

FLUIDION® ALERT LAB (PORTABLE *E. COLI* ANALYZER)

The autonomous mobile microbiology analysis lab

The Fluidion® Alert Lab is a fully portable, autonomous and remotely-controllable analyzer for the measurement of *E. coli* and other bacteria. Suitable for source water and environmental monitoring at a field location, in a moving vehicle, or in a lab, it performs six measurements using a 12V power source or battery. The Alert Lab enables rapid bacterial enumeration immediately following water sampling by field personnel.

A miniaturized mobile microbiology lab

The Alert Lab from Fluidion® is a unique analyzer capable of automatic processing and measurement of a manually-collected fluid sample. It performs automatic incubation, optical monitoring (multispectral absorbance and fluorescence) and wireless data transmission, providing rapid bacterial enumeration. The Alert Lab greatly simplifies measurement logistics, eliminates the need for sample refrigeration during transportation prior to standard laboratory measurements, and minimizes errors due to sample degradation between collection and measurement. It has been shown to have similar accuracy and repeatability to an approved laboratory using MPN methods.

On-demand analysis in the field, on-the-go, or in a lab

The Alert Lab can be used in a variety of settings for quantifying *E. coli*, Total Coliforms, Fecal Coliforms or Enterococci presence in lakes, rivers, coastal water, catchment sites or in water treatment plants. It can be operated on a rechargeable battery at a remote field location, powered via a vehicle's power on-the-go, or plugged into an electrical outlet in a laboratory setting. Capable of carrying out six independent measurements on a battery charge, full water quality monitoring at remote field locations is considerably simplified while minimizing cost and time-to-result. The mobile Alert Lab is extremely portable and fully operational out-of-the-box. A fully-automated floating version (Alert System V2) is also available, which can be installed directly in-situ, thus eliminating the need for expensive infrastructure (piping, pumps, cabinets, communication equipment etc.).



A fast and reliable response

The Alert Lab provides a quantified response in terms of bacteria/100 mL present in the sampled water, that has been validated through numerous side-by-side studies with approved laboratories. The system implements Fluidion's multispectral optical detection technology, which ensures high accuracy consistent measurements and rapid time-to-result. Triggered via mobile phone through an online command portal, the analyzer measures a wide range of concentrations, sends data wirelessly and can generate automatic alerts if a control threshold is exceeded in order to enable greater operator responsiveness. The ALERT System has been shown to have similar accuracy and repeatability to an approved laboratory using MPN methods, and relies on the Fluidion® ALERT technology that has been verified by the WHO and UNICEF¹.

1. WHO and UNICEF Joint Monitoring Programme, "Laboratory evaluation of portable water quality testing kits – Fluidion ALERT Lab", pp.1-23 (2022)

TECHNICAL SPECIFICATIONS

Dimensions	10.2" X 9.6" X 6.6" (26cm X 24cm X 17cm)	Total measurements	6 in parallel
Weight	8 lbs. (3.7 kg)	Response time	2 h - 14 h
Environmental conditions	15 °F to 105 °F (-10 °C to 40 °C)	Communication	Global SIM card, USB
Measurement range	4 – 5×10 ⁵ bacteria/100 mL	Antenna	Internal/External (opt.)
Materials	PMMA, PP, PE, SST316L	Power source	Li-ion battery, AC power, 12V car adapter
Parameters	<i>E. coli</i> , Total or fecal coliforms; Enterococci		



ALERT command portal and cloud interface

The Alert Lab uses a wireless communication protocol based on the cellular network for both system configuration and data management. The system can be fully configured from an operator cell phone using an intuitive online command portal and can generate email alerts. Real-time data is sent via the cellular network to a secure cloud-based data analytics and visualization server (installation in client datacenter possible as an option). In case there is no cell coverage in the installation area, the system can be pre-configured from a PC via the USB interface, and data can be sent via serial protocols such as RS232 (optional).

Usage examples



Left: Alert Lab being used in a water quality analysis laboratory. **Middle:** The equipment during a field operation, analyzing six samples simultaneously. **Right:** Alert Lab as used by regulatory agency agent in the field.

Fluidion® is a high-technology company that designs and manufactures innovative sample collection and chemical/microbiological in-line and in-situ analysis instruments for water quality monitoring and environmental applications. The core technology relies on Fluidion's proprietary patented fluidic and sampling systems.