



BioSentry™

**ENSURE YOUR WATER SECURITY:
THE ONLY CONTINUOUS SURVEILLANCE SYSTEM THAT
DETECTS AND CLASSIFIES WATERBORNE PATHOGENS 24/7**

Benefits:

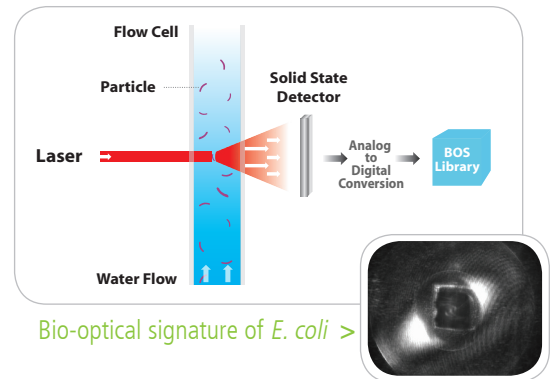
- ▶ 'Detect to Warn' system prevents widespread illness in potable water distribution systems
- ▶ Continuous monitoring detects biological water quality deterioration allowing for quick remedial action
- ▶ Automated system offers low maintenance and low cost of ownership

Features:

- ▶ Provides continuous, on-line, real-time detection and classification of potentially harmful microorganisms
- ▶ Total system flow up to 250 ml/min (360 liters per day)
- ▶ Inspection volume rate approximately 1 ml per minute (1.4 liters per day)
- ▶ Detects and monitors HPCs
- ▶ Requires no consumables or reagents for detection
- ▶ Low maintenance with automatic cleaning
- ▶ Integrates into customer's SCADA or Information System
- ▶ Uses Universal Library for detection
- ▶ Factory tunable for specific pathogens

[Laser-based Technology]

The BioSentry™ system from JMAR Technologies provides continuous, on-line, real-time monitoring for waterborne microorganisms, without the need for consumables or reagents. It utilizes laser-produced, multi-angle light scattering (MALS) technology to generate unique bio-optical signatures (BOS) for classification using JMAR's pathogen detection library. BioSentry can immediately detect the presence of microorganisms and offer classification for suspected pathogens in minutes.



[Flexible System Configuration]

Fully automated and remotely accessible, the BioSentry system offers low maintenance and low cost of ownership. It integrates easily into existing SCADA or MIS systems, and can be configured to meet individual requirements for alert thresholds and notification procedures. Alerts can be relayed over a variety of communication protocols including email, encrypted internet or directly into linked information systems. When an "event" is detected, the system can immediately capture a water sample for validation. The system can be used both as a pathogen alarm and as a biological monitoring device to complement your existing water instruments and quality processes.

[Simple to Install – Simple to Use]

The BioSentry can be incorporated into most water delivery systems with little effort. Its compact size and rugged construction allows it to fit into confined spaces, while the flexible mount system supports either free-standing, table-top or wall-mounted installations. It offers a state-of-the-art touch screen interface which provides a real-time graphical depiction of water status. Information is refreshed in one minute increments and shows relative microbial counts for the species being monitored as well as unclassified microorganisms. At a glance, an operator can identify when concentrations are approaching user-defined thresholds for warning or alert conditions.

EPA TESTED

BioSentry™

Applications:

Water Quality

- ▶ Municipal drinking water for contamination warning
- ▶ Post filtration – integrity and performance
- ▶ Monitor background flora (heterotrophs) trends and changes for water quality deterioration
- ▶ Reservoirs and lakes
- ▶ Water & amusement parks
- ▶ Beverage & bottled water
- ▶ Cruise ships, hotels & resorts - drinking water, pools & spas
- ▶ Key complement to other water quality monitors

Water Security

- ▶ Distribution systems
- ▶ Government and 'at risk' buildings & facilities
- ▶ Military facilities

Water Reuse / Desalination

- ▶ Measure / monitor biological load
- ▶ Monitor for early membrane deterioration

[Contamination Warning & Water Quality Monitoring]

Most waterborne pathogen events result from rapid, high concentrations of microorganisms that breach the water system by natural, accidental, or intentional means. BioSentry detects pathogens at contamination warning levels and can also consistently monitor the normal flora (heterotrophic plate counts) to meet regulatory monitoring or to augment standard water quality monitoring processes.

Possible contamination events include: pipe breakage, accidental wastewater connection to drinking water system, high levels of contaminants from source water that have not been effectively treated, system malfunction, operator error, low chlorine levels in the distribution system, natural disasters, and vulnerability to terrorist activity.

In public water contact usage, such as water parks, hotels/resorts, and public pools, the BioSentry monitors for any unusual events that may occur from protozoa (*cryptosporidium*) or bacteria (*E. coli*) contamination.

[Pathogen Detection Library]

Microbial Classification	Detection Library Microorganism	BioSentry Classification
Bacteria: Rod Shaped	<ul style="list-style-type: none"> • <i>Pseudomonas</i> • <i>Legionella</i> • <i>E. coli</i> • <i>Salmonella</i> • <i>Shigella</i> 	Rod-shaped (rod-shaped bacteria)
Bacteria: Endospores	<ul style="list-style-type: none"> • <i>Bacillus subtilis</i> spores • <i>Bacillus globigii</i> spores • <i>Bacillus cereus</i> spores 	Spore-shaped (bacterial endospores)
Protozoa	<ul style="list-style-type: none"> • <i>Cryptosporidium</i> oocysts • <i>Giardia</i> cysts 	Protozoa-shaped (e.g. <i>Crypto</i> or <i>Giardia</i>)
Future Library Additions	<ul style="list-style-type: none"> • Algae • Yeast & Molds 	Currently classified as 'Unknown'

©2008 JMAR Technologies, Inc. All rights reserved. Specifications subject to change without notice. BioSentry and BioSentry LAB are trademarks of JMAR Technologies, Inc. All other products are trademarks of their respective companies. Multiple patents & patents pending. 110408



JMAR Technologies, Inc.
10905 Technology Place
San Diego, CA 92127

www.jmar.com
P. 858.946.6800
E. biosentry@jmar.com