

Shimadzu RF-5301PC Spectrofluorometer



Fluorescence spectrometry can be as much as thousands of times more sensitive than absorbance techniques. This makes it possible to analyze samples in the nanogram to picogram range.

Fluorescence is used to identify or quantify specific molecules in complex mixtures. If the compound of interest is not fluorescent by itself, it can be labeled with specific fluorescent probes. The RF-5301PC's synchronous scanning mode allows mixtures of fluorochromes to be analyzed. Biological activity of enzymes can be assayed using substrates that yield a fluorescent product after cleavage.

The RF-5301PC is computer driven for data acquisition and processing. Its high throughput optical system in the RF-5301PC employs a blazed holographic grating, photomultiplier and digital signal processing to provide an excellent signal:noise ratio.

	Hardware Specifications
Light Source	150W Xenon lamp. Ozone resolving type lamp housing.
Excitation and emission monochromators	Concave, blazed holographic grating, F/2.5, 1300 grooves/mm.
Wavelength scale	220-900 nm
Measuring wavelength range	220-750 nm and 0 order as standard. 220-900 nm with the optional R928 photomultiplier.
Spectral bandwidth	6-step selection of 1.5, 3, 5, 10, 15 and 20 nm. (6 nm bandwidth is available for half sample height on the excitation side only.)
Wavelength accuracy	±1.5 nm
Light source compensation	Dynode feedback system with monochromatic light monitoring.
Sensitivity	The S/N ratio is 150 or higher for the Raman line of distilled water (350 nm excitation wavelength, 5 nm spectral bandwidth, and 2 second response for 98% of the full scale).
Wavelength scanning	7-step selection of Survey (about 5500 nm/min), Super (about 3000 nm/min), Very Fast, Fast, Medium, Slow and Very Slow.
Wavelength slewing speed	About 20,000 nm/min.
Response	8-step selection of 0.02, 0.03, 0.1, 0.25, 0.5, 2, 4, and 8 seconds for 98% of the full scale.
Sensitivity selection	2-steps of HIGH and LOW. (The sensitivity at HIGH is about 50 times that of LOW.)
Interface	RS-232C interface, interface for autosampler, and interface for sipper unit.

	Software Specifications
Measurement	Excitation, emission and synchronous spectrum measurement, time-course measurement, quantitation, automatic search of optimal excitation and emission wavelengths, PopUp Scan.TM

	Software Specifications
Data processing	Arithmetic calculation between spectra and between a spectrum and a constant, smoothing, 1 st through 4 th derivatives, 1/Y, logarithmic conversion, data printout (with or without activity value computation), peak pick, point pick, area calculation, averaging (in quantification), generation of calibration curves of 1 st through 3 rd order.
Filing	Save, recall, and delete, of data. Conversion into ASCII and DIF formats.
Data output	Automatic scale adjustment, readout of data at user-specified point, data printout (preview function provided), selection of colors and types of curves.
Maintenance	Automatic monitoring of signal-to-noise ratio, monitoring of the run time of light source lamp.
User interface	SpeedBox™ (assign icons for commonly used menu commands).
Other functions	Data exchange via clipboard, auto response control, automatic shutter.
PC requirements	IBM-PC/AT or 100% compatible; i486 or higher CPU; 8 Mbyte or larger main memory. Operates on MS-Windows version 3.1 or higher.

For more information, contact [Shimadzu](http://www.shimadzu.com/).

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