Microtox® LX

The Definitive Solution for Rapid Toxicity Testing

MODERN WATER

A Metir plc Trading Company

Microtox® LX

Laboratory Solution for Rapid Toxicity Testing

Microtox® LX is the next-generation laboratory-based acute toxicity analyzer, combining Modern Water's proven M500 technology with advanced features to simplify testing in demanding drinking water, industrial, and wastewater applications. The LX Series delivers fast, highly accurate, and reproducible results, making it the trusted choice for laboratories worldwide.

- **Biological early warning system** – sensitive to thousands of simple and complex chemicals, protecting water supplies from accidental or deliberate contamination.
- **Fast, reliable results** – available in as little as 15 minutes after initial sample preparation.
- **Proven performance** – numerous peer-reviewed studies validate Microtox® LX as an effective toxicity screening tool.
- **Increased sensitivity** – proprietary fully dynamic photomultiplier enhances detection.
- **Automatic colour correction** – adjusts for sample turbidity, improving accuracy.
- **Actively cooled wells** – ensure precise and consistent readings.
- **Cost-effective** – small sample volumes and low-cost tests.
- **ISO certified** – manufactured with 100% lot traceability.

Applications

Drinking Water Plants

- **Monitor for accidental or deliberate contamination**
- **Rapid screening of source, in-process, and finished water**
- **Early warning for timely intervention**

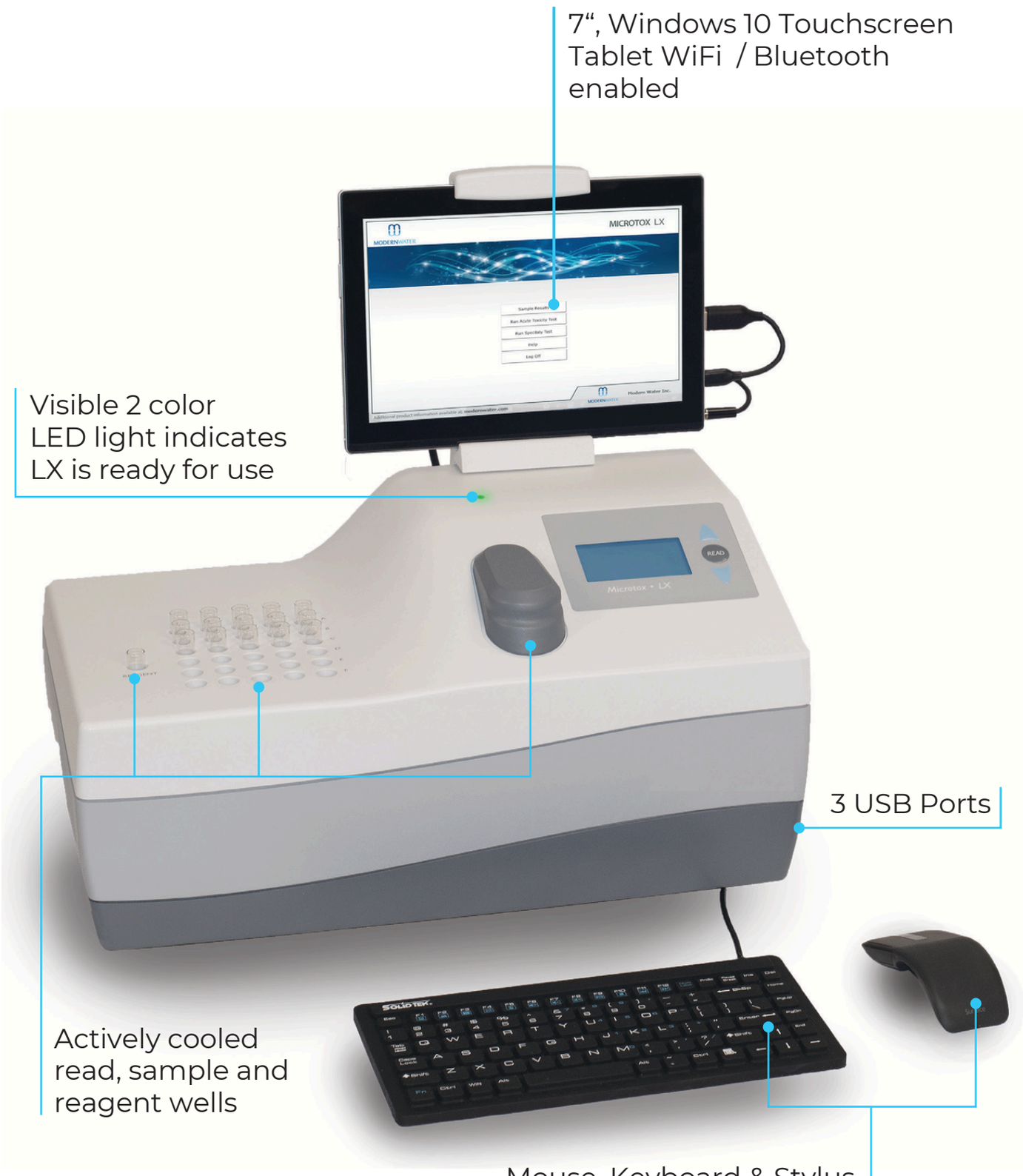
Wastewater Plants

- **Measure toxicity in influent streams**
- **Ensure treatment efficiency and compliance**
- **Minimize process upsets, unscheduled shutdowns, and chemical costs**

Other Industries & Uses

- **Industrial effluents and process water**
- **Marine water and drilling fluids**
- **Soil, sediments, and stormwater**
- **Food processing, medical/pharmaceutical products, and personal care/household chemicals**

Product Features



Microtox®

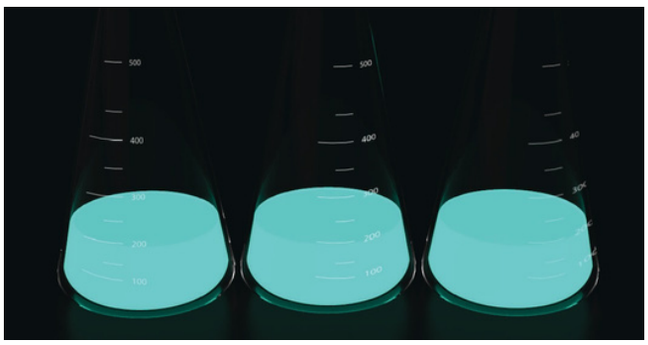
How Microtox® Technology Delivers Rapid, Highly Accurate Results

Biological monitoring is becoming increasingly important in assessing acute toxicity. For more than 30 years, biosensors using bioluminescent bacteria have been used for this purpose.

Modern Water developed Microtox® technology to overcome the limitations of conventional bioassay toxicity tests.

Thanks to its simplicity, speed, cost-effectiveness, and reliability, Microtox® has become one of the most widely recognised bioassays in the world today.

Unlike traditional tests that can take up to 96 hours and require manual counting, Microtox® **delivers results in under one hour**.



How It Works

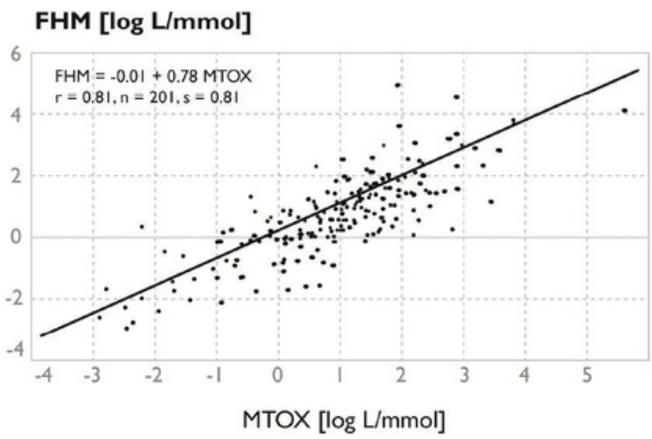
- The system uses a proprietary strain of bioluminescent bacteria (*Aliivibrio fischeri*).
- When the bacteria are exposed to a toxic substance, their light output changes — the greater the reduction in light, the higher the toxicity.
- The CTM instrument's luminometer measures these changes in light intensity, using a photometer designed specifically for Modern Water's bacteria.

Proven Accuracy

Independent, peer-reviewed studies show that Microtox® test results strongly correlate with conventional bioassay methods such as fish, daphnia, and shrimp tests.

As a result, wastewater treatment plants and other facilities use Microtox® acute toxicity tests to:

- Ensure compliance with effluent discharge permits
- Measure toxicity in influent streams
- Assess treatment efficiency in industrial and municipal plants
- Monitor water quality from raw influent to final effluent



Correlation of Microtox EC50 with Fathead Minnow LD50 (Kaiser) (r 2 = 0.81) Modern Water maintains an online library of over 700 published studies referencing Microtox technology in a wide variety of applications.

Applications

Drinking Water Plants

- monitor for accidental or deliberate contamination
- provides warning in sufficient time for action
- rapid screening and confirmatory results
- check source water
- check in process water
- check 'finished' water prior to distribution
- check water distribution system

Wastewater Plants

As part of the pre-treatment program, it allows the facility to:

- regulate the amount of pollutants coming into the facility
- maintain smooth operations
- minimize upsets
- maintain good compliance performance
- reduce and control costs and generate revenues by surcharging particularly toxic influent streams

Improve operating efficiency:

- avoid unscheduled shutdowns avoid damage/disruption to biological
- treatment systems
- avoid effluent violations
- avoid increasing chemical costs

Microtox® Has Been Used In A Broad Range of Applications In A Diverse Range of Industries;

- drilling fluids and drilling
- muds mining, wastewater, soil and water
- industrial effluents industrial process
- water marine water
- medical/pharmaceutical products
- food packaging materials
- personal care and household chemical analysis
- sediments
- storm water runoff
- solid phase materials
- food processing water

Microtox® LX Specification

Measurement Methog	Bioluminescence
Light Source	Proprietary fully dynamic photomultiplier
Reagents	Genuine Microtox Reagents
Dimentions	45.7cm x 25.4cm x 43.2cm (18" x 10" x 17")
Bench Space Required	
Weight	20lbs (~9kg)
Display	17.8mm (7in) colour touch tablet
Tablet Operating System	Microsoft Windows 10 with Microtox LX software preloaded.
Input	Touchscreen, Mouse, Keyboard, Stylus
Connectivity	USB, Wifi, Bluetooth
Interface	3 ports for USB flash drive, keyboard, mouse or compatible external printer
Temperature	
Room Temperature	15°C to 30 °C
Active Cooling Reagent Well	5.5°C +/- 1 °C
Active Cooling Incubator Block	15°C +/- 0.5 °C
Active Cooling Read Well	15°C +/- 0.5 °C
Reagent Operational Temperature	10 °C to 28 °C
Instrument Operational Humidity	5% to 95% non-condensing
Certifications	CE, IEC 610010-1:2010, IEC 61010-2-010:2014; IEC 61326-1:2103; FCC part 15, Subpart B
Water Ingress	IEC IEC 60529: IPX-O
Power Requirements	Auto-ranging universal AC input 100-240 V AC, 50/60 Hz, 200 watts

Microtox® LX Specification

Standard Protocols	Basic Toxicity Test I Comparison Test I Confirmation Test I ASTM (D5660) DIN (Deutches Institut for Normung 38412 Teil Test) I Screening Toxicity Test SOLO Screening Test I International Standards Organisation (ISO) 11348-3 I Solid Phase/Basic Solid Phase I WET (Whole Effluent Toxicity)
Custom Protocols	Parameters of standard test protocols can be modified
Quality Control Protocols	Zinc and Phenol
Additional Analysis Capabilities	Trend Monitoring
Colour Correction	Optional feature, test results adjusted for variations in water quality
Data Storage	Test results can be stored for future reference or downloaded to a USB drive

Microtox® FX

The Microtox® FX instrument has a combined detection capability that provides a very sensitive and rapid test to detect two of the most probable classes of agents, pathogens and toxic chemicals that may accidentally or intentionally contaminate drinking water or wastewater. Microtox® FX's acute toxicity and ATP detection capabilities make it the ideal instrument for rapidly and accurately assessing if the quality of drinking water, from the source to the tap, has been affected by an incident.

Microtox® CTM

The Microtox® CTM makes fully automatic, continuous, on-line testing a reality.

It has broad range detection capabilities that provide rapid early warning of contamination by several thousand known chemicals. This enables containment measures to be actioned in time to protect against serious contamination events.

Contact Information

For further information or to schedule your complimentary technical survey, please contact:

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