

tSML - FO Trunk Cable 2x MPO Female/2x MPO Female 24G50/125 $\mu$  OM3 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<sup>®</sup> 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<sup>®</sup>plug has a defined fiber height of 1 - 3.5 $\mu$ . The max. adjacent fiber height difference is 0.2 $\mu$ m and for all fibers 0.3 $\mu$ m.

Cable	Universal Cable
Connectors	MPO/MTP <sup>®</sup> Push Pull (aqua)
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

### Connector

Type	MPO/MTP <sup>®</sup> Female Push Pull Locking (aqua)
Ferrule	12 Fiber MM Elite <sup>®</sup> ferrule, PPS
Boot colour	Black
Manufacturer	tde/US Conec

### Optical Performance

Fiber	Type	Wavelength	Insertion loss typ.	Insertion loss max.	Return loss min.
50/125 $\mu$ OM3	MPO/MTP <sup>®</sup>	850 nm	$\leq$ 0.14 dB	0.25 dB	35 dB

## FO Fan-Out

Fan-out length	50 mm
$\emptyset$ Fan-out	16 mm
$\emptyset$ Single unit	3.8 mm
Single unit length	78 $\pm$ 5 cm (not stepped)

## FO Cables

### Mechanical characteristics

Temperature range	Storage -25 to +70°C, IEC 60794-1-22 F1
	Pulling in -10 to +50°C
	Operation -25 to +60°C
Tensile performance	IEC 60794-1-21 E1
Crush resistance	IEC 60794-1-21 E3
Impact	IEC 60794-1-21 E4

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Repeated bending	IEC 60794-1-21 E6
Torsion	IEC 60794-1-21 E7
Bend	IEC 60794-1-21 E11
Water penetration	IEC 60794-1-22 F5

## General characteristics

Sheath colour	green, similar to RAL 6016
Zero halogen, no corrosive gases	IEC 60754-1/-2, EN 60754-1/-2, VDE 0482-754-1/-2
Flame propagation	IEC 60332-1-2, EN 60332-1-2, VDE 0482-332-1-2
Flame spread	IEC 60332-3-24, EN 50266-2-4, VDE 0482-266-2-4
Smoke density	IEC 61034-1/-2, EN 61034-1/-2, VDE 0482-1034-1/-2
Reaction to fire (Euroclasses)	EN 13501-6: E <sub>ca</sub>

Cabletype	Universal U-DQ(ZN)BH for indoor and outdoor use
	non metallic, dry interstices, rodent protection, flame retardant, in accordance with IEC 60332.1 and IEC 60332.3 C
Fibertype	Corning G50/125 OM3
No. of fibers	24
Loose tube	2
Sheath $\varnothing$	9.5 mm
Weight	96 kg/km
Bending radius	140 mm
Tensile load	2800 N
Crush resistance	3000 N continuous
	5000 N short term
Fire load	430 kWh/km
	1548 MJ/km

## Length tolerances (prefabricated with plugs)

Tolerances for lengths up to 40m	$\pm$ 100 cm
Tolerances for lengths up to 100m	$\pm$ 100 cm
Tolerances for lengths from 100m	$\pm$ 2%

## FO Fiber

### Optical properties

Attenuation typical (cabled)	850 nm: 2.5 / 1300 nm: 0.5 dB/km
Attenuation maximum (cabled)	850 nm: 2.7 / 1300 nm: 0.7 dB/km
OFL bandwidth as per TIA/EIA 455-204 and IEC 60793-1-41	850 nm: 3500 / 1300 nm: 500 MHz x km

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High-Performance EMB bandwidth as per TIA/EIA 455-220A and IEC 60793-1-49	850 nm: 4700 / 1300 nm: 4700 MHz x km
Refractive Index	850 nm: 1.480 / 1300 nm: 1.479

## Technical properties

Bending radius	No. of windings (turns)	Max. induced attenuation
37.5 mm	100	850 nm: $\leq 0.05$ / 1300 nm: $\leq 0.15$ dB/km
15 mm	2	850 nm: $\leq 0.1$ / 1300 nm: $\leq 0.3$ dB/km
7.5 mm	2	850 nm: $\leq 0.2$ / 1300 nm: $\leq 0.5$ dB/km

## Geometrical and mechanical characteristics

Numerical Aperture	0.200 +/- 0.015
Core $\varnothing$	50.0 +/- 2.5 $\mu$ m
Maximum Core Non-Circularity	5 %
Cladding $\varnothing$	125.0 +/- 1.0 $\mu$ m
Maximum Cladding Non-Circularity	1.0 %
Maximum Cladding/Core Concentricity Error	1.5 $\mu$ m
Maximum Coating Concentricity Error	12 $\mu$ m
Coating $\varnothing$	242 +/- 5 $\mu$ m
Test load	100 kpsi

## Product variants & accessories

Art.-No.	Description
TSML-MP/MP09B24Exxx	tSML - FO Trunk Cable 2x MPO Female/2x MPO Female 24E9/125 $\mu$ OS2 LSHF, Type C, Length: xxx in m
TSMLMP/MP50B24G3-xxx	tSML - FO Trunk Cable 2x MPO Female/2x MPO Female 24G50/125 $\mu$ OM3 LSHF, Type C, Length xxx in m
TSMLMP/MP50B24G4-xxx	tSML - FO Trunk Cable 2x MPO Female/2x MPO Female 24G50/125 $\mu$ OM4 LSHF, Type C, Length xxx in m