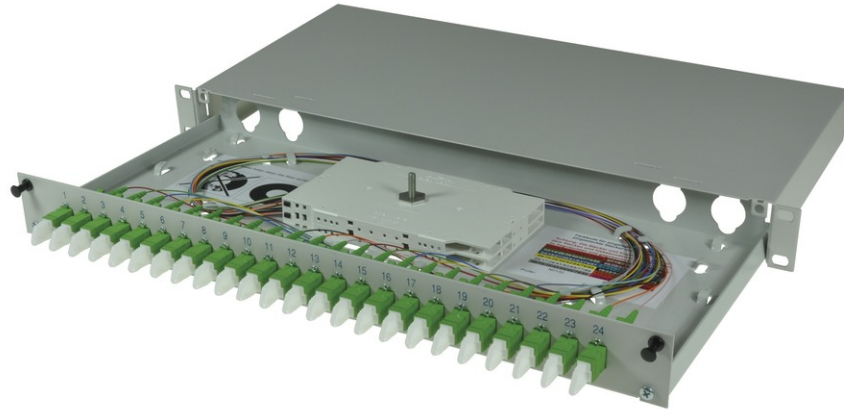


tBL[®] - FO Splice box 19" 1U SM 12x E2000 OS2, splice ready prepared



tBL[®] - tde Basic Link (FO Enclosures)

The FO enclosures of the tBL[®] - 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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Technical Data

Pre-mounted	12 E2000 adapters SM 12 E2000 Fiber pigtails 9/125 μ OS2 2.0 meters 12 x Colors, splice ready prepared 12 Crimp Splice protectors 1 Splice cassettes 1 Splice holder 1 Splice cover 1 Glands M20 for cable entry 1 set cage nuts and screws (M5)
Alternative pre-mounted	TBL-F24-xxE2-9yz (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

Standardisation	acc. to IEC61754-15, DIN EN 186270
Connector class	coupling Adapter
Number of connectors (A)	1
Connector type (A)	E2000 [™]
Protection class (IP) connector (A)	20
Polishing connector (A)	PC
Attenuation grade IL - connector (A)	C
Delta insertion loss	≤ 0.2 dB, testing method acc. to IEC 61300-3-4
Mating cycles	min. 1000
Pull-out force	min. 70 N
Connector color (A)	blue
Lever- frame-coding connector (A)	color
Frame color connector (A)	blue
Sleeve material	ceramic
Adapter fastening method	end cap
Fiber type	Singlemode (SM)
Dimensions	74.7 / 42 x 22 x 9.35 mm

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Material	plastic: PBT, fiber-glass reinforced (halogen-free)
Manufacturer	R&M

FO Pigtails Standard

FO Connectors

Type	E2000 PC
Ferrule	Ceramic
Ferrule Hole	125.5 μ
Ferrule Concentricity	$\leq 0.6 \mu$
Connector Colour	Blue
Lever Colour	Blue
Boot colour	Blue
Manufacturer	RDM

Optical performance

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

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FO Fiber

Type	Corning Ultra SMF-28 [®] 09/125 μ 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_{ccf})	$\lambda_{ccf} \leq 1260$ nm
Mode-Field Diameter	At 1310 nm = 9.2 ± 0.4 μ m At 1550 nm = 10.4 ± 0.5 μ m
Dispersion	At 1550 nm = ≤ 18.0 [ps/(nm*km)] At 1625 nm = ≤ 22.0 [ps/(nm*km)]
	Zero Dispersion Wavelength (λ_0): $1304 \text{ nm} \leq \lambda_0 \leq 1324 \text{ nm}$ Zero Dispersion Slope (S_0): ≤ 0.092 ps/(nm ² *km)
Polarization Mode Dispersion (PMD)	PMD Link Design Value = ≤ 0.04 ps/ $\sqrt{\text{km}}$ Maximum Individual Fiber = ≤ 0.1 ps/ $\sqrt{\text{km}}$

Dimensional Specifications

Fiber Curl	≥ 4.0 m radius of curvature
Cladding Diameter	125.0 ± 0.7 μ m
Core-Clad Concentricity	≤ 0.5 μ m
Cladding Non-Circularity	$\leq 0.7\%$
Coating Diameter	242 ± 5 μ m
Coating-Cladding Concentricity	< 12 μ 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 \pm 2°C	≤ 0.05
Heat Aging	85°C \pm 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).
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Length	Fiber lengths available up to 63.0 km/spool.
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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

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 gland M20
Color	light grey

Type	Locknut for cable gland M20
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tBL[®] - FO Splice box 19" 1U SM 12x E2000 OS2, splice ready prepared

Color	light grey
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Type	Cable tie
Dimensions	75 x 2.5 mm

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

Type	FO Blind stopper
Application	For covering of unused adapter slots

FO Splice Accessories

Product variants & accessories

Art.-No.	Description
TBL-F24-12E2-9S	tBL [®] - FO Splice box 19" 1U SM 12x E2000 OS2, splice ready prepared
TBL-F24-12E2A9AS	tBL [®] - FO Splice box 19" 1U SM 12x E2000 APC OS2, splice ready prepared