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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 cryptophyceae
- 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 ...

- 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 ($R^2 > 0.93$).
- 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 additional algae with special pigment

distribution is possible after determining a standard spectrum.

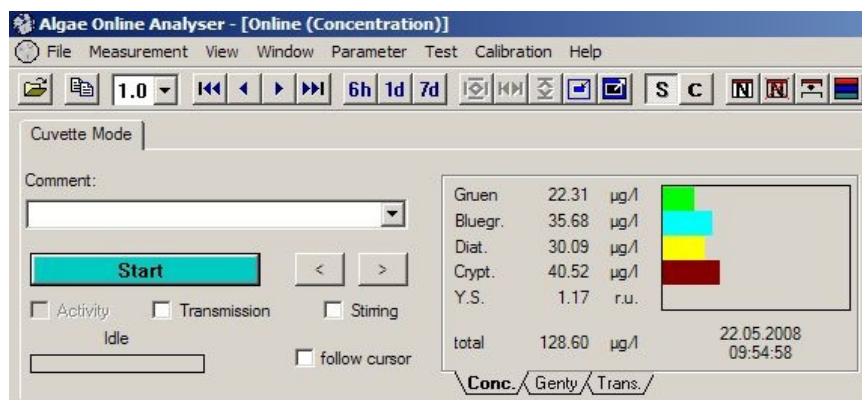
- the Genty parameter and f_m , f , f_0 to the oxygen production rate; the values determine the percentage of photosynthetically active chlorophyll under illumination and allows classification of active chlorophyll and other fluorescence-emitting compounds.

- determination 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

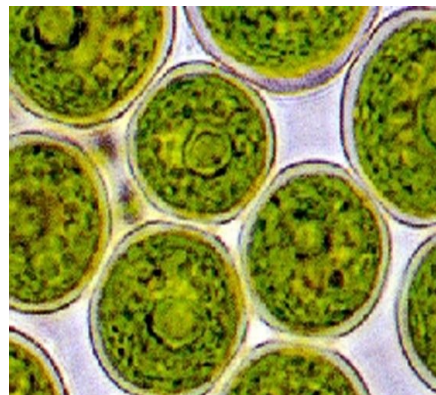


Software

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

Applications

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



Technical Data

Measurands

total chlorophyll [$\mu\text{g chl-a/l}$]
 concentration of green algae [$\mu\text{g chl-a/l}$]
 concentration of blue-green algae [$\mu\text{g chl-a/l}$]
 concentration of diatoms [$\mu\text{g chl-a/l}$]
 concentration of cryptophyceae [$\mu\text{g chl-a/l}$]
 yellow substances
 photosynthetic activity option (Genty)
 transmission (at 5 wavelengths)

Measuring range

0 - 200 $\mu\text{g chl-a/l}$

Resolution

0.05 $\mu\text{g chl-a/l}$

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 - 30 ° C

Protection class

IP54

Data interfaces

RS 232, USB

PC hardware (incl.)

Notebook 1.6 GHz, 1GB RAM, 160 GB HDD or equivalent

Software

Windows software with database

Options

12V motor vehicle adapter, rechargeable battery pack