

Catalogue 2020

# EQUIPMENT FOR ANALYTICAL, PREPARATIVE AND FLASH LIQUID CHROMATOGRAPHY

**Compact Preparative System up to 300 bar**

- Touch Screen with new SW
- 200 - 800 nm 3D Data
- Fraction Collector
- 50 or 300 ml/min Six Solvents Inputs



**ECOM**  
HPLC FROM PRAGUE

**NEW!**

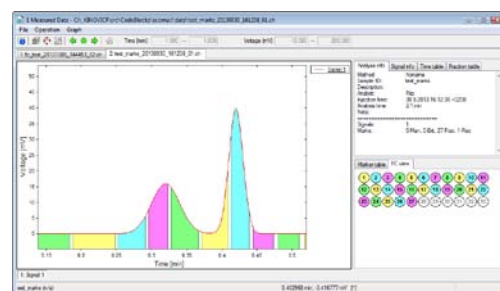
ECOM is moved into new building near to Prague airport



# PREPARATIVE SYSTEMS

**High effective modular HPLC preparative system** containing UV-VIS photodiode array detector, preparative pump and gradient box. The system is variable and allows different configurations of components.

Controlled by ECOMAC software!



Preparative pump with flow rate up to 50, 250 or 300ml/min



Box ECB2005/2007 with gradient valve or ECB2005PC with built-in PC

TOY18DAD H detector in versions up to 400, 600 and 800 nm



ECF2096 Fraction collector for 9, 21 and 40 ml tubes

or

ECV2010 Fraction collector with 10 positions valve



## System configuration examples

Equipment	ECS21	ECS22	ECS23
P/N	ASP2100X	ASP2200X	ASP2300X
	Gradient	Isocratic	Gradient
Detector	TOY18DAD H 600	TOY18DAD H 400	TOY18DAD H 600
Pump	ECP2050	ECP2200	ECP2300
Box	ECB2007	ECB2006	ECB2005
Fraction collector	-	ECV2010	ECF2096

### NOTE:

- For more information and technical specifications see pages 6 and 7.
- This system is controlled by ECOMAC or Clarity chromatography software.
  - Ask us for different configuration.

# ANALYTICAL SYSTEMS

Modular Analytical HPLC system includes **PDA Detector** or **UV-VIS Detector**, **autosampler** for 96 vials, **isocratic pump** with flow rate up to 10 ml/min works together with **gradient box** with degasser as **gradient pump** and **column oven** with heating/cooling. Communication is through RS232 or LAN. New addition to these units is **ECB2004BP** box which has built-in PC.

Gradient box with degasser ECB2004B or ECB2004BP box with built-in PC



Analytical HPLC pump ECP2010 with flow-rate up to 10 ml/min and pressure up to 40 MPa

Column oven ECO2080 with heating and cooling or ECO2099 with heating only

ECDA2800 PDA scanning detector or ECD2800 / ECD2600 UV-VIS detector with continuously variable wavelength



L3320 Autosampler with excellent accuracy and linearity

Units controlled by Clarity

## System configuration examples

Equipment	ECS01	ECS02	ECS03	ECS04	ECS05
	ASA0100X	ASA0200X	ASA0300X	ASA0400X	ASA0500X
	<b>Gradient</b>	<b>Gradient</b>	<b>Isocratic</b>	<b>Gradient</b>	<b>Gradient</b>
Detector	ECD2800	ECD2600	ECD2600	ECD2800	ECDA2800
Pump	ECP2010	ECP2010	ECP2100	ECP2010	ECP2010
Column Oven	ECO2080	ECO2099	-	ECO2080	ECO2080
Box	ECB2004B	ECB2004B	ECB2006	ECB2004B	ECB2004B
Sampling	Manual	Manual	Manual	L3320	L3320

### NOTE:

- For more information and technical specifications see pages 4 and 5.
  - This system is controlled by Clarity Chromatography software.
  - Ask us for different configuration.



# ANALYTICAL UNITS OVERVIEW

## DETECTORS

### ECDA2800 UV-VIS PDA Detector



Diode Array Detector measures at eight wavelengths simultaneously or full scan with speed up to 100 Hz. 3D support in Clarity SW. Noise level  $\pm 5 \times 10^{-6}$  AU. Four analog outputs. Two special mathematical channels are

available. Wavelength range 200-800 nm. AD05 analytical cell included.

**ECDA2800**

**P/N ANW0000X**

### ECD2800/ECD2600 UV-VIS Detector



UV-VIS detector with continuously variable wavelength in range of 190-800 (600) nm and noise level  $\pm 3 \times 10^{-6}$  AU controlled by RS232, LAN or keypad. Automatic wavelength calibration using deuterium spectral lines.

AC05 analytical cell included.

**ECD2800**

**P/N ADA0000X**

**ECD2600**

**P/N ADB0000X**

### ECD2800/2600 EX UV-VIS Detector



Modification of basic ECD2800/2600 unit suited for external cell connecting using optical cables with SMA 905 connectors. Noise level  $\pm 15 \times 10^{-5}$  AU. Wide range of external cells available.

**ECD2800 EX**

**P/N ADAEX00X**

**ECD2600 EX**

**P/N ADBEX00X**

### ECD2800/2600 CE UV-VIS Detector



Modification of basic ECD2800/2600 unit suited for capillary electrophoresis. Easily replaceable capillary in cell compartment. Noise level  $10 \times 10^{-6}$  AU.

**ECD2800 CE**

**P/N ADACE00X**

**ECD2600 CE**

**P/N ADBCE00X**

### L3320 Autosampler



Autosampler for 96 vials with excellent accuracy and linearity of sample injection. Inovated needle design significantly reduces sample residue contamination. Wide range of sample volumes, even  $\mu$ l pick-up mode with zero sample loss.

**L3320**

**P/N ARA03320**

### AC05/AD05 Analytical Cells



Standardly included cells with 5 mm optical path length. Cells with optical path length 2 and 10 mm are available on request. Cells are designed with a temperature exchanger which suppresses the temperature changes.

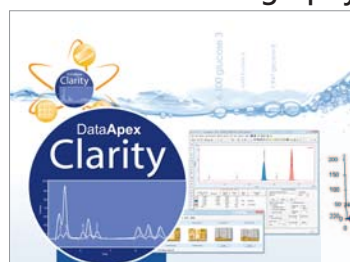
**AC05**

**P/N ADA70000**

**AD05**

**P/N ANW70000**

### CLARITY Chromatography Station



Clarity is advanced Chromatography Data Station with optional software modules for **data acquisition**, **data processing** and **instrument control**. Its wide range of data acquisition interfaces (A/D converters, LAN, USB, RS232) allows **connection to any ECOM unit**. Single Instrument SW is possible to extend by SW Module for LC control, SW module for AS control, SW module for System Suitability Test, SW module for PDA Data processing, Single Instrument Add-on and Offline version for data processing.

**All ECOM units drivers are included in Module LC Control.** Drivers contain **full control** of instruments as well as **diagnostics tools** and are made by ECOM with DataApex supervision that guarantees the highest quality and full integration into the Clarity station.

# ANALYTICAL UNITS OVERVIEW

## PUMPS

### ECP2010 / ECP2010H Analytical HPLC Pump



Works as isocratic pump, together with Gradient Box also as gradient pump. It has two pump heads connected in series with a piston diameter of 1/8". Unit software includes new learning algorithm for pulsation suppression and many testing and diagnostic features.

Flow rate 0.02–10 ml/min  
ECP2010 40 MPa (5800 PSI)  
ECP2010H 60 MPa (8700 PSI)

**ECP2010**

**P/N ACA0000X**

**ECP2010H**

**P/N ACF0000X**

### KAPPA10 / Kappa10PP Isocratic One Piston Pump



Single piston pump suited for column washing and columns regeneration process. Kappa **10PP includes pressure sensor**. It is designed with piston diameter of 1/8". Completely new concept of electronic control and drive of pump allows it to be used as a standalone unit.

Flow rate 0.01–10 ml/min  
40 MPa (5800 PSI) up to 2 ml/min  
20 MPa (2900 PSI) 2.01 to 10 ml/min

**KAPPA10**

**P/N PK00000X**

**KAPPA10PP**

**P/N PL00000X**

### ECB2004B / ECB2004BP Gradient Box with Degasser



Box is suited for handling liquids in ECOM gradient systems. It accommodates container for solvent bottles, built-in high-efficiency vacuum degasser and four way gradient valve. Four way gradient valve is controlled via

ECP2010 pump. Up to four solvent lines may be degassed simultaneously. ECB2004BP has a built-in PC included inside.

**ECB2004B**

**P/N ABA0000X**

**ECB2004BP**

**P/N ABAPC00X**

### ECB2006 Box for Solvent Bottles

ECB2006 is a simple container for solvent bottles.



**ECB2006**

**P/N ABC000X**

### ECO2080 / ECO2099 Column Oven



Peltier heating/cooling column oven (0–80 °C) with a big compartment room can accommodate up to 3 columns with length up to 25 cm. Unit is controlled via keypad, RS232 or LAN

Interface. Column oven can be also supplied with heating only, temperature range up to 99 °C as ECO2099.

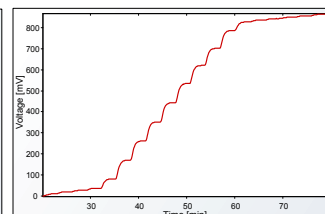
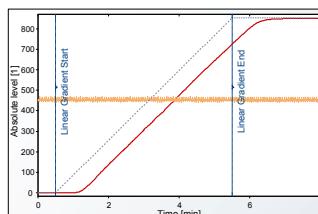
**ECO2080**

**P/N AOA0000X**

**ECO2099**

**P/N AOB0000X**

These graphs show linear and stepped gradient (10 % steps and at the beginning and end 1 %) performed on HPLC pump ECP2010 and gradient box ECB2004B. This is used for measuring and testing performance criteria such as accuracy and reproducibility of solvent delivery system in production.



# PREPARATIVE UNITS OVERVIEW

## STAND ALONE DETECTORS

**TOY18DAD V**, **TOY18DAD VEX** and **TOY18DAD H** are designed for preparative and flash applications, with four continuously variable wavelength in the range 200-400 nm, 200-600 nm, 200-800 nm and 190-840 nm for each instrument. Noise level at 254 nm is  $\pm 50 \times 10^{-6}$  AU with an empty cell.

### TOY18DAD V



**TOYDAD V** uses internal cell and it is equipped with keyboard, display, analog outputs, LAN, USB, RS232 and IO ports.

### TOY18DAD VEX



**TOYDAD VEX** uses external cell connected by optical cables and it is equipped with keyboard, display, analog outputs, LAN, USB, RS232 and IO ports.

### TOY18DAD H



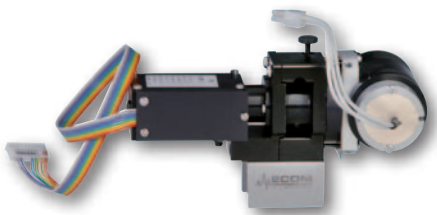
**TOYDAD H** is used in ECOM standard Preparative systems equipped with LAN, USB, RS232 and IO ports.

## BUILT-IN DETECTORS (ALL POWERED BY 24-36 VDC)

**TOYDAD detectors** are very small but powerful DAD units produced in many mechanical and optical versions. Each version is available with 2 or 4 variable wavelengths or as 4 variable wavelengths + continuously scanning in wavelength ranges 200 – 400, 600 or 800 nm. Noise level  $\pm 50 \times 10^{-6}$  AU. Drift  $1000 \times 10^{-6}$  AU/hr. Detectors can use **different types of cells** - optical path length **0.1 – 2.4 mm**, for flow rates up to **500 or 3000 ml/min**. Also available cells with **pressure limit 30 MPa (4351 PSI)**. Each cell type can be delivered in **EX version for connection with optical cables** – available upon request.

### TOY18DAD I

Unit with small cell housing



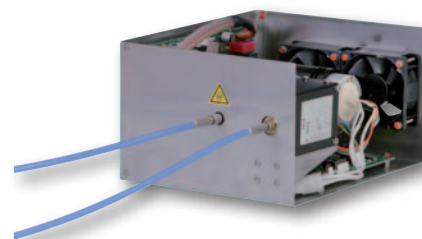
### TOY18DAD L

unit with cell and lamp accessible from front panel



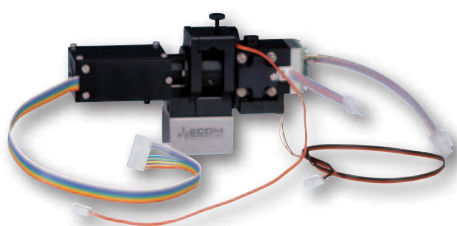
### TOY18DAD EX

Designed for external cell connected by optical cables



### BABY18DAD

Smallest unit with dimensions 182x59x67 mm (7.17x2.32x2.64 in)



### TOY18DAD U

130 mm narrow detector with cell out off unit



### LED20FIX

Single or dual fix wavelengths with **LED diodes** from 265 nm and low noise  $\pm 5 \times 10^{-6}$  AU.



## NOTE:

- 3D evaluation for Flash DAD, BABYDAD and all TOYDAD detectors is supported by Clarity SW.



# PREPARATIVE UNITS OVERVIEW

## PUMPS

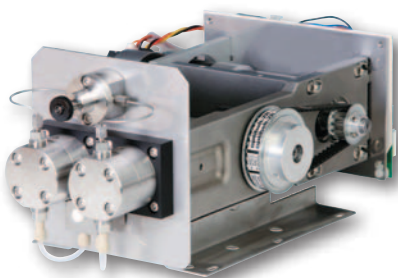
### ECP2050/2200/2300



Preparative pumps with pulsation compensation controlled by RS232 and LAN. Pumps work as isocratic pump, together with Gradient Box also as gradient pump.

ECP2050 50 ml/min, 30 MPa (4351 PSI)  
ECP2200 250 ml/min, 30 MPa (4351 PSI)  
ECP2300 300 ml/min, 15 MPa (2176 PSI)

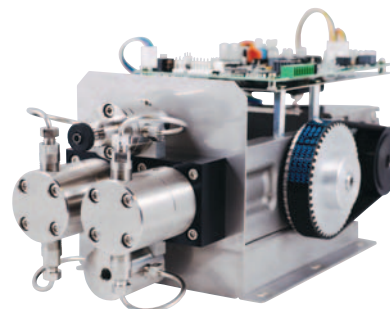
### THETA 50/300 IOTA 50/300



OEM pumps suited for preparative and flash applications. Controlled by RS232. THETA is **without** pressure sensor IOTA **with** pressure sensor.

THETA50 50 ml/min, 30 MPa (4351 PSI)  
THETA300 300 ml/min, 7.5 MPa (1015 PSI)  
IOTA50 50 ml/min, 30 MPa (4351 PSI)  
IOTA300 300 ml/min, 7.5 MPa (1015 PSI)

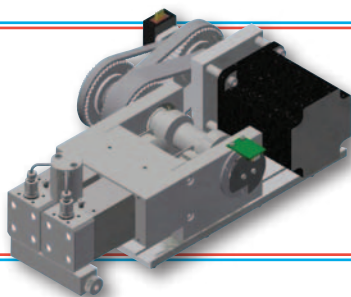
### ECP2200 OEM



OEM preparative pumps with pulsation compensation controlled by RS232 and LAN. Pumps work as isocratic pump, together with Gradient Box also as gradient pump.

ECP2200 250 ml/min, 30 MPa (4351 PSI)

COMING SOON!



We are preparing a **new pump with flow rate 1000 ml/min and pressure 15 MPa (2176 PSI)** with new gradient box up to 4 solvents for low pressure gradient mixing.

### ECF2096 Fraction Collector



Fractions collected according to chosen method which can be created manually by keyboard, just as using **ECOMAC** software. Analog input allows collecting based on detector signal. Racks for 9, 21 and 40 ml tubes.

### ECB2007/2005/2005PC Gradient Box

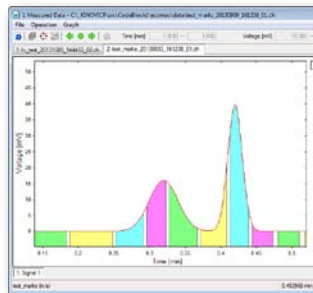


Suited for liquid handling in ECOM gradient preparative system. It accommodates container for solvent bottles and four way gradient valve. **ECB2005PC box contains built-in computer.**

### ECV2010 FC with 10 positions valve



Fraction Collector ECV2010 is equipped with **10 position rotary valve**. It collects fractions according chosen method which can be created using **ECOMAC** software.



ECOMAC SW Controls all ECOM units and collects data. It is suited for preparative applications with many possibilities of fraction collecting and events programming.

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