

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.

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.

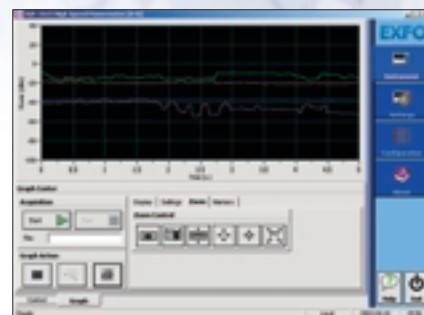


Use the BFA 3000 Universal Bare Fiber Adapter to perform measurement of unconnectorized components on the 3 mm detector of the IQS-1600W High-Speed Power meter. Select the FOA-3000 Adapter for the BFA-3000.

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.

Specifications¹

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)	bandwidth ⁷ (Hz)(ranges 1 to 6)	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)	output voltage (V)	output voltage (V)
	between 0 and 4, typical	between 0 and 4, typical	between 0 and 4, typical
	output impedance (Ω)	output impedance (Ω)	output impedance (Ω)
	640	640	640

Notes

- At 1310 nm (unless otherwise specified) with an FC/non-angled connector and a warmup time of 20 minutes, followed by an offset nulling.
- From 18 °C to 32 °C
- 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.
- At 23 °C ± 5 °C, constant wavelength (1550 nm) and constant power.
- Averaged measurement at constant temperature in 0 °C to 40 °C range.
- Averaging time 0.25 s, observation time 50 s, at 23 °C ± 1 °C and from 1200 nm to 1640 nm.
- Bandwidth corresponds to each electrical scale from the lowest to the highest gain.
- 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 libraries 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)

Accessories

BFA-3000 Universal Bare Fiber Adapter

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
- PL = Low polarization-dependent response

Standard
InGaAs only

Also available for the IQ-200 Optical Test System

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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 Web site at <http://www.exfo.com/support/techdocs.asp>
In case of discrepancy, the Web version takes precedence over any printed literature.

