

HPLC DIODE ARRAY DETECTOR



The HPLC Diode Array Detector provides detailed full-spectrum data, enabling compound identification through spectral comparison with entries in the database. Furthermore, within the workstation, users can perform peak purity determination. This detector offers a high sensitivity mode for analyzing low concentration samples, reaching a signal-to-noise ratio similar to that of the UVD (Ultraviolet Detector).

APPLICATIONS

- **Pharmaceutical Analysis:** Compound identification, impurity profiling, and peak purity testing for drug quality control.
- **Food & Beverage Testing:** Detection of colorants, preservatives, flavors, and contaminants using spectral fingerprints.
- **Environmental Monitoring:** Identification and quantification of pesticides, herbicides, and organic pollutants in soil and water.
- **Clinical & Biomedical Research:** Analysis of biomolecules, metabolites, and complex mixtures with full-spectrum detection.
- **Chemical & Petrochemical Industry:** Characterization of intermediates and final products through spectral confirmation.
- **Biotechnology Applications:** Protein, peptide, and nucleic acid analysis with enhanced spectral mapping.
- **Forensic Science:** Reliable detection and identification of drugs, toxins, and unknown substances using database spectral comparison.
- **Method Development & Validation:** Enables multi-wavelength and full-spectrum detection, supporting high-precision method optimization.

FEATURES

Precision in Spectral Similarity Alignment and Peak Purity

The HPLC Diode Array Detector provides comprehensive full-spectrum data. Compounds can be identified by comparing their spectra against a database for similarity. Additionally, peak purity determination is performed directly within the workstation for precise qualitative and quantitative analysis.

Spectral similarity alignment using HPLC Diode Array Detector

Peak purity determination results on HPLC workstation

High Sensitivity Comparable to UV Detector

The high-sensitivity mode allows analysis of low-concentration samples, achieving a signal-to-noise ratio close to that of a UV Detector (UVD).

- Sample: 1.0×10^{-7} g/mL naphthalene standard solution
- Column: C18, 4.6×250 mm, 5 μ m
- Mobile phase: 95% methanol + 5% water
- Flow rate: 1.0 mL/min
- Injection volume: 20 μ L
- Wavelength: 254 nm

High sensitivity mode performance of HPLC Diode Array Detector

Accurate Data Through High-Resolution Spectra

Operating in high-resolution mode during compound detection generates a more detailed spectral map, supporting improved analysis of complex samples and greater inspection accuracy.

High-resolution spectrum analysis for HPLC system

Ease of Use

12-Channel Real-Time Data Collection

Improve analysis efficiency with advanced multi-channel detection:

- Configure up to 12 wavelengths for simultaneous real-time detection.
- Perform real-time analysis at a high sampling rate of up to 150 Hz.
- Enable full-spectrum detection for comprehensive analysis.

12-channel real-time data collection feature in HPLC

Rapid Spectral Scanning

With a cuvette holder, samples can be quickly loaded for rapid spectral scanning, enabling the HPLC detector to function as a UV spectrophotometer.

Cuvette holder for rapid spectral scanning with HPLC system

TECHNICAL SPECIFICATIONS

Light source	Deuterium (transmission type) & Tungsten lamp
Wavelength range	190~800nm
Slit width	1nm, 2nm, 4nm, 8nm
Wavelength accuracy	+/- 1nm
Wavelength precision	+/- 0.1nm
Linearity	> 2.0 AU
Wavelength calibration	Holmium glass



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