

## Automate Detection of Cyanobacteria & Other Algae

### OVERVIEW

The FlowCam<sup>®</sup> Cyano detects cyanobacteria, other algae, and particles in water samples. Using the organism's fluorescent signature to differentiate cyanobacteria from other algae, VisualSpreadsheet<sup>®</sup> further classifies taxa through image analysis.

- 2 fluorescence channels to differentiate cyanobacteria from other algae: 633 nm laser (Chlorophyll - Ch1: 700 nm  $\pm$  10 nm, Phycocyanin - Ch2: 650 nm  $\pm$  10 nm)
- Snap-in flow cell and auto-focus enable setup in under 5 minutes
- VisualSpreadsheet<sup>®</sup> software performs image analysis by measuring 40+ morphological parameters including biovolume, coloration, shape, and size to classify taxa



### APPLICATIONS

Detect and identify cyanobacteria and other algae (e.g., green algae) in freshwater and marine environments

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Analyze freshwater and marine samples

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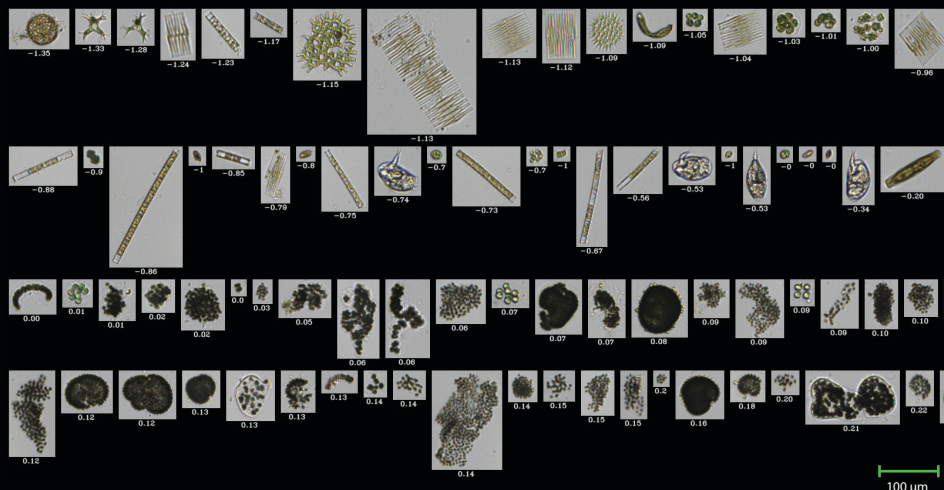
Calculate cell counts, concentration, and biovolume

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Semi-automate classification of taxa

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Manage drinking water, recreational, or ecologically significant water bodies

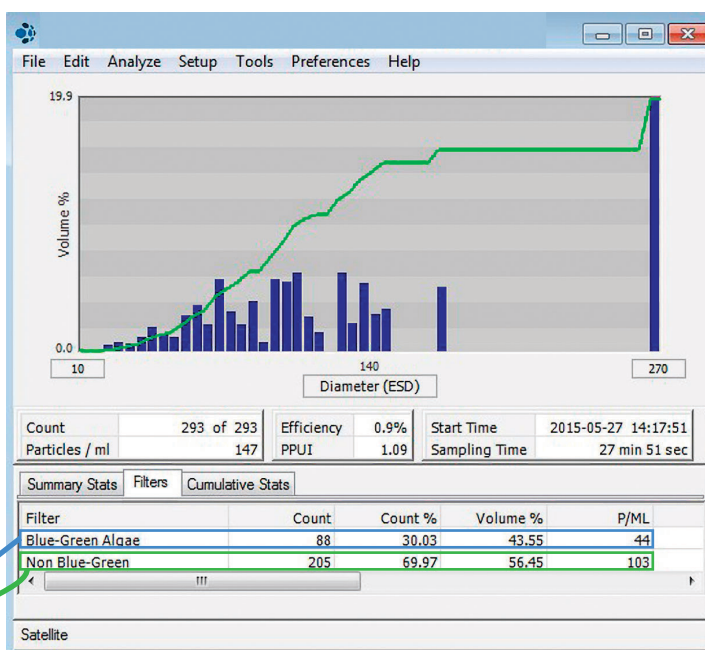


FRESHWATER SAMPLE AT 10X. DATA SORTED BY FLUORESCENCE VALUE RATIO OF CHLOROPHYLL TO PHYCOCYANIN TO IDENTIFY CYANOBACTERIA

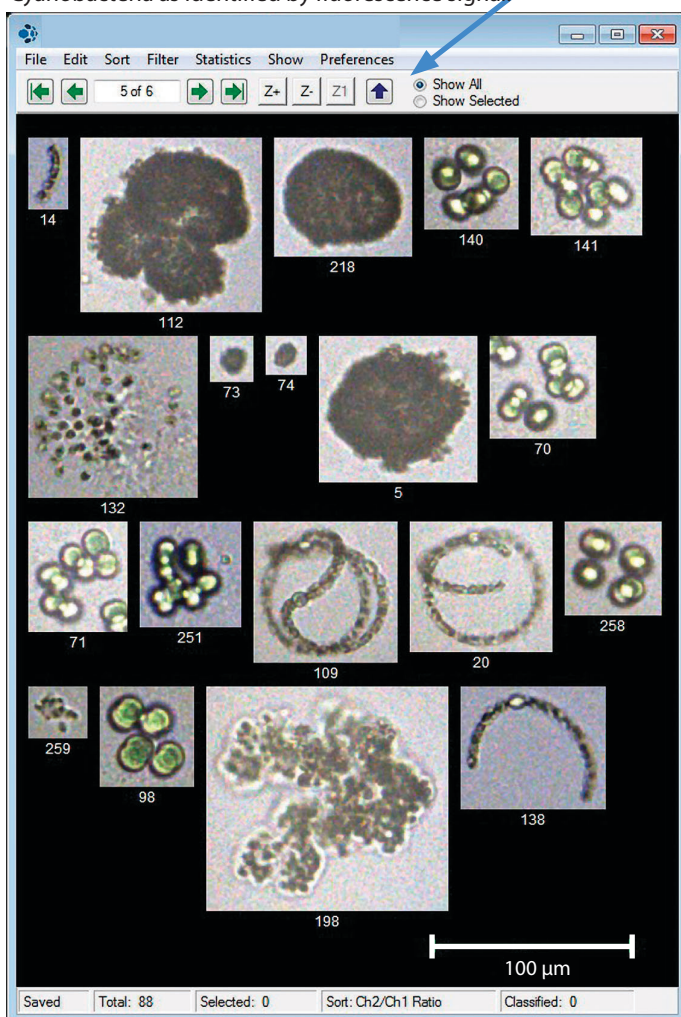
### CASE STUDY

A sample containing low levels of cyanobacteria and other algae was collected from a Vermont lake in the early spring and evaluated with the FlowCam Cyano. By sorting images using the ratio of the two fluorescence signals collected for each particle, the FlowCam Cyano distinguishes the cyanobacteria from other algae as shown at right and below.

VisualSpreadsheet software can help users organize cyanobacteria and other algae by taxa so that researchers and environmental monitoring agencies can better protect and manage aquatic systems.



Cyanobacteria as identified by fluorescence signal



Non-cyanobacteria (green algae, diatoms, etc.) as identified by fluorescence signal.

