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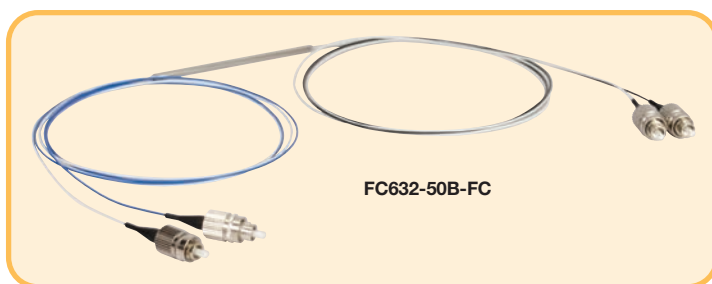
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## 2 x 2 Single Mode Fiber Couplers and Taps (Page 1 of 2)

NEW  
versions

FC632-50B-FC

Thorlabs offers single mode 2 x 2 fiber couplers with center wavelengths from 488 nm to 1550 nm. Split ratios of 50:50, 90:10, and 99:1 are available, with the 99:1 versions typically referred to as fiber optic taps. All fiber leads are 0.8 m long (1 m for 10202A) and have a Ø900 µm Hytrel jacket. All specifications below are valid for couplers without connectors.

## Feature

- Three Split Ratios Offered
  - 50:50
  - 90:10
  - 99:1
- Center Wavelengths from 488 to 1550 nm
- Termination Options: FC/PC, FC/APC, or Unconnectorized
- FC Connectors Feature 2.0 mm Narrow Keys
- Polarization Insensitive
- High Directivity
- Bidirectional
- 0.8 m Fiber Leads (1 m for 10202A)
- Dual-Wavelength Model for 1310 & 1550 nm
- Custom Connectors Available

## Specifications Provided for Unconnectorized Couplers

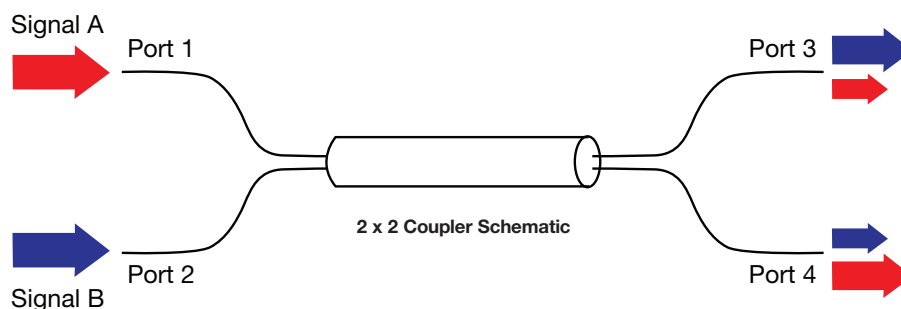
| SERIES                                           | FC488                                                           | FC532                                                           | FC632                                                           | FC780                                                           |
|--------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|
| Center Wavelength                                | 488 nm                                                          | 532 nm                                                          | 632 nm                                                          | 780 nm                                                          |
| Bandwidth                                        | ±15 nm                                                          | ±15 nm                                                          | ±15 nm                                                          | ±15 nm                                                          |
| Coupling Ratio                                   | 50:50<br>90:10<br>99:1                                          | 50:50<br>90:10<br>99:1                                          | 50:50<br>90:10<br>99:1                                          | 50:50<br>90:10<br>99:1                                          |
| Insertion Loss<br>(Coupling Ratio + Excess Loss) | 4.0/4.0 dB (50:50)<br>1.2/11 dB (90:10)<br>21/0.7 dB (99:1)     | 4.0/4.0 dB (50:50)<br>1.2/11 dB (90:10)<br>21/0.7 dB (99:1)     | 3.7/3.7 dB (50:50)<br>11/1.0 dB (90:10)<br>21/0.6 dB (99:1)     | 3.6/3.6 dB (50:50)<br>11/0.8 dB (90:10)<br>21/0.4 dB (99:1)     |
| Excess Loss (Typical)                            | 1.0 dB                                                          | 1.0 dB                                                          | ≤0.3 dB                                                         | 0.3 dB                                                          |
| PDL                                              | 0.2/0.2 dB (50:50)<br>0.1/0.2 dB (90:10)<br>0.05/0.22 dB (99:1) | 0.2/0.2 dB (50:50)<br>0.1/0.2 dB (90:10)<br>0.05/0.22 dB (99:1) | 0.2/0.2 dB (50:50)<br>0.1/0.2 dB (90:10)<br>0.05/0.22 dB (99:1) | 0.2/0.2 dB (50:50)<br>0.1/0.2 dB (90:10)<br>0.05/0.22 dB (99:1) |
| Directivity                                      | ≥50 dB                                                          | ≥50 dB                                                          | >55 dB                                                          | ≥50 dB                                                          |
| Operating Temperature                            | -40 to 85 °C                                                    | -40 to 85 °C                                                    | -40 to 85 °C                                                    | -40 to 85 °C                                                    |
| Fiber Type*                                      | 460-HP or Equivalent                                            | 460-HP or Equivalent                                            | SM600                                                           | HI780C                                                          |

\* Equivalent fiber types may be substituted.

| SERIES                                           | FC830                                                                                            | FC980                                                                                            | FC1064                                                                                           | 10202A                                                          |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Center Wavelength                                | 830 nm                                                                                           | 980 nm                                                                                           | 1064 nm                                                                                          | 1310 and 1550 nm                                                |
| Bandwidth                                        | ±15 nm                                                                                           | ±15 nm                                                                                           | ±15 nm                                                                                           | ±40 nm                                                          |
| Coupling Ratio                                   | 50:50<br>90:10<br>99:1                                                                           | 50:50<br>90:10<br>99:1                                                                           | 50:50<br>90:10<br>99:1                                                                           | 50:50<br>90:10<br>99:1                                          |
| Insertion Loss<br>(Coupling Ratio + Excess Loss) | 3.1 - 3.5/3.1 - 3.5 dB (50:50)<br>9.5 - 10.5/0.4 - 0.7 dB (90:10)<br>20 - 22/0.15-0.35 dB (99:1) | 3.1 - 3.5/3.1 - 3.5 dB (50:50)<br>9.5 - 10.5/0.4 - 0.7 dB (90:10)<br>20 - 22/0.15-0.35 dB (99:1) | 3.1 - 3.5/3.1 - 3.5 dB (50:50)<br>9.5 - 10.5/0.4 - 0.7 dB (90:10)<br>20 - 22/0.15-0.35 dB (99:1) | 3.8/3.8 dB (50:50)<br>12.7/0.8 dB (90:10)<br>21.6/0.4 dB (99:1) |
| Excess Loss (Typical)                            | 0.15 dB                                                                                          | 0.12 dB                                                                                          | 0.12 dB                                                                                          | 0.2 dB                                                          |
| PDL                                              | <0.2 dB                                                                                          | <0.15 dB                                                                                         | <0.2 dB                                                                                          | <0.15 dB                                                        |
| Directivity                                      | >55 dB                                                                                           | >55 dB                                                                                           | >55 dB                                                                                           | >60 dB                                                          |
| Operating Temperature                            | -40 to 85 °C                                                                                     | -40 to 85 °C                                                                                     | -40 to 85 °C                                                                                     | -40 to 85 °C                                                    |
| Fiber Type*                                      | SM800                                                                                            | HI1060FLEX                                                                                       | HI1060FLEX                                                                                       | SMF-28e+                                                        |

\* Equivalent fiber types may be substituted.

Note: Thorlabs uses both narrow (2.0 mm) and wide (2.14 mm) key FC connectors in its product line. Narrow key connectors are used on connectorized fiber, while wide key connectors are used on fiber bulkheads (with few exceptions). This ensures that our connectorized fibers are compatible with all of our mating components.



## 2 x 2 Single Mode Fiber Couplers and Taps (Page 2 of 2)

**NEW**  
versions

| ITEM #         | CENTER WAVELENGTH | COUPLING RATIO | CONNECTORS | \$        | £        | €        | RMB        |
|----------------|-------------------|----------------|------------|-----------|----------|----------|------------|
| FC488-50B-FC   | 488 nm            | 50:50          | FC/PC      | \$ 360.00 | £ 259.20 | € 313.20 | ¥ 2,869.20 |
| FC488-50B-APC  | 488 nm            | 50:50          | FC/APC     | \$ 400.00 | £ 288.00 | € 348.00 | ¥ 3,188.00 |
| FC488-90B-FC   | 488 nm            | 90:10          | FC/PC      | \$ 360.00 | £ 259.20 | € 313.20 | ¥ 2,869.20 |
| FC488-90B-APC  | 488 nm            | 90:10          | FC/APC     | \$ 400.00 | £ 288.00 | € 348.00 | ¥ 3,188.00 |
| FC488-99B-FC   | 488 nm            | 99:1           | FC/PC      | \$ 360.00 | £ 259.20 | € 313.20 | ¥ 2,869.20 |
| FC488-99B-APC  | 488 nm            | 99:1           | FC/APC     | \$ 400.00 | £ 288.00 | € 348.00 | ¥ 3,188.00 |
| FC532-50B-FC   | 532 nm            | 50:50          | FC/PC      | \$ 330.00 | £ 237.60 | € 287.10 | ¥ 2,630.10 |
| FC532-50B-APC  | 532 nm            | 50:50          | FC/APC     | \$ 370.00 | £ 266.40 | € 321.90 | ¥ 2,948.90 |
| FC532-90B-FC   | 532 nm            | 90:10          | FC/PC      | \$ 330.00 | £ 237.60 | € 287.10 | ¥ 2,630.10 |
| FC532-90B-APC  | 532 nm            | 90:10          | FC/APC     | \$ 370.00 | £ 266.40 | € 321.90 | ¥ 2,948.90 |
| FC532-99B-FC   | 532 nm            | 99:1           | FC/PC      | \$ 330.00 | £ 237.60 | € 287.10 | ¥ 2,630.10 |
| FC532-99B-APC  | 532 nm            | 99:1           | FC/APC     | \$ 370.00 | £ 266.40 | € 321.90 | ¥ 2,948.90 |
| FC632-50B      | 632 nm            | 50:50          | None       | \$ 150.00 | £ 108.00 | € 130.50 | ¥ 1,195.50 |
| FC632-50B-FC   | 632 nm            | 50:50          | FC/PC      | \$ 190.00 | £ 136.80 | € 165.30 | ¥ 1,514.30 |
| FC632-50B-APC  | 632 nm            | 50:50          | FC/APC     | \$ 230.00 | £ 165.60 | € 200.10 | ¥ 1,833.10 |
| FC632-90B      | 632 nm            | 90:10          | None       | \$ 150.00 | £ 108.00 | € 130.50 | ¥ 1,195.50 |
| FC632-90B-FC   | 632 nm            | 90:10          | FC/PC      | \$ 190.00 | £ 136.80 | € 165.30 | ¥ 1,514.30 |
| FC632-90B-APC  | 632 nm            | 90:10          | FC/APC     | \$ 230.00 | £ 165.60 | € 200.10 | ¥ 1,833.10 |
| FC632-99B      | 632 nm            | 99:1           | None       | \$ 150.00 | £ 108.00 | € 130.50 | ¥ 1,195.50 |
| FC632-99B-FC   | 632 nm            | 99:1           | FC/PC      | \$ 190.00 | £ 136.80 | € 165.30 | ¥ 1,514.30 |
| FC632-99B-APC  | 632 nm            | 99:1           | FC/APC     | \$ 230.00 | £ 165.60 | € 200.10 | ¥ 1,833.10 |
| FC780-50B-FC   | 780 nm            | 50:50          | FC/PC      | \$ 190.00 | £ 136.80 | € 165.30 | ¥ 1,514.30 |
| FC780-50B-APC  | 780 nm            | 50:50          | FC/APC     | \$ 230.00 | £ 165.60 | € 200.10 | ¥ 1,833.10 |
| FC780-90B-FC   | 780 nm            | 90:10          | FC/PC      | \$ 190.00 | £ 136.80 | € 165.30 | ¥ 1,514.30 |
| FC780-90B-APC  | 780 nm            | 90:10          | FC/APC     | \$ 230.00 | £ 165.60 | € 200.10 | ¥ 1,833.10 |
| FC780-99B-FC   | 780 nm            | 99:1           | FC/PC      | \$ 190.00 | £ 136.80 | € 165.30 | ¥ 1,514.30 |
| FC780-99B-APC  | 780 nm            | 99:1           | FC/APC     | \$ 230.00 | £ 165.60 | € 200.10 | ¥ 1,833.10 |
| FC830-50B      | 830 nm            | 50:50          | None       | \$ 150.00 | £ 108.00 | € 130.50 | ¥ 1,195.50 |
| FC830-50B-FC   | 830 nm            | 50:50          | FC/PC      | \$ 190.00 | £ 136.80 | € 165.30 | ¥ 1,514.30 |
| FC830-50B-APC  | 830 nm            | 50:50          | FC/APC     | \$ 230.00 | £ 165.60 | € 200.10 | ¥ 1,833.10 |
| FC830-90B      | 830 nm            | 90:10          | None       | \$ 150.00 | £ 108.00 | € 130.50 | ¥ 1,195.50 |
| FC830-90B-FC   | 830 nm            | 90:10          | FC/PC      | \$ 190.00 | £ 136.80 | € 165.30 | ¥ 1,514.30 |
| FC830-90B-APC  | 830 nm            | 90:10          | FC/APC     | \$ 230.00 | £ 165.60 | € 200.10 | ¥ 1,833.10 |
| FC830-99B      | 830 nm            | 99:1           | None       | \$ 150.00 | £ 108.00 | € 130.50 | ¥ 1,195.50 |
| FC830-99B-FC   | 830 nm            | 99:1           | FC/PC      | \$ 190.00 | £ 136.80 | € 165.30 | ¥ 1,514.30 |
| FC830-99B-APC  | 830 nm            | 99:1           | FC/APC     | \$ 230.00 | £ 165.60 | € 200.10 | ¥ 1,833.10 |
| FC980-50B      | 980 nm            | 50:50          | None       | \$ 150.00 | £ 108.00 | € 130.50 | ¥ 1,195.50 |
| FC980-50B-FC   | 980 nm            | 50:50          | FC/PC      | \$ 190.00 | £ 136.80 | € 165.30 | ¥ 1,514.30 |
| FC980-50B-APC  | 980 nm            | 50:50          | FC/APC     | \$ 230.00 | £ 165.60 | € 200.10 | ¥ 1,833.10 |
| FC980-90B      | 980 nm            | 90:10          | None       | \$ 150.00 | £ 108.00 | € 130.50 | ¥ 1,195.50 |
| FC980-90B-FC   | 980 nm            | 90:10          | FC/PC      | \$ 190.00 | £ 136.80 | € 165.30 | ¥ 1,514.30 |
| FC980-90B-APC  | 980 nm            | 90:10          | FC/APC     | \$ 230.00 | £ 165.60 | € 200.10 | ¥ 1,833.10 |
| FC980-99B      | 980 nm            | 99:1           | None       | \$ 150.00 | £ 108.00 | € 130.50 | ¥ 1,195.50 |
| FC980-99B-FC   | 980 nm            | 99:1           | FC/PC      | \$ 190.00 | £ 136.80 | € 165.30 | ¥ 1,514.30 |
| FC980-99B-APC  | 980 nm            | 99:1           | FC/APC     | \$ 230.00 | £ 165.60 | € 200.10 | ¥ 1,833.10 |
| FC1064-50B     | 1064 nm           | 50:50          | None       | \$ 150.00 | £ 108.00 | € 130.50 | ¥ 1,195.50 |
| FC1064-50B-FC  | 1064 nm           | 50:50          | FC/PC      | \$ 190.00 | £ 136.80 | € 165.30 | ¥ 1,514.30 |
| FC1064-50B-APC | 1064 nm           | 50:50          | FC/APC     | \$ 230.00 | £ 165.60 | € 200.10 | ¥ 1,833.10 |
| FC1064-90B     | 1064 nm           | 90:10          | None       | \$ 150.00 | £ 108.00 | € 130.50 | ¥ 1,195.50 |
| FC1064-90B-FC  | 1064 nm           | 90:10          | FC/PC      | \$ 190.00 | £ 136.80 | € 165.30 | ¥ 1,514.30 |
| FC1064-90B-APC | 1064 nm           | 90:10          | FC/APC     | \$ 230.00 | £ 165.60 | € 200.10 | ¥ 1,833.10 |
| FC1064-99B     | 1064 nm           | 99:1           | None       | \$ 150.00 | £ 108.00 | € 130.50 | ¥ 1,195.50 |
| FC1064-99B-FC  | 1064 nm           | 99:1           | FC/PC      | \$ 190.00 | £ 136.80 | € 165.30 | ¥ 1,514.30 |
| FC1064-99B-APC | 1064 nm           | 99:1           | FC/APC     | \$ 230.00 | £ 165.60 | € 200.10 | ¥ 1,833.10 |
| 10202A-50      | 1310 nm & 1550 nm | 50:50          | None       | \$ 96.80  | £ 69.70  | € 84.22  | ¥ 771.50   |
| 10202A-50-FC   | 1310 nm & 1550 nm | 50:50          | FC/PC      | \$ 136.80 | £ 98.50  | € 119.02 | ¥ 1,090.30 |
| 10202A-50-APC  | 1310 nm & 1550 nm | 50:50          | FC/APC     | \$ 176.80 | £ 127.30 | € 153.82 | ¥ 1,409.10 |
| 10202A-90      | 1310 nm & 1550 nm | 90:10          | None       | \$ 80.50  | £ 57.96  | € 70.04  | ¥ 641.59   |
| 10202A-90-FC   | 1310 nm & 1550 nm | 90:10          | FC/PC      | \$ 120.50 | £ 86.76  | € 104.84 | ¥ 960.39   |
| 10202A-90-APC  | 1310 nm & 1550 nm | 90:10          | FC/APC     | \$ 160.50 | £ 115.56 | € 139.64 | ¥ 1,279.19 |
| 10202A-99      | 1310 nm & 1550 nm | 99:1           | None       | \$ 100.90 | £ 72.65  | € 87.78  | ¥ 804.17   |
| 10202A-99-FC   | 1310 nm & 1550 nm | 99:1           | FC/PC      | \$ 140.90 | £ 101.45 | € 122.58 | ¥ 1,122.97 |
| 10202A-99-APC  | 1310 nm & 1550 nm | 99:1           | FC/APC     | \$ 180.90 | £ 130.25 | € 157.38 | ¥ 1,441.77 |

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Couplers850 ± 40 nm  
1310 ± 70 nmSee page  
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