# tde
## trans data elektronik GmbH

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**tML® - FO Micro Distribution Trunk Cable both sides 1x MPO/MTP® Female 12G50/125µ OM2 LSOH, Type C, Length: xxx**



## 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 Micro Distribution trunk cable is intended for the connection of two tML®- FO Modules.

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## tML® - FO Micro Distribution Trunk Cable both sides 1x MPO/MTP® Female 12G50/125µ OM2 LSOH, Type C, Length: xxx

## Technical Data

The tML®- FO trunk cable is preterminated with MPO/MTP®connectors on both ends. The Cable is very slim and flexible. 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.

| | |
|---|---|
| Cable | Round cable, loose tube, LSOH, orange |
| Connectors | MPO/MTP®Female Push Pull (grey) |
| Pin out | Crossover (TIA/EIA-568-B.1 Methode C) |
| 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 meters (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® Female Push Pull Locking (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 Cables

| | |
|---|---|
| Standards | EN 50173-5 |
| | IEC 60794-2-20 |
| | ISO/IEC 24764 |
| Flame resistance | IEC 60332-1-2 |

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| | |
|---|---|
| | IEC 60332-2-2 |
| | IEC 60754-1 |
| | IEC 60754-2 |
| | IEC 61034 |

## Cable construction

| | |
|---|---|
| Type | IVH12G50-OM2 |
| Loose tube | 12 coated fibers within PVC-core tube |
| Wall thickness PVC-tube | 0.20 mm – 0.25 mm |
| Fiber type | MM-OM2, 50/125µ, Corning |
| Strength members | Aramid yarn |
| Outer jacket | LSZH (Halogen free, low smoke, flame retardant thermoplastic compound) |
| Jacket color | Orange, RAL 2003 |
| Identification | "t d e – IVH12G50-MPO-OM2 LSZH" and sequential meter marking + Lot number |

## Physical properties

| | |
|---|---|
| Outer diameter cable | 3.0 ± 0.1 mm |
| Diameter PVC-core tube | 1.8 ± 0.1 mm |
| Max. tensile load | 300 N |
| Min. bending radius | 30 mm |
| Temperature range (storage, installation, operation) | -20°C to +70°C |

## FO Fiber

| | |
|---|---|
| Type | Corning 50/125µ OM2 multimode fiber |
| Manufacturer | Corning |

## Optical Specifications

| | |
|---|---|
| Bandwidth | 500 at 850 nm / 500 at 1300 nm |
| Attenuation | At 850 nm max. ≤ 2.5 dB/km<br>At 1300 nm max. ≤ 0.8 dB/km |
| Numerical Aperture | 0.200 ± 0.015 |

## Dimensional Specifications

| | |
|---|---|
| Core Diameter | 50.0 ± 3.0 µm |
| Cladding Diameter | 125.0 ± 2.0 µm |
| Core-Clad Concentricity | ≤ 3.0 µm |
| Cladding Non-Circularity | < 2.0% |

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| | |
|---|---|
| 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 8.8 km/spool. |

### Performance Characterizations

| | |
|---|---|
| Refractive Index Difference | 2% |
| Effective Group Index of Refraction | 850 nm: 1.490<br>1300 nm: 1.486 |
| Fatigue Resistance Parameter (nd) | 20 |
| Coating Strip Force | Dry: 0.6 lbs (2.7N)<br>Wet: 14 days in 23°C water soak: 0.6 lbs (2.7N) |
| Cromatic Dispersion | Zero Dispersion Wavelength (λ0): 1300 nm ≤λ0 ≤ 1320 nm<br>Zero Dispersion Slope (S0): ≤ 0.101 ps/(nm²*km) |

## Product variants & accessories

| Art.-No. | Description |
|---|---|
| TML-MP/MP09I12Exxx | tML® - FO Micro Distribution Trunk Cable both sides 1x MPO/MTP® Female 12E9/125µ OS2 LSOH, Type C, Length: xxx |
| TML-MP/MP50I12G3-xxx | tML® - FO Micro Distribution Trunk Cable both sides 1x MPO/MTP® Female 12G50/125µ OM3 LSOH, Type C, Length: xxx |
| TML-MP/MP50I12G4-xxx | tML® - FO Micro Distribution Trunk Cable both sides 1x MPO/MTP® Female 12G50/125µ OM4 LSOH, Type C, Length: xxx |
| TML-MP/MP50I12Gxxx | tML® - FO Micro Distribution Trunk Cable both sides 1x MPO/MTP® Female 12G50/125µ OM2 LSOH, Type C, Length: xxx |
| TML-MP/MP62I12Gxxx | tML® - FO Micro Distribution trunk cable both sides 1x MPO/MTP® Female 12G62,5/125µ OM1 LSOH, Type C, Length: xxx |