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Instrumentación | Proyectos | Servicios

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The AlgaeLabAnalyser

Measurement of chlorophyll-a and photosynthetic activity in the laboratory

The laboratory instrument for ...

- quantification of algal classes: green, blue-green (cyanobacteria), brown (diatoms and dinoflagellates) and cryptophycea
- determination of total chlorophyll
- determination of photosynthetically active chlorophyll

The chlorophyll analysis includes determination of the chlorophyll content, which replaces the wet chemical approach. The pigments are spectrally excited by coloured LEDs. This enables the determination of the distribution of chlorophyll across the different algae classes. The photosynthetic activity of the algae is determined by the fluorescence pattern of the pigment excitation (Genty).



bbe AlgaeLabAnalyser: reliable measurements in the laboratory

Measurements ...

- of direct chlorophyll fluorescence:
performed without sample preparation and therefore much faster than common chlorophyll analysis; in spite of an average measuring time of only 3 minutes, the results are comparable to HPLC or wet-chemical analysis (R^2>0.93).

- of algae class differentiation:
to determine the content of chlorophyll emerging from green algae, blue-green algae, brown algae (diatoms and dinoflagellates) and cryptophyceae; the pigments of different algae are determined by using coloured LEDs, adding other algae with special pigment distribution is possible after determining a standard spectrum.

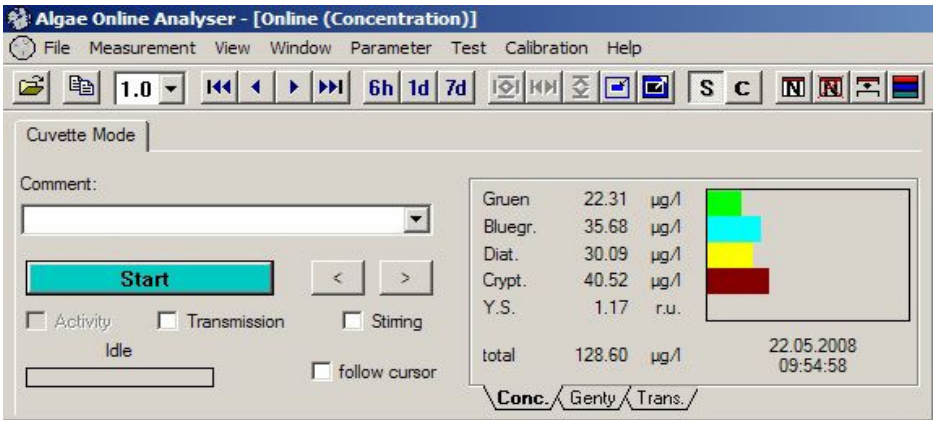
- of the Genty parameter and fm, f, f0:
allow the determinations of the oxygen production rate, i.e. the percentage of photosynthetically active chlorophyll under illumination, and the classification of active chlorophyll and other fluorescence-emitting compounds.

- of toxicity:
by comparison of a polluted sample plus algae with untreated algae.

- of transmission:
takes place during each analysis and, if necessary, can be used to compensate the influence of substances that cause turbidity; a sample transmission can also be determined.

Features

- compact, desktop design
- modern notebook included
- subsequent recalibration of algal classes



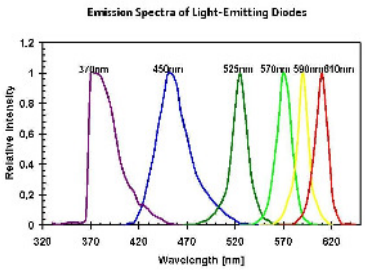
AlgaeLabAnalyser measurement using the AlgaeOnlineAnalyser software

Applications

- waterway analysis and assessment
- general environmental management
- intake monitoring
- toxicity testing
- dam monitoring
- limnological work
- research and education

Software

- saving of data/parameters at any time
- graphic display of all measurement values
- online display in LAN
- parametrisation of measurements
- data export to EXCEL and text files
- comment input for each measurement



Excitation wavelengths for the bbe AlgaeLabAnalyser



Technical Data

Measurands	total chlorophyll [µg chl-a/l] concentration of green algae [µg chl-a/l] concentration of blue-green algae [µg chl-a/l] concentration of diatoms [µg chl-a/l] concentration of cryptophyceae [µg chl-a/l] yellow substances photosynthetic activity option (Genty) transmission (at 5 wavelengths)
Measuring range	0 - 200 µg chl-a/l
Resolution	0.01 µg chl-a/l
Transmission	0 - 100 %
Weight	7.5 Kg
Size	220 x 370 x 400 mm
Power supply	110/230 V @50/60 Hz - 12V DC
Power input	10 W
Sample volume	25 ml
Sample temperature	0 - 40 ° C
Protection class	IP54
Data interfaces	RS 232, USB
PC hardware (incl.)	Notebook
Software	bbe++ Windows software with database
Options	12V motor vehicle adapter, rechargeable battery pack

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