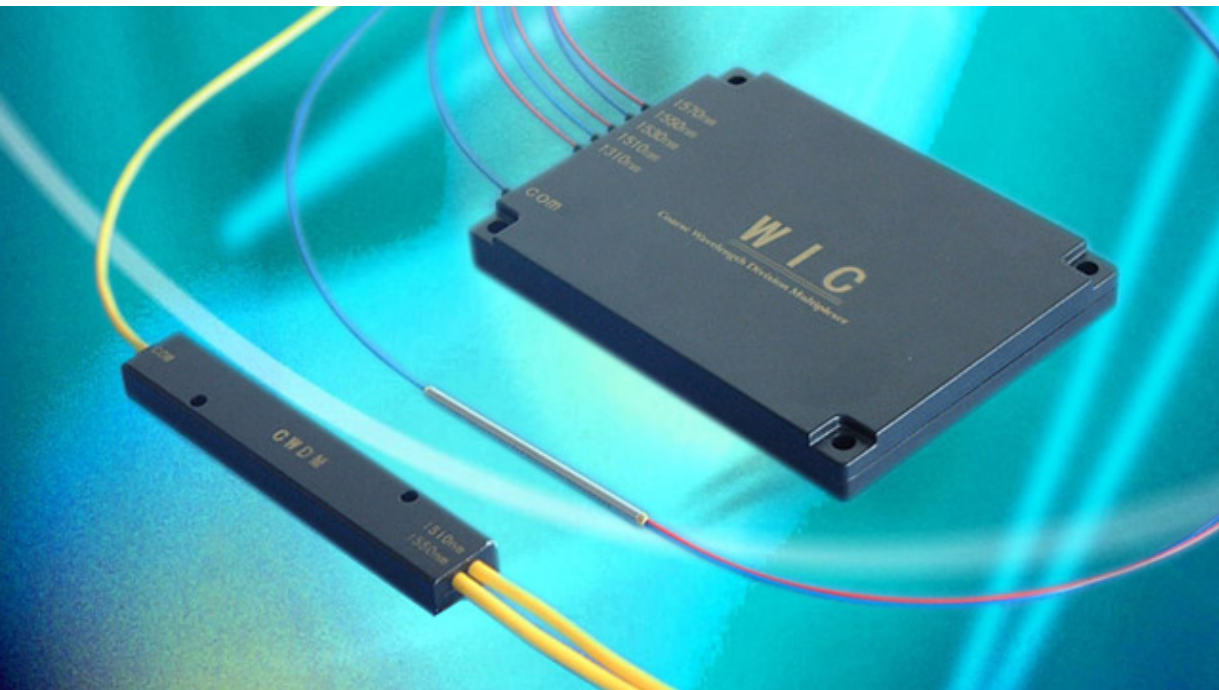


SPLITTERS, COUPLERS & WDM



PLC splitters, standard couplers, wide band couplers, dual wavelength couplers, polarization-independent couplers, polarization & wavelength independent couplers, polarization-independent dual-window couplers, WDMs, HWDMs, 980nm WDMs, 1480nm WDMs, etc.



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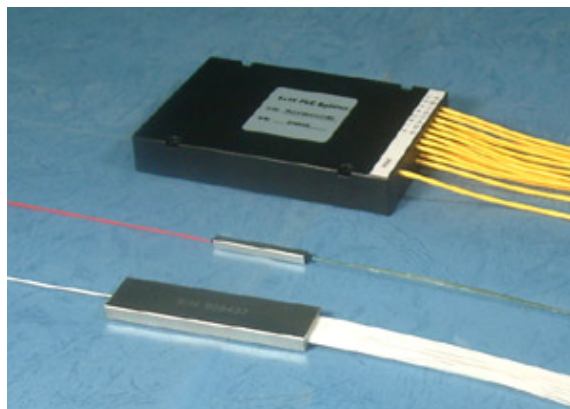
- connecting the world with fiber optics



PLC SPLITTERS

Description

PLC splitters are based on the Planar Waveguide Technology. They provide a cost effective and space saving networking solution. They are key components in FTTX networks and are responsible to distribute the signal from central office to numbers of premises. They have very wide range of operating wavelength from 1260nm to 1620nm. With it's compact size, these splitters can be utilized in in-ground and aerial pedestals as well as rack mount systems.



Our PLC splitters feature low insertion loss, low polarization dependent loss, and high port uniformity. The PLC splitters are available in a variety of configurations, pre-terminated and pre-package in ruggedized cassettes, compact square tubes or flat tubes.

Features

- Low loss
- Low polarization dependence
- Environmentally stable
- Excellent uniformity
- Telcordia GR-1221 and GR-1209

Applications

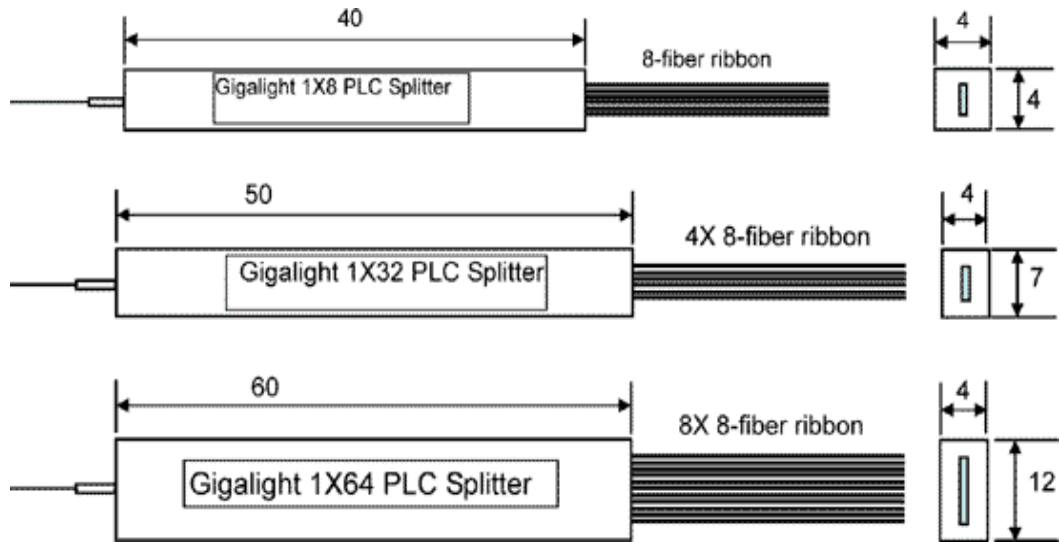
- FTTX
- Passive optical networks
- CATV
- LAN, WAN & Metro networks
- Test instrument

Specifications

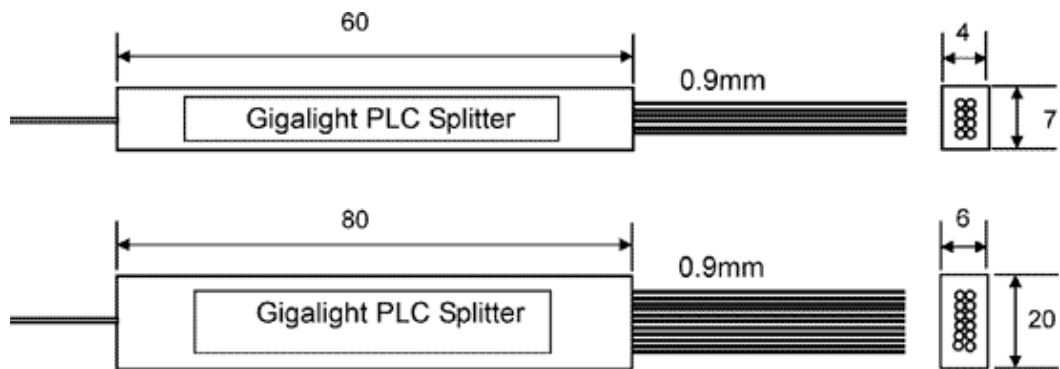
Characteristics		Unit	Value/Performance										
Operating Wavelength		nm	1260 - 1650, others on request										
Port Configuration		-	1x2	1x4	1x8	2x4	2x8	1x16	2x16	1x32	2x32	1x64	2x64
Insertion Loss		dB	≤4.0	≤7.3	≤10.5	≤7.6	≤11.0	≤13.7	≤14.4	≤16.9	≤17.5	≤21.0	≤21.0
Uniformity		dB	≤0.4	≤0.6	≤0.8	≤1.0	≤1.2	≤1.2	≤1.5	≤1.5	≤1.8	≤2.0	≤2.2
PDL		dB	≤0.2	≤0.2	≤0.2	≤0.2	≤0.3	≤0.25	≤0.3	≤0.3	≤0.4	≤0.35	≤0.4
Directivity		dB	≥55										
Operating Temperature		°C	-20 ~ +70										
Storage Temperature		°C	-40 ~ +85										
Max. Power		mW	300										
Lead Length		m	1, others on request										
Package Type		-	Box, square tube with bare ribbon, flat tube with 900um fibers										
Dimension	Cassette	mm	100x80x10				120x80x18			140x115x18			
	Sq. Tube	mm	40x4x4		50x4x4			50x7x4		60x7x4	60x12x4	N.A.	
	Flat Tube	mm	50x7x4		60x7x4			60x12x4		80x20x6		N.A.	

Dimensional Drawing

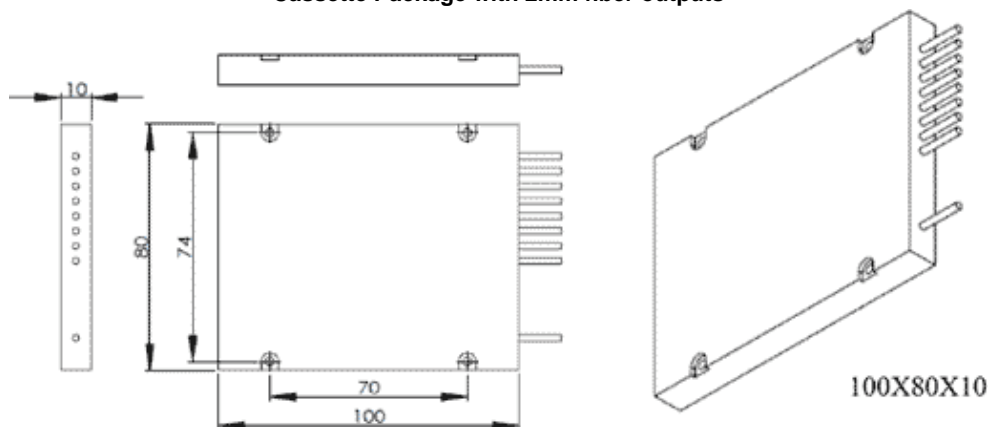
Square Tube Package with ribbon fiber outputs



Flat Tube Package with 900um fiber outputs

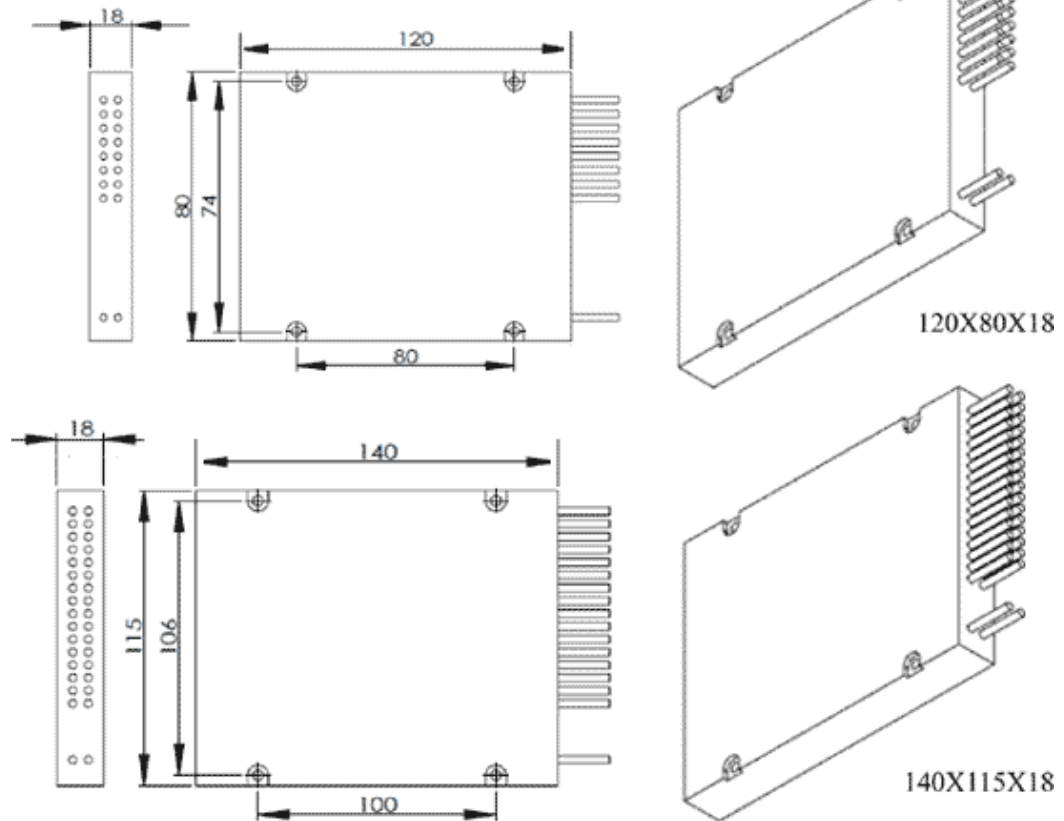


Cassette Package with 2mm fiber outputs



Dimensional Drawing

Cassette Package with 2mm fiber outputs



Ordering Information

Part Number: **PLC-208ST 1 1 LU- 4 2 LU 1 3**

1 2 3 4 5 6 7 8 9 10

1 Configuration	102=1x2, 104=1x4, 108=1x8, 208=2x8, 116=1x16, 232=2x32, etc.
2 Package	BX=Box, ST=Square Tube, FT=Flat Tube
3 Input Fiber Type	1=250um, 2=900um, 3=2.0mm
4 Input Fiber Length	Length in meter, i.e. 1=1m, 1.5=1.5m
5 Input Connector	Blank=no connector, LU=LC/UPC, SU=SC/UPC, SA=SC/APC, etc.
6 Output Fiber Type	1=250um, 2=900um, 3=2.0mm, 4=Bare Ribbon
7 Output Fiber Total Length	Length in meter, i.e. 1=1m, 1.5=1.5m
8 Output Connector	Blank=no connector, LU=LC/UPC, SU=SC/UPC, SA=SC/APC, etc.
9 Fan-out Length in meter	For bare ribbon output only, and blank for all other outputs
10 Fan-out Fiber Jacket Type	2=900um, 3=2.0mm. For bare ribbon output only, and blank for all other outputs

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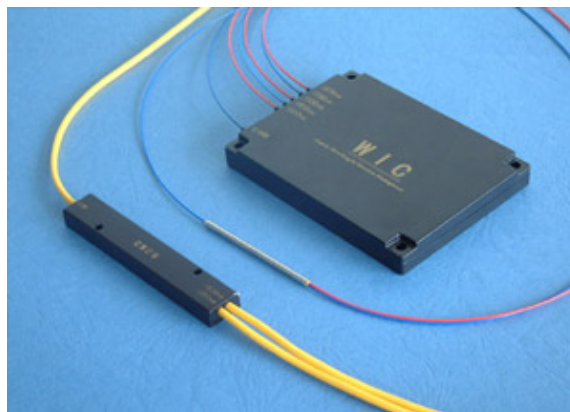
STANDARD COUPLERS

Description

Fused Biconic Taper (FBT) Technique is used to make our standard single mode couplers. They have minimal excess loss and long-term stability. Unused ports are terminated to reduce back reflection.

1x2 couplers are used to split light with minimal loss from one into two fibers or to merge light from two fibers into one. These components are excellent for duplex transmission on a single fiber in CATV systems or within fiber optic test sets.

1xN tree couplers and NxN star couplers are made with fuse cascade-connecting (N-1) pieces of 1x2 and 2x2 couplers respectively.



Features

- Low loss
- Low polarization dependence
- Environmentally stable
- Good thermal stability
- Excellent uniformity

Applications

- Local Area Networks
- CATV
- Fiber optic sensors
- Test instrument

Specifications

Characteristics		Unit	Value/Performance			
1X2, 2X2						
Center Wavelength		nm	1310 or 1550, others on request			
Bandwidth		nm	±20			
Excess Loss		dB	≤0.08 (0.05 typ.)			
Coupling Ratio		-	50/50	40/60	30/70	20/80
Typ. Insertion Loss		dB	3.05	4.1/2.3	5.3/1.6	7.1/1.0
Max. Insertion Loss		dB	3.3	4.4/2.5	5.6/1.8	7.4/1.1
Polarization Dependent Loss		dB	≤0.1	≤0.1	≤0.15/0.1	≤0.15/0.1
Thermal Stability		dB/°C	≤0.002 over -40 ~ +80°C			
Directivity	1x2	dB	≥50, ≥60 on request			
	2x2	dB	≥65			
Lead Length		m	1, others on request			
Lead Type		-	250um bare fiber	900um loose tube	2 or 3mm loose tube	
Package Type		-	A1	A3 or B	B	
Operating Temperature		°C	-40 ~ +80	-20 ~ +70	-20 ~ +70	

Specifications

Characteristics	Unit	Value/Performance			
1xN, NxN					
Configuration	-	N x 4 N=1,2, 4	N x 8 N=1,2, 8	N x 16 N=1,2, 16	N x 32 N=1,2, 32
Center Wavelength	nm	1310 or 1550, others on request			
Bandwidth	nm	±20			
Max. Excess Loss	dB	0.2	0.3	0.4	0.5
Typ. Insertion Loss	dB	6.2	9.3	12.4	15.5
Max. Insertion Loss	dB	6.8	10.2	13.6	17.0
Uniformity	dB	≤1.2	≤1.8	≤2.4	≤3.0
Polarization Dependent Loss	dB	≤0.2	≤0.3	≤0.4	≤0.5
Thermal Stability	dB	≤0.2	≤0.3	≤0.4	≤0.5
Directivity	dB	≥60			
Operating Temperature	°C	-20 ~ +70			
Lead Length	m	1, others on request			
Lead Type	-	900um, 2mm or 3mm loose tube			
Package Type	-	C	D	E	E

Dimensional Drawing

Please see coupler package information.

Ordering Information

Part Number: **SC-12 1 -50/50SM 2 A3- 1 FU**

1 2 3 4 5 6 7

- 1** Configuration 12=1x2, 22=2x2, 18=1x8, 1616=16x16, 132=1x32, etc.
- 2** Wavelength 1=1310nm, 2=1550nm
- 3** Coupling Ratio 50/50, 40/60, 20/80, 25x4(for 25/25/25/25), etc.
- 4** Lead Type 1=250um, 2=900um, 3=2.0mm, 4=3.0mm
- 5** Package Type A1, A3, B, C, D or E
- 6** Lead Length 0.5=0.5m, 1=1m, etc.
- 7** Connectors Terminated Blank=no connector, FU=FC/UPC, FA=FC/APC, SU=SC/UPC, SA=SC/APC

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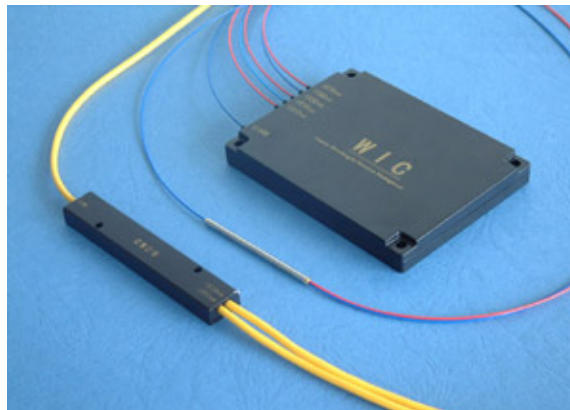
WIDE-BAND COUPLERS

Description

The wide-band single mode couplers are manufactured with Fused Biconic Taper (FBT) Technique. They have wide bandwidth, minimal excess loss, long-term stability and high directivity. They are optimized at 1310nm, 1550nm, or custom wavelengths, and is available in a variety of coupling ratios.

1x2 couplers are used to split light with minimal loss from one into two fibers or to merge light from two fibers into one across a broad wavelength region.

1xN tree couplers and NxN star couplers are made with fuse cascade-connecting (N-1) pieces of 1x2 and 2x2 couplers respectively.



Features

- Wide bandwidth
- Low loss
- Low polarization dependence
- Environmentally stable
- Excellent uniformity

Applications

- Local Area Networks
- CATV distribution
- Fiber optic sensors
- DWDM systems
- Trunk/loop branching

Specifications

Characteristics		Unit	Value/Performance			
1X2, 2X2						
Center Wavelength		nm	1310 or 1550, others on request			
Bandwidth		nm	±40			
Excess Loss		dB	≤0.08 (0.05 typ.)			
Coupling Ratio		-	50/50	40/60	30/70	20/80
Typ. Insertion Loss		dB	3.05	4.1/2.3	5.3/1.6	7.1/1.0
Max. Insertion Loss		dB	3.4	4.4/2.5	5.6/1.8	7.4/1.2
Polarization Dependent Loss		dB	≤0.1	≤0.1	≤0.15/0.1	≤0.15/0.1
Thermal Stability		dB/°C	≤0.002 over -40 ~ +80°C			
Directivity	1x2	dB	≥50, ≥60 on request			
	2x2	dB	≥65			
Lead Length		m	1, others on request			
Lead Type		-	250um bare fiber	900um loose tube	2 or 3mm loose tube	
Package Type		-	A1	A3 or B	B	
Operating Temperature		°C	-40 ~ +80	-20 ~ +70	-20 ~ +70	

Specifications

Characteristics	Unit	Value/Performance			
1xN, NxN					
Configuration	-	N x 4 N=1,2, 4	N x 8 N=1,2, 8	N x 16 N=1,2, 16	N x 32 N=1,2, 32
Center Wavelength	nm	1310 or 1550, others on request			
Bandwidth	nm	±40			
Max. Excess Loss	dB	0.2	0.3	0.4	0.5
Typ. Insertion Loss	dB	6.2	9.3	12.4	15.5
Max. Insertion Loss	dB	6.8	10.2	13.6	17.0
Uniformity	dB	≤1.2	≤1.8	≤2.4	≤3.0
Polarization Dependent Loss	dB	≤0.2	≤0.3	≤0.4	≤0.5
Thermal Stability	dB	≤0.2	≤0.3	≤0.4	≤0.5
Directivity	dB	≥60			
Operating Temperature	°C	-20 ~ +70			
Lead Length	m	1, others on request			
Lead Type	-	900um, 2mm or 3mm loose tube			
Package Type	-	C	D	E	E

Dimensional Drawing

Please see coupler package information.

Ordering Information

Part Number: **WBC-12 1 -50/50SM 1 A3- 1 FA**

1 2 3 4 5 6 7

1 Configuration	12=1x2, 22=2x2, 18=1x8, 1616=16x16, 132=1x32, etc.
2 Wavelength	1=1310nm, 2=1550nm
3 Coupling Ratio	50/50, 40/60, 20/80, 25x4(for 25/25/25/25), etc.
4 Lead Type	1=250um, 2=900um, 3=2.0mm, 4=3.0mm
5 Package Type	A1, A3, B, C, D or E
6 Lead Length	0.5=0.5m, 1=1m, etc.
7 Connectors Terminated	Blank=no connector, FU=FC/UPC, FA=FC/APC, SU=SC/UPC, SA=SC/APC

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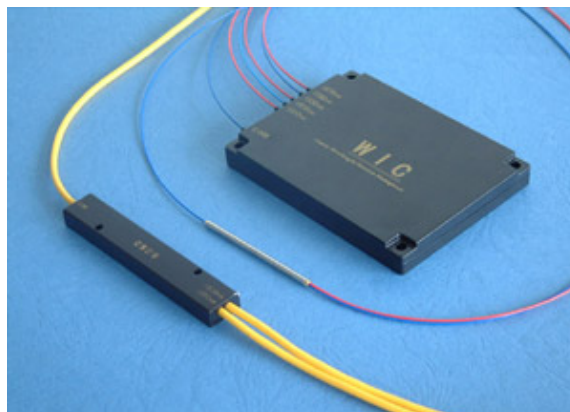
DUAL-WINDOW COUPLERS

Description

The dual-window single mode couplers are made using Fused Biconic Taper (FBT) Technique. They have dual window of 1310nm and 1550nm, minimal excess loss, long-term stability and high directivity. They are optimized at 1310 and 1550nm, and is available in a variety of coupling ratios.

1x2 couplers are used to split light with minimal loss from one into two fibers or to merge light from two fibers into one across broad wavelength regions in windows of 1310nm and 1550nm.

1xN tree couplers and NxN star couplers are made with fuse cascade-connecting (N-1) pieces of 1x2 and 2x2 couplers respectively.



Features

- Dual wavelength with wide bandwidth
- Low loss
- Low polarization dependence
- Environmentally stable
- Excellent uniformity

Applications

- Local Area Networks
- CATV distribution
- Fiber optic sensors
- DWDM systems
- Trunk/loop branching

Specifications

Characteristics		Unit	Value/Performance			
1X2, 2X2						
Center Wavelength		nm	1310 and 1550			
Bandwidth		nm	±40			
Excess Loss		dB	≤0.08 (0.06 typ.)			
Coupling Ratio		-	50/50	40/60	30/70	20/80
Typ. Insertion Loss		dB	3.06	4.1/2.3	5.3/1.6	7.1/1.0
Max. Insertion Loss		dB	3.6	4.7/2.7	6.0/1.9	7.9/1.2
Polarization Dependent Loss		dB	≤0.1	≤0.1	≤0.15/0.1	≤0.15/0.1
Thermal Stability		dB/°C	≤0.002 over -40 ~ +80°C			
Directivity	1x2	dB	≥50, ≥60 on request			
	2x2	dB	≥65			
Lead Length		m	1, others on request			
Lead Type		-	250um bare fiber	900um loose tube	2 or 3mm loose tube	
Package Type		-	A1	A3 or B	B	
Operating Temperature		°C	-40 ~ +80	-20 ~ +70	-20 ~ +70	

Specifications

Characteristics	Unit	Value/Performance			
1xN, NxN					
Configuration	-	N x 4 N=1,2, 4	N x 8 N=1,2, 8	N x 16 N=1,2, 16	N x 32 N=1,2, 32
Center Wavelength	nm	1310 and 1550			
Bandwidth	nm	±40			
Max. Excess Loss	dB	0.2	0.3	0.4	0.5
Typ. Insertion Loss	dB	6.2	9.3	12.4	15.5
Max. Insertion Loss	dB	7.0	10.5	14	17.5
Uniformity	dB	≤1.6	≤2.4	≤3.2	≤4.0
Polarization Dependent Loss	dB	≤0.2	≤0.3	≤0.4	≤0.5
Thermal Stability	dB	≤0.2	≤0.3	≤0.4	≤0.5
Directivity	dB	≥60			
Operating Temperature	°C	-20 ~ +70			
Lead Length	m	1, others on request			
Lead Type	-	900um, 2mm or 3mm loose tube			
Package Type	-	C	D	E	E

Dimensional Drawing

Please see coupler package information.

Ordering Information

Part Number: **DWC-22 3 -50/50SM 2 A3- 1 FU**

1 2 3 4 5 6 7

1 Configuration	12=1x2, 22=2x2, 18=1x8, 1616=16x16, 132=1x32, etc.
2 Wavelength	3=1310nm & 1550nm
3 Coupling Ratio	50/50, 40/60, 20/80, 25x4(for 25/25/25/25), etc.
4 Lead Type	1=250um, 2=900um, 3=2.0mm, 4=3.0mm
5 Package Type	A1, A3, B, C, D or E
6 Lead Length	0.5=0.5m, 1=1m, etc.
7 Connectors Terminated	Blank=no connector, FU=FC/UPC, FA=FC/APC, SU=SC/UPC, SA=SC/APC

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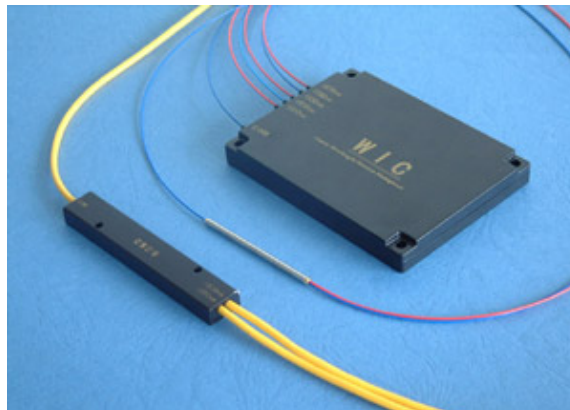
POLARIZATION-INDEPENDENT COUPLERS

Description

The polarization-independent single mode couplers are manufactured with Fused Biconic Taper (FBT) Technique. They are based on the standard single mode fiber couplers. However, they have extra-low polarization dependent loss (PDL) of less than 0.04dB for coupling ratio 50/50. They are suited for applications where PDL of the system is critical.

1x2 couplers are used to split light with minimal loss from one to two or to merge light from two fibers into one.

1xN tree couplers and NxN star couplers are made with fuse cascade-connecting (N-1) pieces of 1x2 and 2x2 couplers respectively.



Features

- Low loss
- Minimal polarization dependence
- Environmentally stable
- Good thermal stability
- Excellent uniformity

Applications

- Optical Amplifiers
- CATV
- WDM systems
- LAN
- Test instrument

Specifications

Characteristics	Unit	Value/Performance			
1X2, 2X2					
Center Wavelength	nm	1310 or 1550, others on request			
Bandwidth	nm	±20			
Excess Loss	dB	≤0.08 (0.05 typ.)			
Coupling Ratio	-	50/50	40/60	30/70	20/80
Typ. Insertion Loss	dB	3.05	4.1/2.3	5.3/1.6	7.1/1.0
Max. Insertion Loss	dB	3.3	4.4/2.5	5.6/1.8	7.4/1.2
Polarization Dependent Loss	dB	≤0.04	≤0.04	≤0.06/0.04	≤0.06/0.04
Thermal Stability	dB/°C	≤0.002 over -40 ~ +80°C			
Directivity	1x2	dB	≥50, ≥60 on request		
	2x2	dB	≥65		
Lead Length	m	1, others on request			
Lead Type	-	250um bare fiber	900um loose tube	2 or 3mm loose tube	
Package Type	-	A1	A3 or B	B	
Operating Temperature	°C	-40 ~ +80	-20 ~ +70	-20 ~ +70	

Specifications

Characteristics		Unit	Value/Performance			
1X2, 2X2, Tap-couplers						
Center Wavelength		nm	1310 or 1550, others on request			
Bandwidth		nm	±20nm			
Excess Loss		dB	≤0.08 (0.05 typ.)			
Coupling Ratio		-	1/99	3/97	5/95	10/90
Max. Insertion Loss		dB	21.5/0.2	17.5/0.3	14.6/0.4	10.8/0.6
WDL*1 (tap port)		dB	±0.5	±0.4	±0.3	±0.3
PDL*2 (tap port)		dB	≤0.08			
Thermal Stability (tap port)		dB/°C	≤0.002 over -40 ~ +80°C			
Directivity	1x2	dB	≥50, ≥60 on request			
	2x2	dB	≥65			
Lead Length		m	1, others on request			
Lead Type		-	250um bare fiber	900um loose tube	2 or 3mm loose tube	
Package Type		-	A1	A3 or B	B	
Operating Temperature		°C	-40 ~ +80	-20 ~ +70	-20 ~ +70	
1xN, NxN						
Configuration		-	N x 4 N=1,2, 4	N x 8 N=1,2, 8	N x 16 N=1,2, 16	N x 32 N=1,2, 32
Center Wavelength		nm	1310 or 1550, others on request			
Bandwidth		nm	±20			
Max. Excess Loss		dB	0.2	0.3	0.4	0.5
Typ. Insertion Loss		dB	6.2	9.3	12.4	15.5
Max. Insertion Loss		dB	6.8	10.2	13.6	17.0
Uniformity		dB	≤1.2	≤1.8	≤2.4	≤3.0
Polarization Dependent Loss		dB	≤0.08	≤0.12	≤0.16	≤0.2
Thermal Stability		dB	≤0.2	≤0.3	≤0.4	≤0.5
Directivity		dB	≥60			
Operating Temperature		°C	-20 ~ +70			
Lead Length		m	1, others on request			
Lead Type		-	900um, 2mm or 3mm loose tube			
Package Type		-	C	D	E	E

*1 WDL = Wavelength dependent loss

*2 PDL = Polarization dependent loss

Dimensional Drawing

Please see coupler package information.

Ordering Information

Part Number: **PIC-12 1 -40/60SM 2 A3- 1 SU**

1 2 3 4 5 6 7

1	Configuration	12=1x2, 22=2x2, 18=1x8, 1616=16x16, 132=1x32, etc.
2	Wavelength	1=1310nm, 2=1550nm
3	Coupling Ratio	50/50, 40/60, 20/80, 10/90, 3/97, 25x4(for 25/25/25/25), etc.
4	Lead Type	1=250um, 2=900um, 3=2.0mm, 4=3.0mm
5	Package Type	A1, A3, B, C, D or E
6	Lead Length	0.5=0.5m, 1=1m, etc.
7	Connectors Terminated	Blank=no connector, FU=FC/UPC, FA=FC/APC, SU=SC/UPC, SA=SC/APC

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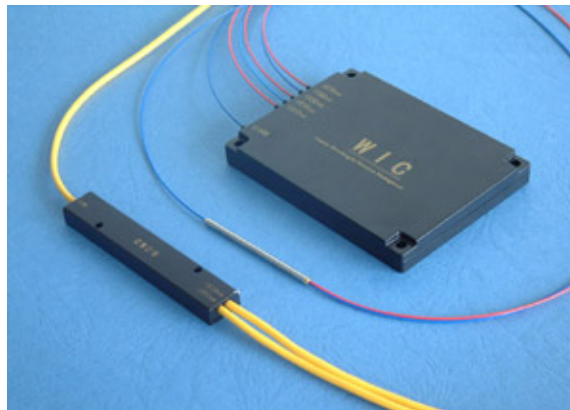
POLARIZATION & WAVELENGTH INDEPENDENT COUPLERS

Description

The polarization and wavelength independent single mode couplers are made using Fused Biconic Taper (FBT) Technique. They are based on the standard wide-band couplers. However, they have very low polarization dependent loss (PDL) of less than 0.05dB for coupling ratio 50/50. They are suited for applications where PDL of the system is critical.

1x2 couplers are used to split light with minimal loss from one into two fibers or to merge light from two fibers into one across a broad wavelength region.

1xN tree couplers and NxN star couplers are made with fuse cascade-connecting (N-1) pieces of 1x2 and 2x2 couplers respectively.



Features

- Low loss
- Minimal polarization dependence
- Environmentally stable
- Wide bandwidth

Applications

- Optical Amplifiers
- CATV
- WDM systems
- LAN

Specifications

Characteristics		Unit	Value/Performance			
1X2, 2X2						
Center Wavelength		nm	1310 or 1550, others on request			
Bandwidth		nm	±40			
Excess Loss		dB	≤0.08 (0.05 typ.)			
Coupling Ratio		-	50/50	40/60	30/70	20/80
Typ. Insertion Loss		dB	3.05	4.1/2.3	5.3/1.6	7.1/1.0
Max. Insertion Loss		dB	3.3	4.4/2.5	5.6/1.8	7.4/1.2
Polarization Dependent Loss		dB	≤0.05	≤0.05	≤0.08/0.05	≤0.1/0.05
Thermal Stability		dB/°C	≤0.002 over -40 ~ +80°C			
Directivity	1x2	dB	≥50, ≥60 on request			
	2x2	dB	≥65			
Lead Length		m	1, others on request			
Lead Type		-	250um bare fiber	900um loose tube	2 or 3mm loose tube	
Package Type		-	A1	A3 or B	B	
Operating Temperature		°C	-40 ~ +80	-20 ~ +70	-20 ~ +70	

Specifications

Characteristics		Unit	Value/Performance			
1X2, 2X2, Tap-couplers						
Center Wavelength		nm	1310 or 1550, others on request			
Bandwidth		nm	±40nm			
Excess Loss		dB	≤0.08			
Coupling Ratio		-	1/99	3/97	5/95	10/90
Max. Insertion Loss		dB	21.5/0.2	17.5/0.3	14.6/0.4	10.8/0.6
WDL*1 (tap port)		dB	±0.4	±0.4	±0.3	±0.3
PDL*2 (tap port)		dB	≤0.1			
Thermal Stability (tap port)		dB/°C	≤0.002 over -40 ~ +80°C			
Directivity	1x2	dB	≥50, ≥60 on request			
	2x2	dB	≥65			
Lead Length		m	1, others on request			
Lead Type		-	250um bare fiber	900um loose tube	2 or 3mm loose tube	
Package Type		-	A1	A3 or B	B	
Operating Temperature		°C	-40 ~ +80	-20 ~ +70	-20 ~ +70	
1xN, NxN						
Configuration		-	N x 4 N=1,2, 4	N x 8 N=1,2, 8	N x 16 N=1,2, 16	N x 32 N=1,2, 32
Center Wavelength		nm	1310 or 1550, others on request			
Bandwidth		nm	±40			
Max. Excess Loss		dB	0.2	0.3	0.4	0.5
Typ. Insertion Loss		dB	6.2	9.3	12.4	15.5
Max. Insertion Loss		dB	6.8	10.2	13.6	17.0
Uniformity		dB	≤1.4	≤2.1	≤2.8	≤3.5
Polarization Dependent Loss		dB	≤0.1	≤0.15	≤0.2	≤0.25
Thermal Stability		dB	≤0.2	≤0.3	≤0.4	≤0.5
Directivity		dB	≥60			
Operating Temperature		°C	-20 ~ +70			
Lead Length		m	1, others on request			
Lead Type		-	900um, 2mm or 3mm loose tube			
Package Type		-	C	D	E	E

*1 WDL = Wavelength dependent loss

*2 PDL = Polarization dependent loss

Dimensional Drawing

Please see coupler package information.

Ordering Information

Part Number: **PWIC-12 2 -5/95 SM 1 A1-0.5**

1 2 3 4 5 6 7

1	Configuration	12=1x2, 22=2x2, 18=1x8, 1616=16x16, 132=1x32, etc.
2	Wavelength	1=1310nm, 2=1550nm
3	Coupling Ratio	50/50, 40/60, 20/80, 5/95, 3/97, 25x4(for 25/25/25/25), etc.
4	Lead Type	1=250um, 2=900um, 3=2.0mm, 4=3.0mm
5	Package Type	A1, A3, B, C, D or E
6	Lead Length	0.5=0.5m, 1=1m, etc.
7	Connectors Terminated	Blank=no connector, FU=FC/UPC, FA=FC/APC, SU=SC/UPC, SA=SC/APC

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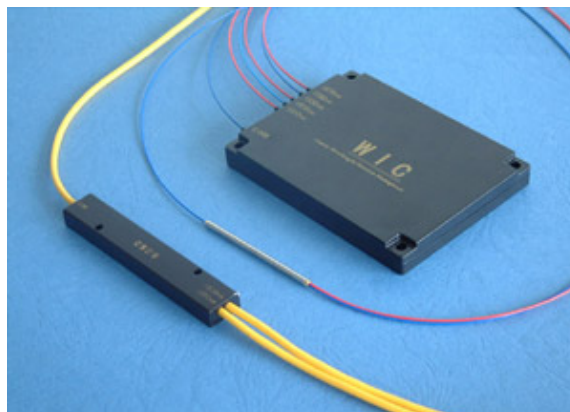
POLARIZATION-INDEPENDENT DUAL-WINDOW COUPLERS

Description

Fused Biconic Taper (FBT) Technique is used to make our polarization-independent dual-window couplers. They are based on the standard dual-window couplers. However, they have very low polarization dependent loss (PDL) of less than 0.06dB for coupling ratio 50/50. They are suited for applications where PDL of the system is critical.

1x2 couplers are used to split light, with minimal loss, from one into two fibers or to merge light from two fibers into one in windows of 1310nm and 1550nm.

1xN tree couplers and NxN star couplers are made with fuse cascade-connecting (N-1) pieces of 1x2 and 2x2 couplers respectively.



Features

- Dual wavelength with wide bandwidth
- Minimal polarization dependence
- Environmentally stable
- Low loss

Applications

- Optical Amplifiers
- CATV
- WDM systems
- LAN

Specifications

Characteristics		Unit	Value/Performance			
1X2, 2X2						
Center Wavelength		nm	1310 and 1550			
Bandwidth		nm	±40			
Excess Loss		dB	≤0.08 (0.06 typ.)			
Coupling Ratio		-	50/50	40/60	30/70	20/80
Typ. Insertion Loss		dB	3.06	4.1/2.3	5.3/1.6	7.1/1.0
Max. Insertion Loss		dB	3.6	4.7/2.7	6.0/1.9	7.9/1.3
Polarization Dependent Loss		dB	≤0.06	≤0.06	≤0.09/0.06	≤0.12/0.09
Thermal Stability		dB/°C	≤0.002 over -40 ~ +80°C			
Directivity	1x2	dB	≥50, ≥60 on request			
	2x2	dB	≥65			
Lead Length		m	1, others on request			
Lead Type		-	250um bare fiber	900um loose tube	2 or 3mm loose tube	
Package Type		-	A1	A3 or B	B	
Operating Temperature		°C	-40 ~ +80	-20 ~ +70	-20 ~ +70	

Specifications

Characteristics		Unit	Value/Performance			
1X2, 2X2, Tap-couplers						
Center Wavelength		nm	1310 and 1550			
Bandwidth		nm	±40nm			
Excess Loss		dB	≤0.08			
Coupling Ratio		-	1/99	3/97	5/95	10/90
Max. Insertion Loss		dB	22/0.25	17.8/0.35	14.8/0.45	11.2/0.7
WDL*1 (tap port)		dB	±0.4	±0.4	±0.3	±0.2
PDL*2 (tap port)		dB	≤0.12			
Thermal Stability (tap port)		dB/°C	≤0.002 over -40 ~ +80°C			
Directivity	1x2	dB	≥50, ≥60 on request			
	2x2	dB	≥65			
Lead Length		m	1, others on request			
Lead Type		-	250um bare fiber	900um loose tube	2 or 3mm loose tube	
Package Type		-	A1	A3 or B	B	
Operating Temperature		°C	-40 ~ +80	-20 ~ +70	-20 ~ +70	
1xN, NxN						
Configuration		-	N x 4 N=1,2, 4	N x 8 N=1,2, 8	N x 16 N=1,2, 16	N x 32 N=1,2, 32
Center Wavelength		nm	1310 and 1550			
Bandwidth		nm	±40			
Max. Excess Loss		dB	0.2	0.3	0.4	0.5
Typ. Insertion Loss		dB	6.2	9.3	12.4	15.5
Max. Insertion Loss		dB	7.0	10.5	14.0	17.5
Uniformity		dB	≤1.6	≤2.4	≤3.2	≤4.0
Polarization Dependent Loss		dB	≤0.12	≤0.18	≤0.24	≤0.3
Thermal Stability		dB	≤0.2	≤0.3	≤0.4	≤0.5
Directivity		dB	≥60			
Operating Temperature		°C	-20 ~ +70			
Lead Length		m	1, others on request			
Lead Type		-	900um, 2mm or 3mm loose tube			
Package Type		-	C	D	E	E

*1 WDL = Wavelength dependent loss

*2 PDL = Polarization dependent loss

Dimensional Drawing

Please see coupler package information.

Ordering Information

Part Number: **PDWC-18 3 -12.5X8SM 3 D - 1 FA**

1 2 3 4 5 6 7

1	Configuration	12=1x2, 22=2x2, 18=1x8, 1616=16x16, 132=1x32, etc.
2	Wavelength	3=1310nm & 1550nm
3	Coupling Ratio	50/50, 40/60, 20/80, 5/95, 3/97, 25x4(for 25/25/25/25), etc.
4	Lead Type	1=250um, 2=900um, 3=2.0mm, 4=3.0mm
5	Package Type	A1, A3, B, C, D or E
6	Lead Length	0.5=0.5m, 1=1m, etc.
7	Connectors Terminated	Blank=no connector, FU=FC/UPC, FA=FC/APC, SU=SC/UPC, SA=SC/APC

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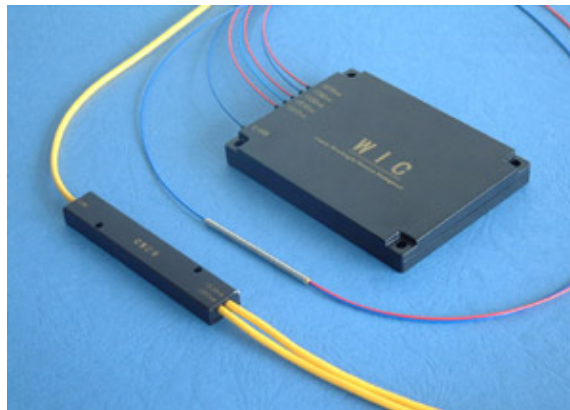
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1310/1550NM WDM

Description

Fused Biconic Taper (FBT) Technique is used to make our single mode wavelength division multiplexers (WDM). The WDM multiplexes two optical carrier signals signals at 1310nm and 1550nm wavelengths on a single optical fiber to carry different signals, or de-multiplexes the signals from a single fiber into two separate fibers. This allows for a multiplication in capacity, in addition to making it possible to perform bi-directional communications over one strand of fiber. The true potential of optical fiber is fully exploited when multiple beams of light at different frequencies are transmitted on the same fiber.



Our WDM products have low polarization dependence. In addition to standard WDM (isolation ≤ 20 dB), we also provide HWDM (isolation ≤ 38 dB) and SWDM (isolation ≤ 45 dB).

Features

- Low insertion loss
- High wavelength isolation
- Low polarization dependence
- Environmentally stable

Applications

- WDM Networks
- CATV

Specifications

Characteristics	Unit	Value/Performance		
Center Wavelength	nm	1310 and 1550		
Bandwidth	nm	± 10		
Insertion Loss	dB	≤ 0.15 (0.1 typ.)		
Isolation	dB	≥ 20		
Polarization Dependent Loss	dB	≤ 0.1		
Thermal Stability	dB/°C	≤ 0.002 over $-40 \sim +80^{\circ}\text{C}$		
Directivity	dB	≥ 60		
Configuration	-	1x2 or 2x2		
Lead Length	m	1, others on request		
Lead Type	-	250um bare fiber	900um loose tube	2 or 3mm loose tube
Package Type	-	A1	A3 or B	B or C
Operating Temperature	°C	$-40 \sim +80$	$-20 \sim +70$	$-20 \sim +70$

Dimensional Drawing

Please see coupler package information.

Ordering Information

Part Number: **WDM-12 3 SM 1 A1- 1 SA**

1 2 3 4 5 6

1	Configuration	12=1x2, 22=2x2
2	Wavelength	3=1310nm & 1550nm
3	Lead Type	1=250um, 2=900um, 3=2.0mm, 4=3.0mm
4	Package Type	A1, A3, B or C
5	Lead Length	0.5=0.5m, 1=1m, etc.
6	Connectors Terminated	Blank=no connector, FU=FC/UPC, FA=FC/APC, SU=SC/UPC, SA=SC/APC

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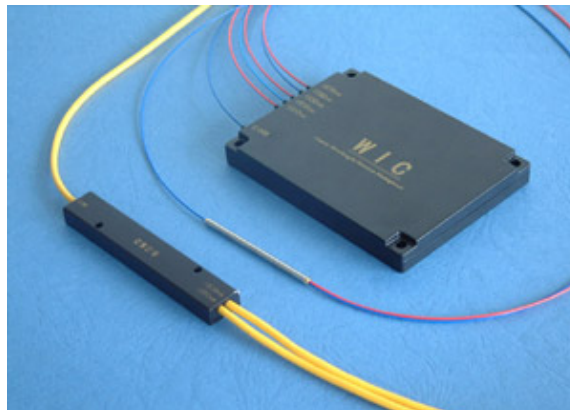
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HIGH ISOLATION WDM

Description

Fused Biconic Taper (FBT) Technique is used to make our single mode wavelength division multiplexers (WDM). The WDM multiplexes two optical carrier signals signals at 1310nm and 1550nm wavelengths on a single optical fiber to carry different signals, or de-multiplexes the signals from a single fiber into two separate fibers. This allows for a multiplication in capacity, in addition to making it possible to perform bi-directional communications over one strand of fiber. The true potential of optical fiber is fully exploited when multiple beams of light at different frequencies are transmitted on the same fiber.



Our WDM products have low polarization dependence. Our high isolation WDM has isolation of ≥ 38 dB, and our super high isolation WDM has isolation of ≥ 45 dB.

Features

- Low insertion loss
- High wavelength isolation
- Low polarization dependence
- Environmentally stable

Applications

- WDM Networks
- CATV

Specifications

Characteristics	Unit	Value/Performance	
		HWDM	SWDM
Isolation Type	-	HWDM	SWDM
Center Wavelength	nm	1310 and 1550	
Bandwidth	nm	± 15	
Insertion Loss	dB	≤ 0.60	≤ 0.80
Isolation	dB	≥ 38	≥ 45
Polarization Dependent Loss	dB	≤ 0.1	
Thermal Stability	dB/°C	≤ 0.002 over $-20 \sim +70^\circ\text{C}$	
Directivity	dB	≥ 60	
Configuration	-	1x2	
Lead Length	m	1, others on request	
Lead Type	-	900um, 2mm or 3mm loose tube	
Package Type	-	C	C or D
Operating Temperature	°C	$-20 \sim +70^\circ\text{C}$	

Dimensional Drawing

Please see coupler package information.

Ordering Information

Part Number: **HWDM-12 3 SM 1 C - 1 FU**

1 2 3 4 5 6

1	Isolation Type	HWDM = high isolation, SWDM = super high isolation
2	Wavelength	3 = 1310nm & 1550nm
3	Lead Type	2=900um, 3=2.0mm, 4=3.0mm
4	Package Type	C or D
5	Lead Length	0.5=0.5m, 1=1m, etc.
6	Connectors Terminated	Blank=no connector, FU=FC/UPC, FA=FC/APC, SU=SC/UPC, SA=SC/APC

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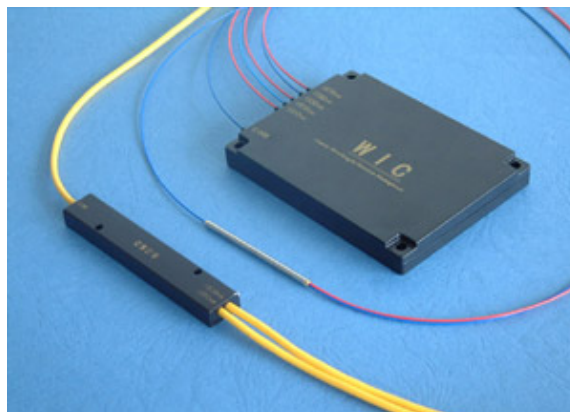
980/1550NM WDM

Description

The fiber amplifier WDM enables the combination of pump and signal in C-band 980nm pumped Erbium Doped fiber Amplifiers (EDFA). The uniquely low insertion loss of this component, across the whole C-band, enables manufacturers to achieve the lowest noise figure in their amplifiers. Similarly low loss in the 980nm window maximizes the pump power reaching the Erbium fiber. Applications include EDFAs for dense WDM systems, pre and post amplifiers and optical noise sources.

980/1550(or 1590)nm WDMs are manufactured using

optical fiber with numerical aperture intermediate between that of signal and gain fibers to enable mode-field matching and bend-insensitive single mode operation at both wavelengths.



Features

- Low insertion loss
- High wavelength isolation
- Low polarization dependence
- Environmentally stable

Applications

- Optical amplifiers
- CATV
- High speed communications
- WDM networks

Specifications

Characteristics	Unit	Value/Performance
Center Wavelength	nm	980 and 1550, or 980 and 1590
Bandwidth	nm	±15
Insertion Loss	dB	≤0.15 (0.06 typ.)
Isolation	dB	≥20
Polarization Dependent Loss	dB	≤0.1
Thermal Stability	dB/°C	≤0.002 over -20 ~ +70°C
Directivity	dB	≥60
Configuration	-	1x2 or 2x2
Lead Length	m	0.75, others on request
Lead Type	-	250um bare fiber
Package Type	-	A1
Operating Temperature	°C	-40 ~ +85°C

Dimensional Drawing

Please see coupler package information.

Ordering Information

Part Number: **WDM-12 4 SM 1 A1-0.75**

1 2 3

1 Configuration	12=1x2, 22=2x2
2 Wavelength	4 = 980nm & 1550nm, 6 = 980nm & 1590nm
3 Lead Length	0.75=0.75m

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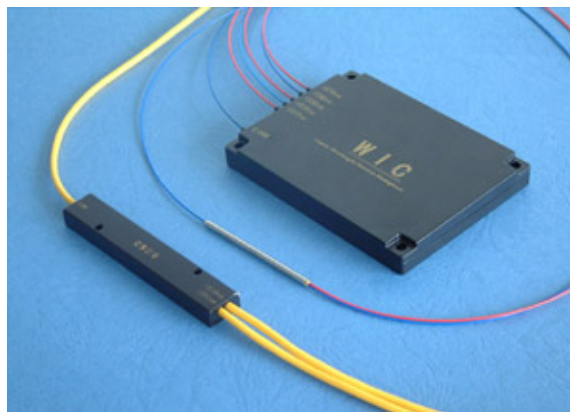




1480/1550NM WDM

Description

The 1480nm pump WDMs enable the combination of pump and signal in 1480nm pumped Erbium Doped fiber Amplifiers (EDFA). Both C-band and L-band versions of this component are available, providing a cost-effective alternative to filter based WDMs, particularly for single channel amplification.



Features

- Low insertion loss
- High wavelength isolation
- Low polarization dependence
- Environmentally stable

Applications

- Optical amplifiers
- CATV
- High speed communications
- WDM networks

Specifications

Characteristics	Unit	Value/Performance	
		1480 and 1550	1480 and 1590
Center Wavelength	nm	1480 and 1550	1480 and 1590
Bandwidth	nm	±5	±6
Insertion Loss	dB	≤0.25	
Isolation	dB	≥16	≥17
Polarization Dependent Loss	dB	≤0.1	
Thermal Stability	dB/°C	≤0.002 over -20 ~ +70°C	
Directivity	dB	≥60	
Configuration	-	1x2 or 2x2	
Lead Length	m	1, others on request	
Lead Type	-	250um bare fiber	
Package Type	-	A3	
Operating Temperature	°C	-40 ~ +85°C	

Dimensional Drawing

Please see coupler package information.

Ordering Information

Part Number: **WDM-12 5 SM 1 A3-0.75**

1 2 3

1 Configuration	12=1x2, 22=2x2
2 Wavelength	5 = 1480nm & 1550nm, 7 = 1480nm & 1590nm
3 Lead Length	0.75=0.75m

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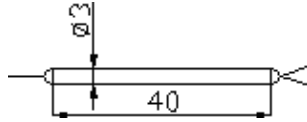
COUPLER AND WDM PACKAGE INFORMATION

COUPLER AND WDM PACKAGE INFORMATION

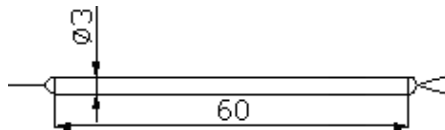
Type Dimension Drawing (mm)

A Stainless Steel Tube

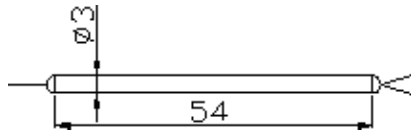
A1 Ø3mm x 40mm



A2 Ø3mm x 60mm

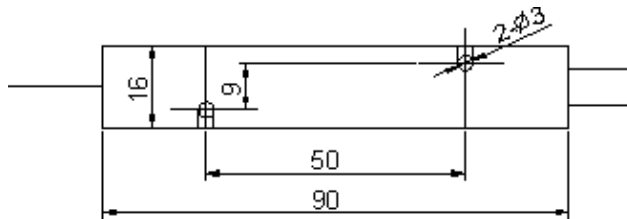


A3 Ø3mm x 54mm



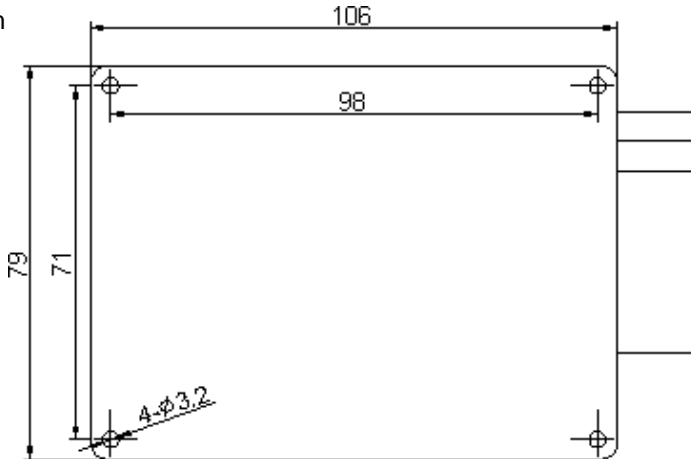
B Small Metal Box

90mm x 16mm x 9mm



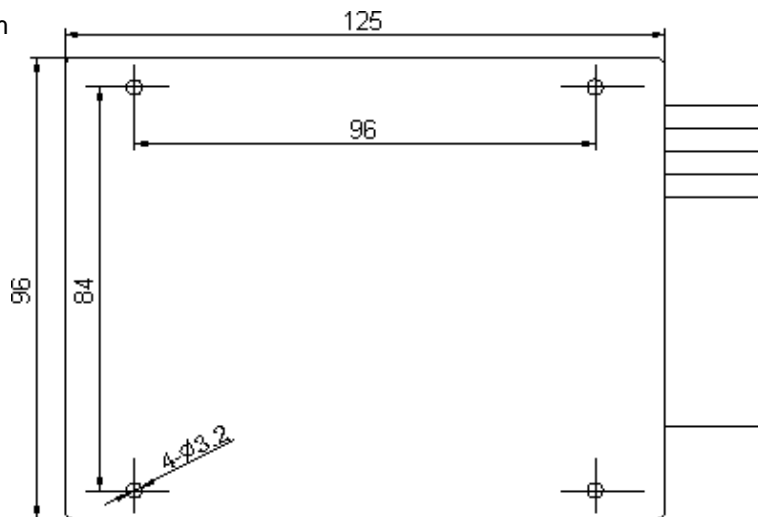
C Median Plastic Box

106mm x 79mm x 10mm



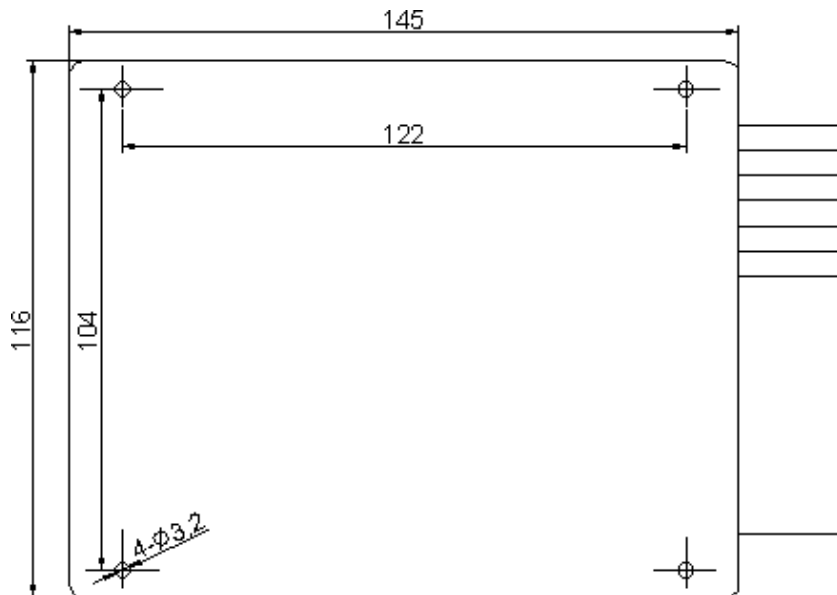
D Large Plastic Box

125mm x 96mm x 15mm



E Extra Large Plastic Box

145mm x 116mm x 18mm



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