

Policies/Notifications
Effective Date: March 20, 2020
Number: 0066A

Subject: FLIR Imagers FAQ's for Elevated Body Temperature Screening

FLIR Thermal Cameras

Q: Can FLIR products be used to detect the coronavirus?

No, thermal imaging cameras cannot be used to detect for or diagnose an infection. However, FLIR thermal cameras are being today used in public spaces – such as airports, train terminals, and concerts – as an effective tool to measure skin surface temperature and identify individuals with Elevated Body Temperature (EBT). Used at points of entry including airports and buildings, FLIR thermal cameras enable the screening of people with EBT that might indicate illness. People who are indemnified with EBT must then be screened medical professionals for diagnosis of any medical condition.

Q: How does thermal imaging technology work in detecting Elevated Body Temperature (EBT) screening?

FLIR thermal cameras detect heat radiation and can be used to identify the surface temperature of objects and people. With this capability, FLIR thermal cameras are commonly used as a non-contact screening tool to detect differences in skin surface temperatures and pattern changes. In fact, FLIR has received US FDA approval for using a variety of its thermal products to screen high traffic public places like airports, train stations and subway stations.

Q: How should operators use thermal cameras for EBT screening location?

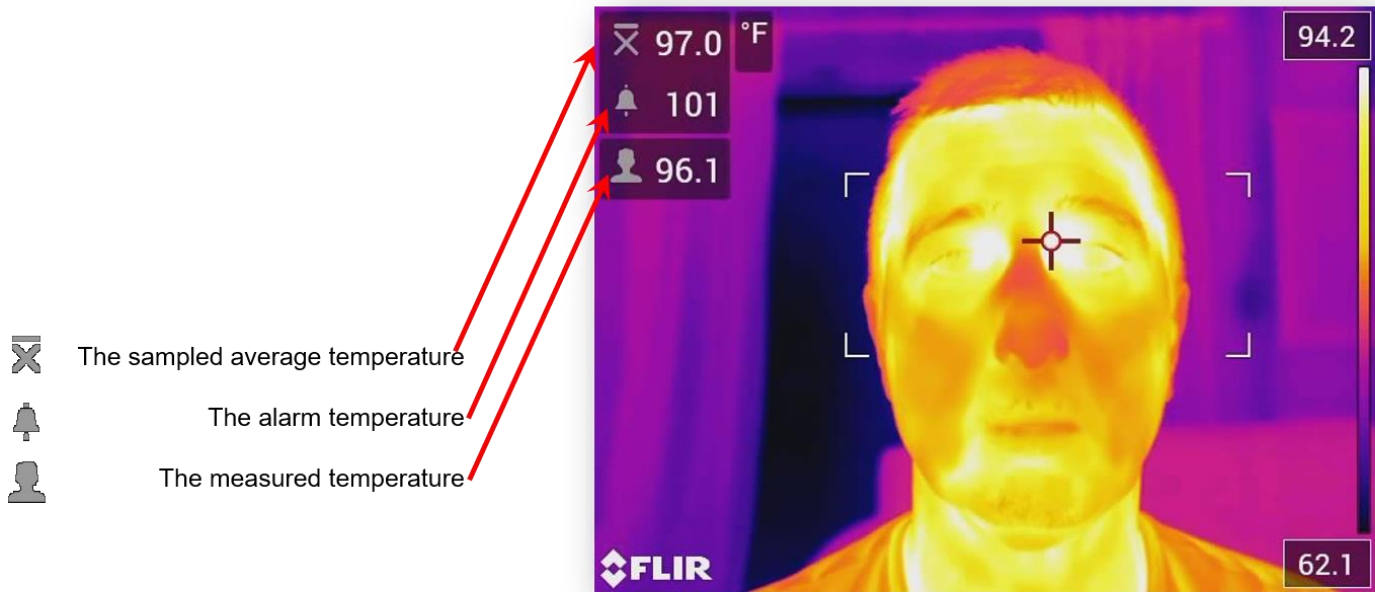
- FLIR handheld cameras mounted on tripods or FLIR fixed-mounted cameras, positioned at building or port entrances, can be used as a non-contact screening tool to detect differences in skin surface temperatures.
- Camera operators screen people one at a time and look for temperature anomalies. Operators should measure temperature in the corner of the eye as this location provides the most accurate reading on the human body.
- FLIR's EBT cameras "see" or detect the temperature differences with temperature measurements between -20 C to +2000 C (-4 F to +3632 F).
- A camera operator who detects elevated temperature in a person being screened should request that such individual be screened using additional medical devices.


Q: Explain the Screening mode available in the FLIR FDA-certified cameras?


Certain FLIR cameras include a screening mode that provides an alarm when an object or person is detected to have an elevated temperature. Activating the screening mode will turn on a measurement box and screening data on the camera's screen:


- The sampled average temperature.
- The alarm temperature.
- The measured temperature.

The alarm will trigger when the measurement box measures a temperature higher than the alarm temperature. The alarm temperature is, in turn, the sum of a specified allowed deviation and a sampled average value.



 The sampled average temperature

 The alarm temperature

 The measured temperature

Q: Which FLIR cameras include the screening mode?

E95, E85, E75, T530, T540, T620, T640, T840, T860, T1020, T1040, A310, A615, A655sc

Q: How close do you need to be to detect someone with a higher temperature?

In order to obtain a good temperature reading, it is recommended that the intended target be as close to the camera as possible. In this use case, the location of the camera may require a different lens. For instance, if the operator wanted to place the camera at a significant distance, FLIR might recommend a telephoto lens. Therefore, distance to the target is an important consideration, as is focus.

It is extremely important that the application be set up so that all intended targets are in focus during the screening process, thereby creating a good image. In addition to focus, a good image is dependent on several additional functions and settings, with certain functions and settings affecting the image more than others.

Functions and settings that you need to set and/or adjust, including:

- ✓ Adjusting the infrared camera focus.
- ✓ Adjusting the infrared image (automatically or manually).
- ✓ Selecting a suitable temperature range.
- ✓ Selecting a suitable color palette.
- ✓ Changing the measurement parameters.
- ✓ Performing a non-uniformity correction (NUC)
- ✓ For the Extech non-contact thermometer, the optimal measurement distance of 5 to 15 cm (1.9 in. to 5.9-in.) is recommended.

Q: How accurate are the cameras?

The temperature measurement cameras for EBT are calibrated to an accuracy of +/- 2 degrees C or 2% of the temperature reading at 30 degrees C ambient environment. FLIR uses calibration standards established under NIST (National Institute of Standards and Technology) traceable black body reference sources.

Note, there are many contributing factors that affect accuracy. For instance, FOCUS and DISTANCE can affect accuracy. Other factors, like the emissivity of the target, ambient environment, and speed at which the temperatures are acquired all play a pivotal role in accuracy.

Q: Do people using your cameras need to be certified/trained to understand how to interpret the images/data?

FLIR recommends that thermal camera operators obtain at a minimum Level 1 thermal imaging certification through certified thermography courses such as the Infrared Training Center. This is not a medical training or certification, but it provides a baseline understanding in thermography. The Infrared Training Center offers more advanced training.

Q: What products do you sell for this use?

All thermal cameras in this list are certified by the US Food and Drug Administration for Elevated Body Temperature screening:

Thermal Cameras (US FDA Certified)			IR-Thermometer
Handhelds	Handheld/Tripod Mounted	Fixed-Mounted	Handheld
E95	T530, T540	A310	Extech IR200
E85	T620, T640	A615	
E75	T840, T860		
	T1020, T1040		
	A655sc		

FLIR also sells radiometric thermal cores for other companies to integrate into their solutions.

Q: Can you name some companies/organizations/airports that have purchased your products?

While we cannot name specific customers or comment on current sales, we can say that our thermal cameras are used for by customers at ports of entries and high-traffic locations in several countries several countries, including the US, China, Hong Kong, Taiwan, Singapore, South Korea, Thailand, Philippines, and Malaysia.

Q: How long have you been selling thermal cameras and non-contact thermometers for this application?

For EBT screening, FLIR noted an increase during the first potential epidemic with SARS in 2003 and then in 2009 with the H1N1 outbreak.

Non-contact thermometers

Q: How do you use non-contact thermometers for elevated body temperature screening?

FLIR sells an IR non-contact handheld thermometer under our Extech brand. Non-contact thermometers are primarily used in a handheld fashion to screen a person's forehead. The operator of the non-contact device will point the device at a recommended distance of 5 to 15 CM (1.9 in. to 5.9 in.) and be able to measure temperatures from 32 to 42.5 °C (89.6 to 108.5°F).

Q: What are the minimum specifications for the non-contact thermometer?

- ✓ Non-contact Infrared thermometer / Gun type. Human body measurement.
- ✓ Product has to be CE marked or USFDA 510k.
- ✓ Product has to be produced in accordance to ISO 13485 or equal.
- ✓ Production has to be in accordance to EU standards, ISO 9001 or equal.

For Extech non-contact thermometers, adjustable alarm alerts the user either visually or audibly, when the temperature exceeds the programmed limit. The non-contact thermometer also utilizes a large backlit LCD display to read temperatures.

The recommended Extech non-contact thermometer has been calibrated to an accuracy to 0.3°C (0.5°F) with 0.1°F/°C resolution