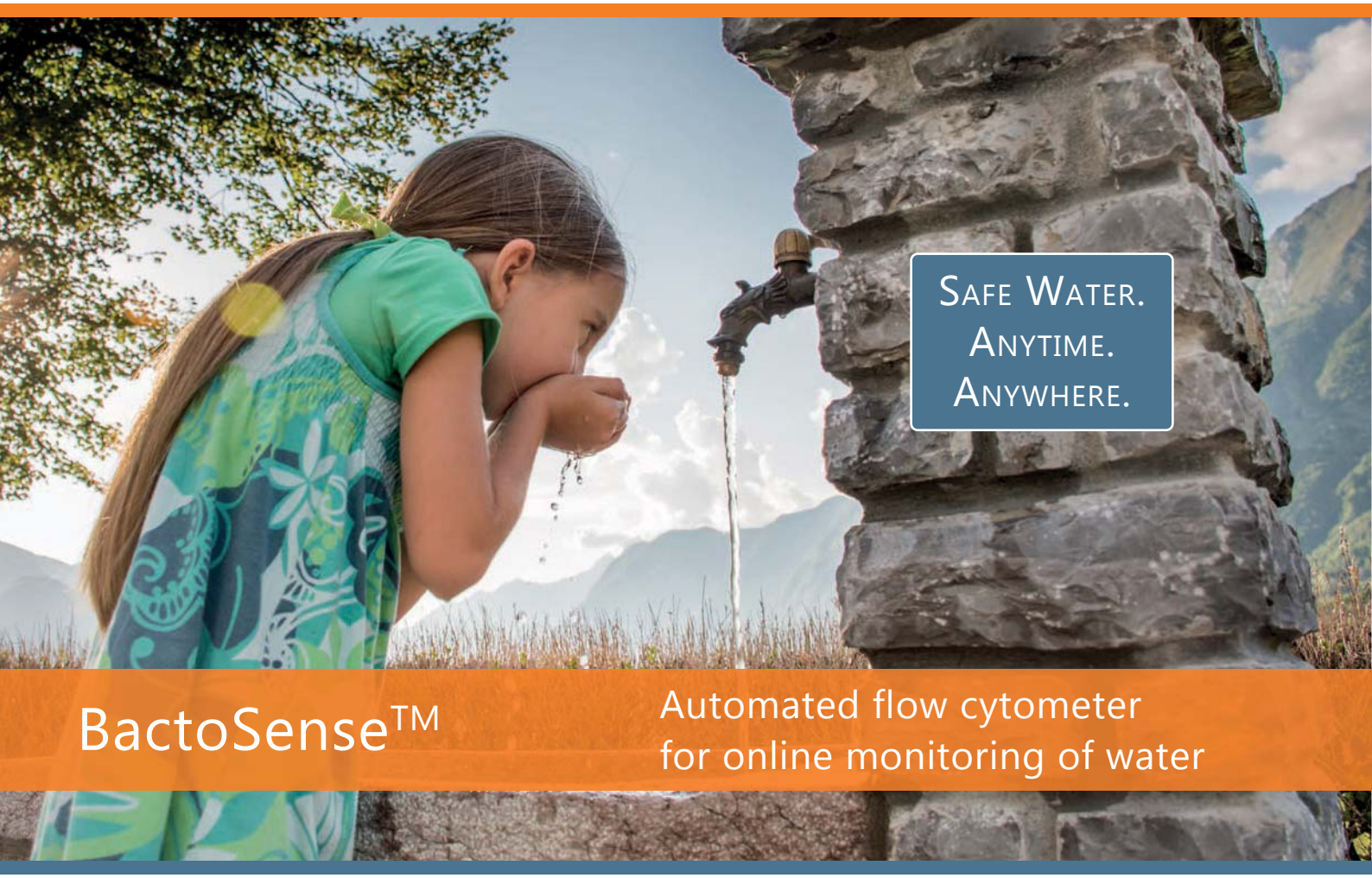
bNovate TECHNOLOGIES



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.

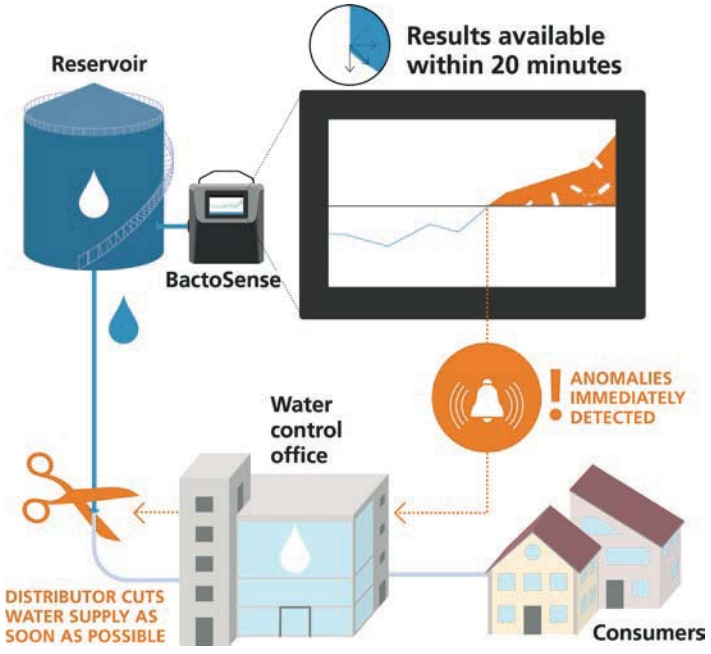
In the LAB

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 µm 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

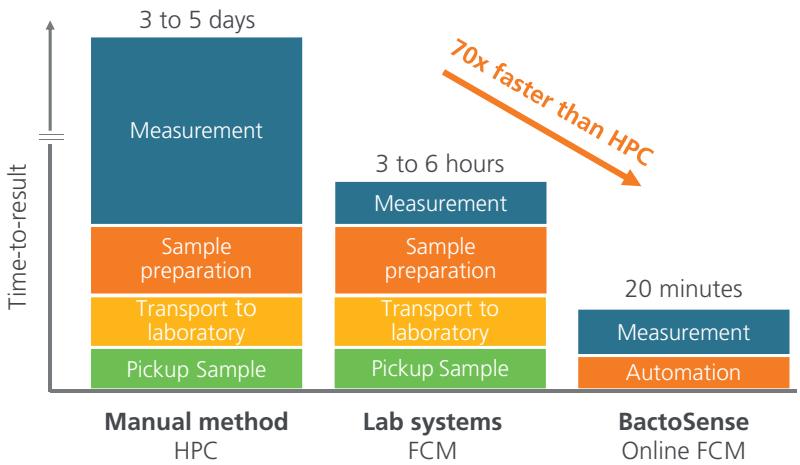
It has been proven that plating methods (HPC) only detect 1% of bacteria present in a water sample. BactoSense technology makes it possible to count 99.9% of them with a high repeatability.

IP 65

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

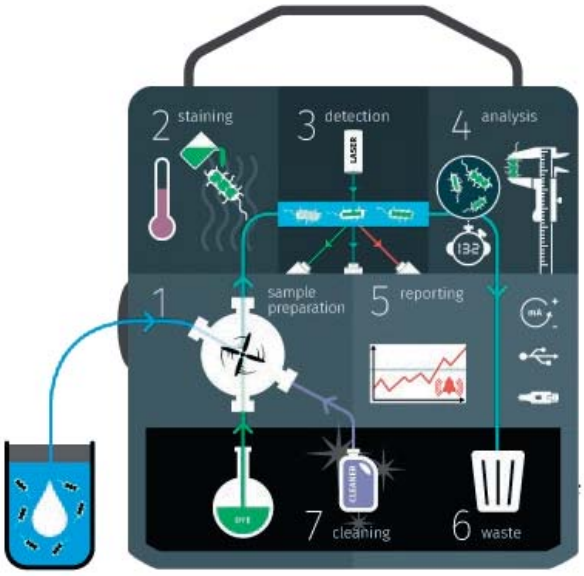
Don't bring your sample to the lab, bring your lab to the sample. BactoSense gives you the opportunity to analyse your water sample directly at its source.

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

BactoSense – Peace of mind

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.**

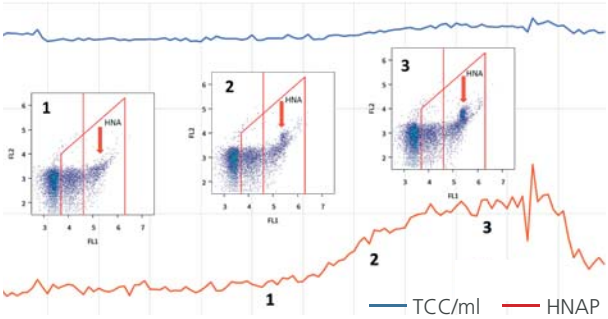
ICC (Intact Cell Count), ICP (Intact Cell Percentage) and HNAP for **ICC cartridges.**

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

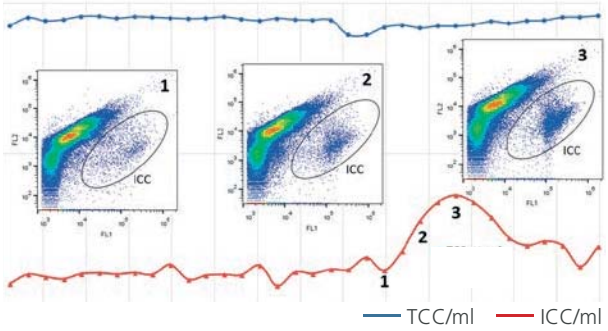


Error detection in desinfection system

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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