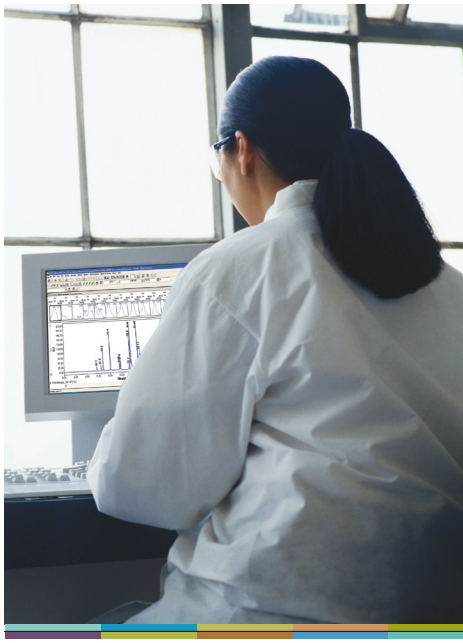
Waters
THE SCIENCE OF WHAT'S POSSIBLE.™

ACQUITY UPLC FLR DETECTOR

Simply the best performance in fluorescence detection

UNRIVALED SENSITIVITY AND SELECTIVITY IN UPLC DETECTION



Pioneering technologies like the ACQUITY UltraPerformance LC® (UPLC®) system were founded on the principles of sensitivity, resolution and speed. The superior, high-efficiency separations afforded by UPLC technology require the addition of high-performance detection techniques able to effectively acquire and quantitate this type of data.

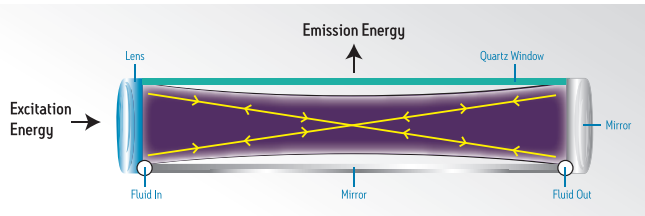
The Waters® ACQUITY UPLC Fluorescence (FLR) detector is a high-sensitivity, multi-channel fluorescence detector optimized for use with the ACQUITY UPLC system. Innovative flow cell design, low-noise electronics and support for high-speed data rates result in a detector that brings unrivaled sensitivity and selectivity to UPLC separations.

Designed with ultra performance in mind

The ACQUITY UPLC FLR detector is all you need to fit the stringent analytical requirements of today's laboratories.

- Advanced optical design reduces light scatter, allowing for maximum light throughput and optimum signal-to-noise performance.
- Uniquely designed, low volume flow cell focuses excitation energy; increasing the opportunity for light absorption and enhancing sensitivity.
- Effective integration algorithms, sampling rates up to 80 Hz and independent optimization of filtering constants, facilitate both accurate and reproducible integration.
- 3D detection modes allow for the quick determination of wavelength maxima, resulting in faster method development.
- Easy-to-use software interface and diagnostic tools instill confidence that the FLR detector is performing optimally.

ACQUITY UPLC FLR detector.



The ACQUITY UPLC FLR detector's axially illuminated flow cell design allows for better light absorption with low dispersion.

MEETING TODAY'S ANALYTICAL CHALLENGES

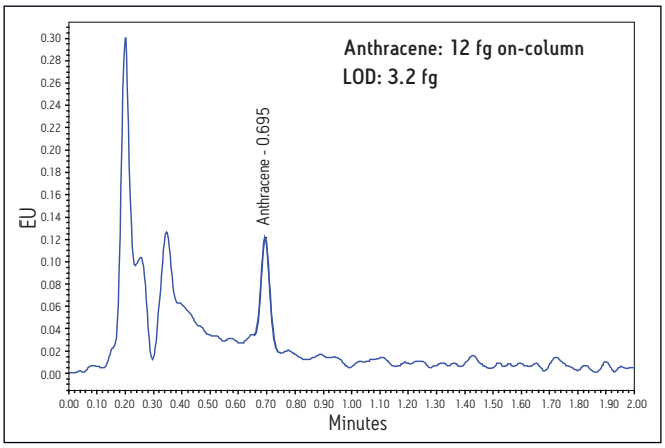
The advantage of fluorescence detection over other techniques is the intrinsic sensitivity of fluorescence coupled with outstanding selectivity – due to the fact that relatively few molecules naturally fluoresce.

The overall design of the ACQUITY UPLC FLR detector achieves both the high sensitivity and selectivity needed to ensure that applications requiring the lowest limits of detection are accurately detected and quantitated, whether naturally fluorescent or derivatized with a fluorescent tag.

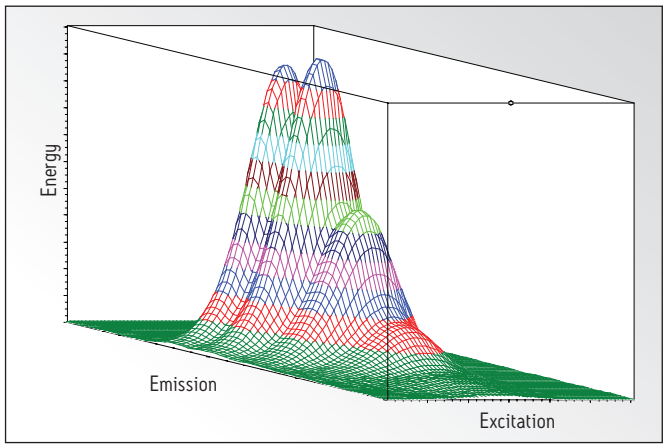
Fast method optimization

Efficient methods development requires the determination of wavelength maxima for each compound in a sample. As optimum excitation (Ex) and emission (Em) wavelengths vary from compound to compound, the detector's flexible 2D and 3D spectral acquisition modes enable users to quickly determine optimal detector wavelength settings.

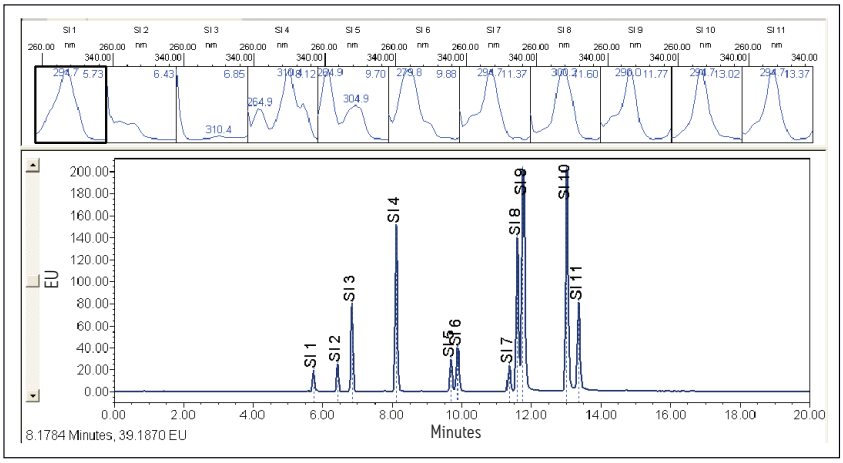
As an added benefit, users can generate on-the-fly or static spectral scans enabling quick optimization of methods and on-demand peak confirmation when compared against stored spectra.



High sensitivity analyses require high-sensitivity detection. FLR detector optics results in the efficient detection of Anthracene (12 fg on-column) at levels as low as 3.2 fg.



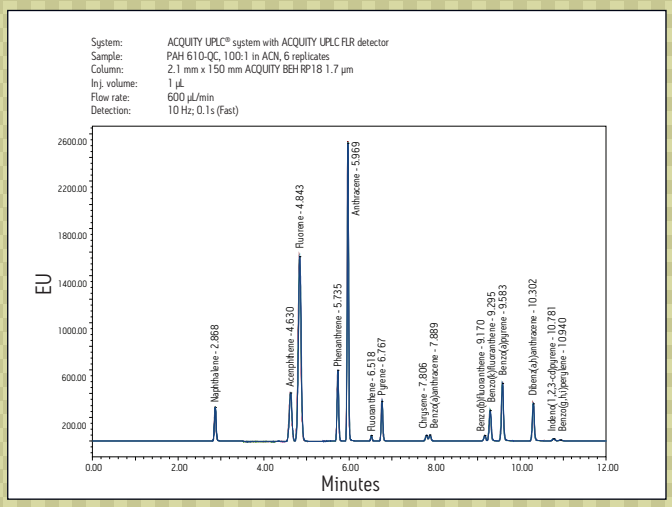
Characterize unknowns via the Spectrum λ-λ detection mode. Both excitation and emission wavelengths can be plotted on the same 3D contour plot for easy determination of optimum wavelength maxima.



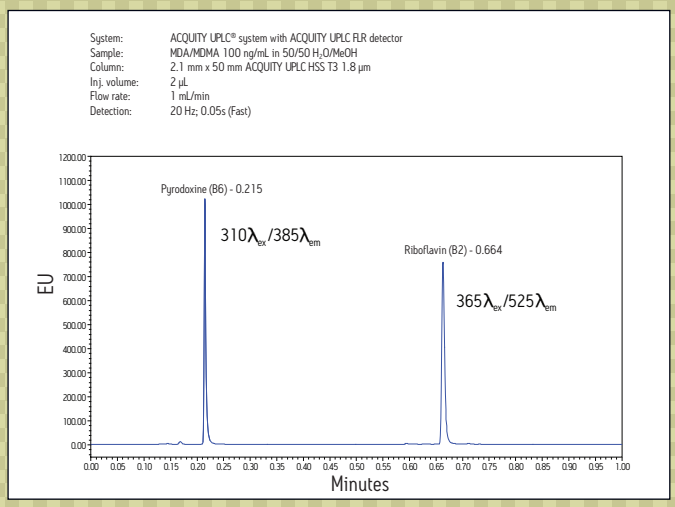
For samples with many components, like Polynuclear Aromatic Hydrocarbons (PAHs), the 3D scan feature easily determines optimal excitation and emission wavelengths.

ACQUITY UPLC FLR DETECTOR – FOR EVERYDAY APPLICATIONS

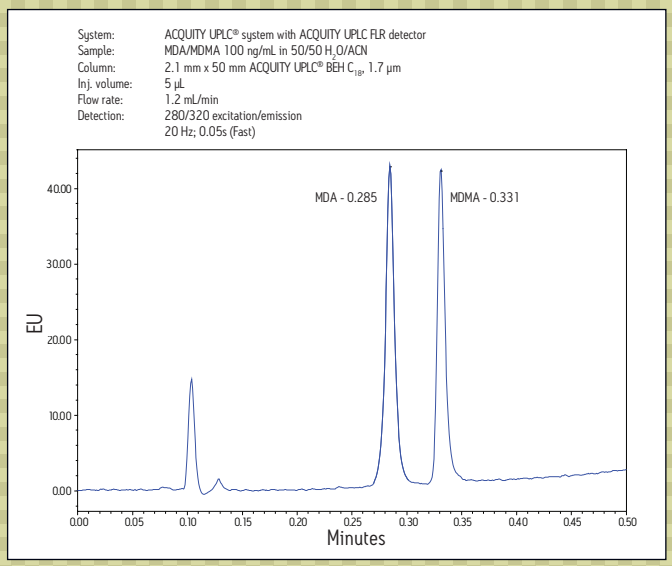
The ACQUITY UPLC FLR detector, as part of the ACQUITY UPLC system, increases productivity while enhancing chromatographic performance, detection limits and data quality.



Analysis of 16 Polynuclear Aromatic Hydrocarbons (PAHs). Significant improvement in throughput over conventional HPLC methods is realized and with excellent repeatability.



Detector selectivity is crucial when looking for low concentrations of analytes, such as B2 and B6, in complex sample matrices. These naturally fluorescent water-soluble B vitamins are easily quantitated with the ACQUITY UPLC FLR detector.



Toxicology screens, such as those involving drugs of abuse, require a highly sensitive and selective technique for the determination of trace levels of these compounds in biological fluids.

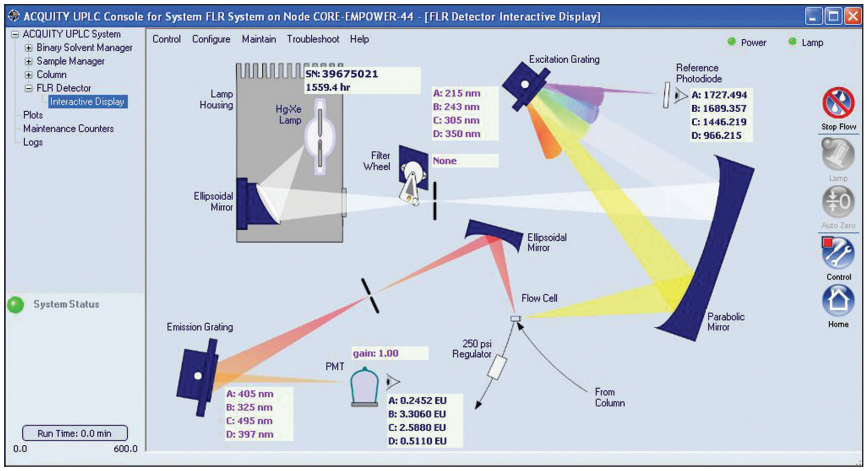
INTUITIVE, EASY-TO-USE SOFTWARE INTERFACE

The ACQUITY UPLC FLR detector is equipped with a customizable instrument console for both Empower™ and MassLynx™ software, which enables users to easily stay in control. Interactions that were historically done through an instrument keypad (instrument setup, status monitoring, and system diagnostics) are now readily accessible through an intuitive, easy-to-learn software interface.

The console interface:

- Uses a simple navigational approach for easy system implementation and instrument usability.
- Allows quick and easy access to critical instrument parameters, enabling the FLR detector to be easily controlled, monitored, and diagnosed.

ACQUITY UPLC FLR detector with the ACQUITY UPLC system achieves better quality data with shorter analysis times, as well as lower limits of detection for high-throughput, high-sensitivity analyses.



ACQUITY UPLC FLR detector console.

Waters

THE SCIENCE OF WHAT'S POSSIBLE.™

May 2007 720002040EN LB-PC

Waters Corporation
34 Maple Street
Milford, MA 01757 U.S.A.
T: 1 508 478 2000
F: 1 508 872 1990
www.waters.com