

Optical add/drop and mux/demux

For CFO OP-X series

Optical passive CWDM single channel
add/drop and multichannel
mux/demux products

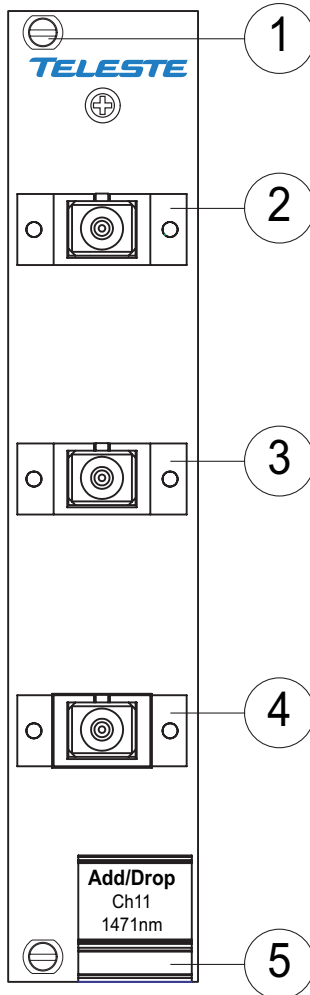


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Optical add/drop introduction

Single channel CWDM add/drop unit



Add/drop unit, front view.

1. Locking screw (2 pcs)
2. ADD/DROP port
3. IN/OUT port 1
4. COMMON port
5. Handle (with unit information)

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

General

The single channel CWDM ADD/DROP unit has been designed to add a single wavelength to one fibre. The same unit can also be used as a drop unit extracting one wavelength from a single fibre. There are eight different wavelength variants available covering the ITU CWDM channels C11...C18. The bypass between common ports is wideband and includes the 1310 nm optical window as well. Fully bi-directional optical operation is allowed. The unit is fully compatible with CFO OP-X series system and it can be installed in a standard CSR installation frame or alternatively as stand-alone with CMA wall mount adapter. The unit meets all international EMC and environmental requirements. The units are 5HP wide. All ADD/DROP 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

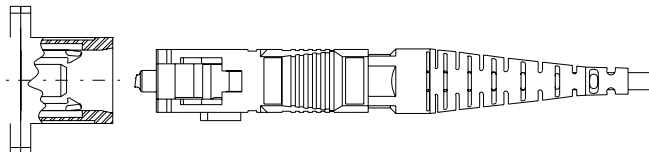
The unit can be installed for stand-alone use by using a CMA series module adapter. The unit is to be pushed along the guide rails into the CMA module adapter and secured with the two locking screws. The stand-alone unit should be mounted to a vertical surface.

Fibre connection

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

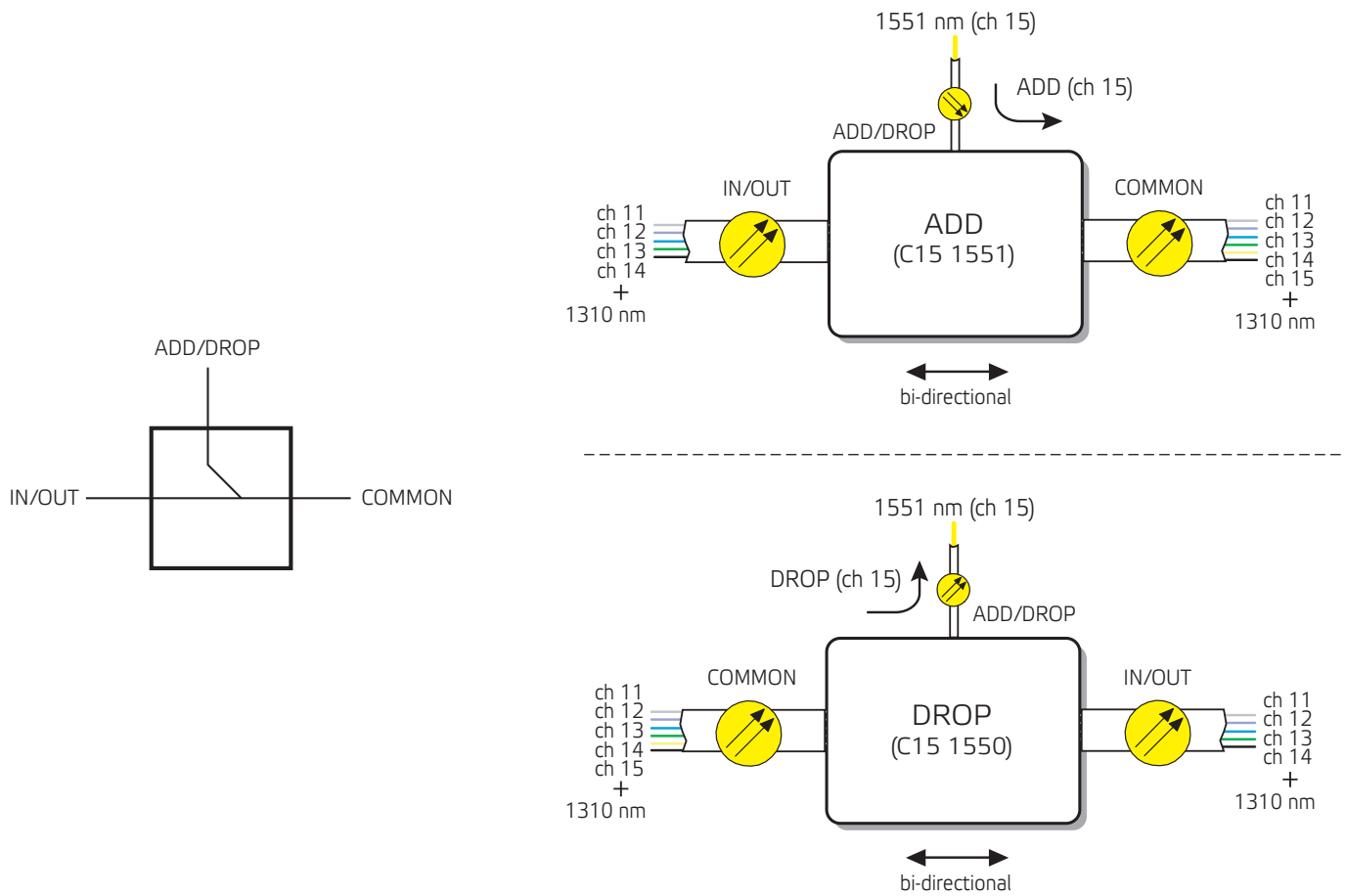
For correct optical operation ensure that:

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



SC/APC 8° optical connection.

Optical add/drop block and connection diagram

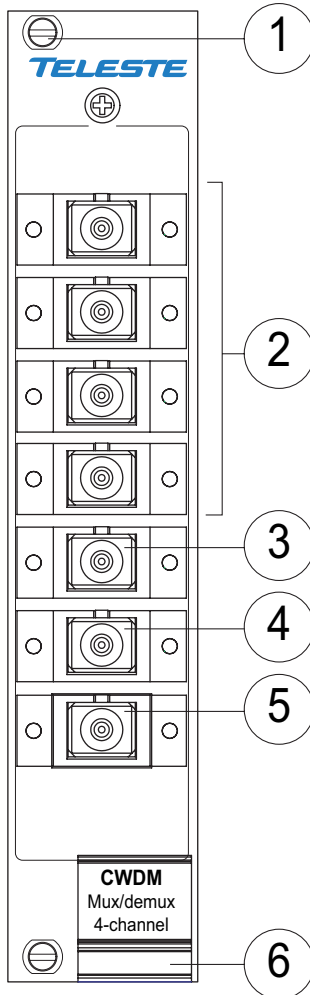


Optical add/drop technical specifications

Optical			General		
Centre wavelength	1471 nm 1491 nm 1511 nm 1531 nm 1551 nm 1571 nm 1591 nm 1611 nm	ch11 ch12 ch13 ch14 ch15 ch16 ch17 ch18	ADD/DROP ITU G.694.2		
Bybass					
Wavelength	1270...1370 nm 1450...1620 nm	1310 nm window excluding add/drop channel ± 13.5 nm	Supply voltage	-	passive unit
			Current consumption	-	passive unit
ADD/DROP <—> COMMON	1.0 dB	insertion loss	Dimensions (H x W x D)	3U ● 5HP ● 190 mm	
IN/OUT <—> COMMON	0.7 dB	insertion loss	Weight	0.5 kg	
ADD/DROP <—> IN/OUT	> 50 dB	isolation	Operating temperature	-10...+70 °C	
COMMON <—> IN/OUT	> 25 dB	isolation add/drop channel	Storage temperature	-40...+85 °C	
Pass band ripple	0.5 dB		Humidity	0...95 %	non condensing
Channel passband	± 6.5 nm	@-0.5 dB	Notes		
Reflect channel isolation	10 dB				
Directivity	45 dB				
Return loss	45 dB				
Polarization dependent loss (PDL)	0.1 dB				
Polarization mode dispersion	0.1 ps				
Connectors	SC/APC 8°	female			

Optical mux/demux introduction

Multichannel CWDM mux/demux units



4-channel optical mux/demux, front view.

1. Locking screw (2 pcs)
2. CWDM ports, individual channels 11-14 or 15-18
3. CWDM bypass port, channels 11-14 or 15-18
4. 1310 nm bypass port
5. COM port
6. Handle (with unit information)

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

General

There are three different variants of optical mux/demux available covering the ITU CWDM channels C11...C18. The four and eight channel optical mux/demux products have been designed to combine 4 or alternatively 8 different ITU G.694.2 specified wavelengths to one fibre. The same unit can also be used extracting 4 or 8 different wavelengths from single fibre. The products also include 1310 nm bypass channel ports. Fully bi-directional optical operation is allowed. The unit is fully compatible with CFO system and it can be installed in a standard CSR installation frame or alternatively stand-alone CMA wall mount adapter. The unit meets all international EMC and environmental requirements. The 4 channel units are 5HP wide and the 8 channels units are 10HP wide. All mux/demux 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

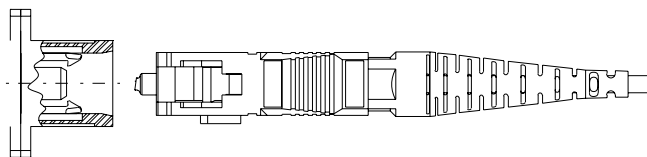
The unit can be installed for stand-alone use by using a CMA series module adapter. The unit is to be pushed along the guide rails into the CMA module adapter and secured with the two locking screws. The stand-alone unit should be mounted to a vertical surface.

Fibre connection

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

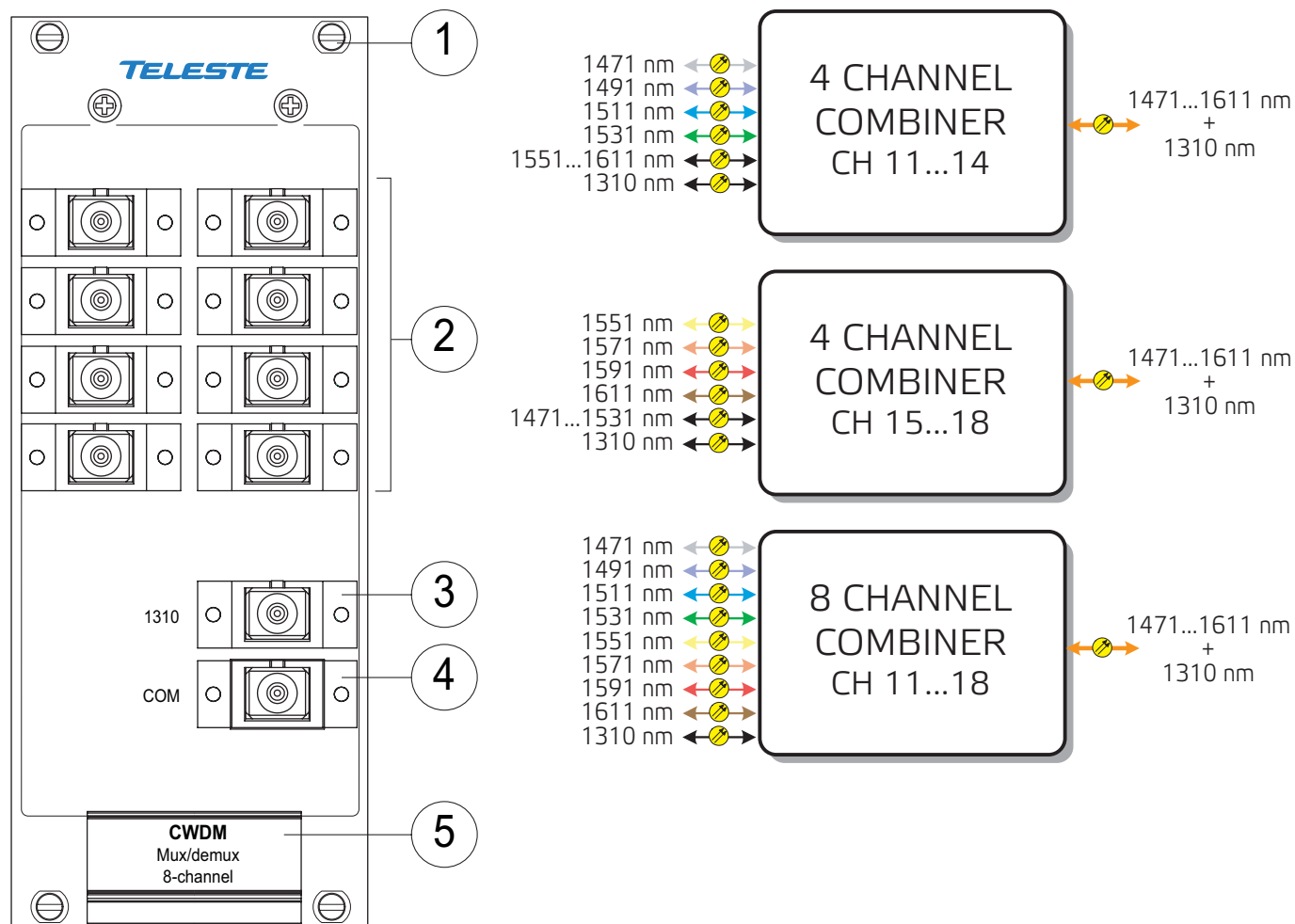
For correct optical operation ensure that:

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



SC/APC 8° optical connection.

Optical mux/demux block diagram



8-channel optical mux/demux, front view.

1. Locking screw (4 pcs)
2. CWDM ports, individual channels 11-18
3. 1310 nm bypass port
4. COM port
5. Handle (with unit information)

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

Optical mux/demux technical specifications

Optical					
Centre wavelength (ITU G.694.2)	1471 nm	ch11	CWDM channel bandwidth	±6.5 nm	@-0.5 dB
	1491 nm	ch12	Adjacent channel isolation	30 dB	
	1511 nm	ch13	Non-adjacent channel isolation	40 dB	
	1531 nm	ch14	Directivity	50 dB	
	1551 nm	ch15	Return loss	45 dB	
	1571 nm	ch16	Polarization dependent loss (PDL) max (-40...+85 °C)		0.3 dB
	1591 nm	ch17	Polarization mode dispersion	0.2 ps	max
	1611 nm	ch18	Optical power	300 mW	max allowed
	Channel spacing	20 nm	Connectors	SC/APC 8° female	
<u>Bybass channel range</u>			General		
4 channel (ch 11-14)	1271...1451 & 1551...1611 nm		Supply voltage	-	passive unit
4 channel (ch 15-18)	1271...1451 & 1471...1531 nm		Current consumption	-	passive unit
8 channel	1271...1451 nm		Dimensions (H x W x D)	3U ● 5HP ● 190 mm	4 channel
<u>Insertion loss, all ports</u>				3U ● 10HP ● 190 mm	8 channel
CWDM port -> Common port	1.2 dB (4 channel unit)	max (-5...+65 °C)	Weight	0.3 kg	4 channel
	1.8 dB (4 channel unit)	max (-40...+85 °C)		0.5 kg	8 channel
	1.5 dB (8 channel unit)	max (-5...+65 °C)			
	2.1 dB (8 channel unit)	max (-40...+85 °C)			
Bybass channel -> common port	1.5 dB (CWDM)	max (-5...+65 °C)	Operating temperature	-40...+85 °C	
	2.1 dB (CWDM)	max (-40...+85 °C)	Storage temperature	-40...+85 °C	
	1.2 dB (1310)	max (-5...+65 °C)	Humidity	0...95 %	non condensing
	1.8 dB (1310)	max (-40...+85 °C)			
Pass band ripple	0.5 dB		Notes		
Typical values unless otherwise stated					

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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:

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