

FBT Coupler

Single Window Wideband Coupler

➔ Specifications (50/50)

Parameter	Premium	A Grade
Operating Wavelength Range	Center Wavelength $\pm$ 40 nm	
Insertion Loss (Max)	$\leq$ 3.5 dB	$\leq$ 3.7 dB
Uniformity (Typical)	$\leq$ 0.5 dB	$\leq$ 0.7 dB
Return Loss	$\geq$ 55 dB (1x2) $\geq$ 65dB (2x2)	
PDL	$\leq$ 0.10 dB	$\leq$ 0.15 dB
TDL	$\leq$ 0.2dB	
Operating & Storage Temperature	- 40° C ~ + 85° C	
Package Dimensions	Light Duty (B)	3.0mm (Φ) x 55.0mm (L)
	Medium Duty (L)	3.0mm (Φ) x 60.0mm (L)
	Heavy Duty (K, R)	100.0mm x 12.0mm x 8.0mm

➔ Tap Coupler

Coupling Ratio	Max Insertion Loss	
	Premium	A Grade
40/60	4.4/ 2.5 dB	4.8/2.8 dB
30/70	5.6/1.8 dB	6.1/2.0 dB
20/80	7.6/1.2 dB	8.0/1.3 dB
10/90	10.8/0.6 dB	12.0/0.8 dB
5/95	14.0/0.4 dB	14.5/0.5 dB
1/99	21.0/0.2 dB	21.5/0.3 dB

Note1: All values specified are without connectors.

Note2: Higher performance specifications are available upon request.

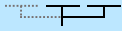
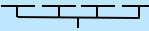
Note3: Fiber Type – Corning SMF-28e.

➔ Tree Couplers

*Port #	Max IL		Uniformity	
	Premium	A Grade	Premium	A Grade
1 x 4	7.0 dB	7.4 dB	1.0 dB	1.4 dB
1 x 8	10.2 dB	10.8 dB	1.5 dB	1.8 dB
1 x 16	14.0 dB	14.8 dB	2.0 dB	2.8 dB

*Other port numbers upon request.

➔ Ordering Information

S	W	C						
								
			Port Number	Grade	Coupling Ratio	Wavelength	Fiber Length	Pigtail Style
			12: 1 x 2	P: Premium	xy % : xy %	E: 1310 nm	1: 1 meter	(=Package style)
			22: 2 x 2	A: A Grade	EVEN: Even split	F: 1480 nm	2: 2 meter	B: bare fiber
			14: 1 x 4			G: 1510 nm	S: Special	L: 900 μm loose tube
			18: 1 x 8			H: 1550 nm		K: 2mm cable
			116: 1 x 16			L: 1625 nm		R: 3mm cable
								Connector
								0: None 7: LC/UPC
								1: FC/PC 8: LC/SPC
								2: FC/APC 9: Special
								3: SC/ PC A: FC/UPC
								4: SC/APC B: SC/UPC
								5: FC/SPC C: ST
								6: SC/SPC

➔ Specifications (50/50)

Parameter	Premium	A Grade
Operating Wavelength Range	1310 & 1550 nm $\pm$ 40 nm	
Insertion Loss (Max)	$\leq$ 3.6 dB	$\leq$ 3.8 dB
Uniformity (Typical)	$\leq$ 0.7 dB	$\leq$ 1.0 dB
Return Loss	$\geq$ 55 dB (1x2) $\geq$ 65dB (2x2)	
PDL	$\leq$ 0.15 dB	$\leq$ 0.20 dB
TDL	$\leq$ 0.2dB	
Operating & Storage Temperature	- 40° C ~ + 85° C	
Package Dimensions	Light Duty (B)	3.0mm (Φ) x 55.0mm (L)
	Medium Duty (L)	3.0mm (Φ) x 60.0mm (L)
	Heavy Duty (K, R)	100.0mm x 12.0mm x 8.0mm

➔ Tap Coupler

Coupling Ratio	Max Insertion Loss	
	Premium	A Grade
40/60	4.7/ 2.7 dB	5.0/2.9 dB
30/70	6.0/1.9 dB	6.4/2.2 dB
20/80	7.9/1.2 dB	8.5/1.4 dB
10/90	11.3/0.6 dB	12.7/0.8 dB
5/95	15.0/0.4 dB	16.0/0.5 dB
1/99	23.5/0.3 dB	24.0/0.4 dB

Note1: All values specified are without connectors.

Note2: Higher performance specifications are available upon request.

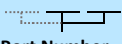
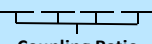
Note3: Fiber Type – Corning SMF-28e.

➔ Tree Couplers

*Port #	Max IL		Uniformity	
	Premium	A Grade	Premium	A Grade
1 x 4	7.2 dB	7.6 dB	1.3 dB	1.8 dB
1 x 8	11.0 dB	11.3 dB	2.0 dB	2.4 dB
1 x 16	14.4 dB	15.2 dB	2.7 dB	3.2 dB

*Other port numbers upon request.

➔ Ordering Information

D	W	C						
								
			Port Number	Grade	Coupling Ratio	Fiber Length	Pigtail Style	Connector
			12: 1 x 2	P: Premium	XY % : XY %	1: 1 meter	(=Package style)	0: None 7: LC/UPC
			22: 2 x 2	A: A Grade	EVEN: Even split	2: 2 meter	B: bare fiber	1: FC/PC 8: LC/SPC
			14: 1 x 4			S: Special	L: 900 μm loose tube	2: FC/APC 9: Special
			18: 1 x 8				K: 2mm cable	3: SC/ PC A: FC/UPC
			116: 1 x 16				R: 3mm cable	4: SC/APC B: SC/UPC
								5: FC/SPC C: ST
								6: SC/SPC

➔ Specifications (50/50)

Parameter	Premium	A Grade
Operating Wavelength Range	1260-1360 nm, 1480-1550 nm, 1535-1570 nm	
Insertion Loss	≤ 3.6 dB	≤ 3.8 dB
Uniformity	≤ 0.7 dB	≤ 1.0 dB
Return Loss	≥ 55 dB (1x2) ≥65 dB (2x2)	
PDL	≤ 0.15 dB	≤ 0.2 dB
TDL	≤ 0.2 dB (-10°C ~ +75°C) ≤ 0.35 dB (-40°C ~ +85°C)	
Operating & Storage Temperature	- 40° C ~ + 85° C	
Package Dimensions	Light Duty (B)	3.0mm (Φ) x 55.0mm (L)
	Medium Duty (L)	3.0mm (Φ) x 60.0mm (L)
	Heavy Duty (K, R)	100.0mm x 12.0mm x 8.0mm

➔ Tap Coupler

Coupling Ratio	Premium	A Grade
40/60	4.7/2.7 dB	5.0/2.5 dB
30/70	6.0/1.9 dB	6.4/2.2 dB
20/80	7.9/1.2 dB	8.5/1.4 dB
10/90	11.3/0.6 dB	12.7/0.8 dB
5/95	15.0/0.4 dB	16.0/0.5 dB
1/99	23.5/0.3 dB	25/0.4 dB

Note1: All values specified are without connectors.

Note2: Higher performance specifications are available upon request.

Note3: Fiber Type – Corning SMF-28e.

➔ Tree Couplers

*Port #	Max IL		Uniformity	
	Premium	A Grade	Premium	A Grade
1 x 4	7.2 dB	7.6 dB	1.3 dB	1.8 dB
1 x 8	11.0 dB	11.3 dB	2.0 dB	2.4 dB
1 x 16	14.4 dB	15.2 dB	2.7 dB	3.2 dB
1 x 32	18.1 dB	19.0 dB	3.4 dB	4.2 dB

*Other port numbers upon request.

➔ Ordering Information

T	W	C	-	-	-	-	-	-	-	-
Port Number			Grade		Coupling Ratio		Fiber Length		Pigtail Style	
12: 1 x 2			P: Premium		xy % : xy %		1: 1 meter		(=Package style)	
14: 1 x 4			A: A Grade				2: 2 meter		B: bare fiber	
18: 1 x 8							S: Special		L: 900 μm loose tube	
16: 1 x 16									K: 2mm cable	
32: 1 x 32									R: 3mm cable	
									Connector	
									0: None	7: LC/UPC
									1: FC/PC	8: LC/SPC
									2: FC/APC	9: Special
									3: SC/PC	A: FC/UPC
									4: SC/APC	B: SC/UPC
									5: FC/SPC	C: ST
									6: SC/SPC	

➔ Specifications (50/50)

Parameter	Premium	A Grade
Operating Wavelength Range	1310 ± 50 nm & 1550 nm ± 75 nm	
Insertion Loss	≤ 3.6 dB	≤ 3.8 dB
Uniformity	≤ 0.8 dB	≤ 1.0 dB
Return Loss	≥ 55 dB (1x2) ≥65 dB (2x2)	
PDL	≤ 0.15 dB	
TDL	≤ 0.2 dB (-10°C ~ +75°C) ≤ 0.35 dB (-40°C ~ +85°C)	
Operating & Storage Temperature	-40° C ~ +85° C	
Package Dimensions	Light Duty (B)	3.0mm (Φ) x 55.0mm (L)
	Medium Duty (L)	3.0mm (Φ) x 60.0mm (L)
	Heavy Duty (K, R)	100.0mm x 12.0mm x 8.0mm

➔ Tree Couplers (equal split)

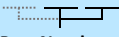
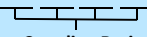
*Port #	Max IL		Uniformity		PDL
	Premium	A Grade	Premium	A Grade	
1 x 4	7.4 dB	7.8 dB	1.5 dB	1.8 dB	0.3 dB
1 x 8	11.2 dB	11.6 dB	2.2 dB	2.6 dB	0.4 dB
1 x 16	14.8 dB	15.4 dB	3.0 dB	3.6 dB	0.5 dB

Note1: All values specified are without connectors.

Note2: Higher performance specifications are available upon request.

Note3: Fiber Type – Corning SMF-28e.

➔ Ordering Information

U F D -						
						
Port Number	Grade	Coupling Ratio	Fiber Length	Pigtail Style	Connector	
12: 1 x 2	P: Premium	xy % : xy %	1: 1 meter	(=Package style)	0: None	7: LC/UPC
22: 2 x 2	A: A Grade	EVEN: even split	2: 2 meter	B: bare fiber	1: FC/PC	8: LC/SPC
14: 1 x 4			S: Special	L: 900 μm loose tube	2: FC/APC	9: Special
18: 1 x 8				K: 2mm cable	3: SC/PC	A: FC/UPC
116: 1 x 16				R: 3mm cable	4: SC/APC	B: SC/UPC
					5: FC/SPC	C: ST
					6: SC/SPC	

➔ Specifications (50/50)

Parameter						
Central Wavelength		630, 850, 980, 1060, 1310, 1550 nm				
Configuration		1x2, 2x2	1x3	1x4	1x8	1x16
Insertion Loss*	50/125 Fiber	≤ 4.9 dB	≤ 6.7 dB	≤ 7.8 dB	≤ 11.5 dB	≤ 15 dB
	62.5/125, 100/140, 105/125 Fiber	≤ 4.6 dB	≤ 6.4 dB	≤ 7.5 dB	≤ 11 dB	≤ 14.2 dB
Directivity		≥ 40 dB				
TDL		≤ 0.2 dB				
Operating & Storage Temperature		- 40° C ~ + 85° C				
Package Dimensions (in mm)	Light Duty (B)	3.0(Φ) x 55.0(L)	3.0(Φ) x 60(L)	3.0(Φ) x 60(L)	3.0(Φ) x 60(L)	5.0(Φ) x 60(L)
	Medium Duty (L)	3.0(Φ) x 60(L)	100 x 12 x 8	100 x 12 x 8	100 x 12 x 8	135 x 100 x 10
	Heavy Duty (K, R)	100 x 12 x 8	95 x 75 x 6	95 x 75 x 6	130 x 100 x 6	130 x 100 x 8.5

➔ Tap Coupler

Coupling Ratio	Maximum Insertion Loss		
	50/125 μm	62.5/125 μm	100/140 μm & 105/125 μm
60/40	4.5/6.5 dB	3.6/5.8 dB	3.0/5.0 dB
70/30	3.9/8.0 dB	3.0/7.0 dB	2.3/6.3 dB
80/20	3.2/10.0 dB	2.4/9.0 dB	1.7/8.3 dB
90/10	2.7/13.5 dB	1.9/12.5 dB	1.2/12.0 dB
95/5	2.4/17.0 dB	1.5/16.5 dB	1.0/16.0 dB
99/1	1.4/22.0 dB	1.1/22.0 dB	0.8/22.0 dB

* All data tested under LED direct launching conditions.

Note1: All values specified are without connectors.

Note2: Higher performance specifications are available upon request.

➔ Ordering Information

M	M	C							
Port Number		Grade	Coupling Ratio		Fiber Type	Wavelength	Fiber Length	Pigtail Style	Connector
12:	1 x 2	A: A Grade	xy % : xy %		1: 50/125 μm	A: 630 nm	1: 1 meter	(=Package style)	0: None
22:	2 x 2		EVEN: Even split		2: 62.5/125 μm	B: 850 nm	2: 2 meter	B: bare fiber	1: FC/PC
13:	1 x 3				3: 100/140 μm	C: 1060 nm	S: Special	L: 900 μm loose tube	3: SC/ PC
14:	1 x 4				4: Special	D: 980 nm		K: 2mm cable	9: Special
18:	1 x 8				5: 105/125 μm, NA=0.15	E: 1310 nm		R: 3mm cable	C: ST
116:	1 x 16				6: 105/125 μm, NA=0.22	H: 1550 nm			

FBT Coupler

High Directivity, Mode Insensitive Achromatic Multimode Coupler

➔ Specifications (50/50)

Parameter	Premium	A Grade
Central Wavelength	Achromatic	
Configuration	1 x 2	
Split Ratio	90/10, 80/20, 70/30, 60/40, 50/50	
Max Insertion Loss*	≤ 3.6 dB	≤ 4.0 dB
Directivity	≥ 45 dB	≥ 40 dB
Operating & Storage Temperature	- 40° C ~ + 85° C	
Package Dimensions	Light Duty (B)	3.0mm (Φ) x 40.0mm (L)
	Medium Duty (L)	3.0mm (Φ) x 45.0mm (L)
	Heavy Duty (K, R)	100.0mm x 12.0mm x 8.0mm

*The insertion loss specified does not include connector loss.

➔ Ordering Information

M	M	C	H	-	1	2	-		-		-		-		-		-				
Port Number					Grade			Coupling Ratio			Fiber Type			Fiber Length			Pigtail Style			Connector	
12: 1 x 2					P: Premium A: A Grade			xy % : xy %			1: 50/125 μm 2: 62.5/125 μm			1: 1 meter 2: 2 meter S: Special			B: bare fiber L: 900 μm loose tube K: 2mm cable R: 3mm cable			0: None 1: FC/PC 3: SC/ PC 9: Special C: ST	

FBT Coupler

Visible Wavelength Single Window Coupler

➔ Specifications (50/50)

Parameter		Premium
Center Wavelength		See order information (choose from 400-700nm)
Band Pass		±10 nm
Insertion Loss		≤ 3.8 dB
Uniformity		≤ 1.0 dB
Return Loss		≥ 55 dB
PDL		≤ 0.15 dB
Operating & Storage Temperature		- 40° C ~ + 85° C
Package Dimensions	Light Duty (B)	3.0mm (Φ) x 55.0mm (L)
	Medium Duty (L)	3.0mm (Φ) x 60.0mm (L)
	Heavy Duty (K, R)	100.0mm x 12.0mm x 8.0mm

➔ Tap Coupler

Coupling Ratio	Max Insertion Loss
	Premium
40/60	4.8/ 2.8 dB
30/70	6.1/2.0 dB
20/80	8.0/1.3 dB
10/90	12.0/0.8 dB
5/95	14.5/0.5 dB
1/99	22.0/0.3 dB

Note1: All values specified are without connectors.

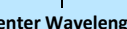
Note2: Higher performance specifications are available upon request.

➔ Tree Couplers

*Port #	Max IL	Uniformity
	Premium	Premium
1 x 4	7.5 dB	2.0 dB
1 x 8	11.0 dB	2.5 dB
1 x 16	15.0 dB	3.0 dB

*Other port numbers upon request.

➔ Ordering Information

S W C						
						
Port Number	Grade	Coupling Ratio	Center Wavelength	Fiber Length	Pigtail Style	Connector
12: 1 x 2	P: Premium	xy % : xy %	Example:	1: 1 meter	(=Package style)	0: None 7: LC/UPC
22: 2 x 2		EVEN: Even split	460 = 460 nm	2: 2 meter	B: bare fiber	1: FC/PC 8: LC/SPC
14: 1 x 4				S: Special	L: 900 μm loose tube	2: FC/APC 9: Special
18: 1 x 8					K: 2mm cable	3: SC/ PC A: FC/UPC
116: 1 x 16					R: 3mm cable	4: SC/APC B: SC/UPC
						5: FC/SPC C: ST
						6: SC/SPC

FBT Coupler

Single Window Short Wavelength Coupler

➔ Specifications (50/50)

Parameter	Premium	A Grade
Operating Wavelength Range	See order information	
Band Pass	± 10 nm	
Insertion Loss (Max)	≤ 3.5 dB	≤ 3.7 dB
Uniformity (Typical)	≤ 0.5 dB	≤ 0.9 dB
Return Loss	≥ 55 dB	
PDL	≤ 0.15 dB	≤ 0.20 dB
TDL	≤ 0.2 dB	
Operating & Storage Temperature	$-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$	
Package Dimensions	Light Duty (B)	3.0mm (Φ) x 55.0mm (L)
	Medium Duty (L)	3.0mm (Φ) x 60.0mm (L)
	Heavy Duty (K, R)	100.0mm x 12.0mm x 8.0mm

➔ Tap Coupler

Coupling Ratio	Max Insertion Loss	
	Premium	A Grade
40/60	4.4/ 2.5 dB	4.8/2.8 dB
30/70	5.6/1.8 dB	6.1/2.0 dB
20/80	7.6/1.2 dB	8.0/1.3 dB
10/90	10.8/0.6 dB	12.0/0.8 dB
5/95	14.0/0.4 dB	14.5/0.5 dB
1/99	21.0/0.2 dB	21.5/0.3 dB

Note1: All values specified are without connectors.

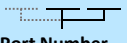
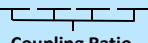
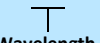
Note2: Higher performance specifications are available upon request.

➔ Tree Couplers

*Port #	Max IL		Uniformity	
	Premium	A Grade	Premium	A Grade
1 x 4	7.0 dB	7.4 dB	1.3 dB	1.7 dB
1 x 8	10.2 dB	11.3 dB	1.9 dB	2.5 dB
1 x 16	13.6 dB	15.0 dB	2.4 dB	3.5 dB

*Other port numbers upon request.

➔ Ordering Information

S	W	C						
								
			Port Number	Grade	Coupling Ratio	Wavelength	Fiber Length	Pigtail Style
			12: 1 x 2	P: Premium	xy % : xy %	A: 630 nm	1: 1 meter	(=Package style)
			22: 2 x 2	A: A Grade	EVEN: Even split	B: 850 nm	2: 2 meter	B: bare fiber
			14: 1 x 4			C: 1060 nm	S: Special	L: 900 μm loose tube
			18: 1 x 8			D: 980 nm		K: 2mm cable
			116: 1 x 16			I: 780 nm		R: 3mm cable
						J: 1030 nm		
								Connector
								0: None 7: LC/UPC
								1: FC/PC 8: LC/SPC
								2: FC/APC 9: Special
								3: SC/ PC A: FC/UPC
								4: SC/APC B: SC/UPC
								5: FC/SPC C: ST
								6: SC/SPC

➔ Specifications (50/50)

Parameter	Premium	A Grade
Operating Wavelength Range	See ordering information	
Band Pass	± 10 nm	
Insertion Loss (Max)	≤ 3.8 dB	≤ 4.0 dB
Uniformity (Typical)	≤ 0.7 dB	≤ 1.0 dB
Return Loss	≥ 55 dB	
PDL	≤ 0.10 dB	≤ 0.15 dB
Operating & Storage Temperature	- 40° C ~ + 85° C	
Package Dimensions	Light Duty (B)	3.0mm (Φ) x 55.0mm (L)
	Medium Duty (L)	3.0mm (Φ) x 60.0mm (L)
	Heavy Duty (K, R)	100.0mm x 12.0mm x 8.0mm

➔ Tap Coupler

Coupling Ratio	Max Insertion Loss	
	Premium	A Grade
40/60	4.7/ 2.7 dB	5.0/2.9 dB
30/70	6.0/1.9 dB	6.4/2.1 dB
20/80	7.9/1.2 dB	8.5/1.4 dB
10/90	11.3/0.55 dB	12.7/0.8 dB
5/95	15.2/0.4 dB	18.5/0.5 dB
1/99	22.5/0.3 dB	23.0/0.4 dB

Note1: All values specified are without connectors.

Note2: Higher performance specifications are available upon request.

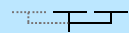
➔ Tree Coupler

*Port #	Max IL		Uniformity	
	Premium	A Grade	Premium	A Grade
1 x 4	7.2 dB	7.6 dB	1.3 dB	1.8 dB
1 x 8	11.0 dB	11.3 dB	2.0 dB	2.5 dB
1 x 16	14.4 dB	15.2 dB	2.7 dB	3.5 dB

*Other port numbers upon request.

Ordering Information

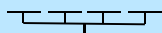
S W C -



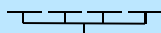
Port Number
12: 1 x 2
22: 2 x 2
14: 1 x 4
18: 1 x 8
116: 1 x 16



Grade
P: Premium
A: A Grade



Coupling Ratio
XY % : XY %
EVEN: Even split



Wavelength
 (example)
1950: 1950nm



Fiber Length
1: 1 meter
2: 2 meter
S: Special



Pigtail Style
 (=Package style)
B: bare fiber
L: 900 μm loose tube
K: 2mm cable
R: 3mm cable



Connector
0: None **7:** LC/UPC
1: FC/PC **8:** LC/SPC
2: FC/APC **9:** Special
3: SC/ PC **A:** FC/UPC
4: SC/APC **B:** SC/UPC
5: FC/SPC **C:** ST
6: SC/SPC

Parameter		Wavelength ≤ 1280 nm	Wavelength ≥ 1280 nm
Center Wavelength		Specified by customer	
Operating Wavelength Range		Center wavelength ± 10 nm	
Coupling Ratio		1% (± 0.3%) to 50% (± 5%)	
Excess Insertion Loss (slow axis input, including TDL)		≤ 0.7 dB	≤ 0.5 dB
Polarization Extinction Ratio		≥ 15 dB	≥ 20 dB
Return Loss		≥ 55 dB	
Directivity		≥ 55 dB	
Fiber Type		PM Panda Fiber	
Operating Temperature		0° C to + 70° C	
Storage Temperature		- 40° C ~ + 85° C	
Package Dimensions	Light Duty (B)	3.0mm (Φ) x 60.0mm (L)	3.0mm (Φ) x 55.0mm (L)
	Medium Duty (L)	3.0mm (Φ) x 65.0mm (L)	3.0mm (Φ) x 60.0mm (L)
	Heavy Duty (K, R)	100.0mm x 12.0mm x 8.0mm	

Note 1: All values specified are without connectors.

P	M	C				
Align Axis S: Slow F: Fast	Port Number 12: 1 x 2 22: 2 x 2 13: 1 x 3 14: 1 x 4	Coupling Ratio xy % : xy % EVEN: Even split	Center Wavelength Examples 0980: 980 nm 1480: 1480 nm	Fiber Length 1: 1 meter 2: 2 meter S: Special 0: 0.5 meter	Pigtail Style (=Package style) B: bare fiber L: 900 μm loose tube K: 2mm cable R: 3mm cable	Connector 0: None 1: FC/PC 2: FC/APC 3: SC/ PC 4: SC/APC 5: FC/SPC 6: SC/SPC 7: LC/UPC 8: LC/SPC 9: Special A: FC/UPC B: SC/UPC C: ST

Parameter			
Center Wavelength		Specified by customer	
Operating Wavelength Range		Center wavelength $\pm$ 10 nm	
Coupling Ratio		1% ($\pm$ 0.3%) to 50% ($\pm$ 5%)	
Excess Insertion Loss (slow axis input, incl. TDL)		$\leq$ 0.5 dB	
Polarization Extinction Ratio		$\geq$ 15 dB	
Return Loss		$\geq$ 55 dB	
Directivity		$\geq$ 55 dB	
Fiber Type		PM Panda fiber	
Operating Temperature		0° C to + 70° C	
Storage Temperature		-40° C ~ + 85° C	
Package Dimensions	Light Duty (B)	3.0mm (Φ) x 60.0mm (L)	3.0mm (Φ) x 55.0mm (L)
	Medium Duty (L)	3.0mm (Φ) x 65.0mm (L)	3.0mm (Φ) x 60.0mm (L)
	Heavy Duty (K, R)	100.0mm x 12.0mm x 8.0mm	

Note 1: All value specified are without connectors.

P	M	C					
	Align Axis S: Slow F: Fast	Port Number 12: 1 x 2 22: 2 x 2 13: 1 x 3 14: 1 x 4	Coupling Ratio XY % : XY % EVEN: Even split	Center Wavelength (example) 1950: 1950nm	Fiber Length 1: 1 meter 2: 2 meter S: Special 0: 0.5 meter	Pigtail Style (=Package style) B: bare fiber L: 900 μm loose tube K: 2mm cable R: 3mm cable	Connector 0: None 7: LC/UPC 1: FC/PC 8: LC/SPC 2: FC/APC 9: Special 3: SC/ PC A: FC/UPC 4: SC/APC B: SC/UPC 5: FC/SPC C: ST 6: SC/SPC

➔ Specifications

Parameter	Premium	A Grade
Operating Wavelength Range	1311 or 1550 ± 40 nm	
Insertion Loss (Max)	≤ 5.5 dB	≤ 6.0 dB
Uniformity (Typical)	≤ 0.8 dB	≤ 1.2 dB
Return Loss	≥ 50 dB	
PDL	≤ 0.15 dB	≤ 0.15 dB
TDL	≤ 0.2 dB (-10°C ~ +75°C)	≤ 0.4 dB (-40°C ~ +85°C)
Operating & Storage Temperature	- 40° C ~ + 85° C	
Package Dimensions	Light Duty (B)	3.0mm (Φ) x 55.0mm (L)
	Medium Duty (L)	3.0mm (Φ) x 70.0mm (L)

➔ Tap Coupler

R	Coupling Ratio	Max Insertion Loss	
		Premium	A Grade
1	10/45/45	11.5/4.6/4.6 dB	11.8/4.8/4.8 dB
2	20/40/40	8.2/5.2/5.2 dB	8.5/5.4/5.4 dB
3	30/35/35	6.2/5.6/5.6 dB	6.5/5.8/5.8 dB
4	40/30/30	5.2/6.2/6.2 dB	5.5/6.5/6.5 dB
5	50/25/25	4.2/7.2/7.2 dB	4.4/7.5/7.5 dB
6	60/20/20	3.4/8.3/8.3 dB	3.5/8.5/8.5 dB
7	70/15/15	2.6/9.6/9.6 dB	2.8/9.8/9.8 dB
8	80/10/10	2.2/11.0/11.0 dB	2.4/11.5/11.5 dB

Note1: All values specified are without connectors.

Note3: Fiber Type – Corning SMF-28e.

➔ Ordering Information

S	W	W	C	1	3	Grade	Coupling Ratio	Wavelength	Fiber Length	Pigtail Style	Connector
				Port Number		P: Premium	R: as above	E: 1310 nm F: 1480 nm G: 1510 nm H: 1550 nm L: 1625 nm	1: 1 meter 2: 2 meter S: Special	(=Package style) B: bare fiber L: 900 μm loose tube	0: None 1: FC/PC 2: FC/APC 3: SC/PC 4: SC/APC 5: FC/SPC 6: SC/SPC 7: LC/UPC 8: LC/SPC 9: Special A: FC/UPC B: SC/UPC C: ST

➔ Specifications

Parameter	Premium	A Grade
Operating Wavelength Range	1311 & 1550 ± 40 nm	
Insertion Loss (Max)	≤ 5.6 dB	≤ 5.9 dB
Uniformity (Typical)	≤ 1.2 dB	≤ 1.6 dB
Return Loss	≥ 50 dB	
PDL	≤ 0.10 dB	≤ 0.15 dB
TDL	≤ 0.2 dB (-10°C ~ +75°C)	≤ 0.4 dB (-40°C ~ +85°C)
Operating & Storage Temperature	- 40° C ~ + 85° C	
Package Dimensions	Light Duty (B)	3.0mm (Φ) x 55.0mm (L)
	Medium Duty (L)	3.0mm (Φ) x 70.0mm (L)

Note1: All values specified are without connectors.

Note3: Fiber Type – Corning SMF-28e.

➔ Ordering Information

<u>D</u>	<u>W</u>	<u>W</u>	<u>C</u>	-	<u>1</u>	<u>3</u>	-		-	<u>EVEN</u>	-		-		-		-		-		
Port Number					Grade			Coupling Ratio			Wavelength			Fiber Length			Pigtail Style			Connector	
13: 1 x 3					P: Premium A: A Grade			EVEN: 33/33/34			E: 1310 nm F: 1480 nm G: 1510 nm H: 1550 nm L: 1625 nm			1: 1 meter 2: 2 meter S: Special			B: bare fiber L: 900 μm loose tube			0: None 7: LC/UPC 1: FC/PC 8: LC/SPC 2: FC/APC 9: Special 3: SC/PC A: FC/UPC 4: SC/APC B: SC/UPC 5: FC/SPC C: ST 6: SC/SPC	

FBT Coupler

1x4 Single Fused Single Window Wideband Coupler

➔ Specifications

Parameter	Premium	A Grade
Operating Wavelength Range	See order information	
Bandwidth	± 40 nm	
Insertion Loss (Max)	≤ 7.2 dB	≤ 7.5 dB
Uniformity (Typical)	≤ 0.8 dB	≤ 1.4 dB
Return Loss	≥ 55 dB	
PDL	≤ 0.2 dB	≤ 0.3 dB
TDL	≤ 0.4 dB	
Operating & Storage Temperature	- 40° C ~ + 85° C	
Package Dimensions	Light Duty (B)	3.0mm (Φ) x 55.0mm (L)
	Medium Duty (L)	4.0mm (Φ) x 65.0mm (L)

Note1: All values specified are without connectors.

Note3: Fiber Type – Corning SMF-28e.

➔ Ordering Information

S	W	W	C	1	4	Grade	Coupling Ratio	Wavelength	Fiber Length	Pigtail Style	Connector
						P: Premium A: A Grade	xy% : xy%	E: 1310 nm F: 1480 nm G: 1510 nm H: 1550 nm L: 1625 nm	1: 1 meter 2: 2 meter	(=Package style) B: bare fiber L: 900 μm loose tube	0: None 7: LC/UPC 1: FC/PC 8: LC/SPC 2: FC/APC 9: Special 3: SC/PC A: FC/UPC 4: SC/APC B: SC/UPC 5: FC/SPC C: ST 6: SC/SPC

➔ Specifications

Parameter		Premium	A Grade
Operating Wavelength Range		1310 & 1550 nm ± 40 nm	
Insertion Loss (Max)		≤ 7.2 dB	≤ 7.5 dB
Uniformity (Typical)		≤ 1.5 dB	≤ 2.0 dB
Return Loss		≥ 55 dB	≥ 50 dB
Directivity		≥ 55 dB	
PDL		≤ 0.30 dB	≤ 0.35 dB
TDL		≤ 0.2 dB	
Operating & Storage Temperature		- 40° C ~ + 85° C	
Package Dimensions	Light Duty (B)	3.0mm (Φ) x 55.0mm (L)	
	Medium Duty (L)	3.0mm (Φ) x 65.0mm (L)	

Note1: All values specified are without connectors.

Note2: Higher performance specifications upon request.

Note3: Fiber Type Corning SMF-28e.

➔ Ordering Information

D	W	W	C								
Port Number				Grade	Coupling Ratio		Fiber Length	Pigtail Style (=Package style)		Connector	
14: 1 x 4				P: Premium A: A Grade	XY%: XY% EVEN: Equal split		1: 1 meter 2: 2 meter	B: bare fiber L: 900 μm loose tube		0: None 7: LC/UPC 1: FC/PC 8: LC/SPC 2: FC/APC 9: Special 3: SC/ PC A: FC/UPC 4: SC/APC B: SC/UPC 5: FC/SPC C: ST 6: SC/SPC	

FBT Coupler

1x4 Single Fused Triple Window Wideband Coupler

➔ Specifications

Parameter	Premium	A Grade
Operating Wavelength Range	1270-1350, 1480-1500 & 1510-1590 nm	
Bandwidth	1 x 4	
Port Configuration	25/25/25/25	
Insertion Loss (Max)	≤ 7.1 dB	≤ 7.3 dB
Uniformity (Typical)	≤ 1.0 dB	≤ 1.2 dB
Return Loss	≥ 55 dB	≥ 50 dB
PDL	≤ 0.2 dB	≤ 0.3 dB
Operating Temperature	- 40° C ~ + 70° C	
Storage Temperature	- 40° C ~ + 85° C	
Package Dimensions	Light Duty (B)	3.0mm (Φ) x 55.0mm (L)
	Medium Duty (L)	3.0mm (Φ) x 65.0mm (L)

Note1: All values specified are without connectors.

Note3: Fiber Type – Corning SMF-28e.

➔ Ordering Information

S	F	C	T	1	4	E	V	E	N	Fiber Length	Pigtail Style	Connector	
				Port Number 14: 1 x 4		Grade P: Premium A: A Grade		Coupling Ratio 25/25/25/25		1: 1 meter 2: 2 meter	(=Package style) B: bare fiber L: 900 μm loose tube	0: None 1: FC/PC 2: FC/APC 3: SC/ PC 4: SC/APC 5: FC/SPC 6: SC/SPC	7: LC/UPC 8: LC/SPC 9: Special A: FC/UPC B: SC/UPC C: ST

Parameter		Premium	A Grade
Operating Wavelength Range		1310 ± 20 nm or 1550 ± 20 nm	
Insertion Loss		≤ 3.5 dB	≤ 3.7 dB
Uniformity		≤ 0.6 dB	≤ 0.9 dB
Return Loss		≥ 55 dB (1x2)	≥65dB (2x2)
PDL		≤ 0.03 dB	≤ 0.05 dB
TDL		≤ 0.2dB	
Operating & Storage Temperature		- 40° C ~ + 85° C	
Package Dimensions	Light Duty (B)	3.0mm (Φ) x 55.0mm (L)	
	Medium Duty (L)	3.0mm (Φ) x 60.0mm (L)	
	Heavy Duty (K, R)	100.0mm x 12.0mm x 8.0mm	

Coupling Ratio	Max Insertion Loss	
	Premium	A Grade
40/60	4.7/ 2.7 dB	5.0/2.9 dB
30/70	6.0/1.9 dB	6.4/2.2 dB
20/80	7.9/1.2 dB	8.5/1.4 dB
10/90	11.3/0.6 dB	12.7/0.8 dB
5/95	15.0/0.4 dB	16.0/0.5 dB
1/99	23.5/0.3 dB	24.0/0.4 dB

Note3: Fiber Type – Corning SMF-28e unless otherwise specified.

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FBT Coupler

Compact Size Dual Window Wideband Coupler

➔ Specifications (50/50)

Parameter	Premium	A Grade
Operating Wavelength Range	1310 & 1550 nm $\pm$ 40 nm	
Insertion Loss	$\leq$ 3.6 dB	$\leq$ 3.9 dB
Uniformity (Typical)	$\leq$ 0.8 dB	$\leq$ 1.0 dB
Return Loss	$\geq$ 55 dB (1x2) $\geq$ 65dB (2x2)	
PDL	$\leq$ 0.15 dB	$\leq$ 0.2 dB
TDL	$\leq$ 0.2dB (-10°C ~ +75°C)	$\leq$ 0.35dB (-40°C ~ +85°C)
Operating & Storage Temperature	- 40° C ~ + 85° C	
Package Dimensions	Light Duty (B)	3.0mm (Φ) x 35.0mm (L)
	Medium Duty (L)	3.0mm (Φ) x 45.0mm (L)

➔ Tap Coupler

Coupling Ratio	Max Insertion Loss	
	Premium	A Grade
40/60	4.7/2.7 dB	5.0/2.5 dB
30/70	6.0/1.9 dB	6.4/2.2 dB
20/80	7.9/1.2 dB	8.5/1.4 dB
10/90	11.3/0.6 dB	12.7/0.8 dB
5/95	15.0/0.4 dB	16.0/0.5 dB
1/99	23.5/0.3 dB	25.0/0.4 dB

Note1: All values specified are without connectors.

Note2: Higher performance specifications are available upon request.

Note3: Fiber Type Corning SMF-28e.

➔ Ordering Information

D	W	C	C							
				Port Number	Grade	Coupling Ratio	Fiber Length	Pigtail Style	Connector	
				12: 1 x 2	P: Premium	XY % : XY %	1: 1 meter	(=Package style)	0: None	7: LC/UPC
				22: 2 x 2	A: A Grade		2: 2 meter	B: bare fiber	1: FC/PC	8: LC/SPC
								L: 900 μm loose tube	2: FC/APC	9: Special
									3: SC/ PC	A: FC/UPC
									4: SC/APC	B: SC/UPC
									5: FC/SPC	C: ST
									6: SC/SPC	

➔ Specifications

Parameter		
Operating Wavelength Range		1310 or 1550 ± 40 nm
Split Ratio		50/50
Insertion Loss		≤ 3.5 dB
Uniformity		≤ 0.4 dB
Return Loss		≥ 55 dB
PDL		≤ 0.02 dB
TDL		≤ 0.2 dB
Operating & Storage Temperature		- 40° C ~ + 85° C
Package Dimensions	Light Duty (B)	3.0mm (Φ) x 35.0mm (L)
	Medium Duty (L)	3.0mm (Φ) x 60.0mm (L)
	Heavy Duty (K, R)	100.0mm x 12.0mm x 8.0mm

Note1: All values specified are without connectors.

Note2: Fiber Type Corning SMF-28e.

➔ Ordering Information

C	U	P	C	-	1	2	-	P	-	5	0	5	0	-		-		-		-	
					Port Number			Grade		Coupling Ratio					Center Wavelength		Fiber Length		Pigtail Style		Connector
					12: 1 x 2			P: Premium		50/50					E: 1310 nm H: 1550 nm		1: 1 meter 2: 2 meter S: Special		(=Package style) B: bare fiber L: 900 μm loose tube K: 2mm cable R: 3mm cable		0: None 7: LC/UPC 1: FC/PC 8: LC/SPC 2: FC/APC 9: Special 3: SC/ PC A: FC/UPC 4: SC/APC B: SC/UPC 5: FC/SPC C: ST 6: SC/SPC

➔ Specifications

Parameter		1 x 4	1x 8	1 x 16	1 x 32
Operating Wavelength Range		1260-1650 nm			
Insertion Loss		≤ 7.5 dB	≤ 11.0 dB	≤ 14.2 dB	≤ 17.5 dB
Uniformity		≤ 0.8 dB	≤ 1.0 dB	≤ 1.5 dB	≤ 2.0 dB
Return Loss		≥ 55 dB			
PDL		≤ 0.2 dB	≤ 0.3 dB	≤ 0.3 dB	≤ 0.4 dB
Maximum Power		300 mW			
Operating & Storage Temperature		- 40° C ~ + 85° C			
Package Dimensions (in mm)	Pigtailed	40 x 4 x 4	40 x 5 x 4	50 x 5 x 4	55 x 7 x 4
	1RU 19" Rack Mount	438.0 x 330.2 x 43.7			
	LGX Box	159 x 130 x 30	159 x 130 x 59	159 x 130 x 120	152.4 x 130 x 175

Note1: All values specified are without connectors.

Note2: Higher performance specifications are available upon request.

Note3: Fiber Type – Corning SMF-28e.

➔ Ordering Information

P	L	C	-	-	-	-	-	-	-
									
Port Number				Packaging		Fiber Length (for 'R' packaging only)		Pigtail Style	
104: 1 x 4				R: Pigtailed		1: 1 meter		A: ribbon fiber	
108: 1 x 8				M: 1RU 19" rack mount		2: 2 meter		B: bare fiber	
116: 1 x 16				X: LGX box				L: 900 μm loose tube	
132: 1 x 32								R: 3mm cable	
								Connector	
								0: None	
								1: FC/PC	
								2: FC/APC	
								3: SC/ PC	
								4: SC/APC	
								5: FC/SPC	
								6: SC/SPC	
								7: LC/UPC	
								8: LC/SPC	
								9: Special	
								A: FC/UPC	
								B: SC/UPC	
								C: ST	

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