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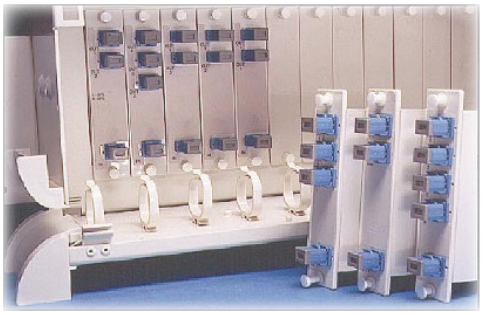
Splitter Wave Division Multiplexer Modules

Custom modules to meet your specialty network applications



Features and Benefits

- Cost effective solutions
- Diverse range of split ratios
- Fits standard 7-inch LGX® shelves
- Maximizes shelf space
- Can be used on FTTH applications
- Ease of customization
- Attenuator capable
- Flexible interface design (change connector interface as needed)
- Qualified to GR1209 and GR1221

Applications

The primary applications for splitter and Wave Division Multiplexer modules include:

- Test Access (BER and OTDR)
- Demarcation test point between customer systems and network systems
- Network migration: combine 1310 nm and 1550 nm systems onto a single fiber
- Power tap access
- Signal separation (PON networks or FTTH)
- Load 1 shelf per distribution frame for critical path test access

Product Description

Splitter and Wave Division Multiplexer (WDM) modules are critical network components that compliment the LGX® frame management system. Modules provide operators a multitude of test access methods for bit error analysis or OTDR test entry. WDM modules create a migration path for traditional single band networks by allowing fiber to move to a dual band system without infrastructure build. Combine a 1310 nm with a 1550 nm system onto single fibers through the use of OFS WDM modules.

Splitter and WDMs are cassette housings used in 7-inch LGX shelves utilizing LC, SC, and ST interfaces. These modules are dual band bi-directional passive devices operating at 1310 nm and 1550 nm. Splitter modules are found in 1x2 up to 1x32 with a wide range of power output ratios. The WDM products are available in 15 dB, 25 dB and 55 dB isolation in dual band configurations. Modules can also be found with dual components housed in a single unit to maximize shelf space.

OFS created specialty splitter modules for fiber to the home (FTTH) applications. These modules are designed to mount in an 8-inch diameter pedestal so that drop cables can be administered efficiently. See the new outside plant splitter designs referred to as OSP Modules.

OFS creates custom modules to meet your specialty network applications. Please contact your OFS sales representative for customization.

Product Description Cont.

Splitter Modules

Splitter modules are assemblies utilizing traditional fusion couplers with LC, SC, and ST connector interfaces where the course optical power is split.

WDM Modules

WDM modules are assemblies utilizing traditional course band fusion couplers with LC, SC, and ST connector interfaces where the optical wavelengths are isolated at broad band levels with differing isolation characteristics.

Terminology

Fusion Couplers: Are a well known industry technology for splitting optical power and/or splitting wavelengths. Couplers are created through a process of fusing two bare fibers like an X and pulling the fused section to achieve the desired optical characteristics. Couplers are fused in tree structures to combine optical splitting effects to create power ratio output of 1xn or 2xn, where n is the number of desired outputs. Coupler trees are also created for WDMs to achieve different levels of wave isolation from the various outputs.

Module: A completed assembly utilizing connectorized passive optical elements that are in a protective housing with adapter interfaces. Modules are typically designed to fit within LGX shelves or within other fiber management systems.

Splitter Module: An assembly utilizing traditional fusion couplers with LC, SC, or ST connector interfaces where a signal is to be bi-directionally transmitted or distributed to two or more service points.

WDM Module: An assembly utilizing traditional course band fusion couplers with LC, SC, and ST connector interfaces where multiple signals, each at different wavelengths, are transmitted on a single fiber.

Module Insertion Loss (IL): The sum total of optical loss across a module due to connector losses, and excess losses (coupler losses).

Connector IL: The optical loss induced from the interface transition from one connector to another.

Excess IL: The loss induced from the couplers fused section and the combination of couplers in a tree structure.

Power Splitting Ratio: The percentage of optical signal on each output port relative to the total input signal strength.

Wave Division Multiplexer (WDM): Distributes light based on its wavelength composition. It is used to transmit signals, each at a different wavelength, on a single fiber.

Return Loss: The ratio of signal that is reflected back toward the input signal.

Directivity: The portion of the signal that is reflected back toward the input signal.

Isolation: The ratio of the unexpected wave band to the expected wave band on a WDM output.

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Splitter Wave Division Multiplexer Modules

Coupler Environmental Reliability Tests

High Temperature Storage Test	85 °C (185 °F) for 5000 hrs
Low Temperature Storage Test	-40 °C (-40 °F) for 5000 hrs
Thermal Cycling Test	-40/75 °C (-40/167 °F) for 500 Cycles
Water Immersion Test	43 °C (109 °F), PH=5.5, 340hrs
Vibration Test	10~2000Hz Random, 20g, 3 axes
Impact Test	8 drops, 1.8 m (5.9 ft) high
Thermal Shock Test	100 °C (212 °F)

Optical Performance Specifications

OFS Couplers		***1310/1550 nm ± 50 nm Dual Band Operation***	
Split Ratio	***Coupling Ratio (%)***	***Max Insertion Loss (dB)***	***Uniformity (dB)***
1x2	5/95	14.4/0.5	n/a
1x2	10/90	11.2/0.8	n/a
1x2	15/85	9.2/1.0	n/a
1x2	20/80	7.3/1.3	n/a
1x2	25/75	6.8/1.6	n/a
1x2	30/70	6.0/2.0	n/a
1x2	35/65	5.3/2.3	n/a
1x2	35/65	4.7/2.7	n/a
1x2	45/55	4.1/3.2	n/a
1x2	Balanced 50/Port*	3.9/3.9	0.5
1x3	Balanced 33/Port	5.9	0.8
1x3	60/20/20	2.7/8.4/8.4	n/a
1x3	50/25/25	3.6/7.3/7.3	n/a
1x3	40/30/30	4.7/6.4/6.4	n/a
1x3	30/35/35	6.2/5.6/5.6	n/a
1x3	20/40/40	8.2/5.2/5.2	n/a
1x3	20/36/44	7.9/6.0/4.0	n/a
1x3	10/45/45	11.3/4.1/4.1	n/a
1x4	Balanced 25/Port	7.3	1.0
1x4	35/22/22/22	4.8/7.8/7.8/7.8	n/a
1x5	Balanced 20/Port	8.4	1.1
1x6	Balanced 16.7/Port	9.3	1.3
1x8	Balanced 12.5/Port	10.7	1.5
1x16	Balanced 6.25/Port	14.5	2.0
Maximum Directivity: -55dB			
Maximum Reflection: -55dB			
Complies with TR-NWT-001221 & TR-NWT-001209			
* Max Directivity: -50dB			

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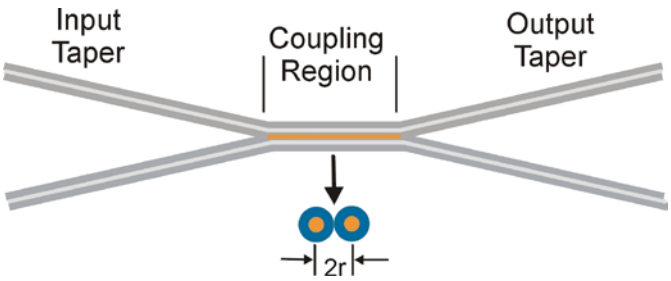
Splitter Wave Division Multiplexer Modules

Ordering Information – Dual Wavelength Operation 1300/1550 nm

Comcode	Product Code	Split	Split Ratio
Splitter Modules using Angled LC Connectors and Adapters			
300 387 057	S1-1X2-1315-LCA-S-BAL-F	1X2	50\50 (Balanced)
300 387 180	S1-1X3-1315-LCA-S-BAL-F	1X3	33\33\33 (Balanced)
300 387 214	S1-1X4-1315-LCA-S-BAL-F	1X4	25\25\25\25 (Balanced)
300 387 222	S1-1X5-1315-LCA-S-BAL-F	1X5	20\20\20\20\20 (Balanced)
Splitter Modules using SC Connectors and Adapters			
300 387 230	S1-1X2-1315-SCU-S-BAL-F	1X2	50\50 (Balanced)
300 387 255	S1-1X2-1315-SCU-S-C09-F	1X2	40\60
300 387 313	S1-1X2-1315-SCU-S-C03-F	1X2	10\90
300 387 362	S1-1X3-1315-SCU-S-BAL-F	1X3	33\33\33 (Balanced)
300 387 404	S1-1X4-1315-SCU-S-BAL-F	1X4	25\25\25\25 (Balanced)
300 387 420	S2-1X2-1315-SCU-M-BAL-F	1X2 (Dual)*	50\50 (Balanced)
Splitter Modules using SC Universal Build Out Adapters: Front Cap purchased separately			
300 387 511	S1-1X2-1315-000-M-BAL-F	1X2	50/50
300 387 537	S1-1X3-1315-000-M-BAL-F	1X3	33\33\33 (Balanced)
300 387 602	S2-1X2-1315-000-M-C03-F	1X2 (Dual)*	10\90
Splitter Modules using Angled SC Connectors and Adapters			
300 387 610	S1-1X2-1315-SCA-S-BAL-F	1X2	50\50 (Balanced)
300 387 628	S1-1X2-1315-SCA-S-C10-F	1X2	45\55
300 387 636	S1-1X2-1315-SCA-S-C09-F	1X2	40\60
300 387 644	S1-1X2-1315-SCA-S-C08-F	1X2	35\65
300 387 651	S1-1X2-1315-SCA-S-C07-F	1X2	30\70
300 387 669	S1-1X2-1315-SCA-S-C06-F	1X2	25\75
300 387 677	S1-1X2-1315-SCA-S-C05-F	1X2	20\80
300 387 685	S1-1X2-1315-SCA-S-C04-F	1X2	15\85
300 387 693	S1-1X2-1315-SCA-S-C03-F	1X2	10\90
300 387 701	S1-1X2-1315-SCA-S-C02-F	1X2	05\95
300 387 743	S1-1X3-1315-SCA-S-BAL-F	1X3	33\33\33 (Balanced)
300 387 404	S1-1X4-1315-SCA-S-BAL-F	1X4	25\25\25\25
Splitter Modules using ST Connectors and Adapters			
300 387 792	S1-1X2-1315-STU-M-BAL-F	1X2	50\50 (Balanced)
300 387 800	S2-1X2-1315-STU-S-C03-F	1X2 (Dual)*	10\90
300 387 818	S1-1X4-1315-STU-M-BAL-F	1X4	25\25\25\25 (Balanced)

Additional configurations are available upon request.
* Dual Coupler within a single module housing.



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Splitter Wave Division Multiplexer Modules

Ordering Information – Course WDM Modules 1300/1550 nm*

Comcode	Product Code	Adapter Interface	Split	Split Ratio	Maximum Coupler Loss (dB)
300 387 834	W1-1X2-1315-SCU-S-25D-F	SC	1X2	50\50	1.0
300 387 842	W1-1X2-1315-SCU-S-55D-F	SC	1X2	50\50	1.5

Additional configurations are available upon request.
* Band Pass 1260 - 1360 nm
1480 - 1580 nm
** Dual Coupler within a single module housing.

Ordering Information – OSP Splitter Modules

Comcode	Product Code	Split	Split Ratio
Angled LC Connectors and Adapters			
109 179 218	S1-1X4-1315-LCA-M-BAL-F	1X4	25\Port
109 179 226	S1-1X8-1315-LCA-M-BAL-F	1X8	12.5\Port
LC Connectors and Adapters			
109 179 135	S1-1X4-1315-LCU-M-BAL-F	1X4	25\Port
109 179 150	S1-1X8-1315-LCU-M-BAL-F	1X8	12.5\Port
Angled SC Connectors and Adapters			
109 179 234	S1-1X4-1315-SCA-M-BAL-F	1X4	25\Port
109 179 242	S1-1X8-1315-SCA-M-BAL-F	1X8	12.5\Port
SC Connectors and Adapters			
109 179 176	S1-1X4-1315-SCU-M-BAL-F	1X4	25\Port
109 179 192	S1-1X8-1315-SCU-M-BAL-F	1X8	12.5\Port

Additional configurations are available upon request.

Ordering Information – Associated Hardware

Comcode	Product Code/Description	Use
105 335 871	7-inch Shelf - LST1U-072/7	Shelf to house modules
107 796 864	Terminator, SC-T	Reduce back-reflection
107 857 104	Terminator, FC-T	Reduce back-reflection
106 708 951	A3060 SC/ST	Adapter front for UBO
106 795 354	A3070 ST	Adapter front for UBO
300 387 040	OSP-MDL-BRKT	8-inch Pedestal Bracket Pedestal Charles Industries

Example of OSP Module within a Pedestal

For additional information please contact your sales representative.
You can also visit our website at www.ofsoptics.com or call 1-888-fiberhelp (1-888-342-3743) USA or 1-770-798-5555 outside the USA.

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OFS Marketing Communications
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