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**GOEBEL** 

INSTRUMENTELLE ANALYTIK

Komplettlösungen HPLC &amp; Photometrie

kompetent

HPLC  
SOFTWARE  
PHOTOMETRIE

## CELENO™ Diode Array Detectors for HPLC

- High resolution photodiode array detector combined with sensitivity of state-of-the-art conventional detectors
- Ceramic polychromator provides unmatched real sensitivity in combination with low noise and drift
- Verify separation quality with peak purity and positive identification checks using spectra matching
- Minimise dispersion effects using extended fibre optic connections, even inside a column oven, for remote positioning of flow cell at the column outlet
- Stackable with modules of Celeno HPLC System to reduce required bench space
- Complete link with Geminix Chromatography Software for detector control, on-line display, data storage and spectra handling



Sophisticated applications require, alongside precise quantitation, additional qualitative information on component identity and purity. Only high-resolution spectra comparison can highlight the difference between similar molecule structures; high spectral resolution is therefore a key issue for high quality analytical results.

### High sensitivity for quantitation

The special polychromator design of the Celeno Diode Array Detector with its temperature-independent ceramic housing provides the basic framework for utilizing the high sensitivity of these detectors. A low drift specification, which also eliminates the need to use different wavelengths for compensation, is a pre-condition for effective exploitation of low noise specifications.

### True absorbance measurements

Precision and accuracy of absorbance measurements, particularly at low concentrations, is influenced by refractive index changes. The flow cell geometry ensures that the refractive index fluctuations have a minimum effect on any measurements.

### High-resolution spectra for peak purity and component identity

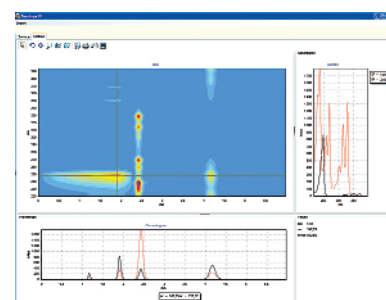
The high pixel resolution of 0.8 nm permits comparison of spectra at a high resolution, which is instrumental in identifying substances with similar molecular structures. Individual spectra libraries may be generated with reference materials and integrated into the method for component identification.

### Utilise the power and flexibility of fibre optics

The use of fibre optic technology results in very high efficiency of collection and transmission of light through the complete system. Applications, which provide high resolving power at low flow rates, require both specially designed flow cells and low volume connections at the column outlet in order to preserve chromatographic resolution. Temperature critical separations may require more stable conditions between the column and the detector flow cell. The fibre optic connections to the flow cell permit the cell to be located directly at the column outlet, i.e. inside a column oven. This technique minimises delay volume, avoids temperature effects and can also be used for operation in hazardous environments.

### Spectra and Chromatogram extraction by Geminix Chromatography Software

The Geminix Chromatography Software is used for complete system control, data acquisition, storage and quantitative analysis. Full spectra handling capabilities such as true 3-D display, extraction of chromatograms and spectra from a 3-D data field, peak purity control, spectra library matching and spectra derivatives allow maximum information to be obtained from a single run. User-defined automatic information extraction can be used typically in routine applications to obtain identity and purity information.



Komplettlösungen HPLC & Photometrie

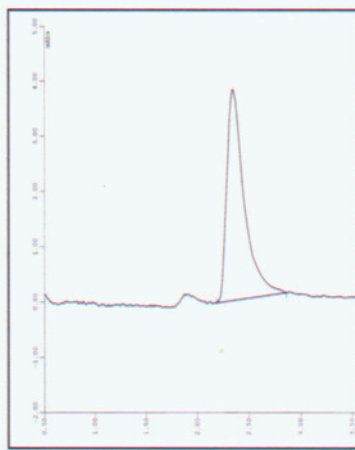
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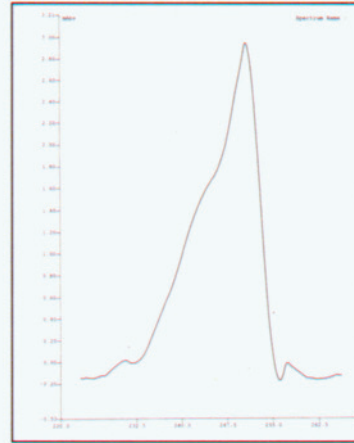
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*Injection of  
20pg of  
Anthracene*



*Spectrum of  
20pg of  
Anthracene*

## Specifications

### Wavelength range

- Celeno DAD UV 200 - 610 nm
- Celeno DAD UV/Vis 190 - 999 nm

### Wavelength accuracy

- $\pm 1$  nm

### Spectral resolution

- 0,8 nm per diode over full wavelength range

### Polychromator

- Ceramic polychromator with:  
UV/VIS: 1024channel photodiode array  
UV: 512 channel photodiode array

### Absorbance range

- $\pm 2$  AU, linear from - 0.1 AU to 1.6 AU

### Scanning interval

- 12 bis 99 msec

### Noise

- better than  $\pm 1 \times 10^{-5}$  AU at 250 nm (ASTM E685-93)

### Drift:

- better than  $3 \times 10^{-4}$  AU/hour after warm-up at 250 nm

### Chromatograms

- 8 chromatogram channels, individual wavelength and bandwidth, bunching from 0.8 to 20 nm

### Flow cells

- 8  $\mu$ l, 10 mm path length
- 3  $\mu$ l, 5 mm path length \*
- 1  $\mu$ l, 5 mm path length \*
- pressure limit 25.0 Mpa

### Digital interface

- Ethernet Interface, 100 MBit/sec (requires separate LAN Interface at PC)

### Diagnosis functions:

- wavelength accuracy test
- lamp test
- reference energy test

### Dimensions/Weight

226 x 190 x 390 mm (W x H x D),  
10,5 kg

### Power Supply

110/220 V, 50/60 Hz, 150 VA

\*) optional

## Ordering Information

**78-279200** Celeno UV/Vis Diode Array Detector including 8  $\mu$ l flow cell, interface and cable

**78-279201** Celeno UV Diode Array Detector including 8  $\mu$ l flow cell, interface and cable

**78-270200** Deuterium lamp module, pre-aligned including 2000-hour counter

**78-279201** Halogen lamp module

**78-279006** Geminix Chromatography Software for complete control of one System with digital data acquisition from one DAD

**78-278000** A/D converter for 6 analogue signals

Detailed information can be found on our web site or on request:

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