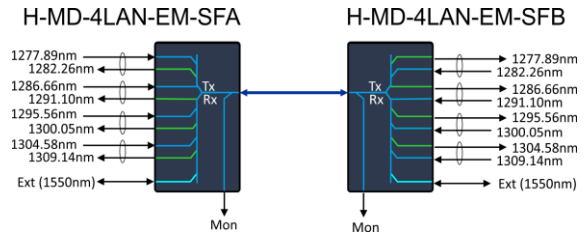
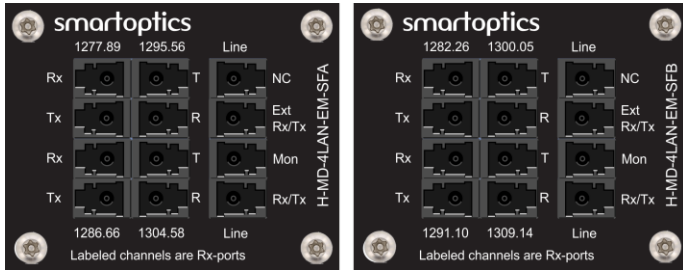


# H-MD-4LAN-EM-SFx

4-channel Single-fiber LANWDM Mux/Demux with Extension and Monitor ports



## OVERVIEW

The H-MD-4LAN-EM-SFx filters are two LANWDM-filters for single-fiber configurations. The LANWDM channels are located in the 1300nm region where the dispersion properties are the lowest for standard single-mode fiber. As an example, this enables longer distances for 25G Ethernet services in a 5G network. See datasheet on the 25G transceivers SO-SFP28-LWDM-x-E for more information on the optical performance on 25G Ethernet LANWDM transceivers.

There are eight LANWDM channels defined and the H-MD-4LAN-EM-SFx filters are using one channel in uplink and another in downlink, providing 4 bi-directional channels in total. Consequently, there are two different filters, denoted “A” and “B” where the difference lies in the transmitted and received channels.

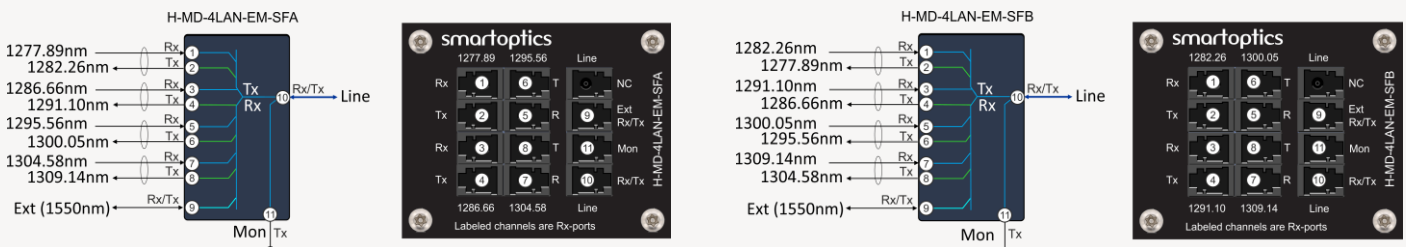
The H-MD-4LAN-EM-SFx filters have an Extension port intended for single-fiber DWDM filters. In 5G networks there is typically a need to transport e.g. 10G Ethernet services together with 25G Ethernet services. This Extension port covers the complete C-band which provides a flexible addition of any DWDM channel combination.

The H-MD-4LAN-EM-SFx filters have a Monitor port that tap off 1% of the transmitted and received line signal. This provides the ability to monitor the channel power levels via a connected Optical Channel Monitoring (OCM) device or an optical spectrum analyzer.

The H-MD-4LAN-EM-SFx filters support 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 C-temp conditions 0 to +70°C (+32 to +158°F) the loss values will be reduced. The below table shows loss values for both C-temp and I-temp operating conditions.

## FUNCTIONAL OVERVIEW AND PORT DESCRIPTION

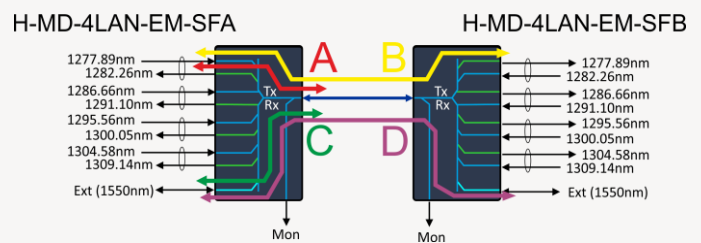
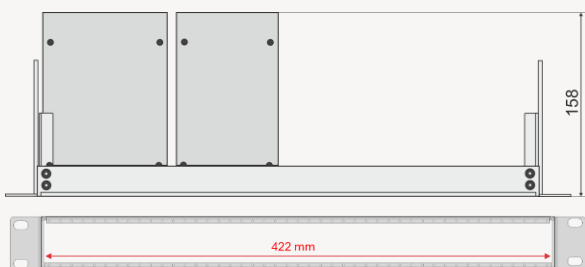
Client and Line signals entering the filter are denoted “Rx”.  
Client and Line signals exiting the filter are denoted “Tx”.



## TECHNICAL SPECIFICATIONS

Parameter		
Transmitted channels H-MD-4LAN-EM-SFA	1277.89nm 1286.66nm 1295.56nm 1304.58nm	
Transmitted channels H-MD-4LAN-EM-SFB	1282.26nm 1291.10nm 1300.05nm 1309.14nm	
Passband Ext-port	1528.66 to 1561.53nm / 192.0 to 196.10THz	
Channel spacing	LANWDM	
Insertion loss, per LANWDM channel (A), C-temp operating temperature (Line Rx/Tx ↔ Ch Rx/Tx)	3.0dB typical <sup>1)</sup>	Max 3.3dB
Link loss, per LANWDM channel (B), C-temp operating temperature (Ch Rx/Tx ↔ Ch Rx/Tx)	4.0dB typical <sup>1)</sup>	Max 4.5dB
Insertion loss, Extension port (C), C-temp operating temperature (Line Rx/Tx ↔ Ext Rx/Tx)	0.9dB typical <sup>1)</sup>	Max 1.2dB
Link loss, Extension port (D), C-temp operating temperature (Ext Rx/Rx ↔ Ext Rx/Tx)	1.8dB typical <sup>1)</sup>	Max 2.4dB
Insertion loss, per LANWDM channel (A), I-temp operating temperature (Line Rx/Tx ↔ Ch Rx/Tx)	3.0dB typical <sup>1)</sup>	Max 3.5dB
Link loss, per LANWDM channel (B), I-temp operating temperature (Ch Rx/Tx ↔ Ch Rx/Tx)	4.0dB typical <sup>1)</sup>	Max 4.9dB
Insertion loss, Extension port (C), I-temp operating temperature (Line Rx/Tx ↔ Ext Rx/Tx)	1.0dB typical <sup>1)</sup>	Max 1.4dB
Link loss, Extension port (D), I-temp operating temperature (Ext Rx/Rx ↔ Ext Rx/Tx)	2.0dB typical <sup>1)</sup>	Max 2.8dB
Insertion loss, monitor	Min 19dB	Max 22dB
Isolation, adjacent channel Line Tx/Rx ⇒ channels Rx/Tx	Min 25dB	
Isolation, non-adjacent channel Line Tx/Rx ⇒ channels Rx/Tx	Min 40dB	
Isolation, non-adjacent channel Line Tx/Rx ⇒ Ext Rx/Tx	Min 25dB	
Ripple, passband	Max 0.5dB	
Directivity	Min 45dB	
Return loss	Min 40dB	
Polarization dependent loss	Max 0.2dB	
Polarization mode dispersion	Max 0.20ps	
Extended operating temperature, I-temp <sup>1)</sup>	-40°C to +85°C	
Normal operating temperature	0°C to +70°C	
Max optical power	Max 300mW	
Connector type	LC/UPC	
Module width	55mm	
Mounting bracket	H-Chassi-1RU (19"), 422mm slot width	

<sup>1)</sup> 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.



## ORDERING INFORMATION

Parameter	Value
H-MD-4LAN-EM-SFA	4-channel Single-fiber LANWDM Mux/Demux with Extension and Monitor ports, A-side
H-MD-4LAN-EM-SFB	4-channel Single-fiber LANWDM Mux/Demux with Extension and Monitor ports, B-side