

Tempe Fire Department Policies and Procedures
Thermal Detector
405.09
Rev 2-5-97

PURPOSE

The Tempe Fire Department has two (2) thermal detectors. One each is located on each ladder company.
This procedure provides operational instructions and technical information for these detectors.

PROCEDURE

When attempting to locate overheated ballasts in fluorescent light fixtures or potentially hidden "hot spots", the proper use of this device will enhance our commitment to safety and customer service.

Operating Instructions: (Refer to diagram on page 3 of this policy when necessary)

Battery Installation

Remove battery cover by unscrewing the two (2) slotted screws at the base of the unit.

Slide a 9V Alkaline battery into place with the terminals facing out.

Attach terminals. The unit will beep when the battery is first connected.

Replace the battery cover and tighten the screws securely.

Basic Thermal Detection Function

This function should be activated when attempting to locate hot locations. There are two sensitivity modes that can be used.

High Sensitivity Mode will sense temperatures that are slightly above ambient. This can be used to locate overheated ballasts for example.

Low Sensitivity Mode can be used to locate areas that are much hotter than ambient. This mode is useful in determining hot areas of a structure during loss control/overhaul.

To Operate

Press the trigger switch momentarily. This unit will go through a battery check and momentarily light all of the LED's. If it senses a low battery, the unit will provide an audible downward sounding warning. The unit will operate for at least two (2) hours after low voltage is first detected. Replace the battery as soon as possible if a low voltage warning is detected.

The unit will provide an audible indication of which sensitivity level it is in. One beep = low sensitivity mode. Two beeps = high sensitivity mode. The unit will always start at the same sensitivity mode as the last time it was operating.

NOTE: The high sensitivity mode increases the sensitivity level by a factor of 10.

If you decide to change modes, press the mode button. The sequence of modes is:

High Sensitivity, Low Volume
High Sensitivity, High Volume
Low Sensitivity, Low Volume
Low Sensitivity, High Volume

Once the mode and sound level are selected, the detector is operational. Simply point the device at the area of interest and listen for a change in sound frequency. The higher the frequency, the hotter the spot.

During operation, the row of LED's will provide a visual indication of how hot the object is. They light up in sequence from bottom (green) to top (red). Red = the hotter side of the range.

If not buttons have been pushed in five minutes, the unit will automatically shut off to preserve battery life.

To manually shut the unit off, press the trigger once.

Compare Function

Allows the detector to compare the temperature of one object with another.

Turn the detector on by pressing the trigger once.

Select sensitivity mode, if required.

Point the detector at the first item that you want to compare. Press the hold the trigger switch down until you hear three (3) short beeps, then release the trigger switch.

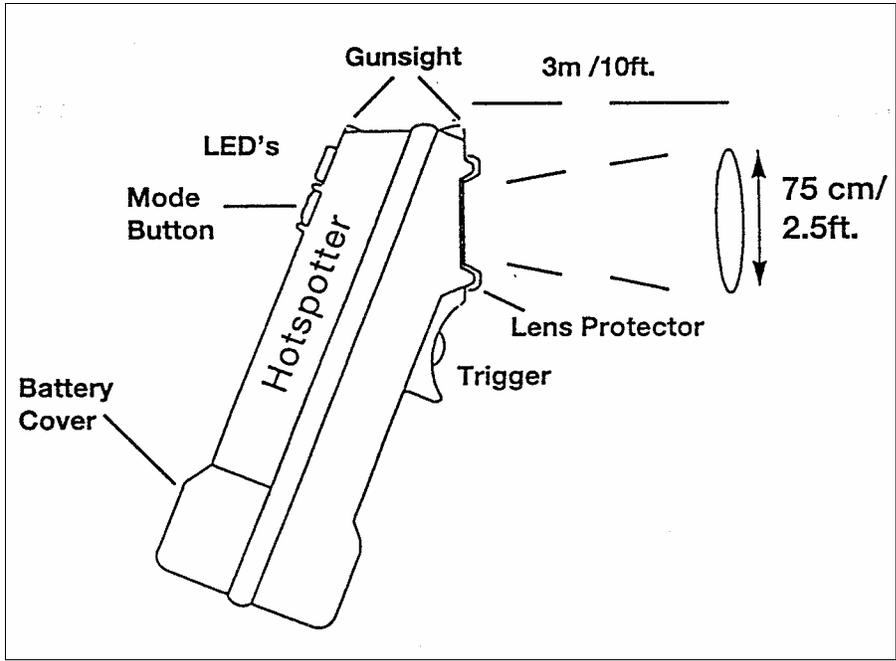
Point the detector at the second object to be compared. The sound level and LED's will go up or down, depending on whether this second object is hotter or cooler than the first.

Technical Information

The detector senses infrared radiation. The hotter an object, the more infrared radiation is emitted.

The detector "sees" infrared from a cone that projects approximately 7 degrees from either side of its axis. At a distance of ten feet, a disc of approximately 30 inches in diameter is being read. Note that the maximum optimal operational distance is ten feet.

The detector calibrates itself to ambient conditions each time it is turned on.



Diagram