



# PON and FTTx-optimized products

## Circulators, Splitters, and basic WDM for OSP

**Optelian provides solutions to support transport of PON and FTTH-related infrastructure, with placement in the Central Office (CO) and at Outside Plant (OSP) locations. Single-fiber circulators, splitters and specialized WDM products are available in several form-factors.**

### OMS cards

OMS passive cards are designed to fit in the Optelian family of active mounting shelves (OMS). They contain passive optical elements, and all optical signals are transported passively. The cards additionally have electronics to allow connectivity to the OMS shelf purely for system detection purposes. For information on the OMS shelves, refer to the data sheet. All cards are single-slot width.

### LGX modules

LGX modules are packaged in the industry-standard format originally designed by Lucent Technologies. All are passive, with no power or ground, and have front access faceplate connectors. They are deployed in the Optelian family of CMS passive mounting shelves, or in any standard LGX-compatible passive mounting platform. For information on the CMS shelves, refer to the data sheet. LGX modules for these applications are available in single-slot and double-slot widths.

### Enclosed mounting shelves

Passive shelves are available for high-fanout power splitter application. The shelves are enclosed metal units that mount in standard 19-inch and 23-inch racks. They have faceplate connectors for front access. Units are available in 1RU and 2RU height.

## OMS card common specifications

Parameter	Value
Operating temperature	-40 to 65°C (-40 to 149°F)
Relative humidity (non-condensing)	5 to 95%
Optical connectors	LC/PC
Power supply and power consumption	-48V nominal; 2W typical
Dimensions	10.2 x 2.8 x 15.5 cm (4.0 x 1.1 x 6.1 in.)

## LGX module common specifications

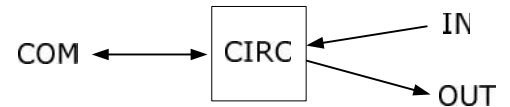
Parameter	Value
Operating temperature (SC or LC)	-40 to 85°C (-40 to 185°F)
Operating temperature (MPO)	-40 to 75°C (-40 to 167°F)
Relative humidity (non-condensing)	5 to 95%
Dimensions, case (HxWxD) (single-slot)	10.2 x 2.8 x 16.5 cm (4.0 x 1.1 x 6.5 in.)
Dimensions, case (HxWxD) (double-slot)	10.2 x 5.8 x 15.2 cm (4.0 x 2.3 x 6.0 in.)

## Enclosed shelf common specifications

Parameter	Value
Operating temperature (Splitter shelves)	-40 to 85°C (-40 to 185°F)
Storage temperature (Splitter shelves)	-40 to 85°C (-40 to 185°F)
Relative Humidity (non-condensing)	5 to 95%
Connectors	SC/APC
Dimensions, 1RU units (HxWxD)	4.3 x 43 x 23 cm (1.7 x 16.9 x 9 in.)
Dimensions, 2RU units (HxWxD)	8.6 x 43 x 23 cm (3.4 x 16.9 x 9 in.)

## Circulators

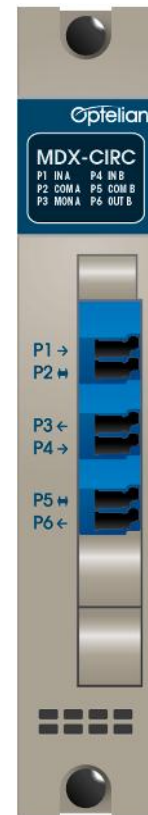
In one direction, circulators separate common fiber bidirectional traffic into separate fibers, each carrying unidirectional traffic. In the other direction, the traffic is combined. Circulators are available in the OMS card form.



## Circulator specifications

Parameter	Value
Operating wavelength	1525 to 1565 nm
Insertion Loss	0.9 dB (maximum)
Polarization Dependent Loss	0.1 dB (maximum)
Polarization Mode Dispersion	0.06 ps (maximum)
Isolation	38 dB (minimum)
Return Loss	50 dB (minimum)
Directivity	50 dB (minimum)

Note: MDX-CIRC operating temperature is 0 to 70°C  
 Insertion loss includes one connector

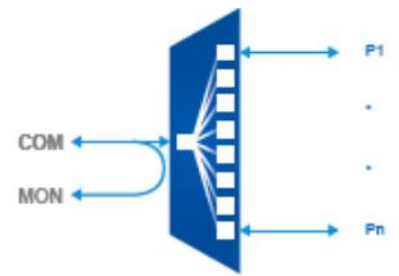


## Circulator – OMS - ordering information

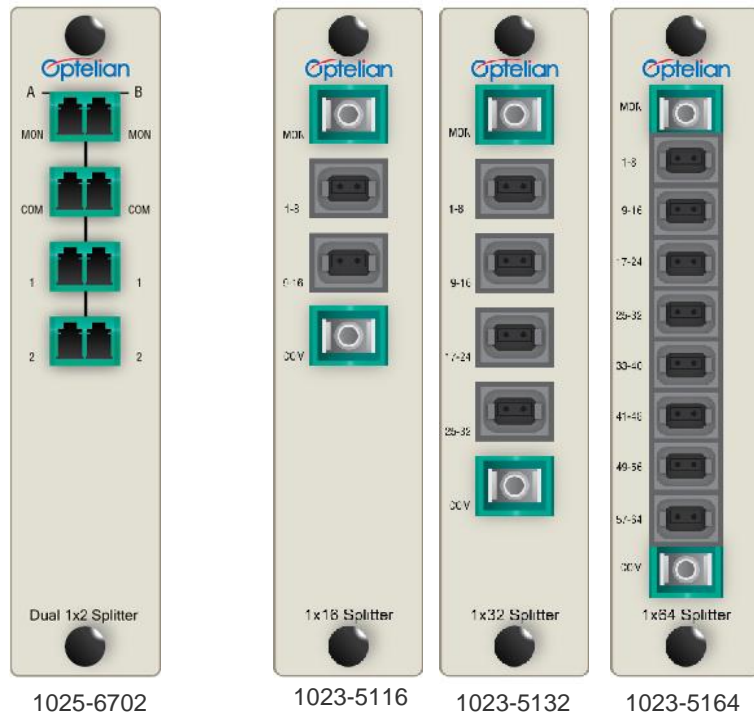
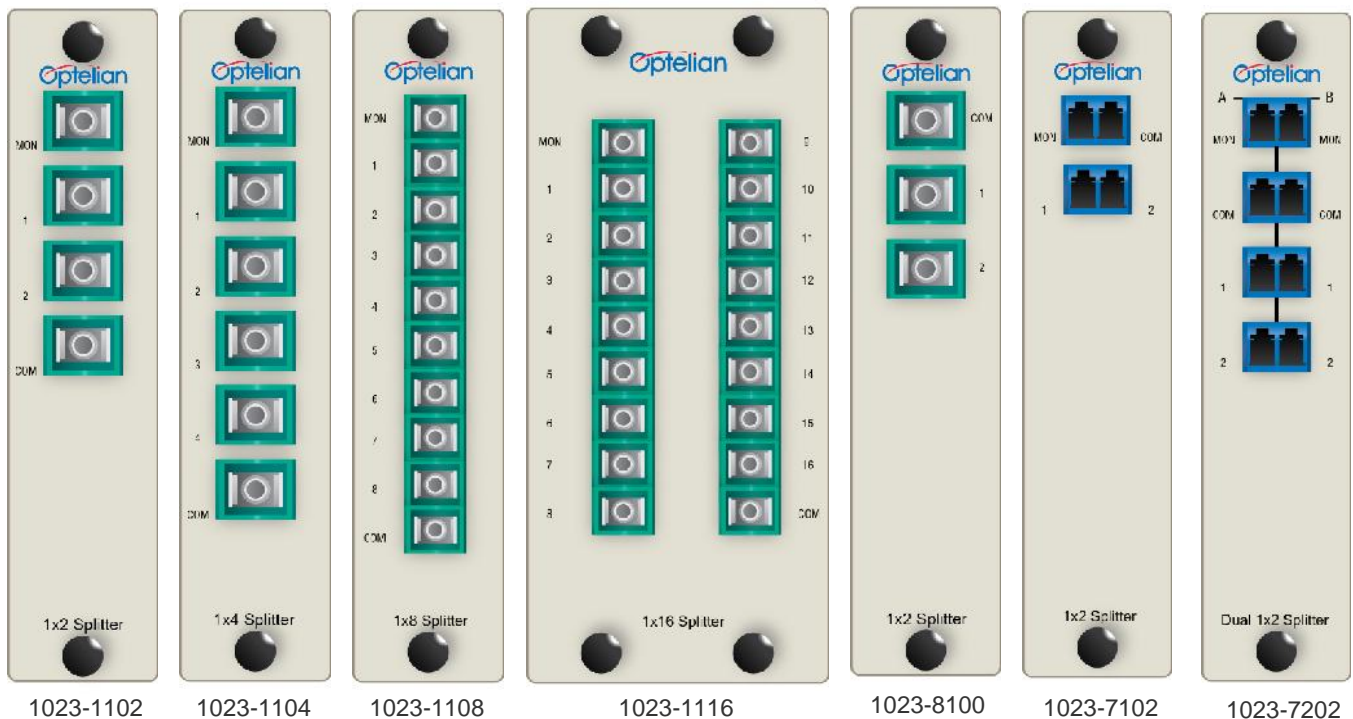
Part Number	Description
1006-9800	MDX-CIRC, Circulator, 3-port, Bidirectional, 1550 nm, 2 Circuits OMS, LC

## Splitters

Splitters split the input from a common fiber onto output ports, and in the other direction combine the input ports onto the common fiber. In both directions the entire spectrum is split or combined. Splitters are available in single-circuit single-common fiber modules, and in dual-circuit two individual common fiber modules.

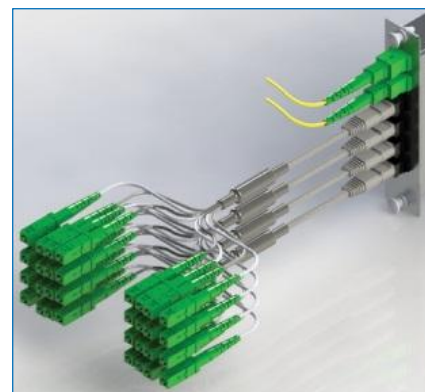


## Splitters - LGX



## MPO eight-fiber fanout cables

These interface with LGX modules with MPO faceplate ports. Examples include the 1x16 MPO, 1x32 MPO and 1x64 MPO LGX splitter modules, as well as one CWDM MUX/DMX LGX module. They break out the individual client signals from the composite faceplate port.



## Splitter – LGX - Insertion Loss specifications

Part Number	Configuration	Connector	Maximum Insertion Loss*
1023-1102	1x2, 2% Monitor	SC/APC	4.6 dB
1023-1104	1x4, 2% Monitor	SC/APC	7.9 dB
1023-1108	1x8, 2% Monitor	SC/APC	11.2 dB
1023-1116	1x16, 2% Monitor	SC/APC	14.3 dB
1023-8100	1x2	SC/APC	-
1023-7102	1x2, 2% Monitor	LC/UPC	-
1023-7202	Dual 1x2, 2% Monitor	LC/UPC	-
1023-8200	Dual 1x2	SC/APC	-
1025-6702	Dual 1x2, 2% Monitor	LC/APC	-
1023-5116	1x16, 2% Monitor	SC/APC, 8xMPO	14.3 dB
1023-5124	1x24, 2% Monitor	SC/APC, 8xMPO	-
1023-5132	1x32, 2% Monitor	SC/APC, 8xMPO	17.7 dB
1023-5164	1x64, 2% Monitor	SC/APC, 8xMPO	21.2 dB

\* Maximum end-of-life; includes one connector

## Splitter – LGX - general specifications

Parameter	Value
Operating wavelength	1260 to 1360 nm and 1480 to 1640 nm
Polarization Dependent Loss	0.3 dB (maximum)
Directivity	55 dB (minimum)
Return Loss (APC Connectors)	55 dB (minimum)
Return Loss (APC/MPO Connectors)	55 dB (minimum)
Return Loss (other connectors)	45 dB (minimum)

## MPO cable - general specifications

Parameter	Value
Operating wavelength	1260 to 1360 nm and 1480 to 1640 nm
SC/APC Insertion Loss	0.35 dB (maximum)
MPO Insertion Loss	0.30 dB (maximum)
Loss per assembly	0.60 dB (maximum)
Operating temperature	-40 to 70°C (-40 to 158°F)
Dimensions	1 m from MPO to fanout, 0.5 m from fanout to SC/APC

## Splitters – LGX - ordering information

Part Number	Description
1023-1102	Splitter,1X2, 2% Monitor, LGX,SC/APC
1023-1104	Splitter,1X4, 2% Monitor, LGX, SC/APC
1023-1108	Splitter,1X8, 2% Monitor, LGX, SC/APC
1023-1116	Splitter,1X16, 2% Monitor, LGX 2-Wide, SC/APC
1023-7102	Splitter,1X2, 2% Monitor, LGX, LC/UPC
1023-7202	Splitter,1X2, 2% Monitor, 2 Circuits LGX, LC/UPC
1023-8100	Splitter,1X2, LGX, SC/APC
1023-8200	Splitter,1X2, 2 Circuits LGX, SC/APC
1025-6702	Splitter,1X2, 2% Monitor, 2 Circuits LGX, LC/APC
1023-5116	Splitter,1X16, 2% Monitor, LGX 8XMPO, SC/APC
1023-5124	Splitter,1X24, 2% Monitor, LGX 8XMPO, SC/APC
1023-5132	Splitter,1X32, 2% Monitor, LGX 8XMPO, SC/APC
1023-5164	Splitter,1X64, 2% Monitor, LGX 8XMPO, SC/APC

## MPO cable assembly - ordering information

Part Number	Description
1024-1001	MPO male to SC/APC, 8 channel, 1.5 m low loss
1024-1002	MPO male to SC/APC, 8 channel, 2.5 m low loss
1024-1003	MPO male to SC/APC, 8 channel, 3.5 m low loss
1024-1004	MPO male to SC/APC, 8 channel, 5.5 m low loss
1024-1005	MPO male to SC/APC, 8 channel, 7.5 m low loss
1024-1006	MPO male to SC/APC, 8 channel, 10.5 m low loss

## Splitters – enclosed shelf



### Splitter – enclosed shelf - Insertion Loss specifications

Part Number	Configuration	Connector	Maximum Insertion Loss*
1023-4116	1x16, 2% Monitor	SC/APC	-
1023-4132	1x32, 2% Monitor	SC/APC	17.7 dB
1023-4164	1x64, 2% Monitor	SC/APC	21.2 dB

\* Maximum end-of-life; includes one connector

### Splitter – enclosed shelf - general specifications

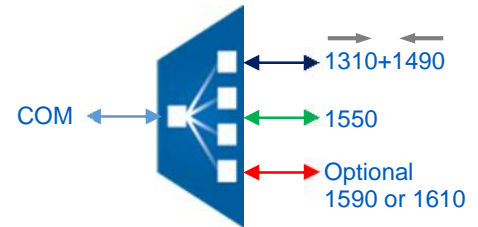
Parameter	Value
Operating wavelength	1260 to 1360 nm and 1480 to 1640 nm
Polarization Dependent Loss	0.3 dB (maximum)
Directivity	55 dB (minimum)
Return Loss	55 dB (minimum)

### Splitters – enclosed shelf - ordering information

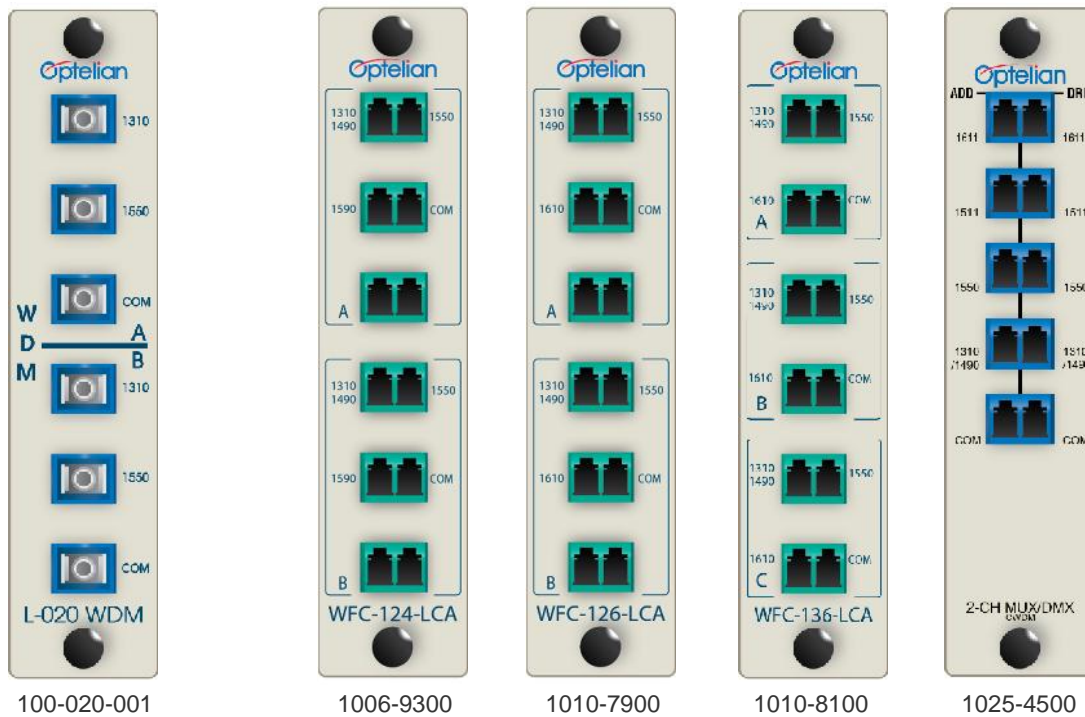
Part Number	Description
1023-4116	Splitter, 1x16, 2% Monitor, 1RU Shelf, SC/APC
1023-4132	Splitter, 1x32, 2% Monitor, 1RU Shelf, SC/APC
1023-4164	Splitter, 1x64, 2% Monitor, 2RU Shelf, SC/APC

## Basic WDM and FTTx/PON filters

Basic WDM filters multiplex or demultiplex over a common fiber a pair of specific wavelengths (1310 and 1550 nm). FTTx/PON filters multiplex or demultiplex one bidirectional interface (duplex voice and data with 1310 nm upstream and 1490 nm downstream) and a 1550 nm interface for video overlay. Options include an additional wavelength interface.



These are used for PON outside plant, including MSO transport. They are all packaged in the LGX format.



## Basic WDM and FTTx – LGX - Insertion Loss specifications \*

Channel	L-020	WFC-124/-126/-136
All channels (L-020)	1.0 dB (maximum)	-
1310/1490	-	1.5 dB (maximum)
1550	1.0 dB (maximum)	1.3 dB (maximum)
1590 or 1610	-	0.8 dB (maximum)

\* End-of-life; includes one connector



## Basic WDM/FTTx/PON - LGX - general specifications

Parameter	L-020 Value	WFC-124/-126/-136 Value
Operating wavelength (1310)	1260 to 1360 nm	-
Operating wavelength (1550)	1460 to 1620 nm	1550 to 1560 nm
Operating wavelength (1310+1490)	-	1260 to 1360 nm and 1480 to 1500 nm
Operating wavelength (1590)	-	1585 to 1598 nm
Operating wavelength (1610)	-	1605 to 1618 nm
Isolation (1550 on 1310, 1310 on 1550)	45 dB (minimum)	-
Isolation (1310+1490, 1590, 1610)	-	40 dB (minimum)
Isolation (1550)	-	30 dB (minimum)
Polarization Dependent Loss (all)	0.2 dB (maximum)	0.2 dB (maximum)
Return Loss (all)	45 dB (minimum)	45 dB (minimum)
Directivity	-	50 dB (minimum)

## Basic WDM/FTTx/PON - LGX - ordering information

Part Number	Description
100-020-001	L-020, Basic WDM (1310, 1550 nm), 2 Circuits LGX, SC/PC
1006-9300	WFC-124-LCA, FWDM (1310+1490, 1550, 1590 nm) 2 Circuits LGX, LC/APC
1010-7900	WFC-126-LCA, FWDM (1310+1490, 1550, 1610 nm) 2 Circuits LGX, LC/APC
1010-8100	WFC-136-LCA, FWDM (1310+1490, 1550, 1610 nm) 3 Circuits LGX, LC/APC
1025-4500	CWDM 2-CH (1511, 1611), 1310+1490, 1550, 2 Circuits LGX

## For additional information

This document provides technical specifications for one class of products in the Optelian portfolio. Your Optelian account representative can assist you in providing additional documentation for other products in the portfolio.

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