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Part 9 Drug information and identification

This document was current at 16 March 2023. Police policies are requlary reviewed and updated.
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Overview

Introduction

This part of the 'Drugs' chapter details:

- different drugs made in New Zealand, how they are made and the symptoms from consuming them
- the need for authorisation before delivering drug related talks
- the exposure risk of fentanyl and how to minimise those risks and maximise safety
- using field drug test kits including the Lumi drug scan kit and the thermos scientific FirstDefender RM device for identifying drugs in the field
- the NDIB Drug Value Calculator that aids consistent reporting and communication of drug seizures
- health and safety risks with using kits or FirstDefender RM device in the field and the procedural duties for minimising those risks.

Training

Untrained employees must be given training from an experienced operator who has previously undergone FirstDefender RM training before operating the device.

Health and safety duties

Maximising safety and minimising risk

The expectation of the Commissioner and the Health and Safety at Work Act 2015 is that employees investigating burglary and allied offences will take reasonable care to ensure that their acts or omissions do not adversely affect the health and safety of themselves or others, comply as far as they are reasonably able to with any reasonable instruction that is given to adhere with the Act and its regulations.

A key enabler is the application of the TENR-Operational threat assessment in the workplace.

See also:

- 'Health, safety and wellbeing' for keeping our communities safe, and ensuring our people are safe and feel safe
- 'Fentanyl: exposure risk' for safely handling the drug
- 'FirstDefender RM health and safety' for specific instructions about safely operating the device.

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Drug Information and Alerts New Zealand (DIANZ)

Responsibility and structure of DIANZ

Drug Information and Alerts New Zealand (DIANZ) is responsible for gathering relevant information, analysing it to determine the need for a drug harm alert and disseminating alerts appropriately.

DIANZ, is located within the National Drug Intelligence Bureau (NDIB). NDIB is a joint operation of Police, the Ministry of Health and NZ Customs. Its aim is to provide a central point for all drug-related data for members of the public and health professionals.

Support for DIANZ

DIANZ is supported by a network of health professionals and social services, both government and NGO, including ESR, the New Zealand Drug Foundation, KnowYourStuffNZ, St John New Zealand and Wellington Free Ambulance.

Drug information and alerts

Drug information 'High Alert' is available at www.highalert.org.nz. The site helps identify where drug harm is occurring, provides evidence and understanding of outbreaks of harm and in some cases anticipates potential harm related to drug use.

The website is run by DIANZ, which is located within the NDIB.

Alerts and notifications are published on the website to inform the public and health professionals of new drug trends or threats, such as contaminated drugs. Information and specific harm reduction advice is also available.

DIANZ receives information from a range of anonymous sources, including:

- existing NDIB sources
- network partner sources
- street sample testing
- public reporting.

Related information

See 'National Drug Policy 2015 - 2020'.

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Drugs made in New Zealand

Drug	Made by	Symptoms
Morphine (including morphine sulphate tablets or MSTs)	From codeine tablets or Papaver somniferum. The plant is boiled or 'bled'.	Euphoria, drowsiness, lethargy, suppression of sensation and emotional response to pain, pupillary constriction, loss of appetite, sweating.
Cannabis oil	By soaking or percolating the material in an alcohol solution.	Feeling of well-being, relaxed and drowsy, distortions in perception of time, sensual enhancement, reddened whites of eyes, reduced ability to process information's, pronounced paranoia, sleep is common.
Methamphetamine	From chemicals. Methamphetamine laboratories are increasing in number and are being regularly located throughout New Zealand.	Is a stimulant and affects the central nervous system. Generally lasts from 4 to 12 hours. Symptoms euphoria, increased energy, increased sense of well-being, hyper activity, extended wakefulness, dryness of mouth increased heart rate and insomnia.
Fantasy - GHB	From chemicals - GHB commonly exists as a colourless, odourless liquid usually sold in small bottles. Also been seen in powder form and sold in capsules.	Is a depressant drug and slows down the central nervous system. Effects are noticeable between 10 minutes and one hour after taking the drug. Effects include euphoria, drowsiness, nausea, increased confidence and dizziness.
LSD	From chemicals.	Is a psychedelic drug and changes the way people perceive the world. Sold as small squares of paper. The drug is characterised by anxiety, fearfulness, depression, terrifying hallucinations, paranoia.
Heroin	With the addition of acetic anhydride, commonly referred to as AA or 'double', MSTs can be used to produce Heroin. This process is not the same as 'home baking', the manufacture of morphine or heroin from codeine-based tablets.	Is a central nervous system depressant. Shortly after taking the drug persons become dreamy, drowsy, pupils become constricted, eyelids droop, and the individual becomes apathetic and cannot concentrate.

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Fentanyl: exposure risk

Fentanyl

Fentanyl is a potent synthetic opioid medication used for severe pain relief (approximately 50 times more potent than heroin). Recreationally, fentanyl can be found as a white powder, tablets, injectable liquid, adhesive patches, and blotter paper tabs.

The highest risk of exposure to fentanyl is ingested, or through direct contact with eyes, nose or mouth. This poses an exposure risk for police staff. Even a minuscule amount of fentanyl carries a significant risk of accidental opioid overdose.

When handling suspected fentanyl:

- wear gloves, cover eyes, nose and mouth. Nitrile gloves and N-95 masks are recommended, along with suitable eye protection
- refrain from eating, drinking, or smoking at the location of the seizure
- place the suspected item in a plastic bag, change gloves (so that material is not transferred to the outside of the bag) and seal
- do not empty the drug from its original bag or take a sample
- double bagging is recommended
- ensure item and submission form are clearly labelled “suspected fentanyl” and stickered with hazardous substances label.

If there is suspected exposure, move the person to fresh air and wash any exposed areas with soap and water. Call 111 for paramedic assistance and use naloxone, typically administered by healthcare professionals for fentanyl overdoses.

Seek assistance by contacting the national Clan Lab team on 027 273 1540 (24/7).

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Drug education talks

Police employees must not give drug related talks to the public unless authorised by a District Commander, either generally or for a specific occasion.

Requests to address school groups

Requests to address school groups should be referred to the National Coordinator - Youth Aid at PNHQ. Police and the Ministry of Education have jointly developed special programmes suitable for school age children.

Drug talks

If you give drug talks, relate the law and present policy factually to avoid any criticism that Police may unwittingly be tempting young persons to experiment with drugs. You should be familiar with the arguments for and against the decriminalisation of cannabis, and avoid unnecessarily demonstrating methods of using controlled drugs, especially to young persons.

You must also be familiar with the law, policy, and trends relating to controlled drugs. Where necessary, seek assistance to be able to answer.

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NDIB Drug Value Calculator

What is calculated?

The NDIB Drug Value Calculator aids consistent reporting and communication of drug seizures. This allows Police employees seizing drugs to convey the scale of their seizure more easily, and the harm prevented. When a drug seizure volume is inputted, it calculates (where known) the estimated:

- number of common doses contained in a seizure
- amount of money generated if sold in retail amounts
- total drug harm prevented.

Note: The calculator is classified IN CONFIDENCE and is intended for law enforcement use only.

Benefits with reporting drug seizures

After inputting the drug seizure volume and the calculation is concluded, the calculator then generates a sentence that can be edited and copied as required when reporting on drug seizures. Figures are taken from NDIB's and Ministry of Health's reports. The calculator is reissued periodically when updates to pricing etc. are received.

How to use the NDIB Drug Value Calculator

Click on the link to use the Drug Value Calculator and follow the directions on the spreadsheet.

Contact the NDIB at ndib@ndib.govt.nz should you have any queries.

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Field drug test kits

Test kits for the identification of controlled drugs must be requisitioned from the National Police Store and held at each district. The kits must be issued to watchhouses to enable Police employees to screen test substances suspected of being or containing a controlled drug.

Remember: The kits contain corrosive acids capable of causing skin damage or damage to clothing and care must be exercised when carrying out any screening test.

If . . .	**then . . .**
a screening test gives a positive reaction to a suspect substance and there is other evidence giving good cause to suspect that an offence has been committed,	you may proceed with an appropriate resolution.
the ESR analysis reveals that the composition of the suspect substance does not include a controlled drug,	you must immediately ensure that any related court proceedings are either terminated or any related conviction vacated.

Note: Where there is insufficient material for both a screening test and analysis by the ESR, the screening test must not be carried out.

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Lumi drug scan kit

About Lumi

Lumi is a portable, on-the-spot drug testing device that:

- provides quick, accurate and reliable drug screening information
- identifies with 95% accuracy if a substance in clear plastic packaging is methamphetamine, cocaine and MDMA (ecstasy)
- enables informed decision-making at the frontline
- ensures staff safety when interacting with suspected drugs.

Note: Lumi devices are screening tools only and cannot be used as evidence.

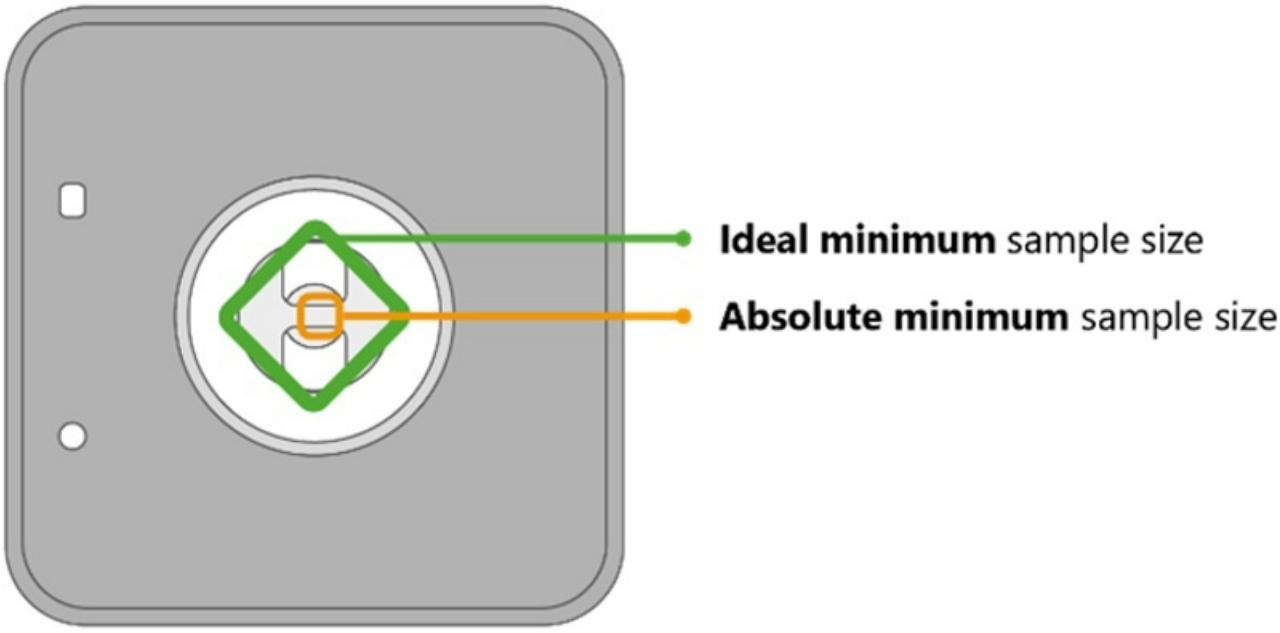
Key information about Lumi

Key information about the Lumi drug-testing device includes:

- the device is a screening tool only, chemical analysis is still required for cases that proceed to court. Some false positives and false negatives may occur, however this has been kept to a minimum - below 5%
- the device is not expected to detect below 20% purity of the target drugs at this stage
- the service can perform under most standard conditions. It has been tested under the following conditions:
    - in temperatures from 10 - 50 oc
    - in any kind of lighting conditions, inside or outside
    - in different orientations, including upside down (as long as it is steady during scanning)
- a calibration must be performed every 7 days. The app will not allow items to be scanned if outside of the calibration
- clean the device with a tissue, alcohol wipe or a clean gloved hand - avoid using bare hands or clothing to wipe as this may scratch the glass or contaminate the glass further.

See the ‘Help’ section of the app for further guidance or contact Police IT Service Desk.

Sample size



Operational benefits

The operational benefits of the device include:

- testing a substance on the spot, is more likely to result in the holder disclosing what the substance is
- providing information during the exercise of a search power about the most appropriate action to take with the drug holder by directly assessing if they are more suitable for a warning, health referral or to be prosecuted

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- its use of GPS better informs district level drug trends and deployment decisions (note, to protect privacy, the device does not hold personal details of the drug holder)
- reducing community harm.

Further information

See these documents for further guidance about the Lumi drug-testing device:

- 'Lumi Drug Scan: An innovative approach to screening suspected drug samples on the street'
- 'Lumi Instruction Sheet' for information about:
  - the kit
  - Lumi components
  - instructions for using Lumi.

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Thermo Scientific FirstDefender RM

Purpose

The Thermo Scientific FirstDefender RM applies analytical technology developed to identify unknown materials and substances. Its main use as a law enforcement tool is the quick identification of narcotics, precursors, white powers, explosives, hazardous chemicals, CW agents, pharmaceuticals, and general and common chemicals.

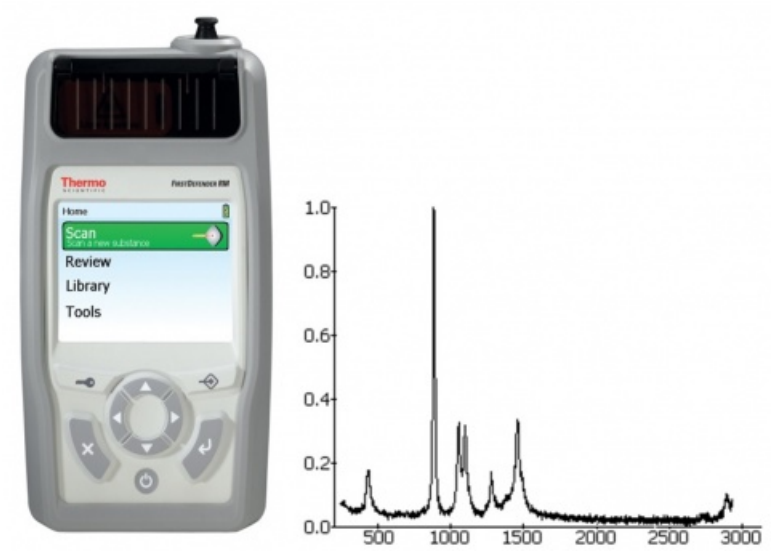
Description

The device is specifically designed to be used in an everyday environment in the field and is therefore considerably more rugged than a laboratory device, but must still be treated with care.

The device is a handheld portable device that can operate in a variety of locations, situations, and conditions. It works by pointing and shooting a laser beam at an object.

Device's capability

The device can scan solids, powders, gels, and liquids. It analyses and compares the signature to those signatures of materials/substances that have been previously analysed and stored in a library. Matching algorithms are used to provide a correlation match of the unknown with that stored in the library. A match of the sample is shown on the screen for the user to determine if the unknown substance is an illegal substance.



Note: The device provides an initial determination and be used as an information resource.**It is not an absolute or conclusive identification tool for evidential purposes in Court proceedings.**

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FirstDefender RM: Identifiable and unidentifiable substances

This section outlines those substances that the FirstDefender RM can and cannot identify.

Identifiable substances

The FirstDefender RM can identify these substances:

- explosives
- organic compounds:
    - petroleum products, pesticides, fertilisers, plastics, industrial plant materials
    - **drugs** (legal and illicit)
    - chemical weapons
- substances in water, but not highly diluted solutions
- inorganic compounds:
    - mineral acids such as sulphuric and nitric acid
    - oxides such as rust or titanium dioxide (common chemical used as a pigment in paints, sunscreens, and food colouring)
    - some ionic compounds, such as sulfates, phosphates, perchlorates, and carbonates)
    - crystalline semi-metals, such as silicon.

Unidentifiable substances

The FirstDefender cannot identify these substances:

- dark coloured materials.
- highly fluorescent materials:
    - some natural products
    - some brightly coloured materials, dye-coated materials (for example, blues, green, blacks).
    - a range of miscellaneous materials such as, brake fluid, tomato sauce, detergent, some types of diesel, and some agents used to cut heroin.
- most pure metals and elemental substances
- certain acids:
    - hydrochloric
    - hydrofluoric
- biological agents:
    - for example, Anthrax, and ricin
    - often fluorescent
- radiation, gases, vapours
- highly diluted substances will not perform trace detection.

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Advantages and limitations of FirstDefender RM

Advantages

The main advantages of the FirstDefender RM are:

- easy to use and to train users
- minimal sample preparation
- non-destructive
- non-invasive sampling of the substance
- no direct contact with sample
- ability to analyse through transparent containers - glass and plastic
- ability to analyse solids, powers, gels, and liquids
- rapid return of results - often in less than 20 seconds.

The device is lightweight (800 grams), transportable, and battery or mains operated.

The device offers the user several safety features that minimises the risks to users. SeeFirstDefender RM health and safety. The device includes an advanced tagging feature that enables users to tag items of interest for preferential visual display and enables detection at lower concentration limits, even for complex mixtures.

Limitations

The device is intended to provide an initial determination and be used as an information resource and not as an absolute or conclusive identification tool. Results provided by the instrument should be verified by using other appropriate techniques.

A weakness of the device is the effect of fluorescent lighting when acquiring a spectrum. For example, the device does not work well identifying heroin because of fluorescence.

It can be difficult to pinpoint and focus the laser, and identify the illicit drug in a compound/mixture if in small quantity, or highly diluted in a liquid. Rather it may identify the dominant component in the compound or mixture such as fillers/cutting ingredients. Several scans may be required from different areas of the mixture to find a high concentration spot of the illicit drug.

The device is not capable of trace analysis. Although it is capable of analysis down to very low concentrations of material, more so if the substance being tested is a tagged item.

Positive identification of unknown substances is limited by the library size. If the substance has not been recorded in the library, a ‘no result’ may be displayed on the screen. The instrument will not give any result if there is no matching library spectrum. This does not mean the device is not working - it is working correctly.

A ‘no match’ may be common result for the many unknown white powders and new, emerging, and changing psychoactive substances that employees may encounter.

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FirstDefender RM library

The FirstDefender RM comes with a manufacturer supplied library. This library contains around 13,000 signatures of controlled drugs, common substances, chemicals, and explosives. The library also includes detailed information on some chemicals such as the CAS number.

Using the library

The library is organised into tabs. You can choose to view either alphabetical tabs or category tabs to view library items.

To manually locate library items select the Library function from the main menu, then using the arrow keys scroll to an item and select View Info.

Users can also search for items by any part of their name using the Search Items function.

The manufacturer will supply updates to the library throughout the year, this is usually combined with a software release.

In addition, users have the ability to create user libraries.

ESR technicians at the screening lab are trained to maintain, update, and create new user libraries. The technicians will update the library and create new libraries as necessary.

Tagging application

The tagging feature enables users to select (tag) library items for improved identification in low concentration mixtures. Tagging is beneficial in any scenario where the user's knowledge can improve detection capabilities.

Tagged items are identified by the tag icon. The tag list is limited to a maximum of 50 library items.

Tag lists can be manually created (customised to user's needs) or imported from another instrument. Users can view the tag list, add a library item to the tag list, untag a library item, export the tag list, clear the tag list, and disable the tagging feature.

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FirstDefender RM health and safety

The FirstDefender RM is designed to be used in an everyday environment. There are minimal health and safety hazards from using the device by following instructions in this section.

Minimising health and safety risks

Employees should never touch, taste, or smell suspected narcotic substances or chemicals. Narcotic substances can be ingested through the skin, by inhaling, or orally. When suspected narcotic substances are located employees should exercise the appropriate safety precautions by using protective safety gloves, masks, and safety glasses.

The device can scan through sealed translucent containers such as; plastics and glass. Avoid coming into direct contact with the unknown substance that is being tested, nor is it necessary to take a sample from the substance. This prevents exposure and direct contact to potentially harmful substances.

There will be situations when an employee is required to take a small sample of the substance. In these situations when the package has to be opened, establish that the substance is safe to handle before taking the sample. If this is not possible, then employees should apply their own and supervisor's knowledge and situation awareness to make a best informed decision on whether to take a sample.

3 potential hazards with using FirstDefender RM

There are three potential hazards when using the device:

- battery and power hazards (with changing or charging batteries or using external power supply - comply with manufacturer's User Guide)
-

FirstDefender RM USER GUIDE.pdf **3.71 MB**

- laser hazard - damage to eyes when exposed to the laser
- laser hazard - explosion or fire.

Damage to eyes

Serious eye damage can be eliminated by:

- never pointing the instrument at eyes of other people
- never looking at the laser aperture when the laser is ON
- using the laser safety shield when laser is in point-and-shoot mode
- using point-and-shoot mode only if scanning through a clear container or sample is small and easily accessible
- avoiding accidental laser exposure to the eye always operate the instrument at arm's length, or keep your eyes at a distance equal to or greater than 50 cm from the laser's aperture when the laser is ON
- operating the instrument as per instructions in OPS PRO 111 - First Defender RM
- always following the current and correct procedures and instructions for handling unknown substances (Refer OPS PRO 109)
- turning the instrument 'Off' or put into 'Sleep' mode when not in use.

Explosion or fire

Risk of explosion of fire can be minimised by:

- not scanning dark coloured materials, gunpowder, match tips, or suspected explosive substances
- not scanning potential energetics that contain, or are in contact with, thermally sensitive materials. For example:
    - dark specks
    - dark bench tops and substrates
    - cellulose based materials such as coffee filters, cardboard and paper towels.
- scanning through packaging is the preferred method. However if you have concerns as to the stability/flammability of the substance then:
    - consider using expert advice from (ESR Lab at ACIF)

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- minimise the sample size (pea sized for solids/powders, 5 drops for liquids)
- use the vial method, remove the cap of the vial before a scan
- set scan delay to allow operator to exit the area before scan starts
- set the timeout so laser is turned Off automatically making it safe to return to the instrument
- lower the laser power to reduce the heat generation in the sample.

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Quick reference steps with using the FirstDefender RM

Only employees given on the job training with using the FirstDefender RM should use and operate the device.

Follow these steps before operating the FirstDefender RM device.

Step	Action
1	Before using the device, ensure on the job training: - from an experienced operator has been received on the use of the device - includes access to the **User Guide** - FirstDefender RM USER GUIDE.pdf **3.71 MB** - and **Quick Reference Guide** - FD_quick_reference_guide_Jan2017.pdf **2.67 MB** - for information and instructions on how to operate, manage, and look after the device.
2	Be aware of the health and safety hazards, procedures and duty instructions contained in this part of the Drugs chapter when using the device.
3	Note, the device: - works by shooting a laser beam at an object - measures the light that is scattered by the sample of interest to develop a 'fingerprint'. Almost every material has its own unique pattern or fingerprint, based on how strongly its atoms are bonded - can match chemicals to a database of known materials.
4	Select menu options using push buttons on the front face of the device. **Note:** The rechargeable batteries provides about 4 hours of normal use.
5	Perform a self-test using the polystyrene rod and confirm that the device passes this test (before using the device to identify substances). **Notes:** - In practice a self-test should at a minimum be carried out at the beginning of a day or shift, and at the end of the day or shift, but may be carried out at any time. - The self-test is not a calibration. The device is internally calibrated.
6	Operate the device to scan substances. Select one of two modes: - a point and shoot mode, or - vial scan with integrated vial compartment mode.
7	Arm, point, focus and shoot the built-in laser at the substance to be tested for the laser beam to analyse the substance. **Note:** The device records a spectrum of the substance that is sent to a detection system. A good spectrum has narrow lines or peaks embellished on a flat background. After the spectrum is scanned the device performs a search of the library.

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8	View the result on the device. The device provides five possible results: - single positive match (green screen) - multiple positive match (green screen) - mixture (blue screen) - similar match (yellow screen) - no match (red screen). **Note:** Results of all spectra are saved. Saved spectrum can then be downloaded to a mini-SD card and then uploaded to a computer or laptop for emailing and report printing.

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