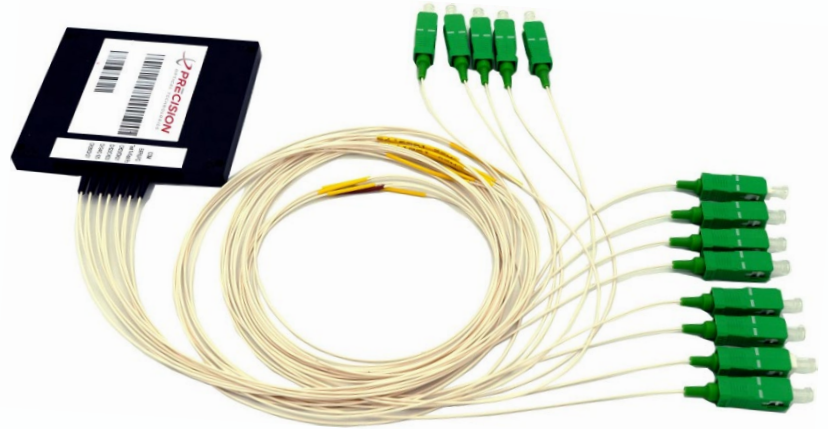


# 4-Channel DWDM Passive Filter OSP (Outdoor Use)

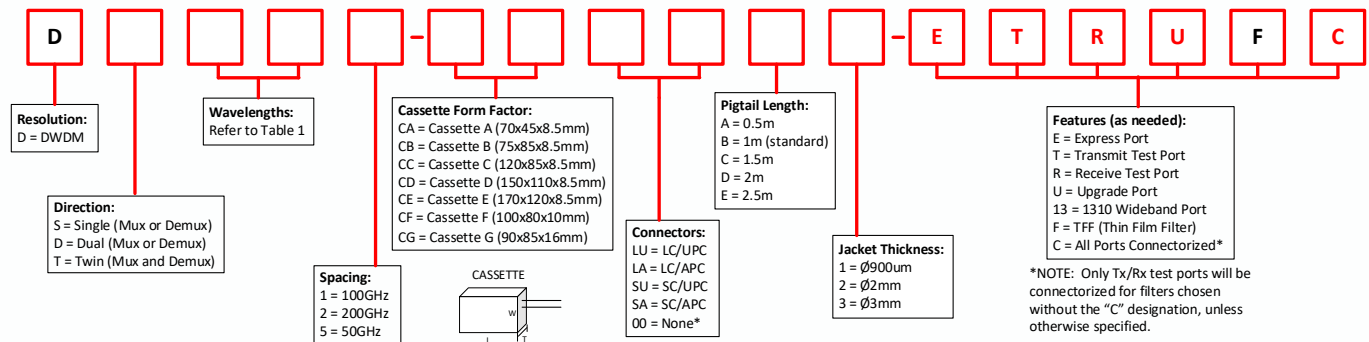
## Product Description:

4-Channel DWDM Thin Film Filter with the following options:

- Upgrade/Express/Test Ports
- Multiple Cassette Sizes/Pigtail Lengths
- UPC/APC Connectors



## Product Ordering Information



**Table 1**

Channel Designation		
4A = ITU 20-23	5A = ITU 21-24	6A = ITU 21, 23, 25, 27
4B = ITU 24-27	5B = ITU 25-28	
4C = ITU 28-31	5C = ITU 29-32	
4D = ITU 32-35	5D = ITU 33-36	
4E = ITU 36-39	5E = ITU 37-40	
4F = ITU 40-43	5F = ITU 41-44	
4G = ITU 44-47	5G = ITU 45-48	
4H = ITU 48-51	5H = ITU 49-52	
4I = ITU 52-55	5I = ITU 53-56	
4J = ITU 56-59	5J = ITU 57-60	

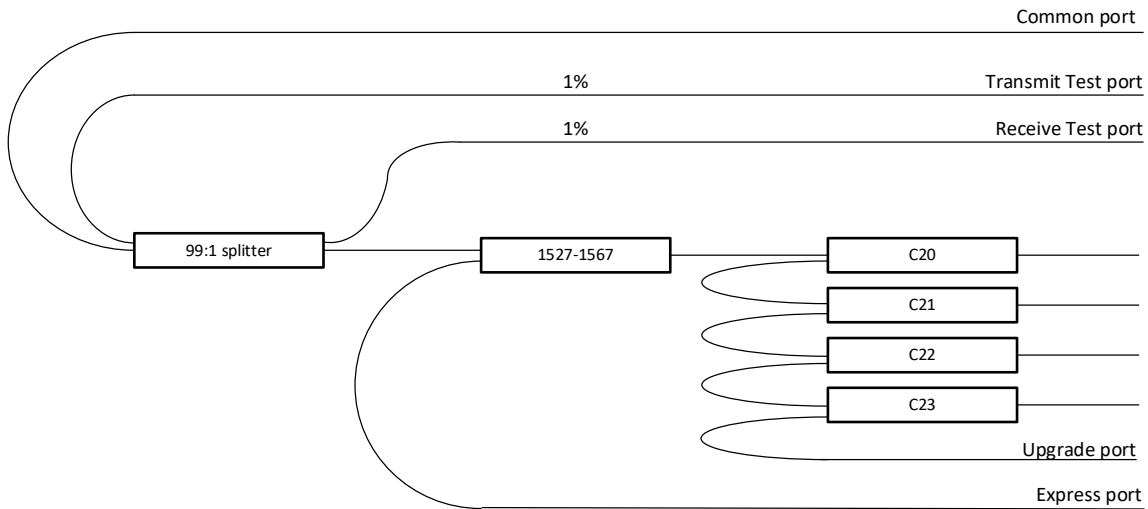
## Part Number / Description Examples

Part Number	Single Description
DS4x1-CBLUB1-ETRUFC	DWDM, Single (Mux or Demux), 4A/4B/4C/4D/4E/4F/4G/4H/4I/4J, 100GHz grid, Outdoor Cassette Type B (75 x 85 x 8.5mm), Ø900µm 1meter pigtail with labeled LC-UPC Connectors on all Transmit/Receive Test/DWDM/Upgrade/Express Ports, Thin Film Filter
DS4x1-CBSAB1-ETRUFC	DWDM, Single (Mux or Demux), 4A/4B/4C/4D/4E/4F/4G/4H/4I/4J, 100GHz grid, Outdoor Cassette Type B (75 x 85 x 8.5mm), Ø900um 1meter pigtail with labeled SC-APC Connectors on all Transmit/Receive Test/DWDM/Upgrade/Express Ports, Thin Film Filter
DS4x1-CBSAB1-ETRUF	DWDM, Single (Mux or Demux), 4A/4B/4C/4D/4E/4F/4G/4H/4I/4J, 100GHz grid, Outdoor Cassette Type B (75 x 85 x 8.5mm), Ø900um 1meter pigtail with label, with SC-APC Connectors on Transmit/Receive Test Ports, Unterminated DWDM/Express/Upgrade Ports, Thin Film Filter
DS5x1-CBLUB1-ETRUFC	DWDM, Single (Mux or Demux), 5A/5B/5C/5D/5E/5F/5G/5H/5I/5J, 100GHz grid, Outdoor Cassette Type B (75 x 85 x 8.5mm), Ø900µm 1meter pigtail with labeled LC-UPC Connectors on all Transmit/Receive Test/DWDM/Upgrade/Express Ports, Thin Film Filter
DS5x1-CBSAB1-ETRUFC	DWDM, Single (Mux or Demux), 5A/5B/5C/5D/5E/5F/5G/5H/5I/5J, 100GHz grid, Outdoor Cassette Type B (75 x 85 x 8.5mm), Ø900um 1meter pigtail with labeled SC-APC Connectors on all Transmit/Receive Test/DWDM/Upgrade/Express Ports, Thin Film filter
DS5x1-CBSAB1-ETRUF	DWDM, Single (Mux or Demux), 5A/5B/5C/5D/5E/5F/5G/5H/5I/5J, 100GHz grid, Outdoor Cassette Type B (75 x 85 x 8.5mm), Ø900um 1meter pigtail with label, with SC-APC Connectors on Transmit/Receive Test Ports, Unterminated DWDM/Express/Upgrade Ports, Thin Film Filter

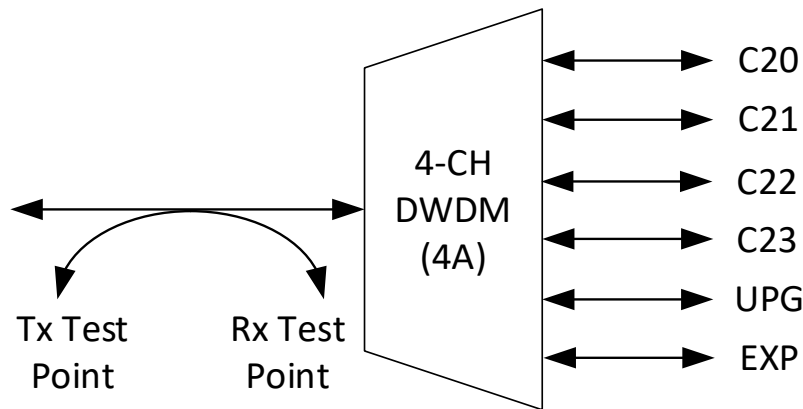
## Optical Characteristics

Parameter	Value	Unit
DWDM Passband @ -0.5dB	$\lambda_c \pm 0.125$	nm
DWDM passband insertion loss @ -0.5dB	< 2.5	dB
DWDM passband ripple @ -0.5dB	< 0.5	dB
Test port insertion loss (dB)	20 ± 2	dB
Express insertion loss	< 1.5	dB
Express passband ripple	< 0.5	dB
Express passband	1260-1520 (1420-1520 w/ 1310 Port) 1570-1635	nm
Upgrade insertion loss	< 2.5	dB
Upgrade passband	Any ITU wavelengths within ITU 14 to 62 that is not being designated on the front plate	nm
1310 port insertion loss	< 1.5	dB
1310 port passband ripple	< 0.5	dB
1310 port passband	~1260-1360	dB
DWDM uniformity	< 1.5	dB
Isolation Adj (COM-DWDM)	> 30	dB
Isolation Non-Adj (COM-DWDM)	> 45	dB
Isolation Non-Adj (COM-EXP)	> 12	dB
DWDM directivity	> 50	dB
EXPRESS directivity	> 45	dB
Return loss	> 45	dB
Polarization dependent loss	< 0.2	dB
Polarization mode dispersion	< 0.15	ps
IL thermal stability	< 0.005	dB/°C
Wavelength thermal stability	< 0.001	nm/°C
Maximum input power	300 / 24.8	mW/dBm
Operating temperature	-40 to +85	°C
Operating humidity	5 to 95	%
Tensile strength pull strength (up to 10 seconds max)	> 20 <sup>3</sup>	N
Fiber type (all ports)	SMF-28e (G.657.A1)	

## Filter Optical Design

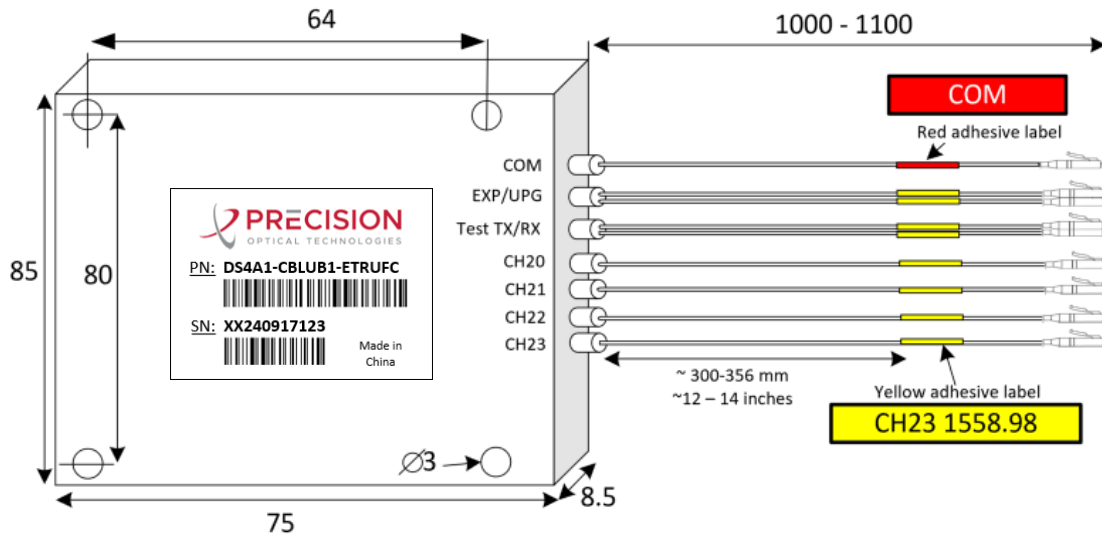


**4-Channel DWDM Design Example**

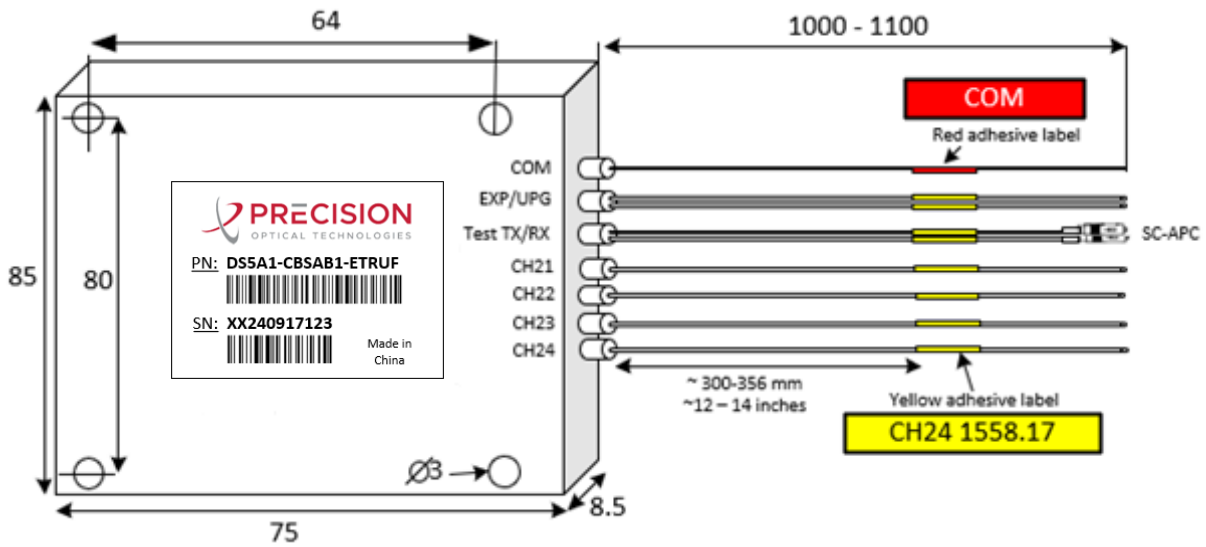


**4-Channel DWDM Design (high level)**

## Filter Physical Design



**4-Channel DWDM External Design (mm)**  
(DS4A1-CBLUB1-ETRUFC shown)



**4-Channel DWDM External Design (mm)**  
(DS5A1-CBSAB1-ETRUF shown)