



BactoSense[™] Multi

Automated flow cytometer for multi-point monitoring of bacteria in water

Always a step ahead – capture a precise picture of your complete process

In a world where sustainability meets efficiency, don't waste precious time transporting your many samples to a lab – instead, bring the lab to the samples. BactoSense Multi is a step forward in the evolution of microbiological monitoring. With it, you experience a complete mapping of your production environment: it samples different points of your process and analyses them fully automatically. Never be caught off guard on your production line and enjoy the peace of mind that comes from knowing the quality of your water.



Processes up to 30 samples, coming from anywhere on your production line.

Measures fully automatically without human interaction – also overnight.



YOUR CHALLENGES

Do you need to monitor the water quality at several points of your production or process line?

Would you prefer to have a global view on your overall process as well as detect and understand any variations on your network?

Are you missing the in-house knowledge or resources to perform water testing?

Do you want to take decisions based on rapid microbiological analysis without having to wait for external lab results?



OUR SOLUTION

Ease of use

BactoSense Multi is a compact automated flow cytometer for the microbial analysis of water. Thanks to its user-friendly interface, it can be operated by anyone. Up to 30 samples can be loaded and measured without any human intervention.

Accurate

It is proven that plating methods (HPC) only detect 1% of bacteria present in a water sample. The BactoSense technology makes it possible to count 99.9% of them with a high repeatability. Bringing this fast analysis method to the heart of your production accelerates your decision process.



YOUR WORKPLACES



On the production line

Sampling multiple points gives a complete picture of your line. BactoSense Multi and Online complement each other to reveal the microbial landscape in any situation.

Process engineering

Combining precise mapping and fast time to results enables process optimization, lower costs, reduced waste, and the avoidance of production downtime.

Quality assurance

In industries where high sanitary standards are expected, quality control is required at every step of the production. Results can be accessed remotely anytime for a maximum flexibility.

- Complete overview of production
- Can be operated anytime, day and night
- Quick decision, without the involvement of an external lab •
- Minimized handling of chemicals •
- Optimized production yield ٠
- Low maintenance and low total cost of ownership
- No need for specialists
- Full compatibility when comparing results between Online and Multi

Innovation for your processes

YOUR BENEFITS



BactoSense Multi – Peace of mind

How does it work?

The process starts with labeling, scanning and loading the samples into the cooled tray. Then begins their staining, mixing, incubating (1 & 2) and measuring (3 & 4). The results are ready for exploitation after only 25 minutes (5).

The sample finishes its course into the integrated waste container (6). The measuring cycle ends with a full cleaning of the instrument (7).

Measurement type tailored by the cartridge

All the results can be retrieved from the database at any time to be evaluated. Depending on the cartridge used, TCC (Total Cell Count) or ICC (Intact Cell Count), specific sample parameters are displayed on the dotplots.





Safe and environmentally friendly handling

The cartridge system of BactoSense minimises any contact with chemicals including their waste. The cartridge is hermetically sealed, quickly replaceable, and reusable. It contains all you need for up to 500 measurements, giving your instrument full autonomy for up to 9 months - depending on the frequency of your analyses.

Application example

A water production line can have many treatment steps. Sampling and measuring at different points provide valuable details. For example, before and after a filtration step: not only does it provide a direct assessment of the filtration efficiency, but it also enables a rapid evaluation of the filter integrity to anticipate its cleaning or replacement.



10 bacteria / ml

after ultrafiltration

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All this information allows to achieve an optimised process control, with reduced reaction times and increased safety to finally produce a better water quality.



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Safe Water. Anytime. Anywhere.

BactoSense™

Automated flow cytometer for online monitoring of water

Peace of mind - always know your water quality

The best way to control the microbiological quality of your water is to analyse it. For more than a century, a laboratory was needed to detect bacterial contamination. Nowadays, the possibility to monitor on-site continuously opens up a new era of water quality monitoring.

HPC (Heterotrophic Plate Count)



Since 1883 manually – within 3 days

FCM (Flow Cytometry)



Since 1968 manually – within 3 hours

Online FCM (Online Flow Cytometry)



Since 2017 automatically – within 20 minutes

BactoSense – Fully automated water monitoring

YOUR CHALLENGES

You need to monitor the quality of raw or ground water? You wish to improve your water treatment processes or ease your flushing procedures? You want to avoid bacterial contamination in your water distribution networks? In all cases you need an easy way to get quick results of your water analysis to take decisive actions. However, today's methods are complicated, slow, not always accurate and can only be performed in a laboratory.



OUR SOLUTIONS



For your PROCESS

Online sampling at any chosen point: at the inlet, before and after rapid and slow sand filtration, before and after disinfection, at the reservoirs. 24/7 monitoring can raise an alarm when necessary but also helps to optimize the processes.



In the FIELD

Manual or online sampling anywhere on the distribution networks: pipes maintenance, sources, roadworks.

Portability, robustness, and low voltage power supply makes the device fully field compatible.



In the LAB

Manual analysis for process validation, quick check from different points. Tests can be done by anyone – the intuitive use of BactoSense does not require any special lab technicians. The compact footprint is also suitable for limited spaces.

Early warning and peace of mind

When a water sample is measured using BactoSense, 99.9% of the microbial cells larger than $> 0.1 \mu$ m can be detected. A dotplot showing the exact quantity and the approximate size of each bacteria is represented.

To retrieve the results, you can choose between a remote access via Ethernet by using the integrated web interface or export your data through the USB port. An alarm system with configurable warning ranges will inform you immediately in case of a contamination, enabling prompt actions.



Innovation for your processes



Safe and environmentally friendly handling

The cartridge system of BactoSense removes the manipulation of toxic substances and avoids any contact with chemicals and their waste. The cartridge is hermetically sealed and reusable. It contains all you need for up to 1'000 measurements, giving your instrument a full autonomy for 3 weeks to 9 months depending on the frequency of your analyses. The cartridge replacement is then easily done within short time.

Easy to use

BactoSense is a fully automated flow cytometer for the microbial analysis of water. It can be used anywhere, by anyone and without any laboratory

equipment. The sampling can be done manually or continuously. Thanks to the user-friendly interface, measuring intervals (30 min to 6 h) and further settings can be programmed simply.

Accurate

It has been proven that plating methods (HPC) only detect 1% of bacteria present in a water sample. BactoSense technology makes it possible to count 99.9% of them with a high repeatability.





Compact

With an IP65 protection and a compact footprint, BactoSense is designed for industrial applications.

It can be mounted directly on the wall or placed on a table, anywhere in a water supply or in a laboratory. It can be transported and used in the field.

YOUR BENEFITS

Reduce time and costs

Don't bring your sample to the lab, bring your lab to the sample. Bacto-Sense gives you the opportunity to analyse your water sample directly at its source.

The automated sample preparation makes it possible to have an accurate result in only 20 minutes.

How does it work?

The process starts with staining of the sample, mixing, incubating (1 & 2) and measuring (3 & 4). The results are ready for exportation after **only 20 minutes** (5). The sample finishes its course into the integrated waste (6). The measuring cycle ends by a full cleaning of the instrument (7).

Measurement type tailored by the cartridge

All results can be retrieved from the database at any time to be evaluated. Depending on the cartridge used, specific sample parameters are shown on the dotplots.





Parameters available for the different cartridges TCC (Total Cell Count) and HNAP (High Nucleic Acid Percentage) for **TCC cartridges.**

ICC (Intact Cell Count), ICP (Intact Cell Percentage) and HNAP for **ICC cartridges.**

APPLICATION EXAMPLES

Contamination detection

While the TCC/ml remains relatively steady (blue curve), a distinct increase of the HNAP level is discernible (red curve), due to a contamination that occurred in the tubing. The online monitoring shows after a few hours that a cleaning is needed. Thanks to the quick reaction, time and money can be saved.



Graph showing TCC and HNAP measurements over one week

Error detection in desinfection system

This graph shows ICC/ml increasing significantly at a specific point (red curve), while TCC/ml remains relatively stable (blue curve).

This allows a fast and precise understanding of the system failure in the water installation, which leads to highly efficient troubleshooting. BactoSense enables process enhancement and ensures that your systems functions flawlessly.

Graph showing TCC and ICC measurements every 3 hours





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