tML® - FO Module 5HP black MPO/MTP® with Pins/6x MU Duplex 62,5/125µ OM1





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.

The tML® - FO Module 5HP MPO/MTP®is intended for the installation in the tML® Rack Mount Enclosure 3U (for 17 x Modules).

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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. 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	1 x MPO/MTP®Male Adapter (beige) back
Exit	6 x MU Duplex Adapter 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	black

FO Adapters

Type	MPO/MTP®
Application	Multimode OM1/OM2
Design	without Flange
Connector style	SC Simplex
Key Orientation	Type A, Key up/down
Color	Beige
Material	Plastic
Sleeve	--
Shutter	--
Standards	IEC 61754-7 TIA 604-5
Manufacturer	US Conec

FO Adapters

Applications

- Fiber optic subscriber network transmission/switching equipment
- CATV
- Active device termination
- Telecommunication networks
- Metro networks
- Local Area Networks (LANS)
- Data processing networks
- Premise installations

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- Industrial, military and medical

Features

- Compact design
- NTT-MU hardware compatibility
- NTT & JIS compliance
- High precision alignment
- Low insertion and return loss and back reflection
- Corrosion resistance reflection

Type	MU Duplex
Sleeve	Zirconia Straight Split
Manufacturer	tde

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 (beige)
Ferrule	12 Fiber MM Elite® ferrule, PPS
Boot colour	Black
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 OM2	MPO/MTP®	850 nm	≤ 0.25 dB	0.45 dB	20 dB
62.5/125µ OM1	MPO/MTP®	850 nm	≤ 0.25 dB	0.45 dB	

FO Connectors

Type	MU
Ferrule	Ceramic
Ferrule Hole	126 µ
Connector colour	Black
Boot colour	Blue
Manufacturer	tde

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Optical performance

Fiber	Type	Wavelength	Insertion loss typ.	Insertion loss max.	Return loss min.
50/125µ OM2	MU	850 nm	≤ 0.25 dB	0.45 dB	30 dB
62.5/125µ OM1	MU	850 nm	≤ 0.25 dB	0.45 dB	

FO Fiber

Type	Corning 62.5/125µ OM1 multimode fiber
Manufacturer	Corning

Optical Specifications

Bandwidth	160/200 at 850 nm / 500 at 1300 nm
Attenuation	At 850 nm max. ≤ 3.0 dB/km At 1300 nm max. ≤ 0.7 dB/km
Numerical Aperture	0.275 ± 0.015

Dimensional Specifications

Core Diameter	62.5 ± 3.0 µm
Cladding Diameter	125.0 ± 2.0 µm
Core-Clad Concentricity	≤ 3.0 µm
Cladding Non-Circularity	< 2.0%
Core Non-Circularity	≤ 5.0%
Coating Diameter	245 ± 5 µm
Coating-Cladding Concentricity	< 12 µm

Environmental Specifications

Enviromental Test	Test Condition	Induced Attenuation 850 nm and 1300 nm (dB/km)
Temperature Dependence	-60°C to +85°C	≤ 0.20
Temperature Humidity Cycling	-10°C to +85°C and 4% to 98% 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.

Performance Characterizations

Refractive Index Difference	2%

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Effective Group Index of Refraction	850 nm: 1.496 1300 nm: 1.491
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 (λ0): 1332 nm ≤λ0 ≤ 1354 nm Zero Dispersion Slope (S0): ≤ 0.097 ps/(nm²*km)

Product variants & accessories

Art.-No.	Description
TML-T06MUDK/MPP09ES	tML® - FO Module 5HP black MPO/MTP® with Pins/6x MU Duplex 9/125µ OS2
TML-T06MUDK/MPP50G3S	tML® - FO Module 5HP black MPO/MTP® with Pins/6x MU Duplex 50/125µ OM3
TML-T06MUDK/MPP50GS	tML® - FO Module 5HP black MPO/MTP® with Pins/6x MU Duplex 50/125µ OM2
TML-T06MUDK/MPP62GS	tML® - FO Module 5HP black MPO/MTP® with Pins/6x MU Duplex 62,5/125µ OM1

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