

Analytical instrumentation data sheet

The Ecotron IleDeFrance offers access to a full range of instrumentation dedicated to water microbiology and biogeochemistry in a dedicated laboratory room. All instruments are managed by an expert engineer who can provide guidance for the development of protocols, specific training for users and assistance for data collection and interpretation. Standard services include data provision with certified calibration according to the users' need and our fees include all standard consumables and data delivery products. Current analytical facilities are a standard flow cytometer, a titration station and a double beam spectrophotometer as well as a state-of-the-art auto-analyzer.

Figure 1. Photographs of analytical facilities including (from top to bottom, and left to right) the flow cytometer, the compact titration station, double beam spectrophotometer and segmented flow auto-analyzer. All photographs from suppliers: © BD Biosciences, Metrohm, Analytik Jena and SEAL Analytical.



Table 1. Major characteristics of the analytical instrumentation facility at Ecotron IleDeFrance

Aquatic microcosms - Ecotron IleDeFrance	
Flow cytometer	
Model	BD - FACSCalibur
Characteristics	Two excitation lasers: 488 nm and 635 nm. Detection of 5 colours of fluorescence and of the relative size and granularity of particles ranging from viruses up to 50 μ m cells.
Operation	Average 40 samples/day in manual mode, and 500 samples/day in HTS mode. Calibration is specific of each series of samples. Analysis settings have to be determined before each sample series.
Data sheet	http://www.bdbiosciences.com/sg/instruments/facscalibur/index.jsp
Compact titration station	
Model	Metrohm - Titrino
Characteristics	Acid/base, redox, precipitation, and compleximetric titrations. Sample changer for up to 11 automated measurements/
Operation	Average 60 samples/day. Calibration with two electrode solutions required at the beginning of each day.
Data sheet	http://www.metrohm.com/en-us/products-overview/titration/titrino-plus/product-filter/
Double beam spectrophotometer	
Model	Analytik Jena - Specord 200 PLUS
Characteristics	Double beam, adjustable wavelength, standard measurement of optic density of natural samples, and of dissolved elements in fresh and seawater
Operation	Average 20 samples/day + 4-6 calibration standards. Standards need to be prepared analytically immediately before each analysis session
Data sheet	https://www.analytik-jena.de/en/analytical-instrumentation/products/uvvis-spectrophotometers/double-beam/specordr-plus.html
Continuous segmented flow analyzer	
Model	SEAL AA3 HR
Characteristics	Six analysis modules allowing the simultaneous analysis of nitrites/nitrates, phosphates, ammonium, silicates, total nitrogen and total phosphorous
Operation	Average 350 samples/day + 4-10 calibration standards that need to be prepared analytically just before the analysis run
Data sheet	http://www.seal-analytical.com/Products/AA3HRAutoAnalyzer/tabid/59/language/en-US/Default.aspx