innovazione scientifica qualificata •
newproject

Flowsys

Technical Data	
Technology & Principle	Automated continuous flow analyzer micro or macroflow
Operations	Multichannel in parallel, up to 12 channels simultaneously
Sampler RA104 or RA200	
Dimensions/ Weight & Power	60x45x40 cm (LxWxH); 15 Kg; 12/24 V DC power supply included
Operations	Random Access type ρ φ ζ
Number of positions	104 or 200
Multiprobe operations	Yes up to 4 probes
Autodilution module	Yes, optional
Analytical module	
Dimensions & weight	60x22x46 (LxWxH), 15Kg
Power	12 & 24 VDC, power supply included as standard
Operations	PC controlled, locally by ntegrated colour touch screen
Each analytical module includes:	
Peristaltic pump	n. 1 high precision peristaltic pump PC controlled, long pump tube life
Pump tubes positions	12
Multispeed	Yes, 2 speeds, Fast for start/stop & reagent changeover, Standard for analysis
Digital Colorimeter	
Wavelenght range	340-1100nm
Light source	LED emitters coupled with specific interferential filter
Flow cell - standard	15 or 50mm, ID 1.0mm
Flow cell - special design (options)	Guided Wave Flow Cell path length on demand Fluorimetric flow cell
Colorimeter adjust, baseline and gain	Fully controlled by PC
Debbubbling	Hydraulic or electronic
Matrix correction	Yes, optional
Linearity & OD resolution	Standard: $1x10^{-4}$, max linearity: 3.5 AU ; Extended: $2.5x10^{-7}$, max linearity: 6.0AU, 24 bit A/D converter (optional)
Alternative Detectors	Amperometric (integrated), Fluorimetric (integrated) Flame (external detector
Heating baths	
Heating or distillation bath	n. 2 heating baths, fully PC controlled
UV digestor	
Coils & Lamps	Quartz coil, high energy UV lamp for TN, TP and dedicated lamp for TCN
Wash Reagent valves	
Number of valves & control	Max n. 6 Wash/Reagent valves, fully PC controlled
Software	3 level password: operator, supervisor, manager
	Up to 12 channel
	Up to 9 standards for each channels
	Calibration curve stored for each run
	Real time peaks and results
	On Line Quality control (up to 5 levels)
	Work list, peaks and results stored with each run
	Auto wake up & Auto shutdown included as standard

Subject to change without notice

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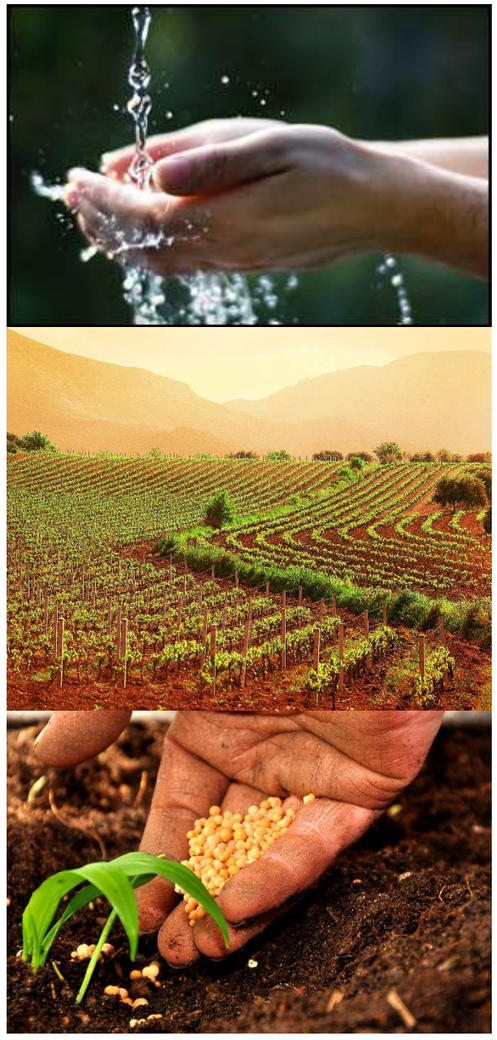
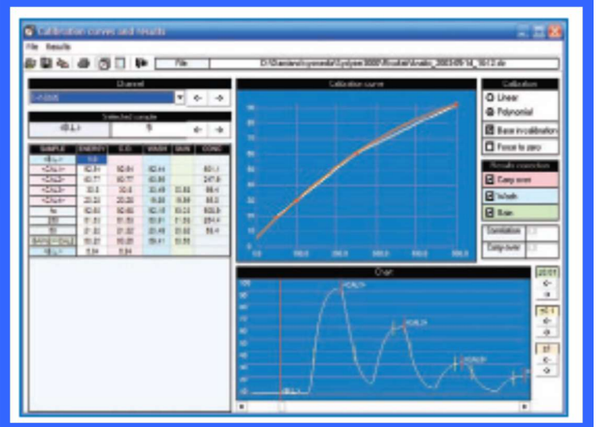


FLOWSYS III

CONTINUOUS FLOW ANALYZER
FOR AUTOMATED CHEMISTRIES

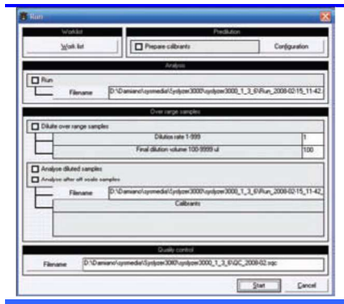
SYSLYZER 3000 - CFA software

Syslyzer 3000 software has been developed on CFA users suggestions, collected through many years of application engineers activities.
Systea in house software department programmed a 32 bit software for MS Windows XP /7/8.



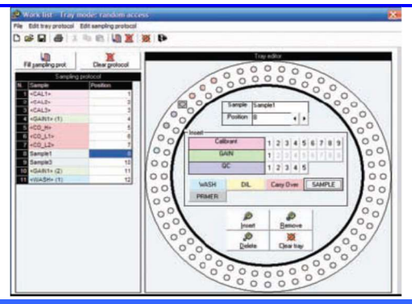
EASY TO USE

All the functions and symbols are familiar to all the laboratory operators.
Set up a run is easy and quick: all work lists prepared for run can be changed at any time.
Stored methods settings can define up to 9 standards and up to 5 controls. Calibration can be linear, polynomial, etc.. Corrections can be selected to re-calculate results compensating baseline or gain drift.



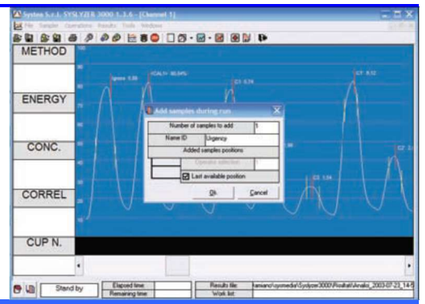
QUICK START

Start a run is simple and friendly the operator can use a master work list and simply insert the samples to be analyzed. After starting analysis, the flow chart displays the colorimeter graphic and the calibration function if already processed.



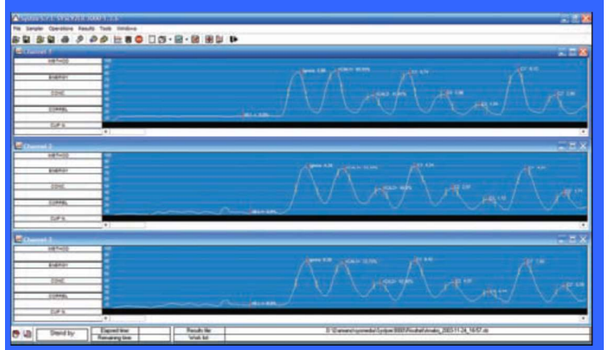
WORK LIST

A complete work list including sample ID can be generated easily. In the worklist the operator defines the order of the batch to be analysed. Standard worklists can be stored and used repeatedly when needed.



URGENT SAMPLES

Urgent samples can be added during a run. Just click on Add Samples and digit the number of samples to add. Results, identified as QC are automatically stored in QC files, to be available as controls chart.



MAIN FEATURES
- 3 level password: operator, supervisor, manager
- Up to 12 channel
- Up to 9 standards for each channels
- Automatic calibration
- Calibration curve stored for each channel for each run
- Reanalyze function for calibration, and/or samples
- Real time peaks and results
- On Line Quality control (5 levels) and QC chart
- Peaks and results stored for each run
- Autowake up and autoshutdown

FLOWSYS III
CONTINUOUS FLOW ANALYZER

FLOWSYS III is a microflow/macroflow automated CFA analyzer for water, soil, plants extracts and other industrial samples.

More than 800 applications are available on various matrix.

FLOWSYS III is a unique CFA analyzer combining higher performances and low running costs with a friendly user interface.
The segmented technique offers all the various possibilities of flow-analysis, what basically is a highly integrated, modular sample preparation and handling technique, with outstanding repeatability.

The 3rd Generation CFA Analyzer

The CFA technique carries out all steps of the analytical procedure in a reaction line of 1.0 or 2.0 mm inner diameter. These flow-conditions results in several advantages, for analytic process, design and easy operation. The reduction of flow-volume to 40% of the previous second CFA generation reduces the required dimensions for the pump. A high precision, multichannel pump separately for each determination provides maximum flexibility and easy maintenance.

The physical properties of flow line and segmentation provides high effective, continuous mixing and faster kinetics reaction.

FlowSys III provides easier and safer conditions for today's most interesting CFA applications, using inline distillation (cyanide, phenolindex) or UV-digestion (total-P, total-N).

Features/Benefits

- Colour touch-screen
- Baseline and gain PC controlled
- HB temperature PC controlled
- Dual-speed pump PC controlled , for quick set-up or shut-down
- PC controlled Wash/Reagents valves
- Automatic colorimeter adjust on all filters
- Random access Automatic Sampler, 104 or 200 positions on single sampling probe, up to 4 probes operations option
- Auto diluter option
- Low reagent consumption & low cost for reagent disposal
- Special pump design/new manifold connectors
- Low maintenance cost
- Easier and friendly approach, no problems from bubble pattern, tubes connections etc.
- Easy & Fast method changeover
- Fast shutdown and Start up
- Independent analytical module
- Pump/s activated only for running channel/s
- Pump tubes saving

IN LINE SAMPLE PRETREATMENTS

In line distillation for Cyanides (total & free), Phenols, Volatile acidity etc.

In line UV digestor for Total Phosphorous, Total Nitrogen etc., dedicated lamp for Total Cyanides

Dialyzers for high level or coloured samples

CYANIDE AMPEROMETRIC ELIMINATES TOXIC REAGENTS

Available Cyanide:

FlowSys measures available cyanide by a ligand-exchange, gas diffusion technique coupled with amperometric detector as per ASTM Method D6888-09 or OIA1677. This non-distillation technique provides accurate measurement of available cyanide in the presence of thiocyanate, sulfite and thiosulfate interferences. A sulfide removal acidification reagent is added in-line to samples containing this interference. Also can quickly and easily perform Free Cyanide measurements according to ASTM D7237 or ISO 14403

Total Cyanide:

FlowSys measures total cyanide by a UV digestion, gas diffusion technique coupled with amperometric detector as per with ASTM Method D7511-09e2. This non-distillation technique is particularly effective for applications where thiocyanate is present to avoid cyanide loss or positive interference. ASTM D7511-09e2 is USEPA-approved for analysis of wastewater samples for NPDES compliance reporting.

Samples distillation:

Additionally for difficult samples FlowSys can include an in line distillation that will remove most interferences from the sample, the sample after distillation is treated in accordance to OIA1677, ASTM D6888-09 for Available Cyanide, ASTM D7511-09e2or ISO 14403 for Total Cyanide

APPLICATIONS LIST

Surface,ground, drinking, waste and seawater		
ALDEHYDES	COD	PERMANGANATE INDEX
ALKALINITY	CYANIDE FREE & TOTAL	PHENOLS
ALUMINIUM	FLUORIDE	PHOSPHATE
AMMONIA	HARDNESS	SILICATE
CALCIUM	IRON	SULFATE
CHLORIDES	MANGANESE	SULFIDE
CHLORINE	NITRATE+NITRITE	TOTAL NITROGEN
CHROMIUM 6^{+}	NITRITE	TOTAL PHOSPHOROUS
Wine/Beer/Etc.	**Soils, plants, feeds and fertilizers**	
ACETIC ACID	AMMONIA	TOTAL PHOSPHOROUS*
ALFA AMMINIC NITROGEN	CALCIUYM	**NOTE**
AMMONIA	CHLORIDE	
BETA-GLUCAN	MAGNESIUM	Applications list includes almost 800 methods this list shows only the most common methods
ANTHOCYANS (WINE)	NITRATE+NITRITE	For any method not included in the list please contact our application laboratory to check method availability.
ANTHOCYANOGEN (BEER)	NITRITE	Methods list is under continuous development
PROTEIN/TOTAL N	PHOSPHATE	
REDUCING SUGARS	POTASSIUM (FLAME)	
SO2 FREE	SODIUM (FLAME)	
SO2 TOTAL	SILICATES	
TOTAL POLYPHENOLS	SULFATE	
• *Require external sample pre treatment*	TOTAL NITROGEN (TKN)*	

METHODS COMPLIANCE:	Most of methods are EPA, SM, ISO, APAT compliant

Flame option

Allow to connect an external flame photometer to measure Sodium & potassium is soils.

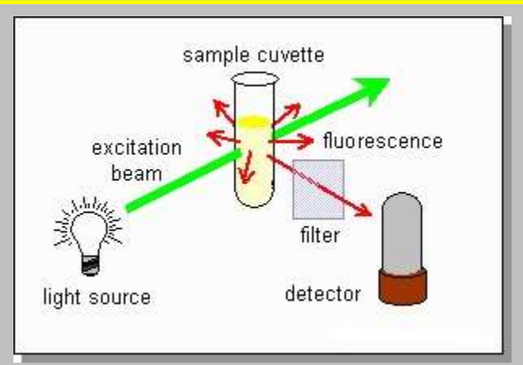
Flame photometers are available in two versions:

Standard: single channel ready to measure potassium, sodium or calcium.

Dual channel: to measure sodium & potassium simultaneously

Sherwood photometer mod 410

Colorimetric & Fluorimetric detector



Fluorimetric methods can be used as alternative to the standard colorimetry thanks to the integrated high sensitivity fluorimeter .

Available applications are:

Ammonia, Phosphate, Nitrite & Nitrite + Nitrate in seawater as well as Beta Glucan in beers.