

FP-8050 series
Spectrofluorometer

Contents

1. Lineup of FP-8050
2. Concepts and advantages
3. Introduction of each model
4. Accessories

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Lineup of FP-8050



FP-8250

■ Entry model

FP-8350

■ Standard model



FP-8550

■ Flagship model

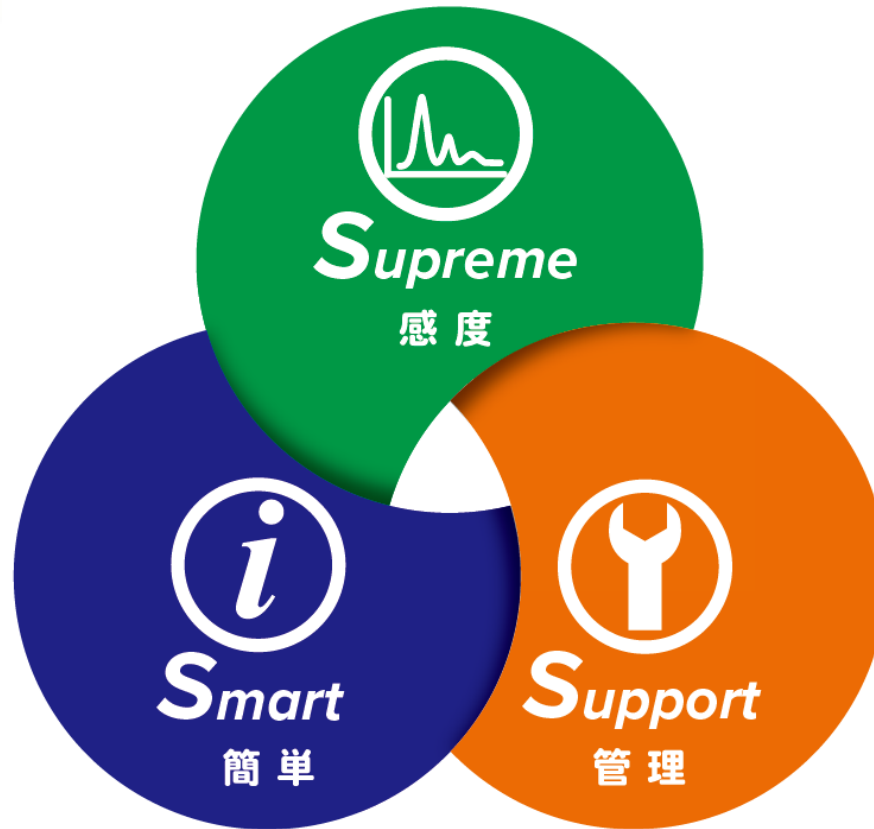
FP-8650

■ Dedicated model for NIR FL

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Concepts



S³ -S cubic-

Advantages

Supreme

- ◆ Outstanding sensitivity
- ◆ Evolved high-order light cut-off filter
- ◆ Accurate spectrum correction

Smart

- ◆ Improved operability
- ◆ Support functions
- ◆ IQ accessory

Support

- ◆ Daily check
- ◆ Device usage record
- ◆ Long-life Xe lamp

Outstanding sensitivity

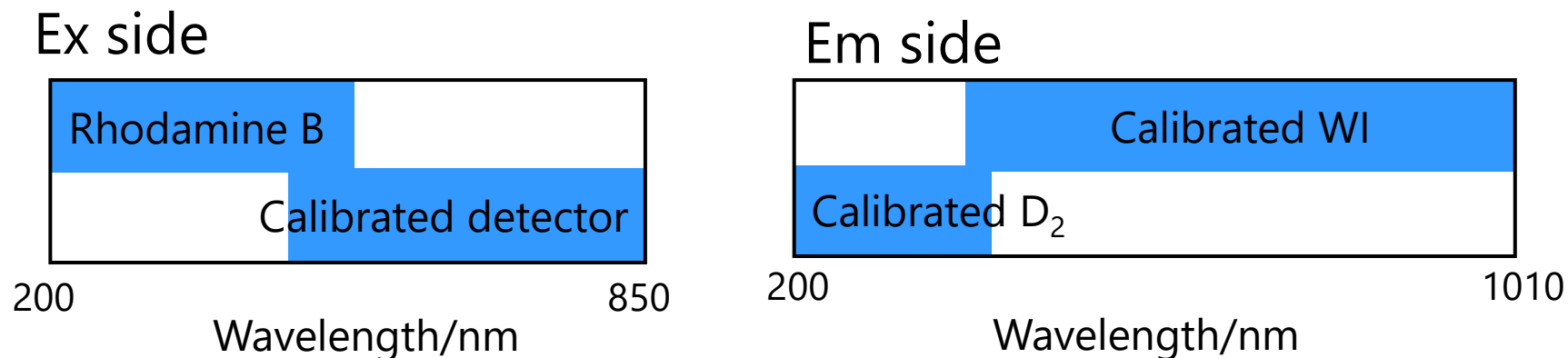
High throughput optical system and low noise signal processing provide users with outstanding sensitivity.

Model	RMS
FP-8250	4,500:1 (bandwidth (Ex, Em): 5 nm)
FP-8350	8,000:1 (bandwidth (Ex, Em): 5 nm)
FP-8550	8,500:1 ((bandwidth (Ex, Em): 5 nm)
FP-8650	3,500:1 (bandwidth (Ex): 5 nm, bandwidth (Em): 10 nm)

Accurate spectrum correction

- Correction curve of whole range can be made directly
 - Ex side: Rhodamine B and Calibrated detector
 - Em side: Calibrated light source (WI and D₂)
- Direct correction can be executed even when integrating sphere is equipped.

Jigs for direct spectrum correction

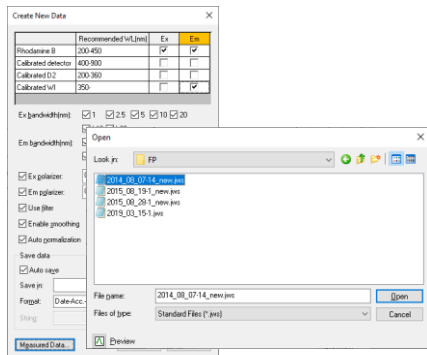


However, operation has been complicated and knowledge of spectrofluorometer has been required, so far.

Now, Correction curve can be made easily

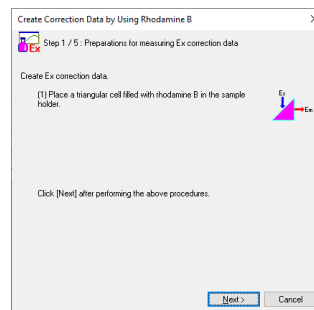
Step 1

Open the measured spectrum.



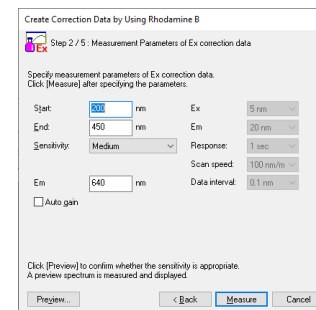
Step 2

Setting jigs.



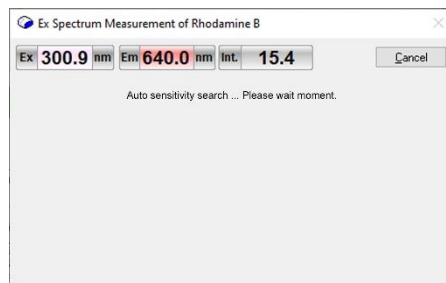
Step 3

Suitable parameters are auto set.



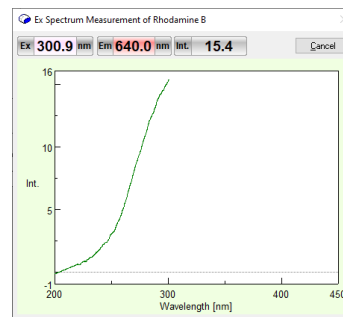
Step 4

Sensitivity is automatically searched.



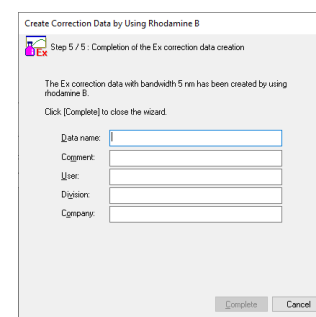
Step 5

Measurement is automatically started.



Step 6

Save the correction curve



Correction curve is easily gotten and no mistakes!

Advantages

Supreme

- ◆ Outstanding sensitivity
- ◆ Evolved high-order light cut-off filter
- ◆ Accurate spectrum correction

Smart

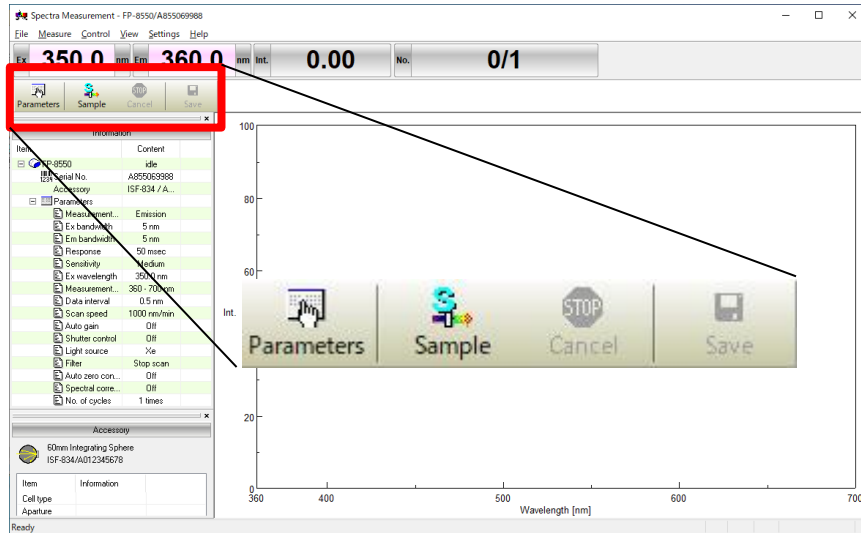
- ◆ Improved operability
- ◆ Support functions
- ◆ IQ accessory

Support

- ◆ Daily check
- ◆ Device usage record
- ◆ Long-life Xe lamp

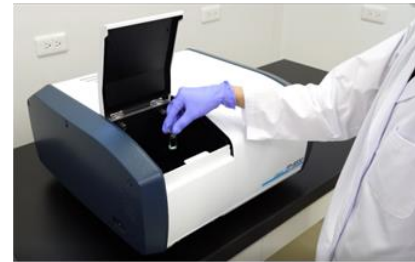
Improved operability

- Auto Ex and Em shutter
- Self-motion "Auto zero"
- Sophisticated tool buttons



Step 1

Sample setting



Step 3

Measurement



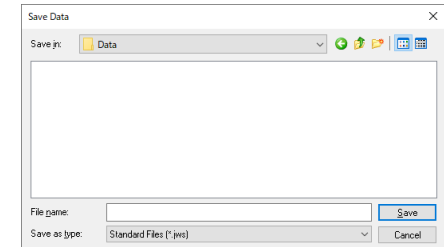
Step 2

Parameter setting



Step 4

Save data



Support functions

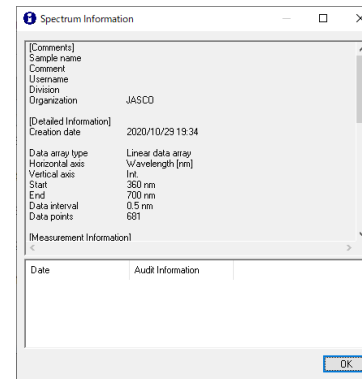
■ Video manual

It explains how to maintain the instrument (lamp replacement, etc.) by the movie.



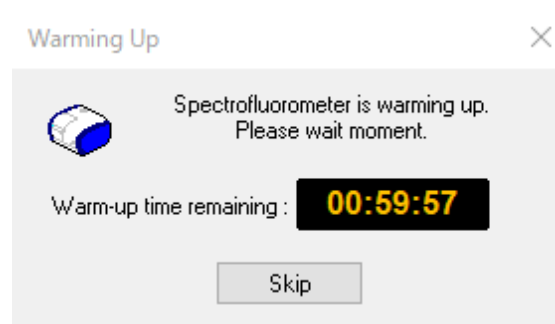
■ Saturation log (photometric value)

When photometric value exceeds the measurement limit during measurement, its saturation information is recorded as log.



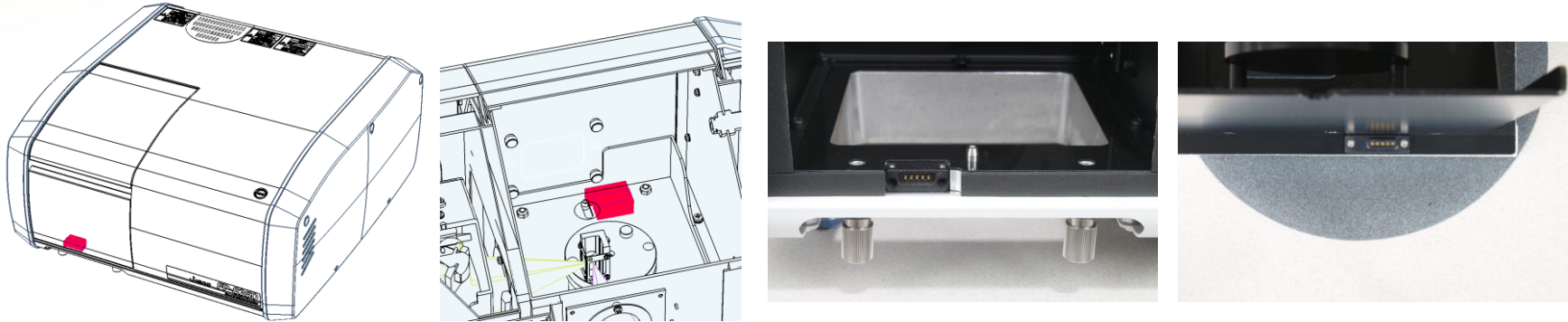
■ Standby timer

It displays the remaining time of warm-up.



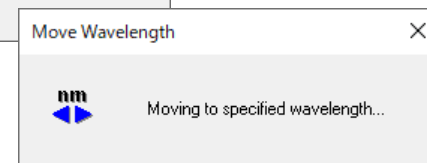
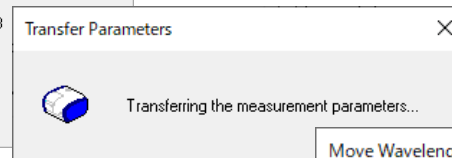
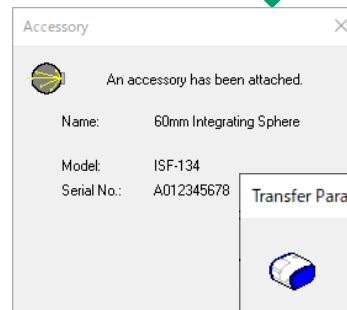
IQ accessory

Easy and robust accessory recognizing design



[Measurement Information]	
Model name	FP-8550
Serial No.	A855069988
Ex filter holder	None
Em filter holder	None
Accessory	ISF-134
Accessory S/N	A012345678
Measurement date	2020/10/29 18:40
Mode	Emission

Accessory information is saved
in measurement data



“IQ start” is available as well
as previous models.

Advantages

Supreme

- ◆ Outstanding sensitivity
- ◆ Evolved high-order light cut-off filter
- ◆ Accurate spectrum correction

Smart

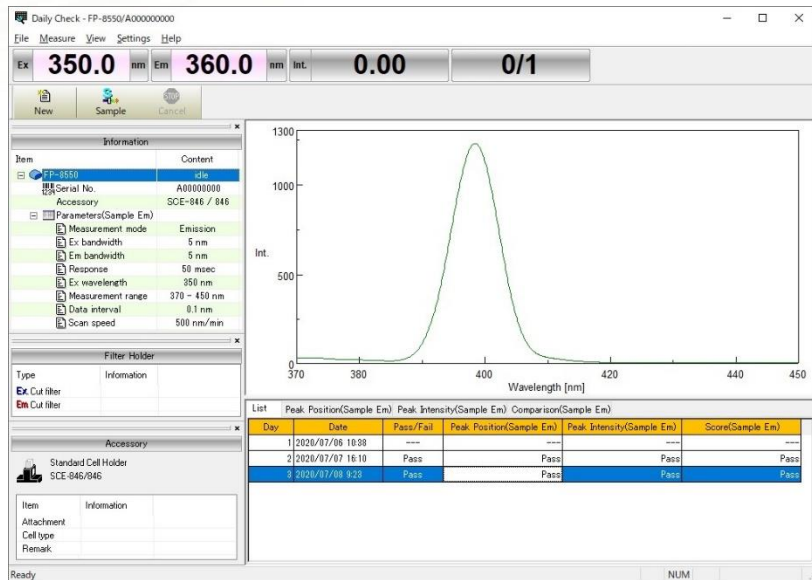
- ◆ Improved operability
- ◆ Support functions
- ◆ IQ accessory

Support

- ◆ Daily check
- ◆ Device usage record
- ◆ Long-life Xe lamp

Daily monitoring of instrument conditions

[Daily check] program



Day	Date	Pass/Fail	Peak Position(Sample Em)	Peak Intensity(Sample Em)	Comparison(Sample Em)	Score(Sample Em)
1	2020/07/06 10:38	---	---	---	---	---
2	2020/07/07 16:10	Pass	Pass	Pass	Pass	Pass
3	2020/07/08 9:23	Pass	Pass	Pass	Pass	Pass

- Inspection jig: diffusion plate (Xe lamp) or standard sample
- Inspection item: peak position, peak intensity, spectrum comparison
- **Batch display of measured data in time series**

Inspection procedure

- Step 1** Runs the program.
- Step 2** Sets the sample
- Step 3** Starts the inspection
- Step 4** Displays the result within X minutes
- Step 5** Closes the program

It enables to perform daily instrument performance verification without feeling stress.

- Quick performance check
 - Comparison with previous instrument performance
- etc.

Auto-recording function of instrument activity log

It records the usage status of multi user, lamp usage time, etc.

The screenshot shows the Spectra Manager software interface. On the left, there is a notebook icon labeled 'COMPOSITION NOTEBOOK' and 'FP-8550'. A green arrow points from this icon to the main software window. The software window displays the following information:

- Item Contents:**
 - Status: Idle
 - Model name: FP-8550
 - Serial No.: A855069988
 - Driver version: 1.10.01 [Build 2]
 - ROM version: 1.50.00
 - Instrument usage time: 8.2 hours
 - Xe lamp usage time: 8.2 hours
 - Hg lamp usage time: 0.0 hours
- Usage Record Table:**

No.	Start date and time	Division	Username	Instrument usage ti...	Xe lamp usage time (hr)	End date and time	Remark
3	2020/10/09 10:33:36			0.1	0.1	2020/10/09 10:40:17	
2	2020/10/05 12:04:13	Inorganic	Steven	1.3	1.3	2020/10/05 13:22:29	
1	2020/10/05 11:15:04	Chem bio	Tina	0.8	0.8	2020/10/05 12:04:04	

Below the table, there is a filter section with options for 'All events', 'Certain fixed period', and 'Past' (1 months, 7 days). There is also a 'Memo' section with fields for 'No.', 'Division', 'Username', and 'Remark', and buttons for 'Update' and 'Save'.

It can be used as the instrument log books which work in shared instrument facility. Actually, date and time information, and instrument and Xe lamp usage information is automatically recorded. Username can be added one by one.

Long-life Xe lamp

Maximum usage time of new Xe lamp : 3000 hours

Product guarantee : 1000 hours or a year

service cost reduction and cost efficiency

Brand	JASCO	Hitachi	Shimadzu
Model	FP-8050	F-7100	RF-6000
Max. usage time	3000 hours	2500 hours	2000 hours
Guarantee	1000 hours or A year	500 hours or 6 months	Not disclosed

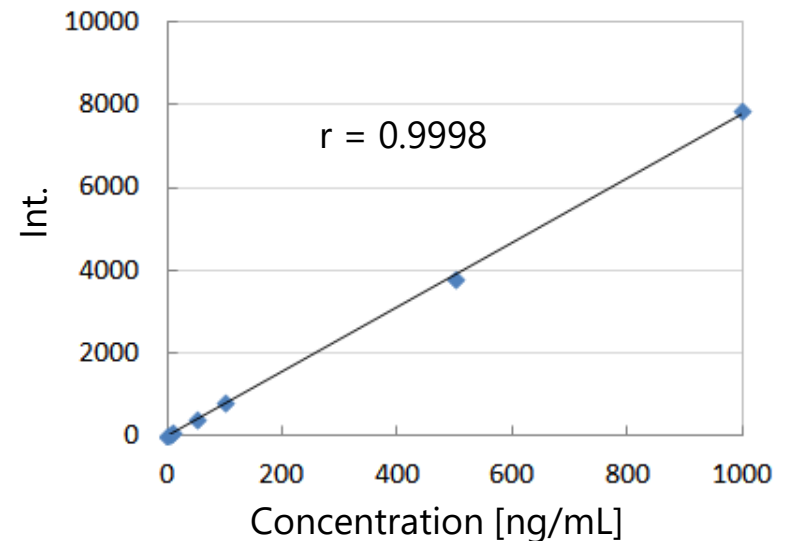
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Entry model

- Liquid sample measurement
- Quantitative analysis

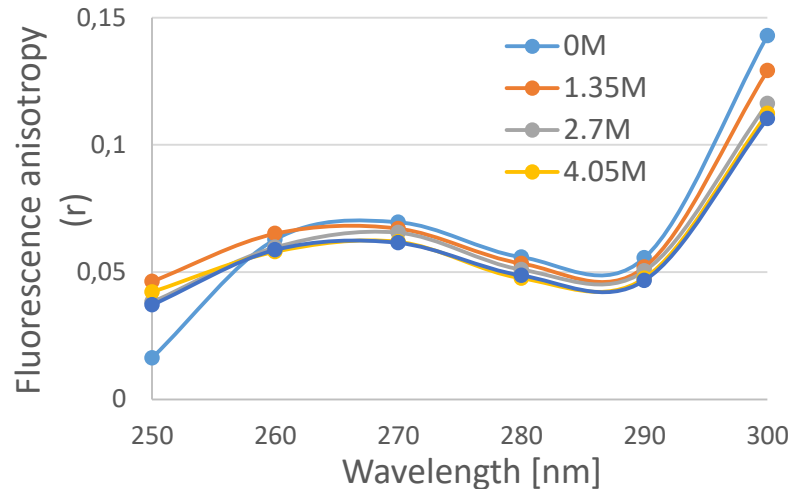
* Evolved high-order light cut-off filter is not available for this model.



Measurement using of one drop accessory
(Picogreen™ labeled λ DNA)

Standard model

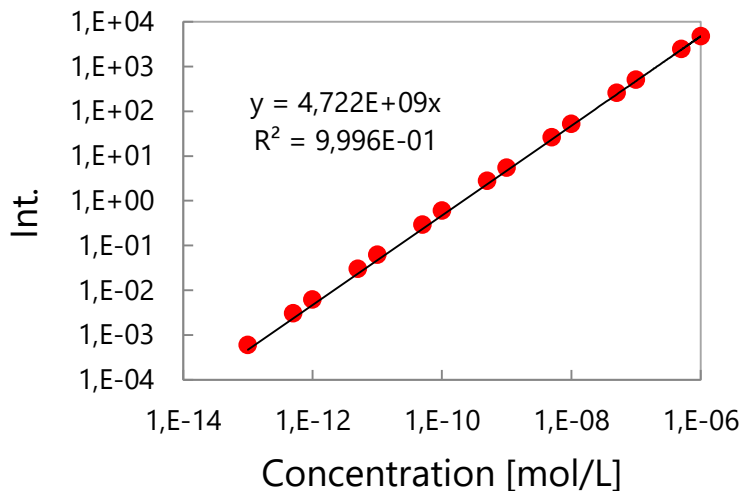
- Outstanding sensitivity
- Evolved high-order light cut-off filter is mounted as standard.
- Various life science applications



Fluorescence anisotropy excited discrete spectrum
Apo- α -lactalbumin + GuHCl

Flagship model

- Outstanding sensitivity (RMS:8,500:1)
- Wavelength extension detector is equipped as standard (200-850 nm range)
- Various applications for solid and liquid samples



Calibration curve of fluorescein solution

Dedicated model for NIR region measurement

- High performance using of NIR high sensitivity PMT
- Conventional detector can be selected as option.

	FP-8600	FP-8650
Phosphorescence measurement	N.A.	Available
Wavelength region	200-1010 nm	200-980 nm

Specification (1)

	FP-8250	FP-8350	FP-8550	FP-8650
Light source	150 W xenon lamp (long-life type, lifetime: 3,000h(estimate)) Low pressure Hg lamp (for validation)			
Photometric system	Photometric ratio system			
Monochromator	Modified Rowland mount with 1650 lines/mm concave grating		Modified Rowland mount with 1800 lines/mm concave grating	Modified Rowland mount with 1800 lines/mm concave grating (Ex monochromator), with 900 lines/mm concave grating (Em monochromator)
	N/A	Higher-order diffraction light cut-off filter		
Detector	Silicon photodiode (for Ex monochromator), Photomultiplier (for Em monochromator)			
Wavelength range	200–750 nm	200–750 nm (200–900 nm, with optional detector)	200–850 nm	Ex: 200–850 nm Em: 200–980 nm (200–1010 nm, with optional detector)
Spectral bandwidth	1, 2.5, 5, 10, 20 nm		1, 2.5, 5, 10, 20, L5, L10 nm	Ex: 1, 2.5, 5, 10, 20, L5, L10 nm Em: 2, 5, 10, 20, 40, L10, L20 nm
Wavelength accuracy	± 1.5 nm		± 1.0 nm (± 0.3 nm at 546.1 nm)	Ex: ± 1.0 nm (± 0.3 nm at 546.1 nm) Em: ± 2.0 nm (± 0.3 nm at 546.1 nm)
Wavelength repeatability	± 1.0 nm		± 0.3 nm	
Wavelength slew speed	30000 nm/min		60000 nm/min	Ex: 60000 nm/min Em: 120000 nm/min
Wavelength scanning speed	20000 nm/min		60000 nm/min	Ex: 60000 nm/min Em: 120000 nm/min

Specification (2)

	FP-8250	FP-8350	FP-8550	FP-8650
Sensitivity (RMS)	4,500:1	8,000:1	8,500:1	3,500:1
	Bandwidth: Ex 5 nm, Em 5 nm			Bandwidth: Ex 5 nm, Em 10 nm
Photomultiplier voltage	High, Medium, Low, Very Low, Auto, Manual (0–1000 V) With automatic gain control			
Resolution	1.0 nm (546.1 nm)			Ex 1.0 nm Em 2.0 nm
Photometric display	-10000–10000			
Nitrogen purge	Available			
Dimension	520 (W) x 545 (D) x 270 (H) mm	520 (W) x 545 (D) x 270 (H) mm	570 (W) x 545 (D) x 270 (H) mm	570 (W) x 545 (D) x 270 (H) mm
Weight	36 kg	36 kg	39 kg	39 kg

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Various accessories

- FP-8000-like lineup
- FP-8000 series' accessories can be also used (manual).

New accessories are shown below.

*Lead time of highlighted accessories will be 3 months in general.

CTH-107	Water thermostatted cell block	OBF-132	Optical fiber unit
STR-112	Water thermostatted cell holder with stirrer	EFA-133	Epi-Fluorescence Unit
EHC-113	Air-cooled Peltier thermostatted cell holder with stirrer	ISF-134	60 mm dia. Integrating Sphere
ETC-115	Water-cooled peltier thermostatted cell holder with stirrer	ILF-135	120 mm dia. Integrating Sphere
FCT-117	Water thermostatted automatic 8-position turret cell changer	HPC-136	High temperature powder cell unit
FCT-117S	Water thermostatted automatic 8-position turret cell changer with stirrer	ESC-142	Calibrated light source (WI)
PCT-118	Water-cooled peltier thermostatted 4-position automatic cell changer with stirrer		
SHP-120	Peristaltic Sipper	ESC-143	Calibrated light source (D ₂)
QFS-122	Vacuum Sipper	SID-144	Calibrated detector
FSC-124	Micro flow cell holder	SCE-146	Standard Cell Holder
FMP-125	Microplate reader	ILFC-147	Cooled 120 mm dia. integrating sphere
ATS-127	Automatic titration unit	SAF-151	One drop accessory
CSP-129	Sample compartment lid with syringe port	CTS-155	Coumarin measurement unit
PMU-130	Liquid nitrogen cooling unit	FMD-160	Cell holder for high-speed scanning
CSH-131	Cryostat holder		