Product Specifications

Responder and community safety are critical when analyzing potentially hazardous materials. The Thermo Scientific FirstDefender RMX instrument can be used as a handheld instrument or integrated onto a tactical robot, providing military and civilian first responders more flexibility and increased safety.

Thermo Scientific FirstDefender RMX

Down Range Chemical and Explosives Identification

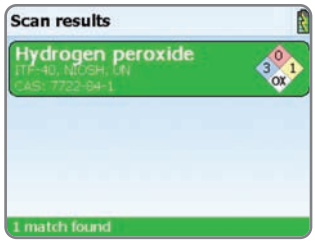
The Thermo Scientific FirstDefender RMX instrument is a rugged Raman spectrometer for rapid, accurate identification of unknown chemicals including explosives, toxic industrial chemicals, precursors and more. Designed for flexible use modes, the FirstDefender® RMX device can be used as a handheld instrument with a fixed probe, through an integrated vial mode, or mounted to select tactical robots via an integration kit.

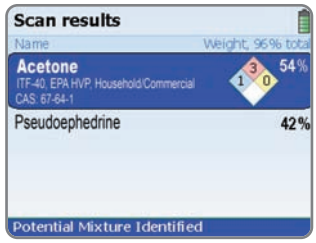
FirstDefender® analyzers are deployed worldwide by military personnel and civilian first responders, delivering exceptional chemical identification capability for a range of response scenarios. Using the tagging feature, users can incorporate situational awareness for enhanced analysis of priority items.

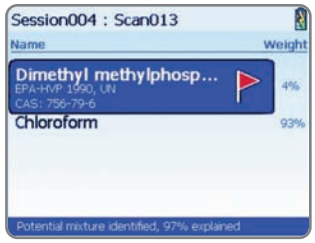
The FirstDefender RMX instrument is not ITAR-restricted, though a U.S. Department of Commerce export license may be required for some countries.

Key Benefits:

- **Fast, accurate identification.** Based on Raman spectroscopy, quickly identifies unknown solid and liquid chemicals down range.
- **Built for field use.** MIL-STD-810G and IP67 tested and certified.
- **Flexible use modes.** Handheld use or easily connected to select tactical robots using optional integration kit.
- **Improved automatic mixture analysis.** Sophisticated algorithms automatically determine presence of mixed and contaminated chemicals.
- **Point-and-shoot™ sampling.** Operates directly through sealed glass or plastic containers, avoiding exposure to potentially harmful substances.







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.

Continuous Innovation

FirstDefender analyzers continue to evolve to meet the demanding requirements of elite military personnel and civilian first responders. Improved algorithms and tagging ensure that the instrument offers military organizations, hazmat teams, bomb squads and law enforcement personnel a unique tool for identification of various threats.

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 RMX

Specifications	
Weight	2.0 lbs (919g)
Size	7.7 x 4.5 x 2.4 in (19.6cm x 11.4cm x 6.1cm)
Use Mode	Flexible: handheld with fixed probe; vial mode; or robot-mounted
Spectral Resolution	7 to 10.5 cm^{-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
Robot Integration	Integration kit required from robot manufacturer for mounting and universal control. Contact sales.chemid@thermofisher.com for more information about supported interfaces.

Note: Complete test reports available upon request.

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