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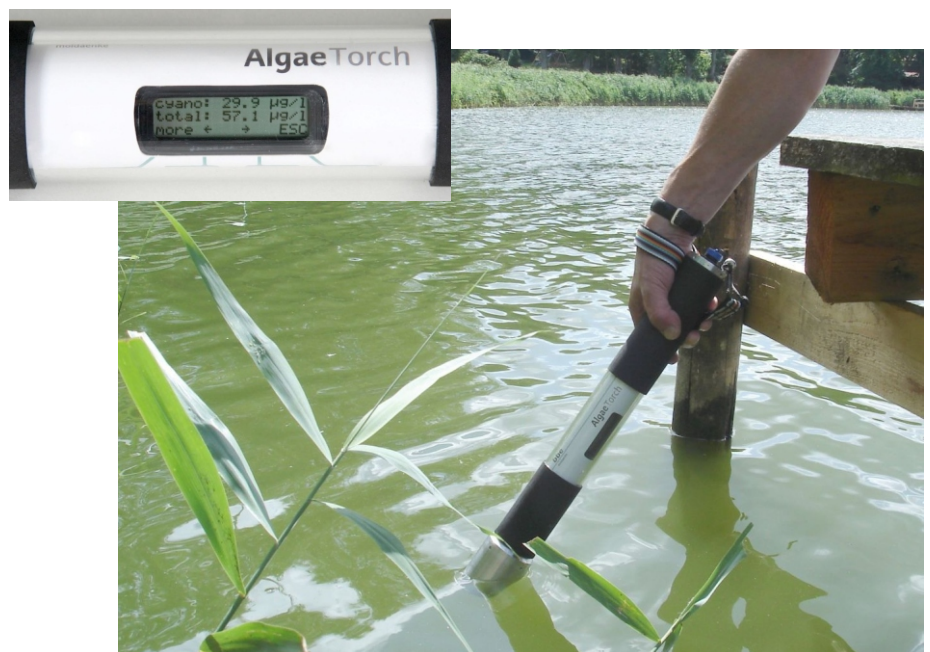
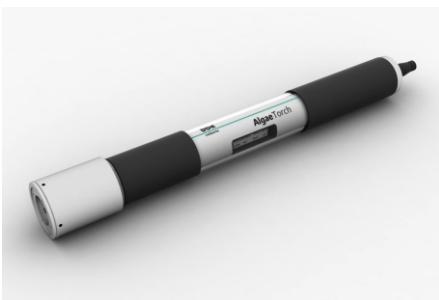
The *bbe AlgaeTorch*

Switch on, dip in and read off

Dip in and read your algae in less than a minute

The greatest amount of biomass on earth consists of algae. While most algae increase the benefits to humans in the form of food, energy and pharmaceuticals, some bear the potential of toxin production. These hazardous algae pose a high risk to human health in fresh and marine waters. The group of blue-green algae (*cyanobacteria*) is well-known to produce highly toxic compounds such as MICROCYSTIN. Therefore it is an essential task to survey water bodies where humans can come into contact with algae-polluted water.

The *bbe AlgaeTorch* is a light-weight, outdoor instrument for the quantification of blue-green algae and total chlorophyll. The algae analysis includes the determination of the chlorophyll content, which replaces the laborious wet-chemical approach. The measurement is based on the natural fluorescence of algae cells. Immediately performed, the measurement does not need more than 15 seconds. There is no sample preparation. Just turn it on, dip into the water, and read the display.



bbe **AlgaeTorch**: handheld operation for measurement of e.g. bathing water

The illuminated display enables clear readings even in bright sunlight.

Operation

To switch on the *bbe AlgaeTorch*, it is simply turned upside down, and back again. A clearly presented menu enables one-step measurement. For the input and operation of the *AlgaeTorch*, four contact keys are situated on the surface of the housing. Input is indicated by a short vibration signal.

After starting a measurement, the remaining seconds until the end of the measurement are counted down visibly on the display. A vibration alert

informs the user about completion of the measurement.

Features

- total chlorophyll
- blue-green algae (*cyanobacteria*)
- high sensitivity
- no sample preparation
- easy handling
- automatic turbidity correction
- cable-free operation
- display on the instrument
- GPS sensor included (new)
- datalogger function
- internal rechargeable batteries
- USB connection to PC
- optional pressure sensor



■ A handy instrument for the rapid determination of chlorophyll values

Measurements

The pigments of the algae are spectrally excited subsequently by three coloured LEDs at high frequency. As a response, the algae emit red fluorescent light. The intensity of the light is used for the calculation of the different algae types, i.e. blue-greens and total microalgae. The calculation is performed internally with optimised algorithms. Results are displayed and stored in the internal memory. An encapsulated USB port enables data transfer to a PC.

Turbidity measurement

For the determination of particulate matter, the intensity of reflected red light is measured and displayed as turbidity.

Pressure measurement (optional)

For profiling down to 100 m depths, a special version of the AlgaeTorch is equipped with a depth rating pressure measurement. Depths are simultaneously recorded with the chlorophyll data.

Applications

- water quality analysis
- bloom detection
- blue-green algae assessment
- toxicity alerts
- reservoir management
- bathing water surveillance
- dam monitoring
- environmental monitoring
- limnological work
- research and education



bbe **AlgaeTorch** measurement at a bathing area

Instrument software functions

- start / stop of instrument
- acces to all stored data
- calibration of instrument

PC software functions

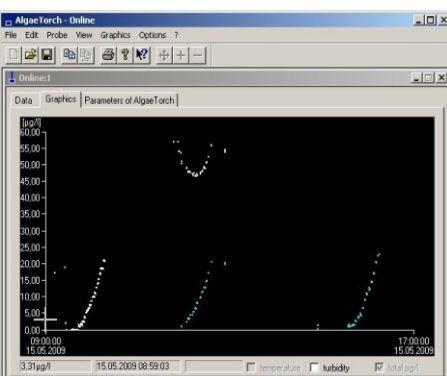
- display of depth profiles as graphic
- display of time data as graphic
- data export to ASCII files
- GPS file export (e.g. Google Earth)



bbe **AlgaeTorch** with telescopic rod

Technical data

Measurands	total chlorophyll [µg chl-a/l] blue-green algae [µg chl-a/l]
Measuring range	0 - 200 µg chl-a/l
Resolution	0.2 µg chl-a/l
Weight	1.2 kg
Size (H x Ø)	500 x 60 mm
Power supply	110/230 V - 50/60 Hz - 12V DC
Turbidity	0 - 1000 FTU
Sample temperature	0 - 30° C
Protection	Ip68
Depth range	AlgaeTorch 10 10 m AlgaeTorch 100 100 m
Interface	USB
Software	bbe data evaluation software for Windows
Memory capacity	1000 datasets
Options	telescopic rod 10 m rope



bbe **AlgaeTorch** software screenshot