

tBG2 - FO splice module 6x E2000 Compact MM 3U/7HP with pigtails 50/125 $\mu$  OM4



**Note: pay attention to the colors specified in the item description**

## tBG II - tde Subrack

The newest generation of tde - Subracks is developed especially for the application by loose tube cables with high fiber counts. Up to 288 fibers can be distributed to 12 splice modules. Alternative up to 12 tML<sup>®</sup> modules. By the application deep-adjustable 84HP Subrack with 7HP-grid is a simple module mounting possible. The modules are fixed by screws. Cable over lengths are accommodated certainly in a cable tray. The cable tray is removable. The cable entry is on the left and right back side. On the front side is a patch cord management panel with 5 rings integrated.

tBG II - tde subrack 19"/4U is for the equip of up to 12 x tBG II - splice modules 3U/7HP with high component density.

The tBG II – FO splice module 3U/7HP is intended for the installation in tBG II - subracks (for 12 x modules).

### Features:

- Available for all standard FO connectors: E2000, FC/PC, LC, SC and ST



**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

## tBG2 - FO splice module 6x E2000 Compact MM 3U/7HP with pigtails 50/125μ OM4

- Integrated loose tube strain relief
- Module mounting with screws

### Technical Data

|                         |  |
|-------------------------|--|
| Pre-mounted             | 6 E2000 compact adapters<br>12 E2000 Fiber pigtails 50/125μ OM4<br>12 Crimp Splice protectors<br>1 Splice cassettes<br>1 Splice holder<br>1 Splice cover |
| Alternative pre-mounted | TBG2-MO6-xxE2C50-4S  |
| xx                      | (01 - 06) quantity of adapters   |

|             |  |
|-------------|--|
| Type        | Front panel for 6 x E2000 Compact      |
| Color       | Anodized E6 EV1                        |
| Inscription | 1 - 12 Screen printing by label strips |
| Material    | Alu- AIMG3 G22                         |
| Dimensions  | 3U/7HP                                 |

|            |                              |
|------------|------------------------------|
| Type       | Module slot for rack 3U/84HP |
| Dimensions | app. 250 x 100 mm            |

### FO Adapters

|                                      |   |
|--------------------------------------|---|
| Standardisation                      | acc. to IEC61754-15, DIN EN 186270  |
| Mating cycles                        | min. 1000   |
| Pull-out force                       | min. 70 N   |
| Number of connectors (A)             | 1   |
| Connector type (A)                   | E2000™ Compact  |
| Protection class (IP) connector (A)  | 20  |
| Polishing connector (A)              | PC  |
| Attenuation grade IL - connector (A) | ≤ 0.2 dB, testing method acc. to IEC 61300-3-4                                    |
| Connector color (A)                  | beige   |
| Lever- frame-coding connector (A)    | color   |
| Frame color connector (A)            | magenta-magenta   |
| Sleeve material                      | Zirkonia Staight Split  |
| Adapter fastening method             | flange snap   |
| Holder for connector / module        | Snap-In frame   |
| Fiber type                           | Multimode (MM)  |
| Dimensions                           | 74.7 / 42 x 14.7 x 13 / 15.4 mm   |
| Material                             | steel: X10CrNi18-8 (1.4310) / plastic: PBT, fiber-glass reinforced (halogen-free) |
| Manufacturer                         | R&M   |

## tBG2 - FO splice module 6x E2000 Compact MM 3U/7HP with pigtails 50/125μ OM4

### FO Pigtails Standard

#### FO Connectors

|                  |         |
|------------------|---------|
| Type             | E2000   |
| Ferrule          | Ceramic |
| Ferrule Hole     | 126 μ   |
| Connector colour | Beige   |
| Lever colour     | Magenta |
| Boot colour      | Black   |
| Manufacturer     | RDM     |

#### Optical performance

| Fiber       | Type  | Wavelength | Insertion loss typ. | Insertion loss max. | Return loss min. |
|-------------|-------|------------|---------------------|---------------------|------------------|
| 50/125μ OM4 | E2000 | 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 |

## tBG2 - FO splice module 6x E2000 Compact MM 3U/7HP with pigtails 50/125 $\mu$ OM4

|                     |  |
|---------------------|--|
| 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   |
| *                   | 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                  |  |

## tBG2 - FO splice module 6x E2000 Compact MM 3U/7HP with pigtails 50/125μ OM4

### 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.   |

### 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) |

### Product variants & accessories

| Art.-No.            | Description  |
|---------------------|--|
| TBG2-M06-06E2AC9AS  | tBG2 - FO splice module 6x E2000 Compact APC SM 3U/7HP with pigtails 09/125μ |
| TBG2-M06-06E2C50-3S | tBG2 - FO splice module 6x E2000 Compact MM 3U/7HP with pigtails 50/125μ OM3 |
| TBG2-M06-06E2C50-4S | tBG2 - FO splice module 6x E2000 Compact MM 3U/7HP with pigtails 50/125μ OM4 |
| TBG2-M06-06E2C50S   | tBG2 - FO splice module 6x E2000 Compact MM 3U/7HP with pigtails 50/125μ     |
| TBG2-M06-06E2C62S   | tBG2 - FO splice module 6x E2000 Compact MM 3U/7HP with pigtails 62,5/125μ   |
| TBG2-M06-06E2C9S    | tBG2 - FO splice module 6x E2000 Compact SM 3U/7HP with pigtails 9/125μ      |