FO Patch cord both sides MPO24 Male 24G50/125µ OM4 100GbE, Type A, Length: xxx



tde - Fiber Optic Assemblies

The tde patch and trunk cables are manufactured completely at the German facility in Ohrte. Production processes at tde meet the latest standards, and the company has one of the most up-to-date fiber optic assembly houses in Europe. Fiber optic patch cables and trunk cables are manufactured in many different configurations using highly automated processes on two independent mass production lines. The range of products on offer encompasses the entire spectrum of connector types available on the market. Production capacity is around 100,000 fiber optic connectors per month, and this can be ramped up easily whenever required. To guarantee consistently top quality, only the best components from renowned vendors are used. All tde production staff have the necessary qualifications and education, and have been well trained in using specialist technical equipment such as laser cleavers and glue-dispensing robots.
Each cable application is subjected to a full test procedure comprising interferometer measurements, insertion loss and return loss measurements and a final visual inspection to ensure that only 100% error-free products are shipped to the customer.

Products made by tde perform at least internationally accepted quality standards and norms. The quality management system is ISO 9001, ISO 14001 and TL9000 certified.

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Technical Data

The end faces of the connectors are optimized by means of Lasercleaving and machine polish. The MPO/MTP®plug has a defined fiber height of 1 - 3.5µ. The max. adjacent fiber height difference is 0.2µm and for all fibers 0.3µm.

Cable	Round cable 3.6 mm, loose tube, LSOH, magenta
Connectors	MPO/MTP®Male Push Pull (magenta)
Pin out	Method A
Tests	Interferometer, Insertion Loss, Return Loss and Visual Final Inspection; all measured values are electronically archived
	QS-Managementsystem ISO 9001, ISO 14001 and TL 9000

xxx - stands for the cable length in m (every length available)

FO Connectors

The end faces of the connectors are optimized by means of Lasercleaving and machine polish. The MPO/MTP® plug has a defined fiber height of 1 - 3.5µ. The max. adjacent fiber height difference is 0.2µm and for all fibers 0.3µm.

Connector

Type	MPO/MTP® Male Push Pull Locking with Elite Pins (magenta)
Ferrule	24 Fiber MM Elite® ferrule, PPS
Boot colour	Red
Temperature range	-40°C to +75°C
Manufacturer	tde/US Conec

Optical Performance

Fiber	Type	Wavelength	Insertion loss typ.	Insertion loss max.	Return loss min.
50/125µ OM4	MPO/MTP®	850 nm	≤ 0.25 dB	0.45 dB	20 dB

FO Cables

Standards	EN 50173-5
	IEC 60794-2-20
	ISO/IEC 24764

Construction

Type	IVH24G50-OM4
Fiber	24 primary coated fibres nominally 242 µm, arranged in 2 groups of 12 fibres, Group 1: Red id tread Group 2: Green id tread

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Fiber colors	According to TIA/EIA 598-C also in agreement with IEC 60304: 1-12: Blue, orange, green, brown, grey, white, red, black, yellow, violet, pink and aqua
	13-24: Blue, orange, green, brown, grey, white, red, transparent, yellow, violet, pink and aqua (with add. ring mark)
Strength member	Ultra high modulus Aramid yarns
Sheath	Halogen free, flame resistant thermoplastic sheathing compound acc. to EN 50290-2-27, UV stabilised
Sheath colors	Magenta, RAL 4003

Fire rating

IEC 60332-1-2	Pass
IEC 60332-2-2	Pass
IEC 60754-1	No halogens
IEC 60754-2	No acid matters
IEC 61034-2	No dense smoke

Heat of combustion

200 MJ/km	0.5 KWh/m

Physical properties IEC60974-1-2

Outer diameter cable	ø3.6 mm +0.1 mm -0.3 mm
Diameter PVC-core tube	2.0 ± 0.1 mm
Wall thickness PVC-core tube	0.35 mm – 0.40 mm
Weight	11 kg/km
Tensile strength (dynamic)	220 N
Tensile strength (permanent)	110 N
Compressive strength (crush)	400 N
Impact	4 Nm, R= 12.5 mm
Kink	No Kink
Min. Bending radius	R = 20 mm
Temperature range	Operation and installation: -0°C to 50°C. Storage: -20°C to 50°C

FO Fiber

Type	Corning ClearCurve® 50/125µ OM4 multimode fiber
Optimized Data Rate over Distance	40/100 Gb over 170 m* 10 Gb/s over 550 m 1 Gb/s over 1100 m
Standard Compliance	ISO/IEC 11801: type OM4 fiber** IEC 60793-2-10: type A1a.3 fiber** TIA/EIA: 492AAAD ITU: ITU G651.1

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FO Patch cord both sides MPO24 Male 24G50/125µ OM4 100GbE, Type A, Length: xxx

*	Distances specified in the 40G/100G per IEEE 802.3ba standard are 150m on OM4 and 100m on OM3; Corning fibers are manufactured to tighter dispersion specifications and thereby support the extended distances shown in the table (assuming cable attenuation ≤3.0 dB/km and same 1.0 dB of connector loss for OM3 that the standard requires for OM4)
**	Assumes IEC draft standard is harmonized with 492AAAD which was approved by TIA

Optical Specifications

Bandwidth	High Performance EMB* (MHz.km): 4700 at 850 nm only Legacy Performance EMB** (MHz.km): 3500 at 850 nm / 500 at 1300 nm
Attenuation	At 850 nm max. ≤ 2.3 dB/km At 1300 nm max. ≤ 0.6 dB/km
Macrobend Loss	Mandrel Radius (mm): 37.2 / 15 / 7.5 Number of Turns: 100 / 2 / 2 Induced Attenuation (dB) at 850 nm: ≤ 0.05 / ≤ 0.1 / 0.2 Induced Attenuation (dB) at 1300 nm: ≤ 0.15 / ≤ 0.3 / ≤ 0.5
Numerical Aperture	0.200 ± 0.015
*	Ensured via miniEMBc, per TIA/EIA 455-220A and IEC 60793-1-49, for high performance laser-based systems (up to 10Gb/s)
**	OFL BW, per TIA/EIA 455-204 and IEC 60793-1-41, for legacy and LED-based systems (typically up to 100 Mb/s)

Dimensional Specifications

Core Diameter	50.0 ± 2.5 µm
Cladding Diameter	125.0 ± 1.0 µm
Core-Clad Concentricity	≤ 1.5 µm
Cladding Non-Circularity	≤ 1.0%
Core Non-Circularity	≤ 5.0%
Coating Diameter	242 ± 5 µm
Coating-Cladding Concentricity	< 12 µm

Environmental

Enviromental Test	Test Condition	Induced Attenuation 850 nm & 1300 nm (dB/km)
Temperature Dependence	-60°C to +85°C	≤ 0.10
Temperature Humidity Cycling	-10°C to +85°C and 4% to 98% RH	≤ 0.10
Water Immersion	23°C ± 2°C	≤ 0.20
Heat Aging	85°C ± 2°C	≤ 0.20
Damp Heat	85°C at 85% RH	≤ 0.20
Operating Temperature Range	-60°C to +85°C	

Mechanical Specifications

Proof Test	The entire fiber length is subjected to a tensile stress ≥ 100 kpsi (0.7 GN/m²).
Length	Fiber lengths available up to 17.6 km/spool.

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Performance Characterizations

Refractive Index Difference	1%
Effective Group Index of Refraction	850 nm: 1.480 1300 nm: 1.479
Fatigue Resistance Parameter (nd)	20
Coating Strip Force	Dry: 0.6 lbs (2.7N) Wet: 14 days in 23°C water soak: 0.6 lbs (2.7N)
Cromatic Dispersion	Zero Dispersion Wavelength (λ_0): 1295 nm $\leq\lambda_0\leq$ 1315 nm Zero Dispersion Slope (S_0): $\leq$ 0.101 ps/(nm²*km)

Product variants & accessories

Art.-No.	Description
L-M2/M2-50I24G4Axxx	FO Patch cord both sides MPO24 Female 24G50/125µ OM4 100GbE, Type A, Length: xxx
L-M2/M2-50I24G4Bxxx	FO Patch cord both sides MPO24 Female 24G50/125µ OM4 100GbE, Type B, Length: xxx
L-M2/M2P50I24G4Axxx	FO Patch cord MPO24 Female/ MPO24 Male 24G50/125µ OM4 100GbE, Type A, Length: xxx
L-M2/M2P50I24G4Bxxx	FO Patch cord MPO24 Female/ MPO24 Male 24G50/125µ OM4 100GbE, Type B, Length: xxx
L-M2P/M2P50I24G4Axxx	FO Patch cord both sides MPO24 Male 24G50/125µ OM4 100GbE, Type A, Length: xxx
L-M2P/M2P50I24G4Bxxx	FO Patch cord both sides MPO24 Male 24G50/125µ OM4 100GbE, Type B, Length: xxx

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