

# Achieve High Resolution over a Wide Wavelength Range of 190 ~ 900 nm with Easy Operation using ChromNAV Chromatography Software

The MD-2018 is a PDA detector for HPLC which is equipped with 1024-element diode array. Maintenance and validation functions as well as performance have been enhanced in comparison with previous models. JASCO's ChromNAV software offers control and sophisticated data acquisition and processing through a USB 2.0.



LC-2000 *Plus* HPLC Series

## MD-2018

### Photodiode Array Detector



#### MD-2018 Features

##### ■ High resolution

The MD-2018 has high spectral resolution in wide wavelength region by newly designed optics which is equipped with 1024-element diode array.

##### ■ Equipped with Deuterium (D<sub>2</sub>) and halogen (W) lamp

Using a deuterium(D<sub>2</sub>) and halogen(W) lamp provide coverage of a wavelength region as wide as 190 ~ 900 nm. Each lamp can be turned on or off independently, enabling the user to save lamp usage time.

##### ■ Temperature control

Temperature control of both the flow cell and the lamp house increases baseline stability.

##### ■ Functions to support validation

Equipped with Hg lamp as standard, automatic wavelength calibration can be performed. Functions such as indicating time for lighting lamp and monitoring lamp energy are available to support validation.

##### ■ Maintenance

Flow cell, D<sub>2</sub> and W lamps can be accessed from front side, assuring easy replacement. Functions such as stopping the system when a solvent leak occurs and warning indication to replace lamps with new ones are available, improving safety and reliability.

##### ■ Communication via USB 2.0

Setting up USB 2.0 communication can be done easily by plug and play. Connecting the USB cable can be performed even with the PC's power on.

##### ■ Function for identifying flow cell

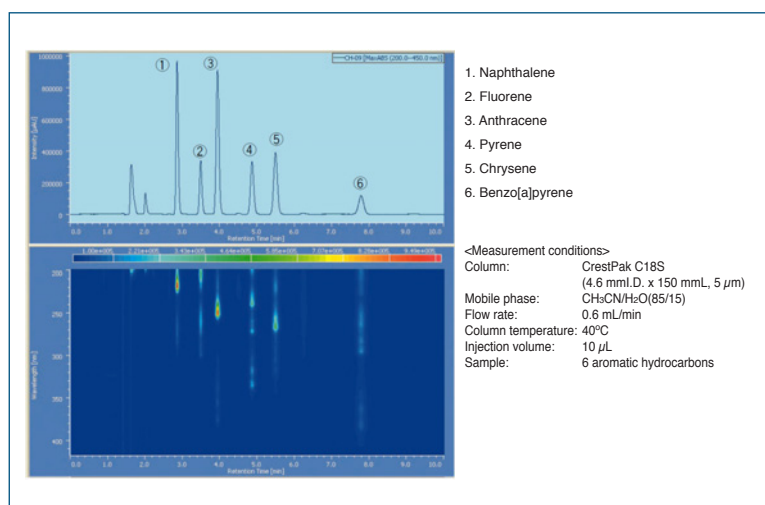
The flow cell for the MD-2018 is recognized automatically, allowing suitable signal processing for each cell.

##### ■ Analog output

2 channels of analog output are available as standard, assuring output for both integrator and recorder.

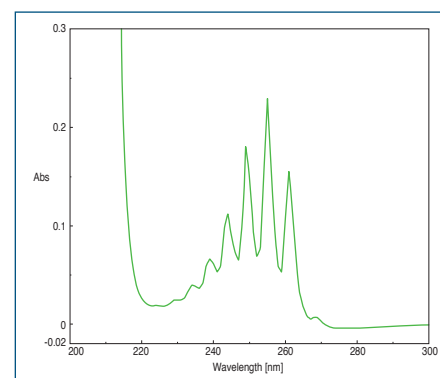
#### Analysis of 6 aromatic hydrocarbons

This data shows a chromatogram of 6 aromatic hydrocarbons and a contour plot. By plotting the wavelength of maximum Abs by Max Abs display, detecting peaks of unknown components can be performed.



#### Benzene spectrum

Resolution is superior to previous models (MD-2010/2015) by newly designed optics.



## Replacement of lamps



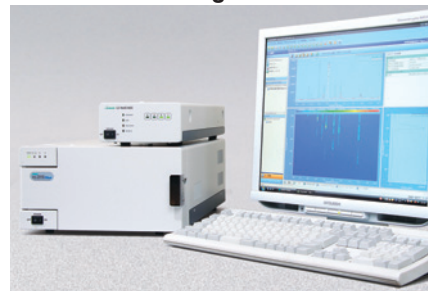
Replacement of D<sub>2</sub> and halogen lamps can be performed from front panel.

## Flow cell



A newly added temperature control function increases baseline stability. Information on each flow cell can be identified by the cell ID function, enabling suitable data processing for each flow cell.

## Measurement using **ChromNAV** software



Data acquisition and processing for PDA can be done smoothly using ChromNAV software.

## Specifications

Light sources	Deuterium lamp and Halogen lamp
Wavelength range	190 ~ 900 nm
Detector	1024-element diode array
Photometric method	Single beam
Slit width	1 nm, 4 nm, 8 nm
Wavelength accuracy	±1 nm
Noise level	±0.7 × 10 <sup>-5</sup> AU or less (254 nm, Specified condition)
Drift	1 × 10 <sup>-3</sup> AU/h or less (Specified condition)
Linearity	2.0 AU or more (ASTM)
Response	Minimum 0.1 S, 5 steps (Ultra fast, Fast, Standard, Slow, Ultra slow)
Interface for external PC	USB 2.0
Analog outputs	2 channels, Integrator/recorder selection, Signal mode: absorbance at a selected wavelength, ratio, Max Abs
Flow through cell	Front loading cassette type with temperature control
Optionable cell	High-pressure flow cell, preparative flow cell
Validation function	Wavelength calibration by Hg or D <sub>2</sub> lamp, Lamp lighting time, Monitoring of lamp energy
Safety features	Output the stop signal when an error occurs such as unusual high temperature at lamp house and/or solvent leakage.*1
Dimensions and weight	300 (W) × 470 (D) × 150 (H) mm, Approx. 15.6 kg
Power consumption	AC 100 ~ 240 V ±10% 50/60 Hz 150 VA

\*1 Solvent delivery can be stopped through **ChromNAV** or event signal.

## Control Software **ChromNAV**

System requirements	OS: Microsoft Windows Vista Business Edition (32 bit), Processor: Core2Duo 3.0 GHz or higher, Memory: 2 GB or higher, HDD: 80 GB or higher, Display: 17 inch TFT or higher, Optical drive: DVD-ROM drive
PDA data analysis function	Display of contour map, 3D, virtual channel, ratio chromatogram, 2-contour map, on-peak spectrum, Max Abs spectra, Multiple chromatogram display up to 12 Peak purity calculation, spectrum library creation, spectrum search

\* Stand alone operation of MD-2018 cannot be done, but it can be operated only with PC. As software, **ChromNAV** Ver. 1.11 or higher is necessary.



● Specifications are subject to change without notice.

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