High-Speed Power Meter

IQS-1600

- Fast stabilization time over a wide dynamic range
- Wide area detector
- Detector with low polarization-dependent response
- Convenient user interface
- Graphical display mode
- Ideal for component characterization and environmental and dynamic testing

Fiber-optic test, measurement, monitoring and automation solutions

EXFO

The Fastest Power Meter on the Market

The IQS-1600 High-Speed Power Meter is designed for high-performance fiber-optic testing. The high sampling rate and fast stabilization time are ideal for system monitoring as well as high-density WDM component characterization and assembly. With a choice of 1-, 2- or 4-channel InGaAs photodetectors, this high-speed power meter meets wide-ranging requirements for power level and wavelength.

High-Performance Features

With the automatic gain range feature, power fluctuations of up to 95 dB stabilize within 15 ms, and a continuous sampling rate of up to 256 samples per second can be achieved. You can also manually select the gain range for individual channels. In this case, dynamic range is limited to selection; but in return, stabilization times are shorter (as little as 1 ms), with sampling rates as high as 4096 samples per second. The synchronization capability of the IQS-1600 High-Speed Power Meter complements the high sampling rates. The high-speed power meter provides two types of synchronization triggers, a power level trigger and a TTL voltage (electrical) trigger. For both, synchronization of all optical channels (2- and 4-channel models) is simultaneous.

The IQS Solution

For integrated test solutions, you can combine the IQS-1600 High-Speed Power Meter with other IQS instruments that cover testing requirements for DWDM components, whether passive or active, as well as cable and fiber subassemblies. All IQ instruments are built for fast data transfer and comprehensive test result analysis, as well as true multitasking.

Advanced Detector Options

Wide Area Detector

Select EXFO's new Wide Area Detector for excellent repeatability of in-process testing of passive components long before they are connectorized. Combined with our family of bare fiber adapters, the IQS-1600W Power Meter will allow you to take precise and efficient measurements over the S-, C- and L-bands.

Low-PDR Detector

A new detector option, specified for very low polarization-dependent response (IQS-1600-PL, with a PDR of ± 0.005 dB), provides improved relative uncertainty. Even with highly polarized sources such as DFB or tunable lasers, minor variations in the test setup (patchcord movement or pinching) don't affect readings beyond specified values. For IL or very low PDL component measurements, this detector provides optimal accuracy.

Use the BFA 3000 Universal Bare Fiber Adapter to perform measurement of unconnectorized components on the 3 mm detector of the IQS-1600W High-Speed Power meter. Select the FOA-3000 Adapter for the BFA-3000.

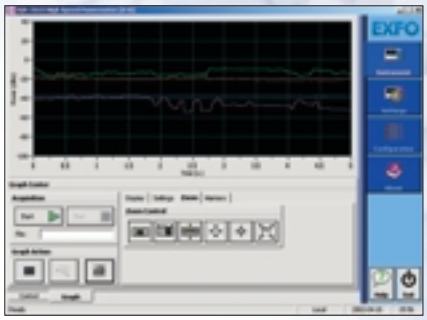
Easy-to-Use Interface

The flexible graphical user interface (GUI) developed by EXFO allows easy control of the power meter settings. Get instant access to software buttons, such as those used to launch an acquisition, perform a min/max signal tracking or to activate the Graph mode.

Graph Mode

The Graph mode displays measurements. Up to four curves can be displayed at once. When operating in Continuous mode (up to 256 samples per second), the graph displays the measurements in real time.

High-speed acquisitions (from 512 to 4096 samples per second) can be triggered by very fast power fluctuations, or by an electrical signal, and are displayed right after data processing.



The Graph mode display: an unique way of displaying multi channel high-speed power measurement results.

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 modules from EXFO's IQ generation, 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.

Specifications[1]

Model		IQS-1613/1623/1643	IQS-1613-PL/1623-PL/1643-PL	IQS-1613W/1623W/1643W
Number of detectors		1/2/4	1/2/4	1/2/4
Detector type		InGaAs	InGaAs	InGaAs
Detector size (mm)		1	1	3
Wavelength range (nm)		800 to 1700	800 to 1700	800 to 1700
Power range[2] (dBm)		9 to -85	9 to -85	8 to -75
Uncertainty[3] (%)		± 5 (0 to -55 dBm)	± 5 (0 to -55 dBm)	± 5 (0 to -50 dBm)
Polarization dependent responsivity[4] (dB)		n/a	± 0.005 dB	n/a
Linearity[5] (dB)		± 0.015 (0 to -55 dBm)	± 0.015 (0 to -55 dBm)	± 0.015 (0 to -50 dBm)
Noise (peak to peak)[6] (pW)		1	1	7
Power resolution (dB)		0.001 (9 to -40 dBm)	0.001 (9 to -40 dBm)	0.001 (8 to -40 dBm)
Wavelength resolution (nm)		0.01	0.01	0.01
Stabilization time (ms)				
automatic range		< 12 (9 to -85 dBm)	< 12 (9 to -85 dBm)	< 6 (8 to -75 dBm)
automatic range		< 3 (9 to -49 dBm)	< 3 (9 to -49 dBm)	< 3 (8 to -49 dBm)
fixed range (ranges 1 to 4)		< 1	< 1	< 1
Sampling rate (sample/s/channel)				
fast acquisition mode		up to 4096	up to 4096	up to 4096
continuous measurement mode		up to 256	up to 256	up to 256
Fiber type (µm)		5/125 to 62.5/125	5/125 to 62.5/125	5/125 to 62.5/125
Analog output	bandwidth[7] (Hz)(ranges 1 to 6)	700 k; 700 k; 30 k; 30 k; 150; 150; typical	700 k; 700 k; 30 k; 30 k; 150; 150; typical	50 k; 7.5 k; 5 k; 7 k; 1 k; 1 k; typical
	output voltage (V)	between 0 and 4, typical	between 0 and 4, typical	between 0 and 4, typical
	output impedance (Ω)	640	640	640

Notes

1. At 1310 nm (unless otherwise specified) with an FC/non-angled connector and a warmup time of 20 minutes, followed by an offset nulling.
2. From 18 °C to 32 °C
3. At 23 °C ± 1 °C with FOA-322 between 1000 nm and 1640 nm. For IQS-16X3 and IQS-16X3W add 1 % to uncertainty below 1000 nm and 6 % over 1640 nm. For IQS-16X3-PL, add 2 % to uncertainty below 1000 nm and 6 % over 1640 nm. All uncertainties are valid on the day of calibration.
4. At 23 °C ± 5 °C, constant wavelength (1550 nm) and constant power.
5. Averaged measurement at constant temperature in 0 °C to 40 °C range.
6. Averaging time 0.25 s, observation time 50 s, at 23 °C ± 1 °C and from 1200 nm to 1640 nm.
7. Bandwidth corresponds to each electrical scale from the lowest to the highest gain.
8. Measured in 0 °C to 40 °C range.

n/a:not available

General Specifications

External trigger	input voltage (V)	0 to 5 (TTL)	
Size (H x W x D)		12.5 cm x 3.6 cm x 28.2 cm	($4^{15}/_{16}$ in x $1^{7}/_{16}$ in x $11^{1}/_{8}$ in)
Weight		0.7 kg	(1.5 lb)
Temperature	operating	0 °C to 40 °C	(32 °F to 104 °F)
	storage	–35 °C to 70 °C	(–31 °F to 158 °F)
Relative humidity[a]		0 % to 80 % non-condensing	

Remote Control

With IQS-500: GPIB (IEEE-488.1, IEEE-488.2) Ethernet and RS-232.

Instrument Drivers

LabVIEW™, SCPI commands and COM/DCOM librairies drivers

Standard Accessories

Instruction manual; one fiber-optic adapter per channel; Certificate of Compliance; Certificate of Calibration

Ordering Information

IQS-16XX-XX-FOA-3XX

Number of channels
1 = One channel
2 = Two channels
4 = Four channels

Detector code
3 = InGaAs
3W = InGaAs wide area (3 mm)

Connector adapter code
FOA-316 = SMA 906 ultra-low-reflection
FOA-322 = FC ultra-low-reflection: FC, FC (/PC/SPC/UPC/APC, NEC-D3)
FOA-328 = DIN 47256 (LSA) ultra-low-reflection: DIN 47256 (/PC/APC)
FOA-332 = ST ultra-low-reflection: ST, ST (/PC/SPC/UPC)
FOA-340 = Diamond HMS-0, HFS-3 (3.5 mm) ultra-low-reflection
FOA-354 = SC ultra-low-reflection: SC, SC (/PC/SPC/UPC/APC)
FOA-376 = FSMA HMS-10/AG, HFS-10/AG ultra-low-reflection
FOA-384 = Diamond HMS-10, HFS-13 ultra-low-reflection
FOA-393 = MT-RJ ultra-low-reflection (singlemode and 3 mm detector only)
FOA-396 = E-2000 ultra-low-reflection: E-2000 (PC/APC)
FOA-398 = LC ultra-low-reflection
FOA-399 = MU ultra-low-reflection
FOA-8100 = Utility adapter
FOA-3000 = Adapter for BFA-3000

Polarization code
00 = Standard detector
Standard InGaAs only — PL = Low polarization-dependent response

Accessories

BFA-3000 Universal Bare Fiber Adapter

Also available for the IQ-200 Optical Test System

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