

**JASCO**

# ***FP-8000 Series***

**Spectrofluorometers**



# JASCO FP-8000 Series Spectrofluorometers

## Advanced Technology for Superior Results

Designed with the latest technology, the JASCO FP-8000 Series spectrofluorometers incorporate the highest sensitivity, fastest spectral scanning capability and excellent analysis-oriented functionality offering integrated solutions for advanced materials research and biochemical analysis applications. To meet the most stringent analysis demands, a variety of accessories are available for integration with a range of sophisticated control and analysis applications available in the user-friendly Spectra Manager™ II software to offer a flexible platform for any fluorescence and phosphorescence application.



- Highest sensitivity (> 5000, RMS)
- Fastest scan speed (60,000 nm/min)
- Wide dynamic range (> 6.5 orders of magnitude)
- Automatic higher-order diffraction cut filter
- IQ Accessories (Automatic accessory identification)
- Rapid 3D spectra measurements
- Expanded features for phosphorescence measurements (lifetime measurements > 1 millisecond)

### Four different models of the FP-8000 Series offer the optimum solution for luminescence applications.

**FP-8200** : For general use, especially for routine fluorescence analysis

**FP-8300** : Versatile model with additional features for Bio applications

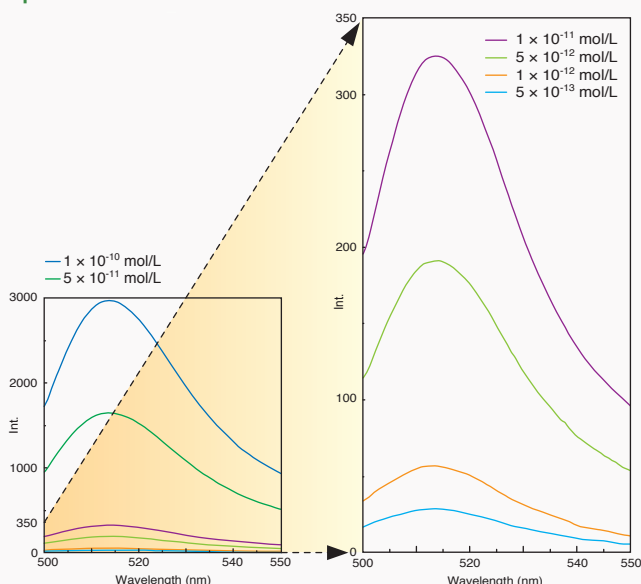
**FP-8500** : Research model offering the ultimate performance

**FP-8600** : NIR model for materials analysis research

### ■ Highest S/N performance

The high S/N performance of the FP-8000 Series (5000:1 or greater (RMS) for the FP-8500) is achieved by a high throughput optical system and low-noise signal processing.

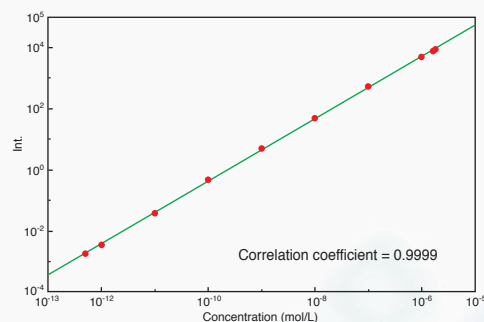
Spectra of fluorescein solutions



### ■ Wide Dynamic Range

A wide dynamic range for luminescence measurements is obtained using the Auto-Gain and Auto-SCS features, automatically adjusting the detector sensitivity for optimum measurements.

Calibration curve of fluorescein solutions



#### Auto-Gain

Collecting data with an optimized S/N throughout the entire scan range for spectra or time course measurements is obtained with ease using the Auto-Gain feature, automatically adjusting the gain due to fluorescence intensity.

#### Auto-SCS

Effective for fixed wavelength measurements and quantitative analysis, Auto-SCS makes it possible to create a calibration curve for a wide range of concentrations without modifying the instrument measurement parameters. (SCS : Sensitivity Control System)

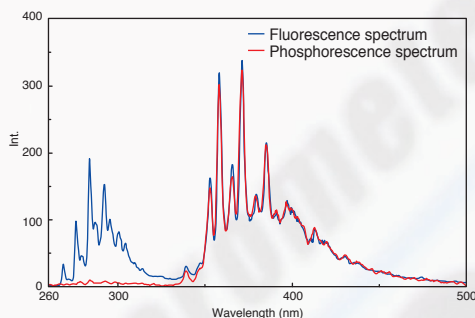
# A variety of accessories for temperature control and specific application requirements



## ■ Phosphorescence measurements

A high-speed chopper for the FP-8300/8500/8600 offers phosphorescence spectrum measurements as well as advanced phosphorescent lifetime and quantitative analysis measurements. The PMU-830 liquid nitrogen sampling accessory can be added for additional flexibility.

### Luminescence spectra of cooled Benzene



The luminescence spectra of benzene measured with 255 nm excitation at 77 K. The blue trace in the figure is the normal emission spectrum; the red trace is the phosphorescence spectrum measured using a 5 msec delay.

## ■ Fluorescence anisotropy

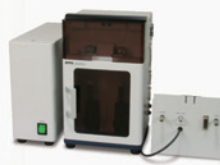
The FDP-837 automatic polarizer allows fluorescence depolarization measurements by using linearly polarized light. With a thermostatted cell holder and the auto-depolarization program, fluorescence polarization can be monitored while changing the sample temperature.

## ■ Temperature control



The CTH-807 water-thermostatted cell block option (for all models of the FP-8000 Series) can be easily and quickly installed by replacing the front cover of the standard sample holder. A range of optional water- or Peltier-thermostatted cell holders for single or multiple samples are available for accurate temperature control.

## ■ Stopped flow accessory



The SFS-850 Series Stopped Flow accessory for the FP-8300/8500/8600 instruments employs a high-efficiency mixer featuring exceptionally fast mixing compared to conventional mixing systems. The innovative cell design places the cell directly into the sample compartment eliminating light-flux attenuation by optical fibers and resulting in excellent signal to noise ratio and long term performance. An optional Peltier temperature control module is available for both the syringe drive and cell units.

## ■ One drop fluorescence measurement



The SAF-850 (FP-8200) or SAF-851 (FP-8300/8500/8600) One-Drop measurement accessory is a dedicated module for rapid measurements of micro-volume samples. Simply place a droplet of sample on the disk cell to obtain a measurement of the sample.

## ■ Microplate reader

The FMP-825 microplate reader for the FP-8300/8500/8600 instruments allows automated high-throughput and high-speed analysis using a micro-well plate. Temperature control is optionally available.

## ■ Automatic titration accessory

The ATS-826 (FP-8200) or ATS-827 (FP-8300/8500/8600) automatic titration accessory offers two independently controlled syringes. This accessory is a powerful tool for monitoring protein denaturation and ligand binding experiments under temperature control with a thermostatted cell holder.

### ● For various volumes and shapes of samples

FMH-801	3 mm micro cell jacket	(FP-8200/8300/8500/8600)
FMH-802	5 mm micro cell jacket	(FP-8200/8300/8500/8600)
FUV-803	Absorbance measurement cell block	(FP-8200/8300/8500/8600)
FHM-804	High sensitivity cell block	(FP-8200/8300/8500/8600)
FSA-805	30 degrees incident angle cell block for triangular cell	(FP-8200/8300/8500/8600)

FSA-806	30 degrees incident angle cell block for rectangular cell	(FP-8200/8300/8500/8600)
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FDA-808	Solid sample holding block	(FP-8200/8300/8500/8600)
FLH-809	Film holding block	(FP-8200/8300/8500/8600)
FPA-810	Powder sample cell block	(FP-8200/8300/8500/8600)
SAF-850	One-drop measurement unit	(FP-8200)
SAF-851	One-drop measurement unit	(FP-8300/8500/8600)
CTS-855	Coumarin measurement unit	(FP-8300/8500/8600)
OBF-832	Optical fiber unit	(FP-8300/8500/8600)
EFA-833	Epi-fluorescence unit	(FP-8300/8500/8600)

### ● For temperature control

CTH-807	Water thermostatted cell block	(FP-8200/8300/8500/8600)
STR-811	Water thermostatted cell holder with stirrer	(FP-8200)
STR-812	Water thermostatted cell holder with stirrer	(FP-8300/8500/8600)
FCT-816	Water thermostatted 4-position cell changer	(FP-8200)
FCT-817	Water thermostatted 8-position cell changer	(FP-8300/8500/8600)
EHC-813	Peltier thermostatted single cell holder (air-cooled)	(FP-8300/8500/8600)
ETC-814	Peltier thermostatted single cell holder (water-cooled)	(FP-8200)
ETC-815	Peltier thermostatted single cell holder (water-cooled)	(FP-8300/8500/8600)
PCT-818	Automatic 4-position Peltier cell changer	(FP-8300/8500/8600)
PMU-830	Liquid nitrogen cooling unit	(FP-8300/8500/8600)
CSH-831	Cryostat holder	(FP-8300/8500/8600)
HPC-836	High temperature powder cell unit	(FP-8300/8500/8600)

### ● Auto-sampler and sipper

SHP-819	Peristaltic sipper	(FP-8200)
SHP-820	Peristaltic sipper	(FP-8300/8500/8600)
QFS-821	Vacuum sipper	(FP-8200)
QFS-822	Vacuum sipper	(FP-8300/8500/8600)
FSC-823	Micro flow cell holder	(FP-8200)
FSC-824	Micro flow cell holder	(FP-8300/8500/8600)
FMP-825	Automatic microplate reader	(FP-8300/8500/8600)
ASU-800	Autosampler	(FP-8200/8300/8500/8600)
ASP-849	Syringe pump	(FP-8200/8300/8500/8600)

### ● For quantum yield determination

ISF-834	60 mm dia. integrating sphere	(FP-8300/8500/8600)
ILF-835	100 mm dia. integrating sphere	(FP-8300/8500/8600)
ILFC-847	Cooled 100 mm dia. integrating sphere	(FP-8300/8500/8600)

### ● For kinetics and reaction analyses

SFS-852/853/854	Stopped flow system	(FP-8300/8500/8600)
ATS-826	Automatic titration unit	(FP-8200)
ATS-827	Automatic titration unit	(FP-8300/8500/8600)
CSP-828	Sample compartment lid with syringe port	(FP-8200)
CSP-829	Sample compartment lid with syringe port	(FP-8300/8500/8600)

### ● Polarizer and depolarizer

FDP-837	Automatic polarizer for UV/VIS range	(FP-8300/8500/8600)
FSP-838	Depolarization plate	(FP-8200/8300/8500/8600)

## ■ Hardware Specification

Model:	FP-8200	FP-8300	FP-8500	FP-8600
Light source:	Xe lamp with shielded lamp housing, 150 W			
Photometric system:	Photometric ratio system: utilizing monochromatic light to monitor Xe lamp intensity output			
Automatic higher-order diffraction cut filter:	Option	Standard		
Sensitivity*1 (RMS):	Peak*2:	380 : 1	680 : 1	1200 : 1
	Base*3:	1600 : 1	2800 : 1	5000 : 1
Wavelength range:	Ex:	Zero order, 200 - 750 nm		
	Em:	Zero order, 200 - 850 nm		
Wavelength range: (with optional detector assembly)	Ex:	Zero order, 200 - 900 nm	Zero order, 200 - 850 nm	N/A
	Em:			
Band width:	Ex:	2.5, 5, 10, 20 nm	1, 2.5, 5, 10, 20 nm	1, 2.5, 5, 10, 20, L5, L10 nm
	Em:	2.5, 10, 20, 40, L10, L20 nm		
Wavelength scan speed:	Ex:	20, 50, 100, 200, 500, 1000, 2000, 5000, 10,000, 20,000 nm/min	20, 50, 100, 200, 500, 1000, 2000, 5000, 10,000, 20,000, 60,000 nm/min	1, 2.5, 5, 10, 20, L5, L10 nm 20, 50, 100, 200, 500, 1000, 2000, 5000, 10,000, 20,000, 60,000 nm/min
	Em:	20, 50, 100, 200, 500, 1000, 2000, 5000, 10,000, 20,000, 60,000, 120,000 nm/min		
Resolution:	Ex:	2.5 nm (at 546.1 nm)	1.0 nm (at 546.1 nm)	
	Em:	1.0 nm (at 546.1 nm)		
Wavelength accuracy:	Ex:	±2.0 nm	±1.5 nm	±1.0 nm
	Em:	±2.0 nm		
Sensitivity selection:	High, Medium, Low, Very Low, Manual, Auto-SCS			
Auto-Gain:	Standard			
Start button:	Standard			
IQ Accessory Identification:	Standard			
Dimensions:	490(W) × 545(D) × 270(H) mm	520(W) × 545(D) × 270(H) mm	570(W) × 545(D) × 270(H) mm	
Weight:	33.6 kg (74 lbs)	36 kg (79 lbs)	39 kg (86 lbs)	

\*1 : Minimum Signal-to-noise ratio of Raman band of water, excitation 350 nm, band width Ex 5 nm Em 5 nm (FP-8600: Ex 5 nm Em 10 nm), response 2 seconds

\*2 : Noise is measured on the Raman peak

\*3 : Noise is measured on the baseline

## ■ Software Specification

Model:	FP-8200	FP-8300	FP-8500	FP-8600
Data Station type:	JASCO Spectra Manager ver. 2.0 / JASCO Spectra Manager CFR (Microsoft Windows® 7 Professional)			
iRM type:	Intelligent Remote Module iRM-900			N/A
Measurement programs:	Spectra Manager Ver. 2.0	Spectra measurement, Quantitative measurement, Fixed wavelength measurement, Time course measurement, 3D Spectra measurement, Abs measurement	Spectra measurement, Quantitative measurement, Fixed wavelength measurement, Time course measurement, 3D Spectra measurement, Abs measurement, Phosphorescence measurement	
	Spectra Manager CFR *4			
	iRM-900 *5	Spectra measurement, Quantitative measurement, Fixed wavelength measurement, Time course measurement, 3D Spectra measurement, Abs measurement	N/A	
Spectra correction program:	Standard *6		Standard	
Instrument validation:	Program and Hg lamp (Standard), Accessories (option)		Program and Hg lamp (Standard), Accessories (Standard)	
Self diagnosis:	Standard			
IQ Accessory recognition and IQ Start:	Standard			

\*4 : Spectra Manager CFR is the 21 CFR Part 11 compliant software package.

\*5 : The iRM-900 uses a compatible PictBridge printer. Please contact your local distributor for compatible printers.

\*6 : Optional components are necessary.



● Specifications are subject to change without notice.

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