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Find the *Advantest Q8381A* at our website: ***Click HERE***

Optical Spectrum Analysis of Wide Dynamic Range

Q8381/8382

Specifications

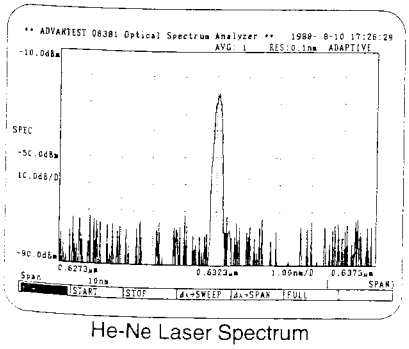
Model No.		Q8381	Q8382 (Q8381+Q83811)
Wavelength	Measuring range	0.6 µm to 1.75 µm	
	Resolution	0.1, 0.2, 0.5, 1.0, 2.0, 5.0 nm	
	Measurement accuracy	±0.5 nm (23°C), ±1.0 nm (10°C to 40°C)	
Level	Measuring range	–80 dBm to +10 dBm (1.1µm to 1.6 µm), –70 dBm to +10 dBm (0.7 µm to 1.6 µm), –60 dBm to +10 dBm (0.6 µm to 1.75 µm)	
	Linearity	±0.5 dB/10 dB, ±1.0 dB/40 dB	
	Scale	0.2, 0.5, 1.0, 2.0, 5.0, 10.0 dB/div and linear	
	Dynamic range	50 dB as measured 5 nm from peak wavelength 40 dB as measured 1 nm from peak wavelength with 1152 nm, 1523 nm (0.1 nm resolution) using SM fiber	60 dB as measured 1.0 nm from peak wavelength 50 dB as measured 0.5 nm from peak wavelength Wavelength 1152 nm, 1523 nm (0.1 nm resolution)
	Insertion loss	–	When preseiect is used: 15 dB or less (0.9 µm to 1.6 µm) 20 dB or less (0.8 µm to 1.65 µm) Through mode: 8 dB or less (1.1 µm to 1.6 µm) 12 dB or less (0.8 µm to 1.65 µm) using G1-50/125 nm fiber for input/output
Sweep	Span	0.1 nm/div to 115 nm/div and zero	Up to 50 nm (range synchronized once)
	Sweep time	One second or less (with span 50 nm or less, RAPID mode, LOG display) Four seconds or less (with span 500 nm or less, RAPID mode,LOG display) Eight seconds or less (with span 1.5 nm or less, RAPID mode,LOG display) with measurement range of –30 dBm or more, one time averaging	2.5 seconds or less (with span 50 nm or less, RAPID mode,LOG display) with measurement range of –30 dBm or more, one time average
Processing and display functions		**Memory function** The equivalent of up to three screens of measurement data and up to nine measurement conditions can be stored (protected by backup battery). **Display function** Two-split display (overlap display, upper/lower display), cursor display. **Calculation** • Automatic optimum measurement conditions set (aauto function) • Peak search • Averaging • Half-bandwidth measurement • Peak center • Normalizing	
Input/output functions	Input connector	FC type	
	Data output	GPIB and thermal printer included as standard (printing speed: 8 seconds or less)	
	Direct plot	Data displayed on the picture tube can be plotted on paper by directly connecting the Advantest plotter (R9833) or HPGL built-in plotter by using the GPIB interface.	
General specifications	Ambient conditions	Temperature –10°C to 40°C; relative humidity 80% or less (Q8382's dynamic range, insertion loss, and span are guaranteed for measurements under 15°C to 30°C).	
	Storage conditions	Temperature –20°C to +60°C; relative humidity 90% or less	
	Power requirements	90 VAC to 250 VAC, 48 Hz to 66 Hz, 180 VA	
	Dimensions	Approx. 424(W) × 221(H) × 450(D) for Q8381; approx. 424(W) × 132(H) × 450(D) for Q83811	
	Weight	29 kg or less for Q8381; 19 kg or less for Q83811	

Accessories

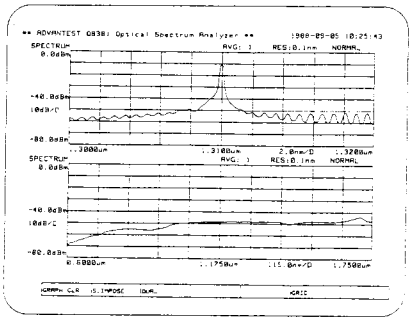
Product name	Type	Remarks
Power cable	A01402	
Printer paper	A09075	114 mm wide × 30 m long, one real

Accessories (Sold separately)

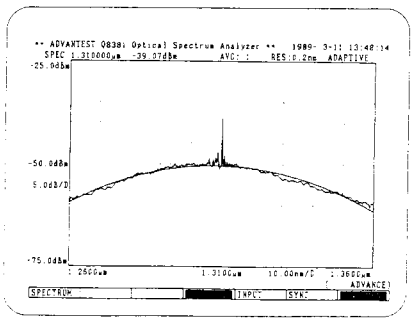
OCS-F2SFW-2	Optical fiber cord (G150/125 µm, 2 m)
OCS-F2SPS-2	Optical fiber cord (SM10 /125 µm, 2 m)
OPCL-20H-100/FC	Fiber collimator (SI200)
OPCL-5G-100/FC	Fiber collimator (GI50)



He-Ne Laser Spectrum



Modulated DFB Laser Diodes Spectrum Analysis Example



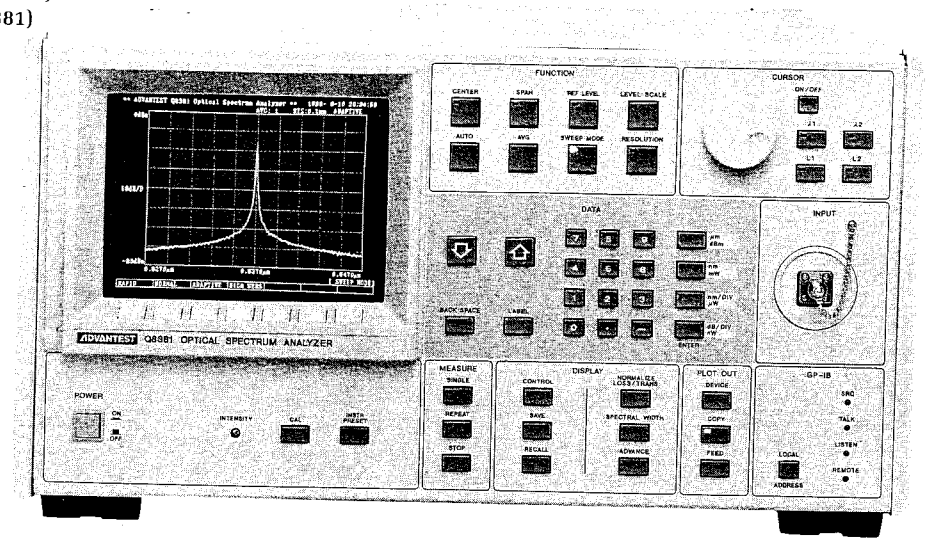
EL Mode Measurements

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Optical Spectrum Analysis of Wide Dynamic Range

Q8381/8382

- Wavelength Range: 0.6 to1.75 μm
- 0.1 nm Resolution
- Wide Dynamic Range:
  60 dB (at ±1.0 nm Away, Q8382)
  50 dB (at ±5 nm Away, Q8381)
- High-Speed Measurement



Q8381/8382
Optical Spectrum Analyzers

The Q8381/8382 is the ideal optical spectrum analyzers for use in spectrum and side mode ratio analysis of DFB laser diodes. At 5 nm and 1 nm from the peak wavelength, these analyzers provide a dynamic range of 50 dB and 40 dB, respectively. By connecting a preselector (Q83811) to the Q8382, it is possible to achieve a dynamic range of 60 dB at 1 nm away and 50 dB at 0.5 nm away from the peak wavelength.
These analyzers cover from visible light at 0.6 μm to long wavelengths of 1.75 μm with 0.1 nm resolution and a measurement accuracy of 0.5 nm, making them suitable for wide-dynamic-range measurements of not only laser diode spectra, but of optical-fiber or optical component loss, when teamed with the TQ8111 White Light Source. An auto-function feature and a diverse range of cursor functions, automatic half-value width measurement functions, and normalization are provided to further improve operational simplicity and breadth of applications.

■ Wide Dynamic Range

By minimizing the ambient light level occurring in the optics, the Q8381 achieves a dynamic range of 50 dB. Connected to an optical preselector (Q83811), the Q8382 extends this even further to 60 dB of dynamic range. This level of performance is ideal for side mode ratio measurements on DFB laser diodes.

■ High-Speed Measurement

In addition to a linear scaled level axis, these analyzers provide logarithmic scaling, thereby enabling a measurement to be completed in less than one second. In measuring the loss versus wavelength characteristics of optical fiber and components, the previously required long measurement times have been dramatically reduced, using the analyser's high-speed sweep (adaptive) mode.

■ Uncluttered, Easy-to-Use Design

The number, size, and arrangement of keys have all been considered in designing these analyzers for easy operation, making them usable by virtually anyone. In the Q8382, the center wavelength, span and other parameters of the optical preselector are linked to the mainframe, and alignment of the optical axis is performed automatically, thereby enabling wide-dynamic-range measurements without the need for complex setup procedures.

■ Easy-to-Interpret Display Screen

For automatic peak search and side mode measurements, a 2nd-peak search function and dual-frame display which enable easy discrimination of differences between waveforms are provided. Minute differences can be clearly detected by overlapping waveforms using the superimpose function.

■ Wide Wavelength Range Measured with High Sensitivity

The Q8381/8382 features –70 dBm sensitivity over the wide wavelength range of 0.7 to 1.6 μm. This is ideal for loss versus wavelength measurements of optical fibers and for natural emissions measurements of DFB laser diodes (EL mode).

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