



# Passive Alcohol Sensors

## Passive Sensor Flashlight Overview & FAQs

### What are passive alcohol sensors?

“Alcohol sensors” generally are devices that analyze samples of breath, blood, or sweat to measure the concentration of ethanol in a person’s system and are interpreted to estimate recent alcohol consumption and/or current impairment. Due to its relative unobtrusiveness, police frequently use breath alcohol sensors (i.e., preliminary breath-test units) while in the field. To collect the breath sample to be analyzed, standard breath test units require that the individuals blow into a disposable plastic tube that is attached to the sensor. “Passive alcohol sensors,” on the other hand, require little participation by an individual to obtain a breath sample from the air surrounding his or her face.

### How do passive alcohol sensors collect participants’ breath without their active cooperation?

The passive alcohol sensor contains a pump that draws air into a sensor. The officer simply holds the device 5 to 10 inches from the driver’s face, and the device samples air as the driver exhales or speaks. The driver only needs to breathe (e.g., not hold one’s breath) for this device to work. Usually, this occurs as the driver answers some questions posed by the police officer, which should provide sufficient breath for a passive alcohol sensor reading. The air sample is analyzed for ethanol concentration in the same way that alcohol analyzers do.

### What type of information is received?

Once a breath sample is analyzed, passive alcohol sensors provide *qualitative* feedback on the amount of ethanol (alcohol) detected. Depending on the model of the sensor unit, feedback is provided via 10 colored bars that light up—more ethanol causes more bars to light up. Although the bars are linked to approximate blood alcohol levels, they rarely are interpreted as specific BACs. Rather, different bars are associated with rough categories, such as “safe” or “high risk.”

### How are passive alcohol sensors used in enforcement?

Passive alcohol sensors are commonly integrated in heavy-duty police-style flashlights. Ideally, officers should use the passive alcohol sensor when first contacting the driver during any nighttime traffic stop (whenever an officer would reasonably have a flashlight out). Passive alcohol sensors should be used with every driver interviewed during sobriety checkpoints. The information provided by the passive alcohol sensor is one piece of evidence (along with the driver’s smell, behavior, and speech, as naturally detected by the officer) that police can use to assess the presence of alcohol and potential for impairment. If this information is sufficient to raise suspicion that the driver has been drinking, the officer may elect to conduct a preliminary breath test or ask the driver to take a field sobriety test. If the driver’s alcohol level is low but still illegal

(e.g., zero tolerance for drivers younger than age 21), or when the driver is skilled at minimizing overt signs of impairment, the use of passive alcohol sensors MAY be particularly effective in enhancing the officer's ability to detect drinking drivers. They more quickly and efficiently detect drinkers on the road.

### **Are they accurate?**

Standard preliminary breath-test devices analyze small volumes of deep lung air, whereas passive alcohol sensors analyze large volumes of ambient air produced through normal speaking and breathing. Passive alcohol sensors do not measure breath alcohol as reliably as preliminary breath-test units, and their accuracy varies depending on the quality of the sample collected. Readings from a passive alcohol sensor are not meant to be interpreted quantitatively, but qualitatively, and officers should use passive alcohol sensor readings in conjunction with other cues to determine whether there is reasonable suspicion to conduct more formal tests of alcohol impairment. Even so, several studies have documented that police officers who use passive alcohol sensors during sobriety checkpoints are substantially more successful in detecting drinking drivers.

### **Are the results used in the court of law?**

Passive alcohol sensors are not evidentiary. They cannot be used in court to determine whether a driver is guilty of "driving under the influence of alcohol" by indicating a blood alcohol concentration above the stated *per se* BAC limit. Guilt or innocence is determined by the results of field sobriety tests and/or evidentiary blood tests. However, passive alcohol sensors may increase an officer's ability to detect alcohol, which provides reasonable suspicion to request that more formal sobriety tests be performed.

### **Are there any factors that might affect the passive sensor's accuracy?**

Anecdotal evidence suggests that strong perfumes or mouthwash may activate the sensor in the unit. Furthermore, vehicles where passengers have been drinking heavily may have ambient air with high concentrations of ethanol; this may cause the sensor to register false positives (if the driver is sober). To the contrary, taking insufficient air samples (e.g., holding the unit too far from the driver's face) may produce false negative results. Passive sensor results are never the direct basis for criminal a charge, much less a conviction. These devices produce only one piece of evidence for assessing a driver's drinking and impairment. Nevertheless, passive alcohol sensors may be particularly helpful in detecting alcohol in drivers who do not display overt signs of alcohol impairment.

### **Are passive sensors not a breach of individual's fourth amendment rights?<sup>11</sup>**

The constitutionality of using passive alcohol sensors has never been challenged in appellate courts. A scholarly examination of the topic, however, suggests that it is likely that the use of the sensors will be upheld if courts follow well-established constitutional principles. To our knowledge, no court has ever dismissed charges of driving under the influence because court admissible evidence was collected under reasonable suspicion that was established, in part, through the use of passive alcohol sensors.

### **How much do passive sensors cost?**

They cost \$695 each and are manufactured by PAS Systems International, Fredericksburg, Virginia. The NIAAA grant funds paid for the devices. None of the grant recipients or police departments receive any benefit from or have any financial interests in PAS Systems International.