

tDF[®] - FO Premium splice to patch module 12x SC APC simplex SM 3U/7HP with pigtails 9/125µ w.
5,0mm flex tube



tDF[®] - tde Distribution Frame (ODF)

tDF[®] is a modular Central Office solution with the highest packing density. At 46U, up to 4032 fibers can be terminated with LC. In developing the tde has taken primarily attention on the user-friendly installation. So the patented modules are fully be fitted from the front. A 19-inch sub rack occupies three height units and is equipped with twelve splice modules. Per sub rack, up to 288 fibers can be terminated with LC. The splices will be stored in standard splice cassettes. A unique feature of the splice module is the built-in loose tube over length management, which compared to conventional solutions saves an additional rack unit for the over length tray. The trunk cables are brought to the sub rack side and splitted there. This results in very short stripping lengths for the trunk cables. Due to the tML[®] compatibility also MPO/MTP[®] modules can be equipped in the same sub rack. The modular design of the tDF rack system offers maximum flexibility. The racks can be ordered customized completely preconfigured.



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Technical Data

| | |
|-------------------------|--|
| Dimensions | 3U/7HP |
| Pre-mounted | 12 SC APC adapters 12 SC APC Fiber pigtails 9/125µ OS2 12 Crimp Splice protectors 1 Splice cassettes 1 Splice holder 1 Splice cover 1,6m Flex tube |
| Alternative pre-mounted | TDF-M12-xxSCA09APS |
| xx | (01 - 12) quantity of adapters |

| | |
|-------------|--|
| Type | Front panel for 12 x SC Simplex |
| Color | Anodized E6 EV1 |
| Inscription | 1 - 12 Screen printing by label strips |
| Material | Alu- AIMG3 G22 |
| Dimensions | 3U/7HP |

| | |
|------------|----------------------------|
| Type | Module slot for rack 84 HP |
| Dimensions | app. 230 x 129 x 32mm |

FO Adapters

| | |
|-----------------|-------------------------|
| Type | SC Simplex |
| Application | Singlemode OS2 APC |
| Design | with flange |
| Connector style | SC Simplex |
| Color | Green |
| Material | Plastik |
| Sleeve | Zirkonia Straight Split |
| Shutter | -- |
| Manufacturer | tde |

FO Pigtails Premium

FO Connectors

| | |
|-----------------------|--|
| Connector Type | SC APC Simplex |
| Housing | Plastic, Green |
| Ferrule | Zirconia Straight Split, Spring-loaded Axially |
| Ferrule Hole | 125.5 µ |
| Ferrule Concentricity | ≤ 0.6 µ |

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|-----------------------|-----------------------|
| Mating Cycles | 500 |
| Operating Temperature | -40°C up to +75°C |
| Manufacturer | tde |
| Simplex/Duplex Clip | Separately on request |

Optical performance

| Fiber | Type | Wavelength | Insertion loss typ. | Insertion loss max. | Return loss min. |
|--------|--------|------------|---------------------|---------------------|------------------|
| 9/125µ | SC APC | 1550 nm | ≤ 0.10 dB | 0.25 dB | 75 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

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|--|------------------|
| 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

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|----------------------------|--|
| 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 |

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|---|---|
| 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 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_0): 1304 nm ≤ λ_0 ≤ 1324 nm Zero Dispersion Slope (S_0): ≤ 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

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|--------------------------------|-----------------------------|
| 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 | |

Mechanical Specifications

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|------------|---|
| 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

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|--------------------|--------|
| Core Diameter | 8.2 µm |
| Numerical Aperture | 0.14 |

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| 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 |
|---------------------|---|
| TDF-M12-12SC-9PS-5 | tDF [®] - FO Premium splice to patch module 12x SC PC simplex SM 3U/7HP with pigtails 9/125μ w. 5,0mm flex tube |
| TDF-M12-12SCA9APS-5 | tDF [®] - FO Premium splice to patch module 12x SC APC simplex SM 3U/7HP with pigtails 9/125μ w. 5,0mm flex tube |