

tSML - FO Micro Distribution Trunk Cable both sides 4x MPO Female 48G50/125µ 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 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.

Cable	Micro Distribution Cable
Connectors	MPO/MTP [®] Push Pull (magenta)
Pin out	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

FO Connectors

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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 Fan-Out

Length Fan-Out	50 mm
Max. Ø Fan-Out	16.4 mm
Parallel connectors	4

FO Cables

Standards	Environmental and mechanical tests according to EN 187000 and IEC 60794-1-2.
Flame retardant	IEC 60332-3
Halogen free	IEC 60754-1
Low smoke emission	IEC 61034-1/2
Reaction to fire (Euroclasses)	D _{ca}

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Type	Micro Distribution Indoor Cable
Fibers	48 (4 x 12)
Strength members	Aramid Yarns
Outer jacket	LSZH
Color	Magenta (RAL4003)
Weight	62 kg/km
Outer Ø	7.5 ± 0.2 mm
Tensile Load	1000 N
Crush	700 N
Temperature range	-20°C to +70°C
Min. bending radius	10 x Ø Outer

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
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
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Cladding Diameter	125.0 \pm 1.0 μ m
Core-Clad Concentricity	\leq 1.5 μ m
Cladding Non-Circularity	\leq 1.0%
Core Non-Circularity	\leq 5.0%
Coating Diameter	242 \pm 5 μ m
Coating-Cladding Concentricity	< 12 μ m

Environmental

Environmental Test	Test Condition	Induced Attenuation 850 nm & 1300 nm (dB/km)
Temperature Dependence	-60°C to +85°C	\leq 0.10
Temperature Humidity Cycling	-10°C to +85°C and 4% to 98% RH	\leq 0.10
Water Immersion	23°C \pm 2°C	\leq 0.20
Heat Aging	85°C \pm 2°C	\leq 0.20
Damp Heat	85°C at 85% RH	\leq 0.20
Operating Temperature Range	-60°C to +85°C	

Mechanical Specifications

Proof Test	The entire fiber length is subjected to a tensile stress \geq 100 kpsi (0.7 GN/m ²).
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 $\leq \lambda_0 \leq$ 1315 nm Zero Dispersion Slope (S_0): \leq 0.101 ps/(nm ² *km)

Product variants & accessories

Art.-No.	Description
TSMLMP/MP50I48G4-xxx	tSML - FO Micro Distribution Trunk Cable both sides 4x MPO Female 48G50/125 μ OM4 LSHF, Type C, Length xxx in m