



AHURA First Defender



The Ahura First Defender uses Raman Spectroscopy to excite the bonds of SOLIDS and LIQUIDS that translates to an electric spectrum that can be compared to a known library of 6508 chemicals and many more mixtures of those chemicals.

The AHURA WILL:

- See solids and liquids
- See through paper and glass or plastic bottles (It has a hard time with dark or opaque containers)
- Potentially serve as an ignition source for black powders, silver azides, cardboard, and match tips. **START THE LASER** in low when sampling these materials.

The AHURA WILL NOT:

- See dark or brightly colored materials
- See water or material that is in water, such as dilute ammonia or hydrochloric acid
- Show concentrations of materials in a mixture. **IGNORE THE NUMBERS THAT APPEAR ON THE READOUT FOR MIXTURES**



WARNING: The Ahura uses a Class 3 laser that can damage your eyes. Keep a distance of 14 inches from the laser.

Laser Password: Left, Left, Down, Enter



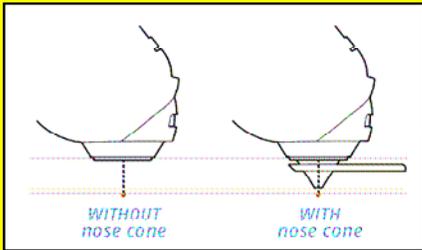
EXAMPLES OF WHAT THE AHURA WILL SEE:

- Petroleum Products*
- Drugs (illegal and prescription)*
- Pesticides*
- White Powders*
- Chemical Weapons*
- Mineral Acids (Sulfuric and Nitric)*
- Inorganic Oxides (Rust, Titanium Dioxide)*
- Some Ionic Compounds (Sulfates, Phosphates)*

EXAMPLES OF WHAT THE AHURA WILL NOT SEE:

- Black or Dark Substances*
- Bright or Fluorescent Materials*
- Pure Metals and Elements (Mercury)*
- Water*
- Biological Substances (The Ahura is confused by mixtures of fats, proteins, and carbohydrates).*

FOCAL POINT
The laser must be placed at the right focal point to be effective. Remember that the focal point is 18mm without the nose cone and 3 mm with the nose cone.

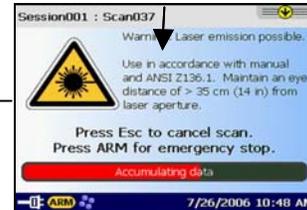


COMPLETING A SCAN

Step 1: Turn the device on
Step 2: Arm the Laser by pressing the top left ARM key
Step 3: Enter the laser password (Left, Left, Down, Enter)
Step 4: Press the ENTER button on "SCAN" on the main Menu and then press "GO"



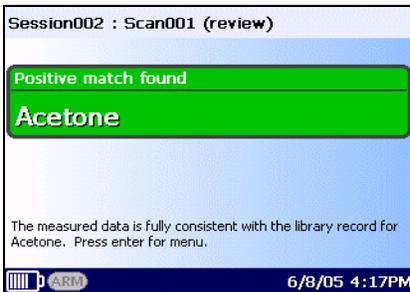
Step 5: Once the scan menu appears, press the down arrow and the signal meter will appear



Step 6: Make sure that the Raman Signal Strength has at least 5 bars. If not, reposition sample during the scan

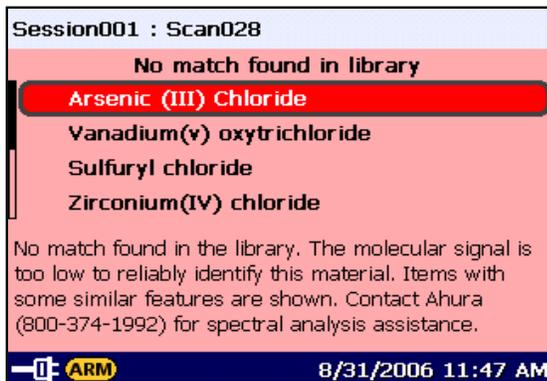
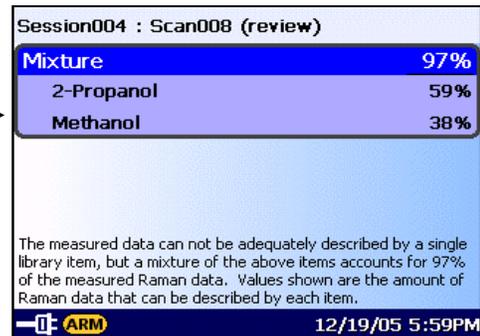
Step 7: Refer to the below information once the scan result is returned.

Results: One of four colored screens will appear on the Ahura once the scan is complete:



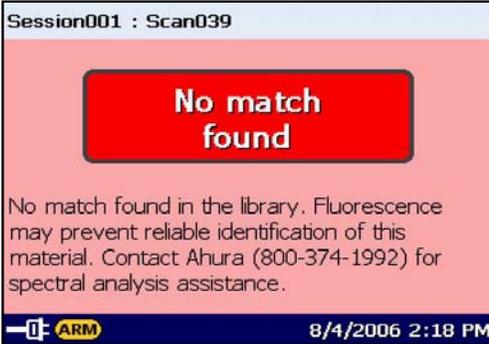
GREEN SCREEN: The results were in the library and the Ahura has identified the material with greater than a 95% certainty

BLUE SCREEN: The Ahura has identified the substance as a mixture. **IGNORE THE NUMBERS** - They do not represent a concentration. They represent the percent of the total Raman Activity

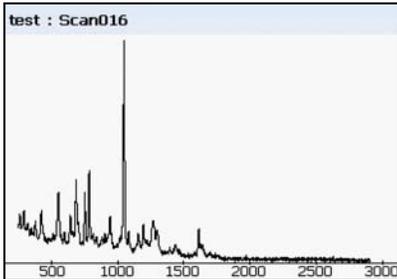


RED SCREEN: No match greater than 95% certainty but the spectrum resembles those materials listed.

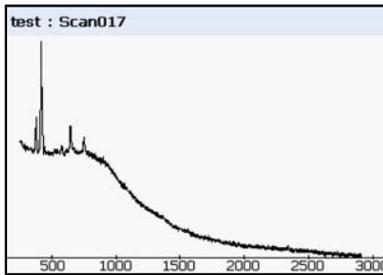
Results Screens Continued



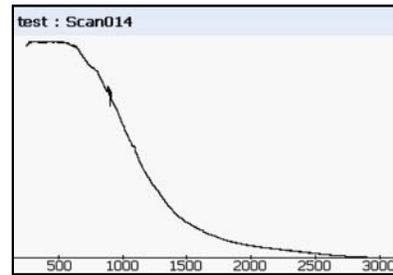
RED SCREEN - NO MATCH FOUND: The spectrum did not resemble anything in the library. Either the spectrum is adequate but the material is not in the library or the scan is not adequate. Press the enter button and then choose "VIEW SPECTRUM". The spectrum will look like one of the three below. Follow the directions for each.



Good Spectrum but the material is not in the library: Call Ahura at 800-374-1992 - They have a scientist on call 24 hours a day who can interpret the scan



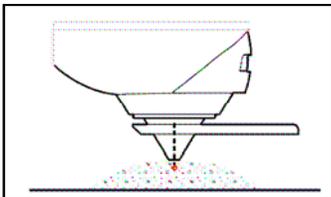
Poor Signal: Try again and then choose another tool (Field IR)



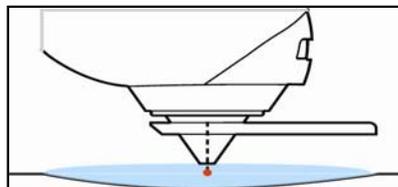
Ski Slope = High Fluorescence: The material must be dark, brightly colored, or contain WATER. Try the Field IR

GENERAL TIPS

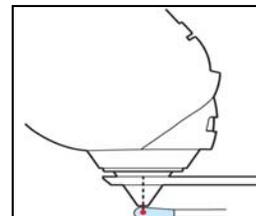
- The Ahura works in point and shoot mode and in vial mode
- The vial mode usually returns results within 30 seconds
- The point and shoot mode takes longer to return results (Up to 2 minutes)
- If you encounter difficulties in point and shoot mode and "V" appears on the screen, press the "EJECT" button for the vial to make sure the aperture is completely closed within the device



Position cone in substance



Position cone in substance



A sample can be applied to a WET Q-Tip and scanned

CHEMICAL INFORMATION

Once results are returned, you can use the arrow buttons to highlight a specific chemical and press the return button to view a menu of options. You can then choose "View Information" to see the data from NIOSH and other sources.

N,N-Diet...				
Desc	NIOSH	Gear	Fire	FirstAid
Description				
CAS:	134-62-3			
UN:				
Formula:	C ₁₂ H ₁₇ NO			
Mtl Vend/ Source:	ALDRICH			
Hazard Ranking:				
Principle				

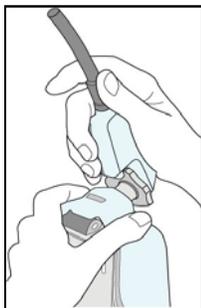
Use the arrow buttons to navigate through the information



PRINTING A REPORT

You can also choose to "Print Report" once the options appear or you can choose to print a report by selecting "REVIEW" from the main screen. You will pick a scan, hit "Enter", then choose "Print Report". The report will be saved on the flash drive as a JPEG. Eject the flash drive, insert it in the USB adaptor, then view it on a computer.

FLEX PROBE



Line up the black line of the flex probe with top of the ahura, twist until a click is heard, then screw the flex probe in place until it is tight. Remember: Scans take a little longer when using the probe.



A pink square containing the white letters "FP".

If attached correctly, the above icon will appear on the screen of the AHURA.