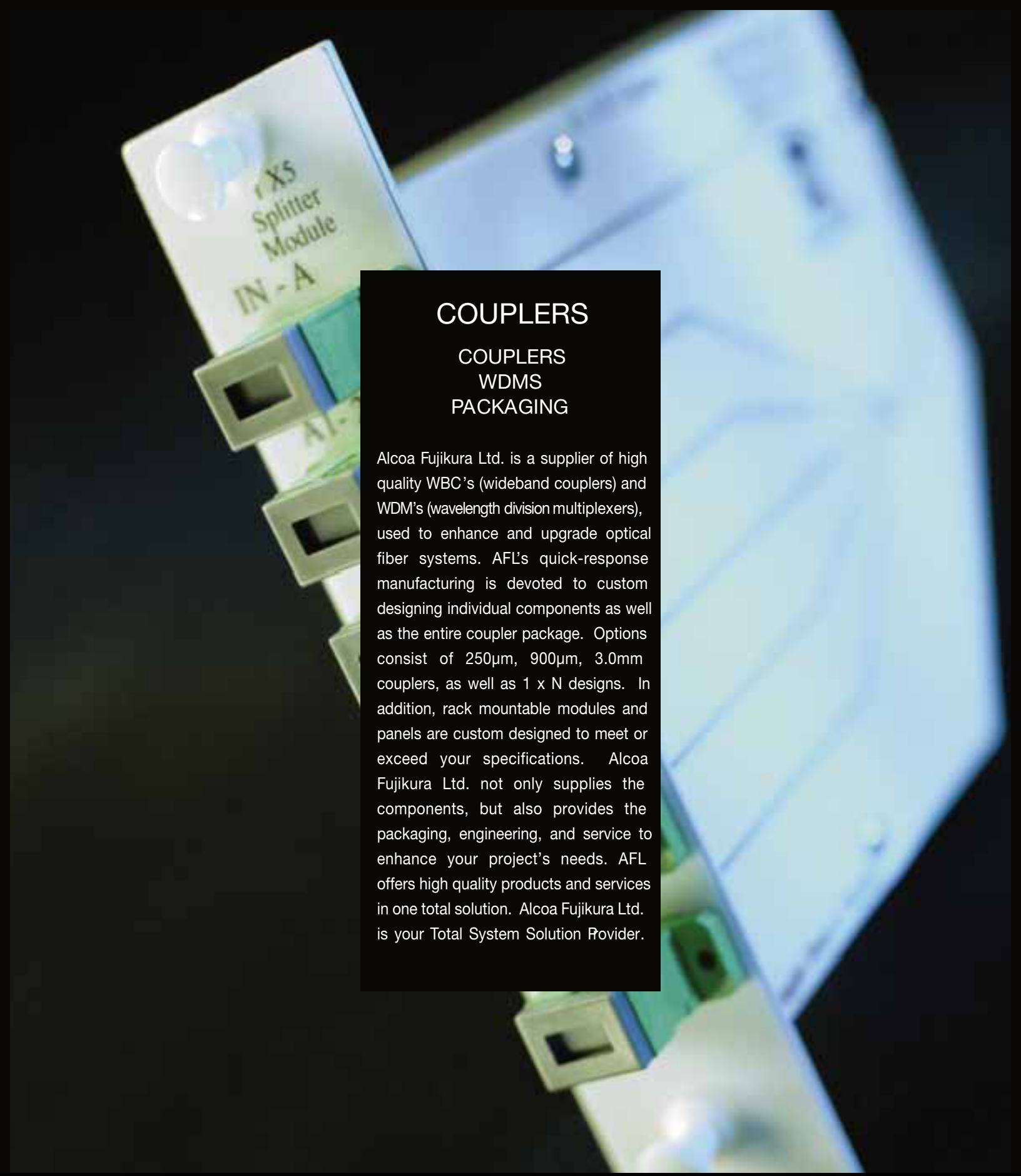


COUPLERS

COUPLERS
WDMS
PACKAGING

Alcoa Fujikura Ltd. is a supplier of high quality WBC's (wideband couplers) and WDM's (wavelength division multiplexers), used to enhance and upgrade optical fiber systems. AFL's quick-response manufacturing is devoted to custom designing individual components as well as the entire coupler package. Options consist of 250µm, 900µm, 3.0mm couplers, as well as 1 x N designs. In addition, rack mountable modules and panels are custom designed to meet or exceed your specifications. Alcoa Fujikura Ltd. not only supplies the components, but also provides the packaging, engineering, and service to enhance your project's needs. AFL offers high quality products and services in one total solution. Alcoa Fujikura Ltd. is your Total System Solution Provider.

ALCOA

Alcoa Fujikura Ltd.
Telecommunications Division

www.aflfiber.com
1-800-235-3423

COUPLER OVERVIEW

Alcoa Fujikura Ltd. is a leading supplier of couplers which are used to enhance and upgrade optical fiber systems. Wideband couplers are devices designed specifically to split or combine optical power in optical fiber communication networks. The two most common designs are the wideband coupler (WBC) and the wavelength division multiplexer (WDM).

The WBC is used to split optical power, thereby permitting multiple customers to be serviced by a single transmitter. This leads to a reduction in the total system construction and upgrade costs.

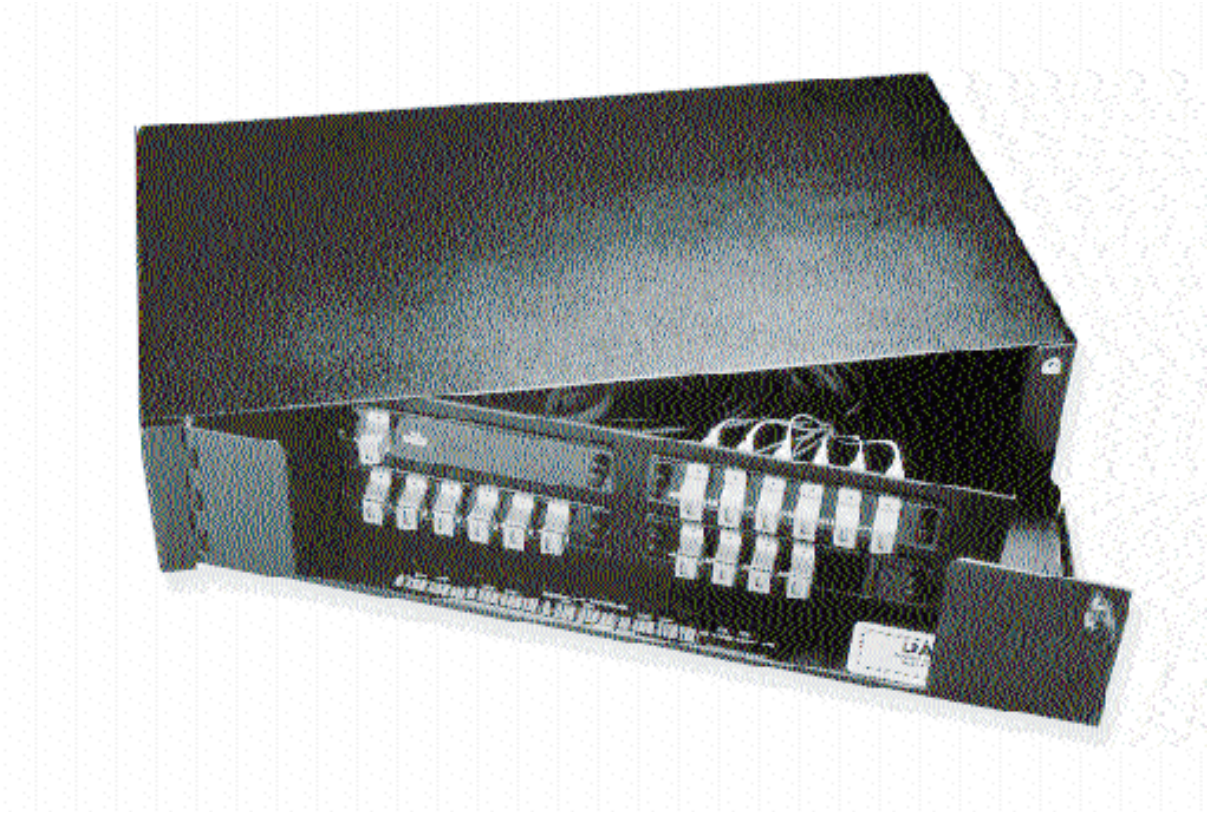
The WDM is designed to insert different wavelengths into a single fiber or to separate signals into different fibers, adding capacity to an optical fiber network.

WDM's can be utilized with status monitoring equipment to provide active monitoring.

FEATURES & BENEFITS

- Small package size allows for packaging in confined spaces
- Low insertion loss provides for excellent power splitting
- 5% coupling ratio divisions
- Designed to exceed CATV and telecommunications requirements
- Available in a variety of packages
- Tested by Bellcore (report available upon request)
- Complimentary splitter array configuration software available to assist in determining exact product requirements

WIDEBAND COUPLER & WAVELENGTH DIVISION MULTIPLEXER



CAPABILITIES

Alcoa Fujikura Ltd. offers a wide variety of coupler designs and packaging alternatives that can be custom designed to meet your specific needs. Couplers can be pre-connectorized for fast turnaround and cost savings.

- LGX® compatible coupler module
- 19" or 23" rack-mountable coupler module
- 1 x 2, 1 x 3, 1 x 4, 1 x 5, 1 x 8, 1 x 16, and 2 x 2 designs available
  (custom designs available upon request)
- Pigtail and pre-connectorized versions available

1 X 2 WIDEBAND COUPLER

APPLICATIONS

- Splitting of optical power down different channels, tapping off small amounts of power for monitoring and distribution along a fiber trunk
- Bi-directional transmission on a single fiber

FEATURES & BENEFITS

- Small package size allows for packaging in confined spaces
- Low insertion loss provides for excellent power splitting
- 5% coupling ratio divisions
- Designed to exceed CATV and Telco requirements
- Available in a variety of packages

ORDERING INFORMATION

Item Description	Insertion Loss		PDL (db)	Coupling Ratio %	Item Number
	Max (dB) Through	Max (dB) Cross			
S-0102-50-B-000-01-000-01	3.7	3.7	0.15	50	S006770
S-0102-45-B-000-01-000-01	3.3	4.2	0.15	45	S006824
S-0102-40-B-000-01-000-01	2.8	4.8	0.3	40	S006787
S-0102-35-B-000-01-000-01	2.5	5.6	0.3	35	S006830
S-0102-33-B-000-01-000-01	2.3	5.8	0.3	33	S008640
S-0102-30-B-000-01-000-01	2.1	6.2	0.3	30	S006793
S-0102-25-B-000-01-000-01	1.8	7.2	0.3	25	S006847
S-0102-20-B-000-01-000-01	1.5	8.2	0.3	20	S006801
S-0102-15-B-000-01-000-01	1.4	10.0	0.3	15	S006853
S-0102-10-B-000-01-000-01	1.0	12.0	0.3	10	S006818
S-0102-05-B-000-01-000-01	0.7	16.0	0.3	5	S006876

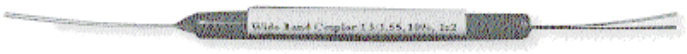
Directivity < -55dB

Optical Bandpass: 1260 - 1360nm, 1480 - 1580nm

1 X 2 WAVELENGTH DIVISION MULTIPLEXER

APPLICATIONS

- Transmits bi-directionally at different wavelengths
- Cost effectively upgrades the bandwidth of an installed fiber cable
- Combines and splits optical wavelengths



FEATURES & BENEFITS

- Small package size allows for packaging in confined spaces
- Low insertion loss provides for excellent wavelength separation
- Ideal for fully utilizing the bandwidth of existing fiber cables
- Designed to exceed CATV and Telco requirements
- Available in a variety of packages

ORDERING INFORMATION

Item Description	Insertion Loss Typical (dB)	Insertion Loss Max (dB)	Isolation Loss Max (dB)	Item Number
S-0102-0020-B-000-01-000-01	0.2	<0.6	20	S008952
T-0102-0020-B-000-01-000-01	0.2	<0.6	20	S008812
3-0102-0020-B-000-01-000-01	0.2	<0.6	20	S008816
A-0102-0040-E-000-01-000-01	0.8	<1.5	40	S008788
B-0102-0040-E-000-01-000-01	0.8	<1.5	40	S008792
A-0102-0060-E-000-01-000-01	0.8	<1.5	60	S008800
B-0102-0060-E-000-01-000-01	0.8	<1.5	60	S008804

Optical Bandpass: 1280 - 1335nm, 1525 - 1575nm

PACKAGING

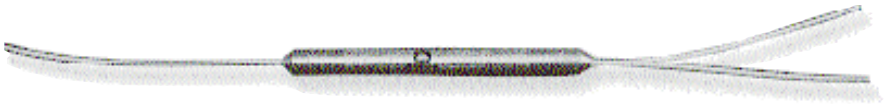
250μM 1 X 2

Package Type: S

- Primary coupler package
- Ideal for fusion splicing and confined space applications
- Fits into existing splice trays
- Dimensions: 3.7mm (0.14”); length 47mm (1.77”)

Standard length for pigtails is one meter.

900μM 1 X 2

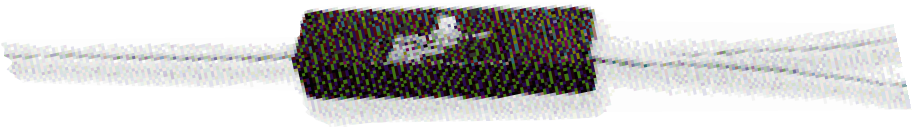


Package Type: T

- Ruggedized for handling and environmental exposure
- Can be connectorized with all connector types
- Dimensions: 5.5mm (0.22”); length 66mm (2.60”)

Standard length for pigtails is one meter.

3.0MM 1 X 2



Package Type: 3

- Designed for rugged environmental conditions
- Provides easy access to 3mm simplex cable
- Can be connectorized with all connector types
- Dimensions: length 72.2mm (2.84”); width 18mm (0.71”); height 12mm (0.47”)

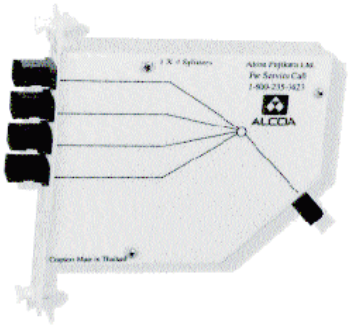
Standard length for pigtails is one meter.

PACKAGING

DISTRIBUTION RACK-MOUNTABLE COUPLER MODULE

Package Type: C

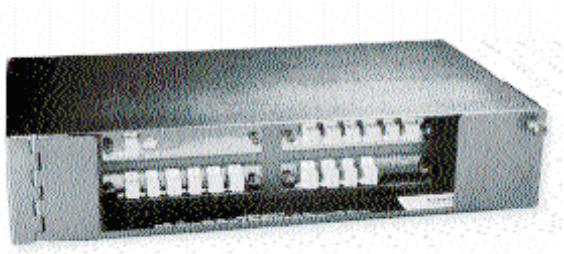
- Possible combinations: 1 x 2, 1 x 3, 1 x 4, 1 x 5, 1 x 6
- Compatible with both 72 and 144 fiber LGX® frames
- SC, FC, D4 and other pigtail designs available
- Dimensions: length 72.2mm (5.08"); width 29mm (1.14"); height 130mm (5.12")



RACK-MOUNT COMPATIBLE COUPLER MODULE

19" Rack front mount - Package Type D
23" Rack mid-mount - Package Type K

- Rack unit is 1.75" high x 17" wide
- Dimensionally compatible with standard laser diodes and receivers
- Ideal for headend and central office locations
- Can be pre-terminated per customer's requirements



1 X N

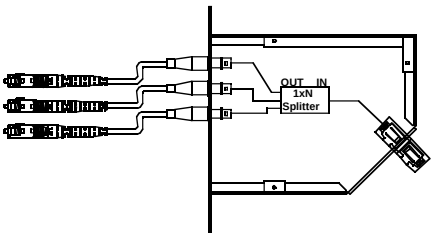
3mm Package Type B
900μm Package Type A

Standard 1 x N package design

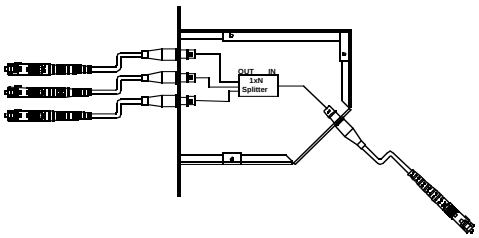
- Designed for 1 x 3 - 1 x 16 WBC's, as well as WDM's
- Dimensions: length 144mm (5.67"); width 95.4mm (3.76"); height 10.4mm (0.41")

Other special packaging is available.

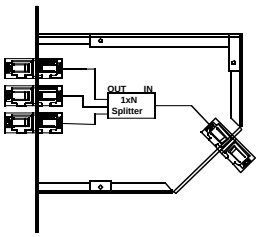
TYPICAL LAYOUTS



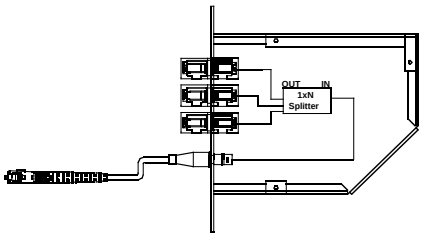
A
- Input rear adapter
- Output front pigtail/jumper



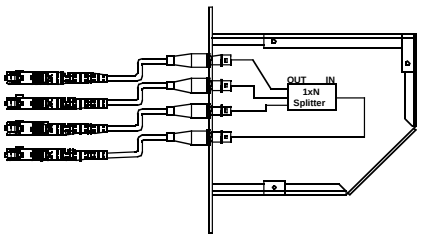
B
- Input rear pigtail/jumper
- Output front pigtail/jumper



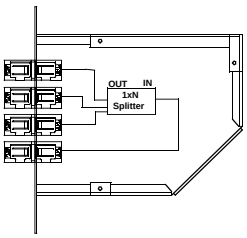
C
- Input rear adapter
- Output front adapter



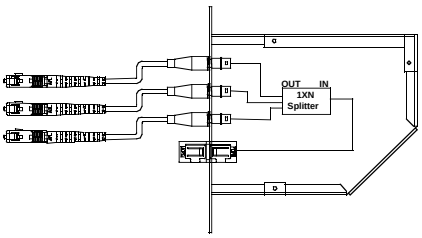
D
- Input front pigtail/jumper
- Output front adapter



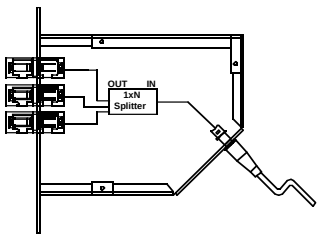
E
- Input front pigtail/jumper
- Output front pigtail/jumper



F
- Input front adapter
- Output front adapter



G
- Input front adapter
- Output front pigtail/jumper



H
- Input rear pigtail/jumper
- Output front adapter

ORDERING INFORMATION

PART B: ASSEMBLY ORDER CONSTRUCTION FORMULA

A LGX® compatible 1 x 4 module with two 50% couplers and one 30% coupler. The input for the module consists of an SC adapter located on the rear of the module. The outputs for this module are SC adapters located on the front of the module.

Example:

C-0104-505030-C-SSC-00-SSC-00

1. The Package Type selection determines the final package type to be used.

2. The Input/Output Ports selection designates the number of input ports and the number of output ports required in the coupler design. The first two digits represent the number of input ports. The last two digits represent the number of output ports.

Example:

1 X 4 = 0104

3. The Coupling Ratio selection is used to determine the number of couplers needed in the design at each particular coupling ratio.

4. Typical Layout selection determines where adapters and pigtails are placed in the selected package. In selection 1, (Package Type), if package type A or B is selected, the typical configuration can only be selection E. For other package types, any configuration is acceptable.

5. Designate the connector type and the polishing style on the Input Connector or the adapter style.

6. Indicate the desired length of the Input Pigtail (meters). If an adapter is selected, use "00" to indicate length.

7. Designate the connector type and the polishing style on the Output Connector or the adapter style.

8. Indicate the desired length of the Output Pigtail (in meters). If an adapter is selected, use "00" to indicate length.

ASSEMBLY ORDERING CONSTRUCTION FORMULA

1	2 2 2 2	33 33 33	*	4	5 5 5	6 6	7 7 7	8 8
C	0 1 0 4	50 50 50		C	S S C	0 0	S S C	0 0

1. Package Type
A = 1 x N, 900µm
B = 1 x N, 3.0mm
C = LGX®** Compatible
D = 19" Rack Mountable
H = Siecor®*** Compatible
K = 23" Rack Mountable
S = 250µm Standard Coupler
T = 900µm Coupler
3 = 3.0mm Coupler

2. Input/Output Ports
0102 = 1 x 2
0103 = 1 x 3
0104 = 1 x 4
0105 = 1 x 5
0106 = 1 x 6
0108 = 1 x 8
0116 = 1 x 16

3. Coupling Ratio
50 = 50%
45 = 45%
40 = 40%
35 = 35%
33 = 33%
30 = 30%
25 = 25%
20 = 20%
15 = 15%
10 = 10%
05 = 5%
WDM's
00 = WDM
XX = Isolation

4. Typical Configuration
A = Input rear adapter
= Output front pigtail/jumper
C = Input rear adapter
= Output front adapter
D = Input front pigtail/jumper
= Output front adapter
E = Input front pigtail/jumper
= Output front pigtail/jumper
F = Input front adapter
= Output front adapter
G = Input front adapter
= Output front pigtail/jumper

5. Input Connector/Adapter
ASC = SC Angled Polish
SSC = SC Super Polish
USC = SC Ultra Polish
AFC = FC Angled Polish
SFC = FC Super Polish
UFC = FC Ultra Polish
SST = ST® Super Polish
UD4 = D4 Ultra Polish
000 = Non-connectorized

6. Input Pigtail Length (m)
Example:
1 meter = 01
8 meters = 08
Adapter = 00

7. Output Connector/Adapter
ASC = SC Angled Polish
SSC = SC Super Polish
USC = SC Ultra Polish
AFC = FC Angled Polish
SFC = FC Super Polish
UFC = FC Ultra Polish
SST = ST® Super Polish
UD4 = D4 Ultra Polish
000 = Non-connectorized

8. Output Pigtail Length (m)
Example:
1 meter = 01
8 meters = 08
Adapter = 00

*** Dynamic field expands to accommodate 1 x N configuration.**
**** LGX® is a registered trademark of Lucent Technologies®.**
***** Siecor® is a registered trademark of Siecor.**