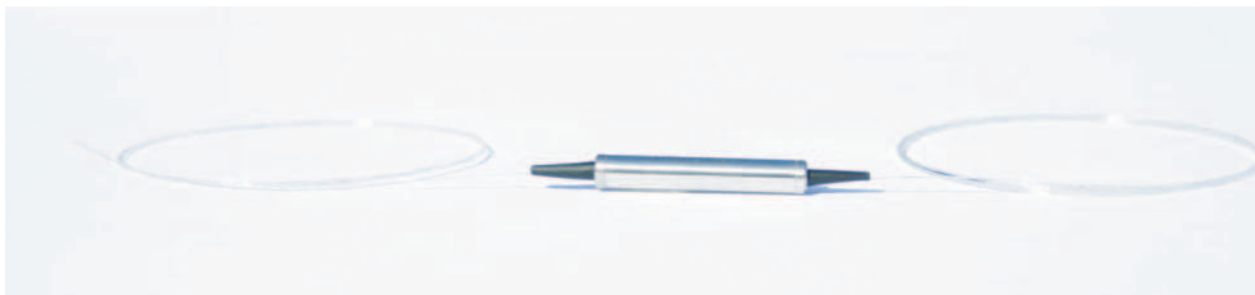


# Optical Elements - PON

## CPL FBT (Fused Biconical Tapering) Splitters/Couplers

02



### FBT Splitters/Couplers

Fibrain optical splitters of the CPL family are used for splitting of optical power irrespective of the signal wavelength (within the operating region). They are available in different production variants. The CPL series couplers are made in the FBT (Fused Biconical Tapering) process. The advantages of this technology include very small excess loss, low reflectance, low PDL and small size. For 1x2 couplers, any custom split ratio is available.

#### Technical specification:

##### Standard single window

Type	1x2; 2x2	1x3	1x4
Power split	1-50%	33.3/33.3/33.3*	25/25/25/25*
Wavelength	1310 / 1550 nm /other		
Bandwidth	+/-40 nm		
Uniformity	<=0.5 dB	<=1.1 dB	<=1.4 dB
PDL max.	<=0.15 dB		
Max. Attenuation	<=3.4 dB 50/50	<=5.6 dB	<=7.2 dB
Directivity	>=55 dB		
Temperature stability	0.002 dB/°C		
Operating temperature	-40°C to +85°C		

\*other split ratios available per individual order

##### Example of power split/attenuation:

Type	1x2; 2x2	1x3	1x4
	1/99 21 dB / 0.2 dB		
	10/90 10.8 dB / 0.6 dB		
	20/80 7.60 dB / 1.2 dB		
	30/70 5.80 dB / 1.9 dB		
	40/60 4.40 dB / 2.5 dB		

##### Dual window 1310&1550 nm

Type	1x2; 2x2	1x3	1x4
Power split	1-50%	33.3/33.3/33.3*	25/25/25/25*
Wavelength	1310 / 1550 nm /other		
Bandwidth	+/-40 nm		
Uniformity	<=0.6 dB	<=1.1 dB	<=1.4 dB
PDL max.	<=0.15 dB		
Max. Attenuation	<=3.6 dB 50/50	<=5.8 dB	<=7.6 dB
Directivity	>=55 dB		
Temperature stability	0.002 dB/°C		
Operating temperature	-40°C to +85°C		

\*other split ratios available per individual order

##### Example of power split/attenuation:

Type	1x2; 2x2	1x3	1x4
	1/99 23.5 dB / 0.3 dB		
	10/90 11.3 dB / 0.6 dB		
	20/80 7.85 dB / 1.4 dB		
	30/70 6.00 dB / 1.9 dB		
	40/60 4.70 dB / 2.7 dB		

#### Applications:

- passive optical networks B-PON, G-PON, E-PON,
- telecommunication networks,
- CATV networks,
- measuring devices.

#### Features:

- custom split ratios available,
- non-standard operating windows possible,
- full spectral loss profiles available on request.

#### Splitters 1x2 & 2x2 type:

- 1x2 2x2 - standard single window 1310 nm+/-40 nm lub 1550 nm+/-40 nm
- 1x2 2x2 - dual window 1310/1550 nm +/-40 nm
- 1x2 2x2 - wide band 1310/1550 nm +/-40 nm 1490 nm+/-10 nm
- 1x2 2x2 - all band wideband - 1260 -1620 nm

#### Splitters 1x3 & 1x4 - monolithic type:

- 1x3 1x4 - standard single window 1310 nm+/-40 nm lub 1550 nm+/-40 nm
- 1x3 1x4 - dual window 1310/1550 nm +/-40 nm
- 1x3 1x4 - wide band 1310/1550 nm +/-40 nm 1490 nm+/-10 nm

#### Casing:

- 3x55 mm: 1x2 and 2x2; 250 µm or 900 µm,
- 3x60 mm: 1x3 and 1x4; 250 µm or 900 µm,
- Blackbox 90x20x10 mm: 1x2; 2x2; 2.0 mm or 3.0 mm,
- Blackbox 100x80x12 mm: 1x3 1x4; 2.0 mm or 3.0 mm,
- 19" 1U and 2U patchpanels,
- LGX module or modular patchpanel.

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## CPL FBT (Fused Biconical Tapering) Splitters/Couplers

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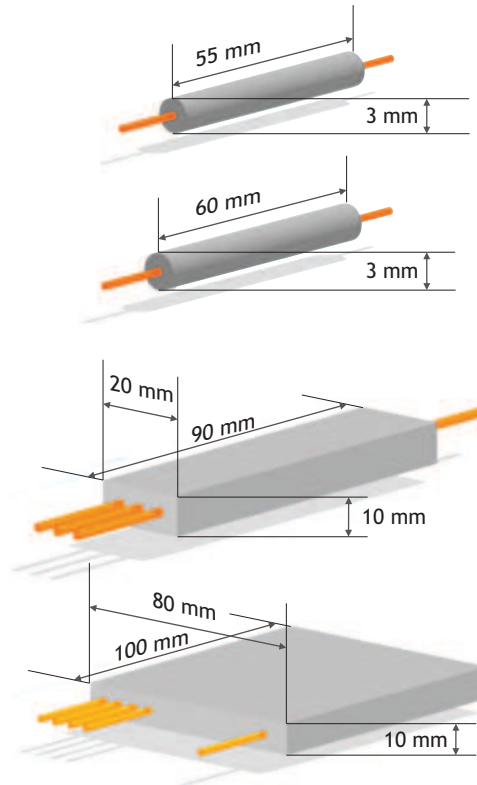


Three window 1310 & 1550 & 1490 nm			
Type	1x2; 2x2	1x3	1x4
Power split	1-50%	33.3/33.3/33.3*	25/25/25/25*
Wavelength	1310 / 1550 / 1490 nm / other		
Bandwidth	+/-40 nm		+/-40 nm/+10 nm
Uniformity	<=0.7 dB	<=1.4 dB	<=1.7 dB
PDL max.	<=0.20 dB	<=0.30 dB	<=0.30 dB
Max. Attenuation	<=3.7 dB 50/50	<=6.0 dB	<=7.8 dB
Directivity	>=55 dB		
Temperature stability	0.002 dB/°C		
Operating temperature	-40° C to +85° C		

\*Another split available per individual order

Example of power split/attenuation:			
Type	1x2; 2x2	1x3	1x4
	1/99 23.5 dB / 0.30 dB		
	10/90 11.5 dB / 0.75 dB		
	20/80 7.95 dB / 1.50 dB		
	30/70 6.20 dB / 2.10 dB		
	40/60 4.90 dB / 2.80 dB		

All band 1260-1620 nm	
Type	1x2; 2x2
Power split	1-50%
Wavelength	1260-1620 nm
Uniformity	<=0.9 dB
PDL max.	<=0.20 dB
Max. Attenuation	<=3.9 dB 50/50
Directivity	>=55 dB
Temperature stability	0.002 dB/°C
Operating temperature	-40° C to +85° C



<b>Fiber:</b> 1-G652D 2-G657A 3-G657B 4-MM50 5-OM3 6-M62.5	<b>Length:</b> 0 - 0.5 MB 1 - 1.0 MB 2 - 2.0 MB	<b>Fiber type:</b> 25 - 250 µm 90 - 900 µm 20 - 2.0 mm 30 - 3.0 mm	<b>Casing type:</b> 1 - 3x55 mm pipe 2 - 3x60 mm pipe 3 - 3.5x40 mm pipe 4 - 90x20x10 mm blackbox 5 - 100x80x10 mm blackbox 6 - 125x95x16 mm blackbox 7 - 10x60 mm Y patchcord	<b>Window type:</b> S - single window D - dual windows T - three windows F - full band M - multimode	
<b>Quality:</b> S0/S1 G0/G1 T0/T1 P0/P1	<b>Split:</b> 12 - 1X2 22 - 2X2 13 - 1X3 14 - 1X4 18 - 1X8 116 - 1X16 132 - 1X32 164 - 1X64 ... etc.	<b>Wavelength:</b> 85 - 850 nm 98 - 980 nm 10 - 1060 nm 13 - 1310 nm 15 - 1550 nm 35 - 1310/1550 nm 345 - 1310/ 1490/ 1550 nm XX - other	<b>Power split:</b> 50 - 50/50 70 - 70/30 3333 - 33/33/33 2525 - 25/25/25/25 ... etc.	<b>Connector type:</b> ST SC SCA FC FCA LC LCA E20 E2A x - other	<b>Connector type:</b> ST SC SCA FC FCA LC LCA E20 E2A x - other

**CPL-G0-1-22-0-15-25-50-4-S-SC-SC**

**Example:** CPL series splitter, 2x2, 50% split ratio, single window 1550 nm, 0.5 m pigtails, 250 mm, SC PC connectors