Couplers, WDMs

Fiber optic couplers are devices used in optical fiber systems with one or more input fibers and one or several output fibers. Light entering an input fiber can appear at one or more outputs and its power distribution potentially depending on the wavelength and polarization. Such couplers can be fabricated in different ways, for example by thermally fusing fibers so that their cores get into intimate contact. If all involved fibers are single-mode (supporting only a single mode per polarization direction for a given wavelength), there are certain physical restrictions on the performance of the coupler. In particular, it is not possible to combine two or more inputs of the same optical frequency into one single-polarization output without significant excess losses. However, such a restriction does not occur for different input wavelengths: there are couplers that can combine two inputs at different wavelengths into one output without exhibiting significant losses. Wavelength-sensitive couplers are used as multiplexers in wavelength-division multiplexing (WDM) telecom systems to combine several input channels with different wavelengths, or to separate channels.

Sintec offers a varied selection of double-clad, single mode, multimode, and polarization-maintaining fiber couplers as well as RGB combiners and WDMs. These tools allow single fiber input to be split into 2 outputs, multiple inputs to be combined into one output, and two fibers to be joined. Our SM 2x2 fiber couplers also include a selection of couplers for OCT applications

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Near Infrared Coupler

The Near Infrared Coupler splits light at any selected wavelength from 700nm to 1150nm. Designed for applications in fibre laser, sensor and avionics applications, the coupler utilizes G&H's low loss fused fibre technology. No light leaves the fibre and therefore no alignment is required; and there are no unwanted reflections. Furthermore the output fibre pigtails may be directly integrated into beam delivery systems. For components and modules which combine different wavelengths within the near infrared region please refer to the datasheet 'Near Infrared WDM'.

Key Features:

- 700 to 1150nm operation
- Any coupling ratio available
- All fibre – no alignment required
- No unwanted reflections
- Low light loss
- High power handling

Applications:

- Fibre lasers
- Sensors
- Avionics
- Biomedical equipment
- Research

Optical Specifications

Coupling Ratio (%)[3]	Grade	Available Wavelength(s)	Available Housing Option	Signal Path Insertion Loss (dB)[1,2]	Tap Path Insertion Loss (dB)[1,2]
1	A	700 to 1150nm	3,4,5,6	0.15	24.9
1	B	700 to 1150nm	3,4,5,6	0.20	25.3
5	A	700 to 1150nm	3,4,5,6	0.40	15.9
5	B	700 to 1150nm	3,4,5,6	0.50	16.2
10	A	700 to 1150nm	3,4,5,6	0.9	12.2
10	B	700 to 1150nm	3,4,5,6	1.1	12.4
20	A	700 to 1150nm	3,4,5,6	1.5	8.4
20	B	700 to 1150nm	3,4,5,6	1.7	8.6
30	A	700 to 1150nm	3,4,5,6	2.2	6.4
30	B	700 to 1150nm	3,4,5,6	2.4	6.4
40	A	700 to 1150nm	3,4,5,6	3.0	4.9
40	B	700 to 1150nm	3,4,5,6	3.2	5.1
50	A	700 to 1150nm	3,4,5,6	3.8	3.8
50	B	700 to 1150nm	3,4,5,6	4.0	4.0

1. In 2x2 couplers insertion loss is not specified for launch through second input port P4 (coloured blue)
2. Maximum insertion loss at operating wavelength. Not including TDL, PDL or connector losses.
3. Any coupling ratio available. Please contact us for specifications of coupling ratios not listed.

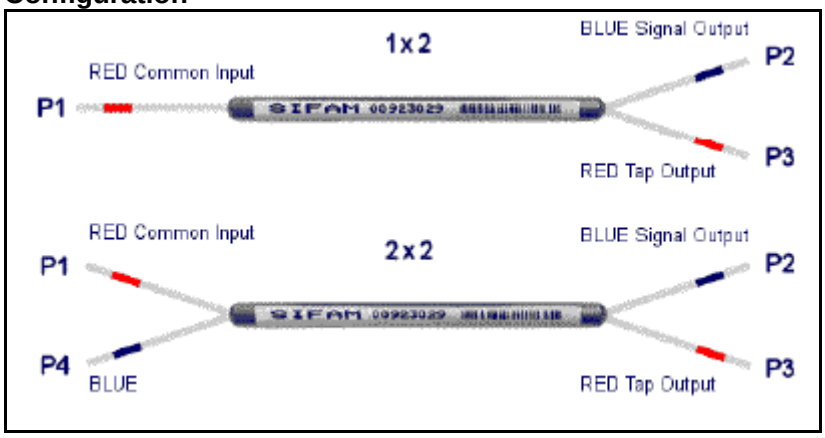
Parameter	**Specification**	**Unit**
Operating Wavelength	Specified wavelength within the range 700-1150nm	nm
Operating / Storage Temperature Range	-40 to +75 / -40 to + 85	^{o}C
Pigtail Tensile Load	5	N
Fibre Type	Speciality singlemode fibre	

1. For connectorised component, operating temperature range is –5 to +75^{o}C.

Housing Option

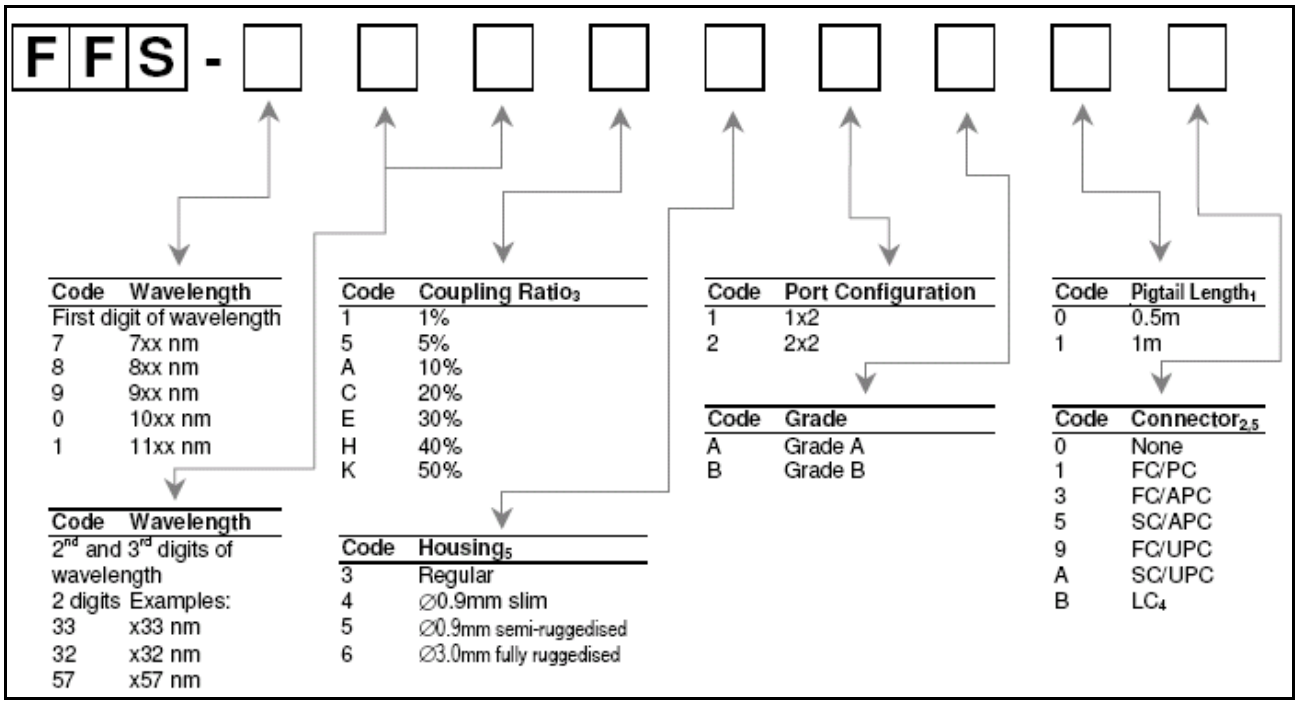
Housing Code	Description	1x2, 2x2 Dimension(mm)	Pigtail
3	Regula	3.0 (ϕ) x 50 (L)	Primary-coated fibre
4	ϕ0.9 mm slim	3.0 (ϕ) x 60 (L)	ϕ0.9mm loose-tube
5	ϕ0.9 mm semi-ruggedised	5.0 (ϕ) x 75 (L)	ϕ0.9 mm loose-tube
6	ϕ3.0 mm fully-ruggedised	80(L)x10(W)x8(H)	ϕ3.0 mm fan-out sleeving

Configuration



Ordering Code Information

- FFS-780K31A10 (Fused Fibre Speciality Coupler, 780nm, 50/50 coupling ratio, regular housing, 1x2, A grade, 1m pigtails, no connectors)
- FFS-060K31A10 (Fused Fibre Speciality Coupler, 1060nm, 50/50 coupling ratio, regular housing, 1x2, A grade, 1m pigtails, no connectors)



1. Minimum pigtail length. Further pigtail lengths available on request. Where connectorised, pigtail length is to connector end face.
2. Insertion Loss in specification table does not include connector losses.
3. Any coupling ratio available. Please contact G&H for ordering codes of coupling ratios not listed.
4. LC connector not available for housing code 6, fully ruggedised housing.
5. Connectors may be fitted to housing types 4, 5 and 6. For connectorisation of housing type 3 please contact the sales office.

PM Coupler

The G&H PM Coupler enables the accurate monitoring and splitting of optical signals in polarisation maintaining fibre. Manufactured using industry-standard PM fibre, the PM Coupler is available in any coupling ratio from 1% to 50%. Based on G&H's fused fibre technology, the PM Coupler demonstrates very low loss, high power handling and there is no price penalty for adding a second input port. The centre operating wavelength may be chosen from within a wide variety of operating passbands, including 980, 1064, 1310, 14xx, 15xx and 16xx.

In common with all PM components, it is necessary to launch into either the slow or the fast axis to maintain polarisation. For the G&H PM Coupler, specifications are based on slow axis launch, although fast axis versions are also available if requested.

Key Features:

- All PM fibre construction
- Low excess loss
- High power handling
- 980, 1064, C, L and S bands available
- Slow axis operation as standard
- Fast axis operation also available

Applications:

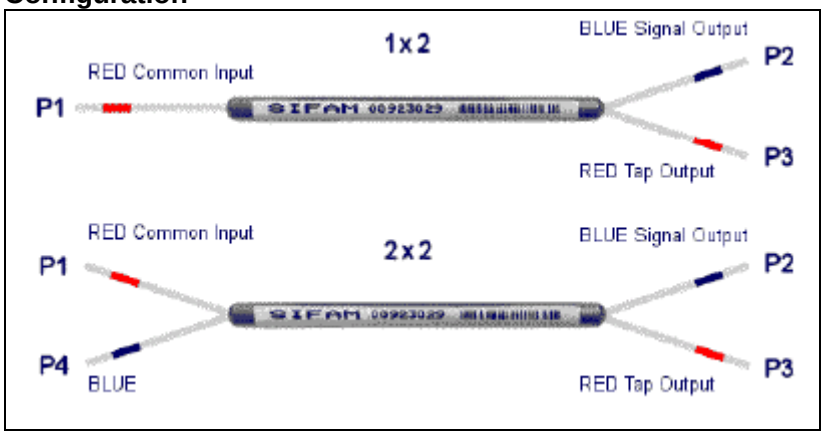
- Power monitoring of PM sources
- Coherent communications
- Fibre gyroscopes
- High power fibre lasers
- Fibre amplifiers

Optical Specifications[1]

Parameter	Specification						Unit
Centre Wavelength Range	9xx	10xx	1310	14xx	15xx	16xx	nm
Available Wavelengths[2]	915-999	1000-1099	1310	1425-1499	1500-1599	1600-1650	nm
Coupling Ratio	1/99						%
Coupling Ratio Tolerance	+/- 0.5						%
Extinction Ratio[3], Grade A	20	20	20	20	20	20	dB
Extinction Ratio[3], Grade B	17	17	17	17	17	17	dB
Coupling Ratio	5/95						%
Coupling Ratio Tolerance	+/- 1.5						%
Extinction Ratio[3], Grade A	20	20	20	20	20	20	dB
Extinction Ratio[3], Grade B	17	17	17	17	17	17	dB
Coupling Ratio	10/90						%
Coupling Ratio Tolerance	+/- 3.0						%
Extinction Ratio[3], Grade A	20	20	20	20	20	20	dB
Extinction Ratio[3], Grade B	17	17	17	17	17	17	dB
Coupling Ratio	33/67						%
Coupling Ratio Tolerance	+/- 4.0						%
Extinction Ratio[3], Grade A	20	20	20	20	20	20	dB
Extinction Ratio[3], Grade B	17	17	17	17	17	17	dB
Coupling Ratio	50/505						%
Coupling Ratio Tolerance	+/- 5.0						%
Extinction Ratio[3], Grade A	20	20	20	20	20	20	dB
Extinction Ratio[3], Grade B	17	17	17	17	17	17	dB
Excess Loss Grade A	0.3	0.3	0.3	0.3	0.3	0.3	dB
Excess Loss Grade B	0.5	0.5	0.5	0.5	0.5	0.5	dB
Return Loss/Directivity	50						dB
Pigtail Tensile Load	5						N
Operating Temperature	-5 to +751						°C
Storage Temperature	-40 to +85						°C
Fibre Type	Polarisation maintaining fibre (industry-standard profile)						

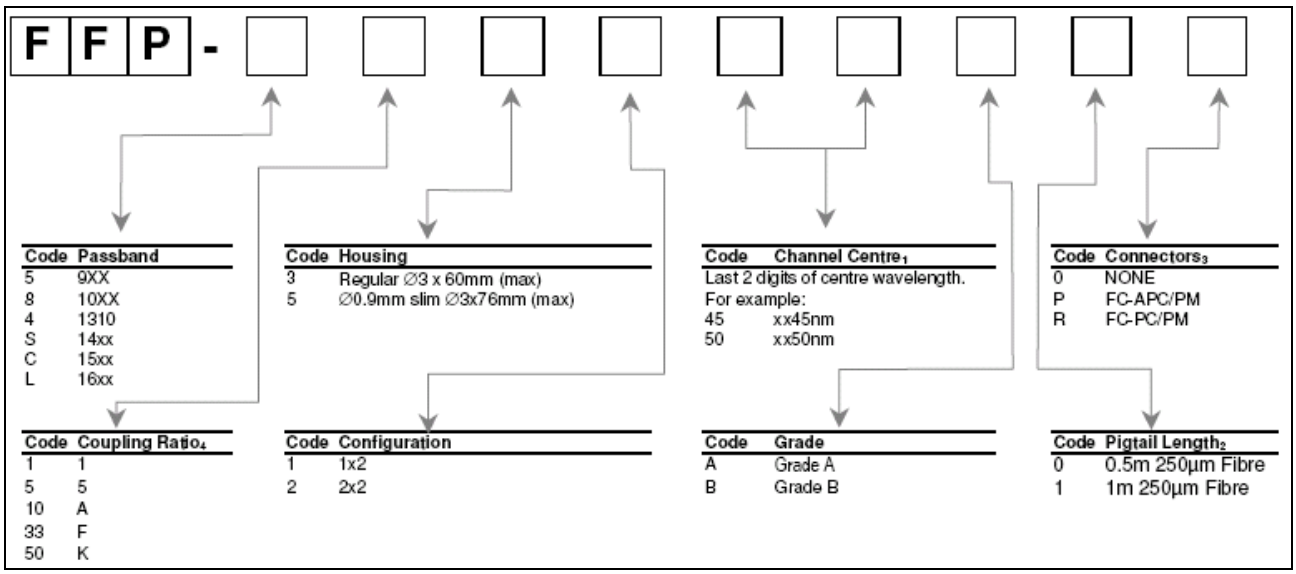
1. All specifications are for operation at room temperature.
2. The centre wavelength may be selected from within the available wavelength ranges supplied.
3. Defined for signal path P1-P2.
4. Defined for both signal path P1-P2 and tap path P1-P3.
5. Preliminary specifications.

Configuration



Ordering Code Information

Example: FFP-CK3250A10 (C band, PM Coupler, 50/50 coupling ratio, regular housing, 2x2, channel centre =1550nm, grade A, 1m pigtail, no connector)



1. Channel centre must be within the wavelength ranges shown in the Optical Specifications table.
2. Minimum pigtail length. Other pigtail lengths are available on request.
3. Optical specifications in specification table do not include connector loss. Other connectors available on request.
4. Other coupling ratios available on request.
5. PM Products are manufactured using 250µm PANDA PM fibre, 400µm PANDA PM fibre available at wavelengths higher than 1400nm.

Sintec Optronics

PM Low Ratio Tap Coupler

The G&H Fused PM LRT, taps off low power from a signal path whilst maintaining polarisation through the component. G&H proprietary PM manufacturing technology provides tap ratios as low as 0.01% with ultra low loss and high polarisation extinction ratio. The all fibre construction and excellent loss characteristics provide exceptional reliability at high powers. PM LRT's also exhibit improved tap ratio stability when input polarisation extinction ratio levels are low or fluctuating.

These high performance parts are available at a range of wavelengths with different fibre options. PM LRTs can therefore be readily specified in a wide variety of applications, enabling rapid design cycles and new project builds.

Standard parts are available at wavelengths from 900 – 1600nm. For other wavelengths or coupling ratios please contact the sales office.

Key Features:
- Low Loss
- High PER
- High power handling
- PM PANDA Fibre on all ports

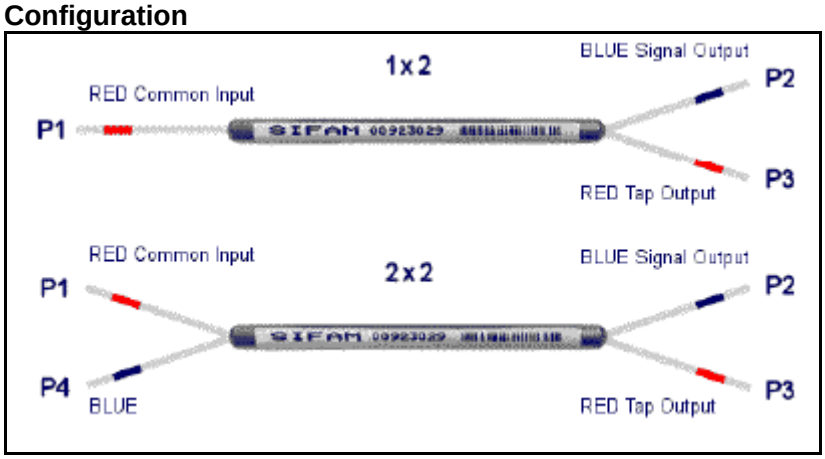
Applications:
- Fibre lasers
- Instrumentation

Optical Specifications

Parameter	Specification[3]					Unit
Coupling Ratio	0.01	0.1	1	5	10	%
Tap Insertion Loss[1]	36 -44	27-33	18.2-23	11.9-14.9	8.86-1.85	dB
Signal Insertion Loss[1]	0.3(Typ<0.1)	0.3 (Typ<0.1)	0.37	0.6	0.9	dB
1300 – 1600 Signal PER[2]	>20					dB
900 – 1100 Signal PER[2]	>20					dB
Return Loss	>55					NA
Operating Wavelength[4]	Any Wavelength from 900-1100nm and 1300-1600nm					NA
Housing	Regular Ø3.0 x 60 (max)					
Fibre Type	PM PANDA Fibre					

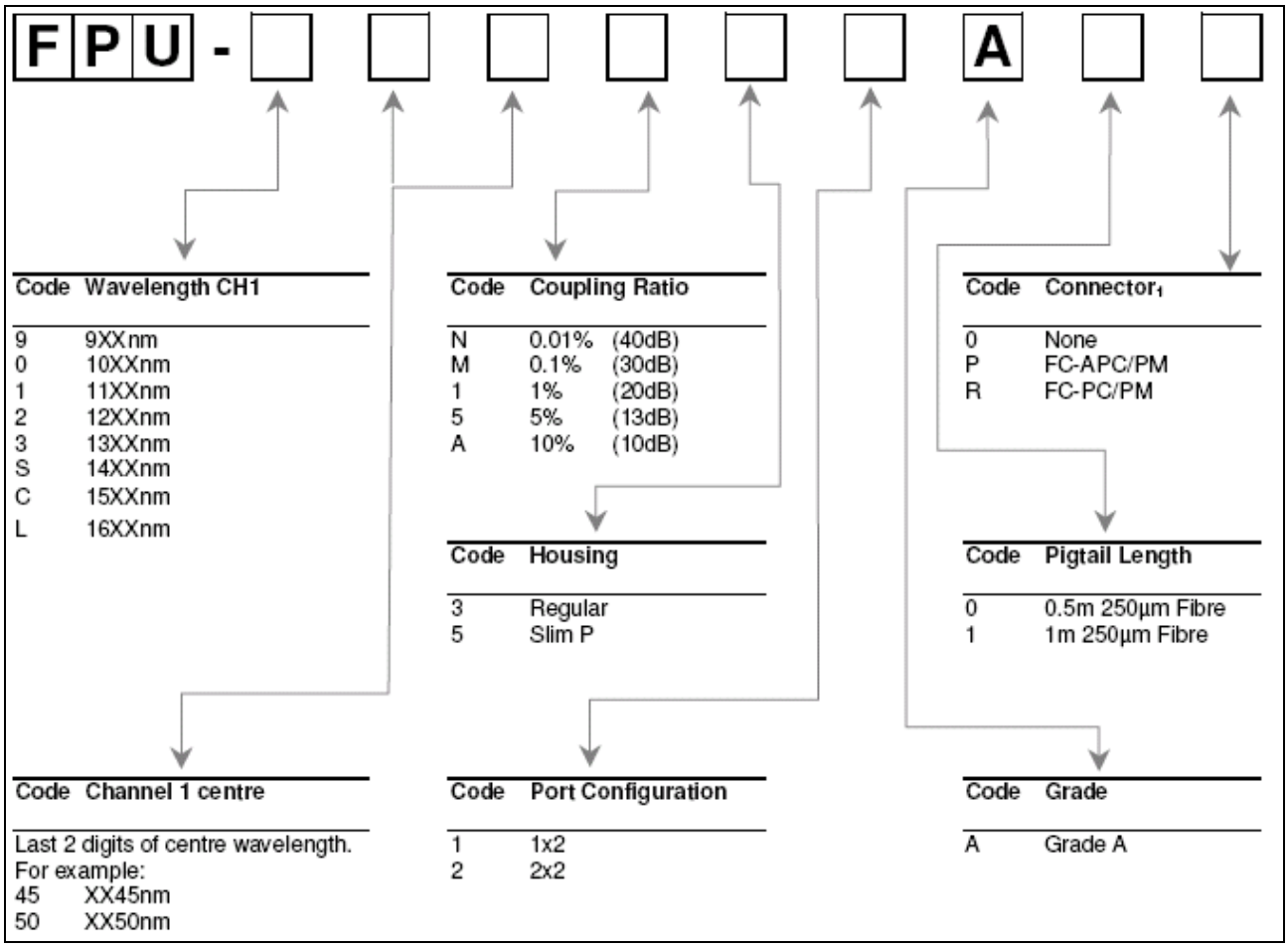
1. Insertion Loss at operating wavelength. Not including TDL.
2. Devices manufactured to operate in fast axis as standard. For use in a slow-axis system a 90° PM splice is required.
3. Specifications shown are for operation at room temperature.
4. The centre wavelength may be selected from within the available wavelength range supplied.

Configuration



Ordering Code Information

Sample: FPU-060N31A10 (Fused Fibre LRT, 1060nm, 0.01% tap, Regular housing, 1x2, Grade A, 1m pigtails, No connectors)



PM Products are manufactured using 250µm PANDA PM fibre, 400µm PANDA PM fibre available at wavelengths higher than 1400nm.

Ultra Low Ratio Tap Coupler

The Ultra Low Ratio Tap Coupler splits a very small amount of light from a signal path to a tap port. Tested at up to 50W optical power, it's main application is in the monitoring of very high power optical sources such as fibre lasers. Low tap ratios such as 0.1%, 0.01% or 0.001% enable the monitoring photodetector to operate without damage or saturation.

G&H proprietary manufacturing technology provides ultra-low loss in the signal path, thereby maximising optical power handling. Consistently high return loss (>55dB) reduces the amount of optical power reflected back along the input fibre. This helps the fibre laser operate in a stable manner.

Standard parts are available for wavelengths from 700 to 1599nm. For other wavelengths, coupling ratios or customised fibre types please contact the sales office.

Key Features:

- Tap ratio up to 40dB
- High return loss
- Ultra-low signal insertion loss
- High power handling
- Available at wide variety of laser wavelengths
- Custom product

Applications:

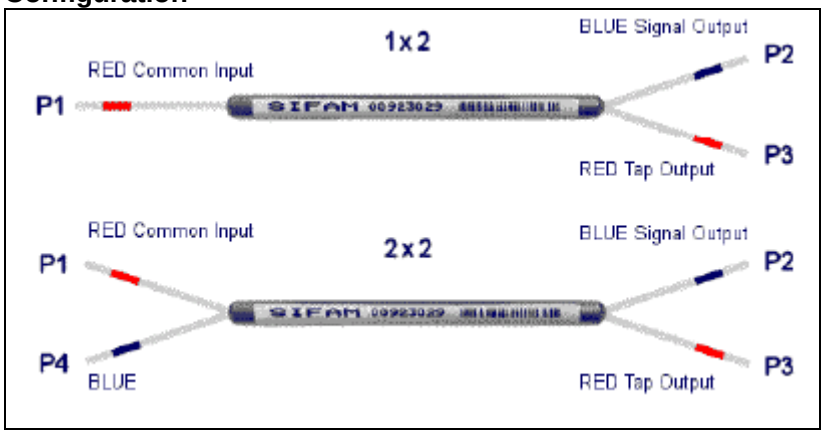
- Fibre Lasers
- RAMAN amplifiers
- High Power EDFA

Specifications

Parameter	Specification			Unit
Coupling Ratio	0.1	0.01	0.1	%
Tap Insertion Loss	30 (±3)	40 (±4)	50 (±5)	dB
Signal Insertion Loss [1,2]	0.1			dB
Return Loss	≥ 55			dB
Operating Wavelength [3]	Any selected wavelength from 700 to 1599nm			nm
Housing	Regular Æ3.0 x 50			mm
Operating Temperature	-40 to 75			°C
Storage Temperature	-40 to 85			°C
Pigtail Tensile Load	5			N
Fibre Type [4]	Singlemode			

1. Maximum insertion loss at operating wavelength. Not including TDL or PDL.
2. In 2x2 couplers insertion loss is not specified for launch through second input port P4 (coloured blue)
3. Other wavelengths available as custom components. Please contact the sales office.
4. For customised fibre types please contact the sales office.

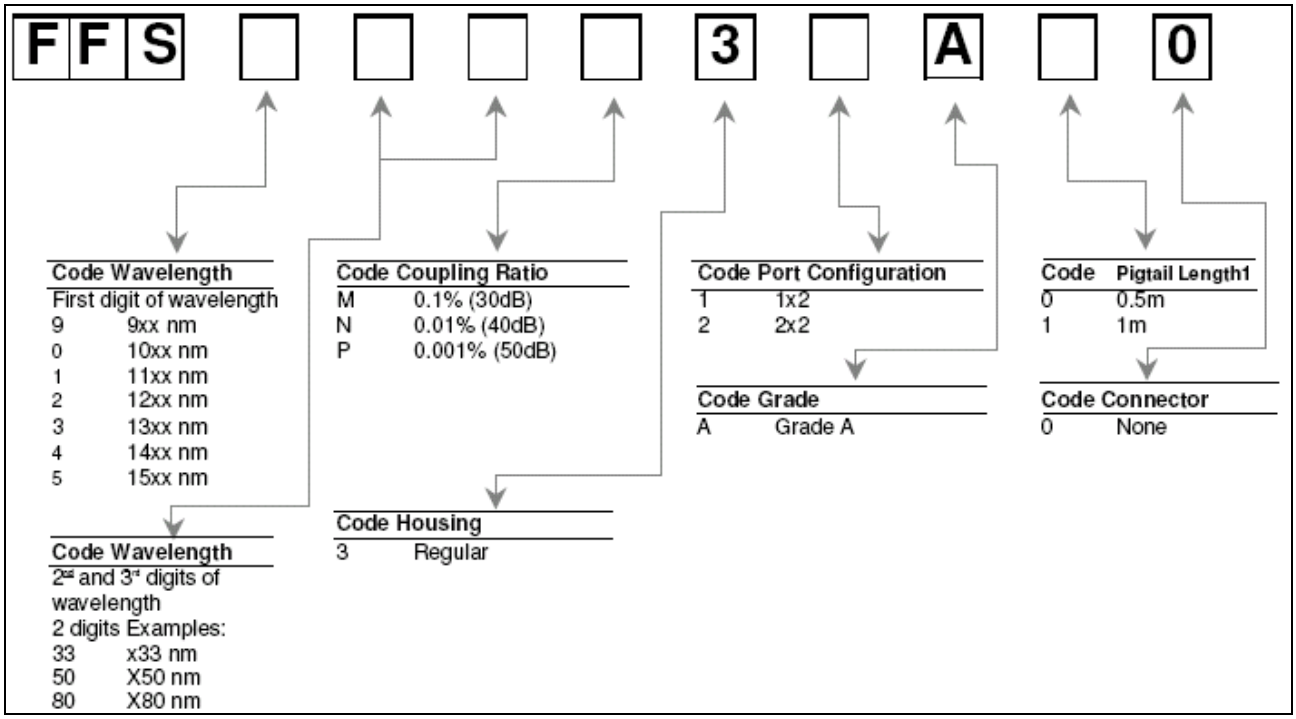
Configuration



Ordering Code

Examples:

1. FFS-080 P32 A10 (Fused Fibre Speciality Coupler, 1080nm, 0.001% coupling ratio, regular housing, 2x2, A grade, 1m pigtails, no connectors)
2. FFS-550 M32 A10 (Fused Fibre Speciality Coupler, 1550nm, 0.1% coupling ratio, regular housing, 2x2, A grade, 1m pigtails, no connectors)



1. Minimum pigtail length. Further pigtail lengths available on request.

Visible Wavelength Coupler

The Visible Wavelength Coupler splits or combines light in the visible region. Versions optimised for any wavelength within the range 450nm to 700nm may be selected.

Designed for applications in display systems, sensors and biomedical equipment, the coupler utilises G&H's low loss fused fibre technology.

No light leaves the fibre and therefore no alignment is required; and there are no unwanted reflections. Furthermore the output fibre pigtails may be directly integrated into beam delivery systems.

For components and modules which combine different wavelengths within the visible region please refer to the datasheet 'Visible Wavelength Combiners'.

Key Features:

- Visible wavelength operation
- Any coupling ratio available
- All fibre – no lens alignment
- No unwanted reflections
- Low light loss
- High power handling

Applications:

- Visible and display systems
- Sensors
- Biomedical equipment
- Research

Optical Specifications

Coupling Ratio (%)[3]	Available Housing Option	Grade[1]	Available Wavelength(s)	Coupling Ratio Tolerance (%)	Excess Loss (dB) [2]
10	3,4,5,6	A	500 to 700nm	±2	0.3
10	3,4,5,6	B	450 to 700nm	±3	0.5
20	3,4,5,6	A	500 to 700nm	±3	0.3
20	3,4,5,6	B	450 to 700nm	±4	0.5
30	3,4,5,6	A	500 to 700nm	±3	0.3
30	3,4,5,6	B	450 to 700nm	±4	0.5
40	3,4,5,6	A	500 to 700nm	±4	0.3
40	3,4,5,6	B	450 to 700nm	±5	0.5
50	3,4,5,6	A	500 to 700nm	±5	0.3
50	3,4,5,6	B	450 to 700nm	±6	0.5

1. In 2x2 couplers performance is not specified for launch through second input port P4 (coloured blue)
2. Includes fibre losses for up to 1m pigtail length. Does not include connector losses.
3. Any coupling ratio available. Please contact us for specifications of coupling ratios not listed.

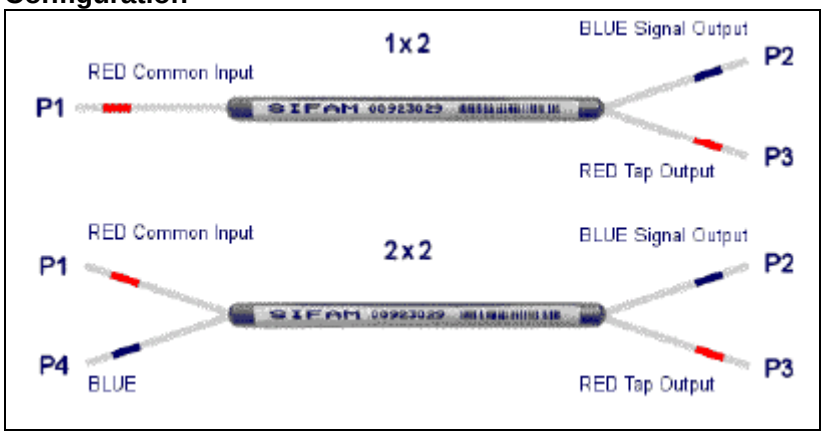
Parameter	**Specification**	**Unit**
Operating Wavelength	Specified wavelength within the range 450-700nm	nm
Operating/Storage Temperature Range[1]	-40 to +75 / -40 to + 85	^{o}C
Pigtail Tensile Load	5	N
Fibre Type	Short wavelength speciality fibre	

1. For connectorised component, operating temperature range is –5 to +75^{o}C.

Housing Option

Housing Code	Description	Dimensions (mm)	Pigtail
3	Regular	3.0 (ϕ) x 55 (L) max.	Primary-coated fibre
4	ϕ0.9 mm slim	3.0 (ϕ)x 76 (L) max.	ϕ0.9 mm loose-tube
5	ϕ0.9 mm semi-ruggedised	5.0 (ϕ) x 85 (L) max.	ϕ0.9 mm loose-tube
6	ϕ3.0mm fully-ruggedised	80 (L) x 10 (W) x 8 (H)	ϕ3.0 mm fan-out sleeving

Configuration[1]

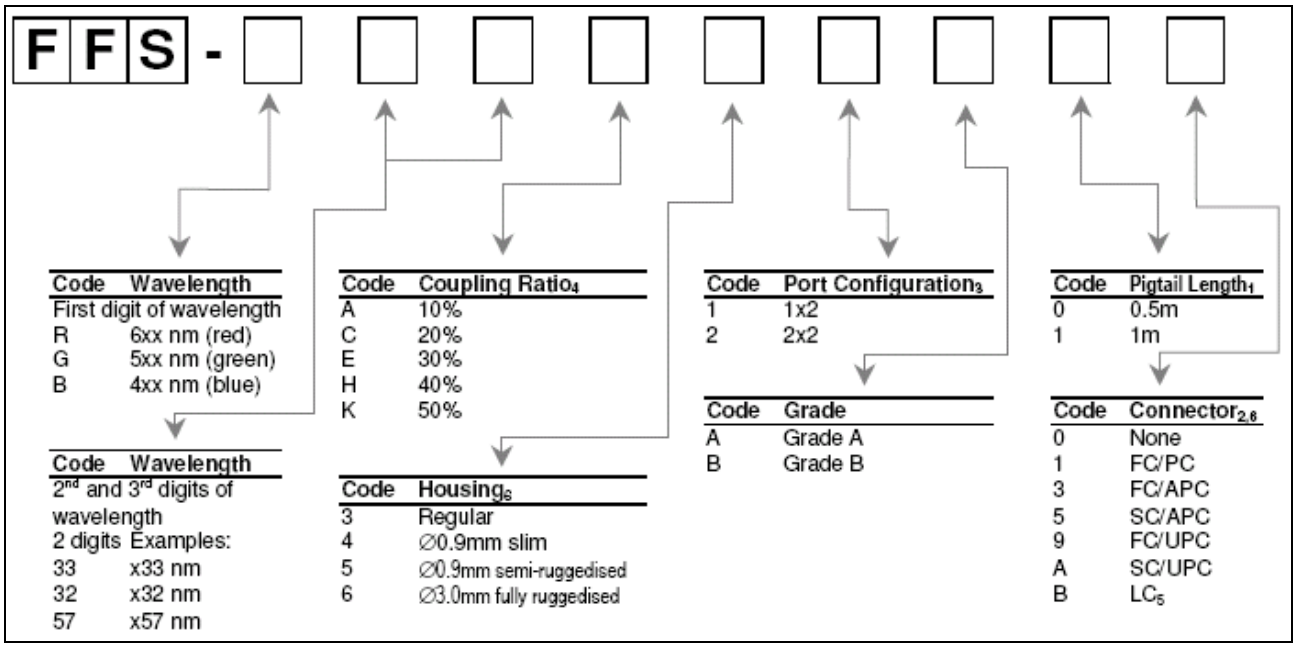


1. 1x2 couplers for blue wavelengths i.e. <500nm are supplied as a 2x2 with an external termination on port P4.

Ordering Code Information

Example:

FFS-G32K31A10 (Fused Fibre Speciality Coupler, 532nm, 50/50 coupling ratio, regular housing, 1x2, A grade, 1m pigtails, no connectors)



1. Minimum pigtail length. Further pigtail lengths available on request. Where connectorised, pigtail length is to connector end face.
2. Excess Loss in specification table does not include connector losses.
3. 1x2 couplers for blue wavelengths i.e. <500nm are supplied as a 2x2 with an external termination on port P4.
4. Any coupling ratio available. Please contact G&H for ordering codes of coupling ratios not listed.
5. LC connector not available for housing code 6, fully ruggedised housing.
6. Connectors may be fitted to housing types 4, 5 and 6. For connectorisation of housing type 3 please contact the sales office.

Near Infrared WDM

The Near Infrared WDM enables the low loss combining or splitting of a pair of wavelengths within the 700nm to 1150nm region. G&H can rapidly produce such custom WDMs, with typical minimum wavelength separation of 50nm.

Designed for applications in fibre laser, sensing, biomedical, military and avionics the WDM utilises G&H's low loss fused fibre technology. No light leaves the fibre and therefore no alignment is required. Furthermore the output fibre pigtails may be directly integrated into beam delivery systems.

Specific applications could include combining two sensor wavelengths onto one fibre, splitting laser harmonics, or combining wavelengths in fibre lasers.

For components which split optical signals of the same wavelength within the near infrared region please refer to the datasheet 'Near Infrared Coupler'.

Key Features:

- 700 to 1150nm operation
- Custom wavelength capability
- 50nm minimum wavelength spacing (<50nm channel spacing available on request)
- Low loss
- High power handling
- Custom product

Applications:

- Fibre lasers
- Sensors
- Biomedical equipment
- Avionics
- Military
- Research

Optical Specifications

Channel Spacing	Available Housing	Max Insertion Loss1,2,3	Min Isolation 3
100 – 50nm	3,4,5	0.5dB	12dB
>100nm	3,4,5	0.4dB	14dB

1. In 2x2 components insertion loss is not specified for launch through second input port P4 (coloured blue)
2. Maximum insertion loss at operating wavelength. Not including TDL, PDL or connector losses.
3. Improved specifications may be available- contact Sales Department.

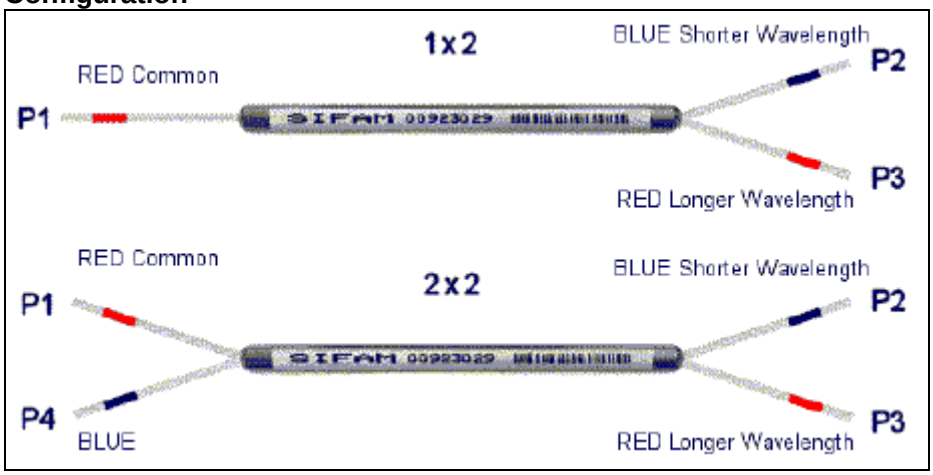
Parameter	**Specification**	**Unit**
Operating Wavelength	Specified wavelength within the range 700-1150nm	nm
Operating/Storage Temperature Range[1]	-40 to +75 / -40 to + 85	^{o}C
Pigtail Tensile Load	5	N
Fibre Type	Speciality singlemode fibre	

1. For connectorised component, operating temperature range is –5 to +75oC.

Housing Option

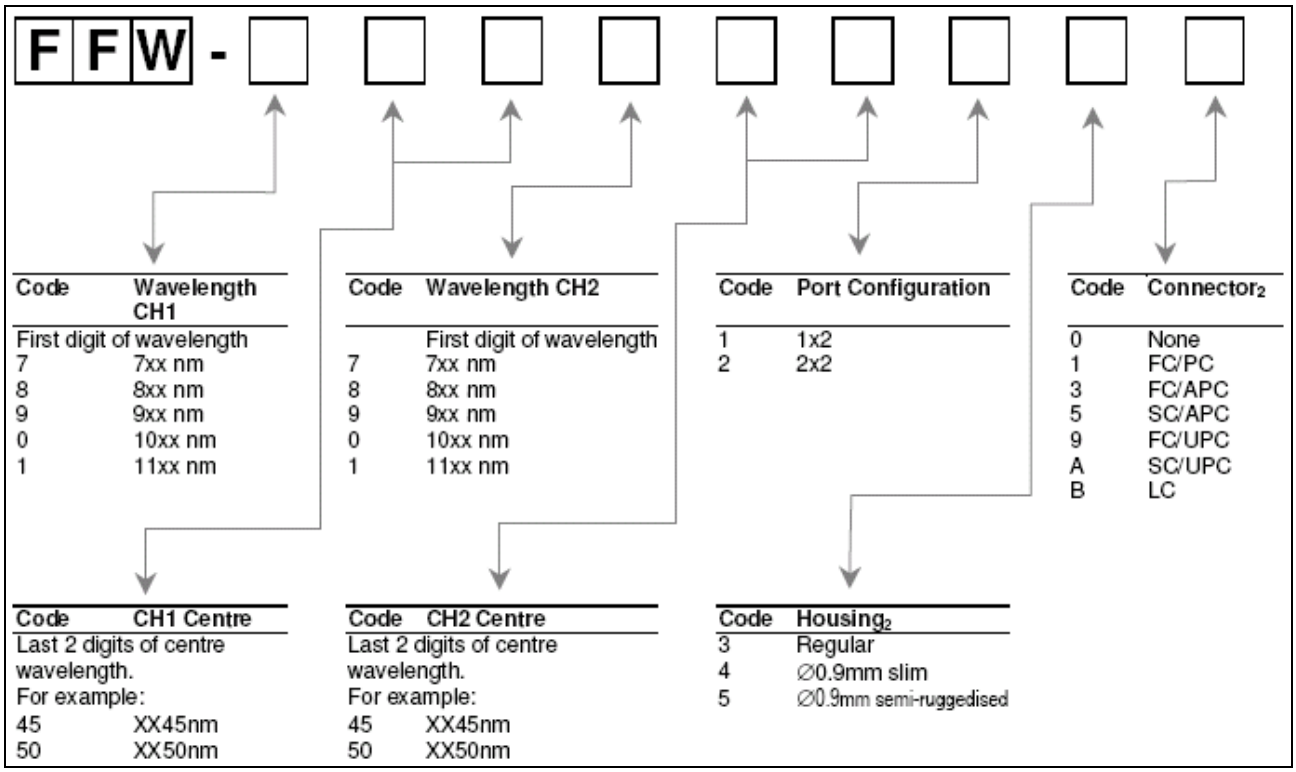
Housing Code	Description	1x2, 2x2 Dimensions (mm)	Pigtail
3	Regular	3.0 (ϕ) x 60 (L)	Primary-coated fibre
4	ϕ0.9 mm slim	3.0 (ϕ) x 70 (L)	ϕ0.9mm loose-tube
5	ϕ0.9 mm semi-ruggedised	5.0 (ϕ) x 85 (L)	ϕ0.9 mm loose-tube

Configuration



Ordering Code Information

FFW-780060130 (Fused Fibre WDM, 780/1060, 1x2, Regular Housing, 1m pigtails, No connectors)



Code	Wavelength CH1
First digit of wavelength	
7	7xx nm
8	8xx nm
9	9xx nm
0	10xx nm
1	11xx nm

Code	Wavelength CH2
	First digit of wavelength
7	7xx nm
8	8xx nm
9	9xx nm
0	10xx nm
1	11xx nm

Code	Port Configuration
1	1x2
2	2x2

Code	Connector[2]
0	None
1	FC/PC
3	FC/APC
5	SC/APC
9	FC/UPC
A	SC/UPC
B	LC

Code	CH1 Centre
Last 2 digits of centre wavelength. For example:	
45	XX45nm
50	XX50nm

Code	CH2 Centre
Last 2 digits of centre wavelength. For example:	
45	XX45nm
50	XX50nm

Code	Housing[2]
3	Regular
4	∅0.9mm slim
5	∅0.9mm semi-ruggedised

1. 1m Pigtail length as standard. For custom pigtail length requirements please contact the sales office.
2. Connectors may be fitted to housing types 4 and 5. For connectorisation of housing type 3 please contact the sales office.

PM WDM

The G&H Fused PM WDM, combines multiple wavelengths of light in PM Fibre whilst maintaining polarisation. G&H proprietary PM manufacturing technology provides low loss, with high polarisation extinction ratio. The all fibre construction offers excellent reliability and high power handling characteristics.

These high performance parts are available in many wavelength configurations, housing, fibre and connector options and can therefore be readily specified in a wide variety of applications, enabling rapid design cycles and new project builds.

In common with all PM components, it is necessary to launch into either the slow or the fast axis to maintain polarisation. For the G&H PM WDM, specifications are based on slow axis launch, although fast axis versions are also available if requested

Key Features:
- Low Loss
- High PER
- High power handling
- PM PANDA Fibre on all ports
- Slow Axis operation as standard
- Fast Axis operation available on request

Applications:
- Pump signal WDM for EDFA
- Fibre lasers
- Instrumentation

Optical Specifications

Wavelength			Available Housing	CH1 Insertion Loss1 (dB)	CH2 Insertion Loss1 (dB)	CH1 PER	CH2 PER
CH1	CH2	Spacing		Max (Typ)	Max (Typ)		
900-1100nm	900-1100nm	50-100nm	3	1.0 (0.5)	1.0 (0.5)	>15dB	>15dB
900-1100nm	900-1100nm	>100nm	3	0.7 (0.3)	0.7 (0.3)	>17dB	>17dB
900-1100nm[2]	1450 - 1600nm	-	3	0.32(0.2)	0.5(0.2)	>17dB2	>20dB
1300 - 1600nm	1300 - 1600nm	50-100nm	3	1.0 (0.5)	1.0 (0.5)	>17dB	>17dB
1300 - 1600nm	1300 - 1600nm	>100nm	3	0.7 (0.3)	0.7 (0.3)	>20dB	>20dB

1. Insertion loss specified at centre wavelength and room temperature.
2. 900-1100nm wavelength range may be below the 2nd order mode cut-off for the fibre used to manufacture this product type. Performance specified for single-mode incident on this path.
3. Custom specifications available on request
4. For wavelength spacing <50nm, please contact the sales office.

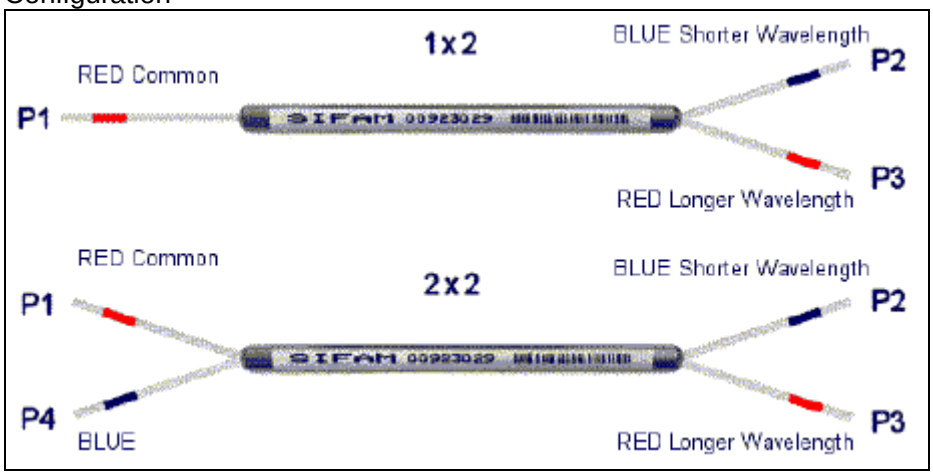
Parameter	Specification	Unit
Return Loss/Directivity1	55	dB
Pigtail Tensile Load	5	N
Optical Power Handling	1	W
Operating / Storage Temperature Range	–5 to +75 / -40 to +85	^{o}C
Fibre Type	PM PANDA Fibre	

1. Measured reference port P3 input for signal wavelength, P2 input for pump wavelength and P1 input for signal and pump wavelengths.

Housing Option

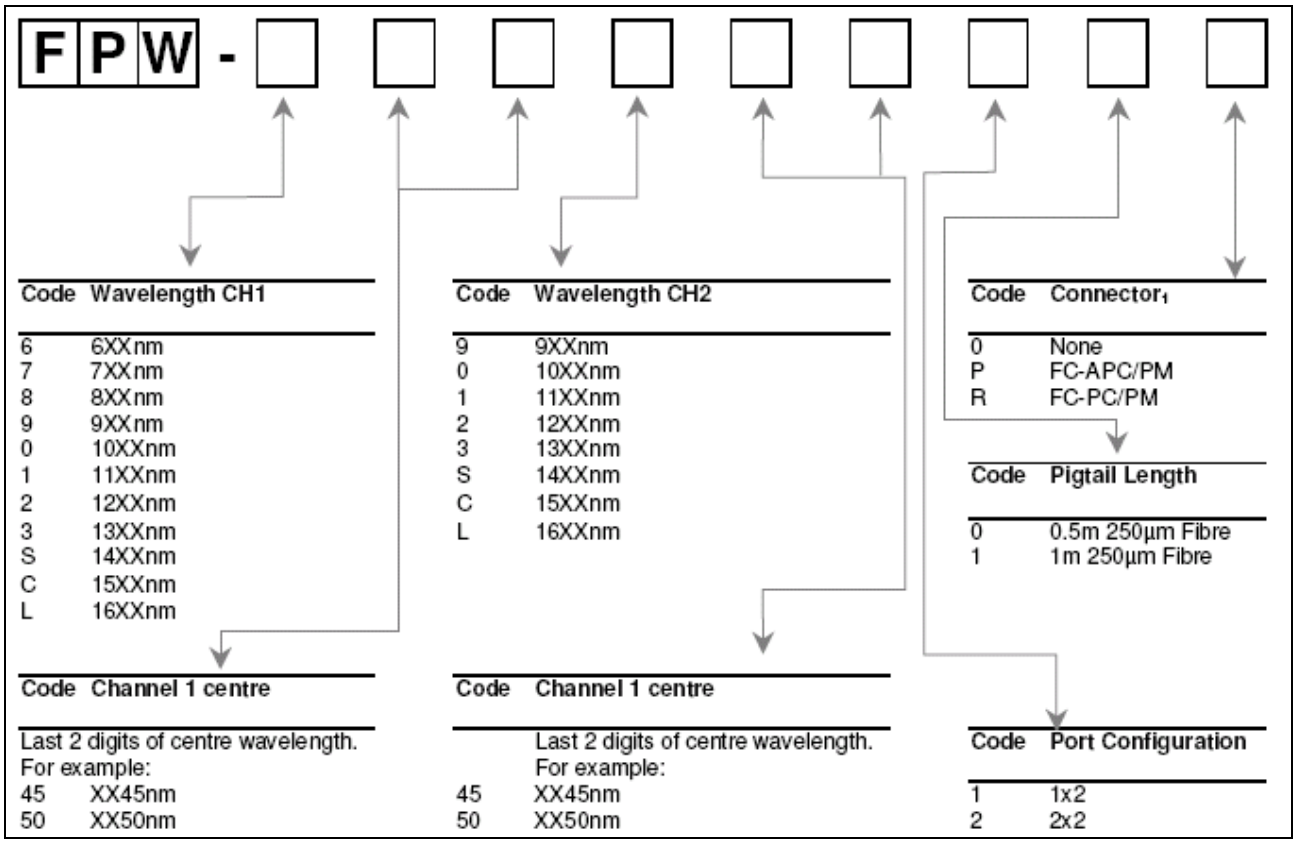
Housing Code	Description	Max Dimensions (mm)	Pigtail
3	Regular	3.0 (ϕ) x 85 (L)	Primary-coated fibre

Configuration



Ordering Code Information

Sample: FPW-980060110 (Fused Fibre WDM, 980/1060, 1x2, 1m pigtails, No connectors)



1. Insertion loss in specification table does not include connector losses.
2. The G&H high power housing option is available on request for this product.
3. PM Products are manufactured using 250µm PANDA PM fibre, 400µm PANDA PM fibre available at wavelengths higher than 1400nm.

WDM

Single Mode Wavelength Division Multiplexer

		STOZ-WDM	STOZ-WDM	STOZ-WDM	STOZ-WDM
Grade				P	P
Center Wavelength (λc)	nm	980 & 1550	980 & 1060	1310 & 1550	1480 & 1550
Operating Wavelength Range	nm	±15	±5	±10	±5
Min. Isolation at 23℃	dB	20	15	20	13
Max. Insertion Loss at 23℃	dB	0.2	0.35	0.3	0.4
Max PDL	dB	0.15	0.15	0.15	0.15
Thermal Stability	dB/℃	<=0.002 dB/ ℃ over -5 ℃ to +70℃	<=0.002 dB/ ℃ over -5 ℃ to +70℃	<=0.002 dB/ ℃ over -5 ℃ to +70℃	<=0.002 dB/ ℃ over -5 ℃ to +70℃
Min. Return Loss	dB	50	50	50	50
Min. Directivity	dB	50	50	50	50
Max. Optical Power (CW)	mW	500	500	500	500
Max. Tensile Load	N	5	5	5	5
Fiber Type		HI 1060 fiex	HI 1060 fiex	SMF-28e	SMF-28e
Operating Temperature	℃	-5 to +70	-5 to +70	-5 to +70	-5 to +70
Storage Temperature	℃	-40 to +85	-40 to +85	-40 to +85	-40 to +85
Package Dimensions		250um Bare Fiber dia. 3.0mmX40mm 900um Loose Tube dia. 3.0mmX56mm 3mm Loose Cable 90mmX16mmX9.0mm 3mm Cable 106X79mmX10mm (Plastics Type) (only for 980&1060)			

Above specifications are for device without connector
For devices with connectors, IL will be 0.3dB higher and RL will be 5dB lower.

Ordering Information

STOZ-WDM-①①①①-②-③③③③-④④④④-⑤

①①①①: Wavelength
9855 – 980 & 1550nm
9806 – 980 & 1060nm
SS - Specify

②: Port
1 – 1x2
2 – 2x2

③③③③: Connector Type on Part 1, 2, 3, 4
1 - FC/UPC
2 - FC/APC
3 - SC/UPC
4 - SC/APC
N - None
S - Specify

④④④④: Fiber Jacket on Part 1, 2, 3, 4
B – 250um Panda fiber
L - 900um Loose Tube Panda Fiber
C – 3mm Loose Cable
S - Specify

⑤: Fiber Length
1 – 1m
S – Specify

Ordering Information

STOZ-WDM-①①①①-②-③-④④④④-⑤⑤⑤⑤-⑥

①①: Wavelength
3155 – 1310 & 1550nm
4855 – 1480 & 1550nm
SS - Specify

④④④④: Connector Type on Part 1, 2, 3, 4
1 - FC/UPC
2 - FC/APC
3 - SC/UPC
4 - SC/APC
N - None
S - Specify

②: Grade
P – P Grade
S - Specify

③: Port
1 – 1x2
2 – 2x2

⑤⑤⑤⑤: Fiber Jacket on Port 1, 2, 3, 4
B – 250um Panda fiber
D – 400um Panda Fiber
L - 900um Loose Tube Panda Fiber
S - Specify

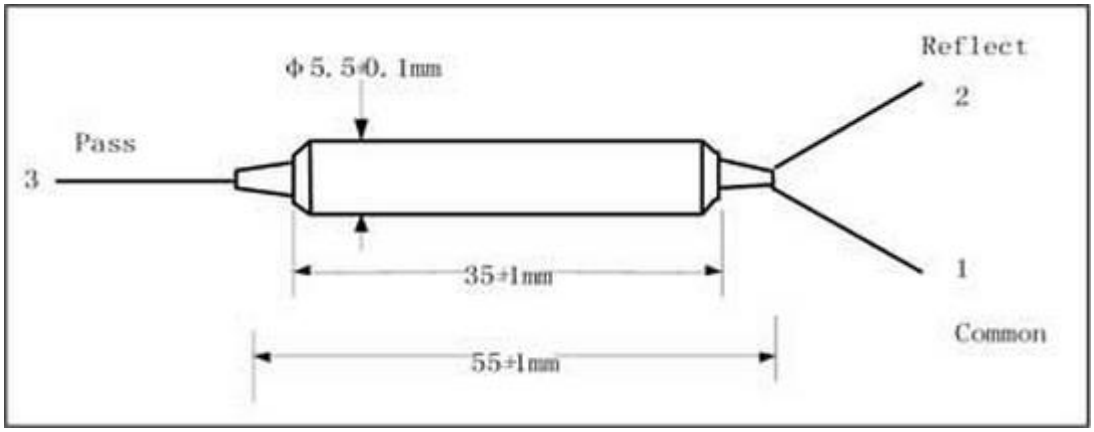
⑥: Fiber Length
1 – 1m
S – Specify

FWDM

Filter Wavelength Division Multiplexer

			STOZ-FWDM-2055	STOZ-FWDM-9806	STOZ-FWDM-3155 or 5531	STOZ-FWDM-4855 or 5548	STOZ-FWDM-5155 or 5551	STOZ-FWDM-5598 or 9855
Pass Band	Wavelength Range	nm	1950-2050	960-990	1270-1350 (1530-1600)	1450-1490 (1530-1580)	1500-1520 (1530-1570)	950-1010 (1500-1600)
	Max. Insertion Loss	dB	0.8	0.7	0.4	0.4	0.5	0.5
	Typ. Insertion Loss	dB	0.6	0.5	0.6	0.6	0.7	0.7
	Min. Isolation	dB	25	30	35	30	35	35
	Typ. Isolation	dB	30	25	30	25	30	30
Reflection Band	Wavelength Range	nm	1500-1600	1020-1080	1530-1600 (1270-1350)	1530-1580 (1450-1490)	1530-1570 (1500-1520)	1500-1600 (950-1010)
	Max. Insertion Loss	dB	0.6	0.5	0.3	0.3	0.3	0.3
	Typ. Insertion Loss	dB	0.4	0.3	0.5	0.5	0.5	0.5
	Min. Isolation	dB	12	15	15	15	15	15
	Typ. Isolation	dB	15	13	12	12	12	12
Min. Return Loss		dB	50	50	50	50	50	50
Min. Directivity (over 1500-1600nm)		dB	50	-	-	-	-	-
Max. PDL		dB	0.1	0.1	0.1	0.1	0.1	0.1
Typ. PDL		dB	0.05	0.05	0.05	0.05	0.05	0.05
Thermal Stability		dB	<=0.005	<=0.005	<=0.005	<=0.005	<=0.005	<=0.005
Max Optical Power (CW)		mW	500	300	500	500	500	500
Max Tensile Load		N	5	5	5	5	5	5
Fiber Type			SMF-28e	Hi 1060	SMF-28e for all ports			SMF-28e for pass port HI1060 for common and reflect ports
Operating Temperature		℃	-5 to +70	-5 to +70	-5 to +70	-5 to +70	-5 to +70	-5 to +70
Storage Temperature		℃	-40 to +85	-40 to +85	-40 to +85	-40 to +85	-40 to +85	-40 to +85

Above specifications are for device without connector
For devices with connectors, IL will be 0.3dB higher and RL will be 5dB lower.



Ordering Information

STOZ-FWDM-①①①①-②②②-③③③-④

①①①①: Wavelength

9806 – 980 Pass/1064 Reflect
3155 – 1310 Pass/1550 Reflect
5531 – 1550 Pass/1310 Reflect
4855 – 1480 Pass/1550 Reflect
5548 – 1550 Pass/1480 Reflect
5155 – 1510 Pass/1550 Reflect
5551 – 1550 Pass/1510 Reflect
5598 – 1550 Pass/980 Reflect
2055 – 2000 Pass/1550 Reflect

②②②: Connector Type on Part 1, 2, 3
1 - FC/UPC
2 - FC/APC
3 - SC/UPC
4 - SC/APC
N - None
S - Specify

③③③: Fiber Jacket on Port 1, 2, 3, 4
B – 250um Panda fiber
L - 900um Loose Tube Panda Fiber
S – Specify

④: Fiber Length
1 – 1m
0.8 – 0.8m
S – Specify

Couplers

Single Mode Coupler

		SMC	SMC	SMC	SMC	Single Mode Dual Window Wavelength Flattened Coupler (SDC)			
Number of ports									
Center Wavelength (λc)	nm	1310 or 1550	1310 or 1550	1310 or 1550	1310 or 1550	1310 and 1550	1310 and 1550	1310 and 1550	1310 and 1550
Operating Wavelength Range	nm	±20	±20	±20	±20	±40	±40	±40	±40
Coupling Ratio		01/99	05/95	10/90	50/50	01/99	05/95	10/90	50/50
Max. Insertion Loss at 23℃		21.5/0.2	14.6/0.4	10.8/0.6	3.4	23.5/0.3	15.2/0/4	11.3/0.6	3.6
Max PDL (Tap/Through Port)		0.3/0.05	0.3/0.05	0.25/0.05	0.05	0.15	0.15	0.15	0.15
Max. Excess Loss		0.15	0.15	0.15	0.15	0.1	0.1	0.1	0.1
Thermal Stability		<=0.002dB/℃ over -5 ℃ to +70℃	<=0.002dB/ ℃ over -5℃ to +70℃	<=0.002dB/ ℃ over -5℃ to +70℃	<=0.002dB/ ℃ over -5℃ to +70℃	<=0.002dB/ ℃ over -5℃ to +70℃	<=0.002dB/ ℃ over -5℃ to +70℃	<=0.002dB/ ℃ over -5℃ to +70℃	<=0.002dB/ ℃ over -5℃ to +70℃
Min. Directivity	1x2	50dB	50dB	50dB	50dB	55dB	55dB	55dB	55dB
	2x2	65dB	65dB	65dB	65dB	65dB	65dB	65dB	65dB
Max. Optical Power (CW)	mW	500	500	500	500	500	500	500	500
Max. Tensile Load	N	5	5	5	5	5	5	5	5
Fiber Type		SMF-28e	SMF-28e	SMF-28e	SMF-28e	SMF-28e	SMF-28e	SMF-28e	SMF-28e
Operating Temperature	℃	-5 to +50	-5 to +50	-5 to +50	-5 to +50	-5 to +70	-5 to +70	-5 to +70	-5 to +70
Storage Temperature	℃	-40 to +85	-40 to +85	-40 to +85	-40 to +85	-40 to +85	-40 to +85	-40 to +85	-40 to +85
Package Dimensions		250um Bare Fiber and dia.3.0mmx40mm 900um Loose Tube and dia. 3.0mmx56mm 3mm Loose Cable and 90mmx16mmx9mm							

Ordering Information

STOZ-SMC-①①-②-③③-④④-⑤⑤-⑥

①①: Wavelength
31 - 1310nm
55 -1550nm
SS - Specify

②: Port
1 – 1x2
2 – 2x2

③: Coupling Ratio
01 – 01/99
05 – 05/95
10 – 50 – 50/50
SS - specify

④④④④: Connector Type on Part 1, 2, 3, 4
1 - FC/UPC
2 - FC/APC
3 - SC/UPC
4 - SC/APC
N - None
S - Specify

⑤⑤⑤⑤: Fiber Jacket on Port 1, 2, 3, 4
B – 250um Panda fiber
L - 900um Loose Tube Panda Fiber
C – 3mm Loose Cable
S - Specify

⑥: Fiber Length
1 – 1m
S – Specify

Ordering Information

STOZ-SDC-①①①①-②-③③-④④–⑤⑤-⑥

①①①①: Wavelength
3155 – 1310 & 1550nm
SSSS - Specify

②: Port
1 – 1x2
2 – 2x2

③③: Coupling Ratio
01 – 01/99
05 – 05/95
10 – 50 – 50/50
SS - specify

④④: Connector Type on Part 1, 2, 3, 4
1 - FC/UPC
2 - FC/APC
3 - SC/UPC
4 - SC/APC
N - None
S - Specify

⑤⑤: Fiber Jacket on Port 1, 2, 3, 4
B – 250um Panda fiber
L - 900um Loose Tube Panda Fiber
C – 3mm Loose Cable
S - Specify

⑥: Fiber Length
1 – 1m
S – Specify

1XN(2XN) Single Mode Coupler Module

1×N (2×N) coupler splitter modules are cascaded with the single mode couplers. These modules are widely used for FTTH, LAN, and CATV optical networks

Specifications:

Type / Parameter	Standard Coupler Module (SSSC); Wide Band Coupler Module (SWBC)															
	N×4 N=1, 2		N×6 N=1,2		N×8 N=1, 2		N×12 N=1,2		N×16 N=1, 2		N×24 N=1, 2		N×32 N=1, 2		N×64 N=1, 2	
Operating wavelength (nm)	1310 or 1550, others on request															
Operating bandwidth(nm)	SSSC: ±15; SWBC: ±40															
Grade	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A
Insertion loss (dB)	≤6.9	≤7.3	≤9.0	≤9.6	≤10.4	≤11.0	≤12.4	≤13.2	≤13.8	≤14.6	≤15.8	≤16.8	≤17.4	≤18.4	≤20.9	≤22.1
Typical excess loss (dB)	0.25		0.3		0.4		0.5		0.55		0.6		0.7		0.85	
PDL (dB)	≤0.25		≤0.35		≤0.35		≤0.45		≤0.45		≤0.55		≤0.55		≤0.65	
Operating temperature	-40 ~ +85(℃)															
Fiber lead length	1 meter, others on request															
Fiber type	900μm, 2mm, 3mm loose tube															
ABS Box Dimensions(L×W×H) (mm)	100×80×10		100×80×10		100×80×10		125×96×16		125×96×16		141×115×18		141×115×18		On request	

	Dual Window Coupler Module (SDWC); Three-Window Coupler Module (STWC)															
	N×4 N=1, 2		N×6 N=1,2		N×8 N=1, 2		N×12 N=1,2		N×16 N=1, 2		N×24 N=1, 2		N×32 N=1, 2		N×64 N=1, 2	
Operating wavelength (nm)	SDWC: 1310 and 1550; STWC:1310,1490 and 1550															
Operating bandwidth (nm)	SDWC: ±40; STWC:1310 ±40,1490 ±10 and 1550 ±40															
Grade	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A
Insertion loss (dB)	≤7.2	≤7.6	≤9.6	≤10.2	≤10.8	≤11.4	≤13.2	≤14.0	≤14.4	≤15.2	≤16.8	≤17.8	≤18.0	≤19.0	≤21.6	≤22.8
Typical excess loss (dB)	0.3		0.4		0.45		0.55		0.6		0.7		0.75		0.9	

PDL (dB)	≤0.3	≤0.4	≤0.4	≤0.5	≤0.5	≤0.6	≤0.6	≤0.7
Operating temperature (℃)	-40 ~ +85							
Fiber lead length	1 meter, others on request							
Fiber type	900μm, 2mm, 3mm loose tube							
ABS Box Dimensions(L×W×H) (mm)	100×80×10	100×80×10	100×80×10	125×96×16	125×96×16	141×115×18	141×115×18	On request

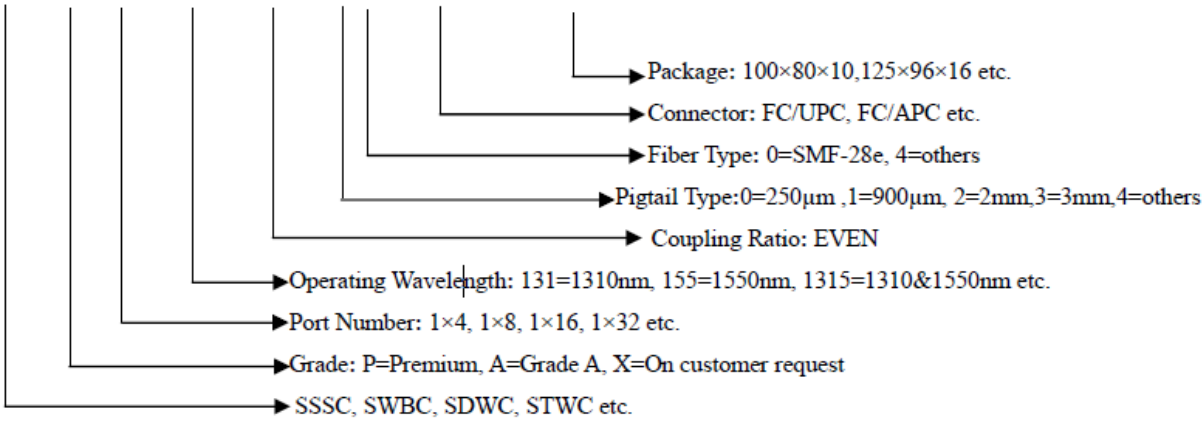
Configuration	19 Inch Rack			LGX Box	
	1U	2U	3U	1U	2U
Package Dimensions (mm)	482.6×278×44	482.6×278×88	482.6×278×132	130×127×29	130×127×58
Installation Dimensions (mm)	462.7×11.0(4-Φ6)	462.7×27.5(6-Φ6)	462.7×49.5(6-Φ6)	118(2-Φ6)	118×29.2(2-Φ6)

* The above specification is without connector.

*Other specifications can be made on customer request

Ordering Information

STLC-XXXX-X-XXX-XXX-XX/XX-X-X-XX/XXX-XX*XX*XX



2XN1×N (N×N) Monolithic Single Mode Coupler

1×3, 3×3, 1×4 monolithic couplers have the compact package size, low insertion loss, and high reliability performance. These couplers were designed for optical modules, the fiber sensors and fiber testing instruments.

Specifications

Parameter	1×3 SSC		3×3 SSC		1×3 WBC		3x3 WBC		1x3 DWC	
Operating wavelength (nm)	1310 or 1550				1310 or 1550				1310 and 1550	
Operating bandwidth (nm)	±15				±40				±40	
Grade	P	A	P	A	P	A	P	A	P	A
Typical excess loss (dB)	0.1	0.15	0.1	0.15	0.1	0.15	0.1	0.15	0.1	0.15
Insertion loss (dB)	≤5.4	≤5.7	≤5.6	≤5.8	≤5.6	≤6.0	≤5.8	≤6.2	≤5.8	≤6.2
PDL (dB)	≤0.2	≤0.25	≤0.25	≤0.3	≤0.2	≤0.25	≤0.25	≤0.3	≤0.25	≤0.3
Uniformity (dB)	≤0.8	≤1.2	≤1.0	≤1.4	≤1.0	≤1.4	≤1.3	≤1.6	≤1.2	≤1.5
Directivity (dB)	≥55									
Operating temperature (℃)	-40 ~ +85									

Parameter	1×4 SSC				1×4 WBC				1×4 DWC				1×4 TWC			
	Normal Size		Mini Size		Normal Size		Mini Size		Normal Size		Mini Size		Normal Size		Mini Size	
Operating wavelength (nm)	1310 or 1550, others on request								1310 and 1550				1310,1490 and 1550			
Operating bandwidth (nm)	±15				±40				±40				1310±40,1490±10 and 1550±40			
Grade	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A
Typical excess loss (dB)	0.15	0.25	0.15	0.25	0.2	0.3	0.2	0.3	0.3	0.4	0.3	0.4	0.3	0.4	0.3	0.4
Insertion loss (dB)	≤7.0	≤7.4	≤7.2	≤7.5	≤7.1	≤7.4	≤7.2	≤7.5	≤7.2	≤7.5	≤7.3	≤7.7	≤7.2	≤7.5	≤7.3	≤7.7
PDL (dB)	≤0.2	≤0.25	≤0.2	≤0.35	≤0.2	≤0.25	≤0.2	≤0.35	≤0.2	≤0.3	≤0.2	≤0.35	≤0.2	≤0.3	≤0.2	≤0.35
Uniformity (dB)	≤1.0	≤1.4	≤1.2	≤1.5	≤1.2	≤1.6	≤1.4	≤1.8	≤1.4	≤1.8	≤1.5	≤2.0	≤1.4	≤1.8	≤1.5	≤2.0
Directivity	≥55 (dB)															
Operating temperatue	-40 ~ +85 (℃)															

* The above specification is without connector.
* Other specifications can be made on customer request.

Package Information

Configuration			1×3 or 3×3	1×4
Dimensions (Φ×L)(mm)	250μm bare fiber	Normal size	Φ3.0×54	
		Mini size	Φ3.0×35	
	900μm loose tube		Φ4.0×60	Φ4.0×65
Fiber lead length			1 meter, others on request	

*Other package dimensions can be made on customer request.

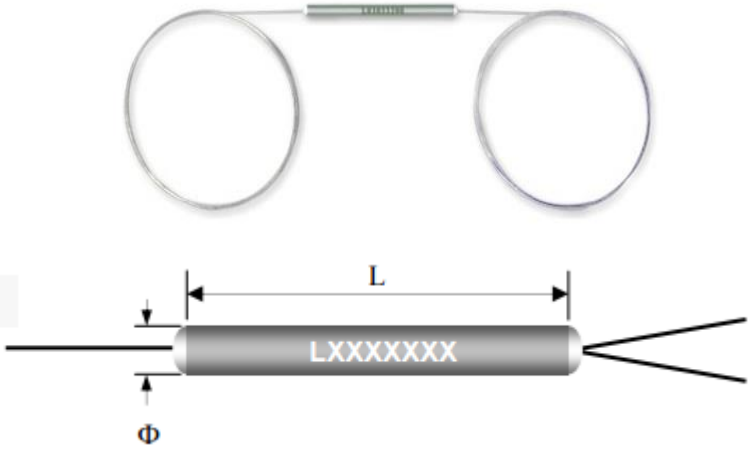
Ordering Information

STLC-XXX-X-XXX-XXX-XX/XX-X-X-XX/XXX-XX*XX

- Package: 3.0×54 etc.
- Connector: FC/UPC, FC/APC etc.
- Fiber Type: 0=SMF-28e, 4=others
- Pigtail Type: 0=250μm, 1=900μm, 2=2mm, 3=3mm, 4=others
- Coupling Ratio: EVEN etc.
- Operating Wavelength: 131=1310nm, 155=1550nm, 1315=1310&1550nm etc.
- Port Number: 1×3, 3×3, 1×4
- Grade: P=Premium, A=Grade A, X=On customer request
- SSC, WBC, DWC, TWC

1×2(2×2) Mini Size WDM

The function and the performance of the mini size WDM couplers are the same as the regular WDM couplers. These mini size WDM couplers are widely used in EDFA modules and communication systems.



Key Features

- Mini size
- High isolation
- Low PDL
- Low excess loss
- High stability and reliability

Applications

- EDFA modules
- WDM systems
- Testing instruments

Specifications

Type / Parameter	980/1550 WDM		980/1590 WDM		1310/1550 WDM	
Operating wavelength (nm)	980 and 1550		980 and 1590		1310 and 1550	
Operating bandwidth (nm)	±10/20		±10/20		±15	
Package dimensions (Φ×L) (mm)	Φ2.4/3.0×30, Φ2.4×25				Φ2.4×30	
Grade	P	A	P	A	P	A
Insertion loss (dB)	≤0.25	≤0.35	≤0.25	≤0.35	≤0.25	≤0.35
Isolation (dB)	≥20	≥18	≥20	≥18	≥17	≥16
PDL (dB)	≤0.08	≤0.12	≤0.08	≤0.12	≤0.08	≤0.12
Fiber lead length	0.8 meter, others on request				1 meter, others on request	
Directivity (dB)	≥55					
Operating temperature (℃)	-40 ~ +85					
Configuration	1×2 or 2×2					

* The above specification is without connector

*Other specifications can be made on customer request.

Ordering Information

STLC- WDM-X-XXX-XXX -X-X-XX/XXX-XX*XX

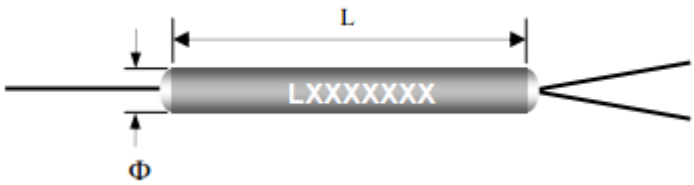
- Package: 2.4×25, 2.4/3.0×30 etc.
- Connector: FC/UPC, FC/APC etc.
- Fiber Type: 0=SMF-28e, 1=HI1060flex, 4=others
- Pigtail Type: 0=250μm
- Operating Wavelength: 980/1550, 980/1590, 1310/1550 etc.
- Port Number: 1×2 or 2×2
- Grade: P=Premium, A=Grade A, X=On customer request

Needle Size Coupler (SSC)

Needle size couplers feature compact package size, low insertion loss, and high reliability performance. These couplers are designed for optical modules, fiber sensors, and fiber testing instruments.

Features

- Super mini-size
- Low excess loss
- High stability and reliability



Applications

- Fiber sensor
- Testing instruments

Specifications

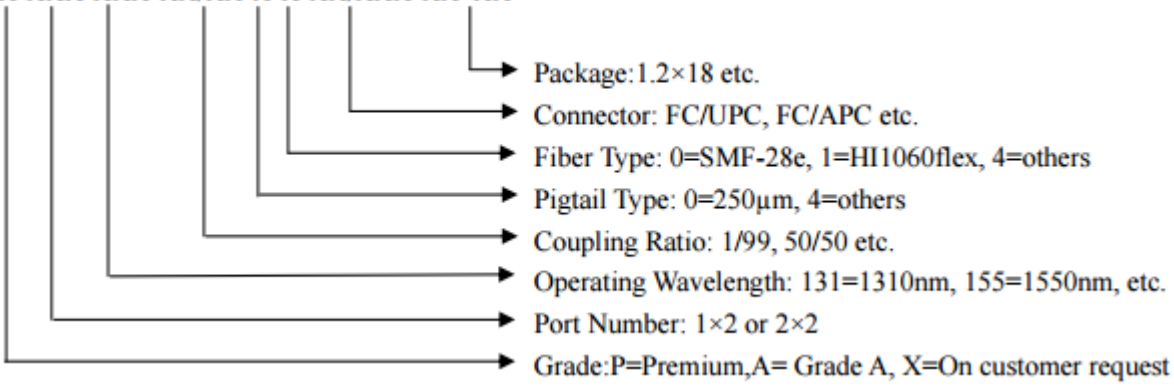
Parameter		Needle size coupler	
Operating wavelength (nm)		1310 or 1550, others on request	
Operating bandwidth (nm)		±15	
Package dimension (Φ×L) (mm)		Φ1.2×18	
Grade		P	A
Typical excess loss (dB)		0.15	0.25
Insertion loss (dB)	50/50	≤3.60	≤3.80
	40/60	≤4.60/2.8	≤4.90/3.00
	30/70	≤5.90/2.10	≤6.30/2.20
	20/80	≤7.80/1.30	≤8.20/1.50
	10/90	≤11.30/0.75	≤11.80/0.90
	5/95	≤14.50/0.50	≤15.00/0.55
	3/97	≤16.90/0.40	≤17.60/0.45
	2/98	≤18.80/0.35	≤19.50/0.40
	1/99	≤21.80/0.30	≤22.50/0.35
PDL (dB)		≤0.1	≤0.15
Directivity (dB)		≥50	
Operating temperature (℃)		-40 ~ +85	
Configuration		1×2 or 2×2	
Fiber lead length		1 meter, others on request	

*The above specification is without connector

*Other specifications can be made on customer request

Ordering Information

STLC- SSC-X-XXX-XXX-XX/XX-X-X-XX/XXX-XX*XX



Mini Size Dual Window Coupler (DWC)

Dual window coupler (DWC) is built by asymmetric coupling technique. The operating bandwidth of this coupler is expanding to ±40nm. The DWC coupler has the same coupling ratio on both 1310nm and 1550nm communication windows. The mini size DWC is designed for the compact optical modules and communication systems.

Specifications:

Parameter					
Operating wavelength (nm)		1310 and 1550			
Operating bandwidth (nm)		±40			
Package size (Φ×L) (mm)		Φ3.0/Φ2.4×30		Φ2.4×25	
Grade		P	A	P	A
Typical excess loss (dB)		0.1	0.15	0.15	0.25
Insertion loss (dB)	50/50	≤3.60	≤3.80	≤3.70	≤3.90
	40/60	≤4.70/2.70	≤4.90/2.90	≤4.70/2.80	≤5.00/3.00
	30/70	≤6.00/1.90	≤6.30/2.10	≤6.10/2.10	≤6.40/2.20
	20/80	≤7.90/1.30	≤8.40/1.40	≤8.00/1.40	≤8.50/1.50
	10/90	9.20~ 11.30/≤0.75	8.75~ 12.00/≤0.80	9.25~ 11.50/≤0.80	8.80~ 12.00/≤0.85
	5/95	12.05~ 14.35/≤0.40	11.55~ 14.85/≤0.50	12.10~ 14.40/≤0.50	11.60~ 14.90/≤0.55
	3/97	14.10~ 16.70/≤0.35	13.55~ 17.25/≤0.45	14.15~ 16.75/≤0.40	13.60~ 17.30/≤0.45
	2/98	15.75~ 18.65/≤0.30	15.10~ 19.25/≤0.40	15.80~ 18.70/≤0.35	15.15~ 19.30/≤0.40
	1/99	18.60~ 21.80/≤0.25	17.90~ 22.50/≤0.35	18.65~ 21.85/≤0.30	17.95~ 22.55/≤0.35
PDL (dB)		≤0.15	≤0.2	≤0.15	≤0.2
Directivity (dB)		≥55			
Operating temperature (℃)		-40~+85			
Configuration		1×2 or 2×2			
Fiber lead length		1 meter, others on request			

*The above specification is without connector

**Other specifications can be made on customer request.

Ordering Information

STLC-DWC-X-XXX-XXX-XX/XX-X-X-XX/XXX-XX*XX

- Package: 2.4×30 etc.
- Connector: FC/UPC, FC/APC etc.
- Fiber Type: 0=SMF-28e, 4=others
- Pigtail Type: 0=250μm, 4=others
- Coupling Ratio: 1/99, 50/50 etc.
- Operating Wavelength: 1315=1310&1550nm etc.
- Port Number: 1×2 or 2×2
- Grade:P=Premium,A=GradeA,X=On customer request

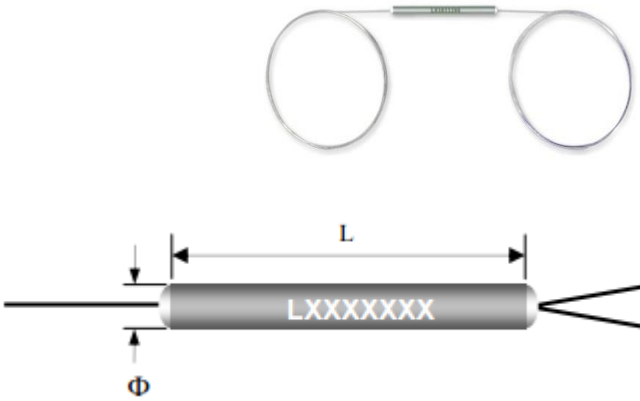
Sintec Optronics

Mini Size Wide Band Coupler (WBC)

Bandwidth expanding techniques (asymmetric techniques) are used to build the wide band coupler (WBC). The WBC has an operating bandwidth of ±40nm, low excess loss and PDL. The mini size WBC is designed for the compact optical modules and communication systems.

Features

- Mini size
- Low excess loss
- Low PDL and low WDL
- High stability and reliability



Applications

- Mini size EDFA
- Mini size transmitter/receiver module
- Optical communication systems
- Testing instruments

Specifications

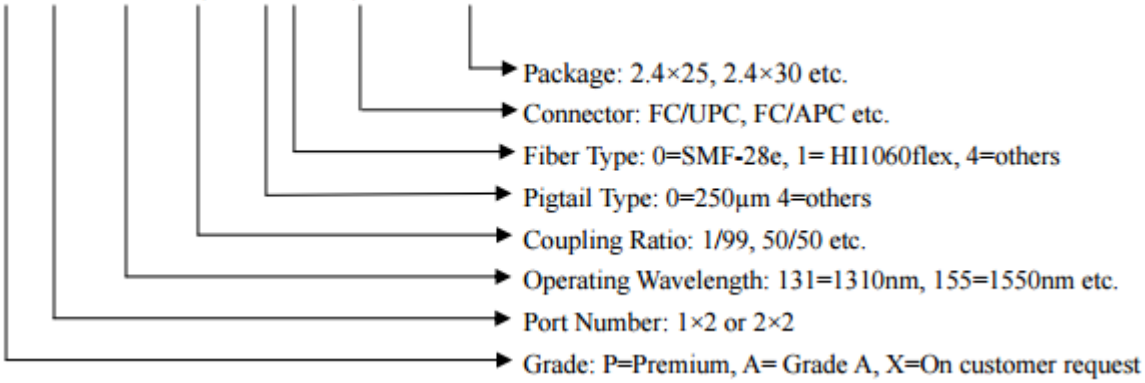
Parameter		Mini Size Wide Band Coupler (WBC)			
Operating wavelength (nm)		1310 or 1550, others on request			
Operating bandwidth (nm)		±40			
Package size (Φ×L) mm		Φ3.0/Φ2.4×30		Φ2.4×25	
Grade		P	A	P	A
Typical excess loss (dB)		0.10	0.15	0.15	0.25
Insertion loss (dB)	50/50	≤3.50	≤3.70	≤3.60	≤3.80
	40/60	≤4.50/2.70	≤4.80/2.90	≤4.60/2.80	≤4.90/3.00
	30/70	≤5.80/2.00	≤6.10/2.10	≤5.90/2.10	≤6.30/2.20
	20/80	≤7.70/1.25	≤8.00/1.30	≤7.8/1.30	≤8.20/1.40
	10/90	9.55~ 10.85/≤0.70	9.25~ 11.15/≤0.85	9.60~ 10.90/≤0.75	9.30~ 11.20/≤0.85
	5/95	12.40~ 14.00/≤0.45	12.10~ 14.35/≤0.55	12.45~ 14.05/≤0.5	12.15~ 14.40/≤0.55
	3/97	14.50~ 16.35/≤0.35	14.10~ 16.75/≤0.45	14.55~ 16.40/≤0.40	14.15~ 16.80/≤0.45
	2/98	16.15~ 18.25/≤0.30	15.65~ 18.70/≤0.35	16.20~ 18.30/≤0.35	15.70~ 18.75/≤0.40
	1/99	19.05~ 21.35/≤0.25	18.55~ 21.85/≤0.30	19.10~ 21.40/≤0.30	18.60~ 21.90/≤0.35
PDL (dB)		≤0.1	≤0.15	≤0.1	≤0.15
Directivity (dB)		≥50			
Operating temperature (℃)		-40 ~ +85			
Configuration		1×2 or 2×2			
Fiber lead length		1 meter, others on request			

*The above specification is without connector.

*Other specifications can be made on customer request.

Ordering Information

STLC-WBC-X-XXX-XXX-XX/XX-X-X-XX/XXX-XX*XX



Mini Size Standard Coupler (SSC)

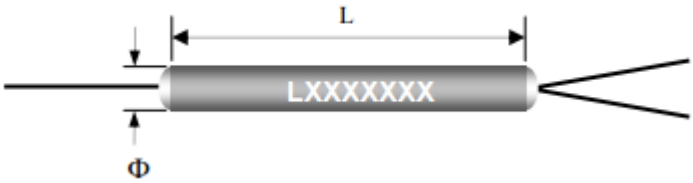
Mini size couplers are designed to meet the requirement of the optical modules and fiber systems where need the small coupler package size. LightComm develops the mini size SSC with high stability and reliability.

Features

- Mini size
- Low excess loss
- Low PDL
- High stability and reliability

Applications

- Mini size EDFA
- Mini size transmitter/receiver module
- Optical communication systems
- Testing instruments



Specifications

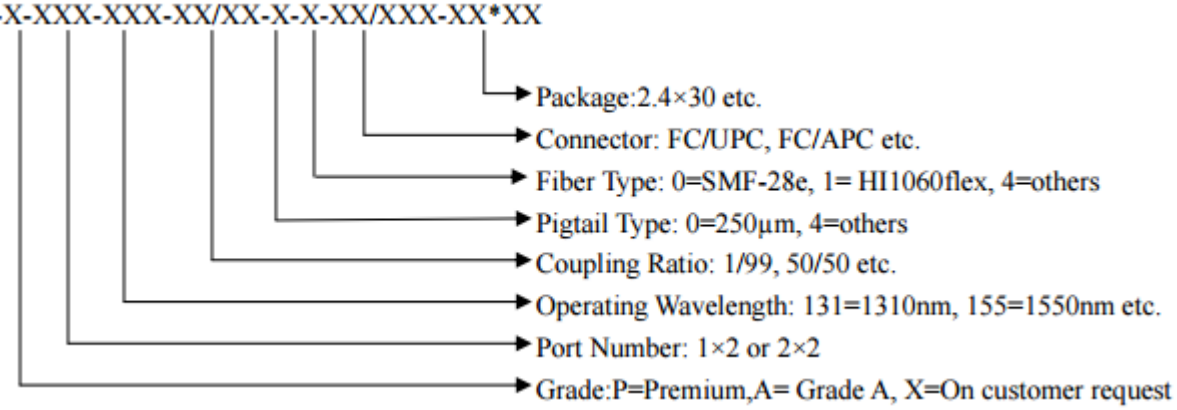
Parameter					
Operating wavelength (nm)		1310 or 1550, others on request			
Operating bandwidth (nm)		±15			
Package size (Φ×L) mm		Φ3.0/Φ2.4×30; Φ2.4×25		Φ2.4×22; Φ2.0×18	
Grade		P	A	P	A
Typical excess loss (dB)		0.10	0.15	0.15	0.25
Insertion loss (dB)	50/50	≤3.50	≤3.70	≤3.60	≤3.80
	40/60	≤4.50/2.70	≤4.80/2.90	≤4.60/2.80	≤4.90/3.00
	30/70	≤5.80/2.00	≤6.10/2.10	≤5.90/2.10	≤6.30/2.20
	20/80	≤7.70/1.25	≤8.00/1.30	≤7.80/1.30	≤8.20/1.40
	10/90	9.35~ 11.15/≤0.70	9.15~ 11.35/≤0.85	9.50~ 11.30/≤0.75	9.30~11.50/≤0.85
	5/95	12.15~ 14.35/≤0.45	11.90~ 14.60/≤0.55	12.30~ 14.50/≤0.50	12.05~ 14.75/≤0.55
	3/97	14.20~ 16.70/≤0.35	13.90~ 17.00/≤0.45	14.35~ 16.85/≤0.40	14.05~ 17.15/≤0.45
	2/98	15.85~ 18.50/≤0.30	15.50~ 19.00/≤0.35	16.00~ 18.80/≤0.35	15.65~ 19.15/≤0.40
	1/99	18.70~ 21.50/≤0.25	18.30~22.20/≤0.30	18.85~ 21.80/≤0.30	18.45~ 22.35/≤0.35
PDL (dB)		≤0.1	≤0.15	≤0.1	≤0.15
Directivity (dB)		≥50			
Operating temperature (℃)		-40 ~ +85			
Configuration		1×2 or 2×2			
Fiber lead length		1 meter, others on request			

*The above specification is without connector

*Other specifications can be made on customer request.

Ordering Information

STLC- SSC-X-XXX-XXX-XX/XX-X-X-XX/XXX-XX*XX



1x2(2x2) Single Mode WDM

980/1550nm and 1480/1550nm WDM are widely used in EDFA, Which can combine the pump power and optical signal into the Er-fiber. 1310/1550 WDM can be used to combine or split 1310nm and 1550nm optical signals, which double the fiber transmission capability and ensure bi-direction communication in a single fiber.

Specifications

Parameter \ Type		980/1550nm WDM				1310/1550nm WDM and HWDM				1480/1550nm WDM	
		Normal		Mixed Fiber		Normal		Monolithic High Isolation		1480/1550	
Fiber	Common port & Pump Port	Corning HI1060flex or OFS BF05635-02				SMF-28e					
	Signal Port	Corning HI1060flex or OFS BF05635-02		Corning SMF-28e							
Operating wavelength (nm)		980 and 1550				1310 and 1550				1480 and 1550	
Operating bandwidth (nm)		±10/20				±15				±5	
Grade		P	A	P	A	P	A	P	A	P	A
Insertion loss (dB)		≤0.15	≤0.25	≤0.30	≤0.40	≤0.2	≤0.3	≤0.5	≤0.6	≤0.3	≤0.35
Isolation (dB)		≥20	≥18	≥20	≥18	≥17	≥16	≥32	≥30	≥15	≥14
PDL (dB)		≤0.05	≤0.1	≤0.05	≤0.1	≤0.05	≤0.1	≤0.1	≤0.15	≤0.1	≤0.1
Directivity (dB)		≥55									
Operating temperature (℃)		-40 ~ +85									

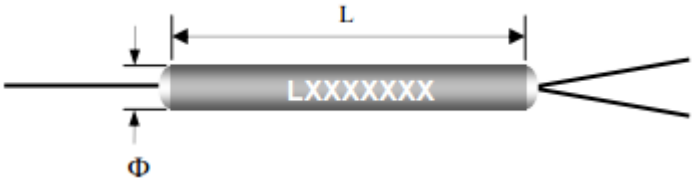
* The above specification is without connector

* Other specifications can be made on customer request

Package Information

Configuration		1×2 or 2×2		
Fiber lead length		1 meter, others on request		
Fiber type		250μm bare fiber	900μm loose tube	900μm/2mm/3mm loose tube
Dimensions (Φ×L)(mm)	980/1550 WDM	Φ3.0×54	Φ3.0×54	90×14×8.5
	1310/1550 WDM	Φ2.4×42		
	1480/1550 WDM	Φ3.0×60	Φ3.0×70	/
	1310/1550 WDM (high isolation)	Φ4.0×75		/

*Other package dimensions can be made on customer request.



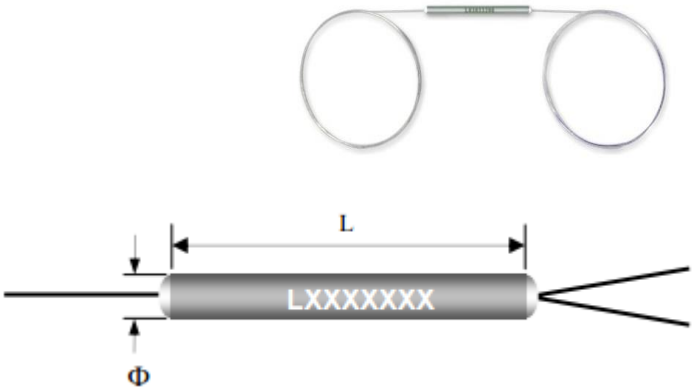
Ordering Information

STLC- XXX **-**X**-**XXX**-**XXX **-**X**-**X**-**XX/XXX**-**XX*XX

- Package:3.0×54 etc.
- Connector: FC/UPC, FC/APC etc.
- Fiber Type:0=SMF-28e,1= HI1060flex,4=others,01=SMF-28e+ HI1060flex, 04= SMF-28e+ others
- Pigtail Type: 0=250μm, 1=900μm, 2=2mm, 3=3mm 4=others
- Operating Wavelength: 9815 = 980&1550nm, 1315=1310n&1550nm, 1480/1550nm etc.
- Port Number: 1×2 or 2×2
- Grade: P=Premium, A=Grade A, X=On customer request
- WDM, HWDM

Three-Window Coupler (TWC)

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, with low excess loss and low PDL. TWC is widely used for communication systems, CATV, FTTH, where multiple optical signals pass through single fiber.



Key Features

- Low excess loss
- Low PDL
- Three operating windows
- High stability and reliability

Applications

- Optical communication systems
- CATV
- FTTH

Specifications

Parameter \ Grade		P	A
Operating wavelength (nm)		1310,1490 and 1550	
Operating bandwidth (nm)		1310 ± 40,1490 ± 10 and 1550 ± 40	
Typical excess loss (dB)		0.07	0.10
Insertion loss (dB)	50/50	≤3.6	≤3.8
	45/55	≤4.2/3.2	≤4.4/3.4
	40/60	≤4.7/2.7	≤4.9/2.9
	35/65	≤5.4/2.4	≤5.7/2.6
	33/67	≤5.7/2.2	≤6.0/2.4
	30/70	≤6.0/1.9	≤6.3/2.1
	25/75	≤7.0/1.7	≤7.3/1.9
	20/80	≤7.9/1.3	≤8.4/1.4
	15/85	≤9.5/1.0	≤10.0/1.2
	10/90	9.20~11.00/≤0.75	8.80~11.40/≤0.8
	5/95	12.05~14.20 /≤0.4	11.55~14.65/≤0.5
	3/97	14.10~16.50/≤0.35	13.60~17.05/≤0.45
	2/98	15.60~18.55/≤0.3	15.00~19.20/≤0.4
	1/99	18.45~21.70/≤0.25	17.80~22.40/≤0.35
PDL (dB)		≤0.15	≤0.20
Directivity (dB)		≥55	
Operating temperature (℃)		-40 ~ +85	

* The above specification is without connector

* Other specifications can be made on customer request.

Package Information

Configuration	1×2 or 2×2		
Fiber lead length	1 meter, others on request		
Fiber type	250μm bare fiber	900μm loose tube	900μm/2mm/3mm loose tube
Dimensions (Φ×L)	Φ3.0mm×54mm	Φ3.0mm×54mm	90mm×14mm×8.5mm
	Φ2.4mm×42mm		

*Other package dimensions can be made on customer request.

Ordering Information

STLC-TWC-X-XXX-XXX-XX/XX-X-X-XX/XXX-XX*XX

- Package:3.0×54 etc.
- Connector: FC/UPC, FC/APC etc.
- Fiber Type: 0=SMF-28e,4=others
- Pigtail Type:0=250μm,1=900μm, 2=2mm, 3=3mm, 4=others
- Coupling Ratio:1/99, 50/50 etc.
- OperatingWavelength:131415=1310&1490&1550nm etc.
- Port Number: 1×2 or 2×2
- Grade:P=Premium, A=Grade A, X=On customer request

All Band Coupler (ABC)

All Band coupler (ABC) is built by Special technique. The operating bandwidth of the coupler is expanded to 1260-1620nm, and with low excess loss and low PDL.

Key Features

* Low excess loss
* Low PDL
* All Band operating Wavelength
* High stability and reliability

Applications

* Optical communication systems
* CATV
* FTTH

Specifications:

Parameter		All Band Coupler	
Grade		P	A
Operating Wavelength(nm)		1260-1620	
Typical excess loss (dB)		0.07	0.1
Insertion loss (dB)	50/50	≤3.8	≤4.0
	45/55	≤4.45/3.45	≤4.65/3.65
	40/60	≤5.1/3.1	≤5.3/3.3
	35/65	≤5.7/2.7	≤5.95/2.90
	33/67	≤6.0/2.55	≤6.25/2.75
	30/70	≤6.4/2.3	≤6.7/2.5
	25/75	≤7.4/2.0	≤7.65/2.2
	20/80	≤8.3/1.7	≤8.8/1.8
	15/85	≤9.9/1.4	≤10.1/1.50
	10/90	9.10~11.10 /≤1.15	8.65~11.50/≤1.25
	5/95	11.90~14.30/≤0.8	11.40~14.80 /≤0.9
	3/97	13.85~16.75/≤0.75	13.30~17.35/≤0.85
	2/98	15.45~18.75/≤0.7	14.75~19.40/≤0.8
	1/99	18.25~21.95/≤0.65	17.50~22.70/≤0.75
PDL (dB)		≤0.15	≤0.20
Directivity (dB)		≥55	
Operating temperature (℃)		-40 ~ +85	

*The above specification is without connector.
*Other specifications can be made on customer request.
*Insertion Loss around 1383nm (water peak) is counted in the specifications above.

Single Mode Standard Coupler (SSC)

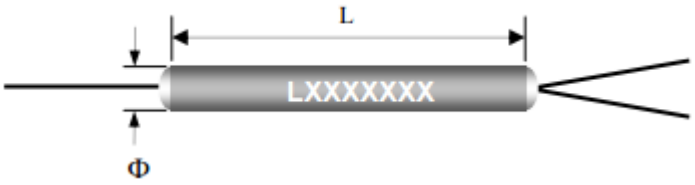
The single mode standard coupler (SSC) features low excess loss, high stability and reliability. It is widely used for optical fiber communication systems and CATV systems.

Key Features：

* Low excess loss
* Low PDL
* High stability and reliability

Applications:

* CATV
* Optical communication systems
* Testing instruments



Specifications:

Parameter \ Grade		P	A
Operating wavelength (nm)		1310 or 1550, others on request	
Operating bandwidth (nm)		± 15	
Typical excess loss (dB)		0.07	0.1
Insertion loss (dB)	50/50	≤3.4	≤3.6
	45/55	≤4.1/3.1	≤4.3/3.3
	40/60	≤4.4/2.6	≤4.7/2.8
	35/65	≤5.2/2.3	≤5.5/2.5
	33/67	≤5.4/2.2	≤5.7/2.3
	30/70	≤5.7/1.9	≤6.0/2.0
	25/75	≤6.6/1.7	≤7.0/1.8
	20/80	≤7.6/1.25	≤8.0/1.35
	15/85	≤9.2/1.0	≤9.6/1.2
	10/90	9.2~11.0/≤0.65	9.0~11.2/≤0.8
	5/95	12.0~14.2 /≤0.4	11.75~14.45/≤0.5
	3/97	14.05~16.55/≤0.3	13.75~16.85/≤0.4
	2/98	15.7~18.5/≤0.25	15.35~18.85/≤0.35
	1/99	18.55~21.5/≤0.2	18.15~22.0/≤0.3
PDL (dB)		≤0.10	≤0.15
Directivity (dB)		≥55	
Operating temperature (℃)		-40 ~ +85	

*The above specification is without connector

*Other specifications can be made on customer request.

Package Information

Configuration	1×2 or 2×2		
Fiber lead length	1 meter, others on request		
Fiber type	250μm bare fiber	900μm loose tube	900μm/2mm/3mm loose tube
Dimensions (Φ×L)	Φ3.0mm×54mm	Φ3.0mm×54mm	90mm×14mm×8.5mm
	Φ2.4mm×42mm		

*Other package dimensions can be made on customer request.

Ordering Information

STLC- SSC-X-XXX-XXX-XX/XX-X-X-XX/XXX-XX*XX

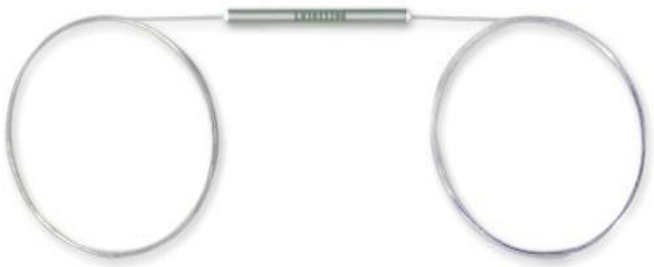
- Package:3.0×54 etc.
- Connector: FC/UPC, FC/APC etc.
- Fiber Type: 0=SMF-28e, 1=HI1060flex, 4=others
- Pigtail Type:0=250μm,1=900μm, 2=2mm, 3=3mm, 4=others
- Coupling Ratio: 1/99, 50/50 etc.
- Operating Wavelength: 131=1310nm, 155=1550nm etc.
- Port Number: 1×2 or 2×2
- Grade: P=Premium, A= Grade A, X=On customer request

Wide Band Coupler (WBC)

Lightcomm uses unique bandwidth expanding techniques (asymmetric techniques) to build the wide band coupler (WBC). The WBC has an operating bandwidth of ± 40nm or EDFA C band or L band, and it features low excess loss and low wavelength depend loss (WDL).

Key Features

- Low excess loss
- Low PDL
- High stability and reliability



Applications

- CATV
- LAN
- Optical fiber sensors
- Testing instruments

Specifications

Grade Parameter		P	A	P	A
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	0.10	0.07	0.10
Insertion loss (dB)	50/50	≤3.4	≤3.6	≤3.35	≤3.5
	45/55	≤4.1/3.1	≤4.3/3.3	≤4.0/3.0	≤4.2/3.2
	40/60	≤4.4/2.6	≤4.7/2.8	≤4.4/2.55	≤4.6/2.7
	35/65	≤5.2/2.3	≤5.5/2.5	≤5.1/2.2	≤5.3/2.4
	33/67	≤5.4/2.2	≤5.7/2.3	≤5.3/2.1	≤5.5/2.25
	30/70	≤5.7/1.9	≤6.0/2.0	≤5.7/1.85	≤5.9/1.95
	25/75	≤6.6/1.7	≤7.0/1.8	≤6.5/1.65	≤6.8/1.75
	20/80	≤7.6/1.25	≤8.0/1.3	≤7.55/1.25	≤7.8/1.3
	15/85	≤9.2/1.0	≤9.6/1.2	≤9.0/1.0	≤9.3/1.1
	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
	3/97	14.50~16.15/≤0.3	14.15~16.50/≤0.4	14.55~16.10 /≤0.3	14.20~16.45/≤0.35
	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 (℃)		-40 ~ +85			

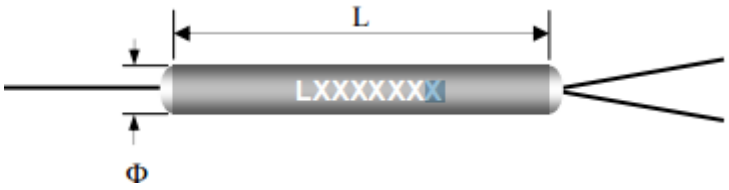
*The above specification is without connector.

*Other specifications can be made on customer request.

Package Information

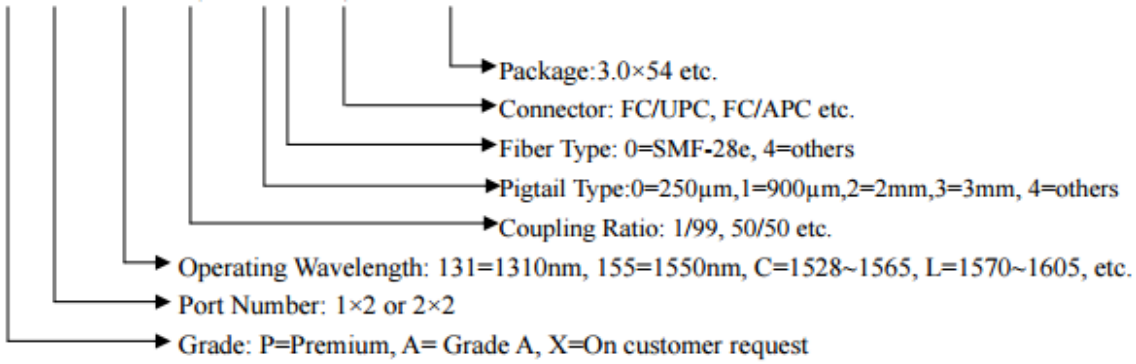
Configuration	1×2 or 2×2		
Fiber lead length	1 meter, others on request		
Fiber type	250μm bare fiber	900μm loose tube	900μm/2mm/3mm loose tube
Dimensions (Φ×L)	Φ3.0mm×54mm	Φ3.0mm×54mm	90mm×14mm×8.5mm
	Φ2.4mm×42mm		

*Other package dimensions can be made on customer request.



Ordering Information

STLC-WBC-X-XXX-XXX-XX/XX-X-X-XX/XXX-XX*XX

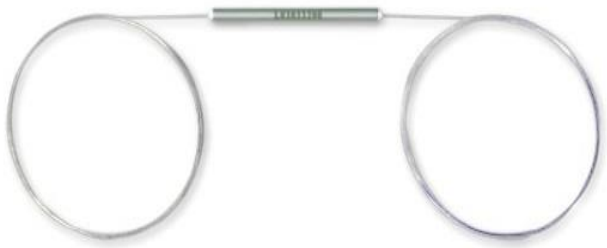


Dual Window Coupler (DWC)

Dual window coupler (DWC) is built by asymmetric coupling technique. The operating bandwidth of this normal coupler is expanding to ±40nm, and the ultra broadband coupler is expanding to ±80nm. 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.

Key Features

- Low excess loss
- Low PDL
- Dual operating window
- High stability and reliability



Applications

- Optical communication systems
- CATV
- FTTH

Specifications

Type Parameter		Normal		Ultra Broadband	
Grade		P	A	P	A
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
	45/55	≤4.2/3.2	≤4.4/3.4	≤4.5/3.3	≤4.7/3.5
	40/60	≤4.7/2.7	≤4.9/2.9	≤5.0/2.8	≤5.2/3.0
	35/65	≤5.4/2.4	≤5.7/2.6	≤5.8/2.5	≤6.1/2.7
	33/67	≤5.7/2.2	≤6.0/2.4	≤6.1/2.3	≤6.4/2.5
	30/70	≤6.0/1.9	≤6.3/2.1	≤6.4/2.0	≤6.7/2.2
	25/75	≤7.0/1.7	≤7.3/1.9	≤7.3/1.7	≤7.7/1.9
	20/80	≤7.9/1.3	≤8.4/1.4	≤8.3/1.3	≤8.7/1.5
	15/85	≤9.5/1.0	≤10.0/1.2	≤9.6/1.0	≤10.1/1.2
	10/90	9.2~11.2/≤0.75	8.80~11.40 /≤0.8	9.15~11.05 /≤0.75	8.75~11.45/≤0.8
	5/95	12.05~14.15/≤0.4	11.60~14.60 /≤0.5	12.00~14.25/≤0.45	11.50~14.70/≤0.5
	3/97	14.1~16.5/≤0.35	13.60~17.05/≤0.45	14.00~16.60 /≤0.35	13.45~17.15/≤0.45
	2/98	15.75~18.45/≤0.3	15.15~19.00/≤0.4	15.60~18.60/≤0.3	14.95~19.20/≤0.4
	1/99	18.6~21.6 /≤0.25	17.95~22.25/≤0.35	18.35~21.85/≤0.25	17.60~22.55/≤0.35
PDL (dB)		≤0.15	≤0.2	≤0.15	≤0.2
Directivity (dB)		≥55			

Operating temperature (℃)	-40 ~ +85

*The above specification is without connector

*Insertion Loss around 1380nm (water peak) is not counted in the specifications above.

Package Information

Configuration	1×2 or 2×2		
Fiber lead length	1 meter, others on request		
Fiber type	250μm bare fiber	900μm loose tube	900μm/2mm/3mm loose tube
Dimensions (Φ×L)	Φ3.0mm×54mm	Φ3.0mm×54mm	90mm×14mm×8.5mm
	Φ2.4mm×42mm		

*Other package dimensions can be made on customer request.

Ordering Information

STLC-DWC-X-XXX-XXX-XX/XX-X-X-XX/XXX-XX*XX

- Package: 3.0×54 etc.
- Connector: FC/UPC, FC/APC etc.
- Fiber Type: 0=SMF-28e, 4=others
- Pigtail Type:0=250μm,1=900μm,2=2mm,3=3mm, 4=others
- Coupling Ratio: 1/99, 50/50 etc.
- Operating Wavelength: 1315=1310&1550nm etc.
- Port Number: 1×2 or 2×2
- Grade:P=Premium,A= Grade A, X=On customer request

Special WDM

There are different special wavelength WDM such as 980/1064nm, 1064/1550nm, 1550/1625nm WDM. Raman Pump Combiner is designed for combining the multiple pumps with different wavelengths for Raman amplifiers.

Specifications

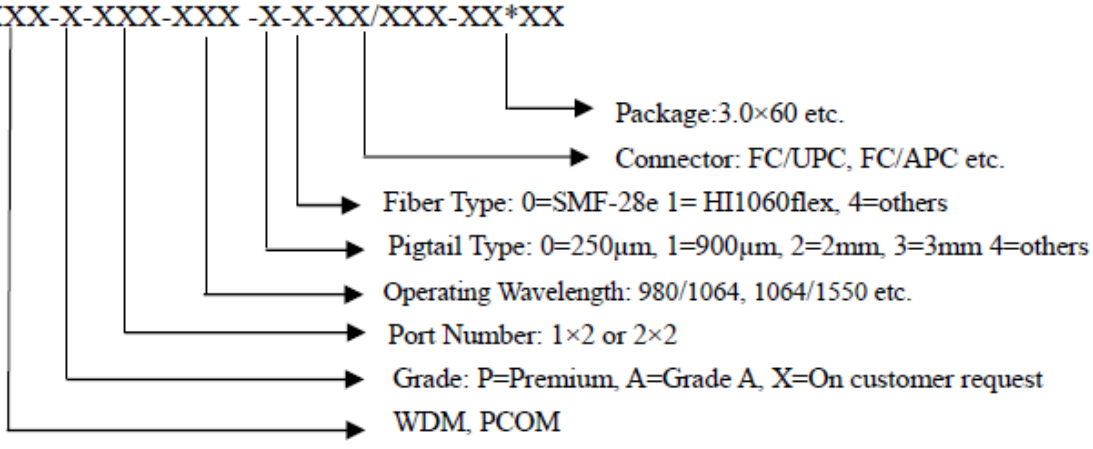
Type / Parameter		Special WDM		
Operating wavelength (nm)		980 / 1064	1064 / 1550	1550 /1625
Operating bandwidth (nm)		±5	±15	±5
Insertion loss (dB)	P	≤0.3		
	A	≤0.4		
Isolation (dB)	P	≥14	≥18	≥14
	A	≥13	≥17	≥13
PDL (dB)	P	≤0.10		
	A	≤0.15		
Directivity (dB)		≥55		
Operating temperature (℃)		-40 ~ +85		

Channel space / Parameter	Raman Pump Combiner (PCOM)			
	15~ 20nm		>20nm	
Operating wavelength (nm)	Upon customer request			
Grade	P	A	P	A
Center insertion loss (dB)	≤0.5	≤0.6	≤0.4	≤0.5
Center isolation (dB)	≥14			
Directivity (dB)	≥55			
Operating temperature (℃)	-40 ~ +85			

*The above specification is without connector
**Other specifications can be made on customer request.

Ordering Information

STLC-XXX-X-XXX-XXX -X-X-XX/XXX-XX*XX



Special Wavelength Coupler

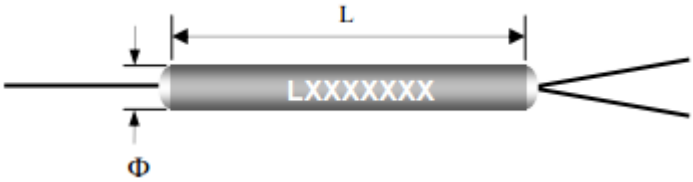
Besides 1310nm and 1550nm fiber couplers, LightComm manufactures special couplers with work at wavelengths of 473nm, 532nm, 655nm, 850nm, 980nm,1064nm, 1625nm etc. These couplers use special single mode fibers.

Key Features

Wavelength on customer request
Coupling ratio on customer request
Low excess loss
High stability and reliability

Applications

Fiber sensors
Optical communication systems
Testing instruments



Specifications

Parameter		Special Wavelengths Coupler							
Operating wavelength (nm)		473	532	655	850	980	1064	1480	1625
Operating bandwidth (nm)		±15							
Coupling ratio		1/99 ~ 50/50							
Fiber type		460-HP		630-HP	HI780C	780-HP	HI1060flex	SMF-28e	
Typical excess Loss(dB)	P	0.8		0.5	0.3		0.15	0.1	0.1
	A	1.0		0.7	0.4		0.2	0.15	0.15
Directivity (dB)		≥50							
Operating temperature (℃)		-40 ~ +85							

*Other specifications can be made on customer request.

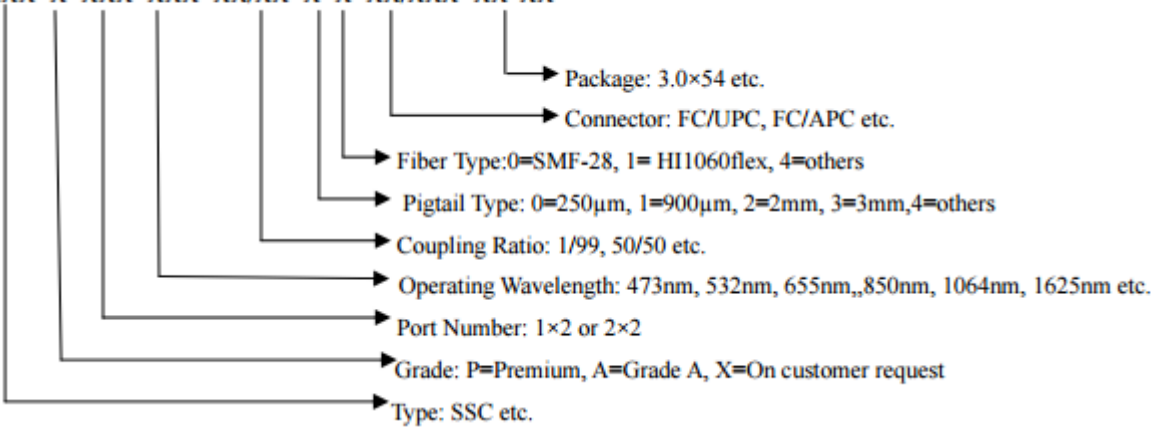
Package Information

Configuration	1×2 or 2×2		
Fiber lead length	1 meter, others on request		
Fiber type	250μm bare fiber	900μm loose tube	900μm/2mm/3mm loose tube
Dimensions (Φ×L)	Φ3.0mm×54mm	Φ3.0mm×70mm	90mm×14mm×8.5mm
	Φ2.4mm×42mm	Φ3.0mm×54mm	

*Other package dimensions can be made on customer request.

Ordering Information

STLC- XXX- X- XXX- XXX- XX/XX- X- X- XX/XXX- XX*XX



Visible Wavelength Combiner

Visible Wavelength Combiners are single mode optical fiber components and modules. They enable any two or three primary colours in the visible wavelength region to be combined or separated. Combiners are available for either 2 or 3 wavelengths: 2 wavelength combiners combine red/green, blue/green or red/blue. 3 wavelength combiners provide full RGB operation; enabling full colour displays.

Key Features

- 2 or 3 color combining or separating
- High power handing
- High stability and reliability

Applications

- Visible and display systems
- Sensors
- Biomedical equipment
- Research

Specifications

Item	Specification
Two wavelength combiner	Red/Green,Red/Blue,Green/Blue note1
Typical combine efficiency (%)	95% note2
Minimum combine efficiency (%)	90% note2
Fiber type	Specialty single mode fiber
Dimensions(Φ×L)(mm)	3×54(bare fiber) 3×60(0.9mm loose tube)
Operating / storage temperature range(℃)	-40~85

Item		Specification
Three wavelength combiner		655/532/473
Typical combine efficiency (%)	Red and Green	75% note2
	blue	90% note2
Minimum combine efficiency (%)	Red and Green	70% note2
	blue	85% note2
Fiber type		Specialty single mode fiber
Housing box(L×W×H) (mm)		100×80×10
Operating / storage temperature range(℃)		-40~85

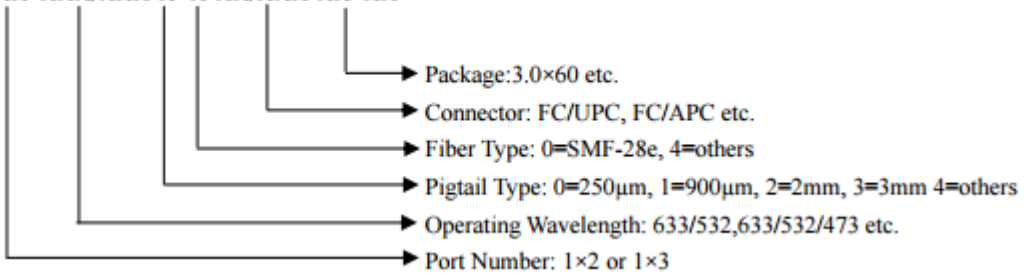
Note1: Red can be 630,633,655nm, Green can be 532nm, Blue can be 457,473,488nm.

Note2: The combine efficiency may different from the table value due to different wavelengths.

Note3: The above specification is without connector.

Ordering Information

STLC-PCOM-XXX-XXX/XXX-X- X-XX/XXX-XX*XX



1×N (N×N) Monolithic Multi-Mode Coupler

Multimode fiber couplers (MMC) are used for multimode fiber LAN systems. We offer a series of MMC with low insertion loss, high reliability.

Specifications:

Parameter		1×2 (2×2)MMC	
		P	A
Operating wavelength (nm)		850 or 1310, others on request	
Operating bandwidth (nm)		±40	
Typical excess loss (dB)		0.4	0.7
Insertion loss (dB)	50/50	≤3.7/3.7	≤4.0/4.0
	40/60	≤4.7/2.7	≤5.0/3.0
	30/70	≤6.0/2.1	≤6.3/2.4
	20/80	≤7.8/1.4	≤8.1/1.7
	10/90	≤11.2/0.9	≤11.6/1.2
	5/95	≤14.5/0.7	≤15.0/1.0
	2/98	≤18.6/0.6	≤19.4/0.9
	1/99	≤22.0/0.5	≤22.8/0.8
Uniformity (50/50) (dB)		≤0.5	≤0.8
Directivity (dB)		≥40	
Operating temperature (℃)		-40 ~ +85	
Fiber type (μm)		50/125 or 62.5/125 Multi-Mode or others	

Parameter	1×3 MMC		3×3 MMC		1×4 MMC	
Operating wavelength(nm)	850 or 1310, others on request					
Operating bandwidth (nm)	±40					
Grade	P	A	P	A	P	A
Typical excess loss (dB)	0.7	1.0	1.0	1.3	0.9	1.2
Insertion loss (dB)	≤6.0	≤6.3	≤6.3	≤6.6	≤7.8	≤8.3
Uniformity (dB)	≤0.6	≤0.9	≤1.2	≤1.6	≤1.2	≤1.5
Directivity (dB)	≥40					
Operating temperature (℃)	-40 ~ +85					
Fiber type (μm)	50/125 or 62.5/125 Multi-Mode or others					

* The above specification is without connector.
**Other specifications can be made on customer request.

Package information

Configuration		1×2 or 2×2	1×3, 3×3,1×4
Dimensions (Φ×L)(mm)	250μm bare fiber	Φ2.4×30, Φ2.4×42, Φ3.0×54	Φ3.0×54
	900μm loose tube	Φ3.0×54	Φ4.0×60
	900μm/2mm/3mm loose tube	90×14.×8.5	/
Fiber lead length		1 meter, others on request	

*Other package dimensions can be made on customer request.

Ordering Information

STLC- MMC-X-XXX-XXX-XX/XX-X-X-XX/XXX-XX*XX