

3M™ Passive Optical Splitter Shelves and Modules

3M offers a robust portfolio of passive optical fiber splitter products made to enable easy configuration, design, ordering, and installation of passive optical networks. 3M™ Passive Optical Splitters are compliant to GR-1209/GR-1221 and factory tested. Splitters are optimally configured and labeled with port counts specifically suited for PON networks and are self-contained and pre-connectorized to enable easy interconnect or cross-connect configurations. 3M Passive Optical Splitters enable various physical topology solutions to optimize the optical signal distribution for PON networks in a campus environment or throughout a building according to the installation needs including rack-mount, wall-mount or ceiling/floor enclosure.

Product Overview

Application	Passive optical networking applications that require fiber optic splitter components to branch and distribute the optical signal to multiple endpoints.
Product range	Products are available to accommodate evenly distributed optical splitter configurations from 1x2 to 2x32.
Splitter shelves	1RU 19" rack-mount pre-configured and SC/APC pre-connectorized splitter shelves are available in five models (1x32, 2x32, two 1x16, two 2x16, four 1x8s).
Splitter modules	Splitter modules, pre-connectorized with SC/APC, can be installed in various 3M™ Fiber Distribution Unit rack or wall-mount enclosures or flat rack-mount panels. They are available with the following port configurations: 3-slot wide (2x32, 1x32, two 2x16, two 1x16, four 1x8s, four 2x8s) 2-slot wide (2x16, 1x16) 1-slot wide (2x8, 1x8, two 1x4s)
Standards	Telcordia GR1209 Generic Requirements for Passive Optical Components and GR1229 Generic Reliability Assurance Requirements for Passive Optical Components, SC/APC connectors are GR-326 compliant

Fiber optic splitters are used typically to enable passive optical networks signal distribution between the main aggregation optical line terminal/switch and the singlemode fiber-fed multiple optical network terminals/endpoints. 3M Passive Optical splitter products are clearly labeled with connectorized SC/APC couplers into and out of the modules which makes them easy to configure, install, and test for passive optical networks.



3M™ 1RU Rack-mount Splitter Shelf and optional Patch Cord Management Tray



1 - slot wide



2 - slot wide



3 - slot wide

3M™ Splitter Modules

3M™ Passive Optical Splitter Shelves and Modules

Features	Benefits
Factory tested	Consistent quality, faster installs
High performance specifications	Provides infrastructure longevity, flexibility in optical design
Self-contained units	Tamper resistant encasement, provides increased reliability
Pre-connectorized SC/APC	Ready for quick installation on arrival
Produced to industry specifications	Provides system compatibility and interoperability
Both rackmount shelf and modular	Allows flexible, optimized configurations for the project

Splitter performance values (provided without connectors):

Operating wavelength range 1260-1650 nm

Parameters	1X2	1X4	1X8	1X16	1X32	2X4	2X8	2X16	2X32
Insertion loss (max dB)	3.8	7.1	10.5	13.5	16.8	7.5	10.8	14.1	17.4
Uniformity (dB)	≤0.5	≤0.6	≤0.8	≤1.2	≤2.5	≤1.2	≤1.5	≤2.0	≤2.5
PDL (dB)	≤0.2	≤0.2	≤0.25	≤0.3	≤0.4	≤0.3	≤0.4	≤0.4	≤0.4
Return loss (dB)	≤55	≤55	≤55	≤55	≤55	≤55	≤55	≤55	≤55
Directivity (dB)	≤55	≤55	≤55	≤55	≤55	≤55	≤55	≤55	≤55

Maximum insertion loss	Ratio of optical power at the input port of the coupler to optical power from any single output port. Maximum value for the device over entire operating wavelength and temperature range.
Uniformity	Measure of how evenly power is distributed between the output ports of the splitter. It is the maximum variation of the insertion loss between different legs of the splitter.
Polarization Dependent Loss (PDL)	Performance of a splitter can vary slightly depending on the direction of polarization of light in the fiber. PDL is a measure of variation of the coupler's insertion loss with varying polarization of the signal.
Return loss	Return loss is the ratio of optical power into an input port to the power returning to the same port.
Directivity	Ratio of the optical power into an input port to the optical power returning to any other input port.

3M™ Connectorized Splitter Shelves and Modules (includes two SC/APC connected pairs) Optical Insertion Loss and Reflectance Specifications:

Parameters	1X2	1X4	1X8	1X16	1X32	2X4	2X8	2X16	2X32
Insertion Loss (max dB)	4.6	7.9	11.3	14.3	17.6	8.3	11.6	14.9	18.2
Return Loss (dB)	≤55	≤55	≤55	≤55	≤55	≤55	≤55	≤55	≤55

3M factory connectorized SC/APC insertion loss per mated pair: Typical ≤ .15 dB, Max ≤ .4 dB, return loss better than 60 dB

3M™ Rack-mount 1RU Splitter Shelves

- 19-inch 1RU self-contained splitter shelf (1.7" H x 19" W x 6.9" D)
- All pre-connectorized with SC/APC
- Dual input splitters are provided to enable redundant configurations
- Use with second fiber patch panel for cross connect or stand alone for interconnect solution
- Optional, removable front fiber management tray for the unit



3M™ Rack Mount 1RU Splitter Shelf and optional Patch Cord Management Tray

3M™ Rack-mount 1RU Fiber Optic Splitter Shelves Ordering Information

Product Number	Description	3M ID
8421BK-132	Splitter shelf 1 rack unit, one 1X32 SC/APC in/out	80-6114-8025-4
8421BK-232	Splitter shelf 1 rack unit, one 2X32 SC/APC in/out	80-6114-8026-2
8421BK-2X116	Splitter shelf 1 rack unit, two 1X16 SC/APC in/out	80-6114-8027-0
8421BK-2X216	Splitter shelf 1 rack unit, two 2X16 SC/APC in/out	80-6114-8028-8
8421BK-4X108	Splitter shelf 1 rack unit, four 1X8 SC/APC in/out	80-6114-8029-6
8421BK-MGR	Patch cord management tray for 19" splitter shelf, black	80-6114-8430-6

3M™ Fiber Optic Splitter Modules

- 1-, 2-, or 3-slot-wide splitter modules
- Fits into various 3M™ Fiber Enclosures (check for enclosure number of slots available)
- Compatible with 3M™ Rack-mount Fiber Distribution Unit 8425, 3M™ Wall-mount Fiber Distribution Units 8430 series, 3M™ Wall-mount Boxes 8437 series and 3M™ Rack-mount Panels 8422 series.
- Allows flexible, mix-n-match configurations with other 3M modular products (multi-fiber push on (MPO) trunk fan-out modules)

1-slot module dimensions: 5.1" H x 1.15" W x 6.12" D

2-slot module dimensions: 5.1" H x 2.47" W x 6.12" D

3-slot module dimensions: 5.1" H x 3.72" W x 6.12" D



3M™ Fiber Optic Splitter Modules



3M™ Rack-Mount FDU 8425 (12-slot capacity) with four triple-wide splitter cassette modules

3M™ Rack-mount 4RU Fiber Optic Splitter Modules Ordering Information

Product Number	Description	3M ID
8443BK-132	Splitter module, 3-slot wide, one 1X32 SC/APC in/out	80-6114-8034-6
8443BK-232	Splitter module, 3-slot wide, one 2X32 SC/APC in/out	80-6114-8035-3
8443BK-2x116	Splitter module, 3-slot wide, two 1X16 SC/APC in/out	80-6114-8036-1
8443BK-2X216	Splitter module, 3-slot wide, two 2X16 SC/APC in/out	80-6114-8037-9
8443BK-4X108	Splitter module, 3-slot wide, four 1X8 SC/APC in/out	80-6114-8038-7
8443BK-4X208	Splitter module, 3-slot wide, four 2X8 SC/APC in/out	80-6114-8039-5
8442BK-116	Splitter module, 2-slot wide, one 1X16 SC/APC in/out	80-6114-8040-3
8442BK-216	Splitter module, 2-slot wide, two 2X16 SC/APC in/out	80-6114-8041-1
8441BK-108	Splitter module, 1-slot wide, one 1X8 SC/APC in/out	80-6114-8043-7
8441BK-204	Splitter module, 1-slot wide, one 2X4 SC/APC in/out	80-6114-8091-6
8441BK-208	Splitter module, 1-slot wide, one 2X8 SC/APC in/out	80-6114-8044-5
8441BK-2X102	Splitter module, 1-slot wide, two 1X2 SC/APC in/out	80-6114-8092-4
8441BK-2X104	Splitter module, 1-slot wide, two 1X4 SC/APC in/out	80-6114-8045-2

3M™ Rack-mount Fiber Distribution System 8425 series

The 3M Rack-mount Fiber Distribution Unit 8425 is a 4RU, 19" patch panel design accepting either the 3M™ Splitter Modules or 3M™ MPO to SC/APC Fan-out Modules in one-, two-, or three-slot wide configurations. The 8425 may also be used with many modular adapter plates available with industry accepted connector adapters.



3M™ Rack-mount Fiber Distribution Unit 8425

Ordering Information

Product Number	Description	3M ID	Color
8425BK	FDU 4RU (holds 12 plates)	80-6113-3545-8	Black
8425BK-L	FDU 4RU with locking doors (holds 12 plates)	80-6113-3547-4	Black
8425BK-BPL	FDU 4RU back panel with one 3M™ Splice Tray 2524-FT, locking doors (holds 12 plates)	80-6113-3546-6	Black

3M™ Wall-mount Fiber Distribution System 8437 Series

The 3M Wall-mount Fiber Distribution System 8437 is a double door, lockable wall box designed specifically for the 3M Splitter Modules and 3M™ MPO to SC/APC Fan-out Modules in one-, two-, or three-slot wide configurations.



3M™ Wall-mount Box 8437

Ordering Information

Product Number	Description	3M ID
8437BK-2HDM	Wall-mount box for 2 high-density splitter modules	80-6114-8432-2
8437BK-3HDM	Wall-mount box for 3 high-density splitter modules	80-6114-8433-0
8437BK-4HDM	Wall-mount box for 4 high-density splitter modules	80-6114-8434-8

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