

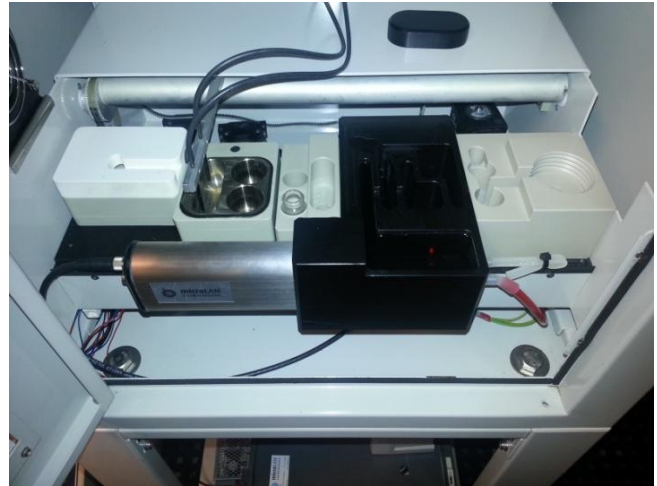
iTOXcontrol

ALGcontrol- option Online Algae Sensor



With the development of the ALGcontrol microLAN adds a new technique to the existing iTOXcontrol. This technique is capable to identify classes of algae and to convert fluorescent values into chlorophyll-a concentrations and blue-green algae (or cyanobacteria) concentrations.

The ALGcontrol for algae differentiation uses 7 LEDs for fluorescence excitation. The LEDs emit light at 7 selected wavelengths.



Measurable components:

DOM (Dissolved Organic Matter)	mg/l
Total chlorophyll	µg/l
Cyano chlorophyll	µg/l
Turbidity	NTU

The turbidity and DOM are detected to enhance the accuracy. They will be used to correct the increase or decrease of the signal caused by the presence of DOM and/or turbidity.



Specifications :

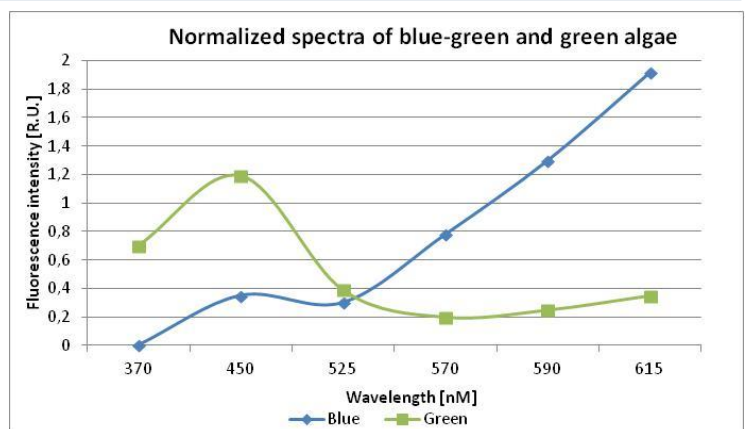
Wavelengths: 365, 450, 525, 570, 590, 610, 710 nm

Range : 0-200 µg chl-a/l

Turbidity: 0-200 NTU

Transmission : 0-100 %

Sample temp. : 0-30 °C



ALGcontrol



Principle fluorescence technique

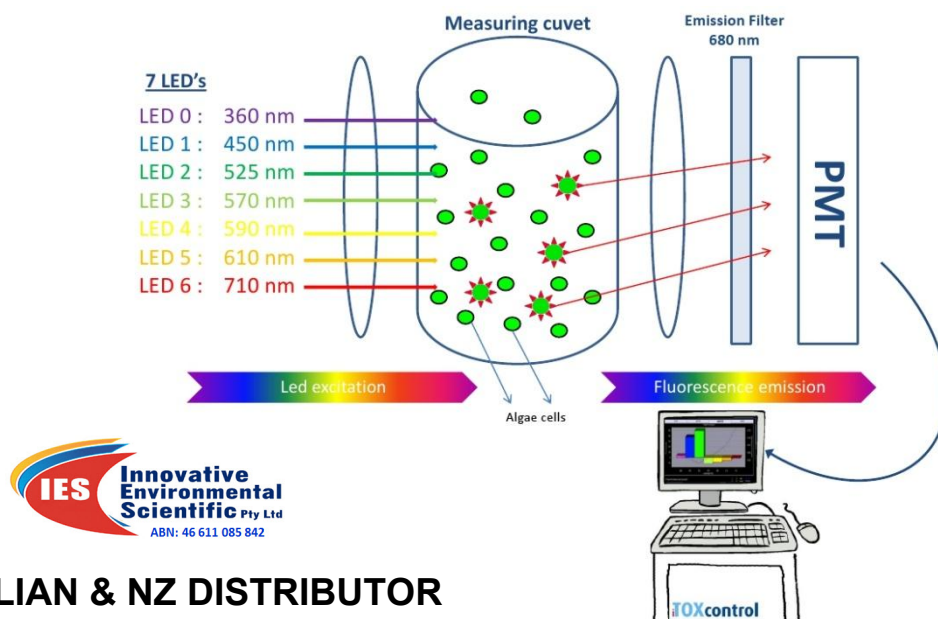
The ALGcontrol makes use of fluorescence excitation. This means that when chlorophyll molecules absorb light, a fraction of the energy absorbed is reemitted as fluorescence.

Due to the fact that algae of the same class contains a similar quantity and quality of pigments, their fluorescence excitation spectrum (with a fixed emission wavelength at 680nm) is significant. Thus, it is possible to differentiate classes of algae by their fluorescence excitation spectrum.

In addition to this, other fluorescing matter (for example, DOM = dissolved organic matters measured with the 365nm wavelength and turbidity, measured with the 710nm wavelength) are detected to enhance the accuracy.

The ALGcontrol uses 7 Light Emitting Diodes or LEDs for fluorescence excitation. The LEDs emit light at 7 selected wavelengths (365nm, 450nm, 525nm, 570nm, 590nm, 615nm and 710nm).

The LEDs in the ALGcontrol are switched on, one after the other, at high frequency. The fluorescence signal for each LED is measured and averaged during a pre-defined time. The fluorescence values for each of the LEDs are given in "counts" after the measurement and shown as raw data. The concentration of the algae will be calculated from these values (counts) to $\mu\text{g/l}$ and the results are displayed in a graph. Correction for other fluorescing matters (DOM and turbidity) will also be calculated automatically



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