

As chemical identification becomes more complex, the need for an advanced analyzer is greater than ever. The Thermo Scientific FirstDefender RM instrument enables hazmat, law enforcement, military and other first responders to obtain accurate chemical identification in seconds, even through sealed translucent containers.

Thermo Scientific FirstDefender RM

Next Generation Raman for Chemical and Explosives Identification

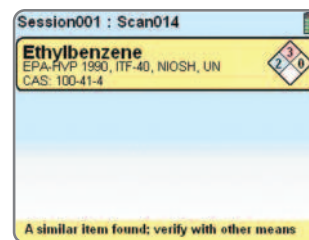
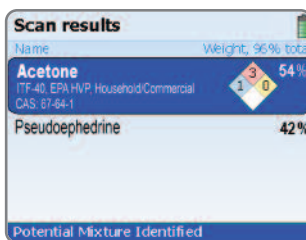
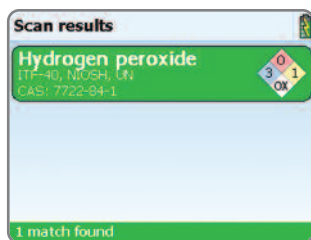


The Thermo Scientific FirstDefender RM instrument is the next generation Raman spectrometer for rapid, accurate identification of unknown chemicals directly in the field. Building on the award-winning, field proven FirstDefender®, significant improvements have been made in speed, performance, mixture analysis and user interface incorporating extensive user feedback and the latest technical advances.

At 1.8 pounds (800g), the FirstDefender RM unit is less than half the size and weight of the first generation instrument, with a large, vivid display for ease of use in bulky protective gear. It is designed to meet the demanding requirements of elite military personnel and civilian first responders.

Key Benefits:

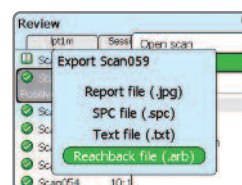
- **Faster, more accurate identification.** Based on Raman spectroscopy, quickly identifies unknown solid and liquid chemicals. Unit stores all data and can export in multiple formats.
- **Built for field use.** MIL-STD-810G and IP67 tested and certified.
- **Improved automatic mixture analysis.** Sophisticated chemometric algorithms automatically determine presence of mixed and contaminated chemicals.
- **Point-and-shoot™ identification.** Operates directly through sealed glass or plastic containers, avoiding exposure to potentially harmful substances.
- **Extensive substance library.** Identifies explosives, toxic industrial chemicals (TICs), chemical warfare agents (CWAs), narcotics, precursors, white powders and more.



Color-coded result screens require no user interpretation and provide rich content for faster, more informed decision making. Onboard NIOSH and CAMEO guides provide detailed hazard information. Patented chemometric algorithms enable automatic mixture analysis, shown with a blue screen result.

A Customer Support Legacy

When lives are on the line, you can rest assured that our highly trained customer support specialists are on call 24/7 and ready to assist with any inquiry—from basic operational questions to complex spectral analyses. Through our Reachback capability, users can easily upload a scanned spectrum which will be immediately routed to a spectroscopy expert. A Thermo Scientific scientist will call you within minutes with a preliminary assessment and then follow up shortly thereafter with a full identification. As always, it is our goal to provide the most dedicated customer support for our products.



Complementary and Confirmatory

Raman spectroscopy and FTIR spectroscopy, the underlying technologies in the FirstDefender and TruDefender® product families, are highly precise and selective optical techniques, each offering distinct advantages in specific applications. When used together, FTIR and Raman spectroscopy provide confirmatory results and a broader range of unknown substance identification—leading to better protection for the responder and the community.



Thermo Scientific FirstDefender RM

Specifications	
Weight	1.8 lbs (800g)
Size	7.6 x 4.2 x 1.75 in (19.3 x 10.7 x 4.4cm)
Use Mode	Point-and-shoot through translucent containers; integrated vial holder
Spectral Resolution	7 to 10.5cm ⁻¹ (FWHM) across range
Collection Optics	NA = 0.23, 17mm working distance; 0.14 to 1.8mm spot size
Laser Output	Power Adjustable, 75 mW, 125 mW, 250 mW
Survivability	Independently tested for MIL-STD-810G and IP67 certification
Exposure	Manual, Automatic modes (5ms minimum)
Scan Delay	Optional; user-configurable delay up to 120 seconds
Battery	Removable and rechargeable lithium ion battery or 123a (eg SureFire™) batteries; >4 hours operation
External Power Supply	DC Wall Adapter, 12 V 1.25 A
Operating Temperature	-4 °F to 104 °F (-20 °C to +40 °C) Continuous

Note: Complete test reports available upon request.

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