



**PREPARATIVE, ANALYTICAL AND FLASH  
LIQUID CHROMATOGRAPHY EQUIPMENT**



**Product  
CATALOG  
2023**

# ECOM COMPANY PROFILE

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ECOM is an established European **manufacturer of scientific and laboratory instruments** for liquid chromatography. The company is based in the Czech Republic and headquartered just outside of the capital Prague in Chrastany. Our company strategy is to supply our customers with high-quality, powerful and durable laboratory equipment at good prices. We develop and manufacture our devices in the European Union.



## ECOM main focus

ECOM intensely emphasizes research and development and hones the skills and knowledge of our experts. This allows us to constantly expand our product portfolio to provide customers with a wider range of products and to continuously pursue innovations. Besides our standard product offer, we can provide many customer solutions and modifications, in contrast to many other manufacturers, thanks to our enduring focus on innovative development.

## Portfolio

We manufacture high-quality instruments for liquid, HPLC, analytical, preparative and flash chromatography. Whether it is for preparative or analytical use, customers can choose from both complete laboratory chromatographic sets and only single-function devices – such as HPLC detectors, pumps, fraction collectors and others. We also offer custom flow cells, control software and many other related products. Thanks to our reliable production quality and ongoing development, we are recognized not just as a supplier of standalone devices and systems for end users, but also as a supplier of high-quality

built-in units and OEM devices for manufacturing companies.

## Worldwide distribution and service support

ECOM successfully supplies its devices and systems all over the world. For more than 30 years we have built a large worldwide network of distributors and service partners who, together with us, ensure that high-quality support is provided for all end customers.

## Certifications

One of the ways in which we ensure consistently high performance levels of production process and process management is through our fulfillment of the ISO 9001 standard. Our other certifications include product certifications – e.g. CSA for detectors. We would also like to mention that sustainability and a strong focus on areas related to the environment, social impact, and governance are among the values we hold in high esteem, which is why we work in accordance with ESG principles.

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# HPLC PREPARATIVE AND FLASH SYSTEMS

## ECOM Preparative and Flash Modular System

A highly effective modular ECOM LC preparative system, which contains the following basic components:

- A UV-VIS photodiode array detector
- A preparative pump
- A gradient box
- A fraction collector

The system is variable and allows different configurations of components.

All our units have implemented support for ECOMAC and Clarity software.

## ...choose your ideal system components...

### GRADIENT BOX

- With a gradient valve
- Optionally with a built-in PC

### PREPARATIVE PUMP

You can choose a preparative pump with the following flow rates:

**50, 250, 300, 1000  
or 3000 ml/min**

### DETECTOR TOY20DAD H

Available wavelength ranges versions:

**Up to 400, 600 and 800 nm**



### FRACTION COLLECTOR

Wide assortment of different sizes of tubes, vials and funnels



### FRACTION COLLECTOR

- Features a 10-position valve
- Large volume fraction collection

# HPLC PREPARATIVE AND FLASH SYSTEMS

## System Configuration Examples


To give you a better idea, we have prepared the following sample preparative and flash system configurations.

However, we would like to remind you that it is possible to equip our systems with a number of other configurations of pumps and detectors.

### HPLC Preparative and Flash Systems Examples

	Name	Type	Flow Rate	Max. Pressure	No. of Solvents	Detection	Main System Parts
	ECS28	Compact Preparative Systems	250 ml/min	30 MPa/ 4351 psi	6	<ul style="list-style-type: none"> <li>• <b>UV-VIS DAD</b> up to 800 nm</li> <li>• <b>4 channels</b> simultaneously</li> <li>• <b>Scan:</b> full spectrum</li> </ul>	<ul style="list-style-type: none"> <li>• Detector</li> <li>• Pump</li> <li>• Gradient valve</li> <li>• Fraction collector</li> <li>• Auto-inject valve</li> <li>• Embedded PC</li> <li>• SW Ecomac</li> </ul>
	ECS58		50 ml/min	30 MPa/ 4351 psi			
	ECS08		10 ml/min	40 MPa/ 5082 psi	4		
	ECS21 ECS21PC	Quaternary Gradient Preparative Systems	50 ml/min	30 MPa/ 4351 psi	4	<ul style="list-style-type: none"> <li>• <b>UV-VIS DAD</b> up to 600 nm</li> <li>• <b>4 channels</b> simultaneously</li> <li>• <b>Scan:</b> informative</li> </ul>	<ul style="list-style-type: none"> <li>• Detector</li> <li>• Pump</li> <li>• Gradient box</li> <li>• Embedded PC – (ECS21PC)</li> <li>• SW Ecomac</li> </ul>
	ECS22	Isocratic Preparative System	250 ml/min	30 MPa/ 4351 psi	1	<ul style="list-style-type: none"> <li>• <b>UV-VIS DAD</b> up to 400 nm</li> <li>• <b>4 channels</b> simultaneously</li> <li>• <b>Scan:</b> informative</li> </ul>	<ul style="list-style-type: none"> <li>• Detector</li> <li>• Pump</li> <li>• Fraction collector</li> <li>• SW Ecomac</li> </ul>
	ECS23 ECS23PC	Quaternary Gradient Preparative Systems	300 ml/min	15 MPa/ 2176 psi	4	<ul style="list-style-type: none"> <li>• <b>UV-VIS DAD</b> up to 600 nm</li> <li>• <b>4 channels</b> simultaneously</li> <li>• <b>Scan:</b> informative</li> </ul>	<ul style="list-style-type: none"> <li>• Detector</li> <li>• Pump</li> <li>• Gradient box</li> <li>• Embedded PC – (ECS23PC)</li> <li>• Fraction collector</li> <li>• SW Ecomac</li> </ul>

### HPLC Preparative and Flash Special Systems

	Name	Type	Pumps and Flow Rates	Max. Pressure	No. of Solvents	Wavelengths	Main system parts
	PrepBox A3L8E	Compact Large-scale Separation Systems	1000 ml/min 300 ml/min	15 MPa/ 2176 psi	4	Up to 800 nm	<ul style="list-style-type: none"> <li>• Detector: UV-VIS DAD</li> <li>• 2 Pumps</li> <li>• Embedded PC</li> <li>• Fraction collection</li> <li>• 10-position valve</li> <li>• SW Ecomac</li> </ul>
	PrepBox A338E		2 x 300 ml/min				



# HPLC PREPARATIVE AND FLASH SYSTEMS

## System Configuration Examples

### ECS21 and ECS21PC

#### Quaternary Gradient Preparative System

ECS21 is a universal and robust chromatography system. It has been designed for high-pressure sample separations at flow rates up to 50 ml/min, with the possibility of a gradient elution of up to 4 solvents. The system enables manual sample injection by loop, at up to 30 MPa, and also using a connection of flash cartridges to serve as a flash chromatography system. The UV-VIS PDA detector allows measuring at four wavelengths at the same time up to 600 nm. This makes the system universal and also allows conducting peak purity checks and other advanced techniques during the process.

**Examples of use:** The system is ideal for the separation of reaction mixtures during small molecule development as well as for the purification of peptides, proteins and oligonucleotides.

**SW and modifications:** It is fully integrated with ECOMAC software via a LAN connection and can be easily extended with other ECOM devices, such as a fraction collector, conductivity/pH monitor, etc. The ECOMAC software has full control over all important device parameters, and the integrated programming of the chromatographic steps facilitates repetitive, automated work that is useful on similar types of samples. To save table space in your laboratory, this unit could be equipped with an embedded PC. It only needs to connect to a monitor, mouse, and keyboard for complete operational readiness.



### ECS22

#### Isocratic Preparative System

ECS22 is a cost-effective chromatography system. It has been designed for repetitive high-pressure sample separations at flow rates up to 250 ml/min and 30 MPa with an isocratic elution. The fraction collector consists of a 10-position valve, which enables collecting up to 9 fractions of purified compounds at large volumes (as defined by the reservoir size). This makes the system ideal for high-load purifications in mid-scale chromatography processes. The system supports manual sample injection by loop up to 30 MPa or the connection of flash cartridges and to serve as a flash chromatography system. The UV-VIS PDA detector allows measuring at four wavelengths up to 400 nm at the same time. This capability enables conducting peak purity checks and other advanced techniques during the process.

**SW and modifications:** The ECOMAC software fully supports the entire system's management. Communication takes place via LAN. The ECOMAC software also enables easy system extension using additional ECOM-produced devices – such as a conductivity/pH monitor, a gradient elution device, etc. – and their integration into the system. The ECOMAC software supports the programming of automated separations with the possibility of smart fraction collecting.

# HPLC PREPARATIVE AND FLASH SYSTEMS

## System Configuration Examples

### ECS23 and ECS23PC

#### Quaternary Gradient Preparative Systems

ECS23 is a powerful chromatography tool for a wide array of preparative or flash applications. It is an ideal solution as a development chromatography system designed for high-pressure sample separations at a flow rate up to 300 ml/min with the possibility of a gradient elution of up to 4 solvents. The tube-based fraction collector – with a variety of tube volumes from 8 ml to 60 ml – makes the system great for first-time separation with new reaction mixtures without the loss of your products. The UV-VIS PDA detector enables measuring absorbance at four wavelengths at the same time up to 600 nm. This ability makes the system universal, and it also allows for a peak purity check and other advanced techniques during the process.

**SW and modifications:** It is fully integrated with ECOMAC software by a LAN connection and can be



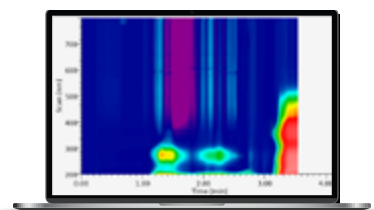
easily extended by other ECOM-produced devices, such as a valve-based fraction collector or a conductivity/pH monitor, etc. To save table space in your laboratory, this unit could be equipped with an embedded PC. It only needs to connect to a monitor, mouse, and keyboard for complete operational readiness.



### ECS08, ECS28, ECS58 Compact Preparative System

A complete preparative modular system with one basic gradient pump and an optional secondary pump for repetitive sampling or an injection valve. The unit also has a switching valve for counter-current chromatography (CCC) applications. The unit's 4-channel photodiode-array (PDA) detector operates at up to 800 nm.

**SW and modifications:** The system is controlled by a built-in PC with a touchscreen. This modular solution allows configuration of the unit according to customer needs. It can be equipped with one of three detectors with a wavelength range between 200–800 nm and also with one of three pump types with flow rates up to 50 or 250 ml/min.



### PREPBOX A3L8E and A338E Chromatography Separation Systems

A separation challenge may be easily resolved by ECOM's special separation systems. We introduce the PrepBox – a compact alternative to ECOM modular preparative systems.

**Examples of use:** In high-capacity systems or with centrifugal chromatography systems, like in the pharmaceutical purification of plant extracts, e.g. cannabinoids (CBD, CBN, CBG, CBC, THC etc.), peptides and oligonucleotides, also in new molecule development or synthesis.

**The systems contains:**

- A PDA 4-channel detector up to 800 nm
- One gradient pump and optionally a secondary pump for repetitive sampling or an injection valve
- A switching valve for CCC applications

**SW and modifications:** The systems contains a built-in PC and a control system. The entire system is tailored to the customer's needs.



# HPLC PREPARATIVE AND FLASH UNITS

## Detectors

**UV-VIS detectors TOY18DAD and TOY20DAD – V, VEX, H and HK versions** are designed for preparative and flash applications with 2 or 4 wavelengths or for continuously scanning in wavelength ranges of 190–800 nm for each instrument (200–800 nm in TOY18DAD). The noise level at 254 nm is  $\pm 50 \times 10^{-6}$  AU. Communication is via LAN, USB, RS232, and I/O ports.

### TOY18DAD V, TOY20DAD V



- Features an internal cell
- Equipped with a keyboard, a display and analog outputs

### TOY18DAD VEX, TOY20DAD VEX



- Uses an external cell connected by optical cables
- Equipped with a keyboard, a display and analog outputs

### TOY18DAD H, TOY20DAD H



- Most commonly used detector in ECOM preparative systems
- Communication: LAN, USB, RS232 and I/O ports

### TOY18DAD HK, TOY20DAD HK



- Equipped with a keyboard, a display and analog outputs
- Communication: LAN, USB, RS232 and I/O ports

**LED DETECTORS – LED20FIX and LED20G** are OEM built-in units with a UV LED diode as a light source, suitable for preparative and flash chromatography with fixed wavelengths.

### LED20FIX



- Single or dual fixed wavelengths with LED diodes and low noise of  $\pm 5 \times 10^{-6}$  AU
- Wavelengths: 265–280 nm (others on request)
- Dimensions: 125 × 65 × 62 mm (4.92 × 2.56 × 2.44 in)

### LED20G



- Thanks to a patented technology the detector cuts out 3 nm halfwidth and an exact wavelength from the LED spectrum
- Single or dual fixed wavelengths
- Wavelengths: Optional custom settings



# HPLC PREPARATIVE AND FLASH UNITS

## Detectors

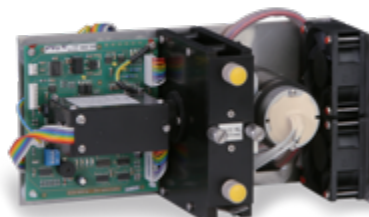
- Compact and powerful built-in ECOM DAD detectors available in many mechanical and optical versions
- 2 or 4 wavelengths or continuous scanning, in wavelength ranges 190–400, 600, or 800 nm with noise of  $\pm 50 \times 10^{-6}$  AU at 254 nm

### OEM DETECTOR TOY I



- Features compact cell housing
- Dimensions: 220 × 120 × 70 mm (8.67 × 4.72 × 2.75 in)

### OEM DETECTOR TOY L



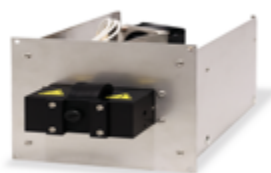
- Provides cell and lamp accessible from front panel
- Dimensions: 220 × 120 × 110 mm (8.67 × 4.72 × 4.33 in)

### OEM DETECTOR BABY



- Features most compact unit among ECOM detectors
- Dimensions: 182 × 59 × 67 mm (7.17 × 2.32 × 2.64 in)

### OEM DETECTOR TOY U



- Features a compact detector of 130 mm width
- With a cell accessible from front
- 130 × 130 × 200 mm (5.19 × 5.19 × 7.87 in)

OEM UV DAD detectors with SMA 905 connectors, for an external cell connected by optical cables

Conductivity and pH Detector

### DETECTORS TOY EXR, EXL



- New & improved versions of previous OEM UV EX detectors with SMA 905 connectors
- External cell connected by optical cables (cell not included)
- Communication by version: EXL–RS232, LAN, USB  
EXR–RS232

### CDPH DETECTOR



- Combined conductivity detector with pH measurement (1–300 mS/cm; 1–14 pH)
- Pressure resistance: Up to 20 MPa
- Max. flow rate: 250 ml/min

built-in

# HPLC PREPARATIVE AND FLASH UNITS

## Pumps • Gradient Boxes • Fraction Collectors

### ECP Pumps 50, 250, 300 ml/min



- Preparative pumps with pulsation compensation
- Controlled by RS232 and LAN
- Work as isocratic pumps
- Also, configurable with a gradient box, to serve as gradient pumps

### ECP L Pumps 1000 and 3000 ml/min



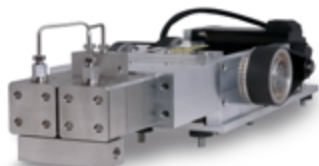
- Two new ECOM preparative pumps with outstanding parameters
- Flow rates: 1000 and 3000 ml/min
- Max. pressure: 15 MPa (2176 psi)

### ECP LG Gradient Pumps 1000 and 3000 ml/min



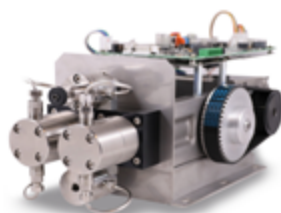
- Two new ECOM gradient pumps with outstanding pump parameters
- Flow rates 1000 and 3000 ml/min
- Max. pressure 15 MPa (2176 psi)
- New gradient box, up to 4 solvents for low-pressure gradient mixing

### ECP Built-in Pump 1000 ml/min



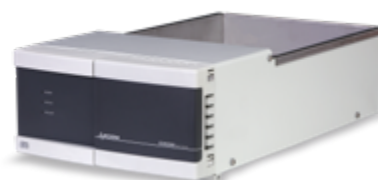
- New OEM pump with a flow rate of 1000 ml/min
- Max. pressure: 15 MPa (2176 psi)
- Provides very stable run even at low flow rates

### ECP Built-in Pumps 50, 250, 300 ml/min



- OEM preparative pumps with pulsation compensation
- Controlled by RS232 and LAN
- Work as isocratic pumps
- Also, configurable with a gradient box as gradient pumps

### Gradient Box ECB line



- Suited for liquid handling within ECOM gradient preparative systems
- Accommodates a container for solvent bottles, a 4-way gradient valve, and a built-in computer

### Box for Bottles ECB 2006



- Mobile phase box for liquids handling within ECOM isocratic systems
- With a stainless steel container for solvent bottles
- For up to 6 × 2 l mobile phase reservoirs

### Fraction Collector ECV 2010



- ECV2010 is equipped with a 10-position rotary valve
- Collects fractions according to the chosen method, which can be created using ECOMAC software

### Fraction Collector ECF 2096



- Fractions collected according to chosen method - manually by the keyboard or by ECOMAC or Clarity SW
- Analog input allows collecting based on the detector signal
- Racks for different number of vials, tubes and funnels

# HPLC ANALYTICAL SYSTEMS

## ECOM Analytical Modular System

We offer high-performance liquid chromatography analytical systems that are developed and manufactured by ECOM. Each configuration contains the following basic or optional components:

- A high-performance analytical pump with high backpressure resistance
- A low-pressure gradient box with degasser – optionally can be embedded with PC
- A column thermostat with a cooling and heating option or column oven with heating only
- A multichannel PDA or a variable UV-VIS detector with ranges from 200 nm up to 800 nm
- A high-sensitivity analytical refractive index detector - optional
- A single quadrupole mass spectrometer - optional
- A manual sample injection valve – optional
- An autosampler for 96 vials with high accuracy and linearity of injections – optional

The system is variable and allows different configurations of components. You can choose from various wettable materials that are used for the construction of pump heads. Detectors can be equipped with various flow cells with different dimensions and materials, including bio-inert materials. All units have implemented support for ECOMAC and Clarity software.

# ...choose your ideal analytical system by components...

### HPLC PUMP

- With maximum flow rate up to 10 ml/min
- Max. pressure up to 60 MPa (8703 psi)

### COLUMN OVEN

- Features heating and cooling 0–80 °C
- Or with heating only, up to 99 °C

### PDA/UV-VIS DETECTOR

With a continuously variable wavelength

### GRADIENT BOX

- With a degasser and a gradient valve
- Optionally with a built-in PC



### SAMPLE INJECTION VALVE

- Stainless steel sample loop



### AUTOSAMPLER






Features excellent accuracy and linearity



# HPLC ANALYTICAL SYSTEMS

## ECOM Modular Analytical System

### Configuration Examples

HPLC Analytical Systems	Name	Type	Flow Rate	Max. Pressure	No. of Solvents	Detection	Main System Parts
	<b>ECS01</b>	HPLC Analytical <b>Gradient</b> System	10 ml/min	40 Mpa/ 5802 psi	4	<ul style="list-style-type: none"> <li>• UV-VIS up to 800 nm</li> <li>• High speed up to 100 Hz</li> </ul>	<ul style="list-style-type: none"> <li>• Detector: UV-VIS</li> <li>• HPLC pump</li> <li>• Gradient box with degasser</li> <li>• Column oven with heating and cooling</li> <li>• Analytical injection valve</li> <li>• SW Clarity</li> </ul>
	<b>ECS02</b>	HPLC Analytical <b>Gradient</b> System			4	<ul style="list-style-type: none"> <li>• UV-VIS up to 600 nm</li> <li>• High speed up to 100 Hz</li> </ul>	<ul style="list-style-type: none"> <li>• Detector: UV-VIS</li> <li>• HPLC pump</li> <li>• Analytical injection valve</li> <li>• SW Clarity</li> </ul>
	<b>ECS03</b>	HPLC Analytical <b>Isocratic</b> System			1		
	<b>ECS04</b>	HPLC Analytical <b>Gradient</b> System			4	<ul style="list-style-type: none"> <li>• UV-VIS up to 800 nm</li> <li>• High speed up to 100 Hz</li> </ul>	<ul style="list-style-type: none"> <li>• Detector: (ECS04) UV-VIS, (ECS05) UV-VIS PDA</li> <li>• HPLC pump</li> <li>• Gradient box with degasser</li> <li>• Column oven with cooling and heating</li> <li>• Autosampler</li> <li>• Analytical injection valve</li> <li>• SW Clarity</li> </ul>
	<b>ECS05</b>	HPLC Analytical <b>Gradient</b> System			4	<ul style="list-style-type: none"> <li>• UV-VIS PDA up to 800 nm</li> <li>• 8 channels simultaneously</li> <li>• Scan: full spectrum, high speed up to 100 Hz</li> </ul>	

## ECS01

### Gradient Analytical System

ECS01 is a superior-quality, highly efficient analytical gradient HPLC system. Configuration includes a high-precision analytical pump; a four-way, low-pressure gradient module with an integrated efficient degasser; and a reservoir for mobile phases. The temperature of the column is regulated by a thermostat within ranges from 0 to 80 °C with a capacity of up to three columns. An extremely sensitive, high-frequency, variable UV-VIS detector with wavelength ranges from 190 to 800 nm is installed for continuous detection. Sample injection is carried out with a manual injection loop at a selectable volume.



## ECS02

### Gradient Analytical System

ECS02 is an analytical gradient HPLC system. It differs from other systems by the use of a column oven, which enables the heating of up to three columns within ranges from 5 to 99 °C above the ambient temperature. This system is equipped with a high-precision analytical pump; a four-way, low-pressure gradient module with an integrated degasser; and a reservoir for mobile phases. Detection is provided by a variable UV-VIS detector at wavelength ranges from 190 to 600 nm. Sample injection is performed with a manual injection loop at a selectable volume.



# HPLC ANALYTICAL SYSTEMS

## ECOM Modular Analytical System

### Configuration Examples

#### ECS03

##### Isocratic Analytical System

ECS03 is an analytical isocratic HPLC system, equipped with a mobile phase reservoir and an isocratic high-precision analytical pump. Detection is provided by a variable UV-VIS detector at wavelength ranges from 190 to 600 nm. Sample injection is carried out with a manual injection loop at a selectable volume. This system is an affordable choice for isocratic normal phase and reverse phase separations.



#### ECS04

##### Gradient Analytical System

ECS04 is an analytical gradient HPLC system equipped with an autosampler. The system consists of a high-precision analytical pump; a four-way, low-pressure gradient module with an integrated efficient degasser; and a reservoir for mobile phases. The temperature of the column is regulated by a thermostat within ranges from 0 to 80 °C with a capacity of up to three columns. For continuous detection, the system is equipped with a sensitive, high-frequency, variable UV-VIS detector within ranges from 190 to 600 nm. Utilization of the autosampler guarantees high accuracy and the linearity of injections.

#### ECS05

##### Gradient Analytical System

ECS05 is an analytical gradient HPLC system equipped with an autosampler. The system includes a high-precision analytical pump, a four-way, low pressure gradient module with an integrated efficient degasser, and a reservoir for mobile phases. The temperature of the column is regulated by a thermostat within ranges from 0 to 80 °C with a capacity of up to three columns. A sensitive UV-VIS PDA detector is installed for continuous detection. This multichannel detector enables high-frequency scanning of the entire UV/VIS spectrum within a wide range of wavelengths from 200 to 800 nm. Utilization of the autosampler guarantees high accuracy and the linearity of injections. Configuration of this system supports demand for high-end laboratory automation.

It is used in the analysis and quality control of pharmaceutically active substances, peptides and products of the chemical industry.



# HPLC ANALYTICAL UNITS

## Detectors • Pumps • Autosamplers • Gradient Boxes • Column Ovens

UV-VIS PDA Detector  
**ECD 2800**



- UV-VIS photodiode array detector
- Measures at 8 wavelengths simultaneously or provides a scan of the full spectrum with speed up to 100 Hz
- Noise level at 254 nm  $\pm 5 \times 10^{-6}$  AU
- Wavelengths ranges: 200-800 nm

UV-VIS Detector  
**ECD 2600/2800**



- UV-VIS variable wavelength detector
- Wavelength type: Continuously variable in ranges 190-800 (600) nm
- Noise level of  $\pm 3 \times 10^{-6}$  AU at 254 nm
- Automatic wavelength calibration by deuterium spectral lines

UV-VIS EX Detector  
**ECD 2600/2800 EX**



- Features a configuration of the basic ECD 2600/2800 units used with external cells connected by optical cables with SMA 905 connectors
- Noise level at 254 nm  $\pm 15 \times 10^{-6}$  AU
- Wide assortment of external cells

UV-VIS CE Detector  
**ECD 2600/2800 CE**



- Modification of the basic ECD2600/2800 units suitable for capillary electrophoresis
- Easily replaceable capillary in cell compartment
- Noise level at 254 nm  $10 \times 10^{-6}$  AU

Analytical Pump  
**ECP 2010 (H)**



- ECP2010 (H) with the max. flow rate up to 10 ml/min
- Max. pressure: 40 (60) MPa
- Works as an isocratic pump, also configurable with a gradient box to serve as a gradient pump

Single-Piston Pump  
**ECP 2011 (P)**



- A single-piston pump suitable for column washing and column regeneration process
- Flow rate: up to 10 ml/min
- ECP2011 P features a pressure sensor
- Piston back-washing function

Gradient Boxes  
**ECB line**



- Suitable for liquid handling within ECOM gradient systems
- Container for solvent bottles
- 4-way gradient valve
- Powerful built-in vacuum degasser
- ECB2004 BP features a built-in PC

Autosampler



- Automatically samples 96 vials with excellent sample injection accuracy and linearity
- Wide range of sample volumes
- $\mu$ l pick-up mode achieves zero sample loss

Column Oven  
**ECO line**



- Peltier heating/cooling column oven (0-80 °C)
- Alternative configuration as a dedicated heating unit (up to 99 °C)
- Capacity: up to 3 columns of 250 mm length

# HPLC ANALYTICAL UNITS

## Analytical Cells • Valves • Columns

### Analytical Cells



- Cells included by default in ECOM systems – 5 mm optical path length
- Path lengths: 2, 5 and 10 mm; different path lengths on request
- Feature a temperature exchanger, which suppresses temperature changes

### Sample Injection Valve



- Analytical/semipreparative stainless steel 2-position injection valve
- Needle injection port on the front side
- No-flow interruption technology

### Valve Actuator ECVA 2000



- Supports 2-position and multi-position valves
- Switching time from 95 ms
- External/Embedded versions
- Smart driver electronics
- Valve position preserved after beeing power off

## Columns

Choose from our wide range of high-quality, but also affordable, analytical columns, which have been designed and developed in the Czech Republic. They feature technologically perfect end-capping, no broken particles, stability over wide pH ranges, and resistance to high pressures. They are available in four stationary phase variants and in a wide range of column dimensions and various particle sizes. Our column assortments are available with various physical parameters, enabling a diverse selection from the viewpoint of applications. This lets the user raise resolution and effectiveness, or lower the mobile phase consumption of chromatography systems. These analytical columns are used in the analysis of medium hydrophobic, aromatic or amine substances. Suitable for use with HPLC and UHPLC systems.



#### Columns Specifications

Column lengths	50–250 mm
Inner diameter	4.6 mm; 3 mm; 2.1 mm
Stationary phase particle size	5 µm ; 3 µm ; 2 µm
Pressure limit	Up to 1,300 bar (130 MPa; 19,000 psi)

#### Columns C18-HE

Common stationary phase with chemical ligand C18. Free silanol groups are efficiently endcapped by an alkyl substituent. This column is one of the most widely used stationary phases for reversed-phase separations. Suitable for the analysis of peptides, ionized and non-ionized moderately hydrophobic substances.

#### Columns DM

A specially developed stationary phase DM (Dual Modification). The first polar functional group is inserted into the non-polar alkyl chain, which is embedded in the stationary phase. The entire chain is terminated with a second polar group. This dual-modified polar alkyl chain excels in weak non-bonding interactions with analytes. Suitable for the measurement of polar, aromatic or amine substances.

#### Columns C18-AQ

Specially modified stationary phase with chemically bound C18 ligand. Free silanol groups are effectively endcapped by a polar substituent, which ensures stability in a purely aqueous mobile phase.

#### Columns Diol

The chemically bonded ligand 1,2-dihydroxypropyl is in the stationary phase of this column. The stationary phase exhibits a moderate degree of polarity. Suitable for normal and reversed phase separations, as well for HILIC chromatography. The column is stable in the purely aqueous mobile phase. This property allows an easy transition between the normal and reversed phase separations on the same instrument.

# HPLC FLOW CELLS

**Standard cells:** We manufacture a wide range of external and internal **standard cells**. We are also very flexible in providing their various modifications.

**Custom cells:** Thanks to the fact that we are constantly expanding our technological production equipment, we are currently able to offer an ever wider assortment for the **development and production of custom cells**, including OEM versions. Do not hesitate to contact us for a request for customized cells.

**Materials:** stainless steel, PEEK, Hastelloy, sapphire glass, quartz glass, FEP, titanium, various bioinert materials including FDA-compatible materials, etc.



## Preparative Cells

- Produced in 4 standard versions: with optical path lengths of 0.1, 0.3, 1.3, and 2.4 mm made from stainless steel or PEEK
- By default, detectors supplied with a PLCC15L cell, other cells on request
- Cell connection usually  $\frac{1}{4}$ " – 28 for  $\frac{1}{8}$ " tubing, but can also be UNF10 – 32 for  $\frac{1}{16}$ " capillaries or  $\frac{5}{16}$ " for  $\frac{3}{16}$ " tubing
- Custom cell parameters available

## External Cells

- Cells are used outside of the detector, connected to the unit by fiber optic cables
- Cells are specially developed for use in explosion or contamination hazard applications
- Custom cell parameters available

## Tri-clamp Cells

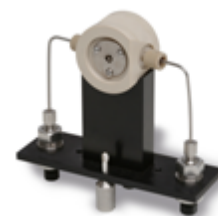
**Tri-clamp (TC) flow cells** are a new series of flow cells with a tri-clamp pipeline connection, used in preparative high-pressure chromatography.

- **Various materials:** stainless steel, Hastelloy or PEEK
- **Optional optical path length ranges :** 0.1–10 mm
- **Maximum operating pressure:** 30 MPa
- Designed for the advantageous **elimination of dead volume inside the cell**
- Custom cell parameters available

## Analytical Cells

- 3 versions of optical path lengths: 2, 5 and 10 mm
- These cells included by default in detectors/systems with a 5 mm optical path length, other path lengths on request
- Designed with a temperature exchanger which suppresses temperature changes
- Custom cell parameters available

Cell Design Examples





# HPLC SOFTWARE

## ECOMAC Software

**ECOMAC is software produced by ECOM used for chromatography device control and data acquisition. The software is designed to maximize the ease of operation of ECOM chromatographic systems. All ECOM units are supported by ECOMAC.**

### ECOMAC features and benefits

- ECOMAC is a useful tool for the convenient management of work with devices, servicing activity purposes and easy diagnostics
- Easy installation
- Connection by USB, LAN or RS232
- No need for an A/D converter (an added PC card)
- Data export in various formats
- Secure access
- Unit control and data collection from one place
- Language support: English, Chinese and Czech



## Clarity Chromatography Software

**Clarity SW is a globally used advanced chromatography data software for data acquisition, processing, and instrument control, which enables controlling all ECOM devices from one environment. Clarity is useful for both analytical and preparative purposes.**

**Integration of ECOM devices:** The benefit of ECOM for our customers is that we constantly prepare for our clients the integration of all our devices into the Clarity system. Thus, all ECOM device drivers are included within the software. There is no need for an A/D converter (an added PC card). Drivers contain full control of instruments as well as diagnostic tools which are made by ECOM in cooperation with the producer. This guarantees the highest quality and full integration into the Clarity station.

**Data acquisition:** Simultaneous data acquisition from up to four independent chromatographs; each chromatograph can acquire data from up to 32 detectors.

**Language support:** Clarity is multilingual; users can switch between 6 languages – English, Chinese, Russian, Spanish, French, and German.

**GLP (Good Laboratory Praxis) and regulated environment compliance:** Clarity contains tools to meet **21 CFR Part 11** requirements, ensuring its suitability for use in regulated environments. Also, Clarity cooperates with **LIMS** systems.



**Find out more about ECOM  
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