# Agilent 1260 Infinity Fluorescence Detector Spectra

## Features, Technical Details, Specifications and Ordering Details

### Lower detection limits and easy spectral analysis for HPLC and UHPLC

As a standalone detector or in an automated Agilent 1200 Infinity Series system the Agilent 1260 Infinity Fluorescence Detector Spectra brings high-sensitivity fluorescence detection to your laboratory. This easy-to-use detector provides quantitative data and fluorescence spectra from a single run. Simultaneous multi-wavelength detection improves sensitivity and selectivity. Use the online spectral information for rapid method optimization and verification of separation quality. High-speed detection with up to 145 Hz data rates keeping pace with the analysis speed of ultra-fast LC.

### Features

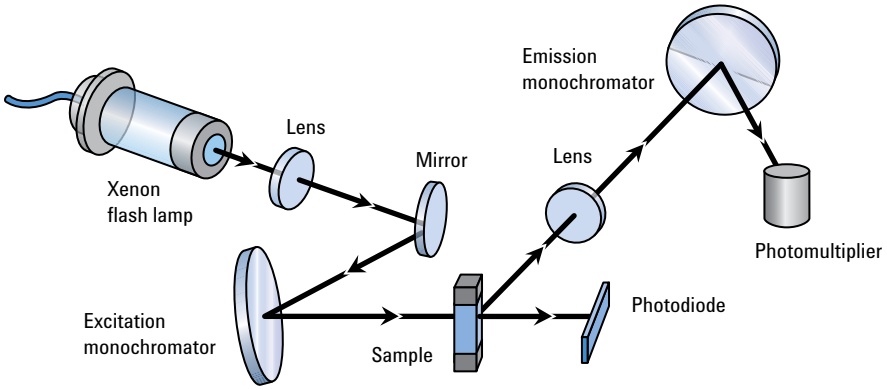
- Rotating gratings for multi-signal and online spectral data acquisition without loss in sensitivity.
- Lowest limits of detection with a Raman S/N > 3000 (using dark signal noise reference).
- Spectra and quantitative data from a single run.
- View online spectra without interrupting the chromatographic run.
- Simplified optical design for optimized baseline stability.
- Up to 100 % resolution gain in fast LC using a 145 Hz data acquisition rate.
- Long-life xenon lamp for highest sensitivity. The long-life (> 4000 hours) flash lamp, lamp reference system and efficient light collection ensure constant lamp energy for maximum excitation of fluorophores.
- Easy front access enables fast inspection or exchange of the flow cell.
- Automatic recognition of all flow cell cartridges provides documentation of instrument parameters and helps to comply with GLP.
- Extensive diagnostics, error detection and display with Instant Pilot controller and Agilent Lab Advisor software.

Agilent Technologies

# Technical Details – Agilent 1260 Infinity Fluorescence Detector Spectra

### Simplified optical design for optimized baseline stability

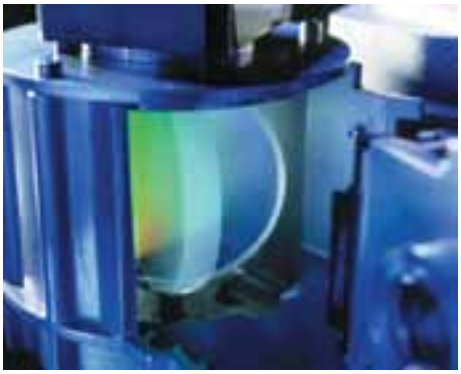
The xenon flash lamp ignites only for microseconds to provide the light energy for the fluorescence. This results in lamp lifetime of several thousand hours and significantly reduces operating costs. Additionally no warm-up time is needed to get a stable baseline.




**Optical system of the 1260 Infinity FLD Spectra.**

### Online Spectra and multi-signal detection

Fast rotating monochromators work in signal or spectral mode are synchronized with the flash lamp allowing single and multi-signal detection of up to four different excitation or emission wavelengths for uncompromised sensitivity.

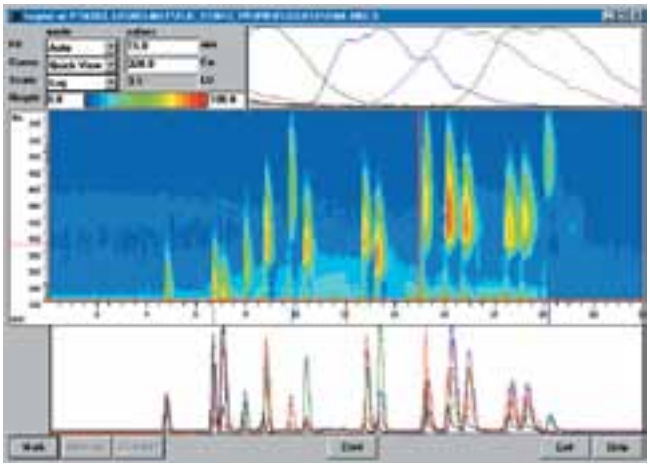


**Fast rotating holographic gratings enables multi-signal and spectra data acquisition**

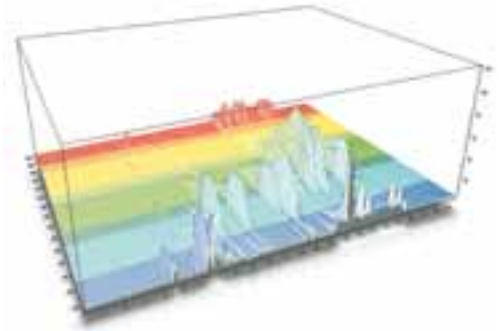
### Fluorescence spectra for method development, routine target analysis and sample characterization

The latest in detector technology provides rapid online acquisition of full excitation or emission wavelengths without interrupting your chromatography.

- Different spectral acquisition modes (all, all-in-peak, apex) allow optimized settings for your specific applications.
- Time-programming of spectral parameters improves spectral resolution of each peak.
- Familiar diode-array-style data evaluation helps you to explore the spectral landscape of your fluorescent compounds.
- Libraries of fluorescence spectra and sophisticated search routines provide for interactive or automatic compound confirmation.



**Optimize your choice of monitoring wavelength with a bird´s eye view.**



**Explore the spectral landscape from a complete run.**

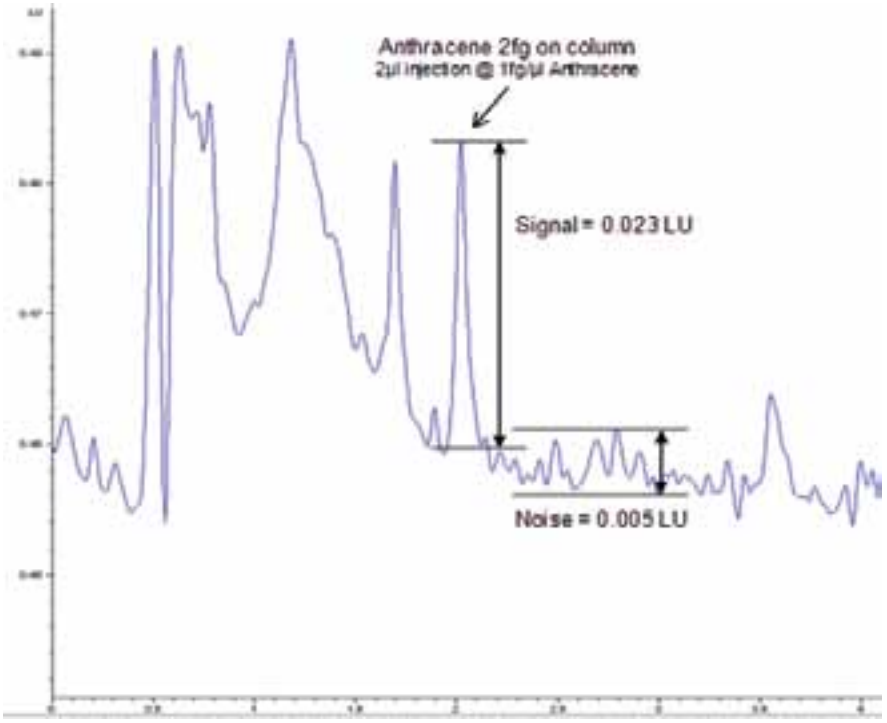
### Check or exchange your flow cell – fast

Easy front access enables fast inspection or exchange of the flow cell. Automatic recognition of all flow cell cartridges provides documentation of instrument parameters and helps to comply with GLP.

**Easy front access of flow cell**

### Ultra sensitivity for lowest detection limits

The 1260 Infinity Fluorescence Detector Spectra achieves a RAMAN signal to noise ratio value of at least 3000 using the dark signal at 450 nm as noise reference. This superior sensitivity results in a detection limit for anthracene as low as 1.3 fg.




| | |
|---|---|
| Column: | ZORBAX RRHD Eclipse Plus C18<br>2.1 x 100 mm, 1.8 µm |
| Injection vol.: | 2 µL |
| Mobile phase: | isocratic, premixed 75% ACN/water |
| Flow: | 0.4 mL/min |
| Detection: | FLD Ex 250 nm, Em 400 nm<br>Peak width 2<br>PMT gain: 14 |

**High sensitivity analysis of anthracene achieving a detection limit of 1.3 fg.**

# Specifications – Agilent 1260 Infinity Fluorescence Detector Spectra

| Specifications: Agilent 1260 Infinity Fluorescence Detector Spectra (G1321B) | |
|---|---|
| **Detection type:** | Multi-signal fluorescence detector with rapid online scanning capabilities and spectral data analysis |
| **Performance** | Single wavelength operation:<br>Raman ($H_2O$) > 3000 (noise reference measured at dark value)<br>Ex 350 nm, Em 397 nm, dark value 450 nm, standard flow cell<br><br>Dual wavelength operation:<br>Raman ($H_2O$) > 300 (noise reference measured at signal)<br>Ex 350 nm, Em 397 nm and Ex 350 nm, Em 450 nm, standard flow cell |
| **Light source** | Xenon flash lamp, normal mode (20 W), economy mode (5 W), lifetime 4000 hours |
| **Pulse frequency** | 296 Hz for signal mode, 74 Hz for economy mode |
| **Excitation monochromator** | Concave holographic grating, F/1.6, blaze 300 nm,<br>Range 200 – 1200 nm and zero-order, bandwidth 20 nm |
| **Emission monochromator** | Concave holographic grating, F/1.6, blaze 400 nm,<br>Range: settable 200 – 1200 nm and zero-order, bandwidth 20 nm |
| **Reference system** | Inline excitation measurement |
| **Time programming** | Up to four signals, response time, PMT gain, baseline behavior (append, free, zero), spectral parameters |
| **Spectral acquisition** | Excitation or emission spectra, scan speed 28 ms per datapoint, e.g. 0.6 s per spectrum 200-400 nm, 10 nm step |
| **Step size** | 1-20 nm |
| **Spectra storage** | Limited only by disk space |
| **Wavelength repeatability** | ± 0.2 nm |
| **Wavelength accuracy** | ±3 nm |
| **Data rate** | 145 Hz |
| **Flow cells** | Standard: 8 µL volume, 20 bar (2 MPa) pressure maximum, quartz.<br>Optional: Fluorescence cuvette for offline spectroscopic measurements with 1 mL syringe, 8 µL volume, quartz<br>Semi-micro flow cell, 4 µL, 20 bar pressure maximum<br>Bio-inert flow cell, 8 µL, 20 bar pressure maximum |
| **Control and data evaluation** | Agilent OpenLAB Chromatography Data System (CDS) ChemStation Edition and EZChrom Edition or Agilent Instant Pilot data evaluation (limited analysis or printing of spectra) |
| **Environment** | 0 - 40 °C constant temperature at <95% humidity (non-condensing) |
| **Analog outputs** | Recorder/integrator: 100 mV or 1 V,<br>Output range selectable from 0.2 to 400 LU, 2 outputs |
| **Communications** | LAN, Controller-area-network (CAN), RS232, APG remote<br>Remote: ready, start, stop and shut-down-signals |
| **Safety and maintenance** | Extensive diagnostics, error detection and display (through ChemStation and Instant Pilot), leak detection, safe leak handling, leak output signal for shutdown of pumping system. Low voltages in major maintenance areas |
| **GLP** | Early maintenance feedback (EMF) for continuous tracking of instrument usage, display of feedback messages in terms of lamp burn time with user-settable limits and feedback messages. Electronic records of maintenance and errors. Verification of wavelength accuracy using Raman band ($H_20$) lines. |

* Reference conditions: standard cell 8 µL, response time 4 s, 2.1 × 100 mm ODS column, 0.4 mL/min flow rate.

# Ordering Details – Agilent 1260 Infinity Fluorescence Detector Spectra

| Description | Product / Part number |
|---|---|
| **Agilent 1260 Infinity Fluorescence Detector Spectra**<br>For multi-wavelength detection, on-line acquisition of Ex and Em spectra, up to 145 Hz data rate. | G1321B |
| **Semi-micro flow cell 4 µL** | #016 |
| **Standard Flow Cell, 8 µL** | #018 |
| **Bio-Inert flow cell, 8 µL** | #028 |
| **Optional flow through cuvette** for using the FLD as a fluorescence spectrometer (not necessary when used as a LC detector) | #025 |
| **Delete LAN card** | #690 |

**www.agilent.com/chem/1200**


Published in the USA, June 1, 2014
5991-2437EN

Agilent Technologies