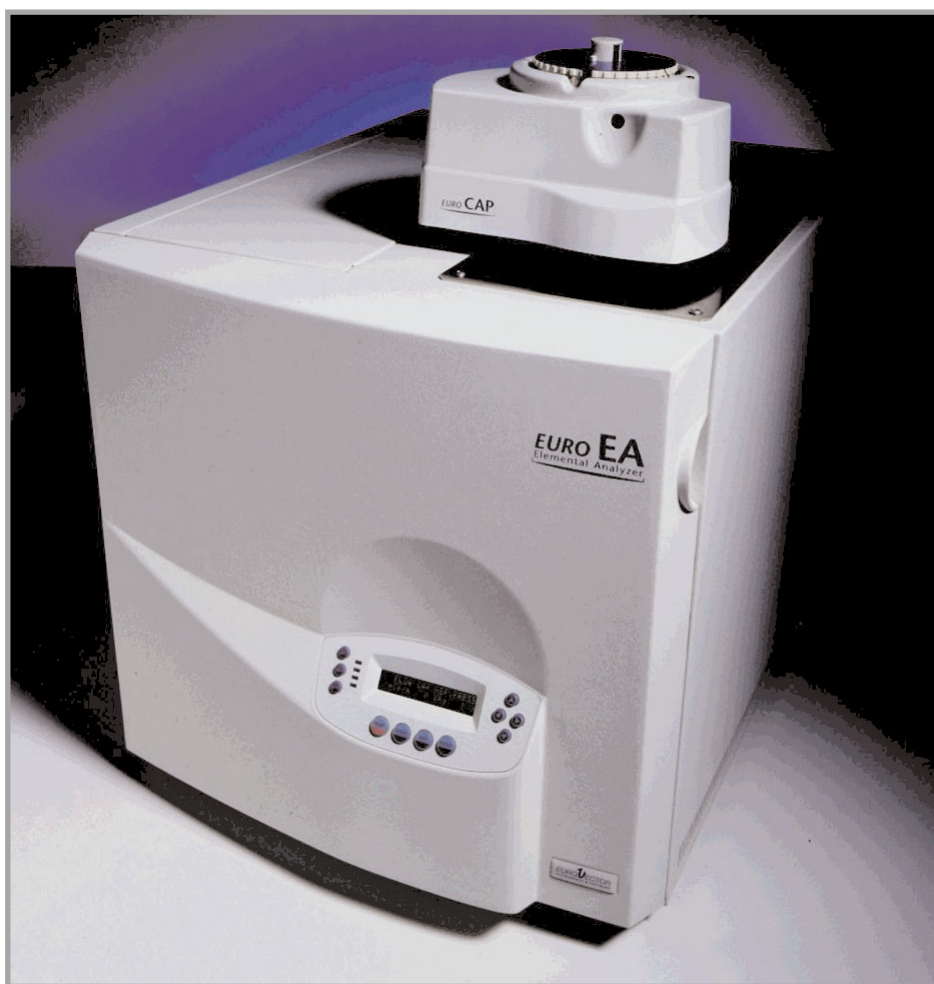


**EuroEA3000**

*Compact, fully automatic Elemental Analyser  
for the most exacting CHNS-O determinations.*

# Smash the Combustion Barrier!

At last... the instrument that fits your real needs, now and into the future



## ***EuroEA3000 Series represents a quantum leap in Oxygen pyrolysis and state of the art of CHNS dynamic flash combustion. It is based on an innovative operating principle...***

...Until now Dynamic Flash Combustion analysers have been operated using a fixed oxygen amount regardless of variations in size or matrix of each sample. Patented TurboFlash<sup>®</sup> Combustion Technology introduced by EuroEA, allows for automatic Pressurised Oxygen injection of any Oxygen volume independently from carrier gas flow rate: difficult matrices are broken with ease, analytical precision improved and analysis time cut down dramatically with simultaneous CHNS analysis completed in 5 minutes.



**EuroEA compact design.** Due to modern design principles and analytical miniaturisation, EuroEA has the smallest footprint while maintaining an enviable ease of access. Installation takes place with the minimum of disruption.

**EuroEA Modularity.** The system is available in Single or Dual Furnace configuration allowing for maximum flexibility through field upgradability for all current and emerging new applications. Analytically tested standard protocols includes: CHNS, CNS, S, O, CHN, CN, N.

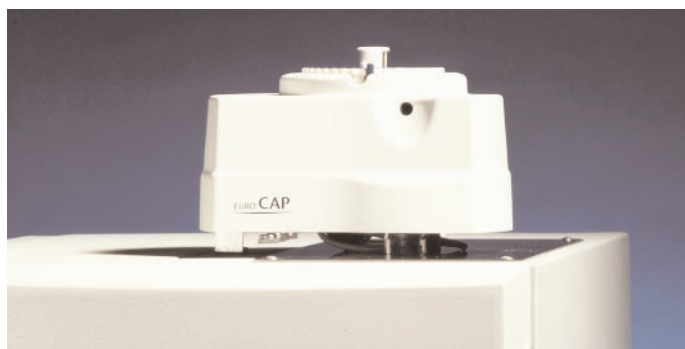
To fulfil specific requirements, customer applications are tailor-made providing Analytical Layout, list of materials needed, instrument parameters, Reference Standard, calibration as well as sample handling procedures.

Dedicated Models (EA and PyrOH) are also available for the very stringent requirements of Isotopic Ratio Mass Spectrometry (EA-IRMS).

**Superior Specifications.** EuroEA is a fast analyser. Simultaneous CHNS analysis is completed in 5 min, CHN in 3 min, Oxygen in 2 min and N in 60sec. Linearity is achieved for a wide dynamic range. The lower detection limits is less than 1microgram for each element.

**EuroEA is cost effective** due to proven reliability, energy and gas savings: in Standby mode, furnace temperatures are reduced and gases are turned off. In Standby, the Catalysts, GC column and TCD are isolated from air contamination thus extending components life time. Sustained automatic operation, analytical miniaturization and significant shorter analysis time lower cost per test.

**AutoSamplers.** Two types of electrically actuated Models are offered for solid and liquid samples. Either 40 or 80 positions, small or large sample can be selected. VectorSAS, the new generation of AutoSamplers, offers a patented full-purge system giving zero blank and the option to extend samples to 120; operation is straight forward allowing for additional samples to be added during AutoRun. New fittings and an Ash Removal Device have been made available for both Models, they are all field retrofittable. Sample admission is synchronised by electronic count-down and a wide viewing mirror allows the operator to clearly see the brighter flash generated by the advanced TurboFlash<sup>®</sup> Combustion.

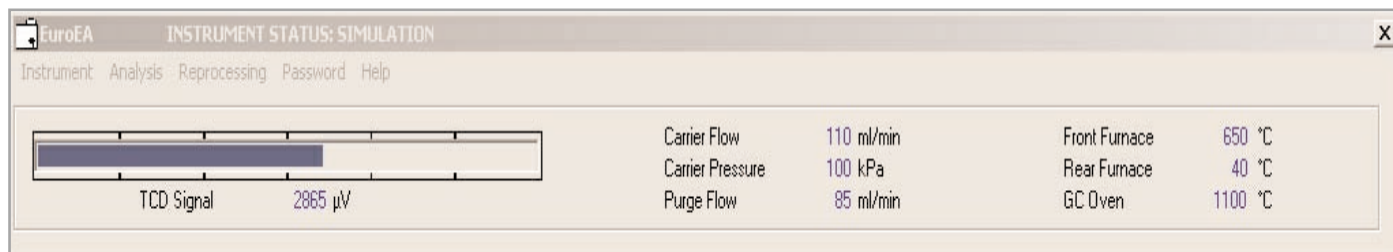


**AutoReady, Wake-up routine & Gas leak test.** The instrument allows for automatic standby at a preset time or sample position in the carousel as well as a wake-up routine at a preset time. Monitored by an intelligent electronic pressure probe, a fast and accurate fully automatic leak test procedure is available at one single key press.

**Keypad operation.** EuroEA can be simply operated from the keypad. Three function buttons, and four command buttons allow full automatic control of the instrumentation and provide access to a series of diagnostic tests.

**EA3000 is simple to operate.** Complete access to the analytical layout is achieved via the front door of the instrument. Top, side and rear panels can also be removed. Exhausted reactors are replaced from the outside of the instrument, through a bayonet-lock action. The Ash Removal Device allows the build up of ash to be removed without the need to extract the reactor from the furnace. Storage of analytical methods, downloading of parameters from proven methods, selection of pre-formatted results reports, all contribute to a greatly simplified operation.

**Callidus S/W.** Instrument operation has become truly intuitive for the first time through the use of Callidus, the most advanced dedicated EA software available. Callidus provides full instrument control, data acquisition, reprocessing and reporting, together with routine maintenance prompting. Callidus includes a permanent display of all parameters for a continuous monitoring of EuroEA operation and a neat grouping of functionalities in the main menu: Instrument, Analysis, Reprocessing as shown below:



**Callidus is a mature Software** and represents a major step ahead for completeness and ease of use; it provides the most elegant solutions in all functionalities key to EuroEA operation.

**Analytical method storage.** Analytical methods storage of pre-set instrument parameters is a basic feature included on the EuroEA Callidus SW. It allows the matching of a single sample with a specific method making operation simple and in line with GLP.

**Callidus SW is based on the AutoRun** concept for the automatic analysis of sequential samples, all using one single set of instrument parameters fully contained within one window.

**Automatic AutoRun name selection and parameters downloading.** The SW allows the creation of AutoRun names from a user programmed two-field list. This facility provides a simple and efficient way to retrieve past Autoruns. In addition, proven instrument and integration parameters from past Autoruns can be automatically downloaded when constructing a new Autorun.

**Instrument calibration.** Calibration is achieved from either a multipoint linear regression or a single point (K factor) algorithm. Calibration compounds are selected from a library of standards that includes their elemental composition. AutoCal allows the operator to import calibrations from past Autoruns.

**LIMS file.** LIMS can be accessed from one keypress. Technical specifications provided by the customer determine the patterns of the file interfacing the EuroEA to LIMS.

**Method: CN-Single**

Carrier	kPa	100
Purge	ml/min	80
Oxygen	ml	20
$\Delta P O_2$	kPa	35
Oxidation time	sec	2184
Sampling Delay	sec	12
Run time	sec	125
Front Furnace	°C	1050
Rear Furnace	°C	--
GC Oven	°C	80

Open Save Print Save As Delete Send to Instrument

**AutoRun: Organic Mix-Synth. Lab.-14.03.06-14.59**

Type	Sample Name	Weight (mg)
1	Blank	Blank
2	Blank	Blank
3	Blank	Blank
4	bypass	1
5	bypass	2
6	bypass	3
7	std	L-Cystine 0.592
8	std	L-Cystine 1.213
9	std	L-Cystine 1.422
10	sample	DHX-135 0.644
11	sample	DHX-135 1.709
12	sample	DHX-135 1.320
13	sample	DHX-135 1.336
14	sample	DHX-135 0.985
15	std	L-Cystine 1.230
16	std	L-Cystine 0.881
17		
18		

Clear Table Delete Row AutoFill Insert Row Copy Line Balance

**Sample Table & Reports**

Report Configuration: Operator ID: MBC Configuration: CHMS Sample Source: Organic Mix - Synth Lab Report Options: Chromatogram

☒ Results Summary ☐ Print Chromatogram

☐ Data after each run Y max:   $\mu$ V Y min:   $\mu$ V

☐ LIMS

Additional Information: The samples had to be ground again prior to analysis.

To LIMS Standby Start

**Real time chromatogram.** This option provided by the SW is a valuable tool. Monitoring baseline and viewing the chromatogram help in determining the overall operation of the analyser.

**Basic Features of Callidus SW also include:**

- Stand by, AutoReady & AutoStandby in one window
- Full diagnostic and Preventive Maintenance
- Effective improvement of the Automatic leak test
- Continuous appending of new samples to the Sample Table

**Interfacing analytical balance.** To simplify sample preparation, Callidus SW provides a direct interface to the analytical balance. After weighing the sample, one press of the balance "Print" key will transfer the weight directly to the AutoRun Sample Table, thus eliminating possible transcription errors.

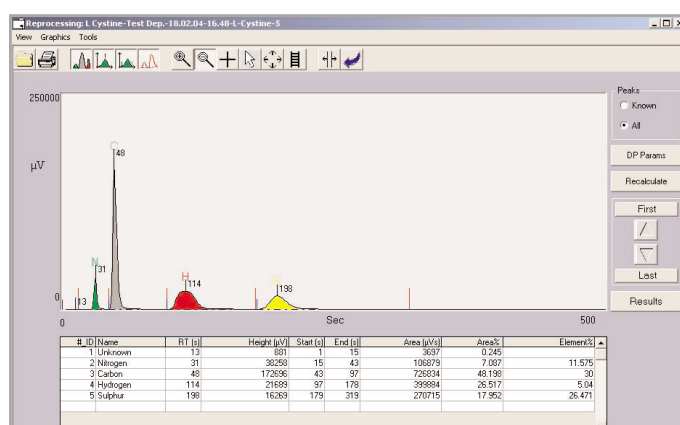
**Results.** The results window opens automatically at the end of the Autorun, offering immediate recalculation and reporting facilities.

**Reprocessing.** All recalculation attempts can be saved in separate files, from which the best integration parameters set can be chosen.

**Fast scroll** facility through all the chromatograms with individual results within one AutoRun is included.

**Graphics features.** The window provides extensive graphics features, as a powerful visual aid in the recalculation process.

**Calibration review** provides data optimisation for each element with full view of all information related to individual calibration points.





**Catalysts and Consumables.** EuroVector is manufacturer and supplier of a complete line of catalysts and materials for advanced instrumentation. In many application areas catalysts have been proven to be the key factor for competitive performances and cost effectiveness. Prioritising quality of consumables, EuroVector have developed a dedicated line of Isotope Grade (IG) consumables for EA-IRMS applications requiring highly demanding specifications.

**Isotopes Dedicated Instrumentation.** EuroVector have gained worldwide reputation for EuroEA Models dedicated to IRMS determination. The family includes Pyrolytic as well as Combustion Units for liquid and solid applications at Standard and High Temperatures. Detailed Analytical Protocols for (CN), (S) and (O-H) in solids as well as (H) and (O) in liquids are available.

**Innovation Leaders.** EuroVector are regarded as innovation leaders in CHNS-O Elemental Analysis for TurboFlash® Technology, optimisation of catalytic combustion processes, modern analytical circuitry and supersensitive TCD detector allowing for high performance instrumentation. A family of compact, high sensitivity, fast analysers together with dedicated Pyrolytic Unit for (H) determination in water was already well established in year 2000. Introduction of a High Temperature Furnace has made Isotopic Oxygen analysis in solids and liquids, an accurate and popular technique. Recently the family was enriched by a patented "zero blank" AutoSampler including optional Ash Removal device. A range of innovation is expected in the next few years.

**Analytical help desk.** End users can take advantage of a permanently available Help Desk suggesting solutions for analytical configurations, sample handling, sample size, calibration procedure, catalyst filling in the Reactors, instrument parameters, sample reprocessing, etc.

**Total solution.** Euro Vector deliver factory analytically tested instruments according to Standard Protocols. Instruments are installed by accredited field service engineers according to EuroVector detailed Installation Procedures and Installation Logbooks.



**EuroAS Liquid AutoSampler** is a major accessory based on a 110 position tray and a rotating turret allowing for accurate sampling of microvolume size with different kind of washing procedures. It includes a key pad for independent programming of Analytical Methods for samples of various viscosity. It is supplied with a mounting plate for accommodation on the EuroEA. Different injector ports and syringes are available as part of the analytical configuration. An independent thermoregulated heater for the injector is supplied for optimal injection temperature programming.

**World-wide distributor network.** EuroVector maintains an international network of accredited distributors with solid background in Elemental Analysis. EuroEA is well established in more than 50 countries over 5 continents. Distributors play an important role in exploiting new areas of applications, granting effective technical support and quick service on consumables deliveries.

**Company Profile.** EuroVector design, manufacture and sell scientific instruments focusing in the field of Elemental Analysis. They are committed to excellence in CHNS-O analysis through continuous innovation and the generation of new products.