

1064nm 60nm Single Mode Tunable Filter



- **Product Description**

High-speed tunable bandpass filter. As a two-port optical module, the input port receives broadband multi-wavelength light and only a small portion of the incident signal within the passband is allowed to pass through the filter and directed to the output port. The center wavelength of the selected band can be tuned to anywhere within the operating wavelength range. In our design flexibility, transmission bandwidth, wavelength tuning range can be customized. The voltage-controlled filter requires no moving parts, has fast tuning speed, and is compact and small in size. Our filters are used as

suppression filters in optical systems to improve laser signal-to-noise ratio in wavelength scanning engines of optical spectrum analyzers (OSAs) and in system diagnostic communication systems.

● Product features

High-speed wavelength tuning 、 Wide operating wavelength range 、 Flat-top/Gaussian filter shapes、 No moving parts、 Over 1 billion cycles

● Part Number

MP-WTF-1064-1-SA

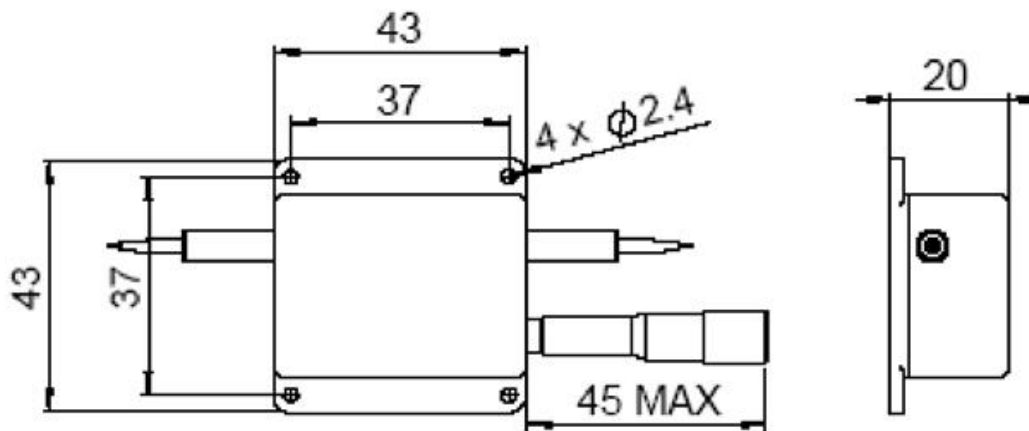
● Application area

Optical spectrum analyzer engine、 ASE noise suppression、 Optical channel diagnostics、 Test and measurement instruments、 Channel selection for wavelength lockers

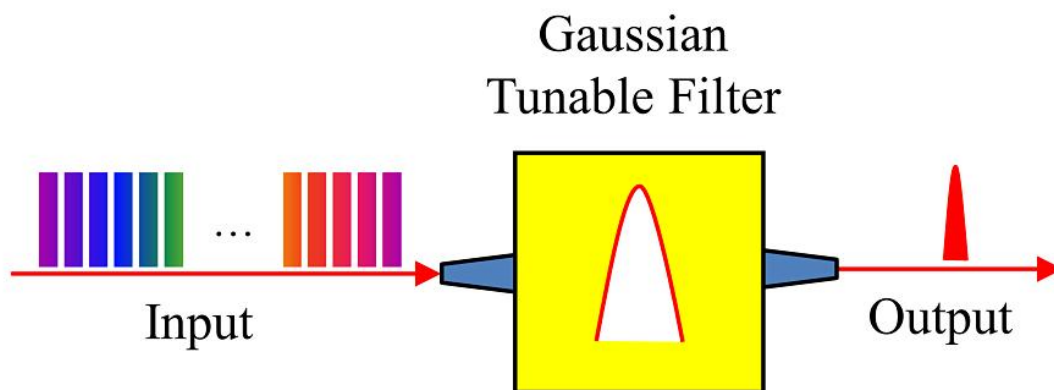
● Core parameters

Center wavelength	Bandwidth	Tuning range
1064nm	1nm	60nm

● **Dimension Drawing**



● **General Parameters**



Technical parameters:

Parameters	Min	Typical	Max	Unit
Center wavelength	-	1060,1310,1550, 2000	-	nm
Tuning range[1]	-	60	80	nm
Tuning resolution	-	0.1	-	nm

Insertion loss[2]	2	3	4	dB
Bandwidth @-3dB	-	1	12	nm
Bandwidth @-20dB	-	10	-	nm
Sideband suppression	-	30	-	dB
PDL (SM fiber only)	-	0.15	0.35	dB
PMD (SM fiber only)	-	-	0.5	ps
Extinction ratio (PM fiber only)	18	23	-	dB
Return loss	40	-	-	dB
Operating power (CW)[3]	-	0.5	15**	W
Operating temperature	0	20	60	°C
Storage temperature	-10	-	70	°C
Dimensions	-	43 Lx43Wx20H	-	mm

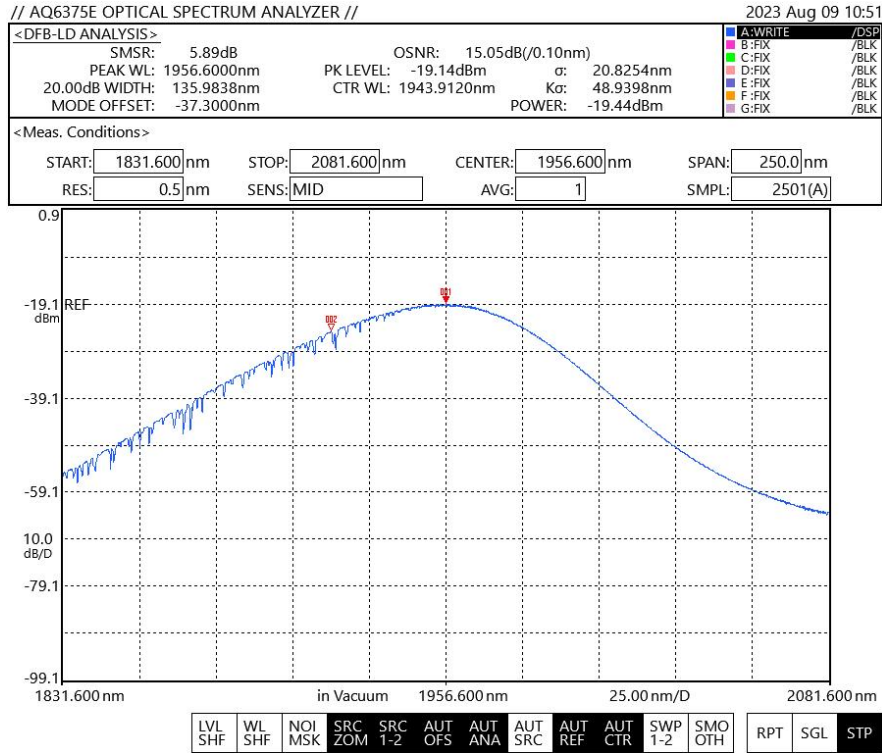
[1]. Longer wavelength and larger tuning range.

[2]. Small core fiber has greater loss. Loss data tested with broadband light source without connector.

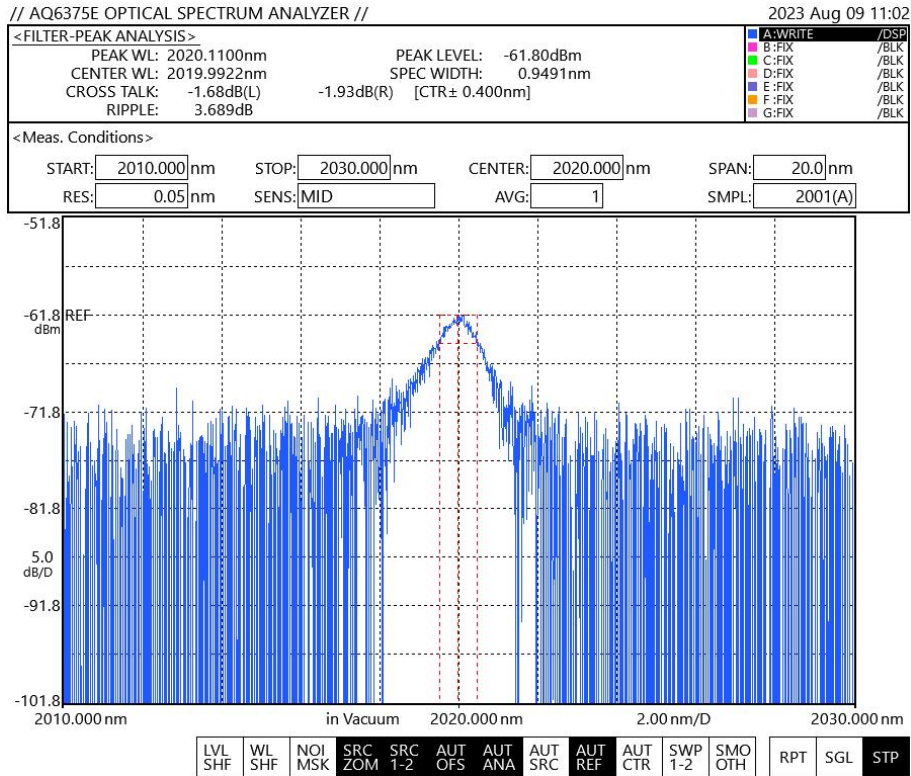
[3]. Supports customized service of high operating power up to 15W.



Test light source spectrum



Measured spectrum





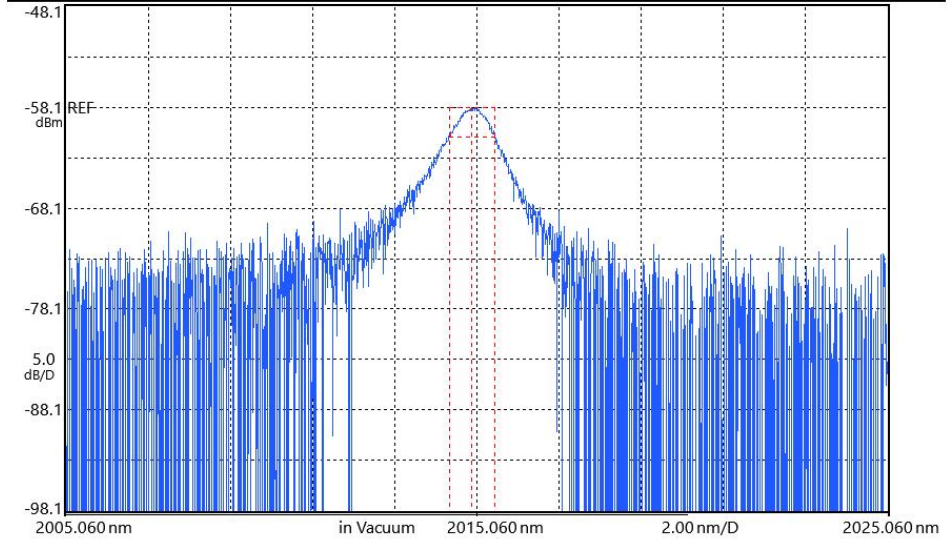
// AQ6375E OPTICAL SPECTRUM ANALYZER //

2023 Aug 09 11:07

<FILTER-PEAK ANALYSIS>
 PEAK WL: 2014.9300nm PEAK LEVEL: -58.09dBm
 CENTER WL: 2014.9573nm SPEC WIDTH: 1.1174nm
 CROSS TALK: -1.76dB(L) -1.22dB(R) [CTR± 0.400nm]
 RIPPLE: 0.000dB

A:WRITE	/DSP
B:FIX	/BLK
C:FIX	/BLK
D:FIX	/BLK
E:FIX	/BLK
F:FIX	/BLK
G:FIX	/BLK

<Meas. Conditions>
 START: 2005.060nm STOP: 2025.060nm CENTER: 2015.060nm SPAN: 20.0nm
 RES: 0.05nm SENS: MID AVG: 1 SMPL: 2001(A)



LVL SHF	WL SHF	NOI MSK	SRC ZOM	SRC 1-2	AUT OFS	AUT ANA	AUT SRC	AUT REF	AUT CTR	SWP 1-2	SMO OTH	RPT	SGL	STP
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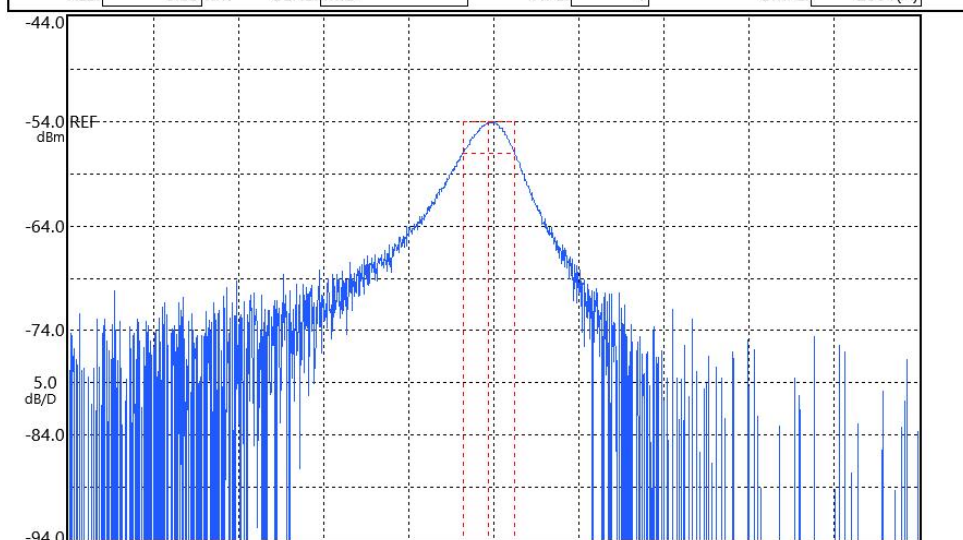
// AQ6375E OPTICAL SPECTRUM ANALYZER //

2023 Aug 09 11:10

<FILTER-PEAK ANALYSIS>
 PEAK WL: 2010.0900nm PEAK LEVEL: -54.02dBm
 CENTER WL: 2009.9861nm SPEC WIDTH: 1.2096nm
 CROSS TALK: -1.46dB(L) -1.08dB(R) [CTR± 0.400nm]
 RIPPLE: 0.000dB

A:WRITE	/DSP
B:FIX	/BLK
C:FIX	/BLK
D:FIX	/BLK
E:FIX	/BLK
F:FIX	/BLK
G:FIX	/BLK

<Meas. Conditions>
 START: 2000.090nm STOP: 2020.090nm CENTER: 2010.090nm SPAN: 20.0nm
 RES: 0.05nm SENS: MID AVG: 1 SMPL: 2001(A)



LVL SHF	WL SHF	NOI MSK	SRC ZOM	SRC 1-2	AUT OFS	AUT ANA	AUT SRC	AUT REF	AUT CTR	SWP 1-2	SMO OTH	RPT	SGL	STP
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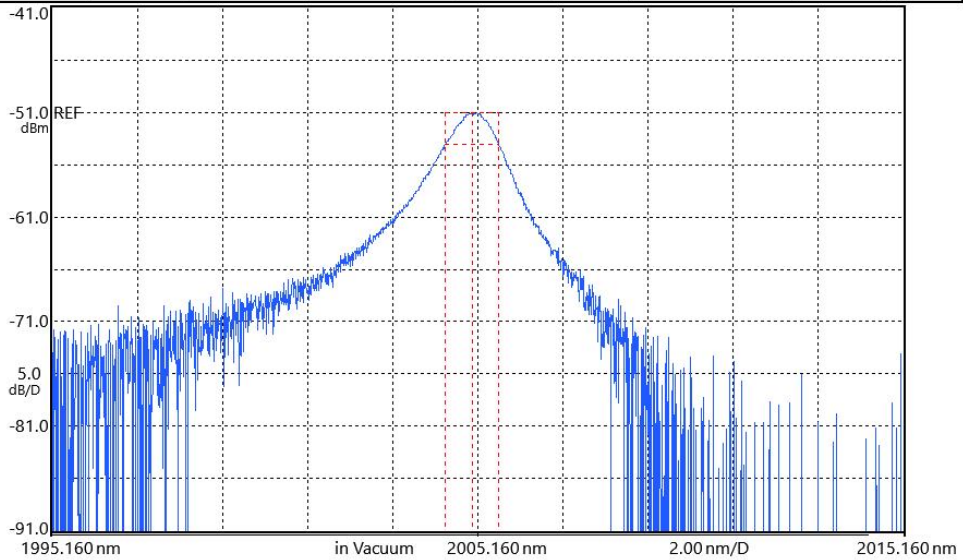
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<FILTER-PEAK ANALYSIS>

PEAK WL: 2005.1200nm	PEAK LEVEL: -51.04dBm	<input type="checkbox"/> A:WRITE /DSP
CENTER WL: 2005.0339nm	SPEC WIDTH: 1.2589nm	<input type="checkbox"/> B:FIX /BLK
CROSS TALK: -1.51dB(L)	-0.91dB(R) [CTR± 0.400nm]	<input type="checkbox"/> C:FIX /BLK
RIPPLE: 0.000dB		<input type="checkbox"/> D:FIX /BLK
		<input type="checkbox"/> E:FIX /BLK
		<input type="checkbox"/> F:FIX /BLK
		<input type="checkbox"/> G:FIX /BLK

<Meas. Conditions>

START: 1995.160 nm	STOP: 2015.160 nm	CENTER: 2005.160 nm	SPAN: 20.0 nm
RES: 0.05 nm	SENS: MID	AVG: 1	SMPL: 2001(A)



LVL SHF	WL SHF	NOI MSK	SRC ZOM	SRC 1-2	AUT OFS	AUT ANA	AUT SRC	AUT REF	AUT CTR	SWP 1-2	SMO OTH	RPT	SGL	STP
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// AQ6375E OPTICAL SPECTRUM ANALYZER //

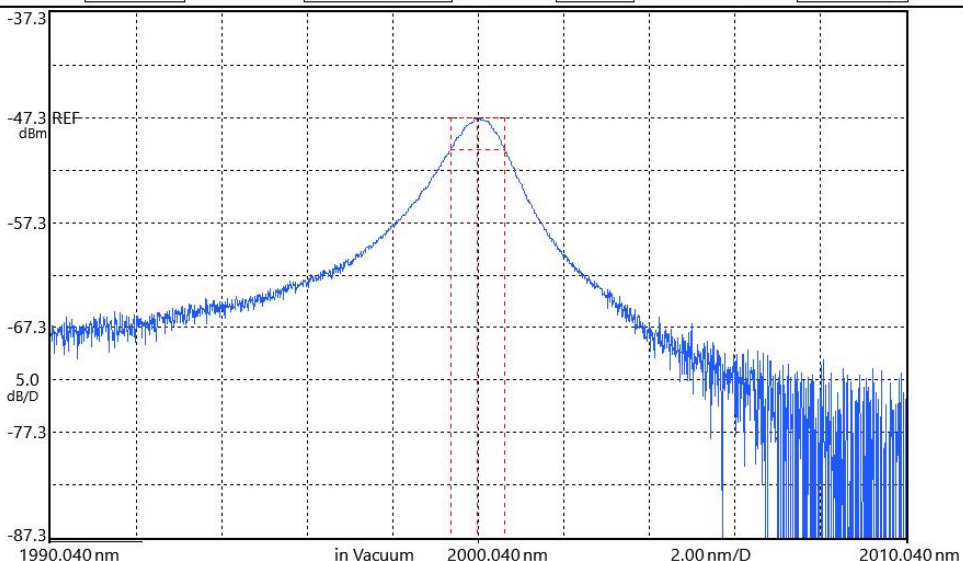
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<FILTER-PEAK ANALYSIS>

PEAK WL: 2000.0500nm	PEAK LEVEL: -47.30dBm	<input type="checkbox"/> A:WRITE /DSP
CENTER WL: 2000.0359nm	SPEC WIDTH: 1.2439nm	<input type="checkbox"/> B:FIX /BLK
CROSS TALK: -1.68dB(L)	-1.26dB(R) [CTR± 0.400nm]	<input type="checkbox"/> C:FIX /BLK
RIPPLE: 0.000dB		<input type="checkbox"/> D:FIX /BLK
		<input type="checkbox"/> E:FIX /BLK
		<input type="checkbox"/> F:FIX /BLK
		<input type="checkbox"/> G:FIX /BLK

<Meas. Conditions>

START: 1990.040 nm	STOP: 2010.040 nm	CENTER: 2000.040 nm	SPAN: 20.0 nm
RES: 0.05 nm	SENS: MID	AVG: 1	SMPL: 2001(A)



LVL SHF	WL SHF	NOI MSK	SRC ZOM	SRC 1-2	AUT OFS	AUT ANA	AUT SRC	AUT REF	AUT CTR	SWP 1-2	SMO OTH	RPT	SGL	STP
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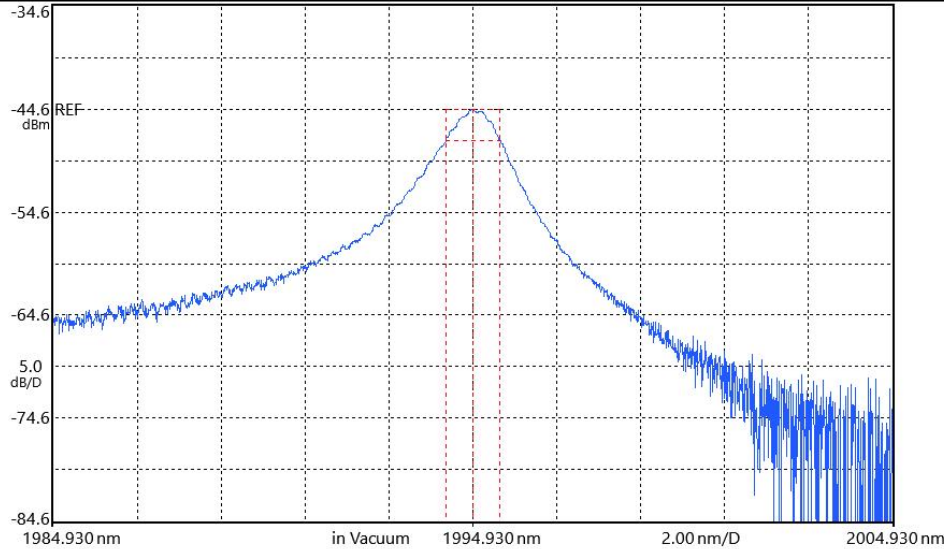


// AQ6375E OPTICAL SPECTRUM ANALYZER //

2023 Aug 09 11:17

<FILTER-PEAK ANALYSIS>		A:WRITE /DSP
PEAK WL: 1994.9100nm	PEAK LEVEL: -44.65dBm	B:FIX /BLK
CENTER WL: 1994.9483nm	SPEC WIDTH: 1.2892nm	C:FIX /BLK
CROSS TALK: -1.57dB(L)	-1.09dB(R) [CTR± 0.400nm]	D:FIX /BLK
RIPPLE: 0.000dB		E:FIX /BLK
		F:FIX /BLK
		G:FIX /BLK

<Meas. Conditions>							
START: 1984.930nm	STOP: 2004.930nm	CENTER: 1994.930nm	SPAN: 20.0nm				
RES: 0.05nm	SENS: MID	AVG: 1	SMPL: 2001(A)				



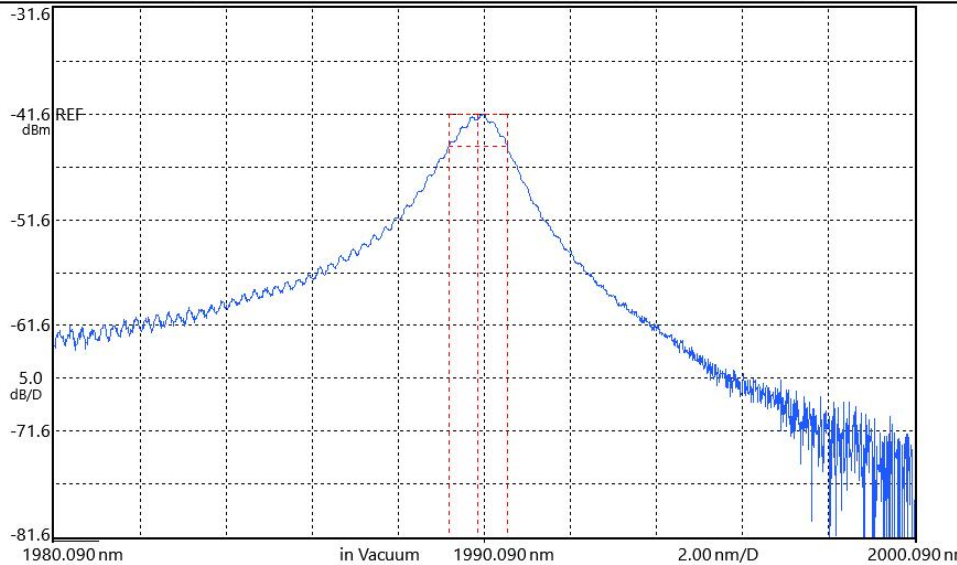
LVL SHF	WL SHF	NOI MSK	SRC ZOM	SRC 1-2	AUT OFS	AUT ANA	AUT SRC	AUT REF	AUT CTR	SWP 1-2	SMO OTH	RPT	SGL	STP
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// AQ6375E OPTICAL SPECTRUM ANALYZER //

2023 Aug 09 11:18

<FILTER-PEAK ANALYSIS>		A:WRITE /DSP
PEAK WL: 1990.0700nm	PEAK LEVEL: -41.61dBm	B:FIX /BLK
CENTER WL: 1989.9531nm	SPEC WIDTH: 1.3539nm	C:FIX /BLK
CROSS TALK: -0.90dB(L)	-0.44dB(R) [CTR± 0.400nm]	D:FIX /BLK
RIPPLE: 0.000dB		E:FIX /BLK
		F:FIX /BLK
		G:FIX /BLK

<Meas. Conditions>							
START: 1980.090nm	STOP: 2000.090nm	CENTER: 1990.090nm	SPAN: 20.0nm				
RES: 0.05nm	SENS: MID	AVG: 1	SMPL: 2001(A)				



LVL SHF	WL SHF	NOI MSK	SRC ZOM	SRC 1-2	AUT OFS	AUT ANA	AUT SRC	AUT REF	AUT CTR	SWP 1-2	SMO OTH	RPT	SGL	STP
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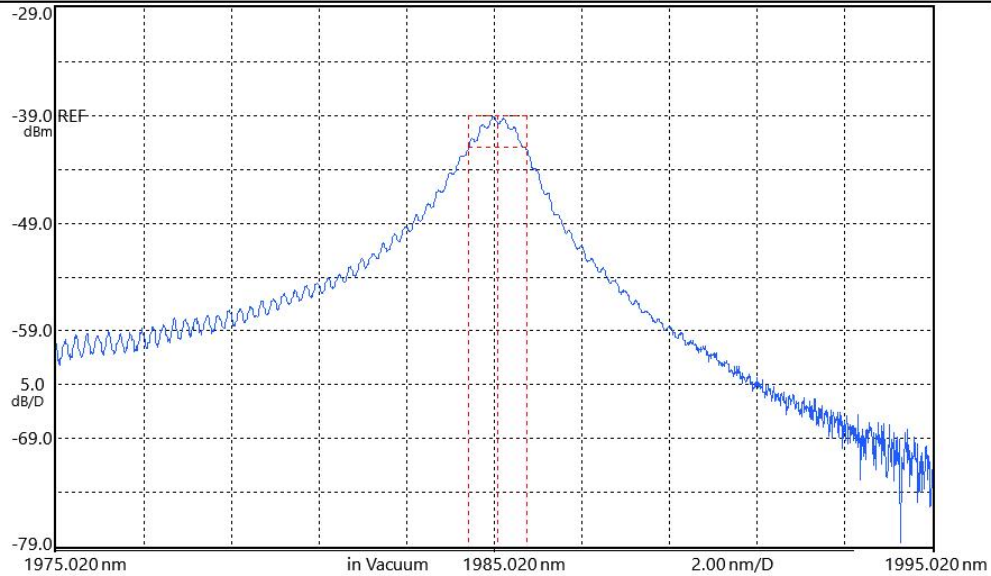


// AQ6375E OPTICAL SPECTRUM ANALYZER //

2023 Aug 09 11:20

<FILTER-PEAK ANALYSIS>		A:WRITE /DSP
PEAK WL: 1985.0200nm	PEAK LEVEL: -38.99dBm	B:FIX /BLK
CENTER WL: 1985.1040nm	SPEC WIDTH: 1.3328nm	C:FIX /BLK
CROSS TALK: -0.96dB(L)	-0.46dB(R) [CTR± 0.400nm]	D:FIX /BLK
RIPPLE: 0.585dB		E:FIX /BLK
		F:FIX /BLK
		G:FIX /BLK

<Meas. Conditions>							
START: 1975.020 nm	STOP: 1995.020 nm	CENTER: 1985.020 nm	SPAN: 20.0 nm				
RES: 0.05 nm	SENS: MID	AVG: 1	SMPL: 2001(A)				



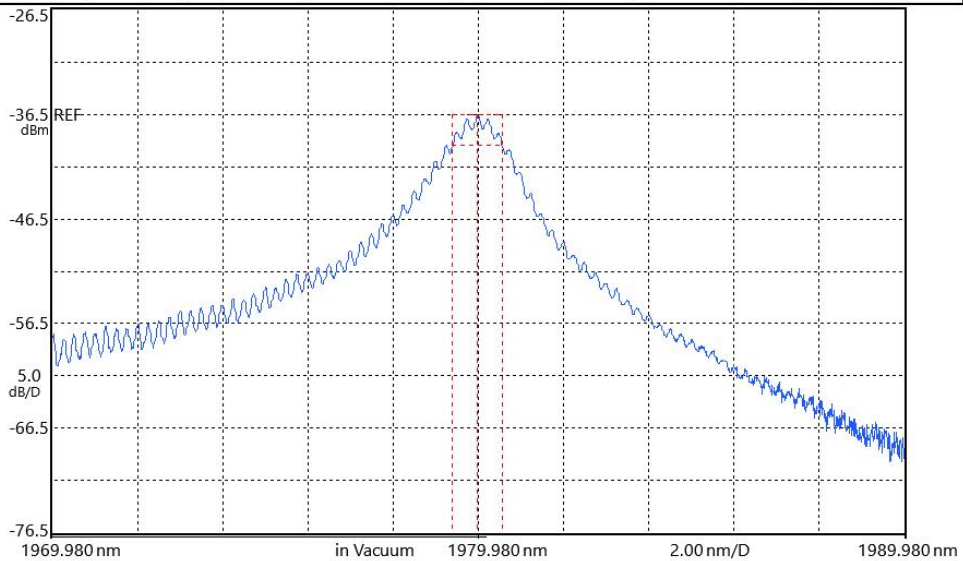
LVL SHF	WL SHF	NOI MSK	SRC ZOM	SRC 1-2	AUT OFS	AUT ANA	AUT SRC	AUT REF	AUT CTR	SWP 1-2	SMO OTH	RPT	SGL	STP
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// AQ6375E OPTICAL SPECTRUM ANALYZER //

2023 Aug 09 11:22

<FILTER-PEAK ANALYSIS>		A:WRITE /DSP
PEAK WL: 1979.9900nm	PEAK LEVEL: -36.48dBm	B:FIX /BLK
CENTER WL: 1979.9676nm	SPEC WIDTH: 1.1688nm	C:FIX /BLK
CROSS TALK: -2.02dB(L)	-2.13dB(R) [CTR± 0.400nm]	D:FIX /BLK
RIPPLE: 3.682dB		E:FIX /BLK
		F:FIX /BLK
		G:FIX /BLK

<Meas. Conditions>							
START: 1969.980 nm	STOP: 1989.980 nm	CENTER: 1979.980 nm	SPAN: 20.0 nm				
RES: 0.05 nm	SENS: MID	AVG: 1	SMPL: 2001(A)				



LVL SHF	WL SHF	NOI MSK	SRC ZOM	SRC 1-2	AUT OFS	AUT ANA	AUT SRC	AUT REF	AUT CTR	SWP 1-2	SMO OTH	RPT	SGL	STP
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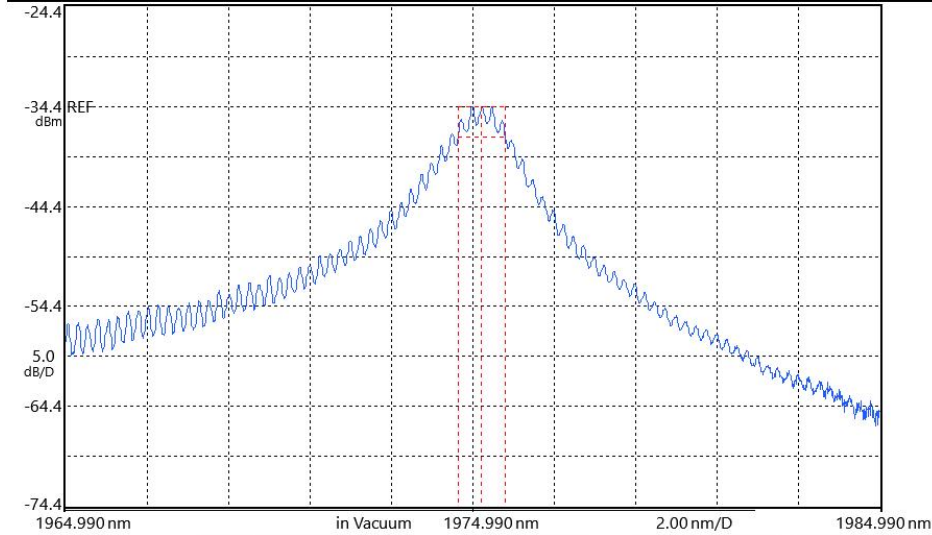


// AQ6375E OPTICAL SPECTRUM ANALYZER //

2023 Aug 09 11:23

<FILTER-PEAK ANALYSIS>		A:WRITE /DSP
PEAK WL: 1974.990nm	PEAK LEVEL: -34.42dBm	B:FIX /BLK
CENTER WL: 1975.2187nm	SPEC WIDTH: 1.1539nm	C:FIX /BLK
CROSS TALK: -2.18dB(L)	-2.43dB(R) [CTR± 0.400nm]	D:FIX /BLK
RIPPLE: 3.903dB		E:FIX /BLK
		F:FIX /BLK
		G:FIX /BLK

<Meas. Conditions>			
START: 1964.990nm	STOP: 1984.990nm	CENTER: 1974.990nm	SPAN: 20.0nm
RES: 0.05nm	SENS: MID	AVG: 1	SMPL: 2001(A)



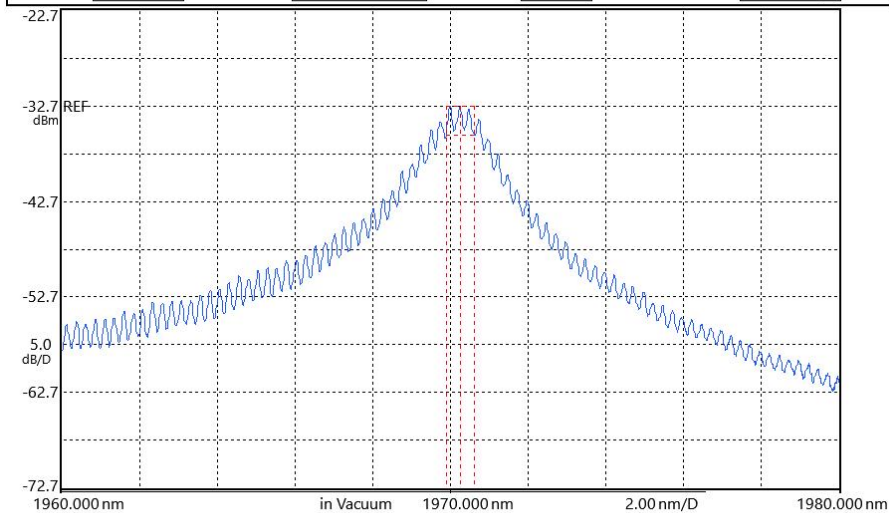
LVL SHF	WL SHF	NOI MSK	SRC ZOM	SRC 1-2	AUT OFS	AUT ANA	AUT SRC	AUT REF	AUT CTR	SWP 1-2	SMO OTH	RPT	SGL	STP
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// AQ6375E OPTICAL SPECTRUM ANALYZER //

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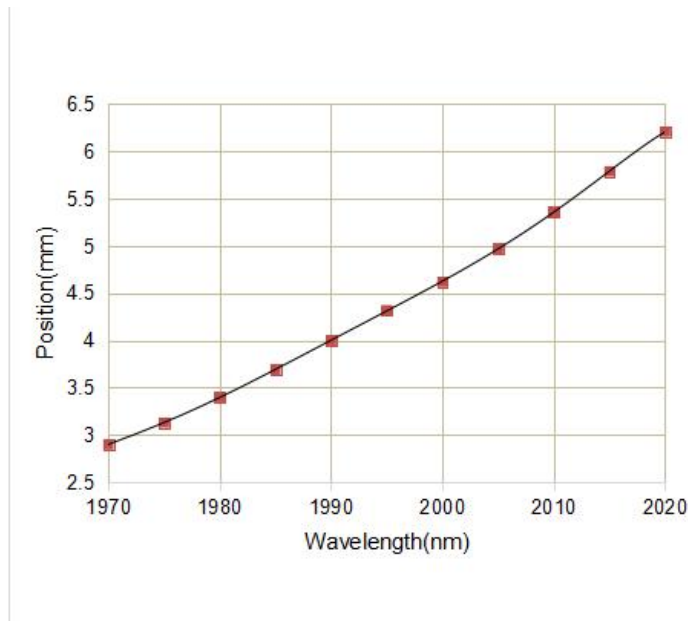
<FILTER-PEAK ANALYSIS>		A:WRITE /DSP
PEAK WL: 1970.000nm	PEAK LEVEL: -32.73dBm	B:FIX /BLK
CENTER WL: 1970.2607nm	SPEC WIDTH: 0.7237nm	C:FIX /BLK
CROSS TALK: -3.15dB(L)	-2.81dB(R) [CTR± 0.400nm]	D:FIX /BLK
RIPPLE: 4.590dB		E:FIX /BLK
		F:FIX /BLK
		G:FIX /BLK

<Meas. Conditions>			
START: 1960.000nm	STOP: 1980.000nm	CENTER: 1970.000nm	SPAN: 20.0nm
RES: 0.05nm	SENS: MID	AVG: 1	SMPL: 2001(A)



LVL SHF	WL SHF	NOI MSK	SRC ZOM	SRC 1-2	AUT OFS	AUT ANA	AUT SRC	AUT REF	AUT CTR	SWP 1-2	SMO OTH	RPT	SGL	STP
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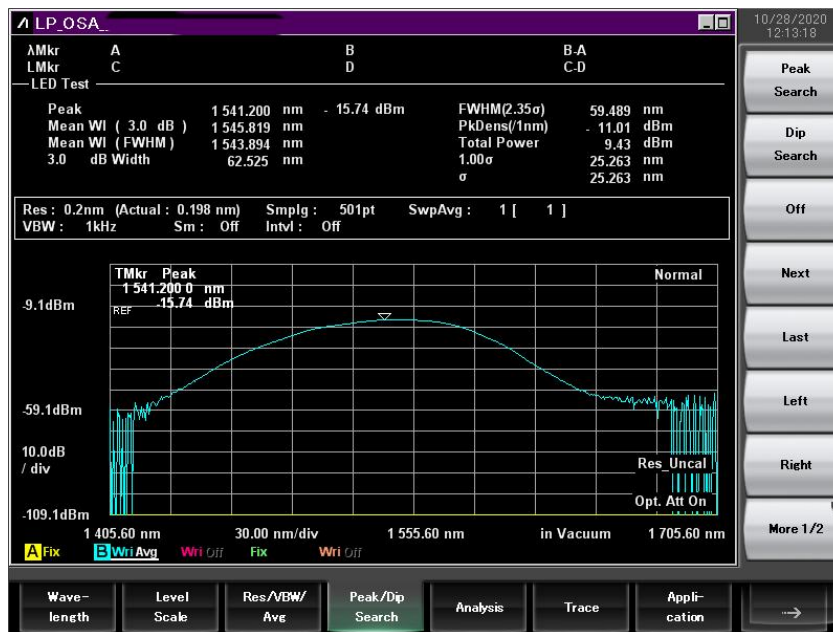
The relation between entral wavelength and rotary knob position



Test light source:

PN: MP-SLD-1550-A-A81-SA

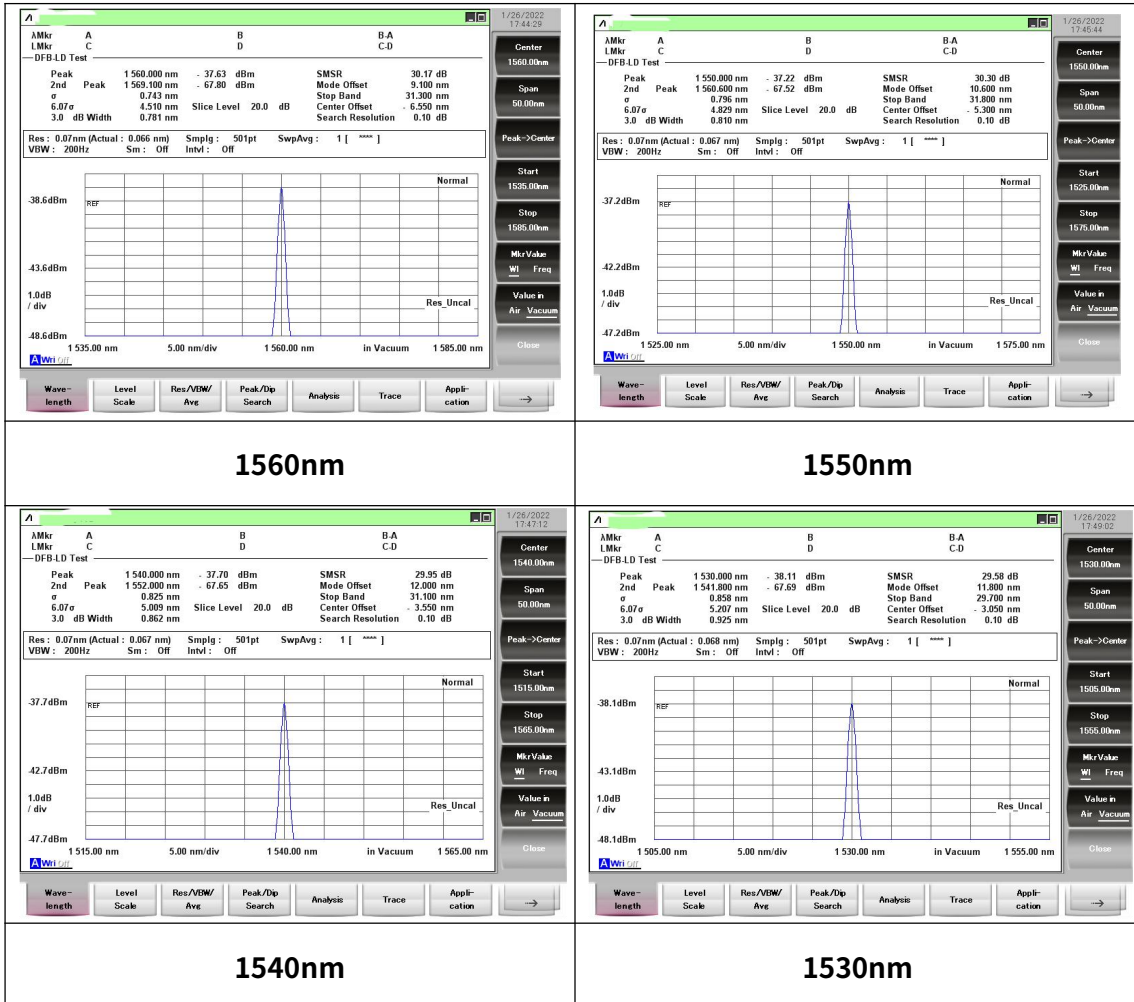
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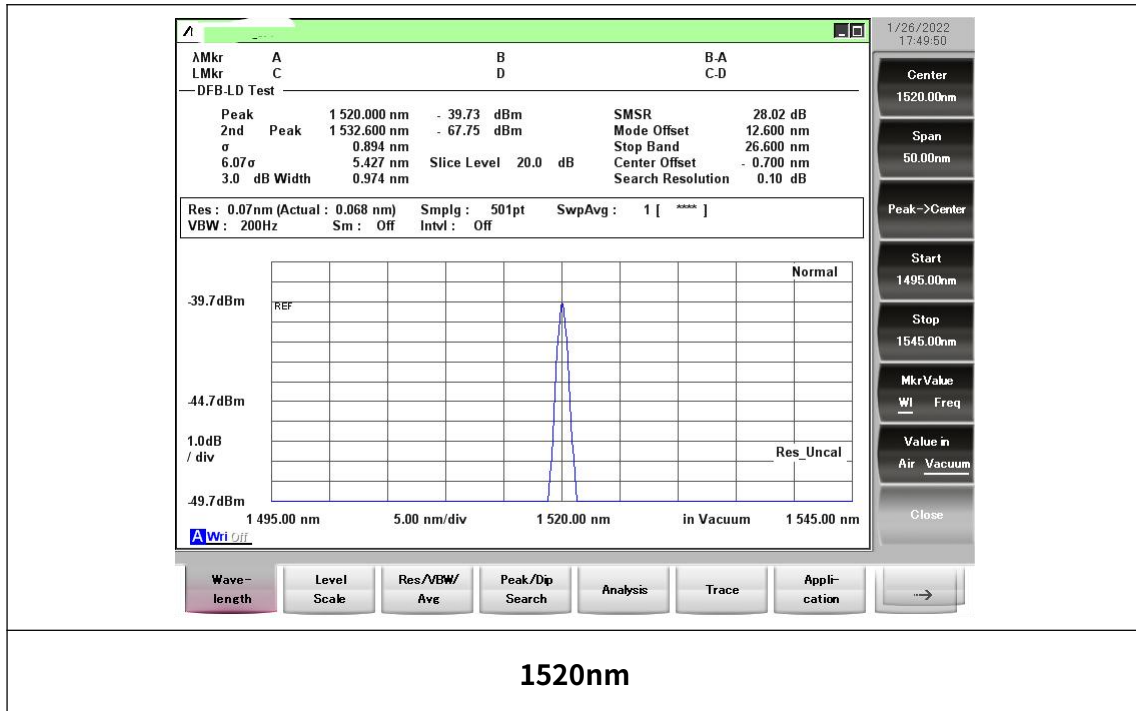


Test light source spectrum



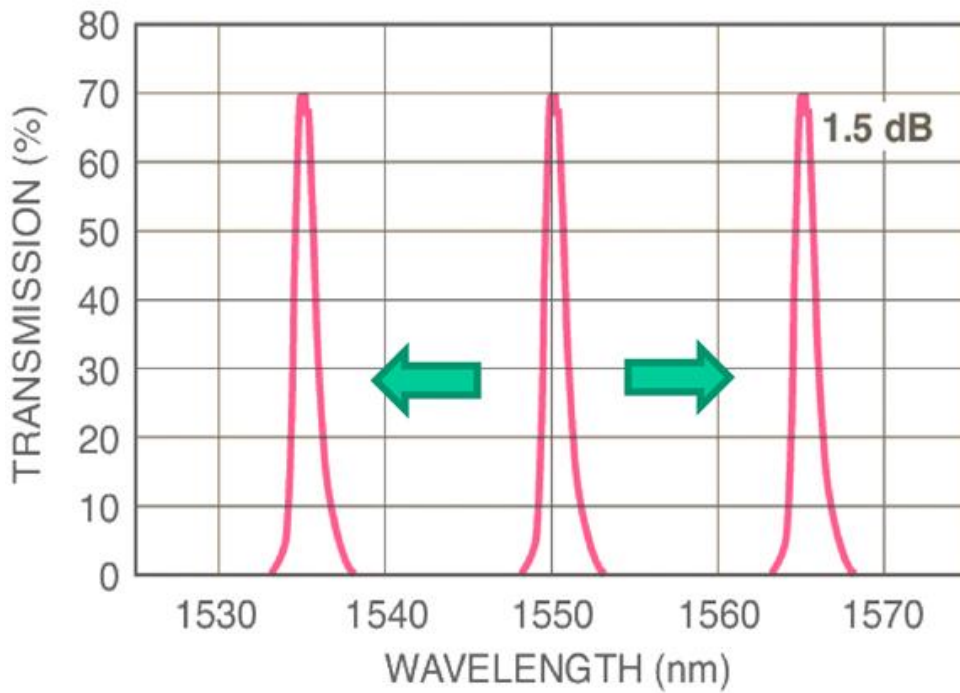
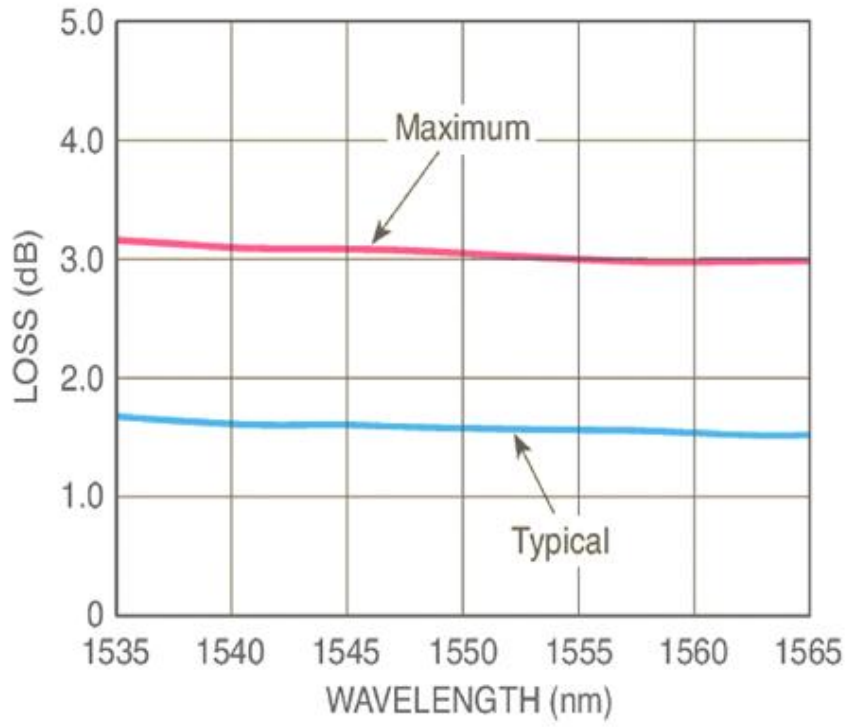
1. Measured spectrum





2. Relationship between wavelength and knob position

Wavelength(nm)	Knob Location
1520	4.48
1530	5.07
1540	5.68
1550	6.4
1560	7.2
1570	8.2
1580	9.6





Order Info:

MP-WTF- □□□□-☆-A8▽- XX

□□□□: Wavelength

1060: 1060nm

1310:1310nm

1550: 1550nm

1620: 1620nm

1850:1850nm

1950:1950nm

2000:2000nm

2100:2100nm

☆ : Handling Power

500: 500mW

5000: 5W

▽: Tuning Range

60: ±30nm

100: ±50nm

XX: Fiber and Connector Type



SA=HI1060(The single-mode optical fiber of the corresponding wavelength band is 1060nm as an example)+ FC/APC

SP=HI1060+ FC/PC

PA=PM980 Fiber+ FC/APC

PP=PM980 Fiber+ FC/APC