fluidion
Water Intelligence

Alert System V2

In situ E. Coli & Total Coliforms Microbiology Lab

- Autonomous, remotely-controllable analyser for quantifying E.coli and Total Coliforms.
- Suitable for environmental and water treatment process monitoring.
- Uses innovative disposable cartridge concept to provide unprecedented accuracy and repeatability while greatly simplifying maintenance procedures.
- Installed in situ, the ALERT SYSTEM V2 measures bacteria concentration and provides automatic alerts in real time.

A fully-automated in-situ microbiology lab

The ALERT System V2 is a unique analyser capable of automatic contamination-free sampling in situ, reagent mixing and incubation, optical detection (absorbance and fluorescence), bacterial quantification (E.coli and total coliforms) and wireless data transmission. It uses a unique disposable measurement cartridge concept, which greatly simplifies field maintenance operations, and eliminates any potential for contamination or human error.

On-demand remote analysis in any aquatic environment

The ALERT System V2 is used for obtaining bacterial concentration time series in lakes, rivers, coastal waters, drinking water reservoirs, Combined Sewer Overflows (CSO) sites, irrigation pools or in wastewater treatment plants. It can float like a buoy or can be installed on a rail at field locations or in a facility, and can operate without an external power supply under the most unforgiving weather conditions. The instrument is quick to install, can be remotely controlled from a mobile phone or web interface, and supplies data to the operator wirelessly via a cloud-based data analytics and visualisation interface. The ALERT System V2 is capable of performing seven measurements on a single battery charge and has minimal maintenance requirements (less than 5 minutes in the field).

The ALERT System V2 can also connect to a wide range of water quality probes (single or multi-parameter), which can provide complete water quality parameters in real time (sensors available for temperature, turbidity, conductivity, pH, nitrate, ammonia, chlorophyll, phycocyanin, fDOM, dissolved oxygen, ORP). This data can be used for adaptive sampling, by rapidly recognising water quality degradation phenomena and triggering microbiology measurements when certain conditions are met.

A reliable response

The ALERT System V2 provides a quantified response in terms of bacteria/100 ml present in the sampled water, and has been validated through numerous side-by-side studies with approved laboratories. Sampling in the disposable measurement cartridges is controlled by an internal vacuum module and the instrument implements Fluidion's multispectral optical detection technology, which ensures consistent, uncontaminated sampling and measurements. Triggered via a mobile phone or web interface, the analyser can quantify a wide range of bacterial concentrations and issue automatic alerts if a threshold is exceeded, enabling greater operator responsiveness in case of pollution events.

TECHNICAL SPECIFICATIONS

Dimensions	*H: 49cm (19.3"), D: 28cm (11")*	**Total Measurements**	*7 per charge*
Weight	*16kg (35lbs)*	**Response Time**	*2 h-12 h*
Measurement Trigger	*On-demand, pre-program, inline sensor (optional)*	**Environmental Conditions**	*0°C-40°C*
Parameters	*E.coli, Total Coliforms*	**Communication**	*Global SIM card, USB*
Measurement Range	*2 CFU - 1x106 CFU/100 mL*	**Installation Type**	*Floating or Rail-based*
Materials	*PVC, PMMA, Acetal, SST 316L*	**Autonomy**	*2 weeks to 2 months, depends on operation and environmental conditions*
Data Interface	*Cloud visualisation and analytics interface, API, real-time email alert*	**External Probe Integration (optional)**	*T, Conductivity, Turbidity, pH, DO, ORP, fDOM, NO3, NH4, chlorophyll, phycocyanin*
Battery Type	*Li Ion, 12V, 20.4Ah*	**GPS Capability**	*Yes (GNSS}*
Waterproof rating	*IP68*	**Data Reporting**	*Automated report generation (PDF), export (CSV), archival*

ALERT System V2 disposable cartridge concept

The ALERT System V2 uses Fluidion's innovative disposable measurement cartridge concept. By integrating all the required components for performing a measurement (check valves, filters, mixers, reagent storage, optical cell, vacuum port), the disposable cartridge greatly simplifies operations: field maintenance is now reduced to simply swapping the battery and installing new cartridges, which requires only a couple of minutes and can be performed by minimally-trained personnel. In addition to gaining precious time, this new design eliminates potential for human error, improving the system's reliability and the measurement repeatability and accuracy characteristics.

ALERT System V2 remote control and data visualization

The ALERT System V2 uses a network-hopping global SIM card that allows it to operate and communicate out of the box, anywhere in the world. The instrument's control interface is accessible online, through a secure portal, and measurement data is supplied wirelessly via a cloud-based data analytics and visualisation interface. Automatic measurement report generation and complete archival functionality provide complete documentation of water quality measurements. Automatic alerts can be configured and sent to the operator once bacterial quantification is completed.