Wilma

On-line Radioactivity Monitor

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LabLogic
EXPERIENCE & EXPERTISE

Wilma

A fully automated, on-line monitoring system for the detection of radioactivity in water and air

Wilma utilises a novel approach to streamline the time consuming process of sample collection and preparation traditionally required for detecting alpha and beta contamination via liquid scintillation counting.

Wilma is ideal for simplifying a range of applications which require routine sampling, including:

- **Ground water contamination monitoring.**
- **Monitoring tritium levels in cooling water.**
- **Air monitoring.**
- **Drinking water and NORM monitoring.**

Key features

- Combined fluid handling system and LSC.
- Small sample volume (max. 5 ml) minimises scintillation cocktail waste production.
- Established coincidence-based liquid scintillation counting techniques gives background rates <15 cpm
- Low energy β counting efficiency (^{3}H) >15% for a 2 ml sample (3 ml scintillation cocktail).
- Lower limit of detection for ^{3}H is 100 Bq/L for a 60 min. count time.
- Proven detection sensitivity down to 10 nCi/L (370 Bq/L) for key environmental radionuclides ^{3}H, ^{90}Sr, ^{137}Cs and ^{241}Am.
- Configurable user alerts (e-mail/alarms).

Simple to use

Wilma includes a touchscreen PC running user-friendly software, which allows easy configuration and monitoring of sampling and measurement cycles. Default measurement cycles can be provided to bring the instrument on-line soon after installation.

Fully integrated system

The simple, self-contained unit combines fluid handling systems for sample collection, preparation, and disposal, with radiation detection and analysis of contamination, all within a rugged and compact housing. IP-rated enclosures are available upon request.

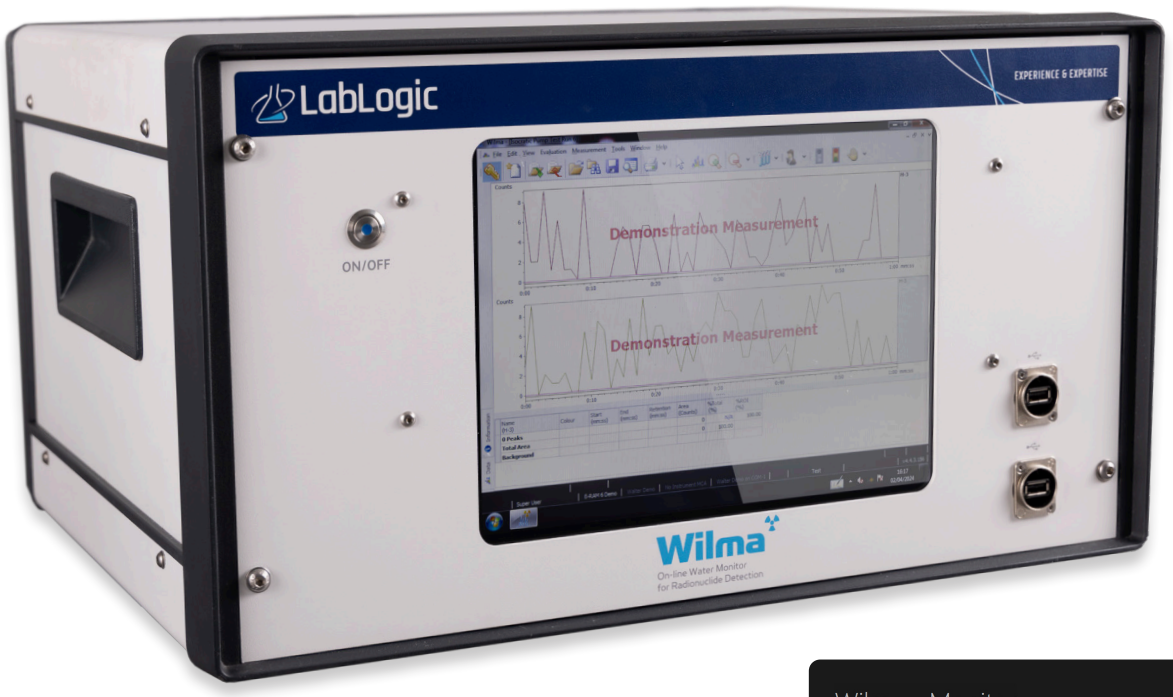
Completely customisable

Designed, developed and built by the LabLogic Group, Wilma can be fully customised to suit any application. The system can integrate additional sensors and measurement systems, handle complex sampling and preparation routines, and integrate with external monitoring and alarm networks. We work closely with our customers in order to provide them with the most applicable solution.

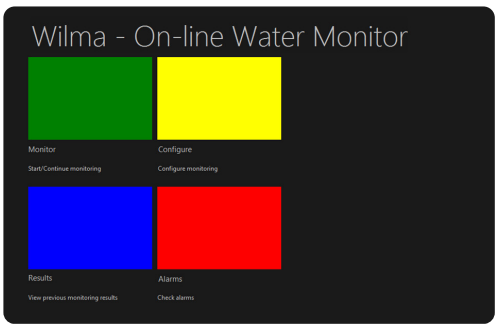
Water Monitoring System

The Wilma Water Monitoring System combines the proven Wilma fluid handling and LSC modules with water samples at the source.

The system can be configured for remote measurements and transmit data via a secure wireless network. Ideal for campaign-based measurements, the system is mounted inside a rugged enclosure for all-weather protection.

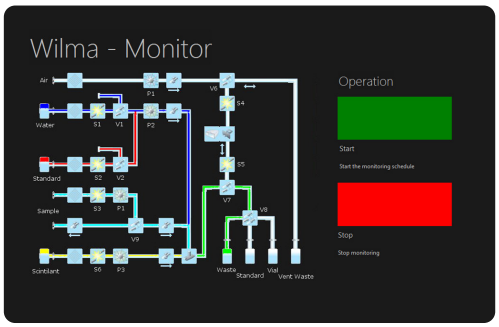


User-friendly software

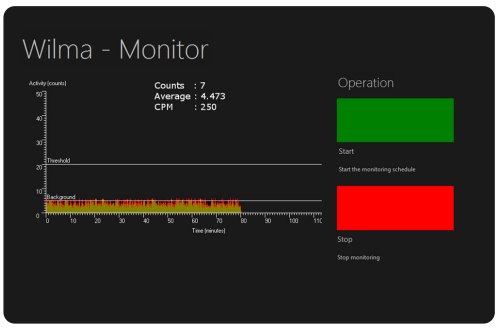


Simple home screen allows for navigation to main instrument features:

- Configuration
- Real-time Monitors
- Results Analysis
- Alarm Trigger Notification



Animated flow-path diagram shows instrument status in real-time and allows sample flow to be tracked.



Count rate monitor shows sample activity during analysis time.

Wilma

Tritium in Air Monitoring System

The Wilma Tritium in Air Monitoring System utilises the configurable Wilma fluid handling and LSC detector to automate the operation of a tritium bubbler.

The customised software includes cycles to sample water in the bottles, as well as emptying, washing and refilling them as part of the standard operating procedure. This application allows long-term, remote monitoring of tritium in air levels down to less than 10 Bq/m^3, ideal for monitoring in isolated locations or areas where access is difficult.

Specifications for Wilma Monitoring System	
Dimensions (mm)	20" (W) x 16" (D) x 12" (H) (Water Monitor) 33" (W) x 20" (D) x 48" (H) mm (Tritium in Air Monitor)
Mass (kg)	30 (Water Monitor) 105 (Tritium in Air Monitor, with bubbler)
Power	100 - 240 Vac Internal power supply output rated at 24 Vdc, 6.5A (150 W max.)
Interfaces	USB Ethernet option Output to external data logger (e.g. MODBUS) option
Detector Geometry	2 x 28 mm diameter PMTs operating in coincidence mode
Detector Shielding	10 mm Pb phosphor bronze Additional Pb shield options
Integral Scintillation Cocktail Pump Flow Rate Range (ml/min)	<0.5 to 30
Integral Sample Pump Flow Rate Range (ml/min)	<0.5 to 30
Integral Wash Solution Pump Flow Rate Range (ml/min)	<0.5 to 30
Integral Standard Solution Pump Flow Rate Range (ml/min)	<0.5 to 30
Counting Window Discrimination	Two counting channels, 0-9999 mV pulse amplitude range
Background count rate (open window, luminescence subtracted) (cpm)	<15
Background count rate (open window, non-subtracted) (cpm)	<40
^{3}H Counting Efficiency (unquenched, %)	>50 (>15% for quenched samples)
^{14}C Counting Efficiency (unquenched, %)	>90
Flow Cell Ranges	5 ml bulk liquid cell as standard Coiled liquid and packed solid scintillator cells available as options (100 µl to 1 ml)
Flow Options	Discrete sampling mode (default) Continuous sampling mode (optional) Automated wash cycle Automated standard introduction
External I/O	4 x USB Temperature sensor (optional) HDMI Ethernet Network Port
Control Software	Integrated Wilma software and user interface via industrial fanless touchscreen PC
Fluid Handling	Liquid manifold with integral switching valves Standard bulkhead tubing fittings for 1/8" (3.2 mm) OD tubing and M6 metric thread
Options	Multichannel analyser (MCA) for LSC spectra

Service and Support

Users of our systems can benefit from our comprehensive, fully inclusive service and support.

We can give reassurance that if things go wrong or you need expert advice, help is only an e-mail or phone call away.

Validation Services

Our Validation Service enables you to implement and get maximum value from your investments as soon as possible.

We work as a partner with your Quality Manager, System Manager and users to provide a tailored Validation Plan, suited to your needs. Our Validation Specialists who have many years' of experience in GLP system validation, detailed knowledge of our systems, together with other industry standard systems to help you meet company and regulatory requirements.

Training

LabLogic can provide a variety of training courses and workshops to help you get the most out of your instrument and software.

All training is performed by our expert Product and Support Specialists who have many years experience in the development and use of the instruments and software.

Certificates can be provided to complement your internal GLP training records.

Visit our website

Download the brochure

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