

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

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 SC Duplex Adapter (beige) 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

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

Type	SC Duplex
Application	Multimode OM1/OM2
Design	One-Piece without flange
Connector style	SC Dupex
Color	Beige
Material	Plastic
Sleeve	Zirconia Straight Split
Shutter	--
Manufacturer	tde

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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

Connector Type	SC Simplex
Housing	Plastic, Beige
Ferrule	Zirconia Straight Split, Spring-loaded Axially
Ferrule Hole	126 µ
Mating Cycles	1.000
Operating Temperature	-40°C up to +75°C
Strain Relief to	150 N
Manufacturer	tde

Optical performance

Fiber	Type	Wavelength	Insertion loss typ.	Insertion loss max.	Return loss min.
50/125µ OM2	SC	850 nm	≤ 0.25 dB	0.45 dB	30 dB
62.5/125µ OM1	SC	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
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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	$62.5 \pm 3.0 \mu\text{m}$
Cladding Diameter	$125.0 \pm 2.0 \mu\text{m}$
Core-Clad Concentricity	$\leq 3.0 \mu\text{m}$
Cladding Non-Circularity	$< 2.0\%$
Core Non-Circularity	$\leq 5.0\%$
Coating Diameter	$245 \pm 5 \mu\text{m}$
Coating-Cladding Concentricity	$< 12 \mu\text{m}$

Environmental Specifications

Environmental Test	Test Condition	Induced Attenuation 850 nm and 1300 nm (dB/km)
Temperature Dependence	-60°C to $+85^{\circ}\text{C}$	≤ 0.20
Temperature Humidity Cycling	-10°C to $+85^{\circ}\text{C}$ and 4% to 98% RH	≤ 0.20
Operating Temperature Range	-60°C to $+85^{\circ}\text{C}$	

Mechanical Specifications

Proof Test	The entire fiber length is subjected to a tensile stress ≥ 100 kpsi (0.7 GN/m^2).
Length	Fiber lengths available up to 17.6 km/spool.

Performance Characterizations

Refractive Index Difference	2%
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)
Chromatic Dispersion	Zero Dispersion Wavelength (λ_0): $1332 \text{ nm} \leq \lambda_0 \leq 1354 \text{ nm}$ Zero Dispersion Slope (S0): $\leq 0.097 \text{ ps}/(\text{nm}^2 \cdot \text{km})$

Product variants & accessories

Art.-No.	Description
TML-T06SCADK/MPP09E	tML [®] - FO Module 5HP MPO/MTP [®] with Pins/6x SC APC Duplex 9/125 μ OS2
TML-T06SCDK/MPP09E	tML [®] - FO Module 5HP MPO/MTP [®] with Pins/6x SC Duplex 9/125 μ OS2
TML-T06SCDK/MPP50G	tML [®] - FO Module 5HP MPO/MTP [®] with Pins/6x SC Duplex 50/125 μ OM2
TML-T06SCDK/MPP50G3	tML [®] - FO Module 5HP MPO/MTP [®] with Pins/6x SC Duplex 50/125 μ OM3

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

Art.-No.	Description
TML-T06SCDK/MPP50G4	tML [®] - FO Module 5HP MPO/MTP [®] with Pins/6x SC Duplex 50/125μ OM4
TML-T06SCDK/MPP62G	tML [®] - FO Module 5HP MPO/MTP [®] with Pins/6x SC Duplex 62,5/125μ OM1