

Optical splitters and WDM

For CFO OP-X series

Optical passive CWDM wideband & dual window splitters and wavelength division multiplexer/demultiplexer products

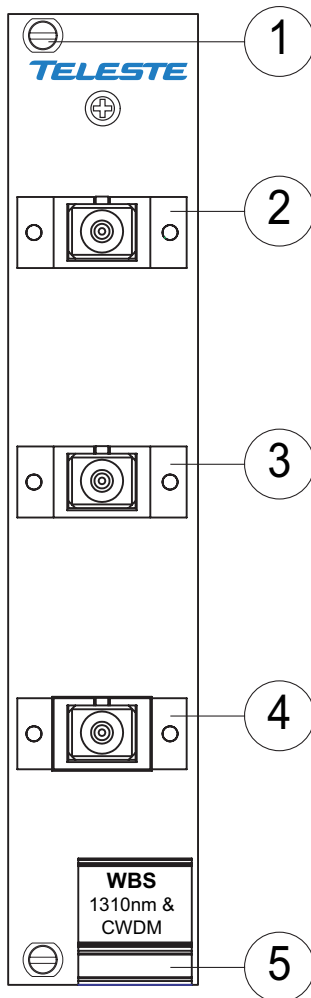


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Optical splitters introduction

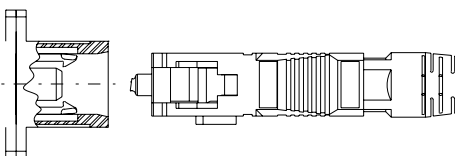
Wideband & dual window splitter units



Optical splitter unit, front view.

1. Locking screw (2 pcs)
2. Tap port
3. Tap port
4. COM port
5. Handle (with unit information)

All optical port connectors are of type SC/APC female (8°).



SC/APC 8° optical connection.

General

The optical SPLITTERS has been designed for splitting optical signals within the CWDM channels in the range of C11 to C18 or standard 1310 and 1550 nm wideband optical windows. The units are fully compatible with CFO series system and it can be installed in a standard CSR installation frame or alternatively as stand-alone with CMA wall mount adapter. The units are 5HP wide. All SPLITTER units are passive and require no power supplies.

Frame installation

The unit is to be pushed along the guide rails into the installation frame (e.g. CSR216 or 316 series) and secured with the two locking screws. The unit can be freely positioned in any slot in the frame. The empty positions in the frame should be blanked off with cover plates.

Stand-alone installation

The unit can be installed for stand-alone use by using a CMA series module adapter. The unit is to be pushed along the guide rails into the CMA module adapter and secured with the two locking screws. The stand-alone unit should be mounted to a vertical surface.

Fibre connection

The dual window optical splitter operate on a standard 1310 nm and 1550 nm signals. Available optical split ratios are:

- 50% / 50%
- 30% / 70%

The wideband CWDM optical splitter operate on CWDM channels in range C11 to C18. Available optical split ratio is:

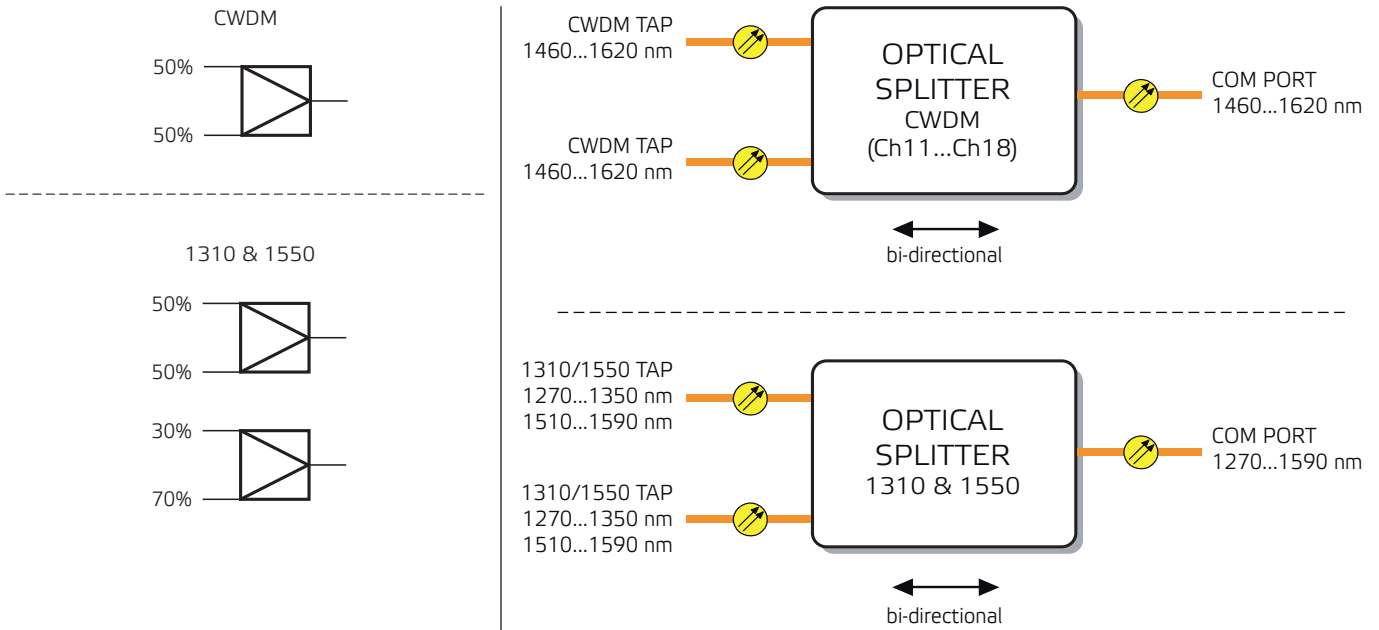
- 50% / 50%

When installing the fibre optic cable, do not exceed the minimum bending radius when connecting cable to the system.

For correct optical operation ensure that:

- > Protect opened connectors always with dustcaps
- > Use only 8° angle polished SC/APC connectors
- > Clean all connectors before mating by using methyl or isopropyl alcohol and dry connectors by compressed air

Optical splitters block and connection diagram

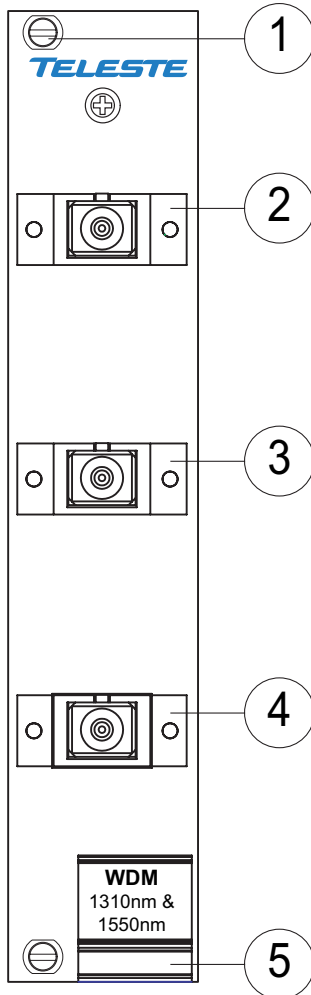


Optical splitters technical specifications

Optical - wideband CWDM (CWDM)			General		
Fibre type	9/125 µm	singlemode	Power consumption	-	passive unit
Wavelength	1460...1620 nm		Supply voltage	-	passive unit
Split ratio	50/50 %		Dimensions (H x W x D)	3U ● 15HP ● 190 mm	
Insertion loss	3.8 dB/3.8 dB		Weight	0.5 kg	
Uniformity	0.7 dB		<u>Operating temperature range</u>		
Directivity	55 dB		Wideband CWDM	-10...+70 °C	
Return loss	50 dB		Dual window	-40...+85 °C	
Connectors	SC/APC 8° female		Storage temperature range	-40...+85 °C	
Optical - dual window (1310 & 1550)			Humidity	95 %	non-condensing
Fibre type	9/125 µm	singlemode	Notes		
<u>Wavelength</u>			Typical values unless otherwise stated		
1310 nm	window 1270...1350 nm				
1550 nm	window 1510...1590 nm				
Split ratio	50/50%				
	30/70%				
Insertion loss	3.6/3.6 dB	50/50%			
	5.8/1.9 dB	30/70%			
Uniformity	0.8 dB				
Directivity	50 dB				
Connectors	SC/APC 8° female				

Optical WDM introduction

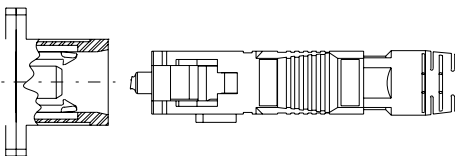
Wavelength division multiplexer/demultiplexer units



Optical WDM, front view.

1. Locking screw (2 pcs)
2. 1310 nm port
3. 1550 nm port
4. COM port
5. Handle (with unit information)

All optical port connectors are of type SC/APC female (8°).



SC/APC 8° optical connection.

General

The optical WDM unit can be used to combine the CWDM channels in the range of C11 to C18 with existing 1310 nm legacy systems, or for combining standard 1310/1550 nm optical signals. The unit is fully compatible with CFO system and it can be installed in a standard CSR installation frame or alternatively as stand-alone with CMA wall mount adapter. The units are 5HP wide. All WDM units are passive and require no power supplies.

Frame installation

The unit is to be pushed along the guide rails into the installation frame (e.g. CSR216 or 316 series) and secured with the two locking screws. The unit can be freely positioned in any slot in the frame. The empty positions in the frame should be blanked off with cover plates.

Stand-alone installation

The unit can be installed for stand-alone use by using a CMA series module adapter. The unit is to be pushed along the guide rails into the CMA module adapter and secured with the two locking screws. The stand-alone unit should be mounted to a vertical surface.

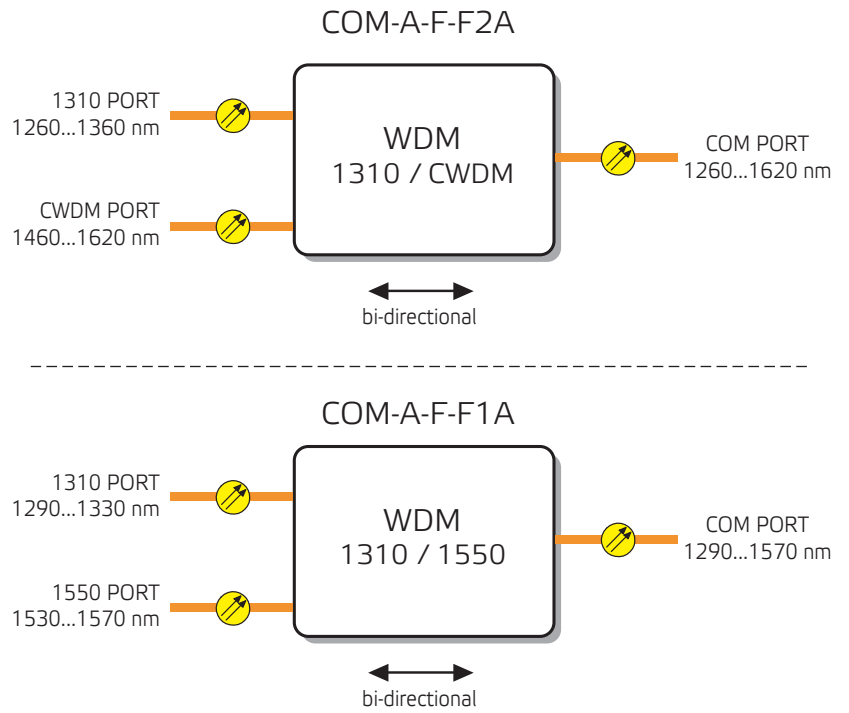
Fibre connection

When installing the fibre optic cable, do not exceed the minimum bending radius when connecting cable to the system.

For correct optical operation ensure that:

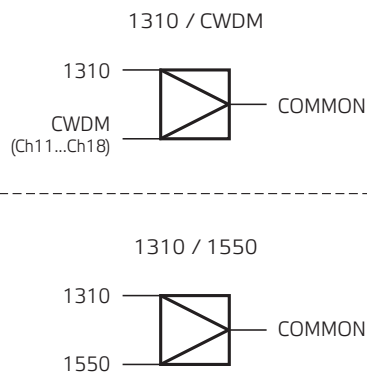
- > Protect opened connectors always with dustcaps
- > Use only 8° angle polished SC/APC connectors
- > Clean all connectors before mating by using methyl or isopropyl alcohol and dry connectors by compressed air

Optical WDM connection diagram



Block diagram.

Optical WDM block diagram



Optical WDM technical specifications

Optical 1310/CWDM			Optical 1310/1550		
Fibre type	9/125 µm	singlemode	Fibre type	9/125 µm	singlemode
<u>Wavelength</u>			<u>Wavelength</u>		
1310 port	1260...1360 nm	reflect channel	1310 port	1290...1330 nm	
CWDM port	1460...1620 nm	pass channel	1550 port	1530...1570 nm	
<u>Insertion loss</u>			<u>Insertion loss</u>		
1310 <-> COM port	0.8 dB		1310 <-> COM port	0.25 dB	
CWDM <-> COM port	0.8 dB		1550 <-> COM port	0.25 dB	
Pass band ripple	0.3 dB		Pass band ripple	0.3 dB	
Pass channel isolation	40 dB	CWDM@1310	Isolation	>16 dB	
Reflect channel isolation	40 dB	1310@CWDM	Directivity	50 dB	
Directivity	50 dB		Polarization dependent loss	0.1 dB	
Return loss	45 dB		Connectors	SC/APC 8° female	
Polarization dependent loss	0.1 dB				
Connectors	SC/APC 8° female				
			General		
			Power consumption	-	passive unit
			Supply voltage	-	passive unit
			Connectors		
			Dimensions (H x W x D)	3U ● 5HP ● 190 mm	
			Weight	0.5 kg	
			Operating temperature range	-34...+74 °C	1310/1550
				-5...+65 °C	1310/CWDM
			Storage temperature range	-40...+85 °C	
			Humidity	95%	non-condensing
			Notes		
			Typical values unless otherwise stated		

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Teleste Corporation
Video Networks
P.O. Box 323
FIN-20101 Turku
FINLAND
www.teleste.com

WEEE directive

Directive 2002/96/EC of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE) obliges that producers appropriately mark electrical and electronic equipment with the symbol indicating separate collection. This obligation applies to the equipment put on the market in EU after 13 August 2005.

Teleste devices which belong to the scope of the directive have been marked with the separate collection symbol shown below. The marking is according to the standard EN 50419. The symbol indicates that the device has to be collected and treated separately from unsorted municipal waste.



User manual revision history note:

The latest version is always available in pdf-format on our web site:

www.teleste.com