



PHOTONIC BIOSYSTEMS

Microbial Detection (Coliform Analyzer) Technology

Photonic BioSystems, Inc. has developed a bioassay system for automatically testing, rapidly identifying, and reporting metabolic-activity of cells/microbes/organisms in fluid samples and deriving information about the number of cells present, their growth and health status. The portable (15 lbs.) testing instrument, that detects the presence of E. coli, total coliform, and other contaminant indicator organisms in 8 hours or less, is the result of over 10 years of research and development. The system uses optical sensing, membrane filtration, and temperature controlled incubation, with proprietary software to provide rapid detection of microbial contamination. With high levels of contamination the system can provide results in as little as 30 minutes; for a single bacterium- 8 hours. The in vitro assay method and device captures and concentrates organisms in a unitized self-contained enclosed filter apparatus that is analyzed in the optical detection instrument. It provides for analysis of biological material including cells, their enzymes, or other constituents thereof, that can be identified based on an indicator-generating means.

Portable case fits: instrument, vacuum pump, sample prep. device, and test kits for easy transportation and in-field testing.



Applicable Markets:

Water:

- Drinking
- Source
- Waste & discharge
- Bottled

Medical:

- Clinical
- Antibiotics sensitivity
- MRSA
- Pharma QA

Sterility:

- Sterilizer cycle efficacy
- Detoxification testing
- Product testing

Toxicity:

- Homeland Security
- Water
- Pharma
- Cosmetics

Agriculture:

- Dairy
- Feed QC
- Biosecurity
- Discharge

Food/Beverage:

- Process QA & HACCP
- Food testing
- Milk/juice

Features/benefits:

- **Speed:** 30 minutes for high contamination; 8 hours for a single bacterium.
- **Simplicity:** technically skilled operator not required.
- **Small Assay-cartridges:** 15mm enclosed filter protects samples allowing practical testing in the field.
- **Sample Size:** test 0.1mL to 1000mL in proprietary filter assay cartridge.
- **Portable:** lightweight (15 lbs.), small (7"x8"x12"); practical for field use or in crowded lab.
- **Objective Analysis:** eliminates readout errors and uncertainties related to user interpretation.
- **Automated Lab & LIMS Compatible:** cost-effective laboratory mgmt.
- **Stand Alone:** test without the necessity of an integrated computer system
- **Random Access:** begin and end/stop tests at operators' convenience without interrupting other tests in progress.
- **Presence/absence Testing:** provides simple result reporting.
- **Quantitative/Semi-quantitative Results:** automatic colony quantity estimation; visual confirmation enables standard counting numeration.
- **Self-contained Incubator:** temperature selectable; eliminates additional equipment.
- **16 Independent Solid-state Sample Reading Channels:** allows for comparison studies and simultaneous sample testing.
- **Remote Access:** receive immediate test results from any location.
- **Immediate, Continuous Signal Analysis:** indication of contamination at first sign of cell activity.
- **Colony Recovery:** allows easy subsequent testing for identity confirmation and source tracing.
- **No Reading Time Constraints:** no analysis confirmation window; obtain results whenever convenient.
- **Completely Enclosed:** protects the operator and sample from foreign contamination.
- **Power:** 9 – 20 VDC - battery or 110 VAC; power the instrument with a vehicle cigarette lighter.
- **Multiple Outputs:** serial, Ethernet, USB, SD-card provides simple data/results transferring.