

ID Kit Quick Guide



Mira DS is a compact, rugged handheld Raman analyzer specifically designed for detection and identification of illicit materials.

This document informs Metrohm Mira DS and P-SERS test strip users about methods and best practices for analysis of samples suspected of containing trace levels of illicit substances, including heroin and other narcotics.

Contents

ID Kit (607506400)

- 1 sample vial pre-filled with solvent
- 1 disposable spatula
- 1 dropper
- 2 silver P-SERS test strips

Additional Requirements

- **Mira DS** Handheld Raman Analyzer (2.926.0020)
- **SERS Attachment** (607506040)
- **Sample** suspected of containing illicit materials
- While unnecessary for stand-alone operation of the analyzer, **MiraCal DS** software (606071020) can be used to create custom Libraries, Operating Procedures and Training Sets; in addition to analyzing and reporting data.




The SERS Attachment features:

1. Slot to accept substrates at the optimal depth.
2. Hinged cover for easy cleaning.

Laser can be operational when instrument is on and door is open!





Warning!

- ! Risk of serious eye injuries by laser radiation.
- ! Follow the safety measures and instructions.
- ! Instruments of the laser class 3B must be used by trained personnel only.

Cleaning of SERS Attachment



Power down the instrument.
Open the hinged door of the attachment.

CAUTION! Laser can be operational when the instrument is on and the door is open!



Wipe down interior surfaces using a kimwipe or swab, ethanol or isopropanol may be used. Cleaning is intended to remove residue from previous substrates, rather than polishing the window.

Test Procedure



Remove cap from the sample vial.



Using the provided spatula, transfer a small amount of sample to the vial, 2–3 mg is sufficient, but more sample will provide a stronger signal.

- 2–3 mg is approximately the size of a pinhead
- if sample is sticky, solvent can be "stirred" with sample-laden spatula



Replace cap on vial and shake for 30 seconds.

- precipitates may remain, but substances of interest will be extracted
- for best results, test within 5 minutes of extraction



Apply sample to the P-SERS test strip using one of two methods:

- a** Drop solution onto the printed portion of strip OR
- b** Dip printed portion of the strip directly into solution.

Do not touch the printed portion on SERS test strips

Wait 2 minutes for the substrate strip to dry.



Mount the SERS attachment onto Mira DS and turn on the instrument.

- daily calibration of Mira DS is recommended, see Mira DS User Manual for instructions
- connecting the SERS Attachment activates automated SERS routines



Insert colored end of the SERS test strip into the slot on the attachment with colored side facing the instrument, stopping when resistance is met.

At the prompt, touch the screen to Arm Laser.

This attachment features a hinged door for decontamination, however, the door must remain closed during operation of the laser.



Touch the screen again to Acquire a spectrum.



Within seconds, a result will display on the screen. A positive result will be displayed with appropriate warnings.

For advanced operation, see Mira DS and MiraCal DS user manuals.

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