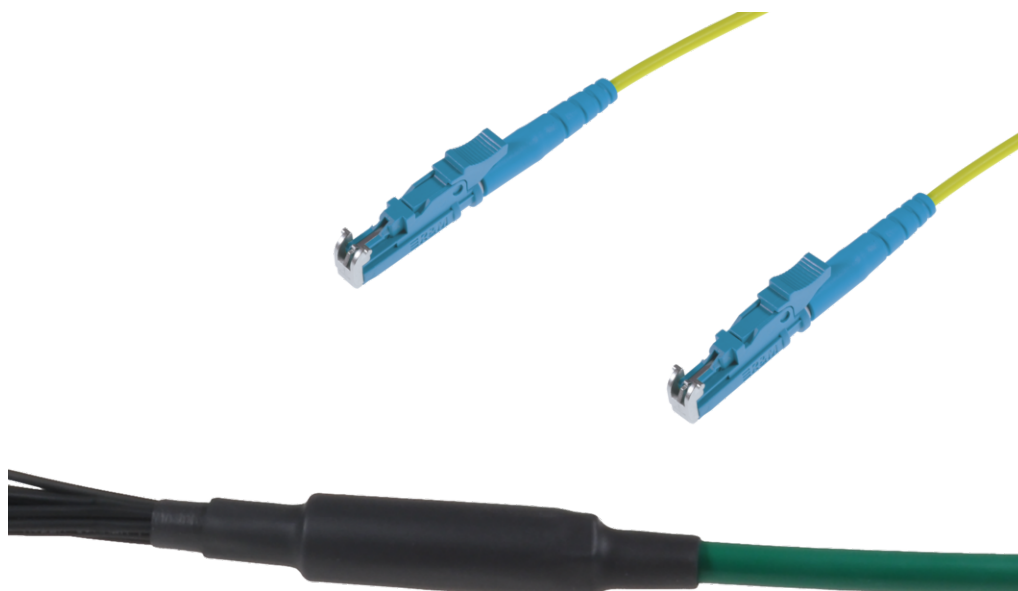


FO Universal Cable 48x E2000/48x E2000 48E9/125μ OS2 LSHF, Length: xxxx



## 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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FO Universal Cable 48x E2000/48x E2000 48E9/125μ OS2 LSHF, Length: xxxx

## Technical Data

### FO Connectors

|                       |          |
|-----------------------|----------|
| Type                  | E2000 PC |
| Ferrule               | Ceramic  |
| Ferrule Hole          | 125.5 μ  |
| Ferrule Concentricity | ≤ 0.6 μ  |
| Connector Colour      | Blue     |
| Lever Colour          | Blue     |
| Boot colour           | Blue     |
| Manufacturer          | RDM      |

### Optical performance

| Fiber  | Type     | Wavelength | Inesertion loss typ. | Insertion loss max. | Return loss min. |
|--------|----------|------------|----------------------|---------------------|------------------|
| 9/125μ | E2000 PC | 1550 nm    | ≤ 0.20 dB            | 0.45 dB             | 45 dB            |

### FO Fan-Out

|                             |                   |
|-----------------------------|-------------------|
| Fan-out length              | 50 mm             |
| Ø Fan-out                   | approx 16 - 19 mm |
| Ø Single unit               | 1.7 - 2.0 mm      |
| Shortest Single unit length | 68 ± 5 cm         |
| Highest Single unit length  | 78 ± 5 cm         |
| Number of stepping          | 2                 |

### 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                       |
| 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 |
|---------------|----------------------------|

## FO Universal Cable 48x E2000/48x E2000 48E9/125μ OS2 LSHF, Length: xxxx

|                                  |                                                   |
|----------------------------------|---------------------------------------------------|
| 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 E9/125 G.652.D                                                                                              |
| No. of fibers               | 48                                                                                                                  |
| Loose tube                  | 4                                                                                                                   |
| Sheath ø                    | 11.4 mm                                                                                                             |
| Weight                      | 149 kg/km                                                                                                           |
| Bending radius              | 175 mm                                                                                                              |
| Tensile load short term     | 9.000 N                                                                                                             |
| Tensile load continuous     | 5.000 N                                                                                                             |
| Crush resistance short term | 5.000 N                                                                                                             |
| Crush resistance continuous | 3.000 N                                                                                                             |
| Fire load                   | 616 kWh/km                                                                                                          |
|                             | 2218 MJ/km                                                                                                          |

### Length tolerances (prefabricated with plugs)

|                                   |          |
|-----------------------------------|----------|
| Tolerances for lengths up to 40m  | ± 100 cm |
| Tolerances for lengths up to 100m | ± 100 cm |
| Tolerances for lengths from 100m  | ± 2%     |

## FO Fiber

### Optical properties

|                                                  |                                                                         |
|--------------------------------------------------|-------------------------------------------------------------------------|
| Maximum attenuation (cabled)                     | 1310 nm: 0.34 / 1383 nm: 0.34* dB/km (*post hydrogen aging performance) |
| Maximum Chromatic Dispersion                     | 3.5 ps/(nm x km)                                                        |
| Zero Dispersion Wavelength λ <sub>0</sub>        | 1304 ≤ λ <sub>0</sub> ≤ 1324 nm                                         |
| Maximum Zero Dispersion Slope S <sub>0</sub>     | 0.092 ps/(nm <sup>2</sup> x km)                                         |
| Mode-Field Diameter                              | 9.2 +/- 0,4 μm                                                          |
| Maximum Cable Cut-off Wavelength λ <sub>CC</sub> | 1260 nm                                                                 |
| PDM Link Design Value                            | ≤ 0.04 ps/√km                                                           |
| Max. individual fibre PMD                        | ≤ 0.1 ps/√km                                                            |
| Max. individual cable PMD                        | ≤ 0.2 ps/√km                                                            |
| Refractive Index                                 | 1.4676                                                                  |

FO Universal Cable 48x E2000/48x E2000 48E9/125μ OS2 LSHF, Length: xxxx

## Mechanical properties

|                                              |                  |
|----------------------------------------------|------------------|
| Cladding diameter                            | 125.0 +/- 1.0 μm |
| Maximum Core/Cladding Concentricity Error    | 0.5 μm           |
| Maximum Cladding Non-Circularity             | 0.7 %            |
| Coating diameter                             | 245 +/- 5 μm     |
| Maximum Cladding/Coating Concentricity Error | 12 μm            |
| Operating temperature range                  | -60 to +85°C     |
| Test load                                    | 100 kpsi         |

## Product variants & accessories

| Art.-No.          | Description                                                             |
|-------------------|-------------------------------------------------------------------------|
| L-E2/E2-09B12Exxx | FO Universal Cable 12x E2000/12x E2000 12E9/125μ OS2 LSHF, Length: xxxx |
| L-E2/E2-09B24Exxx | FO Universal Cable 24x E2000/24x E2000 24E9/125μ OS2 LSHF, Length: xxxx |
| L-E2/E2-09B48Exxx | FO Universal Cable 48x E2000/48x E2000 48E9/125μ OS2 LSHF, Length: xxxx |
| L-E2/E2-09B72Exxx | FO Universal Cable 72x E2000/72x E2000 72E9/125μ OS2 LSHF, Length: xxxx |
| L-E2/E2-09B96Exxx | FO Universal Cable 96x E2000/96x E2000 96E9/125μ OS2 LSHF, Length: xxxx |