5320

MULTI-WAVELENGTH METER

IQS-5320

R&D AND MANUFACTURING

- Wavelength and power measurements for multiplexed signals (WDM)
- Monitor up to 200 channels simultaneously
- One-measurement-per-second capability
- Resolution and uncertainty down to the picometer level
- State-of-the-art drift analysis

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Telecommunications Test and Measurement

EXFO

EXPERTISE REACHING OUT

Spectrum Analyzer or Wavelength Meter?

Precisely measure the central wavelength and power of single or multiplexed laser signals with the IQS-5320 Multi-Wavelength Meter. This accurate instrument is, in fact, a spectrum analyzer, but it is more commonly recognized in the industry as a wavelength meter. Its wavelength measurement precision is at least ten times better than what is available with traditional dispersion-based optical spectrum analyzers (OSAs).

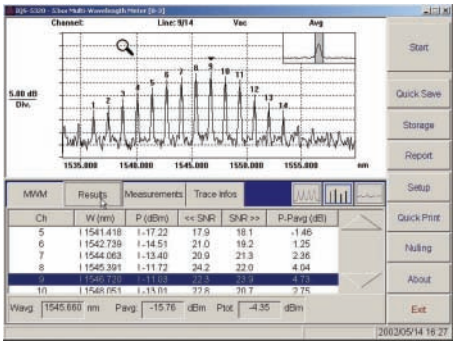
The measuring mechanism is based on a scanning Michelson interferometer. Specialized algorithms convert information from an interferogram (power as a function of path difference between two Michelson arms) into a spectral format (power as a function of wavelength), leading to highly accurate wavelengths.

KEY FEATURES

- High wavelength accuracy
- Power and wavelength measurements
- Small footprint
- Complete drift curve and spectrum data storage and reporting

Accuracy and Reliability

Calculate the central wavelength of up to 200 multiplexed signal channels simultaneously, while achieving 3 pm absolute accuracy with the information extracted from the raw data provided by the interferogram. A reference source–a continuous wave (CW) HeNe laser–is integrated into the Michelson interferometer to ensure that every scan counts and that the unit will have excellent long-term precision. Annual verification against a more accurate instrument or reference source provides the requisite traceability for using the IQS-5320 as a calibration unit for Fabry-Perot (FP) lasers, distributed-feedback (DFB) lasers and tunable distributed-Bragg-reflector (DBR) lasers, as well as more general transmitter or transceiver units.



Spectrum view window displaying a Fabry-Perot laser diode modal distribution

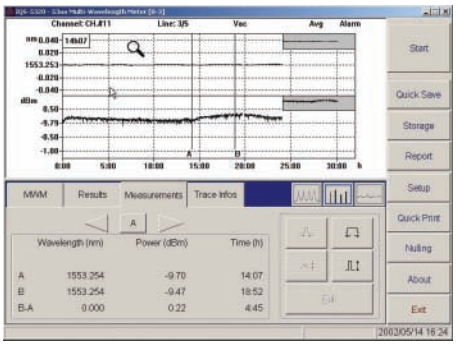
APPLICATIONS

- Wavelength shift measurements due to environmental stresses on transmitter and transceiver cards, operating in their final system or as subsystems
- Spectral long-term drift (reliability) evaluation of active components including DFB, DBR and FP lasers, as well as wavelength-locking, wavelength-conversion and SOA devices
- Characterization and qualification of WDM DFB laser chips and modules
- General calibration of OSAs and lower-accuracy, wavelength-measuring instruments

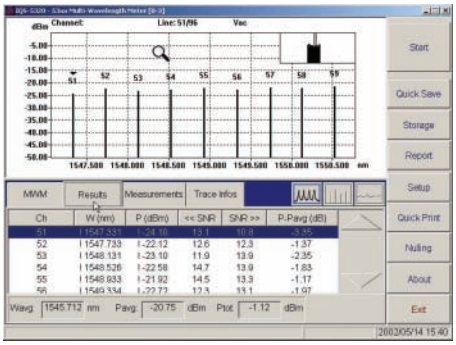
Versatility

The IQS-5320 is a PC-based modular instrument that is part of EXFO's innovative IQS-500 Intelligent Test System, an integrated work and test station. Execute the following functions with the open, standardized software architecture:

- Integrate the IQS-5320 into your new production test bed or pre-installed hardware. Use the GPIB standard communication for acquiring signal wavelength and power data or a complete set of raw spectrum data to which you can apply your own algorithms.
- Build your proprietary integrated application software using LabVIEW™ drivers or ActiveX libraries provided by EXFO to communicate with the module in a PC environment or through your network.
- Instantly analyze power and wavelength data for multiple line signals with the bar graph display found in Monitoring mode.
- Analyze spectrum data with the zoom and marker functions (in Trace Visualization mode) for the presence of excessive optical noise. Perform average acquisition figures to improve signal-to-noise ratio measurements and store a reference trace in a .TXT file.
- Analyze long-term wavelength and power variations in multiplexed signals while in Drift mode. Save your time variation studies on your PC or network, or use the report functions to produce customized, professional reports.



Perform complete signal drift analysis

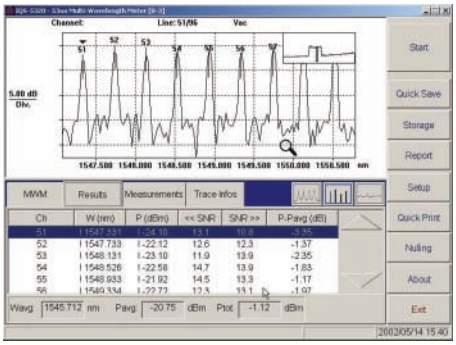


Bar graph display of a multiple line signal

The IQS-500 Intelligent Test System

The new IQS-500 Intelligent Test System provides a flexible approach to optical test and measurement for manufacturing, automation, optical qualification and R&D. It combines powerful features and control capabilities for up to 100 modules.

Based on standard industrial PC architecture, the IQS-500 Intelligent Test System is a scalable modular platform that includes controllers, expansion units and a comprehensive range of plug-in test modules. The IQS-500 is also backward-compatible with most of EXFO's IQ-generation modules, allowing you to maximize the return on previous investments. The IQS-500 Intelligent Test System offers a powerful, easy-to-use environment to match your most demanding needs.



View your test results in trace or bar graph displays

SPECIFICATIONS[1]

Wavelength Measurement		
Wavelength range (nm)		1450 to 1650
Wavelength uncertainty[2] (nm)		± 0.003
Wavelength display resolution (nm)		0.001
Wavelength repeatability[3] (nm)		± 0.001
Minimum channel spacing (GHz)	similar power level signals	≥ 12.5
	13 dB difference between signals	≥ 25
Power Measurement		
Power range (dBm)		+10 to –45
Power display resolution (dB)		0.01
Power uncertainty[4] (dB)		± 0.35
Power repeatability[3] (dB)		± 0.1
Power linearity[5] (dB)	+10 dBm to –20 dBm	± 0.1
	–20 dBm to –30 dBm	± 0.25
Polarization dependence (dB)	typical	± 0.2
	maximum	± 0.25
Maximum input power (dBm)		+15
OSNR[6] (dB)	typical	29
	minimum	> 25

GENERAL SPECIFICATIONS

Size (H x W x D)		12.5 cm x 7.4 cm x 28.2 cm	(4 $^{15}/_{16}$ in x 2 $^{15}/_{16}$ in x 11 $^{1}/_{8}$ in)
Weight		1.4 kg	(3 lb)
Temperature	operating	5 °C to 40 °C	(41 °F to 104 °F)
	storage	–40 °C to 70 °C	(–40 °F to 158 °F)
Relative humidity		0 % to 95 % non-condensing	
Number of IQS slots		2	
Maximum number of signals		200	
Maximum measuring/acquisition rate		1 Hz	

STANDARD ACCESSORIES

User guide, connector cleaners and Certificate of Compliance

LASER SAFETY

21 CFR 1040.10	CLASS 1 LASER PRODUCT
	IEC 60825-1:1993+A1:1997

Notes

1. All specifications are guaranteed above –30 dBm unless specified otherwise, for FC connectors and at room temperature.
2. For averaging of 10. May degrade by ± 0.001 nm over operating temperature range.
3. For a five-minute measurement period, given at 2 σ.
4. At 1550 nm, –10 dBm, for single peak and excluding connector repeatability.
5. At 1550 nm.
6. For single peak signal, at 50 GHz (0.4 nm) from peak.

ORDERING INFORMATION

IQS-5320-XX

Connector code

EA-EUI-89 = APC/FC narrow key
EA-EUI-91 = APC/SC
EI-EUI-89 = UPC/FC narrow key
EI-EUI-90 = UPC/ST
EI-EUI-91 = UPC/SC

Example: IQS-5320-EI-EUI-89

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EXFO is certified ISO 9001 and attests to the quality of these products. 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. EXFO has made every effort to ensure that the information contained in this specification sheet is accurate. However, we accept no responsibility for any errors or omissions, and we reserve the right to modify design, characteristics and products at any time without obligation. Units of measurement in this document conform to SI standards and practices.
Contact EXFO for prices and availability or to obtain the phone number of your local EXFO distributor.
For the most recent version of this spec sheet, please go to the EXFO website at **http://www.exfo.com/specs**
In case of discrepancy, the Web version takes precedence over any printed literature.

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Printed in Canada 05/01

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