

Safety in Any Situation

Addressing the needs of first responders

Mira DS handheld Raman System

Metrohm Raman presents a unique handheld materials identification system designed to meet the needs of defense and security professionals. Meet Mira DS, the most adaptable Raman analyzer available today. Mira DS was developed directly in response to requests from first responders in the field for a small, rugged, automated materials identification system that ensures **the safety of the user in any situation.**



Attachments for all your sampling needs

A HazMat team responds to a call from a local police department investigating a stench emanating from a rundown building on the edge of town. A glance through the window reveals that the space is a clandestine lab littered with trash, dirty glassware, and suspicious chemicals. Before the investigation proceeds, first responders must qualify the nature of the threat to their safety. A unique

instrument, just larger than a cell phone and with an attachment that would excite any photographer, is slipped through a broken window and pointed at white powder scattered across a table four feet away. At the push of a button, the device lights up with a red hazard warning indicating that the substance is sodium sulfite, a chemical used in the process of refining TNT.

The instrument is the newest product from Metrohm Raman, the **Mira DS** instant analyzer. The attachment is a revolutionary tool called the Standoff Attachment, designed for remote materials identification from 1.5 meters away. With this powerful combination, actionable intelligence can

be obtained while the safety of the team is ensured. Mira DS is loaded with a suite of safety features including proprietary ORS technology, scan delay, and Smart Acquire routines. It may also be customized with specialized attachments that permit detection of hazards with situational flexibility.

Universal Attachment

Raman analysis is very special as it can be used to sample through most containers, for identification without contact. The standard attachment for Mira DS is the **Universal Attachment**, a tip with three different sampling distances. Position 3 is for direct contact of the tip with the sample.

Position 2 is for sampling directly through thin plastic bags. Position 1 is specialized for focusing through bottles. The universal and right angle attachments also have a window covering for easy cleaning. This attachment allows for noninvasive, in-situ field analysis.



Metrohm White Paper



Right Angle Attachment

The **Right Angle Attachment** allows the user to easily collect data from substances on a horizontal surface. This smart tip is ideal for scanning a plastic bag on the back of a squad car, for example. When connected to the analyzer, each of these attachments automatically activates proper acquisition routines.

Ball Probe Attachment

The **Contact Ball Probe Attachment** permits a user to quickly and conveniently collect data from a substance with no concern for proper focus. Simply bring the probe in contact with the substance and acquire the data. The 15.3 cm stainless steel construction permits easy cleaning. The focal point on the probe is 0.4 mm from the tip of the lens. This probe will not perform well at identifying substances through a container, it is designed to be in direct contact with the sample, liquid or solid.



Standoff Attachment

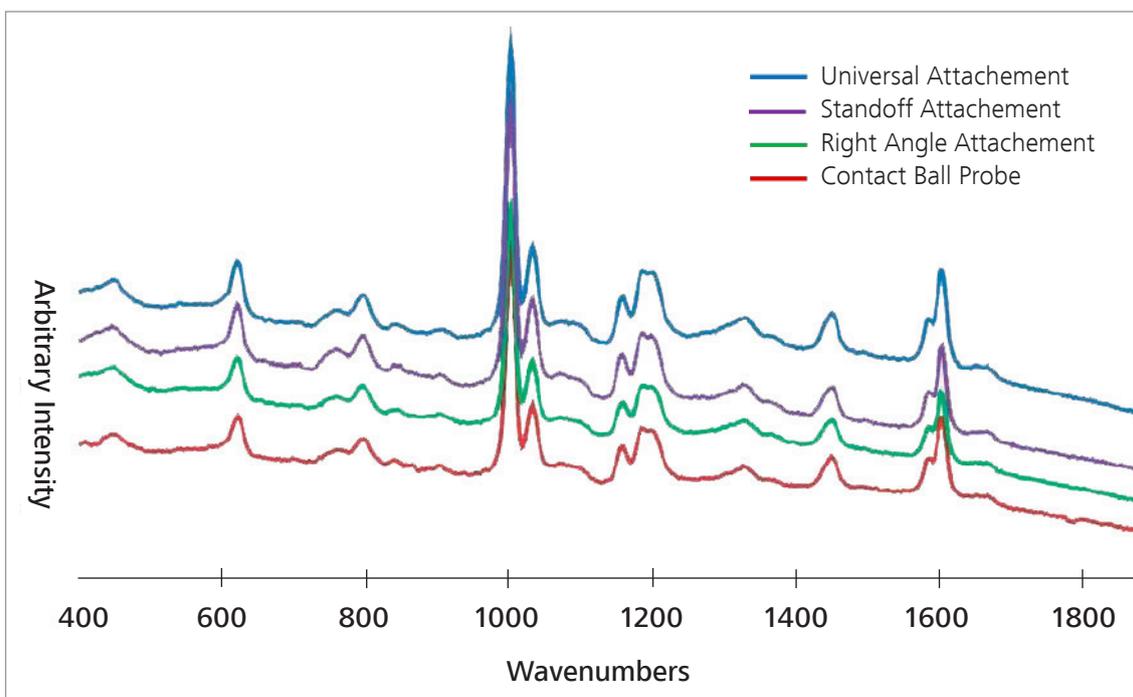
The **Standoff Attachment** permits a user to collect data from unknown or sensitive materials from a distance of 0.25 to 1.5 meters. This attachment can be used to identify the contents inside a 55 gallon drum, for example, or scan an unknown from across the room. The standoff attachment is not meant to be used outdoors or in brightly lit rooms, it is designed for low light situations.



Reliable, Accurate Results

In addition to sampling options that protect the safety of the user, Metrohm Raman delivers excellent resolution and quality data collection. The spectra below illustrate this: each polystyrene spectrum was

collected with different attachments featured here. The similarity of the spectra highlight quality results from Mira DS, regardless of the sampling situation.



Expertise in the Palm of Your Hand

Years of understanding Defense and Security markets went into development of Mira DS. It is about the safety of the user, confidence in results, and ruggedness of the system. Proprietary features such as scan delay, remote acquisition, ORS and scalable laser power ensure safety during sampling of volatile or toxic chemicals. With automated and optimized data acquisition and analysis routines, Mira DS gives field-based first responders accurate results that lead to confident actions.

Modern users of hand-held Raman systems are not satisfied with identification of unknowns: they require intelligent **Information Fidelity**. To accomplish this, Mira DS provides quality results including color-coded warnings about hazardous substances leading to **Actionable Intelligence**. The Mira DS from Metrohm Raman meets all these needs in a compact, ruggedized instrument that is like no other instant analyzer on the market.