



PRODUCT DATA SHEET

Agilent Resolve Raman Handheld Through-Barrier Identification

Agilent Resolve Raman – Handheld Through-Barrier Identification

Insight – Detect through opaque and colored barriers

Safe – No need to open or disturb containers

Fast – Accurate identification of chemicals and mixtures in about 1 minute, no sample preparation, or consumables

Rugged – Built to withstand tough environments

User-friendly – Large buttons, simple interface, designed for use in protective clothing

A new capability for hazardous materials, explosive ordnance disposal, and law enforcement

The Agilent Resolve Raman system is the world's only handheld Raman system that enables true through-barrier identification of hazardous or contraband materials. Resolve rapidly detects and identifies materials from comprehensive libraries including explosives, precursors, toxic industrial chemicals, chemical warfare agents, and narcotics. Unique to Agilent, our proprietary handheld spatially offset Raman spectroscopy (SORS) technology enables positive identification through a wide range of sealed nonmetallic containers, barriers, and packaging.

A New Capability in Chemical, Narcotic and Explosive Detection

The Agilent Resolve Raman system differs from conventional handheld Raman identification systems, which typically only operate with line-of-sight to the sample under investigation.

The system works in three modes:

Through-Barrier mode: Identifies through nonmetallic, sealed containers such as colored and opaque plastics, glass, paper, wrapping, sacks, and fabrics

Surface Scan mode: Line-of-sight measurements, similar to conventional Raman identification systems.

Vial Holder mode: Quickly identifies materials contained within glass vials in a custom holder.



Hazardous materials



Search and law enforcement



Military and explosive ordnance disposal



Customs, borders, mailroom, and checkpoint screening

Configure your own libraries

- Explosives and precursors
- Narcotics and new psychoactive substances; including a wide range of Fentanyl derivatives
- Hazardous and toxic materials
- Household products and less common chemicals
- Chemical agents
- Create, manage, and deploy your own libraries

Identify through containers including:



Coloured plastic



Coloured glass



Paper



Sacks



Packaging, cardboard, and fabric



True Through-Barrier Detection and Identification

Conventional handheld Raman systems are typically limited to operation through clear plastic bags or clear glass vials. If materials are concealed behind thicker, colored, or opaque barriers, it might be necessary to open and take a sample. In hazardous material response scenarios, opening or disturbing containers can increase risk to the operator and, sometimes, the public. Taking samples can also unnecessarily disturb crime scene evidence.

The Resolve system's through-barrier capabilities enable response teams to identify container contents early in an operation, before escalation. This allows information about the situation to be gathered quickly and efficiently, enabling better critical decision making.

Identification through sealed containers

Safer operation – Keep hazards contained

Efficient – Removes the need to take samples, move objects, and waste valuable time in personal protective equipment (PPE)

Preserves evidence – Crime scenes remain intact with containers undisturbed

Make decisions faster – Get complete, accurate information earlier in the operation

Versatile measurement tools

The Resolve Raman system can do everything conventional handheld Raman systems do - point-and-shoot and vial holder measurements - but adds the capability to identify materials through barriers.



Surface Scan mode



Vial Holder mode

Agilent Resolve Raman

Resolve extends through-barrier capability to work with a wide range of non-metallic containers.



Agilent Resolve Raman

Conventional Raman systems require line-of-sight so work with clear plastic bags and vials, and some translucent packaging.



Usually routine



Usually more difficult*

*successful identification depends on container/contents combination.

Intuitive Interface – Clear Results

The Resolve system combines a tough handheld unit with a simple, user-friendly interface. Ruggedized and hardened, the system is built to withstand harsh environments. The software interface is simple to use - full system control requires only seven large, responsive buttons, which are ideal for gloved use, even in Level A PPE. Operational managers can fully customize workflows, laser-arming passwords, and the format of results and associated metadata.

Removable nose cone for contact and noncontact scan modes – in-field calibration and performance check is built into a protective nose cap



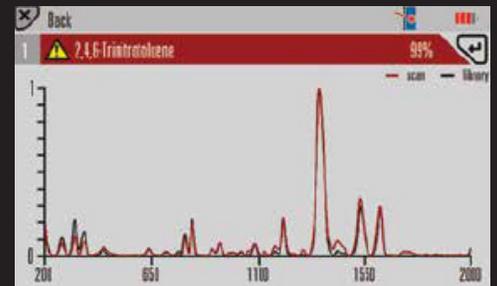
Large buttons with positive feedback – designed for gloved use

Large 12 cm (4.7 inch) display – clear, high contrast graphics for use in all light conditions

Li ion battery pack for up to 4 hours' continuous use



All accessories, cables and chargers are supplied within a hard transparent case



Measurement

Conduct through-barrier, surface, or vial holder scans. Measurements typically take about 1 minute (or less in some modes of operation). Operators can reduce laser power and set a scan delay where necessary.

Results

Display results as BEST match only, ALL results or user-defined PRIORITIES only.

Analysis

Interrogate any result to see spectral views and simple, user-friendly chemical data. Overplot and compare library spectra. Search by chemical name or CAS number.

Agilent Resolve Raman – Handheld Through-Barrier Identification of Hazardous Materials, Explosives, and Narcotics

Technical Details

Specification	Description
Dimensions	Width 155 mm (6.1 inches)
	Height 290 mm (11.4 inches)
	Depth 73 mm (2.9 inches)
Weight	2.2 kg (4.9 lb) including battery
Modes of operation	Through-barrier scan Surface scan (conventional point and shoot Raman) Vial Holder mode
Additional benefits	830 nm laser – allows scanning of fluorescent materials Unique optics – safer operation with sensitive samples
Safety	Scan delay Adjustable laser power (475 mW maximum)
Survivability	Shock, drop, and vibration tested to international and military standards (further details available on request) IP67 – ingress protection against dust and water
Accessories	Calibration piece, laser safety glasses, shoulder strap, and carry case Two Li ion battery packs and one single-bay charger Vial holder
Power requirements	Rechargeable Li ion battery Mains adaptor
Connectivity	USB 2.0 External power
Export data	Data files for offline analysis Evidential reports and image files Reachback files for specialist support