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## FBT Coupler

### Description

FBT (Fused Biconic Taper) coupler is to bundle two or more optical fibers together, and then melt drawing on the tapering machine, and monitor the change of the splitting ratio in real time. After the splitting ratio reaches the requirements, the melt drawing is ended, and one fiber is retained at one end (the rest Cut off) as the input terminal, the other end as a multi-output terminal. The mature cone drawing process can only pull below  $1 \times 4$  at a time and package in steel tube or ABS box package. There are have different wavelength windows, such as dual windows or three windows.

Three window coupler(TWC) is Built by asymmetric coupling technique, TWC operating bandwidth is expanding to 1310nm, 1490nm and 1550nm three communication windows. The TWC coupler has the same coupling ratio on 1310, 1490 and 1550nm communication windows

Dual window coupler (DWC) is built by asymmetric coupling technique. The operating bandwidth of this normal coupler is expanding to  $\pm 40$ nm, and the ultra broadband coupler is expanding to  $\pm 80$ nm. The DWC coupler has the same coupling ratio on both 1310nm and 1550nm communication windows, and with low excess loss and low PDL. DWC couplers are widely used for communication systems, CATV, and FTTH.

### Applications

1. Optical Fiber Communication Systems
2. Optical Fiber CATV
3. Passive Optical Network (PON)
4. Optical Amplifiers
5. Optical Access Networks/LAN
6. Monitoring Systems
7. Optical Fiber Sensor
8. Medical OCT Devices

### Features

1. Low Insertion Loss
2. Low Excess Loss
3. Low PDL
4. Good Directivity
5. Good environmental Stability
6. Various Coupling Ratio
7. Compact Size
8. Standard/Flattened/Broadband/Star/Tree

### Specifications

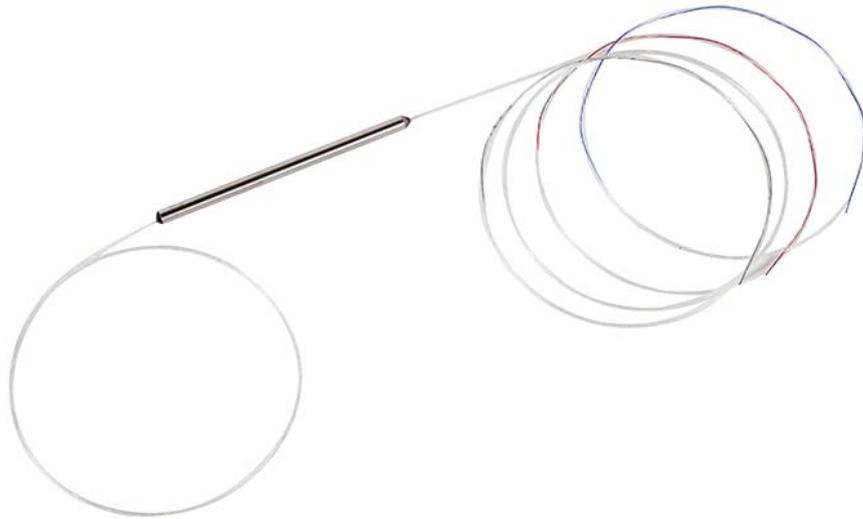
|                            |       | Wide Band Coupler (WBC)  |                   |                        |                   |
|----------------------------|-------|--|-------------------|------------------------|-------------------|
| Grade                      |       | P  | A                 | P                      | A                 |
| Port configuration         |       | 1x2 or 2x2   |                   |                        |                   |
| Operating wavelength (nm)  |       | 1310, 1550 or C+L Band   |                   | C Band or L Band       |                   |
| Operating bandwidth (nm)   |       | ±40  |                   | 1528~1565 or 1570~1605 |                   |
| Typical excess loss (dB)   |       | 0.07   | 0.1               | 0.07                   | 0.1               |
| Insertion Loss (dB)        | 50/50 | ≤3.4   | ≤3.6              | ≤3.35                  | ≤3.5              |
|                            | 40/60 | ≤4.4/2.6   | ≤4.7/2.8          | ≤4.4/2.55              | ≤4.6/2.7          |
|                            | 30/70 | ≤5.7/1.9   | ≤6.0/2.0          | ≤5.7/1.85              | ≤5.9/1.95         |
|                            | 20/80 | ≤7.6/1.25  | ≤8.0/1.3          | ≤7.55/1.25             | ≤7.8/1.3          |
|                            | 10/90 | 9.55~10.65/≤0.65   | 9.3~10.9/≤0.8     | 9.55~10.60/≤0.65       | 9.35~10.85/≤0.8   |
|                            | 5/95  | 12.40~13.80/≤0.4   | 12.10~14.10/≤0.5  | 12.45~13.75/≤0.4       | 12.15~14.05/≤0.45 |
|                            | 2/98  | 16.10~18.05/≤0.25  | 15.70~18.45/≤0.35 | 16.2~17.95/≤0.25       | 15.80~18.35/≤0.3  |
|                            | 1/99  | 19.05~21.15/≤0.2   | 18.55~21.65/≤0.3  | 19.1~21.1/≤0.2         | 18.65~21.55/≤0.3  |
| PDL (dB)                   |       | ≤0.10  | ≤0.15             | ≤0.10                  | ≤0.15             |
| Directivity (dB)           |       | ≥55  |                   |                        |                   |
| Operating temperature (°C) |       | -40 ~ +85  |                   |                        |                   |
| Package Dimension          |       | 250µm bare fiber: Φ3.0×45mm<br>900µm loose tube: Φ3.0×54mm<br>900um/2mm/3mm loose tube: 90×20×10mm |                   |                        |                   |

\*The above specification is without connector.

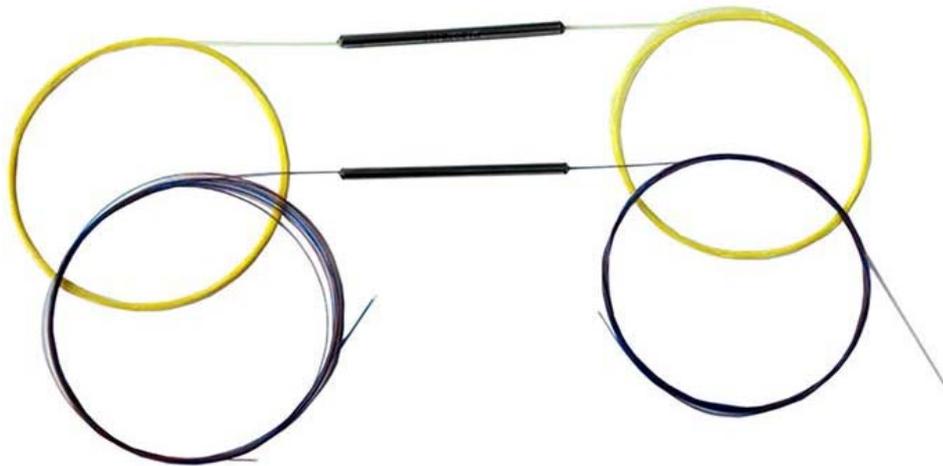
\*\*Other specifications can be made on customer request.

### Specifications

|                            |       | Dual Window Coupler (DWC)  |                   |                   |                  |
|----------------------------|-------|--|-------------------|-------------------|------------------|
| Grade                      |       | P  | A                 | P                 | A                |
| Port configuration         |       | 1x2 or 2x2   |                   |                   |                  |
| Operating wavelength(nm)   |       | 1310 and 1550  |                   |                   |                  |
| Operating bandwidth(nm)    |       | ±40  |                   | ±80               |                  |
| Typical excess loss(dB)    |       | 0.07   | 0.1               | 0.07              | 0.1              |
| Insertion Loss(dB)         | 50/50 | ≤3.6   | ≤3.8              | ≤3.8              | ≤4.0             |
|                            | 40/60 | ≤4.7/2.7   | ≤4.9/2.9          | ≤5.0/2.8          | ≤5.2/3.0         |
|                            | 30/70 | ≤6.0/1.9   | ≤6.3/2.1          | ≤6.4/2.3          | ≤6.7/2.2         |
|                            | 20/80 | ≤7.9/1.3   | ≤8.4/1.4          | ≤8.3/1.3          | ≤8.7/1.5         |
|                            | 10/90 | 9.2~11.2/≤0.75   | 8.8~11.4/≤0.8     | 9.15~11.05/≤0.75  | 8.75~11.45/≤0.8  |
|                            | 5/95  | 12.05~14.15/≤0.4   | 11.6~14.6/≤0.5    | 12.0~14.25/≤0.45  | 11.5~14.7/≤0.5   |
|                            | 2/98  | 15.75~18.45/≤0.3   | 15.15~19.0/≤0.4   | 15.6~18.6/≤0.3    | 14.95~19.2/≤0.4  |
|                            | 1/99  | 18.6~21.6/≤0.25  | 17.95~22.25/≤0.35 | 18.35~21.85/≤0.25 | 17.6~22.55/≤0.35 |
| PDL(dB)                    |       | 0.15   | 0.20              | 0.15              | 0.20             |
| Directivity (dB)           |       | ≥55  |                   |                   |                  |
| Operating temperature (°C) |       | -40 ~ +85  |                   |                   |                  |
| Package Dimension          |       | 250µm bare fiber: Φ3.0×45mm<br>900µm loose tube: Φ3.0×54mm<br>900um/2mm/3mm loose tube: 90×20×10mm |                   |                   |                  |



Package in steel tube and bare fiber out



Package in steel tube



Package in ABS Box