

Passive Optical Components

An Evolant® Solutions Product

Corning
Cable Systems

Description

Corning Cable Systems offers a full line of passive optical component products that is specially designed for our complete fiber optic hardware portfolio to allow maximum network flexibility. Available components include couplers, planar splitters and wavelength division multiplexers (WDMs).

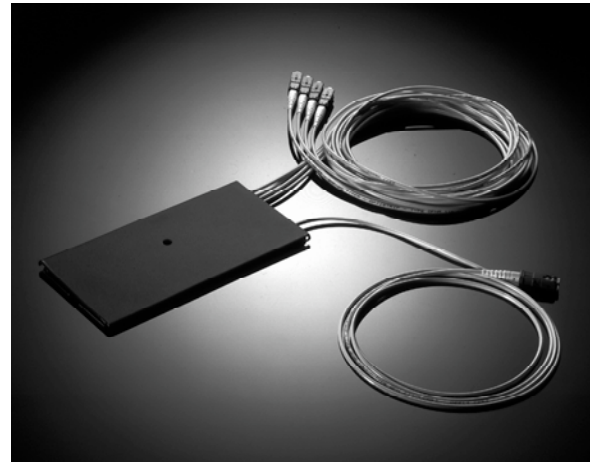
Couplers and splitters are available with port counts from 1 x 2 to 2 x 32, and custom circuits with any number of unequal power outputs can be created by concatenating couplers of various ratios. Couplers are available fully integrated into connectorized rack-mountable shelves or modules or in a variety of cassettes that are compatible with various Corning Cable Systems hardware product lines.

Modern network architectures often require widespread deployment of couplers and splitters in the field to maximize system reach while reducing the cost of expensive electronics. These networks are often designed and constructed around the couplers, as they represent the largest single constraint from both an insertion link-loss budget and an operating environment perspective. Due to the critical nature of these components, network performance is largely dependent upon the performance and reliability of the couplers, especially when installed in an outside plant environment.

Corning Cable Systems' expertise in fiber optics and advanced production techniques yields consistent, high-performance products which are stable across a wide range of environmental conditions. All products are fully qualified to Telcordia GR-1209 and GR-1221 for assured long-term reliability.

Features / Benefits

- Low insertion loss
- Environmentally stable
- Long-term reliability
- Tested to Telcordia standards
- Available with high-performance connectors or splicing solutions



Coupler Cassette | Photo CNP551523



Single-Width (ECL) and Double-Width (EC2)
Eclipse® Hardware Modules | Photo ICH106



High-Density Coupler Shelf | Photo HWP551704



Product Specifications

Passive Optical Components High-Density Coupler Shelves

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Description

Corning Cable Systems offers the space-saving High-Density Coupler Shelf that can be mounted in a single rack space. This shelf can accommodate up to 22 inputs and outputs using standard simplex connectors and is also available in a double-high (2RU) configuration for even greater coupler density. Additional capacity can also be gained through the use of duplex adapters.

The High-Density Coupler Shelf is compatible with our full line of fiber optic hardware, including: Eclipse®, LDC, FDC® and ACH™ Hardware product families, or any EIA standard 19- or 23-in rack. The shelf also provides shielded jumper protection and a slide-forward design for easy access to optical jumpers and pigtails.



Eclipse Hardware Coupler Shelf | Photo ICH208

Specifications

Letter Code	Product Family	Shelves	Maximum Port Count	Package Size H x W x D (in)	Shelf Color
AS	ACH	1U HSF	22 ports total with standard simplex adapters. 34 ports total with SC duplex adapters (2 x 32). Pigtail inputs and outputs also available.	1.70 x 16.91 x 12	Beige
FS	FDC	1U HSF		1.70 x 16.91 x 12	Beige
LS	LDC	1U HSL		1.70 x 16.91 x 12	Platinum
ES	Eclipse	1U ECS		1.70 x 16.91 x 12	Black
AH	ACH	2U HSF	44 ports total with standard simplex adapters. 68 ports total with SC duplex adapters (two 2 x 32). Pigtail inputs and outputs also available.	3.40 x 16.91 x 12	Beige
FH	FDC	2U HSF		3.40 x 16.91 x 12	Beige
LH	LDC	2U HSL		3.40 x 16.91 x 12	Platinum
EH	Eclipse	2U ECS		3.40 x 16.91 x 12	Black

Fits 19- or 23-in rack.

Passive Optical Components Coupler Modules

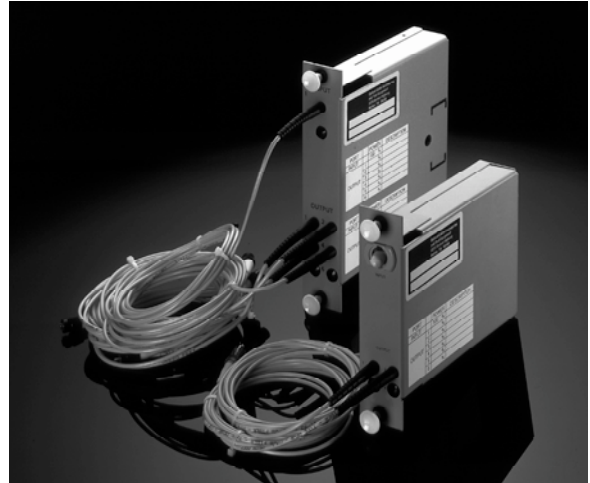
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Description

Corning Cable Systems also offers a wide selection of coupler housings and modules which are compatible with our full line of fiber optic hardware including: Eclipse®, LDC, FDC®, HDF, CCH and ACH™ product family Connector Housings which can be mounted to any EIA standard 19- or 23-in rack. The use of coupler housings and modules provides modularity in a small footprint for your network, allowing expansion as needed by adding couplers via single- or double-wide modules. Modules can be configured with either adapter or pigtail inputs and outputs with a variety of high-performance connector options.

Coupler modules are also available in custom designs for Corning Cable Systems' outside plant hardware such as the Fiber Distribution Hub (FDH) and Local Convergence Cabinet (LCC), as well as the LCA (aerial) and LCB (below-grade) terminal products.



FD8- and FDC-Style Modules | Photo HWPPP1323



LDC Coupler Module | Photo HWPPP1325

Passive Optical Components Coupler Modules

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Specifications

Letter Code	Product Family	Module	Maximum Port Count			Rack-Mount Housing		
			Inputs	Adapter Outputs*	Pigtail Outputs	Package Size H x W x D (in)	Housing Part Number	Module Color
FM	FDC	FDC	1	5	5	6.00 x 1.38 x 6.41	FDC-CMH-072	Beige
FL	FDC	FD8	1	6	6	7.50 x 1.38 x 6.16	FDC-CMH-096	Beige
QM	FMS, left	FiberManager Module	1	11**	N/A	8.75 x 0.88 x 11.8	FiberManager System	Gray
RM	FMS, right	FiberManager Module	1	11**	N/A	8.75 x 0.88 x 11.8	FiberManager System	Gray
LM	LDC	Single-Wide Module	1	5	4	5.10 x 1.14 x 5.75	LDC-CMH-072	Platinum
LD	LDC	Double-Wide Module	2	16	16	5.10 x 2.28 x 5.76	LDC-CMH-072	Platinum
EM	Eclipse	Single-Wide Module	1	5	8	5.10 x 1.37 x 6.70	ECL-C4U	Black
ED	Eclipse	Double-Wide Module	1	11	16	5.10 x 2.76 x 6.69	ECL-C4U	Black
AM	ACH (HCM)	Single-Wide Module	1	5	5	8.60 x 1.06 x 6.75	ACH-HMH-012	Beige
AD	ACH (HCM)	Double-Wide Module	1	11	20	8.60 x 2.15 x 6.76	ACH-HMH-012	Beige
DM	LANscape	CCH (Rear Entry Module option available)	1	6	10	1.37 x 6.13 x 6.00	Various CCH Products	Black
VM	FDH-HDF	Single-Wide Module OptiTect™ Advantage Cabinet	2*** SC only	N/A	16***	5.5 x 0.6 x 5	FDH-HDF Gen 1 and Gen 2	Almond
VD	FDH-HDF	Double-Wide Module OptiTect Advantage Cabinet	2*** SC only	N/A	32***	5.5 x 1.16 x 5	FDH-HDF Gen 1 and Gen 2	Almond
PM	LCC	Single-Wide Module	2 SC only	8	N/A	6.58 x 1.14 x 5.42	Local Convergence Cabinet (LCC)	Black
PD	LCC	Double-Wide Module	2 SC only	16	N/A	6.58 x 2.28 x 5.42	Local Convergence Cabinet (LCC)	Black
PR	LCC	Triple-Wide Module	2 SC only	32	N/A	6.58 x 3.42 x 5.42	Local Convergence Cabinet (LCC)	Black
NM	LCA/LCB	Single-Wide Module	2 SC only	8	N/A	5.00 x 1.15 x 4.14	LCA/LCB Closures	Black
UM	OptiTect Premier Cabinet	Single-Wide Module	1 x 32 2 x 16 2mm Pigtails only		Dual 1 x 16 2 x 32	2.5 x 8 x 4.7	OptiTect Premier Gen 3 Cabinets	Almond

Note: FDC = FDC® Hardware Family, Eclipse = Eclipse® Hardware Family, ACH = ACH™ Hardware Family, LANscape = LANscape® Solutions, FiberManager = FiberManager™ System

* Based on SC simplex adapters unless noted; use of small-form-factor connectors/adapters will increase capacity.

** Maximum number of ports is 1 input/7 output (8 ports total) with ST® compatible Connectors.

*** Available with ZEMA™ Mechanical Attachment pigtail inputs and outputs only.

Passive Optical Components Coupler Cassettes

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Description

Corning Cable Systems also offers a wide selection of coupler cassettes and trays which are designed for use with our full line of closure products or in other applications where space constraints are an issue. Coupler cassettes may be purchased with connectorized pigtails or with 250 µm fibers protected in transport tubing for ready-to-splice configurations.

Specifications

Maximum Port Count					
Code	Product Family	Inputs	Transport Tubing Option	Pigtail Outputs	Dimensions H x W x D (in)
CB	SCA-9T24 SCF-4C18 SCF-4T30 SCF-6C22 SCF-6T30 SCF-ST-099	2	8	SCA = 8* SCF = N/A	8.75 x 3.9 x 0.2
CF	SCA-9T24 SCF-4C18 SCF-4T30 SCF-6C22-F SCF-6T30-F SCF-ST-116	2	32	SCA = 16* SCF = N/A	8.75 x 3.9 x 0.4
CJ	SCA-9T34 SCF-6C28 SCF-6T40 SCF-8C28 SCF-8T40 SCN-10T30 SCN-8C28 SCN-8T40 SCN-8T34 SCF-ST-112	2	8	SCA = 8* SCN = N/A SCF = N/A	13.2 x 3.9 x 0.2
CG	SCA-9T34 SCF-6C28-F SCF-6T40-F SCF-8C28-F SCF-8T40-F SCN-10T30-F SCN-8C28-F SCN-8T40-F SCN-8T34-F SCF-ST-077	2	32	SCA = 16* SCN = N/A SCF = N/A	12.23 x 3.9 x 0.4
CC	SCC	2	5	N/A	3.31 x 4.25 x 0.2
CN	SCC	Adapter Input Only: SC simplex = 1 LC duplex = 2	32	N/A	4.97 x 4.28 x 0.8
CP	SAP	2	32	N/A	4.07 x 4.54 x 0.44

* 900 µm pigtails only

Passive Optical Components Coupler/Splitter Specifications

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Specifications

Chart A – Equal Splits

Dual Window Wideband	Wavelength Range	Typical IL*	Max IL*	Uniformity*	Input Return Loss	Directivity	PDL
1 x 2 Coupler/Splitter	1260-1360 and 1480-1580 nm	3.20	3.60	0.70	≥55	≥50	0.20
1 x 3 Coupler/Splitter	1260-1360 and 1480-1580 nm	5.0	6.0	1.6	≥55	≥50	0.20
1 x 4 Coupler/Splitter	1260-1360 and 1480-1580 nm	6.43	7.25	1.40	≥55	≥50	0.20
1 x 8 Coupler/Splitter	1260-1360 and 1480-1580 nm	9.90	10.75	1.00	≥55	≥55	0.20
1 x 16 Coupler/Splitter	1260-1360 and 1480-1580 nm	12.9	14.00	1.20	≥55	≥55	0.20
1 x 32 Coupler/Splitter	1260-1360 and 1480-1580 nm	16.6	17.50	1.50	≥55	≥55	0.20
2 x 4 Coupler/Splitter	1260-1360 and 1480-1580 nm	6.30	7.80	1.6	≥55	≥50	0.30
2 x 8 Coupler/Splitter	1260-1360 and 1480-1580 nm	10.2	11.00	2.00	≥55	≥55	0.20
2 x 16 Coupler/Splitter	1260-1360 and 1480-1580 nm	13.3	14.60	2.40	≥55	≥55	0.20
2 x 32 Coupler/Splitter	1260-1360 and 1480-1580 nm	17.0	18.50	2.80	≥55	≥55	0.20

* Premium specifications products are also available.

Chart B – Raw 1 x 2 Couplers for Building Custom Modules

Dual Window Narrowband	Wavelength Range	Max IL*	Uniformity*	Input Return Loss	Directivity	PDL
95/5	1300-1320 and 1540-1560 nm	0.5/16.0	N/A	≥55	≥50	0.20
90/10	1300-1320 and 1540-1560 nm	0.9/10.8	N/A	≥55	≥50	0.20
85/15	1300-1320 and 1540-1560 nm	1.2/9.6	N/A	≥55	≥50	0.20
80/20	1300-1320 and 1540-1560 nm	1.3/8.2	N/A	≥55	≥50	0.20
75/25	1300-1320 and 1540-1560 nm	1.6/7.2	N/A	≥55	≥50	0.20
70/30	1300-1320 and 1540-1560 nm	1.9/6.0	N/A	≥55	≥50	0.20
65/35	1300-1320 and 1540-1560 nm	2.3/5.3	N/A	≥55	≥50	0.20
60/40	1300-1320 and 1540-1560 nm	2.6/4.7	N/A	≥55	≥50	0.20
55/45	1300-1320 and 1540-1560 nm	3.1/4.1	N/A	≥55	≥50	0.20
50/50	1300-1320 and 1540-1560 nm	3.5/3.5	0.60	≥55	≥50	0.20

* Values provided do not include connectors.

Passive Optical Components Coupler/Splitter Definitions

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Specifications (continued)

Typical Insertion Loss	Average insertion loss values measured at the specified center wavelengths (1310 and/or 1550 nm) at room temperature
Maximum Insertion Loss	Maximum insertion loss value for the device over entire operating wavelength and temperature range and at all states of polarization
Uniformity	The maximum difference between the leg of the coupler with the highest insertion loss and the leg with the lowest insertion loss
PDL (Polarization Dependent Loss)	Variation of the coupler's insertion loss with varying states of polarization of the signal

Single-mode Connector Specifications

Insertion Loss	0.2 dB Typical, 0.5 dB Max
Reflectance	Ultra PC: -55 dB Max Angled PC: -65 dB Max

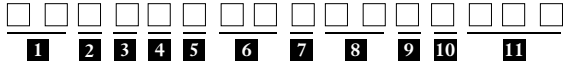
Passive Optical Components Coupler/Splitter Ordering Guide

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Ordering Information

Equal Splits



1 Select product code.

See charts for shelves, modules or cassettes.

2 Coupler optical specifications/test wavelength.

- 1 = Dual window (1310 and 1550 nm) narrowband (see Chart B)
- S = Dual window (1310 and 1550 nm) wideband (see Chart A)
- N = Other special bandpass requirements
- B = Band optimized fiber ("UM" modules only)

3 Module options (input/output options).

- 1 = Input front/output front (default for all cassettes and shelves)
- 4 = Input rear/output front (CCH only)

4 Input configuration.

- A = Adapter
- B = 3 mm jacketed fiber
- C = 2 mm jacketed fiber
- D = 1.6 mm jacketed fiber
- E = 900 µm jacketed fiber
- T = Transport tubing (default for 250 µm fiber)
- Z = ZEMA™ Mechanical Attachment 2.0 mm jacketed fiber (FDH only)

5 Output configuration.

- A = Adapter
- B = 3 mm jacketed fiber – yellow (single-mode)
- C = 2 mm jacketed fiber
- D = 1.6 mm jacketed fiber
- E = 900 µm jacketed fiber
- T = Transport tubing (default for 250 µm fiber)
- Z = ZEMA Mechanical Attachment 2.0 mm jacketed fiber (FDH only)

Note: ST = ST® Compatible

6 Input connector/adaptor code.

- 5C = SC/UPC (single-mode, ceramic insert)
- 6C = SC/APC (single-mode, ceramic insert)
- 72 = SC/UPC duplex (single-mode, ceramic insert)
- 66 = SC/APC duplex (single-mode, ceramic insert)
- 54 = FC/UPC (single-mode, phosphor bronze insert)
- 21 = FC/APC (single-mode, phosphor bronze insert)
- 6T = ST/UPC (single-mode, threaded, ceramic insert)
- 04 = LC/UPC duplex (single-mode)
- 00 = No connectors

7 Input pigtail length (in meters).

- 0 = No pigtails (default for adapter input)
- 1 = 1
- 3 = 3
- 5 = 5
- 7 = 7
- A = 10
- L = 20
- Z = Custom ("UM" modules only)

8 Output connector/adaptor code.

- 5C = SC/UPC (single-mode, ceramic insert)
- 6C = SC/APC (single-mode, ceramic insert)
- 72 = SC/UPC duplex (single-mode, ceramic insert)
- 66 = SC/APC duplex (single-mode, ceramic insert)
- 54 = FC/UPC (single-mode, phosphor bronze insert)
- 21 = FC/APC (single-mode, phosphor bronze insert)
- 6T = ST/UPC (single-mode, threaded, ceramic insert)
- 04 = LC/UPC duplex (single-mode)
- 00 = No connectors

9 Output pigtail length (in meters).

- 0 = No pigtails (default for adapter outputs)
- 1 = 1
- 3 = 3
- 5 = 5
- 7 = 7
- A = 10
- L = 20

continued

Passive Optical Components Coupler/Splitter Ordering Guide

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Ordering Information (continued)

10 Number of devices; see Table A plus examples below. (Ensure maximum number of ports not exceeded for product code entered in Option 1.)

11 Coupler configuration.

012 = 1 x 2
022 = 2 x 2
013 = 1 x 3
014 = 1 x 4
024 = 2 x 4
015 = 1 x 5
016 = 1 x 6
018 = 1 x 8
028 = 2 x 8
110 = 1 x 10
112 = 1 x 12
116 = 1 x 16
216 = 2 x 16
132 = 1 x 32
232 = 2 x 32

Examples:

1018 = One (1 x 8)
2014 = Two (1 x 4)
5012 = Five (1 x 2)
C012 = Twelve (1 x 2)

Table A
Codes for Quantities
(includes quantities less than 9)

1	=	1
2	=	2
3	=	3
4	=	4
5	=	5
6	=	6
7	=	7
8	=	8
9	=	9
A	=	10
B	=	11
C	=	12
D	=	13
E	=	14
F	=	15
G	=	16
H	=	17
J	=	18
K	=	19
L	=	20
M	=	21
N	=	22
P	=	23
Q	=	24
R	=	25
S	=	26
T	=	27
U	=	28
V	=	29
W	=	30
X	=	31
Y	=	32
Z	=	33

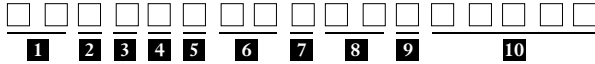
Passive Optical Components Coupler/Splitter Ordering Guide

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Ordering Information

Unequal Splits



1 Select product code.

See charts for shelves, modules or cassettes.

2 Coupler optical specifications/test wavelength.

- 1 = Dual window (1310 and 1550 nm) narrowband (see Chart B)
- N = Other special bandpass requirements

3 Module options (input/output options).

- 1 = Input front/output front (default for all cassettes and shelves)
- 4 = Input rear/output front (CCH only)

4 Input configuration.

- A = Adapter
- B = 3 mm jacketed fiber
- C = 2 mm jacketed fiber
- D = 1.6 mm jacketed fiber
- E = 900 µm jacketed fiber
- T = Transport tubing (default for 250 µm fiber)

5 Output configuration.

- A = Adapter
- B = 3 mm jacketed fiber
- C = 2 mm jacketed fiber
- D = 1.6 mm jacketed fiber
- E = 900 µm jacketed fiber
- T = Transport tubing (default for 250 µm fiber)

Note: ST = ST® Compatible

6 Input connector/adaptor code.

- 5C = SC/UPC (single-mode, ceramic insert)
- 6C = SC/APC (single-mode, ceramic insert)
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- 21 = FC/APC (single-mode, phosphor bronze insert)
- 6T = ST/UPC (single-mode, threaded, ceramic insert)
- 04 = LC/UPC duplex (single-mode)
- 00 = No connectors

7 Input pigtail length (in meters).

- 0 = No pigtails (default for adapter input)
- 1 = 1
- 3 = 3
- 5 = 5
- 7 = 7
- A = 10
- L = 20

8 Output connector/adaptor code.

- 5C = SC/UPC (single-mode, ceramic insert)
- 6C = SC/APC (single-mode, ceramic insert)
- 72 = SC/UPC duplex (single-mode, ceramic insert)
- 66 = SC/APC duplex (single-mode, ceramic insert)
- 54 = FC/UPC (single-mode, phosphor bronze insert)
- 21 = FC/APC (single-mode, phosphor bronze insert)
- 6T = ST/UPC (single-mode, threaded, ceramic insert)
- 04 = LC/UPC duplex (single-mode)
- 00 = No connectors

9 Output pigtail length (in meters).

- 0 = No pigtails (default for adapter outputs)
- 1 = 1
- 3 = 3
- 5 = 5
- 7 = 7
- A = 10
- L = 20

continued

Passive Optical Components Coupler/Splitter Ordering Guide

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Ordering Information (continued)

10 Coupler configuration.

A	=	5/95
B	=	10/90
C	=	15/85
D	=	20/80
E	=	25/75
F	=	30/70
G	=	35/65
H	=	40/60
J	=	45/55
K	=	50/50*
A22	=	2 x 2 95/5
B22	=	2 x 2 90/10
C22	=	2 x 2 85/15
D22	=	2 x 2 80/20
E22	=	2 x 2 75/25
F22	=	2 x 2 70/30
G22	=	2 x 2 65/35
H22	=	2 x 2 60/40
J22	=	2 x 2 55/45
X	=	Input of next coupler is spliced to high-power leg of current coupler
XX	=	Input of next coupler is spliced to high-power leg of previous coupler
/	=	Input of next coupler is spliced to high-power leg of first coupler or first coupler after previous “/”
-	=	Input of next coupler is spliced to next input port (multi-input only)
W	=	1310/1550 WDM
Q	=	1490/1550 WDM

* If single 50/50 1 x 2 split is required, use code 1012 from equal split part number configuration.

Note: Call Customer Service for assistance with complex unequal ratio split coupler configurations. Outputs can be specified using percentage of power for each output port to develop custom part number configurations.