VAPE DETECTOR
by Forensics Detectors

FORENSICS DETECTORS

Handheld Vape Detector
Model: FD-VAPE-HAND

ATTENTION

➢ **ENSURE THE DETECT GRILLS ARE NOT BLOCKED TO ENABLE AIR TO ENTER THE UNIT**
➢ **STORE DETECTOR AT ROOM TEMPERATURE**
➢ **DO NOT INHALE ANY VAPE, SMOKE OR GASES**
➢ **IF UNWELL, SEEK CLEAN AIR & HELP**
➢ **DO NOT OPEN THE UNIT**
➢ **NOT A PERSONAL PROTECTION DEVICE, ONLY for OUTDOOR AND INDOOR READINGS**

INTRODUCTION
You have purchased the Handheld Vape Detector based on laser sensor Particulate Monitoring. The unit detects particles that are emitted from vape, E-cig, dust, smoke, cigarettes, weed and other illicit smoking substances.

VAPE & SMOKE DETECTION & MEASUREMENT
The handheld vape detector incorporates laser scattering sensor technology that allows the detection of vape juice particulates that are suspended in the air. These particles are emitted by vapes, and other illicit inhaled products.
The vape detector is extremely sensitive and sophisticated and detects particles from a broad range of sizes. Research from various universities has unequivocally shown that laser scattering sensing is the best, most sensitive and reliable way to detect vape products suspended in the air.
Your laser sensor detects small particles that include:
PM2.5: These are fine particulate matter that is 2.5 micrometers or smaller in diameter. These tiny particles can be found in vape, smoke, dust, and vehicle exhaust, and can pose a serious health risk when inhaled. They can penetrate deep into the lungs and bloodstream, causing respiratory and cardiovascular problems.
PM1.0: These are fine particulate matter that is 1.0 micrometer or smaller in diameter. These particles are even smaller than PM2.5 and can penetrate even deeper into the lungs and bloodstream.
PM10: These are particulate matter that is 10 micrometers or smaller in diameter. These particles are larger than PM2.5 and PM1.0, and are typically found in dust, pollen, and mold spores. They can still pose a health risk when inhaled, particularly for people with respiratory problems such as asthma

PM is measured in ug/m³. ug/m3 stands for micrograms per cubic meter. It is a unit of measurement used to express the concentration of a substance in the air, such as particulate matter or pollutants. For example, a measurement of 10 ug/m3 of PM2.5 means that there are 10 micrograms of PM2.5 per cubic meter of air.

What are BAD values?
The United States Environmental Protection Agency (EPA) established National Ambient Air Quality Standards for PM2.5. The short-term standard (24-hour or daily average) is **35 μg/m³** and the long-term standard (annual average) is **12 μg/m³**. A microgram is a unit of weight. Cal/OSHA's wildfire smoke standard applies to workplaces where the current Air Quality Index (AQI) for airborne $PM_{2.5}$ is **151 μg/m³ or greater** (deemed an unhealthy level). In fresh air, the levels of PM1.0, PM2.5 and PM10 are typically less than 10ug/m3.

SPECIFICATIONS
Detectable Particles: PM1.0, PM2.0, PM10
Detection Range: 0 - 999 μg/m³
Response Time: <10 seconds
Auto Off: after 10 minutes
Dimensions: 2.0 x 0.7 x 3.4 inches
Weight: 5 ounces
Data Refresh Rate: 1 second
Power: 1000 mAh Li-Ion Battery (recharge USB 5V/1A)
Temperature: 30-122F
Working Humidity: 10%-95%RH
Items Included: Vape Detector, Manual & USB Type-C Recharge Cable
Web: www.forensicsdetectors.com
Email: sarah@forensicsdetectors.com

BASIC OPERATION & DISPLAY

PM2.5: Main vape detection value (2.5 micron and less)
PM1.0: Vape detection value (1.0 micron and less)
PM10: Vape detection value (10 micron and less)
Temperature: Can be toggled between C and F by a quick press of the middle POWER button
Humidity: Displays Relative Humidity RH%
Speaker Icon: Mute ON/OFF via pressing right button S
Battery Icon: Displays levels of battery power
Status Icon: Gives overall indication of air quality

The screen brightness can be modulated by pressing the left button M

VAPE DETECTION METHODOLOGY

1. Press the POWER button to begin. Hold the power button down for 3 long seconds. The front screen with display and you will hear the fan in the unit operating.
2. The displays shows the concentration of PM2.5, PM1.0 and PM10. For vape, PM2.5 is most important.
3. Start by taking a fresh air measurement. It may be outdoors or indoors where you know for certain that nobody has vaped or smoked. Take the measurement by leaving the unit in a stationary location for 5 minutes.
4. Move to the suspected vaped or smoked area. When going to a new location, maintain a stationary position for 5 minutes to allow the unit to take a good stable reading. Take your measurement.

Smoking Example: If trying to take a reading for example when somebody vaping. Take a measurement when (a) not vaping (b) vaping. Compare the values between the two cases to confirm vaping or smoking. Vape and smoke value would need to be much high than when not smoking.

😀 NICE	Maybe Vaped/Smoked
😟 GOOD	Maybe Vaped/Smoked
😱 CAUTION	Certainly Vaped/Smoked
😱 DANGER	Certainly Vaped/Smoked

BATTERY POWER & AUTO OFF

Your Handheld Vape Detector is powered by an internal Li-Ion battery. Plug the cable to a recharger then plug it to the USB port of the analyzer (generic Type C USB cable). Recharge takes about 3 hours. After 10 minutes the unit will automatically turn OFF. Battery level is indicated on the display.

Frequently Asked Questions (FAQ)

What are the Cross Interference Components of Vape Sensors?
It's important to note that vape sensors may not be able to differentiate between vapor or smoke produced by e-cigarettes and vapor or smoke produced by other sources, such as traditional cigarettes or cooking fumes. We often get calls from customers asking if the vape detector can identify the nicotine, identify THC, and other components. To put it simply. No, it cannot. Such a capability would be a dream come true and only a sophisticated laboratory analysis of the air can produce such a breakdown.

What are the variables in detecting Vape?
Vape detectors are very sensitive particulate smoke detectors – they are 100 times more sensitive than a regular smoke alarm and employ more sensitive laser sensors. They are not 100% effective in detecting vape smoke since variables such as:

- the amount of vaping is proportional to the vape smoke
- ventilation and fresh air exchange rate (ACH), which dilutes the vape smoke
- the volume of the indoor room which increases the dilution of vape smoke

Can a False Vape reading occur?
Yes, it can. Our Handheld Vape Detector, just like all others, can be triggered by the vapor produced by e-cigarettes and may also be sensitive to other types of vapor or smoke. For example, some vape detectors may be sensitive to the vapor produced by other types of electronic smoking devices, such as vaporizers or hookahs. In addition, some vape detectors may be sensitive to smoke produced by traditional cigarettes or other types of tobacco products. It's important to note that vape detectors are designed to detect the presence of vapor or smoke, and not necessarily the presence of specific active compounds such as nicotine, THC, or CBD. In addition, it's possible that a vape detector may be triggered by other sources of vapor or smoke, such as steam from a hot shower, breath, or steam from cooking.