

XTA-50

TUNABLE FILTER WITH ADJUSTABLE BANDWIDTH

- Electronically controlled, the XTA-50 allows for center wavelength and bandwidth to be set precisely and independently.



KEY FEATURES AND BENEFITS

Adjustable bandwidth flat-top filter

Ultra-sharp filter edges

High isolation

200 nm wavelength range

High accuracy and repeatability

Narrowest filter: highest selectivity

Models covering all key telecom wavelengths (1260 nm to 1650 nm) and various bandwidths from 32 pm (4 GHz) up to 5 nm (625 GHz)

KEY FEATURES

Adjustable bandwidth flat-top filter

The bandwidth of the XTA-50 filters can be adjusted independently of the center wavelength. The filter has a flat-top profile with minimal ripple, typically 0.2 dB with tight control across operating bands. Models are available with FWHM bandwidths from 32 pm (4 GHz) up to 5 nm (625 GHz).

Ultra-sharp filter edges

The XTA-50 uses EXFO patented quadrupal pass technology. This creates extremely sharp filter edges with slopes of up to 800 dB/nm. Single or groups of narrowly spaced DWDM channels or coherent super-channels can be selected with ease.

High isolation

In addition to the sharp filter edges, the quadrupal pass technology achieves higher isolation than conventional double-pass filters. Isolation is typically 60 dB.

200-nm wavelength range

All models have a very wide wavelength range and cover the key telecom wavelengths from 1260 nm to 1650 nm. The O-band model has a 100-nm range. The SCL band model covers up to a 200-nm range.

High accuracy and repeatability

High resolution translation stages are used for both wavelength and bandwidth control. This ensures the XTA-50 can be set accurately and repeatedly over time.

Narrowest filter and highest selectivity

The XTA-50 is the most selective filter available in the industry. Models are available with filter bandwidths from 32 pm (4 GHz) up to 5 nm (625 GHz).

APPLICATION

DWDM channel selection

Low dispersion, steep edges and high isolation mean that DWDM channels, or even coherent superchannels with spacing down to 10 GHz, can be separated with ease. BER testing has never been so good!

Variable OSNR source

A variable OSNR source typically consists of an ASE source combined with a variable attenuator. Adding a flat-top adjustable bandwidth to the XTA-50 enables consistent noise loading for all DWDM wavelengths.

R&D of modulation formats

The XTA-50 is perfect for the filtering and analysis of sub-bands of complex modulation formats.

Pulse shaping

Wide bandwidth flexibility enables use of filter for pulse shaping of femtosecond lasers.

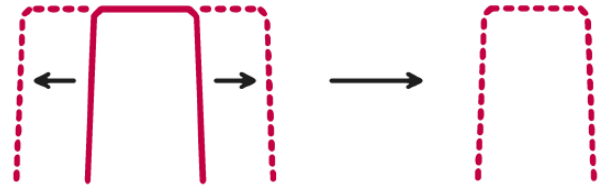


Figure 1. Bandwidth and wavelength tuning.

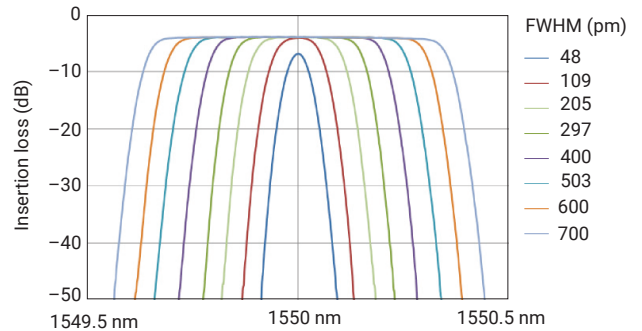


Figure 2. Bandwidth and wavelength tuning



ADVANCED FEATURES AND PERFORMANCE

Easy access to optical connectors for cleaning (low-cost maintenance).

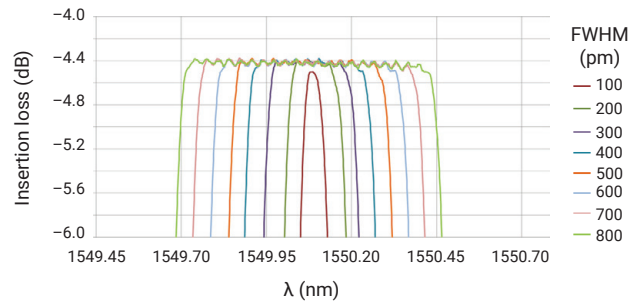


Figure 3. Expanded view of filter profile (wide)

All specifications are given at 21°± 3°C after 30 minutes warm-up.

SPECIFICATIONS

Optical characteristics	XTA-50 standard	XTA-50 ultrafine	XTA-50 O-band ^a	XTA-50 wide
Wavelength range (nm)	1450 to 1650	1480 to 1620	1260 to 1360	1525 to 1610
Wavelength resolution (pm)	1	1	1	1
Wavelength accuracy (pm) ^b	±30	±30	±30	±30
Wavelength tuning speed (s)	1	1	1	1
Minimum bandwidth (FWHM)	50 pm (6.25 GHz)	32 pm (4 GHz)	50 pm (8 GHz)	50 pm (6.25 GHz)
Maximum bandwidth (FWHM)	950 pm (120 GHz)	650 pm (80 GHz)	900 pm (160 GHz)	5000 pm (62.5 GHz)
Bandwidth resolution (pm)	1	1	1	1
Bandwidth tuning speed (s)	1	1	1	1
Filter edge roll-off (dB/nm)	500 (typical) ^c	800 (typical)	500 (typical) ^c	500 (typical) ^d
Insertion loss (dB)	5 (4.5 dB typical) ^{e, f}	5 (4.0 dB typical) ^{f, g}	5 (4.5 dB typical) ^{f, h}	5 (4.5 dB typical) ^{i, j}
Flatness (dB)	0.2 ^{k, p} (typical)	0.2 ^{l, p} (typical)	0.3 ^{k, m, p} (typical)	0.2 ^{n, p} (typical)
Polarization dependent loss (dB)	±0.2 ^e	±0.2 ^g	±0.2 ^h	±0.2 ⁱ
Out-of-band suppression (crosstalk)	40 dB (60 dB typical) ^o	40 dB (50 dB typical) ^o	40 dB (60 dB typical) ^o	40 dB (45 dB typical) ^o
Interfaces				
Display	7 inch resistive touch-screen (resolution 800 x 480)			
Communication interfaces	USB-B, Ethernet (x2)			
Display and other interfaces	HDMI, display port, USB-A 3.2 (x3), USB-A 2.0 (x1)			
Optical fiber type	SMF or PMF	SMF or PMF	SMF or PMF	SMF
Connector type	FC/PC or FC/APC			
Operating conditions				
Temperature range	15 °C to 35 °C (59 °F to 95 °F)			
Maximum optical input power (dBm)	30	30	30	27
Size				
Dimensions (W x D x H)	254 mm x 385 mm x 154 mm (10 in x 15 1/8 in x 6 in)			
Weight	6.5 kg (14.33 lb)			

a. Specifications apply for wavelengths not equal to anywater absorption line.

b. With "Backlash suppression" setting enabled.

c. Between -3 and -40 dB for FWHM < 800 pm.

d. Between -3 and -40 dB. Typically 550 dB/nm at FWHM = 50 pm, 450 dB/nm at FWHM = 1 nm, 225 dB/nm at FWHM = 5 nm.

e. From 1500 nm to 1600 nm and FWHM > 100 pm.

f. At lowest FWHM the insertion loss is 7 dB typical.

g. From 1500 nm to 1600 nm and FWHM > 60 pm.

h. From 1280 nm to 1340 nm and FWHM > 100 pm.

i. For FWHM > 100 pm.

j. At lowest FWHM the insertion loss is < 7.0 dB.

k. Centered width of FWHM-150 pm. For 150 pm < FWHM < 650 pm.

l. Centered width of FWHM-100 pm. For 100 pm < FWHM < 500 pm.

m. From 1280 nm to 1340 nm.

n. Centered width of FWHM-150 pm. For 150 pm < FWHM < 2000 pm.

o. Measured 1 nm away from the -3 dB points.

p. Flatness max < 0.4 dB (< 0.5 dB for O-Band).

ORDERING INFORMATION

XTA-50-XX-XX-XX

Model

SCL-S = 1450 - 1650 nm, bandwidth 50 - 950 pm
 SCL-U = 1480 - 1620 nm, bandwidth 32 - 650 pm
 CL-W = 1525 - 1610 nm, bandwidth 50 - 5000 pm
 O-S = 1260 - 1360 nm, bandwidth 50 - 900 pm

Connector

58 = FC/APC
 50 = FC/PC

Output fiber

00 = SMF28 singlemode fiber
 M = Polarization maintaining fiber ^a

Example: XTA-50-SCL-S-M-50

a. Not available for CL-W model.

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