WESTMINSTER
INTERNATIONAL LTD

WG520 Fever, Coronavirus, Flu, Ebola Screening System

The WG520 Fever, Coronavirus, Flu, Ebola Screening System is a portable rapid deployable thermal imaging fever screening system that is used as a first level mass screening test for accurately identifying individuals that have an above normal body temperature and have a systemic fever and may be suffering from Coronavirus, Ebola, Common Influenza, Norovirus SARS and other flu variants such as Avian Flu, Bird and Swine flu etc.

Thermal imaging as a fever screening tool is used as a first level mass screening test that is sensitive and accurate at identifying all individuals that are above normal temperature and have a systemic fever. The initial level screening, primary screening provides little or no inconvenience or interruption of movement for the majority of people being screened.

Fever Screen works by comparing people's skin temperatures against an average set temperature, that can be adjusted by the user.

The benefits of covering points of entry with thermal fever screening are: -

- Containment;
- Deterrent to individuals considering travelling with un-diagnosed symptoms of fever;
- Flexibility in escalation of screening protocols due to level of risk;
- Reassurance for other travellers that could be exposed.

APPLICATIONS

- Airports
- Borders
- Concerts
- Government facilities
- Hospitals
- Military facilities
- Ports
- Prisons
- Schools
- Shopping malls
- Sporting events
- Universities

Any large gatherings of people, conferences or meetings in public places.

STANDARD FEATURES

- The alarm threshold can be adjusted manually or automatically optimised 11° field of view giving accuracy from 18 m down to 2 m, Allows for rapid movement of multiple people though a large area. Additional FOV available. 17°. 25°. 32°. 50°
- Easy to use software with auto ambient correction and Auto averaging of individual persons gives better accuracy with less false positives and false negatives while proprietary threshold fever alarm (audio and visual) reduces the operator training time to one hour
- Optimised frame rate of 7.5 fps giving temperature sensitivity of 0.01°c and increased accuracy, Additional frame rates available: 30 frames per second, 60 frames per second (special quote)
- Real-time screening means no need for queues
- Simple user interface allows anyone to quickly become proficient at operating the system
- Stable calibration over ambient temperature changes ensures excellent measurement repeatability
- The software controls and buttons can be shown in any language
- User can configure software as desired through a password protected graphical interface
- Visible and audible alarms permit fast identification of alarm sources

DEPLOYMENT

- Fever screening stations are self-contained and portable, so they can be set-up in temporary locations very quickly.
- Single units can operate as primary mass screening stations as well as secondary screening stations.

- With multiple stations deployed, for high volume traffic, a single unit is normally designated as the secondary screening station.

PRINCIPLE OF OPERATION

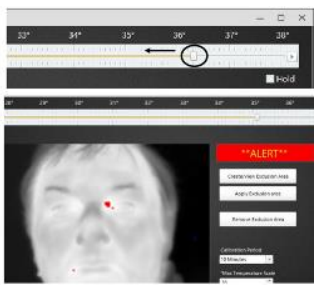
Normal body temperature is dependent on: - Age, Recent activity, The Individual, Time of day. It is generally accepted that normal body temperature ranges between 36.1°C to 37.2°C (97°F to 99°F). The focal length of industrial cameras is generally short and using optical lens (25 degrees is common) to zoom in for distance reduces the accuracy by simply making the pixels bigger and reducing the field of view.

For fever screening we recommend the system WG 520 using an 11-degree field of view which make the temperature measurements more accurate at distance. We do not use an optical or digital zoom lens.

We can supply the WG520 with optional field of view, 11-degree, 17-degree, 25 degree, 32, degree. 50 degree and are happy to advise on the best options for specific requirements.

The focal ability of the WG520 with an 11-degree FOV is 1 metre (39 inches) to infinity. The optimum focal length for fever screening is 7.3 meters (24 foot).

The focal length to stay within specification for fever screening is 1.82 metre to 10.66 metres (6' to 35') accurate measurements can still be made up to 21.3 metres (70') but the area of the face will be so small that sensitivity will be low due to the number of pixels, 'individual temperature measurements' on the face.



Screening works by comparing people's skin temperatures against an average set temperature, that can be adjusted by the user. The average set temperature can be adjusted by sliding the adjuster on the temperature scale at the top of the screen.

The calibration period determines how long the program will wait before adjusting the average set temperature of the temperature slider bar at the top of the screen.

If the “hold” checkbox is untucked and no alerts have been detected for the specified calibration period, then the average set temperature will de- crease until an alert is triggered.

Once triggered, the slider will rise again until a temperature is reached where no alerts are triggered.

After a period of use, the user should have enough experience to manually set the temperature and “hold” the value so that the calibration process should not be needed.

SPECIFICATION

Physical Characteristics

- Enclosure: EMI Shielded
- Overall Dimensions: H12cm x W19cm x D14cm (H4.7" x W7.5" x D 5.5"),
- Weight of Camera: 1.7kg (3.7 lbs)
- Weight of Camera Stand: 11kg (24 lbs)

Optics

- Focal Length: 25mm (1”)
- Fields of View: Optimised 11° field of view giving accuracy from 18 m down to 2 m. Allows for rapid movement of multiple people though a large area. Additional FOV available. 17°. 25°. 32°. 50°
- Focus Range: 1m to infinity (39" to infinity)
- Frame Rate Optimised frame rate of 7.5 fps giving temperature sensitivity of 0.01°c and increased accuracy. Additional Frame rates available: 30 frames per second. 60 frames per second (special quote)

Standards Accessories

- Computer: Desktop or mini tower PC
- Display: 15" flat panel touch-screen LCD
- Software: Full featured with threshold detection, data logging, camera control
- Cables: All necessary cables are supplied with the system
- Camera stand: Roll-about stand included
- Points of entry / Points of exit

SPECIFICATION

Imaging Performance

- Temperature range: 10º C to 50º C (50ºF to 122ºF)
- Measurement accuracy: 1.2%
- Stability: <0.3º C drift over the temp. range 18ºC to 30º C
- (after 1-minute warm-up): (< 0.5º F drift over the temp. range 64ºF to 86ºF)
- Ambient correction: Automatic

Detector

- Focal Plane Array: Amorphous Silicon micro bolometer
- Pixels: 160 x 120; Interpolated to 320 x 240
- Spectral Response: 7-14 microns
- Thermal Sensitivity: 0.1º C @ 30º C (0.2º F @ 86º F)

Display

- Dynamic range: 16bit
- Displayed image: 8bit
- Display colour: Select from 5 colour- maps provided, or create a custom colour-map
- ISO band display: Automatically set to selected threshold temperature

Power Requirements

- Power Source: 95-225 VAC, 45-65 Hz
- Battery/external DC option: 6-32 VDC, minimum of 3 Watts continuous, 1 Ampere for a short time at start-up

Environmental Characteristics

- Operating Temperature: 0º C to 60º C (32º F to 140º F)
- Storage Temperature: -40º C to 80º C (-40º F to 176º F)