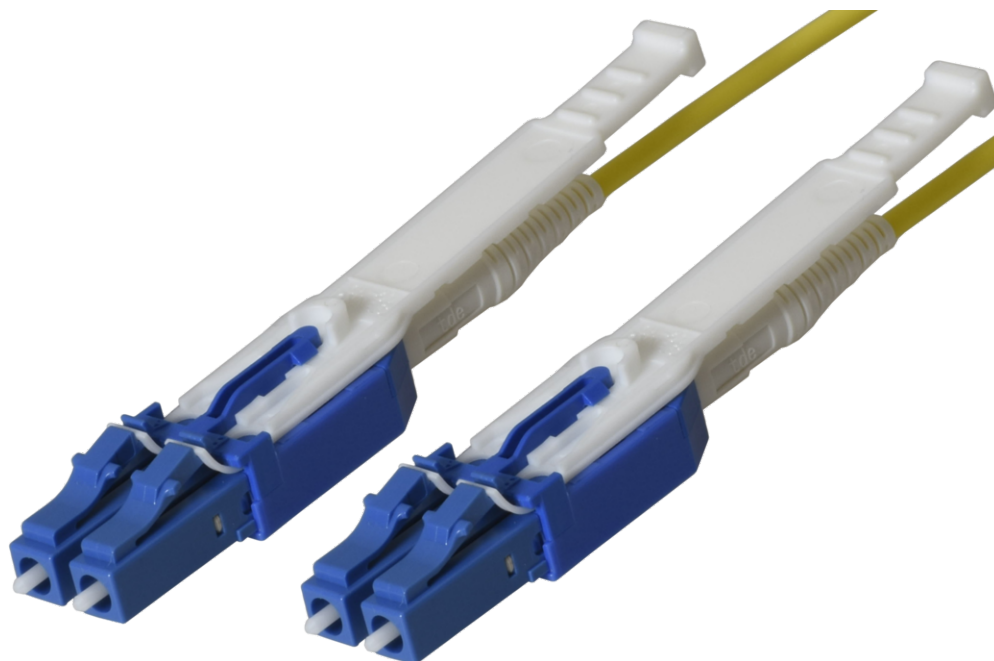


HD - FO Patch cord LC HD/ LC HD Duplex Mini 9/125µ, FRNC, OS2, Crossover, Length: xxxxx in cm



## tde - Fiber Optic Assemblies

The tde patch and trunk cables are manufactured completely at the German facility in Ohrte. Production processes at tde meet the latest standards, and the company has one of the most up-to-date fiber optic assembly houses in Europe. Fiber optic patch cables and trunk cables are manufactured in many different configurations using highly automated processes on two independent mass production lines. The range of products on offer encompasses the entire spectrum of connector types available on the market. Production capacity is around 100,000 fiber optic connectors per month, and this can be ramped up easily whenever required. To guarantee consistently top quality, only the best components from renowned vendors are used. All tde production staff have the necessary qualifications and education, and have been well trained in using specialist technical equipment such as laser cleavers and glue-dispensing robots.

Each cable application is subjected to a full test procedure comprising interferometer measurements, insertion loss and return loss measurements and a final visual inspection to ensure that only 100% error-free products are shipped to the customer.

Products made by tde perform at least internationally accepted quality standards and norms. The quality management system is ISO 9001, ISO 14001 and TL9000 certified.

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HD - FO Patch cord LC HD/ LC HD Duplex Mini 9/125μ, FRNC, OS2, Crossover, Length: xxxxx in cm

## Technical Data

### FO Connectors

Connector Type	LC HD Duplex Unibody
Housing	Plastic, Blue with an integrated belt release (Push-Pull), 60mm
Optional	Push-Pull color coding
Ferrule	Zirkonia Straight Split, Spring-loaded Axially
Ferrule Hole	127 μm
Mating Cycles	1.000
Operating Temperature	-40°C up to +75°C
Strain Relief to	100 N
Manufacturer	tde
Simplex / Duplex Clip	Uniboot Duplex Housing

### Optical performance

Fiber	Type	Wavelength	Insertion loss typ.	Insertion loss max.	Return loss min.
9/125μ OS2	LC PC HD	1550 nm	< 0.10 dB	0.25 dB	55 dB

### FO Cables

Flame resistance	IEC 60332-3
	IEC 60754
	IEC 61034-1
	IEC 61034-2

### Cable construction

Type	DVH02E09X-2.0
Tight buffer	2x 600μ coated fibers (free movable in the compound)
Fiber type	Corning Ultra G652.D / G657.A1
Strength members	Aramid yarn (free movable in the compound)
Outer jacket	LSZH (Halogen free, low smoke, flame retardant thermoplastic compound)
Jacket color	Yellow, RAL 1021
Identification	"I-V(ZN)H 2E G652.D / G657.A1 2,0mm" and sequential meter marking + Lot number

### Physical properties

Outer diameter cable	2.0 ± 0.1 mm
Maximum tensile load, short term	500 N
Maximum tensile load, long term	300 N
Min. Bending radius, unloaded	20 mm
Min. Bending radius, loaded	40 mm

HD - FO Patch cord LC HD/ LC HD Duplex Mini 9/125µ, FRNC, OS2, Crossover, Length: xxxxx in cm

Temperature range (operation)	-5°C to +60°C
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## FO Fiber

Type	Corning Ultra SMF-28® 09/125µ OS2 singlemode fiber
Maximum Attenuation	At 1310 nm max. 0.32 dB/km At 1383 nm max. 0.32 dB/km At 1490 nm max. 0.21 dB/km At 1550 nm max. 0.18 dB/km At 1625 nm max. 0.20 dB/km
Attenuation vs. Wavelength	Range: 1285 - 1330 nm; Ref. λ: 1310 nm; Max. Difference: 0.03 dB/km Range: 1525 - 1575 nm; Ref. λ: 1550 nm; Max. Difference: 0.02 dB/km
Macrobend Loss	Mandrel Radius: 10mm; Number of Turns: 1; Wavelength: 1550nm; Induced Attenuation: ≤ 0.50 dB Mandrel Radius: 10mm; Number of Turns: 1; Wavelength: 1625nm; Induced Attenuation: ≤ 1.5 dB Mandrel Radius: 15mm; Number of Turns: 10; Wavelength: 1550nm; Induced Attenuation: ≤ 0.05 dB Mandrel Radius: 15mm; Number of Turns: 10; Wavelength: 1625nm; Induced Attenuation: ≤ 0.30 dB Mandrel Radius: 25mm; Number of Turns: 100; Wavelength: 1310nm, 1550nm, 1625nm; Induced Attenuation: ≤ 0.01 dB
Point Discontinuity	Wavelength: 1310 nm; Point Discontinuity: ≤ 0.05 dB Wavelength: 1550 nm; Point Discontinuity: ≤ 0.05 dB
Cable Cutoff Wavelength (λ <sub>ccf</sub> )	λ <sub>ccf</sub> ≤ 1260 nm
Mode-Field Diameter	At 1310 nm = 9.2 ± 0.4 µm At 1550 nm = 10.4 ± 0.5 µm
Dispersion	At 1550 nm = ≤ 18.0 [ps/(nm*km)] At 1625 nm = ≤ 22.0 [ps/(nm*km)]
	Zero Dispersion Wavelength (λ <sub>0</sub> ): 1304 nm ≤ λ <sub>0</sub> ≤ 1324 nm Zero Dispersion Slope (S <sub>0</sub> ): ≤ 0.092 ps/(nm² *km)
Polarization Mode Dispersion (PMD)	PMD Link Design Value = ≤ 0.04 ps/√km Maximum Individual Fiber = ≤ 0.1 ps/√km

## Dimensional Specifications

Fiber Curl	≥ 4.0 m radius of curvature
Cladding Diameter	125.0 ± 0.7 µm
Core-Clad Concentricity	≤ 0.5 µm
Cladding Non-Circularity	≤ 0.7%
Coating Diameter	242 ± 5 µm
Coating-Cladding Concentricity	< 12 µm

## Environmental Specifications

Environmental Test	Test Condition	Induced Attenuation 1310 nm, 1550 nm & 1625 nm
Temperature Dependence	-60°C to +85°C	≤ 0.05
Temperature Humidity Cycling	-10°C to +85°C up to 98% RH	≤ 0.05
Water Immersion	23°C ± 2°C	≤ 0.05
Heat Aging	85°C ± 2°C	≤ 0.05
Operating Temperature Range	-60°C to +85°C	

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## Mechanical Specifications

Proof Test	The entire fiber length is subjected to a tensile stress $\geq 100$ kpsi (0.69 GPa).
Length	Fiber lengths available up to 63.0 km/spool.

## Performance Characterizations

Core Diameter	8.2 μm
Numerical Aperture	0.14
Effective Group Index of Refraction	1310 nm: 1.4676 1550 nm: 1.4682
Fatigue Resistance Parameter (nd)	20
Coating Strip Force	Dry: 0.6 lbs (3N) Wet: 14 days room temperature: 0.6 lbs (3N)
Rayleigh Backscatter Coefficient (for 1 ns Pulse Width)	1310 nm: -77 dB 1550 nm: -82 dB

## Product variants & accessories

Art.-No.	Description
P-TLCA/TLCA09DRMxx	HD - FO Patch cord LC APC HD/ LC APC HD Duplex Uniboot Mini 9/125μ, FRNC, OS2, Crossover, Length: xx in m
P-TLC/TLC09DRMxxxxx	HD - FO Patch cord LC HD/ LC HD Duplex Mini 9/125μ, FRNC, OS2, Crossover, Length: xxxxx in cm
P-TLC/TLC50D3RMxxxxx	HD - FO Patch cord LC HD/ LC HD Duplex Mini 50/125μ, FRNC, OM3, Crossover, Length: xxxxx in cm
P-TLC/TLC50D4RMxxxxx	HD - FO Patch cord LC HD/ LC HD Duplex Mini 50/125μ, FRNC, OM4, Crossover, Length: xxxxx in cm