

# Test Equipment Solutions Datasheet

Test Equipment Solutions Ltd specialise in the second user sale, rental and distribution of quality test & measurement (T&M) equipment. We stock all major equipment types such as spectrum analyzers, signal generators, oscilloscopes, power meters, logic analysers etc from all the major suppliers such as Agilent, Tektronix, Anritsu and Rohde & Schwarz.

We are focused at the professional end of the marketplace, primarily working with customers for whom high performance, quality and service are key, whilst realising the cost savings that second user equipment offers. As such, we fully test & refurbish equipment in our in-house, traceable Lab. Items are supplied with manuals, accessories and typically a full no-quibble 2 year warranty. Our staff have extensive backgrounds in T&M, totalling over 150 years of combined experience, which enables us to deliver industry-leading service and support. We endeavour to be customer focused in every way right down to the detail, such as offering free delivery on sales, covering the cost of warranty returns BOTH ways (plus supplying a loan unit, if available) and supplying a free business tool with every order.

As well as the headline benefit of cost saving, second user offers shorter lead times, higher reliability and multivendor solutions. Rental, of course, is ideal for shorter term needs and offers fast delivery, flexibility, try-before-you-buy, zero capital expenditure, lower risk and off balance sheet accounting. Both second user and rental improve the key business measure of Return On Capital Employed.

We are based near Heathrow Airport in the UK from where we supply test equipment worldwide. Our facility incorporates Sales, Support, Admin, Logistics and our own in-house Lab.

All products supplied by Test Equipment Solutions include:

- No-quibble parts & labour warranty (we provide transport for UK mainland addresses).
- Free loan equipment during warranty repair, if available.
- Full electrical, mechanical and safety refurbishment in our in-house Lab.
- Certificate of Conformance (calibration available on request).
- Manuals and accessories required for normal operation.
- Free insured delivery to your UK mainland address (sales).
- Support from our team of seasoned Test & Measurement engineers.
- ISO9001 quality assurance.

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# Optical Measuring Instruments and Optical Device Test Systems

## Optical Spectrum Analyzer Capable of Coherence Measurement

### Q8344A

- Coherence Measurement
- High-Speed Measurement with 1.5 Seconds/Sweep
- Wide Wavelength Range from 0.35 to 1.75  $\mu\text{m}$
- Wavelength Measurement Accuracy of 0.1 nm



### Q8344A

#### Optical Spectrum Analyzer

Q8344A is an optical spectrum analyzer with a wide wavelength range from 0.35 to 1.75  $\mu\text{m}$ .

The usage of a Fourier spectrum system using a Michelson interferometer makes it possible to analyze coherence that cannot be obtained by the dispersing spectrum systems using monochromators. It exhibits its capabilities for evaluation of laser diodes for CDs and video disks.

The built-in He-Ne laser used as the reference wavelength realizes a wavelength accuracy of  $\pm 0.1$  nm (1.3  $\mu\text{m}$ ), ensuring a long-term measurement stability even without wavelength calibration.

The Q8344A provides a maximum wavelength resolution of 0.05 nm (at 0.85  $\mu\text{m}$ ), accommodating measurements of laser diodes with narrow mode intervals. The measurement speed is approx. 1.5 seconds (at 0.4 to 1.05  $\mu\text{m}$  and 0.8 to 1.75  $\mu\text{m}$ ) regardless of the analysis span, allowing it to be used as a system component.

With the versatile display, analysis and processing functions, the Q8344A can be used for characteristic measurement applications for diverse components ranging from photoemitting elements such as laser diodes and LEDs to optical components such as optical fibers and filters.

#### ■ Coherence Measurement

Since the Q8344A uses a Michelson interferometer, it can be used for coherence measurement. This ability allows easy evaluation of performance of the noise suppression caused by the returned light of laser diodes for video disks.

The analysis range is approximately  $\pm 10$  nm, allowing measurement of coherence length of SLDs (super luminescence diodes) used for optical fiber gyros.

#### ■ High-Speed Measurement with 1.5 Seconds/Sweep Well-Suited for Production Use

The Q8344A employs a Fourier spectrum system and therefore can make measurement in 1.5 seconds regardless of the measurement span and sensitivity (provided that the starting wavelength is 0.4  $\mu\text{m}$  or longer and the measurement does not cover both the short and long wavelengths). Therefore, the analyzer is useful for measurements on laser diodes and LEDs at the production lines. Also for evaluation of the transmission and loss characteristics of optical fibers and filters.

When used as a system component, the analyzer requires only 1.5 seconds to perform triggering, measurement and data output; dramatically improving the system throughput.

#### ■ Wavelength Measurement Accuracy of $\pm 0.1$ nm

With the built-in He-Ne laser as the reference light source, measurements can be made with a high wavelength accuracy of  $\pm 0.1$  nm (at 1.3  $\mu\text{m}$  wavelength). This makes it possible for accurate wavelength measurement without wavelength calibration.

#### ■ Maximum Wavelength Range of 0.05 nm

The Q8344A provides a maximum resolution of 0.05 nm at short wavelength (0.85  $\mu\text{m}$ ), making it possible to measure CD and visible light laser diodes by fully resolving the oscillation mode one by one.

#### ■ Large-Caliber Fiber Input (Option)

A 200  $\mu\text{m}$  large-caliber input can be used as an option. When analyzing a device whose wavelength is larger than the standard fiber caliber (GI 50  $\mu\text{m}$ ), this option is needed. For laser diode analysis, the standard 50  $\mu\text{m}$  specifications are recommended and for LED analysis, this optional specification is recommended.

# Optical Measuring Instruments and Optical Device Test Systems

## Optical Spectrum Analyzer Capable of Coherence Measurement

Q8344A

### Specifications

Wavelength	Measurement range	0.35 to 1.75 $\mu\text{m}$		
	Max. resolution *1	Approx. 0.05 nm (at 0.85 $\mu\text{m}$ ) Approx. 0.1 nm (at 1.31 $\mu\text{m}$ )		
	Accuracy	$\pm 0.1$ nm (The wavelength indicated is the value in vacuum.)		
	Span	0.1 to 140 nm/DIV		
Level	Measurement range (input sensitivity)	-70 to +10 dBm (0.7 to 1.6 $\mu\text{m}$ )		
		-60 to +10 dBm (0.45 to 1.7 $\mu\text{m}$ )		
		-45 to +10 dBm (0.35 to 1.75 $\mu\text{m}$ ) (Min. level at a span of 50 nm with 16 averages.)		
Accuracy	$\pm 2.0$ dB or less (at a wavelength of 0.85 $\mu\text{m}$ or 1.31 $\mu\text{m}$ )			
Linearity *2	$\pm 1.0$ dB/25 dB or less			
	$\pm 0.5$ dB/10 dB or less			
Scale	0.2, 0.5, 1.0, 2.0, 5.0, 10.0 dB/DIV and LINEAR			
Processing Functions	Measurement time *3	1.5 seconds or less (SINGLE mode, AVG: 1, Trigger to data output)		
	Memory function	32 pages (measured data)	} With battery backup	
		10 pages (measurement conditions)		
	Display	Overlay display, split screen (top and bottom), 3-dimensional display, and cursor function		
Calculation/analysis	Coherence analysis ( $\pm 10.4$ nm) Automatic peak search	Normalization (LOSS/TRANS) Half-value width measurement	Averaging Automatic setting of the optimum measurement conditions	
I/O	Input connector	FC type *4 Internal fiber. Standard: GI 50 $\mu\text{m}$ Option 10: SI 200 $\mu\text{m}$		
	Data output	GPIB equipped as standard Direct plotter output *5 Built-in printer (Option 01)		

- \*1 Resolution is the wavelength difference between the Nth data and the (N+1) th data point  
 \*2 With input at 0 dBm or less  
 \*3 The start wavelength is 0.4  $\mu\text{m}$  or less and measurement does not cover the short and long wavelengths.  
 \*4 For the other connectors (SMA (2.5), ST, and DIN), contact ADVANTEST.  
 \*5 Compatible plotters connectable: R9833 and TR9832 (ADVANTEST) 7475A, 7440A and 7470A (Hewlett Packard)

### Standard Accessories

Product name	Model	Remarks
Power cable	A01402	1
Printer paper	A09075	5 rolls (included in option 01)

### Options

- Option 01** Built-in printer (Option 01)  
 Prints a hard copy of all the data displayed on the CRT  
 Printing system: Thermal printing line dot system  
 Printing speed: 8 seconds or less  
 Specified recording paper: A09075 (5 rolls)  
 Paper width: 114 mm
- Option 10** 200  $\mu\text{m}$  fiber input (Specified at the time of ordering.)  
 Used for fiber with a core diameters of up to 200  $\mu\text{m}$ , NA 0.4,  
 e.g., for LED measurements.

### Accessories (Optional)

- OPCL-5G-100/FC** Fiber collimator (GI 50/125 $\mu\text{m}$ , 1m FC connector)  
**OPCL-20H-100/FC** Fiber collimator (SI 200/125 $\mu\text{m}$ , 1m FC connector)  
**OCS-F2SFW-2** Optical fiber cable (GI 50/125 $\mu\text{m}$ , 2m FC connector)  
**OCS-F2SPS-2** Optical fiber cable (SM 10/125 $\mu\text{m}$ , 2m PC connector)  
**A02712** Rack mount set (EIA, with handles)  
**A02713** Rack mount set (JIS, with handles)  
**A02722** Rack mount set (EIA, without handles)  
**A02723** Rack mount set (JIS, without handles)

### General Specifications

#### Operating environment

**Temperature:** +10 to +40°C, Humidity: 85%RH or less (without condensation)

#### Storage environment

**Temperature:** -10 to +50°C, Humidity: 90%RH or less (without condensation)

**Power requirements:** 90 to 132 (standard)/198 to 250 VAC (option 40)  
 48 to 66 Hz, 180 VA or less (Power requirements modifications are specified at time of ordering.)

**Dimensions:** Approx. 424 (W)  $\times$  221 (H)  $\times$  500 (D) mm

**Mass:** 27 kg maximum (including the printer option)