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Find the *Jasco FP-2020* at our website: ***Click HERE***

High performance Liquid Chromatograph

LC-2000*Plus* Series

## Intelligent Fluorescence Detector

# FP-2020



The JASCO Model FP-2020 Intelligent Fluorescence Detector is recognized as the industry's most sensitive detector with a signal-to-noise ratio of better than 350:1 for the Raman water peak. The FP-2020 covers a wide wavelength range both for excitation and emission from 220 to 700 nm (~ 900 nm with an optional PMT) with proven stability. Versatile time-programming capabilities are provided for wavelength, response, gain, spectral scan, etc., permitting highly selective detection of various compounds. A rapid scan feature allows on-the-flow spectral acquisition for both emission and excitation spectra without interrupting the chromatographic elution. A specially designed chemiluminescence attachment and capillary electrophoresis cell are optionally available.
The FP-2020 can easily be interfaced with the JASCO HPLC system using the JASCO chromatography data systems. These packages offer full automation of all JASCO HPLC components including the FP-2020.

- **Maximum Sensitivity**
  Improvement in the optical design and coating allows greater efficiency in the collection of fluorescence energy resulting in detection of anthracene (S/N = 1) at levels as low as 40 femtograms. With a S/N of greater than 350:1, the FP-2020 is the most sensitive HPLC fluorescence detector on the market ensuring accurate detection and quantification for applications with very low compound concentrations.
- **Advanced Optics**
  Holographic concave diffraction gratings and non-spherical mirrors are cleverly incorporated in a compact package resulting in extremely efficient and reliable monochromators. Replacement of the lamp can be easily performed in minutes by the user without even opening the instrument cover.
- **Highly-reliable Data**
  A built-in thermistor monitors optical bench temperature and automatically compensates for temperature variation via feedback through the CPU. Digital filtering further enhances signal intensity producing highly-reliable quantitative data especially for applications requiring the ultimate in detection limits.
- **Rapid Spectral Scanning**
  A rapid spectral scan function allows on-flow spectral scanning of both emission and excitation spectra without interrupting the chromatographic elution. The FP-2020 can store up to 10 EX and EM spectra within the on-board microprocessor. Spectral subtraction allows for a true sample spectra by eliminating any interference from the mobile phase solvent.
- **A variety of flow cells**
  In addition to the standard 16 µL flow cell, various type of flow cells, Micro flow cell (5 µL), Capillary flow cell for capillary electrophoresis, Chemiluminescence flow cell, Inert flow cell are available to meet various applications. A rectangular cell holder is also available to place a rectangular cell (10 mm x 10 mm) for use of the FP-2020 as spectrofluorometer for methods development and finding optimal EX and EM wavelengths.

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## SPECIFICATIONS

**Optical System**

| | | |
|---|---|---|
| Monochromators: | Holographic concave diffraction grating monochromators for both excitation and emission | |
| Light source: | 150W Xe lamp | |
| Settable wavelength: | Zero order, 200 ~ 900 nm for both Ex and Em | |
| Measuring wavelength Range: | Zero order, 220 ~ 700 nm for both Ex and Em Optional PM tube extends the range up to 900 nm. | |
| Spectral bandwidths: | Ex: | 18 nm fixed |
| | Em: | 18, 40 nm selectable |
| Wavelength accuracy: | ±2.0 nm | |
| Wavelength repeatability: | ±0.3 nm | |
| Detectors: | Ex: | photodiode |
| | Em: | photomultiplier |
| Cell volume: | 16 µL (standard) | |

**Control System**

| | |
|---|---|
| Sensitivity: | S/N ≥350 for Raman peak of water (Ex=350 nm, time constant=1.5 sec, with standard cell) |
| Sensitivity range: | 1, 2, 4, 8, 16, 32, 64, 128, 256 and S. |
| Gain: | x1. x10, x100, x1000 |
| Response: | FAST, STD, SLOW (0.5, 1.5, 5 sec.) |
| Digital filter: | 3, 5, 10, 20, 40 sec |
| Signal processing: | Digital processing by A/D and D/A converters |
| Output: | 10 mV/FS for recorder (Polarity change is possible.) 1 V/FS for integrator marker, leak out |
| Input: | marker, autozero, program reset/run |
| Self-diagnostics: | memories, DC power supply, Ex. energy, leak in cell, lamp operation time |

**Programings**

| | |
|---|---|
| Time programming: | 64 steps, 10 files, 0.1 to 999.9 minutes in 0.1 min increments for Ex and Em wavelength, range, gain, autozero, spectral bandwidth, and spectral measurement |
| Spectral scanning: | Ex and Em spectra |
| Spectral subtraction: | Ex and Em spectra |
| Lamp timer: | shows accumulated lamp operation time |
| Lamp off timer: | settable from 0 ~ 99.9 hours (0.1 hour increments) |
| Temperature compensation: | compensates PM tube response for temperature variation |

**Miscellaneous**

| | |
|---|---|
| External communication: | RS-232C, LC-Net |
| Dimension: | 300 (W) x 150 (H) x 470 (D) mm |
| Weight: | Approx. 19 kg |
| Power Input voltage: | AC100 ~ 240 V ±10% 50/60 Hz |
| Power consumption: | 425 VA |

## STANDARD ACCESSORIES

| | |
|---|---|
| Spare fuses | 2 pcs |
| AC Power cable | 1 pc |
| Protection plate | 1 pc |
| Screw Thumb | 1 pc |

## OPTIONAL ACCESSORIES

| | |
|---|---|
| 6829-H101A | Low-dispersion flow cell (16 µL), standard |
| 6829-H102A | Micro flow cell unit (5 µL) |
| 6829-H104A | Inert flow cell unit |
| 6829-H103A | Optional rectangular cell holder |
| 1103-0081 | Standard fluorescence rectangular quartz cell, 10 mm pathlength |
| 1103-0180 | Rectangular suprasil quartz cell, 10 mm pathlength |
| 6829-H105A | Chemiluminescence flow cell kit |
| 4340-0033 | Photomultiplier detector (R3788-01), standard |
| 4340-0034 | Photomultiplier detector (R928-23), expansion for wavelength range (~ 900 nm) |
| 6715-H338A | Secondary light cut filter set (set of 7 kinds of filters for EM/EX) |

## ORDERING INFOMATION

| | | |
|---|---|---|
| 6829-J003B | Model FP-2020 | Fluorescence Detector |
| 6824-J002B | Model UV-2070 | UV/VIS Detector (~ 900 nm) |
| 6825-J002B | Model UV-2075 | UV/VIS Detector (~ 600 nm) |
| 6826-J002B | Model UV-2077 | Multi-wavelength UV/VIS Detector |
| 6832-J002B | Model MD-2015 | Diode Array Detector (~ 900 nm) |
| 6831-J002B | Model MD-2010 | Diode Array Detector (~ 600 nm) |
| 6833-J002B | Model RI-2031 | Refractive Index detector |
| 6838-J002B | Model CD-2095 | Circular Dichroism Detector |
| 6837-J002B | Model OR-2090 | Chiral Detector |
| 6836-J002B | Model CL-2027 | Chemiluminescence Detector |
| 6818-J002B | Model PU-2080 | HPLC Pump |
| 6823-J003B | Model PU-2089 | Quaternary HPLC Pump |
| 6820-J002B | Model PU-2085 | Semi-micro HPLC Pump |
| 6821-J002B | Model PU-2086 | Semi-preparative HPLC Pump |
| 6822-J002B | Model PU-2087 | Preparative HPLC Pump |
| 6819-J002B | Model PU-2080i | Bio-inert HPLC Pump |
| 6823-J004B | Model PU-2089i | Bio-inert Quaternary HPLC Pump |
| 6828-J008B | Model AS-2059 | Autosampler |
| 6827-J005B | Model AS-2055 | Autosampler |
| 6827-J006B | Model AS-2057 | Autosampler |
| 6834-J002B | Model CO-2060 | Column Oven |
| 6835-J002B | Model CO-2065 | Column Oven |

● Specifications are subject to change without notice.


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