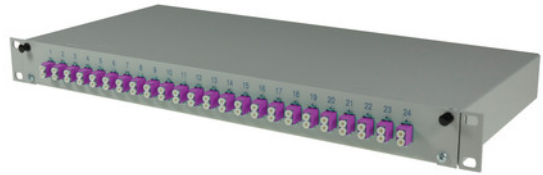
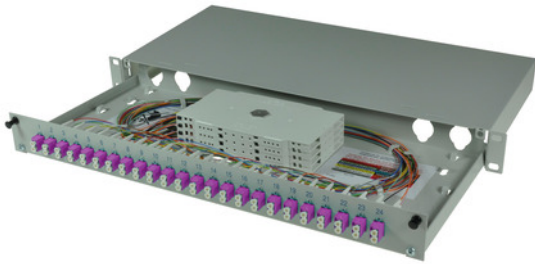


tBL<sup>®</sup> - FO Splice box 19" 1U MM 24x LC Duplex OM4, splice ready prepared



## tBL<sup>®</sup> - tde Basic Link (FO Enclosures)

The FO enclosures of the tBL<sup>®</sup> - tde Basic Link series are optimized products with a high functionality and an easy handling at the installation. The program includes splice and breakout boxes for 19 inch, wall and DIN rail mounting. These products are characterized by a high port density and an optimal fiber management, so that the permissible bending radii can't be undercut. Moreover, there are no sharp corners or edges, to avoid damage to the pigtailed and buffer tubes. The front plates are removable. There are versions for E2000, FC, PC, LC, MPO / MTP, MTRJ, MU, SC, and ST. These products can be obtained with or without equipment. In addition, there are also special versions with IP66 for outdoor and offshore applications.

19" Splice box with extendable drawer and cover. For up to 24 x FO adapters, 1U 210mm deep. The splice box is optional equipped with colored fiber pigtailed and splice ready prepared.



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tBL<sup>®</sup> - FO Splice box 19" 1U MM 24x LC Duplex OM4, splice ready prepared

## Technical Data

|                         |  |
|-------------------------|--|
| Pre-mounted             | 24 LC duplex adapters MM<br>48 LC Fiber pigtails 50/125μ OM4 2.0m, splice ready prepared<br>48 Crimp Splice protectors<br>4 Splice cassettes<br>4 Splice holder<br>1 Splice cover<br>1 Glands M20 for cable entry<br>1 set cage nuts and screws (M5) |
| Alternative pre-mounted | TBL-F24-xxLCD50-4yz (see below)  |
| xx                      | (01 - 24) quantity of adapters   |
| y                       | (S)splice ready prepared   |
| z                       | With(O)ut Crimp Splice protectors  |

## FO Splice Boxes

|             |  |
|-------------|--|
| Housing     | Sheet steel, extendable drawer, front panel removable          |
| Color       | RAL 7035   |
| Cable entry | On the back: Each over 2x metric cable glands (left and right) |
| Dimensions  | 19" 1U 210mm depth   |

|                   |  |
|-------------------|--|
| Front panel color | RAL 7035 light grey matt   |
| Labeling          | 1 - 24 silk screen   |
| Configuration     | Attachment up to 24x SC Simplex, LC Duplex, E2000 Simplex or MPO adapter |

## FO Adapters

|                 |                        |
|-----------------|------------------------|
| Type            | LC Duplex              |
| Application     | Multimode OM4          |
| Design          | One-Piece with Flange  |
| Connector style | SC Simplex             |
| Color           | Magenta                |
| Material        | Plastic                |
| Sleeve          | Zirkonia Staight Split |
| Shutter         | -                      |
| Manufacturer    | tde                    |

## FO Pigtails Standard

### FO Connectors

|                |   |
|----------------|---|
| Connector Type | LC Unibody Simplex                            |
| Housing        | Plastic, Magenta                              |
| Ferrule        | Zirkonia Staight Split, Spring-loaded Axially |

## tBL<sup>®</sup> - FO Splice box 19" 1U MM 24x LC Duplex OM4, splice ready prepared

|                       |                   |
|-----------------------|-------------------|
| Ferrule Hole          | 126 µ             |
| Mating Cycles         | 1.000             |
| Operating Temperature | -40°C up to +75°C |
| Strain Relief to      | 100 N             |
| Manufacturer          | tde               |

### Optical performance

| Fiber       | Type | Wavelength | Insertion loss typ. | Insertion loss max. | Return loss min. |
|-------------|------|------------|---------------------|---------------------|------------------|
| 50/125µ OM4 | LC   | 850 nm     | ≤ 0.25 dB           | 0.45 dB             | 30 dB            |

### FO Cables

|              |  |
|--------------|--|
| Tight Buffer | Low smoke (IEC 61034 and EN 50268) and free of halogens (LSOH)   |
|              | Non corrosive after IEC 60754-2 and EN 50267                     |
|              | Flame resistant after IEC 60332-3C and EN 50266-2-4              |
|              | Completely dry design  |
|              | Free from metal, no grounding problems and potential differences |
|              | Tight Buffer for simple and direct connector mounting            |

### Characteristics

|  |                  |
|--|------------------|
| Fiber Count                              | 1 (Tight Buffer) |
| Core-Ø                                   | 0.9 mm           |
| Coreweight                               | 1 kg/km          |
| Min. Bending radius - Installation       | 30 mm            |
| Min. Bending radius - Operation          | 30 mm            |
| Removal                                  | 1500 mm          |
| Fire load                                | 0.15 MJ/m        |
| Temperature range - Installation         | -5 to +50°C      |
| Temperature range - Operation            | -20 to +60°C     |
| Temperature range - Transport / Lagerung | -25 to +70°C     |

### FO Fiber

|                                   |  |
|-----------------------------------|--|
| Type                              | Corning ClearCurve <sup>®</sup> 50/125µ OM4 multimode fiber  |
| Optimized Data Rate over Distance | 40/100 Gb over 170 m*<br>10 Gb/s over 550 m<br>1 Gb/s over 1100 m  |
| Standard Compliance               | ISO/IEC 11801: type OM4 fiber**<br>IEC 60793-2-10: type A1a.3 fiber**<br>TIA/EIA: 492AAAD<br>ITU: ITU G651.1 |

## tBL<sup>®</sup> - FO Splice box 19" 1U MM 24x LC Duplex OM4, splice ready prepared

|    |  |
|----|--|
| *  | 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) |
| ** | 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<br>Legacy Performance EMB** (MHz.km): 3500 at 850 nm / 500 at 1300 nm  |
| Attenuation        | At 850 nm max. $\leq 2.3$ dB/km<br>At 1300 nm max. $\leq 0.6$ dB/km  |
| Macrobend Loss     | Mandrel Radius (mm): 37.2 / 15 / 7.5<br>Number of Turns: 100 / 2 / 2<br>Induced Attenuation (dB) at 850 nm: $\leq 0.05$ / $\leq 0.1$ / $0.2$<br>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 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 $\pm$ 2.5 $\mu$ m  |
| Cladding Diameter              | 125.0 $\pm$ 1.0 $\mu$ m |
| Core-Clad Concentricity        | $\leq 1.5$ $\mu$ m      |
| Cladding Non-Circularity       | $\leq 1.0\%$            |
| Core Non-Circularity           | $\leq 5.0\%$            |
| Coating Diameter               | 242 $\pm$ 5 $\mu$ m     |
| Coating-Cladding Concentricity | $< 12$ $\mu$ 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 <sup>2</sup> ). |
| Length     | Fiber lengths available up to 17.6 km/spool.   |

## tBL<sup>®</sup> - FO Splice box 19" 1U MM 24x LC Duplex OM4, splice ready prepared

### Performance Characterizations

|                                     |   |
|-------------------------------------|---|
| Refractive Index Difference         | 1%  |
| Effective Group Index of Refraction | 850 nm: 1.480<br>1300 nm: 1.479   |
| Fatigue Resistance Parameter (nd)   | 20  |
| Coating Strip Force                 | Dry: 0.6 lbs (2.7N)<br>Wet: 14 days in 23°C water soak: 0.6 lbs (2.7N)  |
| Chromatic Dispersion                | Zero Dispersion Wavelength ( $\lambda_0$ ): 1295 nm $\leq \lambda_0 \leq$ 1315 nm<br>Zero Dispersion Slope ( $S_0$ ): $\leq 0.101$ ps/(nm <sup>2</sup> *km) |

### FO Splice Accessories

|            |                              |
|------------|------------------------------|
| Type       | Splice cassette              |
| Dimensions | 155 x 92 x 8 mm              |
| Material   | Bright ABS, similar RAL 1013 |

### FO Splice Accessories

|            |   |
|------------|---|
| Type       | FO Splice holder for 12 x Crimp splice protectors |
| Dimensions | 40 x 26 x 6 mm                                    |
| Material   | Bright ABS, similar RAL 1013                      |

### FO Splice Accessories

|            |                        |
|------------|------------------------|
| Type       | Crimp splice protector |
| Dimensions | 31 x 3 x 1 mm          |

### FO Splice Accessories

|            |                              |
|------------|------------------------------|
| Type       | Cassette cover long          |
| Dimensions | 155 x 92 x 2 mm              |
| Material   | Bright ABS, similar RAL 1013 |

|            |             |
|------------|-------------|
| Type       | Cable tie   |
| Dimensions | 75 x 2.5 mm |

|      |                                 |
|------|---------------------------------|
| Type | Mounting set M5                 |
|      | Set of 4 (cage nuts and screws) |

|      |                             |
|------|-----------------------------|
| Type | Locknut for cable gland M20 |
|------|-----------------------------|

## tBL<sup>®</sup> - FO Splice box 19" 1U MM 24x LC Duplex OM4, splice ready prepared

|       |            |
|-------|------------|
| Color | light grey |
|-------|------------|

|       |                 |
|-------|-----------------|
| Type  | Cable gland M20 |
| Color | light grey      |

### FO Splice Accessories

### Product variants & accessories

| Art.-No.           | Description   |
|--------------------|---|
| TBL-F24-24LCD9AS   | tBL <sup>®</sup> - FO Splice box 19" 1U SM 24x LC APC Duplex OS2, splice ready prepared |
| TBL-F24-24LCD50-3S | tBL <sup>®</sup> - FO Splice box 19" 1U MM 24x LC Duplex OM3, splice ready prepared     |
| TBL-F24-24LCD50-4S | tBL <sup>®</sup> - FO Splice box 19" 1U MM 24x LC Duplex OM4, splice ready prepared     |
| TBL-F24-24LCD50S   | tBL <sup>®</sup> - FO Splice box 19" 1U MM 24x LC Duplex OM2, splice ready prepared     |
| TBL-F24-24LCD9S    | tBL <sup>®</sup> - FO Splice box 19" 1U SM 24x LC Duplex OS2, splice ready prepared     |