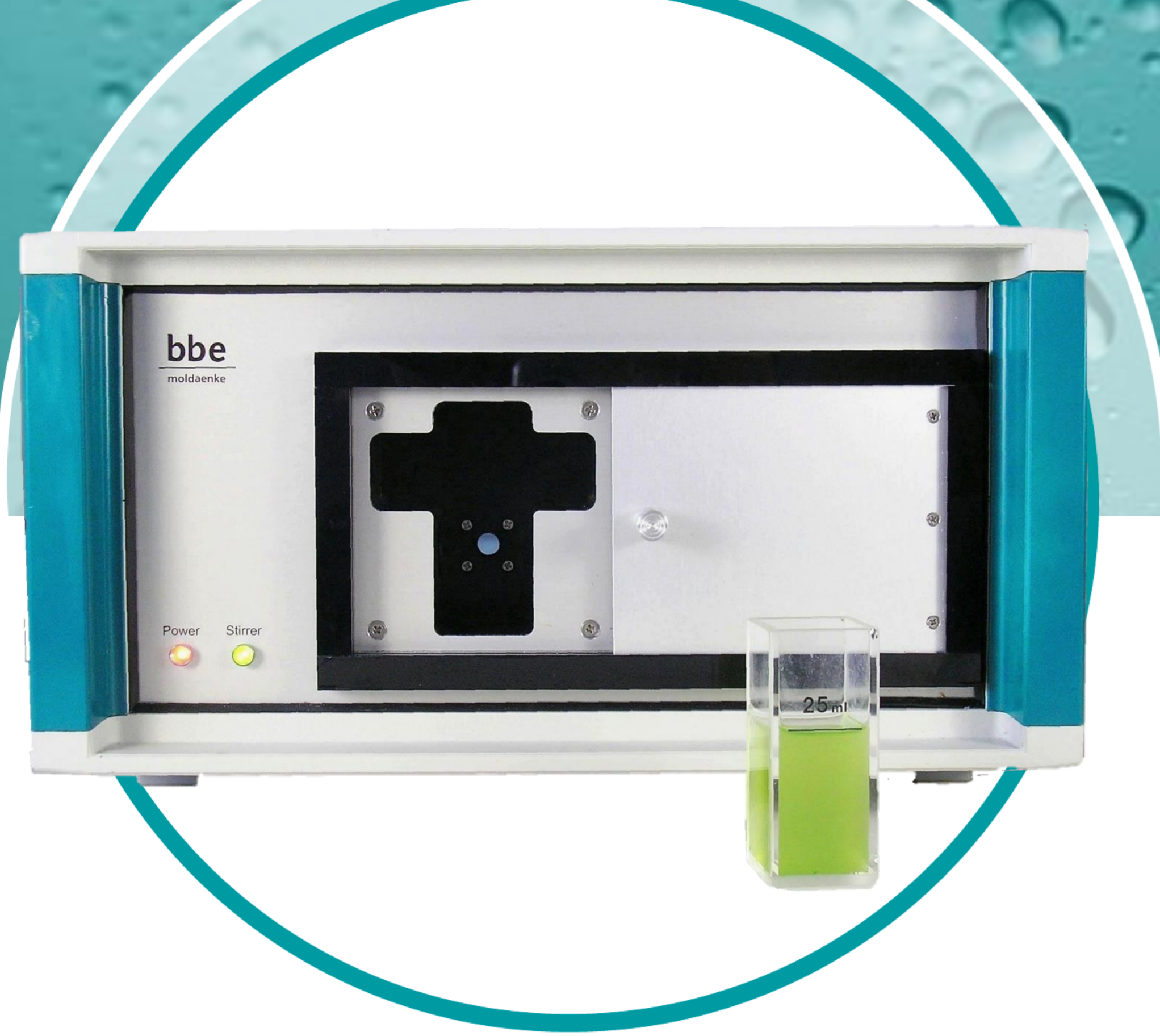# AlgaeLabAnalyser

The reliable instrument for
the laboratory

✔ Quick & simple chlorophyll
measurement with
algal class differentiation

✔ Direct measurement
without preparation

AlgaeLabAnalyser

Determination of chlorophyll concentrations, algal classes and photosynthetic activity for science and routine analysis

The bbe AlgaeLabAnalyser (ALA) offers the simultaneous determination of chlorophyll concentrations, transmission, and – as an option – the photosynthetic activity of microalgae. Chlorophyll is excited by coloured LEDs and the fluorescence emission is allocated to the different algal classes.

The AlgaeLabAnalyser enables direct measurement without sample preparation by filtration or solvent. The fluorescence signals f_0, f, f_m are used to calculate the photosynthetic activity applying the Genty parameter method. A yellow substances (FDOM) compensation is also used to exactly calculate the total chlorophyll content. The device is virtually maintenance- free and very simple to operate thus saving both time and money.

Specifications

| DESCRIPTION	VALUE
Measurands	Total chlorophyll [µg chl-a/l], green algae [µg chl-a/l], cyanobacteria [µg chl-a/l], diatoms [µg chl-a/l], cryptophyceae [µg chl-a/l], yellow substances, transmission (at 5 wavelengths), water temperature, photosynthetic activity (Genty) – Option
Measuring range	0 – 200 µg chl-a/l
Resolution	0.01 µg chl-a/l
Lower detection limit	0.05 µg /l *
Transmission	0 - 100 %, photometry
Weight	7.5 kg (without computer)
Dimensions (H x W x D)	185 x 330 x 350 mm
Protection class	IP 54
Voltage	240 V / 50 Hz; 110 V / 60 Hz
Power consumption	10 W
Temperature	Sample: 0 to 35 °C / Environment: 0 to 40 °C
Sample volume	25 ml (cuvette)
Interface	RS232
Software	bbe++ software with database
Options	Battery pack, 12 V adapter, transport case

* based on lab measurement with cultured algae

FEATURES

▶ Quick chlorophyll measurement with algal class differentiation

▶ Maintenance-free

▶ Simple operation

▶ Direct measurement without sample preparation by filtration or dissolution

▶ Laptop supplied

▶ Integrated stirrer

▶ PC operation with bbe ++ software

▶ Simple data export

▶ Optional transport case

▶ Optional external, rechargeable battery for mobile deployment

APPLICATIONS

▶ Monitoring and assessment of water quality

▶ Environmental monitoring

▶ Intake monitoring

▶ Toxicity testing

▶ Analysis of contaminated sites

▶ Monitoring of dams

▶ Limnological work

▶ Research and education

Chlorophyll measurement in a glass cuvette. Length: 1 minute
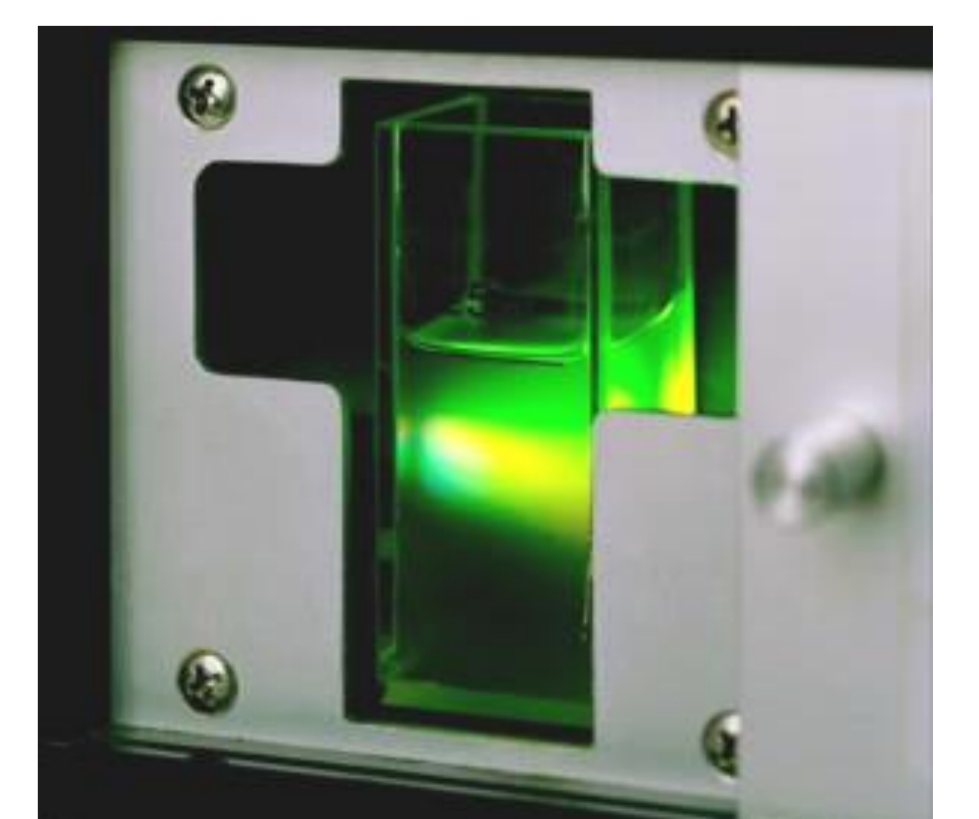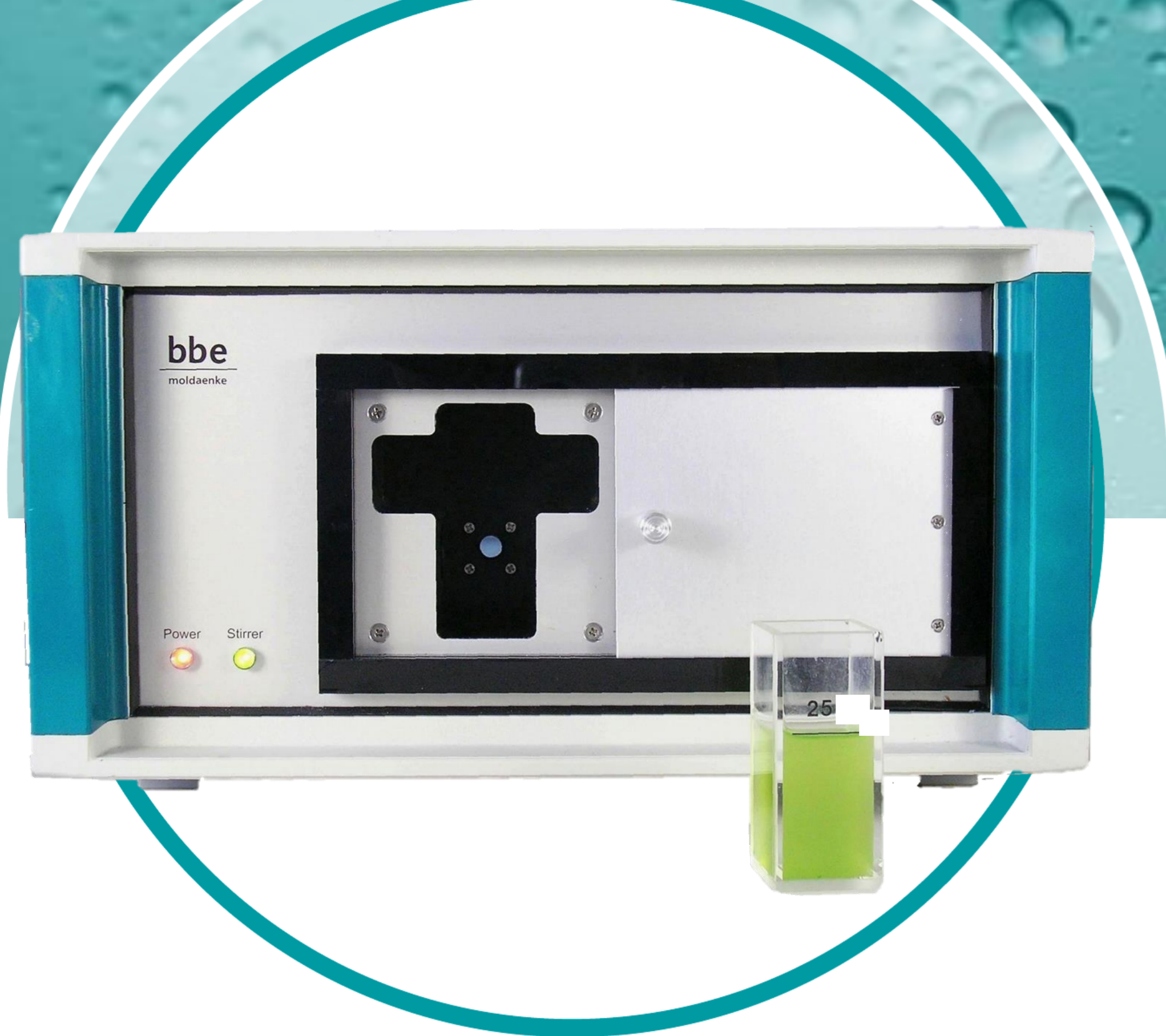
AlgaeLabAnalyser

Measurements …

- **…of chlorophyll-a:**
  Performed without sample preparation and therefore much faster than common chlorophyll analysis. The average measuring time is only 1 minute. The results are comparable to HPLC pigment analysis or wet-chemical analysis ($R^2 > 0.93$).

- **…of algae class differentiation:**
  Determination of the chlorophyll content emerging from green algae, blue-green algae, diatoms plus dinoflagellates and cryptophyceae by use of LEDs with visible range from UV to red.

- **…of transmission:**
  Takes place during each analysis and is used to compensate the effect of turbidity on chlorophyll analysis. The correction is performed automatically.

- **…of toxicity (optional):**
  Standardized microalgae from a culture are used to determine the effect of toxicity in the presence or absence of the potential toxic water. The ALA compares the photosynthetic activity of sample water treated with untreated microalgae to evaluate the level of toxicity of a water sample. The test takes totally 30 minutes.

- **… of algae class activity (optional):**
  Records the percentage of photo-synthetically active chlorophyll under illumination, sorted into the different algal classes and provides information about the health of the cell population. Parameter is the variable fluorescence.

MEASUREMENT PROCEDURES

- ▶ Quantification of algal classes: green, blue-green (cyanobacteria), brown (diatoms and dinoflagellates), cryptophytes

- ▶ Determination of total chlorophyll

- ▶ Determination of photosynthetic activity

- ▶ Determination of toxicity

- ▶ Determination of transmission

SOFTWARE

- ▶ Real-time data display

- ▶ Saving of data/parameters at any time

- ▶ Graphic display of all measurement values

- ▶ Online display in LAN

- ▶ Parametrization of measurements

- ▶ Data export to EXCEL and text files

- ▶ Comment input for each measurement

Measurement example illustrated with the bbe software

Do you have any questions? Please contact us!

Your local representative

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