tML® Xtended - FO Dark Fiber Module 4x MPO/MTP® w/o Pins/6x MPO/MTP® w. Pins 50/125µ OM5, SR4

tML® - tde Modular Link

tML® is a patented, modular cabling system consisting of the three key components module, trunk cable and rack mount enclosure. The system components are 100 percent manufactured, pre-assembled and tested in Germany. They enable plug-and-play installation on site – especially in data centres, but also in industrial environments – within the shortest possible time. Heart of the system are the rear MPO/MTP® and Telco connectors, which can be used to connect at least six or twelve ports at a time. Depending on the module configuration, transfer rates of up to 200G are currently possible with SR4. The fibre optic and TP modules can be used together in a module carrier with a very high port density. The tde offers its tML® cabling system as a proven tML® standard system and in the highly innovative variants tML® Xtended, tML® 24 System and now tML® 32 System for extreme scalability and very easy migration to higher transmission rates such as 40G, 100G, 200G and 400G.

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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 hieght of 1 - 3.5µ. The max. adjacent fiber height difference is 0.2µm and for all fibers 0.3µm. All system components (modules, trunk cables and patch cords) are co-ordinated for the reaching of the performance particularly. The module is marked with sequential serial number and article number. The modules are ROHS compliant.

Entry	2 x MPO/MTP®Female Adapter (limegreen) back
Exit	6 x MPO/MTP®Male Adapter (limegreen) front
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

Box	Galvanized steel sheet
Front Panel	Stainless steel
Dimensions	110 x 108 x 20 mm

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® Female Push Pull Locking
Ferrule	12 Fiber MM Elite® ferrule, PPS
Boot colour	Black
Manufacturer	tde/US Conec

Optical Performance

Fiber	Type	Wavelength	Insertion loss typ.	Insertion loss max.	Return loss min.
50/125µ OM5	MPO/MTP®	850 nm	≤ 0.11 dB	0.25 dB	35 dB

FO Connectors

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Connector

Type	MPO/MTP® Male Push Pull Locking with Elite Pins
Ferrule	12 Fiber MM Elite® ferrule, PPS
Boot colour	Black
Manufacturer	tde/US Conec

Optical Performance

Fiber	Type	Wavelength	Insertion loss typ.	Insertion loss max.	Return loss min.
50/125µ OM5	MPO/MTP®	850 nm	≤ 0.11 dB	0.25 dB	35 dB

FO Adapters

Type	MPO/MTP®
Application	Multimode OM5
Design	without Flange
Connector style	SC Simplex
Key Orientation	Type A, Key up/down
Color	Limegreen
Material	Plastic
Sleeve	--
Shutter	--
Standards	IEC 61754-7 TIA 604-5
Manufacturer	US Conec

FO Fiber

Type	Corning ClearCurve® 50/125µ OM5 multimode fiber
Design	Optical fibre G50/125 µm (conform to IEC 60793-2-10 type A1a.4b) with optical core 50 µm +/- 2.5 µm diameter and optical cladding 125 µm +/- 1 µm diameter

Geometrical properties

Core concentricity error	< 5 %
Coating concentricity error	< 1 %
Core coating eccentricity	< 1.5 µm
Eccentricity of coating	< 12 µm
Screen test	≥ 0.7 GPa (100 kpsi)

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Transmission characteristics

Attenuation, maximum values 850 nm (cabled fibre)	2.5 dB/km
Attenuation, maximum values 953 nm (cabled fibre)	1.8 dB/km
Attenuation, maximum values 1300 nm (cabled fibre)	0.7 dB/km
Attenuation, maximum values 850 nm (uncabled fibre)	2.34 dB/km
Attenuation, maximum values 953 nm (uncabled fibre)	1.7 dB/km
Attenuation, maximum values 1300 nm (uncabled fibre)	0.64 dB/km
Macrobending, induced attenuation 100 turns, 37.5 mm	≤ 0.5 dB (at 850 nm)
Macrobending, induced attenuation 100 turns, 37.5 mm	≤ 0.5 dB (at 1300 nm)
Macrobending, induced attenuation 2 turns, 15 mm	≤ 0.1 dB (at 850 nm)
Macrobending, induced attenuation 2 turns, 15 mm	≤ 0.3 dB (at 1300 nm)
Macrobending, induced attenuation 2 turns, 7.5 mm	≤ 0.3 dB (at 850 nm)
Macrobending, induced attenuation 2 turns, 7.5 mm	≤ 0.5 dB (at 1300 nm)
Bandwidth (OFL), minimum values 850 nm	3500 MHz x km
Bandwidth (OFL), minimum values 953 nm	1850 MHz x km
Bandwidth (OFL), minimum values 1300 nm	500 MHz x km
Effective modal Bandwidth-length product min. 850 nm	4700 MHz x km
Effective modal Bandwidth-length product min. 953 nm	2470 MHz x km
Numerical aperture	0.200 +/- 0.015
Effective group of refraction 850 nm	1.482
Effective group of refraction 1300 nm	1.477

Product variants & accessories

Art.-No.	Description
TML-M06MPP/04MP50G3X	tML® Xtended - FO Dark Fiber Module 4x MPO/MTP® w/o Pins/6x MPO/MTP® w. Pins 50/125µ OM3, SR4
TML-M06MPP/04MP50G4X	tML® Xtended - FO Dark Fiber Module 4x MPO/MTP® w/o Pins/6x MPO/MTP® w. Pins 50/125µ OM4, SR4
TML-M06MPP/04MP50G5X	tML® Xtended - FO Dark Fiber Module 4x MPO/MTP® w/o Pins/6x MPO/MTP® w. Pins 50/125µ OM5, SR4