PROMAX

HUMAN TERMPERATURE CONTROL

THERMAL IMAGE CAMERAS FOR BODY TEMPERATURE MEASUREMENT IN ACCESS CONTROLS

THERMOMETERS AND THERMAL IMAGING IN RELATION OF COVID-19 CORONAVIRUS WHAT IS THIS ABOUT?

Health authorities propose, as part of the actions to prevent cross-contamination among the population, controlling access to public places. It has been agreed that a person suffering from a fever, which may be caused by some COVID-19 related process, must not access public areas or make contact with other individuals. **PROMAX thermal imaging solutions** allow the access control by means of thermal images (thermography) and by the infrared temperature measurement.

EPIDEMIC CONTROL

	 **IR-190 INFRARED THERMOMETER**	 **IR-191 / 192 MANUAL OR FIXED THERMAL IMAGE CAMERA**	 **IR-198 / 199 FIXED THERMAL IMAGE CAMERA**
Temperature margin	From 33 to 43 º C	From 20 to 50 ºC	From 20 to 50 ºC
Measurement distance	10 cm	From 2 to 5 m (IR-191) From 2 to 8 m (IR-192)	From 3 to 10 m
Accuracy	0.3 ºC	0.3 ºC	0.3 ºC
Thermal sensor resolution	-	160x120 pixels (IR-191) 384x288 pixels (IR-192)	384x288 pixels (IR-198) 640x480 pixels (IR-199)
Captured visible image resolution	-	1,3 Mpixels (IR-191) 3,2 Mpixels (IR-192)	Video
Remote video transmission	-	Yes	Yes
Color TFT screen	-	3.5“	PC connection
Automatic HBT (*) alarm	-	Yes	Yes
Simultaneous multiple subjects monitoring	-	-	Yes
Auto calibration with Blackbody	-	Yes	Yes
Continuous video recording	-	-	Yes

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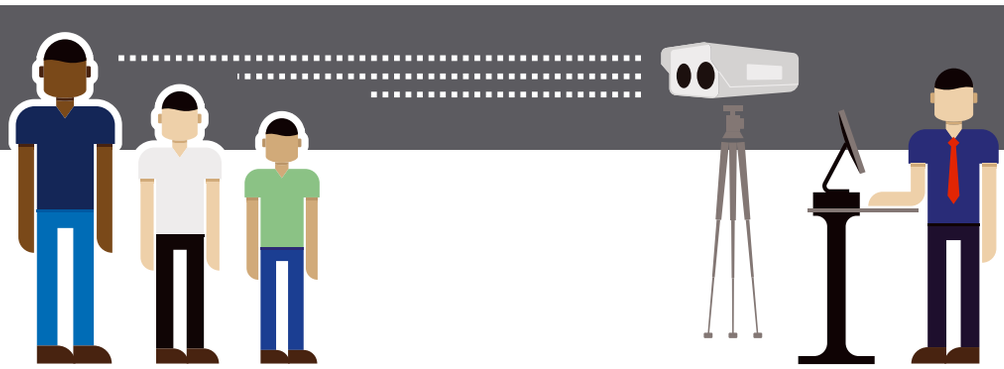
THERMAL IMAGING FOR HBT

HUMAN TEMPERATURE CONTROL

- ✓ EPIDEMIC CONTROL
- ✓ FACE DETECTION
- ✓ TEMPERATURE ALARMS

24H ACCESS CONTROL DETECTION OF HIGH BODY TEMPERATURE



PROMAX thermal imaging cameras **IR-198** and **IR-199** models are HBT (high body temperature) fixed measurement systems and they are designed for public or private facilities access control. The system detects faces, takes the temperature and activates an alarm when it is above the established limits.

It is a complete, ideal solution for a continuous tracking of epidemics such as the COVID-19.

A ***blackbody*** (thermal calibrator) is included to keep the system continuously calibrated to a constant reference temperature preset.

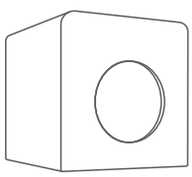
HIGH RESOLUTION THERMAL SENSOR

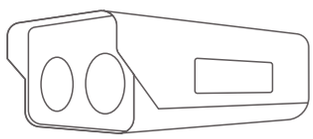
INCLUDES BLACKBODY

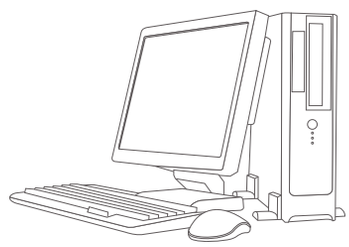
EPIDEMIC CONTROL

UP TO 10 M DETECTION DISTANCE

SYSTEM COMPONENTS







Blackbody module

Thermal calibrator device. It delivers a stable, constant specified temperature.

It is installed in the camera field of view, allowing a continuous calibration of the system.

Thermal + CCD camera

The thermal sensor measures the objects temperature in its field of view, and the visible light sensor (CCD) allows detecting faces. The combined use of both sensors allows an individual tracking of each person.

Control software

The thermal image camera is connected via Ethernet to a PC (not included) and the control software detects faces, analyzes the body temperature of each person, sets the maximum admissible temperature and runs user defined alarms.

24/7 ANALYSIS AND TRACKING

The system is stand-alone. It performs an individual tracking of each person in the thermal image camera field of view and activates an alarm when their body temperature is outside the admissible range.

SPECIFICATIONS	IR-198 - HIGH RESOLUTION THERMAL IMAGE CAMERA FOR HBT (*)	IR-199 - VERY HIGH RESOLUTION THERMAL IMAGE CAMERA FOR HBT (*)
THERMAL SENSOR	384x288	640x480
IMAGE MANAGING		
Measuring distance	From 3 to 10 meters	From 3 to 10 meters
Simultaneous, multiple person tracking?	Yes	Yes
Automatic blackbody calibration	Yes	Yes
Contiuous video recording	Yes	Yes
FOV (Field of view)	25° x 19°	34° x 26°
Focal distance	18 mm	18 mm
Thermal sensitivity	≤ 0.06 ºC	≤ 0.06 ºC
Accuracy	≤ ±0.3 ºC	≤ ±0.3 ºC
Temperature margin	From 20 to 50 ºC	From 20 to 50 ºC
Operating temperature	From 0 to 40 ºC	From 0 to 40 ºC
Integrated CCD camera	1920x1080	1920x1080
FEATURES		
Included accessories	Thermal imaging camera, *Blackbody*, Ethernet connection cable, Power supply	Thermal imaging camera, *Blackbody* Ethernet connection cable, Power supply

(*) Devices for HBT (High Body Temperature) detection, for non-medical use.

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THERMAL IMAGING FOR HBT

HUMAN TEMPERATURE CONTROL

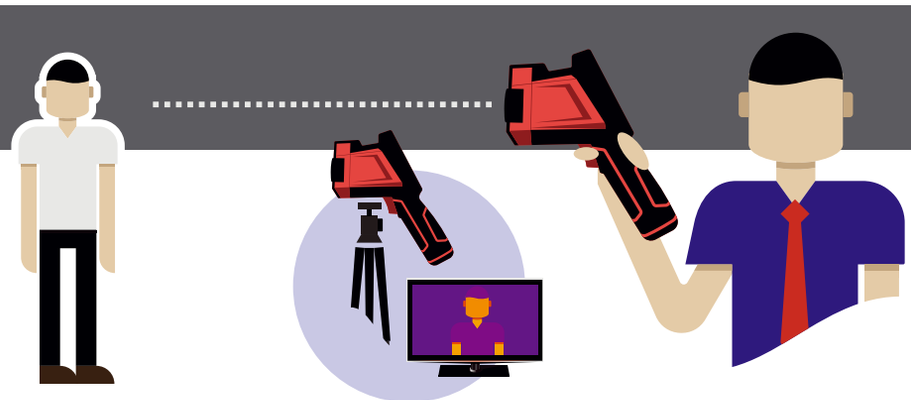
- ✓ EPIDEMIC CONTROL
- ✓ TRIPOD MOUNTING
- ✓ TEMPERATURE ALARMS

DETECTION OF HIGH BODY TEMPERATURE

PROMAX thermal imaging cameras **IR-191** and **IR-192** are portable hand held high body temperature (TCE) measurement devices and are designed for public or private facilities access control.

The accuracy of the devices allows displaying with no error the persons whose temperature is out of the ranges considered as safe.

It is a complete, ideal solution for a continuous tracking of epidemics such as the COVID-19.



- EPIDEMIC CONTROL
- UP TO 8 M DETECTION DISTANCE
- STANDARD TRIPOD MOUNTING
- VIDEO OUTPUT

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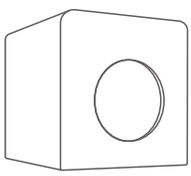
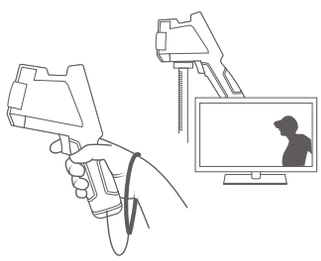
SYSTEM COMPONENTS





Blackbody module

Thermal calibrator device. It delivers a stable, constant specified temperature.

It is installed in the camera field of view, allowing a continuous calibration of the system.

Thermal camera

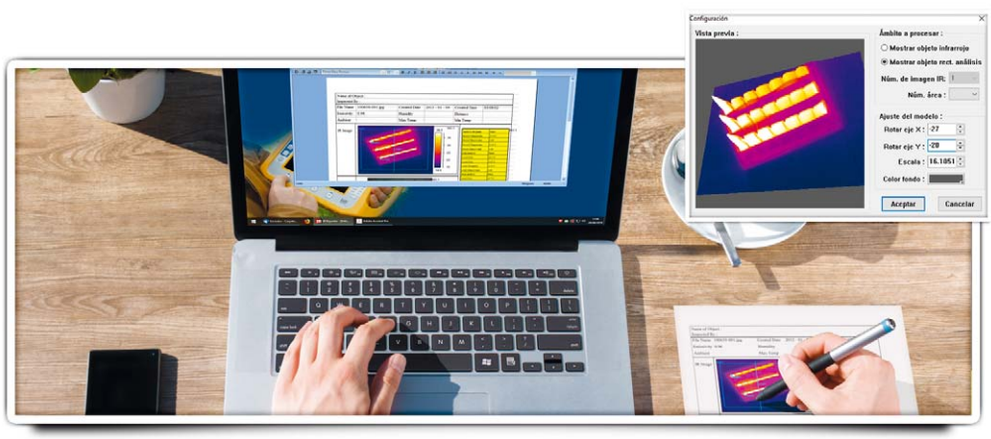
It includes a safety handle and it is shock protected to be used as handheld camera. It can be mounted on a tripod.

Fixed checkpoint: Install and go!

In a matter of minutes the camera can be integrated in an access control because it can be mounted on a tripod, plugged into the electrical power supply for a 24/7 operation and connected to a PAL/NTSC monitor via its video output. At a much lower cost than other solutions.

INSPECT IMAGES
EXPORT DATA
EDIT REPORTS
PRINT REPORTS

The analysis software allows to apply measurements to the captured images (**even creating 3D images**) and to create reports from the captured images from scratch or from templates. Data can be printed and exported to Microsoft Word files, allowing an unlimited customization.



SPECIFICATIONS	IR-191 - THERMAL IMAGE CAMERA FOR HBT (*)	IR-192 - HIGH RESOLUTION THERMAL IMAGE CAMERA FOR HBT (*)
THERMAL SENSOR	160x120	384x288
IMAGE MANAGING		
Measuring distance	From 2 to 5 meters	From 2 to 8 meters
Simultaneous, multiple person tracking?	No	No
Automatic blackbody calibration	Yes	Yes
Video output	Yes	Yes
Accuracy	≤ ±0,3 ºC	≤ ±0.3 ºC
Temperature margin	From 20 to 50 ºC	From 20 to 50 ºC
Operating temperature	From 0 to 40 ºC	From 0 to 40 ºC
Integrated CCD camera	1.3 Mpixels	3,2 Mpixels
FEATURES		
Included accessories	Thermal imaging camera, *Blackbody*, carrying case, battery, memory card, video cable, AC adapter	Thermal imaging camera, *Blackbody*, carrying case, battery, memory card, video cable, AC adapter

(*) Devices for HBT (High Body Temperature) detection, for non-medical use.

INFRARED THERMOMETER FOR HBT

- ✓ CONTACTLESS
- ✓ 32 MEMORIES

The contacless infrared thermometer **IR-190** from PROMAX makes use of the latest infrared technology. This technology allows taking the temperature of the temporal artery at a distance of 3 to 5 cm from the forehead.

The **IR-190** is an accurate, instantaneous and contactless thermometer. It is the most suitable and safe way to take the temperature.

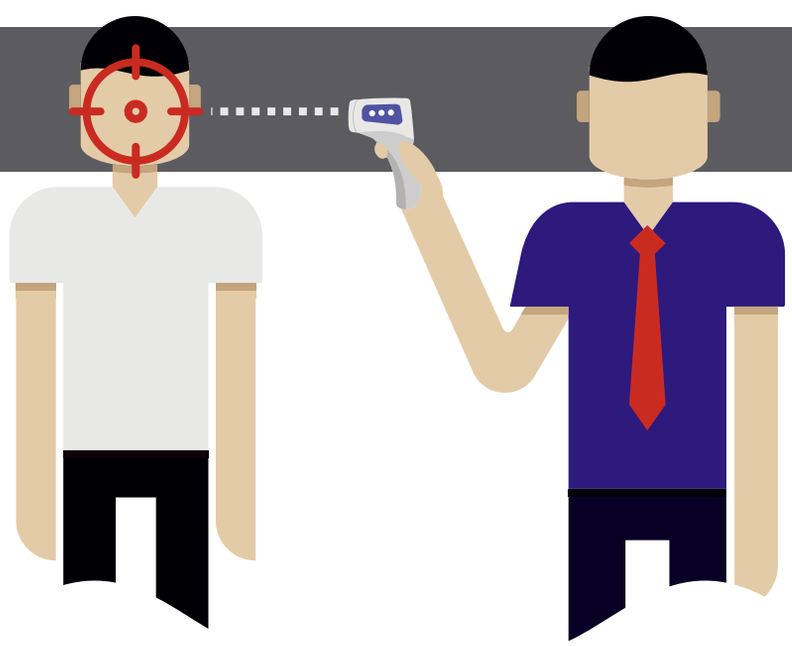
It has been proved that the temporal artery temperature measurement (so called *forehead measurement*) is more accurate than other methods such as eardrum thermometry.

CONTROL DE EPIDEMIAS

HIGH BODY TEMPERATURE DETECTION

SPECIFICATIONS	IR-190 INFRARED THERMOMETER FOR HBT (*)
Measurement margin	From 32 to 43 ºC (*body* mode) From 0 to 60 ºC (*surface* mode) From 0 to 40 ºC (*environment* mode)
Accuracy	±0.3 ºC (from 32 to 34.9 ºC) ±0.2 ºC (from 35 to 42 ºC) ±0.3 ºC (from 42.1 to 43 ºC)
Measurement distance	From 3 to 5 cm
Auto power off	< 30 sec.
Memory	32 records
Environmental conditions	Temperature 10ºC – 40ºC, RH <85%.
Power supply	3V (2 AA batteries - not included)
Dimensions and weight	100 (W.) x 155 (H.) x 40 (D.) mm, 105 gr.

(*) HBT (High Body Temperature) detection, for non-medical use.

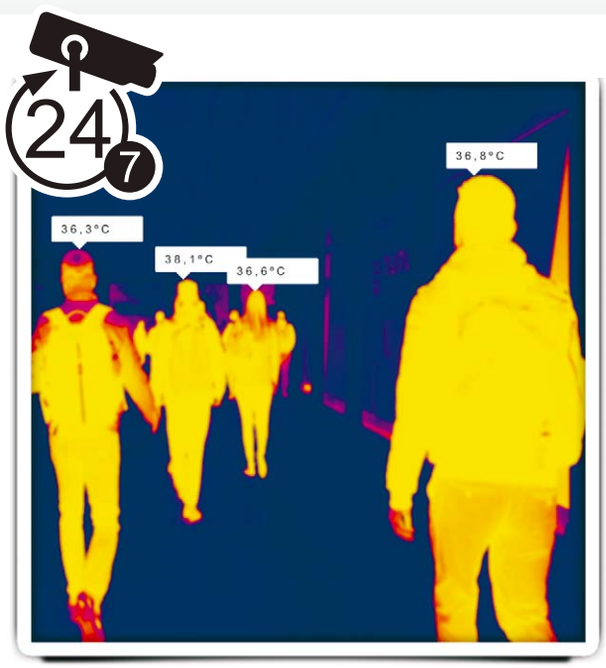


FEVER OR HIGH BODY TEMPERATURE - HBT?

Health authorities around the world are proposing a number of measures focused on controlling the COVID-19 pandemic. These include access control to public places (airports, stations, factories, shops…) to try to prevent possibly infected people to infect other persons.

Since there is no way to find out who is infected or not, it is agreed that persons suffering of a fever must not access public areas and contact other individuals because given the circumstances there would be a good chance that fever may be caused by some process related to COVID-19.

The way to check if a person has a fever avoiding physical Çcontact is using **some kinds** (please note the emphasis in "*some kinds*") of infrared thermometers and thermal imaging cameras.



HOW CAN I IDENTIFY PERSONS WITH HBT WITH NO DIRECT PHYSICAL CONTACT?

Well, I can use an infrared thermometer or a thermal image camera suitable for that application ensuring I use them the right way. The contactless measurement of a body's surface temperature is performed by detecting its radiated heat. It is available from PROMAX a comprehensibe explanation on how do these devices work by scanning the QR or opening this link:

https://www.promaxelectronics.com/ing/news/400/thermal-imaging-camera-how-it-works-and-why-it-may-be-necessary/

Most of these devices are designed for industrial applications and feature a wide temperature range, usually from around -20 to +300 ºC with an accuracy of ±2 ºC in optimal conditions. This makes them very versatile and excellent products for an endless number of applications... but in a few words, when it comes to measure the temperature of a person's face and a I get a value of 37 ºC I don't know whether the real value is 35 or 39 ºC!!

HOW DO THERMAL IMAGING CAMERAS WORK?

THE HBT INFRARED THERMOMETER

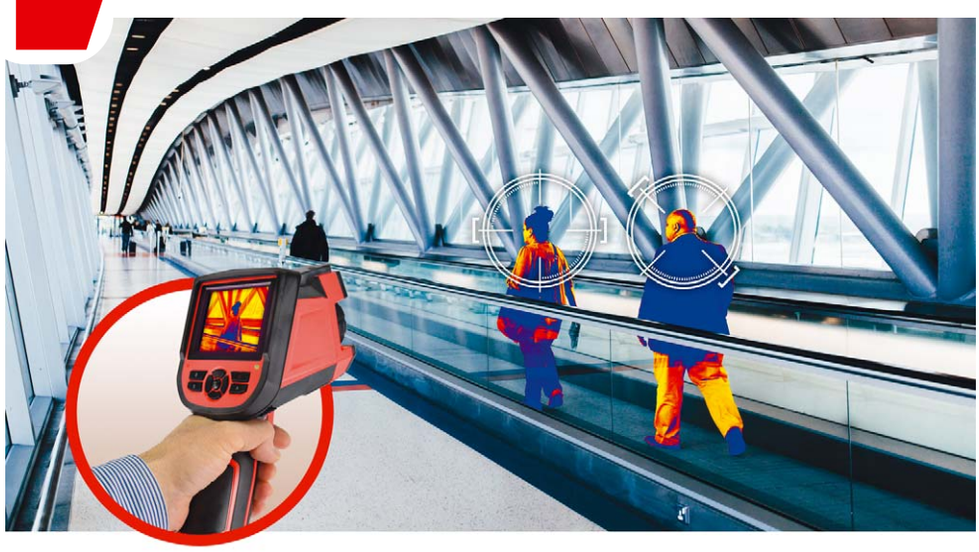
The infrared thermometers suitable for this application are known as forehead thermometers. They are calibrated just in the margin of interest (around 36 ºC) and they feature an accuracy of about 0.5 ºC when the temperature is measured at a distance of 10 cm. It is important to know beyond this distance (10-15 cm) they can NOT measure anything.

- Measurement margin: From 33 to 42 ºC
- Accuracy: 0.3 ºC
- Measurement distance: 10 cm
- Price: They are the most affordable option
- Use: Very easy to use

This kind of product is very easy to use for everyone with no need for previous training.

THE THERMAL IMAGE CAMERA FOR HBT

The thermal image cameras suitable for HBT are designed and calibrated to focus their measurement accuracy in the temperature range of interest (36 to 40 ºC). They are physically indistinguishable from the industrial cameras, therefore it is essential to carefully review the specifications to ensure whether they are suitable for HBT or not.



- Measurement margin: 20 to 50 ºC
- Accuracy: 0.5 ºC with frequent calibration
- Measurement distance: 2 meters
- Price: According to model
- Use: Requires evaluating the usage location. Requires training.

IT IS IMPORTANT SETTING PROPERLY THE THERMAL CAMERA FOR HBT MONITORING?

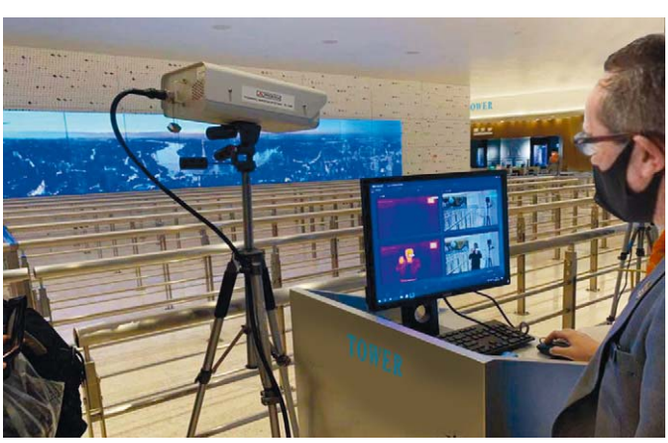
The camera location is very important. For instance, focusing the camera to a sunny glass may dramatically affect the measurements. But there are not always options to choose from.

As a general rule the measurement distance is proportional to the measuring error. The further the camera is from the point to perform a temperature test, the greater the measurement error.

At around 2 or 3 meters, it becomes important to evaluate other facets such as the thermal sensor resolution (notice we are NOT talking on the camera resolution). Usually they are separated specifications. For example 488x340 for the visual camera but 160x120 pixels for the thermal sensor. It is important to ensure at the distance the camera is installed it will be able to distinguish, for example, the face from the rest of the body. The technology behind this kind of thermal image cameras is called *Uncooled FPA*. As time passes, the environmental conditions around the camera vary: It gets colder or warm, the Sun rises or goes down, some lights are turned on or off... All of this affects the measurement! For HBT monitoring applications it is important to consider this, because the impact in the temperature measurements caused by these ambient temperature variations can be substantially important compared to the temperature values to measure.

In a typical application we will: Mount a camera on a tripod, configure it, take some reference temperatures and let it run. The particularities of the process depend on the type of camera. Probably we should manually repeat this process once an hour if we want to ensure the measurements are correct.

THEN, I MUST CONSTANTLY KEEP AN EYE ON THE THERMAL CAMERA?



For most cameras, yes, indeed. Nevertheless to avoid both the periodic manual readjustment and keeping an eye on the device, our cameras come together with what we know as “blackbody”.

The “blackbody” is a device that is designed and built to emit a controlled thermal radiation. It is placed in the camera field of vision in an area where it does not interrupt the normal flow of people, conveniently mounted –for example on another tripod- and it enables the camera to automatically take a reference calibration.

I HAVE FURTHER QUESTIONS ON THE TEMPERATURE CONTROL DURING THE COVID-19 PANDEMIC

The appropiate use of this kind of product obviously needs for the proper support. It is not just getting the proper instrument and making an adequate use, but it is also essential understanding the environment where it is going to be used and ensuring the items will be properly placed to enable the system for an optimum operation.

As you know, PROMAX provides you with this support for free.

The HBT measurement is not simple. An umproper operation will result in unreliable results. Please contact us before choosing one of these instruments for high body temperature detection. We are here to help and inform you with no commitment.

ANY QUESTIONS?

CONTACT US AT
www.PROMAXelectronics.com

CONTACT PROMAX NOW

PROMAX ELECTRONICA, S. L.
Francesc Moragas, 71 * 08907 L'HOSPITALET DE LLOBREGAT * BARCELONA * SPAIN
Tel: (+34) 93 184 77 05 * e-mail:promax@promax.es * https://www.promax.es