Product Specifications

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

Non-Contact, Non-Destructive Chemical and Explosives Identification

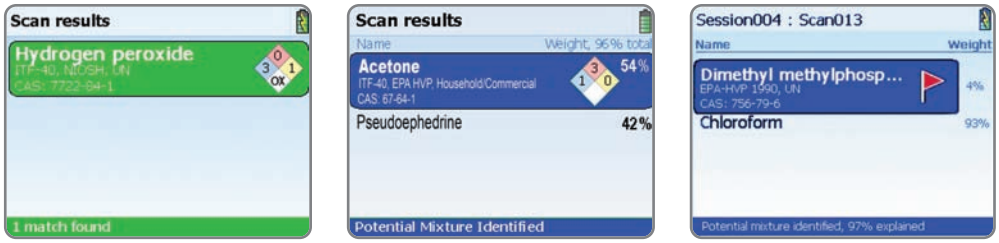
The Thermo Scientific FirstDefender RM instrument is a rugged Raman spectrometer for rapid, accurate identification of unknown chemicals directly in the field. At 1.8 pounds (800g), the FirstDefender RM analyzer includes a large, vivid display for ease of use in bulky protective gear and can be easily transported into a hazard zone.

FirstDefender® analyzers are designed to meet the demanding requirements of elite military personnel and civilian first responders. They are deployed worldwide based on speed, performance, mixture analysis and intuitive user interface. Using the tagging feature, users can incorporate situational awareness for enhanced analysis of priority items.

The FirstDefender RM instrument is not ITAR-restricted, though a U.S. Department of Commerce export license may be required for some countries.

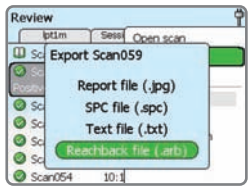
Key Benefits:

- **Fast, accurate identification.** Based on Raman spectroscopy, quickly identifies unknown solid and liquid chemicals.
- **Built for field use.** MIL-STD-810G and IP67 tested and certified.
- **Improved automatic mixture analysis.** Sophisticated 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 results require no user interpretation and provide rich content for faster, more informed decision making. Patented algorithms enable automatic mixture analysis, shown as a blue result, and tagged items are clearly highlighted on the result screen.

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
Working Distance	~16 mm without nose cone; ~5mm with nose cone
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 122 °F (-20 °C to +50 °C) Continuous

Note: Complete test reports available upon request.

Portable Analytical Instruments

Americas
Boston, USA
+1 978 642 1132

Europe, Middle East, Africa
Munich, Germany
+49 89 3681 380

Asia Pacific
New Territories,
Hong Kong
+852 2885 4613

www.thermoscientific.com/safety-chemid
sales.chemid@thermofisher.com

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