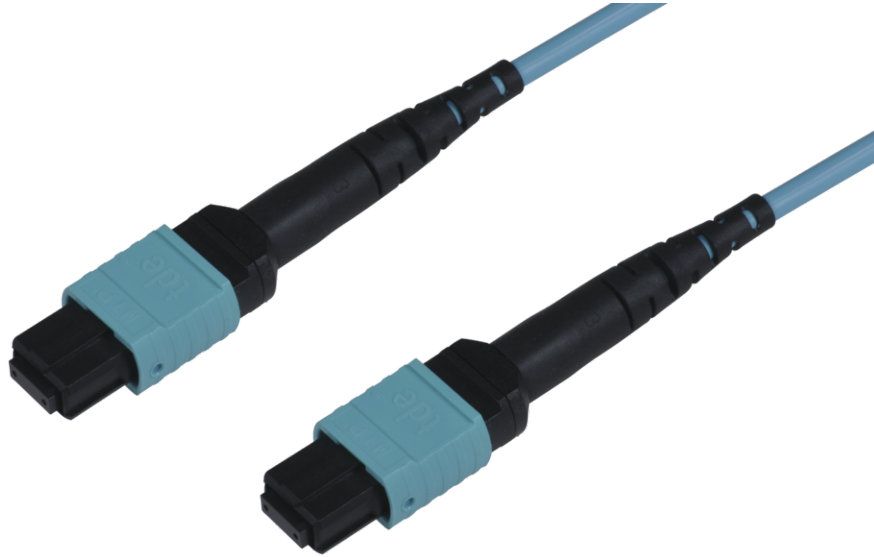


tSML - FO Micro Distribution Trunk Cable both sides 1x MPO Female 12G50/125 $\mu$  OM3 LSHF, Type C,  
Length: xxx in m



## 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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Length: xxx in m

## Technical Data

The tSML- FO trunk cable is preterminated with MPO/MTP<sup>®</sup>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<sup>®</sup>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, loose tube, LSOH, aqua
Connectors	MPO/MTP <sup>®</sup> Female Push Pull (aqua)
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

### 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.
50/125µ OM3	MPO/MTP <sup>®</sup>	850 nm	≤ 0.14 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
	IEC 60754-1
	IEC 60754-2
	IEC 61034

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## Cable construction

Type	IVH12G50-OM3
Loose tube	12 coated fibers within PVC-core tube
Wall thickness PVC-tube	0.20 mm – 0.25 mm
Fiber type	MM-OM3, 50/125 $\mu$ , Corning ClearCurve OM3
Strength members	Aramid yarn
Outer jacket	LSZH (Halogen free, low smoke, flame retardant thermoplastic compound)
Jacket color	Aqua, RAL 6027
Identification	"t d e – IVH12G50-MPO-OM3 LSZH" and sequential meter marking + Lot number

## Physical properties

Outer diameter cable	3.0 $\pm$ 0.1 mm
Diameter PVC-core tube	1.8 $\pm$ 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 <sup>®</sup> 50/125 $\mu$ OM3 multimode fiber
Optimized Data Rate over Distance	40/100 Gb/s über 140 m* 10 Gb/s over 300 m 1 Gb/s over 1000 m
Standard Compliance	ISO/IEC 11801: type OM3 fiber IEC 60793-2-10: type A1a.2 fiber TIA/EIA: 492AAAC-B 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 $\leq$ 3.0 dB/km and same 1.0 dB of connector loss for OM3 that the standard requires for OM4).

## Optical Specifications

Bandwidth	High Performance EMB* (MHz.km): 2000 at 850 nm only Legacy Performance EMB* (MHz.km): 1500 at 850 nm / 500 at 1300 nm
Attenuation	At 850 nm max. $\leq$ 2.3 dB/km At 1300 nm max. $\leq$ 0.6 dB/km
Macrobend Loss	Mandrel Radius (mm): 37.5 / 15 / 7.5 Number of Turns: 100 / 2 / 2 Induced Attenuation (dB) at 850 nm: $\leq$ 0.05 / $\leq$ 0.1 / $\leq$ 0.2 Induced Attenuation (dB) at 1300 nm: $\leq$ 0.15 / $\leq$ 0.3 / $\leq$ 0.5
Numerical Aperture	0.200 $\pm$ 0.015
*	Ensured via miniEMBc, per TIA/EIA 455-220A and IEC 60793-1-49, for high performance laser-based systems (up to 10 Gb/s).

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**	OFL BW, per TIA/EIA 455-204 and IEC 60793-1-41, for legacy and LED-based systems (typically up to 100 Mb/s).
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## 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/m <sup>2</sup> ).
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 <sub>0</sub> ): 1295 nm ≤ λ <sub>0</sub> ≤ 1315 nm Zero Dispersion Slope (S <sub>0</sub> ): ≤ 0.101 ps/(nm <sup>2</sup> *km)

## Product variants & accessories

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