

tSML - FO Micro Distribution Trunk Cable both sides 1x MPO Female 12G50/125µ OM4 LSHF, Type C,
Length: xxx in m



tSML - tde Semi Modular Link

tSML is a modular developed cabling system, which consists of two core components: module and trunk cable. The system components, preterminated with connectors and tested ex works, facilitate very fast installation of both twisted pair and fiber-optic cables. Ready-made trunk cables, providing a high number of pairs or fibers, can simply be plugged together using patch panels. Up to 96x LC duplex and/or 48 x RJ45 of haven can be accommodated in such a way on 1U. At the heart of the System are MPO/MTP[®] and Telco connectors, with which 12 optical fibers or 24 copper pairs can be connected simultaneously. Fiber-optic and twisted pair modules can be combined on 1U within a panel without difficulty.



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Technical Data

The tSML- 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 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.

| | |
|------------|--|
| Cable | Round cable, 3mm, loose tube, LSOH, magenta |
| Option | unsensitive ClearCurve [®] Corning fiber |
| Connectors | MPO/MTP [®] Female Push Pull (magenta) |
| 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 (Magenta) |
| 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 OM4 | MPO/MTP [®] | 850 /1300 nm | ≤ 0.12 dB | 0.25 dB | 35 dB |

FO Cables

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

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

Cable construction

| | |
|-------------------------|---|
| Type | IVH12G50-OM4 |
| Loose tube | 12 coated fibers within PVC-core tube |
| Wall thickness PVC-tube | 0.20 mm – 0.25 mm |
| Fiber type | MM-OM4, 50/125μ, Corning ClearCurve OM4 |
| Strength members | Aramid yarn |
| Outer jacket | LSZH (Halogen free, low smoke, flame retardant thermoplastic compound) |
| Jacket color | Magenta, RAL 4003 |
| Identification | "t d e – IVH12G50-MPO-OM4 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 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 |
| * | 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 |

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|--------------------|---|
| 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

| Environmental 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. |

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) |
| Chromatic Dispersion | Zero Dispersion Wavelength (λ ₀): 1295 nm ≤ λ ₀ ≤ 1315 nm Zero Dispersion Slope (S ₀): ≤ 0.101 ps/(nm²*km) |

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Product variants & accessories

| Art.-No. | Description |
|-----------------------|--|
| TSML-MP/MP09I12Exxx | tSML - FO Micro Distribution Trunk Cable both sides 1x MPO Female 12E9/125μ OS2 LSHF, Type C, Length: xxx in m |
| TSML-MP/MP50I12G3-xxx | tSML - FO Micro Distribution Trunk Cable both sides 1x MPO Female 12G50/125μ OM3 LSHF, Type C, Length: xxx in m |
| TSML-MP/MP50I12G4-xxx | tSML - FO Micro Distribution Trunk Cable both sides 1x MPO Female 12G50/125μ OM4 LSHF, Type C, Length: xxx in m |