



Safety News 38

From this issue:

1. Introduction summarizing available technologies and news in the field of highly toxic drug analysis
2. Invitations to professional events and webinars
3. Information on available software upgrades for instruments supplied by RMI
4. NEW: New **TruNarc TAU** handheld Raman spectrometer for field drug identification
5. NEW: New **Griffin 510x** mobile GC-MS specialized in drug analysis
6. NEW: revolutionary solution – automated mobile Raman microscope **Pendar M1**. Opens up completely new possibilities in the analysis of traces of explosives, toxic drugs, and a range of other applications.

1. Introduction – the issue of detecting and identifying highly toxic drugs

Today's edition of Safety News focuses primarily on the issue of drug detection and identification, with particular emphasis on the new threats associated with highly toxic drugs such as **fentanyles** and **nitazenes**. Nitazenes are now increasingly penetrating the European drug market and are highly toxic in their pure form. Their toxicity can be comparable to or even higher than that of the chemical warfare agent such as sarin, etc. The presence of these highly potent substances on the drug scene poses several threats.

The first threat is the presence of these substances in pure form or in mixtures with relatively low dilution, which are usually intended for further processing into the final form of the drug. In such cases, they pose a classic threat of contact with a highly toxic substance – even inhaling microgram amounts can have fatal consequences. It is important to remember that even seemingly "diluted" drugs (for example, in a ratio of 1:10) remain extremely dangerous. This is because they are a mixture of particles of the cutting agent and crystals or particles of the pure substance, such as **nitazene or butyrylfentanyl**. If small particles are emitted into the environment, there are still separate particles in the air aerosol that pose a fatal risk if inhaled. In such situations, rapid and reliable identification is crucial, even through different types of packaging, without the need to break it. **Stand-off Raman spectroscopy**, specifically the **Pendar X10** device, which features effective hardware fluorescence suppression and the ability to analyze mixtures with a higher degree of dilution, has proven to be very effective in this area. This device belongs to the more expensive technologies and is therefore mainly used in expert workplaces (mobile customs laboratories, specialized fire brigade units, etc.). For frontline drug identification, the **TruNarc** pocket handheld Raman spectrometer from Thermo Scientific has

proven itself over the last decade and has become the most widely used spectrometer for this application worldwide. This device uses a different approach for street drug analysis than classic universal handheld Raman spectrometers. Street drugs often occur in the form of complex mixtures, and the algorithms implemented in the TruNarc devices have been optimized for the analysis of these difficult samples and thus show a high success rate in the analysis of street drugs. Thermo is now launching a new generation of this device—the [TruNarc TAU](#). It retains the proven algorithms of the original device, but offers significantly faster analysis, expanded functionality, and a richer library of substances (**currently more than 1,200 drugs, including 17 nitazene derivatives**). **For more detailed information about this device, see this issue of Safety News.**

In the case of highly potent drugs, it is also necessary to pay attention to controlling contamination of the environment at the site. Very often, the outer surfaces of packaging are heavily contaminated with these substances. Careless handling can therefore lead to direct contamination of people, the site, or even the laboratory where the samples are subsequently processed. For rapid **control of surface contamination** with substances such as fentanyl (and approximately 2,000 of its derivatives) or nitazene (and its derivatives) directly at the site, [MX908](#) mobile mass spectrometers based on **HPMS** (High Pressure Mass Spectrometry) technology are currently most commonly used. These devices enable **the selective identification of trace amounts** with a very low risk of false alarms – both **on surfaces** (with **sensitivity in units of up to tens of nanograms**) and **in the air**, where they can detect aerosols with extreme sensitivity (**from tens of micrograms per m³**). There are currently around 2,000 of these devices in use worldwide in the field of drug enforcement. However, it should be borne in mind that even this technology has its limits. MX908 devices are designed for rapid and routine front-line analysis, using direct thermal desorption mass spectrometry, meaning that pre-separation is based solely on differences in evaporation temperatures during the thermal desorption process. When swabbing or sampling airborne aerosols, diluents or other contaminants from the environment are also captured. If the sample is highly diluted or is a complex mixture in which multiple diluents "mask" the presence of the active substance, the target substance may not be reliably identified. In the case of tablet analysis, it is usually possible to detect fentanyl or nitazene in concentrations of 1–0.5 wt% (depending on the type of drug and the diluents used).

This brings us to **the second threat associated with these substances, namely tablets containing a highly potent substance such as fentanyl or nitazene in its final diluted form.** With highly potent substances, it is very difficult (and often impossible) to ensure uniform and safe dilution. Sources in the US report that approximately one in four tablets may contain a dose that is lethal to some individuals. This is the source of frequent deaths caused by overdose when using these tablets. The problem is the reliable detection of these substances in tablets at concentrations below approximately 1%. Vibrational molecular spectroscopy methods (FT-IR, Raman) are not sensitive enough, and the use of SERS (surface-enhanced Raman) technology has also failed with this type of sample. The HPMS technique is also no longer reliable for concentrations below 1%, and recent international experience shows the occurrence of mixtures of synthetic drugs and, for example, Nitazens. In these cases, the main synthetic drug is usually determined first, while the presence of Nitazens remains hidden (see the example below in these Safety News). Until now, the only reliable method for solving such complicated cases has been gas chromatography coupled with mass detection (**GC-MS**), which is considered **the "gold standard"** in forensic drug analysis. GC-MS allows **complex mixtures** to be analyzed and target substances to be identified even **at very high dilution levels**. The [Griffin G510](#) mobile GC-MS device has been available for several years, offering a complete solution for field drug analysis.

However, performing analyses with these devices has traditionally required a longer time (typically 10-15 minutes) and an experienced operator with GC-MS expertise. The manufacturer (FLIR, USA) responded to this situation by introducing the new **Griffin G510x** model, optimized for fast and routine field drug analysis. You can find more information about this new product in this issue of Safety News. The GC-MS method is indeed the gold standard for analyzing more complex samples and is mainly used in mobile expert laboratories focused on drug issues (the Netherlands, UK, USA, Finland, etc.). However, it is important to note that GC-MS analysis still requires sample preparation (dissolution for injection) and that the analysis of surface contamination using this method is relatively difficult.

Mobile Raman microscopy now offers completely new possibilities. Among other applications, it also enables automated analysis of the composition of powdered drugs, including the identification of trace contents, or the analysis of trace concentrations on surfaces or the analysis of tablets. Automatic analysis is successful even in cases of very complex mixtures or high degrees of dilution. Drug samples always represent a mixture of diluent particles with active ingredient particles, or with multiple active ingredients. Thanks to the automatic analysis of individual particles in the mixture, it is now possible to reliably identify all components of the sample—not only pure substances, but also particles with a mixed composition of up to five components. In combination with advanced image analysis, semi-quantitative analysis based on particle size and number is also possible. This principle has been known for many years, but its practical implementation has been difficult and never fully automated. Large laboratory Raman microscopes typically use classical mapping, which makes analysis extremely slow. In addition, the results provide rather qualitative information and require the presence of an experienced specialist for evaluation. The devices themselves are large, very expensive, and cannot be used in the field.

A major breakthrough has now been achieved with the launch of the new Pendar M1 mobile Raman microscope from Pendar Technologies in the USA. This truly revolutionary solution is the result of 14 years of development sponsored by the US government, involving experts from Pendar Technologies and Harvard University in Boston. The Pendar M1 combines advanced optical microscopy and image analysis with powerful Raman spectrometry, all in a compact and mobile design. The analysis process uses AI algorithms based on machine learning principles. This is a new product that is currently being launched on the commercial market. You can also find the first information about this revolutionary solution in this issue of Safety News.

2. Invitations to professional events and webinars

In the first part of today's Safety News, you will find information about upcoming events, newly available webinars, and new software upgrades for the instruments we supply. **The second part focuses on technological innovations** – the introduction of several very interesting instruments in the field of drug analysis (and beyond).

Invitation to the NATO EOD Demonstration Days

The traditional [NATO EOD Demonstrations and Trials 2025](#) event is once again being held at the INCHEBA Expo exhibition center in Bratislava. This event focuses on EOD and CBRN and combines practical demonstrations of technology with an exhibition and a professional conference. If you are planning to attend, don't forget to stop by the RMI stand. We will be

presenting our complete portfolio of EOD and CBRN detection devices, **including one hot new product!**

When: October 8-9, 2025

Where: Incheba Expo Bratislava



Webinar: Unmasking Nitazenes – A New Threat in the Field of Synthetic Opioids

Nitazenes – a little-known but highly toxic group of synthetic opioids – are rapidly becoming a new threat to public safety. Watch this expert webinar, which reveals parallels with the beginnings of the fentanyl crisis and shows how the **MX908** device helps forensic experts, emergency responders, and medical investigators detect even trace amounts of these substances in the field. Through real-world case studies, you will learn how to properly use the MX908 in a variety of environments and discover why it is important to update testing protocols now.

The webinar can be viewed [HERE](#)

3. New firmware and software for your devices

New firmware for identiFINDER R225 and R425

Teledyne FLIR has released a major **firmware update** for the **identiFINDER R225** (version R225.25.2.159) and **R425** (425.25.1) spectrometers.

Main changes:

- Improved identification algorithm
- New templates for **Lu-177**, **weapons-grade plutonium (WgPu)**, and **reactor-grade plutonium (RgPu)**
- addition of the **Pu-238** isotope

Lu-177 is a medical radionuclide commonly found in healthcare, transportation, and waste. Its spectrum overlaps with **Pu-239**, which can lead to false detection of plutonium. Therefore, **the firmware update is essential for accurate identification.**

The R225, R425, R440, R700, and MUVE R430 devices now correctly recognize **Lu-177**, **Lu-177m**, and **plutonium**. Older models do not have this capability.

To obtain the update package, please contact us at sale@rmi.cz.

New Pendar X10 software version 2.8.1: enhanced data security, new features, improved control

Pendar Technologies has released an important software update for the Pendar X10 spectrometer (version 2.8.1). This version brings **significant improvements in performance**, data security, and user comfort. It introduces a number of new features, such as saving image information from the Pendar X-10 spectrometer camera to result reports, the ability to insert your own notes, sorting results into separate subfolders, and more. If you use the device in the field, in the laboratory, or during HAZMAT/CBRNe interventions, be sure not to overlook this update. **This major update cannot be performed online. To perform the update, please contact us at: sale@rmi.cz.**

Key new features in version 2.8.1

- **Self-test log** – you can now generate and export self-test logs, including results, device configuration, and spectra.
- **Photo documentation of measurements** – a photo can be attached to each measurement, which is displayed in the PDF report and in the PendarLink 2.0 application.
- **Structured data storage** – measurements can be sorted into "Session" folders with custom names – easy navigation and export.
- **User exports and data management** – a new interface for deleting and exporting individual scans, library items, and self-tests.
- **Cross-data search** – the search function works for measurements, self-tests, and the user library.
- **Improved appearance and control** – larger buttons (Export, Delete, Continue, Back) make it easier to work with gloves on.
- **Smaller exported files** – user library exports are now up to 10 times smaller – an advantage for users who create larger user libraries.
- **Better documentation of sample focus** – the position of the laser spot on the sample is now saved in the results report.

MX908 software updates versions 3.5.4 and 3.5.5

New versions of **MX908** software **v3.5.4** and **3.5.5** have been released. Although they do not introduce any major functional changes, we recommend updating for the following improvements:

- **More accurate PCP detection (3.5.4)** – an update to the target database reduces the occurrence of false positives when analyzing lidocaine. It is no longer necessary to use a separate PCP target pack.
- **Improved eutylon detection (3.5.5)**, which reduces the risk of false positives.
- **Beacon support** – users utilizing MX908 with the Beacon module should upgrade to this version.
- **General performance improvements and bug fixes** – increased stability of the device in the field and in the laboratory.

The SW can be updated to the latest version (3.5.5) from any previous version 3.5 or higher.

For instructions on updating your device, please contact us at sale@rmi.cz.

NEW TruNarc Tau



Thermo Fisher Scientific has introduced the new TruNarc Delta and TruNarc Tau handheld narcotics analyzers, which represent a significant advance in the field of field detection of narcotic and psychotropic substances. The devices use proven Raman spectroscopy for rapid, contact and **non-contact identification of drugs, including analysis of street samples**, which often represent complex mixtures, or samples with **low levels of controlled substances** (using **SERS** technology). **The new database contains more than 1,200 substances**, including precursors and diluents, which is more than **double the size of the library** in the original TruNarc model. **The new devices also offer faster scanning, a user-replaceable battery, touch control, and higher durability according to MIL-STD-810H and IP64 standards. With the H2 (SERS) kit, it is now possible to accurately distinguish between fentanyl and methamphetamine.** This new generation of devices reflects the growing need for fast, safe, and legally usable drug detection during interventions by CBRNe units, border guards, customs authorities, and forensic teams in an international environment. The library has been expanded to include new fentanyl derivatives, as well as 17 new nitazene derivatives and many others. Upon request, we will send

you a current list of substances in the library or a presentation with more detailed information. Of course, the system of automatic online library updates remains in place, ensuring the continuous expansion of the spectrum database.



Key features:

- **Comprehensive testing:** Tests more than 1,200 substances, including narcotics, precursors, and cutting agents.
- **Continuously updated library:** Regular updates to include new threats in the field of narcotics.
- **Contactless operation:** Requires no direct contact with most substances, enhancing safety.
- **Performance Enhancements for faster results:** Provides clear, real-time results for presumptive evidence.
- **Advanced kit (SERS kit) Type H2:** Enables testing of fluorescent substances and low-concentration mixtures.
- **Automated record keeping:** Generates tamper-proof records with complete scan results, including time-and-date stamps, to expedite prosecution.

Key selling points

ThermoFisher
SCIENTIFIC

TruNarc Legacy:

-  Rapid and reliable identification
-  Helps keep officers safe
-  Continually updated library to keep up with emerging threats

New & Improved Features:

-  Improved speed
Produces results in significantly less time
-  Type H2 compatibility
Differentiates between fentanyl and methamphetamine
-  Broader library
Includes over 1,200 items

For more reasons to upgrade, see commercial training

The following table compares some of the parameters of the previous and current generations of TruNarc.

Legacy TruNarc vs TruNarc Delta and Tau

ThermoFisher
SCIENTIFIC

	Legacy TruNarc	TruNarc Delta and Tau
Laser	785nm	785nm
Size	6.4 x 4.1 x 2.0 in. (16.26 x 10.41 x 5.10 cm)	6.5 in x 4.1 in x 2 in (16.5 cm x 10.4 cm x 5.1 cm)
Weight	1.25 lb (0.570 kg)	1.27 lbs (0.575 kg)
Operating temperature	14° F to 122° F (-10° C to +50° C)	14° F to 122° F (-10° C to +50° C)
Library items	~530	Over 1,200
Library contents	Controlled substances, cutting agents, and precursors	Controlled substances, cutting agents, and precursors
Device operation	Buttons	Buttons and touchscreen
Configurations	Unlimited or Pay-Per-Scan	Unlimited only
Ruggedness	N/A	MIL-STD-810H IP64
Connectivity	Wired (micro-USB)	Wired (USB-C) and WiFi*
Battery	Rechargeable internal battery pack	Lithium ion rechargeable, user replaceable
Computer administration	Desktop TruNarc Admin software	Desktop TruNarc Admin software
Reachback	24/7/365 reachback services	24/7/365 reachback services
Software updates	Software updates included for life of instrument	Software updates included for life of instrument

*post-launch feature; WiFi connectivity expected to be enabled in Q3 2025 with software version 2.2.0 release

It is still true that **TruNarc spectrometers (including Delta and Tau) store not only the spectrum (or multiple spectra) of each substance in the library, but also an optimized algorithm for analyzing the spectrum in real samples.** This algorithm is capable of detecting the relevant substance even **in more complex mixtures and in the presence of lower concentrations.** This

is important when analyzing real street drug samples, where we encounter sample dilution and the use of masking and additive substances. These **algorithms** are always "tuned" for each substance **on real street samples**, and only after successful verification is the substance, including the algorithm, entered into the device's database. **This is a fundamental difference from conventional "universal" handheld Raman spectrometers**, which use multicomponent analysis (composite synthetic spectra) to analyze mixtures. These technologies are suitable for identifying the main components of mixtures, but often fail when analyzing real drug samples. TruNarc technology has undergone several years of intensive development, with identification algorithms gradually improving with each new version. TruNarc technology is continuously verified by various tests in a number of countries around the world and continues to demonstrate the best identification success rate for real street drug samples. In addition to national agencies in many countries around the world, it is also used by organizations such as the DEA and Europol.

Although the detection capabilities of **TruNarc** technology are constantly improving, **it is important to remember that it is still a technology based on vibrational spectroscopy, and therefore there may be samples for which analysis is difficult or even impossible (for example, when using masking agents with a distinctive vibrational spectrum)**. One solution may be to use **GC-MS** technology. This is considered **the "gold standard"** for analyzing more complex drug samples. It is possible to analyze complex mixtures, including the identification of controlled substances in **low concentrations**, or even perform **quantitative analysis**. **The Griffin G510 from FLIR Teledyne**, which we already told you about in [Safety News 14](#), **is a fully autonomous field GC-MS with a quadrupole analyzer**. The system uses standard **NIST libraries** containing more than **340,000 substances**. The standard version of the Griffin G510 is also widely used for field drug analysis, but due to the universal configuration of the device, it takes longer to perform analyses (approx. 15 minutes per sample) and the interpretation of results depends on the operator's experience in the field of drug analysis. The new **Griffin G510x** model reduces analysis time without compromising the quality of drug analysis results and requires less experience on the part of the operator.

NEW G510x:

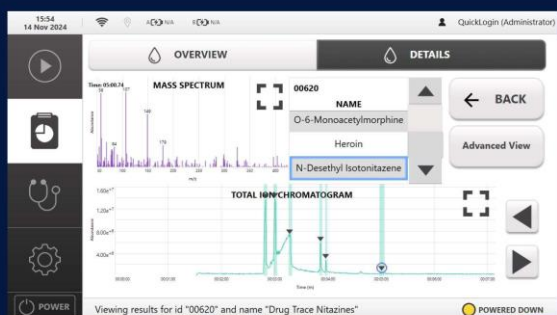
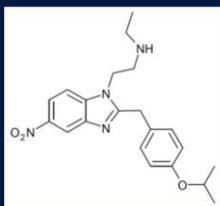
At the end of last year, FLIR launched a version of the Griffin device **called the G510x**. It is specifically optimized **for drug and explosive analysis**. The G510x uses **a new 5m RTX-TNT column**, which provides **a general improvement in sensitivity for drug analysis and also better RDX analysis**. For fast, accurate, and reproducible liquid sample introduction, the device now uses the **Merlin Micro-shot** system. Unlike the universal version of the device, it does not use a thermal sorption and desorption system or a probe for gas sampling. This has also led to a significant reduction in the price of the device. The G510x system configuration allows **the identification of complex mixed street drugs with low levels of highly toxic substances such as fentanyl and nitazen in less than 5 minutes** (8 minutes for very complex samples). The device is also equipped with the following libraries for drug analysis: NFLIS library, Cayman library, and Griffin library. The first user layer of the software was programmed for fast and **fully automatic analysis of drug samples**.



The following figures show two examples of the analysis of more complex drug samples and the analysis of two substances that cannot be analyzed using molecular vibration spectrometry methods (FT-IR, Raman).

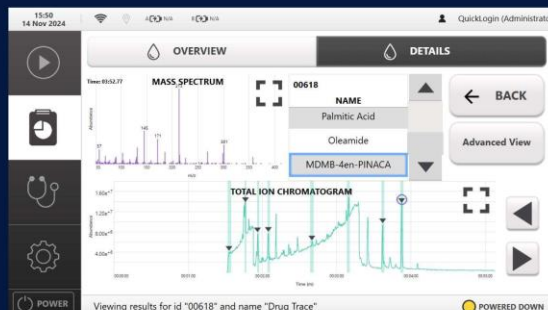
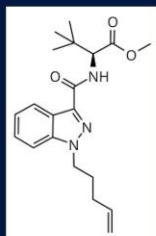
G510X : UNIVERSITY

Powder – weighed out 1.5mg and added 2mL MeOH mix of
heroin and around 5% N-desethyl nitazine



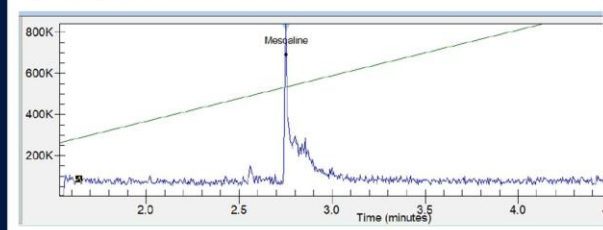
G510X : UNIVERSITY

Blue liquid vape sample collected from a school – but containing Spice synthetic cannabinoid identified as **MDMB-4en-PINACA**

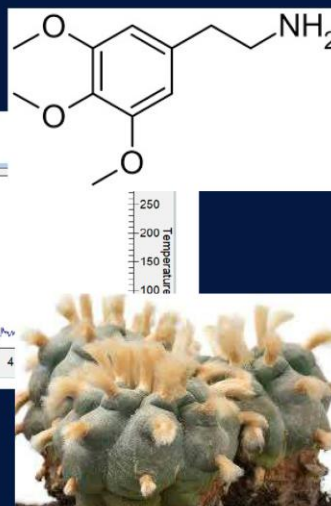


G510X : DUTCH CUSTOMS

Fig 2. 100 ng Mescaline (split method)

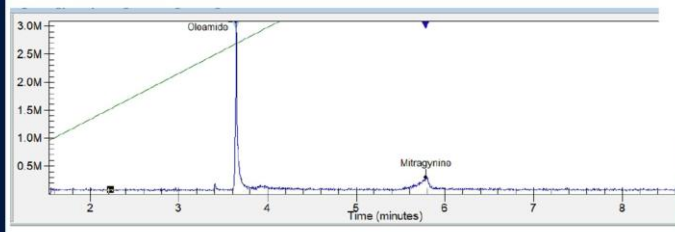


MESCALINE



G510X : DUTCH CUSTOMS

Fig 1. 100 ng Mitragynine (splitless method).



MITRAGYNINE



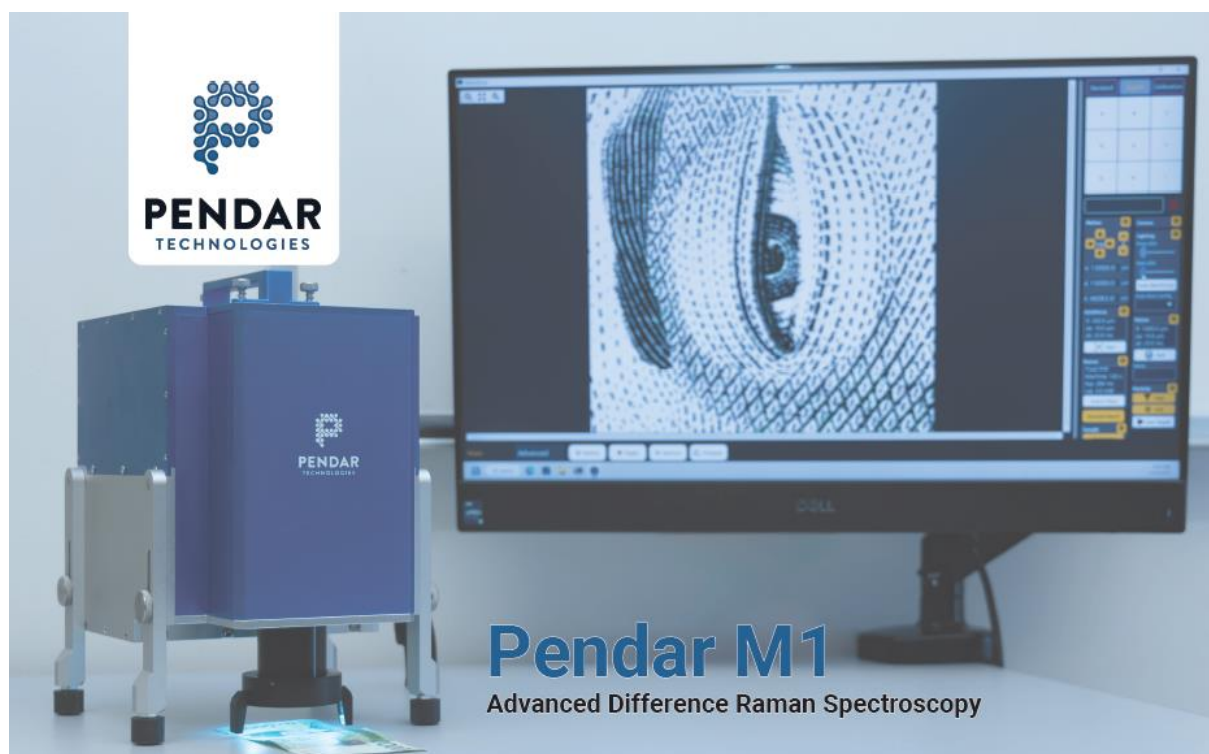


NEW Pendar M1: A new generation of portable Raman microscopes – a revolution in field analysis of complex samples (not only drugs) and identification of microparticles (e.g., in fingerprints).

Microscopy, spectroscopy, and artificial intelligence in a single device = 14 years of development

In the field of CBRNe interventions, time is a key factor. The need to quickly, accurately, and non-destructively identify chemical traces at the scene of a crime, in the field, or in a mobile laboratory is growing with each new threat. With the advent of highly potent new drugs diluted to low concentrations (**fentanyl** and its derivatives, **nitazeny**), mobile Raman microscopy is beginning to play a very important role. It enables reliable analysis of even very complex samples directly in the field.

Pendar M1 is a portable, **fully automated Raman microscope** that uses **Differential Raman Spectroscopy** (SERDS) technology in combination with advanced optical microscopy and machine learning.

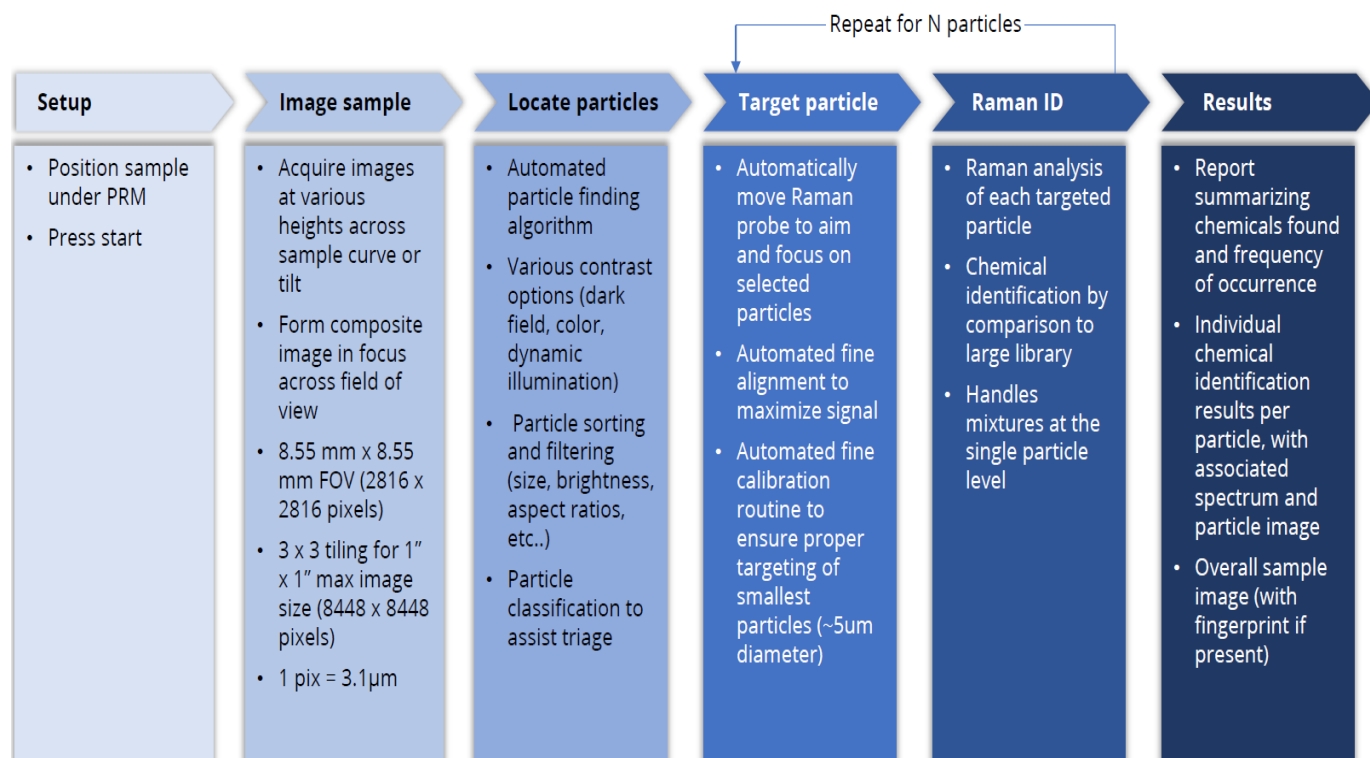


How does the Pendar M1 microscope work and how does it differ from conventional Raman microscopes?

The microscope allows you **to analyze the surfaces of small and large samples, including tilted and uneven surfaces, both in the lab and in the field**. The microscope can be **placed directly above a large sample and scan traces even on the surface** of such samples. The Pendar M1 has two modes of operation, automatic analysis and expert mode, which works similarly to classic Raman microscopes. The **automatic analysis mode is unique** and works as follows.

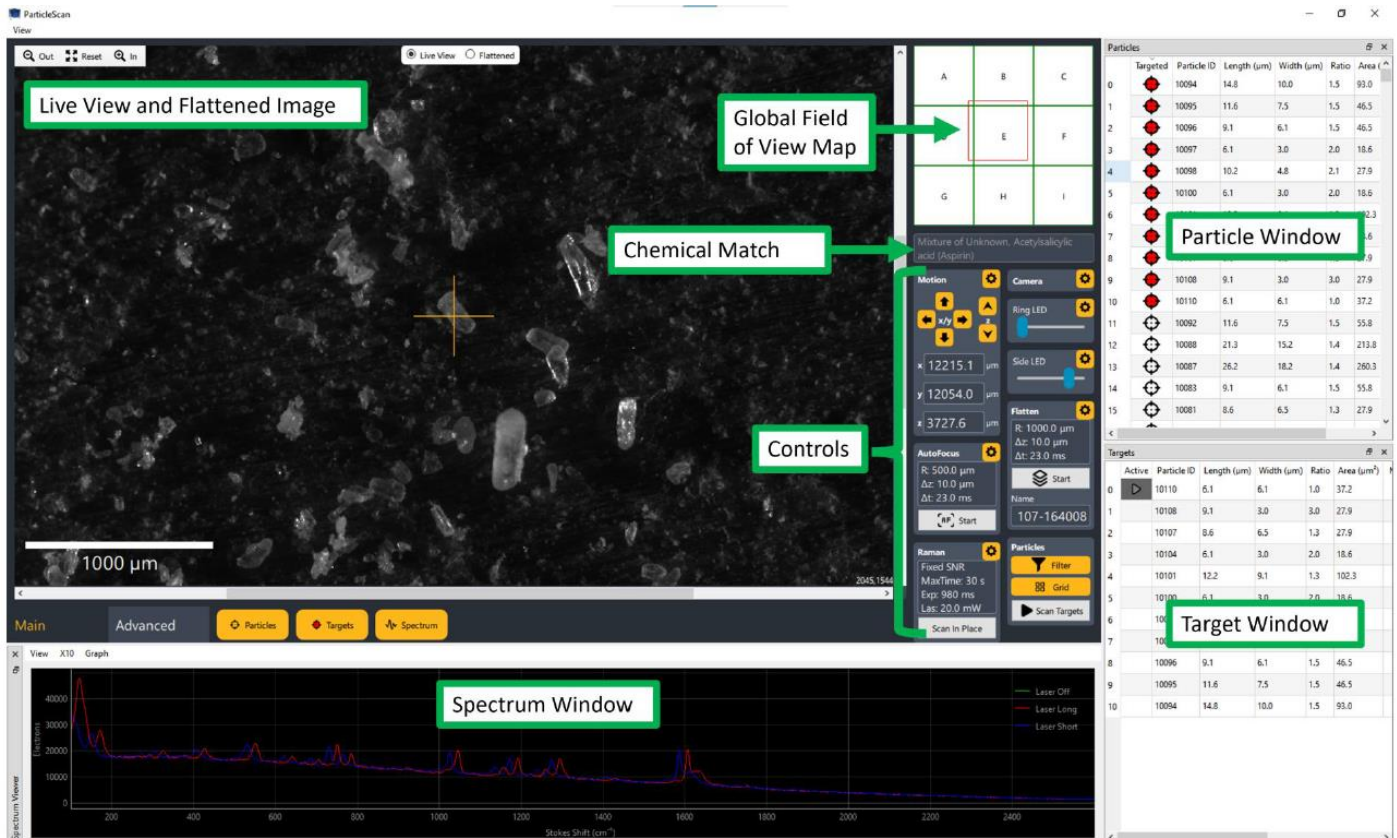
1. **Manually place the sample** under the microscope, or place the portable microscope above the sample being examined (large/immobile samples) and start the analysis.
2. **The microscope automatically and quickly takes a series of optical images** with different **focus (z value)**. This creates **a flattened image** (a flattened image of a curved surface focused at all vertical levels). **However, the software also stores information about the ideal focus (z value) for a given point**.
3. This is followed by **advanced image analysis** – an automated algorithm for particle search (**sorting particles based on various parameters and morphology**).
4. **Automatic movement and focusing of the Raman probe on selected particles representing a given group with their parameters** (fast optical scanning is used).
5. **Raman analysis of targeted particles** – chemical identification based on comparison with an extensive library + advanced analysis of mixtures at the individual particle level. In automatic mode, the system uses artificial intelligence to recognize particles of interest and performs confirmatory Raman analysis of only selected particles. This saves a significant amount of time compared to previously used methods.
6. **The resulting report** provides an overall picture of the sample, **summarizing the occurrence and frequency of specific chemical particles + the results of measurements of individual particles with their spectra and images**.

The following image illustrates **the entire automatic analysis process**. This not only significantly speeds up the work, but also "democratizes" the use of Raman microscopy—now even regularly trained mobile laboratory staff can use it effectively.



The microscope software also has an **"expert mode,"** in which the **Pendar M1** microscope can be **fully controlled manually** and used similarly to other Raman microscopes with motorized or rapid optical scanning of samples. However, **the Differential Raman Spectrometry (SERDS) technique** with pulsed lasers, which has proven itself in the Stand OFF Raman spectrometer Pendar X10 (more in previous [Safety News](#)), is still used. This **significantly suppresses** sample **fluorescence** and makes it possible to identify even particles of highly fluorescent materials. At the same time, **low laser energy** is used **in pulse mode, reducing the risk of thermal damage** to the sample. However, in the case of Raman microscopy, this cannot be completely ruled out (unlike the Stand OFF Raman spectrometer Pendar X10). This again makes this Raman microscope unique. Initial experience gained, for example, in the **EU JRC** laboratories (European Commission Research Laboratories for the Support of Police Units in the EU) shows that the **Pendar M1** microscope **is capable of outperforming even large state-of-the-art** laboratory Raman microscopes for some samples.

Advanced interface of the Pendar M1 microscope

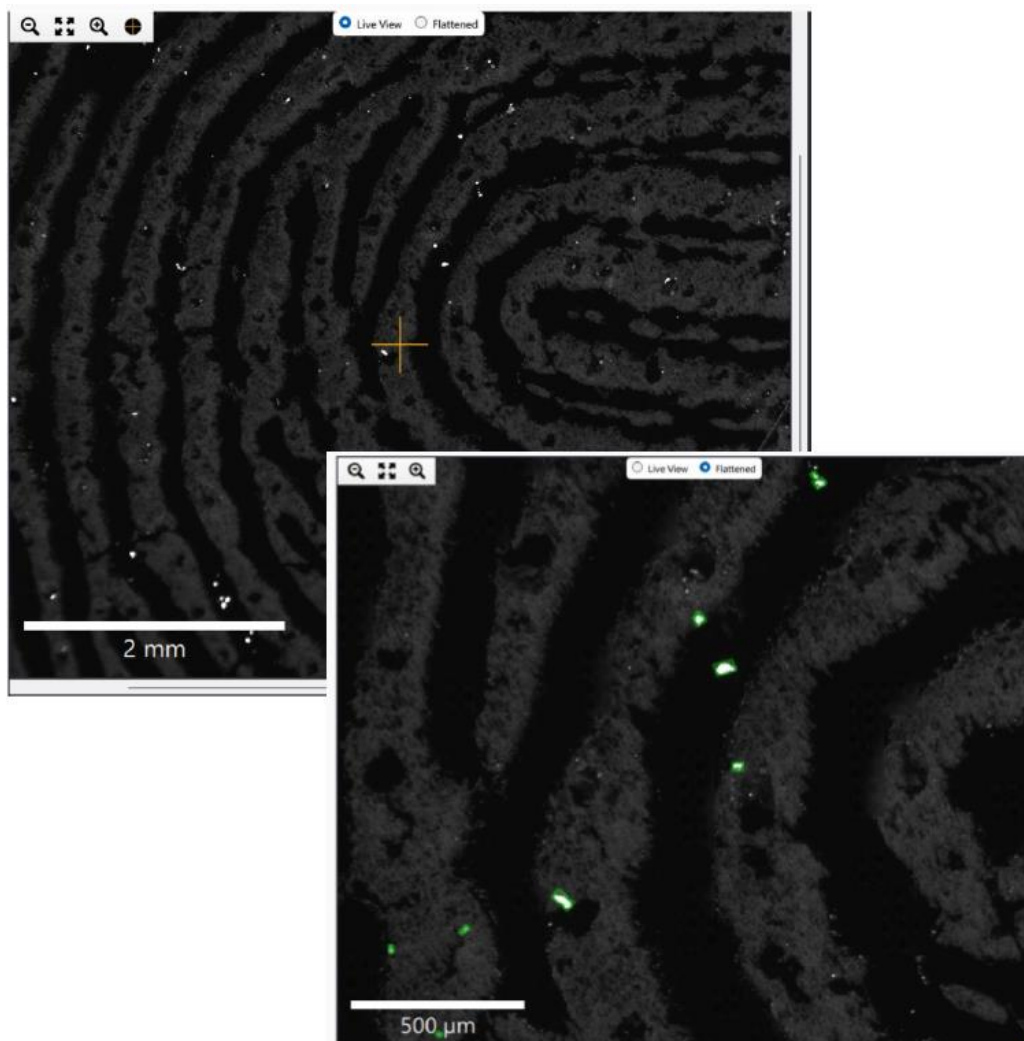
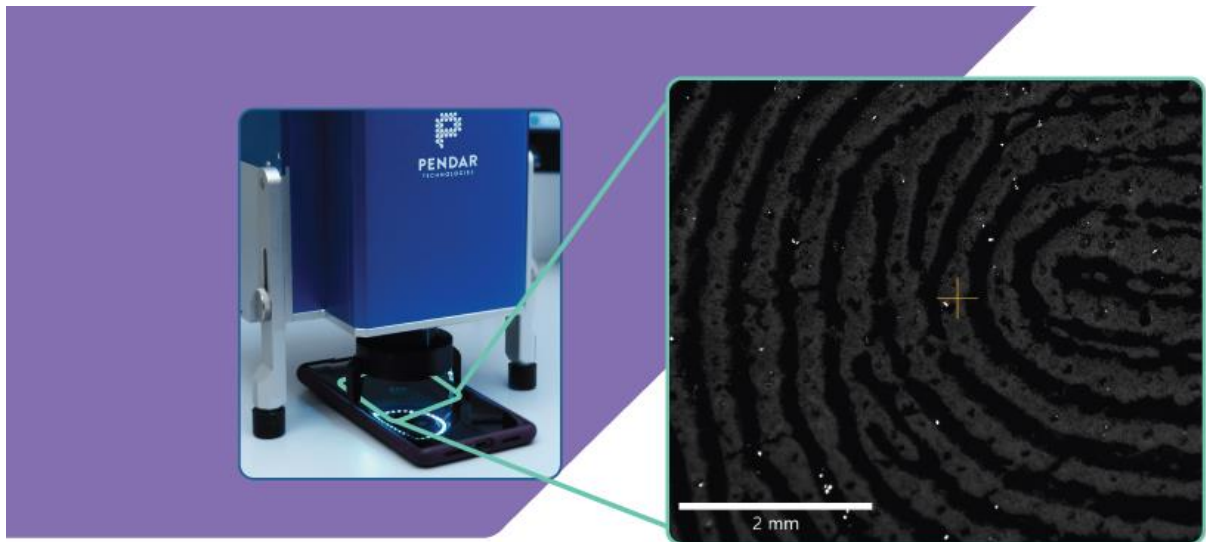


What makes the Pendar M1 exceptional?

- **Automatic particle resolution from 5 μm** – Detection of trace substances in the range of **~ 1 ng**. A typical plastic explosive particle weighs approximately 1 ng, so with the ability to detect and identify these particles, we achieve nanogram sensitivity, even in the case of complex mixtures. This is essential for explosives, precursors, and traces of highly toxic drugs.
- **Machine learning, artificial intelligence (AI) algorithms** – **Detection of particles even on complex, curved surfaces** – gloves, packaging, leather, identification of particles based on their morphology with subsequent confirmation using Raman spectrometry.
- **Automated particle scanning in Raman microscopy mode** – **analysis of up to 20 particles in less than 2.5 minutes** – high throughput and fast decision-making
- **Non-destructive analysis** – Possibility of subsequent GC-MS or DNA analysis on a given sample
- **Integrated Raman library with more than 9000+** substances, these are original spectra measured on this type of device. Instant and highly reliable identification of drugs, explosives, precursors, commonly used chemicals, including **highly effective analysis of mixtures of up to 5 components in a mixture**.
- **Low weight (4.3 kg)** – **Easy to transport to the field** or use in a mobile laboratory

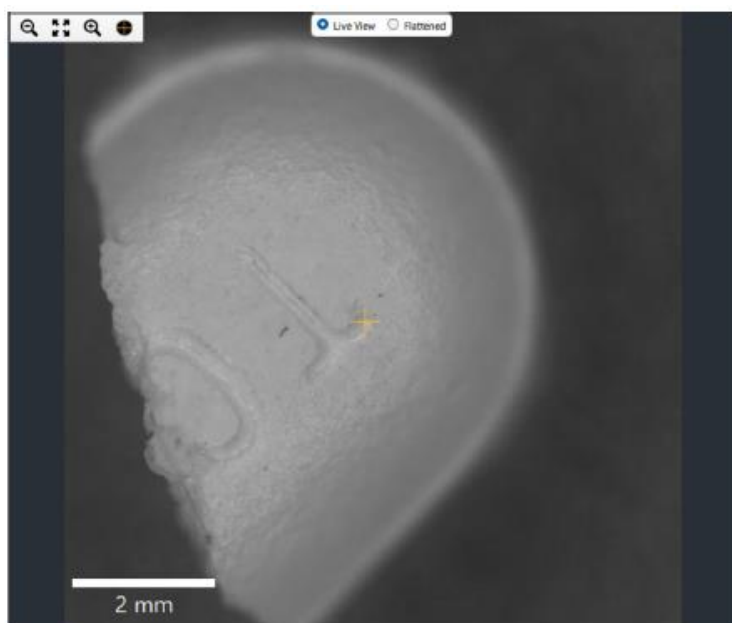
Forensic power – combining chemistry and biometrics

Pendar M1 enables direct analysis of particles in fingerprints, providing a unique opportunity to link chemical evidence to a specific person. Identified particles may include: residues of explosives and precursors (chlorates, nitrates), traces of illegal drugs, residues of skin, hair, or biological materials.



Analysis of complex mixtures and counterfeit drugs

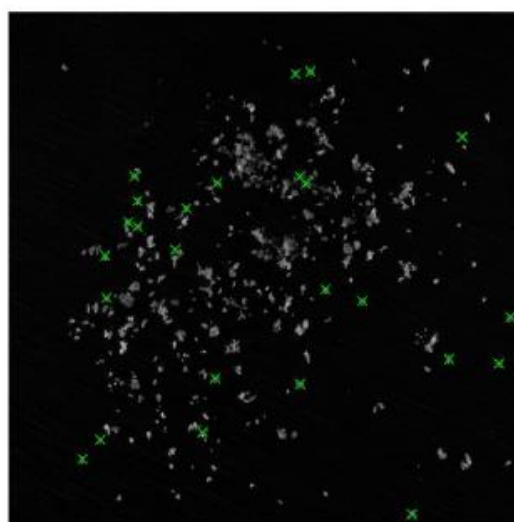
Unlike conventional handheld Raman or FTIR instruments, **the M1** offers: **higher sensitivity at low concentrations, the ability to "unmix" complex mixtures** (e.g., tablets with multiple active ingredients), and **support for sample composition quantification**.



Result Detection Rate

Result	Rate
Mannitol	60.0%
Methamphetamine HCl	28.0%
Cellulose	16.0%
Poor data quality	4.0%
MDMA HCl	4.0%

Particles Measured:25



Why is the Pendar M1 also interesting for the CBRNe sector?

- **Fast sorting of unknown samples** – in the field, at checkpoints, or during interventions.
- **Suitable for mobile laboratories**, vehicles, or decontamination stations.
- **Minimal operator training** thanks to automated mode.
- **Preservation of sample integrity** – allows subsequent use of other analytical techniques.
- **Analysis of trace amounts of explosives directly from swab targets** (unique contrast algorithm for searching for particles in the swab target matrix)

- **Developed with the support of defense agencies** – Pendar M1 was developed in collaboration with: US Army DEVCOM CBC, IWTSD (Irregular Warfare Technical Support Directorate), UK DSTL (Defence Science and Technology Laboratory)
- **Ideal for detecting trace amounts of chemicals on surfaces** in illegal laboratories and sensitive locations, or for detecting contamination, detecting highly toxic drugs, or analyzing post-explosion particles and arson cases.



Your team at **RMI, s.r.o.** – we are here for you ☺. RMI, s.r.o. Horka 221, 533 41 Lázně Bohdaneč,
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