

Identify & Classify Aquatic Microorganisms

OVERVIEW

Since its introduction in 1999, the FlowCam® has become a valued instrument for analyzing marine and freshwater samples. More than 500 FlowCams are used in 50+ countries to identify, count, and measure phytoplankton, zooplankton, and other particulate. Incorporating guidance from our customers and engineers, Yokogawa Fluid Imaging Technologies developed the 4th generation model, the FlowCam 8000.

- Analyze particles sized 2 µm to 1 mm
- Identify, count, and measure phytoplankton and zooplankton
- Process a 1 mL sample in 6 minutes
- VisualSpreadsheet® software performs image analysis by measuring 40+ morphological parameters including biovolume, coloration, shape, and size to classify taxa

2018 Product Launches:

- Freshwater algae libraries included on FlowCam to support identification
- Database driven software enables time series and trend analysis among multiple data sets



APPLICATIONS

Identify and enumerate phytoplankton and micro zooplankton

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Monitor cyanobacteria and nuisance algae, such as taste and odor algae in source water

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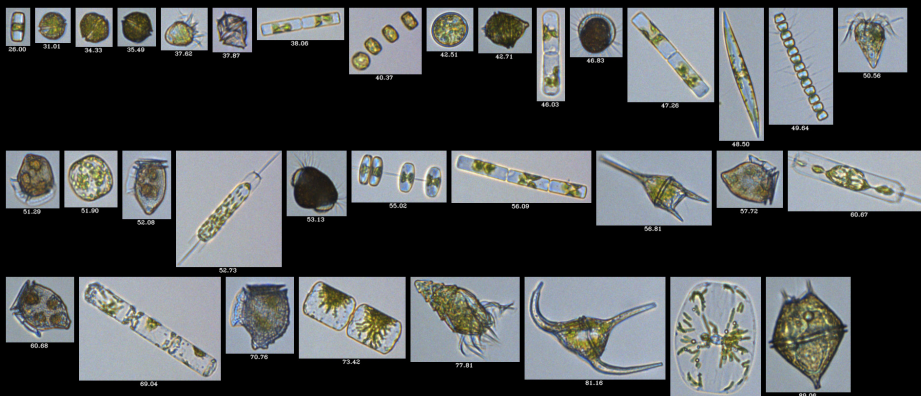
Characterize particles with fluorescing probes: lipid analysis, FISH probes, cell viability

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Analyze sediment: tephra particles, marine foraminifera, paleolimnology

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Monitor contamination in cultures and track biovolume, concentration, cell size distribution



LIVE SAMPLE FROM THE GULF OF MAINE, IMAGED AT 10X



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FlowCam® 8000

Identify & Classify Aquatic Organisms

FlowCam 8000	
Particle Size Range	2 µm to 1 mm
Magnification & FlowCells	20X (~200X magnification), flow cell depth: 50 µm Field-of-View (FOV) 10X (~100X magnification), flow cell depth option: 80 µm and 100 µm FOV 4X (~40X magnification), flow cell depth option: 300 µm and 600 µm FOV 2X (~20X magnification), flow cell depth: 1 mm FOV
Sample Processing Capability	0.05 mL/minute at 20X and up to 5 mL/minute at 2X
Measured Parameters	Basic Shape Parameters: Area, Aspect Ratio (width/length), Area Based Diameter (ABD), Equivalent Spherical Diameter (ESD), Length, Volume (ABD-based), Volume (ESD-based), Width, 3 Biovolume Measurements Advanced Morphology Parameters: Area (Filled), Circle Fit, Circularity, Circularity (Hu), Compactness, Convex Perimeter, Convexity, Elongation, Fiber Curl, Fiber Straightness, Geodesic Aspect Ratio, Geodesic Length, Geodesic Thickness, Perimeter, Roughness, Symmetry Fluorescence Detection & Measurements: Channel 1 Area, Channel 1 Peak, Channel 1 Width, Channel 1 Area, Channel 1 Peak, Channel 1 Width, Channel 2/Channel 1 Ratio Gray Scale and Color Measurements: Average Blue, Average Green, Average Red, Edge Gradient, Intensity, Blue/Green Ratio, Red/Blue Ratio, Red/Green Ratio, Edge Gradient, Intensity, Sigma Intensity, Sum Intensity, Transparency
Camera	High resolution (1920x1200 pixels) CMOS. Monochrome and color available.
Frame Rate	Shutters up to 120 frames per second
Fluidics	Micro syringe pump with multiple sizes to optimize flow rates: 0.5 mL, 1 mL, 5 mL, 12.5 mL
Data Acquisition Method	FlowCam 8400 - fluorescence based laser triggering and auto imaging FlowCam 8100 - auto imaging
Fluorescence Emission & Detection	Excitation Options (488 nm, 532 nm, 633 nm) with 2-Channel Fluorescence Detection: - 488 nm laser - Ch 1: 650 nm long pass (Chlorophyll) / Ch 2: 525 nm ± 15 nm (FITC) - 532 nm laser - Ch 1: 650 nm long pass (Chlorophyll) / Ch 2: 575 nm ± 15 nm (Phycocerythrine) - 633 nm laser- Ch 1: 700 nm ± 10 nm (Chlorophyll) / Ch 2: 650 nm ± 10 nm (Phycocyanin)

REQUEST A FREE SAMPLE ANALYSIS

Send us your sample and we will provide:

- A web-based, interactive presentation of results
- Histograms and scattergrams showing size and distribution of particles
- A Microsoft Excel spreadsheet with measurement data, including count, length, width, and diameter
- Digital images of the cells and particles
- Identification and classification of plankton species/genus

