

NEOXPacketRaven Multimode Fiber TAPs

QUICK USER GUIDE



SecurITy
 made
 in
 Germany



Multimode Fiber TAPs are decoupling elements for passive, secure and reliable tapping of network data in optical networks. These TAPs are looped into the fibre optic line to be monitored and transmit the entire data traffic without interruption and without packet loss, while maintaining data integrity.

Using conventional SPAN ports, also called mirror ports, on the other hand, can distort the result, as this copying process works in store-and-forward mode and, for example, discards FCS/CRC faulty packets on OSI layer 2 instead of making these Ethernet frames available to the security or monitoring tool.

Our Network TAPs do not have a MAC or IP address, but work entirely on OSI Layer 1 and cannot be traced in the network without special and expensive measuring equipment. Hackers and attackers therefore have no chance. As the integrity of the outgoing data remains unaltered due to this tapping method, our Network TAPs are increasingly used in the areas of network forensics, security and monitoring.

Furthermore, Fiber TAPs do not require their own power supply and behave 100% passively in the network. Therefore, our Fiber TAPs guarantee reliable network analysis or security investigation without compromise.

These models in the PacketRaven Network TAPs product family were designed as portable TAPs, but can also be installed in a 19" mounting frame in data centers using a mounting kit or on a DIN rail using a DIN rail clip.

Our passive Fiber TAPs support network speeds from 100Mbps to 400 Gbps.

With PacketRaven Network TAPs you get permanent network access without risk and provide e.g. your monitoring tools with 100% reliable network data - without introducing a single point of failure.

-  Up to 400 Gbps
-  Full Network Transparency
-  No impairment of Data Traffic
-  100% Network Data
-  Invisible for Attackers
-  Flexible to Use
-  Plug-n-Play
-  Failure Protection on Power Loss
-  Various Split Ratios
-  Fast and Precise
-  Support Jumbo Frames
-  Made in Germany

HIGHLIGHTS

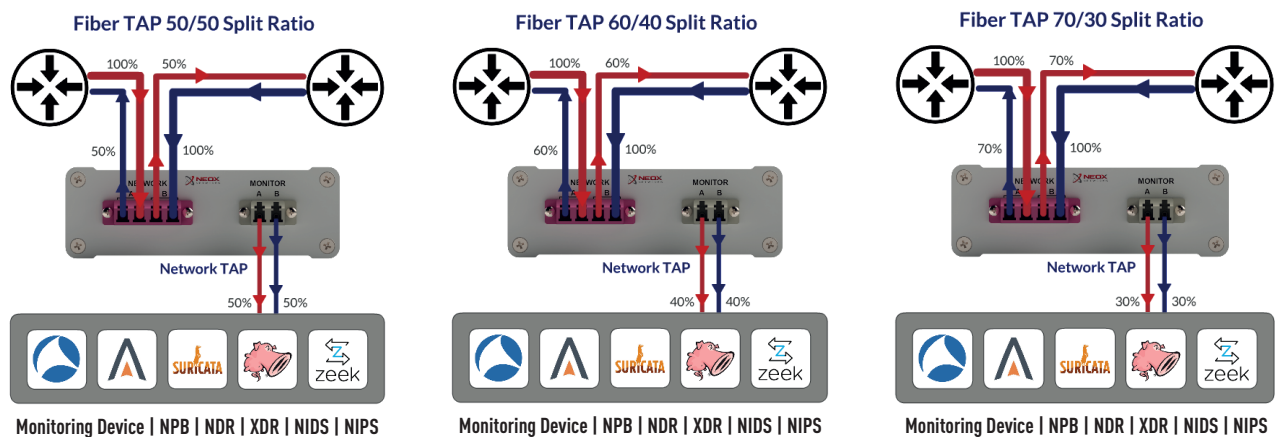
Supported network speeds: 100M, 1G, 2.5G, 5G, 10G, 25G, 40G, 50G, 100G, 200G and 400G
Alternative to SPAN ports - mirrors 100% of traffic including FCS/CRC erroneous packets that may be discarded by SPANs
Invisible on the network, no IP address, no MAC address, cannot be compromised
Guaranteed no packet loss
100% passive without affecting the active network connection, no additional latency
Available in different split ratios: e.g. 50:50, 60:40, 70:30, 80:20, 90:10
No power supply needed, 100% passive
Plug-n-Play - no configuration required
Support up to 16k Jumbo Frames
Various mounting options available
Designed, assembled, certified and tested in Germany

2. Split Ratios / Light Extraction

In order to tap data from an optical network connection, it is necessary to decouple or split off part of the available light signal.

The split ratio is the ratio of the amount of light that is still available for the fiber network connection in relation to the amount of light that is diverted or split off to the monitoring ports of the Fiber Network TAPs.

A split ratio of e.g. 70/30 means that 70% of the light is still available for the network connection and 30% is split off for the monitoring ports.

**3. Advanced features of the Secure Fiber TAPs**

Optical Isolator

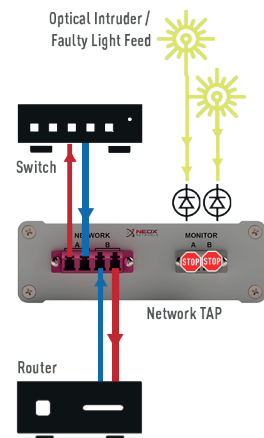


Optical Filter

Secure Fiber TAPs have both an additional optical isolator (Data Diode Functionality) and an optical filter to ensure that unwanted incoming light signals are blocked at the monitoring port to protect the network from compromise.

This protects your IT infrastructure from arbitrary or accidental tampering and ensures full data integrity.

They thus provide an additional security layer that offers increased protection against attackers and faulty configurations.



4. Mounting options



TAPs with rack mount frame bracket or DIN rail clip can of course also be used in mobile applications!

1. Mobile Use

Portable models - these models have no special mounting options and are primarily designed for mobile use.



PacketRaven Network TAP for mobile use



Handy & portable

2. Server Rack Mounting

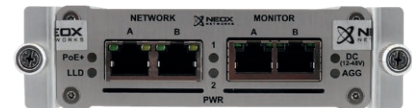
To install our portable TAPs in a server rack, you need our server rack mounting frame with item number **PRP-1U3-V2**, as well as a rack-mount frame mounting kit (item number **PRP-1U3-CLIP**) for the TAP.

The server rack mounting frame PRP-1U3-V2 provides space for up to 3 portable PacketRaven Network TAPs.

Both components are available as accessories.



Server rack mounting frame PRP-1U3-V2
for up to 3 PacketRaven portable Network TAPs



TAP with rack mounting kit for
server rack mounting frame PRP-1U3-V2

3. DIN Rail Mounting

As a further alternative, we also offer a top-hat rail clip for our TAPs for mounting on a TS35/7.5 DIN top-hat rail. This clip can be rotated by 180° so that the connections of the TAP can be aligned according to the respective requirements. This DIN rail clip, available as an accessory, has the item number **PRP-DIN-CLIP**.



TS35/7.5 DIN rail



Network TAP
with DIN rail clip

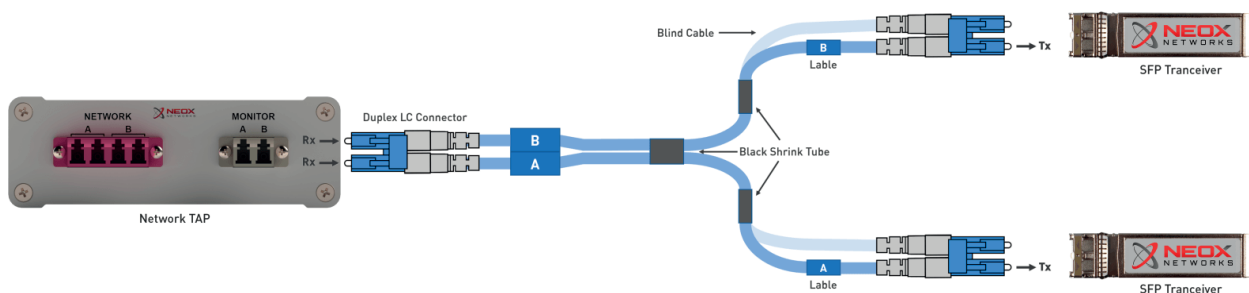
5. Advantages of Y-Cables

A Network TAP equipped with LC connectors has three duplex connectors, two of which are needed for looping through the network traffic to be analysed and one duplex connector for passively tapping the mirrored data for forwarding to, for example, a Network Packet Broker (NPB), an analysis system, an Intrusion Detection System (IDS), a Network Detection and Response System (NDR) or an Extended Detection and Response System (XDR).

This is the so-called monitoring port on which both the left and the right data traffic is present. These two outputs must be fed into two monitoring ports using two transceivers in order to fully receive the bi-directional traffic, as only the receive side (Rx) of the transceivers can be used for recording.

This presents a challenge because the output of the TAP is a duplex port and yet two separate ports are needed on the receive side for two individual transceivers.

To avoid this problem, it is best to use one of our special Y-cables that convert one duplex connector into two duplex connectors oriented so that the light is fed exclusively into the receiving side of the transceivers.



DOWNLOAD - Fiber TAP Cabling Guide
Scan, click here or visit www.neoxn.eu/fo-cab-gui

6. Connection Reliability in case of power loss



All our Fiber Network TAPs are 100% passive and do not require a power supply.

A power failure in a circuit has no effect on the TAP as it is a physical process that disconnects the network signal.

Thus, there is no impairment of the network and monitoring ports, but neighbouring devices could be affected by the power failure.

7. Color Coding for the connectors

You can see from the colours of our connectors for which fibre type the respective connector of the Network port is intended. Monitoring ports are always grey or black!



OM4 = Purple



OM5 = Green



Monitoring Port
LC



Monitoring Port
MTP

8. Installation

NETWORK port A is a full duplex fiber port that should be connected to one of the two network devices where network monitoring is desired.

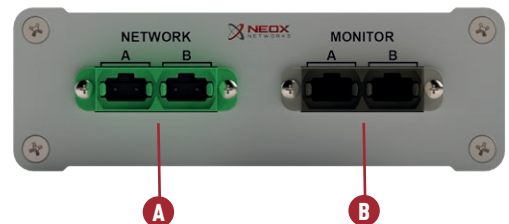
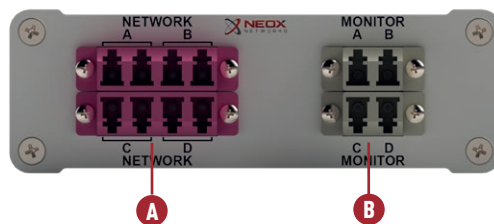
NETWORK port B is a full-duplex fiber port that should be connected to the other side or to an adjacent network device where network monitoring is desired.

MONITOR port is a directional dual simplex port (both sides are output only) that should be connected to the input or receive side of two interfaces of one or more monitoring devices that are to capture tapped traffic.

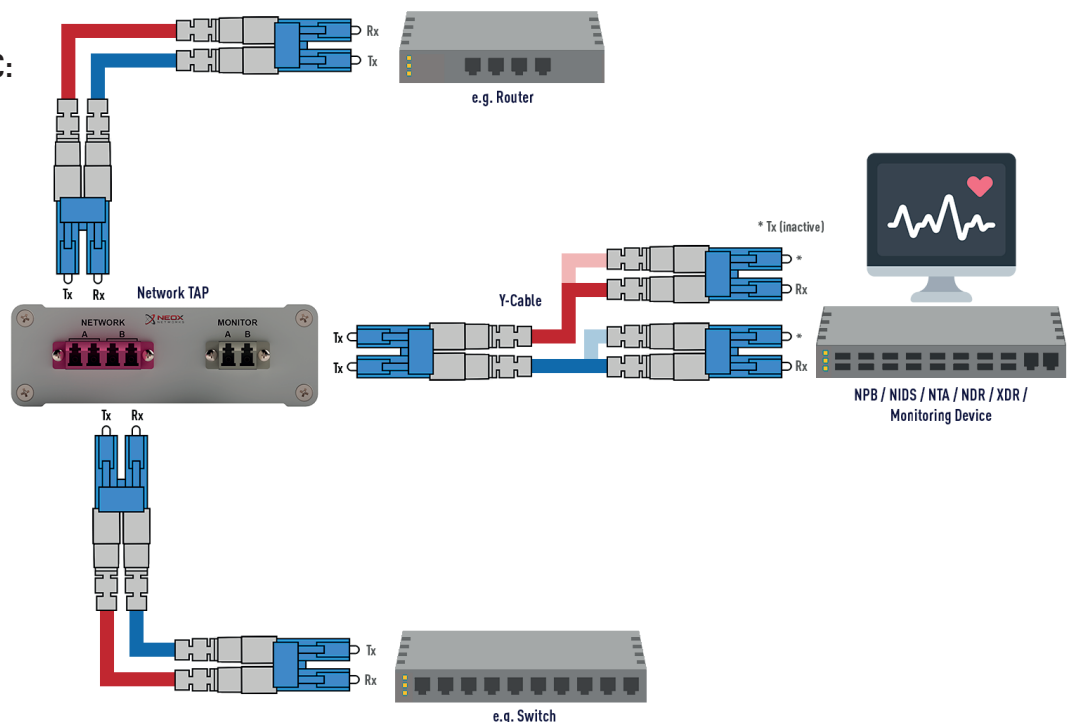
Front view - Connections and LEDs

(A)
LC or MTP®/MPO
Network ports

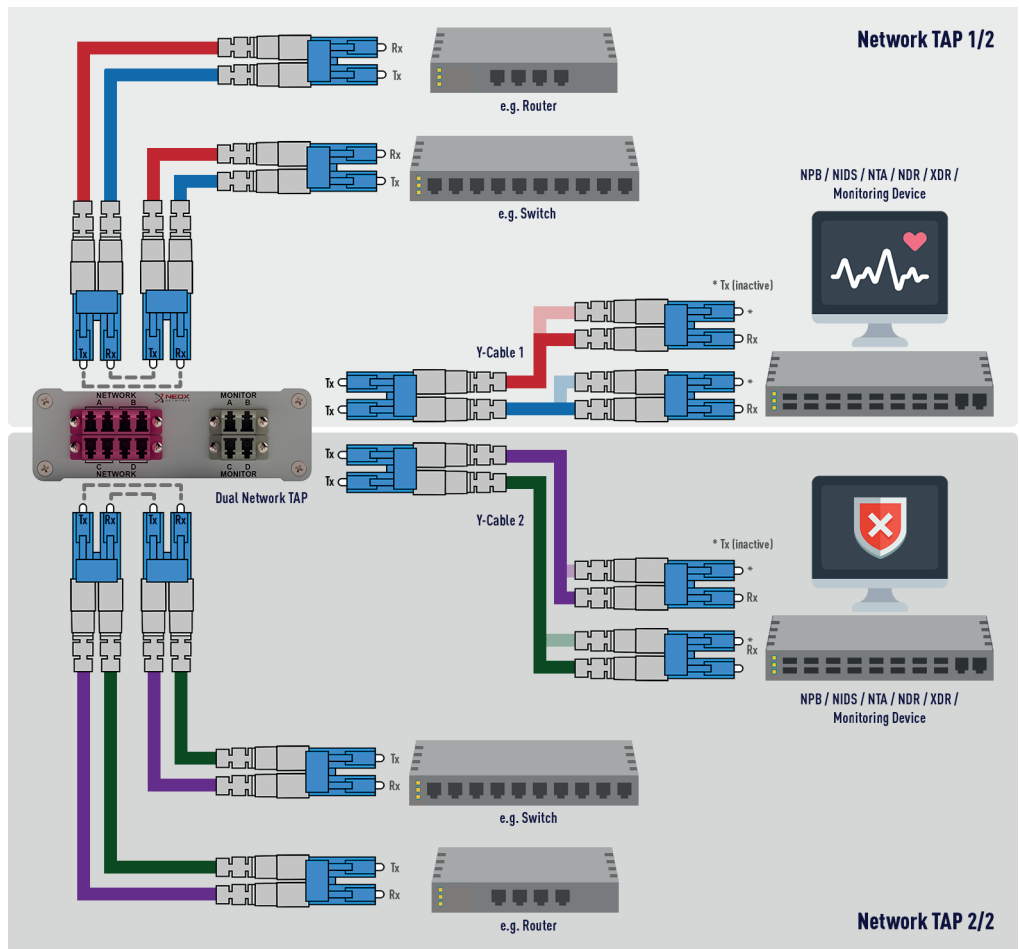
(B)
LC or MTP®/MPO
Monitoring ports



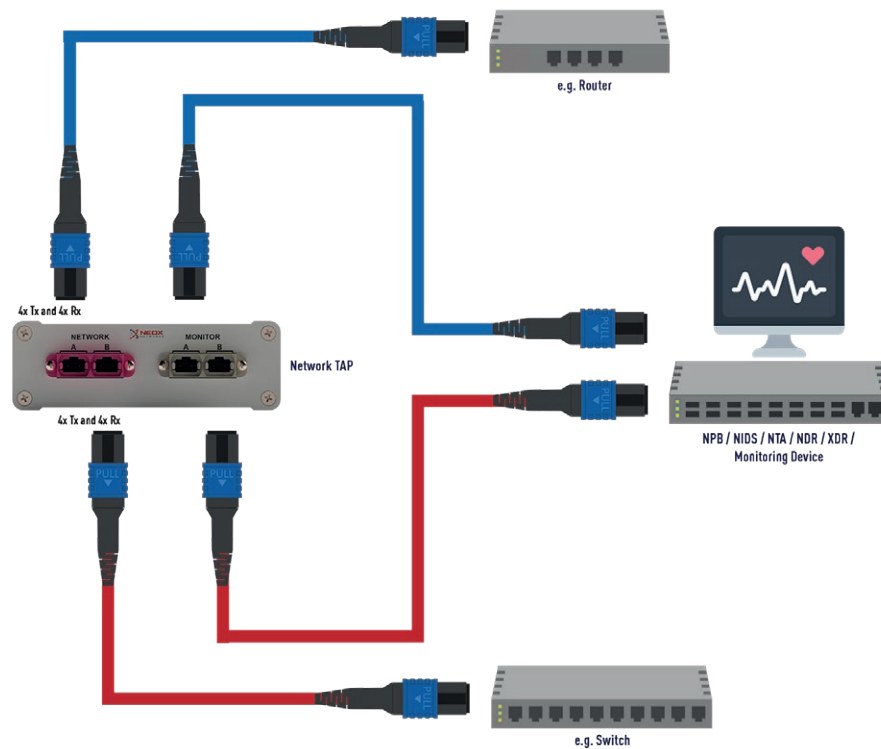
Single TAP Quad-LC/Duplex-LC:



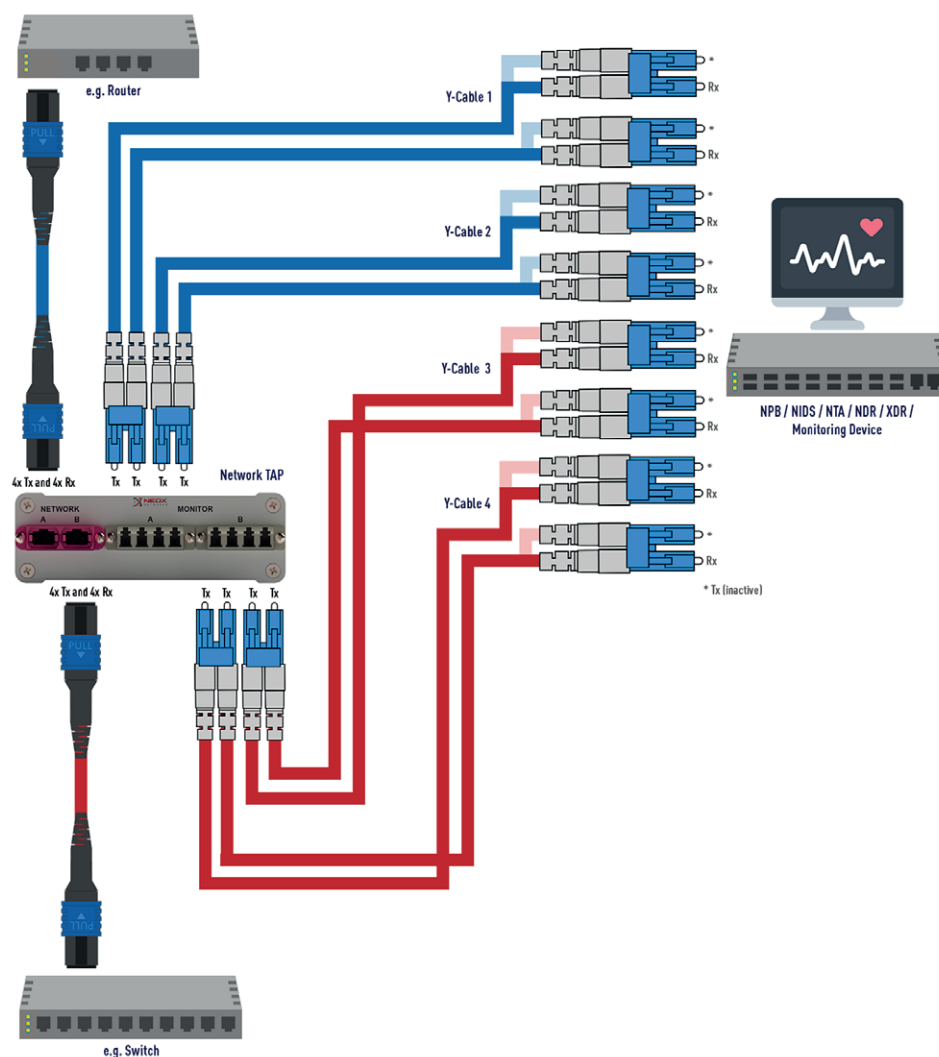
Dual TAP Quad-LC/Duplex-LC:



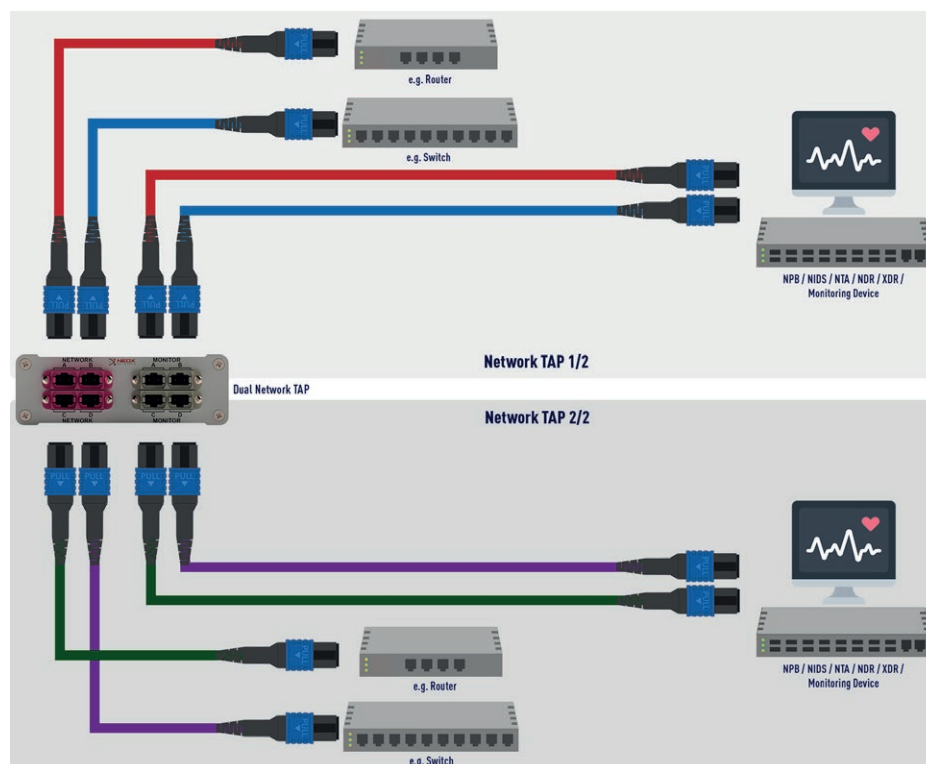
Single TAP Dual-MTP/Dual-MTP:

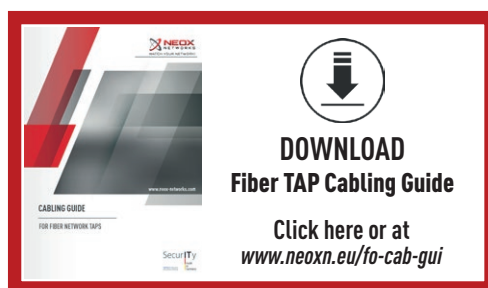


Single TAP Dual-MTP/Quad-LC:



Dual TAP Dual-MTP/Dual-MTP:





9. Technical Specifications

ATTENUATION VALUES			
SPLIT RATIO (OTHERS ON REQUEST)	50:50	60:40	70:30
Multimode OM3, OM4, OM5	3.8 dB / 3.8 dB	2.8 dB / 4.8 dB	2.2 dB / 6.1 dB

TAP			
Dimensions (WxHxD):	10.6 cm x 3.5 cm x 16.4 cm	Storage temperature:	-40°C to 85°C
Weight:	400g	Operating temperature:	0°C to 55°C
Certifications:	CE, FCC, RoHS, WEEE	Relative humidity during operation:	20% to 80%, non-condensing

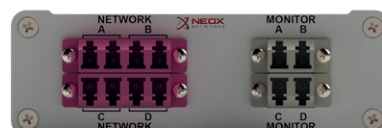
10. Model Variants



If you need a TAP with DIN rail mounting clip, please additionally order the mounting clip **PRP-DIN-CLIP!**
If you need a TAP with rackmount frame front panel, please order the **PRP-1U3-CLIP** front panel additionally!
(see „Mounting Options“)!



PRP-OM4-SLL-x



PRP-OM4-DLL-x

MULTIMODE OM4 LC - STANDARD MODELS

All TAPs for fiber type OM4 are also OM3 compatible!

ITEM NO.	NETWORK	FIBER TYPE	WAVE-LENGTH	INTERFACE NETWORK	INTERFACE MONITOR.	TAP-VERSION
PRP-OM4-SLL-*	100M/1G/10G/25G	OM4	850 / 1310 nm	LC Multimode	LC Multimode	Single-TAP
PRP-OM4-DLL-*	100M/1G/10G/25G	OM4	850 / 1310 nm	LC Multimode	LC Multimode	Dual-TAP

* respective split ratio - e.g. „70“ for a split ratio of 70:30, „60“ for 60:40, and „50“ for 50:50



MULTIMODE OM4 LC - SECURE MODELS

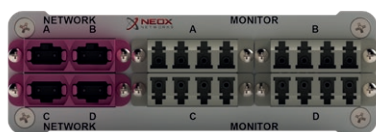
All TAPs for fiber type OM4 are also OM3 compatible!

ITEM NO.	NETWORK	FIBER TYPE	WAVE-LENGTH	INTERFACE NETWORK	INTERFACE MONITOR.	TAP-VERSION
PRP-OM4-SLL-*-S	100M/1G/10G/25G	OM4	850 nm	LC Multimode	LC Multimode	Single-TAP
PRP-OM4-DLL-*-S	100M/1G/10G/25G	OM4	850 nm	LC Multimode	LC Multimode	Dual-TAP

* respective split ratio - e.g. „70“ for a split ratio of 70:30, „60“ for 60:40, and „50“ for 50:50



PRP-OM4-SML-x



PRP-OM4-DML-x



PRP-OM4-SMM-x



PRP-OM4-DMM-x

MULTIMODE OM4 MTP®/MPO - STANDARD MODELS

All TAPs for fiber type OM4 are also OM3 compatible!

ITEM NO.	NETWORK	FIBER TYPE	WAVE-LENGTH	INTERFACE NETWORK	INTERFACE MONITOR.	TAP-VERSION
PRP-OM4-SML-*	100M/1G/10G/25G/40G/50G/100G	OM4	850 nm	MTP® Multimode	LC Multimode	Single-TAP
PRP-OM4-DML-*	100M/1G/10G/25G/40G/50G/100G	OM4	850 nm	MTP® Multimode	LC Multimode	Dual-TAP
PRP-OM4-SMM-*	100M/1G/10G/25G/40G/50G/100G	OM4	850 nm	MTP® Multimode	MTP® Multimode	Single-TAP
PRP-OM4-DMM-*	100M/1G/10G/25G/40G/50G/100G	OM4	850 nm	MTP® Multimode	MTP® Multimode	Dual-TAP

**MULTIMODE OM4 MTP®/MPO - SECURE MODELS**

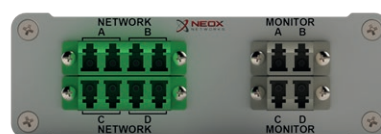
All TAPs for fiber type OM4 are also OM3 compatible!

ITEM NO.	NETWORK	FIBER TYPE	WAVE-LENGTH	INTERFACE NETWORK	INTERFACE MONITOR.	TAP-VERSION
PRP-OM4-SML-*-S	100M/1G/10G/25G/40G/50G/100G	OM4	850 nm	MTP® Multimode	LC Multimode	Single-TAP
PRP-OM4-DML-*-S	100M/1G/10G/25G/40G/50G/100G	OM4	850 nm	MTP® Multimode	LC Multimode	Dual-TAP
PRP-OM4-SMM-*-S	100M/1G/10G/25G/40G/50G/100G	OM4	850 nm	MTP® Multimode	MTP® Multimode	Single-TAP
PRP-OM4-DMM-*-S	100M/1G/10G/25G/40G/50G/100G	OM4	850 nm	MTP® Multimode	MTP® Multimode	Dual-TAP

* respective split ratio - e.g. „70“ for a split ratio of 70:30, „60“ for 60:40, and „50“ for 50:50



PRP-OM5-SLL-x



PRP-OM5-DLL-x

MULTIMODE OM5 LC - STANDARD MODELS

All TAPs for fiber type OM5 are also OM4 and OM3 compatible!

ITEM NO.	NETWORK	FIBER TYPE	WAVE-LENGTH	INTERFACE NETWORK	INTERFACE MONITOR.	TAP-VERSION
PRP-OM5-SLL-*	100M/1G/10G/25G/40G/50G/100G	OM5	850 nm – 950 nm	LC Multimode	LC Multimode	Single-TAP
PRP-OM5-DLL-*	100M/1G/10G/25G/40G/50G/100G	OM5	850 nm – 950 nm	LC Multimode	LC Multimode	Dual-TAP

**MULTIMODE OM5 LC - SECURE MODELS**

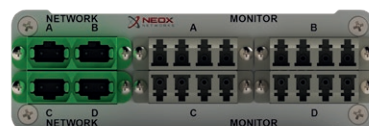
All TAPs for fiber type OM5 are also OM4 and OM3 compatible!

ITEM NO.	NETWORK	FIBER TYPE	WAVE-LENGTH	INTERFACE NETWORK	INTERFACE MONITOR.	TAP-VERSION
PRP-OM5-SLL-*-S	100M/1G/10G/25G/40G/50G/100G	OM5	850 nm – 950 nm	LC Multimode	LC Multimode	Single-TAP
PRP-OM5-DLL-*-S	100M/1G/10G/25G/40G/50G/100G	OM5	850 nm – 950 nm	LC Multimode	LC Multimode	Dual-TAP

* respective split ratio - e.g. „70“ for a split ratio of 70:30, „60“ for 60:40, and „50“ for 50:50



PRP-OM5-SML-x



PRP-OM5-DML-x



PRP-OM5-SMM-x



PRP-OM5-DMM-x

MULTIMODE OM5 MTP®/MPO - STANDARD MODELS

All TAPs for fiber type OM5 are also OM4 and OM3 compatible!

ITEM NO.	NETWORK	FIBER TYPE	WAVE-LENGTH	INTERFACE NETWORK	INTERFACE MONITOR.	TAP-VERSION
PRP-OM5-SML-*	1G/10G/25G/40G/50G/100G/200G/400G	OM5	850 nm – 950 nm	MTP® Multimode	LC Multimode	Single-TAP
PRP-OM5-DML-*	1G/10G/25G/40G/50G/100G/200G/400G	OM5	850 nm – 950 nm	MTP® Multimode	LC Multimode	Dual-TAP
PRP-OM5-SMM-*	1G/10G/25G/40G/50G/100G/200G/400G	OM5	850 nm – 950 nm	MTP® Multimode	MTP® Multimode	Single-TAP
PRP-OM5-DMM-*	1G/10G/25G/40G/50G/100G/200G/400G	OM5	850 nm – 950 nm	MTP® Multimode	MTP® Multimode	Dual-TAP



MULTIMODE OM5 MTP®/MPO - SECURE MODELS

All TAPs for fiber type OM5 are also OM4 and OM3 compatible!

ITEM NO.	NETWORK	FIBER TYPE	WAVE-LENGTH	INTERFACE NETWORK	INTERFACE MONITOR.	TAP-VERSION
PRP-OM5-SML-*-S	1G/10G/25G/40G/50G/100G/200G/400G	OM5	850 nm – 950 nm	MTP® Multimode	LC Multimode	Single-TAP
PRP-OM5-DML-*-S	1G/10G/25G/40G/50G/100G/200G/400G	OM5	850 nm – 950 nm	MTP® Multimode	LC Multimode	Dual-TAP
PRP-OM5-SMM-*-S	1G/10G/25G/40G/50G/100G/200G/400G	OM5	850 nm – 950 nm	MTP® Multimode	MTP® Multimode	Single-TAP
PRP-OM5-DMM-*-S	1G/10G/25G/40G/50G/100G/200G/400G	OM5	850 nm – 950 nm	MTP® Multimode	MTP® Multimode	Dual-TAP

* respective split ratio - e.g. „70“ for a split ratio of 70:30, „60“ for 60:40, and „50“ for 50:50

11. Accessories

INSTALLATION & MOUNTING

ITEM NO.	DESCRIPTION
PRP-1U3-V2	Server rack mounting frame for 3 portable TAPs
PRP-1U3-BP-V2	Blank plate for mounting frame PRP-1U3-V2
PRP-1U3-CLIP	TAP rackmount frame bracket for server rack mounting frame PRP-1U3-V2
PRP-DIN-CLIP	TAP DIN rail mounting clip



PRP-DIN-CLIP



PRP-1U3-V2

PRP-1U3-BP-V2

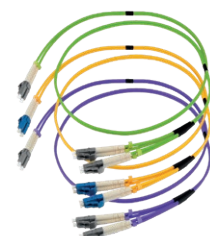


PRP-1U3-CLIP

Y-CABLES

ITEM NO.	FIBER TYPE	DIAMETER	DESCRIPTION
NX-LC-Y-PC-OM4-*	OM4	3.0mm	Y-Cable / Special Patchcord LC / PC-LC / PC Duplex
NX-LC-Y-PC-OM5-*	OM5	3.0mm	Y-Cable / Special Patchcord LC / PC-LC / PC Duplex

* 1M" for 1 metre, „2M“ for 2 metres, „3M“ for 3 metres and „5M“ for 5 metres.





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