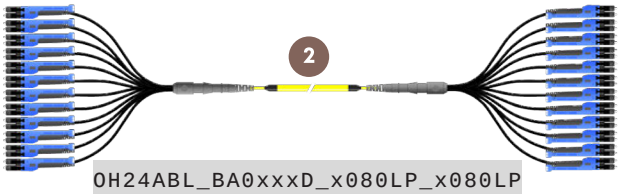
OH12ABL_BA0xxxD_x080LP_x080LP

12



OH12ABL_BA4xxxD_x080LP_x080LP

24



OH24ABL_BA0xxxD_x080LP_x080LP

24

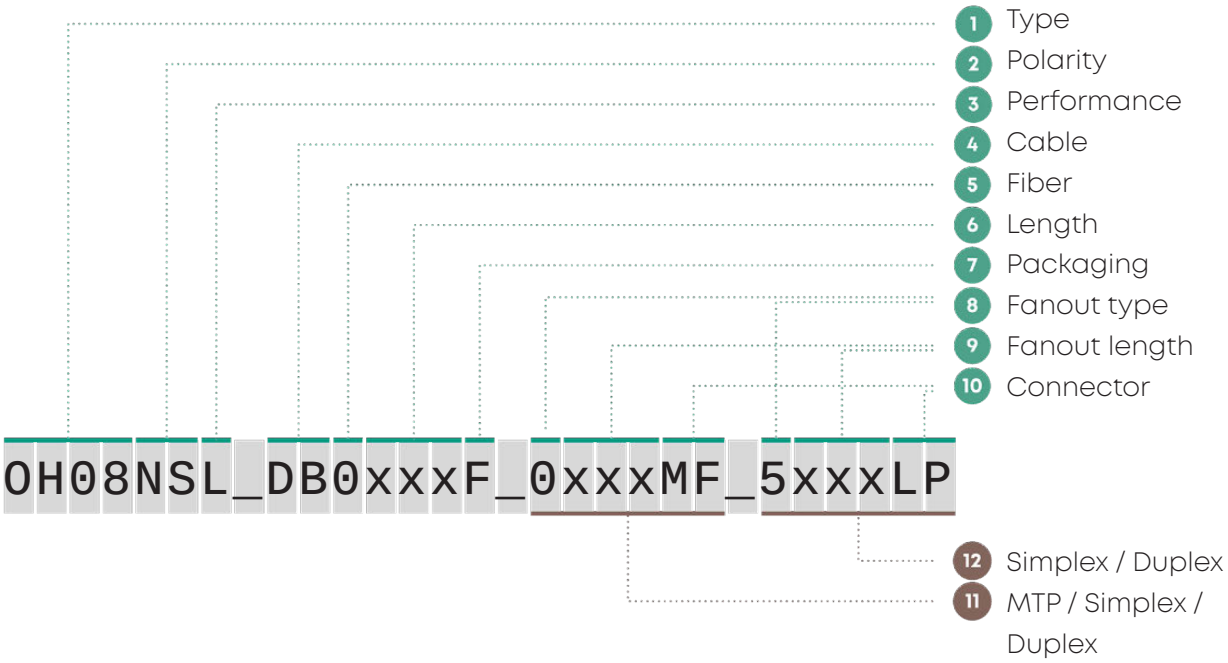


OH24ABL_BA4xxxD_x080LP_x080LP

(1) Double jacket trunk cable, Ø4.0 mm
(2) Double jacket trunk cable, Ø4.9 mm

Order code Optipack harness

Order code Optipack harness



1 Harness type

OH08	Optipack harness Base-8	8
OH12	Optipack harness Base-12 or -12e	12 12
OH24	Optipack harness Base-24	24

2 Polarity

Simplex/duplex to simplex/duplex configurations

AB	A-B/B-A, straight	2
AA	A-A/B-B, flipped	

MTP to simplex/duplex configurations

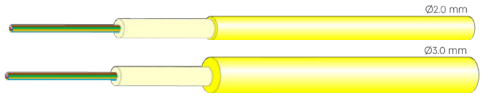
AS	Polarity A straight	12
AP	Polarity A pair-flipped	12
NS	Polarity N straight	8 12
NP	Polarity N pair-flipped	8 12
R1	Polarity N pair-flipped	24

3 Performance

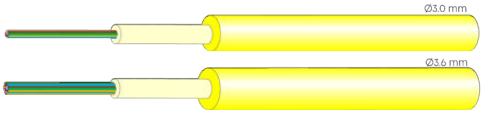
S	Class S - Singlemode standard	
L	Class L - Multimode low-loss	

4 Cable

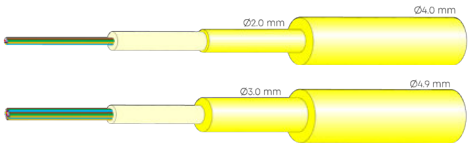
DA In-rack harness
Ø2.0 mm – Base-8, -12 or -12e
Ø3.0 mm – Base-24
8 12 12 24 — D



DB Ruggedised harness
Ø3.0 mm – Base-8, -12 or -12e
Ø3.6 mm – Base-24
8 12 12 24 — D



BA Double jacket harness
DJ Ø4.0 mm – Base-8, -12 or -12e
DJ Ø4.9 mm – Base-24
8 12 12 24 — B



Cable jacket colour depends on fiber type

5 Fiber

0	Singlemode G.657.A2 (low-bend)
4	Multimode 50/125 fiber OM4

6 Length

XXX	Length in meters, 3 characters allowed, e.g.:
0.5	0.5 meters
005	5 meters
100	100 meters

7 Packaging

D	Standard packaging
F	Dust-free packaging

8 Fanout type

1 to 6	Fanout type, according fanout patterns
D	Use 0 on side A in case of MTP
Z	Custom fanout pattern

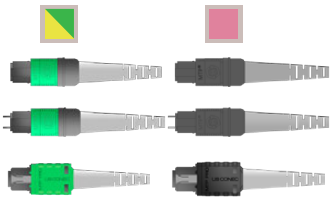
9 Fanout length

XXX	Length in centimeters, 3 characters allowed, e.g.:
022	22 cm, minimum fanout length, equipment cabling
080	80 cm, e.g. IANOS patch, LISA patch
270	270 cm, maximum fanout length
000	In case of MTP

10 Connector

MTP connector, side A

MF	MTP female
MM	MTP male
PF	MTP Pro female



MTP boot colour defined by product type

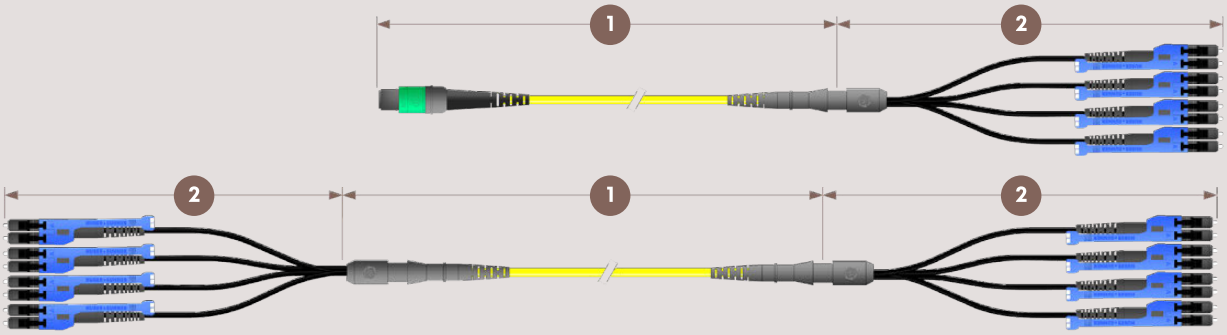


Simplex/duplex, side A or side B

LP	LC-XD PC/UPC
LA	LC-XD APC
KP	LC push-pull PC/UPC
KA	LC push-pull APC
SP	SC PC/UPC
SA	SC APC
EP	E-2000 UPC
EA	E-2000 APC
FP	FC PC



Optipack harness generic drawing

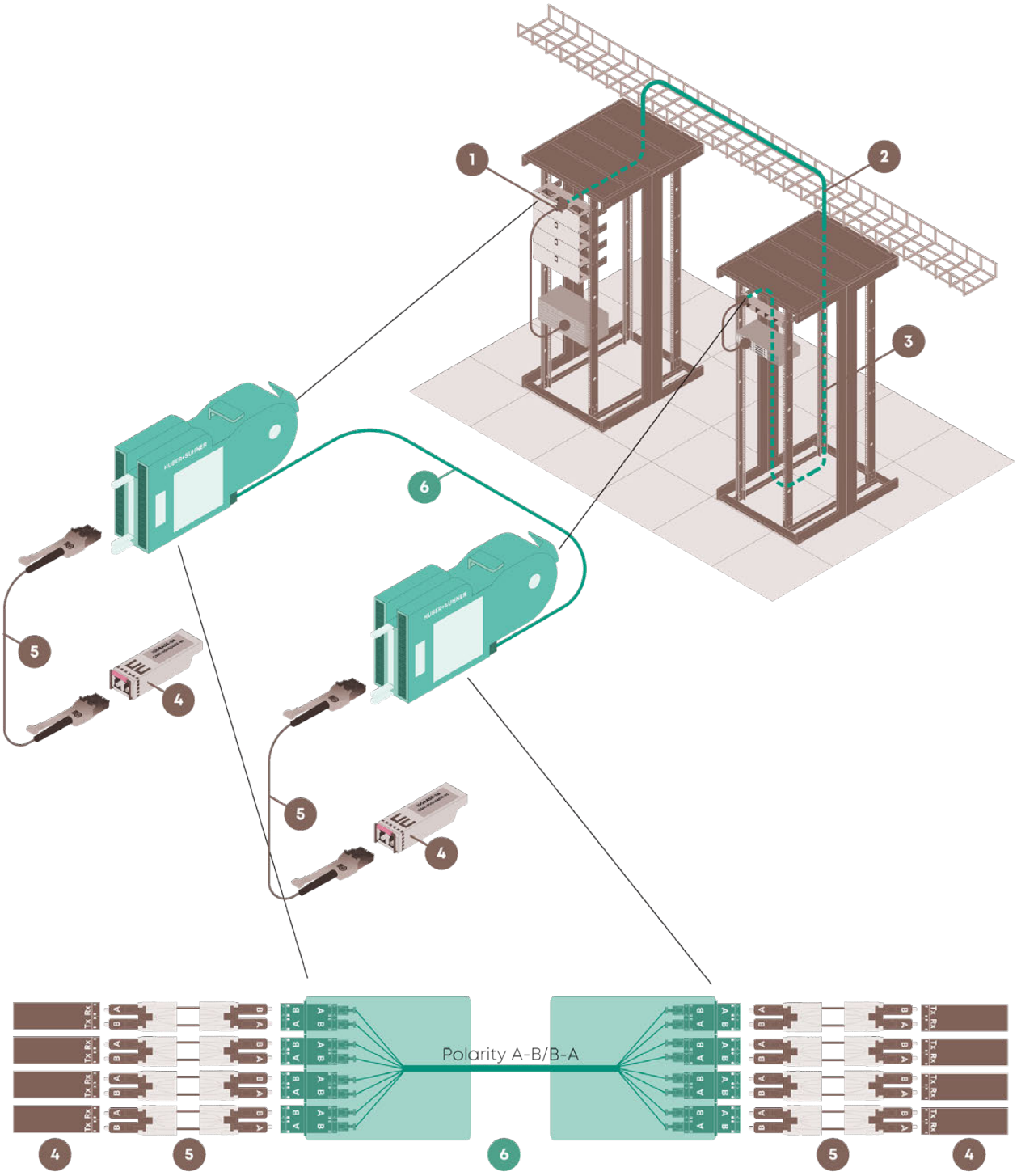


(1) Length of the cable
(2) Fanout length

Data sheet

Optipack module applications

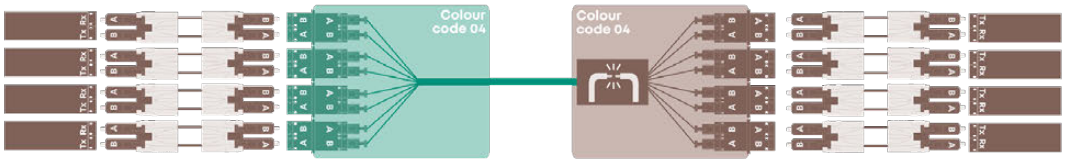
Optipack module applications



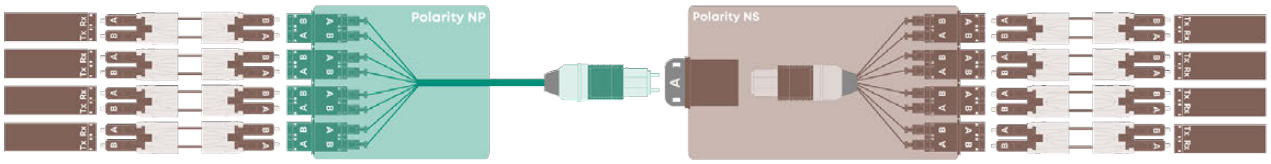
(1) Network rack at beginning of link (near end)
(2) Optipack cable installed and mounted to the zone distribution at far end
(3) Cable slack stored inside the cabinet
(4) Duplex transceiver
(5) Duplex assembly, polarity A-B/B-A
(6) Optipack module A-B/B-A (module to module design)

Examples of inter-connect with Optipack module 8-fiber*

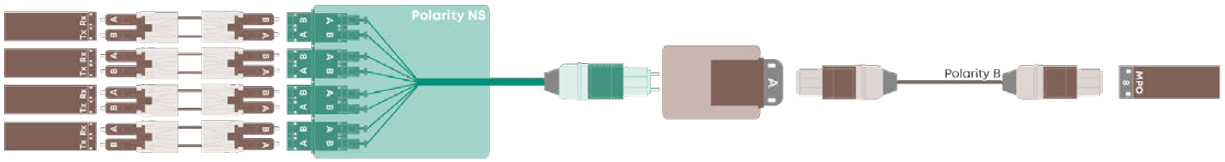
Optipack module to **blunt-cut** for splice



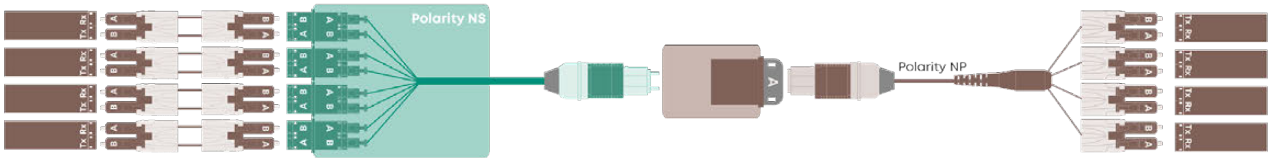
Optipack module to **MTP** + transition module



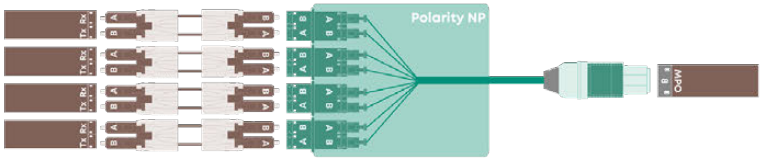
Optipack module to **MTP** + MTP patch cord - breakout mode



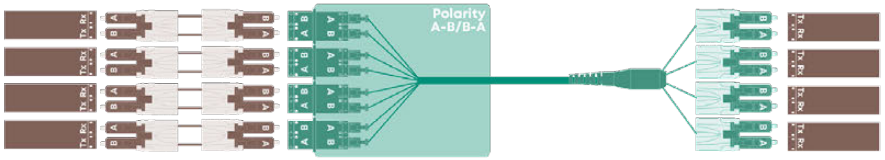
Optipack module to **MTP** + Optipack in-rack harness



Optipack module to **MTP** direct connect - breakout mode



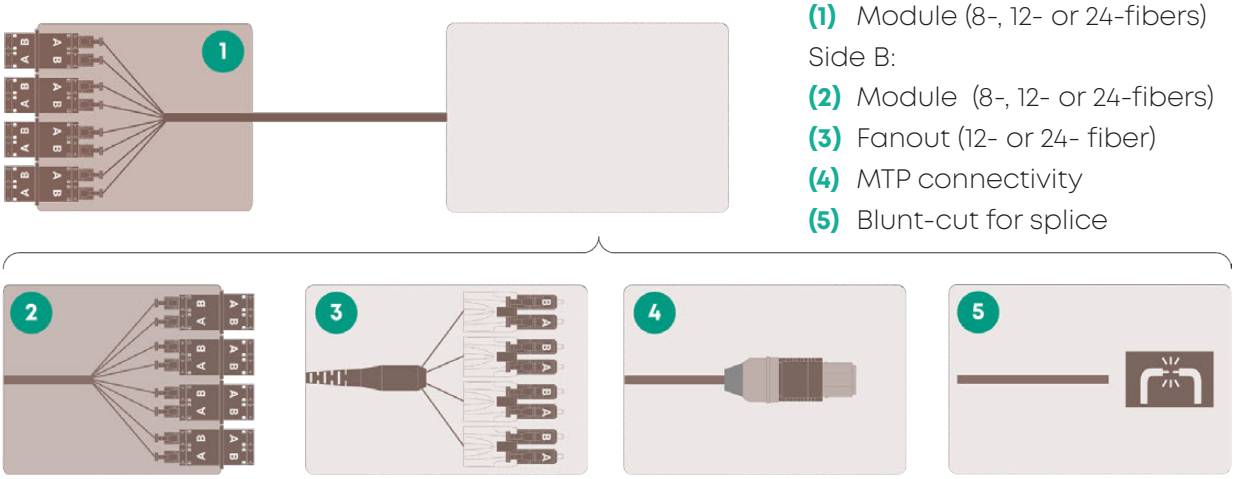
Optipack module to **fanout**



* Only 8-fiber applications shown, 12- or 24- fiber applications work similar

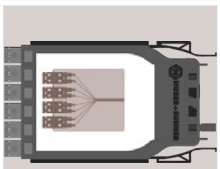
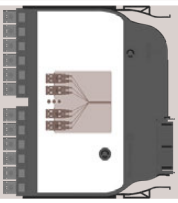
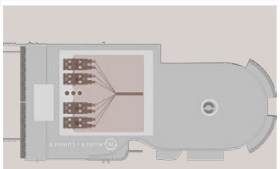
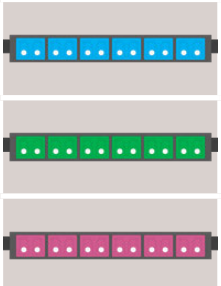
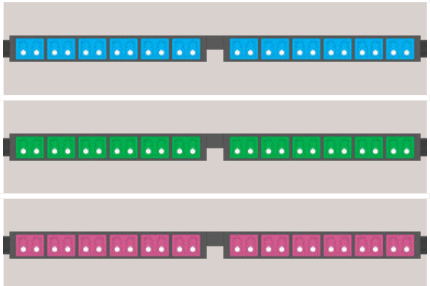
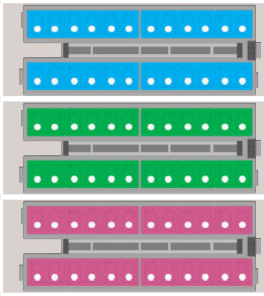
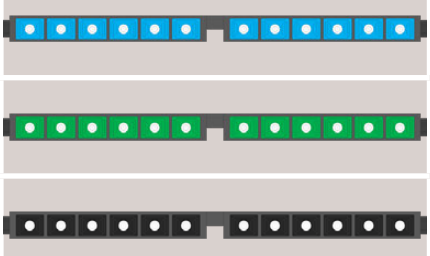
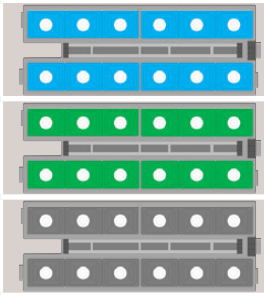
Optipack module overview

Optipack module configurations



Cable:
Optipack patch/trunk cable
Side A:
(1) Module (8-, 12- or 24-fibers)
Side B:
(2) Module (8-, 12- or 24-fibers)
(3) Fanout (12- or 24- fiber)
(4) MTP connectivity
(5) Blunt-cut for splice

1 2 Module

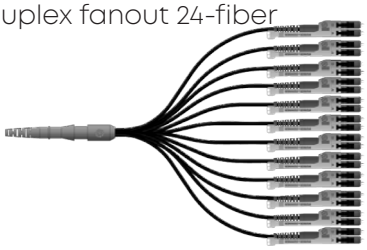
		IANOS single	IANOS double	SYLFA HD
				
LCd adapters				
SC adapter				

3 Fanout

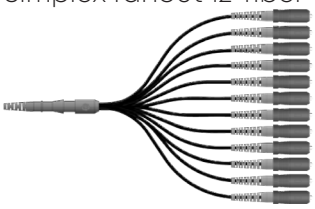
Duplex fanout 12-fiber



Duplex fanout 24-fiber



Simplex fanout 12-fiber



4 MTP connectivity

8 1x MTP connector 8-fiber



12 12 1x MTP connector 24-fiber



24 1x MTP connector 12-fiber



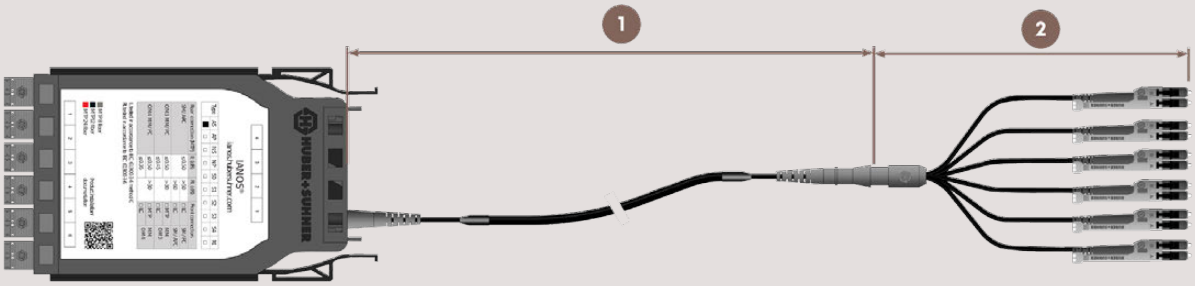
12 12 2x MTP connector 12- fiber



8 3x MTP connector 8-fiber



Optipack module generic drawing



(1) Length of the cable
(2) Fanout length (if exist)

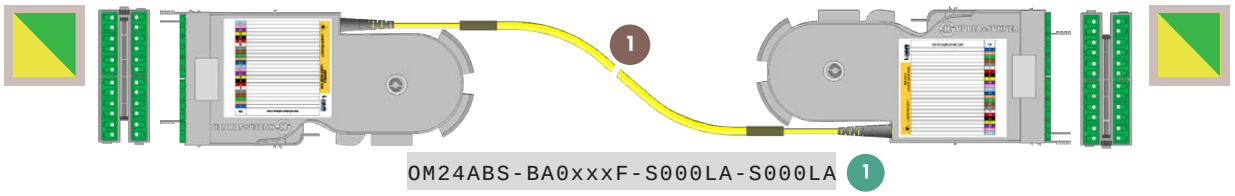
Data sheet

Optipack SYLFA HD module

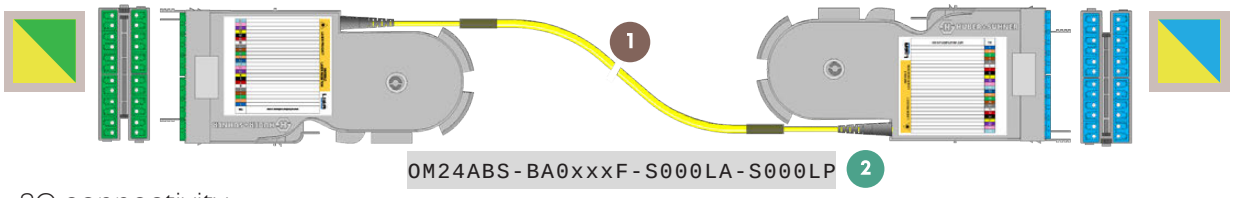
SYLFA HD module to module

2 B

LC duplex connectivity

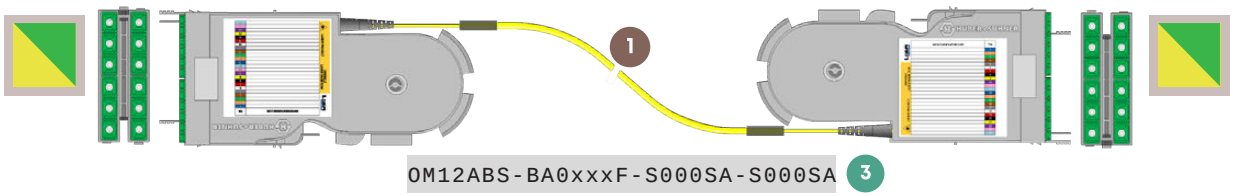


OM24ABS-BA0xxxF-S000LA-S000LA 1



OM24ABS-BA0xxxF-S000LA-S000LP 2

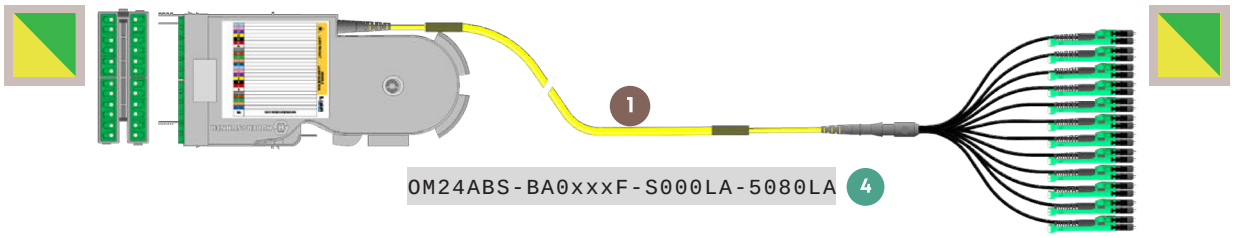
SC connectivity



OM12ABS-BA0xxxF-S000SA-S000SA 3

SYLFA HD module to LC-XD fanout

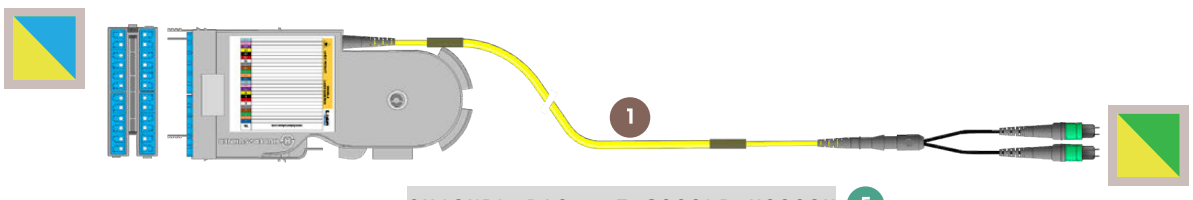
2 B



OM24ABS-BA0xxxF-S000LA-5080LA 4

SYLFA HD module to MTP

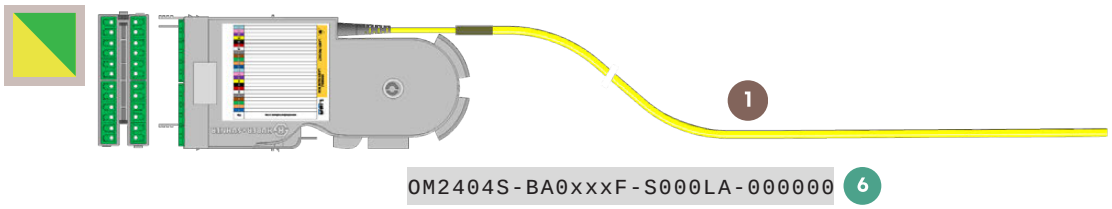
12 B



OM12NPL-BA0xxxF-S000LP-M0002M 5

SYLFA HD module to blunt-cut

24 B



(1) Double jacket trunk cable, Ø4.9 mm

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	generic code	OM24ABS-BA0xxxF-S000LA-S000LA	Optipack pre-term module SYLFA HD, Base-2, front 12x LCd APC adapters, rear 12x LCd APC adapters, polarity A-B/B-A		
2	generic code	OM24ABS-BA0xxxF-S000LA-S000LP	Optipack pre-term module SYLFA HD, Base-2, front 12x LCd APC adapters, rear 12x LCd UPC adapters, polarity A-B/B-A		
3	generic code	OM12ABS-BA0xxxF-S000SA-S000SA	Optipack pre-term module SYLFA HD, Base-2, front 12x SC APC adapters, rear 12x SC UPC adapters, polarity A-B/B-A		
4	generic code	OM24ABS-BA0xxxF-S000LA-5080LA	Optipack pre-term module SYLFA HD, Base-2, front 12x LCd APC adapters, rear fanout 12x LC-XD APC, polarity A-B/B-A		
5	generic code	OM12NPL-BA0xxxF-S000LP-M0002M	Optipack pre-term module SYLFA HD, Base-12e, front 12x LC UPC duplex adapters, rear 2x MTP male, polarity NP		
6	generic code	OM2404S-BA0xxxF-S000LA-000000	Optipack pre-term module SYLFA HD, 24-fiber, front 12x LC APC duplex adapters, rear blunt cut, TIA colour code		

Order code Optipack module

Order code Optipack module

1 Type
2 Polarity
3 Performance
4 Cable
5 Fiber
6 Length
7 Packaging
8 Side A module
9 Side A adapter
10 Side B configuration
11 Side B fanout length
12 Side B connector

OM12NPL-BA0xxxF_I000LP_50001M

1 Optipack module type

OM08

Base type

08	8
12	12 12
24	24

Measurement units

OM	Metric units, m or cm
UM	Imperial units, feets or inch

2 Polarity

Module to module/fanout

AB	A-B/B-A, straight	2
AA	A-A/B-B, flipped	

Optipack module to MTP

AS	Polarity A straight	12
AP	Polarity A pair-flipped	12
NS	Polarity N straight	8 12
NP	Polarity N pair-flipped	8 12
R1	Polarity N pair-flipped	24

Optipack module to blunt-cut

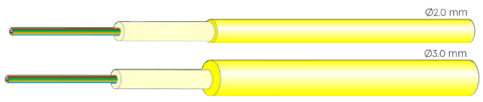
01 to 04 Splicing colour code

3 Performance

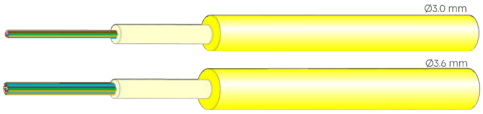
L	Low-loss performance (default)
S	Standard performance

4 Cable

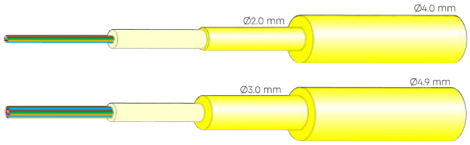
DA Non-ruggedised cable
Ø2.0 mm – Base-8, -12 or -12e
Ø3.0 mm – Base-24
8 12 12 24 — D



DB Ruggedised harness
Ø3.0 mm – Base-8, -12 or -12e
Ø3.6 mm – Base-24
8 12 12 24 — D



BA Double jacket harness
DJ Ø4.0 mm – Base-8, -12 or -12e
DJ Ø4.9 mm – Base-24
8 12 12 24 — B



Cable jacket colour depends on fiber type

5 Fiber

0	Singlemode G.657.A2 (low-bend)
4	Multimode 50/125 fiber OM4

6 Length

XXX Length, 3 characters allowed, e.g.:

Metric system (OM), meters		Imperial system (UM), feets	
0.5	0.5 meters	002	2 feet
005	5 meters	016	16 feet
100	100 meters	300	300 feet

7 Packaging

D	Standard packaging
F	Dust-free packaging

8 Side A module

I	IANOS module
S	SYLFA HD module
L	LISA cassette (coming soon)

9 Side A adapter

LP	LC PC/UPC
LA	LC APC
SP	SC PC/UPC
SA	SC APC

10 Side B configuration

0	Blunt-cut (for splice)
1 to 6	Fanout type, according fanout patterns
I	IANOS module
S	SYLFA HD module
L	LISA cassette (coming soon)

11 Side B fanout length

000	No fanout, in case of module or blunt-cut
XXX	Longest leg, 3 characters allowed, e.g.:

	Metric system (OM), centimeters		Imperial system (UM), inches	
1	022	22 cm	009	9 inches
2	080	80 cm	032	32 inches

(1) Equipment cabling
(2) IANOS patch

12 Side B connector

Blunt-cut

00 Blunt-cut (no configurator)

Module

LP	LC PC/UPC
LA	LC APC
SP	SC PC/UPC
SA	SC APC

Fanout (simplex / duplex)

LP	LC-XD PC/UPC
LA	LC-XD APC
SP	SC PC/UPC
SA	SC APC

MTP connector

1M

MTP connector gender

F	MTP female
M	MTP male

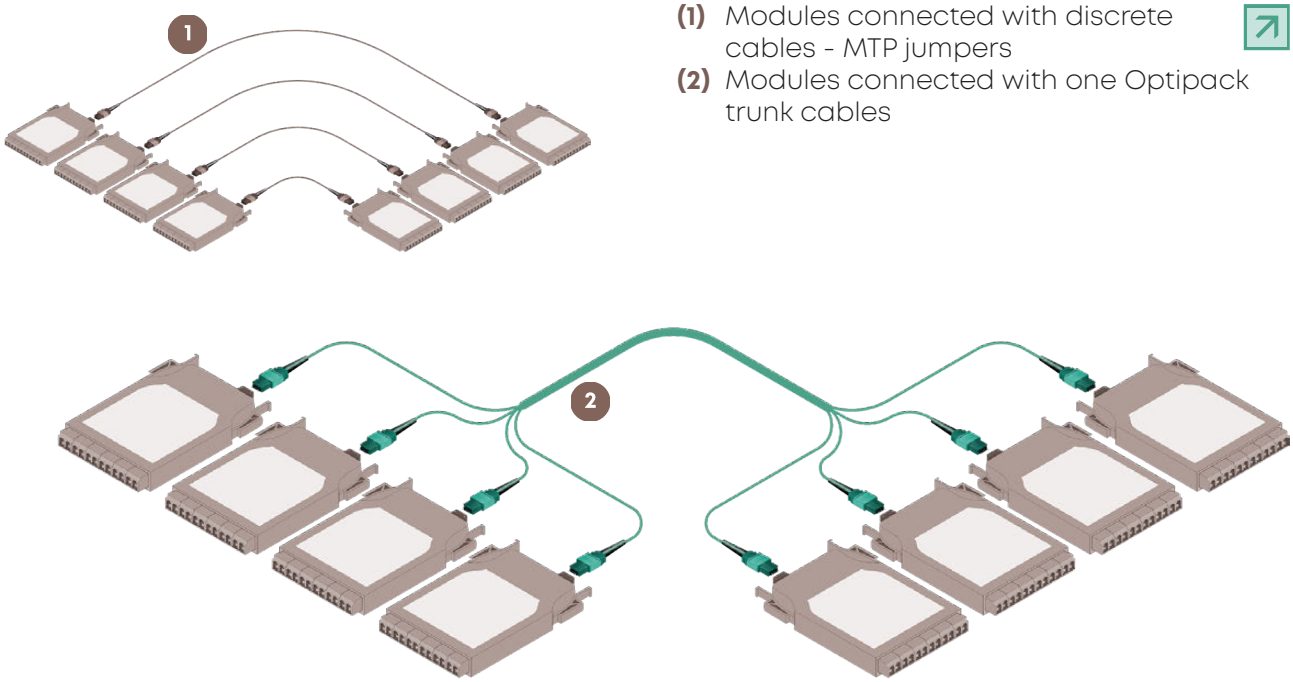
Number of MTP connectors (1, 2 or 3)

MTP boot colour defined by product type



Optipack trunk overview

Optipack trunk application



(1) Modules connected with discrete cables - MTP jumpers
(2) Modules connected with one Optipack trunk cables

Number of connectors, fiber count and cable diameters

Number of connectors in the order code	8			12 12			24	
	1	2	3	1	2	3	1	2
2	16 ✓	Ø6.6 mm	Ø8.8 mm	**24** ✓	Ø6.6 mm	Ø8.8 mm	48	Ø9.3 mm
3	**24** [1]			36			72	
4	32 ✓			**48** ✓			96	
6	**48**	Ø7.6 mm	Ø9.7 mm	72	Ø7.6 mm	Ø9.7 mm	**144** ✓	Ø10.8 mm
8	64 ✓	Ø9.2 mm	Ø10.8 mm	96	Ø9.2 mm	Ø10.8 mm	192	Ø14 mm
C	**96**	Ø10.3 mm	Ø12 mm	**144** ✓	Ø10.3 mm	Ø12 mm	288	

1 Highlighted are standard / recommended cable types to be used in Optipack Meedusa

(1) Numbers of fibers
(2) Optipack indoor breakout cables
(3) Optipack universal breakout cables

Optipack trunks Base-8

8 B

24 fibers



OT083BL-BA0xxxF-5080MM-5080MM



OT083BL-BA4xxxF-5080MM-5080MM

48 fibers

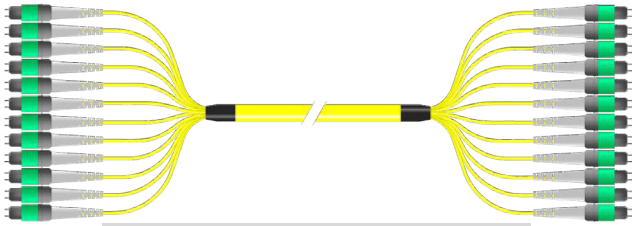


OT083BL-BA0xxxF-5080MM-5080MM



OT086BL-BA4xxxF-5080MM-5080MM

96 fibers



OT083BL-BA0xxxF-5080MM-5080MM



OT08CBL-BA4xxxF-5080MM-5080MM

Optipack trunks Base-12e

12 B

24 fibers



OT122BL-BA0xxxF-5080MM-5080MM



OT122BL-BA4xxxF-5080MM-5080MM

48 fibers

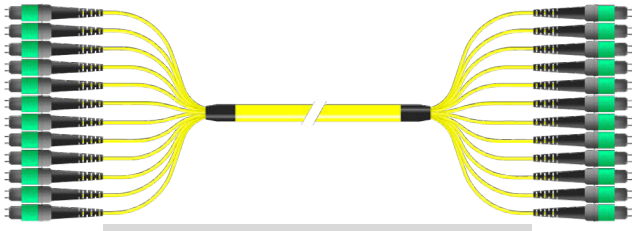


OT124BL-BA0xxxF-5080MM-5080MM



OT124BL-BA4xxxF-5080MM-5080MM

144 fibers



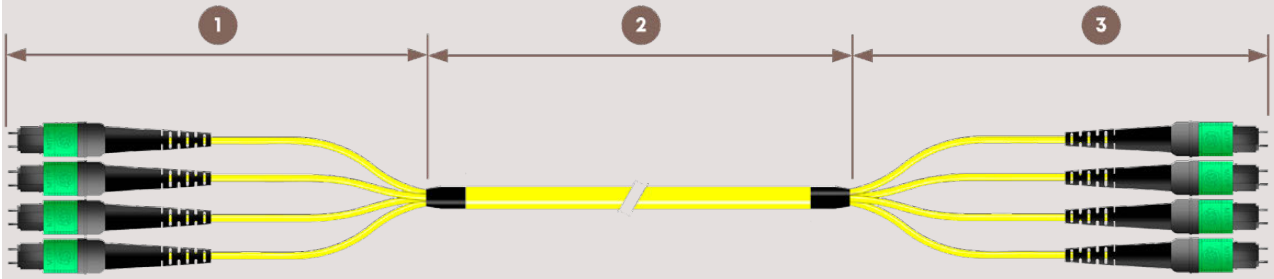
OT12CBL-BA0xxxF-5080MM-5080MM



OT12CBL-BA4XXXF-5080MM-5080MM

Order code Optipack trunk

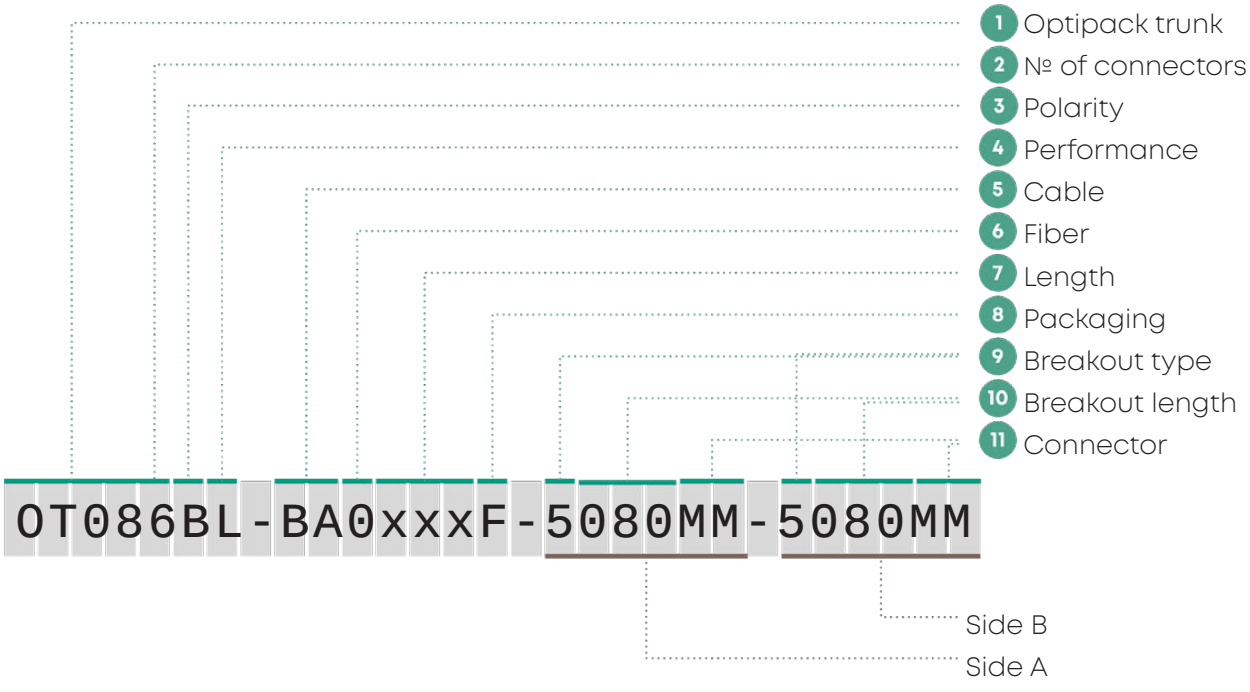
Optipack trunk generic drawing



(1) Breakout side A
(2) Cable length
(3) Breakout side B

Generic data sheet

Order code Optipack trunk



1 Optipack trunk

OT08

Base type

08	8
12	12 12
24	24

Measurement units

OT	Metric units, m or cm
UT	Imperial units, feets or inch

2 Number of connectors

2 to C From 2 to 12 connectors

See variants of number of connectors on previous page

3 Polarity

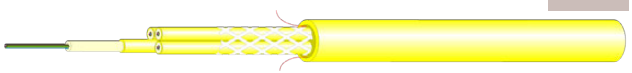
A	Polarity A	12 24
B	Polarity B	8 12
C	Polarity C	

4 Performance

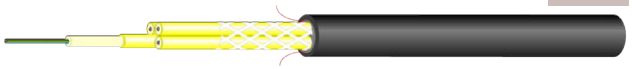
L	Low-loss performance (default)
S	Standard performance

5 Cable

BA Optipack indoor breakout cable **B**



CU Optipack universal breakout cable (indoor + outdoor) **C**



See cable outer diameters on previous page

Cable inner diameters

Inner cable 8 12 12



Inner cable 24



6 Fiber

0	Singlemode G.657.A2 (low-bend)	
4	Multimode 50/125 fiber OM4	

7 Trunk length

XXX Cable length, 3 characters allowed, e.g.:

Metric system (OM), meters		Imperial system (UM), feets	
0.5	0.5 meters	002	2 feet
005	5 meters	016	16 feet
100	100 meters	300	300 feet

8 Packaging

D	Standard packaging
F	Dust-free packaging

9 Breakout type

1	to 5	Breakout type according pre-defined patterns
Z		Custom breakout pattern

10 Breakout length

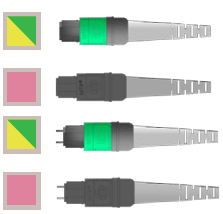
XXX Longest leg, 3 characters allowed, e.g.:

	Metric system (OM), centimeters		Imperial system (UM), inches	
1	022	22 cm	009	9 inches
2	080	80 cm	032	32 inches

(1) Equipment cabling
(2) IANOS patch

11 Connector

MF	MTP female	
MM	MTP male	



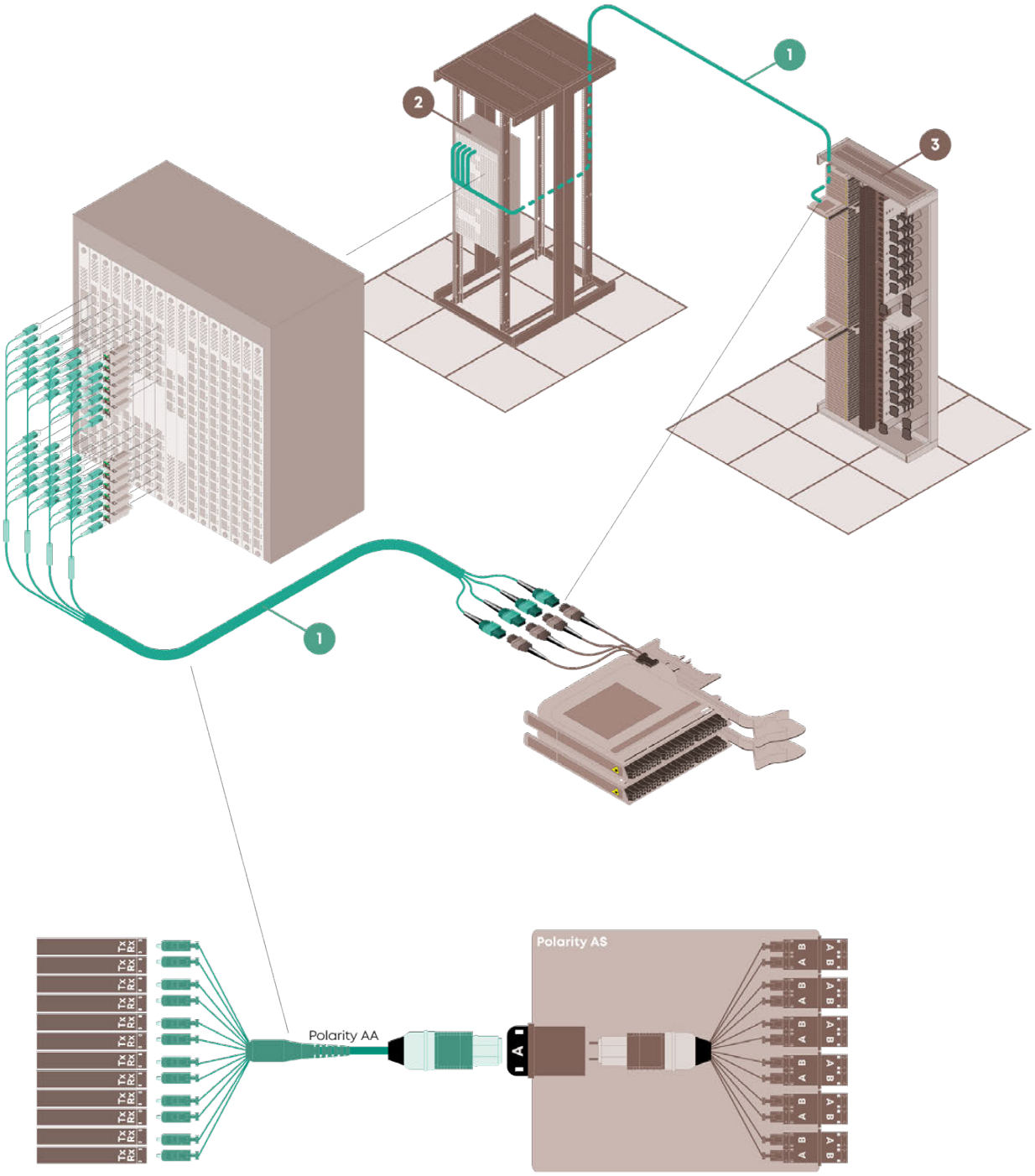
MTP boot colour defined by product type

8 12 12 24



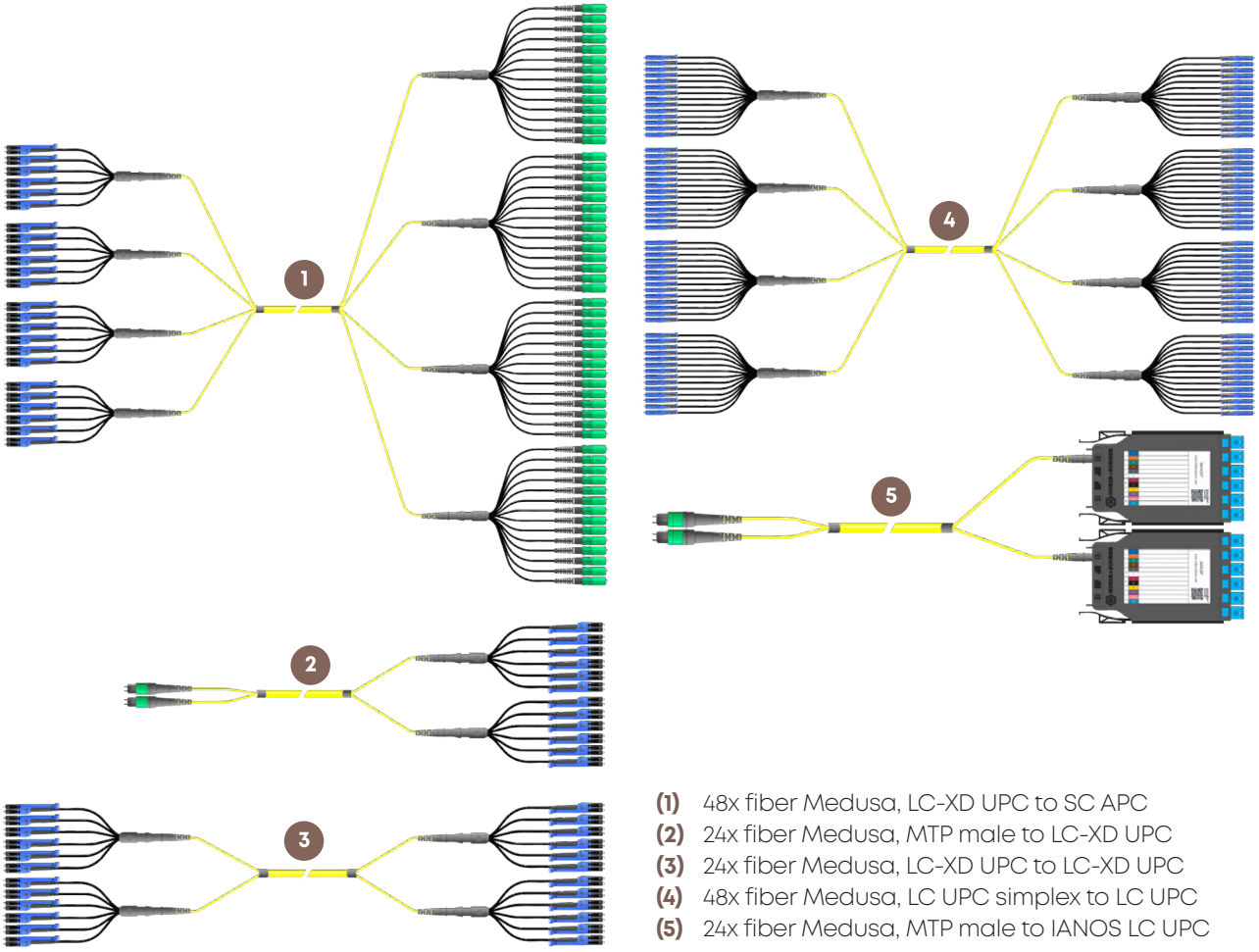
Optipack Medusa overview

Optipack Medusa application example



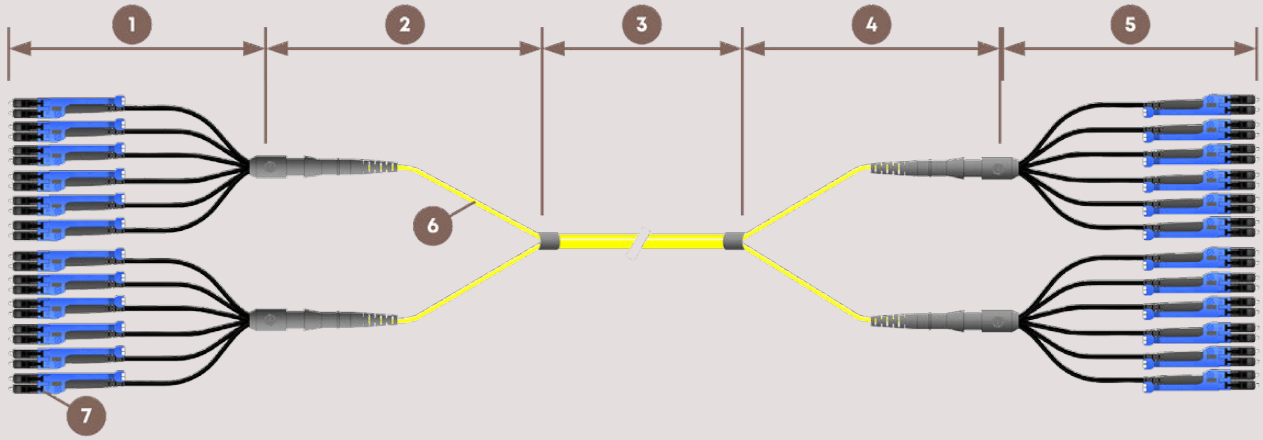
(1) Optipack Medusa connecting OLT to ODF
(2) OLT - optical line terminal
(3) LISA ODF

Optipack Medusa examples



(1) 48x fiber Medusa, LC-XD UPC to SC APC
(2) 24x fiber Medusa, MTP male to LC-XD UPC
(3) 24x fiber Medusa, LC-XD UPC to LC-XD UPC
(4) 48x fiber Medusa, LC UPC simplex to LC UPC
(5) 24x fiber Medusa, MTP male to IANOS LC UPC

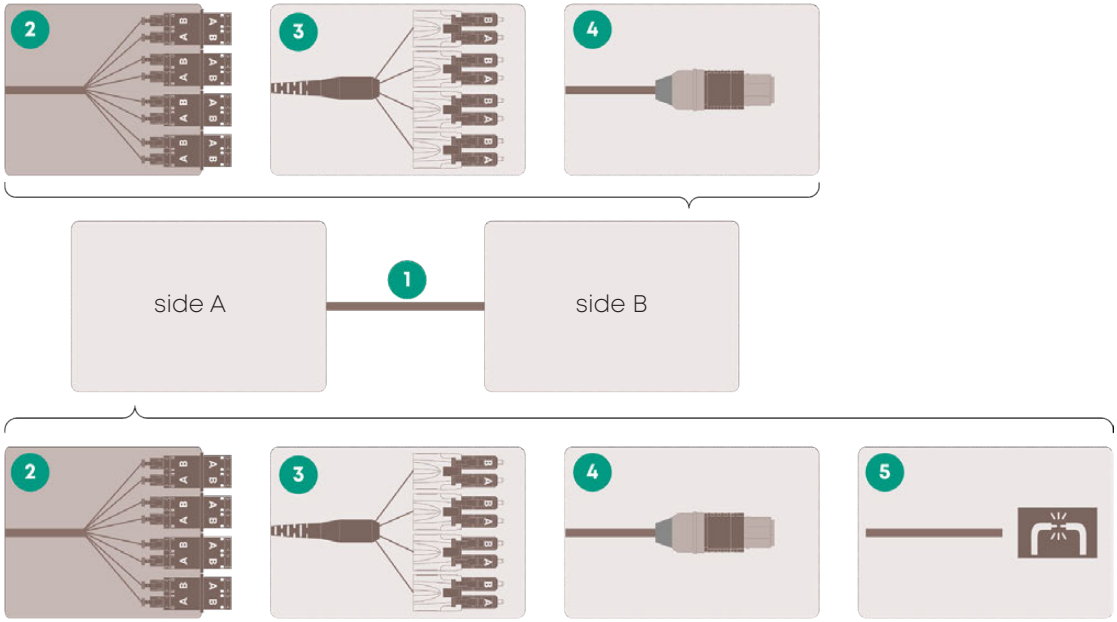
Optipack Medusa generic drawing



(1) Side A termination
(2) Breakout side A
(3) Length of the cable
(4) Breakout side B
(5) Side B termination
(6) Multiple number of strands
(7) In case of connector termination - pre-defined fanout patterns

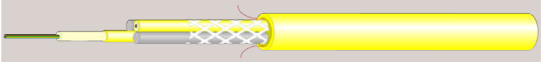
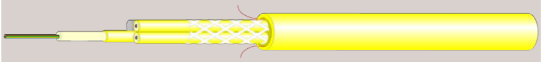
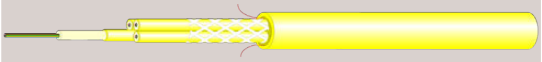
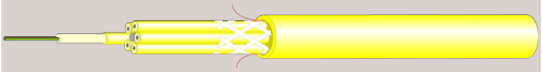
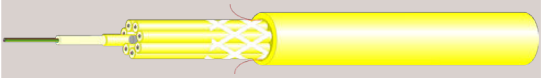
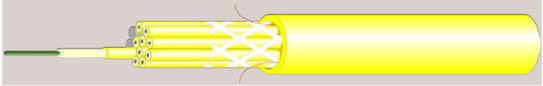
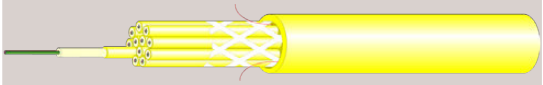
Optipack Medusa configuration

Optipack Medusa configurations



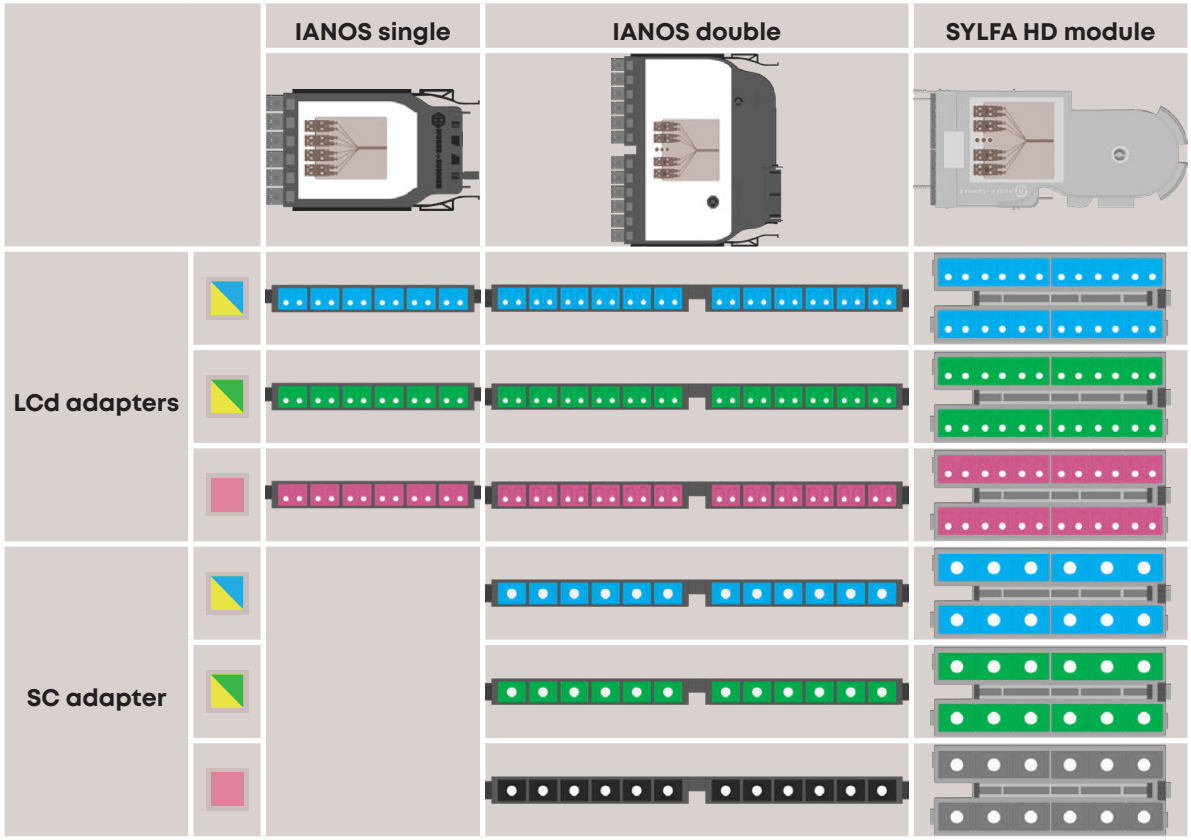
Cable:
(1) Optipack breakout cable
Side A or B:
(2) Module (8-, 12- or 24-fibers)
(3) Fanout (12- or 24- fiber)
(4) MTP connectivity
(5) Blunt-cut for splice

1 Cable

	Order code abbreviation	Cable design	8	12 12	24
2x strands	2		16f	24f[1]	48f
3x strands	3		24f	36f	72f
4x strands	4		32f	48f	96f
6x strands	6		48f	72f	144f
8x strands	8		64f	96f	192f
10x strands	X		80f	120f	240f
12x strands	C		96f	144f	288f

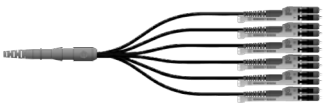
1 Highlighted are standard / recommended cable types to be used in Optipack Meedusa

2 Module

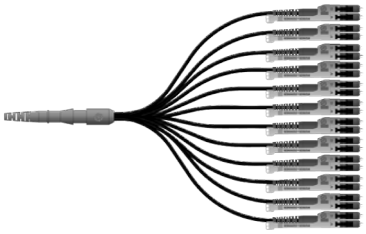


3 Fanout

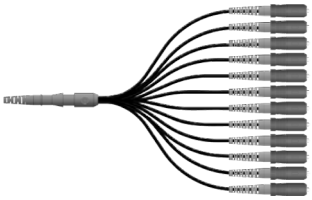
Duplex fanout 12-fiber



Duplex fanout 24-fiber



Simplex fanout 12-fiber



4 MTP connectivity

8 1x MTP connector 8-fiber



12 12 1x MTP connector 12-fiber



24 1x MTP connector 24-fiber



12 12 2x MTP connector 12- fiber

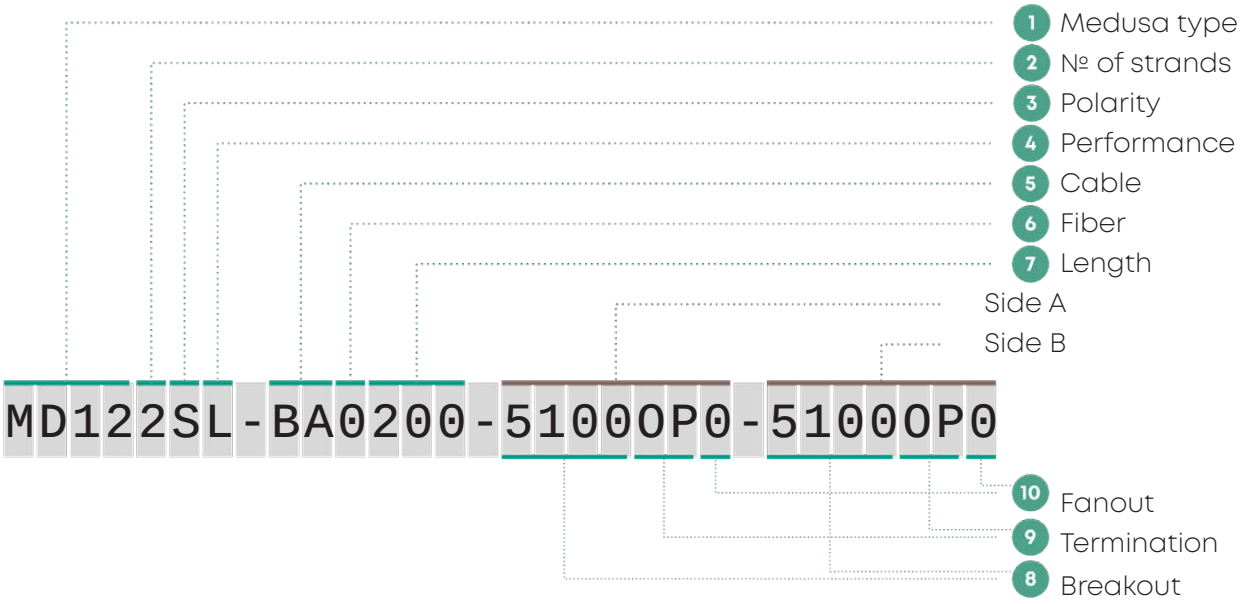


8 3x MTP connector 8-fiber



Optipack Medusa order code

Order code Optipack medusa



1 Optipack Medusa type

MD12

Base type

08	8
12	12
1E	12
24	24

Measurement units

MD	Metric units, m or cm
UD	Imperial units, feets or inch

2 Number of strands

2 to C — According to the cable option table (previous page)

3 Polarity

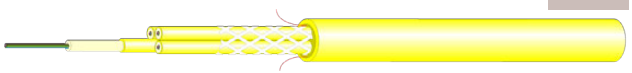
S	A-A/B-B, straight (AA)	2
	Polarity A straight (AS)	12
	Polarity N straight (NS)	8 12
	Polarity R1	24
	Blunt-cut configuration (TIA splicing colour code)	
P	A-B/B-A, pair-flipped (AB)	2
	Polarity A pair-flipped (AP)	12
	Polarity N pair-flipped (NP)	8 12

4 Performance

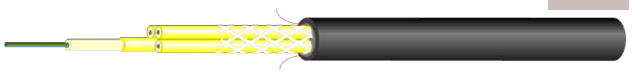
L	Low-loss performance (default)
S	Standard performance

5 Cable

BA	Optipack indoor breakout cable	B



CU	Optipack universal breakout cable (indoor + outdoor)	C



See cable outer diameters

Cable inner diameters

Inner cable 8 12 12



Inner cable 24



6 Fiber

0	Singlemode G.657.A2 (low-bend)	
4	Multimode 50/125 fiber OM4	

7 Medusa length

XXX Cable length, 3 characters allowed, e.g.:

Metric system (OM), meters		Imperial system (UM), feets	
0.5	0.5 meters	002	2 feet
005	5 meters	016	16 feet
100	100 meters	300	300 feet

8 Breakout length and pattern

[redacted]

Longest leg, 3 characters allowed, e.g.:

	Metric system (OM), centimeters		Imperial system (UM), inches	
1	022	22 cm	009	9 inches
2	080	80 cm	032	32 inches

(1) Equipment cabling
(2) IANOS, LISA patch

Breakout pattern

1 to 5 Breakout type according pre-defined patterns

9 Termination options

Blunt-cut

00 Blunt-cut for splicing - only use on side B

MTP connector, side A

MF	MTP female	
MM	MTP male	
PF	MTP Pro female	

MTP boot colour defined by product type



Simplex/duplex, side A or side B

LP	LC-XD PC/UPC	
LA	LC-XD APC	
KP	LC push-pull PC/UPC	
KA	LC push-pull APC	
SP	SC PC/UPC	
SA	SC APC	
EA	E-2000 APC	

Module

OP	IANOS module LC PC/UPC	
OA	IANOS module LC APC	
PP	IANOS module SC PC/UPC	
PA	IANOS module SC APC	
DP	SYLFA HD module LC PC/UPC	
DA	SYLFA HD module LC APC	
YP	SYLFA HD module SC PC/UPC	
YA	SYLFA HD module SC APC	
FP	LISA Cassette LC PC/UPC	
FA	LISA Cassette LC APC	

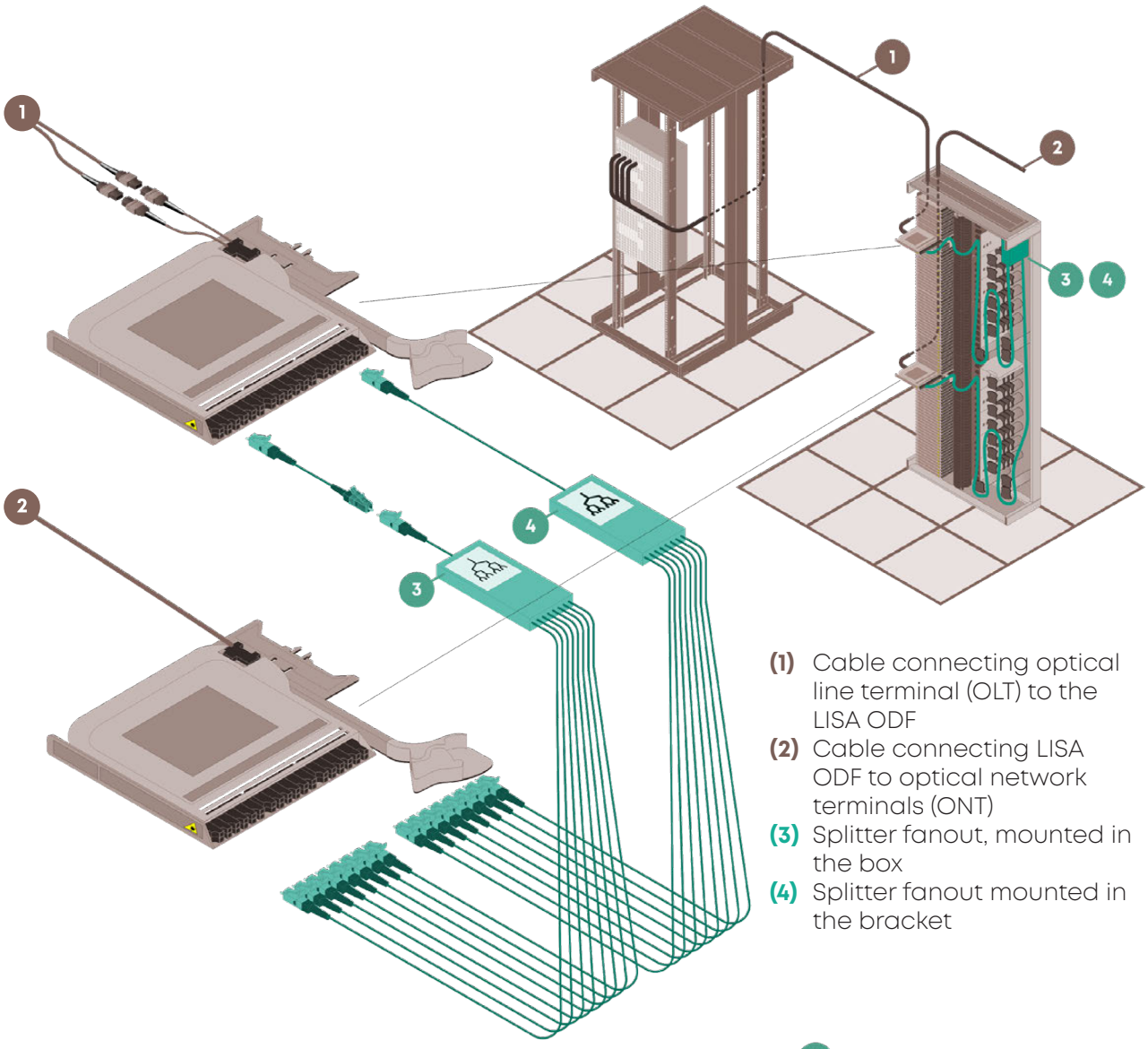
10 Fanout

0 No fanout (use in case of blunt-cut, module or MTP)

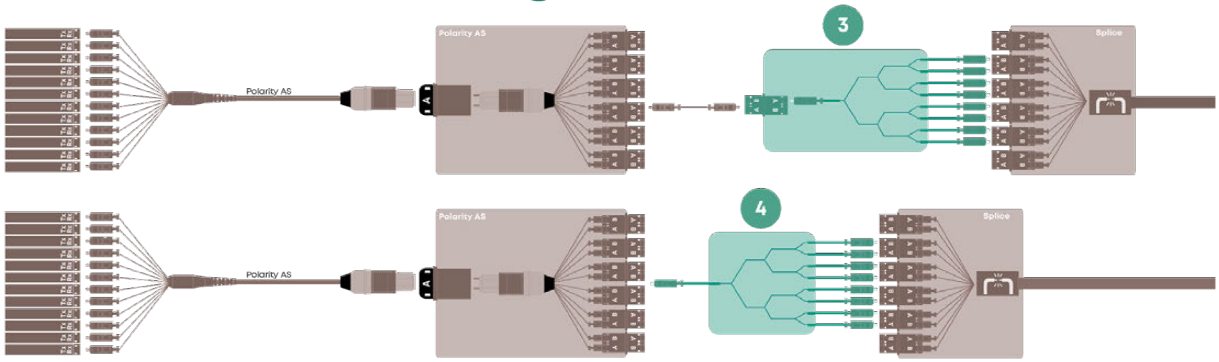
1 to 6 Fanout type according pre-defined patterns

Splitter fanout overview

Splitter fanout application

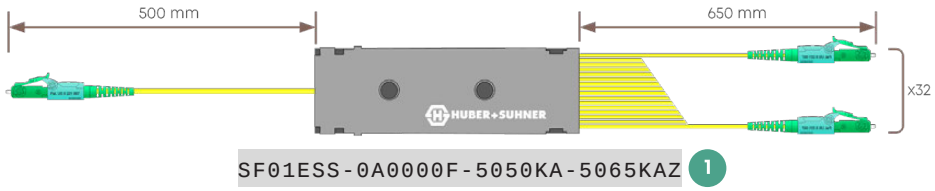


(1) Cable connecting optical line terminal (OLT) to the LISA ODF
(2) Cable connecting LISA ODF to optical network terminals (ONT)
(3) Splitter fanout, mounted in the box
(4) Splitter fanout mounted in the bracket

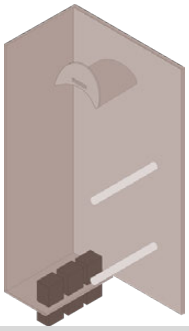


* See the same application implemented with LISA splitter cassette

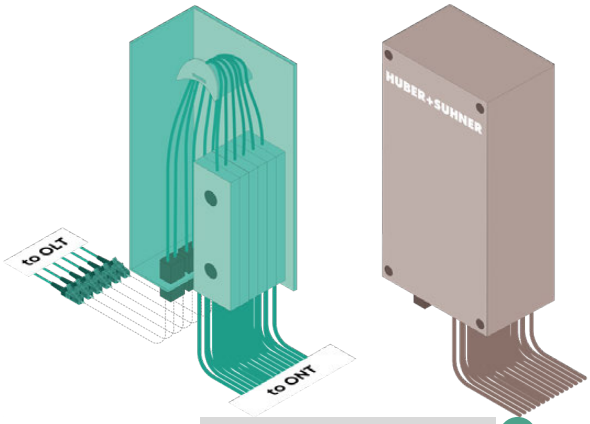
Splitter fanout with the box



SF01ESS-0A0000F-5050KA-5065KAZ 1

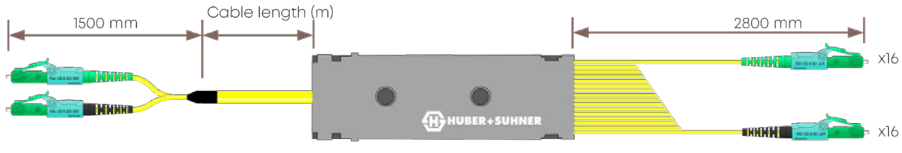


CASE-SFO-3-89-GY 2

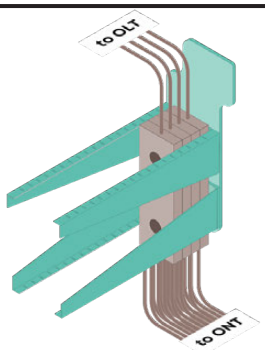


CASE-SFO-6-P-3-89-GY 3

Splitter fanout with the bracket



SF02DSS-DR0xxxF-5150KA-5280KA 4



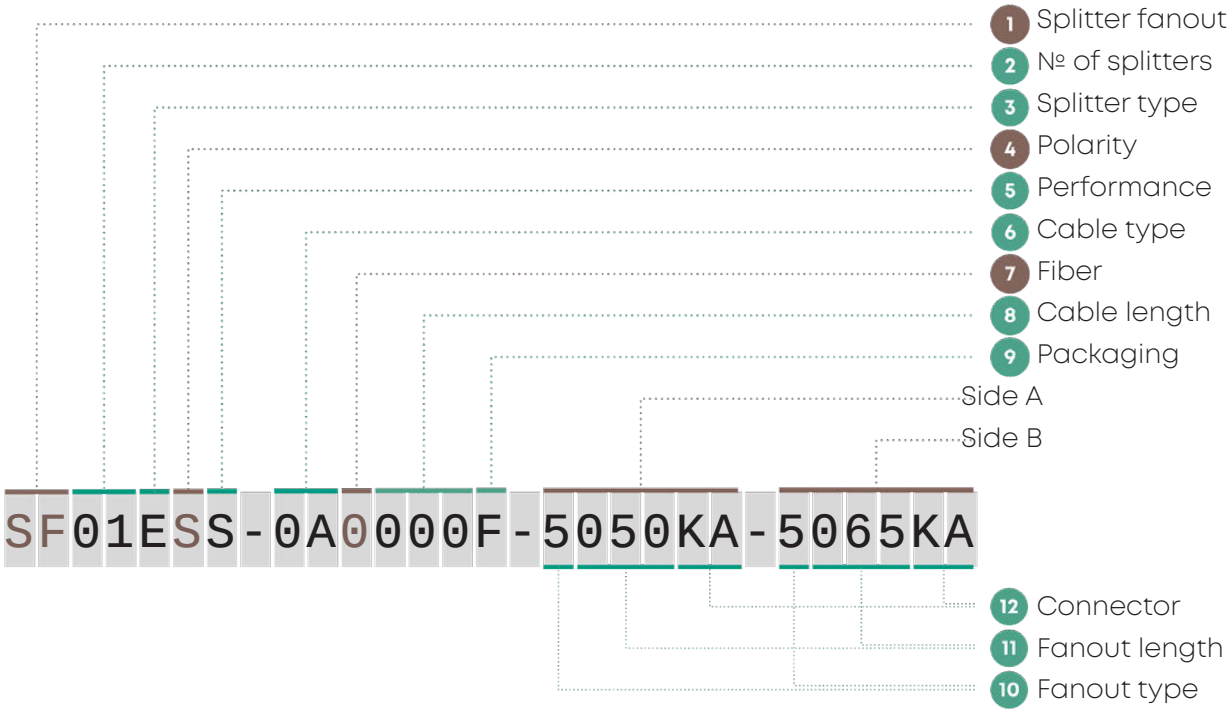
Bracket_SFO 5

Ordering information

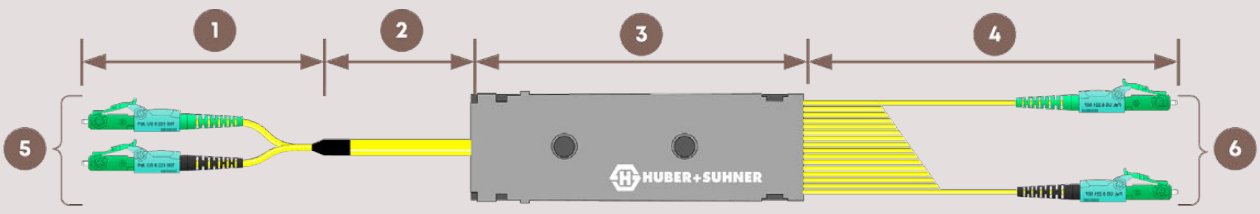
#	Item number	Descriptive code	Item text	LT	URL
1	85163120	SF01ESS-0A0000F-5050KA-5065KAZ	Splitter fanout, 1x32, to use in a SFO box	✓	
2	85163608	CASE-SFO-3-89-GY	Splitter fanout (SFO) box, empty, for up to 6x splitter fanouts	✓	↗
3	85163609	CASE-SFO-6-P-3-89-GY	Splitter fanout (SFO) box, including 6x 1:32 splitter fanouts	◔	↗
4	85152431	SF02DSS-DR0005F-5150KA-5280KAZ	Splitter fanout, 2x 1x16, to use with a SFO bracket, 5 meter	✓	
	85152436	SF02DSS-DR0010F-5150KA-5280KAZ	Splitter fanout, 2x 1x16, to use with a SFO bracket, 10 meter	✓	
5	85124251	Bracket_SFO	Splitter fan-out holder bracket, for up to 18x splitter fanouts	✓	

Splitter fanout order code

Order code splitter fanout



Splitter fanout generic drawing

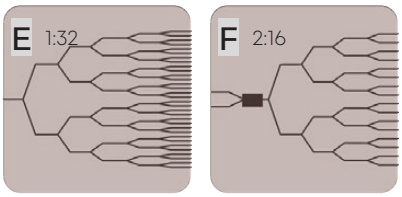


(1) Fanout side A
(2) Extension cable
(3) Splitter case
(4) Fanout side B
(5) Side A - IN connector - maximum x2
(6) Side B - OUT connector - maximum x32

2 Number of splitters

01	1x splitter
02	2x splitter

3 Splitter type



5 Performance

L	Low-loss performance (default)
S	Standard performance

6 Side A cable type

DR	CPR D rated cable D
CR	CPR C rated cable C
0A	no extension cable (e.g. mounted in the box)

8 Side A extension cable length

XXX Cable length, 3 characters allowed, e.g.:

005	5 meters
010	10 meters

9 Packaging

D	Standard packaging
F	Dust-free packaging

10 Fanout type

1 to 6 Fanout type according fanout patterns

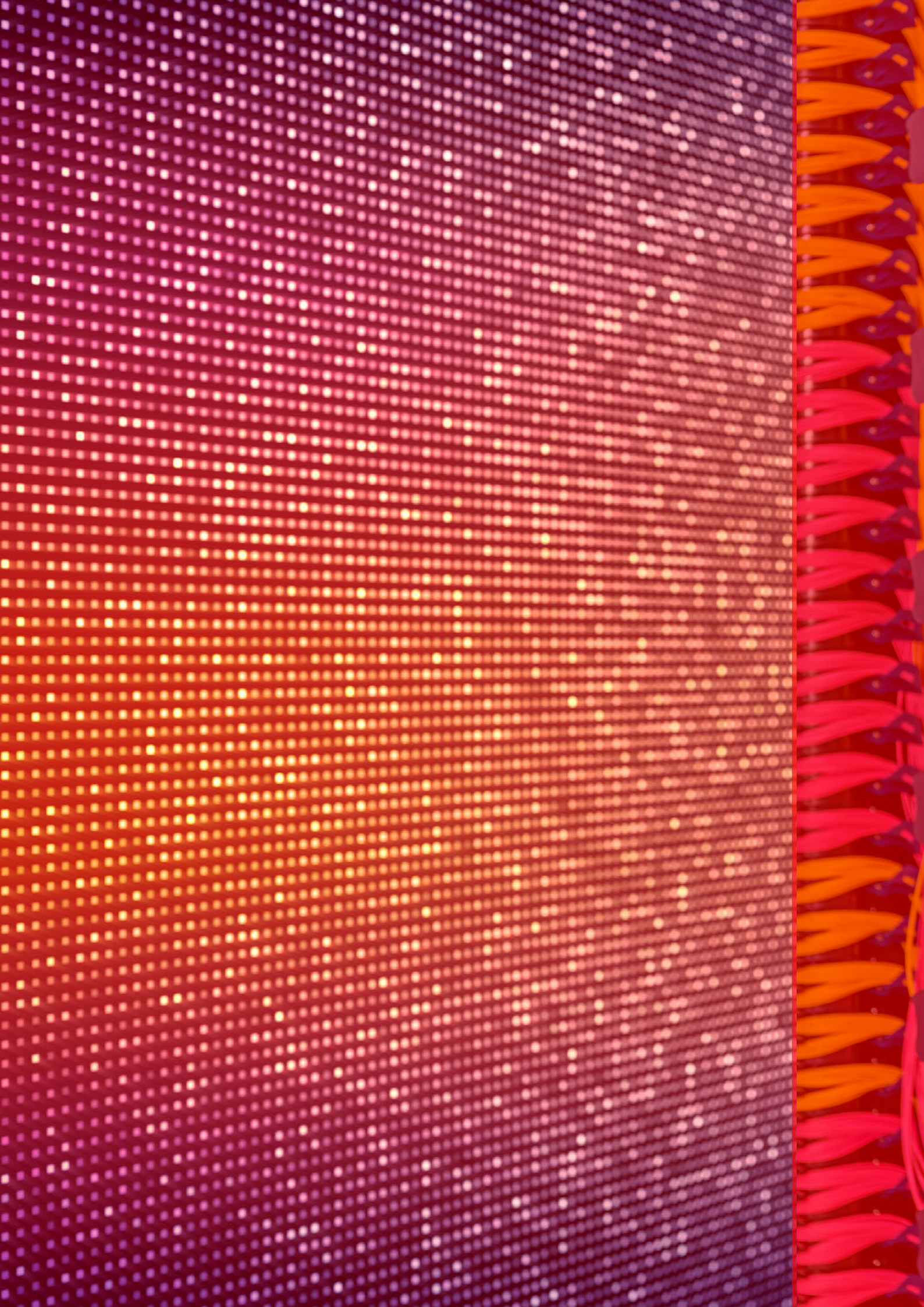
11 Fanout length

XXX Length in centimeters, 3 characters allowed, e.g.:

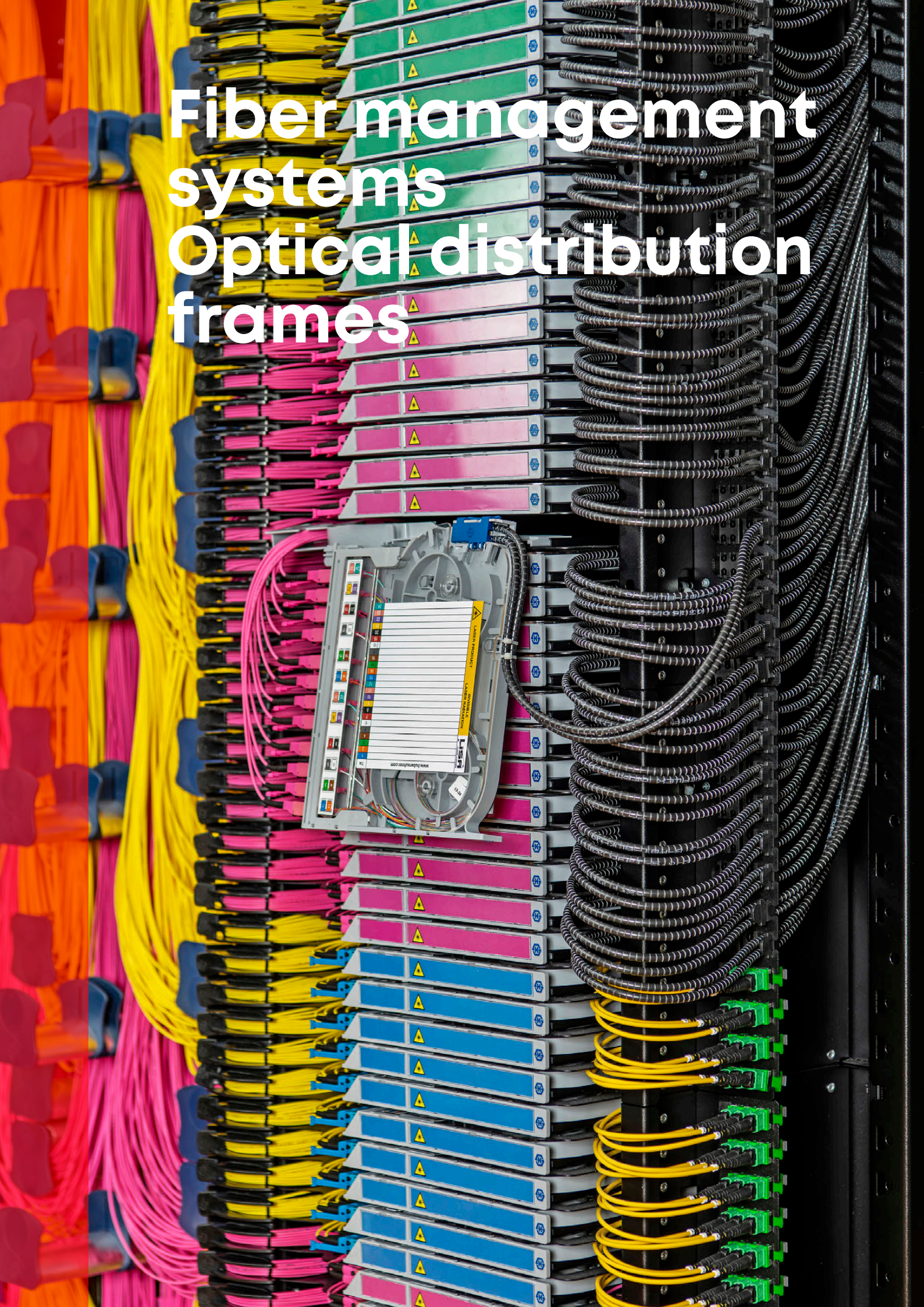
050	50 cm
065	65 cm

12 Connector

LP	LC duplex UPC	
LA	LC duplex APC	
KP	LC push-pull UPC	
KA	LC push-pull APC	
SP	SC UPC	
SA	SC APC	
EA	E-2000 APC	



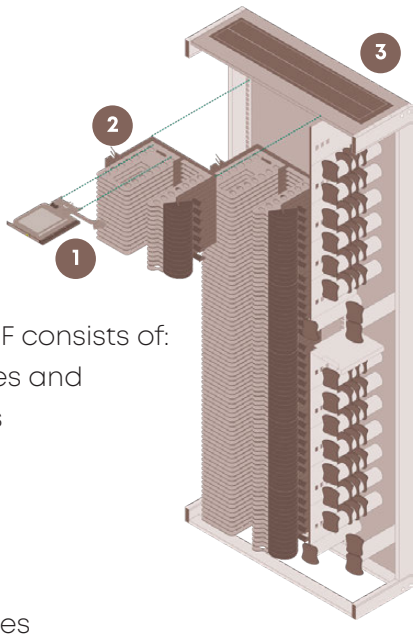
Fiber management systems Optical distribution frames

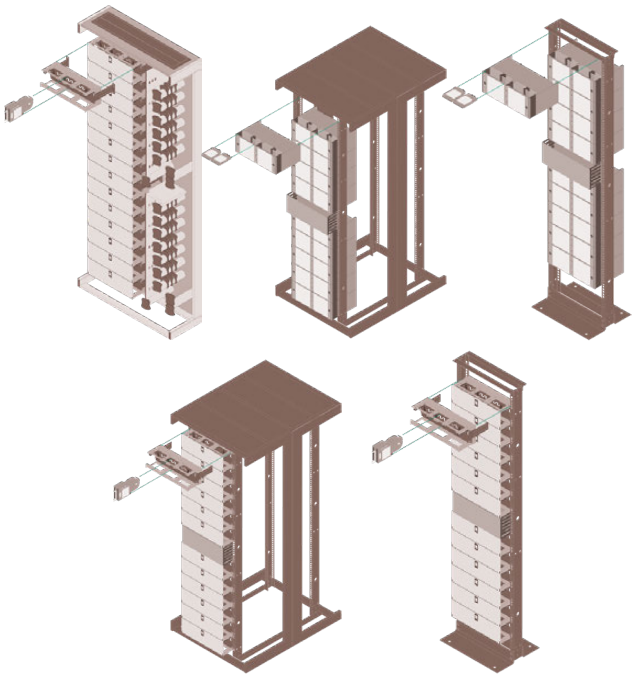


ODF overview

Optical distribution frame examples

An Optical Distribution Frame (ODF) is a point at which connections between two or more elements within a fiber optic network are facilitated and managed in varying degrees of density and flexibility as demanded by the application or network architecture.





Modular ODF consists of:

(1) Cassettes and modules
(2) Chassis
(3) Rack

ODF examples

ODF name	(1) Rack	(2) Chassis	(3) Cassettes and modules
ODF LISA **ODF LISA HD**	CDR 47U, 300 mm	LISA chassis	LISA cassettes
ODF SYLFA HD 300mm	NGR 46U, 300 mm	SYLFA HD chassis	SYLFA HD modules
ODF IANOS	Generic 19 inch racks, cabinets or open frames	IANOS 19 inch chassis	IANOS modules
ODF SYLFA HD 19 inch		SYLFA HD 19 inch chassis	SYLFA HD modules

ODF can be also mix of different chassis and racks. Compatibility matrix:

Product family	CDR or NGR	Generic 19 inch
LISA	✓	✓[1]
IANOS	✕	✓
SYLFA HD	✓	✓
CTS	✓	✕
ZDPHD	✕	✓

Difference NGR and CDR

Feature	CDR	NGR
Height	47U	39U, 46U
Frame	aluminium	steel
Customization via variant configurator	✕	✓
Region	NEU	worldwide

1 LISA ODU

ODF comparison

ODF feature	ODF LISA ODF LISA HD	ODF SYLFA HD 300mm	ODF IANOS	ODF SYLFA HD 19 inch
Front access only [1]	✓	✓	✗	✗
Front and rear access [2]	✗	✗	✓	✓
Adapter orientation [3]	Side	Front	Front	Front
300 mm deep rack	✓	✓	✗	✗
Generic 19 inch	✗	✗	✓	✓
Patching	LC, SC, MTP, E-2000	LC, SC	LC, SC, MTP	LC, SC
Transition	LC, SC, E-2000	LC, SC	LC, SC	LC, SC
Base types [4]	8 12 12 24	12 12	8 12 12 24	12 12
Conversion	✗	✗	✓	✓
Splice in module	LC, SC, E-2000	✗	LC, SC	✗
Splice-through in module	✓	✗	✓	✗
CTS splice point	✓	✓	✗	✗
Pre-terminated modules	✗	✓	✓	✓
Ribbon splicing TAP modules Splitter modules xWDM modules	✓	✗	✓	✗
Application note				

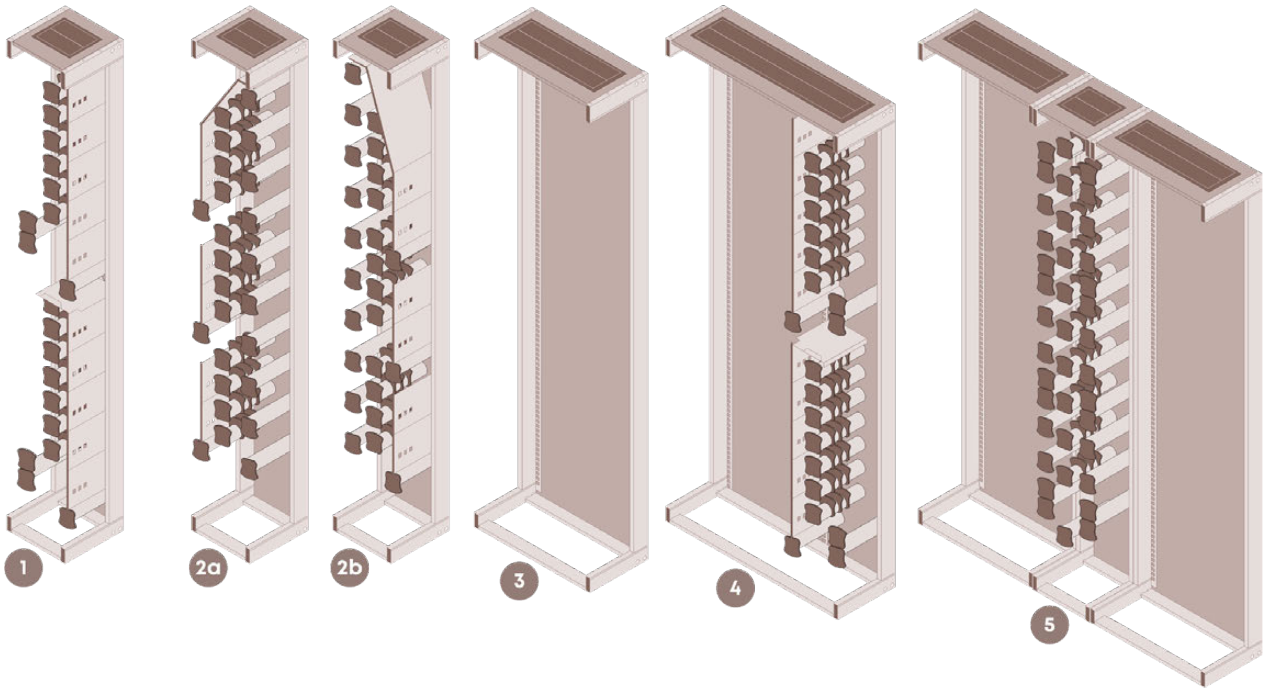
1 Both incoming and outgoing ports or cables accessible from the front side
2 Incoming ports or cables accessible from front and outgoing from the rear
3 Orientation towards an operator
4 MTP transition methods

CDR overview

CDR selection guide

Step 1	**Rack**	**Pre-configured CDR** Pre-defined typical frames + doors configurations	
		Custom CDR Combining various frames and doors	CDR Frames
			CDR Doors
Step 2	**Accessories** Add accessories required by use case		

CDR frame types



(1) **CDR 300 patch cord management**
Mounted to CDR 600 to create ODF 900 LEFT or to CDR 900 to create ODF 1200 PATCH

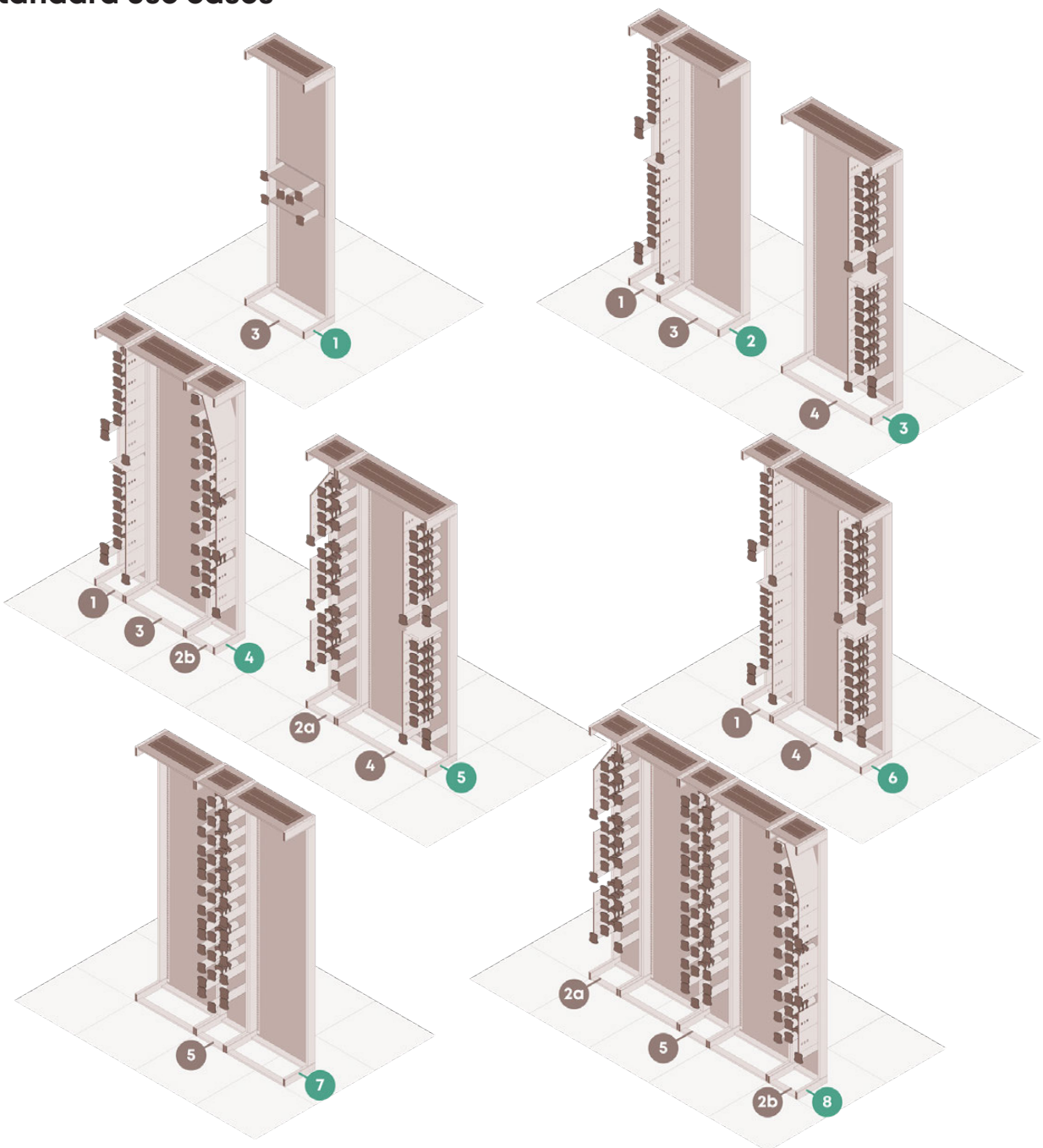
(2) **CDR 300 trunk slack management - LEFT (2a) and RIGHT (2b)**
When extra LEFT and RIGHT trunk slack management required

(3) **CDR 600**
Single 47U mounting space or in combination with other CDR

(4) **CDR 900**
Single 47U mounting space and integrated RIGHT patch cord management

(5) **CDR 1500**
Two 47U mounting spaces with central patch cord management

Standard use cases



(1) ODF 600
Patching, transition or splicing applications

(2) ODF 900 LEFT
Transition or splicing applications

(3) ODF 900 RIGHT*
Transition or splicing applications

(4) ODF 1200 LEFT
With LEFT trunk and patch cord slack management

(5) ODF 1200 RIGHT
With RIGHT trunk and patch cord slack management

(6) ODF 1200 PATCH*
Patching applications

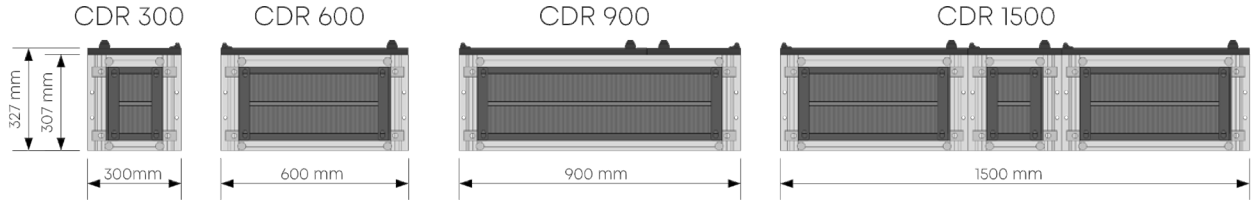
(7) ODF 1500 DOUBLE ACCESS
Transition or splicing applications

(8) ODF 2100 DOUBLE ACCESS*
Transition or splicing applications with LEFT and RIGHT trunk slack management

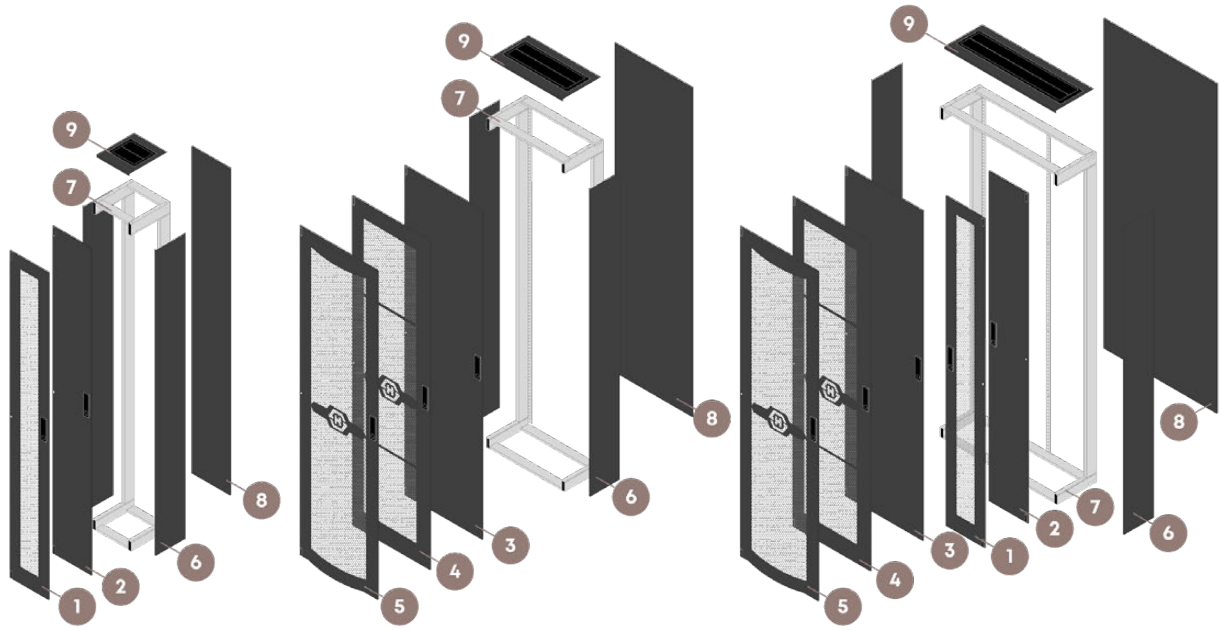
* Highlighted are popular use cases

1 Numbers show CDR frame types

CDR footprint (bottom view)



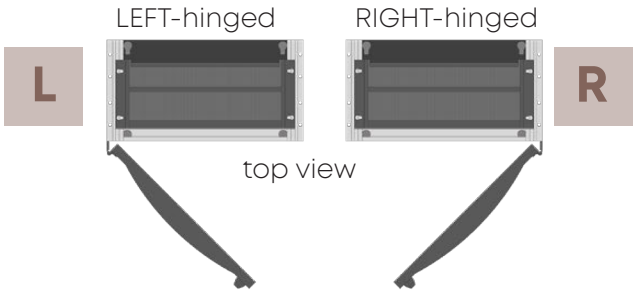
CDR main components

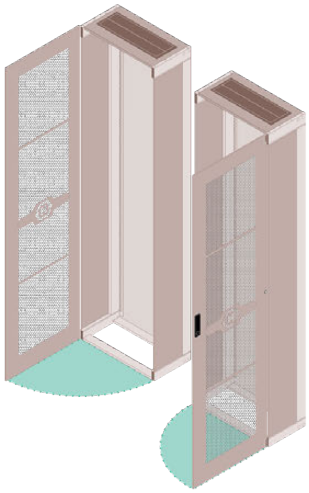


(1) 300 mm perforated flat door
(2) 300 mm solid flat door
(3) 600 mm solid flat door
(4) 600 mm perforated flat door
(5) 600 mm perforated curved door
(6) Side walls
(7) C-shape frame (aluminium)
(8) Back wall
(9) Brush top cover

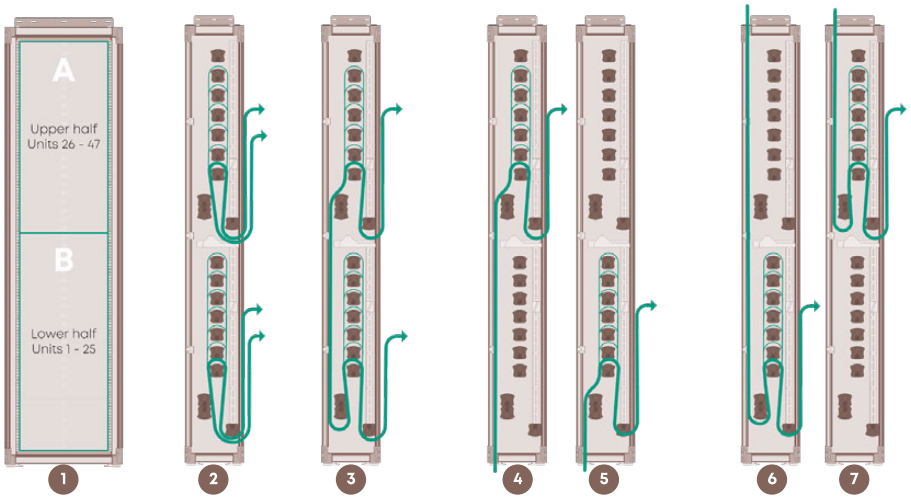
CDR door orientations

CDRs are equipped with LEFT-hinged or RIGHT-hinged doors





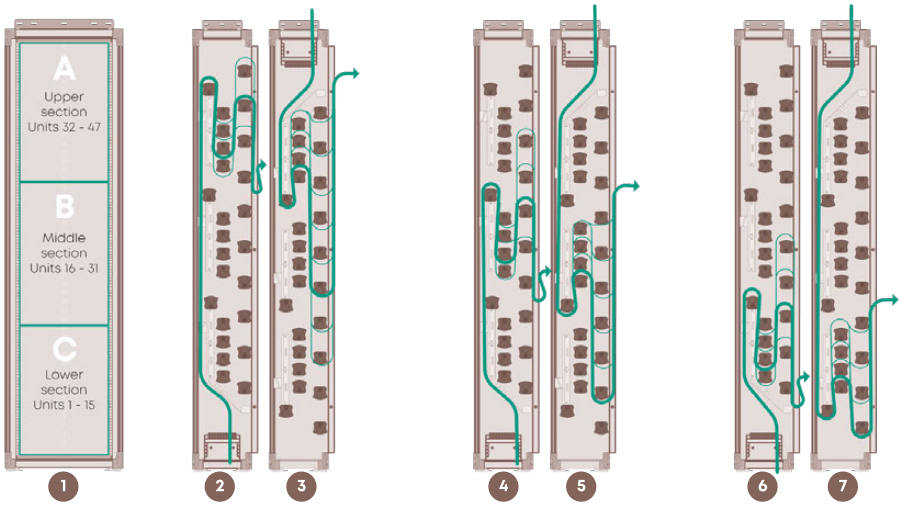
CDR patching guide - patch cord slack management



Patching lengths

(1) Two sections - A and B
(2) Inside A or B - **3.5 m**
(3) From A to B - **5 m**
(4) From A to bottom - **3.5 m**
(5) From B to bottom - **2.5 m**
(6) From B to top - **4.5 m**
(7) From A to top - **2.5 m**

CDR patching guide - trunk slack management

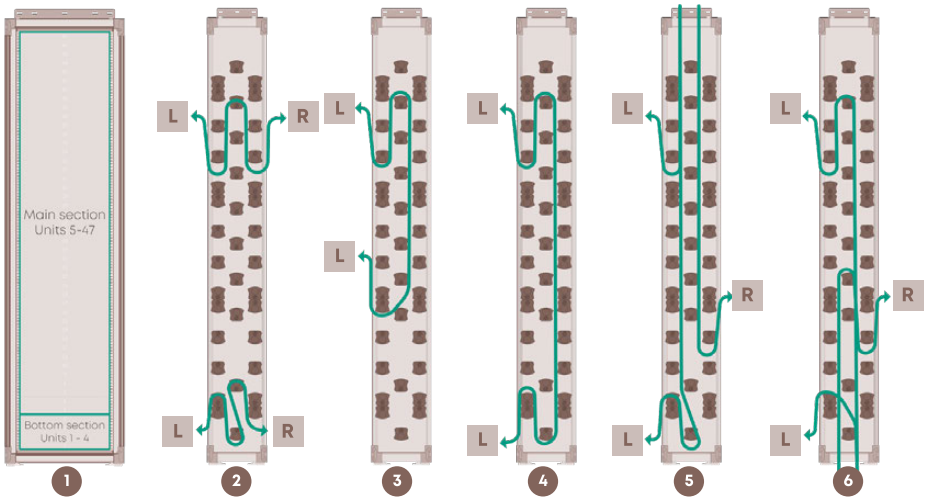


Trunk lengths*

(1) Three sections - A, B and C
(2) A to bottom - **3.0 m**
(3) A to top - **2.7 m**
(4) B to bottom - **3.0 m**
(5) B to top - **2.7 m**
(6) C to bottom - **3.0 m**
(7) C to top - **2.7 m**

* provided lengths are for transition or splicing applications, in case of patching application add 0.7m for every trunk

CDR patching guide - central patch cord slack management



Patching lengths

(1) Main section and bottom section
(2) L to R - **2.5 m**
(3) L to L or R to R, inside main section - **3.5 m**
(4) L to L or R to R, main to bottom - **3.5 m**
(5) Patching out top entry - **3.5 m**
(6) Patching out bottom entry - **3.5 m**

Go to external document/link

Pre-configured CDR

CDR 300 with left (L) patch cord management



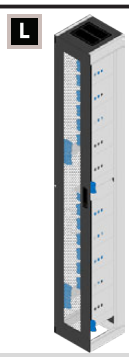
1

CDR03-47U-SDL0-STA-BK



2

CDR03-47U-SDL0-STA-GY



3

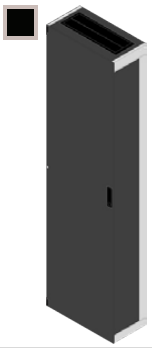
CDR03-47U-PDL0-STA-BK



4

CDR03-47U-PDL0-STA-GY

CDR 600 without patch cord management



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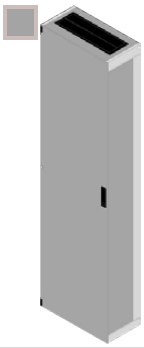
CDR06-47U-SDL0-STA-BK



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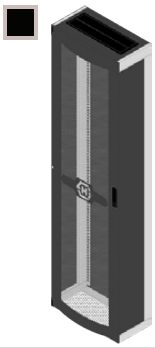
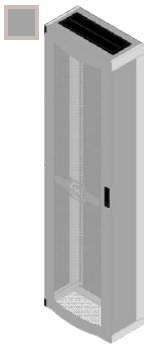
CDR06-47U-SDL0-STA-GY



7

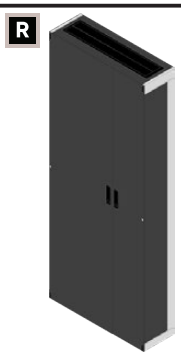
CDR06-47U-PDL0-STA-BK



8

CDR06-47U-PDL0-STA-GY

CDR 900 with integrated right (R) patch cord management



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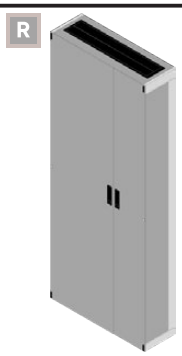
CDR09-47U-SDLR-STA-BK



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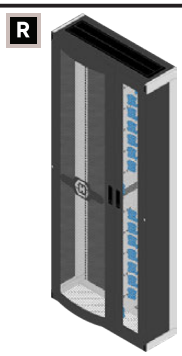
CDR09-47U-SDLR-STA-GY



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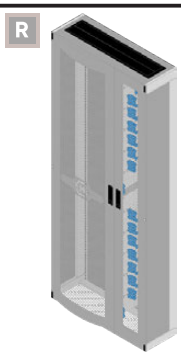
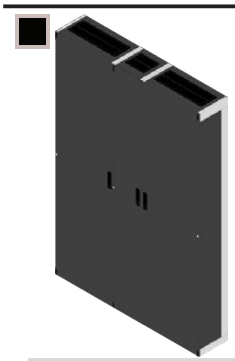


12

CDR09-47U-PDLR-STA-GY

CDR 1500 with central patch cord management



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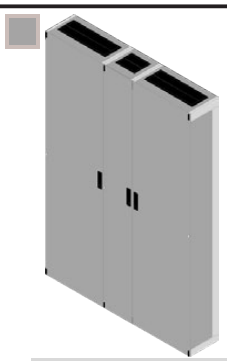
CDR15-47U-SDLR-STA-BK



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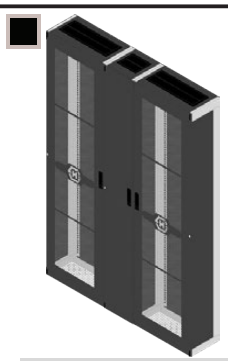
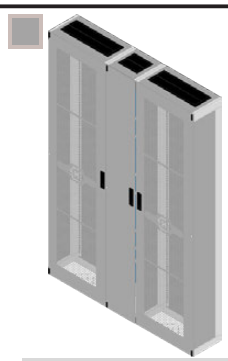
CDR15-47U-SDLR-STA-GY



15

CDR15-47U-PFLR-STA-BK



16

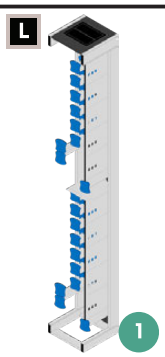
CDR15-47U-PFLR-STA-GY

Ordering information

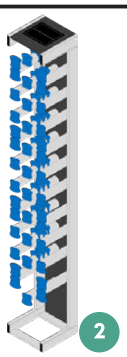
#	Item number	Descriptive code	Item text	LT	URL
1	85030019	CDR03-47U-SDL0-STA-BK	Cable distribution rack 300 mm, solid door left hinged, without side panels, 47U, black		
2	on request	CDR03-47U-SDL0-STA-GY	Cable distribution rack 300 mm, solid door left hinged, without side panels, 47U, grey		
3	85029083	CDR03-47U-PDL0-STA-BK	Cable distribution rack 300 mm, perforated door left hinged, without side panels, 47U, black		
4	85029089	CDR03-47U-PDL0-STA-GY	Cable distribution rack 300 mm, perforated door left hinged, without side panels, 47U, grey		
5	on request	CDR06-47U-SDL0-STA-BK	Cable distribution rack 600 mm, solid door left hinged, 47U, black, with side panels		
6	on request	CDR06-47U-SDL0-STA-GY	Cable distribution rack 600 mm, solid door left hinged, 47U, grey, with side panels		
7	85029092	CDR06-47U-PDL0-STA-BK	Cable distribution rack 600 mm, perforated door left hinged, 47U, black, with side panels		
8	85029087	CDR06-47U-PDL0-STA-GY	Cable distribution rack 600 mm, perforated door left hinged, 47U, grey, with side panels		
9	85029090	CDR09-47U-SDLR-STA-BK	Cable distribution rack 900 mm, solid doors, 47U, black, with side panels		
10	85029086	CDR09-47U-SDLR-STA-GY	Cable distribution rack 900 mm, solid doors, 47U, grey, with side panels		
11	85029082	CDR09-47U-PDLR-STA-BK	Cable distribution rack 900 mm, perforated doors, 47U, black, with side panels		
12	85029085	CDR09-47U-PDLR-STA-GY	Cable distribution rack 900 mm, perforated doors, 47U, grey, with side panels		
13	85117874	CDR15-47U-SDLR-STA-BK	Cable distribution rack 1500 mm, LISA Double Access, 47U, black, all solid flat doors, with side panels		
14	85136758	CDR15-47U-SDLR-STA-GY	Cable distribution rack 1500 mm, LISA Double Access, 47U, grey, all solid flat doors, with side panels		
15	85109330	CDR15-47U-PFLR-STA-BK	Cable distribution rack 1500 mm, LISA Double Access, 47U, black, perforated and solid doors, with side panels		
16	on request	CDR15-47U-PFLR-STA-GY	Cable distribution rack 1500 mm, LISA Double Access, 47U, grey, perforated and solid doors, with side panels		

Custom CDR

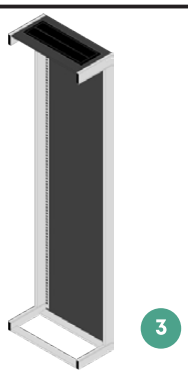
CDR frames



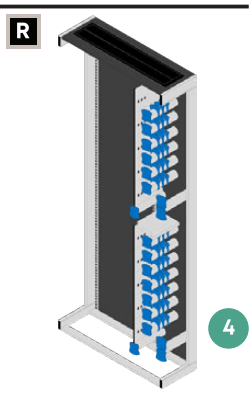
CDR03-47U-0000-STA-BK



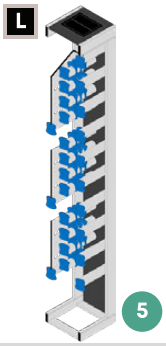
CDR03-47U-BK-0000-PCE



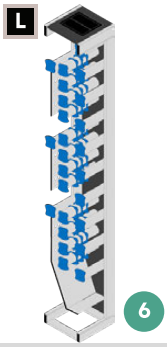
CDR06-47U-BK-0000-STA



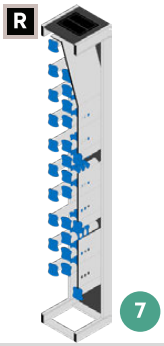
CDR09-47U-0000-STA-BK



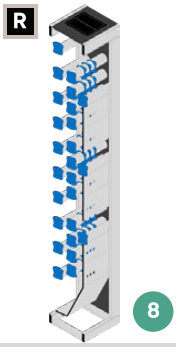
CDR03-47U-BK-0000-TLE-TE



CDR03-47U-BK-0000-TLE-BE



CDR03-47U-BK-0000-TRI-TE



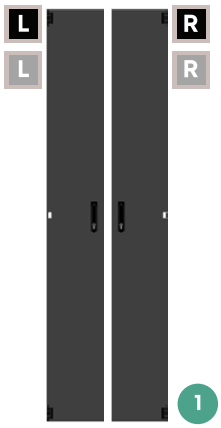
CDR03-47U-BK-0000-TRI-BE

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85119208	CDR03-47U-0000-STA-BK	CDR3 300mm 47U frame patch left (L), without doors, no side panels, black		
2	on request	CDR03-47U-BK-0000-PCE	CDR3 300mm 47U frame patch center (C), without doors, no side panels, black		
3	on request	CDR06-47U-BK-0000-STA	CDR6 600mm 47U frame without doors, no side panels, black		
4	85085431	CDR09-47U-0000-STA-BK	CDR9 900mm 47U frame without doors, no side panels, black	✓	
5	on request	CDR03-47U-BK-0000-TLE-TE	CDR3 300mm 47U frame trunk left (L) top entry, without doors, no side panels, black		
6	on request	CDR03-47U-BK-0000-TLE-BE	CDR3 300mm 47U frame trunk left (L) bottom entry, without doors, no side panels, black		
7	on request	CDR03-47U-BK-0000-TRI-TE	CDR3 300mm 47U frame trunk right (R) top entry, without doors, no side panels, black		
8	on request	CDR03-47U-BK-0000-TRI-BE	CDR3 300mm 47U frame trunk right (R) bottom entry, without doors, no side panels, black		
9	85029105	CDR-47U-SIDE-PAN-BK	CDR side panel 47U, black	✓	
	on request	CDR-47U-SIDE-PAN-GY	CDR side panel 47U, grey		

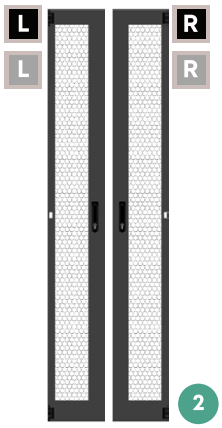
CDR doors

300 mm



CDR3-47U-SOLID-DR-xH-BK

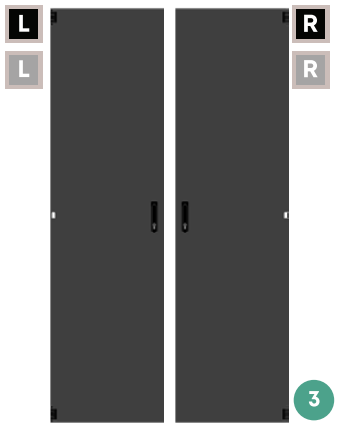
CDR3-47U-SOLID-DR-xH-BK



CDR3-47U-PERF-DR-xH-BK

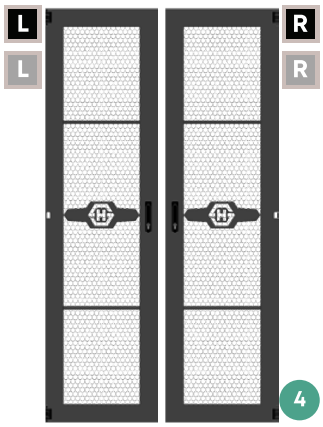
CDR3-47U-PERF-DR-xH-BK

600mm



CDR6-47U-SOLID-DR-xH-BK

CDR6-47U-SOLID-DR-xH-BK



CDR6-47U-PERF-DR-xH-BK

CDR6-47U-PERF-DR-xH-BK

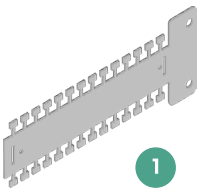
Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85120632	CDR3-47U-SOLID-DR-LH-BK	CDR solid flat door, hinged left, 300 mm wide, 47U, black		
	85120633	CDR3-47U-SOLID-DR-LH-GY	CDR solid flat door, hinged left, 300 mm wide, 47U, grey		
	85029103	CDR3-47U-SOLID-DR-RH-BK	CDR solid flat door, hinged right, 300 mm wide, 47U, black		
	on request	CDR3-47U-SOLID-DR-RH-GY	CDR solid flat door, hinged right, 300 mm wide, 47U, grey		
2	85120630	CDR3-47U-PERF-DR-LH-BK	CDR perforated flat door, hinged left, 300 mm wide, 47U, black		
	85120631	CDR3-47U-PERF-DR-LH-GY	CDR perforated flat door, hinged left, 300 mm wide, 47U, grey		
	85029100	CDR3-47U-PERF-DR-RH-BK	CDR perforated flat door, hinged right, 300 mm wide, 47U, black		
	on request	CDR3-47U-PERF-DR-RH-GY	CDR perforated flat door, hinged right, 300 mm wide, 47U, grey		
3	85029101	CDR6-47U-SOLID-DR-LH-BK	CDR solid flat door, hinged left, 600 mm wide, 47U, black		
	on request	CDR6-47U-SOLID-DR-LH-GY	CDR solid flat door, hinged left, 600 mm wide, 47U, grey		
	on request	CDR6-47U-SOLID-DR-RH-BK	CDR solid flat door, hinged right, 600 mm wide, 47U, black		
	on request	CDR6-47U-SOLID-DR-RH-GY	CDR solid flat door, hinged right, 600 mm wide, 47U, grey		
4	85029099	CDR6-47U-PERF-DR-LH-BK	CDR perforated curved door, hinged left, 600 mm wide, 47U, black		
	on request	CDR6-47U-PERF-DR-LH-GY	CDR perforated curved door, hinged left, 600 mm wide, 47U, grey		
	on request	CDR6-47U-PERF-DR-RH-GY	CDR perforated curved door, hinged right, 600 mm wide, 47U, black		
	on request	CDR6-47U-PERF-DR-RH-BK	CDR perforated curved door, hinged right, 600 mm wide, 47U, grey		

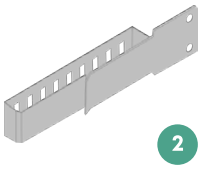
CDR accessories

CDR frame integrated accessories

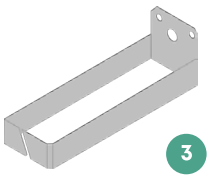
Mounted in pre-configured and custom CDR but can be ordered separately if necessary



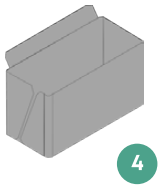
CDR-CONDUIT-TIE-PLT-SR



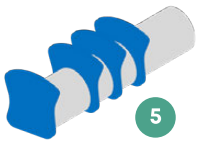
CDR-VERT-CABLE-BRKT-xx



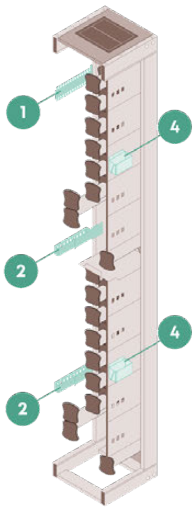
CDR-PATCH-MAN-BRKT-SR

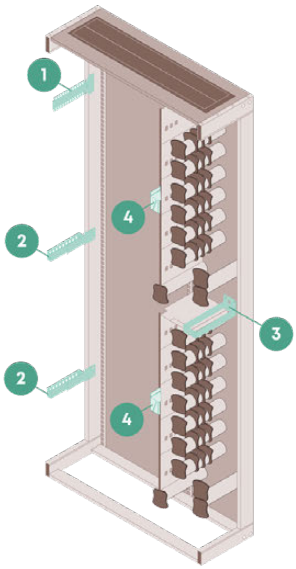


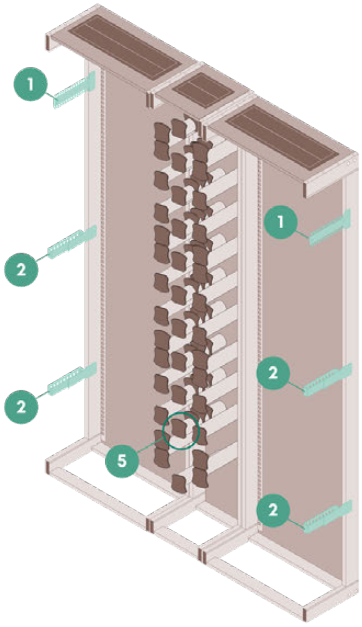
CDR-PATCH-SEP-BRKT-SR



CDR00-MAN-3DIV



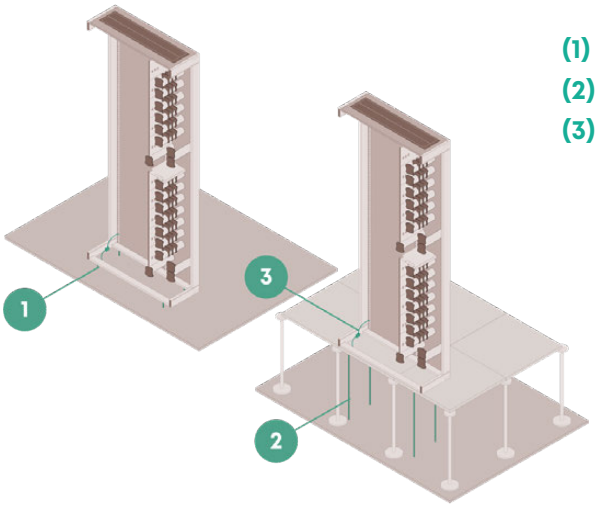




Ordering information

#	Item number	Descriptive code	Item text	LT
1	85021672	CDR-CONDUIT-TIE-PLT-SR	CDR conduit tie plate, silver	
2	85021673	CDR-VERT-CABLE-BRKT-BK	CDR vertical cable bracket, small, black	
3	85029919	CDR-PATCH-MAN-BRKT-SR	CDR patch cord guiding bracket for patch cord management plate, small, silver	
4	85029918	CDR-PATCH-SEP-BRKT-SR	CDR hook-in patch cord guiding bracket for vertical divide plate, small, silver (white aluminium)	
5	85029681	CDR00-MAN-3DIV	Front mountable mandrel assembly with 3 divider plates and endplate, incl. mounting material, length 225 mm	

CDR other accessories



(1) Fastening kit for concrete floor
(2) Fastening kit for raised floor
(3) Earthing kit (is part of standard delivery)

Ordering information

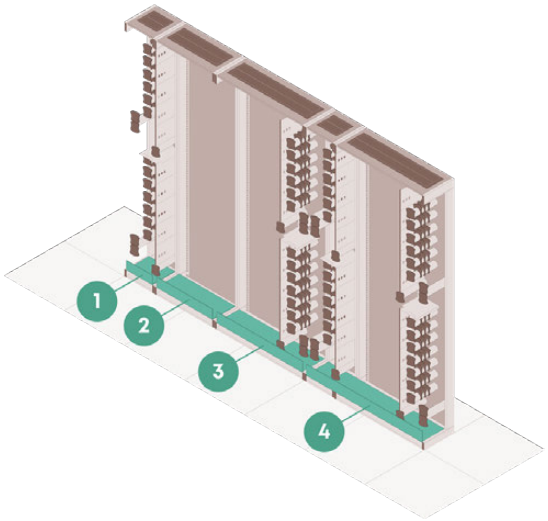
#	Item number	Descriptive code	Item text	LT
1	85038724	ODR-FFK-SF-1	CDR solid/ concrete floor fixing kit (4 per kit), incl. anchors, nuts and washers	☑
2	85029106	CDR00-FFK-RF-1	CDR raised floor fixing kit (4 per kit), incl. anchors, threaded-rod, nuts and washers	★
3	85068485	CDR00-EART-KIT	CDR grounding/ earthing Kit	◕

CDR routing channel

Routing channel adds the possibility to patch between side-to-side or back-to-back racks

(1) For CDR 300
(2) For CDR 600
(3) For CDR 900
(4) For CDR 1200 (900+300)

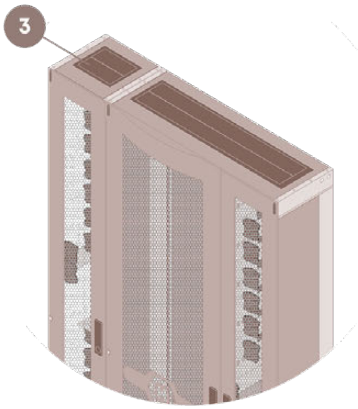
Routing channel for CDR 1500 shown in NGR accessories



Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85029837	CDR03-ROUT-CHAN-SR	CDR 300 mm 2U routing channel, silver (white aluminium)		
2	85113147	CDR06-ROUT-CHAN-SR	CDR 600 mm 2U routing channel with adjustable rear opening, silver (white aluminium)	✓	
3	85029682	CDR09-ROUT-CHAN-SR	CDR 900 mm 2U patch cord routing channel with adjustable rear opening, silver (white aluminium)		
4	85096557	CDR12-ROUT-CHAN-SR	CDR 1200 mm 2U patch cord routing channel with adjustable rear opening, silver (white aluminium)	✓	

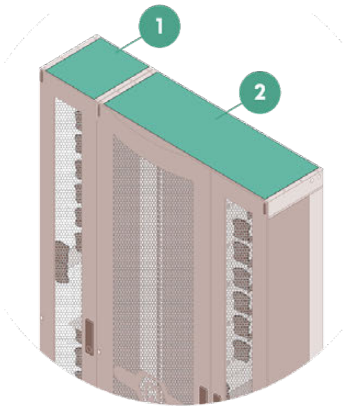
CDR top cover



Replaces the integrated brush top cover with a solid steel cover

.

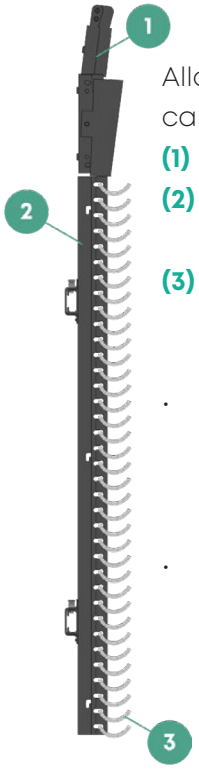
(1) For CDR 300
(2) For CDR 900
(3) Brush top



Ordering information

#	Item number	Descriptive code	Item text	LT
1	85072627	CDR03-COVR-PLAT-SR	CDR 300 top cover plate, silver, incl. mounting material	✓
2	85072626	CDR09-COVR-PLAT-SR	CDR 900 top cover plate, silver, incl. mounting material	✓

Ribbon breakout box - for CDR



Allows to splice ribbon cables in ODF LISA

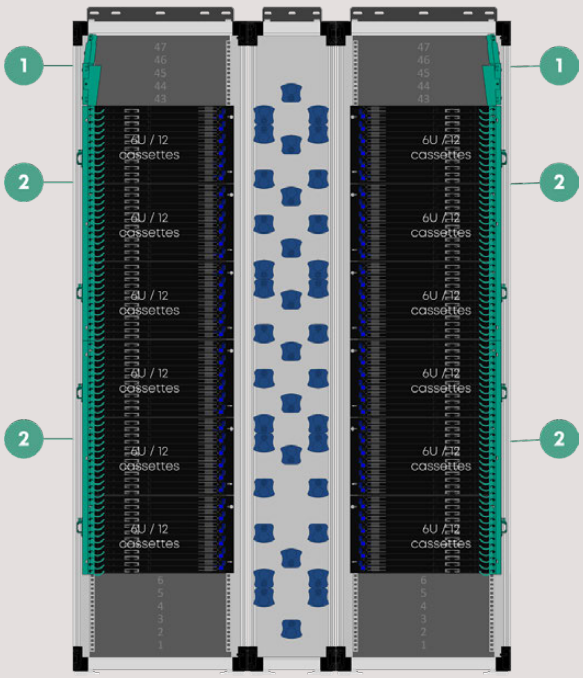
(1) Cable fixation

(2) Ribbon cable breakout box

(3) Ø6mm protection tube set for ribbon box

- One box for 36x cassettes, respectively 3x 6U LISA chassis
- Two stackable boxes for 72x cassettes, respectively 6x 6U LISA chassis

Example of ODF LISA 1500 ribbon splice



4x 864f ribbon cable (or 2x 1728f) in one ODF LISA 1500 using 4x ribbon boxes

Ordering information

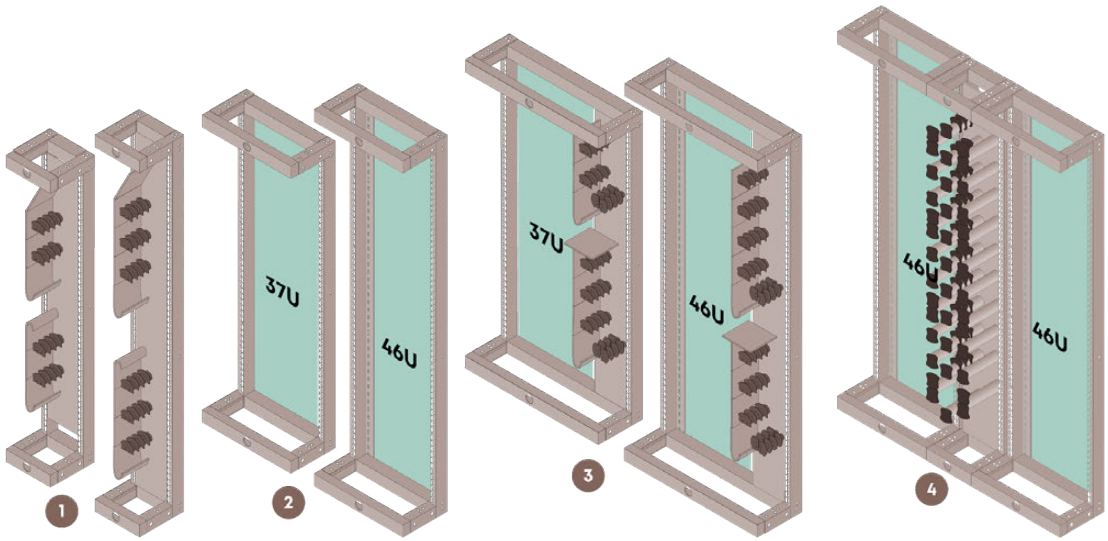
#	Item number	Descriptive code	Item text	LT
1	85128728	RIBBON-BOX-CAB-FIX-BK	LISA ribbon breakout cabel fixation box, up to 2x ribbon cables with diameter Ø20 - Ø32 mm, black	☑
2	85128729	RIBBON-BOX-CAB-B/OUT-BK	LISA ribbon breakout conduit fixation box, up to 36x 6mm conduits, black	☑
3	85139048	OFPT-6.35-4.2-PP-WHT	Cable conduit for LISA ribbon breakout box, diameter Ø6 mm, 36x 530 mm conduits, white	◔

NGR overview

NGR selection guide

Step 1	**Rack**	**Pre-configured NGR** Pre-defined NGR for standard applications
		Custom NGR NGR for standard applications configured with the order code
		Application specific NGR Pre-defined NGR for custom applications
Step 2	**Accessories** Add accessories required by use case	

NGR frames for standard applications



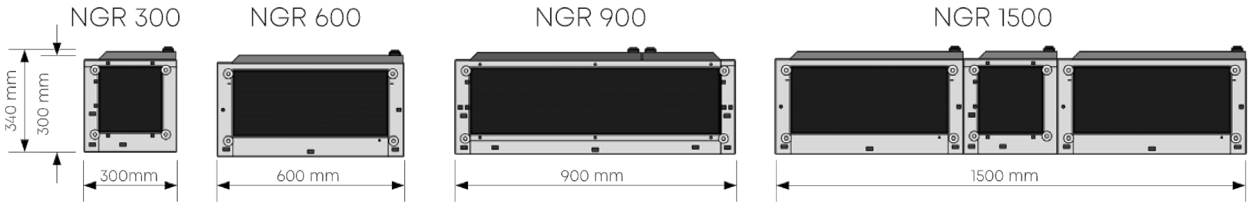
(1) **NGR 300 patch cord /trunk management**
Stacked to NGR 600 to create ODF 900 LEFT or to NGR 900 to create ODF 1200 PATCH

(2) **NGR 600**
Standalone single 37U or 46U mounting space or in combination with other NGR

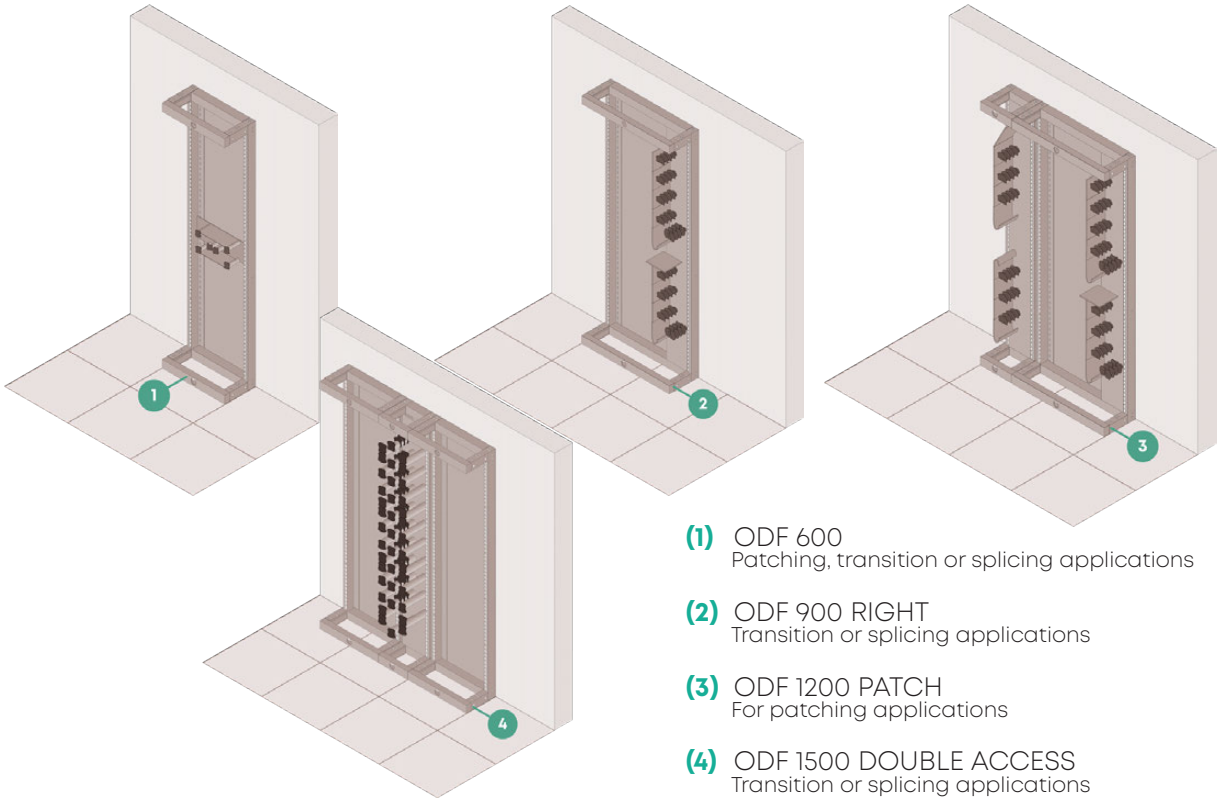
(3) **NGR 900**
Single 37U or 46U mounting space and integrated RIGHT patch cord management

(4) **NGR 1500**
Two 46U mounting spaces with central patch cord management

NGR footprint (bottom view)



NGR standard applications



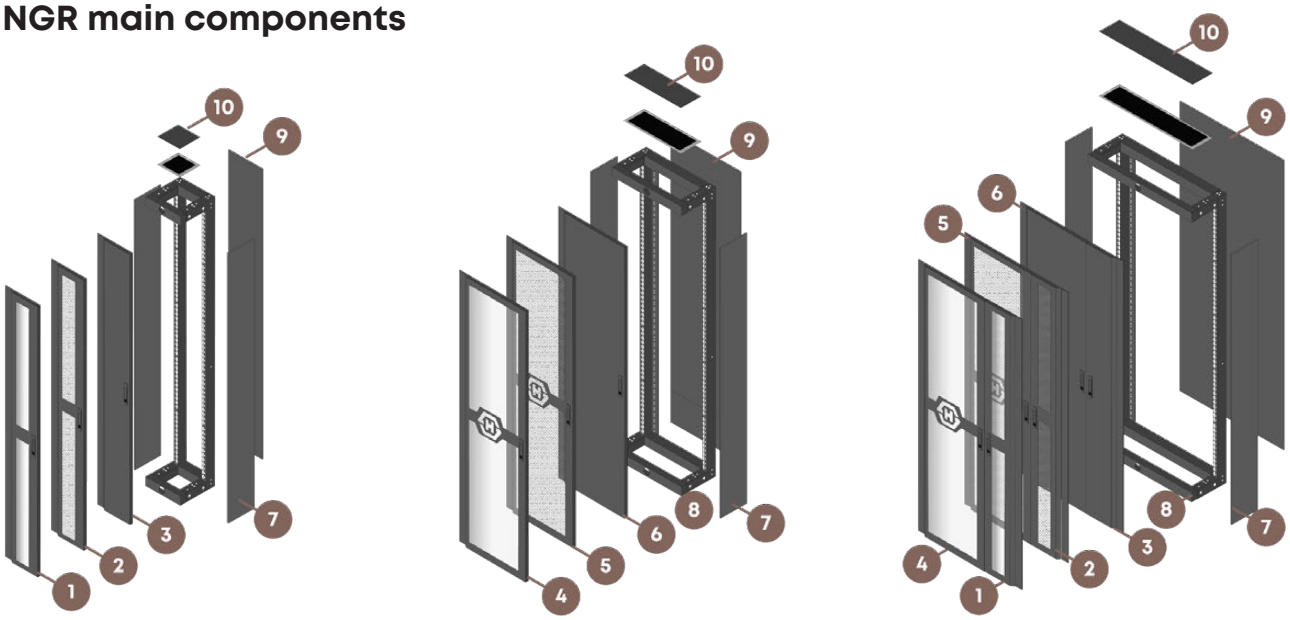
(1) ODF 600
Patching, transition or splicing applications

(2) ODF 900 RIGHT
Transition or splicing applications

(3) ODF 1200 PATCH
For patching applications

(4) ODF 1500 DOUBLE ACCESS
Transition or splicing applications

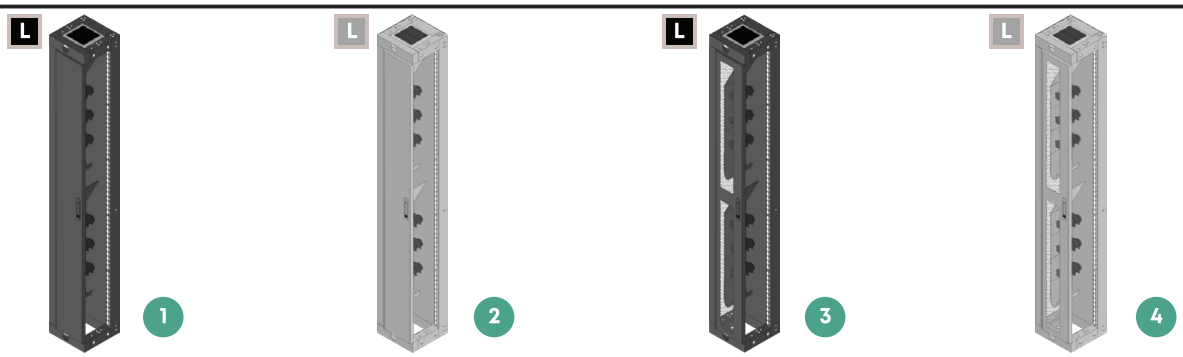
NGR main components



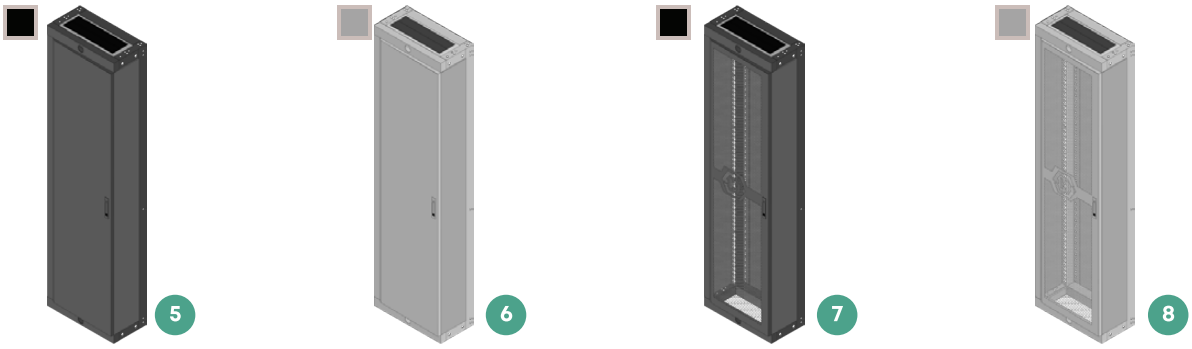
(1) 300 mm safety-glass flat door (on request)
(2) 300 mm perforated flat door
(3) 300 mm solid flat door
(4) 600 mm safety-glass flat door (on request)
(5) 600 mm perforated flat door
(6) 600 mm solid flat door
(7) Side walls
(8) C-shape frame (steel)
(9) Back wall
(10) Brush or solid top cover

Pre-configured NGR

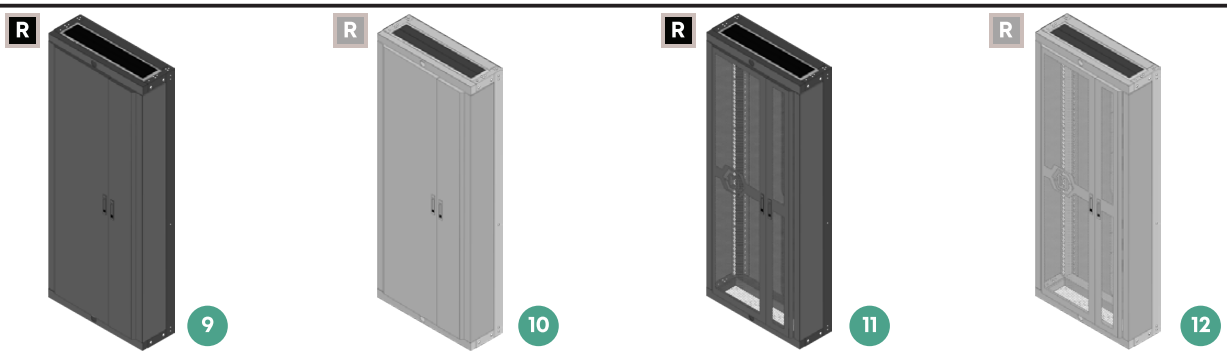
NGR 300 with left (L) patch cord management



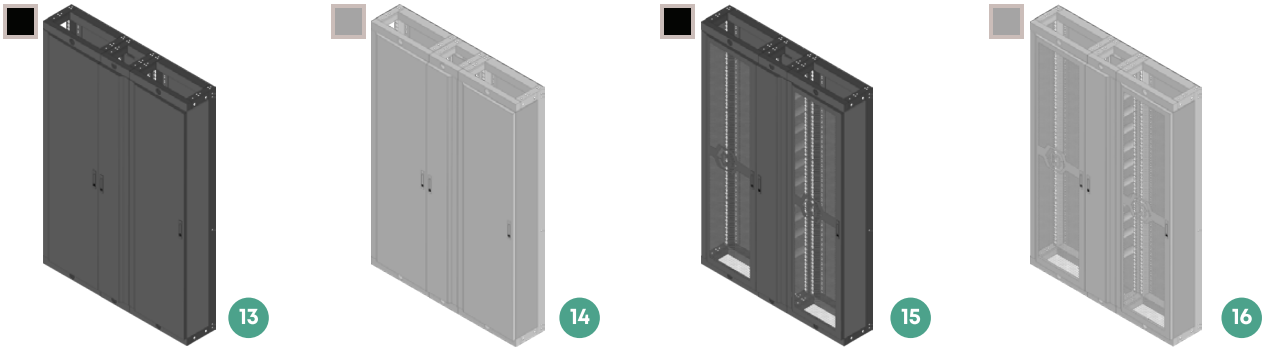
NGR 600 without patch cord management



NGR 900 with integrated right(R) patch cord management



NGR 1500 with central patch cord management

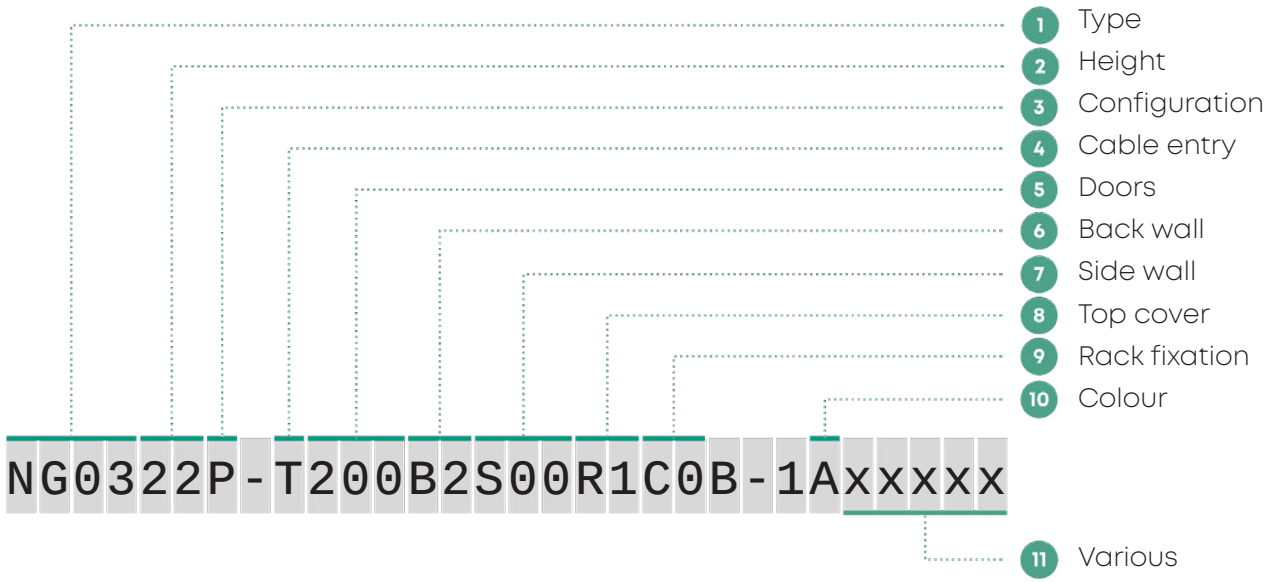


Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	on request	NG0322P-U200B1S00R1C1B-1BOO00A	Next generation rack 300 mm, solid door with key lock, black, without side panels,for LEFT patch/trunk cable management		
2	on request	NG0322P-U200B1S00R1C1B-1AOO00A	Next generation rack 300 mm, solid door with key lock, grey, without side panels,for LEFT patch/trunk cable management		
3	on request	NG0322P-U800B1S00R1C1B-1BOO00A	Next generation rack 300 mm, perforated door with key lock, black, without side panels, for LEFT patch/trunk cable management		
4	on request	NG0322P-U800B1S00R1C1B-1AOO00A	Next generation rack 300 mm, perforated door with key lock, grey, without side panels, for LEFT patch/trunk cable management		
5	on request	NG0622S-U020B1S11R1C1B-1BOO00A	Next generation rack 600 mm, solid door with key lock, black, with side panels, 46U		
6	on request	NG0622S-U020B1S11R1C1B-1AOO00A	Next generation rack 600 mm, solid door with key lock, grey, with side panels, 46U		
7	on request	NG0622S-U080B1S11R110B-1BOO00A	Next generation rack 600 mm, perforated door with key lock, black, with side panels, 46U		
8	on request	NG0622S-U080B1S11R1C1B-1AOO00A	Next generation rack 600 mm, perforated door with key lock, grey, with side panels, 46U		
9	on request	NG0922S-U022B1S11R1C1B-1BOO00A	Next generation rack 900 mm, solid door with key lock, black, with side panels, 46U, with RIGHT patch cord management		
10	on request	NG0922S-U022B1S11R1C1B-1AOO00A	Next generation rack 900 mm, solid door with key lock, grey, with side panels, 46U, with RIGHT patch cord management		
11	on request	NG0922S-U088B1S11R1C1B-1BOO00A	Next generation rack 900 mm, perforated door with key lock, black, with side panels, 46U, with RIGHT patch cord management		
12	on request	NG0922S-U088B1S11R1C1B-1AOO00A	Next generation rack 900 mm, perforated door with key lock, grey, with side panels, 46U, with RIGHT patch cord management		
13	85144055	NG1522NS-Q222B1S11R1C1B-1BA00A	Next generation rack 1500 mm, solid door with key lock, black, with side panels, 2x 46U, with central patch cord management		
14	85141280	NG1522NS-Q222B1S11R1C1B-1AA00A	Next generation rack 1500 mm, solid door with key lock, grey, with side panels, 2x 46U, with central patch cord management		
15	85144056	NG1522NS-Q828B1S11R1C1B-1BA00A	Next generation rack 1500 mm, perforated door with key lock, black, with side panels, 2x 46U, with central patch cord management		
16	85144052	NG1522NS-Q828B1S11R1C1B-1AA00A	Next generation rack 1500 mm, perforated door with key lock, grey, with side panels, 2x 46U, with central patch cord management		

Custom NGR

Order code NGR



1 Rack type

NG03	NGR 300 mm
NG06	NGR 600 mm
NG09	NGR 900 mm

2 Rack height

18	NGR 1800 mm, 37U
22	NGR 2200 mm, 46U

3 Configuration

P	for NG03 : trunk / patch cord management
S	for NG06 and NG09: standard configuration

4 Cable entry

T	top cable entry
U	bottom cable entry

NGR's mandrel positioning will be slightly different, see examples

5 Doors configuration

000	no doors equiped
xxx	see door selection options

6 Back wall

B0	no back wall
B1	back wall full height
B2	back wall 4U shortened (for back to back patching)

7 Side wall

S00	no side walls
S10	Only one side wall included
S11	Both side walls (left + right) included

8 Top cover

R0	no top cover
R1	top cover with brushes
R2	solid top cover

9 Rack fixation

C0	no rack fixation kit included
C1	wall fixation kit
C2	ceiling fixation kit, 1000 mm
C3	ceiling fixation kit, 1000 mm + wall fixation kit
C4	concrete floor fixation kit
C5	raised floor fixation kit

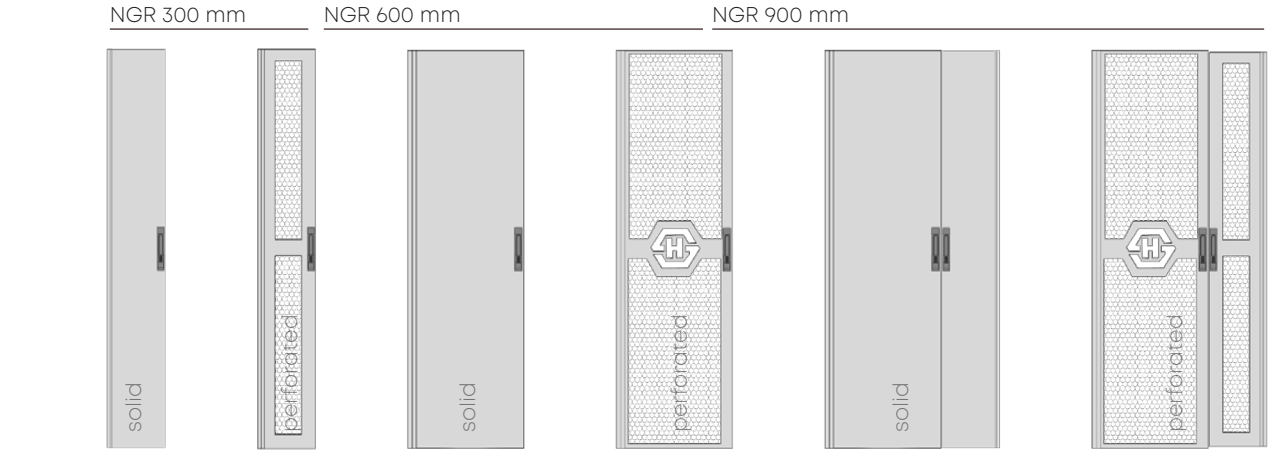
10 Colour

A	grey colour
B	black colour

11 Various assembly options

xxxxx	The rack can be additionally pre-equipped with accessories, such as breakout plates, chassis or protection tubes.
0000A	Add this in the end of the order code for a rack without any pre-equipped accessories

NGR door selection options

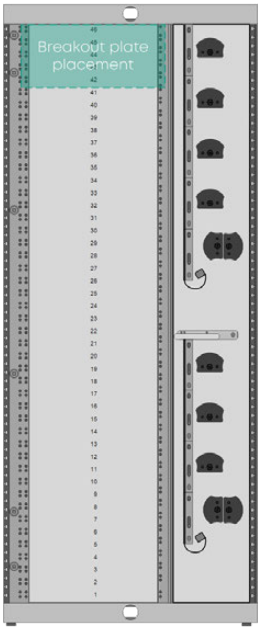


no lock[1]	100	700	010	070	011	077
with lock	200	800	020	080	022	088

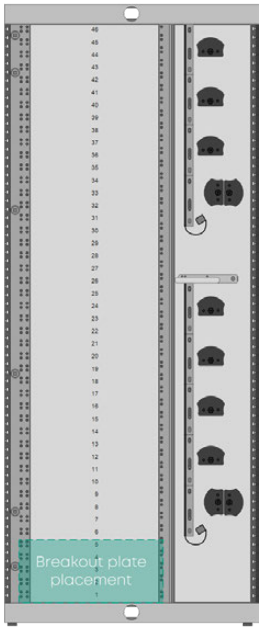
1 It is possible to upgrade the door with lock at later stage

Cable entry variants

T Top entry

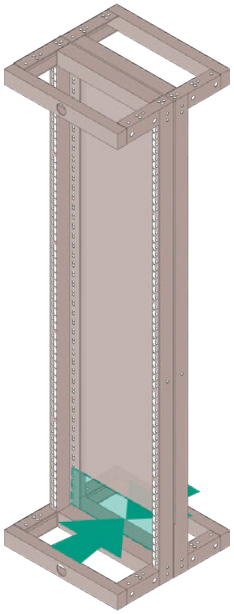


U Bottom entry



Back wall options

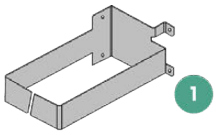
Shortened back wall allows to patch between rack placed back to back



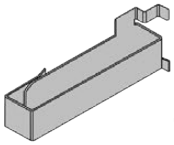
NGR accessories

NGR cable management accessories

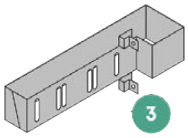
Some accessories are mounted in pre-configured or custom NGR but can be ordered separately if necessary



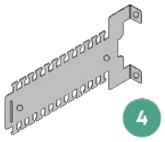
NGR-CABLE-RETAINER-LAR-xx



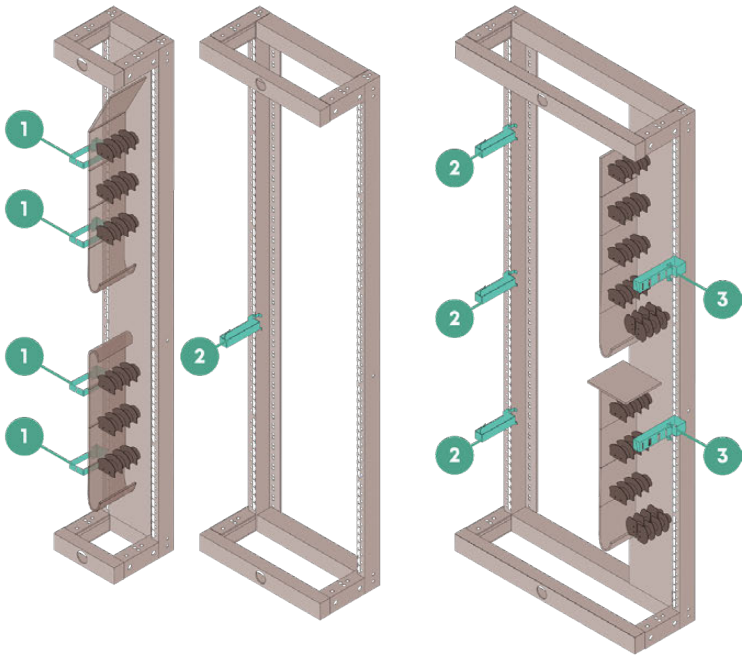
NGR-CABLE-RETAINER-SML-xx



NGR-CABLE-RETAINER-SML-LOW-xx



NGR-CABLE-BRACKET-xx



Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	84076531	NGR-CABLE-RETAINER-LAR-BK	NGR retainer for cables, large, black		
	84071882	NGR-CABLE-RETAINER-LAR-GY	NGR retainer for cables, large, grey		
2	84076535	NGR-CABLE-RETAINER-SML-BK	NGR retainer for patch cords, small black		
	84068200	NGR-CABLE-RETAINER-SML-GY	NGR retainer for patch cords, small, grey		
3	84084432	NGR-CABLE-RETAINER-SML-LOW-BK	NGR retainer for patch cords, small, with front access, black		
	84073696	NGR-CABLE-RETAINER-SML-LOW-GY	NGR retainer for patch cords, small, with frontal access, grey		
4	84076534	NGR-CABLE-BRACKET-BK	NGR cable tie or velcro bracket, black		
	84068201	NGR-CABLE-BRACKET-GY	NGR cable tie or velcro bracket, grey		

NGR door accessories

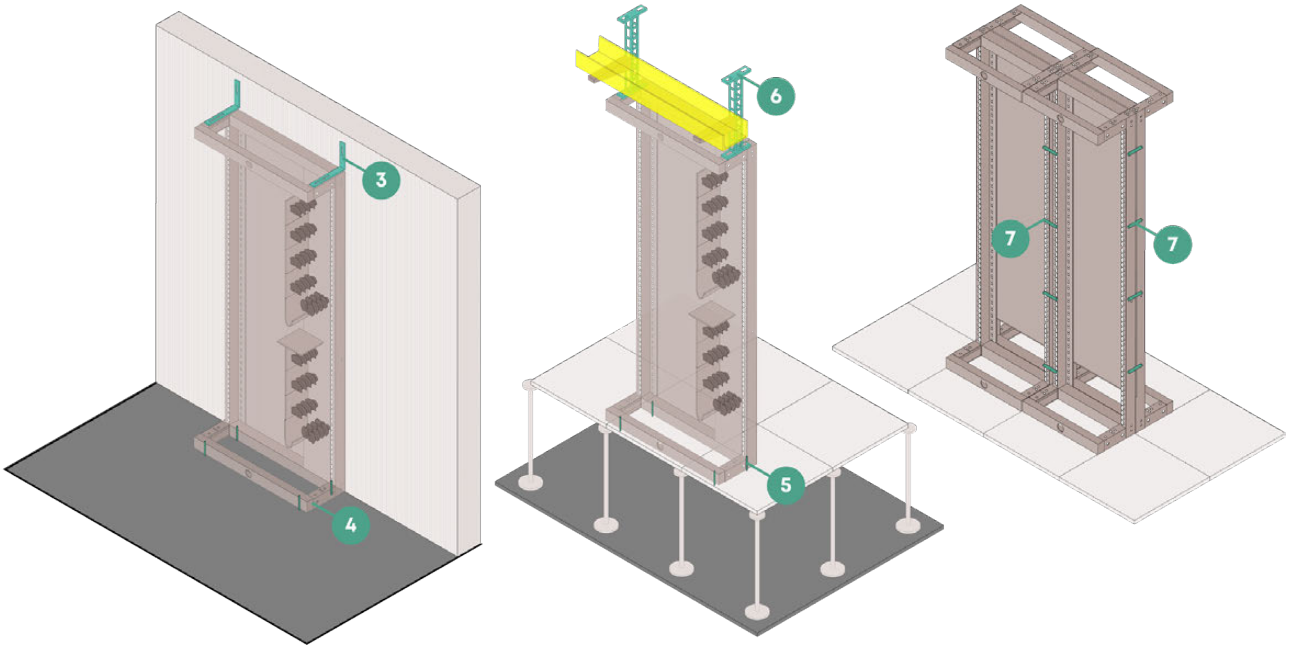


NGR-LOCK-BACKFITTING-EK333 1



NGR-SPARE-KEY-EK333 2

NGR fixing accessories

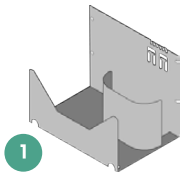


Ordering information

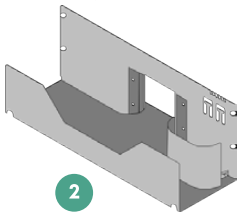
#	Item number	Descriptive code	Item text	LT	URL
1	84085188	NGR-LOCK-BACKFITTING-EK333	NGR door locking upgrade with 1 key, black		
2	84085514	NGR-SPARE-KEY-EK333	NGR door spare key		
3	84071885	NGR-WALL-FIXATION-KIT	NGR wall fixing kit		
4	84081125	NGR-RAISED-FLOOR-FIXING-KIT	NGR raised floor fixing kit, includes screws, washers and nuts to mount to the floor tile		
5	84091849	NGR-CONCRETE-KIT_4-P	NGR concrete floor fixing kit, includes anchors, nuts and washers		
6	84069172	NGR-CEILING-FIXATION-KIT-1000	NGR ceiling fixing kit, maximum height till ceiling 1m		
7	84076448	NGR-BAYING-KIT	Set of screws, washers and nuts to fasten NGR in side-by-side or back-to-back configuration		

NGR routing channels

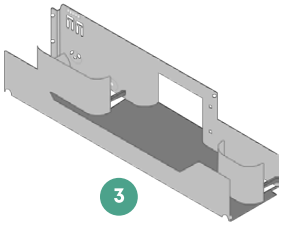
NGR 300-900 mm, **37U**, 1800 mm, 5U



NGR3-PC-ROUTING-CHAN-5U-xx

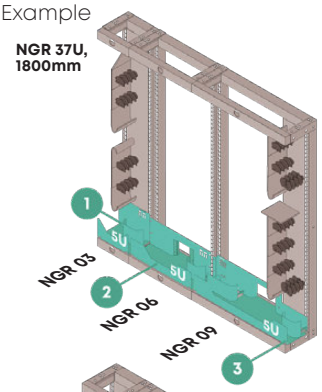


NGR6-PC-ROUTING-CHAN-5U-xx

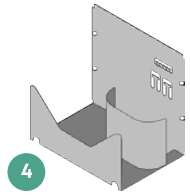


NGR9-PC-ROUTING-CHAN-5U-xx

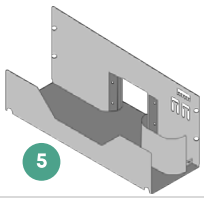
Example



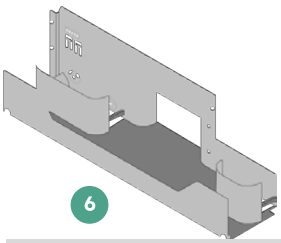
NGR 300-900 mm, **46U**, 2200 mm, 6U



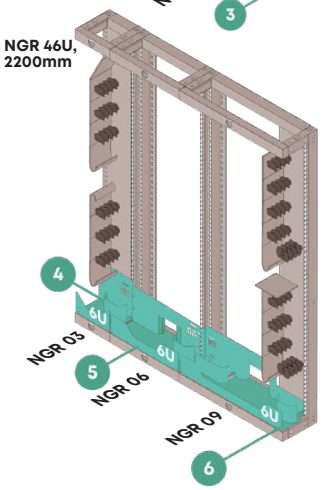
NGR3-PC-ROUTING-CHAN-6U-xx



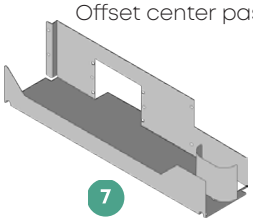
NGR6-PC-ROUTING-CHAN-6U-xx



NGR9-PC-ROUTING-CHAN-6U-xx

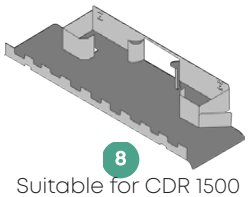


NGR 1200 mm, **46U**, 2200 mm, 6U
Offset center pass



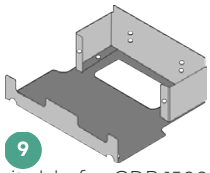
NGR9-ROUT-CHAN-6U-FOR-1200-xx

NGR 1500 mm, **46U**, 2200 mm, 2U



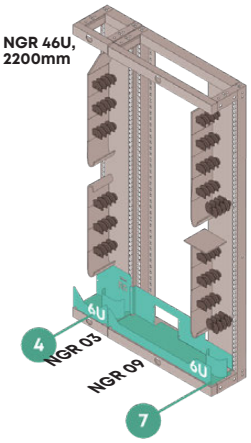
Suitable for CDR 1500

NGR15-ROUT-CHAN-DA-2U-xx

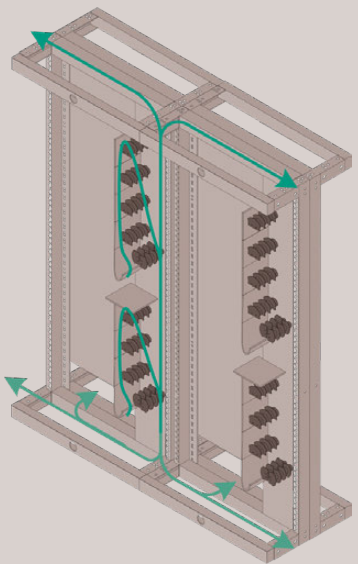


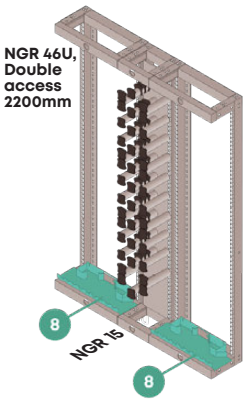
Suitable for CDR 1500

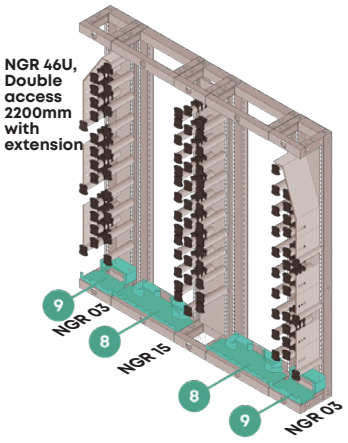
NGR3-ROUT-CHAN-DA-2U-xx



NGR - patching directions



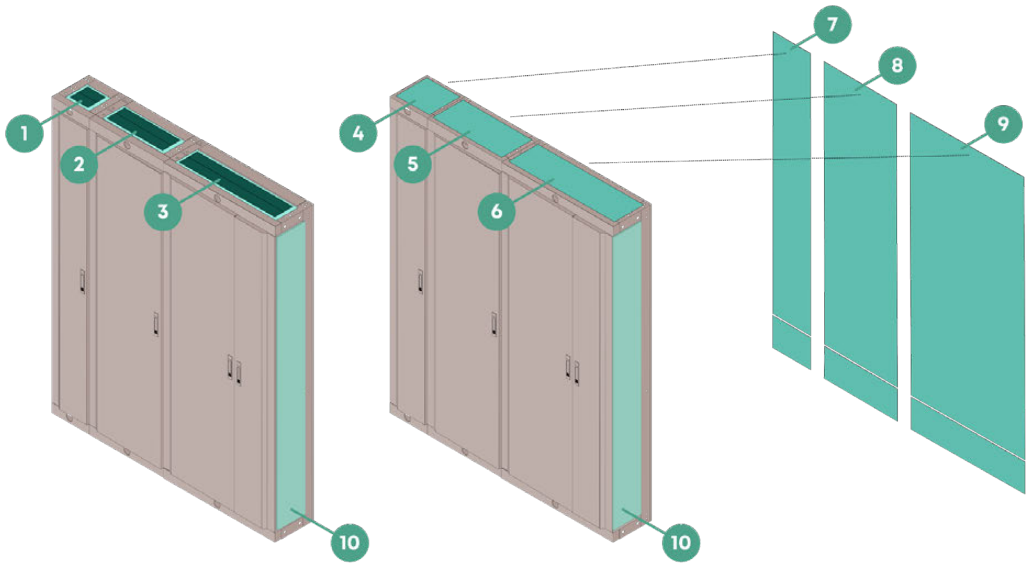




Ordering information

#	Item number	Descriptive code	Item text	LT
1	84077067	NGR3-PC-ROUTING-CHAN-5U-BK	NGR patch cord routing channel 300, 5U, for 1800 mm/37U racks, black	✓
	84077066	NGR3-PC-ROUTING-CHAN-5U-GY	NGR patch cord routing channel 300, 5U, for 1800 mm/37U racks, grey	✓
2	84077065	NGR6-PC-ROUTING-CHAN-5U-BK	NGR patch cord routing channel 600, 5U, for 1800 mm/37U racks, black	✓
	84077064	NGR6-PC-ROUTING-CHAN-5U-GY	NGR patch cord routing channel 600, 5U, for 1800 mm/37U racks, grey	✓
3	84077062	NGR9-PC-ROUTING-CHAN-5U-BK	NGR patch cord routing channel 900, 5U, for 1800 mm/37U racks, black	✓
	84077059	NGR9-PC-ROUTING-CHAN-5U-GY	NGR patch cord routing channel 900, 5U, for 1800 mm/37U racks, grey	✓
4	84076607	NGR3-PC-ROUTING-CHAN-6U-BK	NGR patch cord routing channel 300, 6U, for 2200 mm/46U racks, black	✓
	84068221	NGR3-PC-ROUTING-CHAN-6U-GY	NGR patch cord routing channel 300, 6U, for 2200 mm/46U racks, grey	✓
5	84076609	NGR6-PC-ROUTING-CHAN-6U-BK	NGR patch cord routing channel 600, 6U, for 2200 mm/46U racks, black	✓
	84068220	NGR6-PC-ROUTING-CHAN-6U-GY	NGR patch cord routing channel 600, 6U, for 2200 mm/46U racks, grey	✓
6	84076610	NGR9-PC-ROUTING-CHAN-6U-BK	NGR patch cord routing channel 900, 6U, for 2200 mm/46U racks, black	✓
	84068218	NGR9-PC-ROUTING-CHAN-6U-GY	NGR patch cord routing channel 900, 6U, for 2200 mm/46U racks, grey	✓
7	84136916	NGR9-ROUT-CHAN-6U-FOR-1200-BK	NGR patch cord routing channel 900, 6U, for 2200 mm/46U racks in ODF 1200 (to achieve straight back-to-back pass through), black	✓
	84085828	NGR9-ROUT-CHAN-6U-FOR-1200-GY	NGR patch cord routing channel 900, 6U, for 2200 mm/46U racks in ODF 1200 (to achieve straight back-to-back pass through), grey	✓
8	85150195	NGR15-ROUT-CHAN-DA-2U-BK	NGR patch cord routing channel 1500, 2U, for 2200 mm/46U double access ODF, black (suitable to CDR)	✓
	85150267	NGR15-ROUT-CHAN-DA-2U-GY	NGR patch cord routing channel 1500, 2U, for 2200 mm/46U double access ODF, grey (suitable to CDR)	✓
9	85150268	NGR3-ROUT-CHAN-DA-2U-BK	NGR patch cord routing channel 300, 2U, for 2200 mm/46U double access ODF extension, black (suitable to CDR)	✓
	85150269	NGR3-ROUT-CHAN-DA-2U-GY	NGR patch cord routing channel 300, 2U, for 2200 mm/46U double access ODF extension, grey (suitable to CDR)	✓

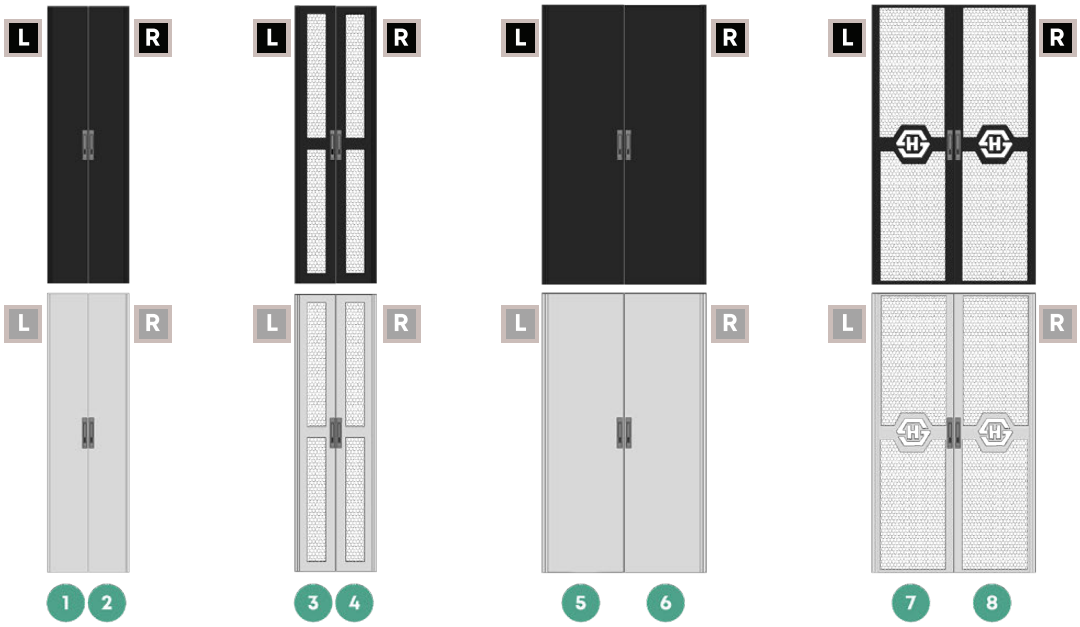
NGR top covers, back and side walls



Ordering information

#	Item number	Descriptive code	Item text	LT
1	84068214	NGR3-TOP-BRUSH	NGR 300mm top brush stripes, grey	
2	84068211	NGR6-TOP-BRUSH	NGR 600mm top brush stripes, grey	
3	84068022	NGR9-TOP-BRUSH	NGR 900mm top brush stripes, grey	
4	84076429	NGR3-TOP-SOLID	NGR 300mm top solid cover, grey	
5	84076430	NGR6-TOP-SOLID	NGR 600mm top solid cover, grey	
6	84076431	NGR9-TOP-SOLID	NGR 900mm top solid cover, grey	
7	84076599	NGR3-BW-1800-BK	NGR 300 mm back wall, 1800 mm, incl. installation material, black	
	84068271	NGR3-BW-1800-GY	NGR 300 mm back wall, 1800 mm, incl. installation material, grey	
	84076463	NGR3-BW-2200-BK	NGR 300 mm back wall, 2200 mm, incl. installation material, black	
	84068173	NGR3-BW-2200-GY	NGR 300 mm back wall, 2200 mm, incl. installation material, grey	
8	84076612	NGR6-BW-1800-BK	NGR 600 mm back wall, 1800 mm, incl. installation material, black	
	84068269	NGR6-BW-1800-GY	NGR 600 mm back wall, 1800 mm, incl. installation material, grey	
	84076460	NGR6-BW-2200-BK	NGR 600 mm back wall, 2200 mm, incl. installation material, black	
	84068171	NGR6-BW-2200-GY	NGR 600 mm back wall, 2200 mm, incl. installation material, grey	
9	84076613	NGR9-BW-1800-BK	NGR 900 mm back wall, 1800 mm, incl. installation material, black	
	84068265	NGR9-BW-1800-GY	NGR 900 mm back wall, 1800 mm, incl. installation material, grey	
	84076454	NGR9-BW-2200-BK	NGR 900 mm back wall, 2200 mm, incl. installation material, black	
	84068165	NGR9-BW-2200-GY	NGR 900 mm back wall, 2200 mm, incl. installation material, grey	
10	84076542	NGR-SW-1800x300-BK	NGR side wall, 1800 mm, black	
	84068273	NGR-SW-1800x300-GY	NGR side wall, 1800 mm, grey	
	84076464	NGR-SW-2200x300-BK	NGR side wall, 2200 mm, black	
	84068179	NGR-SW-2200x300-GY	NGR side wall, 2200 mm, grey	

NGR doors



Ordering information

#	Item number	Descriptive code	Item text	LT
1	85003867	NGR-FD-SOLID-L-0LO-300x2200-BK	NGR solid door 300, left hinged, 2200 mm, black	
	85003866	NGR-FD-SOLID-L-0LO-300x2200-GY	NGR solid door 300, left hinged, 2200 mm, grey	
2	85003859	NGR-FD-SOLID-R-0LO-300x2200-BK	NGR solid door 300, right hinged, 2200 mm, black	
	85003858	NGR-FD-SOLID-R-0LO-300x2200-GY	NGR solid door 300, right hinged, 2200 mm, grey	
3	85003884	NGR-FD-PERFO-L-0LO-300x2200-BK	NGR perforated door 300, left hinged, 2200 mm, black	
	85003883	NGR-FD-PERFO-L-0LO-300x2200-GY	NGR perforated door 300, left hinged, 2200 mm, grey	
4	85003876	NGR-FD-PERFO-R-0LO-300x2200-BK	NGR perforated door 300, right hinged, 2200 mm, black	
	85003875	NGR-FD-PERFO-R-0LO-300x2200-GY	NGR perforated door 300, right hinged, 2200 mm, grey	
5	85003863	NGR-FD-SOLID-L-0LO-600x2200-BK	NGR solid door 600, left hinged, 2200 mm, black	
	85003862	NGR-FD-SOLID-L-0LO-600x2200-GY	NGR solid door 600, left hinged, 2200 mm, grey	
6	85003855	NGR-FD-SOLID-R-0LO-600x2200-BK	NGR solid door 600, right hinged, 2200 mm, black	
	85003854	NGR-FD-SOLID-R-0LO-600x2200-GY	NGR solid door 600, right hinged, 2200 mm, grey	
7	85003880	NGR-FD-PERFO-L-0LO-600x2200-BK	NGR perforated door 600, left hinged, 2200 mm, black	
	85003879	NGR-FD-PERFO-L-0LO-600x2200-GY	NGR perforated door 600, left hinged, 2200 mm, grey	
8	85003872	NGR-FD-PERFO-R-0LO-600x2200-BK	NGR perforated door 600, right hinged, 2200 mm, black	
	85003871	NGR-FD-PERFO-R-0LO-600x2200-GY	NGR perforated door 600, right hinged, 2200 mm, grey	

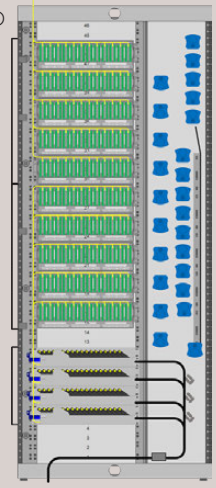
Application specific NGR

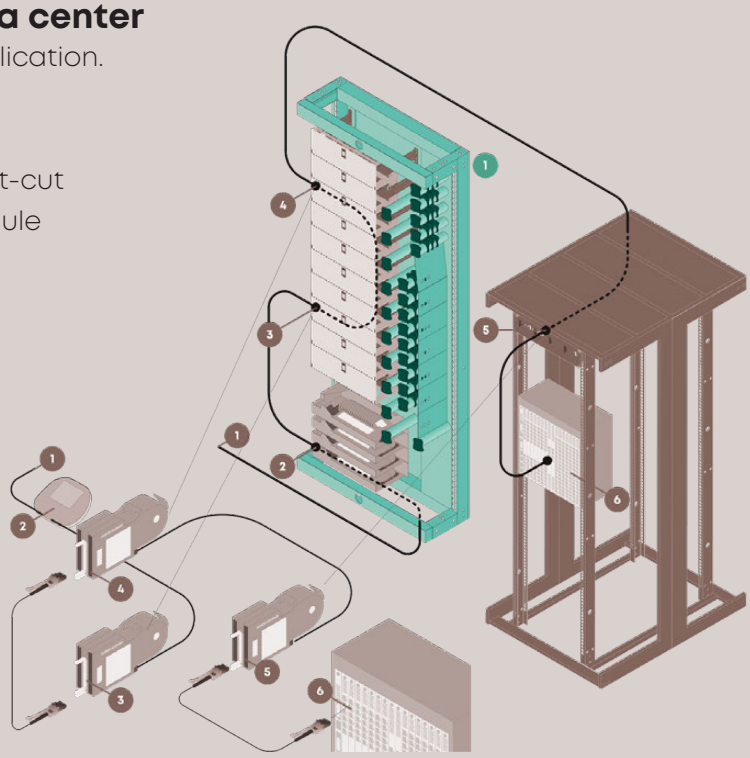
ODF SYLFA HD for telecom data center

Specific NGR 900 in ODF SYLFA HD application.

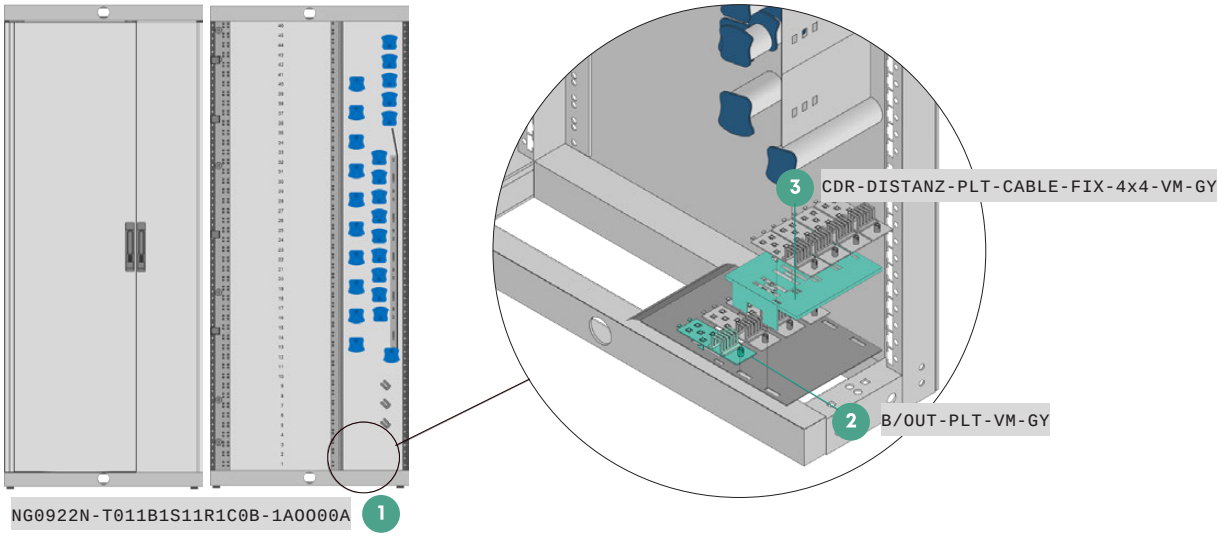
(1) Outside plant cable
(2) Splice point in CTS chassis
(3) Optipack SYLFA HD module to blunt-cut
(4) Optipack SYLFA HD module to module
(5) SYLFA HD 19 inch patch panel

Example of ODF SY-HD





NGR 900 for ODF SYLFA HD



Ordering information

#	Item number	Descriptive code	Item text	LT
1	85158574	NG0922N-T011B1S11R1C0B-1AOO00A	Specific NGR 900, 2200 mm, for ODF SYLFA HD application, up to 2880 fibers, solid doors, for 4 CUBs, grey	
2	85143212	B/OUT-PLT-VM-GY	Modular CUB (cable breakout), maximum 8 per ODF	
3	85143210	ODF-DISTANZ-PLT-CABLE-FIX-4x4-VM-GY	Extension plate for CUBs, to put 4 additional CUB to the ODF	

NGR 300 for trunk slack management (aliminium mandrels)



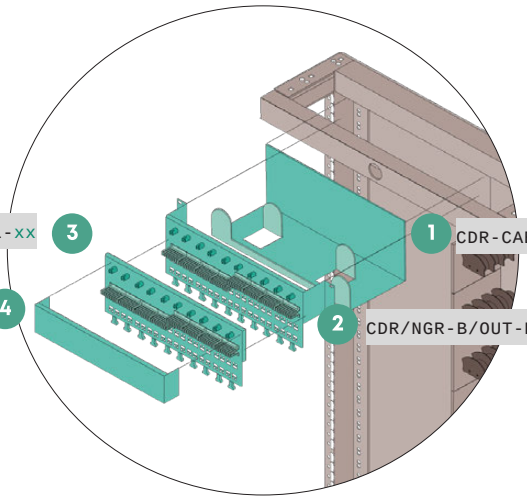
Ordering information

#	Item number	Descriptive code	Item text	LT
1	85141279	NG0322N-T200B1S00R1C1B-1AOO00A	NGR 300, 2200 mm, LEFT trunk cable management with top entry, grey, solid doors	
2	85159350	NG0322N-T200B1S00R1C1B-1BOO00A	NGR 300, 2200 mm, LEFT trunk cable management with top entry, black, solid doors	
3	85141278	NG0322N-T002B1S00R1C1B-1AOO00A	NGR 300, 2200 mm, RIGHT trunk cable management with top entry, grey, solid doors	
4	85159349	NG0322N-T002B1S00R1C1B-1BOO00A	NGR 300, 2200 mm, RIGHT trunk cable management with top entry, black, solid doors	

Racks | CDR or NGR breakout plates

Breakout plate 19 inch CDR/NGR, large

Top or bottom mounting



optional
CDR/NGR-B/OUT-PLT-19"-SL-xx (3)

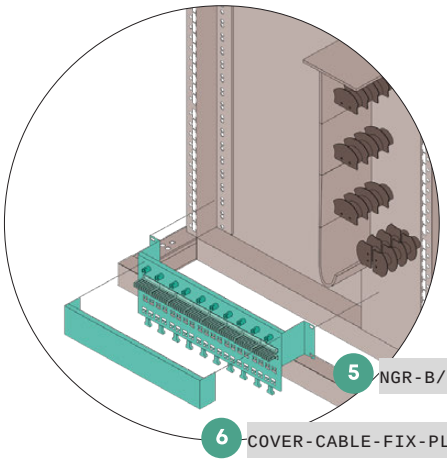
optional
CDR/NGR-B/OUT-PLT-19"-COVER-xx (4)

Required only for top mounting
(1) CDR-CABLE-TROUGH-UNI-19"-xx

(2) CDR/NGR-B/OUT-PLT-19"-xx

Breakout plate 19 inch CDR/NGR, small

Top or bottom mounting

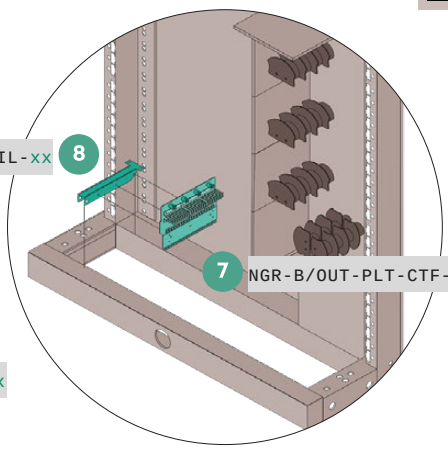


(5) NGR-B/OUT-PLT-CTF-19"-10CSM-xx

(6) COVER-CABLE-FIX-PLATE-19"-xx

Breakout plate 300, NGR only

Top or bottom mounting

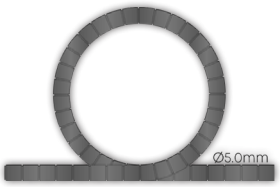


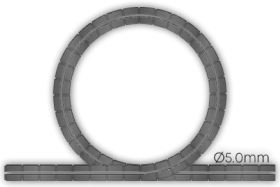
(8) NGR-CABLE-FIXING-PLT-RAIL-xx

(7) NGR-B/OUT-PLT-CTF-300-4CSM-xx

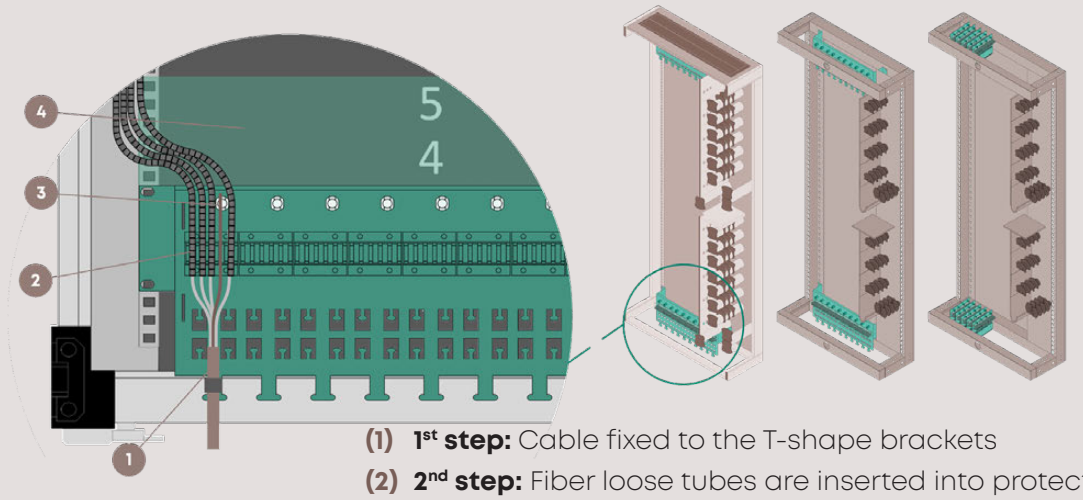
Optical fiber protection tube (OFPT), Ø5 mm

Protection tubes with different design and colour





Example of loose tube cable termination to the breakout plate in ODF LISA 900



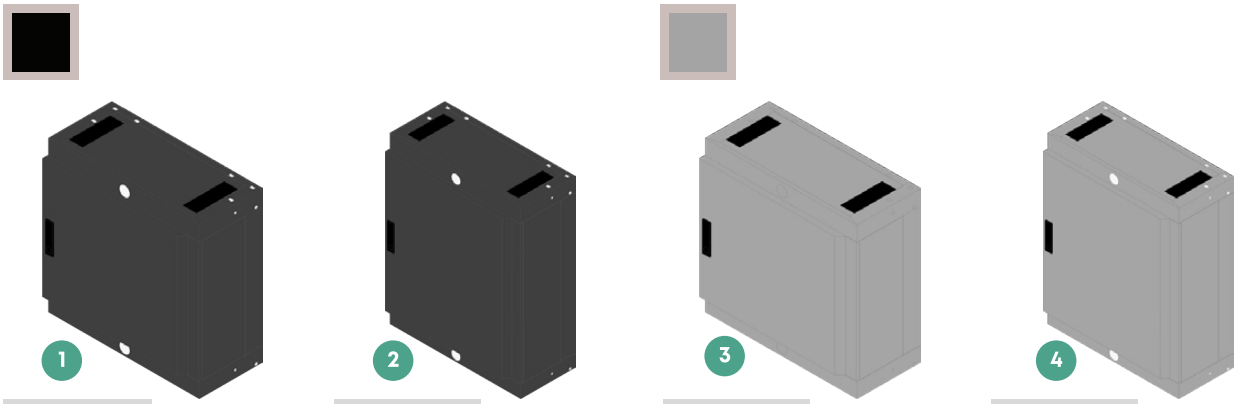
(1) **1st step:** Cable fixed to the T-shape brackets
(2) **2nd step:** Fiber loose tubes are inserted into protection tubes
(3) **3rd step:** Central strength member (CSM) fixed
(4) Reserved 2U space for protection tube distribution

Ordering information

#	Item number	Descriptive code	Item text	LT
1	85135058	CDR-Cable-Trough-UNI-19"-BK	CDR breakout trough, 19 inch, 4U, black	✓
	85110556	CDR-CABLE-TROUGH-UNI-19"-GY	CDR breakout trough, 19 inch, 4U, grey	✓
2	85135061	CDR/NGR-B/Out-PLT-19"-BK	CDR/NGR 19 inch breakout plate large with 10x CSM clamps and cable clamp rail, first layer, inst. depth 77 mm, black	✓
	85135062	CDR/NGR-B/OUT-PLT-19"-GY	CDR/NGR 19 inch breakout plate large with 10x CSM clamps and cable clamp rail, first layer, inst. depth 77 mm, grey	✓
3	85135063	CDR/NGR-B/OUT-PLT-19"-SL-BK	CDR/NGR 19 inch breakout plate large with 10x CSM clamps and cable clamp rail, second layer, inst. depth 80 mm, black	✓
	85135064	CDR/NGR-B/OUT-PLT-19"-SL-GY	CDR/NGR 19 inch breakout plate large with 10x CSM clamps and cable clamp rail, second layer, inst. depth 80 mm, grey	✓
4	85135059	CDR/NGR-B/OUT-PLT-19"-COVER-BK	Protective cover for CDR/NGR 19 inch breakout plate large, black	✓
	85135060	CDR/NGR-B/OUT-PLT-19"-COVER-GY	Protective cover for CDR/NGR 19 inch breakout plate large, grey	✓
5	84088572	NGR-B/OUT-PLT-CTF-19"-10CSM-BK	CDR/NGR 19 inch breakout plate small with 10x CSM clamps, black	
	84085928	NGR-B/OUT-PLT-CTF-19"-10CSM-GY	CDR/NGR 19 inch breakout plate small with 10x CSM clamps, grey	
6	84076533	COVER-CABLE-FIX-PLATE-19"-BK	Breakout plate cover for CDR/NGR 19 inch breakout plate small, black	
	84069169	COVER-CABLE-FIX-PLATE-19"-GY	Breakout plate cover for CDR/NGR 19 inch breakout plate small, grey	
7	84085657	NGR-B/OUT-PLT-CTF-300-4CSM-BK	NGR breakout plate 300 with 4x CSM, black	
	84085421	NGR-B/OUT-PLT-CTF-300-4CSM-GY	NGR breakout plate 300 with 4x CSM, grey	
8	84076539	NGR-CABLE-FIXING-PLT-RAIL-BK	Fixing rail for NGR breakout plate 300, black	
	84079140	NGR-CABLE-FIXING-PLT-RAIL-GY	Fixing rail for NGR breakout plate 300, grey	

Racks | Wall cabinets

Wall cabinet 13U and 17U

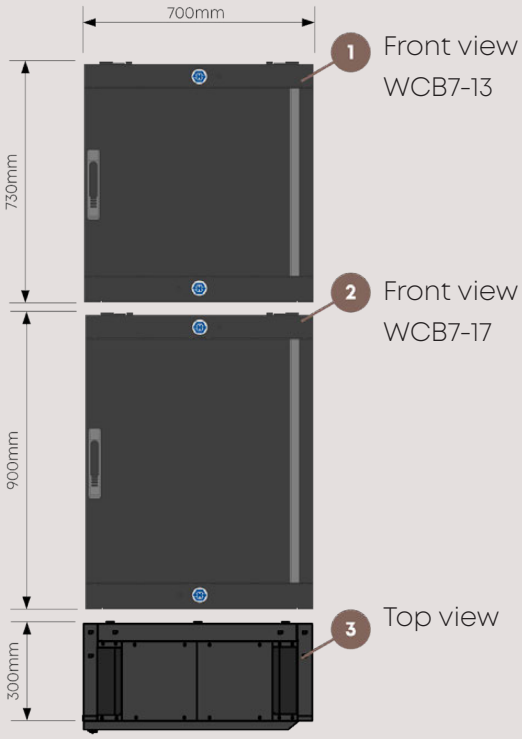


WCB7-13-BK | WCB7-17-BK | WCB7-13-GY | WCB7-17-GY

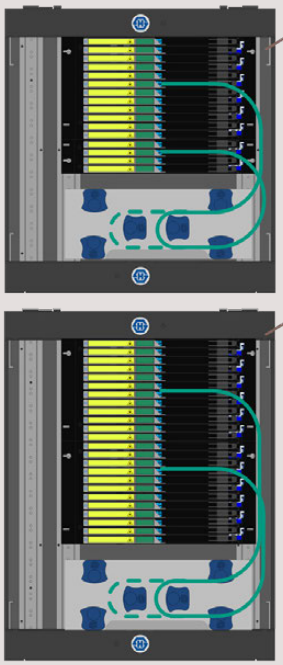
Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	84084947	WCB7-13-BK	Wall cabinet 700 mm, 13U, black		
2	84084915	WCB7-17-BK	Wall cabinet 700 mm, 17U, black		
3	on request	WCB7-13-GY	Wall cabinet 700 mm, 13U, grey		
4	84082846	WCB7-17-GY	Wall cabinet 700 mm, 17U, grey		

Wall cabinet dimensions



Examples of ODF LISA in wall cabinets

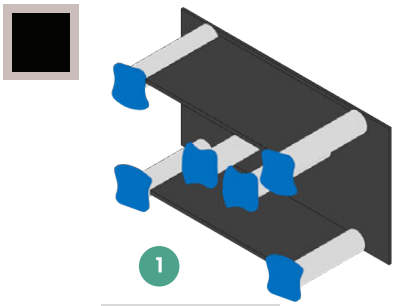


1 Example of LISA ODF based on WCB7-13
1x LISA chassis 6U
1x LISA chassis 2U
16x LISA cassettes

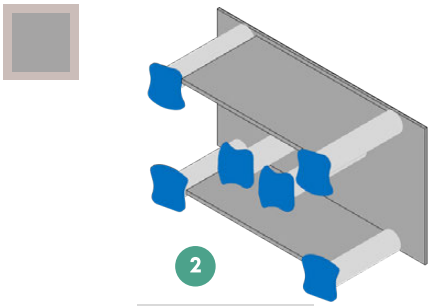
2 Example of LISA ODF based on WCB7-17
2x LISA chassis 6U
24x LISA cassettes

Racks | Cross-connect units

Cross-connect unit 4U



ODR-XU-4U-BK



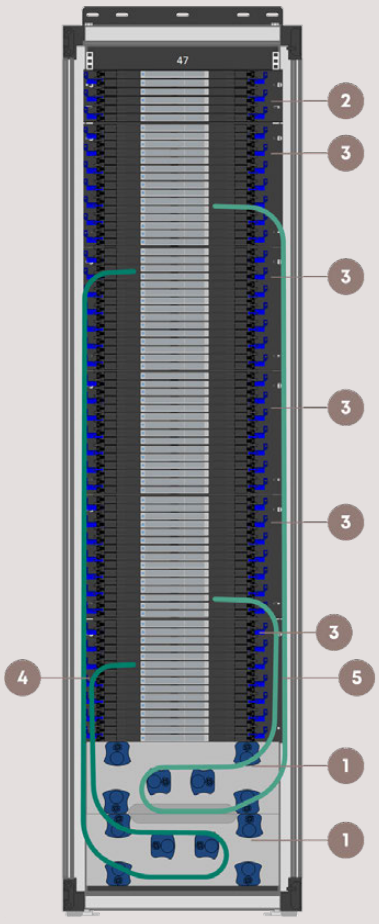
ODR-XU-4U-GY

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85105090	ODR-XU-4U-BK	Cross-connect unit 4U overlength manager, black		
2	85105089	ODR-XU-4U-GY	Cross-connect unit 4U overlength manager, grey		

Example of ODF LISA 600 for patching applications with cross-connect unit

(1) Cross-connect unit 4U
(2) LISA patch chassis 3U
(3) LISA patch chassis 7U
(4) Patching left to left
(5) Patching right to right



LISA chassis overview

LISA chassis capacity

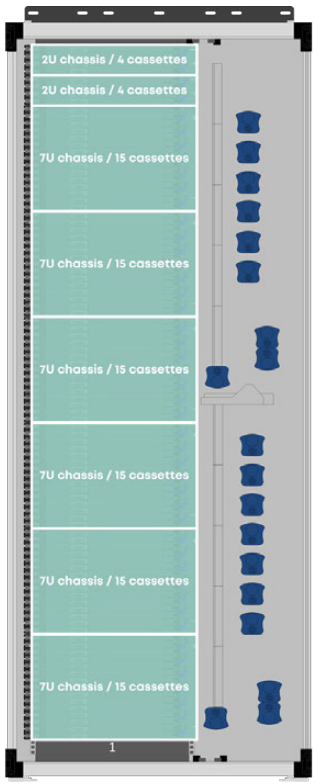
Height	Chassis per 900mm rack and used space	Number of cassettes per chassis	Number of fibers and duplex ports per full ODF	
			24-way cassette Basic version	36-way cassette High-density version
1U	46x / 46U	2	2208 fibers / 1104 ports	3312 fibers / 1656 ports
2U	23x / 46U	4		
3U	15x / 45U*	6	2160 fibers / 1080 ports	3240 fibers / 1620 ports
6U	7x / 42U*	12	2016 fibers / 1008 ports	3024 fibers / 1512 ports
7U (HD)	6x / 42U*	15	2160 fibers / 1080 ports	3240 fibers / 1620 ports

* It is possible to mix various chassis inside the rack to achieve higher density

Maximum ODF LISA capacity

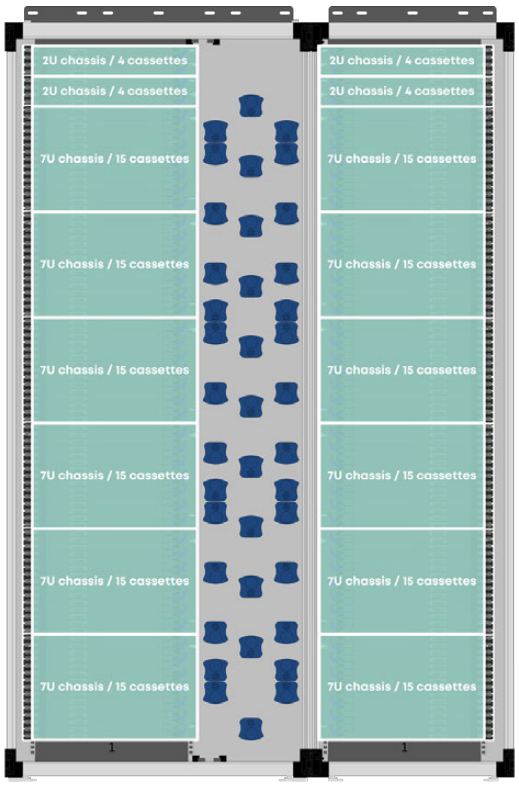
ODF LISA 900 LEFT:

- 6x 7U chassis
- 2x 2U chassis
- 98 cassettes
- 3528 fibers
- 1764 duplex ports



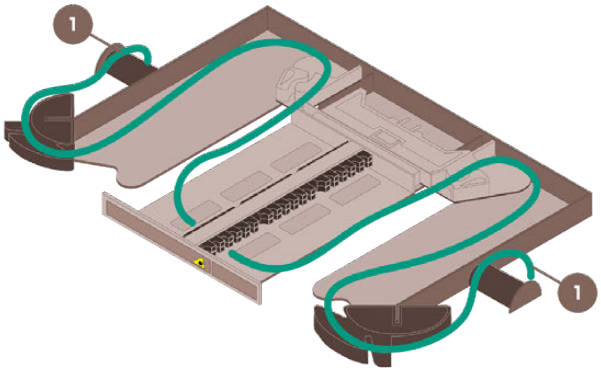
ODF LISA 1500 DOUBLE ACCESS:

- 12x 7U chassis
- 4x 2U chassis
- 196 cassettes
- 7056 fibers
- 3528 duplex ports



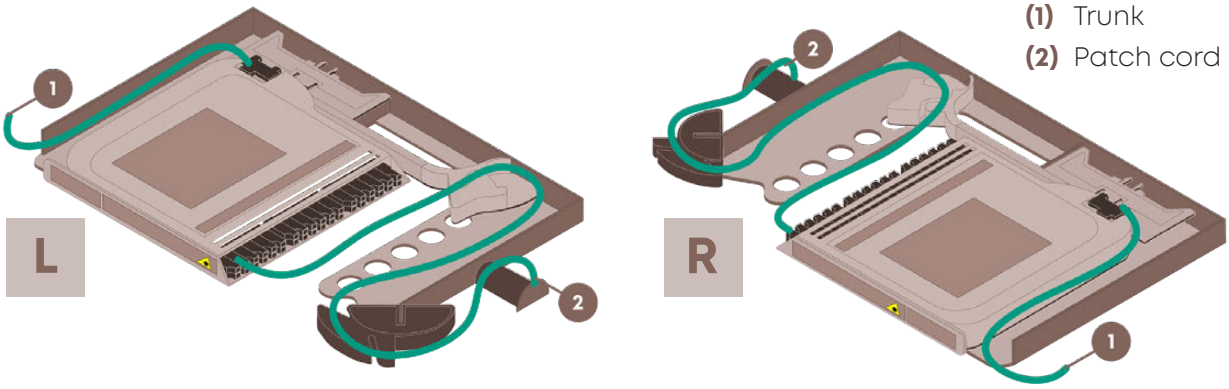
Chassis types for patching applications

(1) Trunk or patch cord



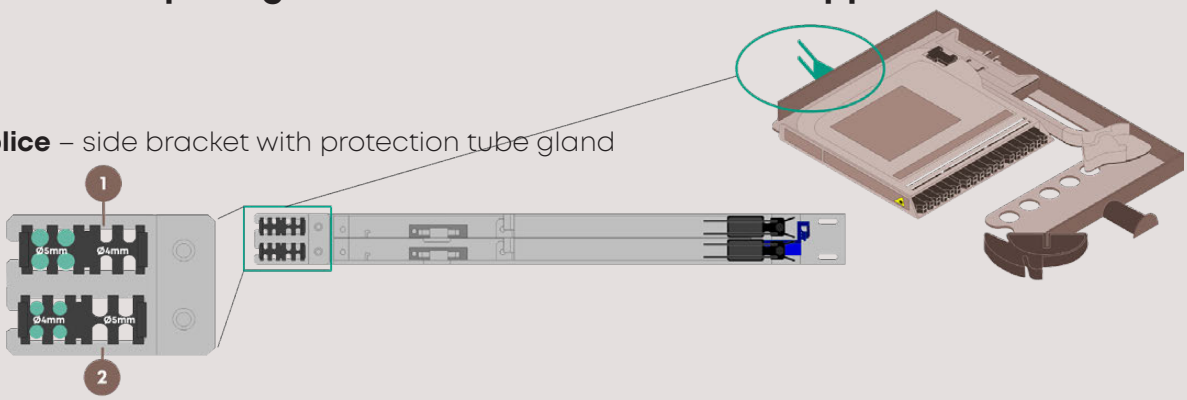
Chassis types for transition or splicing applications

(1) Trunk
(2) Patch cord

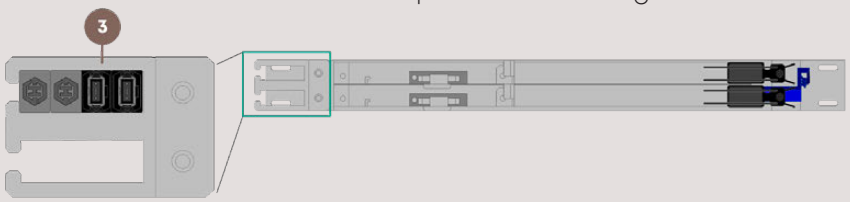


Transition/splicing universal chassis for various applications

Splice – side bracket with protection tube gland



Transition – side bracket without protection tube gland



Ribbon splice – no side bracket



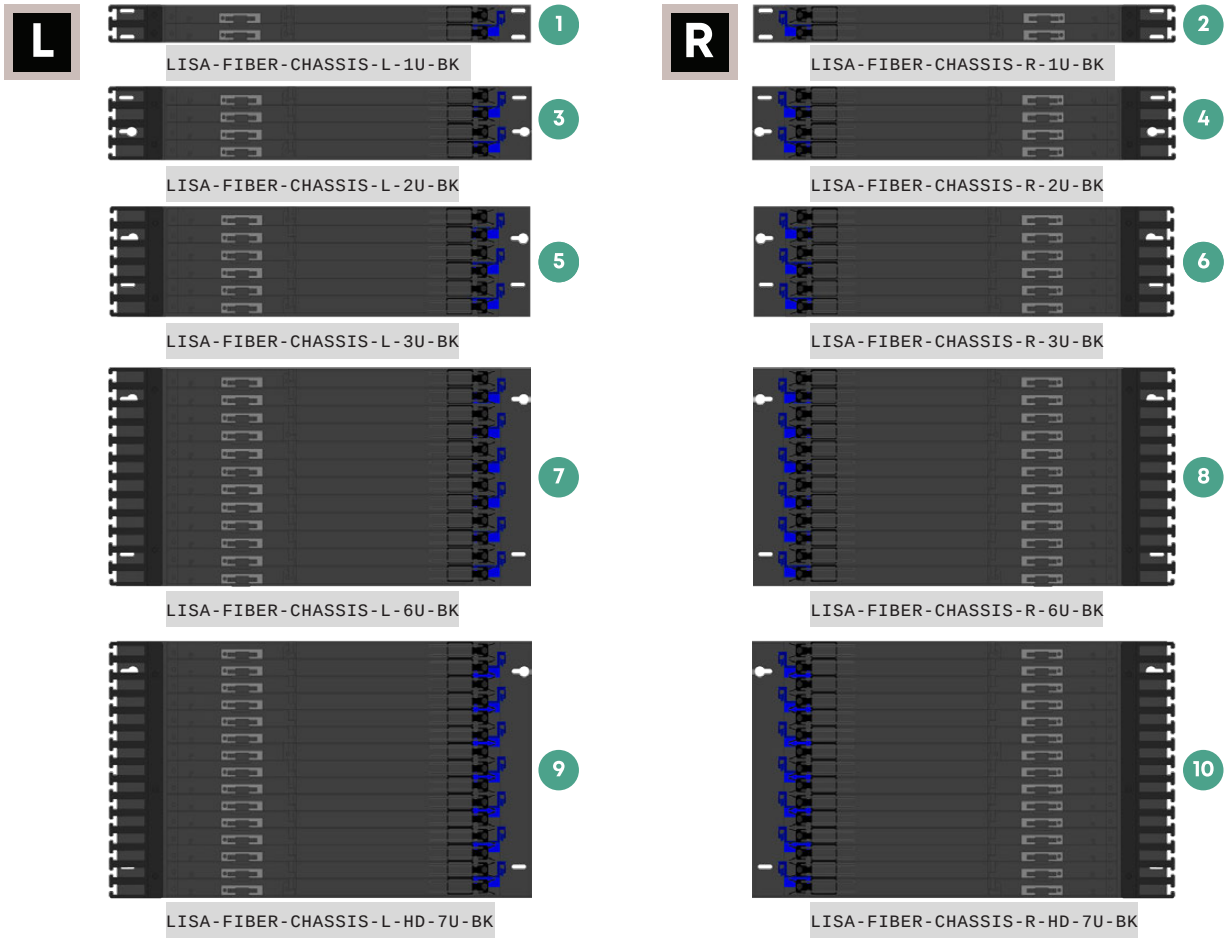
(1) 4x Ø5 mm per cassette
- Ø5 mm protection tubes
- Ø4.9 mm / Ø5 mm cable

(2) 4x 4 mm per cassette:
- Ø4 mm protection tubes
- Ø4 mm cable

(3) Max. 4x MTP adapters

LISA chassis splicing and transition

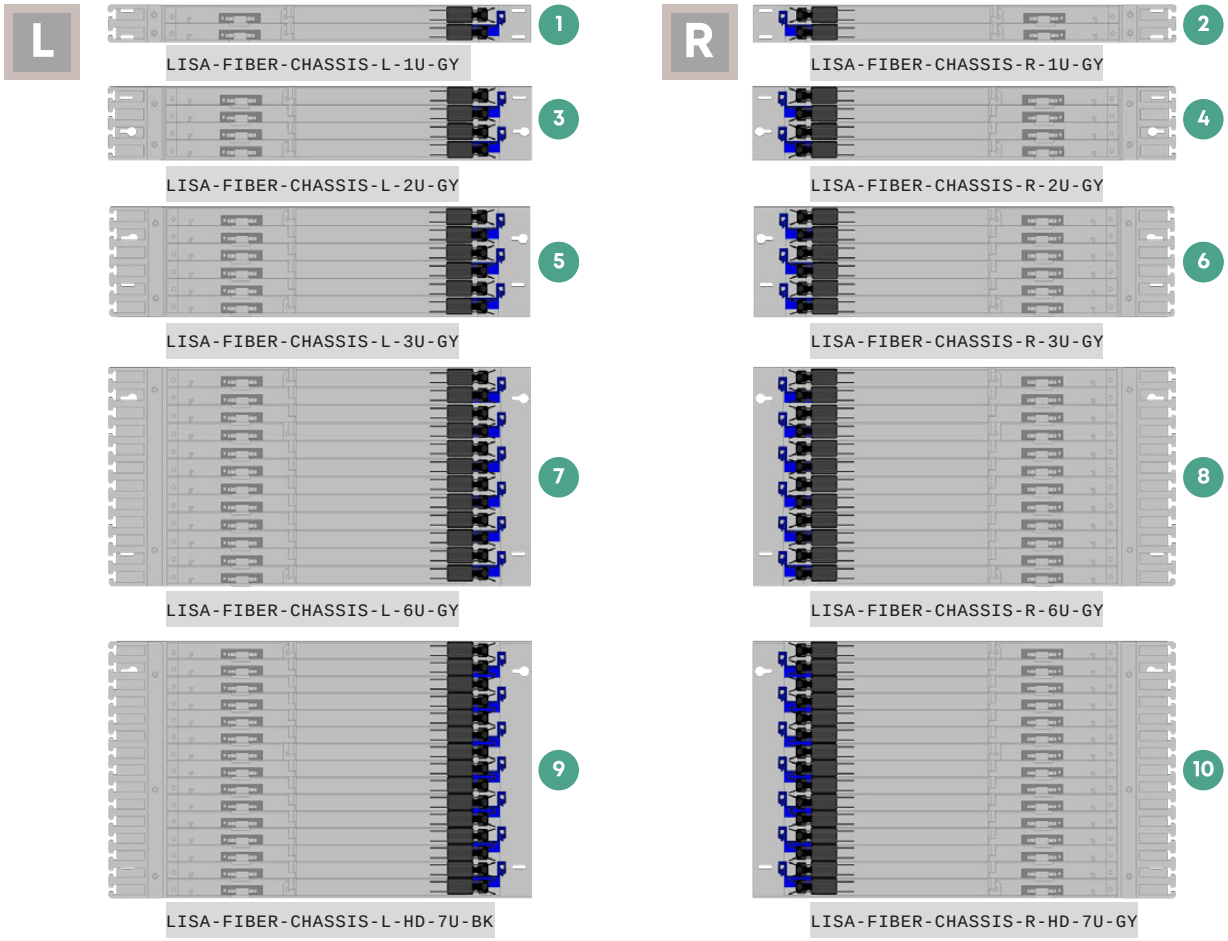
LISA chassis black



Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85109679	LISA-FIBER-CHASSIS-L-1U-BK	LISA chassis LEFT, 1U, black colour, 2 cassettes		
2	85109681	LISA-FIBER-CHASSIS-R-1U-BK	LISA chassis RIGHT, 1U, black colour, 2 cassettes		
3	85109675	LISA-FIBER-CHASSIS-L-2U-BK	LISA chassis LEFT, 2U, black colour, 4 cassettes		
4	85109677	LISA-FIBER-CHASSIS-R-2U-BK	LISA chassis RIGHT, 2U, black colour, 4 cassettes		
5	85109670	LISA-FIBER-CHASSIS-L-3U-BK	LISA chassis LEFT, 3U, black colour, 6 cassettes		
6	85109672	LISA-FIBER-CHASSIS-R-3U-BK	LISA chassis RIGHT, 3U, black colour, 6 cassettes		
7	85109654	LISA-FIBER-CHASSIS-L-6U-BK	LISA chassis LEFT, 6U, black colour, 12 cassettes		
8	85109657	LISA-FIBER-CHASSIS-R-6U-BK	LISA chassis RIGHT, 6U, black colour, 12 cassettes		
9	85109665	LISA-FIBER-CHASSIS-L-HD-7U-BK	LISA chassis LEFT, 7U, black colour, 15 cassettes		
10	85109668	LISA-FIBER-CHASSIS-R-HD-7U-BK	LISA chassis RIGHT, 7U, black colour, 15 cassettes		

LISA chassis grey

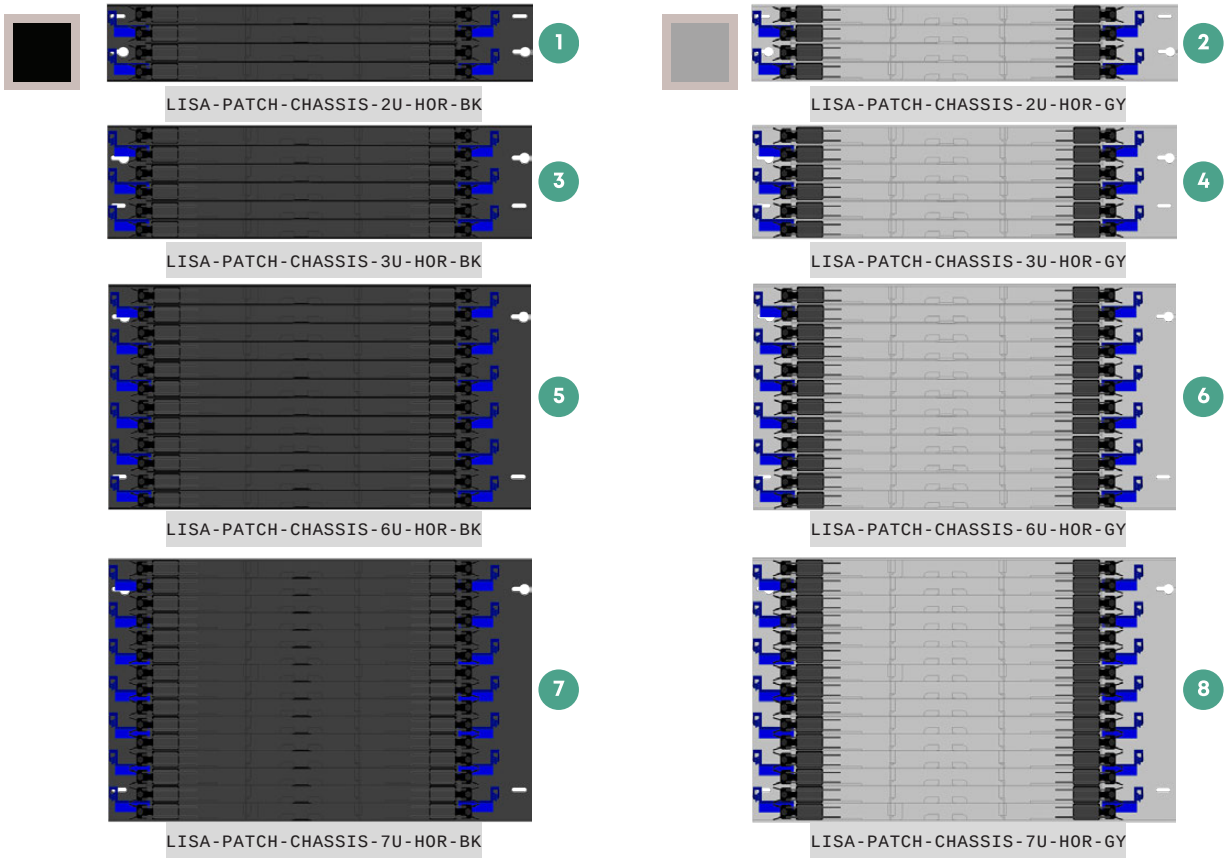


Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85109678	LISA-FIBER-CHASSIS-L-1U-GY	LISA chassis LEFT, 1U, grey colour, 2 cassettes		
2	85109680	LISA-FIBER-CHASSIS-R-1U-GY	LISA chassis RIGHT, 1U, grey colour, 2 cassettes		
3	85109673	LISA-FIBER-CHASSIS-L-2U-GY	LISA chassis LEFT, 2U, grey colour, 4 cassettes		
4	85109676	LISA-FIBER-CHASSIS-R-2U-GY	LISA chassis RIGHT, 2U, grey colour, 4 cassettes		
5	85109669	LISA-FIBER-CHASSIS-L-3U-GY	LISA chassis LEFT, 3U, grey colour, 6 cassettes		
6	85109671	LISA-FIBER-CHASSIS-R-3U-GY	LISA chassis RIGHT, 3U, grey colour, 6 cassettes		
7	85109649	LISA-FIBER-CHASSIS-L-6U-GY	LISA chassis LEFT, 6U, grey colour, 12 cassettes		
8	85109659	LISA-FIBER-CHASSIS-R-6U-GY	LISA chassis RIGHT, 6U, grey colour, 12 cassettes		
9	85109661	LISA-FIBER-CHASSIS-L-HD-7U-GY	LISA chassis LEFT, 7U, grey colour, 15 cassettes		
10	85109666	LISA-FIBER-CHASSIS-R-HD-7U-GY	LISA chassis RIGHT, 7U, grey colour, 15 cassettes		

LISA chassis patching

LISA chassis patching



Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85015635	LISA-PATCH-CHASSIS-2U-HOR-BK	LISA patch chassis, 2U, black colour, 2 patching cassettes		
2	85017844	LISA-PATCH-CHASSIS-2U-HOR-GY	LISA patch chassis, 2U, grey colour, 2 patching cassettes		
3	85015637	LISA-PATCH-CHASSIS-3U-HOR-BK	LISA patch chassis, 3U, black colour, 6 patching cassettes		
4	85017845	LISA-PATCH-CHASSIS-3U-HOR-GY	LISA patch chassis, 3U, grey colour, 6 patching cassettes		
5	85015144	LISA-PATCH-CHASSIS-6U-HOR-BK	LISA patch chassis, 6U, black colour, 12 patching cassettes		
6	85014370	LISA-PATCH-CHASSIS-6U-HOR-GY	LISA patch chassis, 6U, grey colour, 12 patching cassettes		
7	85017847	LISA-PATCH-CHASSIS-7U-HOR-BK	LISA patch chassis, 7U, black colour, 15 patching cassettes	★	
8	85017846	LISA-PATCH-CHASSIS-7U-HOR-GY	LISA patch chassis, 7U, grey colour, 15 patching cassettes		

LISA chassis accessories

LISA chassis integrated accessories

Supplied with LISA chassis, but can be ordered separately if necessary

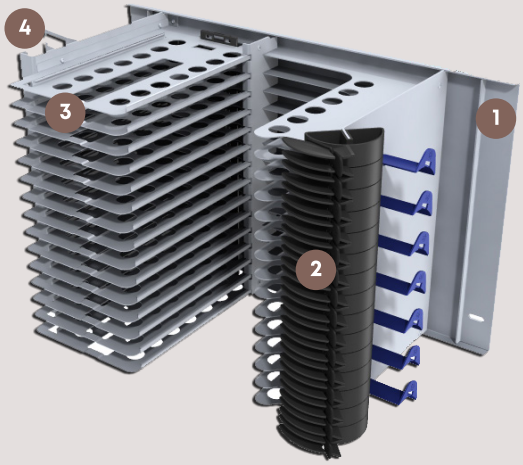


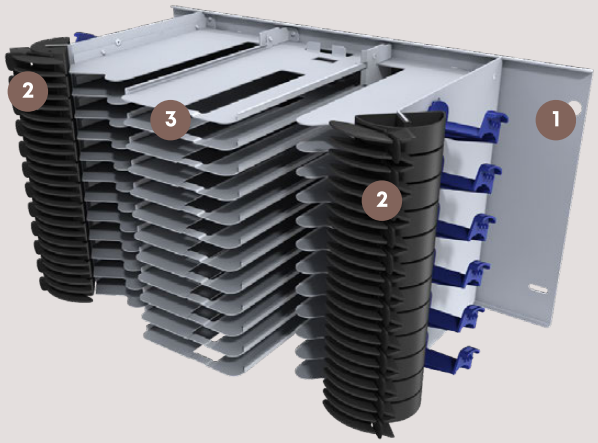
OFBLT-Conduit-Gland-8-way-BK

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85109631	OFBLT-Conduit-Gland-8-way-BK	8-way (4x 4 mm and 4x 5 mm) gland, for splicing applications		

LISA chassis image





(1) 19 inch mounting
(2) Integrated cable manager for service loop
(3) LISA cassettes
(4) Side bracket

SYLFA HD chassis overview

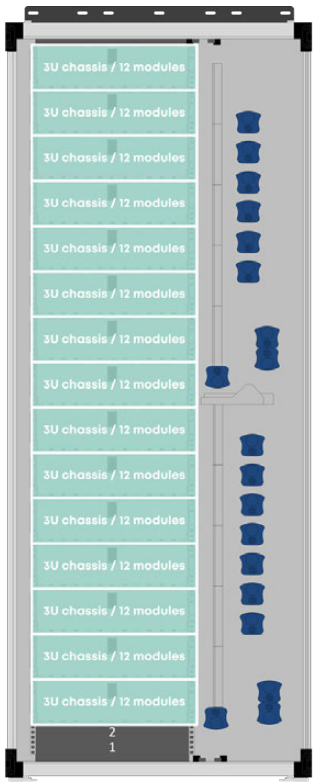
SYLFA HD chassis capacity

Height	Chassis per 900mm rack and used space	Number of modules per chassis	Number of fibers and duplex ports per full ODF 24-way module
3U	15x / 45U	12	4320 fibers / 2160 ports

Maximum ODF SYLFA HD capacity

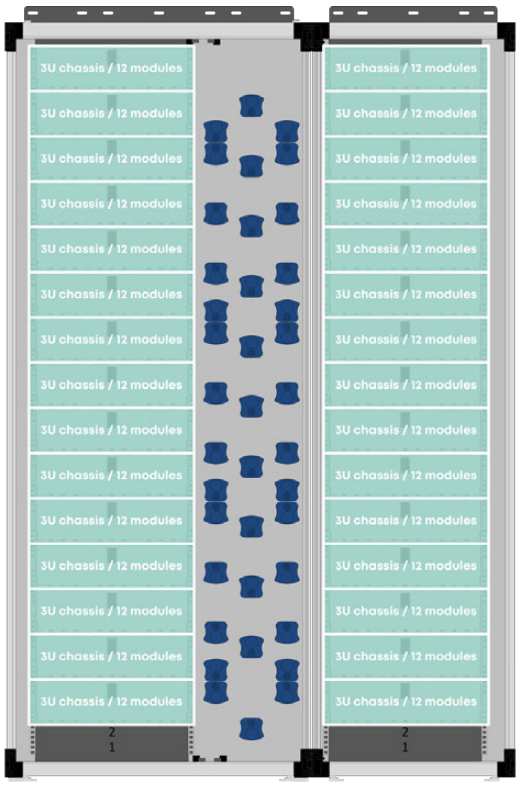
ODF SYLFA HD 900 LEFT:

- 15x 3U chassis
- 180 modules
- 4320 fibers
- 2160 duplex ports

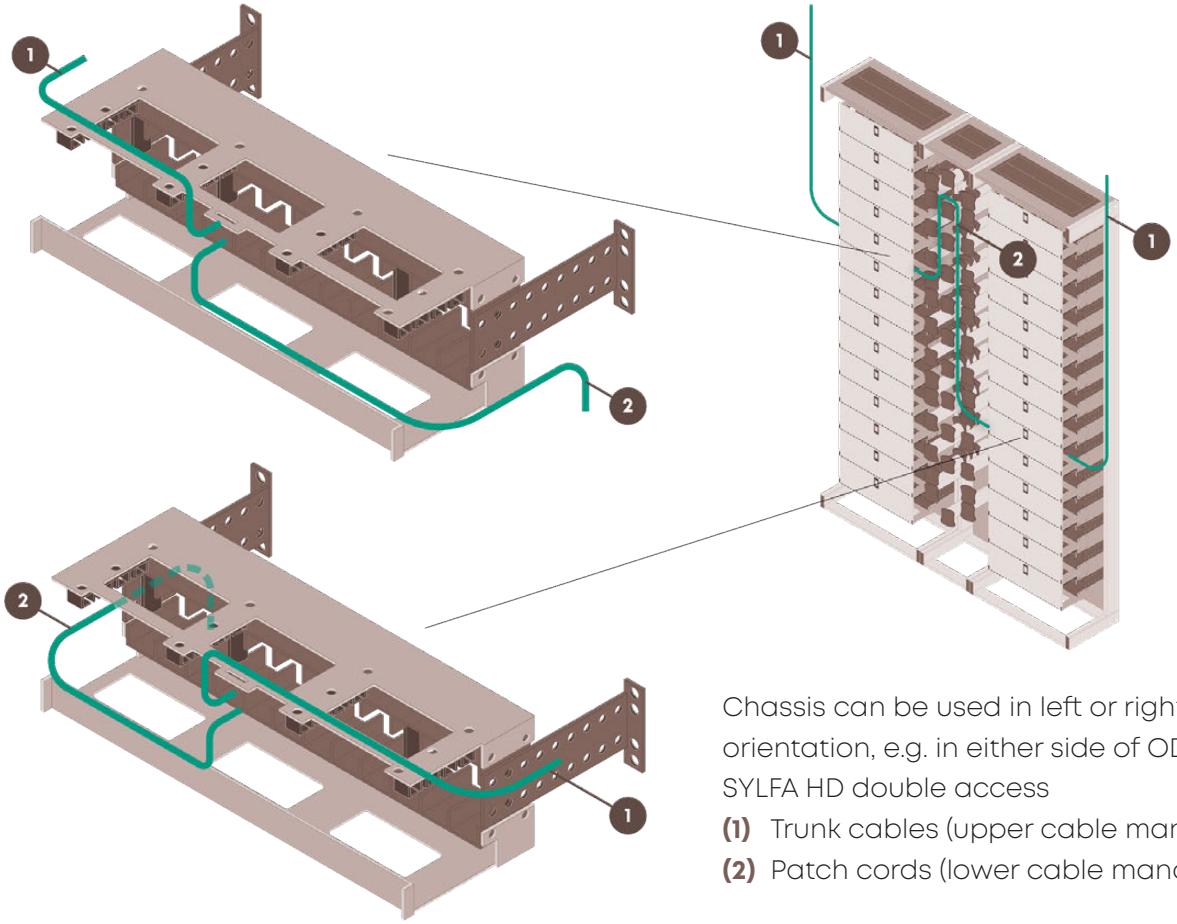


ODF SYLFA HD double access:

- 30x 3U chassis
- 360 modules
- 8640 fibers
- 4320 duplex ports



SYLFA HD chassis orientation



Chassis can be used in left or right orientation, e.g. in either side of ODF
SYLFA HD double access

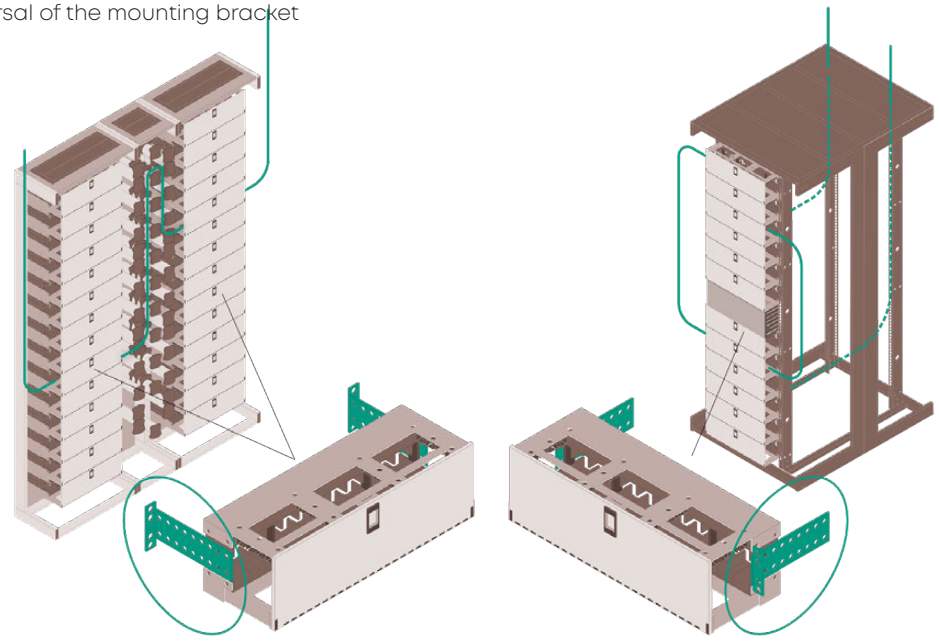
(1) Trunk cables (upper cable manager)

(2) Patch cords (lower cable manager)

SYLFA HD chassis for 19 inch cabinets

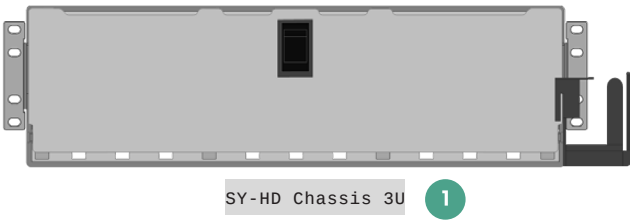
The same chassis* can be used in ODF 300mm or 19 inch cabinets.

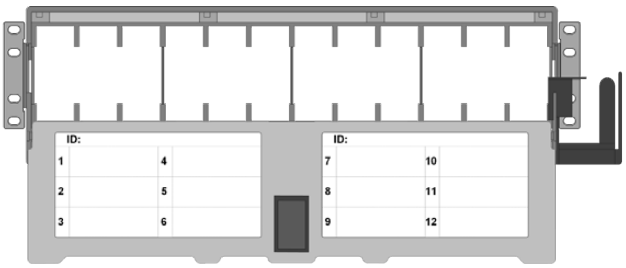
* Requires a reversal of the mounting bracket



SYLFA HD chassis

SYLFA HD chassis

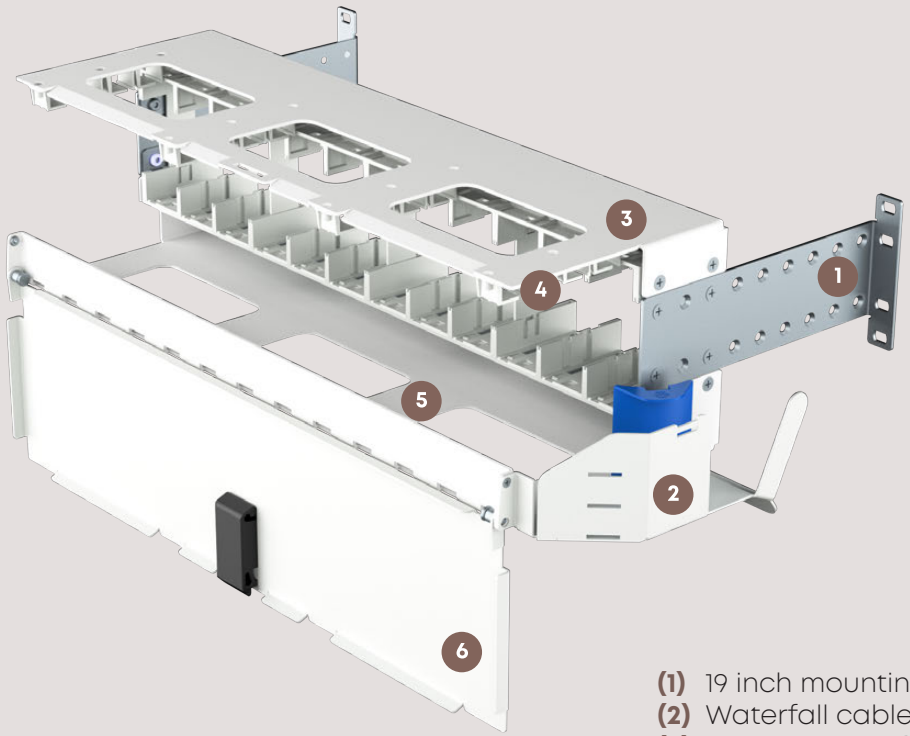




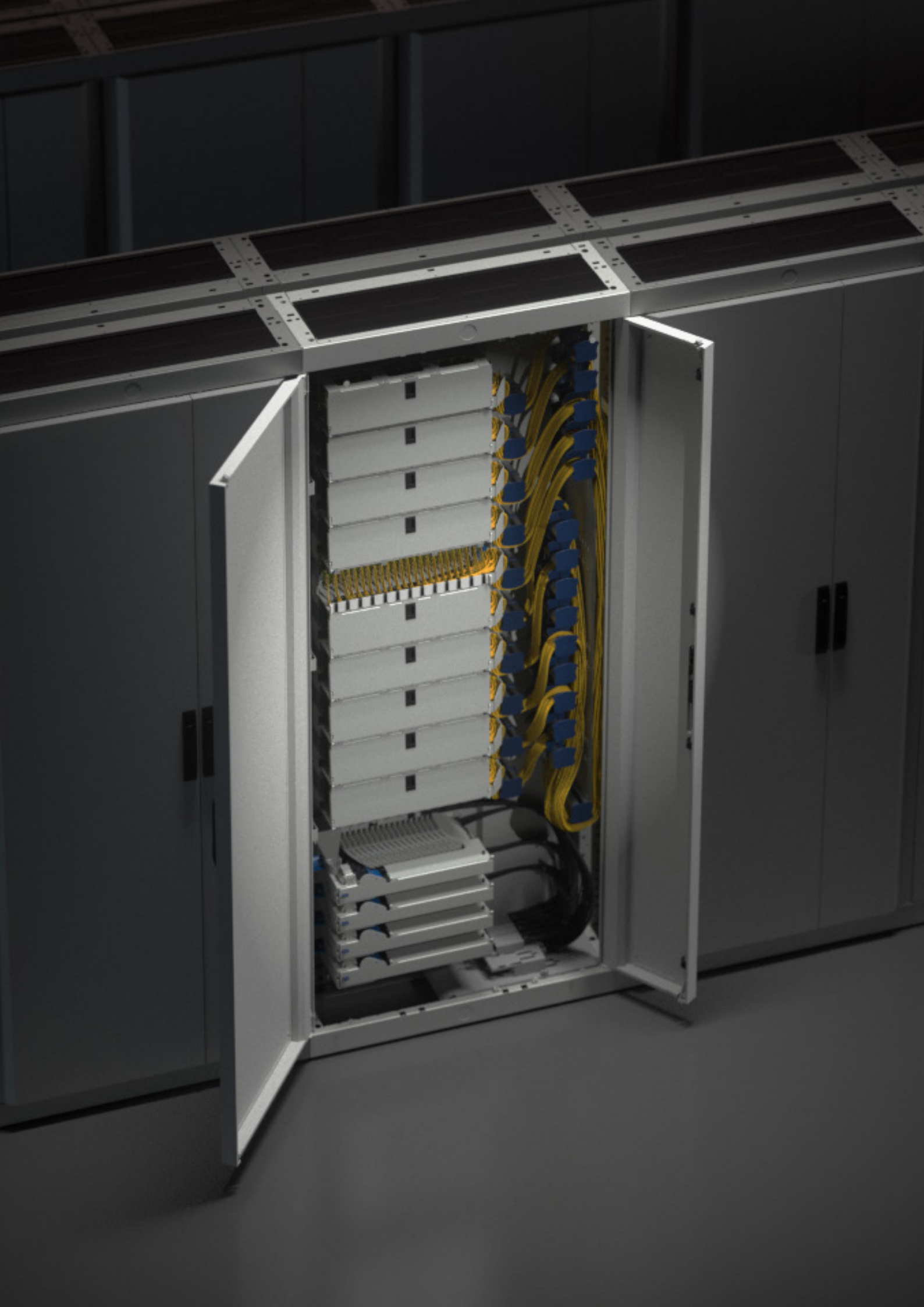
Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85125724	SY-HD Chassis 3U	SYLFA HD 19 inch ODF chassis, for up to 12 SYLFA HD modules, 3U, grey	☑	↗

SYLFA HD ODF chassis



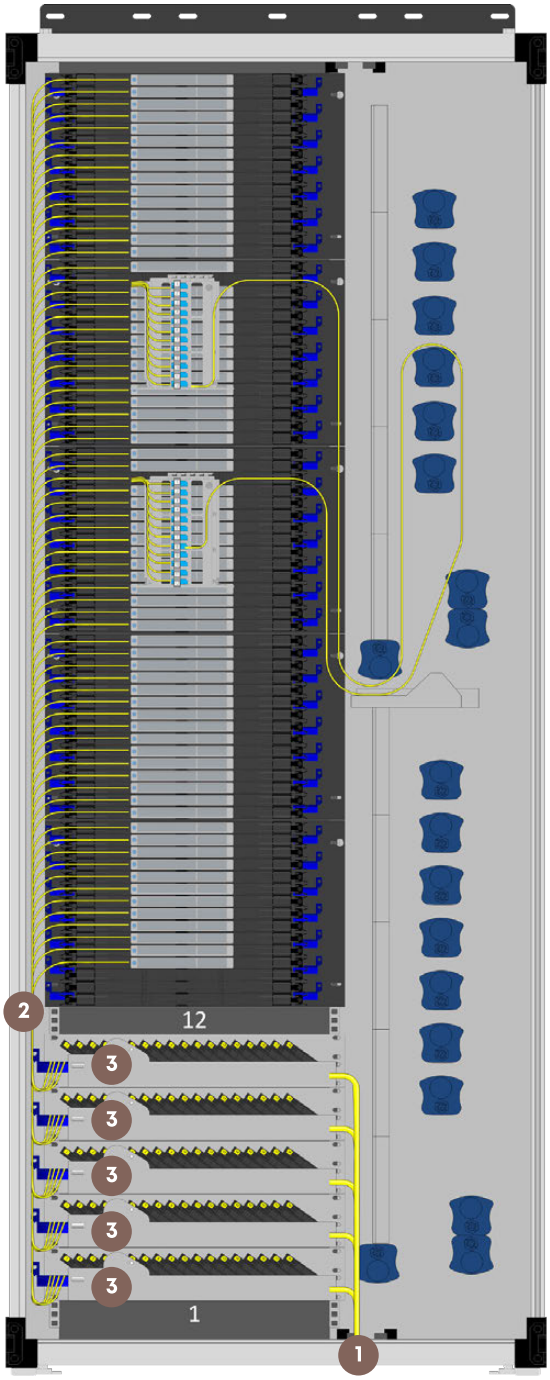
(1) 19 inch mounting bracket
(2) Waterfall cable manager (optional)
(3) Chassis' body for 12 modules
(4) Integrated upper cable manager
(5) Integrated lower cable manager
(6) Integrated door



Cable termination chassis (CTS) overview

ODF application example

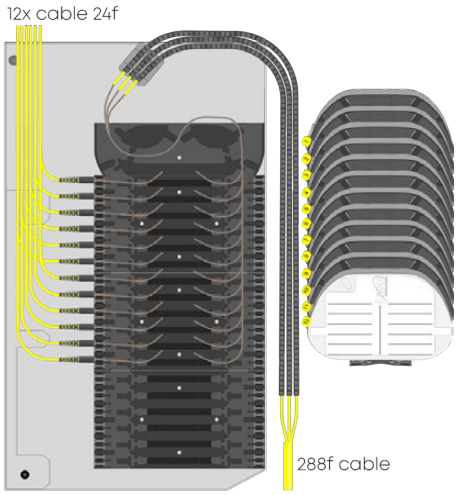
ODF CTS splice to patch, 1440 fibers



(1) 5x 288f Optipack breakout cables
(2) 60x 24f Optipack in-rack harness, patched to 60x LISA patch cassettes
(3) 5x CTS chassis 2U each, total 10U, 1440 splices, see CTS application examples

CTS application example 1

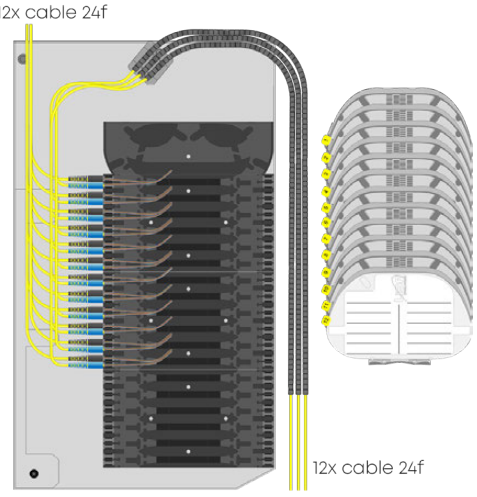
From 288f Optipack breakout cable **to** 12x 24f Optipack non-ruggedised, ruggedised or cable or trunk



Bill of materials:
- 1x CTS chassis
- 12x Single sided cassettes
- 12x Set of 1x splice comb with 24x heatshrinks
- 12x Large cassette cover
- 12x Set of cable relief clamp (CRC)+ black boot
- 5 m protection tube Ø5 mm
- Cassette marking

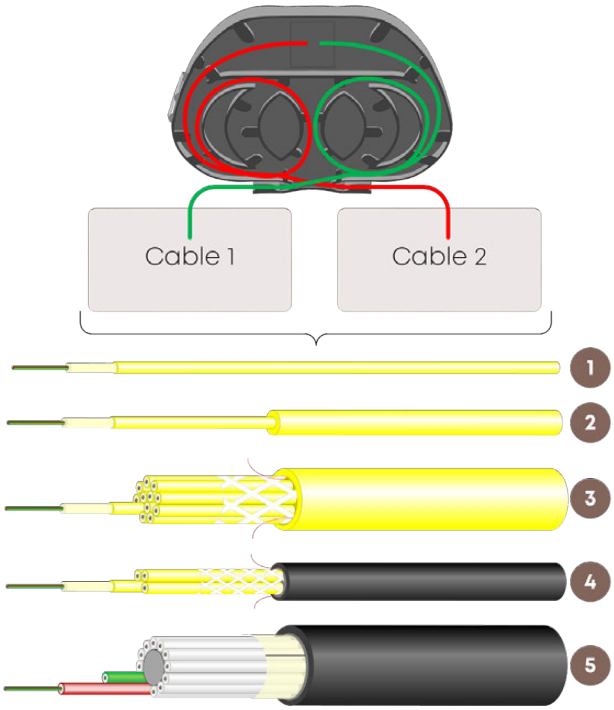
CTS application example 2

From 12x 12f Optipack non-ruggedised, ruggedised cable or trunk **to** 12x 12f Optipack non-ruggedised, ruggedised cable or trunk



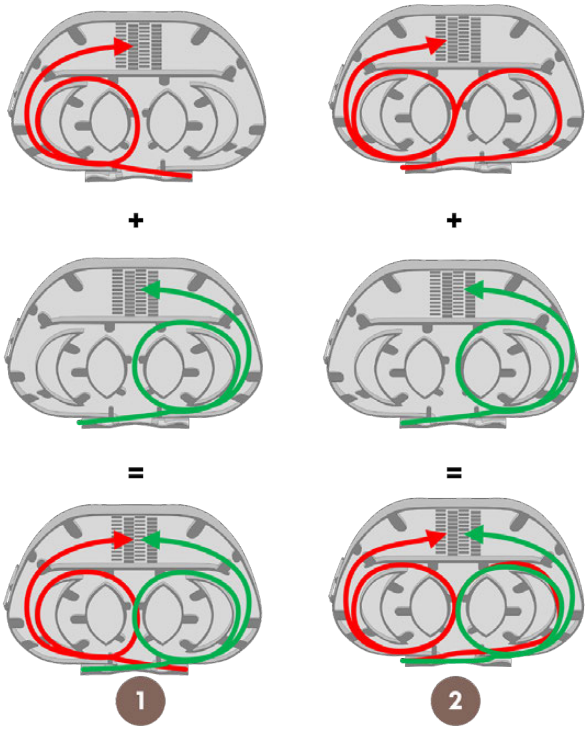
Bill of materials:
- 1x CTS chassis
- 12x Double sided cassettes
- 12x 24x heatshrinks
- 12x Large cassette cover
- 12x Set of CRC + black boot
- 12x Set of CRC + blue boot
- 5 m protection tube Ø5 mm
- Cassette marking

CTS compatible cables



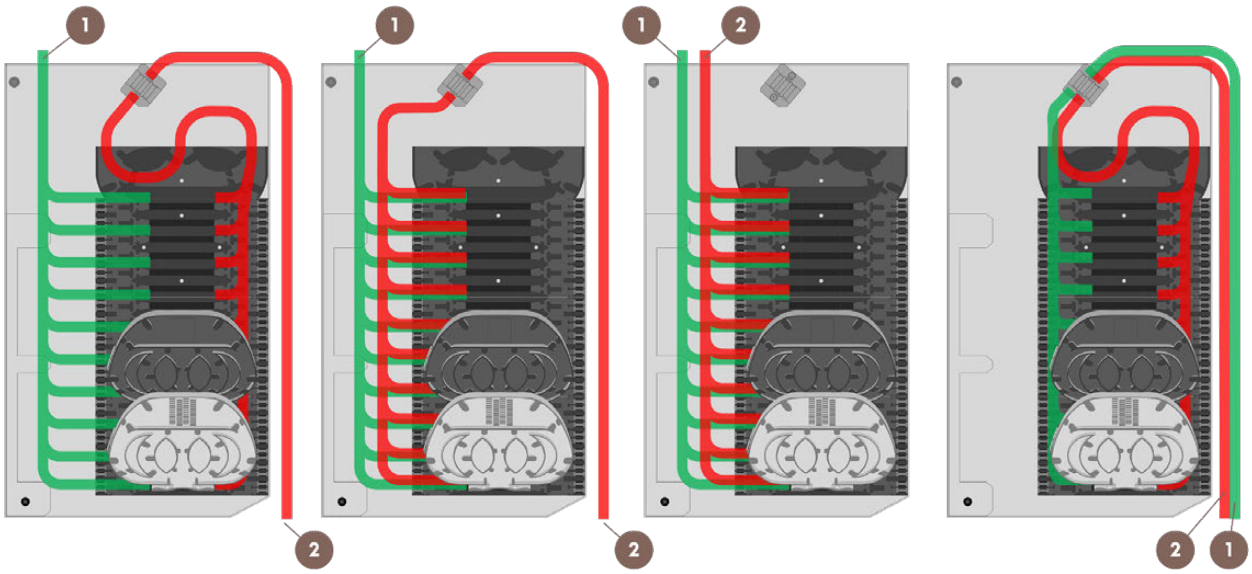
(1) Patch or ruggedised trunk cable
(2) Double jacket trunk cable
(3) Optipack breakout cable
(4) Optipack universal cable
(5) Loose tube cable

Fiber pathways inside a cassette



(1) Entering cassette from **two** sides
(2) Entering cassette from **one** sides

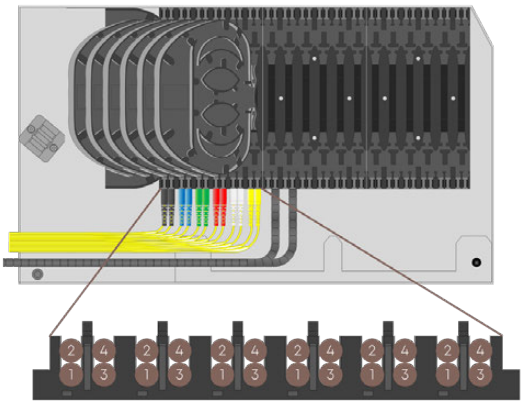
CTS compatible cables



(1) Cable 1 (e.g. patch cable)

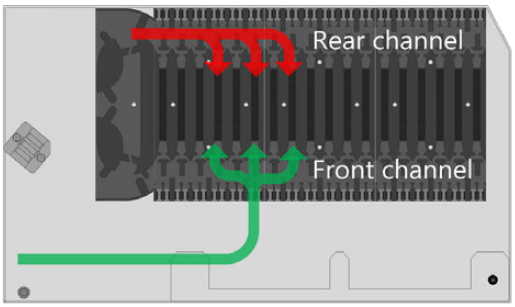
(2) Cable 2 (e.g. trunk cable)

Cassette base entries

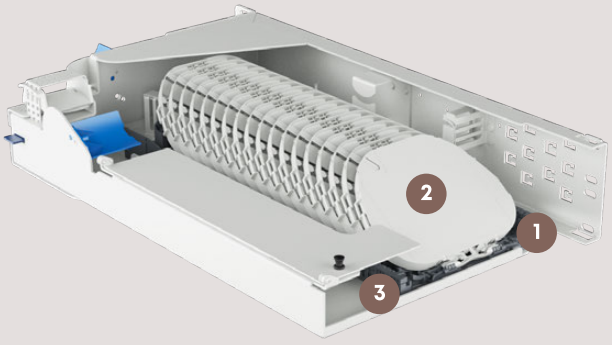


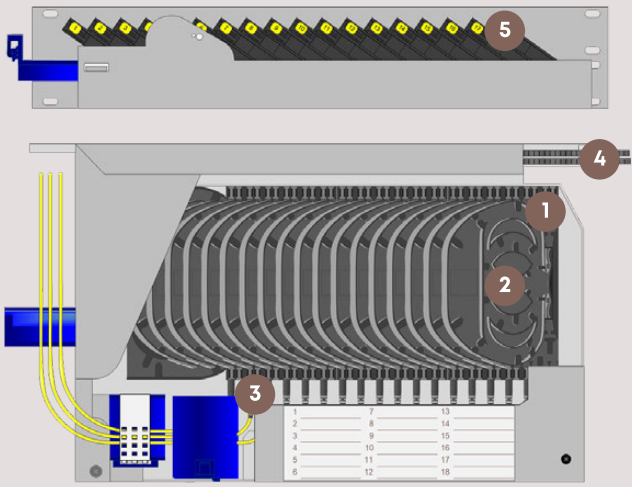
Per one cassette:
- 4x Ø5 mm protection tube
- 4x CRC sleeves

Cassette base fiber routing



CTS chassis components



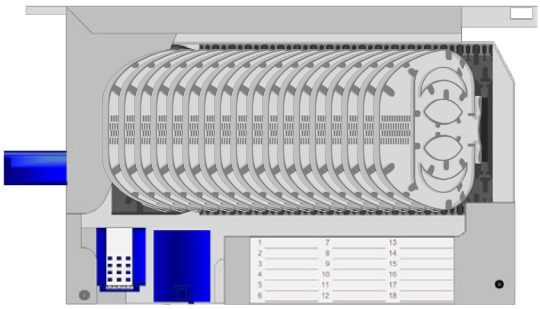


(1) Chassis
(2) Splice cassettes
(3) Cable relief clamps and boots
(4) Protection tubes
(5) Cassette marking

CTS order information

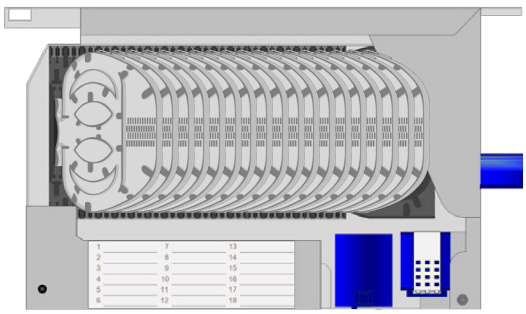
CTS chassis including 18x double sided cassettes

L



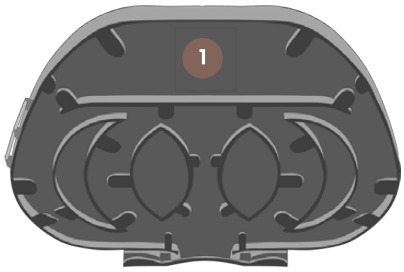
SY-HD-CTS-left-18-ACS 1

R



SY-HD-CTS-right-18-ACS 2

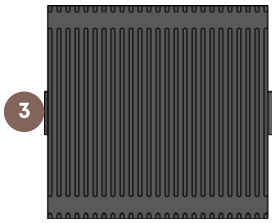
Other splice cassettes



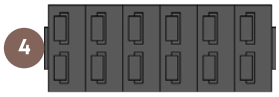
ACS-MCM-cassette 3



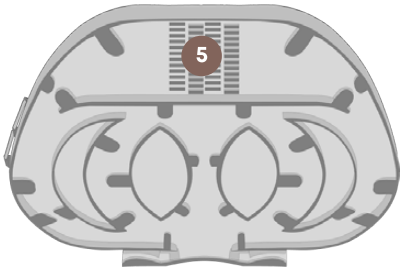
SPL-COMP-ACS-HS1.5-24-WAY



SPL-COMP-ACS-SW-24-WAY



SPL-COMP-FTII-RB-06-WAY-BK



ACS-cassette-double-12x1.5HS 4

(1) Splice cassette for various splice combs, ordered separately:
- heatshrink Ø1.5 mm **(2)**;
- sandwich (crimp) **(3)**;
- heatshrink Ø5 mm **(4)**;

(5) Double-sided cassette with integrated splice comb for heatshrink Ø1.5 mm

Available splice accessories



ACS-large-cassette-cover 5



ACS-small-cassette-cover 6

Cable relief clamps and boots



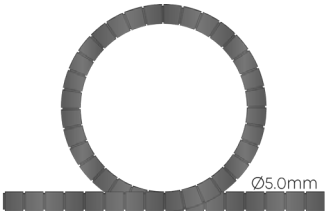
CRC3 Cable Relief Clamp BFF



BOOT BFF 1.4-2.6_XX_1000-P 8

BOOT BFF 2.7-3.2_XX_1000-P 9

Protection tubes Ø5 mm

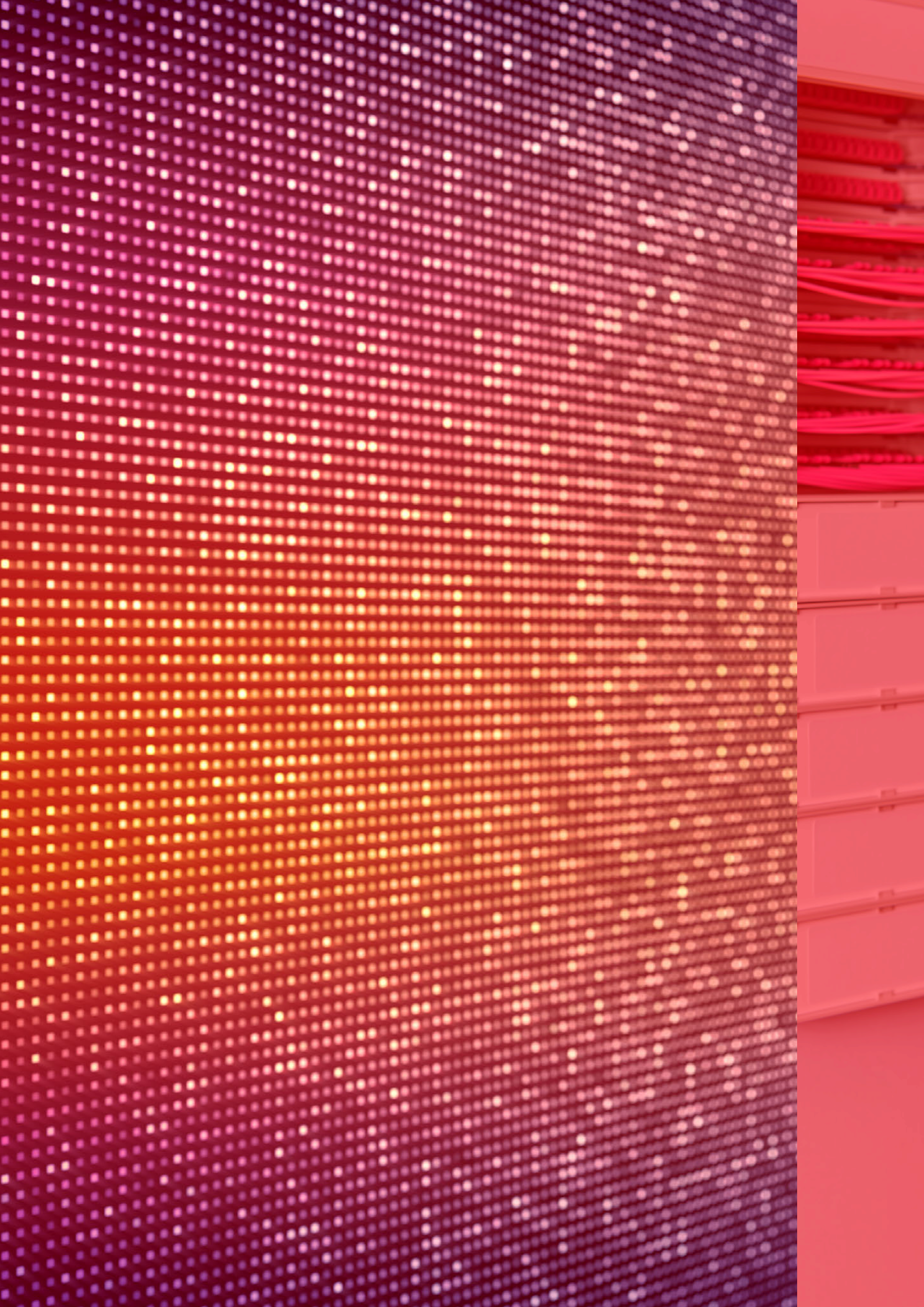


Ø5 mm protection tubes
OFPT - 18x per CTS maximum

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85125741	SY-HD-CTS-left-18-ACS	CTS chassis, LEFT, includes 18x double sided cassettes		
2	85147646	SY-HD-CTS-right-18-ACS	CTS chassis, RIGHT, includes 18x double sided cassettes		
3	84123330	ACS-MCM-cassette	ACS single-sided cassette, 24 splices, splice comb not included		
	84123618	SPL-COMP-ACS-HS1.5-24-WAY	Splice comb, heatshrink ø1.5 mm 24-way		
	84103969	SPL-COMP-ACS-SW-24-WAY	Splice comb, sandwich 24-way		
	85069503	SPL-COMP-FTII-RB-06-WAY-BK	Splice comb, ribbon ø5 mm, 6-way		
4	85123573	ACS-cassette-double-12x1.5HS	ACS double-sided cassette, 24 splices, splice comb integrated		
5	84123617	ACS-large-cassette-cover	ACS large cassette cover		
6	84123616	ACS-small-cassette-cover	ACS small cassette cover		
7	85017010	CRC3-CableReliefClamp_BFF	CRC3 Cable Relief Clamp BFF		
8	84005334	BOOT BFF 1.4-2.6_BK_1000-P	Boot, BFF, ø1.4-ø2.6, black		
	84005390	BOOT BFF 1.4-2.6_BU_1000-P	Boot, BFF, ø1.4-ø2.6, blue		
	84005336	BOOT BFF 1.4-2.6_GN_1000-P	Boot, BFF, ø1.4-ø2.6, green		
	84005337	BOOT BFF 1.4-2.6_RD_1000-P	Boot, BFF, ø1.4-ø2.6, red		
	84072437	BOOT BFF 1.4-2.6_WH_1000-P	Boot, BFF, ø1.4-ø2.6, white		
	84005341	BOOT BFF 1.4-2.6_YE_1000-P	Boot, BFF, ø1.4-ø2.6, yellow		
9	23014820	BOOT BFF 2.7-3.2_BK_1000-P	Boot, BFF, ø2.7-ø3.2, black		
	84005355	BOOT BFF 2.7-3.2_BU_1000-P	Boot, BFF, ø2.7-ø3.2, blue		
	84005353	BOOT BFF 2.7-3.2_GN_1000-P	Boot, BFF, ø2.7-ø3.2, green		
	23022846	BOOT BFF 2.7-3.2_RD_1000-P	Boot, BFF, ø2.7-ø3.2, red		
	84072441	BOOT BFF 2.7-3.2_WH_1000-P	Boot, BFF, ø2.7-ø3.2, white		
	84005354	BOOT BFF 2.7-3.2_YE_1000-P	Boot, BFF, ø2.7-ø3.2, yellow		





Fiber management systems 19 inch patch panels



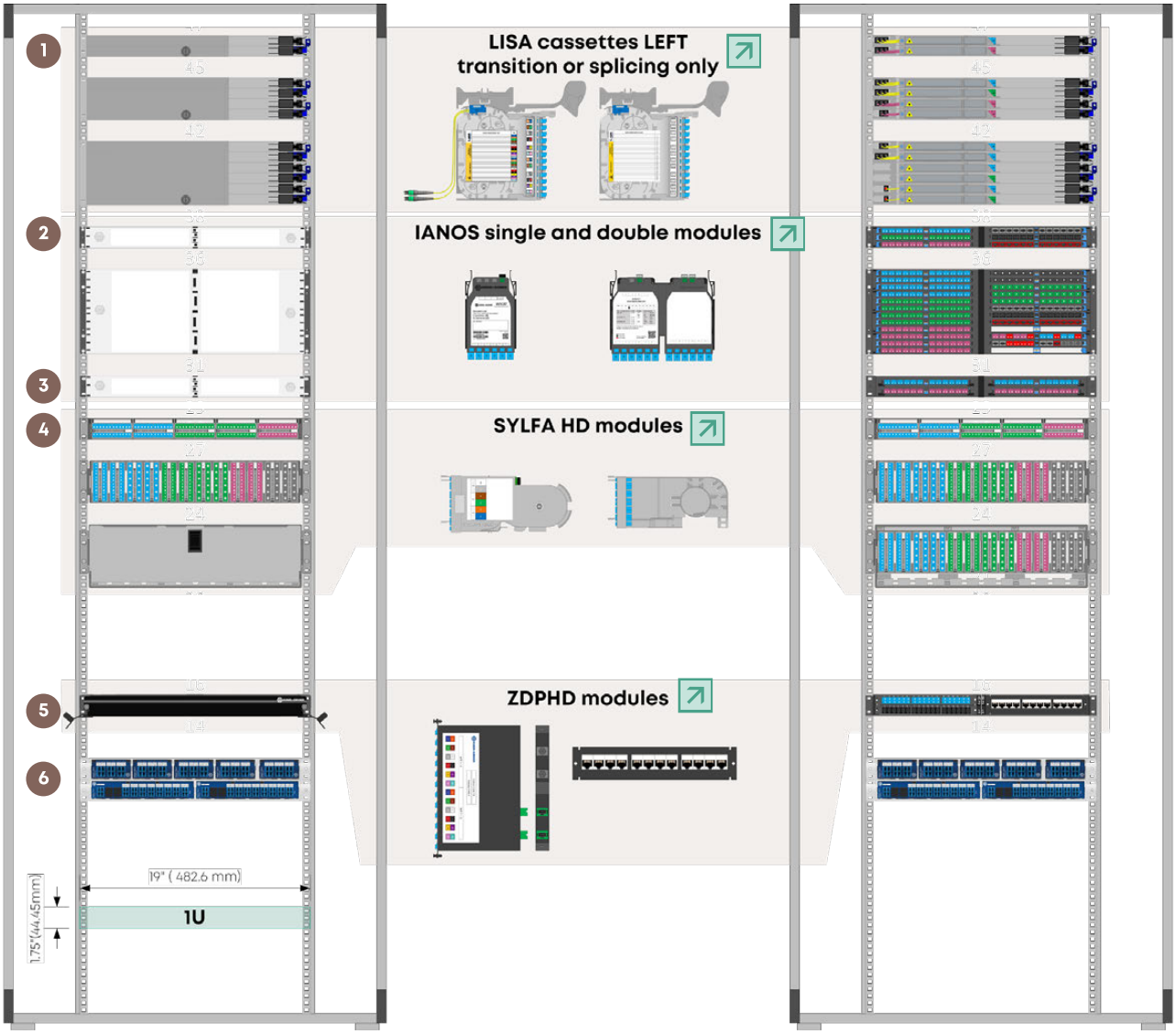
19 inch patch panel overview

19 inch patch panel examples

With doors

Required cassettes and modules

Removed doors



(1) LISA optimized distribution unit (ODU)
(2) IANOS standard
(3) IANOS lite
(4) SYLFA HD
(5) ZDPHD
(6) Network Cube X (NCX)

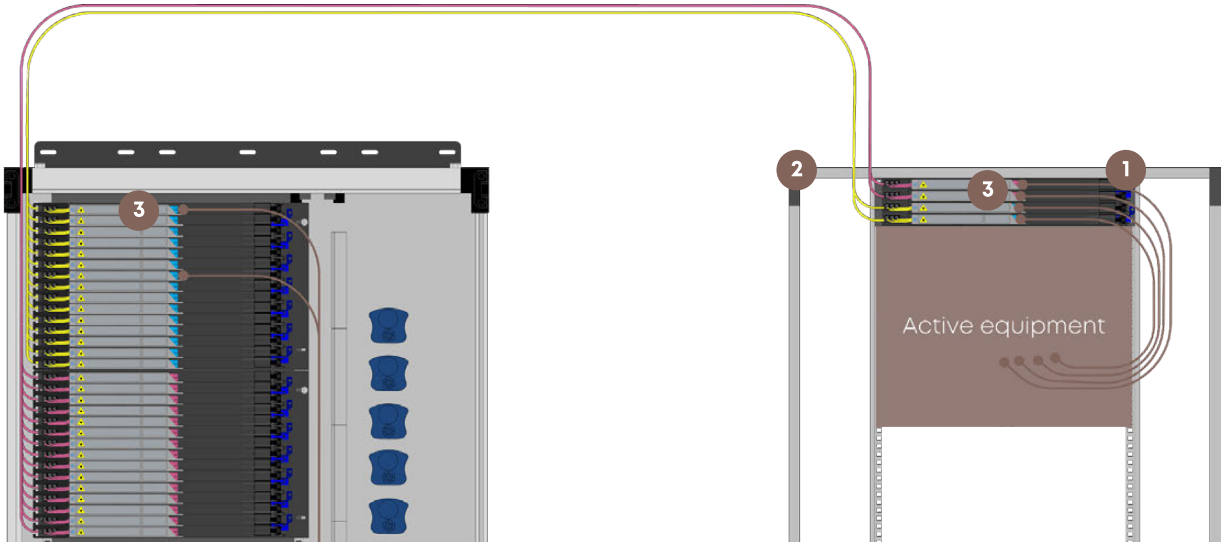
19 inch patch panel comparison

Feature	1	2	3	4	5	6
	LISA ODU	**IANOS standard**	**IANOS lite**	**SYLFA HD**	**ZDPHD**	**NCX**
Height, in 19 inch rack units	1U, 2U, 3U	1U, 4U	1U	1U, 2U, 3U		
Modularity		✓			✓	
Maximum fiber capacity per 19 inch rack unit	72x	144x	96x	144x	144x	100x
Patching	✗	LCd, SC, MTP		LCd, SC	LCd, MTP	–
Transition	LCd, SC, E-2000	LCd, SC		LCd, SC	LCd, SC	
MTP base methods	8 12 12 24		12		12	
Conversion	✗	✓		✗	✗	
Splicing	LCd, SC, E-2000	LCd, SC		LCd, E-2000	✗	✗
Pre-terminated modules	✗	✓			✗	
Ribbon splicing		✓		✗		
TAP modules		✓		✗		
Splitter modules		✓		✗		✓
WDM modules		✓		✗		✓

LISA ODU

LISA ODF and LISA ODU application

LISA ODU **(1)** is the 19 inch patch panel which can be installed in any generic 19" rack or cabinet **(2)** or in LISA ODF and allows to use LISA cassettes **(3)**.

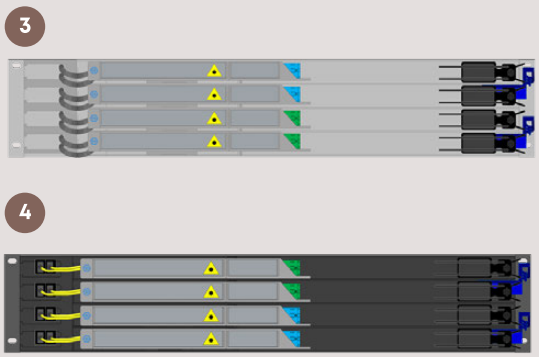


LISA ODU capacity

Patch panel type	Number of cassettes	24-way cassette	36-way cassette
LISA ODU 1U	2	48 fiber / 24 ports	72 fiber / 36 ports
LISA ODU 2U	4	96 fiber / 48 ports	144 fiber / 72 ports
LISA ODU 3U	6	144 fiber / 72 ports	216 fiber / 108 ports

LISA ODU examples





(1) LISA ODU 2U closed door
(2) LISA ODU 2U opened door
(3) ODU 2U for 4x LISA cassettes splicing
(4) ODU 2U for 4x LISA cassettes transition

LISA ODU splice

Grey chassis

Includes conduit gland and Ø5 mm protection tubes

1U



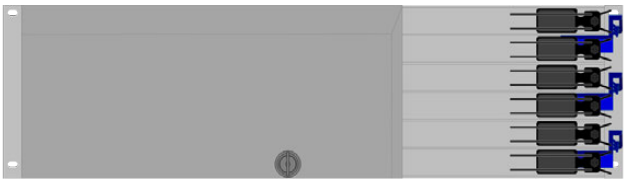
ODU2-1U-SPL-STA-GY 1

2U



ODU2-2U-SPL-STA-GY 3

3U



ODU2-3U-SPL-STA-GY 5

LISA ODU MTP transition

Black chassis

It is not containing conduit gland and protection tubes, however it is possible to convert ODU MTP transition to ODU splice by adding conduit gland and Ø5 mm protection tubes

1U



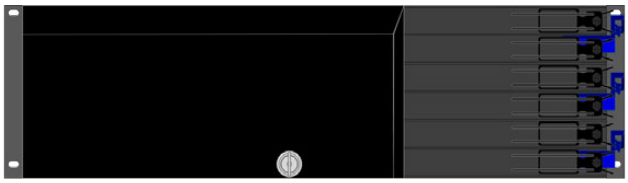
ODU2-1U-MTP-STA-BK 2

2U



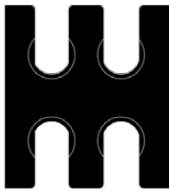
ODU2-2U-MTP-STA-BK 4

3U



ODU2-3U-MTP-STA-BK 6

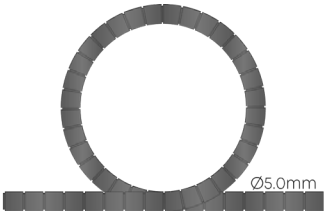
Conduit gland



- 1 pcs per splice cassette required
- mounted at the rear of the panel

OFBLT-Conduit-Gland-4-way-BK 7

Protection tubes Ø5 mm



~60 cm: required length of one tube

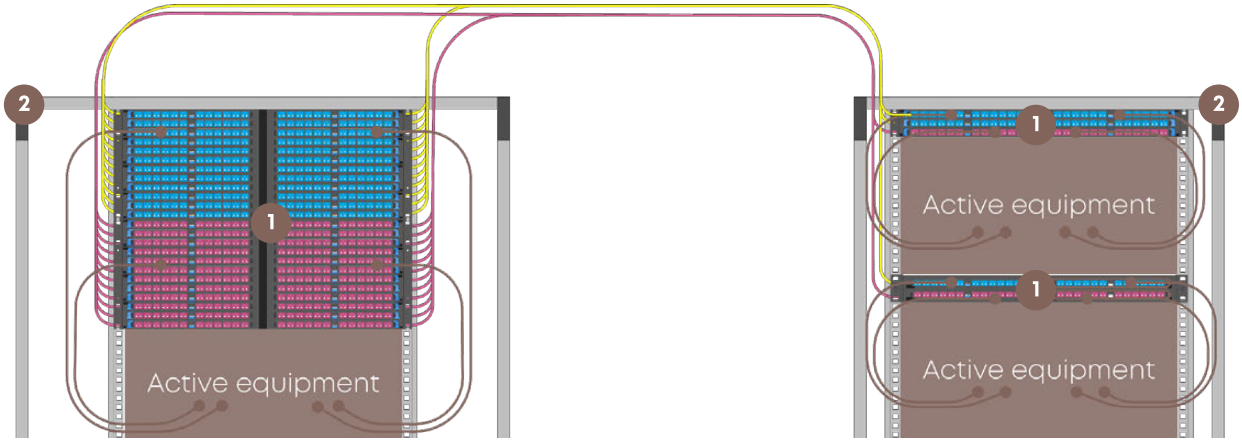
Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	84076616	ODU2-1U-SPL-STA-GY	ODU 1U configuration for splicing applications, grey	★	
2	84138128	ODU2-1U-MTP-STA-BK	ODU 1U configuration for MTP transition applications, black		
3	84076597	ODU2-2U-SPL-STA-GY	ODU 2U configuration for splicing applications, grey	★	
4	84138122	ODU2-2U-MTP-STA-BK	ODU 2U configuration for MTP transition applications, black		
5	84076598	ODU2-3U-SPL-STA-GY	ODU 3U configuration for splicing applications, grey	★	
6	84138119	ODU2-3U-MTP-STA-BK	ODU 3U configuration for MTP transition applications, black		
7	84009731	OFBLT-Conduit-Gland-4-way-BK	4-way 5mm conduit gland, for splicing applications		

IANOS overview

IANOS application

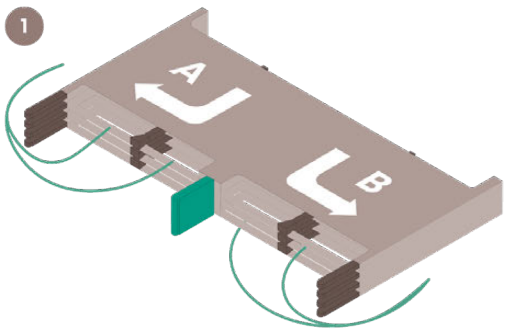
IANOS **(1)** is a 19 inch patch panel which can be installed in any generic 19" rack or cabinet **(2)** and allows to use different IANOS modules.

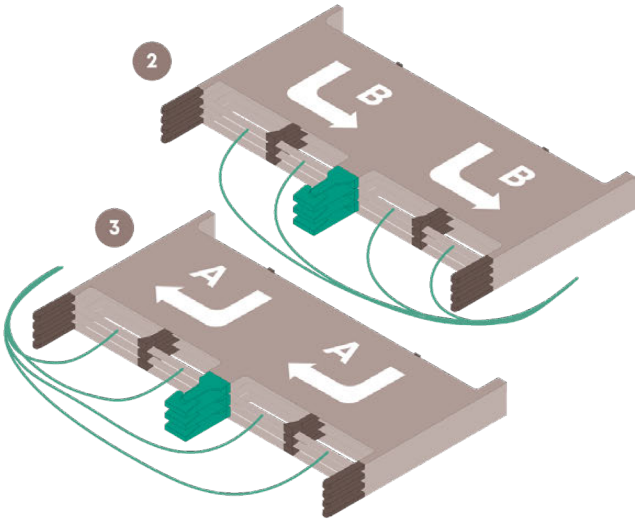


IANOS capacity and comparison

Patch panel type	Number of single modules and maximum fiber capacity	Number of double modules	Design	Door
IANOS 1U standard	12 / 144 fibers	6 / 144 fibers	Sliding	Left + Right door with labels
IANOS 4U standard	48 / 576 fibers	24 / 576 fibers		
IANOS 1U lite	8 / 96 fibers	4 / 96 fibers	Fixed	

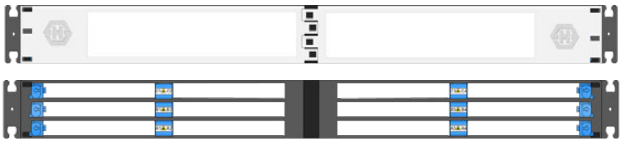
Combined or diverse paths with IANOS layer clip





With IANOS 1U standard and IANOS 4U standard possible various patching paths:
(1) dual paths (no layer clip)
(2) single path B
(3) single path A

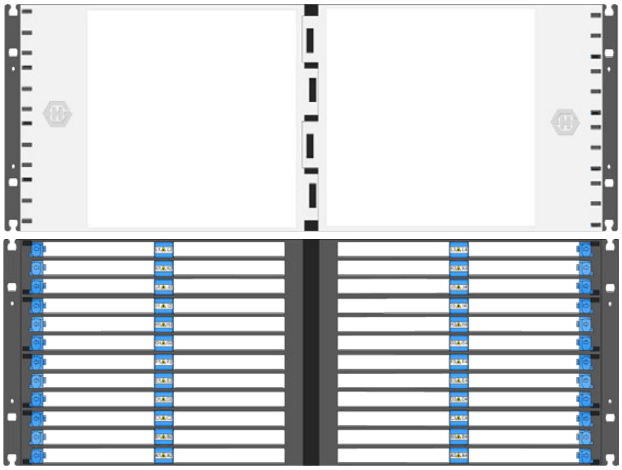
IANOS 1U standard



IANOS-STD-CHASSIS-FLX-1U-2G-T4 1

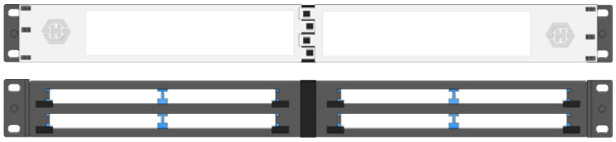


IANOS 4U standard



IANOS-STD-CHASSIS-FLX-4U-2G-T4 2

IANOS 1U lite



IANOS-LITE-STANDARD-T4 3

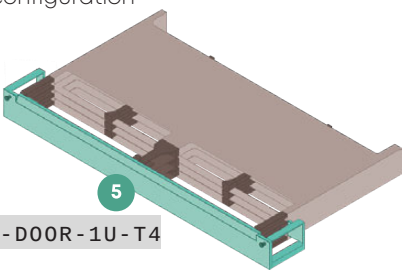
IANOS layer clip and IANOS label door

Layer clip for the single path patch cord routing



IANOS-LAYER-CLIP-BK 4

Additional retrofit door for labeling - in the single path patch cord routing configuration



5

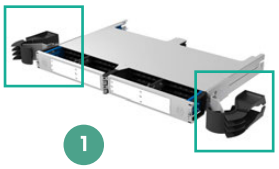
IANOS-LABEL-DOOR-1U-T4

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85102690	IANOS-STD-CHASSIS-FLX-1U-2G-T4	IANOS 1U chassis, capacity up to 12 modules, 72 ports	★	↗
2	85103010	IANOS-STD-CHASSIS-FLX-4U-2G-T4	IANOS 4U chassis, capacity up to 48 modules, 288 ports	★	↗
3	85086220	IANOS-LITE-STANDARD-T4	IANOS Lite chassis, max. configuration	★	↗
4	85069563	IANOS-LAYER-CLIP-BK	IANOS layer clip black, for IANOS standard 1U and 4U	◕	↗
5	85181140	IANOS-LABEL-DOOR-1U-T4	IANOS 1U front door for single path configuration	☑	

IANOS cable managers

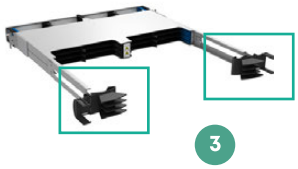
IANOS cable managers for 750+ wide cabinets



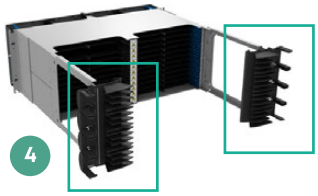
IANOS-CABLE-MANAGER-FRONT-1U



IANOS-CABLE-MANAGER-FRONT-4U



IANOS-CABLE-MANAGER-REAR-1U



IANOS-CABLE-MANAGER-REAR-4U

IANOS cable managers for 600+ wide cabinets



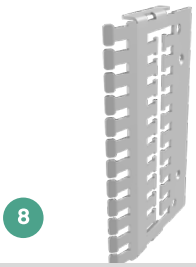
IANOS-REAR-CABLE-MGR-1U-T4



IANOS-REAR-CABLE-MGR-4U-T4



IANOS-REAR-CAB-MGR-1U-T2-T4



IANOS-REAR-CAB-MGR-4U-T2-T4_SET



IANOS-LITE-REAR-CAB-MGR-1U-T4

Ordering information

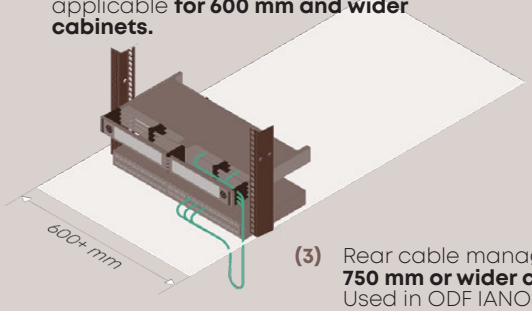
#	Item number	Descriptive code	Item text	LT	URL
1	85108769	IANOS-CABLE-MANAGER-FRONT-1U	IANOS cable manager front, 1U	☑	↗
2	85108770	IANOS-CABLE-MANAGER-FRONT-4U	IANOS cable manager front, 4U	☑	↗
3	85108771	IANOS-CABLE-MANAGER-REAR-1U	IANOS cable manager rear, 1U	★	↗
4	85108772	IANOS-CABLE-MANAGER-REAR-4U	IANOS cable manager rear, 4U	★	↗
5	85069473	IANOS-REAR-CABLE-MGR-1U-T4	IANOS rear cable manager, 1U, grey	★	↗
6	85069474	IANOS-REAR-CABLE-MGR-4U-T4	IANOS rear cable manager, 4U, grey	★	↗
7	85108051	IANOS-REAR-CAB-MGR-1U-T2-T4	IANOS rear cable manager, 1U, tie-off	☑	↗
8	85102273	IANOS-REAR-CAB-MGR-4U-T2-T4_SET	IANOS rear cable manager, 4U, tie-off	☑	
9	85107331	IANOS-LITE-REAR-CAB-MGR-1U-T4	IANOS lite rear cable manager	★	↗

Cable manager compatibility

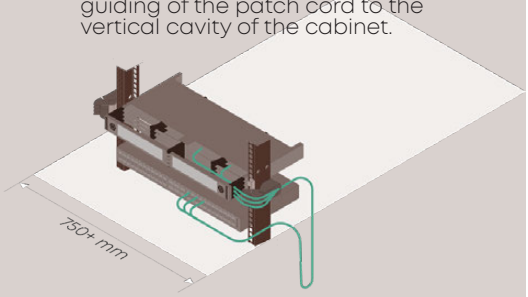
Patch panel type	Cable manger type								
	1	2	3	4	5	6	7	8	9
IANOS 1U standard	✓	✗	✓	✗	✓	✗	✓	✗	✓
IANOS 1U lite			✗				✗		
IANOS 4U standard	✗	✓		✓	✗	✓		✓	✗

IANOS cable manager principals

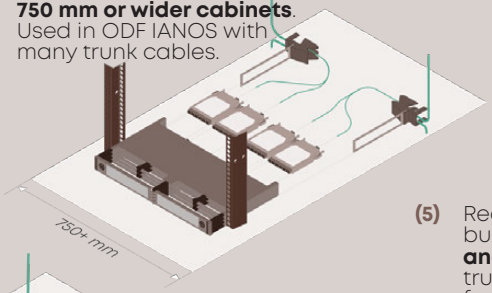
(1) Integral patch cord manager with no additional front cable manager, applicable **for 600 mm and wider cabinets.**



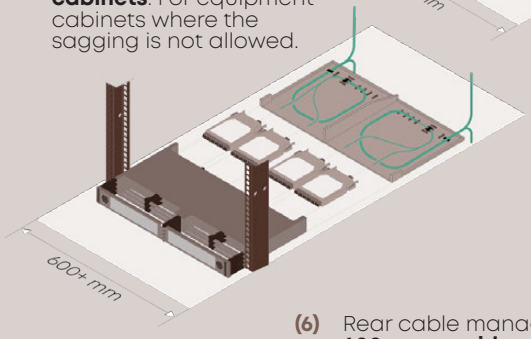
(2) Front cable manager, applicable **for 750 mm or wider cabinets**. Enables guiding of the patch cord to the vertical cavity of the cabinet.



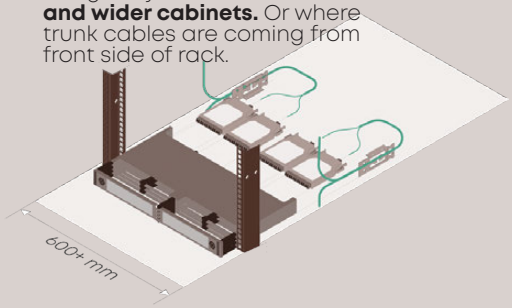
(3) Rear cable manager, **for 750 mm or wider cabinets**. Used in ODF IANOS with many trunk cables.



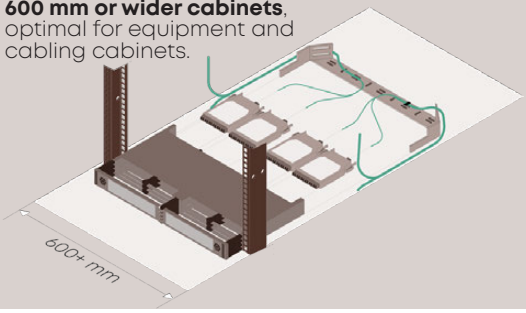
(4) Rear cable manager **for 600 mm or wider cabinets**. For equipment cabinets where the sagging is not allowed.



(5) Rear tie-off cable manager budgetary variant. **For 600 mm and wider cabinets.** Or where trunk cables are coming from front side of rack.



(6) Rear cable manager **for 600 mm or wider cabinets**, optimal for equipment and cabling cabinets.

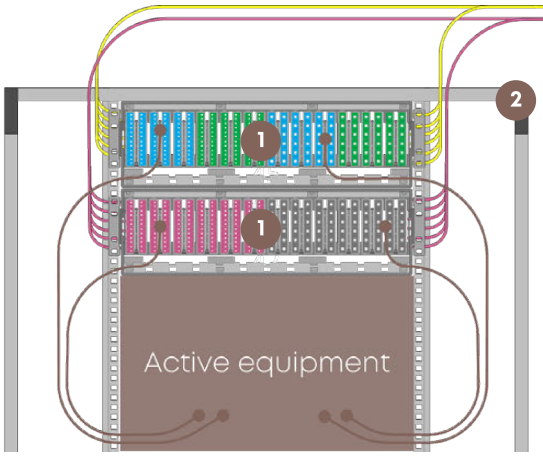


SYLFA HD

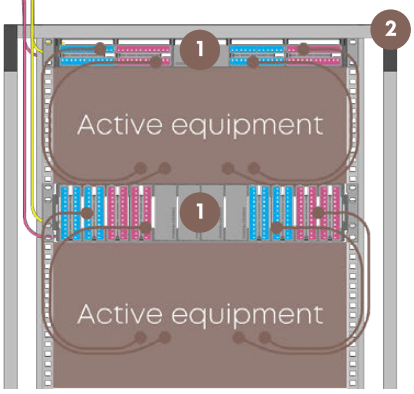
SYLFA HD application

SYLFA HD **(1)** is the 19 inch modular patch panel which can be installed in any generic 19 inch rack, cabinet **(2)** or 300 mm rack **(3)** and allows to use different SYLFA HD modules.

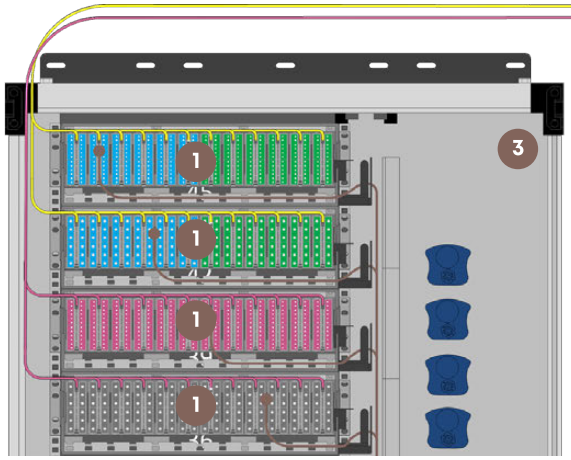
ODF SYLFA HD in 19 inch cabinet



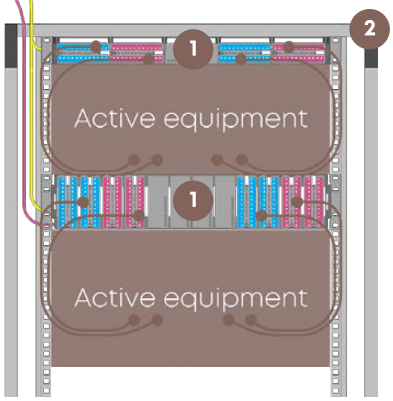
SYLFA HD 19 inch patch panels



ODF SYLFA HD in 300 mm rack



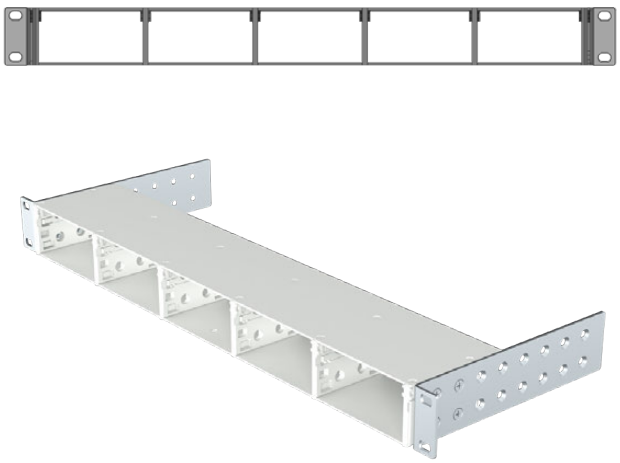
SYLFA HD 19 inch patch panels



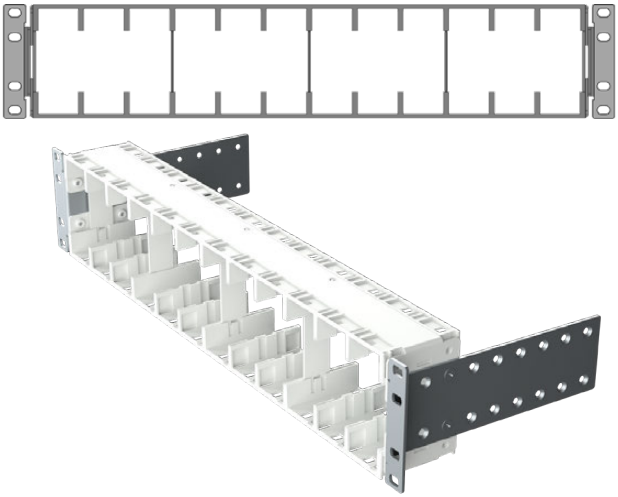
SYLFA HD capacity and comparison

Patch panel type	Number of single modules and maximum fiber capacity	Cable manager	Door
SYLFA HD chassis 1U	5 / 120 fibers	Not included - must be ordered separately* *not supplied by HUBER+SUHNER	No door
SYLFA HD chassis 2U	12 / 288 fibers		
SYLFA HD chassis 3U		Integrated	With door

SYLFA HD chassis 1U and 2U without cable manager

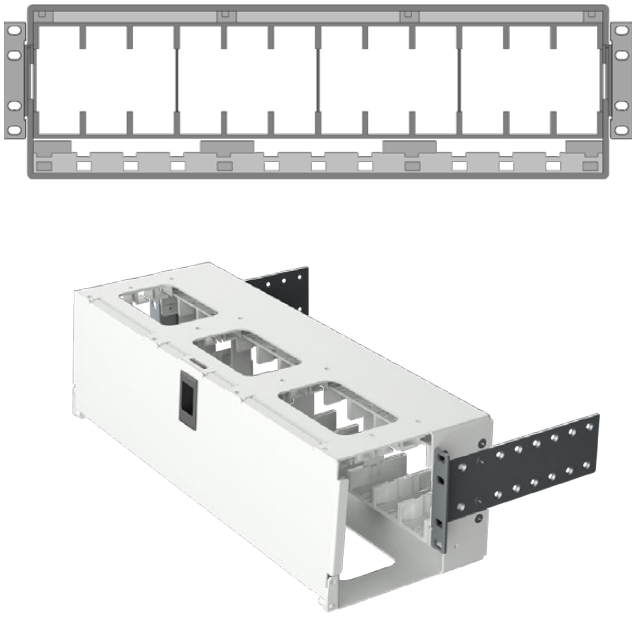


SY-HD Chassis 1U 1



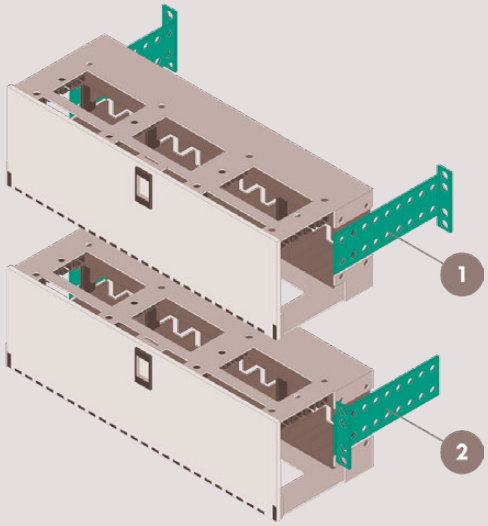
SY-HD Chassis 2U 2

SYLFA HD chassis 3U



SY-HD Chassis 3U

Re-configured SYLFA HD chassis 3U as 19 inch patch panel



(1) Mounting bracket positioned for ODF (rear mount)
(2) Mounting bracket, reversed for 19 inch (front mount)

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85125737	SY-HD Chassis 1U	SYLFA HD 19 inch chassis, for up to 5 SYLFA HD modules, 1U, grey	☑	
2	85125735	SY-HD Chassis 2U	SYLFA HD 19 inch chassis, for up to 12 SYLFA HD modules, 2U, grey	☑	

Zone distribution panel HD

ZDPHD 1U capacity

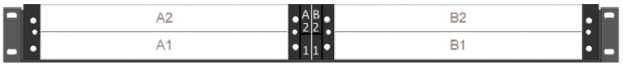
Number of modules	4
Maximum fiber count 24-way modules	96
Maximum fiber count 36-way modules	144

What is ZDPHD?

ZDPHD is a **modular** 19 inch patch panel made from steel which can be used in a 19 inch generic rack and allows to use transition or patch modules. Fixed modules, no movement of fibers during operation

Zone distribution panel high-density (ZDPHD) options and accessories

ZDPHD 1U chassis

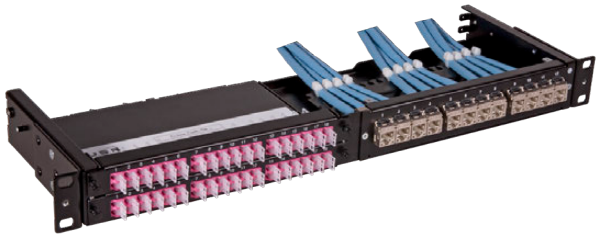


ZDPHD-PANEL-1U-BK 1

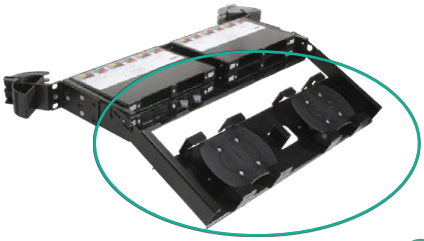
ZDPHD 1U cable manager



ZDPHD-PANEL-DOOR-1U-BK 2



ZDPHD 1U rear cable manager



ZDPHD-REAR-CABLE-MANAGER-BK 3

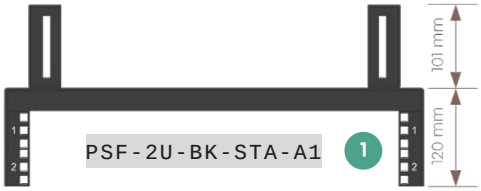
Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	84146158	ZDPHD-PANEL-1U-BK	ZDPHD fixed panel, 1U, black		
2	85030404	ZDPHD-PANEL-DOOR-1U-BK	ZPDHD front door 1U, black		
3	84146157	ZDPHD-REAR-CABLE-MANAGER-BK	Rear cable manager, black, for ZDPHD		

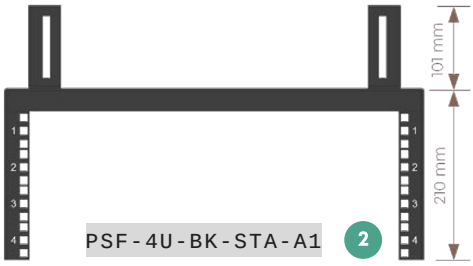
Panel supporting frame (PSF)

PSF variants

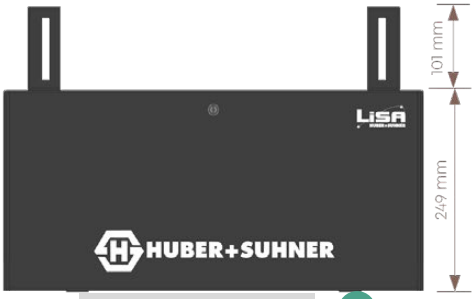
2U, no door



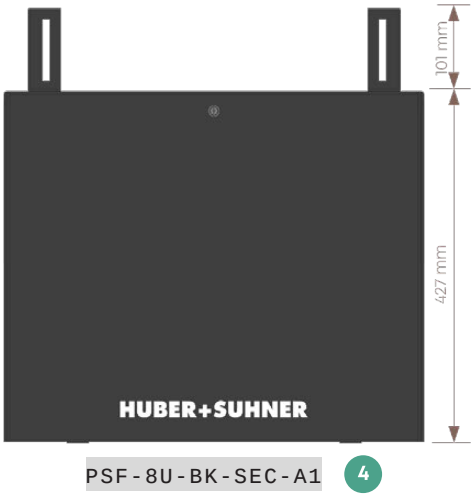
4U, no door



4U, with door

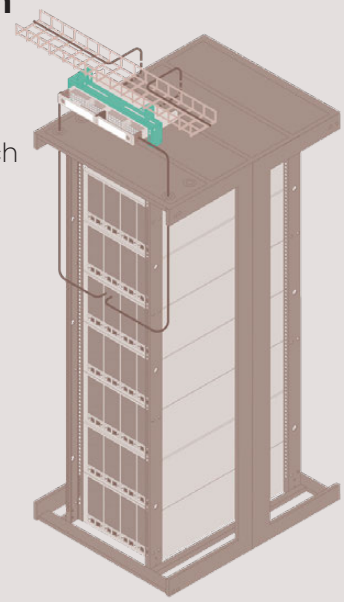


8U, with door



PSF application

Fixed to the cable trays creates additional space for mounting 19 inch patch panels



Ordering information

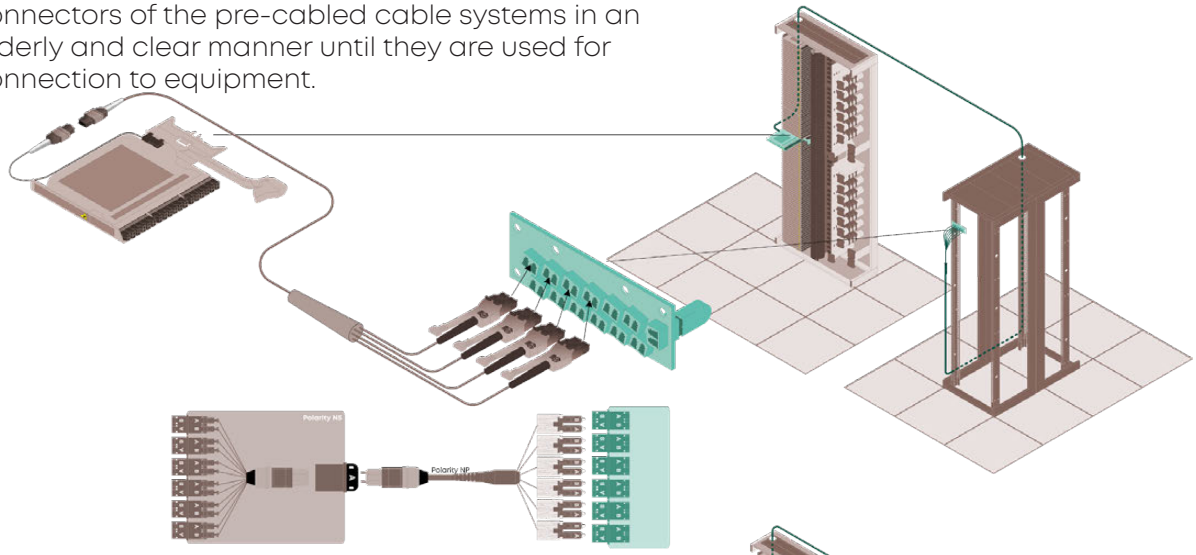
#	Item number	Descriptive code	Item text	LT	URL
1	85008425	PSF-2U-BK-STA-A1	Panel supporting frame (PSF), 2U, black	☑	
2	85008427	PSF-4U-BK-STA-A1	Panel supporting frame (PSF), 4U, black	☑	
3	85013642	PSF-4U-BK-SEC-A1	Panel supporting frame (PSF) incl. door, 4U, black	☑	
4	85151090	PSF-8U-BK-SEC-A1	Panel supporting frame (PSF) incl. door, 8U, black	☑	

Parking panel

Parking panel applications

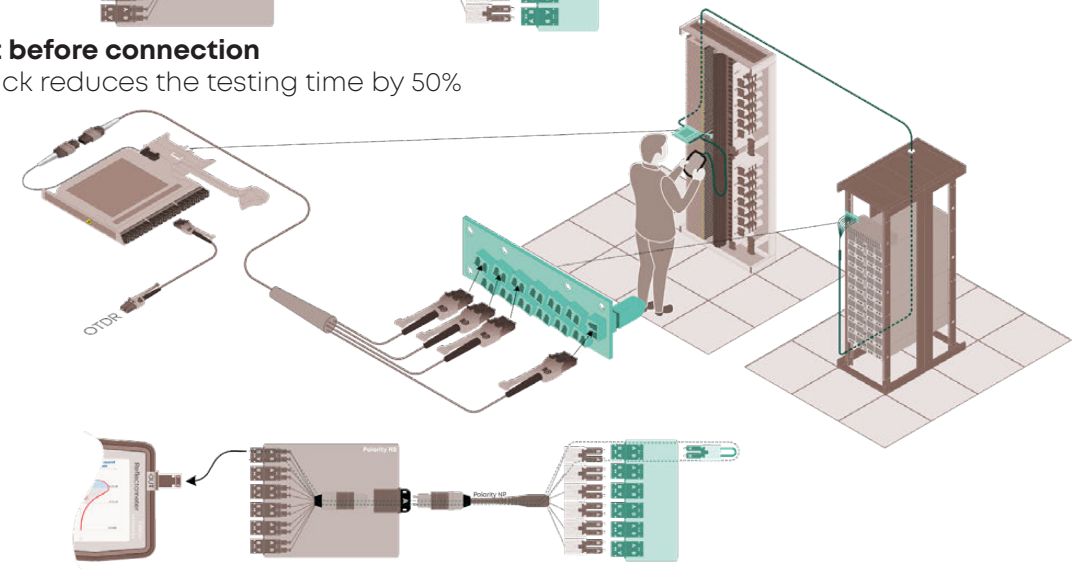
(1) Pre-cable and park

The parking panel makes it possible to park unused connectors of the pre-cabled cable systems in an orderly and clear manner until they are used for connection to equipment.

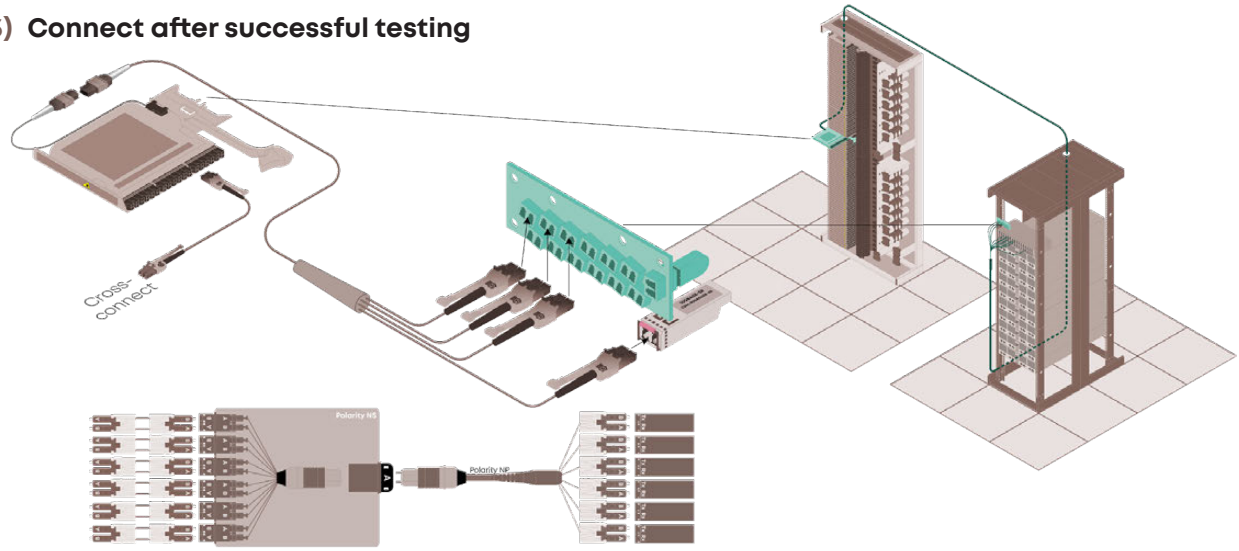


(2) Test before connection

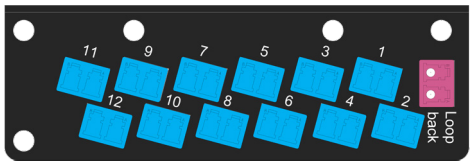
Loopback reduces the testing time by 50%



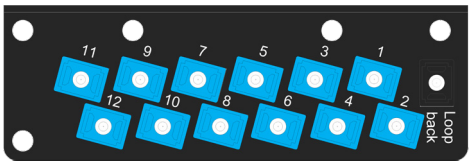
(3) Connect after successful testing



Parking panel and accessories



PARKING-PANEL-LC-0U-BK 1



PARKING-PANEL-SC-0U-BK 2

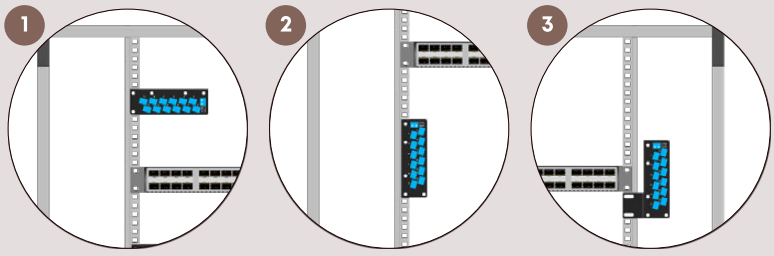


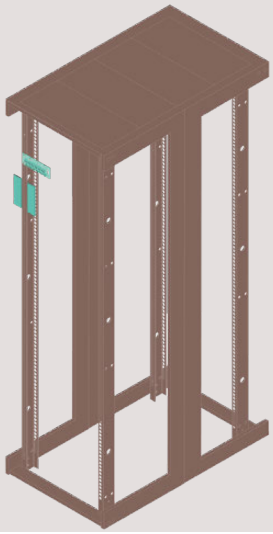
BRACKET_PARKING_PANEL_BK 3

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85162177	PARKING-PANEL-LC-0U-BK	Connector parking panel for 12x LC duplex, with LC UPC singlemode loopback connector		
2	85162178	PARKING-PANEL-SC-0U-BK	Connector parking panel for 12x SC, with simplex patch cord (for loopback)		
3	85164448	BRACKET_PARKING_PANEL_BK	Additional mounting bracket for parking panel		

Parking panel fixation options

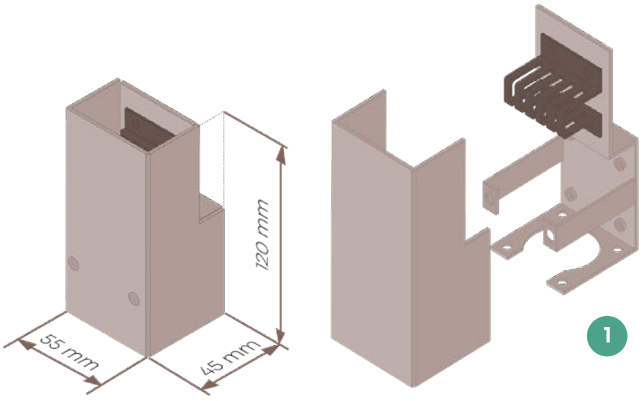


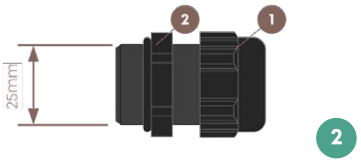


(1) Vertically, inside the 19 inch frame
(2) Horizontally, inside the 19 inch frame
(3) Vertically, outside the 19 inch frame, using mounting bracket

19 inch patch panel accessories

Small manifold box for up to 15x Ø5 mm OFPT





`ODR-B/OUT-GLD-BOX-A1` with CSM*

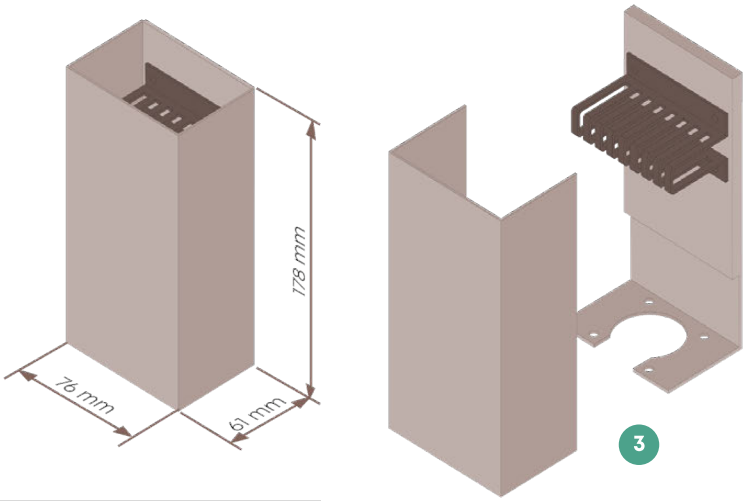
`ODR-B/OUT-GLAND-BOX-GY` no CSM*

CSM - central strength member

1 `GLAND_M25_03_BK`

2 `Nut_M25x7_02_06_01`

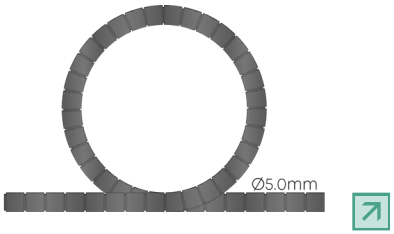
Large manifold box for up to 42x Ø5 mm OFPT



`432-fibre-Breakout-Box` with gland

`B/Out Box_empty_7slot` no gland

Protection tubes Ø5 mm

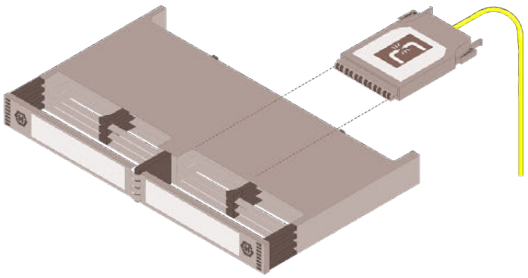


Ordering information

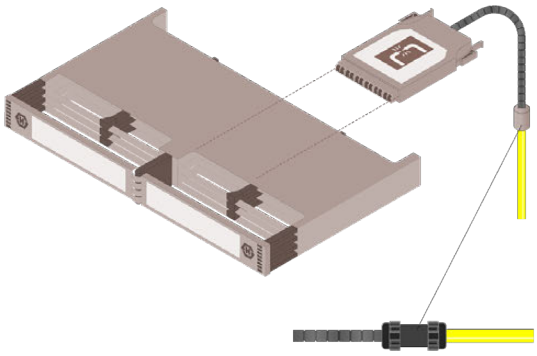
#	Item number	Descriptive code	Item text	LT
1	84024459	ODR-B/OUT-GLD-BOX-A1	Small manifold box, grey, for up to 12x Ø5 mm OFPT, supplied with CSM, M25 cable gland not supplied	
	84024460	ODR-B/OUT-GLAND-BOX-GY	Small manifold box, grey, for up to 15x Ø5 mm OFPT, CSM not supplied, M25 cable gland not supplied	
2	84039078	GLAND_M25_03_BK	M25×1.5 cable gland for cables with diameter Ø9-Ø17 mm, black	
	85064421	Nut_M25x7_02_06_01	Nut M25x7	
3	85089835	432-fibre-Breakout-Box	Large manifold box for up to 42 x Ø5 mm conduits, supplied with CSM and M32 gland for cable size Ø7-Ø25 mm, black	
	85089828	B/Out Box_empty_7slot	Large manifold box for up to 42x Ø5 mm conduits, M32 cable gland not supplied	

Methods of cable termination when splicing

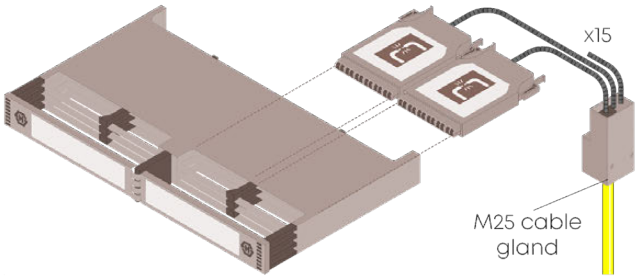
Direct into module



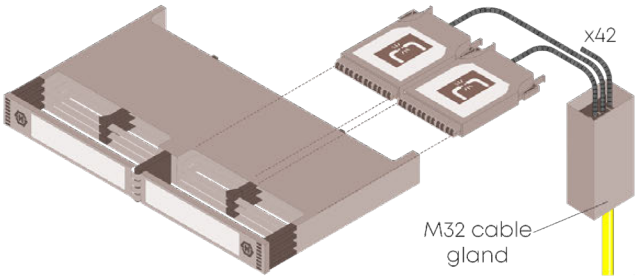
Straight through cable gland

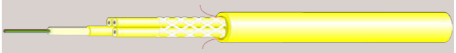
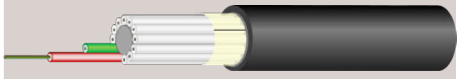
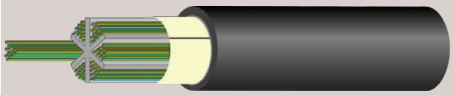


Small manifold box

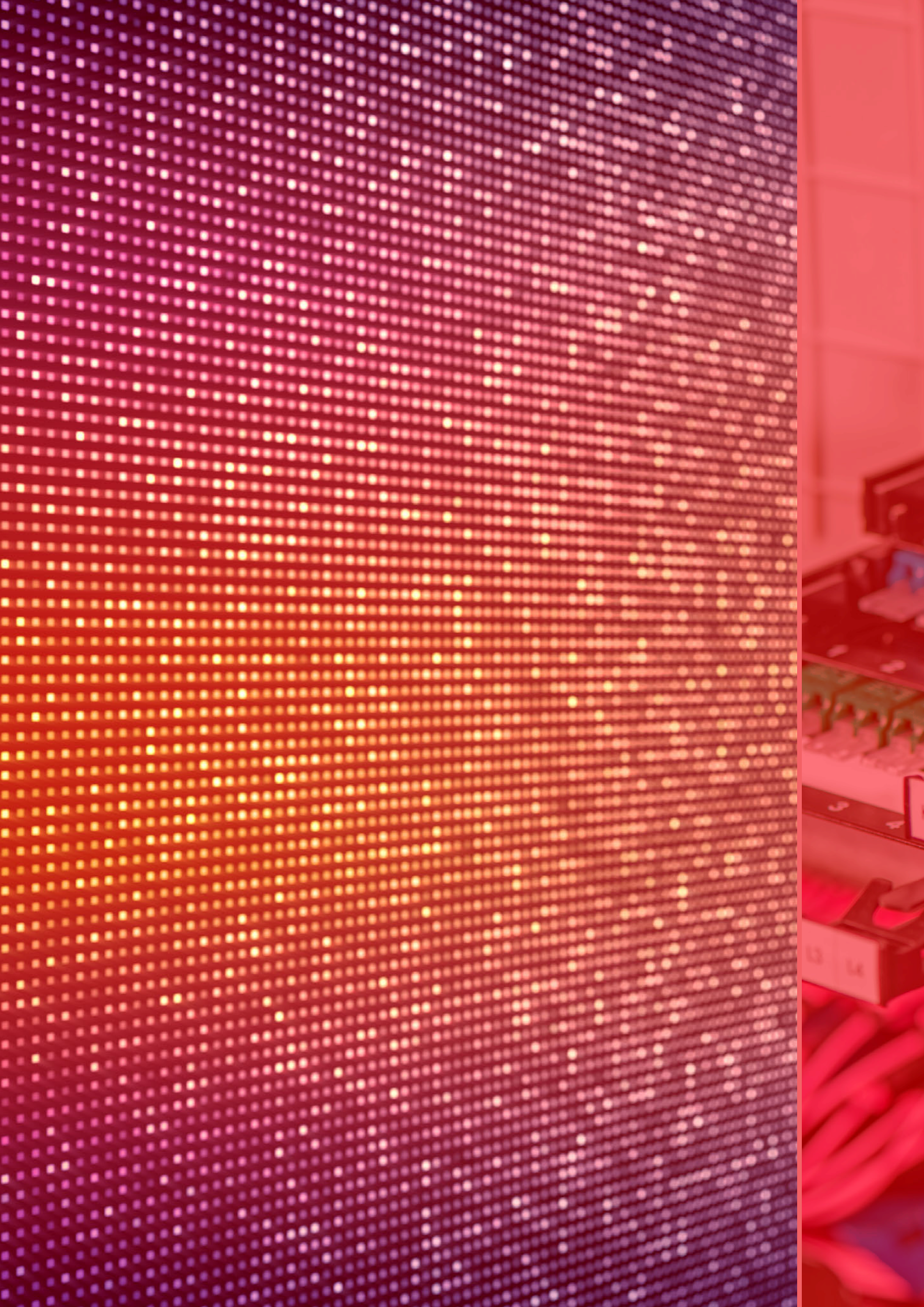


Large manifold box



Cable type	Cable construction	Cable description	Recommended transition method for IANOS patch panels
Optipack double jacket Universal single loose tube (≤Ø5 mm)		12-24 fiber, Ø2-Ø5 mm	**Method 1.** Direct into module [1]
Optipack breakout Optipack universal		24-288 fiber, Ø6.6-Ø14 mm	**Methods 3-4.** Small or large manifold box
Universal single loose tube Outdoor single loose tube		12-24 fiber, Ø5-Ø12 mm	**Method 2.** Straight through cable gland [2].
Universal multifiber loose tube Outdoor multifiber loose tube		24-144 fiber, Ø10-Ø15 mm	**Methods 3-4.** Small or large manifold box
Ribbon cables		288+ fiber	**Method 4.** Large manifold box

1 Addition of tape to bulk up to Ø5 mm may be required
2 Cable gland not supplied

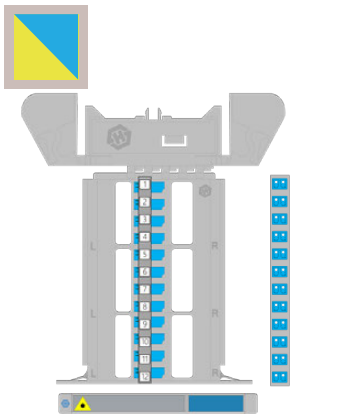


Fiber management systems Cassettes and modules

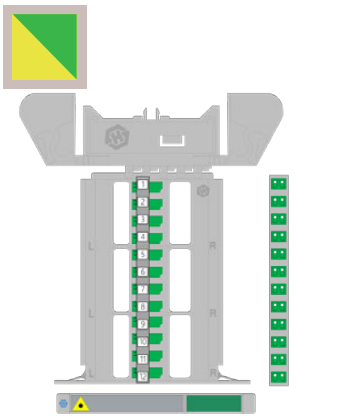


LISA patching LCd, SC and E-2000

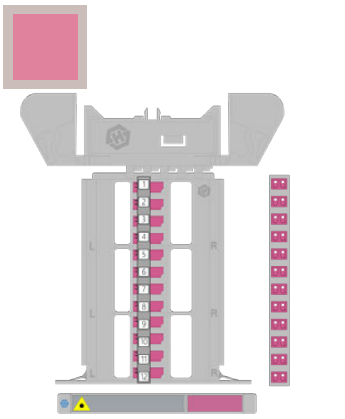
LISA patching cassettes 12x LCd



PT3-H-LCUD-12-A2-0 1

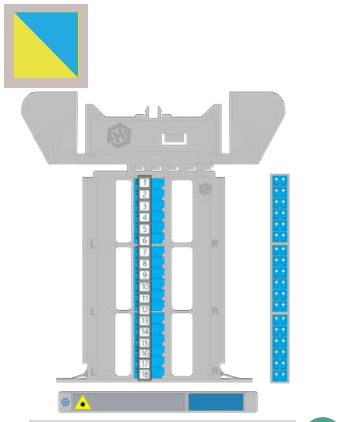


PT3-H-LCAD-12-A2-0 2

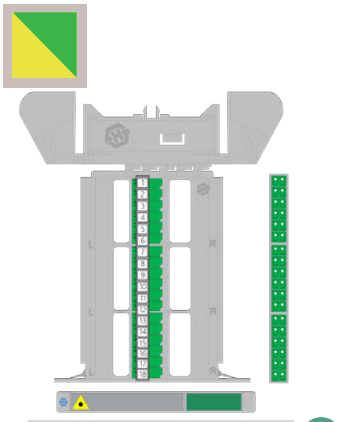


PT3-H-LCMD-12-04-0 3

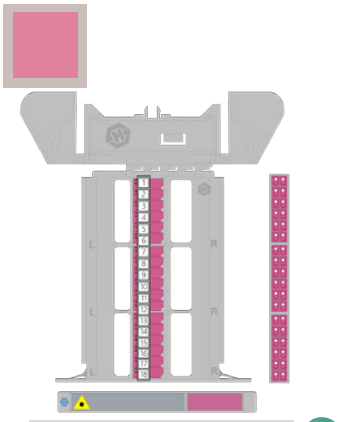
LISA patching cassettes 18x LCd



PT3-H-LCUD-18-A2-0 4



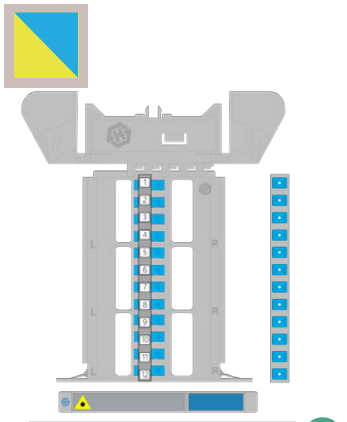
PT3-H-LCAD-18-A2-0 5



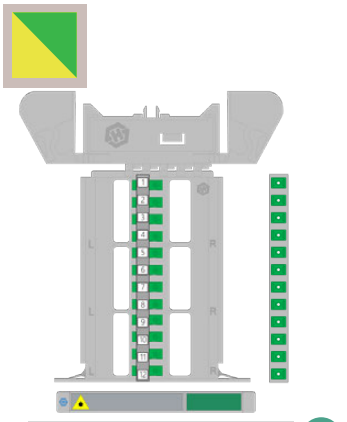
PT3-H-LCMD-18-04-0 6

* 18x LCd supports LC-XD or LC uniboot patch cords only

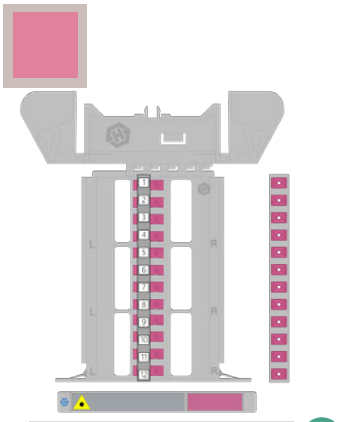
LISA patching cassettes 12x SC



PT3-H-SCUS-12-A2-0 7

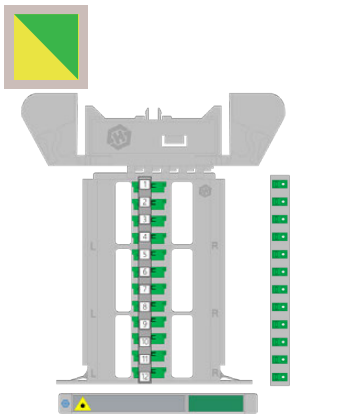


PT3-H-SCAS-12-A2-0 8



PT3-H-SCUS-12-04-0 9

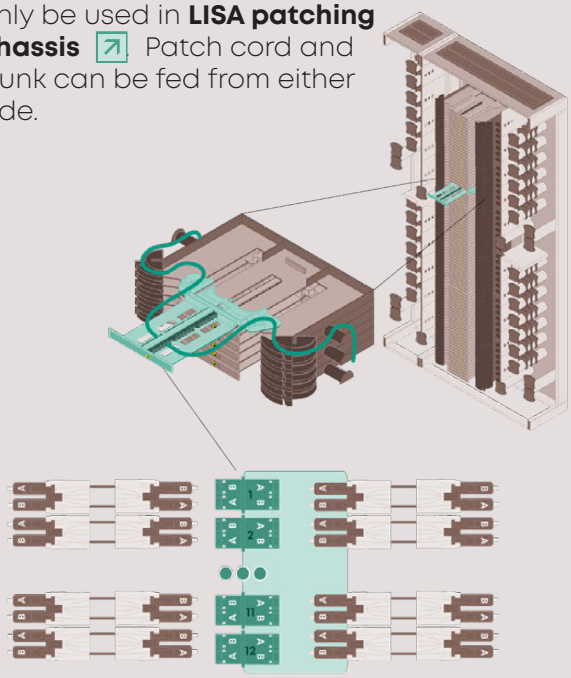
LISA patching cassettes 12x E-2000



PT3-H-LSAS-12-A2-0 1

LISA chassis patching

LISA patching cassettes can only be used in **LISA patching chassis**. Patch cord and trunk can be fed from either side.



Ordering information

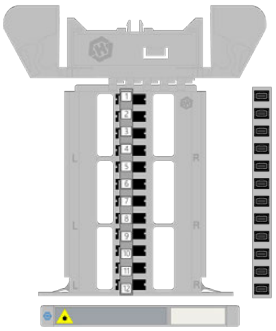
#	Item number	Descriptive code	Item text	LT	URL
1	85103002	PT3-H-LCUD-12-A2-O	LISA patching cassette, 12 x LC UPC Adapter, singlemode blue	★	
2	85103003	PT3-H-LCAD-12-A2-O	LISA patching cassette, 12 x LC APC Adapter, singlemode green		
3	85103004	PT3-H-LCMD-12-O4-O	LISA patching cassette, 12 x LC Adapter, multimode heather violet	✓	
4	85103006	PT3-H-LCUD-18-A2-O	LISA patching cassette, 18 x LC UPC duplex adapter, singlemode blue		
5	85103007	PT3-H-LCAD-18-A2-O	LISA patching cassette, 18 x LC APC duplex adapter, singlemode green		
6	85103008	PT3-H-LCMD-18-O4-O	LISA patching cassette, 18 x LC Adapter, multimode heather violet		
7	85106128	PT3-H-SCUS-12-A2-O	LISA patching cassette, 12 x SC UPC Adapter, singlemode blue	✓	
8	85105343	PT3-H-SCAS-12-A2-O	LISA patching cassette, 12 x SC APC Adapter, singlemode green		
9	85117502	PT3-H-SCUS-12-O4-O	LISA patching cassette, 12 x SC Adapter, singlemode heather violet		
10	85110782	PT3-H-LSAS-12-A2-O	LISA patching cassette, 12 x E-2000 APC adapter, singlemode green		

LISA patching MTP

LISA patching cassettes MPO/MTP

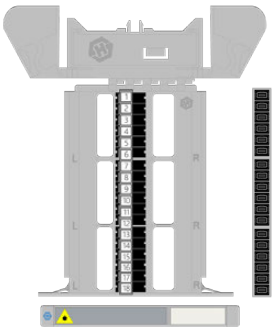
8 12 12 24

12x MPO/MTP



PT3-H-MTPS-12-ZZ-0 1

18x MPO/MTP



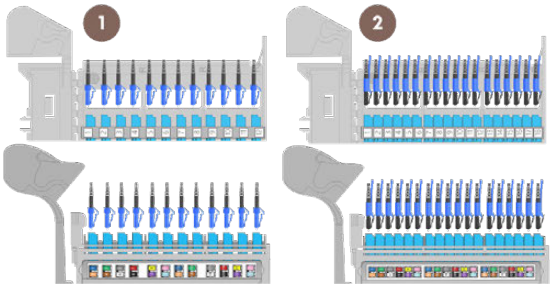
PT3-H-MTPS-18-ZZ-0 2

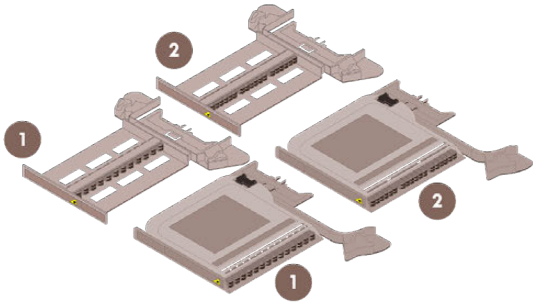
Ordering information

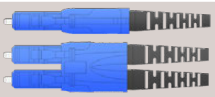
#	Item number	Descriptive code	Item text	LT	URL
1	85103005	PT3-H-MTPS-12-ZZ-O	LISA patching cassette, 12 x MTP key up/key down adapter	✓	
2	85103009	PT3-H-MTPS-18-ZZ-O	LISA patching cassette, 18 x MTP key up/key down adapter	✓	

Compatibility of LISA cassettes and LCd connector

(1) 12 port cassettes
(2) >12 port cassettes (e.g. 18- port), high-density

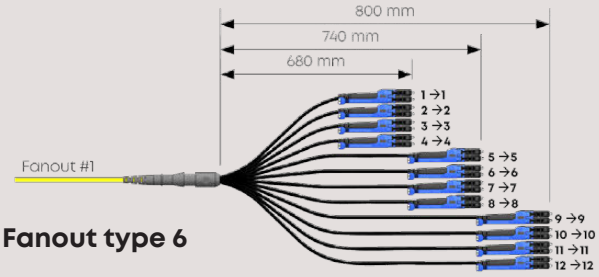




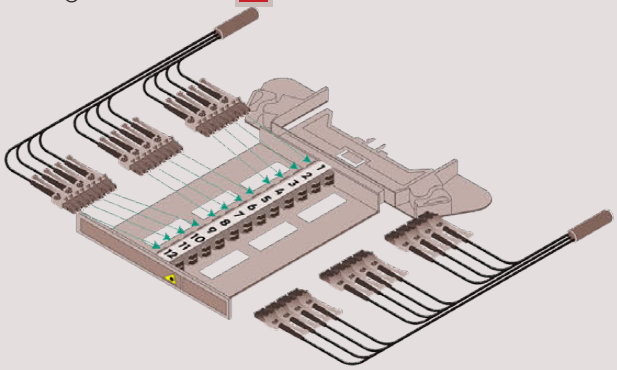
LC connector type	Top view	Side view	1	2
LC classic LC with classic clip · simplex · duplex			✓	✕
LC push-pull LC with push-pull clip · simplex · duplex			✓	✓
LC-HD simplex LC with HD clip			✓	✓
LC-HD duplex LC with duplex HD clip			✓	✓
LC-XD LC uniboot with XD clip			✓	✓
LC classic uniboot			✓	✓

Recommended fanout pattern matching LISA patching cassettes

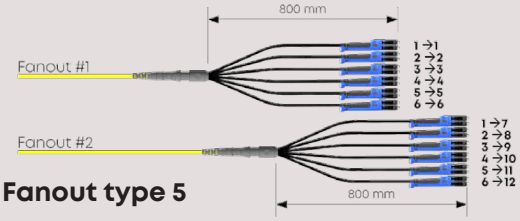
Optipack harness Base-24 to 12x adapter patching cassette 24



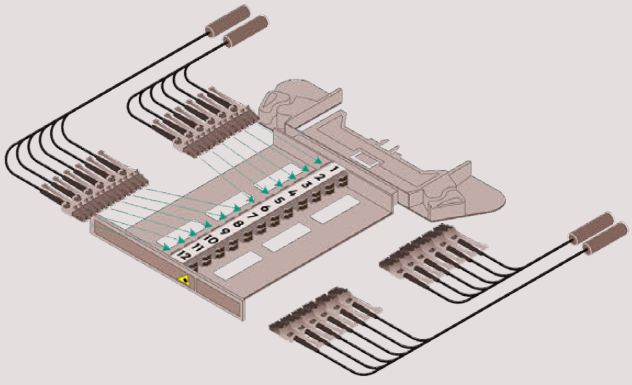
Fanout type 6



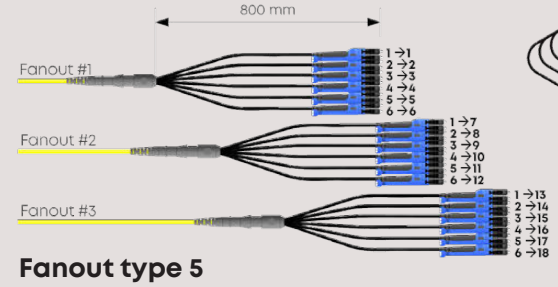
2x Optipack harness Base-12e or Base-12 to 12x adapter patching cassette 12 12



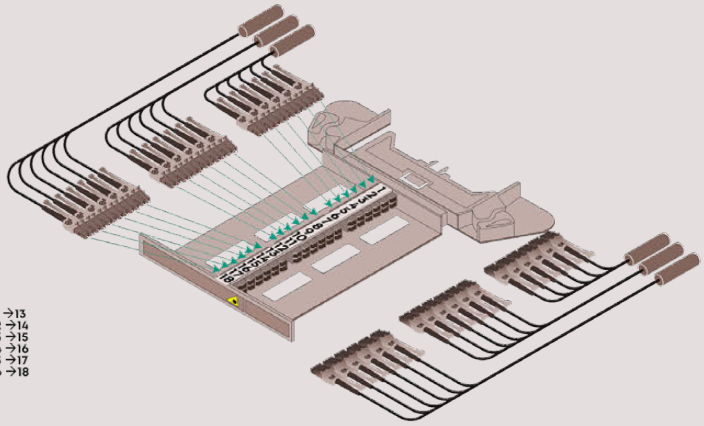
Fanout type 5



3x Optipack harness Base-12e or Base-12 to 18x adapter patching cassette 12 12



Fanout type 5

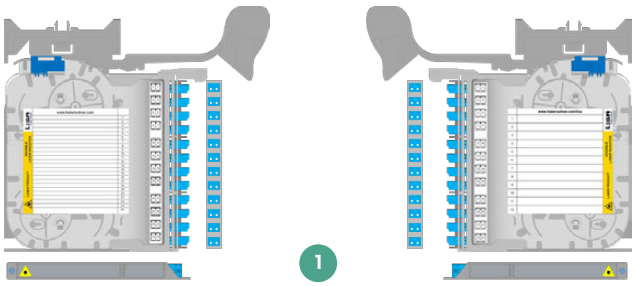


LISA splicing LC

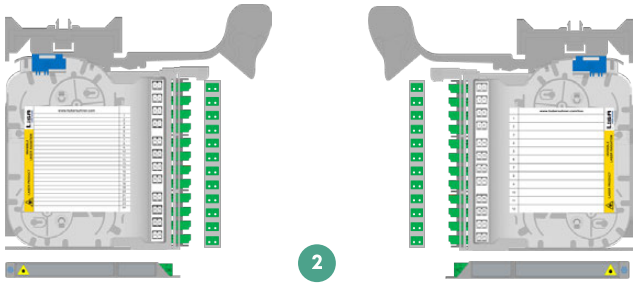
LISA splicing cassette 12x LCd

L R

No colour code - all pigtails same colour - heatshrink or sandwich

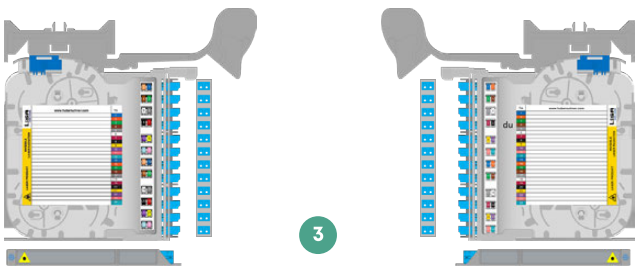


LC-L-SH-88-12-24-09-H1-000-S0 heatshrink
LC-L-SH-88-12-24-09-S0-000-S0 sandwich
heatshrink LC-R-SH-88-12-24-09-H1-000-S0
sandwich LC-R-SH-88-12-24-09-S0-000-S0

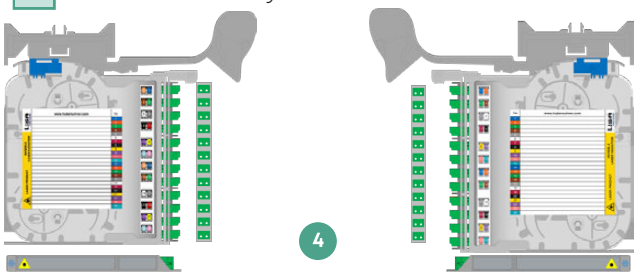


LC-L-SH-89-12-24-09-H1-000-S0 heatshrink
LC-L-SH-89-12-24-09-S0-000-S0 sandwich
heatshrink LC-R-SH-89-12-24-09-H1-000-S0
sandwich LC-R-SH-89-12-24-09-S0-000-S0

Coloured pigtails - according to TIA colour code - heatshrink only - individual or ribbon



LC-L-SH-88-12-24-09-H1-040-S0 individual
LC-L-RH-88-12-24-09-H1-040-S0 ribbon
individual LC-R-SH-88-12-24-09-H1-040-S0
ribbon LC-R-SH-88-12-24-09-H1-040-S0

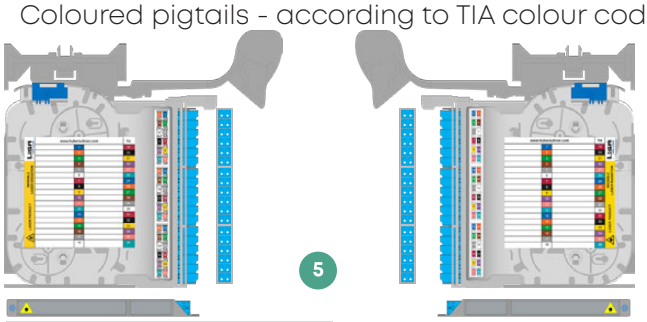


LC-L-SH-89-12-24-09-H1-040-S0 individual
LC-L-RH-89-12-24-09-H1-040-S0 ribbon
individual LC-R-SH-89-12-24-09-H1-040-S0
ribbon LC-R-RH-89-12-24-09-H1-040-S0

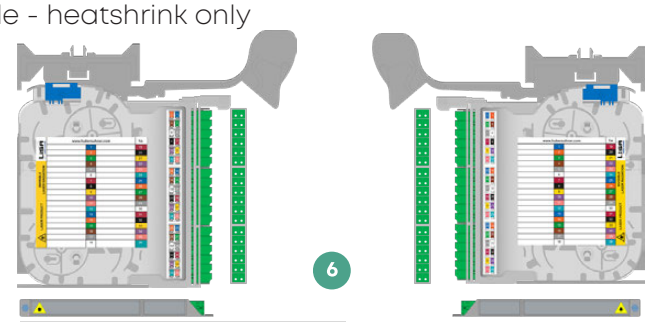
LISA splicing cassette 18x LCd

L R

Coloured pigtails - according to TIA colour code - heatshrink only



LC-L-SH-88-18-36-09-H1-040-S0 individual
LC-L-RH-88-18-36-09-H1-040-S0 ribbon
individual LC-R-SH-88-18-36-09-H1-040-S0
ribbon LC-R-SH-88-18-36-09-H1-040-S0

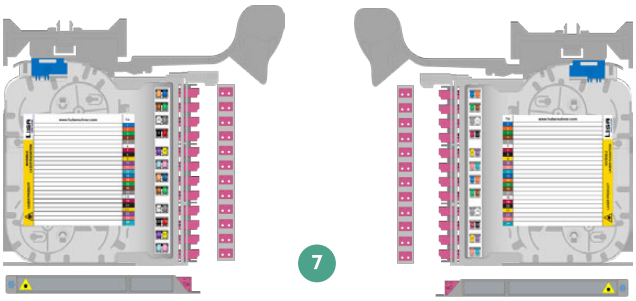


LC-L-SH-89-18-36-09-H1-040-S0 individual
LC-L-RH-89-18-36-09-H1-040-S0 ribbon
individual LC-R-SH-89-18-36-09-H1-040-S0
ribbon LC-R-RH-89-18-36-09-H1-040-S0

* 18x LCd supports LC-XD or LC uniboot patch cords only

LISA splicing cassette 12x LCd multimode

Coloured pigtails - according to TIA colour code - heatshrink only

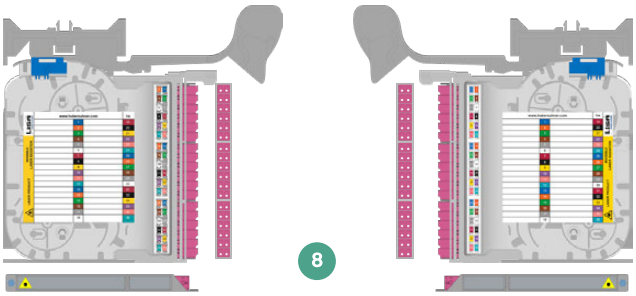


`LC-L-SH-88-12-24-54-H1-040-L0` heatshrink

heatshrink `LC-R-SH-88-12-24-09-H1-040-L0`

LISA splicing cassette 18x LCd multimode

Coloured pigtails - according to TIA colour code - heatshrink only

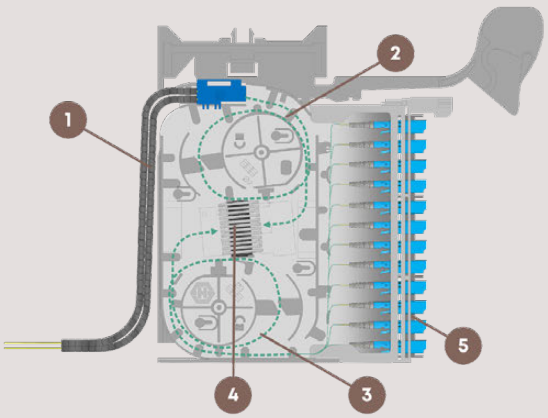


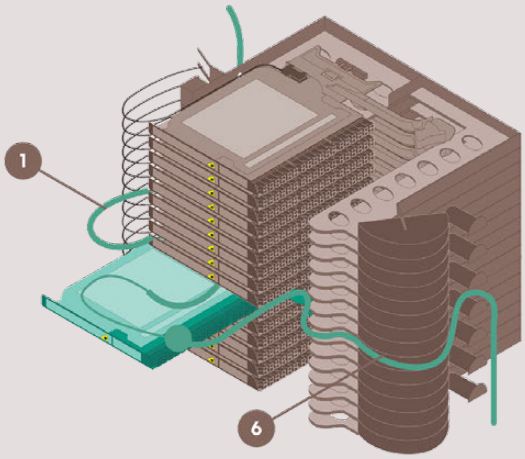
`LC-L-SH-88-18-36-54-H1-040-L0` heatshrink

heatshrink `LC-R-SH-88-18-36-09-H1-040-L0`

* 18x LCd supports LC-XD or LC uniboot patch cords only

LISA cassette splicing scheme





(1) Maximum:
- loose tube protection tubes: 3x Ø5 mm, 4x Ø4 mm, 1x Ø6 mm
- cables: 3x Ø2 mm, 3x Ø3 mm

(2) Routing of incoming fibers

(3) Routing of pigtail

(4) Splice holder:
- individual heatshrink
- ribbon heatshrink
- sandwidch

(5) LC, SC or E-2000 connector

(6) Patch cord routing

LISA splicing LC

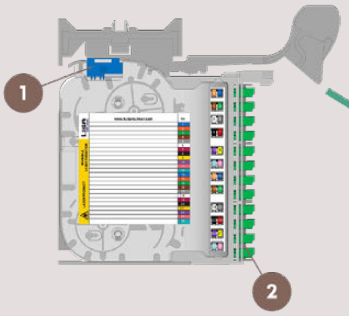
Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85088090	LC-L-SH-88-12-24-09-H1-00O-S0	LISA splicing cassette LC LEFT, 24 fibers, LC UPC duplex, no colour code, heatshrink, singlemode		
	85088674	LC-L-SH-88-12-24-09-S0-00O-S0	LISA splicing cassette LC LEFT, 24 fibers, LC UPC duplex, no colour code, sandwich, singlemode		
	85108917	LC-R-SH-88-12-24-09-H1-00O-S0	LISA splicing cassette LC RIGHT, 24 fibers, LC UPC duplex, no colour code, heatshrink, singlemode		
	on request	LC-R-SH-88-12-24-09-S0-00O-S0	LISA splicing cassette LC RIGHT, 24 fibers, LC UPC duplex, no colour code, sandwich, singlemode		
2	85088093	LC-L-SH-89-12-24-09-H1-00O-S0	LISA splicing cassette LC LEFT, 24 fibers, LC APC duplex, no colour code, heatshrink, singlemode		
	on request	LC-L-SH-89-12-24-09-S0-00O-S0	LISA splicing cassette LC LEFT, 24 fibers, LC APC duplex, no colour code, ribbon, singlemode		
	85111134	LC-R-SH-89-12-24-09-H1-00O-S0	LISA splicing cassette LC RIGHT, 24 fibers, LC APC duplex, no colour code, heatshrink, singlemode		
	on request	LC-R-SH-89-12-24-09-S0-00O-S0	LISA splicing cassette LC RIGHT, 24 fibers, LC APC duplex, no colour code, ribbon, singlemode		
3	85099647	LC-L-SH-88-12-24-09-H1-04O-S0	LISA splicing cassette LC LEFT, 24 fibers, LC UPC duplex, TIA colour code, heatshrink, singlemode		
	85134925	LC-L-RH-88-12-24-09-H1-04O-S0	LISA splicing cassette LC LEFT, 24 fibers, LC UPC duplex, TIA colour code, ribbon, singlemode		
	85128214	LC-R-SH-88-12-24-09-H1-04O-S0	LISA splicing cassette LC RIGHT, 24 fibers, LC UPC duplex, TIA colour code, heatshrink, singlemode		
	85158824	LC-R-RH-88-12-24-09-H1-04O-S0	LISA splicing cassette LC RIGHT, 24 fibers, LC UPC duplex, TIA colour code, ribbon, singlemode		
4	85101367	LC-L-SH-89-12-24-09-H1-04O-S0	LISA splicing cassette LC LEFT, 24 fibers, LC APC duplex, TIA colour code, heatshrink, singlemode		
	85134926	LC-L-RH-89-12-24-09-H1-04O-S0	LISA splicing cassette LC LEFT, 24 fibers, LC APC duplex, TIA colour code, ribbon, singlemode		
	85111137	LC-R-SH-89-12-24-09-H1-04O-S0	LISA splicing cassette LC RIGHT, 24 fibers, LC APC duplex, TIA colour code, heatshrink, singlemode		
	85163175	LC-R-RH-89-12-24-09-H1-04O-S0	LISA splicing cassette LC RIGHT, 24 fibers, LC APC duplex, TIA colour code, ribbon, singlemode		
5	85127816	LC-L-SH-88-18-36-09-H1-04O-S0	LISA splicing cassette LC LEFT, 36 fibers, LC UPC duplex, TIA colour code, heatshrink, singlemode		
	on request	LC-L-RH-88-18-36-09-H1-04O-S0	LISA splicing cassette LC LEFT, 36 fibers, LC UPC duplex, TIA colour code, ribbon, singlemode		
	85143797	LC-R-SH-88-18-36-09-H1-04O-S0	LISA splicing cassette LC RIGHT, 36 fibers, LC UPC duplex, TIA colour code, heatshrink, singlemode		
	85155868	LC-R-RH-88-18-36-09-H1-04O-S0	LISA splicing cassette LC RIGHT, 36 fibers, LC UPC duplex, TIA colour code, ribbon, singlemode		
6	85202480	LC-L-SH-89-18-36-09-H1-04O-S0	LISA splicing cassette LC LEFT, 36 fibers, LC APC duplex, TIA colour code, heatshrink, singlemode		
	on request	LC-L-RH-89-18-36-09-H1-04O-S0	LISA splicing cassette LC LEFT, 36 fibers, LC APC duplex, TIA colour code, ribbon, singlemode		
	on request	LC-R-SH-89-18-36-09-H1-04O-S0	LISA splicing cassette LC RIGHT, 36 fibers, LC APC duplex, TIA colour code, heatshrink, singlemode		
	on request	LC-R-RH-89-18-36-09-H1-04O-S0	LISA splicing cassette LC RIGHT, 36 fibers, LC APC duplex, TIA colour code, ribbon, singlemode		
7	85088676	LC-L-SH-88-12-24-54-H1-04O-L0	LISA splicing cassette LC LEFT, 24 fibers, LC duplex, TIA colour code, heatshrink, multimode OM4		
	85111140	LC-R-SH-88-12-24-54-H1-04O-L0	LISA splicing cassette LC RIGHT, 24 fibers, LC duplex, TIA colour code, heatshrink, multimode OM4		
8	on request	LC-L-SH-88-18-36-54-H1-04O-L0	LISA splicing cassette LC LEFT, 36 fibers, LC duplex, TIA colour code, heatshrink, multimode OM4		
	on request	LC-R-SH-88-18-36-54-H1-04O-L0	LISA splicing cassette LC RIGHT, 36 fibers, LC duplex, TIA colour code, heatshrink, multimode OM4		

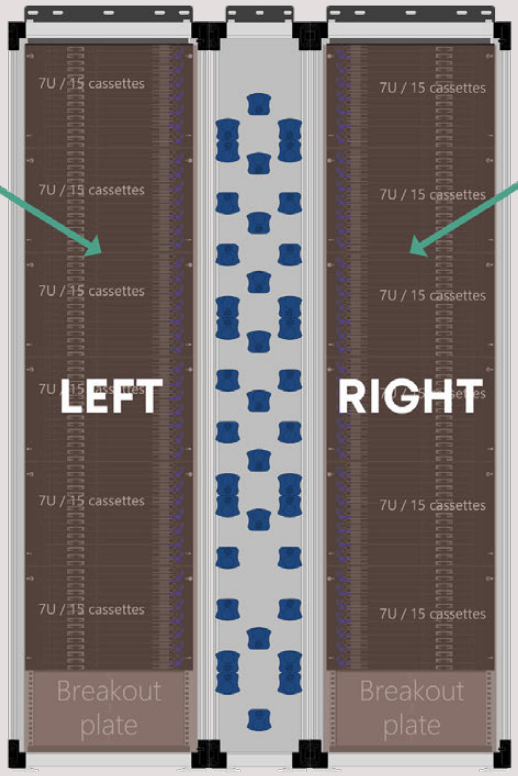
LISA LEFT and RIGHT cassettes

L

LEFT cassette

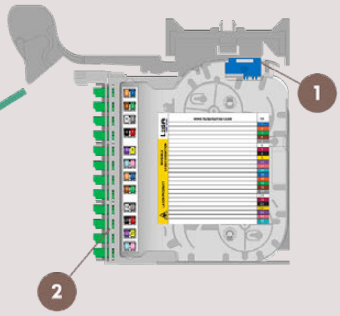


LISA **LEFT** cassette is oriented in the way that the incoming cables **(1)** enter cassette from the left side and patch field **(2)** is on the right side.



R

RIGHT cassette

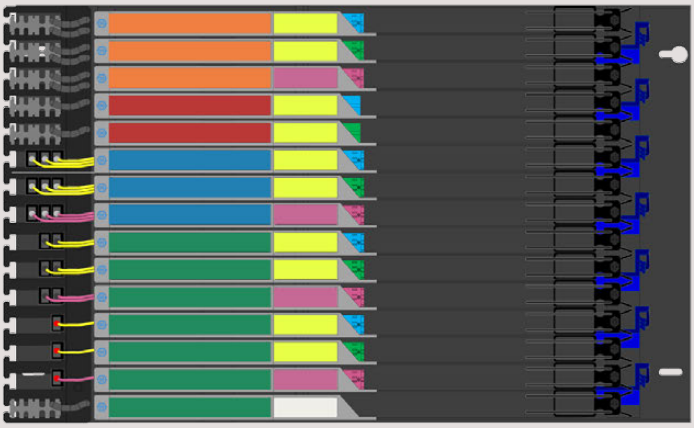


LISA **RIGHT** cassette is oriented in the way that the incoming cables **(1)** enter cassette from the right side and patch field **(2)** is on the left side.

Warning
LEFT cassettes should be only used in combination with **LEFT** LISA chassis, and **RIGHT** cassettes should be only used in combination with **RIGHT** LISA chassis.

LISA cassette colour differentiation labelling

LISA cassettes are supplied with 2 sets of colour strips that can be inserted in the label holder.





1 Larger label 2 Smaller label

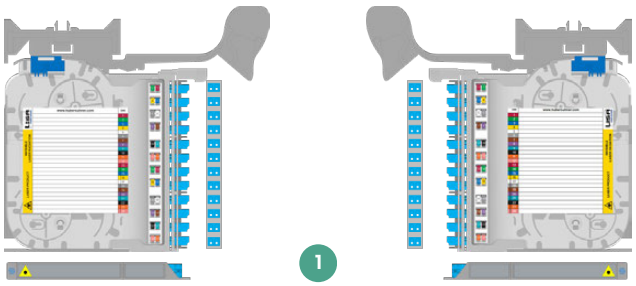
Strip colour	Example of use
RAL 6024 Traffic Green RGB(34,139,94)	Horizontal cabling
RAL 2003 Pastel Orange RGB(240,127,65)	Redundant cabling
RAL 5015 Sky Blue RGB(34,128,178)	Backbone cabling
RAL 3020 Traffic Red RGB(186,56,55)	Equipment cabling
RAL 1060 Sulfur Yellow RGB(231,255,70)	Singlemode fiber
RAL 6027 Light Green RGB(130,190,186)	Multimode OM3
RAL 4003 Heather violet RGB(198,105,149)	Multimode OM4
RAL 7040 Window grey RGB(157,163,168)	Other application
RAL 9010 Pure White RGB(240,239,232)	Other application

LISA splicing LC - DIN colour code

LISA splicing cassette 12x LCd DIN colour code

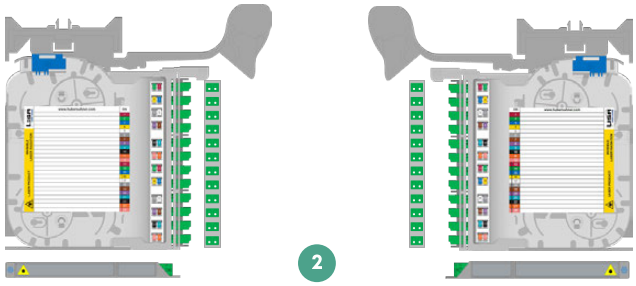
L R

Coloured pigtails - according to DIN colour code - sandwich only



LC-L-SH-88-12-24-09-S0-020-S0 sandwich

sandwich LC-R-SH-88-12-24-09-S0-020-S0



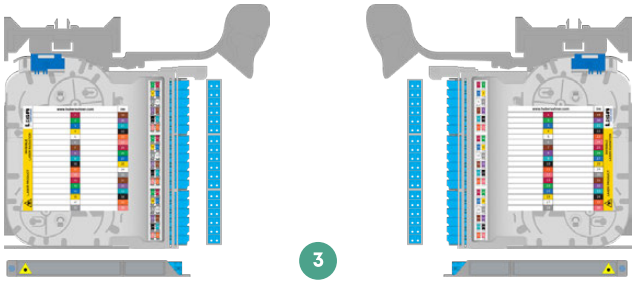
LC-L-SH-89-12-24-09-S0-020-S0 sandwich

sandwich LC-R-SH-89-12-24-09-S0-020-S0

LISA splicing cassette 18x LCd DIN colour code

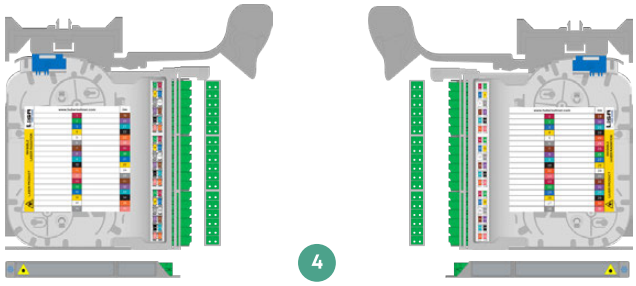
L R

Coloured pigtails - according to DIN colour code - sandwich only



LC-L-SH-88-18-36-09-S0-020-S0 sandwich

sandwich LC-R-SH-88-18-36-09-S0-020-S0



LC-L-SH-89-18-36-09-S0-020-S0 sandwich

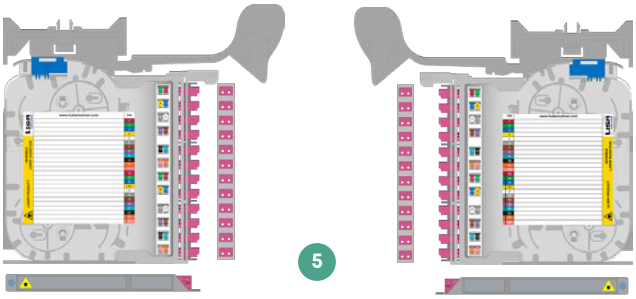
sandwich LC-R-SH-89-18-36-09-S0-020-S0

* 18x LCd supports LC-XD or LC uniboot patch cords only

LISA splicing cassette 12x LCd multimode DIN colour code

L R

Coloured pigtails - according to DIN colour code - sandwich only

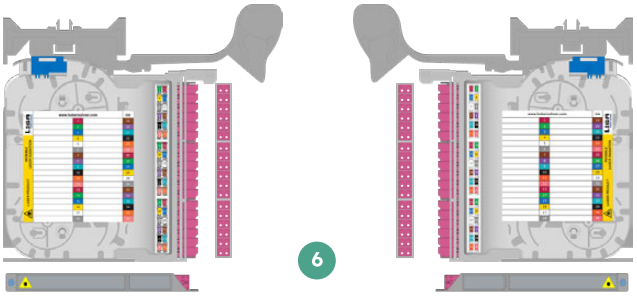


LC-L-SH-88-12-24-54-S0-020-L0 sandwich

sandwich LC-R-SH-88-12-24-54-S0-020-L0

LISA splicing cassette 18x LCd multimode DIN colour code

Coloured pigtails - according to TIA colour code - heatshrink only



`LC-L-SH-88-18-36-54-S0-02O-L0` sandwich

sandwich `LC-R-SH-88-18-36-54-S0-02O-L0`

* 18x LCd supports LC-XD or LC uniboot patch cords only

Ordering information

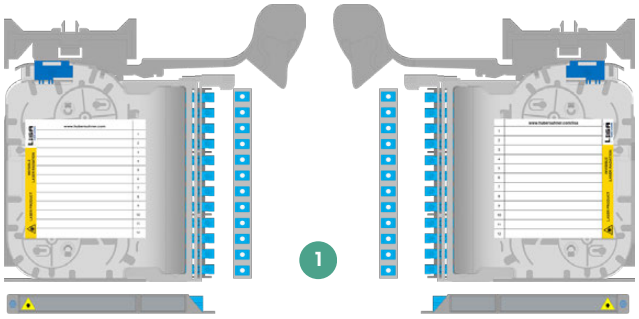
#	Item number	Descriptive code	Item text	LT
1	85135441	LC-L-SH-88-12-24-09-S0-02O-S0	LISA splicing cassette LC LEFT, 24 fibers, LC UPC duplex, DIN colour code, sandwich splice protectors, singlemode	
	85159560	LC-R-SH-88-12-24-09-S0-02O-S0	LISA splicing cassette LC RIGHT, 24 fibers, LC UPC duplex, DIN colour code, sandwich splice protectors, singlemode	
2	85144371	LC-L-SH-89-12-24-09-S0-02O-S0	LISA splicing cassette LC LEFT, 24 fibers, LC APC duplex, DIN colour code, sandwich splice protectors, singlemode	
	85144373	LC-R-SH-89-12-24-09-S0-02O-S0	LISA splicing cassette LC RIGHT, 24 fibers, LC APC duplex, DIN colour code, sandwich splice protectors, singlemode	
3	on request	LC-L-SH-88-18-36-09-S0-02O-S0	LISA splicing cassette LC LEFT, 36 fibers, LC UPC duplex, DIN colour code, sandwich splice protectors, singlemode	
	on request	LC-R-SH-88-18-36-09-S0-02O-S0	LISA splicing cassette LC RIGHT, 36 fibers, LC UPC duplex, DIN colour code, sandwich splice protectors, singlemode	
4	on request	LC-L-SH-89-18-36-09-S0-02O-S0	LISA splicing cassette LC LEFT, 36 fibers, LC APC duplex, DIN colour code, sandwich splice protectors, singlemode	
	85146149	LC-R-SH-89-18-36-09-S0-02O-S0	LISA splicing cassette LC RIGHT, 36 fibers, LC APC duplex, DIN colour code, sandwich splice protectors, singlemode	
5	85135442	LC-L-SH-88-12-24-54-S0-02O-L0	LISA splicing cassette LC LEFT, 24 fibers, LC duplex, DIN colour code, sandwich splice protectors, multimode OM4	
	85144372	LC-R-SH-88-12-24-54-S0-02O-L0	LISA splicing cassette LC RIGHT, 24 fibers, LC duplex, DIN colour code, sandwich splice protectors, multimode OM4	
6	on request	LC-L-SH-88-18-36-54-S0-02O-L0	LISA splicing cassette LC LEFT, 36 fibers, LC duplex, DIN colour code, sandwich splice protectors, multimode OM4	
	on request	LC-R-SH-88-18-36-54-S0-02O-L0	LISA splicing cassette LC RIGHT, 36 fibers, LC duplex, DIN colour code, sandwich splice protectors, multimode OM4	

LISA splicing others

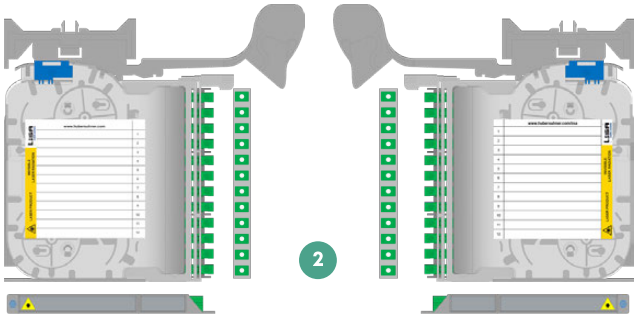
LISA splicing cassette 12x SC

L R

No colour code - all pigtails same colour - heatshrink only

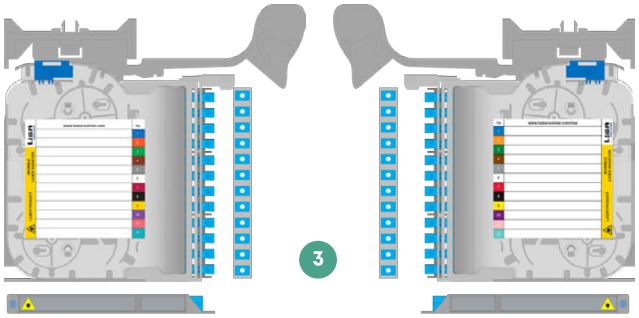


LC-L-SH-70-12-12-09-H1-00O-S0 heatshrink
heatshrink LC-R-SH-70-12-12-09-H1-00O-S0

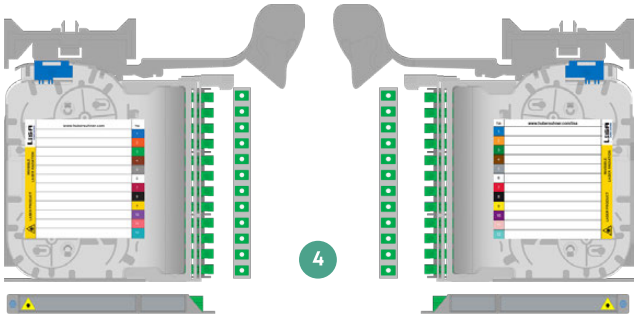


LC-L-SH-73-12-12-09-H1-00O-S0 heatshrink
heatshrink LC-R-SH-73-12-12-09-H1-00O-S0

Coloured pigtails - according to TIA colour code - heatshrink only



LC-L-SH-70-12-12-09-H1-04O-S0 heatshrink
heatshrink LC-R-SH-70-12-12-09-H1-04O-S0

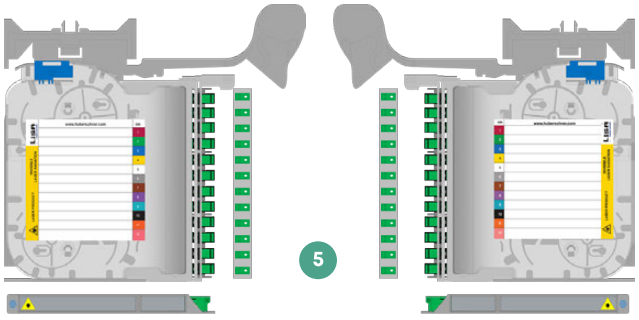


LC-L-SH-73-12-12-09-H1-04O-S0 heatshrink
heatshrink LC-R-SH-73-12-12-09-H1-04O-S0

LISA splicing cassette E-2000 according to DIN colour code

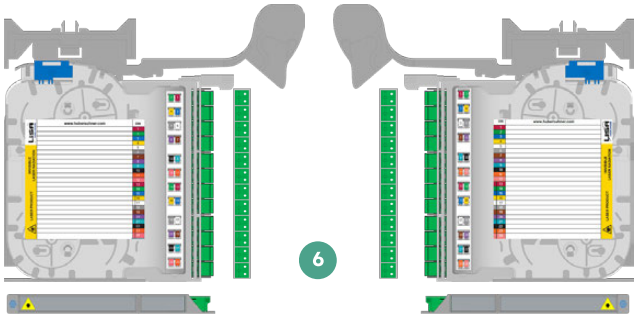
L R

12x E-2000



LC-L-SH-93-12-12-09-H1-02O-B0 heatshrink
heatshrink LC-R-SH-93-12-12-09-H1-02O-B0

24x E-2000



LC-L-SH-98-12-24-09-H1-02O-B0 heatshrink
heatshrink LC-R-SH-98-12-24-09-H1-02O-B0

Ordering information

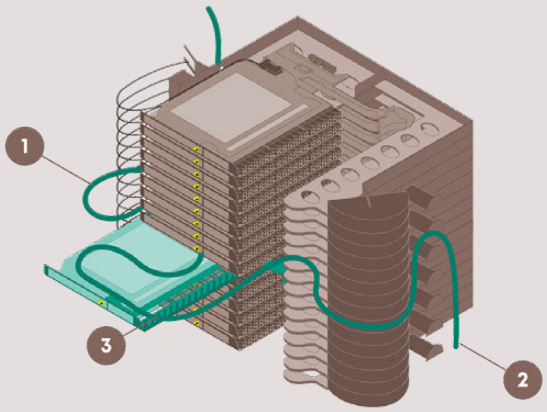
#	Item number	Descriptive code	Item text	LT	URL
1	85088494	LC-L-SH-70-12-12-09-H1-00O-S0	LISA splicing cassette SC LEFT, 12 fibers, SC UPC, no colour code, heatshrink, singlemode		
	on request	LC-R-SH-70-12-12-09-H1-00O-S0	LISA splicing cassette SC RIGHT, 12 fibers, SC UPC, no colour code, heatshrink, singlemode		
2	85137709	LC-L-SH-73-12-12-09-H1-00O-B0	LISA splicing cassette SC LEFT, 12 fibers, SC APC, no colour code, heatshrink, singlemode		
	on request	LC-R-SH-73-12-12-09-H1-00O-B0	LISA splicing cassette SC RIGHT, 12 fibers, SC APC, no colour code, heatshrink, singlemode		
3	on request	LC-L-SH-70-12-12-09-H1-04O-S0	LISA splicing cassette SC LEFT, 12 fibers, SC UPC, TIA colour code, heatshrink, singlemode		
	on request	LC-R-SH-70-12-12-09-H1-04O-S0	LISA splicing cassette SC RIGHT, 12 fibers, SC UPC, TIA colour code, heatshrink, singlemode		
4	85125204	LC-L-SH-73-12-12-09-H1-04O-S0	LISA splicing cassette SC LEFT, 12 fibers, SC APC, TIA colour code, heatshrink, singlemode		
	on request	LC-R-SH-73-12-12-09-H1-04O-S0	LISA splicing cassette SC RIGHT, 12 fibers, SC APC, TIA colour code, heatshrink, singlemode		
5	85088089	LC-L-SH-93-12-12-09-H1-02O-B0	LISA splicing cassette E-2000 LEFT, 12 fibers, E-2000 APC, DIN colour code, heatshrink, singlemode		
	on request	LC-R-SH-93-12-12-09-H1-02O-B0	LISA splicing cassette E-2000 RIGHT, 12 fibers, E-2000 APC, DIN colour code, heatshrink, singlemode		
6	85127357	LC-L-SH-98-12-24-09-H1-02O-B0	LISA splicing cassette E-2000 LEFT, 24 fibers, E-2000 APC duplex, DIN colour code, heatshrink, singlemode		
	on request	LC-R-SH-98-12-24-09-H1-02O-B0	LISA splicing cassette E-2000 RIGHT, 24 fibers, E-2000 APC duplex, DIN colour code, heatshrink, singlemode		

LISA splicing through

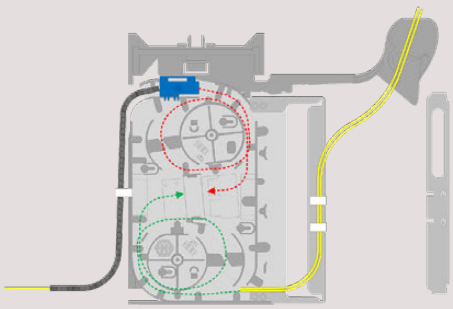
LISA splicing through cassette applications

This product allows two cables to be directly spliced, or a cable spliced to patch cables (duplex or simplex). The result splice connection is protected by the cassette which provides additional safety for critical links.

(1) Outgoing cable
(2) Incoming cable or patch cord
(3) No connector (fixation plate instead)

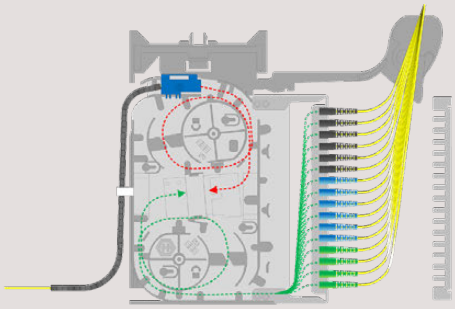


Option 1



Splicing **to multi-fiber** cables:
- max 36 splices per cassette

Option 2

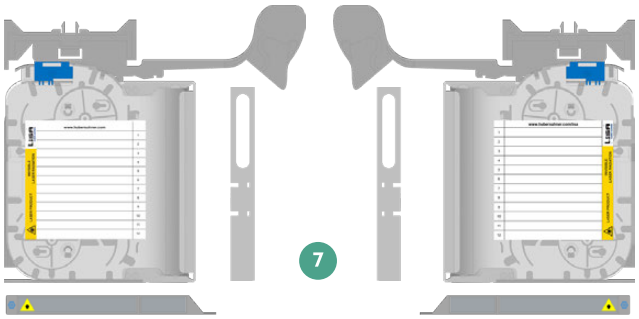


Splicing **to patch** cables:
- 16x patch cables per cassette max
- Cable relief clamps and boots not included, must be ordered separately

LISA splicing through cassettes

L R

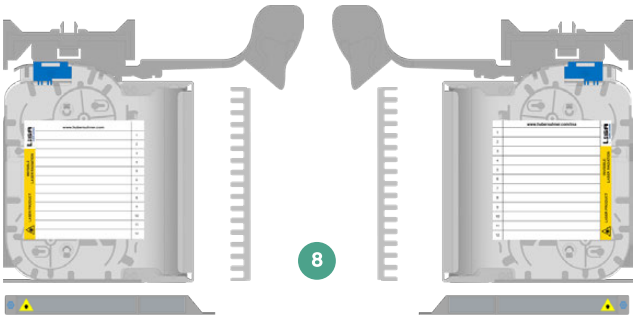
Multi-fiber cable splicing



LC-L-SH-Xi-00-00-00-00-00O-00

LC-R-SH-Xi-00-00-00-00-00O-00

Patch cable splicing



LC-L-SH-P2-00-00-00-00-00O-00

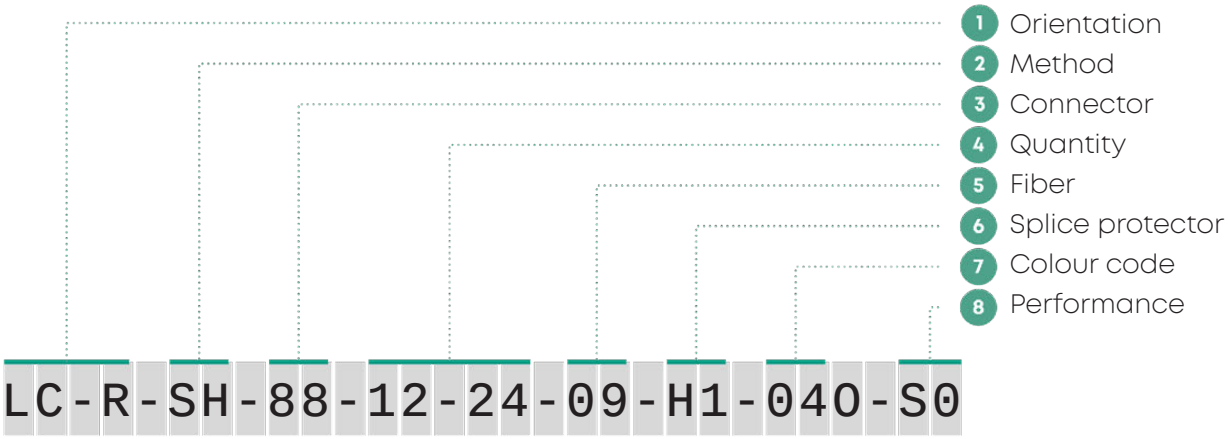
LC-R-SH-P2-00-00-00-00-00O-00

Ordering information

#	Item number	Descriptive code	Item text	LT
1	85103773	LC-L-SH-Xi-00-24-00-H1-00O-00	LISA splicing through LEFT, for Optipack cable splicing	
	85147644	LC-R-SH-Xi-00-24-00-H1-00O-00	LISA splicing through RIGHT, for Optipack cable splicing	
2	on request	LC-L-SH-P2-00-00-00-00-000-00	LISA splicing through LEFT, for patch cord splicing	
	on request	LC-R-SH-P2-00-00-00-00-000-00	LISA splicing through RIGHT, for patch cord splicing	

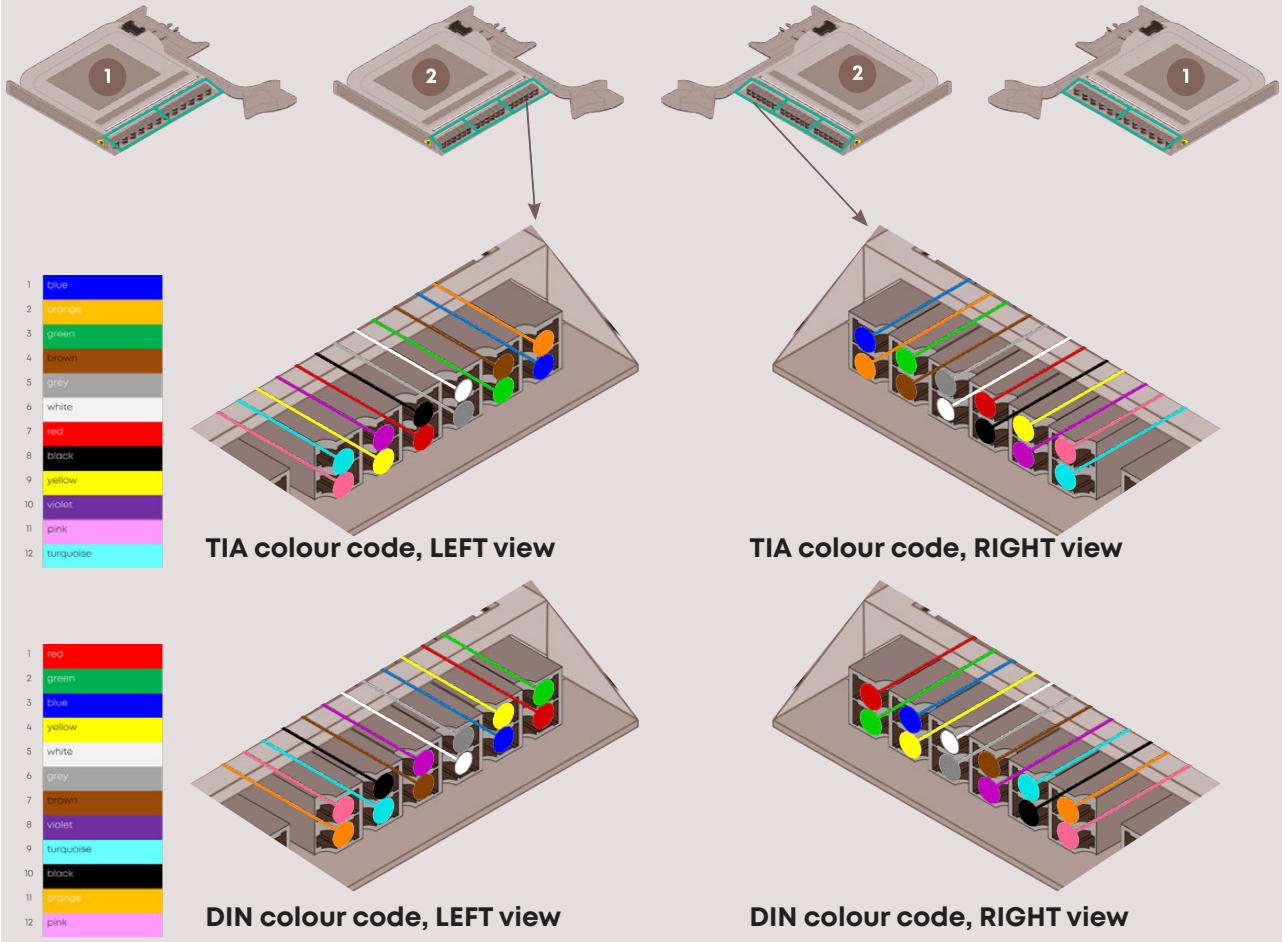
Order code LISA splicing

Order code LISA splicing cassette



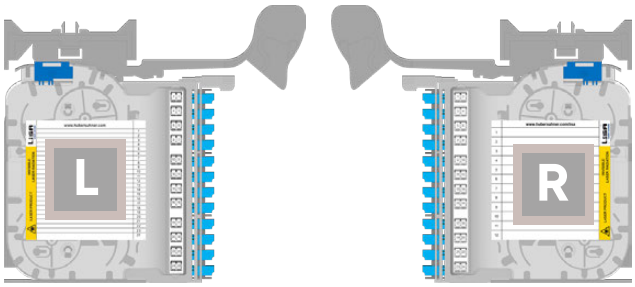
LISA splicing cassette colour code

(1) 24 fiber cassette - 2x pigtail sets
(2) 36 fiber cassette - 3x pigtail sets



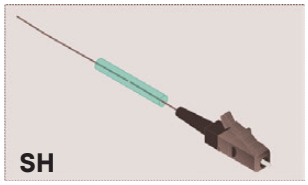
1 Orientation

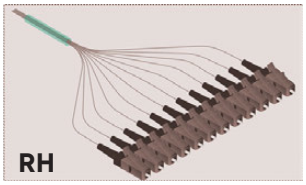
LC-L	LISA cassette LEFT	L
LC-R	LISA cassette RIGHT	R



2 Splicing method

SH	LISA cassette single (individual) pigtail splicing
RH	LISA cassette ribbon pigtail splicing





3 Connector (adapter) type

00	No adapter
88	LC UPC duplex (max 18x)
89	LC APC duplex (max. 18x)
70	SC UPC simplex (max. 12x)
73	SC APC simplex (max. 12x)
90	E-2000 UPC simplex (max. 12x)
93	E-2000 APC simplex (max. 12x)
97	E-2000 UPC duplex (max. 12x)
98	E-2000 APC duplex (max. 12x)
Xi	No adapter, multi-fiber cable splice-through
P2	No adapter, patch cable splice-through

4 Quantity

12-24

Number of pigtails
Number of pigtails shouldn't exceed possible number of connectors

Number of adapters
LISA cassette can be not fully equipped with adapters. Maximum number of adapters depends on adapter type. For example, 18x LC duplex adapters.

5 Fiber

00	No fiber (e.g. splice-through)
09	Singlemode G.652.D
54	Multimode OM4

6 Splice protector

00	No splice holder and protectors
S0	Sandwich splice protector (excl. protectors)
S1	Sandwich splice protector (incl. protectors)
H0	Heatshrink splice holder Ø1.5 x 40 mm or Ø5 x 40 mm ribbon (excl. protectors)
H1	Heatshrink splice holder Ø1.5 x 40 mm or Ø5 x 40 mm ribbon (incl. protectors)

See other splice holder and splice protector options

7 Colour code

00	No colour code - all pigtails same colour
02	DIN colour code
04	TIA colour code

See colour code overview

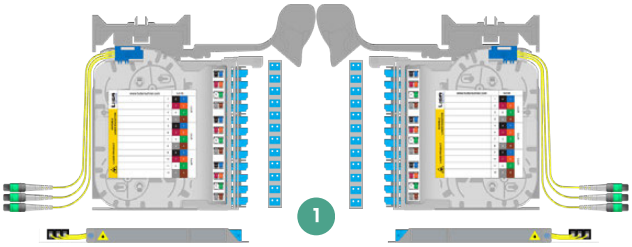
8 Optical performance

00	No fiber
S0	Class S – Singlemode standard
B0	Class B – Singlemode B
L0	Class L – Multimode low-loss
M0	Class M – Multimode standard

LISA MTP cassettes Base-8

MTP to LCd, Base-8, SM UPC

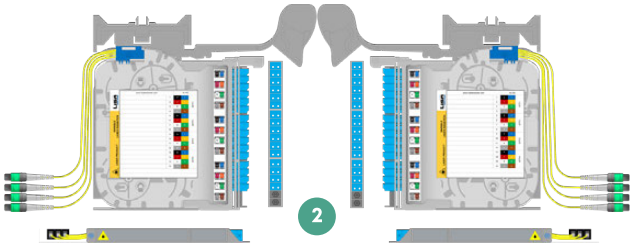
12x LCd, 24x fiber



LC-L-MH-88-12-24-09-F8-NSO-SB

LC-R-MH-88-12-24-09-F8-NSO-SB

16x LCd, 32x fiber



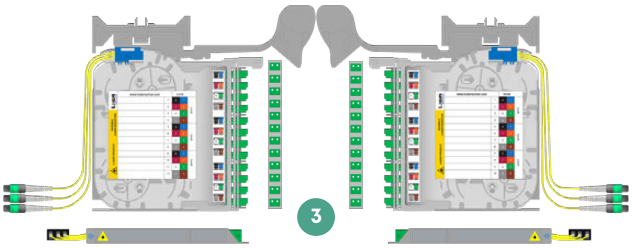
LC-L-MH-88-16-32-09-F8-NSO-SB

LC-R-MH-88-16-32-09-F8-NSO-SB

16x LCd supports LC-XD or LC uniboot patch cords only

MTP to LCd, Base-8, SM APC

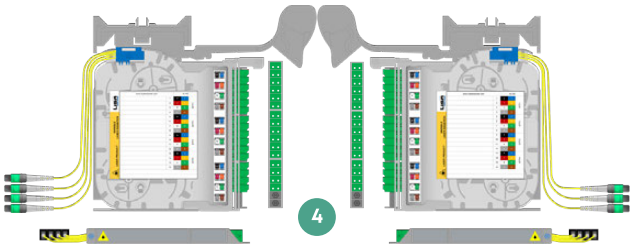
12x LCd, 24x fiber



LC-L-MH-89-12-24-09-F8-NSO-SB

LC-R-MH-89-12-24-09-F8-NSO-SB

16x LCd, 32x fiber



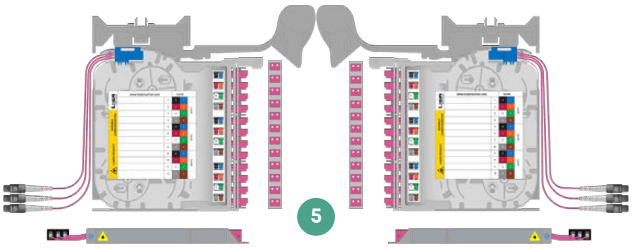
LC-L-MH-89-16-32-09-F8-NSO-SB

LC-R-MH-89-16-32-09-F8-NSO-SB

16x LCd supports LC-XD or LC uniboot patch cords only

MTP to LCd, Base-8, OM4

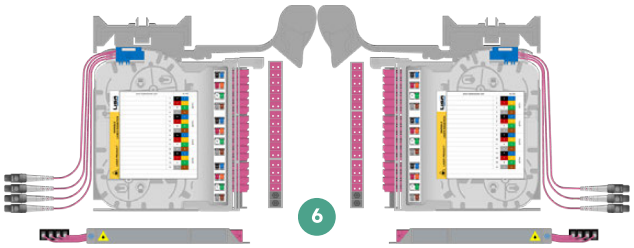
12x LCd, 24x fiber



LC-L-MH-88-12-24-54-F8-NSO-LL

LC-R-MH-88-12-24-54-F8-NSO-LL

16x LCd, 32x fiber



LC-L-MH-88-16-32-54-F8-NSO-LL

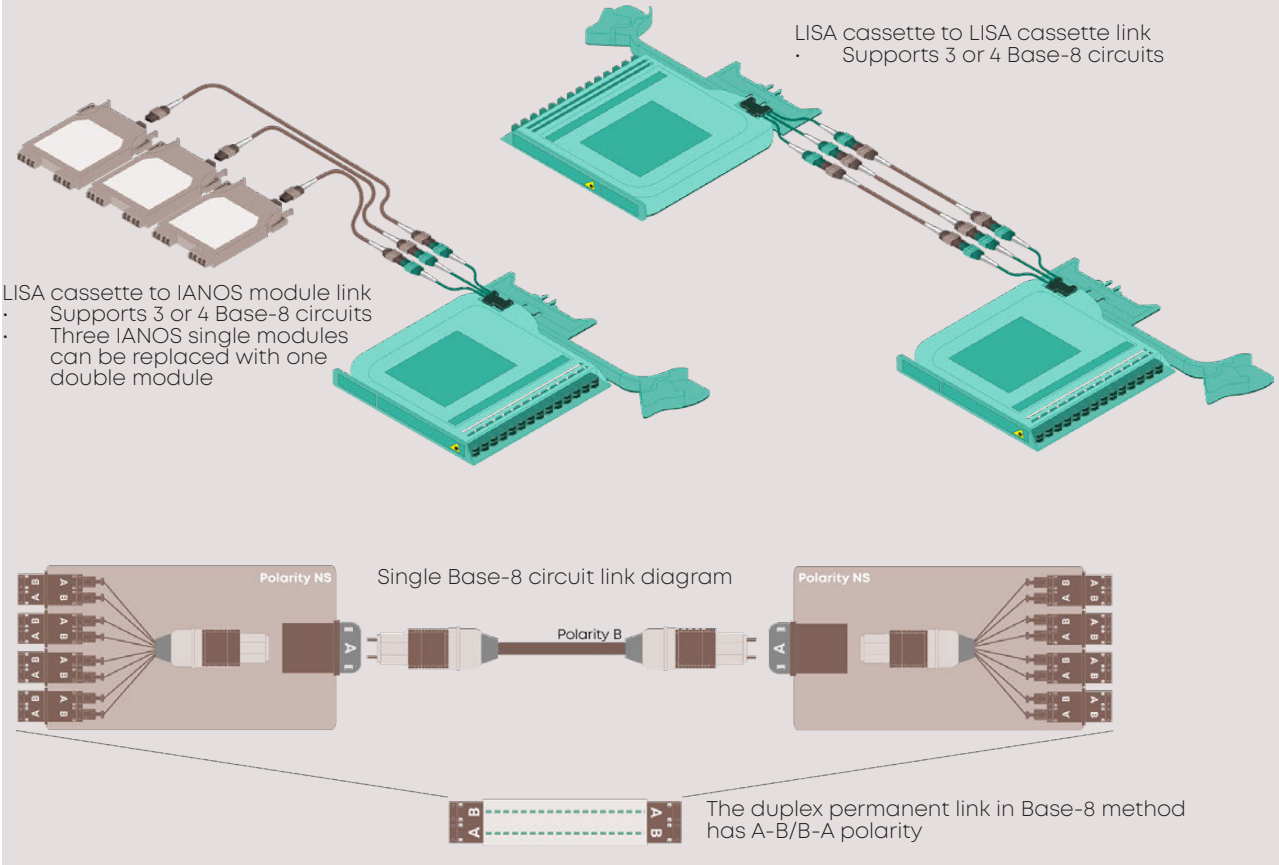
LC-R-MH-88-16-32-54-F8-NSO-LL

16x LCd supports LC-XD or LC uniboot patch cords only

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85124911	LC-L-MH-88-12-24-09-F8-NSO-SB	LISA MTP transition cassette LEFT, Base-8, 12x LCd UPC, 24 fibers, 3x MTP female, polarity NS, singlemode		
	85156995	LC-R-MH-88-12-24-09-F8-NSO-SB	LISA MTP transition cassette RIGHT, Base-8, 12x LCd UPC, 24 fibers, 3x MTP female, polarity NS, singlemode		
2	on request	LC-L-MH-88-16-32-09-F8-NSO-SB	LISA MTP transition cassette LEFT, Base-8, 16x LCd UPC, 32 fibers, 4x MTP female, polarity NS, singlemode		
	on request	LC-R-MH-88-16-32-09-F8-NSO-SB	LISA MTP transition cassette RIGHT, Base-8, 16x LCd UPC, 32 fibers, 4x MTP female, polarity NS, singlemode		
3	85088657	LC-L-MH-89-12-24-09-F8-NSO-SB	LISA MTP transition cassette LEFT, Base-8, 12x LCd APC, 24 fibers, 3x MTP female, polarity NS, singlemode		
	85144815	LC-R-MH-89-12-24-09-F8-NSO-SB	LISA MTP transition cassette RIGHT, Base-8, 12x LCd APC, 24 fibers, 3x MTP female, polarity NS, singlemode		
4	on request	LC-L-MH-89-16-32-09-F8-NSO-SB	LISA MTP transition cassette LEFT, Base-8, 16x LCd APC, 32 fibers, 4x MTP female, polarity NS, singlemode		
	on request	LC-R-MH-89-16-32-09-F8-NSO-SB	LISA MTP transition cassette RIGHT, Base-8, 16x LCd APC, 32 fibers, 4x MTP female, polarity NS, singlemode		
5	85088659	LC-L-MH-88-12-24-54-F8-NSO-LL	LISA MTP transition cassette LEFT, Base-8, 12x LCd, 24 fibers, 3x MTP female, polarity NS, multimode OM4		
	85111139	LC-R-MH-88-12-24-54-F8-NSO-LL	LISA MTP transition cassette RIGHT, Base-8, 12x LCd, 24 fibers, 3x MTP female, polarity NS, multimode OM4		
6	on request	LC-L-MH-88-16-32-54-F8-NSO-LL	LISA MTP transition cassette LEFT, Base-8, 16x LCd, 32 fibers, 4x MTP female, polarity NS, multimode OM4		
	on request	LC-R-MH-88-16-32-54-F8-NSO-LL	LISA MTP transition cassette RIGHT, Base-8, 16x LCd, 32 fibers, 4x MTP female, polarity NS, multimode OM4		

Permanent links with LISA MTP transition Base-8

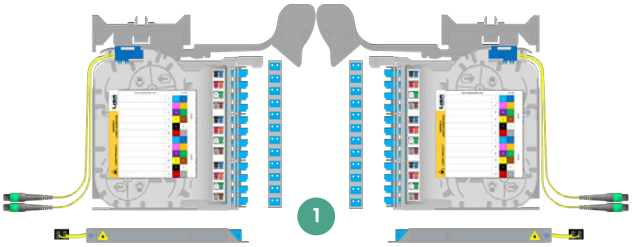


LISA MTP cassettes Base-12e

MTP to LCd, Base-12e, SM UPC

12 L R

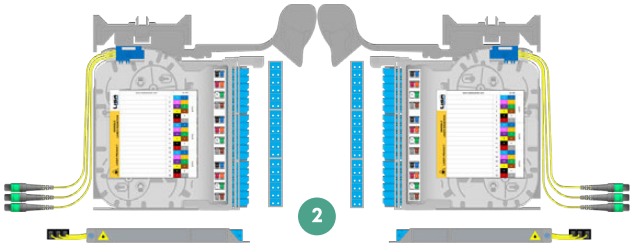
12x LCd, 24x fiber



LC-L-MH-88-12-24-09-F1-NSO-SB

LC-R-MH-88-12-24-09-F1-NSO-SB

18x LCd, 36x fiber



LC-L-MH-88-18-36-09-F1-NSO-SB

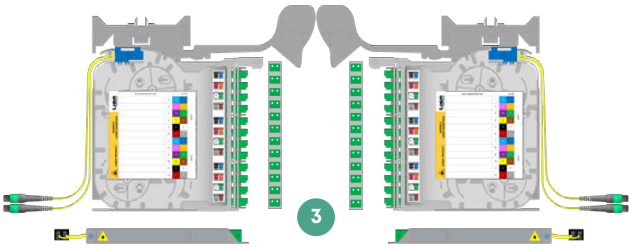
LC-R-MH-88-18-36-09-F1-NSO-SB

18x LCd supports LC-XD or LC uniboot patch cords only

MTP to LCd, Base-12e, SM APC

12 L R

12x LCd, 24x fiber



LC-L-MH-89-12-24-09-F1-NSO-SB

LC-R-MH-89-12-24-09-F1-NSO-SB

18x LCd, 36x fiber



LC-L-MH-89-18-36-09-F1-NSO-SB

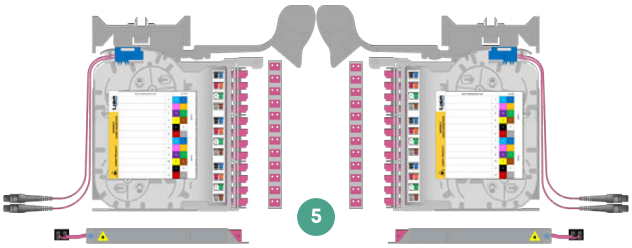
LC-R-MH-89-18-36-09-F1-NSO-SB

18x LCd supports LC-XD or LC uniboot patch cords only

MTP to LCd, Base-12e, OM4

12 L R

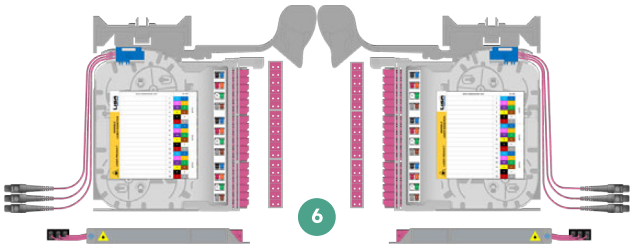
12x LCd, 24x fiber



LC-L-MH-88-12-24-54-F1-NSO-LL

LC-R-MH-88-12-24-54-F1-NSO-LL

18x LCd, 36x fiber



LC-L-MH-88-18-36-54-F1-NSO-LL

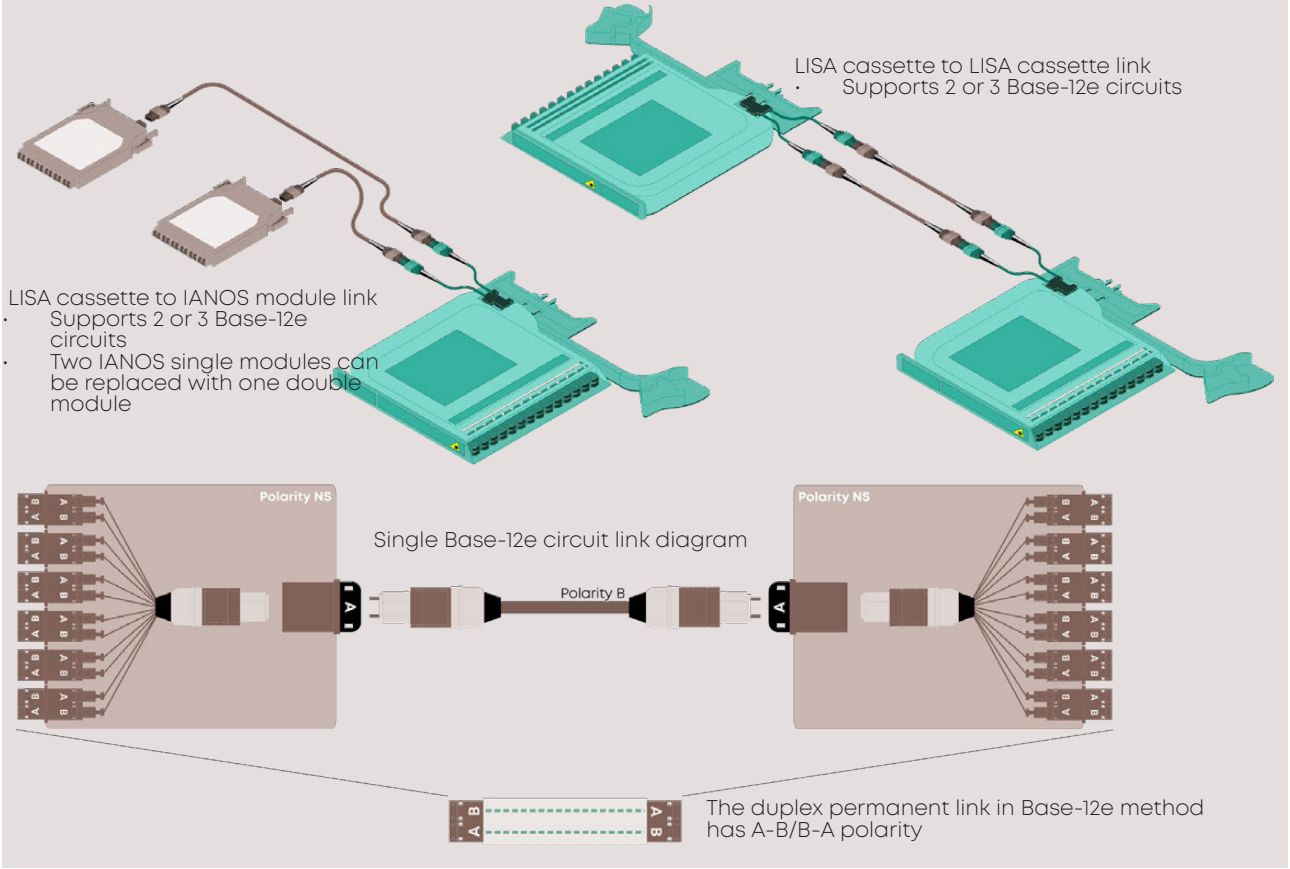
LC-R-MH-88-18-36-54-F1-NSO-LL

18x LCd supports LC-XD or LC uniboot patch cords only

Ordering information

#	Item number	Descriptive code	Item text	LT
1	85156993	LC-L-MH-88-12-24-09-F1-NSO-SB	LISA MTP transition cassette LEFT, Base-12e, 12x LCd UPC, 24 fibers, 2x MTP female, polarity NS, singlemode	
	85156994	LC-R-MH-88-12-24-09-F1-NSO-SB	LISA MTP transition cassette RIGHT, Base-12e, 12x LCd UPC, 24 fibers, 2x MTP female, polarity NS, singlemode	
2	85156990	LC-L-MH-88-18-36-09-F1-NSO-SB	LISA MTP transition cassette LEFT, Base-12e, 18x LCd UPC, 36 fibers, 3x MTP female, polarity NS, singlemode	
	85156992	LC-R-MH-88-18-36-09-F1-NSO-SB	LISA MTP transition cassette RIGHT, Base-12e, 18x LCd UPC, 36 fibers, 3x MTP female, polarity NS, singlemode	
3	85163202	LC-L-MH-89-12-24-09-F1-NSO-SB	LISA MTP transition cassette LEFT, Base-12e, 12x LCd APC, 24 fibers, 2x MTP female, polarity NS, singlemode	
	85163203	LC-R-MH-89-12-24-09-F1-NSO-SB	LISA MTP transition cassette RIGHT, Base-12e, 12x LCd APC, 24 fibers, 2x MTP female, polarity NS, singlemode	
4	85163200	LC-L-MH-89-18-36-09-F1-NSO-SB	LISA MTP transition cassette LEFT, Base-12e, 18x LCd APC, 36 fibers, 3x MTP female, polarity NS, singlemode	
	85163201	LC-R-MH-89-18-36-09-F1-NSO-SB	LISA MTP transition cassette RIGHT, Base-12e, 18x LCd APC, 36 fibers, 3x MTP female, polarity NS, singlemode	
5	85166339	LC-L-MH-88-12-24-54-F1-NSO-LL	LISA MTP transition cassette LEFT, Base-12e, 12x LCd, 24 fibers, 2x MTP female, polarity NS, multimode OM4	
	on request	LC-R-MH-88-12-24-54-F1-NSO-LL	LISA MTP transition cassette RIGHT, Base-12e, 12x LCd, 24 fibers, 2x MTP female, polarity NS, multimode OM4	
6	on request	LC-L-MH-88-18-36-54-F1-NSO-LL	LISA MTP transition cassette LEFT, Base-12e, 18x LCd, 36 fibers, 3x MTP female, polarity NS, multimode OM4	
	on request	LC-R-MH-88-18-36-54-F1-NSO-LL	LISA MTP transition cassette RIGHT, Base-12e, 18x LCd, 36 fibers, 3x MTP female, polarity NS, multimode OM4	

Permanent links with LISA MTP transition Base-12e

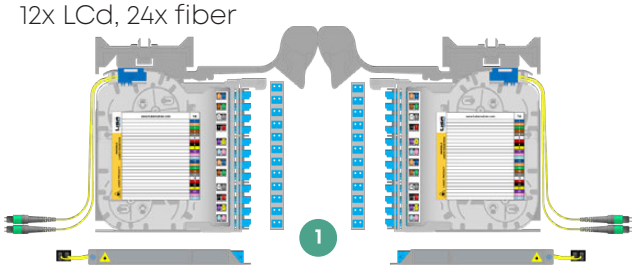


LISA MTP cassettes Base-12

MTP to LCd, Base-12, SM UPC

12 L R

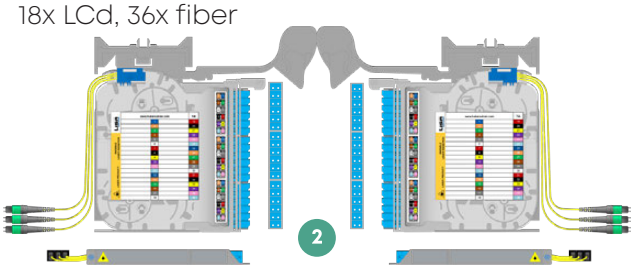
12x LCd, 24x fiber



LC-L-MH-88-12-24-09-M1-ASO-SB

LC-R-MH-88-12-24-09-M1-ASO-SB

18x LCd, 36x fiber



LC-L-MH-88-18-36-09-M1-ASO-SB

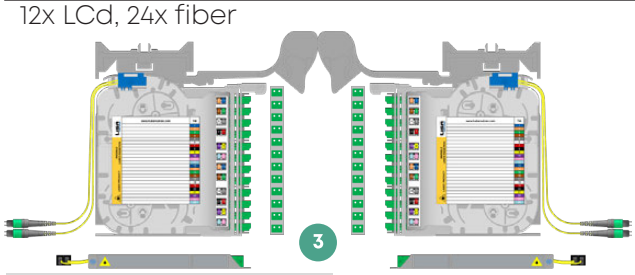
LC-R-MH-88-18-36-09-M1-ASO-SB

18x LCd supports LC-XD or LC uniboot patch cords only

MTP to LCd, Base-12, SM APC

12 L R

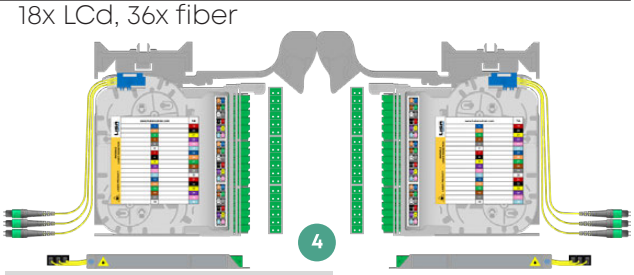
12x LCd, 24x fiber



LC-L-MH-89-12-24-09-M1-ASO-SB

LC-R-MH-89-12-24-09-M1-ASO-SB

18x LCd, 36x fiber



LC-L-MH-89-18-36-09-M1-ASO-SB

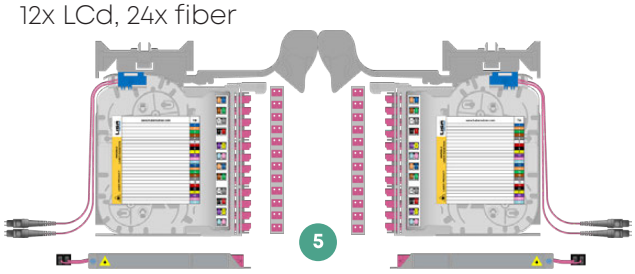
LC-R-MH-89-18-36-09-M1-ASO-SB

18x LCd supports LC-XD or LC uniboot patch cords only

MTP to LCd, Base-12, OM4

12 L R

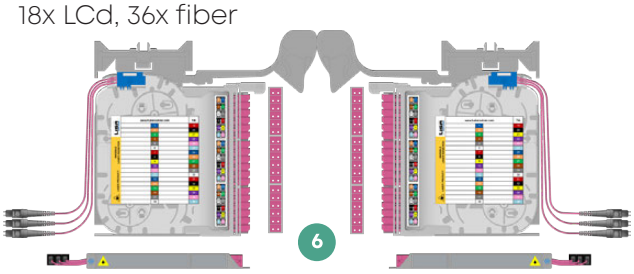
12x LCd, 24x fiber



LC-L-MH-88-12-24-54-M1-ASO-LL

LC-R-MH-88-12-24-54-M1-ASO-LL

18x LCd, 36x fiber



LC-L-MH-88-18-36-54-M1-ASO-LL

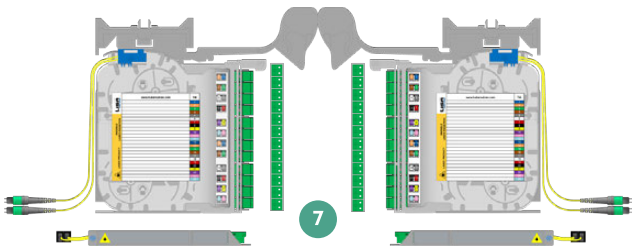
LC-R-MH-88-18-36-54-M1-ASO-LL

18x LCd supports LC-XD or LC uniboot patch cords only

MTP to E-2000, Base-12, SM APC

12 L R

12x E-2000 duplex, 24x fiber



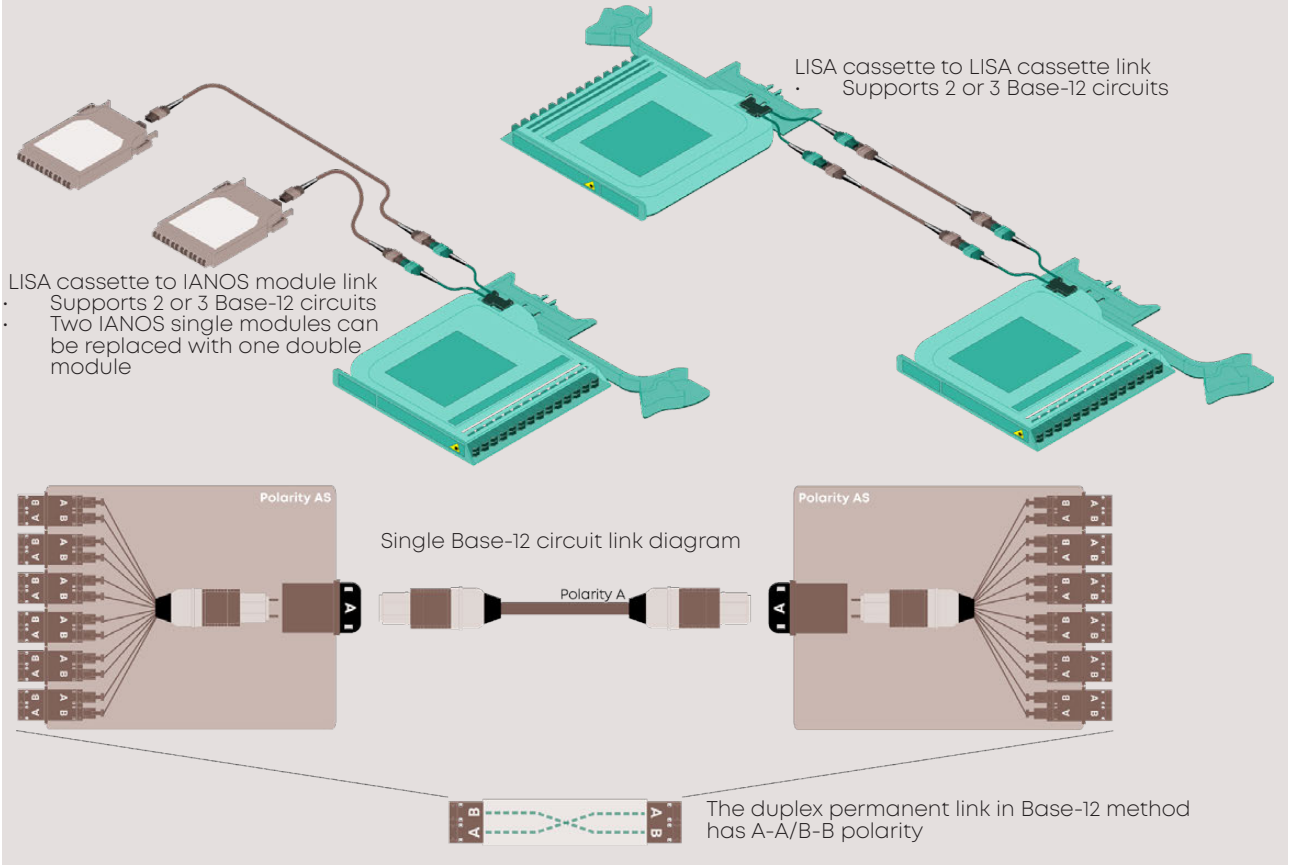
LC-L-MH-98-12-24-09-M1-ASS-BB

LC-R-MH-98-12-24-09-M1-ASS-BB

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85086075	LC-L-MH-88-12-24-09-M1-ASO-SB	LISA MTP transition cassette LEFT, Base-12, 12x LCd UPC, 24 fibers, 2x MTP male, polarity AS, singlemode	★	
	85116040	LC-R-MH-88-12-24-09-M1-ASO-SB	LISA MTP transition cassette RIGHT, Base-12, 12x LCd UPC, 24 fibers, 2x MTP male, polarity AS, singlemode		
2	85092876	LC-L-MH-88-18-36-09-M1-ASO-SB	LISA MTP transition cassette LEFT, Base-12, 18x LCd UPC, 36 fibers, 3x MTP male, polarity AS, singlemode	★	
	85111133	LC-R-MH-88-18-36-09-M1-ASO-SB	LISA MTP transition cassette RIGHT, Base-12, 18x LCd UPC, 36 fibers, 3x MTP male, polarity AS, singlemode		
3	85088660	LC-L-MH-89-12-24-09-M1-ASO-SB	LISA MTP transition cassette LEFT, Base-12, 12x LCd APC, 24 fibers, 2x MTP male, polarity AS, singlemode		
	85148688	LC-R-MH-89-12-24-09-M1-ASO-SB	LISA MTP transition cassette RIGHT, Base-12, 12x LCd APC, 24 fibers, 2x MTP male, polarity AS, singlemode		
4	85088080	LC-L-MH-89-18-36-09-M1-ASO-SB	LISA MTP transition cassette LEFT, Base-12, 18x LCd APC, 36 fibers, 3x MTP male, polarity AS, singlemode		
	85146150	LC-R-MH-89-18-36-09-M1-ASO-SB	LISA MTP transition cassette RIGHT, Base-12, 18x LCd APC, 36 fibers, 3x MTP male, polarity AS, singlemode		
5	85088662	LC-L-MH-88-12-24-54-M1-ASO-LL	LISA MTP transition cassette LEFT, Base-12, 12x LCd, 24 fibers, 2x MTP male, polarity AS, multimode OM4		
	85154351	LC-R-MH-88-12-24-54-M1-ASO-LL	LISA MTP transition cassette RIGHT, Base-12, 12x LCd, 24 fibers, 2x MTP male, polarity AS, multimode OM4		
6	85117583	LC-L-MH-88-18-36-54-M1-ASO-LL	LISA MTP transition cassette LEFT, Base-12, 18x LCd, 36 fibers, 3x MTP male, polarity AS, multimode OM4		
	on request	LC-R-MH-88-18-36-54-M1-ASO-LL	LISA MTP transition cassette RIGHT, Base-12, 18x LCd, 36 fibers, 3x MTP male, polarity AS, multimode OM4		
7	on request	LC-L-MH-98-12-24-09-M1-ASS-BB	LISA MTP transition cassette LEFT, Base-12, 12x E-2000d APC, 24f, 2x MTP male, polarity AS, singlemode		
	on request	LC-R-MH-98-12-24-09-M1-ASS-BB	LISA MTP transition cassette RIGHT, Base-12, 12x E-2000d APC, 24f, 2x MTP male, polarity AS, singlemode		

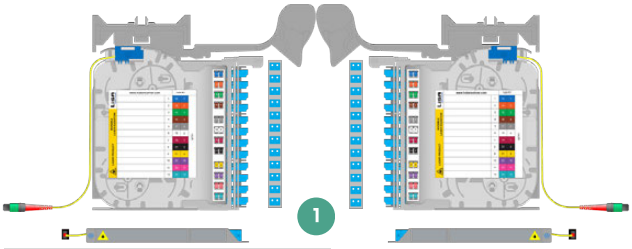
Permanent links with LISA MTP transition Base-12



LISA MTP cassettes Base-24

MTP to LCd, Base-24, SM UPC

12x LCd, 24x fiber

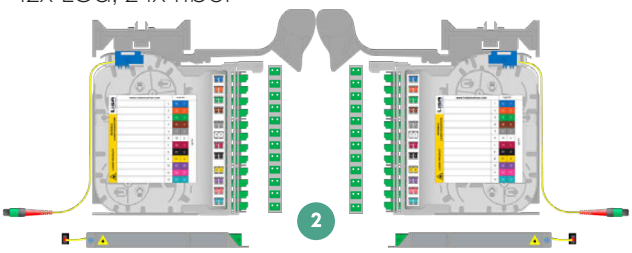


LC-L-MH-88-12-24-09-F2-R10-SB

LC-R-MH-88-12-24-09-F2-R10-SB

MTP to LCd, Base-24, SM APC

12x LCd, 24x fiber

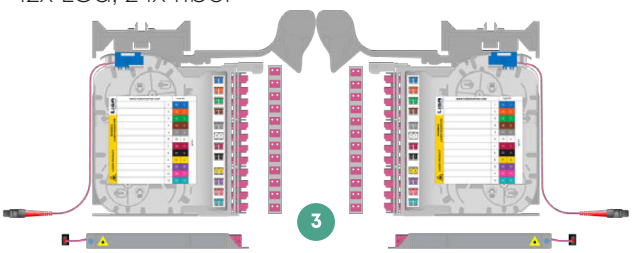


LC-L-MH-89-12-24-09-F2-R10-SB

LC-R-MH-89-12-24-09-F2-R10-SB

MTP to LCd, Base-24, OM4

12x LCd, 24x fiber



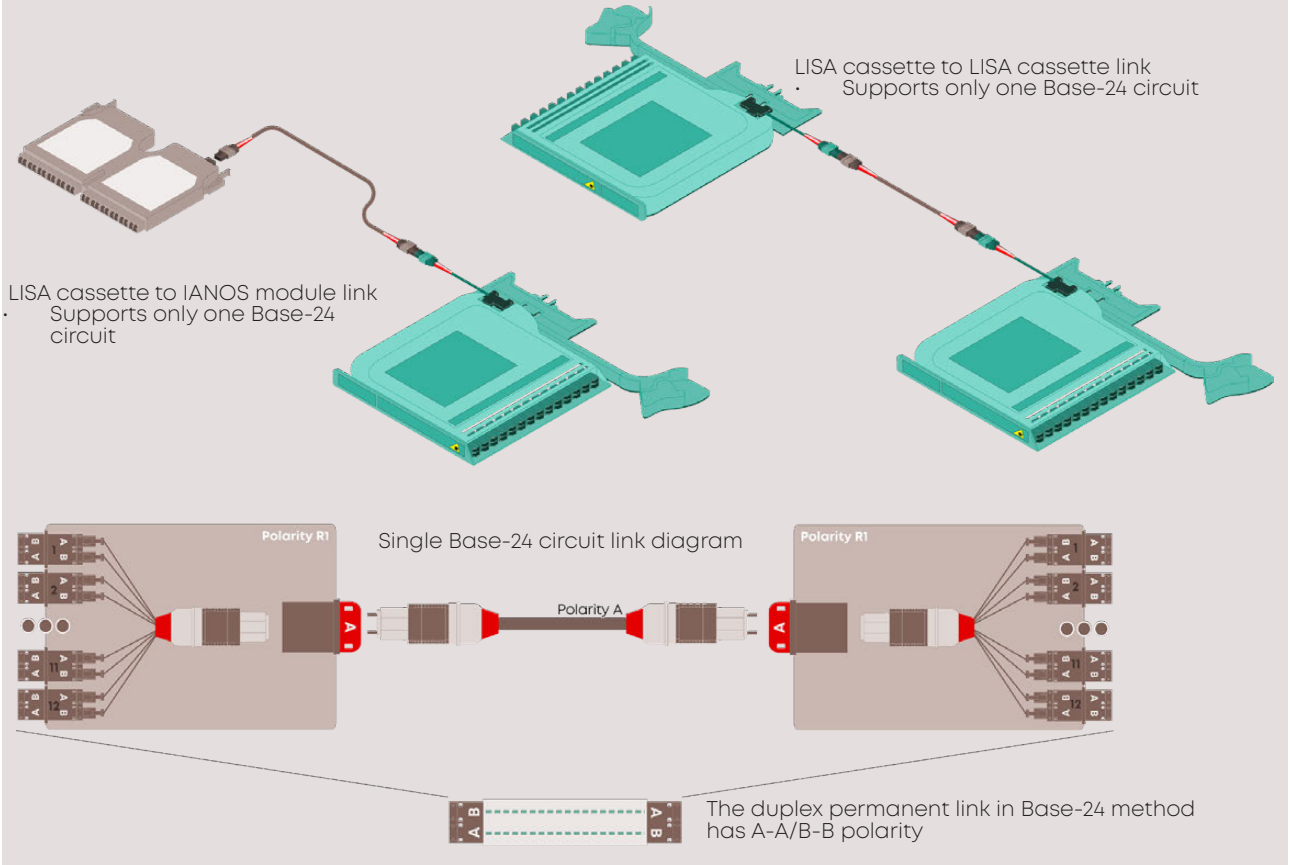
LC-L-MH-88-12-24-54-F2-R10-LL

LC-R-MH-88-12-24-54-F2-R10-LL

Ordering information

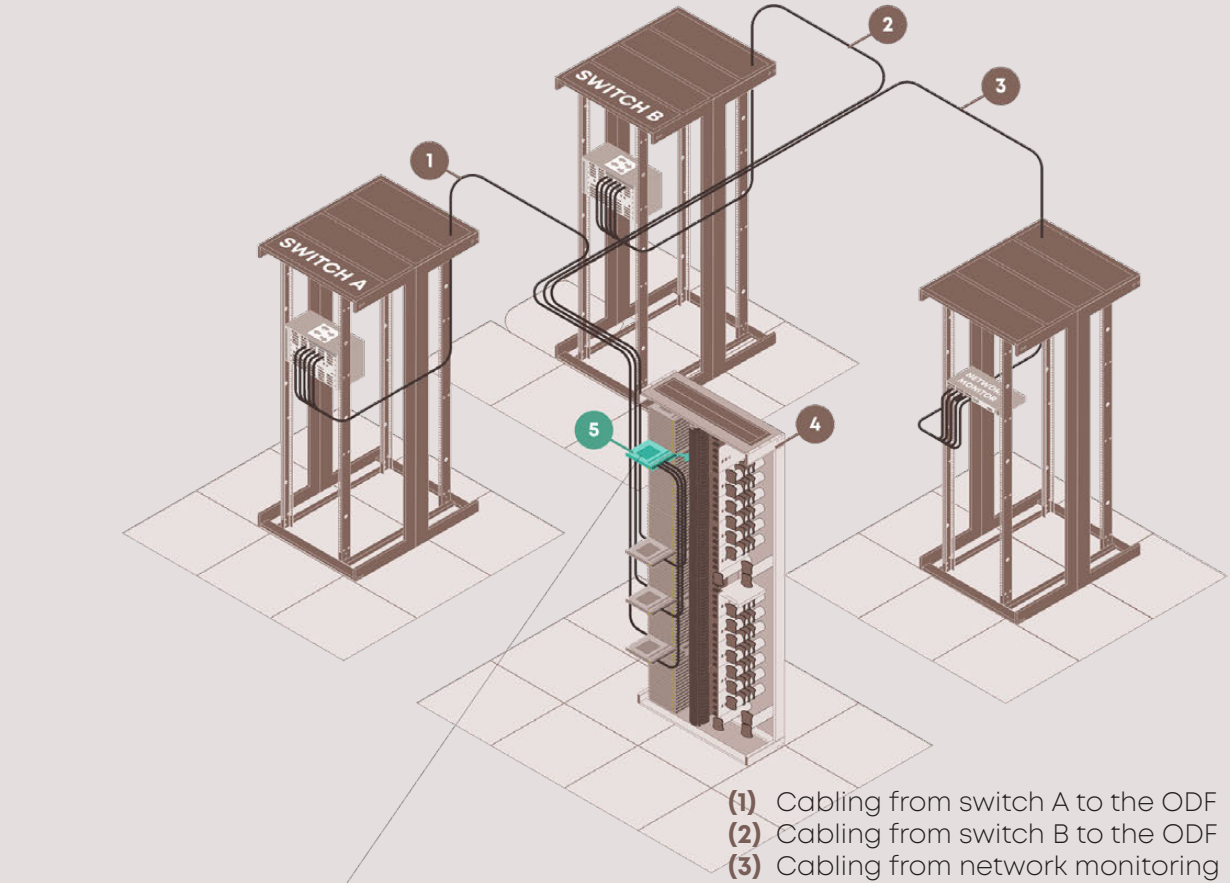
#	Item number	Descriptive code	Item text	LT	URL
1	85094161	LC-L-MH-88-12-24-09-F2-R1O-SB	LISA MTP transition cassette LEFT, Base-24, 12x LCd UPC, 24 fibers, 1x MTP female, polarity R1, singlemode		
	on request	LC-R-MH-88-12-24-09-F2-R1O-SB	LISA MTP transition cassette RIGHT, Base-24, 12x LCd UPC, 24 fibers, 1x MTP female, polarity R1, singlemode		
2	85088663	LC-L-MH-89-12-24-09-F2-R1O-SB	LISA MTP transition cassette LEFT, Base-24, 12x LCd APC, 24 fibers, 1x MTP female, polarity R1, singlemode		
	on request	LC-R-MH-89-12-24-09-F2-R1O-SB	LISA MTP transition cassette RIGHT, Base-24, 12x LCd APC, 24 fibers, 1x MTP female, polarity R1, singlemode		
3	85088671	LC-L-MH-88-12-24-54-F2-R1O-LL	LISA MTP transition cassette LEFT, Base-24, 12x LCd, 24 fibers, 1x MTP female, polarity R1, multimode OM4		
	on request	LC-R-MH-88-12-24-54-F2-R1O-LL	LISA MTP transition cassette RIGHT, Base-24, 12x LCd, 24 fibers, 1x MTP female, polarity R1, multimode OM4		

Permanent links with LISA MTP transition Base-24

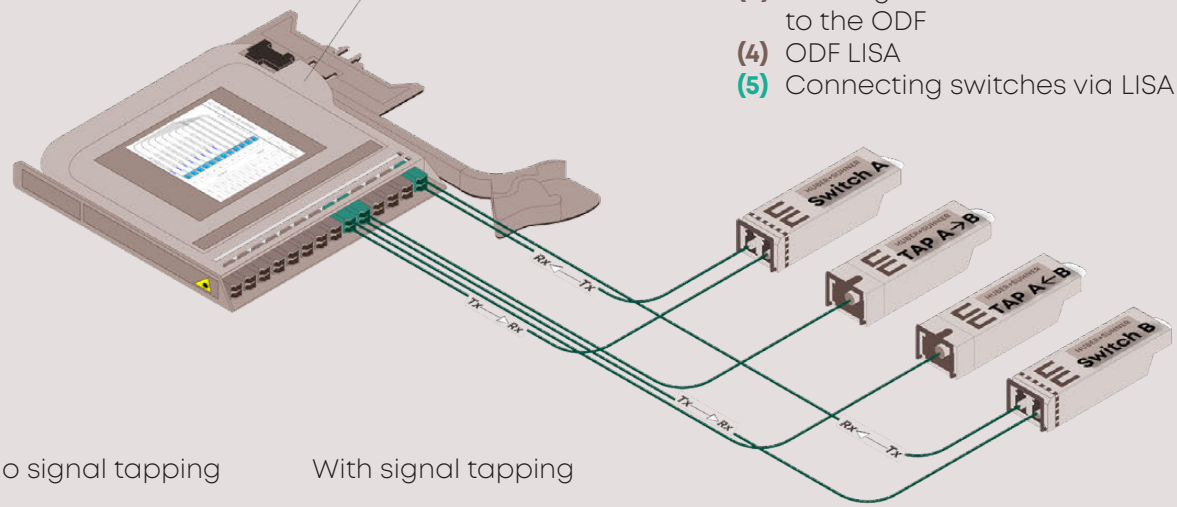


LISA TAP

Cross-connecting two switches via LISA TAP



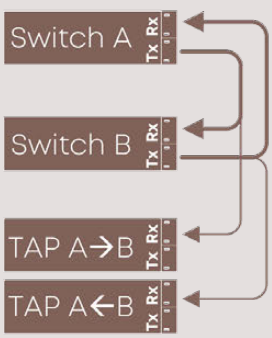
(1) Cabling from switch A to the ODF
(2) Cabling from switch B to the ODF
(3) Cabling from network monitoring to the ODF
(4) ODF LISA
(5) Connecting switches via LISA TAP



No signal tapping

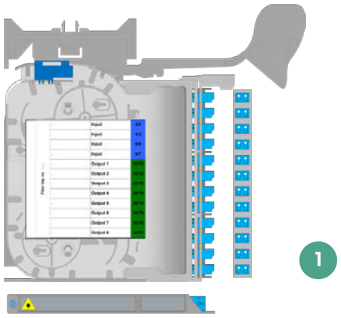


With signal tapping



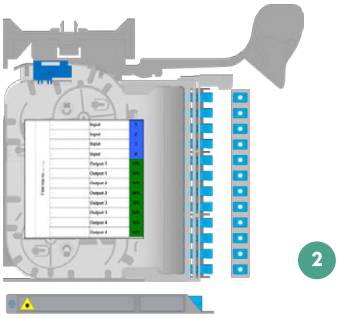
LISA TAP cassettes

LC connectivity



LC-L-CH-8888-08Fxxxx-09-01ONN

SC connectivity

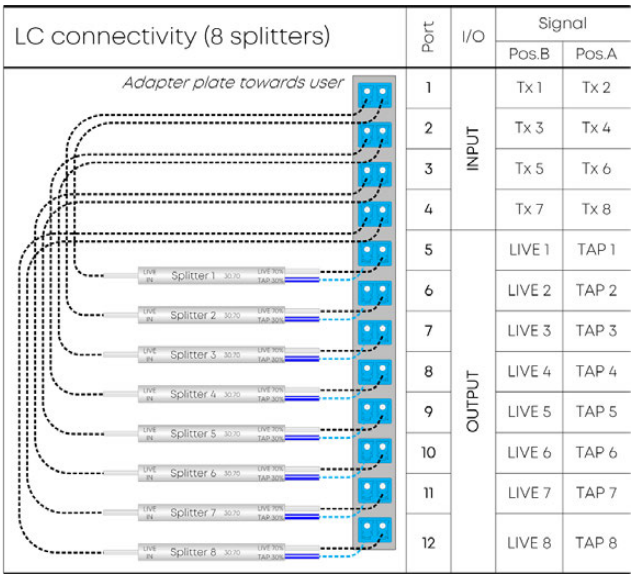


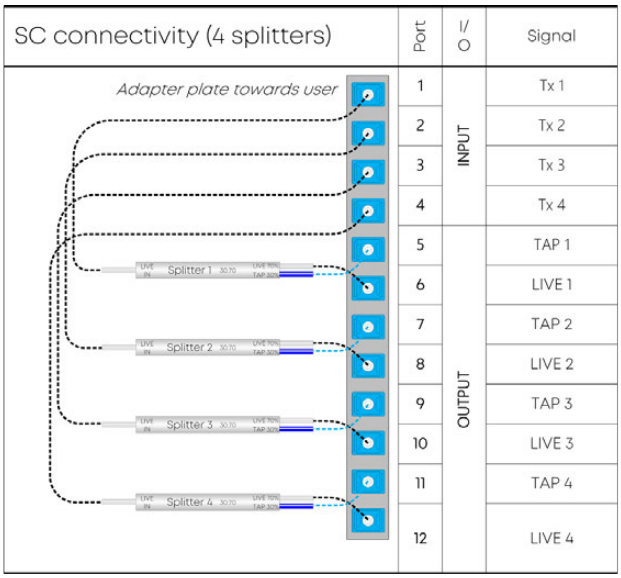
LC-L-CH-7070-04Fxxxx-09-01ONN

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85106062	LC-L-CH-8888-08F5050-09-01ONN	LISA splitter cassette LEFT, 8 x 50:50 FBT splitters, 12 x LCD adaptor blue, OS2, UPC		
	85106063	LC-L-CH-8888-08F7030-09-01ONN	LISA splitter cassette LEFT, 8 x 70:30 FBT splitters, 12 x LCD adaptor blue, OS2, UPC		
	on request	LC-L-CH-8888-08F8020-09-01ONN	LISA splitter cassette LEFT, 8 x 80:20 FBT splitters, 12 x LCD adaptor blue, OS2, UPC		
	85106064	LC-L-CH-8888-08F9010-09-01ONN	LISA splitter cassette LEFT, 8 x 90:10 FBT splitters, 12 x LCD adaptor blue, OS2, UPC		
2	85106061	LC-L-CH-7070-04F5050-09-01ONN	LISA splitter cassette LEFT, 4 x 50:50 FBT splitters, 12 x SC adaptor blue, OS2, UPC		
	85099260	LC-L-CH-7070-04F7030-09-01ONN	LISA splitter cassette LEFT, 4 x 70:30 FBT splitters, 12 x SC adaptor blue, OS2, UPC		
	85099259	LC-L-CH-7070-04F9010-09-01ONN	LISA splitter cassette LEFT, 4 x 90:10 FBT splitters, 12 x SC adaptor blue, OS2, UPC		

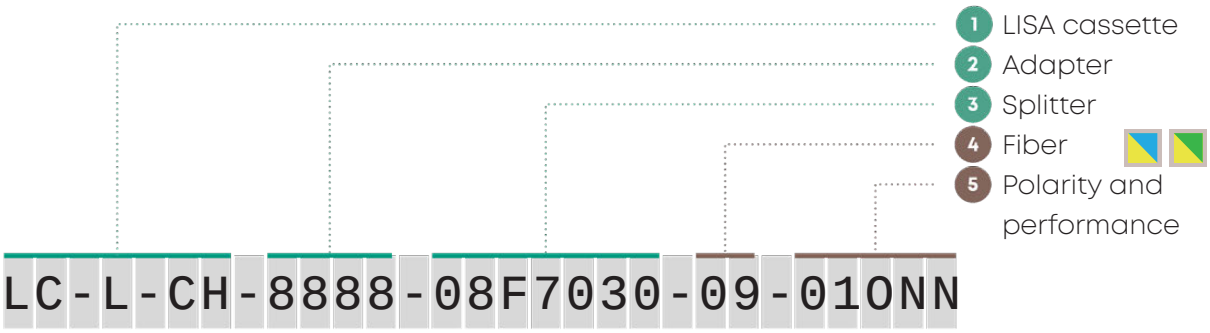
LISA TAP fiber allocation





Order code LISA TAP

Order code LISA TAP cassette



1 LISA cassette type

LC-L-CH	LISA TAP/splitter cassette LEFT	L
LC-R-CH	LISA TAP/splitter cassette RIGHT	R

2 Adapter type

8888

Output adapter (LIVE & TAP)

Input adapter (Tx)

70	SC UPC singlemode	
73	SC APC singlemode	
88	LCd UPC singlemode	
89	LCd APC singlemode	

3 Splitter

08F7030

TAP configuration

5050	LIVE IN — Splitter 1 50:50 — LIVE 50% TAP 50%	
6040	LIVE IN — Splitter 1 40:60 — LIVE 60% TAP 40%	
7030	LIVE IN — Splitter 1 30:70 — LIVE 70% TAP 30%	
8020	LIVE IN — Splitter 1 20:80 — LIVE 80% TAP 20%	
9010	LIVE IN — Splitter 1 10:90 — LIVE 90% TAP 10%	

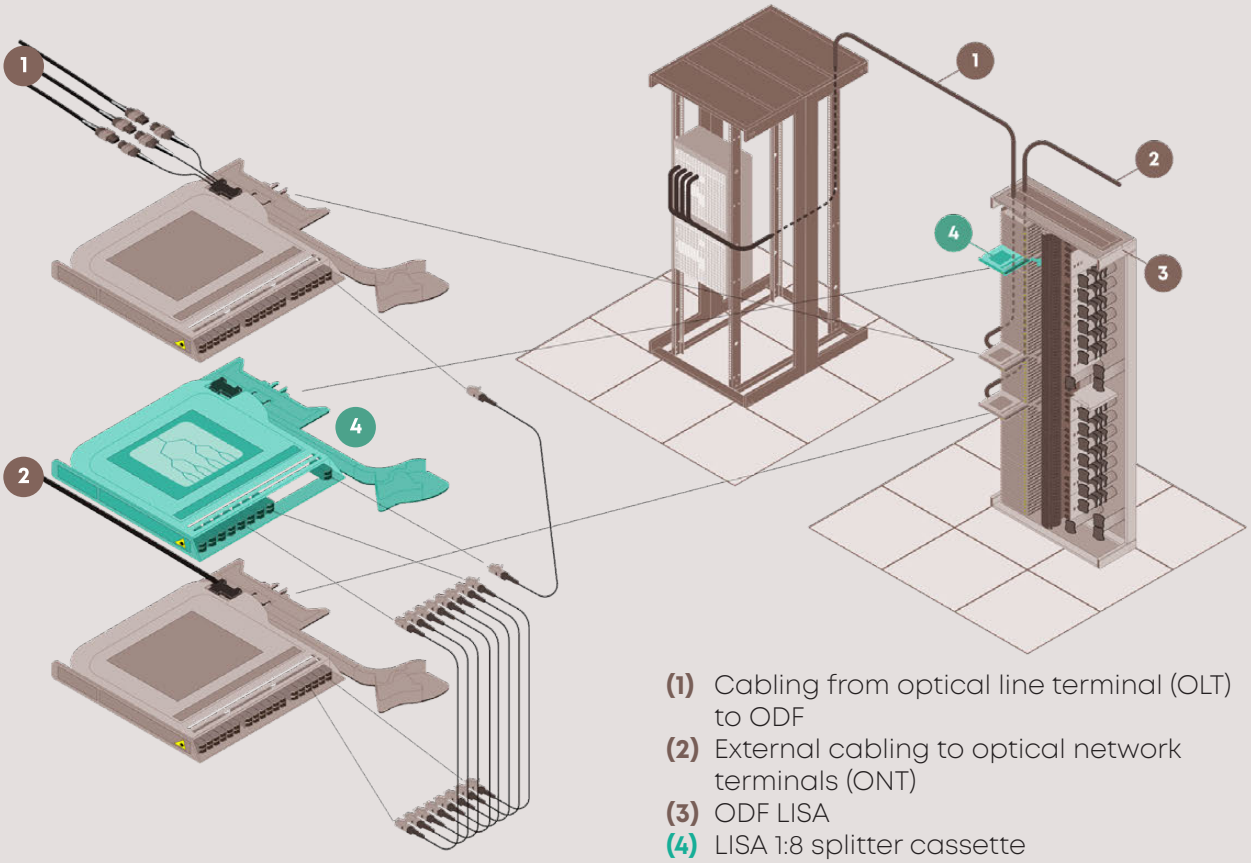
FBT splitter (F)

Number of splitters

04	Maximum number of splitters (SC connectivity)
12	Maximum number of splitters (LCd connectivity)

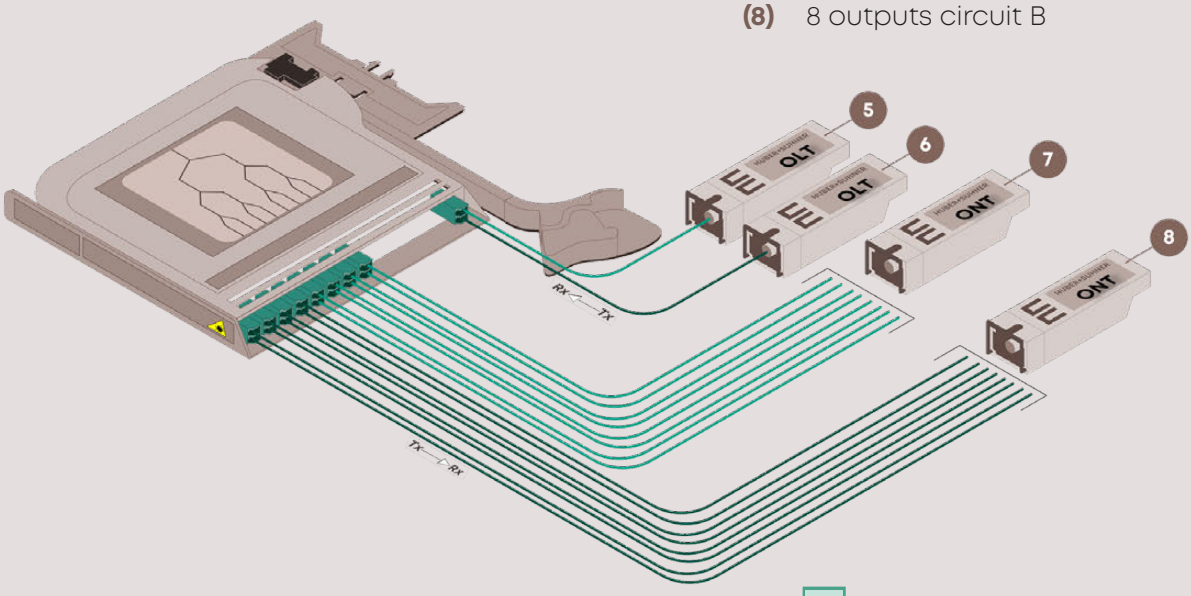
LISA splitter application

xPON fiber infrastructure in telecom data center with LISA ODF



(1) Cabling from optical line terminal (OLT) to ODF
(2) External cabling to optical network terminals (ONT)
(3) ODF LISA
(4) LISA 1:8 splitter cassette

(5) Input circuit A
(6) Input circuit B
(7) 8 outputs circuit A
(8) 8 outputs circuit B

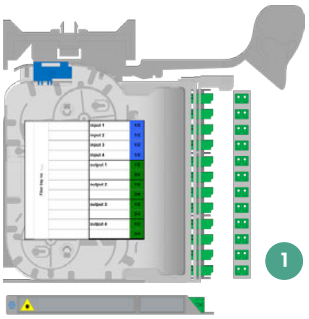


* See the same application implemented with splitter fanout

LISA splitter order information

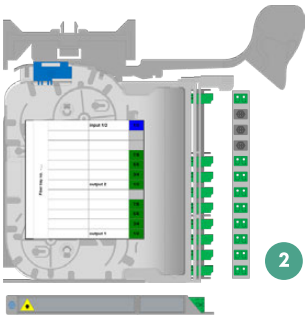
LISA splicing through cassettes

4 splitters 2x4



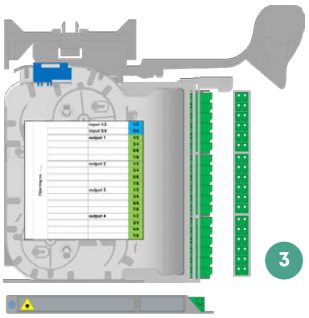
LC-L-CH-8989-04P2x04-09-040A0

2 splitters 1x8



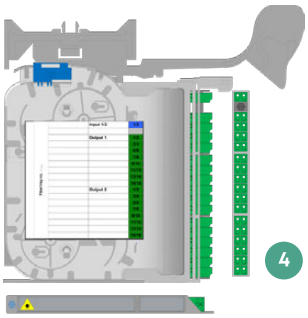
LC-L-CH-8989-02P1x08-09-040A0

4 splitters 1x8



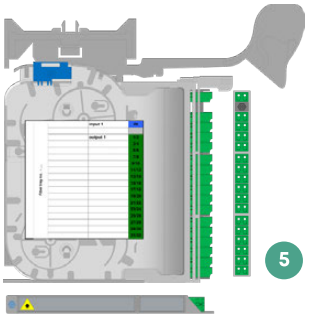
LC-L-CH-8989-04P1x08-09-040A0

2 splitters 1x16



LC-L-CH-8989-02P1x16-09-040A0

1 splitter 1x32

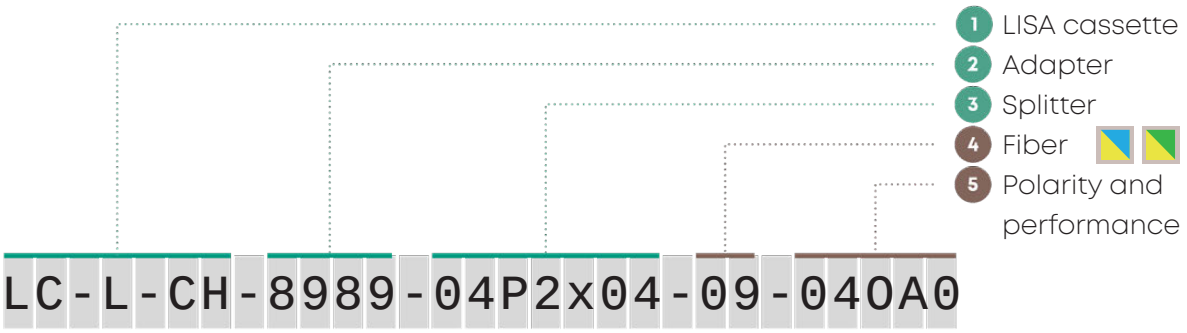


LC-L-CH-8989-01P1x32-09-040A0

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85109593	LC-L-CH-8989-04P2x04-09-04OA0	LISA splitter cassette LEFT, 4 x 2:4 PLC splitter, 12 x LCD adaptor green, OS2, APC		
2	85088498	LC-L-CH-8989-02P1x08-09-04OA0	LISA splitter cassette LEFT, 2 x 1:8 PLC splitter, 9 x LCD adaptor green, OS2, APC		
3	85088500	LC-L-CH-8989-04P1x08-09-04OA0	LISA splitter cassette LEFT, 4 x 1:8 PLC splitter, 18 x LCD adaptor green, OS2, APC		
4	85109592	LC-L-CH-8989-02P1x16-09-04OA0	LISA splitter cassette LEFT, 2 x 1:16 PLC splitter, 18 x LCD adaptor green, OS2, APC		
5	85088499	LC-L-CH-8989-01P1x32-09-04OA0	LISA splitter cassette LEFT, 1 x 1:32 PLC splitter, 17 x LCD adaptor green, OS2, APC		

Order code LISA TAP cassette



1 LISA cassette type

LC-L-CH	LISA TAP/splitter cassette LEFT	L
LC-R-CH	LISA TAP/splitter cassette RIGHT	R

2 Adapter type

8989

Output adapter (LIVE & TAP)

Input adapter (Tx)

70	SC UPC singlemode
73	SC APC singlemode
88	LCd UPC singlemode
89	LCd APC singlemode

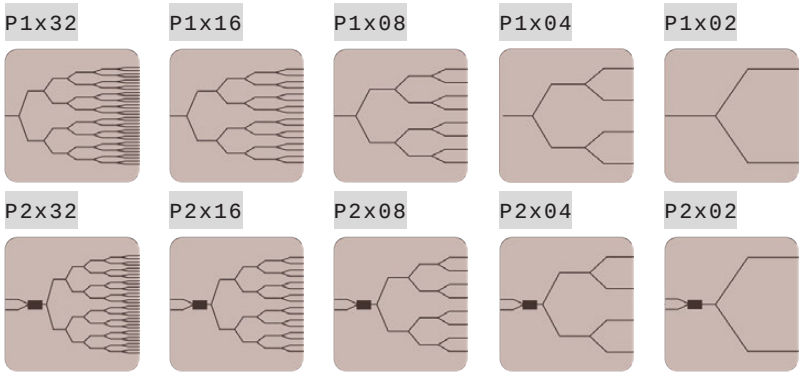
3 Splitter

04P2x04

Splitter designs:

PLC splitter (P)

Number of splitters:



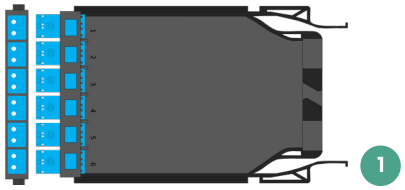
Maximum number of splitters vs splitter design

Connector/ adapter	P1x32	P2x32	P1x16	P2x16	P1x08	P2x08	P1x04	P2x04	P1x02	P2x02
LCd	01	01	02	02	04	03	07	06	12	09
SC	not available				01	01	02	02	04	03

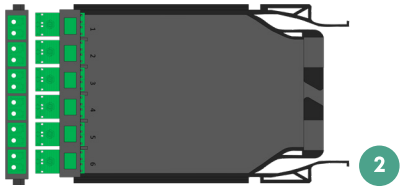
IANOS LCd and SC patch module

IANOS LCd patch modules

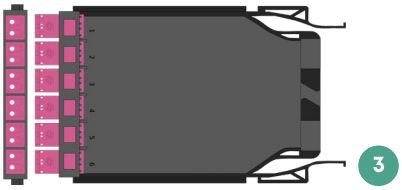
Non-shuttered adapter



1 IPS-06-LCUD-00-0000-SM-00-0000

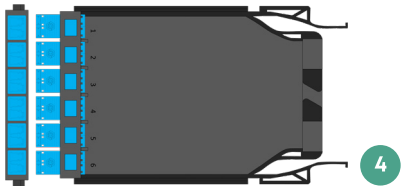


2 IPS-06-LCAD-00-0000-SM-00-0000

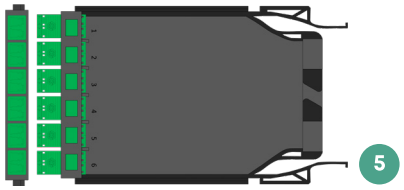


3 IPS-06-LCMD-00-0000-O4-00-0000

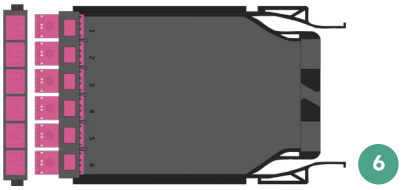
Shuttered adapter



4 IPS-06-LCUP-00-0000-SM-00-0000

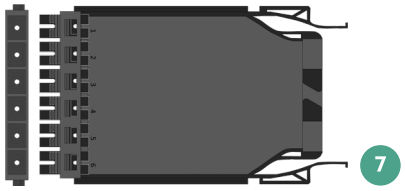


5 IPS-06-LCAP-00-0000-SM-00-0000

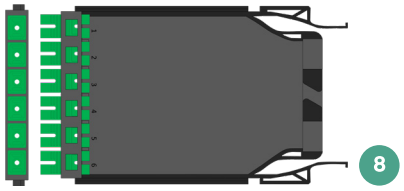


6 IPS-06-LCMP-00-0000-O4-00-0000

IANOS SC patch modules



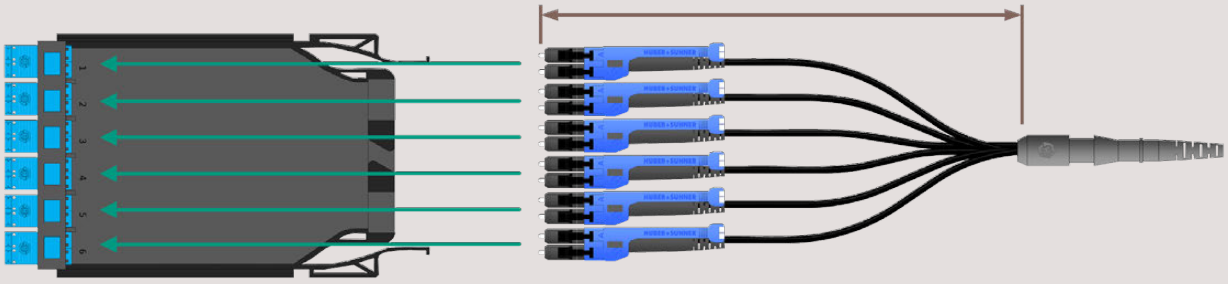
7 IPS-06-SCMS-00-0000-00-00-0000



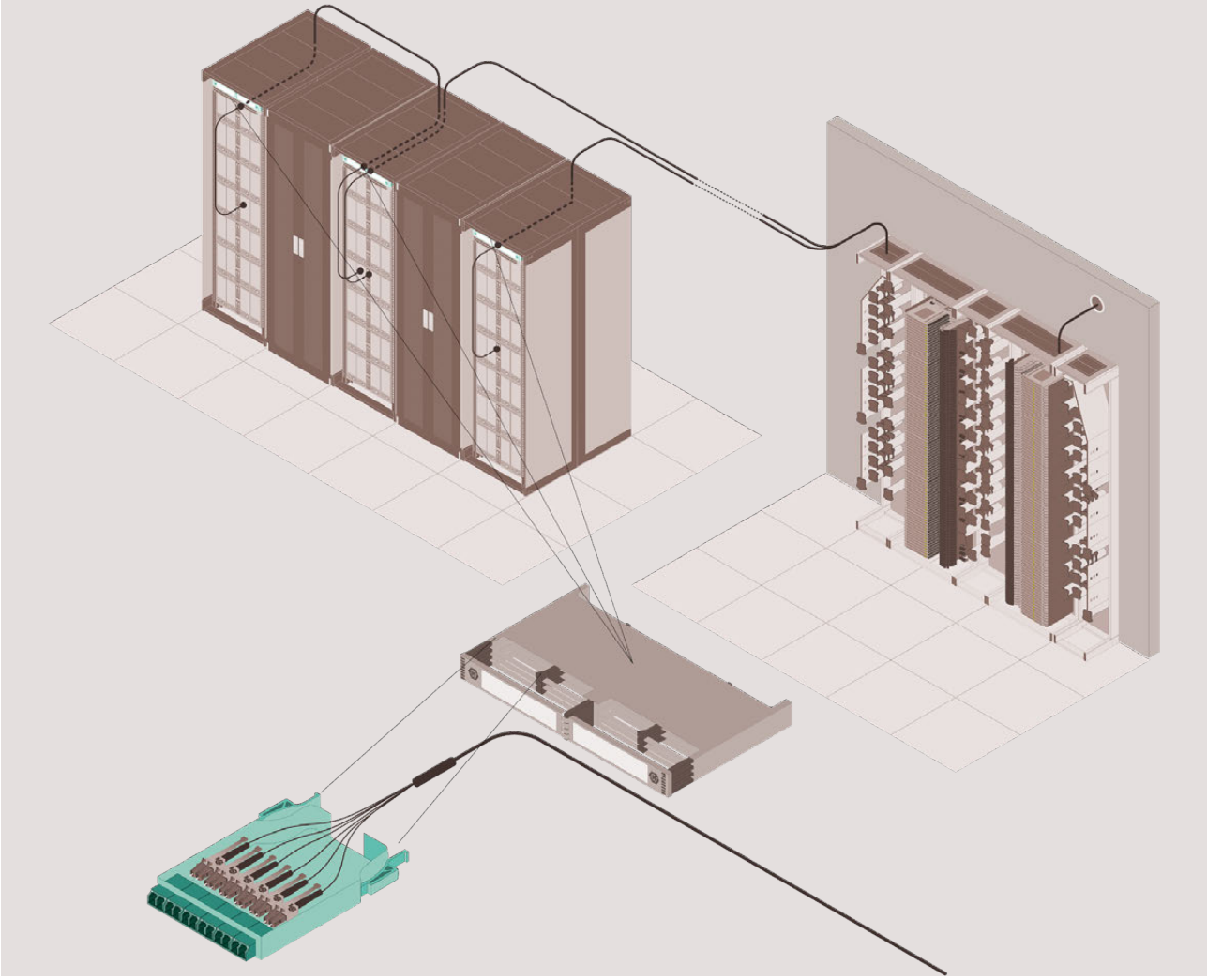
8 IPS-06-SCAS-00-0000-SM-00-0000

Recommended fanout for IANOS patch module

Recommended fanout pattern, equal 80 cm lengths – type 5



IANOS patch module in the cabling for hosting company

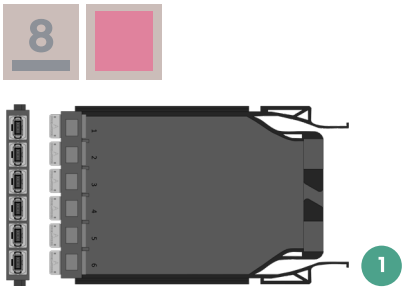


Ordering information

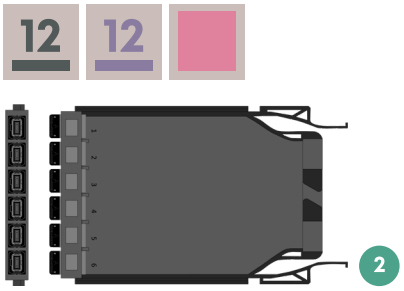
#	Item number	Descriptive code	Item text	LT	URL
1	85072924	IPS-06-LCUD-00-0000-SM-00-0000	IANOS patching single module, 6 x LC UPC duplex, SM	★	↗
2	85073353	IPS-06-LCAD-00-0000-SM-00-0000	IANOS patching single module, 6 x LC APC duplex, SM	★	↗
3	85073355	IPS-06-LCMD-00-0000-O4-00-0000	IANOS patching single module, 6 x LC duplex, OM4	★	↗
4	85103086	IPS-06-LCUP-00-0000-SM-00-0000	IANOS patching single module, 6 x LC UPC shuttered duplex, SM	◕	
5	on request	IPS-06-LCAP-00-0000-SM-00-0000	IANOS patching single module, 6 x LC APC shuttered duplex, SM	◕	
6	on request	IPS-06-LCMP-00-0000-O4-00-0000	IANOS patching single module, 6 x LC shuttered duplex, OM4	◕	
7	85083805	IPS-06-SCMS-00-0000-00-00-0000	IANOS patching single module, 6 x SC, SM or OM4	☑	↗
8	85111145	IPS-06-SCAS-00-0000-SM-00-0000	IANOS patching single module, 6 x SC APC, SM	◕	↗

IANOS MTP patch module

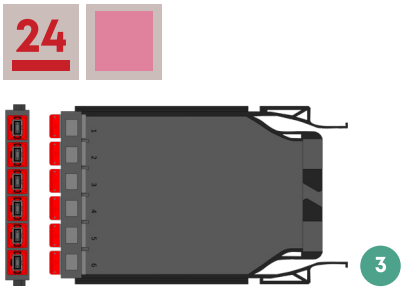
IANOS MTP patch modules



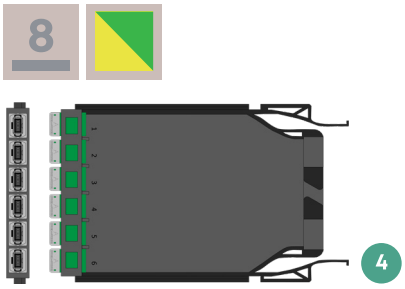
1 IPS-06-08AF-00-0000-00-00-0000



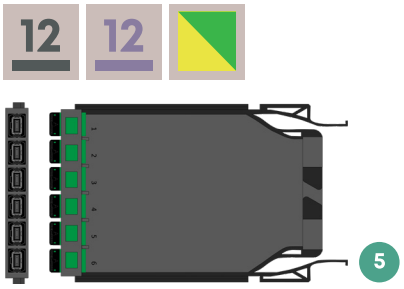
2 IPS-06-12AF-00-0000-00-00-0000



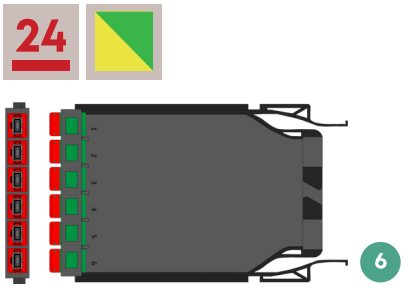
3 IPS-06-24AF-00-0000-00-00-0000



4 IPS-06-08CF-00-0000-00-00-0000



5 IPS-06-12CF-00-0000-00-00-0000

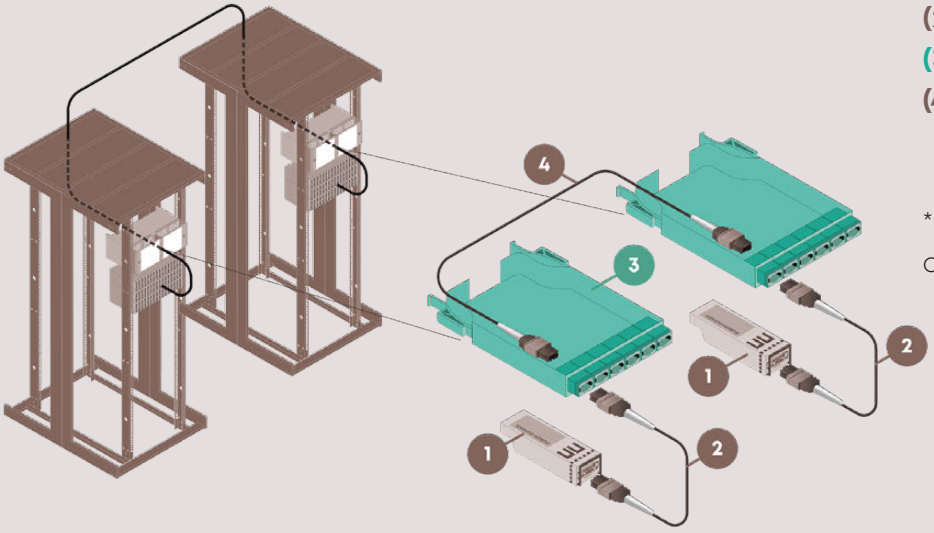


6 IPS-06-24CF-00-0000-00-00-0000

Ordering information

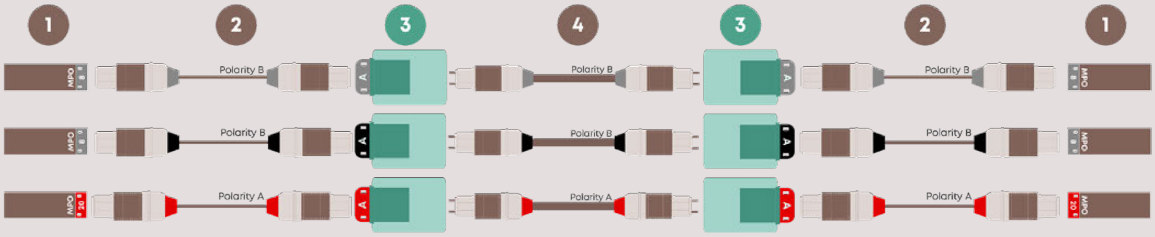
#	Item number	Descriptive code	Item text	LT	URL
1	85120991	IPS-06-08AF-00-0000-00-00-0000	IANOS patching single module, 6 x MTP type A adapters, grey shroud and black body		
2	85116941	IPS-06-12AF-00-0000-00-00-0000	IANOS patching single module, 6 x MTP type A adapters, black shroud and black body		
3	85072931	IPS-06-24AF-00-0000-00-00-0000	IANOS patching single module, 6 x MTP type A adapters, red shroud and black body		
4	85120992	IPS-06-08CF-00-0000-00-00-0000	IANOS patching single module, 6 x MTP type A adapters, grey shroud and green body		
5	85120993	IPS-06-12CF-00-0000-00-00-0000	IANOS patching single module, 6 x MTP type A adapters, black shroud and green body		
6	on request	IPS-06-24CF-00-0000-00-00-0000	IANOS patching single module, 6 x MTP type A adapters, red shroud and green body		

Recommended inter-connect of MPO transceivers



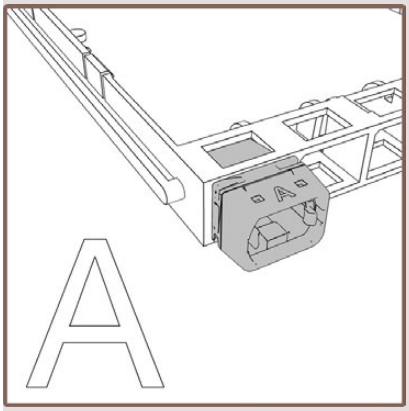
(1) Transceiver
(2) MTP patch cord
(3) Adapter
(4) MTP jumper or trunk

* see required MTP assemblies

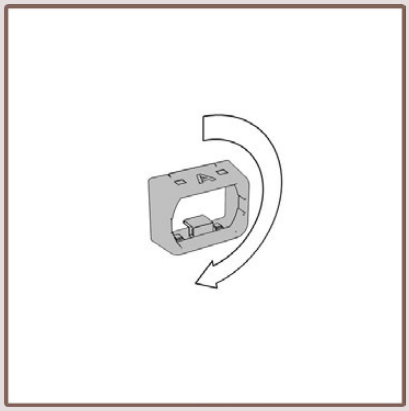


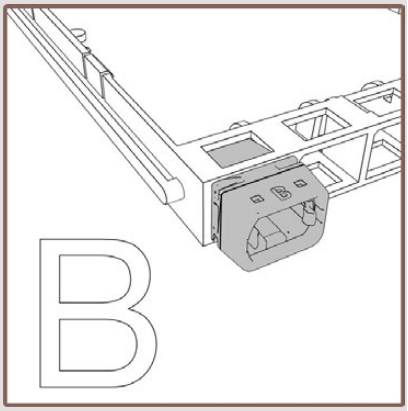
MTP adapter polarity change type A → type B, type B → type A

Reversal of polarity of IANOS MTP patch module is required in exceptional cases.



Type A MTP adapter –
key up/ key down



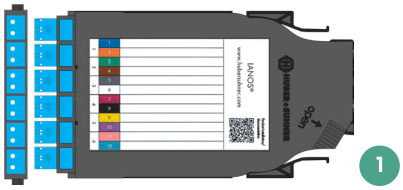


Type B MTP adapter –
key up/ key up

IANOS single splice module

IANOS single splice modules LCd

Coloured individual pigtails – according to TIA colour code – heatshrink only



1 ISS-06-LCUD-00-0000-SM-04-H1S0

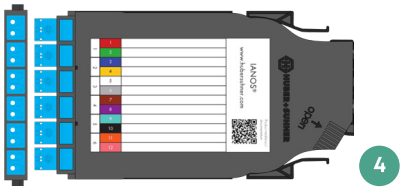


2 ISS-06-LCAD-00-0000-SM-04-H1S0



3 ISS-06-LCMD-00-0000-O4-04-H1L0

Coloured individual pigtails – according to DIN colour code – sandwich only



4 ISS-06-LCUD-00-0000-SM-02-S0S0



5 ISS-06-LCAD-00-0000-SM-02-S0S0



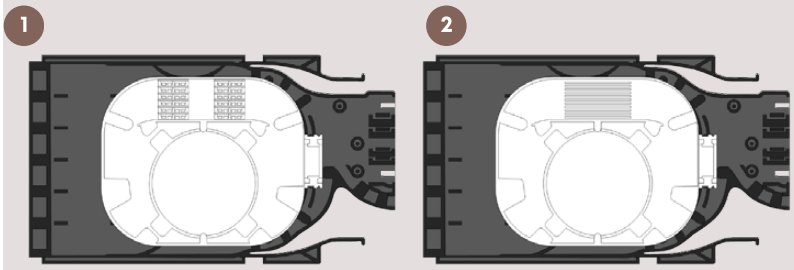
6 ISS-06-LCMD-00-0000-O4-02-S0L0

* IANOS single splice modules LCd are also available with shuttered adapters

Ordering information

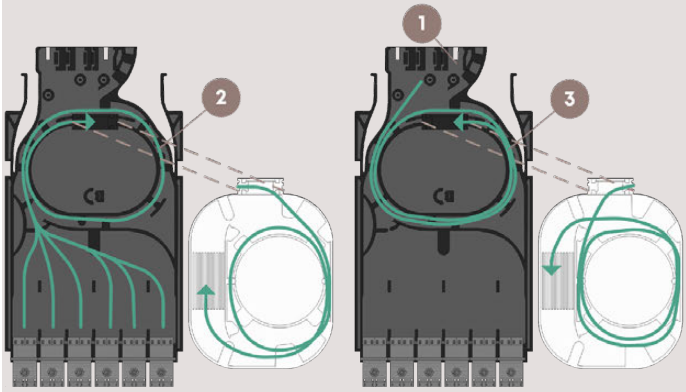
#	Item number	Descriptive code	Item text	LT	URL
1	85115852	ISS-06-LCUD-00-0000-SM-04-H1S0	IANOS splicing single module, 6 x LCd UPC SM, 12 pigtails, heatshrink splice protectors ø1.5 mm, protectors included, TIA colour code	★	
2	85115854	ISS-06-LCAD-00-0000-SM-04-H1S0	IANOS splicing single module, 6 x LCd APC SM, 12 pigtails, heatshrink splice protectors ø1.5 mm, protectors included, TIA colour code	✓	
3	85115850	ISS-06-LCMD-00-0000-O4-04-H1L0	IANOS splicing single module, 6 x LCd OM4, 12 pigtails, heatshrink splice protectors ø1.5 mm, protectors included, TIA colour code	★	
4	85141996	ISS-06-LCUD-00-0000-SM-02-S0S0	IANOS splicing single module, 6 x LCd UPC SM, 12 pigtails, for sandwich splice protectors, protectors not included, DIN colour code	●	
5	85141995	ISS-06-LCAD-00-0000-SM-02-S0S0	IANOS splicing single module, 6 x LCd APC SM, 12 pigtails, for sandwich splice protectors, protectors not included, DIN colour code	●	
6	85141997	ISS-06-LCMD-00-0000-O4-02-S0L0	IANOS splicing single module, 6 x LCd OM4, 12 pigtails, for sandwich splice protectors, protectors not included, DIN colour code	●	

Single splice module types



(1) Module for up to 12x heatshrink Ø1.5 mm splice protectors
(2) Module for up to 12x sandwich splice protectors

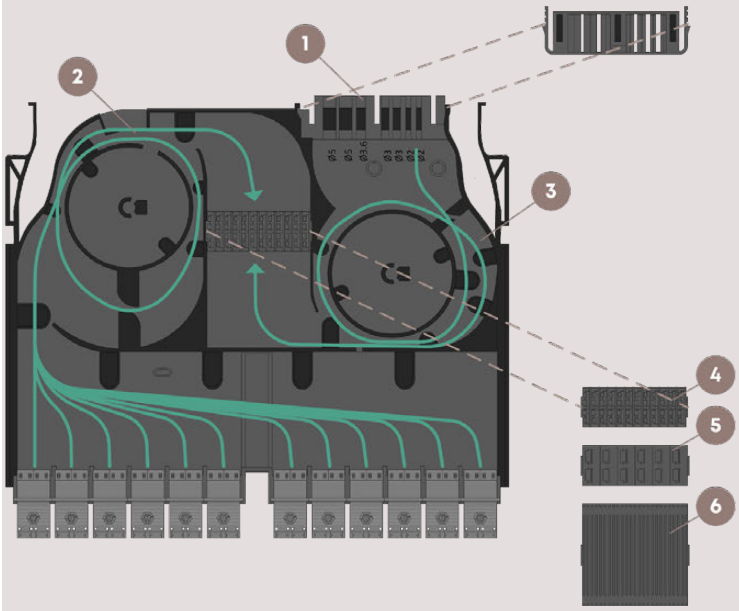
IANOS single splice module scheme



(1) Cable entry variants:
- 1x Ø5 mm (protection tube)
- 1x Ø3.6 mm Optipack
- 1x Ø3 mm Optipack
- 1x Ø2 mm Optipack
- 1x up to Ø5 mm (free choice)

(2) Pigtail routing
(3) Cable routing

IANOS double splice module scheme



(1) Cable entry variants:
- 2x Ø5 mm (protection tube)
- 1x Ø3.6 mm - Optipack
- 2x Ø3 mm - Optipack
- 2x Ø2 mm - Optipack

(2) Pigtail routing
(3) Cable routing
(4) Maximum 24x heatshrink Ø1.5 mm
(5) Maximum 6x heatshrink 3.75x5.75 mm (ribbon)
(6) Maximum 24x sandwich

For splice accessories

IANOS double splice module

IANOS double splice modules LCd

2

Coloured pigtails – according to TIA colour code – heatshrink only



1

Individual pigtails
ISD-12-LCUD-00-0000-SM-04-H1S0
Ribbon pigtails
IRD-12-LCUD-00-0000-SR-04-R1S0



2

Individual pigtails
ISD-12-LCAD-00-0000-SM-04-H1S0
Ribbon pigtails
IRD-12-LCAD-00-0000-SR-04-R1S0



3

Individual pigtails
ISD-12-LCMD-00-0000-O4-04-H1L0
Ribbon pigtails
IRD-12-LCMD-00-0000-MR-04-R1U0

Coloured pigtails – according to DIN colour code – sandwich only



4

Individual pigtails
ISD-12-LCUD-00-0000-SM-02-S0S0



5

Individual pigtails
ISD-12-LCAD-00-0000-SM-02-S0S0



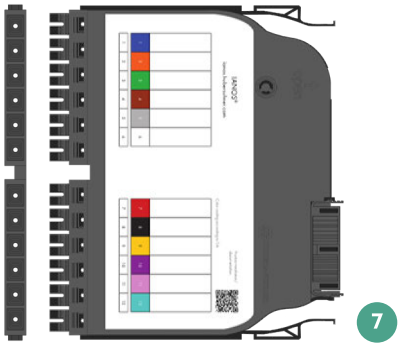
6

Individual pigtails
ISD-12-LCMD-00-0000-O4-02-S0L0

* IANOS double splice modules LCd are also available with shuttered adapters

IANOS double splice modules SC

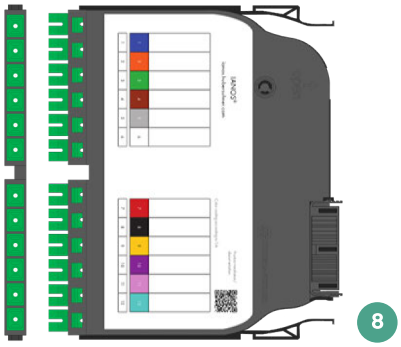
Coloured pigtails – according to TIA colour code – heatshrink only



7

Individual pigtails

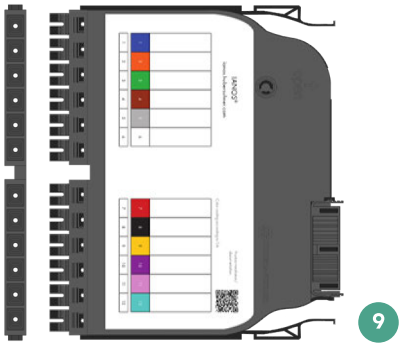
`ISD-12-SCUS-00-0000-SM-04-00S0`



8

Individual pigtails

`ISD-12-SCAS-00-0000-SM-04-00S0`



9

Individual pigtails

`ISD-12-SCMS-00-0000-O4-04-00L0`

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85072934	ISD-12-LCUD-00-0000-SM-04-H1S0	IANOS splicing double module, 12 x LCd UPC SM, 24 pigtails, heatshrink splice protectors ø1.5 mm, protectors included, TIA colour code	★	
	85127554	IRD-12-LCUD-00-0000-SR-04-R1S0	IANOS splicing double module, 12 x LCd UPC SM, 24f ribbon pigtail, ribbon heatshrink splice protectors, protectors included, TIA colour code	◕	
2	85072935	ISD-12-LCAD-00-0000-SM-04-H1S0	IANOS splicing double module, 12 x LCd APC SM, 24 pigtails, heatshrink splice protectors ø1.5 mm, protectors included, TIA colour code	★	
	85127555	IRD-12-LCAD-00-0000-SR-04-R1S0	IANOS splicing double module, 12 x LCd APC SM, 24f ribbon pigtail, ribbon heatshrink splice protectors, protectors included, TIA colour code	◕	
3	85072937	ISD-12-LCMD-00-0000-O4-04-H1L0	IANOS splicing double module, 12 x LCd OM4, 24 pigtails, heatshrink splice protectors ø1.5 mm, protectors included, TIA colour code	★	
	85154283	IRD-12-LCMD-00-0000-MR-04-R1U0	IANOS splicing double module, 12 x LCd OM4, 24f ribbon pigtail, ribbon heatshrink splice protectors, protectors included, TIA colour code	◕	
4	85140268	ISD-12-LCUD-00-0000-SM-02-S0S0	IANOS splicing double module, 12 x LCd UPC SM, 24 pigtails, sandwich splice protectors, protectors not included, DIN colour code	◕	
5	85140239	ISD-12-LCAD-00-0000-SM-02-S0S0	IANOS splicing double module, 12 x LCd APC SM, 24 pigtails, sandwich splice protectors, protectors not included, DIN colour code	◕	
6	85140240	ISD-12-LCMD-00-0000-O4-02-S0L0	IANOS splicing double module, 12 x LCd OM4, 24 pigtails, sandwich splice protectors, protectors not included, DIN colour code	◕	
7	85083806	ISD-12-SCUS-00-0000-SM-04-00S0	IANOS splicing double module, 12 x SC UPC SM, 12 pigtails, heatshrink and sandwich protectors included, TIA colour code	☑	
8	85083807	ISD-12-SCAS-00-0000-SM-04-00S0	IANOS splicing double module, 12 x SC APC SM, 12 pigtails, heatshrink and sandwich protectors included, TIA colour code	★	
9	85083803	ISD-12-SCMS-00-0000-O4-04-00L0	IANOS splicing double module, 12 x SC OM4, 12 pigtails, , heatshrink and sandwich protectors included, TIA colour code	☑	

IANOS single transition module LCd

IANOS single transition module LCd, Base-8, polarity NS

8



1

ITS-04-LCUD-01-08CF-SM-NS-00WW



2

ITS-04-LCAD-01-08CF-SM-NS-00WW



3

ITS-04-LCMD-01-08AF-O4-NS-00UU

IANOS single transition module, LCd, Base-12e, polarity NS

12



4

ITS-06-LCUD-01-12CF-SM-NS-00WW



5

ITS-06-LCAD-01-12CF-SM-NS-00WW



6

ITS-06-LCMD-01-12AF-O4-NS-00WW

IANOS single transition module, LCd, Base-12, polarity AS and AP

12



7

Polarity AS
ITS-06-LCUD-01-12CM-SM-AS-00WW
Polarity AP
ITS-06-LCUD-01-12CM-SM-AP-00WW



8

Polarity AS
ITS-06-LCAD-01-12CM-SM-AS-00WW
Polarity AP
ITS-06-LCAD-01-12CM-SM-AP-00WW



9

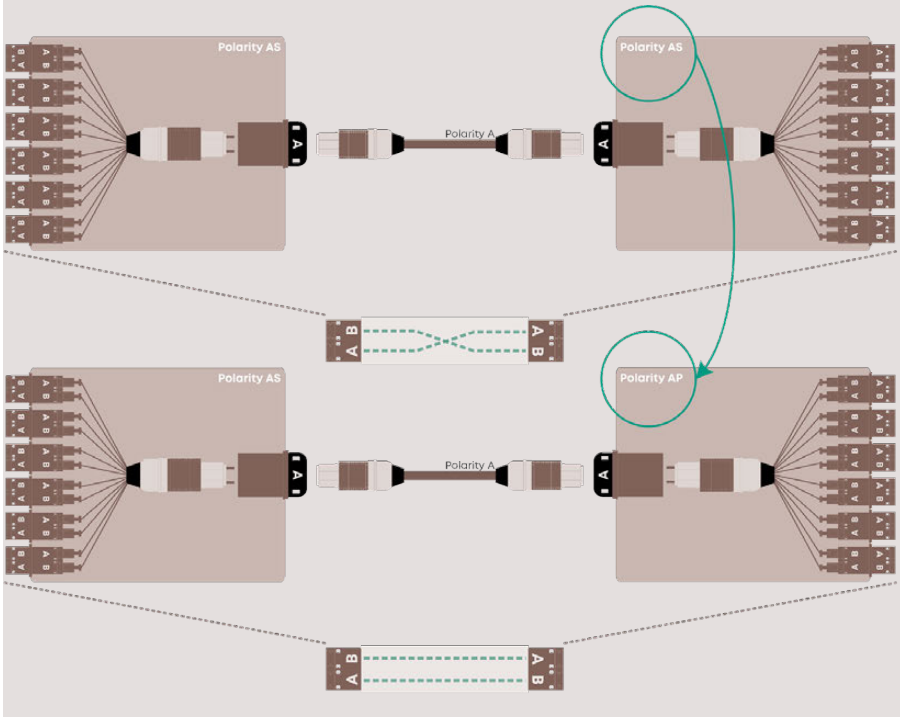
Polarity AS
ITS-06-LCMD-01-12AM-O4-AS-00UU
Polarity AP
ITS-06-LCMD-01-12AM-O4-AP-00UU

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85072940	ITS-04-LCUD-01-08CF-SM-NS-00WW	IANOS transition single module, 4 x LCd UPC SM to MTP-8 female, polarity NS		
2	85147544	ITS-04-LCAD-01-08CF-SM-NS-00WW	IANOS transition single module, 4 x LCd APC SM to MTP-8 female, polarity NS		
3	85072939	ITS-04-LCMD-01-08AF-O4-NS-00UU	IANOS transition single module, 4 x LCd OM4 to MTP-8 female, polarity NS		
4	85099763	ITS-06-LCUD-01-12CF-SM-NS-00WW	IANOS transition single module, 6 x LCd UPC SM to MTP-12 female, polarity NS		
5	85154284	ITS-06-LCAD-01-12CF-SM-NS-00WW	IANOS transition single module, 6 x LCd APC SM to MTP-12 female, polarity NS		
6	85125715	ITS-06-LCMD-01-12AF-O4-NS-00UU	IANOS transition single module, 6 x LCd OM4 to MTP-12 female, polarity NS		
7	85072946	ITS-06-LCUD-01-12CM-SM-AS-00WW	IANOS transition single module, 6 x LCd UPC SM to MTP-12 male, polarity AS		
	85073356	ITS-06-LCUD-01-12CM-SM-AP-00WW	IANOS transition single module, 6 x LCd UPC SM to MTP-12 male, polarity AP		
8	85073357	ITS-06-LCAD-01-12CM-SM-AS-00WW	IANOS transition single module, 6 x LCd APC SM to MTP-12 male, polarity AS		
	85072947	ITS-06-LCAD-01-12CM-SM-AP-00WW	IANOS transition single module, 6 x LCd APC SM to MTP-12 male, polarity AP		
9	85072944	ITS-06-LCMD-01-12AM-O4-AS-00UU	IANOS transition single module, 6 x LCd OM4 to MTP-12 male, polarity AS		
	85072945	ITS-06-LCMD-01-12AM-O4-AP-00UU	IANOS transition single module, 6 x LCd OM4 to MTP-12 male, polarity AP		

Transition AS and AP in Base-12

12



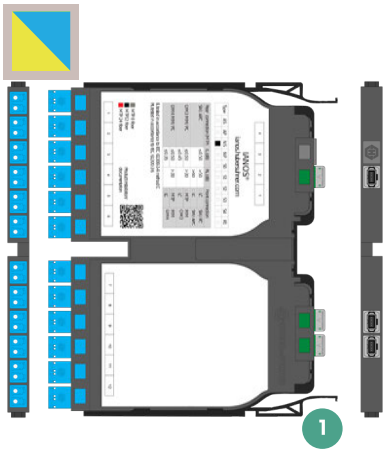
Base-12 link with two transition modules polarity AS and polarity A trunk is equivalent to permanent link A-A

Base-12 link with two transition modules polarity AS and AP, and polarity A trunk is equivalent to permanent link A-B

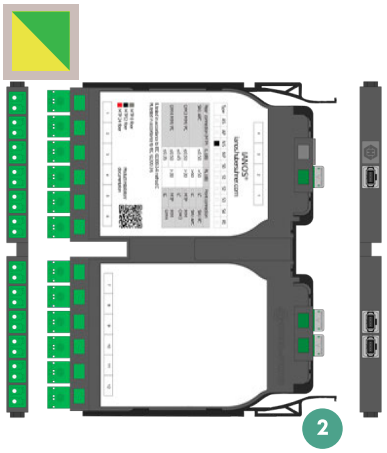
IANOS double transition module LCd

IANOS double transition module LCd, Base-8, polarity NS

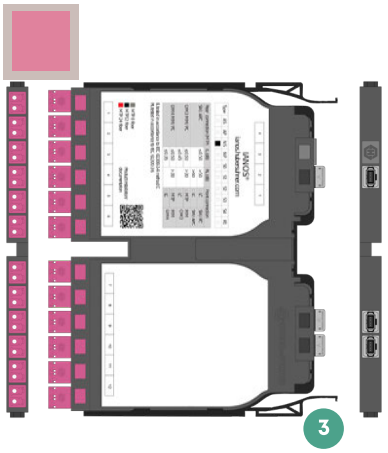
8



ITD-12-LCUD-03-08CF-SM-NS-00WW



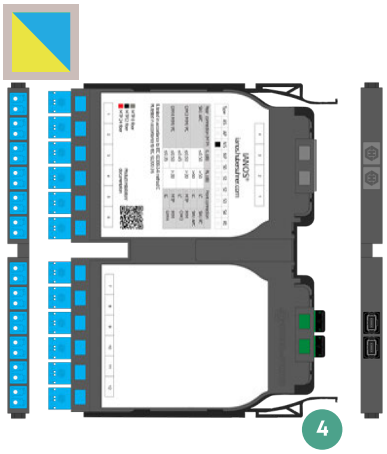
ITD-12-LCAD-03-08CF-SM-NS-00WW



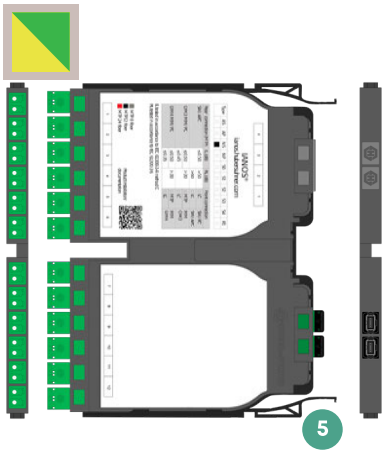
ITD-12-LCMD-03-08AF-O4-NS-00UU

IANOS double transition module LCd, Base-12e, polarity NS

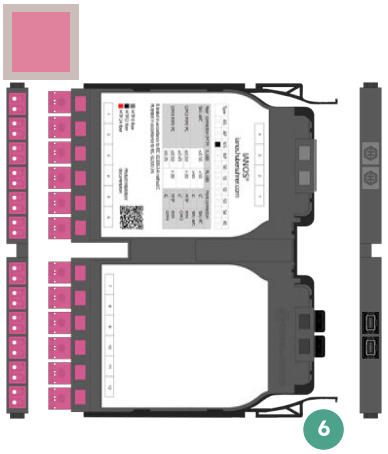
12



ITD-12-LCUD-02-12CF-SM-NS-00WW



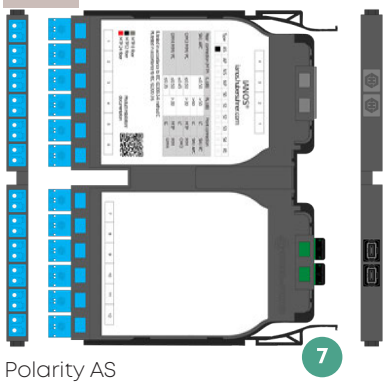
ITD-12-LCAD-02-12CF-SM-NS-00WW



ITD-12-LCMD-02-12AF-O4-NS-00UU

IANOS double transition module LCd, Base-12, polarity AS and AP

12

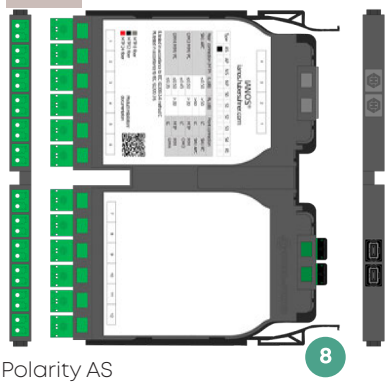


Polarity AS

ITD-12-LCUD-02-12CM-SM-AS-00WW

Polarity AP

ITD-12-LCUD-02-12CM-SM-AP-00WW

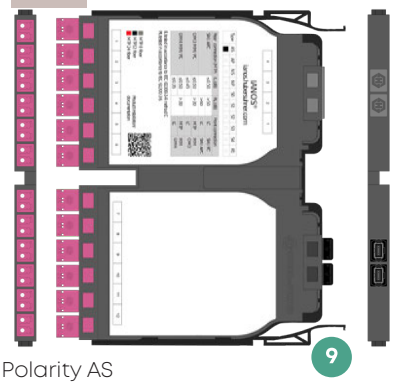


Polarity AS

ITD-12-LCAD-02-12CM-SM-AS-00WW

Polarity AP

ITD-12-LCAD-02-12CM-SM-AP-00WW



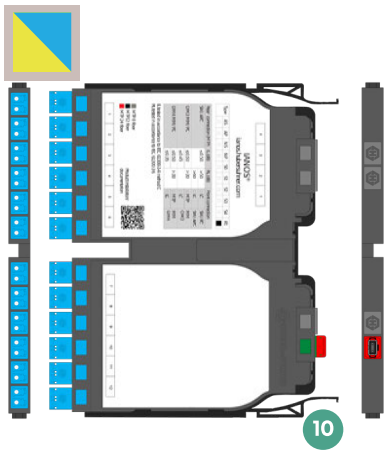
Polarity AS

ITD-12-LCMD-02-12AM-O4-AS-00UU

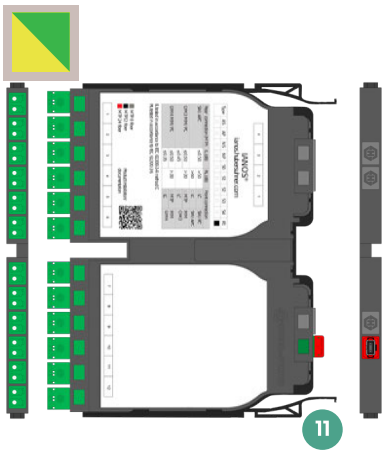
Polarity AP

ITD-12-LCMD-02-12AM-O4-AP-00UU

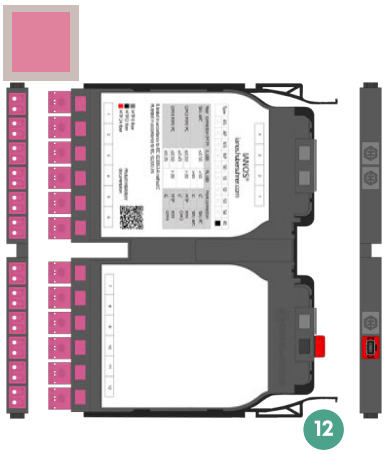
IANOS double transition module LCd, Base-24, polarity R1



ITD-12-LCUD-01-24CF-SM-R1-00WW



ITD-12-LCAD-01-24CF-SM-R1-00WW



ITD-12-LCMD-01-24AF-O4-R1-00UU

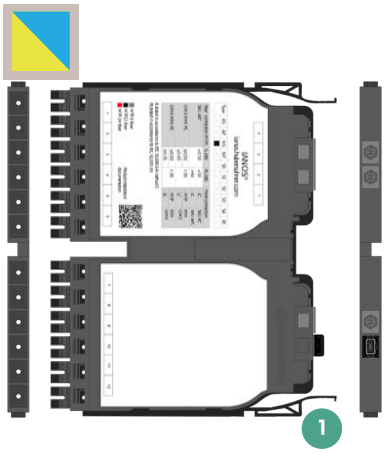
Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85072956	ITD-12-LCUD-03-08CF-SM-NS-00WW	IANOS transition double module, 12 x LCd UPC SM to 3 x MTP-8 female, polarity NS	★	↗
2	85081608	ITD-12-LCAD-03-08CF-SM-NS-00WW	IANOS transition double module, 12 x LCd APC SM to 3 x MTP-8 female, polarity NS	◔	↗
3	85072955	ITD-12-LCMD-03-08AF-O4-NS-00UU	IANOS transition double module, 12 x LCd OM4 to 3 x MTP-8 female, polarity NS	◔	↗
4	85115154	ITD-12-LCUD-02-12CF-SM-NS-00WW	IANOS transition double module, 12 x LCd UPC SM to 2 x MTP-12 female, polarity NS	★	↗
5	85176635	ITD-12-LCAD-02-12CF-SM-NS-00WW	IANOS transition double module, 12 x LCd APC SM to 2 x MTP-12 female, polarity NS	◔	
6	85115173	ITD-12-LCMD-02-12AF-O4-NS-00UU	IANOS transition double module, 12 x LCd OM4 to 2 x MTP-12 female, polarity NS	★	↗
7	85072961	ITD-12-LCUD-02-12CM-SM-AS-00WW	IANOS transition double module, 12 x LCd UPC SM to 2 x MTP-12 male, polarity AS	★	↗
	85073364	ITD-12-LCUD-02-12CM-SM-AP-00WW	IANOS transition double module, 12 x LCd UPC SM to 2 x MTP-12 male, polarity AP	◔	↗
8	85073365	ITD-12-LCAD-02-12CM-SM-AS-00WW	IANOS transition double module, 12 x LCd APC SM to 2 x MTP-12 male, polarity AS	◔	↗
	85072962	ITD-12-LCAD-02-12CM-SM-AP-00WW	IANOS transition double module, 12 x LCd APC SM to 2 x MTP-12 male, polarity AP	◔	↗
9	85072959	ITD-12-LCMD-02-12AM-O4-AS-00UU	IANOS transition double module, 12 x LCd OM4 to 2 x MTP-12 male, polarity AS	★	↗
	85072960	ITD-12-LCMD-02-12AM-O4-AP-00UU	IANOS transition double module, 12 x LCd OM4 to 2 x MTP-12 male, polarity AP	◔	↗
10	85085388	ITD-12-LCUD-01-24CF-SM-R1-00WW	IANOS transition double module, 12 x LCd UPC SM to MTP-24 female, polarity R1	◔	↗
11	85124799	ITD-12-LCAD-01-24CF-SM-R1-00WW	IANOS transition double module, 12 x LCd APC SM to MTP-24 female, polarity R1	◔	
12	85072964	ITD-12-LCMD-01-24AF-O4-R1-00UU	IANOS transition double module, 12 x LCd OM4 to MTP-24 female, polarity R1	◔	

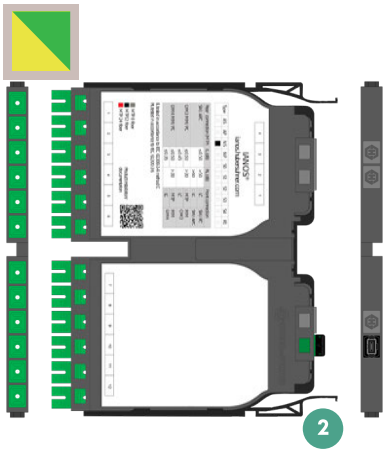
IANOS double transition module SC

IANOS double transition module SC, Base-12e, polarity NS

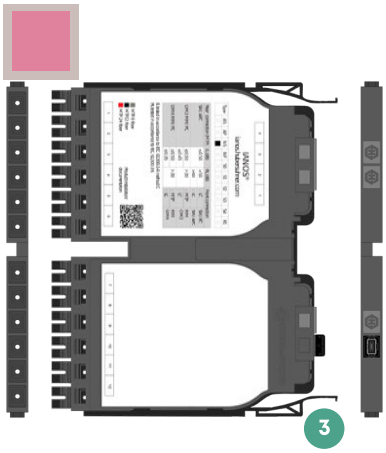
12



ITD-12-SCUS-01-12CF-SM-NS-00WW



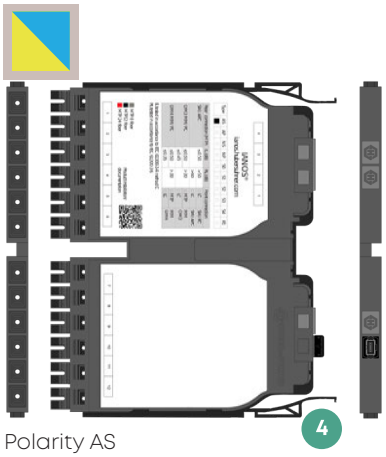
ITD-12-SCAS-01-12CF-SM-NS-00WW



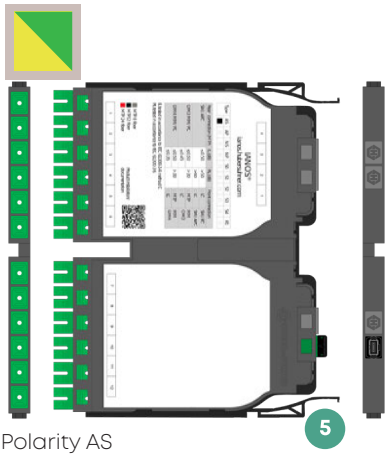
ITD-12-SCMS-01-12AF-O4-NS-00UU

IANOS double transition module SC, Base-12

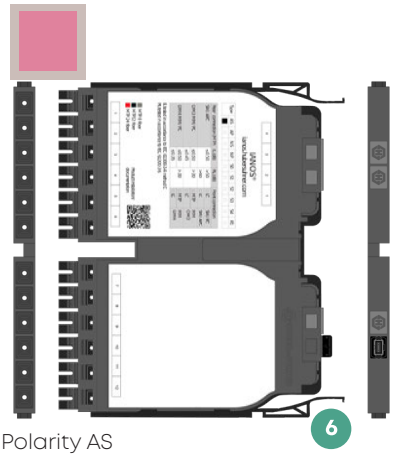
12



Polarity AS
ITD-12-SCUS-01-12CM-SM-AS-00WW
Polarity AP
ITD-12-SCUS-01-12CM-SM-AP-00WW



Polarity AS
ITD-12-SCAS-01-12CM-SM-AS-00WW
Polarity AP
ITD-12-SCAS-01-12CM-SM-AP-00WW



Polarity AS
ITD-12-SCMS-01-12AM-O4-AS-00UU
Polarity AP
ITD-12-SCMS-01-12AM-O4-AP-00UU

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85157746	ITD-12-SCUS-01-12CF-SM-NS-00WW	IANOS transition double module, 12 x SC UPC SM to MTP-12 female, polarity NS		
2	85154287	ITD-12-SCAS-01-12CF-SM-NS-00WW	IANOS transition double module, 12 x SC APC SM to MTP-12 female, polarity NS		
3	85154288	ITD-12-SCMS-01-12AF-O4-NS-00UU	IANOS transition double module, 12 x SC OM4 to MTP-12 female, polarity NS		
4	85099188	ITD-12-SCUS-01-12CM-SM-AS-00WW	IANOS transition double module, 12 x SC UPC SM to MTP-12 male, polarity AS		
	85154285	ITD-12-SCUS-01-12CM-SM-AP-00WW	IANOS transition double module, 12 x SC UPC SM to MTP-12 male, polarity AP		
5	85083804	ITD-12-SCAS-01-12CM-SM-AS-00WW	IANOS transition double module, 12 x SC APC SM to MTP-12 male, polarity AS		
	85085506	ITD-12-SCAS-01-12CM-SM-AP-00WW	IANOS transition double module, 12 x SC APC SM to MTP-12 male, polarity AP		
6	85083808	ITD-12-SCMS-01-12AM-O4-AS-00UU	IANOS transition double module, 12 x SC OM4 to MTP-12 male, polarity AS		
	85085505	ITD-12-SCMS-01-12AM-O4-AP-00UU	IANOS transition double module, 12 x SC OM4 to MTP-12 male, polarity AP		

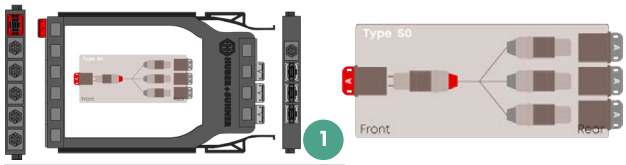


IANOS conversion module

IANOS conversion modules

8 → 24 → S0

Functional scheme

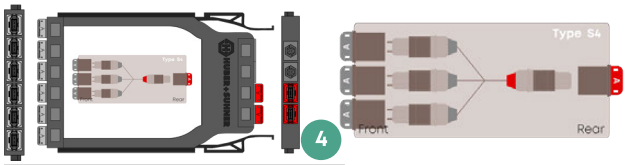


1

ICS-01-24AM-03-08AF-O4-S0-00TT

24 → 8 → S4

Functional scheme

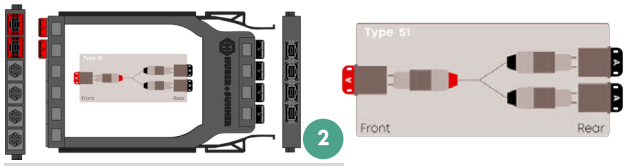


4

ICS-06-08AM-02-24AF-O4-S4-00TT

12 → 24 → S1

Functional scheme

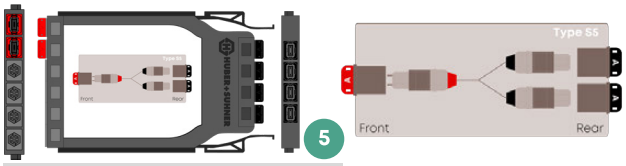


2

ICS-02-24AM-04-12AM-O4-S1-00TT

12 → 24 → S5

Functional scheme

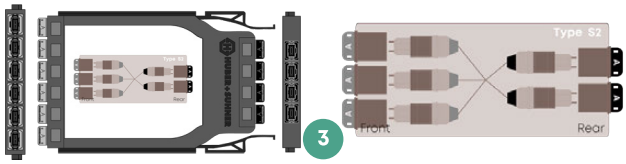


5

ICS-02-24AM-04-12AF-O4-S5-00TT

12 → 8 → S2

Functional scheme

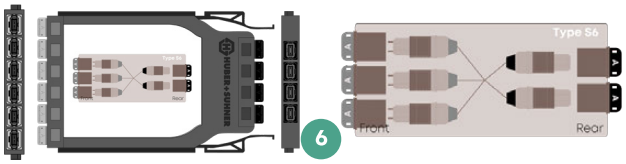


3

ICS-06-08AM-04-12AM-O4-S2-00TT

12 → 8 → S6

Functional scheme



6

ICS-06-08AM-04-12AF-O4-S6-00TT

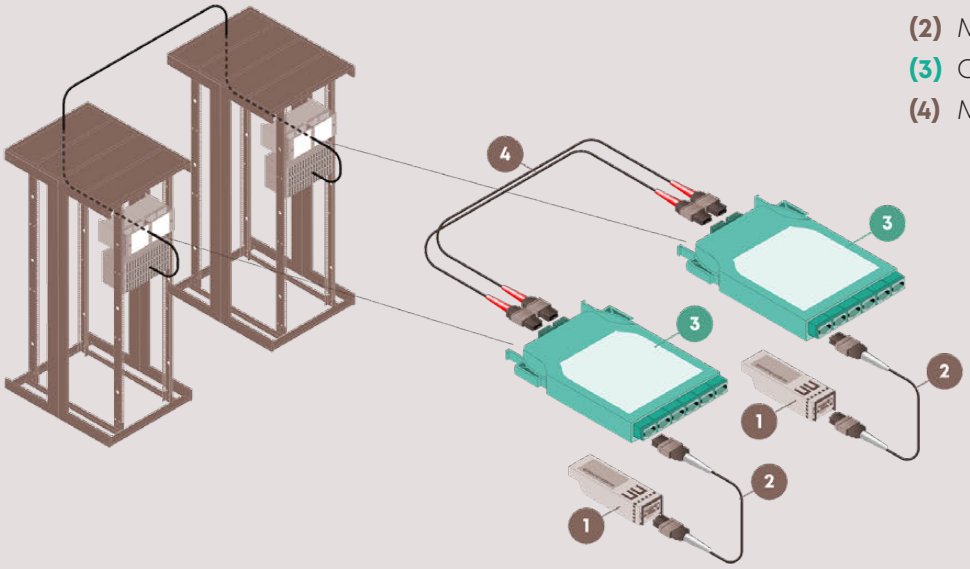
Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85073361	ICS-01-24AM-03-08AF-O4-S0-00TT	IANOS conversion single module, 3 x MTP-8 female to MTP-24 male OM4, polarity S0		
2	85072949	ICS-02-24AM-04-12AM-O4-S1-00TT	IANOS conversion single module, 4 x MTP-12 male to 2 x MTP-24 male OM4, polarity S1		
3	85072951	ICS-06-08AM-04-12AM-O4-S2-00TT	IANOS conversion single module, 4 x MTP-12 male to 6 x MTP-8 male OM4, polarity S2		
4	85072953	ICS-06-08AM-02-24AF-O4-S4-00TT	IANOS conversion single module, 2 x MTP-24 female to 6 x MTP-8 male OM4, polarity S4		
5	85154289	ICS-02-24AM-04-12AF-O4-S5-00TT	IANOS conversion single module, 4 x MTP-12 female to 2 x MTP-24 male OM4, polarity S5		
6	85154290	ICS-06-08AM-04-12AF-O4-S6-00TT	IANOS conversion single module, 4 x MTP-12 female to 6 x MTP-8 male OM4, polarity S6		

Link scenarios examples with IANOS conversion module

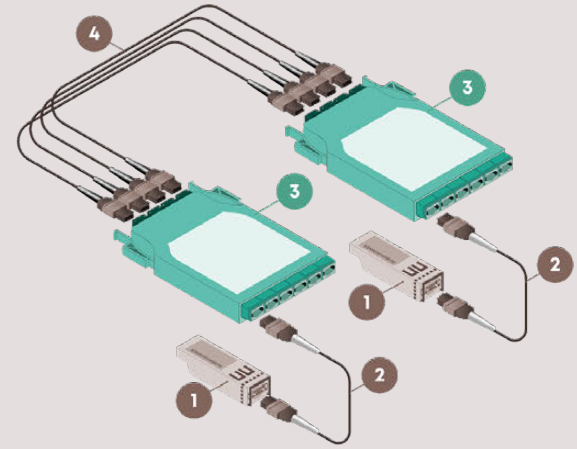
Inter-connect of 6x 8-fiber MPO transceivers with **IANOS conversion module S4** and **Base-24 MTP trunks (polarity A, male to male)**

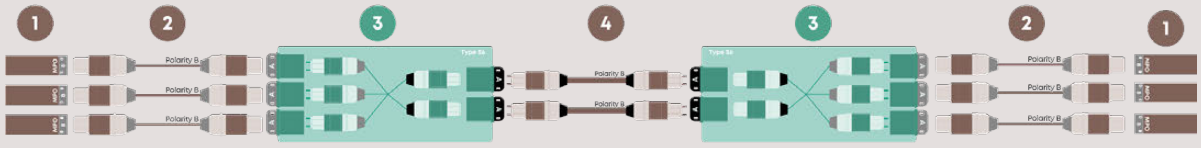
(1) Transceiver
(2) MTP patch cord
(3) Conversion module
(4) MTP jumper or trunk





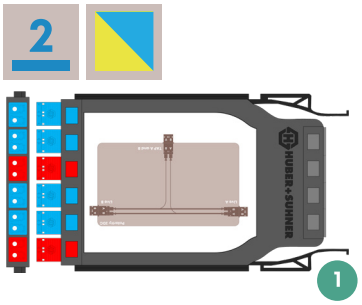
Inter-connect of 6x 8-fiber MPO transceivers with **IANOS conversion module S6** and **Base-12e MTP trunks (polarity B, male to male)**





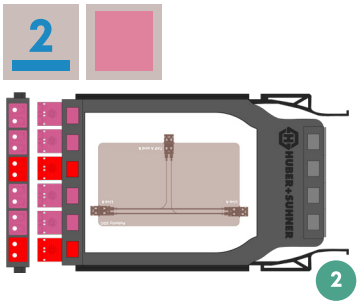
IANOS TAP module

IANOS TAP modules



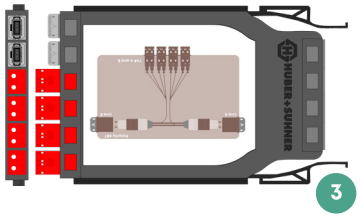
IAS-XX-SM-7A3A-888887-022DCS0S

IAS-XX-SM-8A2A-888887-022DCS0S



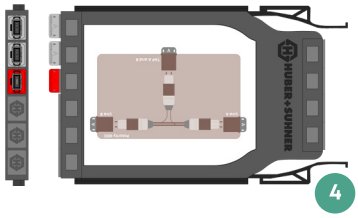
IAS-XX-O4-5050-888887-022DCS0L

IAS-XX-O4-7030-888887-022DCS0L



IAS-XX-SM-9A1A-555587-018BTSBS

IAS-XX-O4-5050-555587-018BTSLL



IAS-XX-SM-9A1A-555563-018DCSB0

IAS-XX-O4-5050-555563-018DCSL0

Optical performance

Insertion loss, maximum, in dB

Polarity		2DC		8DC		8BT	
50:50	LIVE	4.60	4.60	4.70	4.70	4.65	4.65
	TAP	4.60	4.60	4.70	4.70	4.65	4.65
60:40	LIVE	3.90	3.60	4.00	3.70	3.95	3.65
	TAP	5.90	5.60	6.00	5.70	5.95	5.65
70:30	LIVE	3.10	3.00	3.20	3.10	3.15	3.05
	TAP	7.30	6.90	7.40	7.00	7.35	6.95
80:20	LIVE	2.40	2.30	2.50	2.40	2.45	2.35
	TAP	9.40	8.70	9.50	8.80	9.45	8.75
90:10	LIVE	1.80	1.80	1.90	1.90	1.85	1.85
	TAP	12.80	12.20	12.90	12.30	12.55	12.25

Optical performance

Return loss, minimum:

- SM >50 dB
- OM4 >30 dB

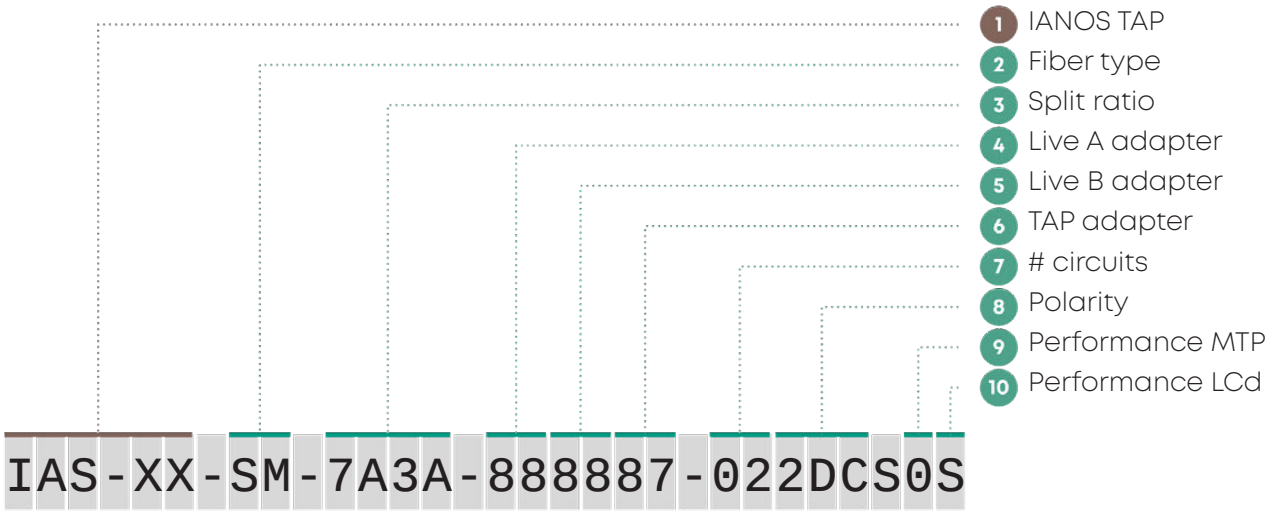
Supported wavelengths:
SM: 1260 nm-1625 nm
OM4: 850±40 nm, 1300±40 nm

Go to external document/link

Ordering information

#	Item number	Descriptive code	Item text	LT
1	85107794	IAS-XX-SM-7A3A-888887-022DCS0S	IANOS TAP single module, LC UPC to LC UPC, 70:30, 2 circuits, singlemode	
	85107793	IAS-XX-SM-8A2A-888887-022DCS0S	IANOS TAP single module, LC UPC to LC UPC, 80:20, 2 circuits, singlemode	
2	85153711	IAS-XX-O4-5050-888887-022DCS0L	IANOS TAP single module, LC to LC, 50:50, 2 circuits, multimode OM4	
	85116020	IAS-XX-O4-7030-888887-022DCS0L	IANOS TAP single module, LC to LC, 70:30, 2 circuits, multimode OM4	
3	85179400	IAS-XX-SM-9A1A-555587-018BTSBS	IANOS TAP single module, MTP-8 to LC, 90:10, 4 circuits, singlemode	
	85096468	IAS-XX-O4-5050-555587-018BTSLL	IANOS TAP single module, MTP-8 to LC, 50:50, 4 circuits, multimode OM4	
4	85096467	IAS-XX-SM-9A1A-555563-018DCSB0	IANOS TAP single module, MTP-8 to MTP-8, 90:10, 1 circuit, singlemode	
	85096469	IAS-XX-O4-5050-555563-018DCSL0	IANOS TAP single module, MTP-8 to MTP-8, 50:50, 1 circuit, multimode OM4	

Order code IANOS TAP modules

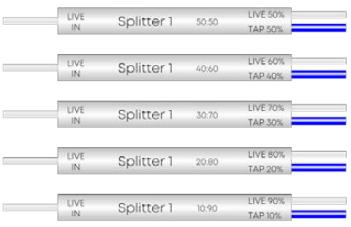


2 Fiber type

SM	Singlemode G.652.D
04	Multimode OM4

3 Splitting ratio

Dual band [1]	All band [2]
5050	5A5A
6040	6A4A
7030	7A3A
8020	8A2A
9010	9A1A



1 λ: SM: 1310±10 nm, 1550±10 nm, OM4: 850±40 nm, 1300±40 nm
2 λ: SM: 1260 nm to 1625 nm, OM4: not available

4 5 Live adapter A or B

88	LC PC/UPC	2
89	LC APC	2
54	MTP Base-8 female	8
55	MTP Base-8 male	8

6 TAP adapter

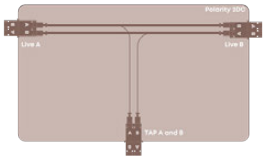
87	LC PC/UPC	2
62	MTP Base-8 female	8
63	MTP Base-8 male	8

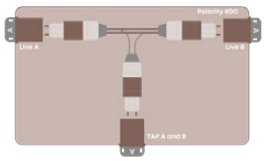
7 Number of circuits

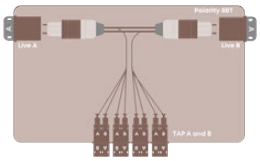
01	1 circuit
02	2 circuits

8 Polarity

2DC	Base-2, direct connect	2
8DC	Base-8, direct connect	8
8BT	Base-8, breakout in the TAP path	8







9 Performance MTP

0	No MTP connectivity
B	Singlemode MTP elite performance
L	Multimode MTP elite performance

10 Performance LCd

0	No LC duplex connectivity
S	Singlemode standard performance
L	Multimode low-loss performance

SYLFA HD patching modules

SYLFA HD patch modules LC



1 STS-12-LCUD-02-12CF-SM-NS-00WW

2 STS-12-LCAD-02-12CF-SM-NS-00WW

3 STS-12-LCMD-02-12AF-04-NS-00UU

SYLFA HD patch modules SC



4 STS-12-SCUS-01-12CF-SM-NS-00WW

5 STS-12-SCAS-01-12CF-SM-NS-00WW

6 STS-12-SCMS-01-12AF-04-NS-00UU

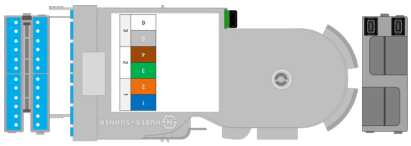
Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	on request	SPS-12-LCUD-00-0000-00-00-0000	SYLFA HD patching module, 24xLC UPC		
2	85125722	SPS-12-LCAD-00-0000-00-00-0000	SYLFA HD patching module, 24xLC APC		
3	on request	SPS-12-LCMD-00-0000-00-00-0000	SYLFA HD patching module, 24xLC OM4		
4	on request	SPS-12-SCUS-00-0000-00-00-0000	SYLFA HD patching module, 12xSC UPC		
5	85192426	SPS-12-SCAS-00-0000-00-00-0000	SYLFA HD patching module, 12xSC APC		
6	on request	SPS-12-SCMS-00-0000-00-00-0000	SYLFA HD patching module, 12xSC OM4		

SYLFA HD transition modules

SYLFA HD transition modules LC

12



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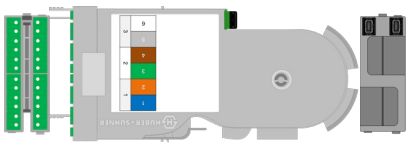
STS-12-LCUD-02-12CF-SM-NS-00WW



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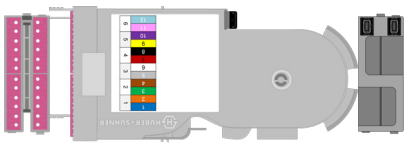
STS-12-LCAD-02-12CF-SM-NS-00WW

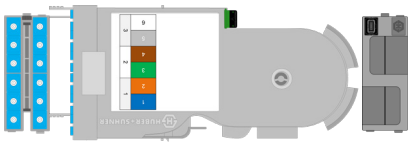


3

STS-12-LCMD-02-12AF-O4-NS-00UU

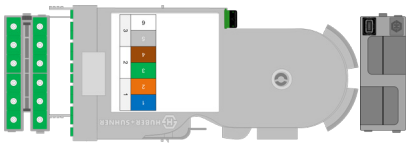
SYLFA HD transition modules SC

12



4

STS-12-SCUS-01-12CF-SM-NS-00WW



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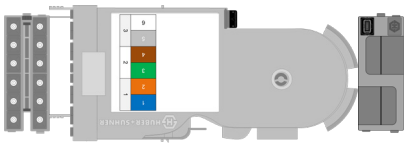
STS-12-SCAS-01-12CF-SM-NS-00WW



6

STS-12-SCMS-01-12AF-O4-NS-00UU

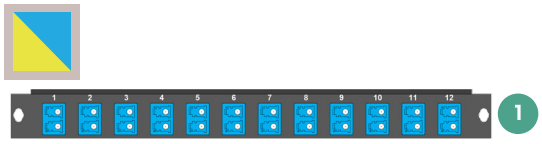
Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85158500	STS-12-LCUD-02-12CF-SM-NS-00WW	SYLFA HD transition module Base-12e, 24xLC UPC to 2x MTP-12 female, singlemode, polarity NS		
2	85158499	STS-12-LCAD-02-12CF-SM-NS-00WW	SYLFA HD transition module Base-12e, 24xLC APC to 2x MTP-12 female, singlemode, polarity NS		
3	85158501	STS-12-LCMD-02-12AF-O4-NS-00UU	SYLFA HD transition module Base-12e, 24xLC OM4 to 2x MTP-12 female, multimode, polarity NS		
4	on request	STS-12-SCUS-01-12CF-SM-NS-00WW	SYLFA HD transition module Base-12e, 12xSC UPC to MTP-12 female, singlemode, polarity NS		
5	85158502	STS-12-SCAS-01-12CF-SM-NS-00WW	SYLFA HD transition module Base-12e, 12xSC APC to MTP-12 female, singlemode, polarity NS		
6	on request	STS-12-SCMS-01-12AF-O4-NS-00UU	SYLFA HD transition module Base-12e, 12xSC OM4 to MTP-12 female, multimode, polarity NS		

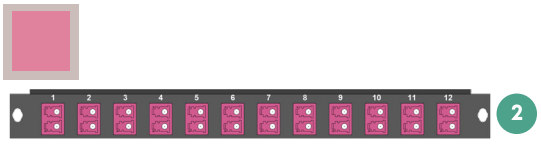
ZDPHD adapter plates

ZDPHD universal adapter plates, 12x LCd

2



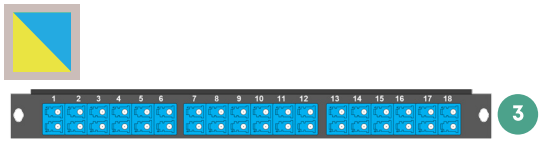
HDUAP-BK-88-12-SM-M-1



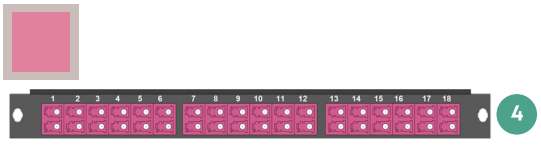
HDUAP-BK-88-12-OM4-M-1

ZDPHD universal adapter plates, 18x LCd

2



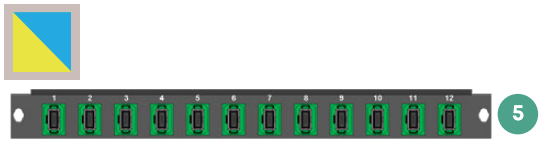
HDUAP-BK-88-18-SM-M-1



HDUAP-BK-88-18-OM4-M-1

ZDPHD universal adapter plates, 12x MTP

8 12 12 24



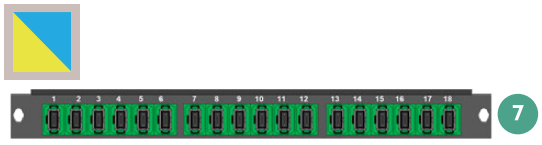
HDUAP-BK-MT-12-SM-M-1



HDUAP-BK-MT-12-BLK-M-1

ZDPHD universal adapter plates, 18x MTP

8 12 12 24

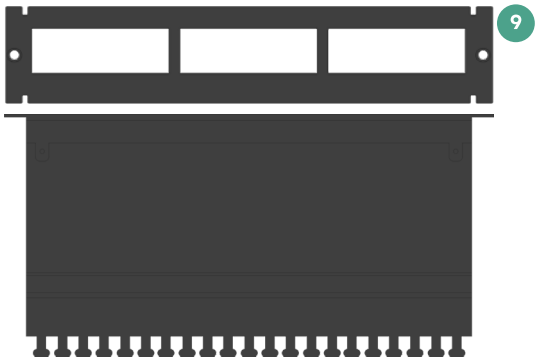


HDUAP-BK-MT-18-SM-M-1



HDUAP-BK-MT-18-BLK-M-1

ZDPHD RJ45 plate



HDUAP-KJ-12-EMPTY-M-1-BK

ZDPHD blind plate



ZDPHD-BLIND-PLT-BK

Important

18x LCd port module or adapter plate supports LC-XD connector only. 12x LCd port supports any LC connector.



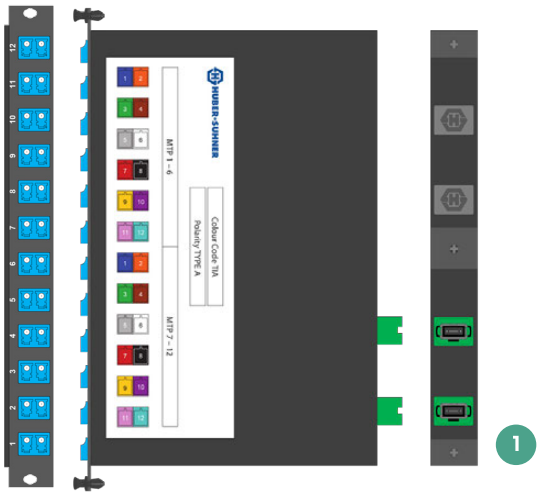
Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	on request	HDUAP-BK-88-12-SM-M-1	Adaptor plate for ZDPHD, black, 12x LCd UPC, singlemode		
2	on request	HDUAP-BK-88-12-OM4-M-1	Adaptor plate for ZDPHD, black, 12x LCd , multimode OM4		
3	85009702	HDUAP-BK-88-18-SM-M-1	Adaptor plate for ZDPHD, black, 12x LCd UPC, singlemode		
4	on request	HDUAP-BK-88-18-OM4-M-1	Adaptor plate for ZDPHD, black, 18x LCd , multimode OM4		
5	on request	HDUAP-BK-MT-12-SM-M-1	Adaptor plate for ZDPHD, black, 12x MTP (green), singlemode		
6	on request	HDUAP-BK-MT-12-BLK-M-1	Adaptor plate for ZDPHD, black, 12x MTP (black), multimode		
7	85018176	HDUAP-BK-MT-18-SM-M-1	Adaptor plate for ZDPHD, black, 18x MTP (green), singlemode		
8	85014434	HDUAP-BK-MT-18-BLK-M-1	Adaptor plate for ZDPHD, black, 18x MTP (black), multimode		
9	85029057	HDUAP-KJ-12-EMPTY-M-1-BK	Plate for ZDPHD, black, 12x keystone cut-outs (for copper keystones)		
10	84148846	ZDPHD-BLIND-PLT-BK	Blind plate for ZDPHD, black		

ZDPHD modules

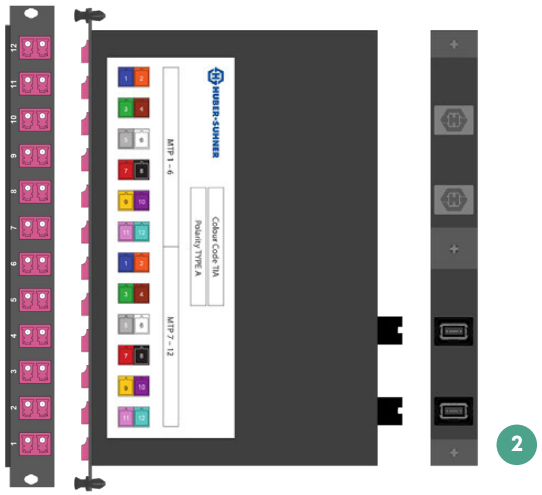
ZDPHD MTP transition modules, 12xLCd

12



1

MTHDM-BK-5388-1224A2-4R-BSA

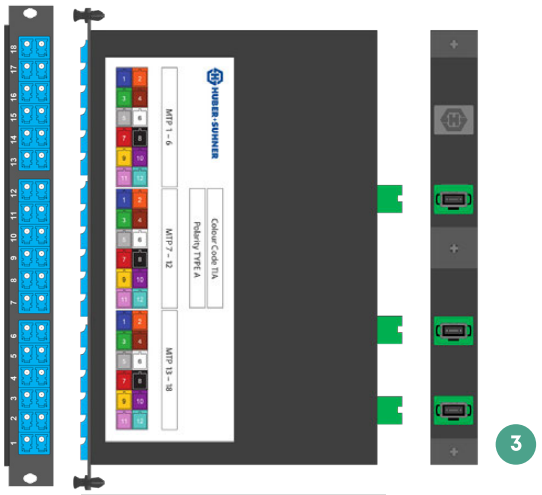


2

MTHDM-BK-5388-122404-4R-UUA

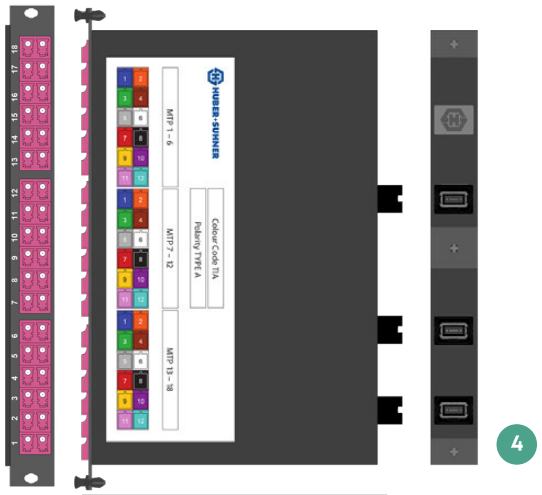
ZDPHD MTP transition modules, 18xLCd

12



3

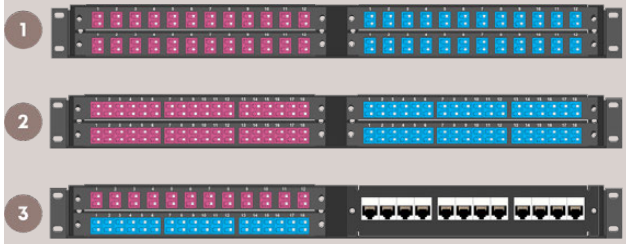
MTHDM-BK-5388-1836A2-4R-BSA



4

MTHDM-BK-5388-183604-4R-UUA

ZDPHD application examples



(1) Example ZDPHD patch panel:
48x LC ports (96 fibers)

(2) Example ZDPHD patch panel:
72x LC ports (144 fibers)

(3) Example ZDPHD hybrid patch panel:
12x LC OM4 multimode ports
18x LC UPC singlemode ports
12x RJ45 keystone jacks

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	84150020	MTHDM-BK-5388-1224A2-4R-BSA	Transition module for ZDPHD, polarity AS, MTP male, 24 fibers; 12x LCd UPC duplex, singlemode		
2	84150025	MTHDM-BK-5388-1224O4-4R-UUA	Transition module for ZDPHD, polarity AS, MTP male, 24 fibers; 12x LCd duplex, multimode OM4		
3	84148469	MTHDM-BK-5388-1836A2-4R-BSA	Transition module for ZDPHD, polarity AS, MTP male, 36 fibers; 18x LCd UPC duplex, singlemode		
4	84148468	MTHDM-BK-5388-1836O4-4R-UUA	Transition module for ZDPHD, polarity AS, MTP male, 36 fibers; 18x LCd duplex, multimode OM4		



Fiber management systems Accessories



Attenuators

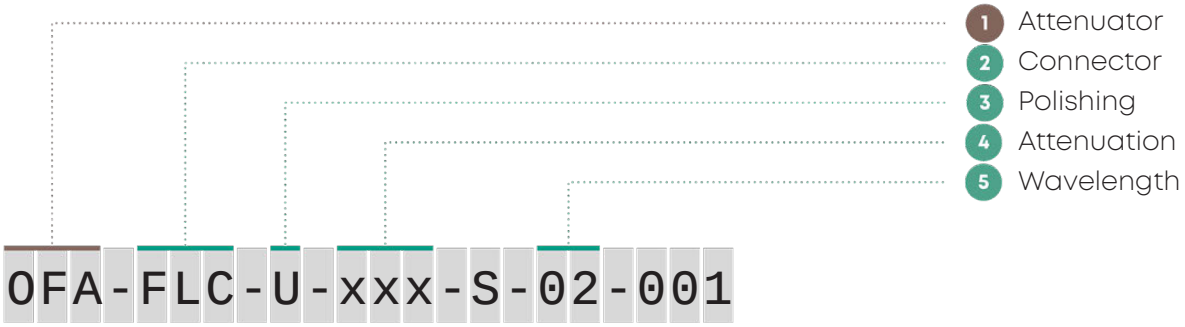
Optical attenuators

Attenuator type	0 dB	5 dB	10 dB	15 dB	20 dB
 OFA-FLC-U-XXX-S-02-001	1	2	3	4	5

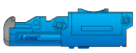
Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85085439	OFA-FLC-U-000-S-02-001	Attenuator, LC UPC simplex, SM, 0dB	☑	
2	84125370	OFA-FLC-U-050-S-02-001	Attenuator, LC UPC simplex, SM, 5dB	★	
3	84123863	OFA-FLC-U-100-S-02-001	Attenuator, LC UPC simplex, SM, 10dB	★	
4	84125383	OFA-FLC-U-150-S-02-001	Attenuator, LC UPC simplex, SM, 15dB	☑	
5	84125388	OFA-FLC-U-200-S-02-001	Attenuator, LC UPC simplex, SM, 20dB	☑	

Order code optical attenuator



2 Connector type

FLC	LC connector		
FSC	SC connector		
FLSH	E-2000 connector		

4 Attenuation value

xxx

Use 3 characters to describe, e.g.:

010	1 dB
055	5.5 dB
200	20 dB

3 APC/UPC polishing shape

A	
U	

5 Operating wavelength

01	1310 nm / 1550 nm
02	1260-1625 nm

Cable accessories

Cable accessories



1 RAPSTRAP-BK_48-P



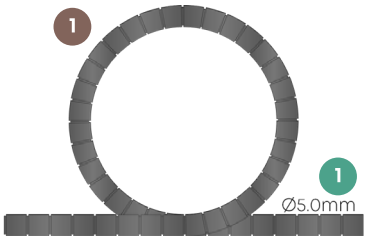
2 Velcrostrap_16xR_BK
Velcrostrap_7x200_BK_100-P

Ordering information

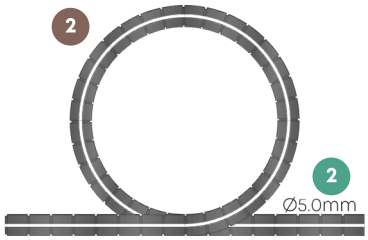
#	Item number	Descriptive code	Item text	LT	URL
1	85004339	RAPSTRAP-BK_48-P	Rapstrap, 48 pcs, black	☑	
2	84005451	Velcrostrap_16xR_BK	Velcrostrap, 16mm width, 25 m, black colour	★	
3	84005803	Velcrostrap_7x200_BK_100-P	Velcrostrap, 7x200 mm, black colour, 100 pcs	☑	

Protection tubes

Optical fiber protection tube (OFPT)



OFPT-5.0-3.3-PBT-V0-BK-100m

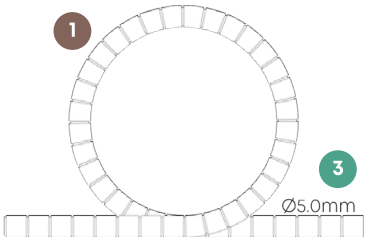


OFPT-S-5.0-3.3-PBT-V0-BK-100m

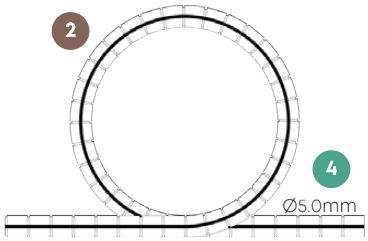
ZIP tool for slitted tubes



ZIP-5.0-R-ALY-SLV(X17263)

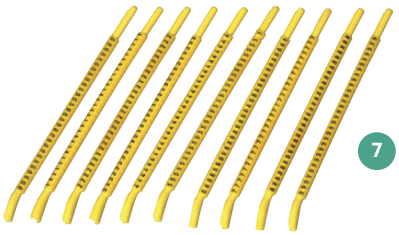


OFPT-5.0-3.3-PBT-V0-WH-100m

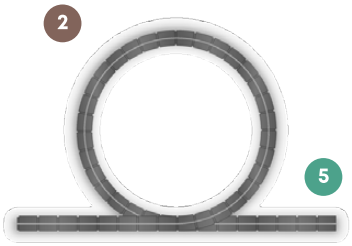


OFPT-S-5.0-3.3-PBT-V0-WH-100m

0-9 numbering for Ø5 mm tube



FBLT-NUMBER-CLIP-SET-0-9-YE



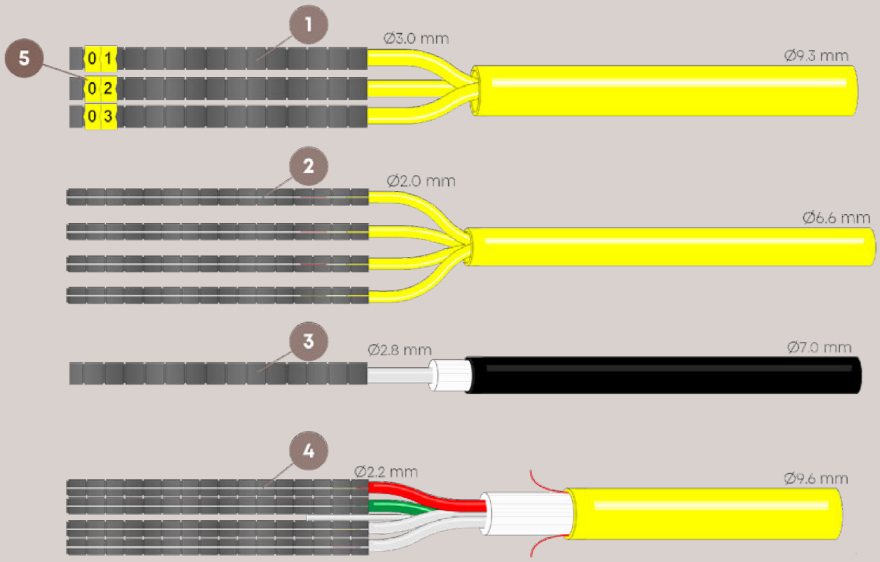
OFPT-S-4.0-2.6-PBT-V0-BK-100m

(1) Solid
(2) Slitted

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	84014502	OFPT-5.0-3.3-PBT-V0-BK-100m	Optical fiber protection tube 5mm, 100m, black	★	
2	85017566	OFPT-S-5.0-3.3-PBT-V0-BK-100m	Optical fiber protection tube 5mm, 100m, black, slitted	★	
3	84147024	OFPT-5.0-3.3-PBT-V0-WH-100m	Optical fiber protection tube 5mm, 100m, white	☑	
4	85017565	OFPT-S-5.0-3.3-PBT-V0-WH-100m	Optical fiber protection tube 5mm, 100m, white, slitted	☑	
5	84088286	OFPT-S-4.0-2.6-PBT-V0-BK-100m	Optical fiber protection tube 4mm, 100m, black, slitted, for mini loose tubes	☑	
6	84025983	ZIP-5.0-R-ALY-SLV(X17263)	Conduit ZIP tool	★	
7	84088287	FBLT-NUMBER-CLIP-SET-0-9-YE	Numper clip set 0-9, yellow, for optical fiber protection tubes	☑	

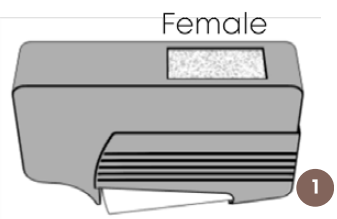
OFPT selection guidance

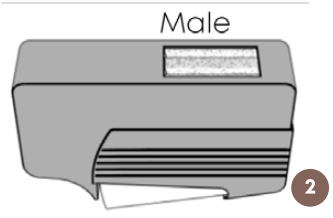


(1) Ø5 mm tube → Optipack Ø2.0-Ø3.0 mm
(2) Ø4 mm tube → Optipack Ø2.0
(3) Ø5 mm tube → Loose tubes Ø2.2-Ø2.8 mm
(4) Ø4 mm tube → Loose tubes Ø2.2 mm
(5) Optional tube numbering

Cleaning

MTP connector cleaning



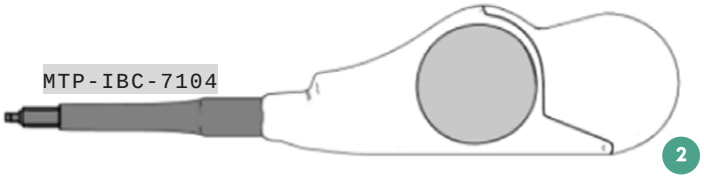


1 OPTIPOPR-MTP-F-6338
2 OPTIPOPR-MTP-M-6339
OPTIPOPR-REFILL-6232-6P

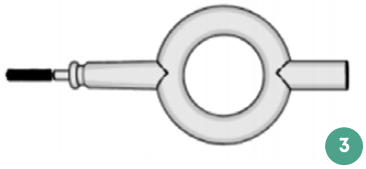
1

MTP connector and adapter

MTP-IBC-7104



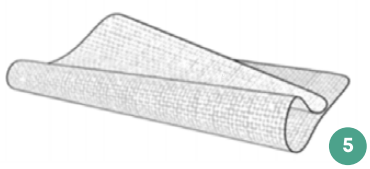
Brush/swap for MTP pins and pin holes, tissues for wet cleaning



TOOL-CLN-BRUSH-CPS107-5P



TOOL-CLN-SWAB-38140-500P

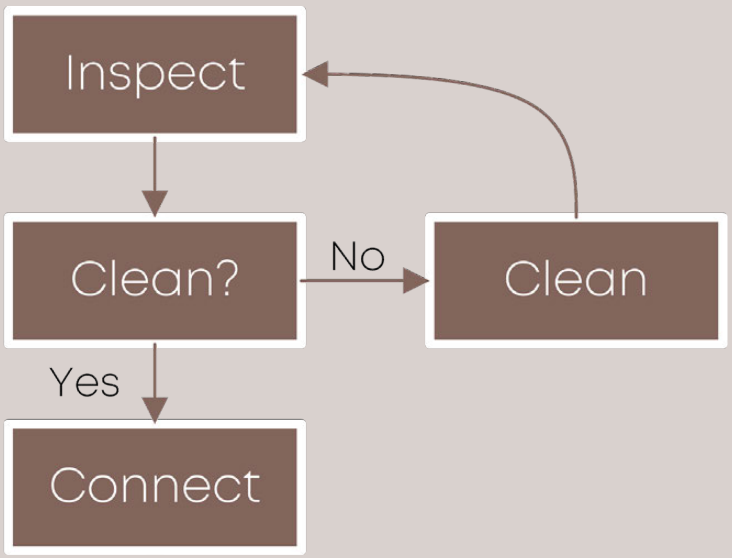


TOOL-CLN-TISSUES-4x4-1200P

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	84097538	OPTIPOPR-MTP-F-6338	OPTIPOP - cassette for MTP Male connectors	✓	
	84097539	OPTIPOPR-MTP-M-6339	OPTIPOP - cassette for MTP Female connectors	✓	
	84097551	OPTIPOPR-REFILL-6232-6P	Replacement ribbon for MTP end face cleaner	✓	
2	84097537	MTP-IBC-7104	MTP end face cleaner	✓	
3	85066833	TOOL-CLN-BRUSH-CPS107-5P	Brushes with handle, 5 pcs	◕	
	85099339	TOOL-CLN-BRUSH-CPS07-25P	Brushes with handle, 25 pcs	✓	
4	84139207	TOOL-CLN-SWAB-38140-500P	Swab for pins cleaning, 500 pcs per pack	★	
5	84118177	TOOL-CLN-TISSUES-4x4-1200P	Cleaning tissues 4 x 4", 1200P	✓	

General procedure for inspection and cleaning



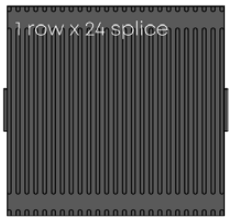
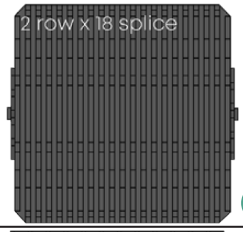
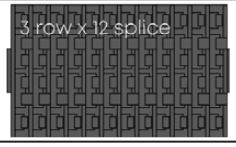
MTP cleaning

LC cleaning

FO cleaning

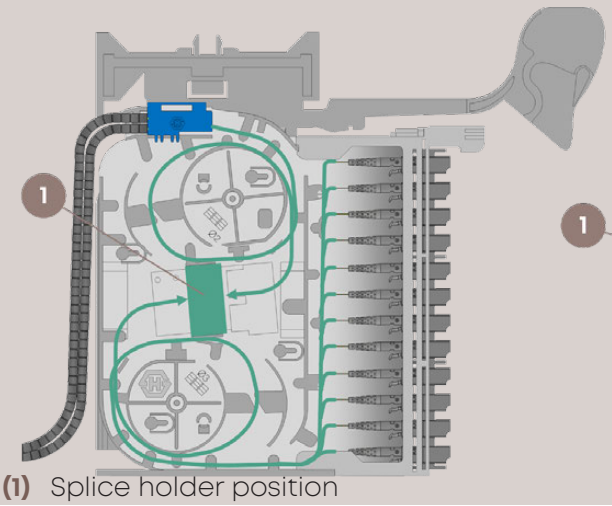
Splice accessories

Splice holder and splice protector matrix

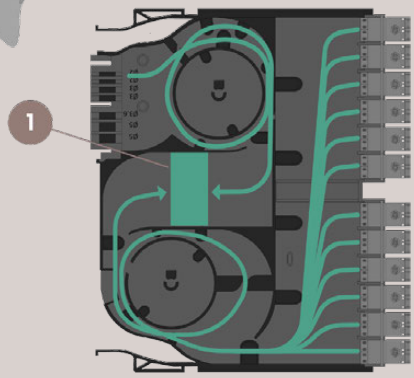
Splice holder		LISA	IANOS double	CTS	Protectors
24-way sandwich SPL-COMP-ACS-SW-24-WAY	 1	✓	✓	✓	SPL-PR-SW-30-150P 7
36-way sandwich SPL-COMP-FTII-SW-36-WAY	 2	✓	✗	✗	
24-way heatshrink Ø1.5 mm SPL-COMP-ACS-HS1.5-24-WAY	 3	✓	✓	✓	SPL-PR-HS-1.5x40mm-12P SPL-PR-HS-1.5x40mm-100-P 8
36-way heatshrink Ø1.5 mm SPL-COMP-FTII-HS1.5-36-WAY	 4	✓	✗	✗	
12-way heatshrink Ø2.4 mm SPL-COMB-ACS-HS2.4-12-WAY	 5	✓	✗	✓	SPL-PR-HS-2.4x45mm-12P SPL-PR-HS-2.4x45mm-100P SPL-PR-HS-2.4x60mm-100P 9
6-way ribbon heatshrink 3.75x5.75 mm SPL-COMP-FTII-RB-06-WAY-BK	 6	✓	✓	✓	SPL-PR-RB-3.75x4.75x40mm-50P 10

Splice holders positions

LISA cassette



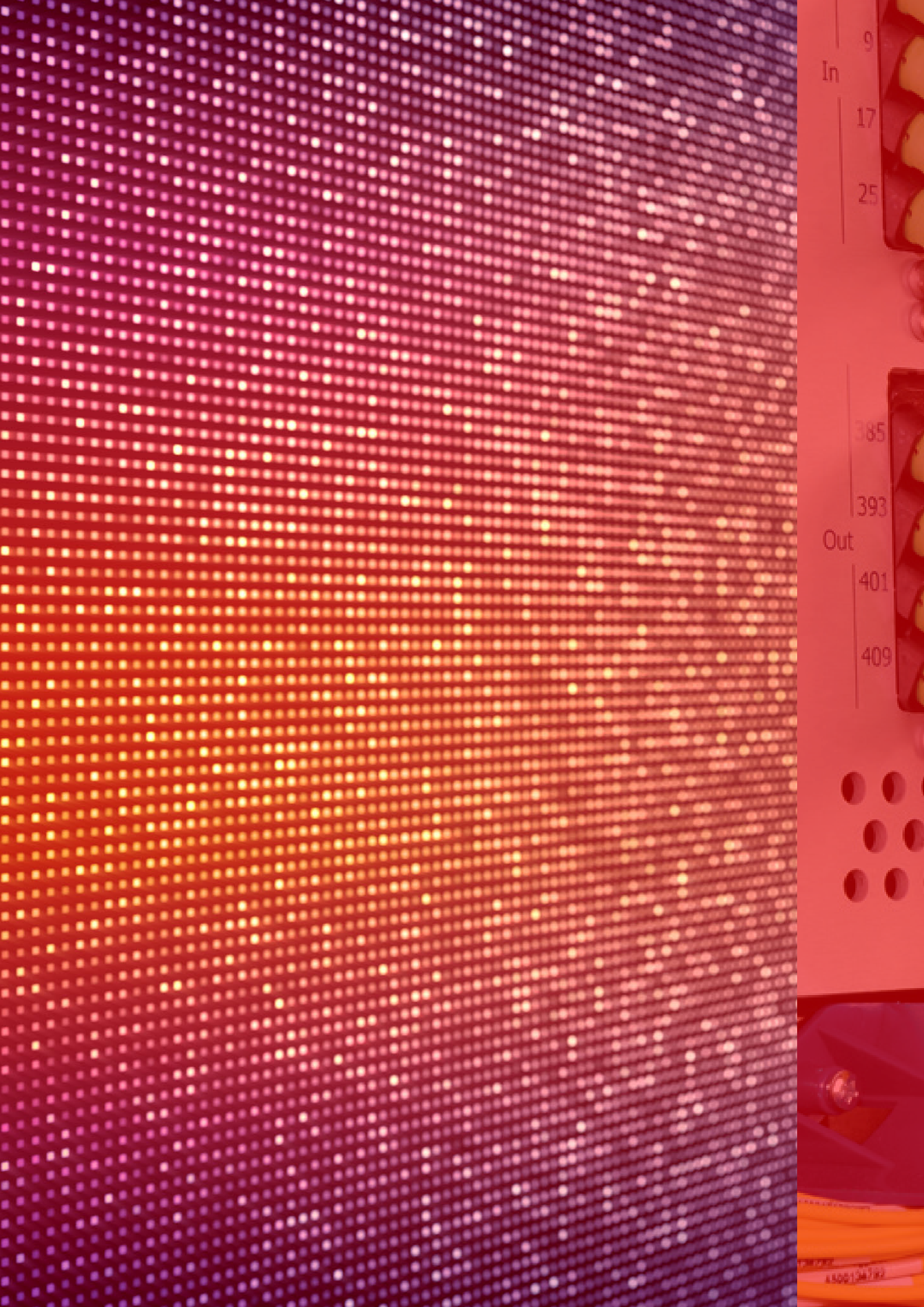
IANOS double module



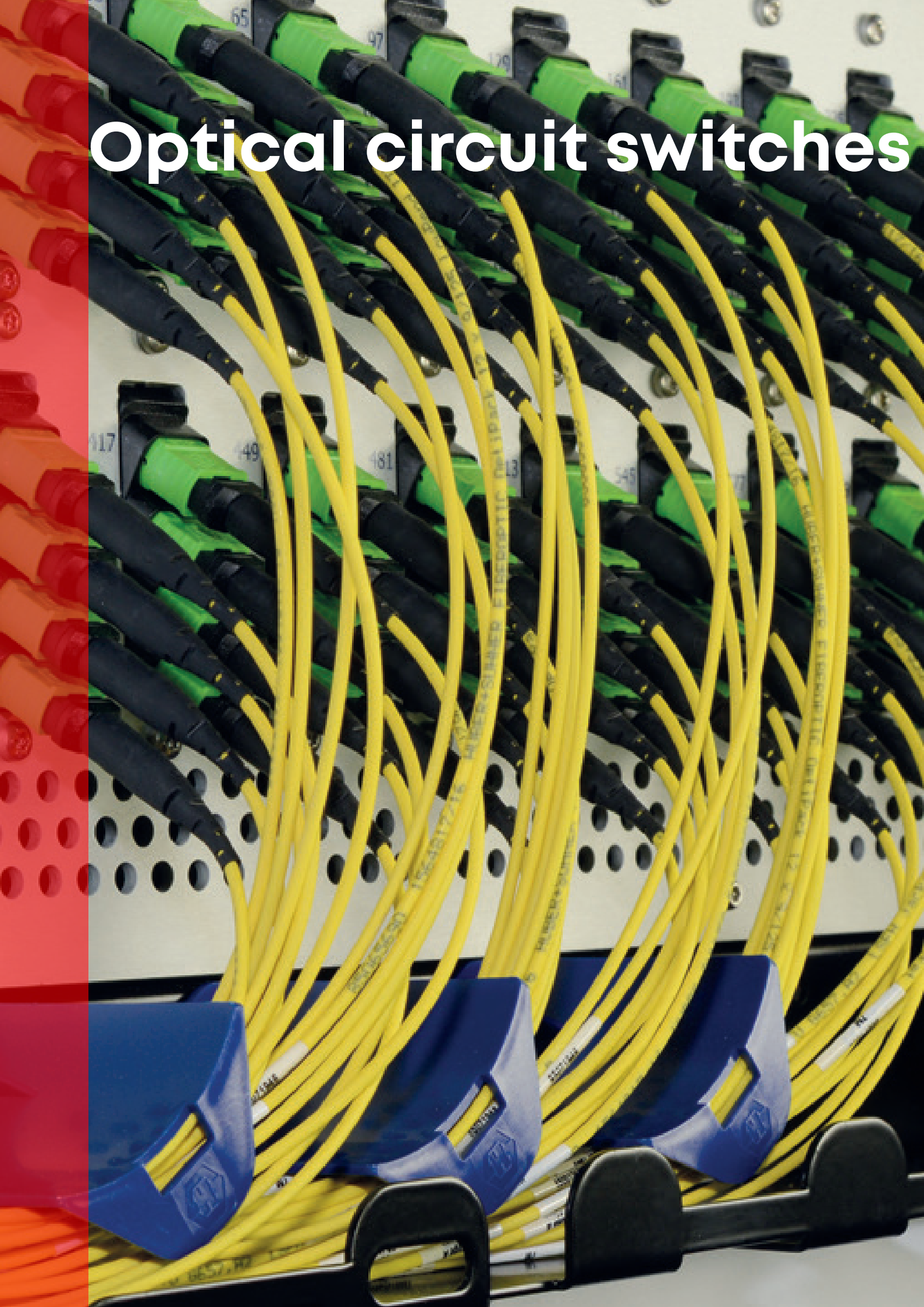
(1) Splice holder position

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	84103969	SPL-COMP-ACS-SW-24-WAY	Splice holder, sandwich, 24-way		
2	84103960	SPL-COMP-FTII-SW-36-WAY	Splice holder, sandwich, 36-way		
3	84123618	SPL-COMP-ACS-HS1.5-24-WAY	Splice holder, heatshrink, 24-way, Ø1.5 mm		
4	84142487	SPL-COMP-FTII-HS1.5-36-WAY	Splice holder, heatshrink, 36-way, Ø1.5 mm		
5	84127301	SPL-COMB-ACS-HS2.4-12-WAY	Splice holder, heatshrink, 12-way, Ø2.4 mm		
6	85069503	SPL-COMP-FTII-RB-06-WAY-BK	Splice holder, ribbon, 6-way		
7	23218558	SPL-PR-SW-30-150P	Splice protector, sandwich, 30 mm, 150 pcs		
8	84004470	SPL-PR-HS-1.5x40mm-12P	Splice protector, heatshrink Ø1.5 mm, 40 mm, 12 pcs		
	84059763	SPL-PR-HS-1.5x40mm-100-P	Splice protector, heatshrink Ø1.5 mm, 40 mm, 100 pcs		
9	84004457	SPL-PR-HS-2.4x45mm-12P	Splice protector, heatshrink Ø2.4 mm, 45 mm, 12 pcs		
	84005214	SPL-PR-HS-2.4x45mm-100P	Splice protector, heatshrink Ø2.4 mm, 45 mm, 100 pcs		
	84005215	SPL-PR-HS-2.4x60mm-100P	Splice protector, heatshrink Ø2.4 mm, 60 mm, 100 pcs		
10	85134949	SPL-PR-RB-3.75x4.75x40mm-50P	Splice protector, heatshrink ribbon 3.75x4.75, 40 mm, 50 pcs		


In
9
17
25
385
393
Out
401
409

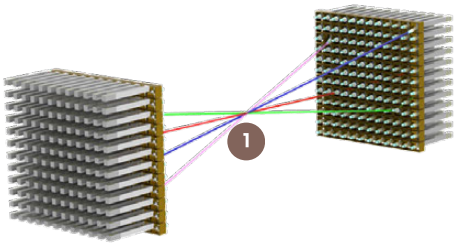
Optical circuit switches



POLATIS technology overview

Direct light™ technology

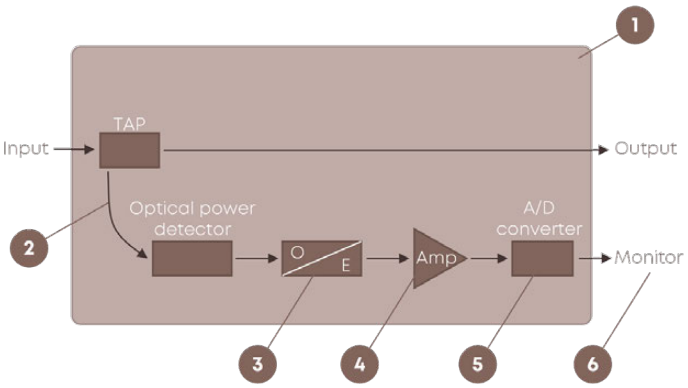
POLATIS all-optical switches (OOO) enable data center operators to make and change single or multiple cross-connects on the fly securely, remotely and from anywhere as part of an SDN-enabled network. The patented DirectLight® **(1)** beam-steering technology at the core of POLATIS optical switches makes connections between opposing arrays of input and output fibers with minimal loss, distortion or interference between paths and switching occurs completely independently of the power level, colour or direction of light on the path. POLATIS optical switches are agnostic with regard to data rates and protocols and can hold dark fiber connections.



Go to external document/link

Optical power monitoring

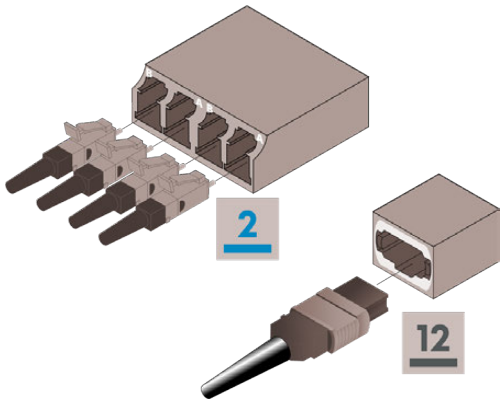
POLATIS optical switches for data centers come with an option to include optical power monitoring on the input fibers. Optical power monitoring is used where the data center operator wants to monitor either an absolute loss of signal or a relative degradation of signal over time, which might indicate an optical component is beginning to fail. The user can set alarm conditions for either application in the switch software.



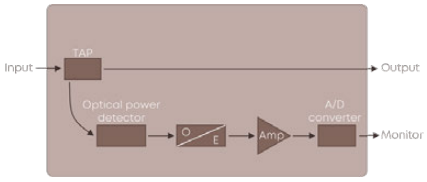
(1) Optical power monitoring
(2) is tapped off to sent to an optical detector
(3) Optical → electrical conversion
(4) Signal amplified
(5) Signal read by A/D converter
(6) Further processed for various calibration factors

Optical switch selection guide

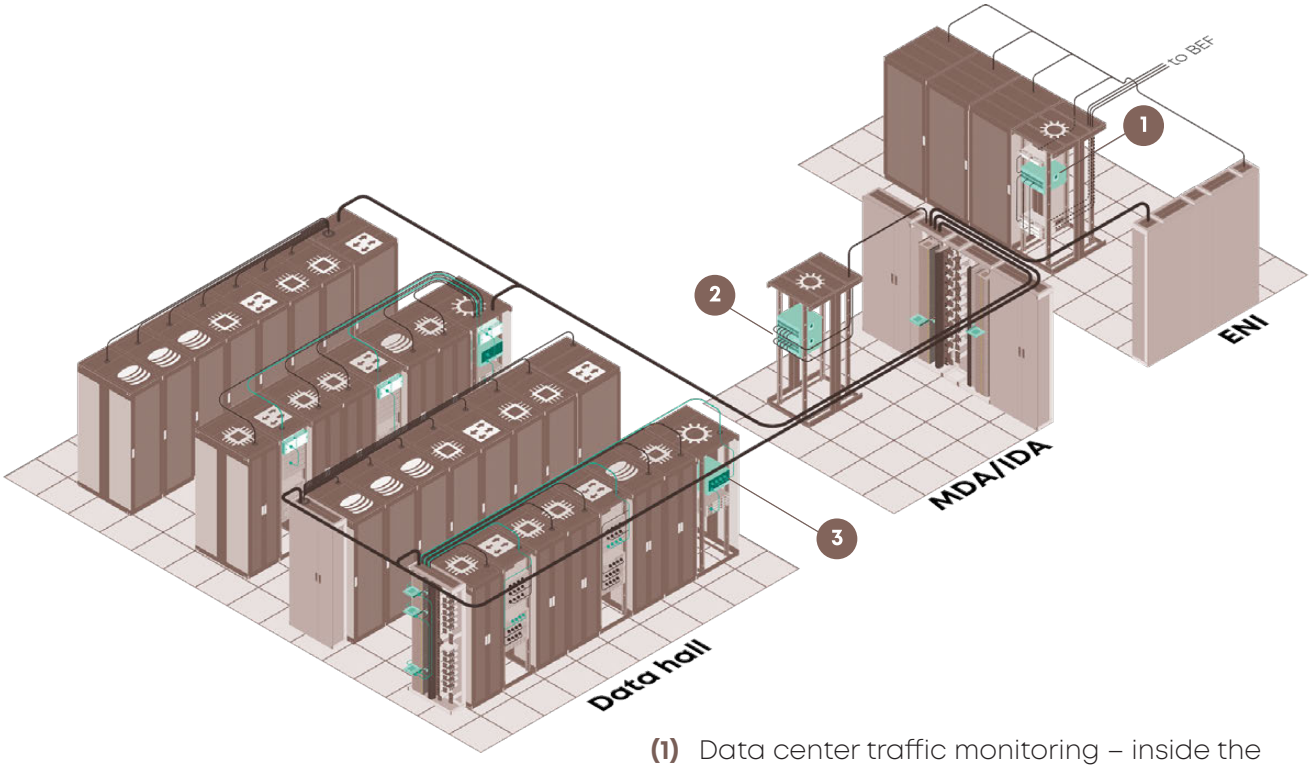
Decide if you want single fiber (LC) or array connectors (12-fiber MTP).



Select OPMs if you want to monitor degradation or loss of signal on the input fibers.



POLATIS – use cases



(1) Data center traffic monitoring – inside the ENI (or meet-me room)

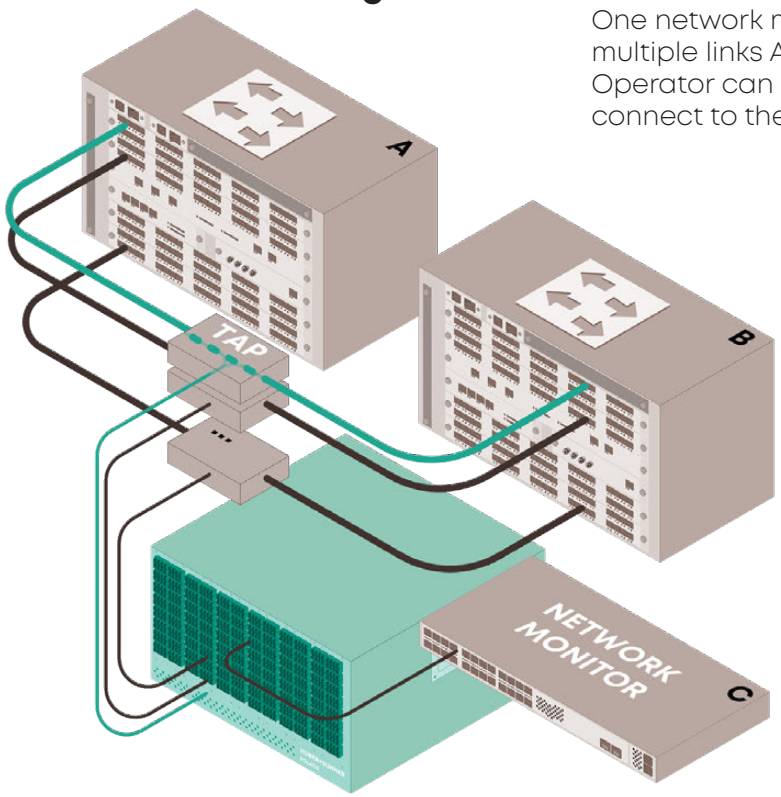
(2) Automated cage-to-cage provisioning – in the MDA/IDA and inside the customer cages in the data hall

(3) Automated fiber testing and protection switching – in the MDA/IDA and inside the customer cages in the data hall

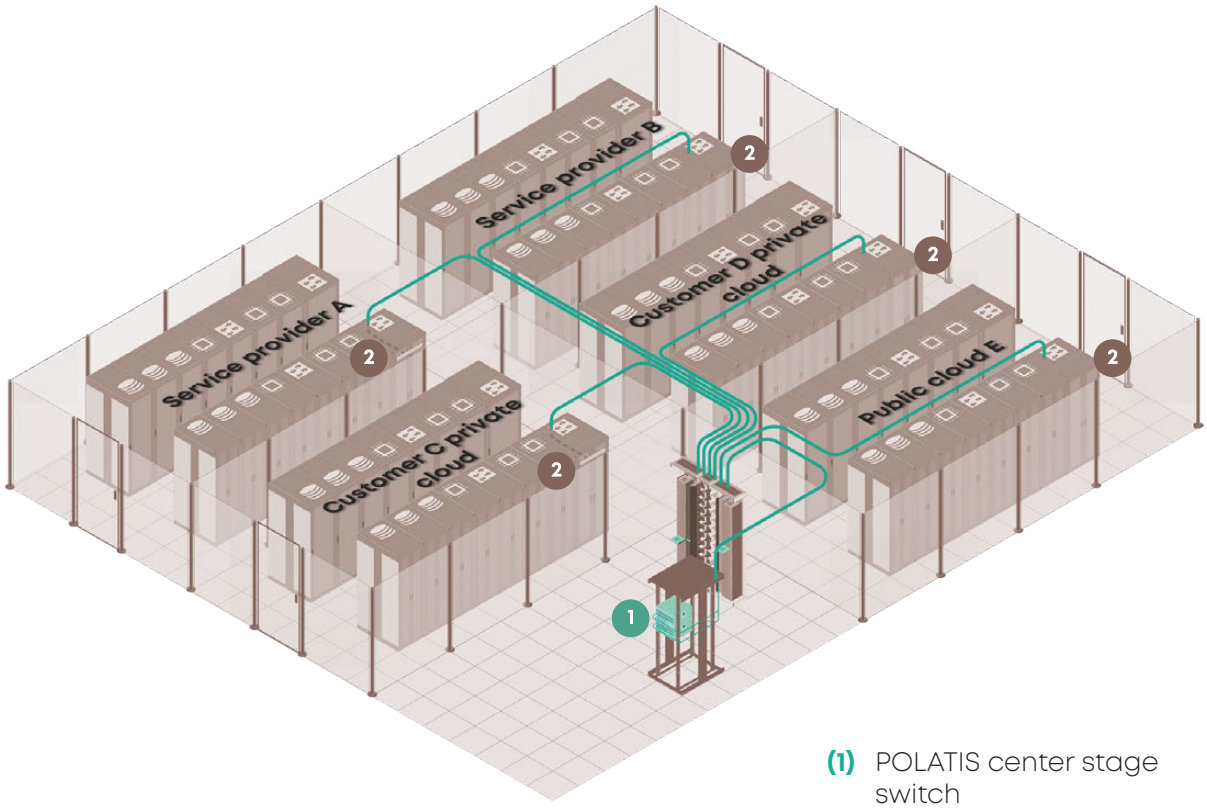
POLATIS data center applications

Data center traffic monitoring

One network monitor (C) can serve multiple links A to B.
Operator can choose which link to connect to the monitor.

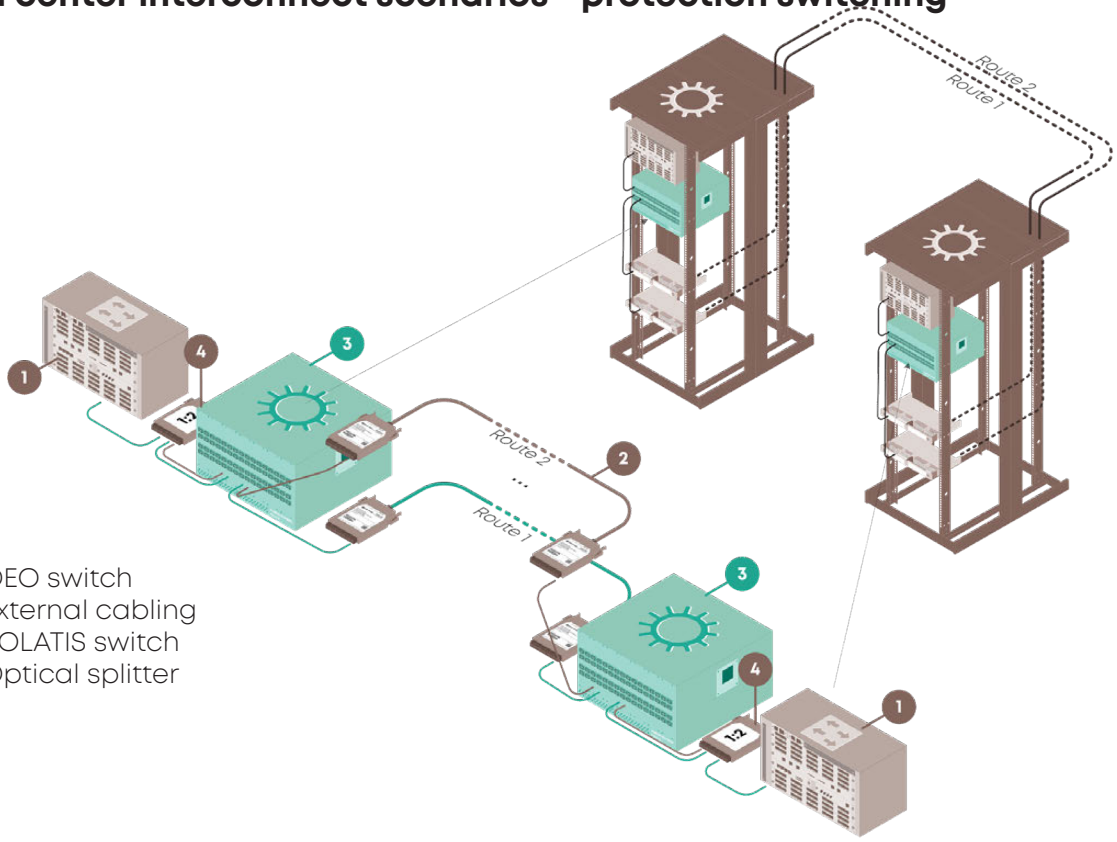


Cage to cage provisioning



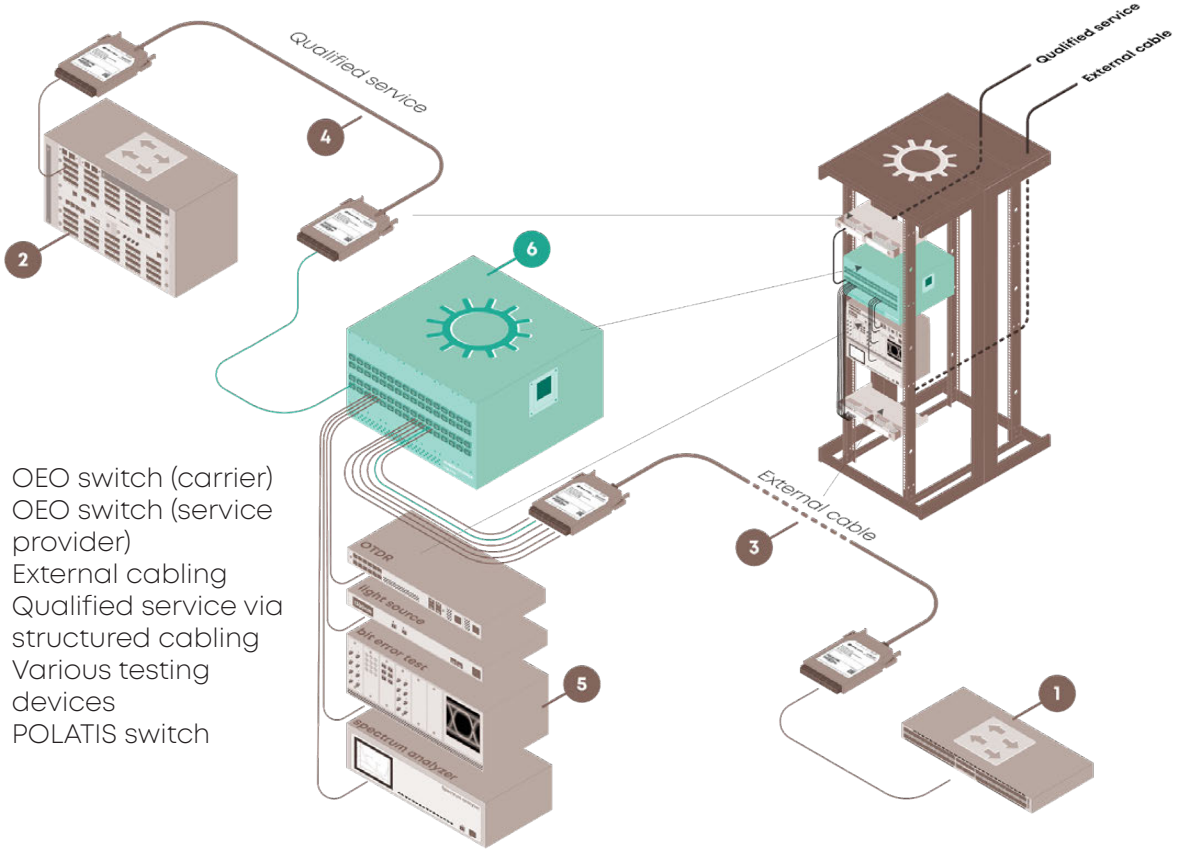
(1) POLATIS center stage switch
(2) POLATIS edge switches

Data center interconnect scenarios - protection switching



(1) OEO switch
(2) External cabling
(3) POLATIS switch
(4) Optical splitter

Data center interconnect scenarios - automating optical fiber testing

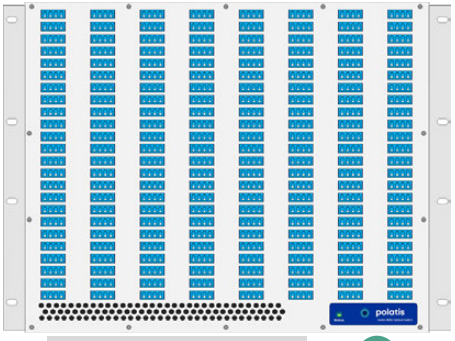


(1) OEO switch (carrier)
(2) OEO switch (service provider)
(3) External cabling
(4) Qualified service via structured cabling
(5) Various testing devices
(6) POLATIS switch

POLATIS order information

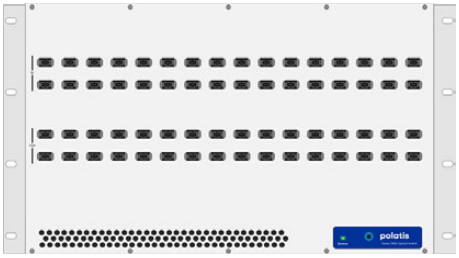
POLATIS optical switch 7000 series, 384x384 matrix

2



N-OST-384x384-LU1-HMWNS
N-VST-384x384-LU1-HMWNS-400
1

12



N-OST-384x384-NA1-HMWNS
N-VST-384x384-NA1-HMWNS-400
2

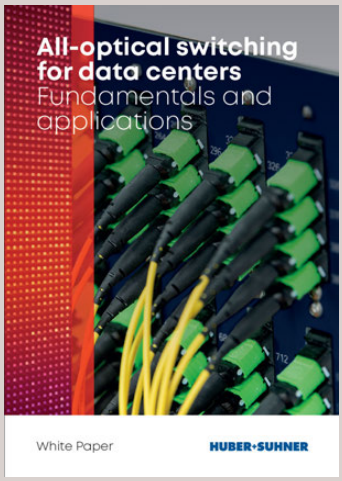
Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	on request	N-OST-384x384-LU1-HMWNS	POLATIS series 7000n network optical switch, 384x384, LC UPC connectors, 8U, hot swap multi-protocol ethernet card, hot swap 90/260 VAC power supply		
	on request	N-VST-384x384-LU1-HMWNS-400	POLATIS series 7000n network optical switch, 384x384, LC UPC connectors, 8U, hot swap multi-protocol ethernet card, hot swap 90/260 VAC power supply, input OPM		
2	on request	N-OST-384x384-NA1-HMWNS	POLATIS series 7000n network optical switch, 384x384, MTP-12 connectors, 6U, hot swap multi-protocol ethernet card, hot swap 90/260 VAC power supply		
	on request	N-VST-384x384-NA1-HMWNS-400	POLATIS series 7000n network optical switch, 384x384, MTP-12 connectors, 6U, hot swap multi-protocol ethernet card, hot swap 90/260 VAC power supply, input OPM		

Many other switch variants available - ask POLATIS team.

Contact form

More to read



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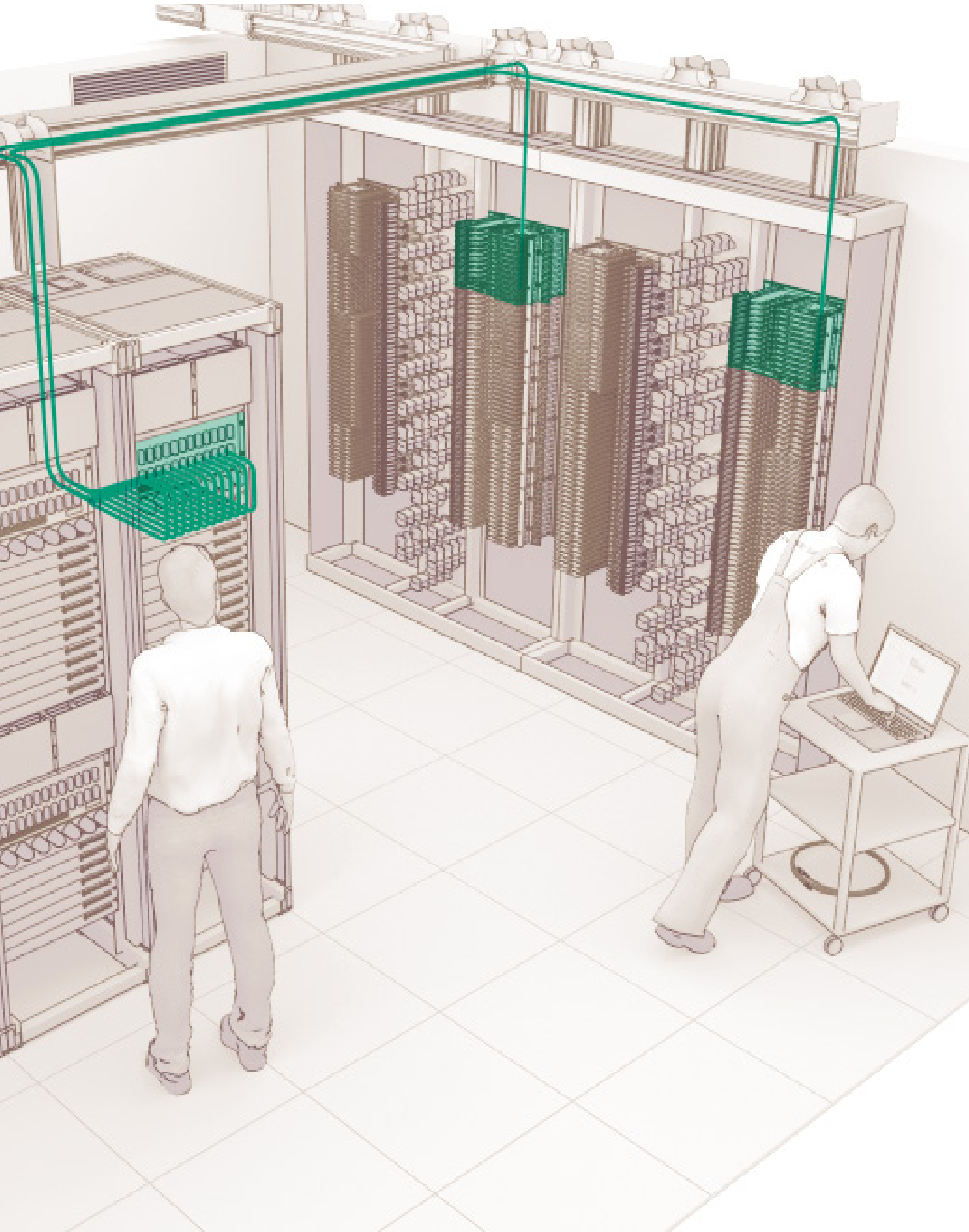
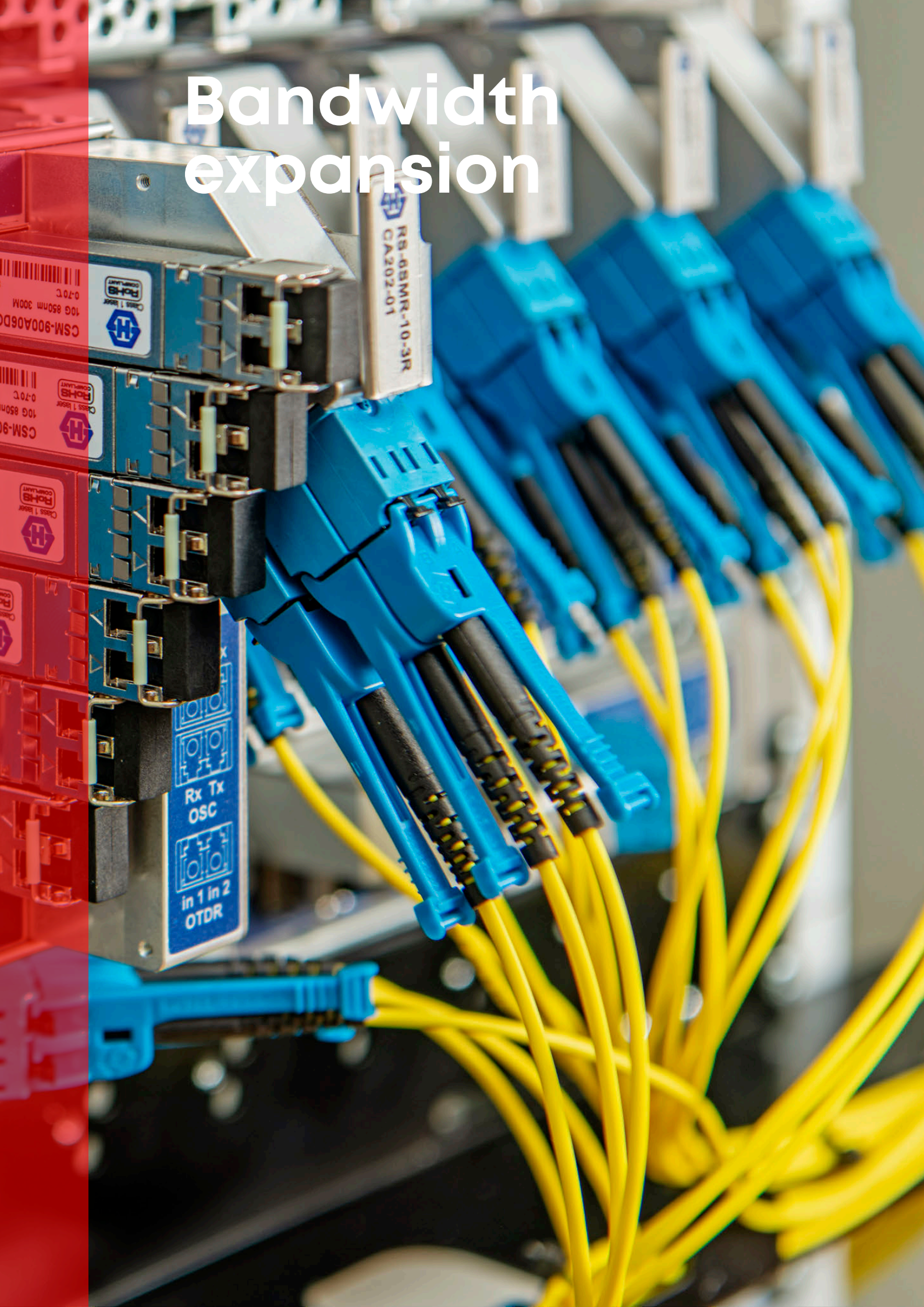


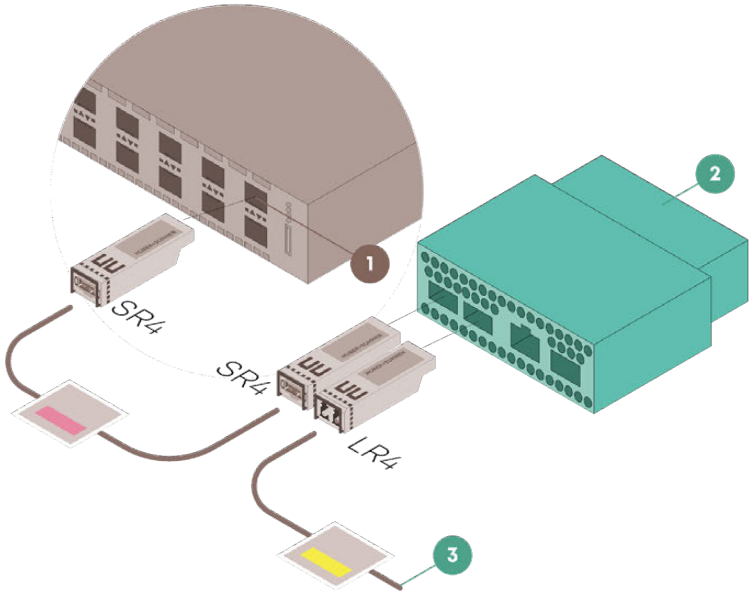


Bandwidth expansion



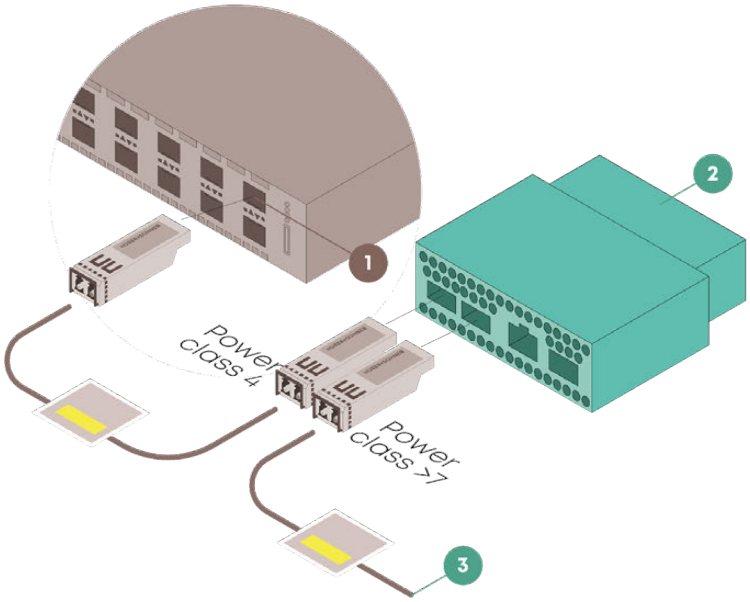
CUBO mini applications

CUBO mini - Media converter



(1) Equipment interface SR4 with short reach
(2) CUBO mini as media converter based on QSFP28
(3) Converted signal to LR4 with 10km reach

CUBO mini - Power class extender

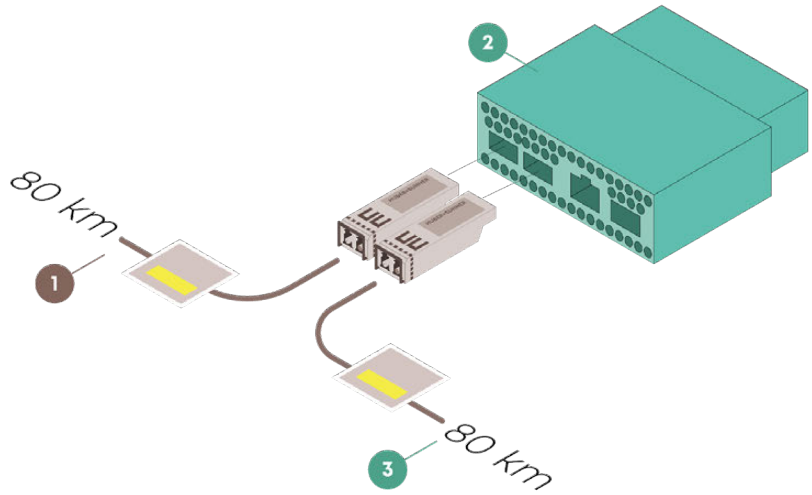


(1) Equipment supporting power class 4
(2) CUBO mini with QSFP28 exceeding MSA power class specifications (up to 8 watt)
(3) Media with extended reach, see supported distances with QSFP28

QSFP28 supported distances

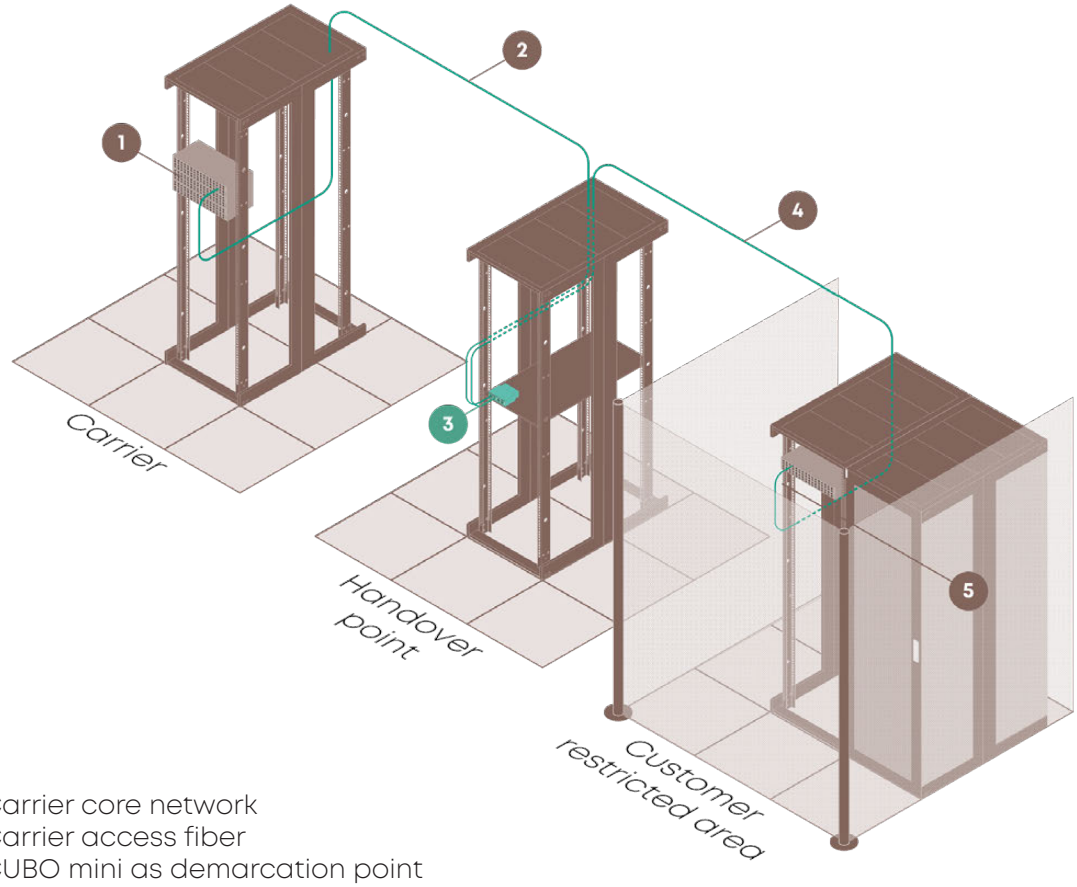
QSFP28 type	AOC	SR4	LR4	eLR4	ER4 lite	ZR4
Max distance	3, 5, 7, 10 meters	100 m	10 km	25 km	30 km	80 km

CUBO mini - Repeater



(1) Fiber length is just beyond of what can be achieved
(2) CUBO mini as repeater based on QSFP28
(3) Regenerated signal

CUBO mini - Repeater



(1) Carrier core network
(2) Carrier access fiber
(3) CUBO mini as demarcation point
(4) Customer fiber
(5) Customer core network

Go to external document/link

CUBO mini order information

CUBO mini 100G ODD



MINI-DEV-ODD-100G 1

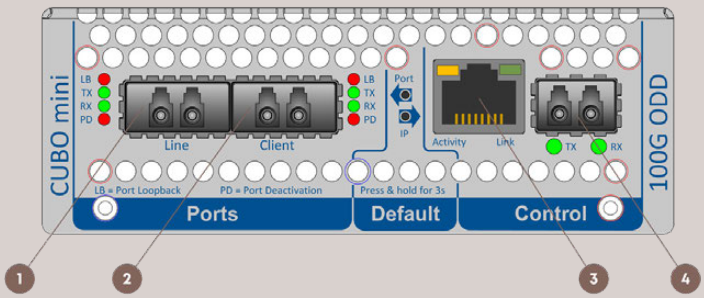


MINI-PSU-AC60-PB 2

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85110287	MINI-DEV-ODD-100G	CUBO mini 100G optical demarcation device (ODD)		
2	85115809	MINI-PSU-AC60-PB	Power Brick Power Supply (not included with CUBO mini 100G ODD)		

CUBO mini 100G ODD interfaces



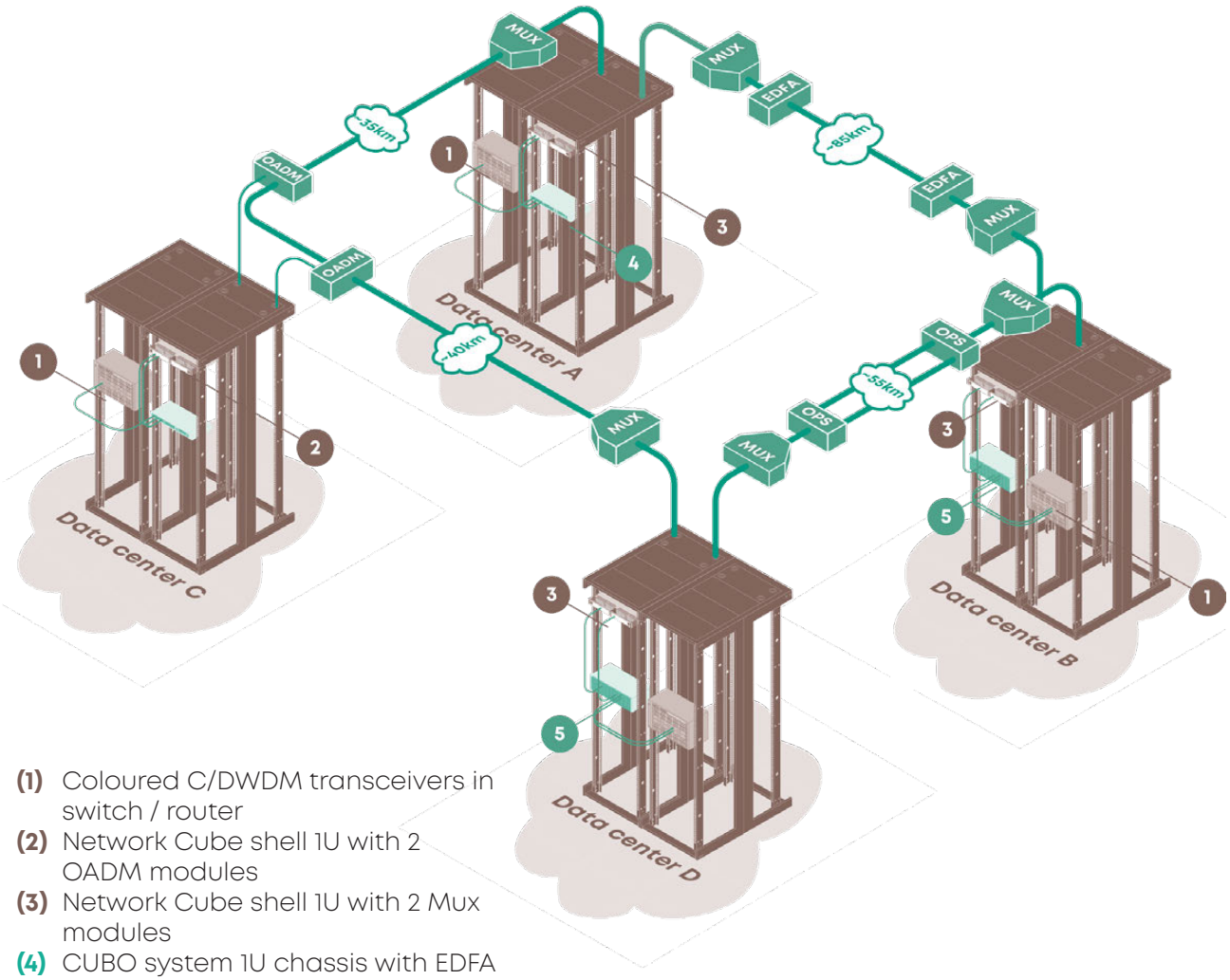
(1) QSFP28 interface line
(2) QSFP28 interface client
(3) RJ45 service port
(4) SFP (management port)

Transceivers



CUBO system applications

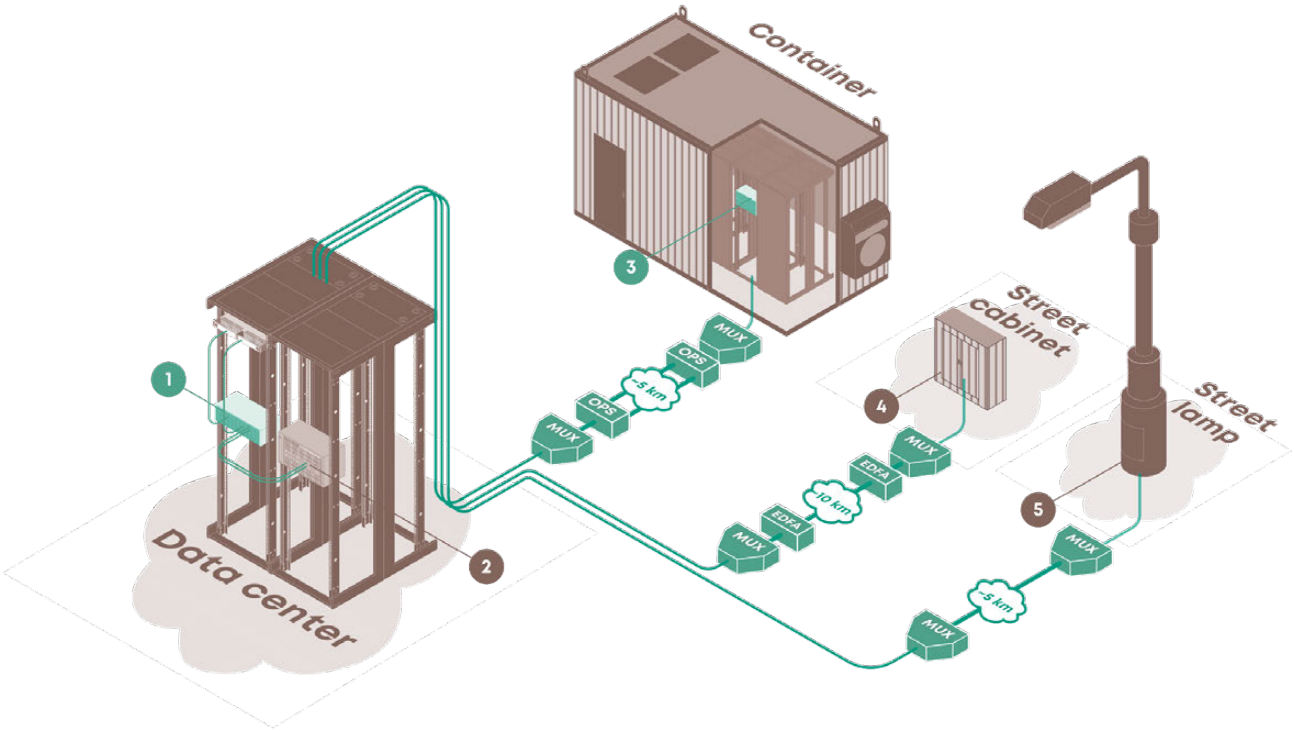
CUBO system - Data center DWDM inter-connects with EDFA and OPS



(1) Coloured C/DWDM transceivers in switch / router
(2) Network Cube shell 1U with 2 OADM modules
(3) Network Cube shell 1U with 2 Mux modules
(4) CUBO system 1U chassis with EDFA module
(5) CUBO system 3U chassis with EDFA module and 1 OPS module

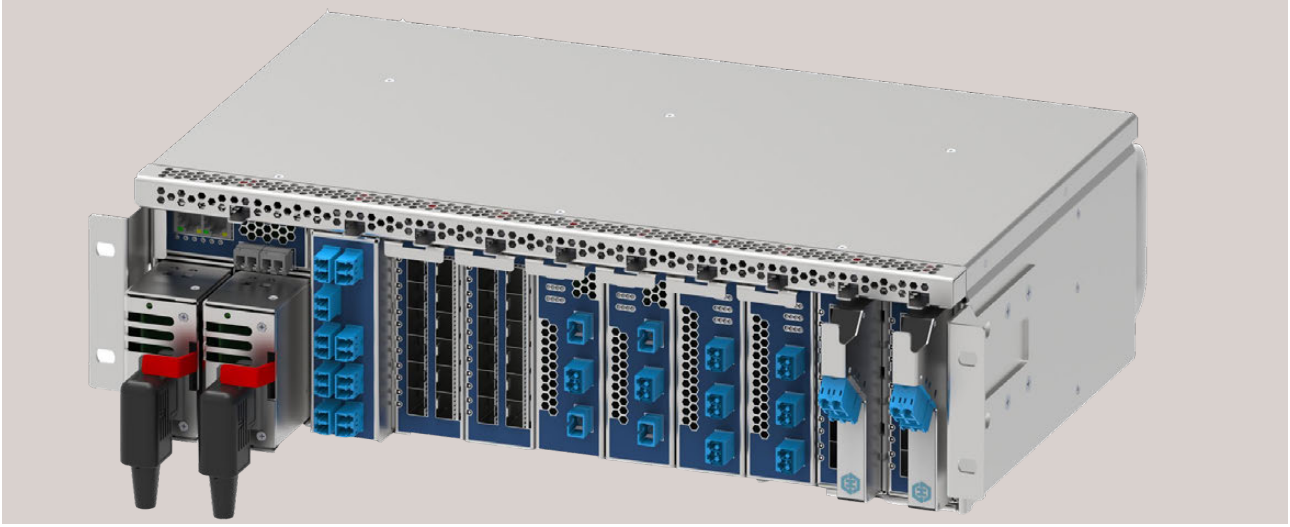
Contact form

CUBO system – Edge data center inter-connects



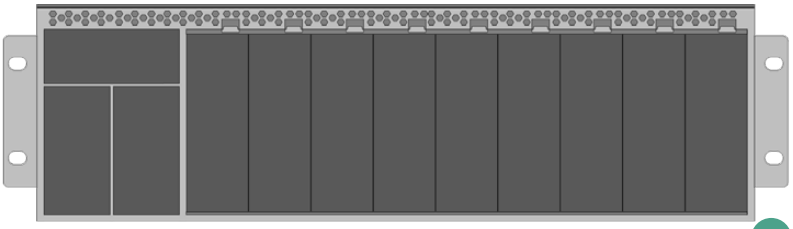
(1) CUBO system with 3U chassis – EDFA, OPS modules and network cubes
(2) Coloured C/DWDM transceivers in switch / router
(3) CUBO system 3U chassis with OPS module and network cubes
(4) Street cabinet with CUBO system 1U – EDFA module and network cubes
(5) Street lamp pedestal with CUBO system outdoor chassis

CUBO system – Modular system

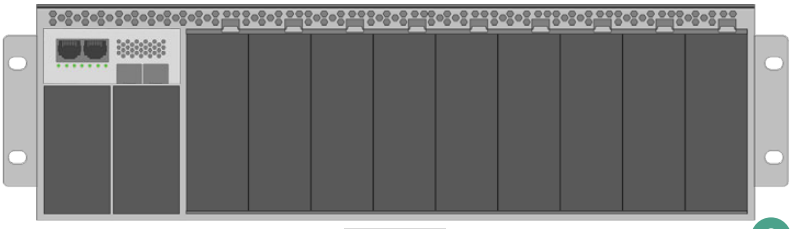


CUBO system chassis

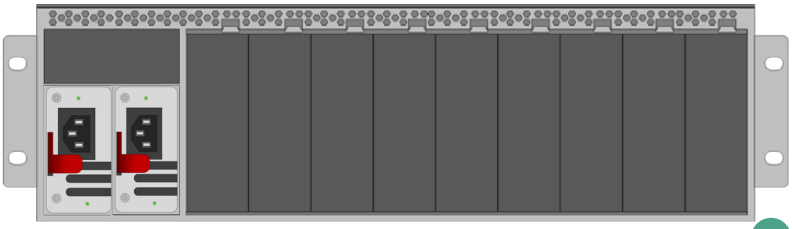
CUBO system chassis 3U



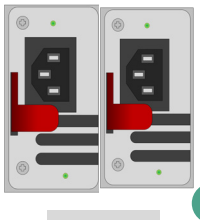
RS-CH3U-0 1



RS-CH3U-1 2



RS-CH3U-3 3



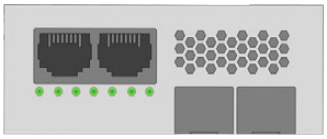
RS-AC350-1
RS-DC350-1 4

CUBO system chassis 1U



RS-CH1U-0 5
RS-AC90-1
RS-FAN1U

CUBO system management module

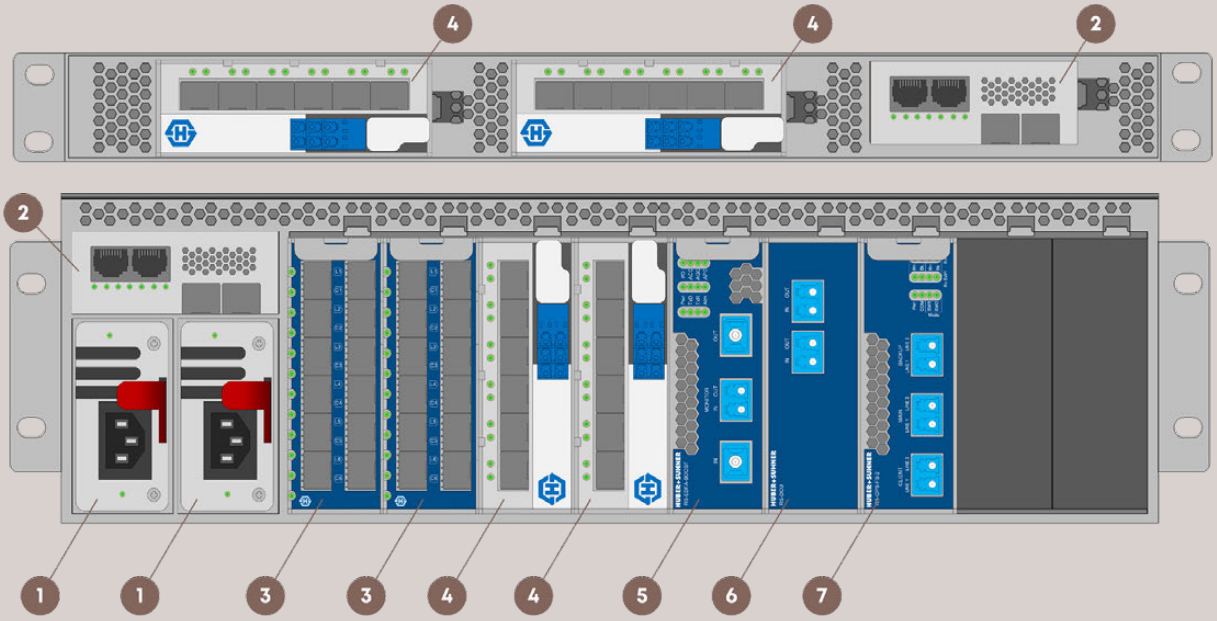


RS-MO-1 6

Ordering information

#	Item number	Descriptive code	Item text	LT
1	85095578	RS-CH3U-0	3U chassis including fan units	
2	85149106	RS-CH3U-1	3U chassis including fan units and management card	
3	on request	RS-CH3U-3	3U chassis including fan units and 2 redundant AC power supplies	
4	85109107	RS-AC350-1	AC power supply for 3U chassis	
	85115711	RS-DC350-1	DC power supply for 3U chassis	
	85096329	RS-FAN	Fan unit for 3U chassis (spare part)	
5	85124083	RS-CH1U-0	1U chassis including fan units	
	85124084	RS-AC90-1	AC power supply for 1U chassis	
	85048481	RS-FAN1U	Fan unit for 1U chassis (spare part)	
6	85095577	RS-MO-1	Management module for 3U or 1U chassis	

CUBO system – Modular platform

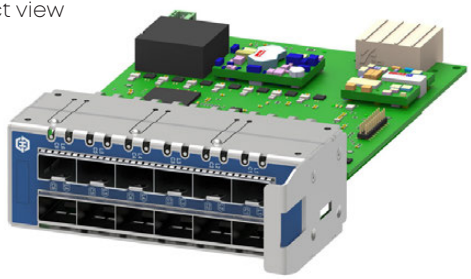


(1) Power supply
(2) Management
(3) Universal 10G/25G transponder
(4) 10G/25G transponding multiplexer
(5) Amplifying
(6) Dispersion compensation
(7) Optical protection switch modules

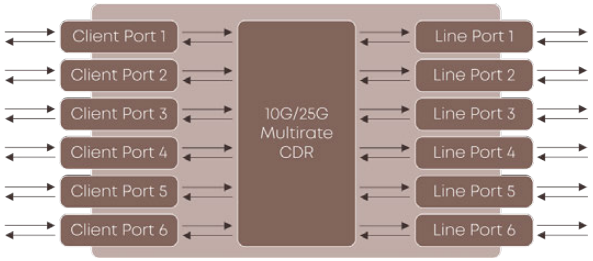
CUBO system modules

Universal 10G/25G transponder modules

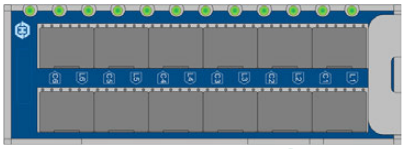
Product view



Functional scheme



Front view



RS-6SMR10-U-0 1

RS-6SMR25-U-0 2

DWDM transceivers

Ordering information

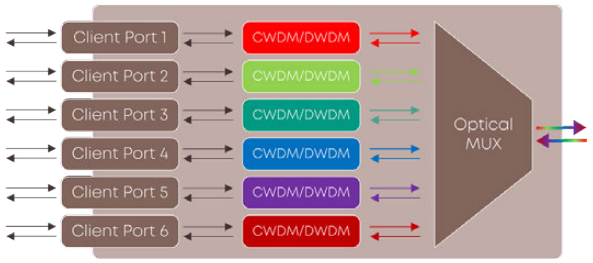
#	Item number	Descriptive code	Item text	LT
1	85149107	RS-6SMR10-U-0	Universal Transponder module, multi protocol 1-10 Gbps, 6 client + 6 line ports (no integrated mux)	
2	85168781	RS-6SMR25-U-0	Universal Transponder module, multi protocol 10-25 Gbps, 6 client + 6 line ports (no integrated mux)	

10G/25G transponding multiplexer modules

Product view



Functional scheme



Front view



RS-6SMR10-xxxxxxx-x 1

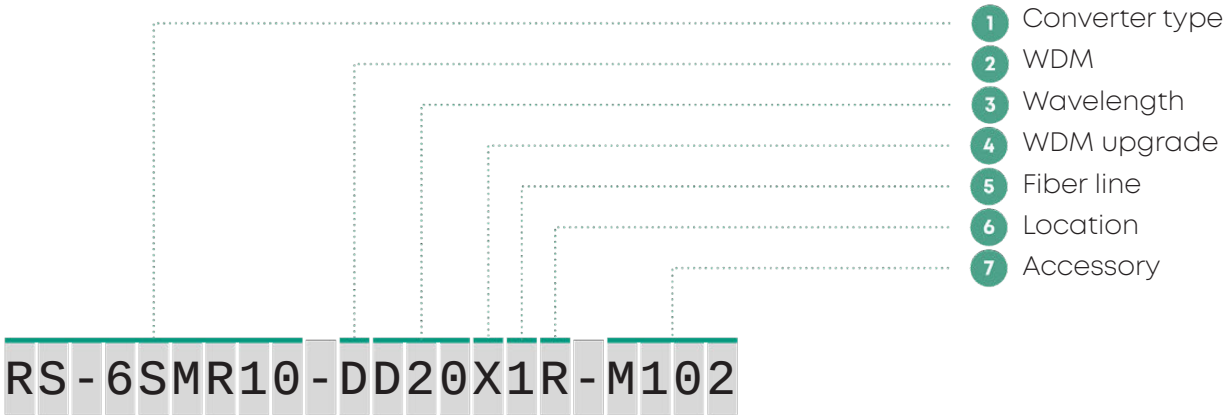
RS-6SMR25-xxxxxxx-x 2

DWDM transceivers

Ordering information

#	Item number	Descriptive code	Item text	LT
1	on request	RS-6SMR10-xxxxxxx-x	Transponder module, multi protocol 1-10 Gbps, 6 services, with integrated mux, use order code to define parameters	
2	on request	RS-6SMR25-xxxxxxx-x	Transponder module, multi protocol 10-25 Gbps, 6 services, with integrated mux, use order code to define parameters	

Order code CUBO system 10G/25G transponding modules



1 Converter module

RS-6SMR10	Transponder module 6 services 10G
RS-6SMR25	Transponder module 6 services 25G

2 WDM

C	CWDM (20 nm)
D	DWDM 100 GHz
E	DWDM 50 GHz

3 Wavelength

A20

- A: C/DWDM channel set from A to L
- 20: Distance in km

Not all channel sets are available with single fiber transmission (fiber code 1)
Some modules with DWDM configuration may require a terminal multiplexer module. Please consult data sheet C-2974_Rev.A

4 WDM upgrade option

X	Without upgrade option
U	Upgrade option 1

5 Fiber line

1	Single fiber (12 wavelengths for 6 services)
2	Dual fiber (6 wavelengths for 6 services)

6 Node/location

H	Hub
R	Remote

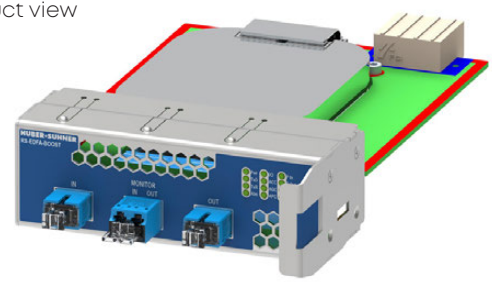
A hub module (H) must be paired with a remote module (R). Each at one end of the link

7 Accessory features

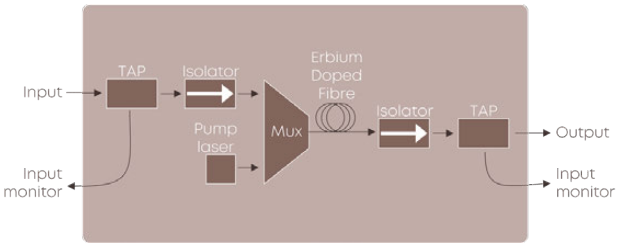
XX	Please contact HUBER+SUHNER for a multitude of options.

Amplifying modules

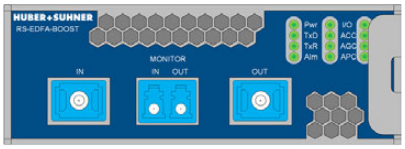
Product view



Functional scheme



Front view



1

RS - EDFA - 19 17 - G - 1 - 00

- Output
- Gain
- Erbium doped fiber amplifier for 1550 nm

RS - SOA - 13 08 - 1 - M1

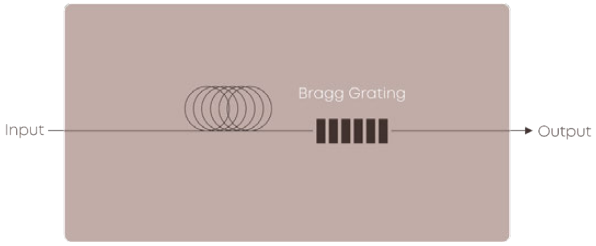
- Line (dual/single)
- Output
- Gain
- Semiconductor optical amplifier for 1300 nm

Dispersion compensation modules

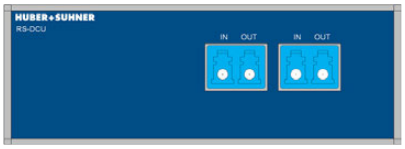
Product view



Functional scheme



Front view

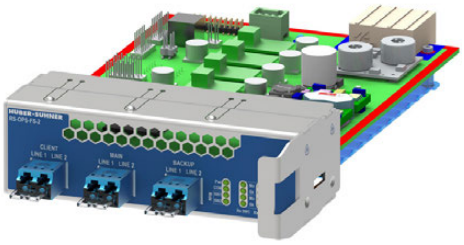


RS-DCU-xx

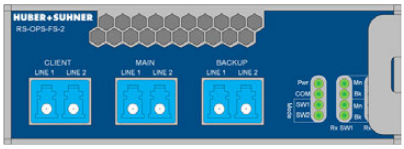
2

Optical protection switch modules

Product view

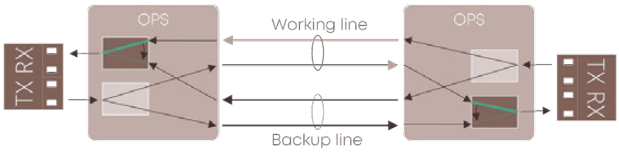


Front view



RS-OPS-FS-2 3

Functional scheme



Ordering information

#	Item number	Descriptive code	Item text	LT
1	85152256	RS-EDFA-1917-G-1-00	EDFA Amplifier module, 19 dB Gain, 17 dB Output, 1 fiber	
	85168707	RS-EDFA-1517-G-1-00	EDFA Amplifier module, 15 dB Gain, 17 dB Output, 1 fiber	
	85152255	RS-EDFA-0920-G-1-00	EDFA Amplifier module, 9 dB Gain, 20 dB Output, 1 fiber	
	85157246	RS-SOA-1308-1-M1	SOA Amplifier module, 13 dB Gain, 8 dB output, 1 Fiber (one SOA chip)	
	85157429	RS-SOA-1308-2-M1	SOA Amplifier module, 13 dB Gain, 8 dB output, 2 fibers (two SOA chips)	
2	on request	RS-DCU-xxx	Dispersion Compensation module, 1 fiber, different distance classes	
3	85034602	RS-OPS-FS-2	OPS Protection Switching module, for 1 fiber bidi transmission (asymmetrical mode), double lines	

Network Cube X - overview

NCX - A range that redefines passive multiplexing

The Network Cube X (NCX) range redefines the passive optical multiplexer by introducing an innovative approach to the upgrade port.
Based on expertise gained from collaborating with customers in countless projects for more than twenty years, the versatile range enables Wavelength-Division Multiplexing (WDM) setups that could previously only be solved by using custom designs.

Modular design

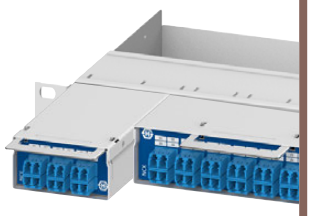
With three standard module sizes, you can choose the most suitable dimensions to minimise the footprint of your setup while meeting your current needs and plans for expansion.





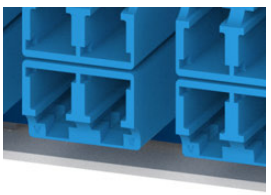
Flexible plug-and-play

The range is equipped with a convenient push-and-pull mechanism that makes installation, moving and removing simple and fast..



Innovative upgrade ports

Three types of application-specific upgrade ports enable you to maximise data transport capacity in line with your system design. And expand it over time.





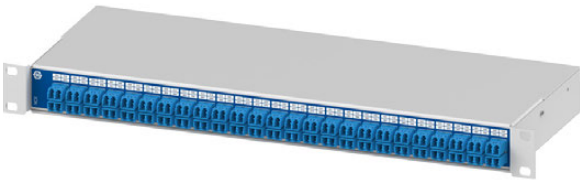
Network Cube X - module types

Mix and match to suit your setup today – and tomorrow

With three standard module sizes, you can choose the most suitable dimensions to minimise the footprint of your setup while meeting your current needs and plans for expansion.

Fixed unit

W 482.6 mm, D 161 mm, H 39 mm



Modules

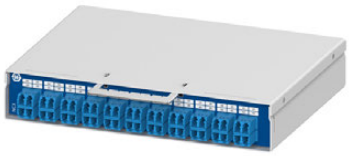
S module
W 71.8 mm, D 161 mm, H 39.25 mm



M module
W 144.3 mm, D 161 mm, H 39.25 mm



L module
W 216.8 mm, D 161 mm, H 39.25 mm



19” NCX shell

The simple auto latching mechanism locks the S, M and L modules in as soon as they have been pushed far enough into the shell. To remove the modules the lever at the top of the individual modules simply has to be pushed down.



Mix and match

The L, M and S modules can be mixed and matched in various combinations, within the 19” NCX shell.



Example packages

The NCX range offers a considerable amount of different options that can be combined to support various applications. The following example packages give an overview of some of our most popular configurations.

Ordering information

Item number	Descriptive code	Item text
on request	X10010-2CM04-4700-EXN1S-55	CWDM Dual Fiber - MxDx 4 +Exp, S-Module, LC/PC, Channel set: 1470/1490/1590/1610
on request	X10020-2CM08-2743-NNN1M-55	CWDM Dual Fiber - MxDx 8, M-Module, LC/PC, Channel set: 1270/1290/1310/1330/1350/1370/1430/1450
on request	X10020-2CM08-4700-13N1M-55	CWDM Dual Fiber - MxDx 8 +1310, M-Module, LC/PC, Channel set: 1470/1490/1510/1530/1550/1570/1590/1610
on request	X10130-2CM18-2747-NNM1L-55	CWDM Dual Fiber - MxDx 18 +Mon, L-Module, LC/PC, Channel set: 1270/1290/1310/1330/1350/1370/1390/1410/1430/1450/ 1470/1490/1510/1530/1550/1570/1590/1610
on request	X20030-2DM08-5300-3GM1M-55	DWDM Dual Fiber - MxDx 8 +Mon +UG, M-Module, LC/PC, Channel set: C53/C54/C55/C56/C57/C58/C59/C60
on request	X20040-2DM16-2100-3GM1L-55	DWDM Dual Fiber - MxDx 16 +Mon +UG, L-Module, LC/PC, Channel set: C21-C36
on request	X20060-2DM40-2000-13M1U-55	DWDM Dual Fiber - MxDx 40 +1310 +Mon, Fixed Unit, LC/PC, Channel set: C20-C59
on request	X20160-2DO04-2023-NNN1M-55	DWDM Dual Fiber - OADM 4, M-Module, LC/PC, Channel set: C20/C21/C22/C23
on request	X20090-1DM06-4544-U0N1M-55	West - DWDM Single Fiber - MxDx 6 +dUG, M-Module, LC/PC, Channel set: TX C45/C47/C49/C51/C53/C55, RX C44/C46/C48/C50/C52/C54
on request	X20090-1DM06-4445-U0N1M-55	East version of above module, Channel set: TX C44/C46/C48/C50/C52/C54, RX C45/C47/C49/C51/C53/C55
on request	X20100-1DM08-2120-NNR1M-55	West - DWDM Single Fiber - MxDx 8 +OTDR +Mon, M-Module, LC/PC, Channel set: TX C21/C23/C25/C27/C29/C31/C33/C36, RX C20/C22/C24/C26/C28/C30/C32/C34
on request	X20100-1DM08-2021-NNR1M-55	East version of above module, Channel set: TX C20/C22/C24/C26/C28/C30/C32/C34, RX C21/C23/C25/C27/C29/C31/C33/C35
on request	X20120-1DM16-2145-NNN1L-55	West - DWDM Single Fiber - MxDx 16, L-Module, LC/PC, Channel set: TX C21-C36, RX C45-C60
on request	X20120-1DM16-4521-NNN1L-55	East version of above module, Channel set: TX C45-C60, RX C21-C36
on request	X20220-1DO02-2120-NNN1S-55	West - DWDM Single Fiber - OADM 2, S-Module, LC/PC, Channel set: TX C21/C23, RX C20/C22
on request	X20220-1DO02-2021-NNN1S-55	East version of above module, Channel set: TX C20/C22, RX C21/C23
on request	X10080-2WI02-1315-NNN1S-55	WWDM Dual Fiber - Bandsplitter Hi-Iso, S-Module, LC/PC, Channel set: 1310, 1550



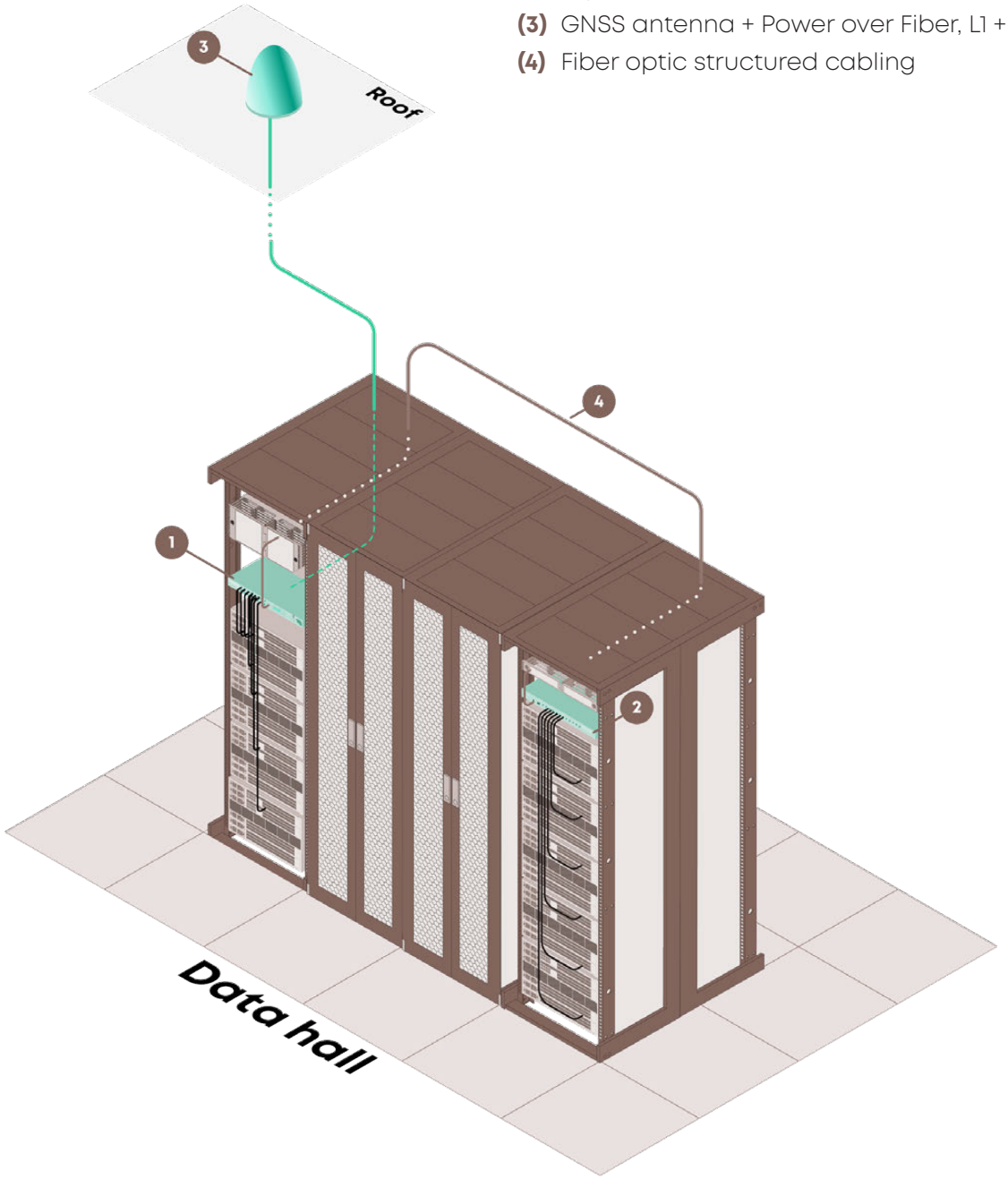
GNSS & Power over fiber



GNSS & Power over fiber applications

Single tenant GNSS* connections via fiber structured cabling

(1) Base unit Power over Fiber
(2) Expansion module (Rx)
(3) GNSS antenna + Power over Fiber, L1 + L5
(4) Fiber optic structured cabling

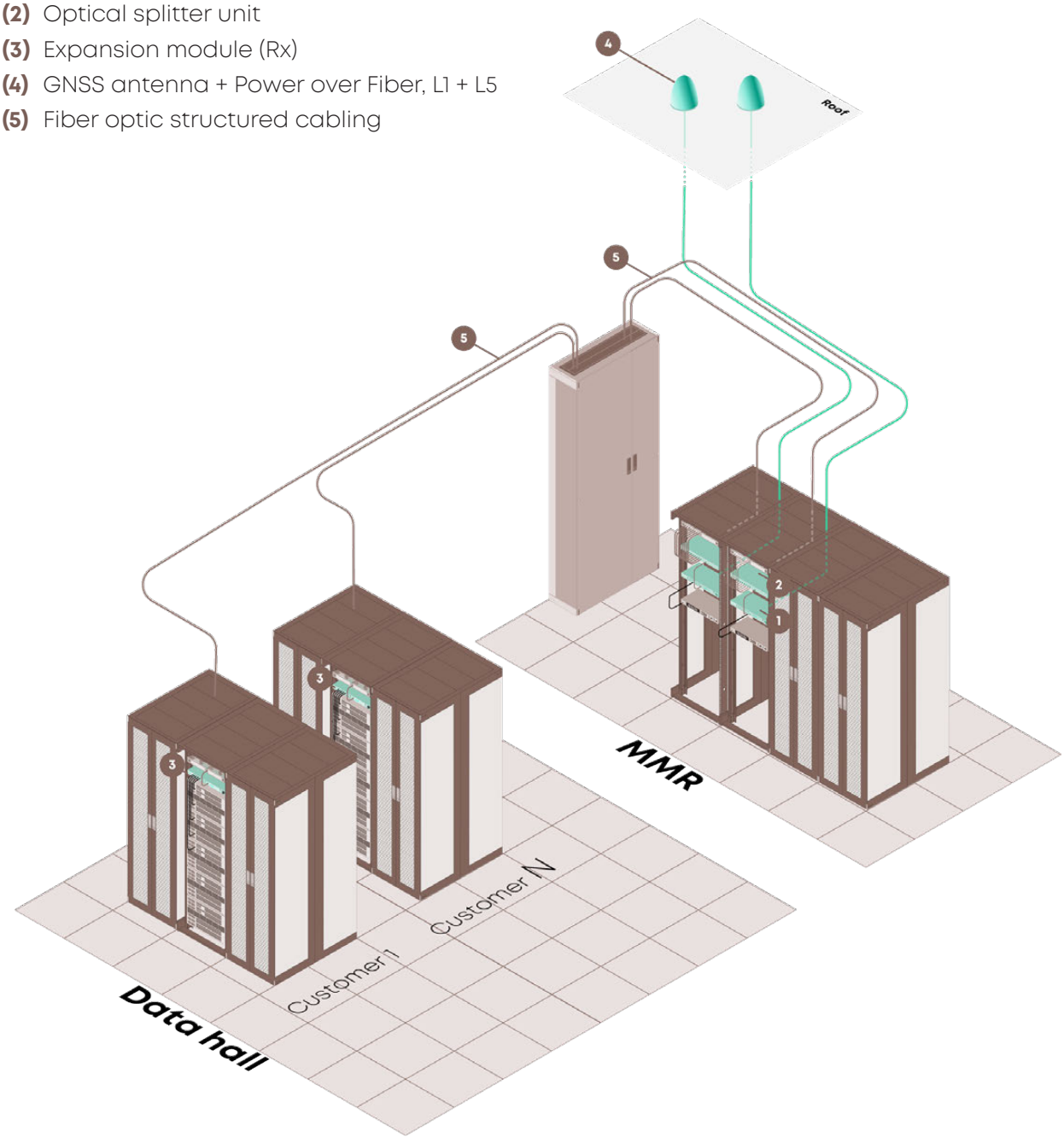


*GNSS— global navigation satellite system. Examples of GNSS: GPS, GLONASS, Galileo

Go to external document/link

Multiple tenant GNSS connections via fiber structured cabling

(1) Base unit Power over Fiber
(2) Optical splitter unit
(3) Expansion module (Rx)
(4) GNSS antenna + Power over Fiber, L1 + L5
(5) Fiber optic structured cabling



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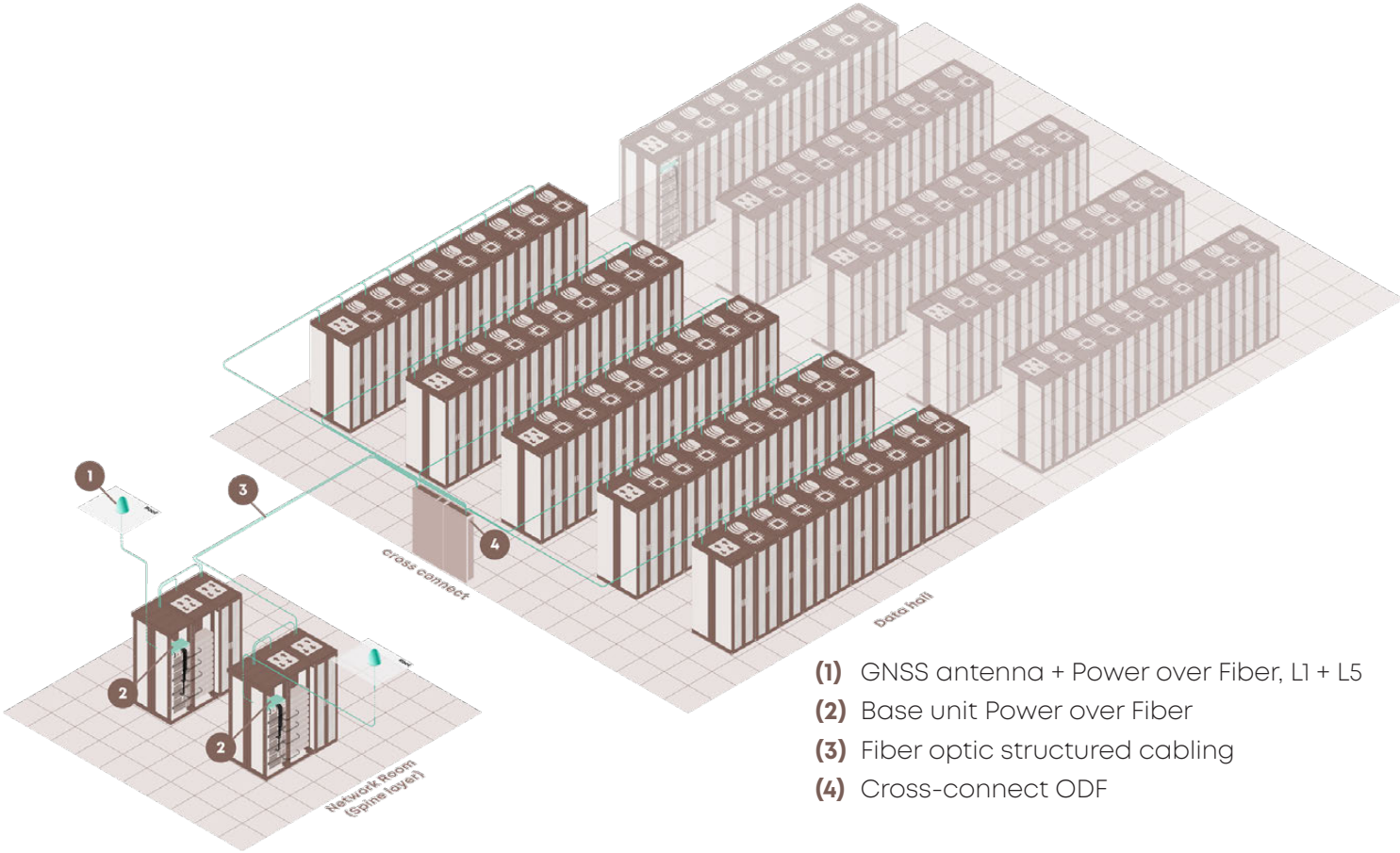
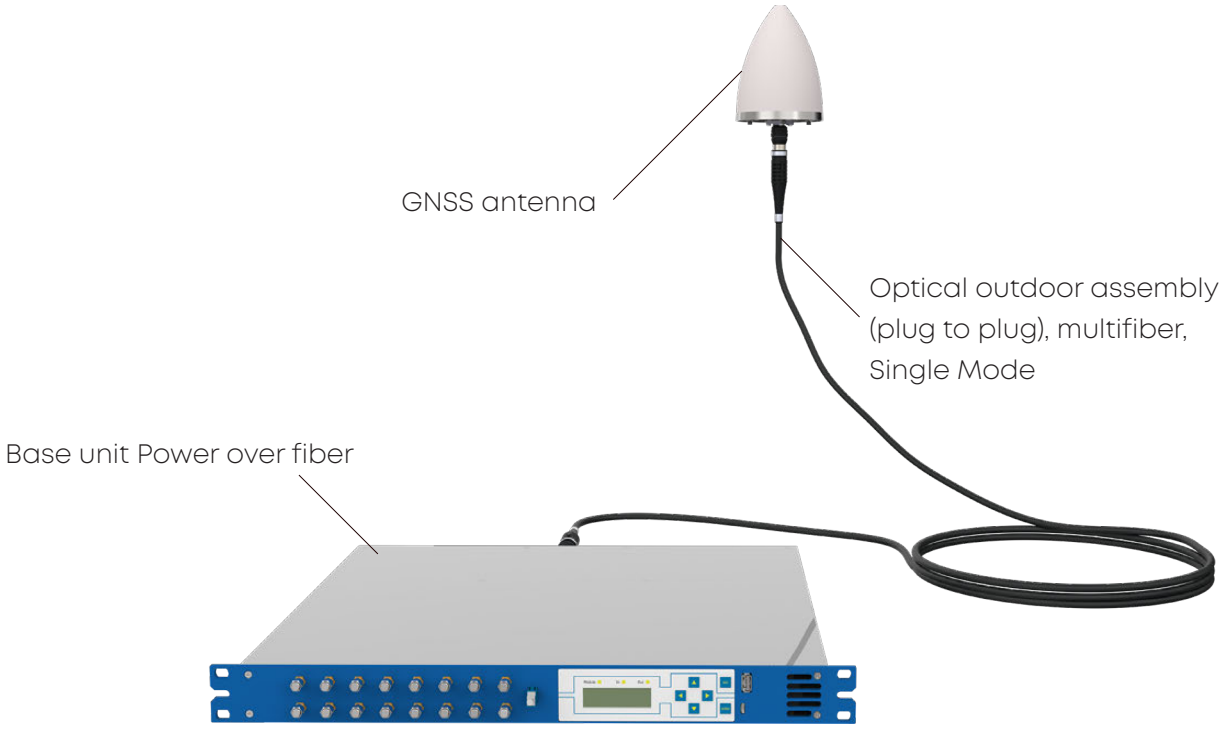
Hyperscale GNSS connections via fiber structured cabling



(1) GNSS antenna + Power over Fiber, L1 + L5
(2) Base unit Power over Fiber
(3) Fiber optic structured cabling
(4) Cross-connect ODF




NER
FO IN

GNSS- power over fiber portfolio

GNSS & power over Fiber transmitter (Tx) and receiver (Rx)

Receiver module (Rx)

Front view



Rear view



P-GNSSoF-16(RX) 1

Transmitter module (Tx)

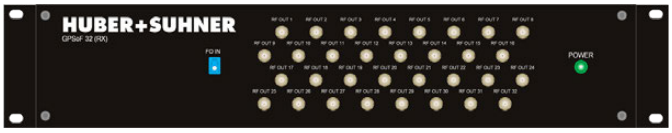


GNSS Antenna L1+L5 2

Receiver module, 19 inch mount

1 fiber input (LC) / 32 RF GNSS outputs (SMA)

Front view

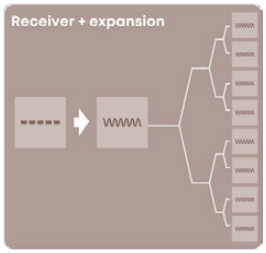


Rear view



GNSSoF32 (RX) 3

Functional diagram



Receiver and cascade module, 19 inch mount

1 fiber input (LC) / 16 RF GNSS outputs (SMA) + 2 fiber outputs

Front view

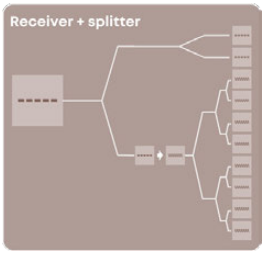


Rear view



GNSSoF16-2 (RX) 4

Functional diagram

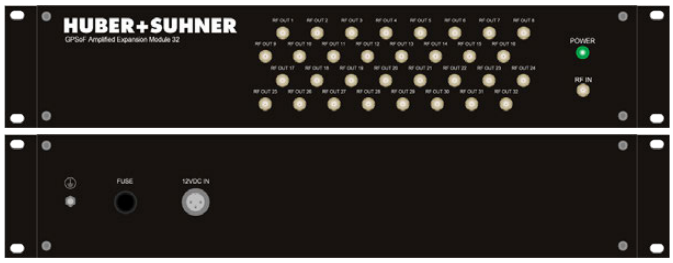


Amplified expansion module, 19 inch mount

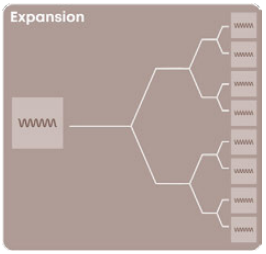
1 RF GNSS inputs (SMA) / 32 RF GNSS outputs (SMA)

Front view

Rear view



Functional diagram



GNNSoF Amp Expansion Module 32 5

Splitter module, 19 inch mount

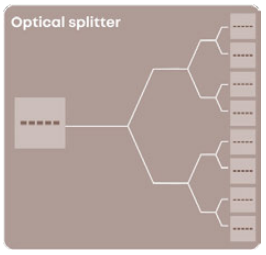
1 fiber input (LC) / 8 fiber outputs (LC)

Front view

Rear view



Functional diagram



GNSSoF - OSM (1x8) 6

-48V DC / 12V DC converter module, 19inch mount

Provides power to 2x GNSSoF products

Front view

Rear view

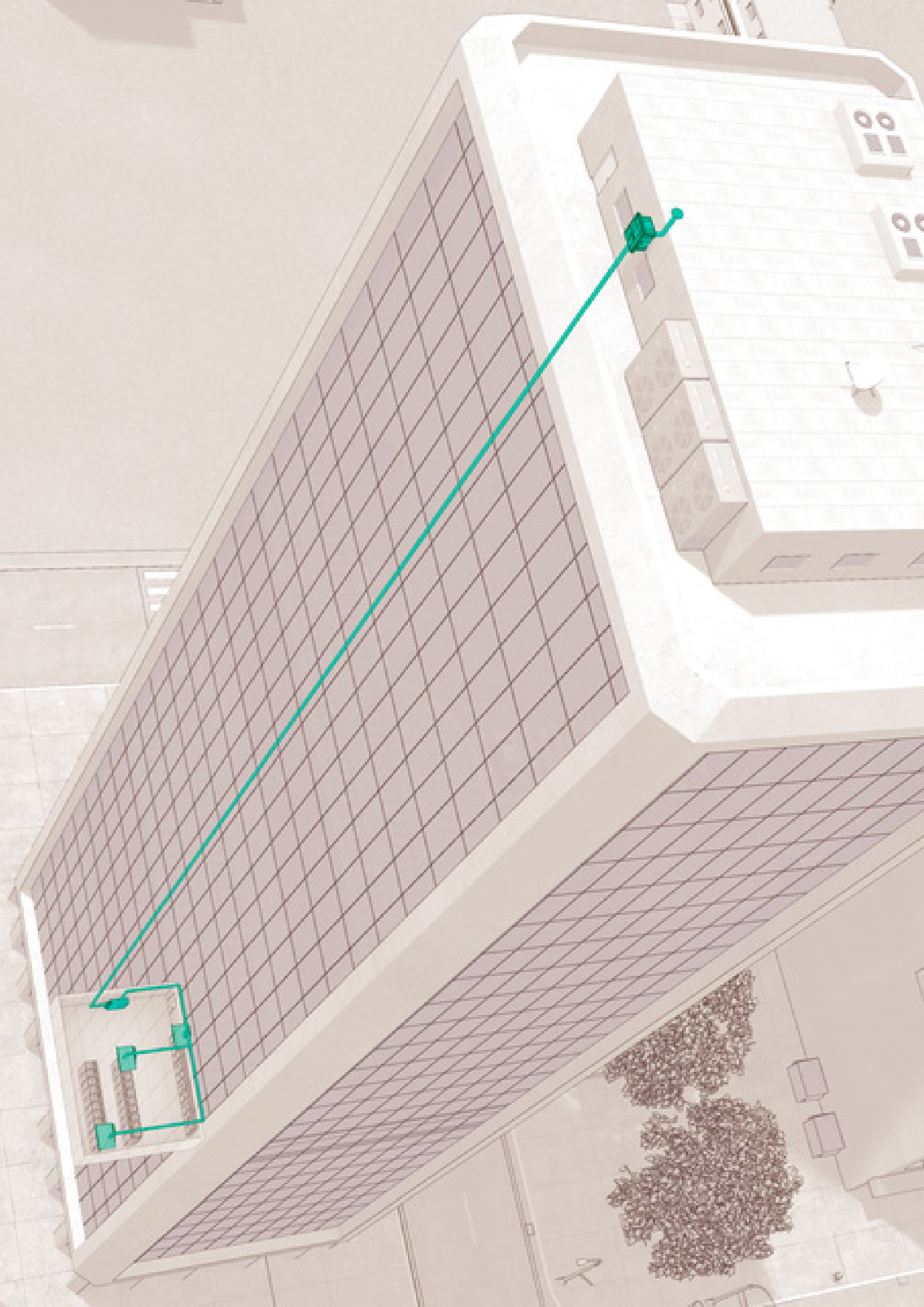


Direct GPSoF DC/DC Converter 7

10 8 9

Ordering information

#	Item number	Descriptive code	Item text	LT	URL
1	85238861	P-GNSSPoF16-RxE AC	GNSS Power over fiber reciever(RX), 16RF out & 1FO out, AC		
	85213405	P-GNSSPoF16-RxE DC	GNSS Power over fiber reciever(RX), 16RF out & 1FO out, DC		
2	85227355	O-GNSSPoF0-1-L15	GNSS antenna, power over fiber, L1 + L5, singlemode		
3	85140926	GPSoF32 (RX)	GNSS-over-Fiber receiver (RX) module, (O/E conversion), 2U, 1 LC output & 32 SMA output		
4	85145447	GPSoF16-2 (RX)	GNSS-over-Fiber receiver (RX) modules, (O/E conversion), 2 LC output & 32 SMA output		
5	85128404	GPSoF Amp Expansion Module 32	Direct GNSS-over-Fiber RF expansion modules (RF GNSS Splitters), 1x input / 32x outputs		
6	85154296	GPSoF - OSM (1x8)	GPSoF splitter module 1x8		
7	85152769	Direct GPSoF DC/DC Converter	GPS-over-Fiber power unit		



Consultancy services and global support

Find peace of mind by working with a global partner with deep expertise and high attention to detail. Our consultancy services are complimentary and provide a wide range of customisation options to make sure that our solutions fit perfectly with your specific needs.

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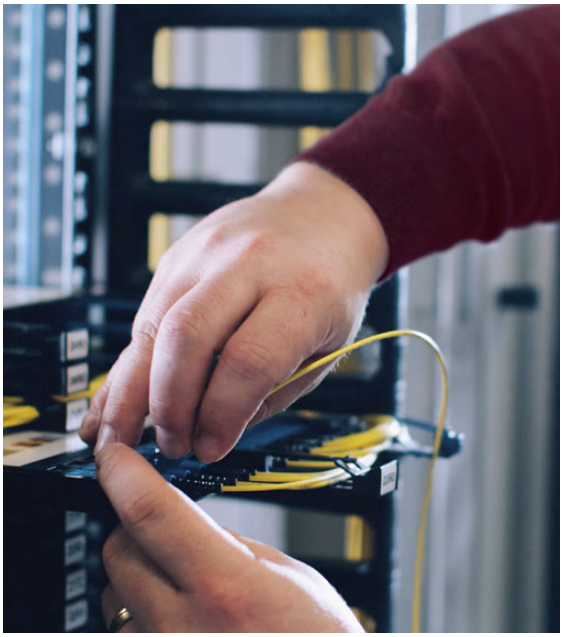







Connecting – today and beyond

About HUBER+SUHNER

We are a leading global supplier of components and systems solutions. With our broad range of products and deep know-how, we serve the industry, communications and transportation markets with applications from the three technologies of radio frequency, fiber optics and low frequency. And as a global company with a presence in over 80 countries, we stay close to our customers. Always.

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