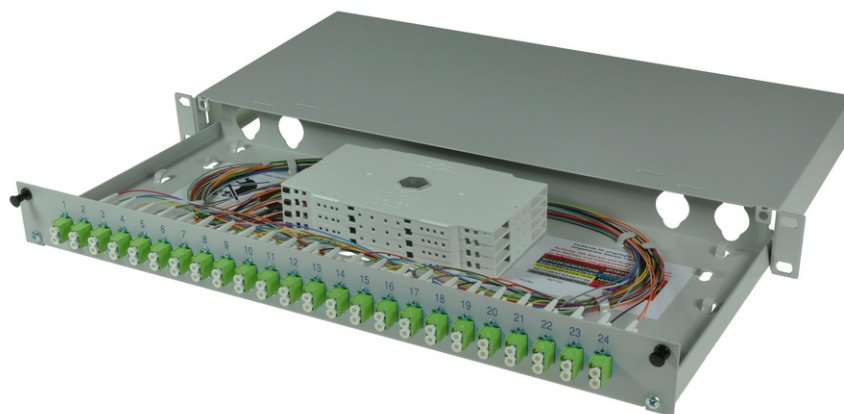


tBL<sup>®</sup> - FO Splice box 19" 1U SM 12x LC APC Duplex OS2, splice ready prepared



## 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 pigtails 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 pigtails and splice ready prepared.



**tde<sup>®</sup> trans data elektronik GmbH**

### Headquarter address:

Lingener Str. 2  
D-49626 Bippen/Ohrte  
Tel.: +49 5435 9511 0  
Fax.: +49 5435 9511 32

### Sales office address:

Prinz-Friedrich-Karl-Str. 46  
D-44135 Dortmund  
Tel.: +49 231 8805 61 13  
Fax.: +49 231 8805 61 15

info@tde.de | www.tde.de

tBL® - FO Splice box 19" 1U SM 12x LC APC Duplex OS2, splice ready prepared

## Technical Data

|                         |   |
|-------------------------|---|
| Pre-mounted             | 12 LC APC duplex adapters SM<br>24 LC APC Fiber pigtails 9/125µ OS2 2.0 meters 12 x Colors, splice ready prepared<br>24 Crimp Splice protectors<br>2 Splice cassettes<br>2 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-xxLCAD9Ayz (see below)  |
| xx                      | (01 - 24) quantity of adapters  |
| y                       | (S)plice 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     | Singlemode OS2 APC      |
| Design          | One-Piece with flange   |
| Connector style | SC Simplex              |
| Color           | Green                   |
| Material        | Plastic                 |
| Sleeve          | Zirconia Straight Split |
| Shutter         | -                       |
| Manufacturer    | tde                     |

## FO Pigtails Standard

### FO Connectors

|                |  |
|----------------|--|
| Connector Type | LC APC Unibody Simplex                         |
| Housing        | Plastic, Green                                 |
| Ferrule        | Zirconia Straight Split, Spring-loaded Axially |

## tBL® - FO Splice box 19" 1U SM 12x LC APC Duplex OS2, splice ready prepared

|                       |                   |
|-----------------------|-------------------|
| Ferrule Hole          | 125.5 µ           |
| Ferrule Concentricity | ≤ 0.6 µ           |
| Mating Cycles         | 500               |
| 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. |
|--------|--------|------------|---------------------|---------------------|------------------|
| 9/125µ | LC APC | 1550 nm    | ≤ 0.20 dB           | 0.45 dB             | 70 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 Ultra SMF-28® 09/125µ OS2 singlemode fiber   |
| Maximum Attenuation        | At 1310 nm max. 0.32 dB/km<br>At 1383 nm max. 0.32 dB/km<br>At 1490 nm max. 0.21 dB/km<br>At 1550 nm max. 0.18 dB/km<br>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<br>Range: 1525 - 1575 nm; Ref. λ: 1550 nm; Max. Difference: 0.02 dB/km         |

## tBL<sup>®</sup> - FO Splice box 19" 1U SM 12x LC APC Duplex OS2, splice ready prepared

|   |   |
|---|---|
| Macrobend Loss                              | Mandrel Radius: 10mm; Number of Turns: 1; Wavelength: 1550nm; Induced Attenuation: ≤ 0.50 dB<br>Mandrel Radius: 10mm; Number of Turns: 1; Wavelength: 1625nm; Induced Attenuation: ≤ 1.5 dB<br>Mandrel Radius: 15mm; Number of Turns: 10; Wavelength: 1550nm; Induced Attenuation: ≤ 0.05 dB<br>Mandrel Radius: 15mm; Number of Turns: 10; Wavelength: 1625nm; Induced Attenuation: ≤ 0.30 dB<br>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<br>Wavelength: 1550 nm; Point Discontinuity: ≤ 0.05 dB  |
| Cable Cutoff Wavelength ( $\lambda_{ccf}$ ) | $\lambda_{ccf} \leq 1260$ nm  |
| Mode-Field Diameter                         | At 1310 nm = $9.2 \pm 0.4$ $\mu$ m<br>At 1550 nm = $10.4 \pm 0.5$ $\mu$ m   |
| Dispersion                                  | At 1550 nm = ≤ 18.0 [ps/(nm*km)]<br>At 1625 nm = ≤ 22.0 [ps/(nm*km)]  |
|   | Zero Dispersion Wavelength ( $\lambda_0$ ): 1304 nm ≤ $\lambda_0$ ≤ 1324 nm<br>Zero Dispersion Slope ( $S_0$ ): ≤ 0.092 ps/(nm <sup>2</sup> *km)  |
| Polarization Mode Dispersion (PMD)          | PMD Link Design Value = ≤ 0.04 ps/√km<br>Maximum Individual Fiber = ≤ 0.1 ps/√km  |

### Dimensional Specifications

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

### 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              |  |

### Mechanical Specifications

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

### Performance Characterizations

|                                     |                                    |
|-------------------------------------|------------------------------------|
| Core Diameter                       | 8.2 $\mu$ m                        |
| Numerical Aperture                  | 0.14                               |
| Effective Group Index of Refraction | 1310 nm: 1.4676<br>1550 nm: 1.4682 |

## tBL® - FO Splice box 19" 1U SM 12x LC APC Duplex OS2, splice ready prepared

|  |  |
|--|--|
| Fatigue Resistance Parameter (nd)                          | 20   |
| Coating Strip Force  | Dry: 0.6 lbs (3N)<br>Wet: 14 days room temperature: 0.6 lbs (3N) |
| Rayleigh Backscatter Coefficient<br>(for 1 ns Pulse Width) | 1310 nm: -77 dB<br>1550 nm: -82 dB                               |

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

## Product variants & accessories

| Art.-No.           | Description   |
|--------------------|---|
| TBL-F24-12LCD9AS   | tBL® - FO Splice box 19" 1U SM 12x LC APC Duplex OS2, splice ready prepared |
| TBL-F24-12LCD50-3S | tBL® - FO Splice box 19" 1U MM 12x LC Duplex OM3, splice ready prepared     |
| TBL-F24-12LCD50-4S | tBL® - FO Splice box 19" 1U MM 12x LC Duplex OM4, splice ready prepared     |
| TBL-F24-12LCD50S   | tBL® - FO Splice box 19" 1U MM 12x LC Duplex OM2, splice ready prepared     |
| TBL-F24-12LCD9S    | tBL® - FO Splice box 19" 1U SM 12x LC Duplex OS2, splice ready prepared     |