

Eclox™

Eclox Rapid Response Water Test System (Eclox™-M)

Developed for use by UK armed forces, the award-winning Eclox Rapid Response Water Testing System is now available for environmental and water services monitoring and protection. It is a portable, easy-to-use system which can indicate the quality of a water sample in only a few minutes. This rugged and portable design has been specifically developed for field use.

The heart of Eclox is a luminometer, which can give a generic identification of the toxicity or purity of a water sample. The system also includes other tests for specific physical and chemical parameters. The system accommodates consumables sufficient for 50 tests.

The innovative and patented design of the luminometer enables the simple operation of the system while maintaining the necessary sensitivity to detect trace contaminants. Low power electronics combined with sophisticated, user-friendly software results in a powerful and informative user interface while maintaining a battery life over hundreds of tests.

Advanced chemical design of the luminometer reagents, which include an enzyme component, has resulted in a consumable pack which is stable for two years at ambient temperatures. No refrigeration is required for the reagents. This is a critical advance in the application of this analysis technique for field use.



- ◆ Rapid detection of contaminated water
- ◆ Reliable indicator of relative water quality
- ◆ Easy to use with minimum training
- ◆ No refrigeration required for reagents
- ◆ Replacement consumables kits
- ◆ Used in a wide range of environmental conditions
- ◆ Lightweight
- ◆ Software provided for data download
- ◆ Sensitive to heavy metals, poisons and CW agents.



The Eclox system has been enthusiastically taken up by the UK Army, Navy and Air Force for making field evaluations of drinking water quality. Many of these systems are now in use by all three services within the UK Ministry of Defence, being used by engineers and environmental health technicians. It is used to evaluate raw water quality, to indicate the preferred method of treatment, and to provide a quality controls measure on the output of the purification process.



Awards for the Eclox system have been given by the Institution of Chemical Engineers and the International Water Organization.

Design Features

The key to the Eclox system is a luminometer, which can give a generic indication of the toxicity or purity of a water sample. In addition there are other tests for specific physical parameters (e.g. pH, TDS, color) and chemical parameters (e.g. chlorine, arsenic, pesticides/nerve agents).

All additional test equipment and space to accommodate the necessary consumables are included in the case. Enough consumables can be held to perform a minimum of 50 tests. Packs of reagents and consumables are available which contain material for either 10 or 50 tests.

Data from the luminometer can be downloaded to a computer using software and cable supplied with the system. The results are entered automatically into a database where other test results can be added and a fully auditable record maintained for future reference.

Operation

The generic, broad-band contaminant detection is achieved with the luminometer using a technique called enhanced chemiluminescence which is a relatively new method in water analysis, although commonly used in clinical medicine.

A measurement of water quality is performed as a two stage process. The chemicals supplied with the instrument are added to a pure (deionized) water sample, also provided. Light produced is measured by the luminometer over a four minute period providing a reference level for very high quality water. The process is repeated using the water sample of interest where less light is produced because of the contaminants in the sample. The extent of this inhibition is a measure of relative water quality. The reaction chemicals include an enzyme and an oxidant, so the reaction is particularly sensitive to substances which can affect biological processes. Chemicals from urine and feces, phenols, amines, heavy metals, cyanide and many other toxic substances are all readily detected.

Technical Data Eclox Water Testing System

GENERAL

Dimensions:

20 ½" x 17 ½" x 8 ½" (520mm x 450mm x 215mm)

Weight:

20 lbs (9 kg) fully loaded

Temperature:

Tested from -4°F to 131°F (-20°C to +55°C)

Quality Standards:

Manufactured within ISO9000 certified company

Military Standards:

Def Stan 08-41 Chemical hardness

Def Stan 07-55 Robustness

Def Stan 00-35 Environmental conditions

ELECTRICAL

Batteries:

Alkaline cell, lithium cell, AA

Battery Life:

AA batteries >250 test, others >2000 tests

Compliance:

CE Marked for compliance with European standards

Data Logging:

Up to 60 test results recorded in full detail

Download:

RS232 cable provided for results download to computer

Software:

Database software provided to record and analyze results



CHEMICAL

Tests:

Arsenic

Chemiluminescence

Chlorine

Color

Mustard Gas (Optional)

Nerve Agents

Pesticides

pH

Total Dissolved Solids (Conductivity)

COMSUMABLES

Pack Size:

Pack 1: Sufficient for 50 of each test

Pack 1A: Sufficient for 10 of each test

Dimensions:

12" x 11" x 7" (300 mm x 280mm x 180mm)

Weight:

5 lbs (2.5kg) including packaging

Shelf Life:

Two years

Storage Conditions:

Ambient temperature



Detection Limits

Organic:		Metallic:		Non-Metallic:	
phenol	0.1 ppm	copper (sulphate)	1 ppm	(potassium) cyanide	0.01 ppm
aniline	0.05 ppm	mercury (nitrate)	1 ppm		
uric acid	0.001 ppm	lead (nitrate)	5 ppm		
carbofuran	0.5 ppm				

Other Tests in the system have levels of sensitivity of approximately:

arsenic 0.1 ppm

chlorine 0.1 ppm

Pesticide test strip detection limits:

carbamates 0.1 - 5 ppm

thiophosphates 0.5 - 5 ppm

organophosphates 1 - 5 ppm

Dependent upon the specific pesticide present.

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