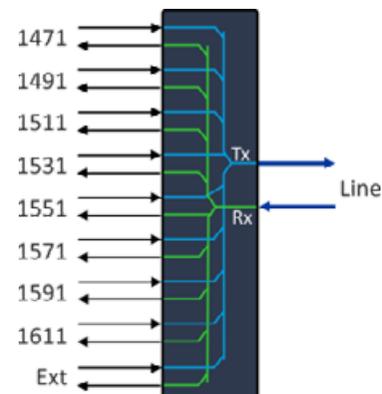
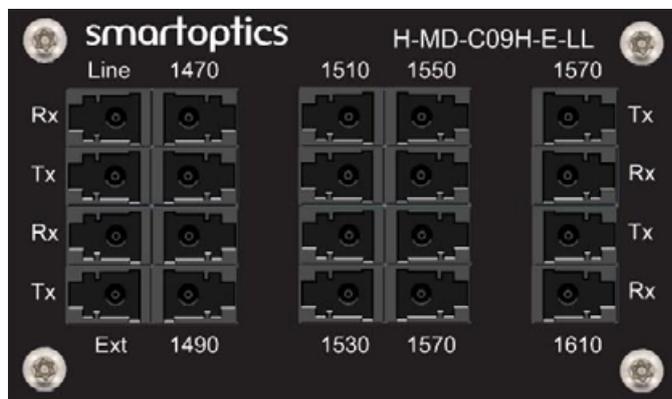


**DATASHEET 5.0**

# H-MD-C09H-E-LL

**Low-loss 8-channel CWDM High Band Mux/Demux with Extension port**


## OVERVIEW

The H-MD-C09H-E-LL is an 8ch CWDM low-loss Mux/Demux operating on the high CWDM channels. The filter has an Extension port where additional channels can be added. This filter is best used to fully utilize the upper CWDM channels in the region where the SM fiber attenuation is the lowest.

The extension port can be used for the following applications:

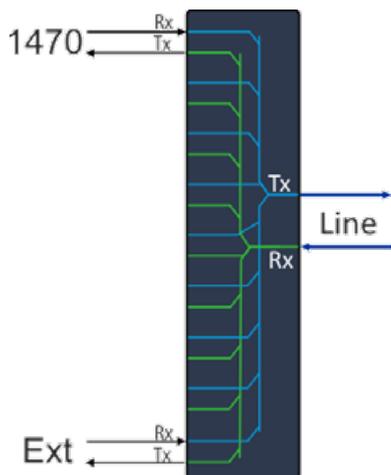
- Connect legacy 1310nm wavelengths
- Connect the H-MD-C08L-LL unit to expand with 8 additional wavelengths in the CWDM low-band

The H-MD-C09H-E-LL filter supports the industrial temperature (I-temp) range of -40°C to +85°C (-40°F to +185°F) which gives an extended application range into sites without temperature control. If the operating temperature is kept within 0 to +70°C (+32 to +158°F) some of the worst-case loss values will be reduced. The listed loss values in the below table are for 0 to +70°C operation. Loss values increased at I-temp conditions are marked.

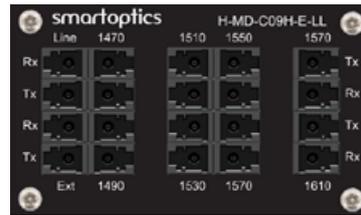
The H-Series filters are mounted in a 1 RU mounting bracket solution, and the filter module sizes vary depending on type of filter.

The H-MD-C09H-E-LL is compliant with ITU-T G.694.2

## FUNCTIONAL OVERVIEW AND PORT DESCRIPTION



Client and Line signals entering the filter is denoted "Rx".  
Client and Line signals exiting the filter is denoted "Tx".



Line Rx	1470 Tx	1510 Rx	1550 Tx	1590 Tx
Line Tx	1470 Rx	1510 Tx	1550 Rx	1590 Rx
NC	1490 Tx	1530 Rx	1570 Tx	1610 Tx
NC	1490 Rx	1530 Tx	1570 Rx	1610 Rx

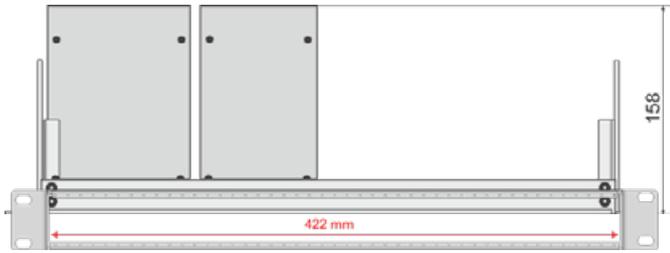
Note: The channel labels "1470", "1490" etc on the overlay are not representing the actual center wavelengths. The actual center wavelengths are at 1471nm, 1491nm etc. as listed in the table below. Note row dependent location of Tx and Rx ports.

## TECHNICAL SPECIFICATIONS

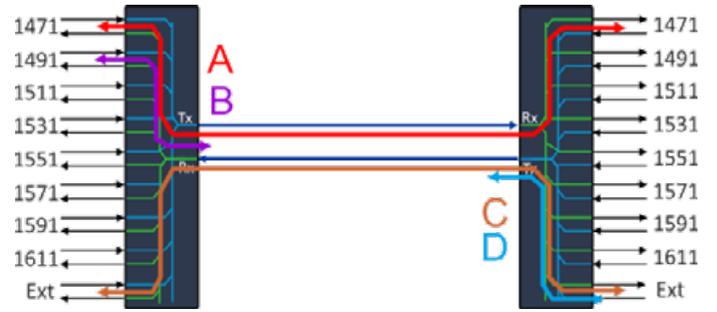
Parameter	Min	Max
Channels	1471, 1491, 1511, 1531, 1551, 1571, 1591, 1611	
Channel spacing	20nm	
Channel passband	ITU±7nm	
Passband Extension port	1264nm	1458nm
Link loss, per channel (A)	2.6dB typical <sup>1)</sup>	3.2dB typical <sup>1)</sup>
Insertion loss, channels (B)	2.6dB typical	2.8dB typical
Link loss, 1551nm	2.0dB typical	2.2dB typical
Link loss, extension ports (C)	1.7dB typical	1.8dB typical
Insertion loss, extension port (D)	0.9dB typical	1.0dB typical
Isolation, adjacent channel	35dB	
Isolation, non-adjacent channel	40dB	
Ripple, passband	0.5dB	
Directivity	45dB	
Return loss	40dB	
Polarization dependent loss	0.2dB	
Polarization mode dispersion	0.20ps	
Max optical power	500mW	
Normal operating temperature	0 °C	+70 °C
Operating temperature	-40 °C	+85 °C
Connector type	LC/UPC	
Module width	75mm	
Mounting bracket	H-Chassi-1RU (19"), 422mm slot width	
Mounting depth (flush mount)	158mm	

Note! A typical loss value is to be seen as a value that ~90% of a population has at beginning of life and at room temperature. The max value is the guaranteed worst-case value over time and over temperature.

1) The given loss values are for "normal operating temperature" conditions. When used in "extended operating temperature" i.e. I-temp conditions, the values shall be increased by 0.2dB.



Mounting bracket dimensions with two example filters.



## ORDERING INFORMATION

The table below shows the part numbers and a short description for the H-MD-C09.

Part number	Description
H-MD-C09H-E-LL	8ch CWDM Mux/Demux High band C47-C61 LL