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Optical Spectrum Analyzer

IQ-5240







- Modular integration (IQ-200 Optical Test System)
- High-performance technical specifications
- Telecom range: 1250 to 1650 nm
- GPIB interface



Fiber-optic test, measurement and monitoring instruments

EXFO

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Measurement Solutions with Optimized Dynamic Range

Designed to improve your productivity, EXFO's new modular IQ-5240 Optical Spectrum Analyzer delivers high-quality signal-to-noise ratio (SNR) measurements for WDM test applications. In narrowly spaced systems, high-power peaks can plague secondary wavelengths generated by non-linear effects such as four-wave mixing and self-phase modulation. If your analyzer lacks dynamic range, it can misread new generated wavelengths or amplified spontaneous emission (ASE) between peaks. The IQ-5240 OSA design meets most requirements for systems with 50 GHz spacing since it delivers an optical rejection ratio of 40 dBc at 25 GHz (0.2 nm) from a high-power, spectrally narrow peak.



Top-of-the-Line Wavelength Resolution and Accuracy

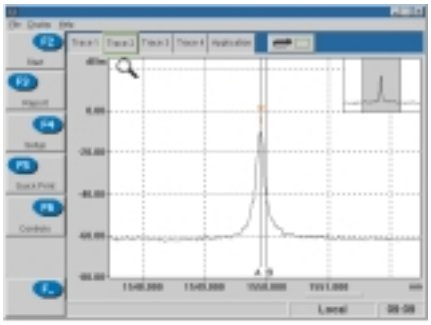
The IQ-5240 is a double-pass Littman-Metcalf monochromator that provides premium filter resolution bandwidth (65 pm in C-band) with a steep, high-rejection shape. The OSA grating rotates on a gearless DC motor. A high-resolution encoder locates and controls the filter position at all times. Linearity and stability are guaranteed due to an innovative optical design limiting misalignment and inaccuracies.

Fast Scans at High Resolution

Many production managers and test engineers believe that wide-range, high-resolution power distribution measurements require a long scanning period. But with the IQ-5240 OSA, you can bypass that wait. For example, the new OSA can sample and analyze 5000 data points over a 50 nm span with 10 pm resolution, in less than a second. It can also collect up to 10001 data points with a maximum resolution of 5 pm.

Excellent Power Measurement Specifications

You benefit from the innovative optical design (patent pending) of the IQ-5240 OSA in more ways than one. We've combined small size with high resolution to deliver well-packaged functionality in the lab and on the production floor—all without compromising on polarization-dependent sensitivity. High-performance PDL reduction offers a low 0.07 dB change in loss over all possible states of polarization, resulting in repeatable and reliable polarized signal spectrum measurement. The rugged, single-grating (double-pass) approach provides stable alignment between the monochromator's input fiber and output slit.



IQ-200 Platform: Expanding Test Options

The IQ-5240 OSA is part of EXFO's flexible IQ-200 Optical Test System, an integrated work and test station. Combine the IQ-5240 OSA with LEDs, ASE sources, power meters, or wavelength meters to streamline your lab and production testing. Even better, you aren't limited to one or two instruments—they can all be integrated into the IQ-200 Optical Test System.

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Key Features

Automated Analysis



WDM signals: central wavelength, power and SNR for each peak



EDFA gain and parameters



Drift analysis: measures, displays, and reports time-varying peak signal power and wavelength

Easy Trace Management

The application window is a visual menu where operations can be applied to two or more traces.

Total Power Measurement

Choose between peak or integrated (between user-defined limits) definitions. Four traces can be acquired and accessed for processing and analysis. A new incoming trace can be identified as a drift curve (power and central wavelength variation over time) or a spectral distribution curve (wavelength spectrum at a particular time).

Set your own parameters for drift trace acquisitions. Parameters include acquisition time period and sampling rate. Performing drift analysis on more than 100 channels is no longer an arduous task.

Specifications[1]

Wavelength		
Range (nm)		1250 to 1650
Adjustable span (nm)		Full to 1
Maximum data points resolution (pm)		5
Resolution BW[2] (pm)		65
Uncertainty[3] (pm)		±50
Linearity[4] (pm)		±10
Repeatability (pm) 1 min		<5
Power level		
Range[5] (dBm)		-75 to +15
Uncertainty[6] (dB)		±0.4
Linearity (dB)	Over 20 dB range	±0.1
	Over 40 dB range	±0.2
Uniformity in C-band (dB)	Typical	±0.1
Repeatability (dB) 1 min		±0.05
Polarization sensitivity[4] (dB)	Typical	±0.1
	Maximum	±0.15
Dynamic range (C-band)		
@ 1 nm from peak (dBc)		>50
@ 0.4 nm from peak (dBc)		>45
@ 0.2 nm from peak (dBc)		>35
Sweep		
Sweep time (s)[7]		<1
Maximum number of data points[8]		10001
Data storage format		ASCII, .OSW[9]
ORL		
Return loss (dB)		>35
	Typical	>45

NOTES

1. Specifications valid at 23 ±2°C and with FC/UPC connector after warmup.
2. Characteristic value for C-band. Factory-calibrated within C-and L-bands. Signal-to-noise ratio can be either directly measured with actual RBW or calculated with a 0.1 nm RBW.
3. Within C-and L-bands after external calibration.
4. Within C-and L-bands.
5. Low level specification requires averaging. High level valid for single peak.
6. At –10 dBm at calibration wavelengths (1310 and 1550 nm).
7. Real-time, 35 nm span, 5000 data points of raw data within IQ-200 OTS.
8. Range-dependent.
9. This is an EXFO file format allowing for data analysis and reporting using the same application software than for data acquisition.

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General Specifications

Dimensions (with IQ-200 OTS)(H x W x D)	14.5 x 36 x 30.5 cm/5 $^{3}/_{4}$ x 14$^{1}/_{4}$ x 12 in.
Weight (kg/lb) (with IQ-203 OTS)	8/17.5
Operating temperature (°C)	10 to 40
Storage temperature (°C)	-20 to +50
Humidity (%) (non-condensing)	<95

Remote Control

SCPI commands

Instruments Drivers

GPIB, RS-232

Ordering Information

Optical Spectrum Analyzer

IQ-5240-XX-XX

Connector code
EI = EXFO UPC Universal Interface
EA = EXFO APC Universal Interface

Connector adapter
The fixed base-plate (EI or EA) must be ordered with a removable universal connector adapter (EUI-XX). Please specify one EUI from the following list:
EUI-89 = FC
EUI-91 = SC
EUI-95 = E-2000

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EXFO is certified ISO 9001 and attests to the quality of its products. These products are accompanied by a 24-month warranty and an excellent after-sales support service.
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
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Contact EXFO for prices and availability or to obtain the phone number of your local EXFO distributor.

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