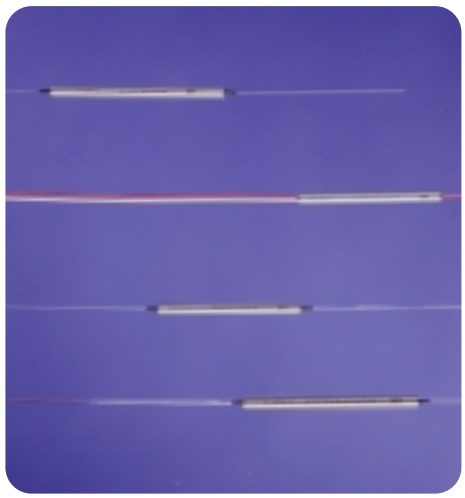
Fused Fiber Technology

Couplers, Splitters,
Wavelength Division Multiplexers



ADC has been manufacturing fused biconic tapered fiber optic couplers for over a decade. During this time, we have developed highly automated machines and sophisticated manufacturing processes to make us the world's leading supplier of couplers, splitters, and WDMs.

ADC's technology, experience, and ongoing development, combined with an ISO 9001 certified manufacturing system, results in quality products second to none, with a capacity to meet the growing demands of the worldwide communications market.

Today, ADC is one of the industry's most dynamic and innovative communications suppliers. Our couplers are used in a wide variety of telecommunication applications ranging from ultra long submarine networks to passive optical networks in metro applications.

Fiber Optic Couplers

Definitions

Center Wavelength and Bandpass

The performance of all couplers varies with wavelength. Coupler performance is usually specified over a wavelength window, or in some cases, multiple windows. The center wavelength is the nominal wavelength of operation of the coupler, while the bandpass is the range of wavelengths over which the specifications are guaranteed. In many cases, couplers will perform adequately over a range outside their bandpass, but adherence to specifications is not guaranteed in this region.

Coupling Ratio

Coupling ratio or splitting ratio is defined as the ratio of the optical power from one output port of the coupler to the sum of the total power from all output ports. The coupling ratio is measured at the specified center wavelength and is normally expressed as a percentage.

Excess Loss

Excess loss is the ratio of the optical power launched at the input port of the coupler to the total optical power measured from all output ports, expressed in dB. Typical excess loss is the expected value of the excess loss measured at the specified center wavelength.

Insertion Loss

Insertion loss is the ratio of the optical power launched at the input port of the coupler to the optical power from any single output port, expressed in dB. The insertion loss includes the coupler splitting loss and excess loss and is the most useful parameter for system design. The maximum and minimum insertion loss is the upper and lower limit, respectively, of the insertion loss of the coupler and applies over the entire wavelength range specified in the bandpass. The typical insertion loss is the expected value of the insertion loss measured at the specified center wavelength. Multimode couplers are measured with an equilibrium mode fill.

Uniformity

Uniformity is a measure of how evenly power is distributed between the output ports of the coupler. Uniformity applies to couplers with a nominally equal coupling ratio and is defined as the difference between the highest and lowest insertion loss between all of the coupler output ports, expressed in dB. Uniformity is a typical value across the entire bandpass.

Directivity, Return Loss and Reflectance

Directivity is the ratio of the optical power launched into an input port to the optical power returning to any other input port. Directivity has been referred to as near-end isolation or near-end crosstalk. Return loss is the ratio of optical power launched into an input port to the optical power returning to the same input port. Both directivity and return loss are expressed as positive dB and are measured with all output ports optically terminated. Reflectance is the negative of return loss. In many instances, reflectance and return loss are used synonymously. Minimum directivity and return loss are the lower limits which apply over the entire wavelength range specified in the bandpass.

Wavelength Isolation

Wavelength isolation is a measure of how well different wavelengths are separated at the output of a wavelength division demultiplexer. It is defined as the ratio of the optical power at the two output ports of the demultiplexer at a given wavelength, expressed in dB. The minimum wavelength isolation is the lower limit to the wavelength isolation measured over the entire wavelength range of the specified bandpass. Wavelength isolation has also been referred to as far-end crosstalk.

Fiber Optic Couplers

Environmental and Mechanical Testing

ADC couplers and assemblies are periodically re-qualified to a variety of existing and developing standards to ensure their long-term reliability in field use. These tests include qualification to the principal coupler specifications used in the United States, the United Kingdom and Europe. The following series of standards are used as references for the development of test regimes: EIA/TIA 455, GR1209, GR1221, CECC 81000 and IEC 68. Qualification programs are regularly reviewed to ensure that the testing specifications of all customers are satisfied. Contact ADC to discuss your special test requirements. A summary of some standard tests is presented below.

Type of Test	Severity	Reference
Thermal Aging:	85°C for 16 days	EIA/TIA 455-4B, IEC 68-2-2 CECC 81000 Part 4.6.18
Humidity Resistance:	85°C, 85% relative humidity for 21 days	EIA/TIA 455-5A, IEC 62-2-3 CECC 81000 Part 4.6.19
Temperature Cycling:	-40°C to 85°C, 42 cycles over 14 days	EIA/TIA 455-3A, IEC 68-2-14
Change of Temperature (condensation):	-40°C to 75°C, 85% relative humidity, 10 cycles over 10 days	IEC 68-2-38 CECC 81000 Part 4.6.21
Water Immersion:	43°C for 7 days	EIA 455-12A, IEC 68-2-17 CECC 81000 Part 4.6.24
Vibration:	3 orthogonal axes at 1.52 mm double amplitude below crossover, 10g peak acceleration above, for 120 cycles of 10 Hz to 2000 Hz	EIA 455-11A, IEC 68-2-6 CECC 81000 Part 4.6.1
Impact:	24 drops (3 orthogonal axes) from 1.8 meters onto a concrete surface	EIA 455-2A
Bump:	1000 bumps, peak acceleration of 245 m/s^2, pulse duration of 6 ms	IEC 68-2-29 CECC 81000 Part 4.6.8
Cable Retention:	Tensile pull of 0.5 kg (unjacketed fiber) or 1 kg (jacketed fiber)	EIA 455-6A CECC 81000 Part 4.6.4
Flex:	300 cycles with 0.5 kg load (jacketed fiber only)	EIA 455-1A
Twist:	10 cycles with 1.36 kg load (jacketed fiber only)	EIA 455-36A

Single Mode Fiber Optic Couplers

Single Window (Wavelength Flattened) and Dual Window (Broadband) Couplers

ADC's fused biconic taper coupler technology and advanced production techniques make for consistent high-performance couplers that are designed for the end users' specific applications. A variety of standard coupler packages, as well as pigtail options and connectorization are available, if required. Non-standard devices can be supplied upon request. All ADC couplers conform to stringent environmental and mechanical standards to give high reliability for a variety of field applications.

Features

- Completely passive
- Low loss
- Proven high reliability
- Qualified to major US and international performance specifications
- Low PDL

Benefits

- Independent of source wavelength and signal format
- Minimize link loss; maximize number of nodes
- Engineered for long-term field operation

Applications

- Active monitoring
- EDFAs
- Passive Optical Network (PON) and Fiber Communication Systems
- CATV networks
- Fiber-in-the-loop
- Fiber optic test equipment and sensing

Specifications
1x2 or 2x2 Couplers

Configuration:	**1x2 or 2x2**	
Operation Wavelength	**Wideband: 1260-1580 nm**	**Wavelength Flattened: 1260-1360 or 1430-1580 nm**
Coupling Ratio	**Maximum Insertion Loss (dB) Primary/Secondary**	**Maximum Insertion Loss (dB) Primary/Secondary**
50/50	3.7/3.7	3.5/3.5
55/45	3.2/4.1	3.0/4.0
60/40	2.7/4.7	2.6/4.5
65/35	2.3/5.3	2.2/5.1
67/33	2.2/5.5	2.1/5.4
70/30	2.0/6.0	1.9/5.8
75/25	1.6/6.8	1.6/6.6
80/20	1.3/7.8	1.3/7.6
85/15	1.0/9.2	1.0/9.0
90/10	0.8/11.2	0.7/10.9
95/5	0.5/14.4	0.5/14.2
Return Loss/Directivity:	>55 dB	
Operating Temperature:	-40ºC to 85ºC	
Fiber:	Corning SMF-28™	

Single Mode Fiber Optic Couplers

Broadband Applications: 1x2 or 2x2 Couplers

Catalog Number

10 A _ _ _ _ _ _ _

Component Type

WB	Wideband
WF	Wavelength Flattened

Configuration

LEAVE BLANK	2x2
Y	1x2

Coupling Ratio

50	50/50
45	45/55
40	40/60
35	35/65
30	30/70
25	25/75
20	20/80
15	15/85
10	10/90
05	5/95

Center Wavelength

1315	1310 nm & 1550 nm (for WB)
13	1310 nm (for WF)
15	1550 nm (for WF)

Fiber Type

10	Corning SMF-28™

Connector Option[1]

LEAVE BLANK	No connectors
AFC	FC angled polish
ASC	SC angled polish
ALX5	LX.5® angled polish[2]
FCU	FC ultra polish
SCU	SC ultra polish
STU	ST® ultra polish

Pigtail Option

P	250 µm acrylate coating[3]
L	250 µm acrylate coating in 0.9 mm diameter loose tube buffer[3]
C	3 mm diameter reinforced cable[4]

Package Option[5]

S	46 mm x 3.18 mm diameter tubular
SR	Small ruggedized
X	46 mm x 3.0 mm diameter tubular

[1]Available with loose tube buffer or cable pigtails ***only***
Connector return loss:
Angled polish: 65 dB minimum
LX.5 angled polish: 60.5 dB
Ultra polish: 57 dB minimum

[2]The LX.5 connector is available ***only*** with 0.9 mm diameter loose tube buffer cable (pigtail option L).

[3]Package options S and X ***only***

[4]Package option SR ***only***

[5]See pages 23-24 for dimensions

Singlemode Fiber Optic Couplers

High Performance Couplers for Demanding Applications

ADC offers a series of splitters and tap couplers optimized for extremely high performance in telecommunication networks and in OEM applications such as EDFAs and Raman Amplifiers. Flattened wavelength response and low excess loss allow for superior performance in the C, S, or L bands or over different pump wavelengths.

Features

- Extremely low excess loss
- C, S, and L band coverage
- 980, 14xx, and 1480 coverage
- Proven FBT reliability
- All fiber construction – stable environmental performance

Applications

- EDFA
- Raman amplifiers
- Passive Optical Networks (PONs)

Specifications
1x2 or 2x2 Couplers

Configuration:	**1x2 or 2x2**			
Operation Wavelength:	**S, C, or L Bands (Transmission Band) or 980, 1480, or 14xx (Amplifier Band)**			
	Primary Port	**Secondary Port**		
Coupling Ratio	**Maximum IL (dB)**	**Minimum IL (dB)**	**Maximum IL (dB)**	**Maximum PDL (dB)**
1/99	0.15	17.5	21.0	0.2
2/98	0.2	15.5	18.0	0.2
5/95	0.35	12.0	13.5	0.2
10/90	0.7		10.5	0.2
20/80	1.2		8.0	0.2
30/70	2.0		5.8	0.2
40/60	2.6		4.5	0.1
50/50	3.4		3.4	0.1
Typical Excess Loss:	0.08 to 0.10 dB			
Fiber Type:	Corning SMF-28™ or 980 Fiber			
Return Loss/Directivity:	>55 dB			
Operating Temperature:	-40ºC to 85ºC			

Single Mode Fiber Optic Couplers

High Performance Couplers

Catalog Number

WF _ _ _ _ _ _ _ _

Component Type

WF	Wavelength Flattened

Configuration

Y	1x2
LEAVE BLANK	2x2

Tap Ratio

01	99/1
02	98/2
05	95/5
10	90/10
20	80/20
30	70/30
40	60/40
50	50/50

Bandpass

09	970-990 nm[1]
14	1465-1495 nm
C	1530-1580 nm
L	1560-1610 nm
CL	1530-1610 nm
S	1480-1530 nm

Connector Option[2]

LEAVE BLANK	No connectors
AFC	FC angled polish
ASC	SC angled polish
ALX5	LX.5® angled polish[3]
FCU	FC ultra polish
SCU	SC ultra polish
STU	ST® ultra polish

Pigtail Option

P	250 µm acrylate coated fiber, 1m long[4]
L	250 µm acrylate coating in 0.9 mm diameter loose tube buffer[4]
C	3 mm diameter reinforced cable[5]

Package Option[6]

S	46 mm x 3.18 mm diameter tubular
X	46 mm x 3.0 mm diameter tubular
SR	Small ruggedized

Fiber Type

09	Singlemode 980 nm fiber
10	Corning SMF-28™

For other configurations, packaging, and performance specifications, contact your nearest ADC sales office.

[1]Requires 980 fiber

[2]Available with loose tube buffer pigtails or cable pigtails ***only***
Connector return loss
Angled polish: 65 dB minimum
LX.5 angled polish: 60.5 dB
Ultra polish: 57 dB minimum

[3]The LX.5 connector is available ***only*** with 0.9 mm diameter loose tube buffer cable (pigtail option L).

[4]Package options S and X ***only***

[5]Package option SR ***only***

[6]See pages 23-24 for dimensions

Single Mode Fiber Optic Couplers

Monolithic 1x4 Couplers

ADC's single mode monolithic 1x4 passive optical couplers are manufactured using ADC's proven fused biconic taper process, resulting in a very compact, highly reliable, cost competitive device that complies with Telcordia specifications for fiber optic branching components. The dual-window devices are ideal for use in video distribution networks and FITL networks operating in the 1310 nm and/or 1550 nm windows. Both wideband and wavelength flattened versions are available.

Features

- Compact packaging
- Dual or single window operation
- Completely passive operation
- Proven high reliability
- Low insertion loss

Benefits

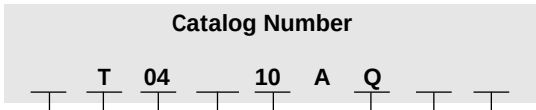
- Operates in both 1310 nm and 1550 nm windows. Can be used with Fabry Perot, DFB and fiber optic amplifiers
- 4 mm diameter x 55 mm long tubular package
- Fully bidirectional and compatible with AM, FM and digital signals
- Manufactured to Telcordia 1209 and 1221 guidelines using automated machines

Specifications

	Wideband	Wavelength Flattened
Operation Wavelength:	**1260-1580 nm**	**1260-1360 or 1430-1580 nm**
Configuration:	1x4	1x4
Maximum Insertion Loss (dB):	7.3	7.1
Typical Insertion Loss (dB):	6.2	6.2
Return Loss/Directivity:	>55 dB	
Operating Temperature:	-40ºC to 85ºC	
Fiber:	Corning SMF-28™	

Single Mode Fiber Optic Couplers

Monolithic 1x4 Couplers



Component Type

WB	Wideband
WF	Wavelength Flattened

Configuration

T	Tree

Ports

04	1x4

Center Wavelength

1315	1310 nm & 1550 nm (for WB)
13	1310 nm (for WF)
15	1550 nm (for WF)

Fiber Type

10	Corning SMF-28™

Connector Option[1]

LEAVE BLANK	No connectors
AFC	FC angled polish
ASC	SC angled polish
ALX5	LX.5® angled polish[2]
FCU	FC ultra polish
SCU	SC ultra polish
STU	ST® ultra polish

Pigtail Option

P	250 µm acrylate coating
L	250 µm acrylate coating in 0.9 mm diameter loose tube buffer

Package Option[3]

Q	55 mm x 4 mm diameter tubular

[1]Available with loose tube buffer pigtails ***only***
Connector return loss:
Angled polish: 65 dB minimum
LX.5 angled polish: 60.5 dB
Ultra polish: 57 dB minimum

[2]The LX.5 connector is available ***only*** with 0.9 mm diameter loose tube buffer cable (pigtail option L).

[3]See page 24 for dimensions

Fused Fiber Technology

1/02 • 1400

Single Mode Fiber Optic Couplers

Passive 1xN and 2xN Optical Splitters

ADC's family of 1xN optical splitters are prestructured trees, manufactured from ADC's high performance FBT couplers. They are designed for very low insertion loss and extremely high uniformity, making these devices ideal for use as splitters in Passive Optical Networks (PONs) in Fiber to the Home (FTTH) and Fiber to the Curb (FTTC) architectures. Manufactured to Telcordia 1209 and 1221 guidelines these bidirectional devices are compatible with AM, FM and digital signals.

Fused Fiber Technology

1/02 • 1400

	Wideband		Wavelength Flattened	
Center Wavelength:	**1310 and 1550 nm**		**1310 or 1550 nm**	
Bandpass:	**1260-1360 and 1430-1580 nm**		**1260-1360 or 1430-1580 nm**	
Configuration	**Maximum Insertion Loss (dB)**	**Typical Insertion Loss (dB)**	**Maximum Insertion Loss (dB)**	**Typical Insertion Loss (dB)**
1x3	6.0	4.9	5.7	4.9
1x4 or 2x4	7.5	6.2	7.1	6.2
1x5	8.6	7.2	8.4	7.2
1x6 or 2x6	9.5	8.0	9.2	8.0
1x7	10.3	8.7	10.0	8.7
1x8 or 2x8	11.0	9.3	10.6	9.3
1x9	11.6	9.9	11.4	9.9
1x10 or 2x10	12.1	10.3	11.9	10.3
1x11	12.6	10.8	12.5	10.8
1x12 or 2x12	13.0	11.2	12.8	11.2
1x13	13.5	11.5	13.3	11.5
1x14 or 2x14	13.8	11.8	13.5	11.8
1x15	14.2	12.2	14.0	12.2
1x16 or 2x16	14.5	12.4	14.1	12.4
1x17	14.8	12.7	14.6	12.7
1x18 or 2x18	15.1	13.0	15.0	13.0
1x19	15.4	13.2	15.2	13.2
1x20 or 2x20	15.6	13.4	15.5	13.4
1x21	15.9	13.7	15.6	13.7
1x22 or 2x22	16.1	13.9	15.9	13.9
1x23	16.3	14.1	16.2	14.1
1x24 or 2x24	16.5	14.3	16.3	14.3
1x25	16.8	14.4	16.5	14.4
1x26 or 2x26	17.0	14.6	16.7	14.6
1x27	17.1	14.8	17.0	14.8
1x28 or 2x28	17.3	15.0	17.3	15.0
1x29	17.5	15.1	17.2	15.1
1x30 or 2x30	17.7	15.3	17.5	15.3
1x31	17.8	15.4	17.6	15.4
1x32 or 2x32	18.0	15.6	17.7	15.6
Return Loss/Directivity:	>55 dB			
Operating Temperature:	-40ºC to 85ºC			
Fiber:	Corning SMF-28™			

Single Mode Fiber Optic Couplers

1xN and 2xN Splitters

Catalog Number

10 A

Component Type

WB	Wideband
WF	Wavelength Flattened

Configuration

T	Tree (1xN)
2T	Tree (2xN)*

Output Ports

03	18
04	19
05	20
06	21
07	22
08	23
09	24
10	25
11	26
12	27
13	28
14	29
15	30
16	31
17	32

Center Wavelength

1315	1310 nm & 1550 nm (for WB)
13	1310 nm (for WF)
15	1550 nm (for WF)

*Only available with even numbered output ports

Note: Non equal splits available on request

Connector Option[1]

LEAVE BLANK	No connectors
AFC	FC angled polish
ASC	SC angled polish
ALX5	LX.5® angled polish[2]
FCU	FC ultra polish
SCU	SC ultra polish
STU	ST® ultra polish

Pigtail Option

L	250 µm acrylate coating in 0.9 mm diameter loose tube buffer
C	3 mm diameter reinforced cable[3]
P	250 µm acrylate coating

Package Option[4]

FN	FO-2 fiber organizer
FO	FO-1 fiber organizer

Fiber Type

10	Corning SMF-28™

[1]Available with loose tube buffer or cable pigtails ***only***
Connector return loss
Angled polish: 65 dB minimum
LX.5 angled polish: 60.5 dB
Ultra polish: 57 dB minimum

[2]The LX.5 connector is available ***only*** with 0.9 mm diameter loose tube buffer cable (pigtail option L).

[3]Only available for devices up to 1x8 or 2x8

[4]See page 25 for dimensions

Single Mode Fiber Optic Attenuators

ADC offers a range of dual window and single window attenuators for applications requiring load management in low to medium power applications.

Features

- C and L band coverage
- Dual window options
- Proven FBT reliability
- All fiber construction – stable environmental performance

Applications

- Passive Optical Networks (PONs)
- DWDM systems

Specifications

Operation Wavelength:	Wideband: 1260-1580 nm		Wavelength Flattened: C and/or L Band	
Attenuation	Minimum Attenuation (dB)	Maximum Attenuation (dB)	Minimum Attenuation (dB)	Maximum Attenuation (dB)
1 dB	0.7	1.3	0.8	1.2
2 dB	1.6	2.4	1.7	2.3
3 dB	2.5	3.5	2.6	3.4
4 dB	3.4	4.6	3.5	4.5
5 dB	4.4	5.6	4.5	5.5
7 dB	6.4	7.6	6.5	7.5
8 dB	7.3	8.7	7.4	8.6
10 dB	9.0	11.0	9.2	10.8
12 dB	11.0	13.0	11.2	12.8
15 dB	13.5	16.5	14.0	16.0
Return Loss:	>55 dB			
Fiber:	Corning SMF-28™			
Operating Temperature:	-40ºC to 85ºC			

Single Mode Fiber Optic Attenuators

Catalog Number

A ____ ____ ____ ____ ____ ____ ____

Component Type

WB	Wideband
WF	Wavelength Flattened

Attenuation

01	1 dB
02	2 dB
03	3 dB
04	4 dB
05	5 dB
07	7 dB
08	8 dB
10	10 dB
12	12 dB
15	15 dB

Bandpass

1315	1310 nm and 1550 nm (for WB)
C	1520-1580 nm
L	1560-1610 nm
CL	1520-1610 nm

Connector Option[1]

LEAVE BLANK	No connectors
AFC	FC angled polish
ASC	SC angled polish
ALX5	LX.5® angled polish[2]
FCU	FC ultra polish
SCU	SC ultra polish
STU	ST® ultra polish

Pigtail Option

P	250 µm acrylate coated fiber, 1m long[3]
L	250 µm acrylate coating in 0.9 mm diameter loose tube buffer[3]
C	3 mm diameter reinforced cable[4]

Package Option[5]

S	46 mm x 3.18 mm diameter tubular
X	46 mm x 3.0 mm diameter tubular
SR	Small ruggedized

Fiber Type

10	Corning SMF-28™

For other configurations, packaging, and performance specifications, contact your nearest ADC sales office.

[1]Available with loose tube buffer or cable pigtails ***only***
Connector return loss
Angled polish: 65 dB minimum
LX.5 angled polish: 60.5 dB
Ultra polish: 57 dB minimum

[2]The LX.5 connector is available ***only*** with 0.9 mm diameter loose tube buffer cable (pigtail option L).

[3]Package options S and X ***only***

[4]Package option SR ***only***

[5]See pages 23-24 for dimensions

Single Mode Wavelength Division Multiplexers

Broadband Wavelength Division Multiplexers

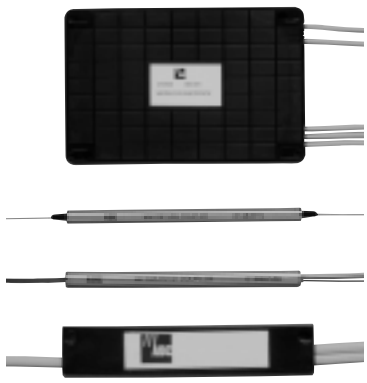
ADC's 1310/1550nm WDM offers superior optical performance in combining or dividing 1310 nm and 1550 nm optical signals. Low insertion loss, low PDL, high isolation, and high directivity are achieved by utilizing ADC's advanced fused biconic taper technology and state-of-the-art manufacturing process. For demanding demultiplexing applications, higher isolation versions are available.

Features

- All fiber construction - high reliability performance
- Suited to standard 1310 nm and 1550 nm sources
- Low insertion loss for multiplexing
- High and very high isolation for demultiplexing
- High directivity – low crosstalk
- Designed for various user applications
  - -variety of package and pigtail options
  - -factory connectorization is available
- Design, development and production are ISO 9001 certified

Applications

- Multiplexing/demultiplexing
- Double system capacity over a single fiber
- Bidirectional communication over a single fiber
- CATV
- Fiber optic test equipment



Specifications

Configuration:	**1x2**		
Center Wavelength:	**1310 & 1550 nm**		
Bandpass:	**1290-1330 nm & 1530-1570 nm**		
	Multiplexer/ Demultiplexer	**High Isolation Demultiplexer**	**Very High Isolation Demultiplexer**
Maximum Insertion Loss:	0.3 dB	0.7 dB	1.0 dB
Minimum Wavelength Isolation:	15 dB	30 dB	45 dB
Typical Isolation for ±10 nm Bandpass:	20 dB	40 dB	60 dB
Return Loss/Directivity:	>55 dB		
Operating Temperature:	-40ºC to 85ºC		
Fiber:	Corning SMF-28™		

Single Mode Wavelength Division Multiplexers

Broadband Wavelength Division Multiplexers

Catalog Number

Y 1315 10 A ___ ___ ___

Component Type

WM	Standard mux/demux
WMH	High isolation[1]
WMHH	Very high isolation[1]

Configuration

Y	1x2

Center Wavelength

1315	1310 nm & 1550 nm

Fiber Type

10	Corning SMF-28™

Connector Option[2]

LEAVE BLANK	No connectors
AFC	FC angled polish
ASC	SC angled polish
ALX5	LX.5® angled polish[3]
FCU	FC ultra polish
SCU	SC ultra polish
STU	ST® ultra polish

Pigtail Option

P	250 µm acrylate coating[4]
L	250 µm acrylate coating in 0.9 mm diameter loose tube buffer[4]
C	3 mm diameter reinforced cable[5]

Package Option[6]

S	46 mm x 3.18 mm diameter tubular
X	46 mm x 3.0 mm diameter tubular
SR	Small ruggedized
FN	FO-2 fiber organizer
FO	FO-1 fiber organizer

[1]Package options fiber organizers ***only***

[2]Available with loose tube buffer or cable pigtails ***only***
Connector return loss:
Angled polish: 65 dB minimum
LX.5 angled polish: 60.5 dB
Ultra polish: 57 dB minimum

[3]The LX.5 connector is available ***only*** with 0.9 mm diameter loose tube buffer cable (pigtail option L).

[4]Not available in SR package

[5]Package options SR and fiber organizers ***only***

[6]See pages 23-25 for dimensions

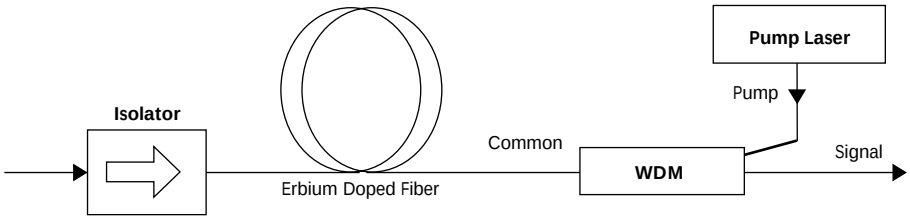
Pump WDMs for EDFAs

Fiber Amplifier Pump Wavelength Division Multiplexers

ADC offers its 980/1550 and 1480/1550 WDMs for EDFA pumping. These devices use ADC's proven fused biconic taper (FBT) technology and advanced production techniques to give high performance and long term stability. The pump WDMs are available in a small tubular package suited for OEM applications.

Features

- Low insertion loss and high pump coupling efficiency
- All fiber construction - stable environmental performance
- Proven FBT performance



Specifications

	980/1550		1480/1550	
	Wavelength	**Insertion Loss**	**Wavelength**	**Insertion Loss**
Pump to Common:	970-990 nm	<0.3 dB	1475-1485 nm	<0.4 dB
Signal to Common:	1535-1565 nm	<0.3 dB	1545-1555 nm	<0.4 dB
Common to Signal:	970-990 nm	>20 dB	1475-1485 nm	>14 dB
PDL:	<0.1 dB			
Minimum Directivity/ Return Loss:	>55 dB			
Operating Temperature:	-40ºC to 85ºC			

Pump WDMs for EDFAs

Fiber Amplifier Pump Wavelength Division Multiplexers

Catalog Number

WMY ___ ___ V ___

Component Type

WMY	1x2 Mux/Demux

Center Wavelength

0915	980/1550 nm[1]
1415	1480/1550 nm

For other configurations, packaging and performance specifications, contact your nearest ADC sales office.

Pigtail Option

P	250 µm acrylate coated fiber, 1 m long
L	250 µm acrylate coating in 0.9 mm diameter loose tube buffer

Package Option[2]

V	55 mm x 3.0 mm diameter tubular

Fiber

09	Single mode 980 fiber
10	Corning SMF-28™

[1]Requires 980 fiber

[2]See page 23 for dimensions

Fused Fiber Technology

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Multimode Fiber Optic Couplers

1x2 and 2x2 Multimode Couplers

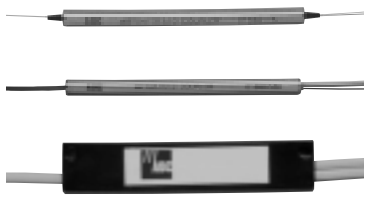
ADC's fused biconic taper coupler technology and advanced production techniques enable consistent high-performance couplers. ADC's multimode couplers offer superior optical performance in combining or dividing optical signals in broadband 400 nm to 1600 nm operations. These components are suitable for applications in LAN, test equipment, and optical systems. All ADC couplers conform to stringent environmental and mechanical standards to give high reliability for field applications.

Features

- All fiber construction – stable environmental performance
- Broadband operation – 400 nm to 1600 nm
- Different fiber sizes – 50/125 and 62.5/125
- Designed for a variety of user applications
  - -variety of standard packaging and pigtail options available
  - -factory connectorization is available
- Design, development and production are ISO 9001 certified

Applications

- Local area networks (LAN)
- Fiber optic test equipment
- Fiber communications systems
- Fiber optic sensing



Specifications

Configuration:	1x2 or 2x2
Bandpass:	400-1600 nm
Maximum Insertion Loss:	4.0 dB
Return Loss/Directivity:	>45 dB
Operating Temperature:	-40ºC to 85ºC
Fiber:	50/125µm or 62.5/125µm

Note: Multimode couplers are measured with an equilibrium mode fill.

Multimode Fiber Optic Couplers

1x2 and 2x2 Multimode Couplers

Catalog Number

M 50 08 _ _ _ _

Component Type

M	Multimode

Configuration

LEAVE BLANK	2x2
Y	1x2

Coupling Ratio

50	50%

Center Wavelength

08	850 nm

Fiber Size

50	50/125 µm
62	62/125 µm

Connector Option[1]

LEAVE BLANK	No connectors
FC	Standard polish FC/PC
SC	Standard polish SC/PC
ST	Standard polish ST/PC
MLX5	Standard polish LX.5®[2]

Pigtail Option

P	250 µm acrylate coating[3]
L	250 µm acrylate coating in 0.9 mm diameter loose tube buffer[3]
C	3 mm diameter reinforced cable[4]

Package Option[5]

S	46 mm x 3.18 mm diameter tubular
SR	Small ruggedized
X	46 mm x 3 mm diameter tubular

[1]Available with loose tube buffer or cable pigtails ***only***
[2]The LX.5 connector is available ***only*** with 0.9 mm diameter loose tube buffer cable (pigtail option L).
[3]Package options S and X ***only***
[4]Package option SR ***only***
[5]See pages 23-24 for dimensions

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Package Options

FO-1 Fiber Organizer

ADC's Fiber Organizer is a multi-purpose module which provides a protected environment for secure storage of couplers, splices and excess fiber without violating minimum fiber bend radius specifications.

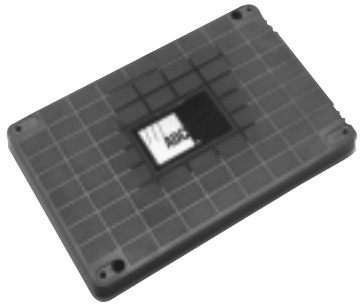
The organizer has breakouts for fiber entry and is available with component clips to hold couplers and splices. The organizers are stackable and designed to be compatible in size with a standard Eurocard.

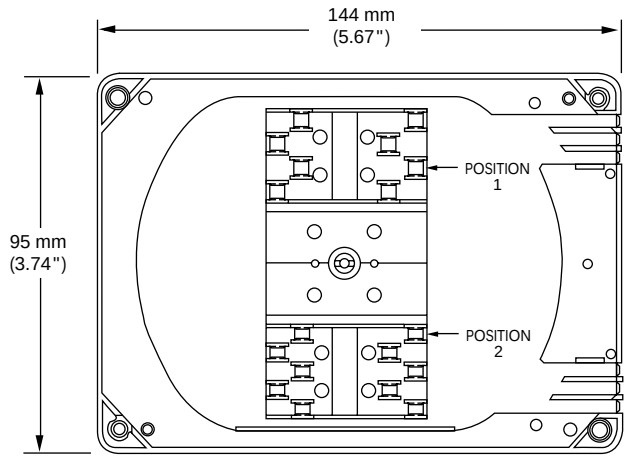
Features

- Meets fiber bend radius specifications
- Entry/exit breakouts for buffer or cable
- Press fit fiber component clips
- Eurocard size compatible
- Strong ABS construction
- Modular design allows stacking
- Design, development and production ISO 9001 certified

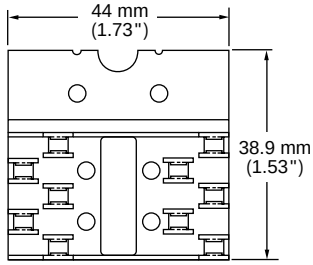
Applications

- Protected storage for:
  - -fiber
  - -couplers
  - -mechanical splices
  - -fusion splice protectors
- Fiber breakouts
- Fiber networks

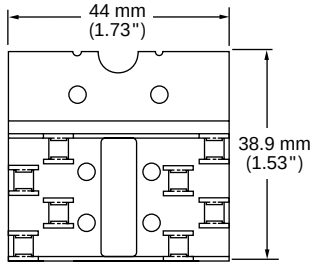




Fiber Organizer FO-1
shown with cover removed



Clip 3



Clip 4

Fiber Component
Retainer Clips

Package Options

FO-1 Fiber Organizer

Catalog Number

FO 1 ___ ___ ___ B

Clip Position 1

4	Clip type 4 for securing items with 4 mm (nominal) diameter and 35 mm minimum length. Accommodates 4 items
3	Clip type 3 for securing items with 3 mm (nominal) diameter and 35 mm minimum length. Accommodates 5 items
0	No clip

Clip Position 2

4	Clip type 4 for securing items with 4 mm (nominal) diameter and 35 mm minimum length. Accommodates 4 items
3	Clip type 3 for securing items with 3 mm (nominal) diameter and 35 mm minimum length. Accommodates 5 items
0	No clip

Color

B	Black

Cover

1	Includes cover and cover screw
0	No cover. Screws provided for pairing organizer

Each organizer module can contain two clips of the same or different type for securing components. Organizers are supplied with clips mounted in the positions indicated on the previous page.

Fiber Component Retainer Clip

Catalog Number

FC B ___

Clip Type

4	Clip type 4
3	Clip type 3

Color

B	Black

Tape

T	Double back tape
LEAVE BLANK	No double back tape

Fiber Organizer (Empty)

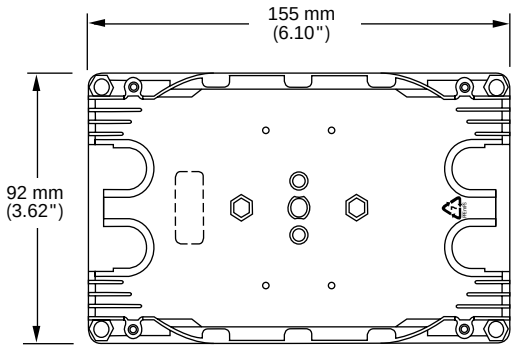
Ordering Information

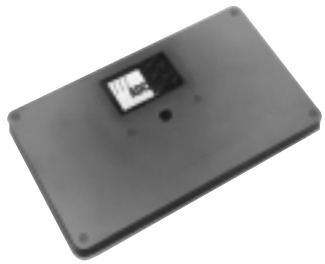
Description	Catalog Number
Fiber Organizer	FO-1

Package Options

FO-2 Fiber Organizer

The ADC Fiber Organizer Package type FO-2 provides storage for couplers, splices and excess fiber without violating minimum fiber bend radius specifications. Eight breakouts are located on each end for cable ingress/egress. The cover breakouts align with the cable ingress/egress channels on the base structure. Tabs, located around the periphery of the base structure, help retain stored fiber. All mounting or accessory holes are sealed and the cover/base assembly can be sealed to prevent moisture or contaminants from entering. The FO-2 is designed to fit a wide range of existing closures and splice tray hardware with a range of mounting options.





Fiber Organizer FO-2
shown with cover removed

Specifications

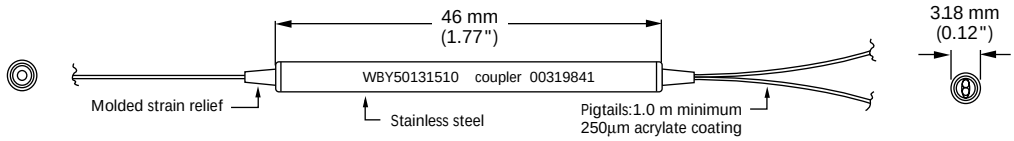
Dimensions:	6.1" x 3.6" x 0.37" (155 x 92 x 9.5 mm)
Color:	Black
Flammability:	The FO-2 is UL 94V-0 rated and will not support combustion
Operating Temperature:	-40°C to 85°C

Ordering Information

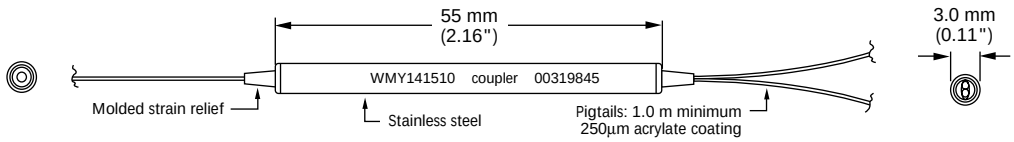
Description	Catalog Number
Fiber Organizer	FO-2

Package Options

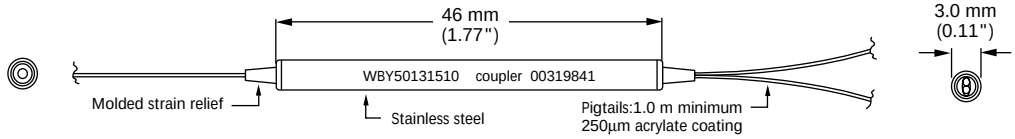
Diagrams



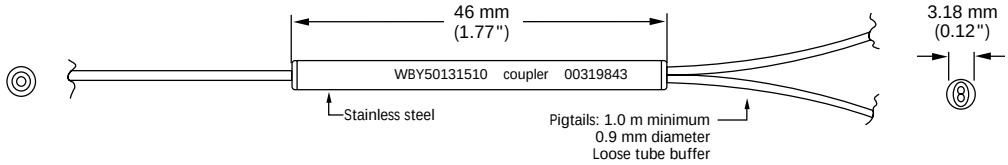
1x2 Tubular Package - S Configuration
Bare Fiber Pigtail



1x2 Tubular Package - V Configuration
Bare Fiber Pigtail



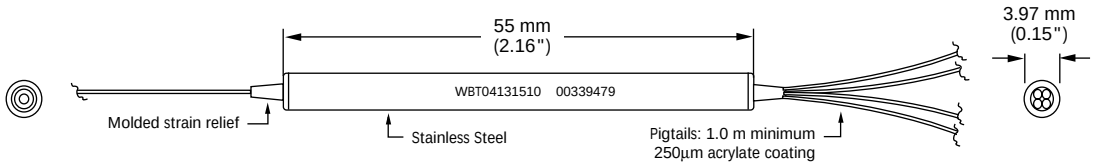
1x2 Tubular Package - X Configuration
Bare Fiber Pigtail



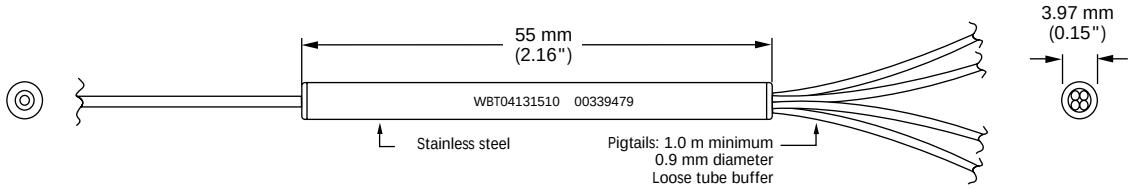
1x2 Tubular Package - S Configuration
900 Micron Jacketed Pigtails - Also available in V and X configurations

Package Options

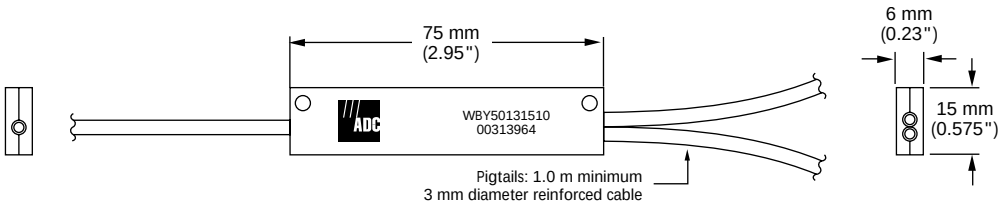
Diagrams



1x4 Tubular Package - Q Configuration
Bare Fiber Pigtail



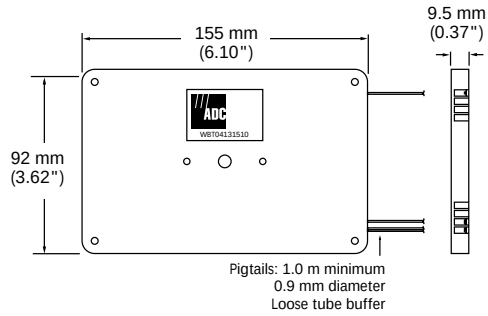
1x4 Tubular Package - Q Configuration
900 Micron Jacketed Pigtail



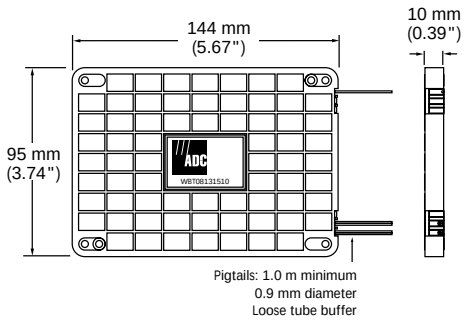
1x2 Ruggedized Package - SR Configuration

Package Options

Diagrams



FO-2 Fiber Organizer Package - FNL



FO-1 Fiber Organizer Package - FOL

Fused Fiber Technology

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For a complete listing of ADC's global sales office locations, please refer to our web site.

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1400 1/02 Revision