Fiber optic connection system

opticalCON® TRUE1® connector series

RUGGEDIZED 2 FIBER

PHYSICAL CONTACT



ENGINEERED TO PERFORM

NEUTRIK®

opticalCON® **TRUE1**®
Fiber optic connection system



★ UNIQUE DESIGN
★ HIGHLY RELIABLE
★ UNMATCHED QUALITY
★ PROVEN TECHNOLOGY
★ MADE IN EUROPE

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TRUE
OUTDOOR
PROTECTION

MADE IN EUROPE



The next step
in rugged fiber connectivity



TRUE OUTDOOR PROTECTION

A compact, rugged and cost-efficient fiber connector platform designed for modern AV equipment and demanding professional environments.

Building on the long-standing success of the opticalCON® ADVANCED series, Neutrik now introduces the next evolution in professional fiber optic connectivity: opticalCON® TRUE1®.

For nearly two decades, opticalCON® ADVANCED has set the benchmark for rugged, mobile fiber connectivity in touring and broadcast applications. It remains a core element of the Neutrik portfolio and will continue to be consistently developed and expanded to meet the highest performance requirements.

With opticalCON® TRUE1®, Neutrik now complements this established platform by addressing new market demands: reduced device footprint, simplified integration and cost-efficient scalability, without compromising reliability or environmental performance.

opticalCON® TRUE1® is not a replacement. It is a strategic extension of the opticalCON® portfolio.

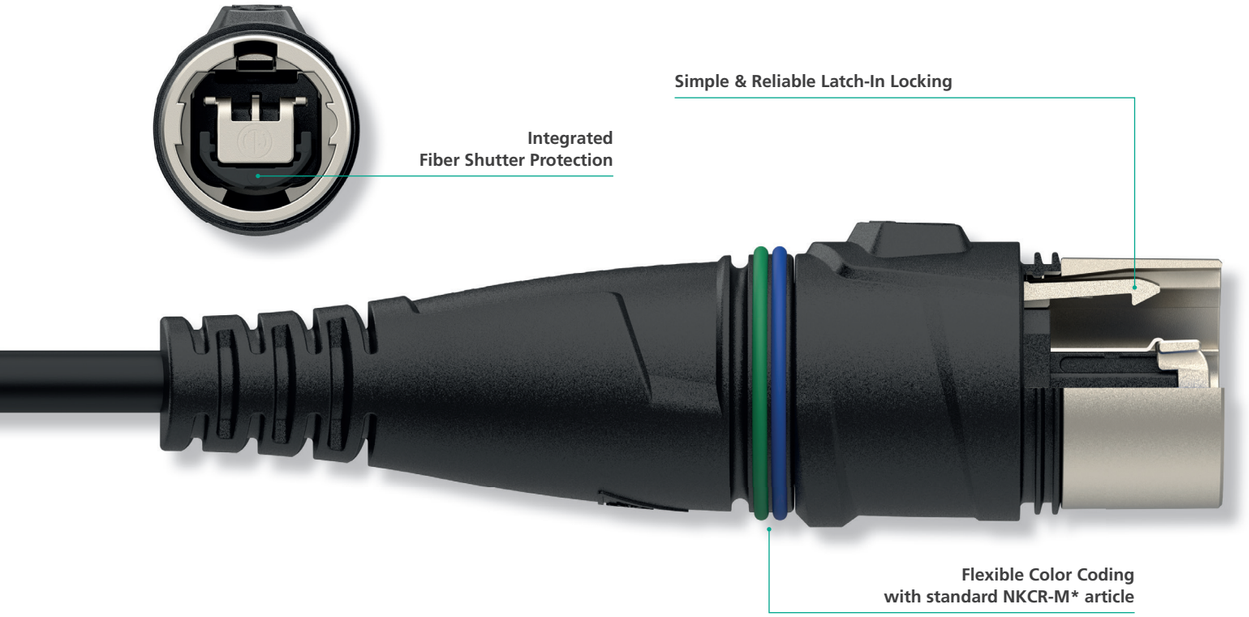
Designed for Modern System Integration
By using the proven MDC technology (US Conec), opticalCON® TRUE1® enables significantly more integration possibilities due to its compact size both in and outside of the device.

The reduced footprint optimizes internal routing, simplifies mechanical design and reduces required installation space inside modern AV equipment. This supports compact device architectures without compromising accessibility or serviceability.

This makes opticalCON® TRUE1® particularly attractive for OEM manufacturers seeking scalable and cost-efficient fiber integration without redesigning existing D-Size based platforms.

opticalCON® **TRUE1**®
Value propositions

opticalCON® TRUE1® combines ease of handling with uncompromising performance. Its key advantages can be structured into two core dimensions: Ease of Use and Performance.





EASE OF USE

Simple & Reliable Latch-In Locking
opticalCON® TRUE1® features a newly developed latch-in locking mechanism. The intuitive latch-in system provides clear tactile and haptic feedback during mating, ensuring users immediately to recognize a secure connection.
The locking system guarantees reliable retention under vibration and mechanical stress, while enabling fast and straightforward handling during setup and teardown operations.

Flexible Color Coding
opticalCON® TRUE1® offers clear color coding options to ensure maximum operational safety and easy identification.
Chassis coding enables clear differentiation between Multimode, Singlemode and Singlemode APC configurations. Cable connector coding allows customer-specific channel identification and system segmentation, reducing the risk of connection errors.

Service-Friendly MDC Rear Connectivity
The chassis design allows the use of standard MDC patch cables on the rear side. This enables easy and fast cable replacement without special tools or proprietary assemblies.
The result is simplified service logistics, reduced downtime and lower lifecycle costs for equipment manufacturers and end users alike.

Standard D-Size Integration
The chassis follows the industry-standard D-Size format, allowing seamless integration into standard D-Size cut-outs.
This ensures mechanical compatibility with established device platforms and eliminates the need for special panel designs.

Replaceable Sealing Cap
The chassis sealing cap is fully replaceable without exchanging the entire chassis or sealing components.
This service-oriented design extends product lifetime, reduces maintenance effort and simplifies field repairs.

PERFORMANCE

Integrated Fiber Shutter Protection
Despite its miniaturized architecture, opticalCON® TRUE1® integrates a protective shutter mechanism that shields the physical contact ferrules against dust and contamination.
This ensures clean optical interfaces, stable transmission performance and reduced maintenance effort, especially in mobile and outdoor environments.

opticalCON® **product series**
Size comparison

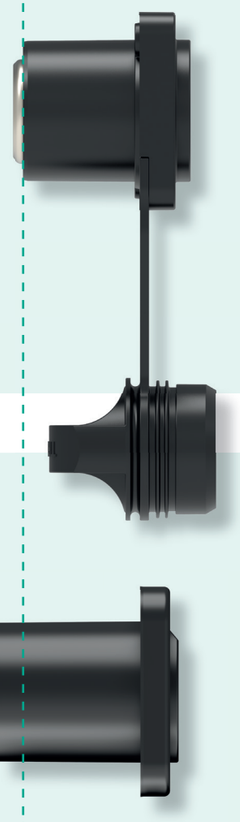
Up to 40% weight reduction, 20% less device integration space and a cable connector size reduced by up to 45% compared to opticalCON® ADVANCED.

PERFORMANCE

Compact & Ruggedized Design
Compared to opticalCON® ADVANCED, the integration space has been significantly reduced while maintaining full outdoor capability.

opticalCON® TRUE1® offers one of the smallest integration footprints within Neutrik's rugged fiber portfolio, enabling compact device concepts without sacrificing durability or mechanical stability.

opticalCON® TRUE1®



Chassis
Weight: 40% weight saving
Installation space: 20% saving

TRUE OUTDOOR PROTECTION

opticalCON® ADVANCED



Cable connector
Length: 45% savings

TRUE OUTDOOR PROTECTION

opticalCON® ADVANCED





opticalCON® LITE

opticalCON® **TRUE1**®
True outdoor protection

As part of the TRUE1® family, opticalCON® TRUE1® delivers genuine outdoor performance with IP65, IP66 and IP67 protection in mated condition or closed sealing cap.

In addition, the connector is manufactured from UV-certified materials and has passed 1440 hours of salt spray testing, ensuring long-term durability in harsh environmental conditions.

IEC 61753 – EXTREME Category Verification
opticalCON® TRUE1® has been verified against selected, most demanding test conditions of IEC 61753 EXTREME category, representing the highest environmental severity level defined by the standard. This includes testing according to:

- Impact (IEC 61300-2-12)
- Cold (IEC 61300-2-17)
- High Temperature Endurance (IEC 61300-2-18)
- Change of Temperature (IEC 61300-2-22)
- Vibration, sinusoidal (IEC 61300-2-1)

Detailed test procedures, conditions and scope are specified in the corresponding datasheet and technical documentation.

This validation confirms resistance against severe mechanical stress, wide temperature ranges, humidity exposure and environmental impact conditions, proving its suitability for the most demanding professional applications. opticalCON® TRUE1® delivers a compact, rugged and economically optimized fiber connector platform, ready for the next generation of professional AV equipment.

IP65 / IP66 / IP67 · CORROSION RESISTANT · UV RESISTANT · ULTRA ROBUST OPTICAL PERFORMANCE · SUPER ROBUST · EASY TO CONNECT · RUGGEDIZED 2 FIBER · PHYSICAL CONTACT

UV-RESISTANT

All external materials are made from UV-resistant components, ensuring long-term durability in outdoor applications.

CORROSION-RESISTANT

Designed for harsh environments and verified by 1440 hours salt spray testing, ensuring excellent corrosion resistance.

INGRESS PROTECTION

IPX5 / IPX6 / IPX7 protection in mated condition for reliable operation in demanding outdoor environments

INGRESS PROTECTION

IP6X dust protection preventing dust ingress and ensuring long-term optical performance.



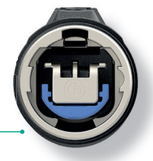
opticalCON® **TRUE1®**
Cable and chassis connectors

opticalCON® **TRUE1®** DUO





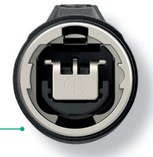
single mode PC



single mode APC



multi mode



opticalCON® **TRUE1®**
Mobile field cable range



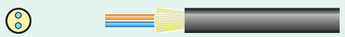
Different cable types available

AVAILABLE CABLE TYPES

LITE with ø 3.00 mm

Rugged and lightweight 2-channel patch cable, excellent cable retention due to aramid yarn, black PVC outer jacket, available in multi- and single-mode (PC or APC), suitable for permanent and temporary instalation.

NKO2*T*030



STANDARD with ø 5.00 mm

Rugged and lightweight 2-channel mobile field cable, excellent cable retention due to aramid yarn, black PUR outer jacket, available in multi- and single mode (PC or APC), military approved.

NKO2*T*050



opticalCON® **TRUE1**®
Cable connectors



Features and benefits

oC Customized solutions with **optical**CON® Configurator



opticalCON® **TRUE1**® DUO



NKO2*T*050

- 2 fibers

MOBILE USE

RUGGED

LOW MAINTENANCE

HIGH PERFORMANCE

opticalCON® **TRUE1**®
Cable connector assembly

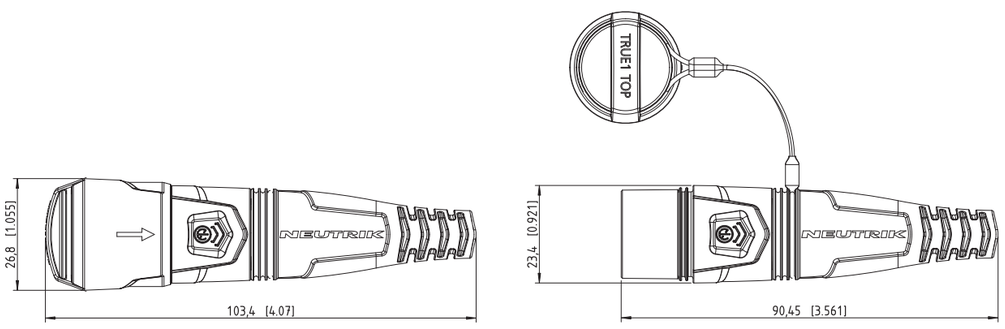
opticalCON DUO
equipment connection system integration



NKO2S-T-* NKO2SA-T-* NKO2M-T-*

- Ruggedized and dirt-protected 2-channel fiber optic connection system
- Cable connector features rugged metal housing and heavy-duty cable retention
- Automatic sealing shutter
- Dust and water resistant according to IP65, IP66 and IP67 in mated condition
- Accommodates standard optical MDC connectors
- Easy to clean, no special tools required
- Reliable and intuitive Latch-In Locking mechanism
- Cable connector comes pre-assembled with a choice of mobile field cables
- Range of 2 different cable types
- Available in multimode, single mode PC, and single mode APC

TRUE OUTDOOR PROTECTION



TECHNICAL DATA
OPTICAL CABLE CONNECTOR

OPTICAL PERFORMANCE	
Optical Connector	MDC (Miniaturized Duplex Connector)
Number of Fibers	2
Fiber	Multimode, Single Mode PC / APC
Insertion Loss	< 0.45 dB per Connection
	(acc. IEC61300-3-4:2023)
min. Return Loss	MM PC > 25 dB
	SM PC > 50 dB
	SM APC > 60 dB

MECHANICAL PERFORMANCE	
Insertion / withdrawal force	< 75 N
Lifetime (mating cycles)	5'000
Cable Retention Force	> 500 N (5.0 mm cable)
	> 500 N (5.8 mm cable)
	> 250 N (3.0 mm cable)

MATERIAL	
Shell	Zinc diecast (ZnAl4Cu1)
Insert	PC; PA66 + PA6 25% GR
Shutter	Zinc diecast (ZnAl4Cu1)
Slider Colour	PC
	MM: black
	SM PC: blue
	SM APC: green
Strain Relief	PA66 + PA6 25% GR; PC; Brass
Bushing	PK
Boot	TPE
Sealing Cap	EPDM; PA66 + PA6 25% GR;
	Stainless Steel Rope

ENVIRONMENTAL	
operating Temperature	-40°C to +85°C
Flammability	UL 94 V0 (chassis)
Protection class	in mated condition IP65, IP66 and IP67
Corrosion Resistance	1440 h

TECHNICAL DATA
CABLES

	LITE ø 3.00 mm NKO2*T*030		Standard ø 5.00 mm NKO2*T*050	
Mode	Multimode	Singlemode	Multimode	Singlemode
max. number of fibers	2		2	
Fiber				
50 / 125 OM3	•	N/A	•	N/A
9 / 125 G657A2	N/A	•	N/A	•
Bend optimized fiber	•	•	•	•
Laser optimized fiber	N/A	•	N/A	•
Strength member				
Stainless steel Jacket				
Cable retention	250 N	250 N	500 N	500 N
Aramid Yarn	•	•	•	•
Overall Diametre (mm)	3.0	3.0	5.0	5.0
Jacket				
PUR	•	•	•	•
Optical Connector				
MDC	•	•	•	•
Min. Bending Radius (cm)	3	3	5	5
Weight (kg/km)	9	9	21	21
Attenuation (dB/km)	850 nm - 3.0 dB 1310 - 1.0 dB	1310 nm - 0.35 dB 1550 - 0.21 dB	850 nm - 3.0 dB 1310 - 1.5 dB	1310 nm - 0.5 dB 1550 - 0.5 dB
Bandwidth (MHz-km)	850 nm - >1500 1310 - > 500		850 nm - >1500 1310 - > 500	
Refraction Index	850 nm - 1.481 1310 - 1.476	1310 nm - 1.467 1550 - 1.468	850 nm - 1.483 1310 - 1.479	1310 nm - 1.458 1550 - 1.458

ORDERING & PACKAGING OPTIONS

with max. cable length see on the opticalCON® Configurator – **www.neutrik.com**



-0... Airspool
-1... opticalCON Case
-2... Drum Schill GT310
-3... Drum Schill GT380
-5... Drum Schill GT450

opticalCON® **TRUE1**® Chassis connectors



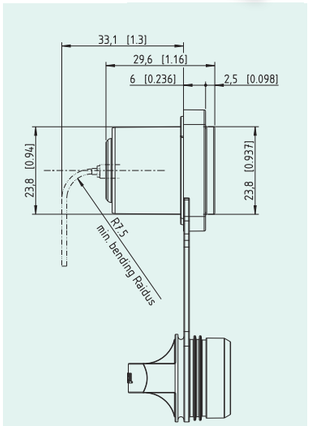
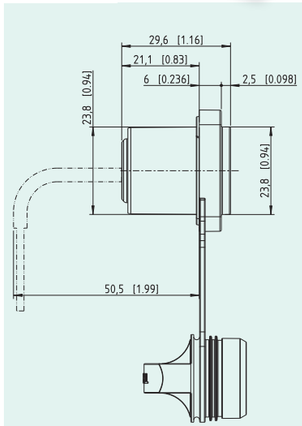
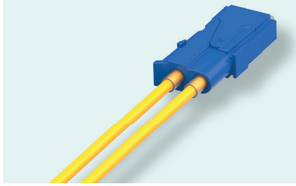
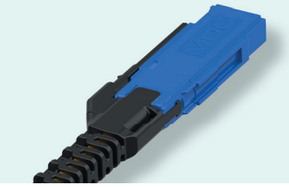
Features and benefits



SMALL FORM FACTOR

AUTOMATIC SEALING SHUTTER

SIMPLE INTEGRATION

opticalCON® **TRUE1**® **DUO** JR	**optical**CON® **TRUE1**® **DUO** SR
 NO2-FDW-T-JR	 NO2-FDW-T-SR
	
compatible with MDC junior	**compatible with MDC senior**
	

opticalCON® **TRUE1**®
Chassis connectors

opticalCON DUO
equipment connection system integration



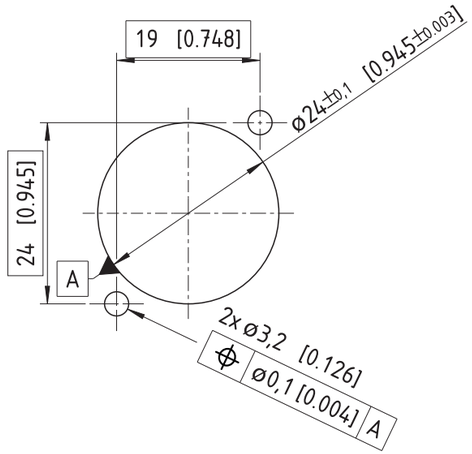
NO2-FDW-T-JR

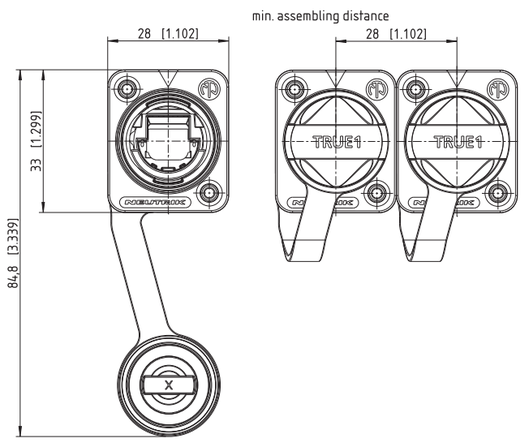


NO2-FDW-T-SR

- Ruggedized and dirt-protected 2-channel fiber optic connection system
- Shutter with silicon gasket protects optical connection from dust and dirt
- Accommodates standard MDC connectors on the rear for simple installation
- IP65, IP66 and IP67 ingress protection in mated condition

TRUE OUTDOOR PROTECTION





TECHNICAL DATA

OPTICAL CHASSIS CONNECTOR

OPTICAL PERFORMANCE	
Optical Connector	MDC (Miniaturized Duplex Connector)
Number of Fibers	2
Fiber	Multimode, Single Mode PC / APC
Insertion Loss	< 0.45 dB per Connection
	(acc. IEC61300-3-4:2023)
min. Return Loss	MM PC > 25 dB
	SM PC > 50 dB
	SM APC > 60 dB
MECHANICAL PERFORMANCE	
Lifetime (mating cycles)	5'000
MATERIAL	
Shell	PA66 + PA6 25% GR
Insert	Zinc diecast; PA66 + PA6 25% GR; PC;
Insert plating	Nickel
Shutter	PBT 25% GR
Split sleeve	Ceramics
Sealing + Cap	EPDM
ENVIRONMENTAL	
operating Temperature	-40°C to +85°C
Flammability	UL 94 V0 (chassis)
Protection class	in mated condition IP65, IP66 and IP67
Corrosion Resistance	1440 h



Removable protective cap

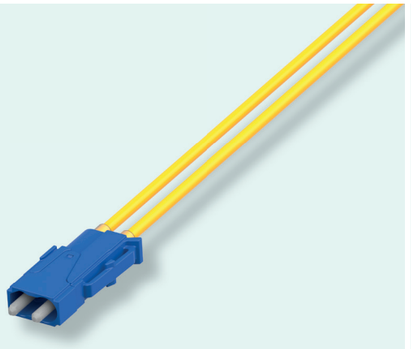
ORDERING INFORMATION

opticalCON® **TRUE1**® **DUO** CHASSIS

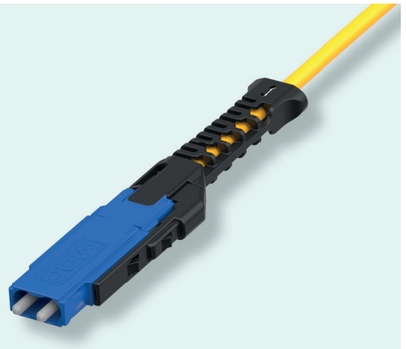
	Type	Fiber
NO2-FDW-T-JR	opticalCON® TRUE1® DUO chassis MDC Junior	2
NO2-FDW-T-SR	opticalCON® TRUE1® DUO chassis MDC Senior	2

opticalCON® **TRUE1**®
Patch cables

MDC Junior



MDC Senior



The MDC (Miniature Duplex Connector) is a compact duplex connector with a push-pull boot mechanism, based on proven 1.25 mm all-ceramic ferrule technology. It belongs to the Very Small Form Factor (VSFF) connector category and was originally developed by US Conec. The connector is available in both single-mode and multi-mode versions and comes with PC (0°) and APC (8°) polish finishes. The MDC connector is standardized in IEC 61754-37.

Neutrik offers the MDC as a patch cable solution in combination with an LC duplex connector, enabling simple and reliable connectivity to existing SFP transceivers.

- MDC (Miniature Duplex Connector) Very-Small-Form-Factor (VSFF) type connector
- Senior and Junior form factors available
- A/B polarity easily and safely interchangeable without tools
- Custom variants available upon request

MDC Junior

The MDC Junior is specifically designed for space-constrained applications. It delivers full connector functionality and testability while minimizing space consumption behind the panel or device, making it ideal for space limited integration concepts.

MDC Senior

The MDC Senior is a robust VSFF connector solution designed for traditional panel and patch applications. It combines high packing density with ease of handling thanks to the proven push-pull mechanism, ensuring reliable and service-friendly connectivity in professional fiber optic infrastructures.

TECHNICAL DATA

PATCH CABLES

OPTICAL PERFORMANCE		
Fiber	Multimode (OM4), Single Mode PC / APC	
Insertion Loss	< 0.25 dB per Connection	acc. IEC61300-3-4 method B
min. Return Loss	MM PC > 30 dB	acc. IEC61300-3-6
	SM PC > 50 dB	acc. IEC61300-3-6
	SM APC > 60 dB	acc. IEC61300-3-6

FIBER TYPES / COLORS
Singlemode SM, 9/125µm, PC and UPC 0° Blue / Black
Singlemode SM, 9/125µm, APC 8° Green / Black
Multimode OM4, 50/125µm Violet / Black M16

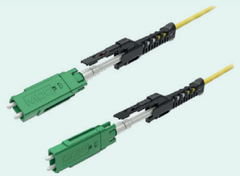
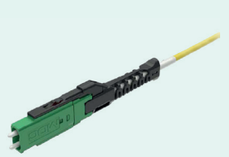
MECHANICAL PERFORMANCE	
Norm	IEC 61754-37

MATERIAL	
Ferrule	Zirconia Keramik, ø 1.25 mm

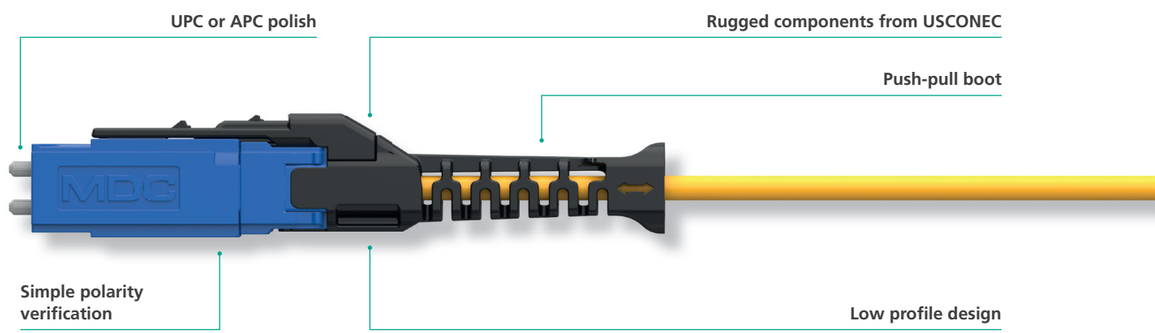
ENVIRONMENTAL	2.0 mm Patch cable	0.9 mm Patch cable
Operating Temperature	-30°C to +80°C	-40°C to 75°C
Storage Temperature	-30°C to +80°C	-40°C to 75°C
Flammability Rating	LSZH; CPR-Dca	LSZH; no flamability rating*

* For 0.9mm Patch cables longer then 4 meters (157 inch) please note following: The cable is equipped with an LSZH jacket compliant with IEC 60754. Testing according to IEC 60332-1-2 has not been performed. Use in equipment in accordance with IEC 62368-1 is the responsibility of the equipment manufacturer, who must conduct a risk -based assessment in accordance with IEC 62368-1, Clause 4.4."

CABLE DIAMETER	
Cable types	2.0 mm (MDC Senior to LC Duplex)
	0.9 mm (MDC Junior to 2* LC Simplex)

POLARITY REVERSAL		
Separate connector housing from boot	Rotate 180°	Re-attach boot to connector housing
		

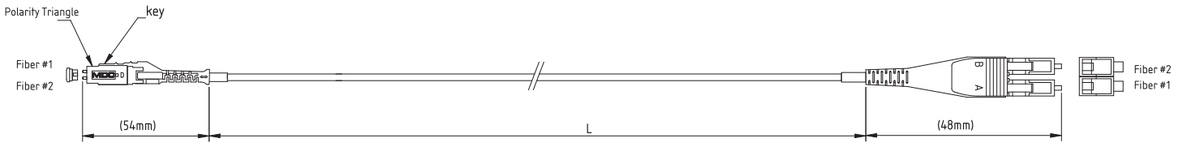
provided by courtesy of US Conec.



ORDERING INFORMATION

opticalCON® **TRUE1®** **DUO** PATCH CABLES / **MDC Senior to LC Duplex**

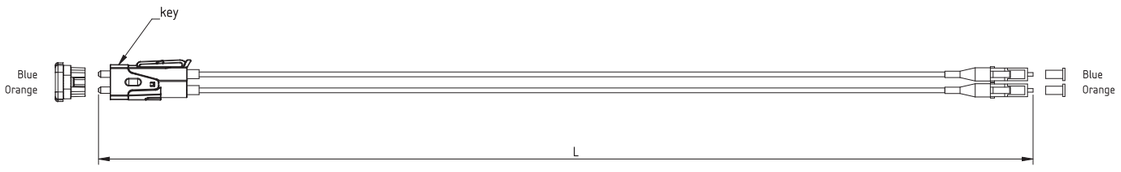
	Type
NKO2PS-T-SR-0-0.1	Patch Kabel MDC Senior – LC Duplex SM 100mm
NKO2PS-T-SR-0-0.2	Patch Kabel MDC Senior – LC Duplex SM 200mm
NKO2PS-T-SR-0-0.3	Patch Kabel MDC Senior – LC Duplex SM 300mm
NKO2PSA-T-SR-0-0.1	Patch Kabel MDC Senior – LC Duplex SM APC 100mm
NKO2PSA-T-SR-0-0.2	Patch Kabel MDC Senior – LC Duplex SM APC 200mm
NKO2PSA-T-SR-0-0.3	Patch Kabel MDC Senior – LC Duplex SM APC 300mm
NKO2PM-T-SR-0-0.1	Patch Kabel MDC Senior – LC Duplex MM 100mm
NKO2PM-T-SR-0-0.2	Patch Kabel MDC Senior – LC Duplex MM 200mm
NKO2PM-T-SR-0-0.3	Patch Kabel MDC Senior – LC Duplex MM 300mm



ORDERING INFORMATION

opticalCON® **TRUE1®** **DUO** PATCH CABLES / **MDC Junior to 2*LC Simplex**

	Type
NKO2PS-T-JR-0-0.1	Patch Kabel MDC Junior – LC Simplex SM 100mm
NKO2PS-T-JR-0-0.2	Patch Kabel MDC Junior – LC Simplex SM 200mm
NKO2PS-T-JR-0-0.3	Patch Kabel MDC Junior – LC Simplex SM 300mm
NKO2PM-T-JR-0-0.1	Patch Kabel MDC Junior – LC Simplex MM 100mm
NKO2PM-T-JR-0-0.2	Patch Kabel MDC Junior – LC Simplex MM 200mm
NKO2PM-T-JR-0-0.3	Patch Kabel MDC Junior – LC Simplex MM 300mm



opticalCON® **TRUE1®** Accessories



ORDERING INFORMATION

opticalCON® **TRUE1®** ACCESSORIES

	Type
NOR-*	Color coding ring for SCTD-TOP sealing cap UNICORN chassis
NKCR-M*	Color coding ring for cable connectors
SCTD-TOP	Sealing cap UNICORN chassis
SCTM-TOP	Protection cap UNICORN TRUE1® with leash (no locking)
SLCTM-TOP	Sealing locking cap for cable connectors

0	1	2	3	4	5	6	7	8	9

NOR-* 0-black / 1-brown / 2-red / 3-orange / 4-yellow / 5-green / 6-blue / 7-violet / 8-grey / 9-white
NKCR-M* 0-black / 1-brown / 2-red / 3-orange / 4-yellow / 5-green / 6-blue / 7-violet / 8-grey / 9-white

NOTES

NOTES

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