

Tempe Fire Department Policies and Procedures
Thermal Imaging Cameras
405.10
Rev 11-12-04

PURPOSE

To provide information which must be followed to ensure safe, effective operation and maintenance of our Thermal Imaging Cameras (TIC's).

POLICY

Familiarization with the manual, training, and practice are the only means to become proficient in interpreting the images of the TIC.

Each camera shall be properly stored inside its storage case with its operation manual, charging equipment, and 2 rechargeable batteries.

To assure security, and to prevent unnecessary damage to this equipment, the storage case with each camera shall be placed securely inside of each apparatus that carries one. Batteries should be charged and loaded.

PROCEDURE

Thermal Imaging Cameras are intended to be used as an aid to emergency operations in smoke, darkness, low visibility, and concealed spaces. It is not intended as a replacement for standard safe firefighting techniques. Personnel must ensure that all established emergency scene procedures are followed. To depend solely on the TIC for orientation and have it fail, could result in becoming disoriented, lost, and injury or death.

Examples for use of the TIC are listed as follows:

- Search and rescue
- Initial size up and assessment of scene
- Locating the seat of the fire
- Locating fire extension
- Identifying potential flashover conditions
- Determining ventilation points and roof conditions
- Haz Mat reactions
- Fluid levels in tanks
- Overhaul operations
- Searching areas around incidents for additional patients after dark.

THE THERMAL IMAGING CAMERA IS NOT INTRINSICALLY SAFE, AND MUST NOT BE OPERATED IN FLAMMABLE OR EXPLOSIVE ATMOSPHERES.

The image displayed is simply a black and white picture of the infra red energy entering the lens. The camera displays relative temperature differences between individual objects and their surroundings irrespective of overall ambient temperature. The camera is set up to display objects at various shades between black for cooler items, to white for hotter bodies.

The sharpness and clarity of the image provided is related to the temperature of the scene and objects in view. A cold room provides little infrared energy and less detail if detected than in a warm environment where objects give off significant energy. The warmer the scene, the more thermal contrast, and hence, greater detail in the picture.

The operator may be able to detect a hidden fire inside of a wall, ceiling or duct work by looking for areas that appear to be lighter or whiter than the surrounding area or background.

Glass and water will reflect heat images. You cannot view through glass. Glass may also have an overall lighter color if the glass is hot.

The Heat-Seeker Indicator System has the hottest points showing red on the screen. The Quick-Temp Indicator registers 100° to 1000° Fahrenheit with each segment being 200 degrees.

When the TIC is reading temperatures above 392° Fahrenheit it is in High sensitivity mode.

When the temperature read is above 1112° Fahrenheit it will switch to Low sensitivity or EI mode.

Two Nickel Metal Hydride 7.2V batteries are good for 1.5 hrs of operation each. Charging takes about 5 hours. Camera works with 1 or 2 batteries and uses the most charged battery first if 2 are installed. Every time the camera is turned off, it will power from the battery with the most charge when turned on again. If the green on the battery indicator begins to show a discharge, the time of use is shortened considerably and the batteries need to be recharged.

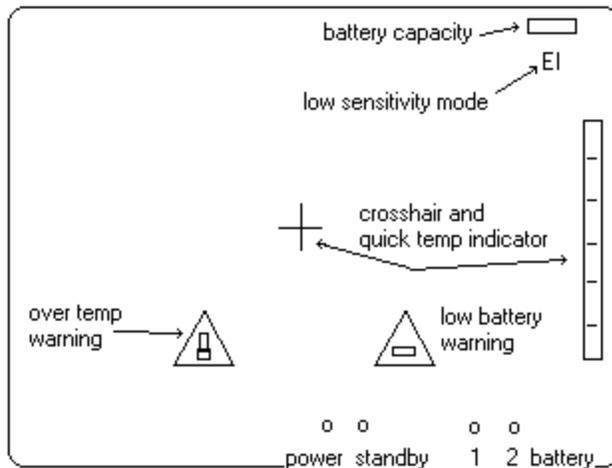
To turn on, press and hold green button 1 second, screen will show MSA then thermal – 15 –30 seconds.

For standby, hold the green button until the display shuts off and yellow Standby LED light comes on. Press and hold green button again and display activates without warm up.

Turn off by pressing and holding green button in for 4 seconds. Power and Standby LED flash during power off.

Cautions:

- Do not aim at the sun or extremely hot objects, the camera may be damaged.
- Radio transmissions may cause interference



DAILY CHECK OUT

The unit should be turned on daily to verify that the batteries are charged and the unit is functioning properly.