Optical Tunable Filter
OTF-930

The OTF-930 is a polarization independent 80nm tunable filter. Santec's unique "Linear Sliding" technology enables precise, continuous wavelength tuning with constant optical properties such as PDL, bandwidth and insertion loss. A breakthrough in filter design enables this device to achieve a very low insertion loss. The instrument is designed to allow filters to be cascaded to increase filter isolation with minimal increase in insertion loss. A wide selection of filters is available to suit most fiber optic applications.

Features

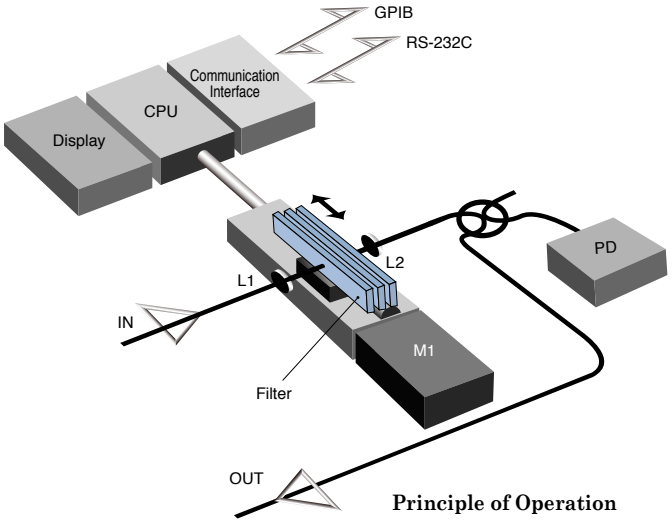
- 80nm tuning range
- Low insertion loss
- Low PDL (<0.1dB) & PMD (<0.1ps) over whole tuning range
- 0.01nm resolution
- Full GPIB support

Applications

- **ASE Noise Suppression**
  When optical signals are amplified using EDFAs, unwanted levels of amplified spontaneous emission (ASE) can decrease the signal-to-noise ratio. The OTF-930 with 08-S1, 08-S2 or 12-S2 filters can remove the ASE noise with minimal loss.

- **Wavelength Channel Selection**
  The 03-S2 filter configuration is particularly suitable for selecting a single DWDM wavelength from a 100GHz grid. Other filters can be used to select other ITU grid spaced signals.

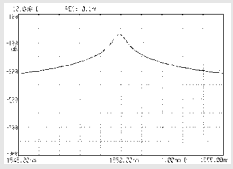
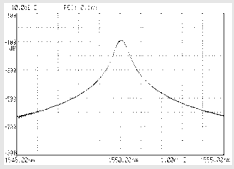
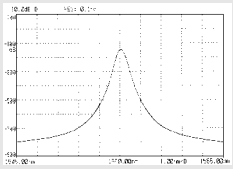
- **Incoherent Light Source**
  When used in combination with a broadband light source the OTF-930 can be configured as a tunable light source. Although the output power is relatively low (-30 to -20dBm) the incoherent light is especially useful for applications which are affected by coherent resonance effects or non-linear interference.



Principle of Operation

santec

Filter Structure

Single (S1)	Double (S2)	Triple (S3)
		

Filter Selections

Filter type	03			04			06		
Filter Structure	S1	S2	S3	S1	S2	S3	S1	S2	S3
Bandwidth @-3 dB (nm)	0.4±0.1	0.3±0.1	0.25±0.1	0.5±0.1	0.35±0.1	0.3±0.1	0.7±0.1	0.5±0.1	0.4±0.1
Bandwidth @-20 dB (nm)	<3.8	<1.5	<1.2	<5.0	<1.7	<1.2	<7.5	<2.4	<1.5
Max.Insertion Loss (dB)	3.5	6.0	7.5	3.0	5.0	6.5	2.5	3.0	4.0
Chromatic dispersion @Center wavelength	+23.0	+33.5	+35.0	+18.0	+21.5	+26.0	+6.5	+14.5	+26.5
(ps/nm) (typ.)	-19.0	-31.5	-23.0	-12.5	-17.5	-17.0	-6.5	-11.0	-17.5

Filter type	08			12			24			50
Filter Structure	S1	S2	S3	S1	S2	S3	S1	S2	S3	S1
Bandwidth @-3 dB (nm)	0.95±0.1	0.65±0.1	0.5±0.1	1.3±0.1	0.9±0.1	0.7±0.1	2.9±0.3	1.95±0.3	1.5±0.3	5.5±1.0
Bandwidth @-20 dB (nm)	<9.8	<3.0	<2.2	<15.0	<4.5	<3.0	<32.0	<10.0	<6.5	<60(Typ.)
Max.Insertion Loss (dB)	2.0	3.0	3.5	2.0	2.5	3.0	2.5	2.5	2.5	2.9
Chromatic dispersion @Center wavelength	+7.0	+8.0	+12.0	+3.5	+5.0	+8.0	+3.5	+3.5	+3.5	-
(ps/nm) (typ.)	-7.0	-5.0	-10.5	-4.0	-5.0	-5.5	-3.5	-3.5	-3.5	-

Specifications

Category	Parameter	Unit	Spec	Notes
Wavelength Characteristics	Wavelength Resolution	nm	0.01	Mechanical resolution
	Wavelength Accuracy	nm	<±0.1, <±0.15(24), <±0.2(50)	
	Wavelength Repeatability	nm	<±0.05, <±0.1(50)	n=50/ Measured at center wavelength of slider
	Wavelength Dependence	nm	<±0.1	
	Temperature Stability	pm/ºC	2	
Power Characteristics	PDL	dB	<0.1	Filter Structure(S1)
		dB	<0.2	Filter Structure(S2) and (S3)
	Insertion Loss	dB	-	
	Return Loss	dB	>45	Refer to "Filter Selections" (Typ.)
Power Monitor	Relative Accuracy	dB	<±0.1	Output Power : -20~+10dBm
Max Rating	Maximum Input Power	dBm	+20	Damage Threshold
PMD	PMD	ps	<0.1	Design guaranteed performance
Environmental Conditions	Operating Temperature	ºC	20 - 30	
	Operating Humidity	%	<80 RH	Non condensing
Interface	Optical Connector	-	FC or SC	
	Connector Polish	-	SPC or APC	*1
Power supply	Communication Interface	-	GPIB & RS-232C	IEEE-488
	Voltage	V	AC100-240	
	Frequency	Hz	50/60	
Dimensions	Power Consumption	VA	35@230 to 240V 30@100 to 120V	
	Width x Height x Depth	mm	210 x 80 x 300	
	Weight	kg	4	

Ordering Code

*1: SPC = Super Physical Contact
APC = Angled Physical Contact

OTF-930 -[A]-[B][B]-[C][C]-[D][E]-[F]

- [F] Connector Polish: **SP**: SPC **AP**: APC*1
- [E] Connector: **F**: FC **S**: SC
- [D] Fiber: **S**: SMF **P**: PMF
- [C][C] Filter Structure: **S1**:Single **S2**:Double **S3**:Triple
- [B][B] Filter Type: **03 04 06 08 12 24 50** or Other
- [A] Tuning Range: **1**: 1530-1610nm **2**: Other

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