OPTIMOS GROUP

ADVANCED SOLUTIONS FOR WATER SECURITY

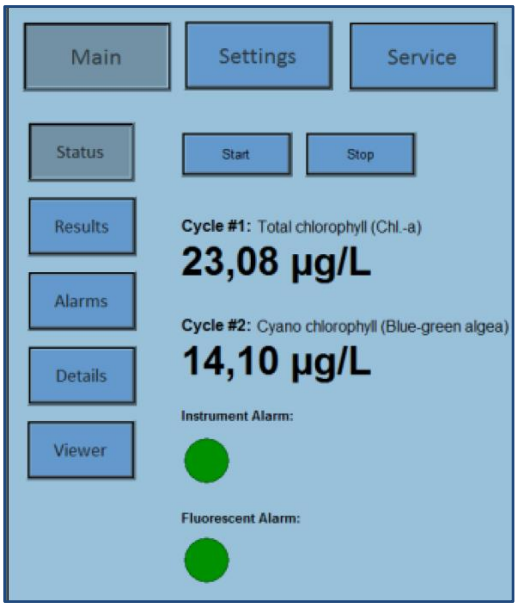
ALGcontrol

The MicroLAN ALGcontrol is an online On-line Fluorescence monitoring of different algae classes and toxic algae

ALGcontrol: Online Toxicity Monitoring System

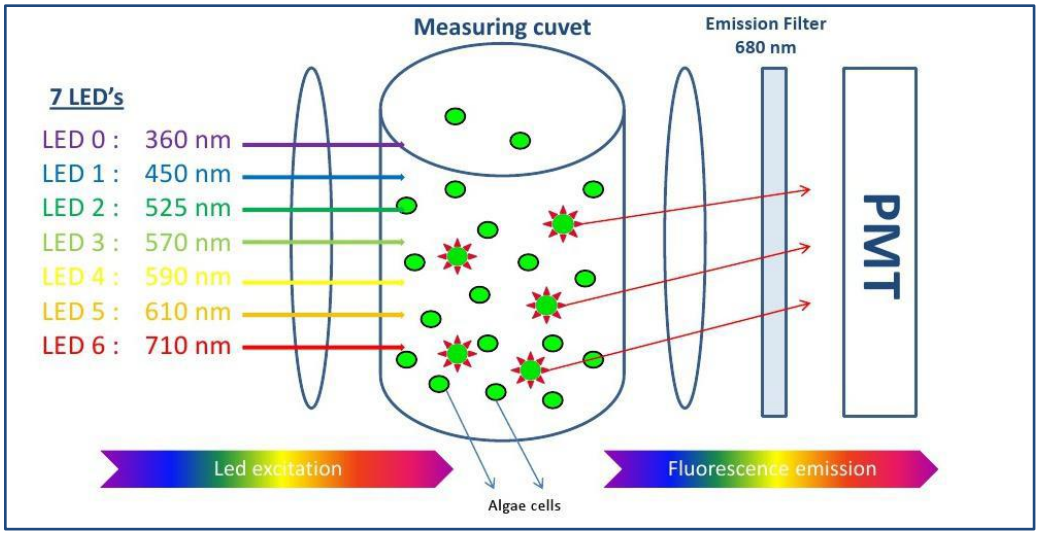
The ALGcontrol continuously measures the chlorophyll fluorescence of different algae classes in real time. Compared to time-consuming sample preparations and counting by microscope, the on-line fluorescence monitoring provides quick determination of the chlorophyll content in for example lakes, rivers and reservoirs.

The ALGcontrol makes use of fluorescence excitation. When chlorophyll molecules absorb light, a fraction of the energy absorbed is reemitted as fluorescence. Algae of the same division contain 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 divisions of algae by their fluorescence excitation spectrum. Other fluorescing matter are detected to enhance the accuracy. DOM = dissolved organic matters measured with the 365nm wavelength and turbidity is measured with the 710nm wavelength. The ALGcontrol uses 7 Light Emitting Diodes or LEDs for fluorescence excitation. The LEDs emit light at 7 selected wavelengths (360nm, 450nm, 525nm, 570nm, 590nm, 610nm and 710nm).



note: more classes will be shown when selected)

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 µg/l and the results are displayed in a graph. Correction for other fluorescing matters (DOM and turbidity) will also be calculated automatically.



Instrument Specifications:

The ALGcontrol can do 5 classes: green, blue (cyanobacteria, phycocyanin), brown (diatoms and dinoflagellates), red algae (incl. crypto) and total chlorophyll.

Ranges:

- Total chlorophyll: 0-200 µg/l (Chl.-a, green algae + blue-green algae)
- Cyano chlorophyll: 0-200 µg/l (Chl.-a, blue- green algae)
- Precision: 0,2 µg/l
- Turbidity: 0-400 NTU
- 1 programmable pump (sample / cleaning)
- 2 programmable valves.

Technical Details:

- Power supply 24V DC
- Protection classification: IP 54 (optional IP65)
- Dimensions (HxBxD): 460 x 450 x 321
- Cabinet material: St. Steel
- Sample pressure: 0 bar (max 0.05 bar overpressure)
- Sample temperature: 10 - 35°C
- Sample flow rate: 3 l/h
- Environmental temperature: 15 - 35°C
- Power consumption (average): 45W.
- Certification: CE

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Communications:

- Integrated PC with Windows-based
- Graphical user interface with interactive touch screen operation
- Full network capability via direct LAN connection
- All standard communications interfaces are supported, LAN, RS232 or RS485
- Protocols: Modbus RTU, Modbus TCP
- 2x output 4 - 20mA.

Automatic Cleaning:

- User selectable cleaning cycles
- Cleaning solution (sodium hypochlorite solution < 0,05% active) prevents fouling and unattended usage for several weeks.

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