



First Defender XL™

RUGGED, HANDHELD IDENTIFICATION OF
WMDs, CHEMICAL AGENTS, EXPLOSIVES, TICs,
TIMs, NARCOTICS & POWDERS

First Defender XL

is the only light-weight, rugged instrument for in-the-field identification of unknown solids, liquids and mixtures by first responders and homeland security personnel.

First Defender XL sets the standard for accuracy, applicability, durability ruggedness and usability, exceeding everything available in today's market.

First Defender XL includes the vast Ahura library of commercial and industrial compounds; narcotics; TICs and TIMs. It also includes WMDs; CWAs; explosives and propellants.



FEATURES

Accurate Identification of Solids & Liquids (*Raman Technique*)

- Chemical agents, toxic chemicals, white powders, narcotics, contraband, & forensics

5 Hour Operational Battery Life

Rugged

- Withstands shock and vibration
- Waterproof
- Chemically resilient

Handheld

- <4 lbs
- Completely self-contained

Rapid Analysis of thousands of Chemicals and Mixtures

Point-and-Shoot Identification

- Operates through glass or plastic bottles
- Operates through plastic bags
- Avoids contamination and maintains evidence
- Integrated sample vial compartment

Non-destructive Testing

- Does not consume any sample

24/7 Support

Photo Top: Department of Defense

FirstDefender XL PROTECTING OUR FORCES

Q & A



Will FirstDefender XL analyze solids and liquids?

Yes, **FirstDefender XL** easily identifies solids and liquids, even aqueous liquids.

Do you have to touch the sample?

No, **FirstDefender XL** has two modes, one allows measurements of materials in vials, and the other is the point and shoot mode, which takes measurements without touching the sample.

Will exposure to chemical contamination harm the unit?

No, **FirstDefender XL** is designed for quick and easy decontamination. The system uses a chemically resilient plastic, offering extreme performance including exposure to solvents. It also offers temperature stability.

What if the sample is in a bottle or a plastic bag?

Raman spectroscopy works through glass and plastic. Bottles do not need to be opened and evidence can be analyzed without the risk of contamination.

Will FirstDefender XL identify mixtures?

Yes, **FirstDefender XL** can identify mixtures. In many practical situations users are confronted with materials that are mixtures of multiple materials. **FirstDefender XL** is equipped with

DecisionEngine™ Mixture Extensions (MX) software, which can identify products which are themselves mixtures, like Excedrin. Alternately, the sophisticated chemometric algorithm can identify up to five root components in mixtures.

My FTIR does not analyze things in water, can FirstDefender XL?

Yes, Raman is ideal for aqueous solutions. Raman and FTIR each work based on molecular vibration and both can identify tens of thousands of unique chemical signatures. FTIR measures the absorption of infrared light by the unknown material. Water is a strong absorber and often masks the desired signature. Raman measures the light that is radiated by the unknown and is not troubled by water.

How long does FirstDefender XL take to warm up?

FirstDefender XL takes about ten seconds to cold boot the computer. It is ready to use in less than a minute from a cold start.

What happens if I drop the system?

FirstDefender XL is a rugged system and has passed MIL STD 810F shock and vibration. It is designed to survive accidental mishaps in the field.

Can it be decontaminated?

Yes, **FirstDefender XL** is waterproof and can be easily decontaminated with a bleach solution and water rinse.

Does FirstDefender XL need to be calibrated?

No, there is no need for calibration, periodic maintenance or adjustment. **FirstDefender XL** does a brief self calibration each time it's turned on.

How long does the battery last?

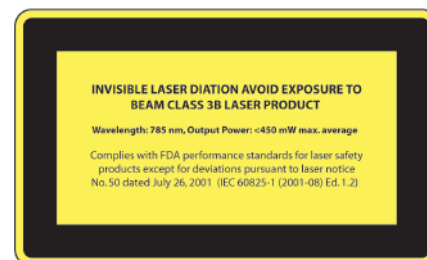
FirstDefender XL is designed to last five hours on one battery in typical operation. Actual battery life depends on the mission temperature and amount of use. Similar to a cell phone, the system has considerable standby time. The battery is primarily consumed during scans of unknown material.

Can I add my own chemicals to the database?

Yes, it takes just a few seconds to test and then add new chemicals to the database.

What happens if the system stops working?

Ahura offers 24/7 tech support to troubleshoot difficulties. We also offer loaner units if a system needs factory re-work.



EXPORT NOTICE: This product is subject to U.S. laws. A license may be required for the export of hardware from the U.S. Department of State.

Single touch software with easy to use interface.

INNOVATIVE HAND-HELD SOLUTIONS FOR HOMELAND SECURITY AND PUBLIC SAFETY

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