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FloPro-Tracker™

Global FIA portable analyzer for nutrient analysis

Flexible, versatile automation

The FloPro-Tracker was developed by Global FIA to meet needs expressed by Chemical Oceanographers. It is intended to be a portable system for carrying out tried and tested wet chemical assays. It makes use of Zone Fluidics to carry out sample preparation steps followed by wet chemical analysis. Zone Fluidics is an approach to flow-based automation that has been pioneered by Global FIA. In Zone Fluidics one or more unit operations are positioned around the central fluidics engine which comprises of a pump and multi-position valve. A Zone Fluidics sequence made up of a series of fluid manipulation steps whereby small zones of fluids are sequentially presented to the various unit operations to process the sample and in the case of an analyzer, transform it into a detectable species, measure an analytical property, convert the analytical signal to concentration using calibration curves, and prepare the device for subsequent measurements. Zone

Fluidics is increasingly being used to automate sample preparation steps.

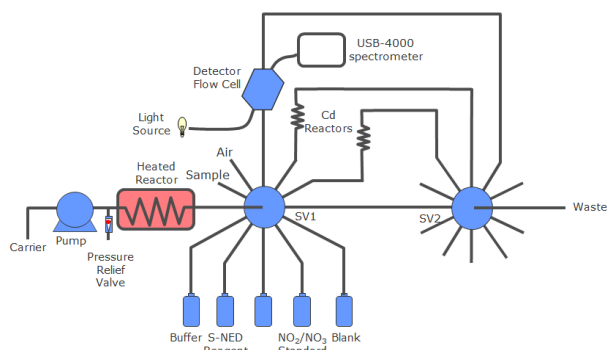
The FloPro-Tracker comprises of:

- a. One or more FloPro Zone Fluidics analyzers mounted in
- b. A rugged portable 19" rack enclosure together with
- c. A high-brightness LCD display and integrated keyboard and mouse and coupled to
- d. An automated self-cleaning filter sampler and controlled by
- e. FloZF device control and data acquisition software installed on
- f. Intel NUC computers which are mounted on the FloPro Analyzers.

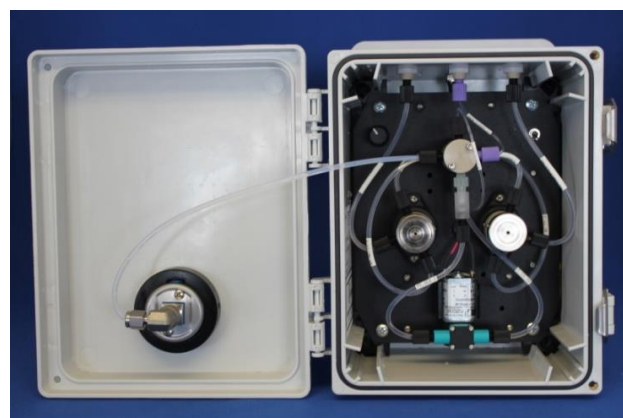
GPS receivers installed on each FloPro provide the geographical location of the device during sampling and measurement.



The basic FloPro Analyzer is equipped with a milliGAT pump and two multi-position selection valves. In most instances, detection is spectrophotometric in which case the FloPro is equipped with an Ocean Optics spectrometer and bubble-tolerant flow cell. Other detection techniques such as fluorescence spectrometry, chemiluminescence, and certain electrochemical detection techniques have also been coupled to FloPro analyzers. Some chemistries benefit from heating steps and in these cases a heated reactor is included in the FloPro manifolds. Other unit operations such as cadmium columns for nitrate determination or a uv digester to digest organically bound analytes can also be coupled to the Zone Fluidics manifold. Where needed, additional unit operations can be added or developed to meet the requirements of a particular assay.



The 19" rack is equipped with a rack-mounted high-intensity LCD screen to allow for outdoor use. A keyboard and pointing device is integrated into the screen's 1U shelf. A KVM (keyboard, video, and mouse) switch allows switching of the display between the NUC computers that drive the two FloPro-Analyzers. All devices in the rack are powered from a single 100-250VAC power strip.



The sampling system is a patented self-cleaning filter system where the sample probe is equipped with two filter elements. A pump circulates sample from the one filter element through a set of valves and back out through the second filter element. In the process, the second element is back-flushed. Periodically a timer switches the valves and the role of the two filter elements is swapped so that the element previously filtering is back-flushed and the back flush element begins filtration. A de-bubbler provides a bubble-free sub stream for measurement. The flow rate of the pump is adjustable as is the frequency with which the valves are switched. Several filter probes have been developed to meet a range of application areas. These are described in more detail below.

The FloZF software is a full-feature device control and data acquisition and manipulation package with support for a range of unit operations, detectors, and sampling systems. Devices are controlled in scripted sequences. Data are acquired from detectors and sensors and are presented in both tabular and graphic form. Quantification of the analyte is by means of calibration and is handled automatically by FloZF. Data can be exported to CSV files or an Excel spreadsheet. Individual results are time stamped and when the system is equipped with a GPS, they can also be plotted on a Google Earth map.



The software is installed on an Intel NUC computer which is mounted on the side of the FloPro. This compact computer is equipped with a 4th Gen Intel i5 processor and Windows 7 operating system. It's built in Wi-Fi means that the computer is accessible wherever Internet connectivity is available.



The Globalsat USB GPS receiver streams data in standard WGS-84 format which is easily converted to longitude and latitude and can be plotted on a Google Earth map (requires internet connection to acquire initial map space). If an Internet connection is not available, the data are plotted on an x-y grid scaled to the far extents of the location space of the chosen data set.

Chemistries

NO₃ & NO_x

PO₄

Size

FloPro-Tracker: 23" x 22.5" x 20.5"
(58.4 x 57.2 x 52.1 cm) (WxDxH)

Power and communication

Power: 110-250VAC

Communication: WiFi 802.11 ac

Software compatible with WIN7 and WIN 8

Technical Point of Contact

Graham Marshall

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Pricing

Enquire for pricing based on configuration

Accessories and spares

MG1-NM	milliGAT pump head
C15-310M	Rotor for 10 port valve
C25G-34R18	Rotor for 18 port valve
SP-8	Sampling probe
SP-0.5	Sampling probe, replaceable 0.5" filter
SP-1	Sampling probe, replaceable 1" filter

Notes