NC TECHNOLOGIES

Innovative Elemental µ-Analysis

ECS8022 | ORGANIC ELEMENTAL ANALYZER

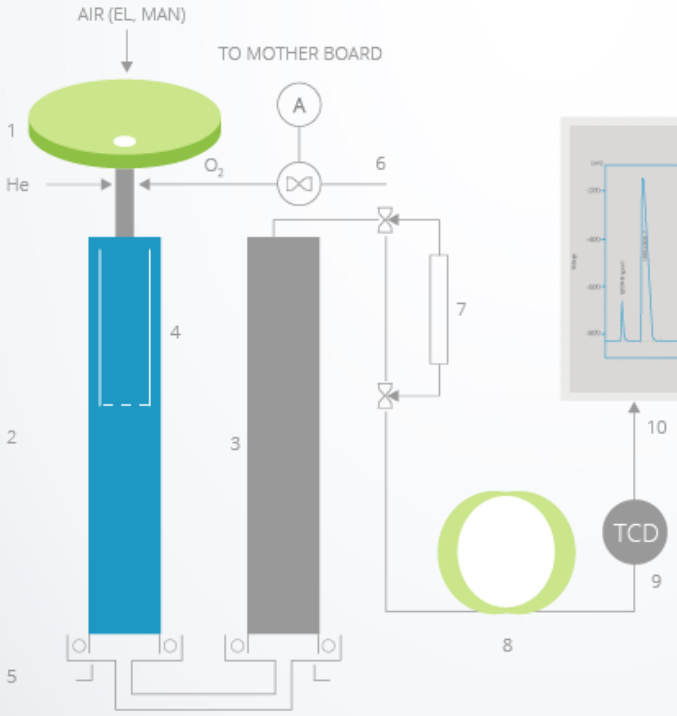
NC

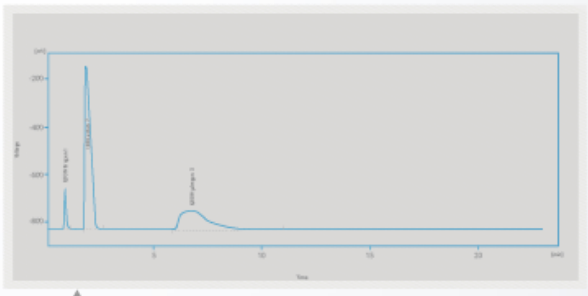
ECS 8022 – NC
Organic Elemental Analysis

ECS 8022 is the specialized N and C Elemental Analyzer Model based on the Dumas combustion method.

ECS 8022 is prepared and dedicated to the carbon and nitrogen determination in a wide range of samples. ECS 8022 is based on sample combustion and separation of gases with a chromatographic column.

The combustion products, i.e. CO2 and N2 are separated and quantified by a high resolution TCD detector.





ECS 8022 is fully automatic, from the available samplers to the oxygen dosage, from the monitoring of consumables status to the automatic leak test

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ECS 8022 is composed by:

Dual furnace combustion system (for a better combustion and optimization of catalysts)
Safety quick fit system for reactors connection (easy and safe way to set the instrument)
Customized GC column
Detection system
Data acquisition and handling

Several configurations may be set for the determination of the target element.
Instrument is already prepared for the determination of carbon and nitrogen.
ECS 8022 could be also equipped with other tools for the upgrade of the instrument to the CHNS-O analyzer.

Consumables kit are prepared for obtaining the best analysis performances.

Prepacked reactors and all chemicals and tools allow fast and user-friendly analyses.

The versatility of ECS 8022 can be expressed also as:
Sample weight
Sample type
Liquid or solid sample

Three different samplers are available:

Pneumatic autosampler up to 147 positions
Electronic autosampler with 32, 50, 100 positions
Manual sampler

Automatisms make it particularly user-friendly:

Automatic oxygen dosage system

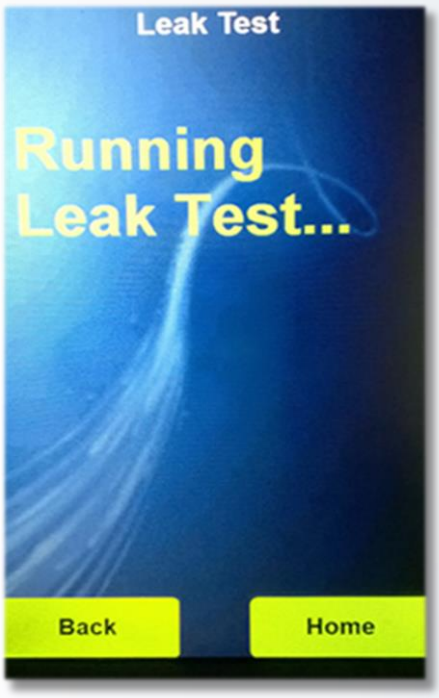
(for a better consumption of oxygen and consumables)

Automatic consumables status monitoring

Automatic leak test

Standby mode

(gas, energy and time savings)



Automatic oxygen dosage: main highlights.

Details of sample are registered:
Position
Type
Weight

ECS 8024 will dose the oxygen for the right combustion. No oxygen or consumables wastes

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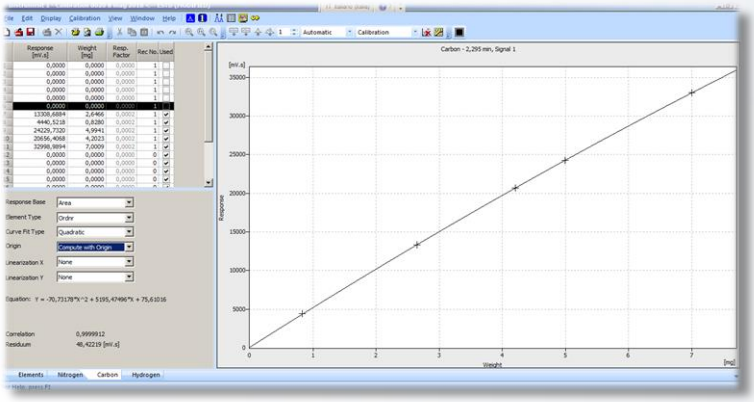
EAS Clarity

Powerful software for powerful instrument
Getting data, analyzing data, presenting data

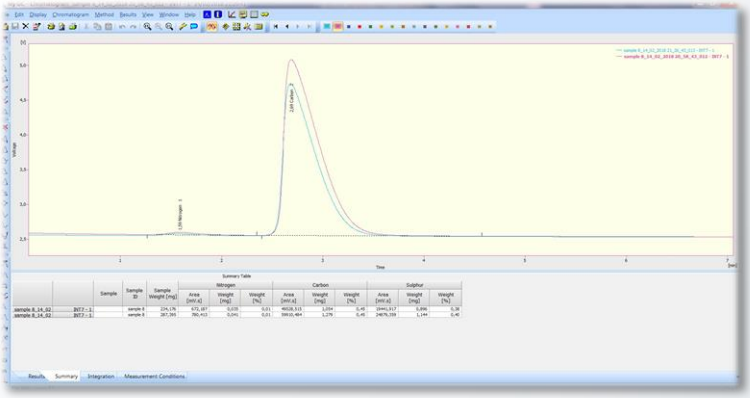
Integration

There is extensive possibility to modify chromatograms. The chromatogram can be changed by entering global parameters or interactively, through direct graphic modification of the baseline.



Overlay

Simultaneously displays a virtually unlimited number of chromatograms and their mathematical modification.



Calibration

Internal and external standard calculation methods.

Automated measuring support

Sequence tables for any set of samples.

ECS 80 SERIES

What the user can do

Summary result tables
Displays and prints selected results from all simultaneously displayed chromatograms.

User settings
User selects parameters for peak display and the specification for axes, including color from an extensive array of color settings. Text labels and lines, either as part of the area or anchored to a chromatogram, may also be inserted.

Export
Optional exportation of all results, with or without the chromatogram, in various formats, into a file or clipboard.

Import
Imports chromatograms or mathematical curves, which have been saved in text or AIA formats, from other programs.

Special features

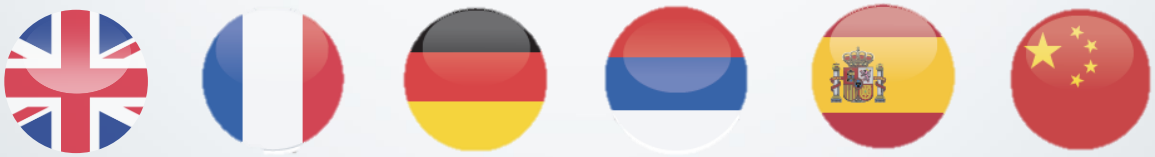
LIMS
Clarity offers connectivity with LIMS both for sample submission and result output. This can be done via convenient ASCII transfers.

Method and calibration history
Each chromatogram can easily be displayed under the same conditions as when it was printed, exported or saved.

Column performance
Calculations of peaks in terms of symmetry, efficiency, resolution; all by several methods.

Batch
Automatically batch processes, displays, exports or prints any number of chromatograms.

Language localization available
Basic version in English language.
At the moment, there are French, German, Russian, Spanish and Chinese localizations available in single installation package



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ECS 8022 key points

- ✓ Fully automated analysis system
- ✓ High sensitivity, accuracy and precision
- ✓ Flexibility and versatility of applications
- ✓ Detector does not require reference gas
- ✓ Powerful software for viewing results from a computer
- ✓ Touch-screen display for an easy settings management
- ✓ Consumables status monitoring for an optimization of catalysts usage
- ✓ Three types of samplers available: electronic / pneumatic / manual.
- ✓ Easy connection to Mass Spectrometers and other detectors for stable isotopes analysis
- ✓ Low operation and management costs
- ✓ Standby mode for gas, energy and time savings

ECS 8022 application fields

- ✓ Organic chemistry and pharmaceutical
- ✓ Soil science and geology- marine science
  (distinction between organic and inorganic carbon is available through the previous acidification of the sample)
- ✓ Environmental analysis
- ✓ Petrol chemistry and energy
- ✓ Materials characterization
- ✓ Food
  (Special configuration for big size sample is easily available)

Analytical and Technical Features

ECS 8022 Features

Type	CN Upgradable to CHNS-O	
Analysis time	CN	5 min
Analytical range	C N	0.002-20 mg 0.002-20 mg
Accuracy* Precision*	<0,2% (certified standard; purity >99.9%) <0,1% (certified standard; purity >99.9%)	
Sampler	Pneumatic autosampler Electronic autosampler Manual sampler	147 positions max 32, 50, 100 positions

Dual furnace system
Safety quick fit system
Touch screen display
Standby mode

* Accuracy and precision are related to samples nature and homogeneity .

Physical Specifications

Dimensions	81x50x37 cm
Weight	68 kg
Power supply	230V, 50/60Hz
Adsorbed power	5A, 1100W
Gas requirements	Helium (99.999% purity), 3-5 bar Oxygen (99.999% purity), 3-5 bar Air (oil free compressed air)

Analytical and Technical Features

Analytical Conditions

Gas carrier	Helium
Leak test	Automatic
Furnace temperature	Left Furnace : max 1100°C RightFurnace : max 1100°C
Oven temperature	Max 110°C
Oxygen volume need	Automatically calculated by the oxygen doser
Flow rate	Electronic Flow Rate
Gas separation	3 m GC Column
Detector	High Sensitivity TCD
Software data analysis	EAS Clarity
Calibration	Linear, Quadratic, Cubic
Active calibration	As needed

Sample

Sample size	0-500mg (depending on sample nature)
Sample type	Liquid Solid
Capsule	High purity tin and/or silver capsule

Accessories

Installation kit	
Sampling kits	Small samples; big samples; deluxe kit
Microbalance	
Consumables	Proprietary NC Technologies S.r.l.
Technical assistance	By phone or email within 24 hours

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