

**FOSS**



**Flow Analysis – simply  
'Plug & Analyze'**

# FIAs<sup>TM</sup> 5000



*FOSS FIAs<sup>TM</sup> systems are used for the automatic wet chemical analysis of nutrients and other parameters in water and soil, as well as in meat, dairy and other food products.*

*Single or multiple parameters can be analysed sequentially using just one Analyzer Module and 'Plug & Analyze' Method Cassettes. The 'Plug*

*& Analyze' concept ensures easy handling, installation and operation, as well as fast start up and shut down and fast change of methods using pre-configured Method Cassettes.*

*The modular system can be expanded for the simultaneous determination of up to three parameters.*

## ■ Water analysis

- Aluminium
- Ammonium
- Boron
- Calcium
- Chloride
- Cyanide
- Iron
- Nitrate/Nitrite
- Phosphate
- Silica
- TKN
- Total Nitrogen
- Total Phosphorus

## ■ Soil analysis

- Aluminium
- Ammonium
- Boron
- Kjeldahl Nitrogen
- Magnesium
- Nitrate
- Phosphorus

## ■ Food analysis

- Nitrate/Nitrite
- Phosphorus

## ■ Plug in Method Cassettes, ready for use.

- Software Method Applications – just calibrate and analyse your samples.
- Digital Dual-Wavelength (DDW) detector reduces baseline disturbances resulting in higher accuracy and lower detection limits.
- Built-in thermostat connects automatically when a Method Cassette is inserted.
- High performance injector for reproducible and reliable injection of samples and easy change of measuring range.

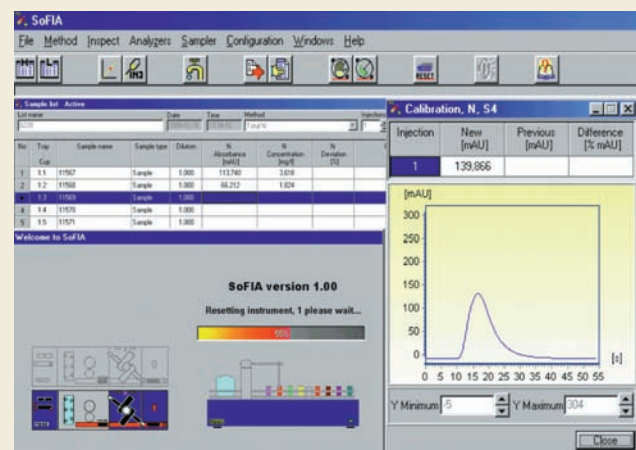
# Simply 'Plug & Analyze'

The 'Plug & Analyze' concept offers unmatched cost efficiency and simplicity in Flow Injection Analysis. You will gain many operational and economical benefits, even with less than 10 samples in a batch.



## The ultimate in ease of use with FIStar™ 5000 SoFIA software

- Predefined methods
- Speed buttons for frequently used functions
- QC routine
- GLP routine for detection of analytical errors
- Calibration according to ISO 8466
- Import of sample registration files
- LIMS interface for export of results
- Add sample and urgent sample functions
- USB (Universal Serial Bus) communication to Analyzer Modules
- Windows™ XP, Service Pack 3
- Different operator levels
- Method development routines



# **FIAstar™ 5000:**

## **For automated routine testing of water, soil and food**

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The FIAstar™ 5000 from FOSS is designed to provide reproducible and consistent results every day – with speed, simplicity and economy.

The basic FIAstar set-up comprises an Analyzer Module, Digital Dual-Wavelength detector and 'Plug & Analyze' pre-configured Method Cassettes. This system is used for automatic wet chemical analysis of nutrients and other parameters in water and soil, as well as in meat, dairy and other food products. Accurate determination of Nitrite, Nitrate, Ammonium, TKN, Total Nitrogen, Phosphate and Total Phosphorus is done according to ISO-approved standard methods.

Our products are sold and supported by FOSS sales companies in 20 countries. In the rest of the

world, they are marketed and serviced by some 100 well-qualified distributors. New products and applications are developed in close cooperation with key customers and recognised research institutes – and through technological partnerships. You are guaranteed complete customer support including extensive training according to your requirements.

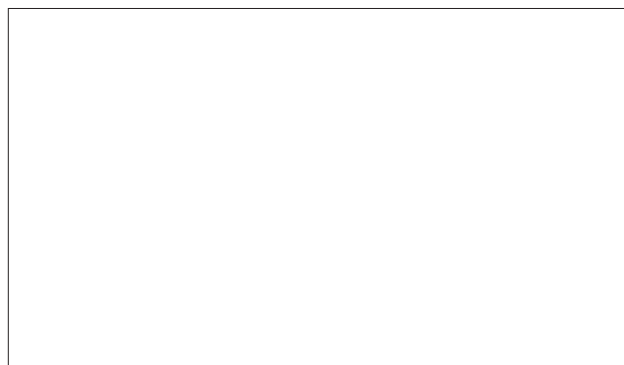
We are the only supplier to offer a complete range of high-speed systems for quality control with indirect and reference methods in food and agricultural analysis. Thus we take special care to ensure a perfect match between your needs and FOSS products and services.

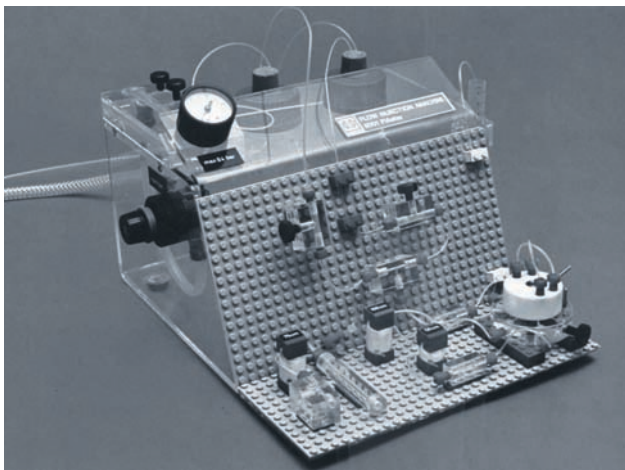
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*Shown above is one of the first models used for education and research in Flow Injection Analysis.*

Pioneering the field of Flow Injection Analysis, the first FIAstar™ instrument based on Tecator™ technology was launched on the market in 1979. In 2000, the latest addition to the product line is introduced, the FOSS FIAstar 5000 system, bringing dedicated solutions to the modern laboratory's need of speed and simplicity of analytical equipment.

**Your new potential:**

# Cost-efficient automation

## even with smaller series of samples

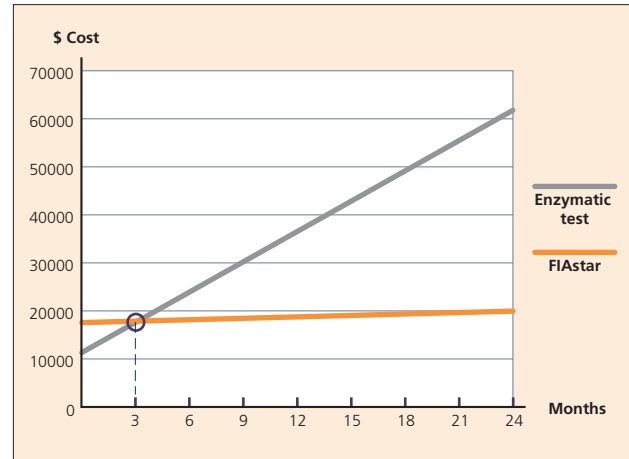
### From single samples to 1000s of analyses per day

The main cost-effective factors for choosing a FIAstar™ system are ease of use, fast start-up, high sample throughput and low reagent consumption.

Using a FIAstar system you can perform thousands of analyses per day, thanks to the high sample throughput and simultaneous analysis for several parameters. In cases of varying or smaller sample loads, fast start-up (5–10 min) and short analysis times (< 1 min) become important. With a FIAstar you can actually run single samples, and it needs only a few samples per day to justify the investment.



**How much  
can you save?**



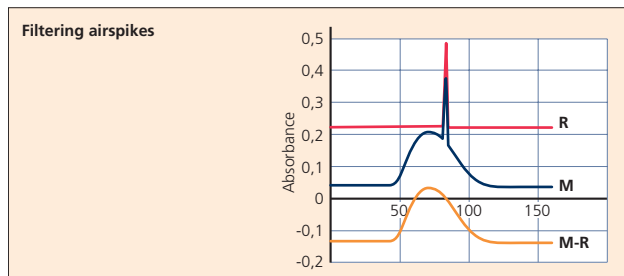
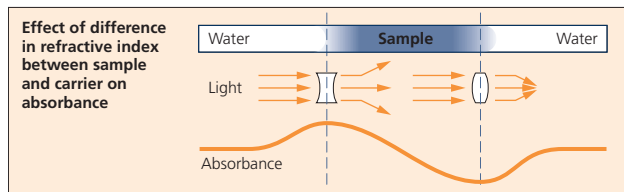
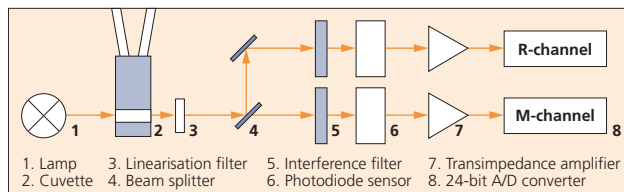
*Break even line for a FIAstar™ system compared with an enzymatic test kit when analyzing 100 meat product samples for Nitrate per week.*

# Low detection limits and accurate results with Digital Dual-Wavelength (DDW) detector

The standard Digital Dual-Wavelength (DDW) detector of the FIAstar™ allows measurements in a wide dynamic range, from  $\mu\text{AU}$  to 2.5 AU. This reduces the need to dilute samples into range. The wide dynamic range is in reality limited by the linearity of the chemistry involved (following Beer's Law) and the presence of Refractive Index (RI) effects. At low absorbance values, this RI effect may become significant and cause appreciable error in the analysis.

Since FIAstar systems are as a standard equipped with a DDW detector, measurements are taken at reference (R) and measuring (M) wavelengths simultaneously. RI effects are not strongly wavelength dependent so they can be effectively reduced by forming the difference M-R. In reality this also reduces or eliminates the effect of air bubbles, reducing the need for checking and re-running of samples or de-gassing of reagents.

As the DDW detector basically reduces all effects that are not wavelength-specific, this leads to a much more stable reading and substantially lower detection limits. For many chemistries, sub-ppb (sub  $\mu\text{g/l}$ ) detection levels can be achieved.



# Unmatched simplicity with the 'Plug & Analyze' concept

'Plug & Analyze' means:

- easy and safe installation and operation
- fast start-up and shutdown
- fast change of methods using pre-configured Method Cassettes and predefined methods in the software

Just insert the Method Cassette into the Analyzer Module, start pumping reagents and start the program. Everything is ready for analysis within 10 minutes!

To calibrate and analyse 10 samples takes < 20 minutes.

The accuracy of your analytical results is secured by:

- QC routines and GLP routines for the detection of analytical errors.
- Approved and validated analytical standard methods, following latest approved ISO Flow Injection methods.

