# Fever screening thermal Solutions and products

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# THERMAL

## Principle

Thermal principle introduction

## Process

Thermal fever screening process

## Solutions

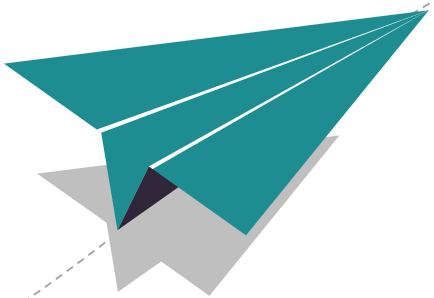
Fever screening solutions

## Products

Product showcase

Successful cases

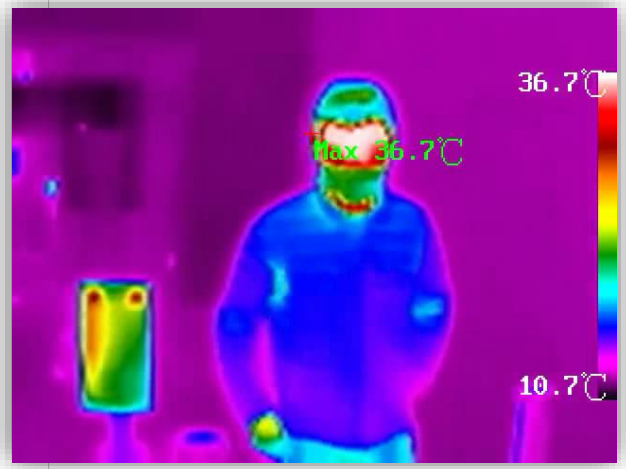
FAQ



# What Is Thermal?

## Principle

Any object with temperature above absolute zero emits a detectable amount of radiations. Thermal camera converts IR radiations into gray value, and establishes the accurate corresponding relation between gray value and temperature through the temperature measurement algorithm model. The model (Temperature Gray Level Curve) is obtained by black-body calibration.



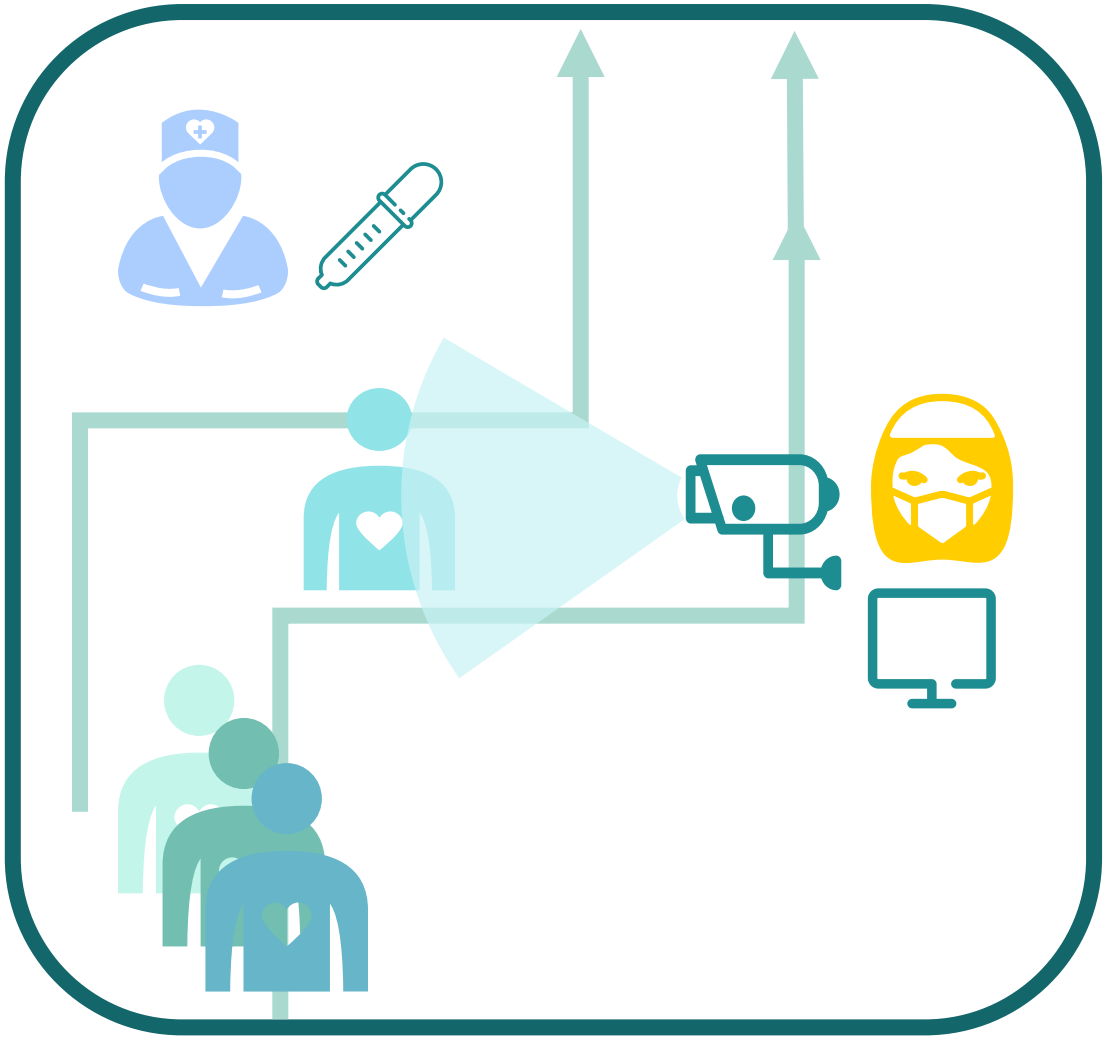

## Application

It is well-known that one major symptom of virus infections is fever. Therefore, thermal camera with high temperature accuracy can detect the elevated body temperature to make the preliminary screening. Thermal cameras are advisable to be installed at the places with long queues such as passport control.


## Advantages

1. **High Efficiency:** It takes only one second that thermal camera can detect temperature of each person. Thus, no congestion will be made when passing through the site where temperature needs to check.
2. **Safety:** Thermal camera supports non-contact temperature measurement which can achieve accurately measuring temperature around 1 meter away. That reduces the risk of infection coming from physical contact.

# Thermal Fever Screening Process



## 1. Set up a quick channel

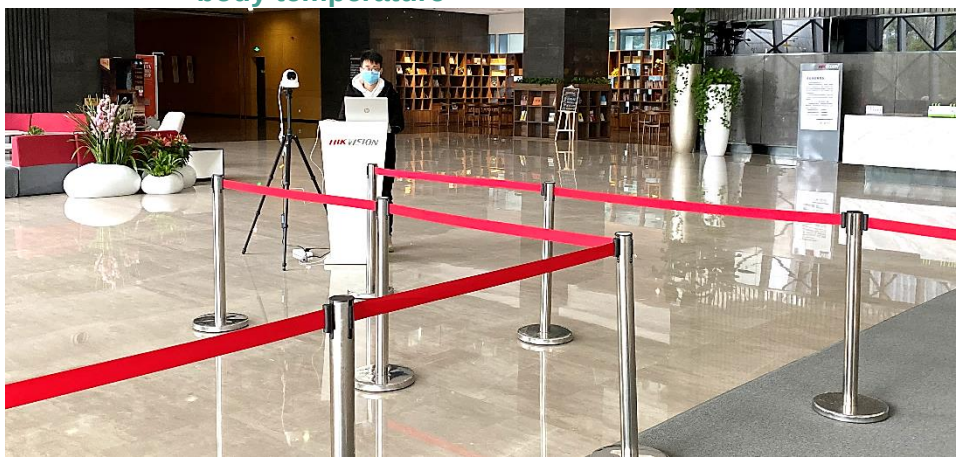
Set up a quick screening channel **in the indoor space** to separate space into few parts.

## 2. Thermal camera quick screening

Using thermal fever screening solutions to do quick screening of moving crowd and ensure the efficiency

## 3. Thermometer secondary check

For the person who is doubt fever symptoms, **use a thermometer to double check people with a high body temperature**



# Solution – Professional Fever Screening Thermographic Handheld Camera

TP21B

iVMS-4200.

Hik-thermal

## Solution Composition :

Professional thermographic handheld camera + Tripod (Optional) + **iVMS-4200 (PC) / Hik-Thermal (Mobile APP)**

## Solution Advantages:

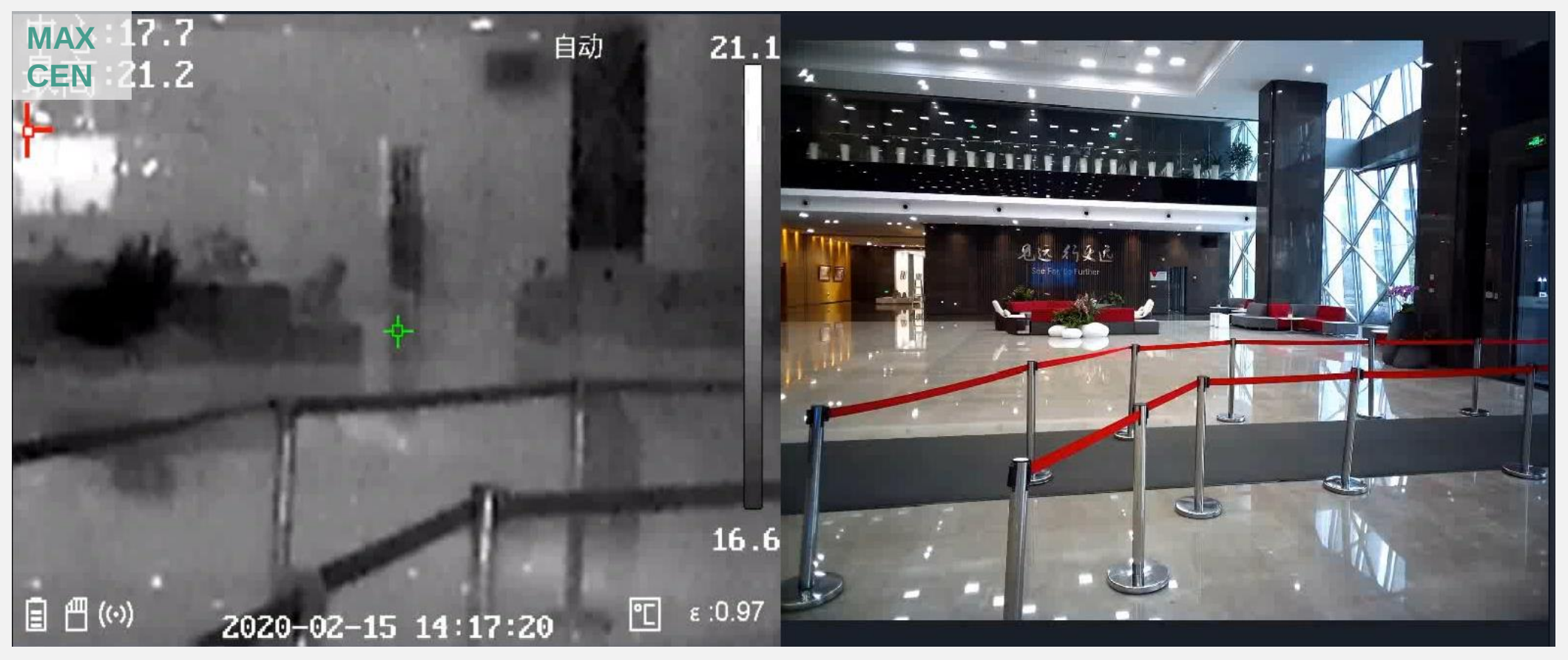
- Thermographic handheld camera **support WIFI**, able to integrate with PC / Mobile client, **real-time audio alarm and upload screen capture automatically** supported.
- Touch screen to ensure use experience
- Support Flexible temperature measurement area.
- Accuracy is **±0.5 degree**, satisfy preliminary fever screening requirement.

## Set Up Tips:

- The camera is recommended to install in **1.5 meter high**, keep the distance between target and camera about **1.5-2 m**
- Recommend to install in a **indoor** stable environment without wind
- People pass by the thermographic camera one by one.

# Solution – Professional Fever Screening Thermographic Handheld Camera

## Scheme performance :



# Solution - Fever Screening Thermographic Handheld Camera

## Forehead Thermometer

Distance : 1-3 cm

Speed : 1-5 seconds

Display: Numeric only

Efficiency: 12 persons / minute

Information preservation: No preserve

## Thermal Thermographic Handheld Camera

Distance : 1.5 m

Speed : Real time

Display: Thermal image

Efficiency: 60 persons / minute

Information preservation: Screenshot / Video

WIFI supported


## Thermographic Handheld Camera Advantages

- Keep distance between the operator and the target person,  reduce the risk of decrease transmission
- Higher efficiency, more suitable for flow of fast moving crowded.
- Easy to use, the operator less steps in operate cameras, need only read the maximum value in the screen
- Able to preserve the screenshot of potential risky target person as an evidence
- Able to integrated with PC/Mobile Client, provide a more flexible solution

# Solution – Economical Thermographic Fever Screening Scheme

## Solution Composition :

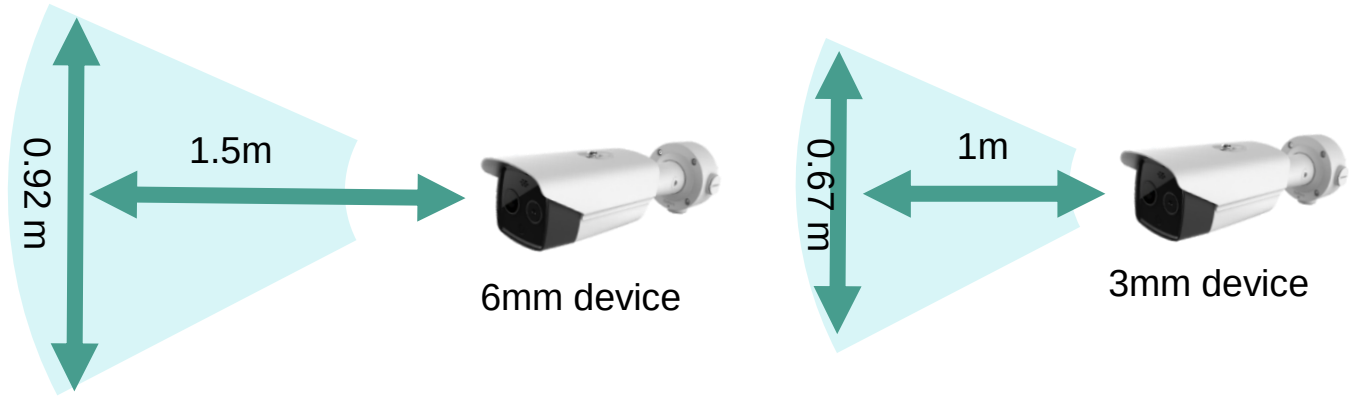
Thermographic fever screening bullet / turret
+ Tripod + Tripod adaptor + iVMS-4200+ POE Switch


## Solution Advantages:

- Thermographic turret / bullet support human temperature-exception **audio alarm** to notice the operator in time
- Support **AI face detection**, multiple targets screening at the same time, reduce false alarms.
- Accuracy is **±0.5 degree**, satisfy preliminary fever screening requirement
- Support **4M pixels optical channel ,** satisfy normal monitoring requirement
- Easy installation and simple configuration.

## Set Up Tips:

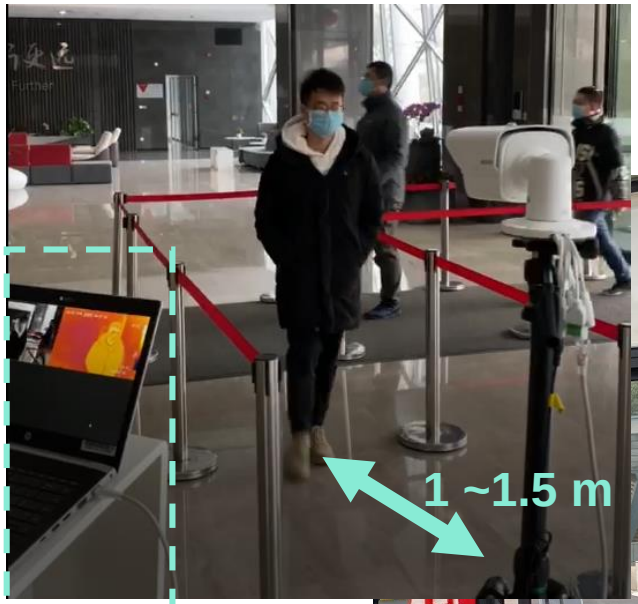
- The camera is recommended to install in **1.5 meter high**, keep the distance between target and camera about **0.8 ~1.5 m(3mm camera) 1.5~2m(6mm camera)**
- Recommend to set up the solution in a **indoor** stable environment without wind ..




Thermographic fever screening scheme cover range

# Solution – Economical Thermographic Fever Screening Scheme

## Scheme performance :

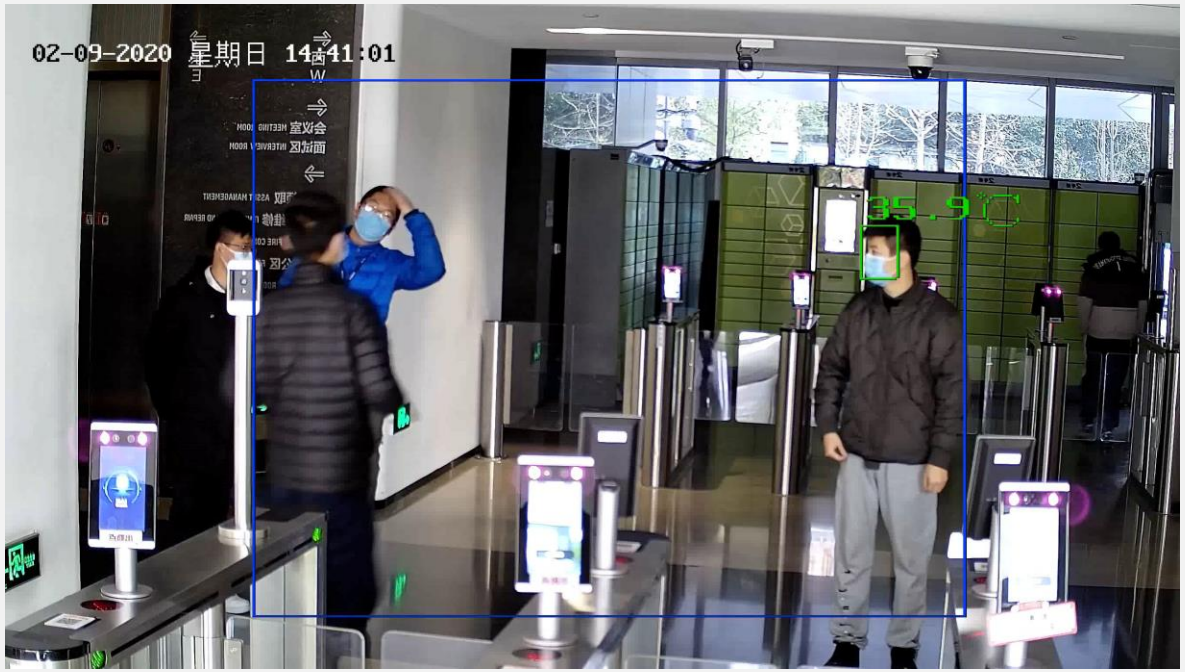




Real Time
VMS Monitor

# Solution – Economical Thermographic Fever Screening Scheme

**Multi-faces detection fever screening**

- Reduce false alarms triggered by other heat sources such as coffee
- Up to 30 faces detection

# Solution – Professional Thermographic Fever Screening Scheme

## Solution Composition :

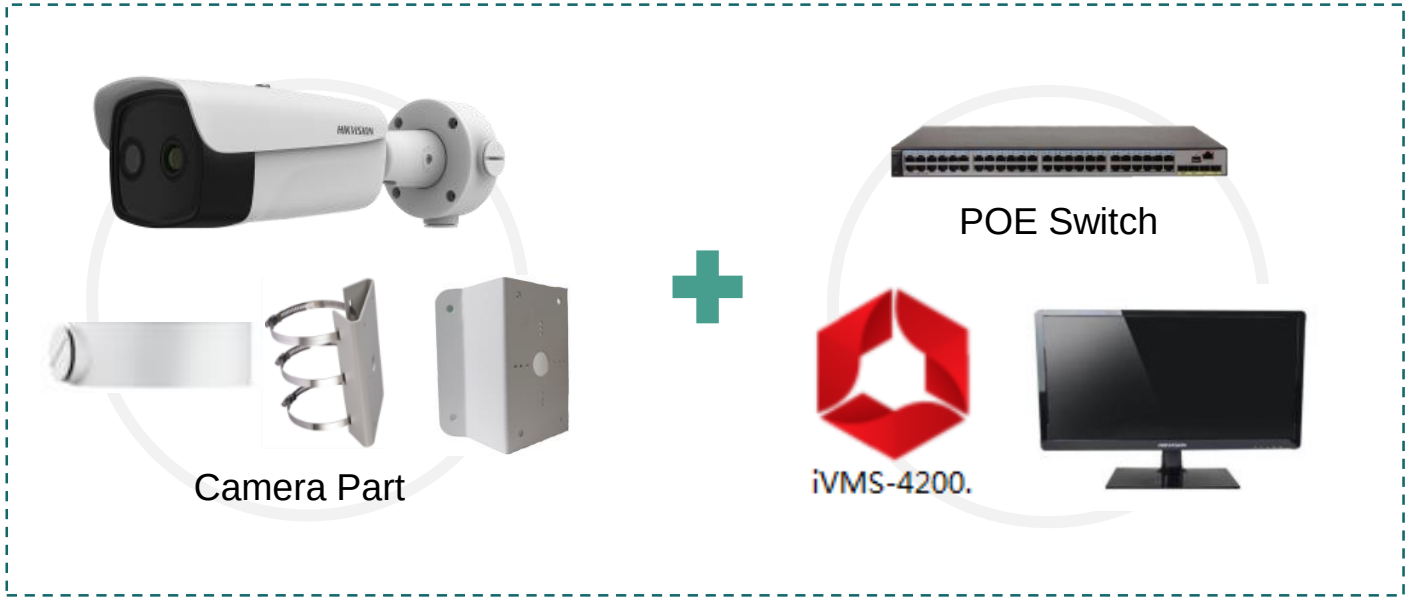
High-resolution thermographic fever screening bullet + Fixed accessories+ iVMS-4200 + POE Switch

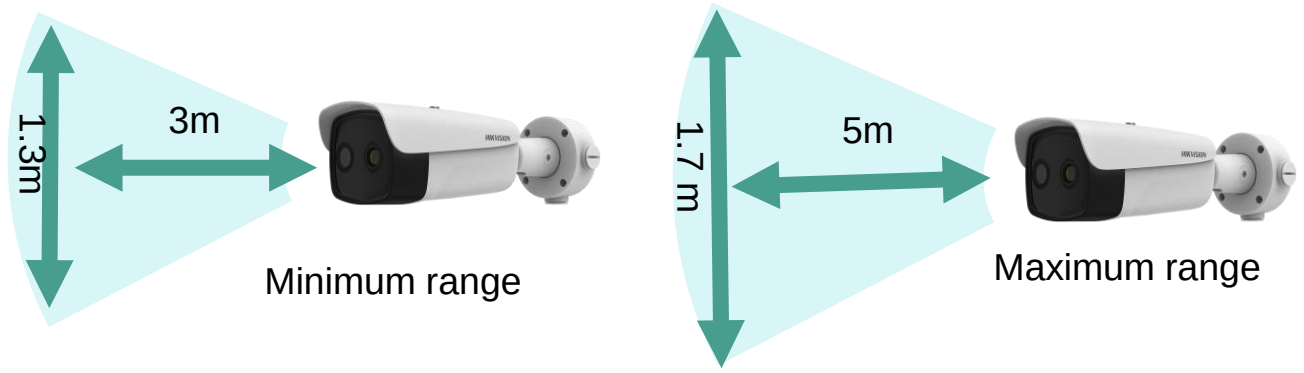
## Solution Advantages:

- Thermal resolution **of 384*288**, provide more image details and cover wider range of temperature measurement
- 15mm thermal lens provide fever screening range of **3 ~ 5 meters which more fit for long range use**
- Fixed solution not only for temporary use but also for **long-term use.**
- Accuracy is **±0.5 degree**, satisfy preliminary fever screening requirement
- Support **4M pixels optical channel ,** satisfy normal monitoring requirement

## Set Up Tips:

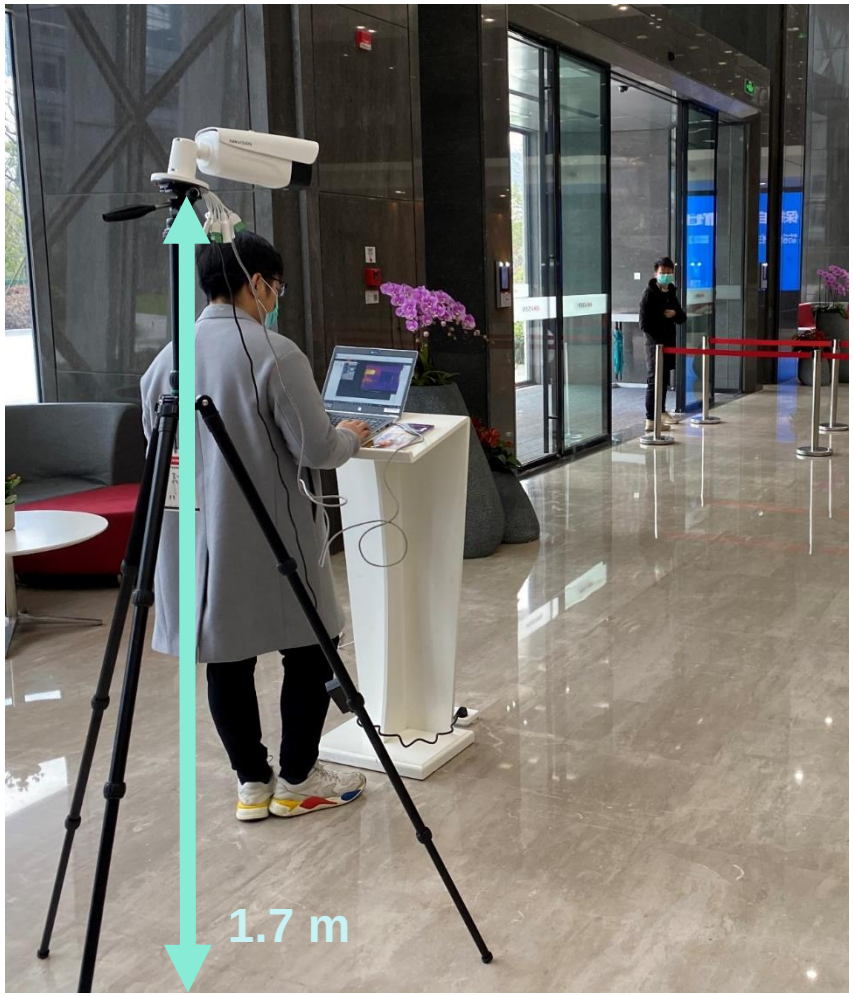
- Recommend to set up the solution in a **indoor** stable environment without wind.



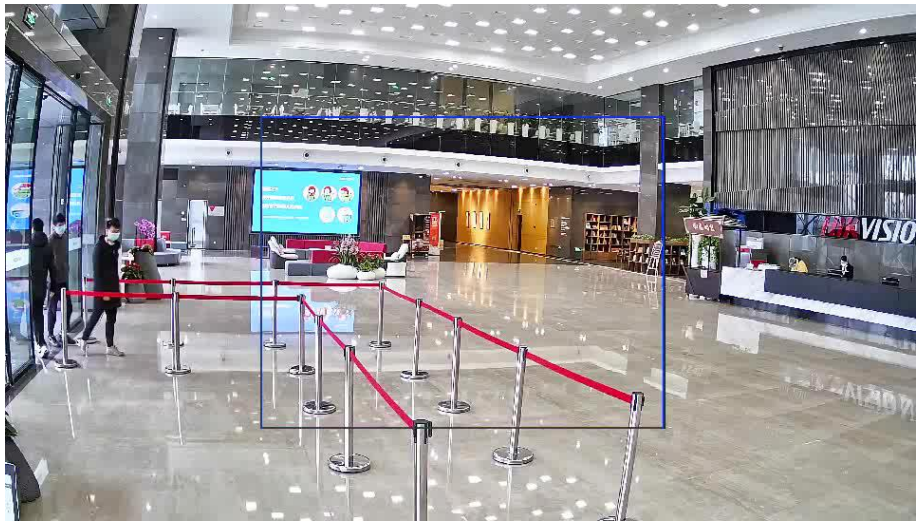




High-end Thermographic fever screening scheme cover range

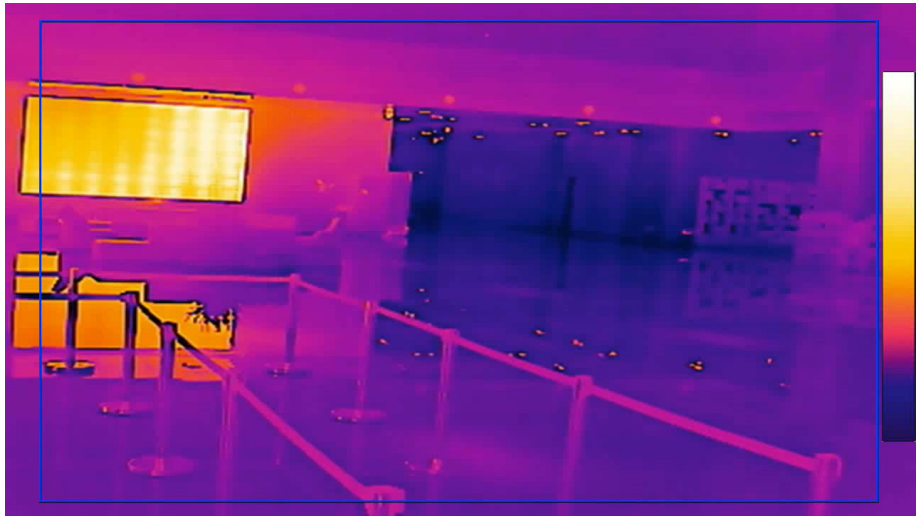
# Solution – Professional Thermographic Fever Screening Scheme



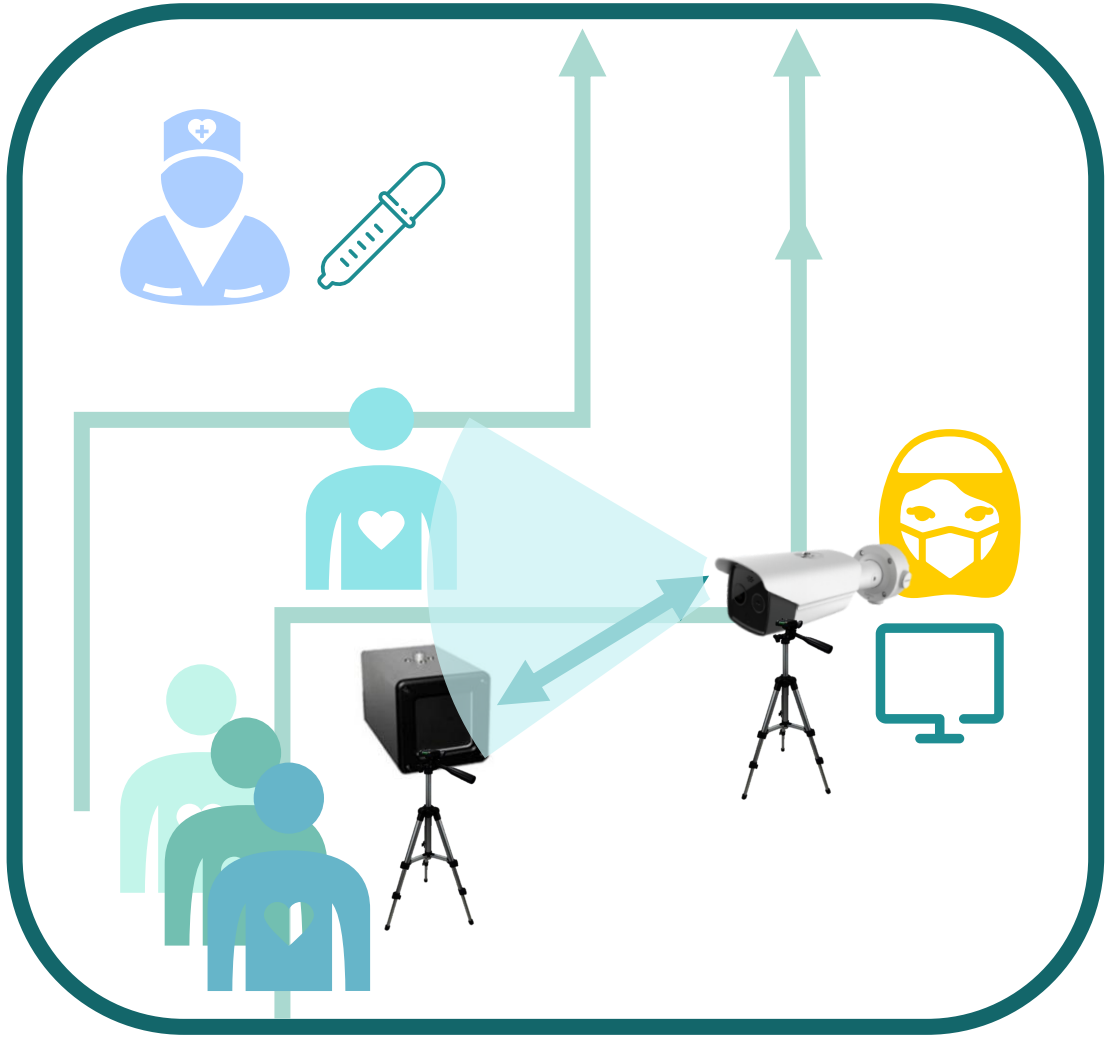

Temporary setting up & monitoring scheme



Performance videos of thermal & optical channel



# Solution – High-end Thermographic Fever Screening Scheme



## Solution Composition：

Thermographic fever screening bullet / turret
+ Tripod + Tripod adaptor + iVMS-4200 + POE Switch **+ Black Body**

## Solution Advantages:

- With higher accuracy **±0.3 degree**, the scheme could reduce missing alarm

## Set Up Tips:

- The camera is recommended to install in **1.5 meter high**, keep the distance between target and camera about **1 ~1.5 m (1217B/2617B) or 3 ~ 5m (2637/B)**
- The black body is used together with body temperature measurement bullet/turret, **1m (3mm device) 2m(6mm device) or 5m (2637/B)** away from the camera
- Make sure that the black body always appears in the **upper left / upper right corner** of the camera view.
- Make sure that the black body **would not be blocked** by other targets during temperature measurement
- Recommend to set up the solution in a stable environment without wind **in the indoor space** .

# Solution – High-end Thermographic Fever Screening Scheme



Performance videos of thermal & optical channel

Temporary setting up & monitoring scheme

Long-term setting up scheme


# Configurations

# Applications

HOSPITAL

MARKET

STATION

AIRPORT

RAILWAY

ENTERPRISE

SCHOOL

BUILDINGS

- Place of crowded flow
- Place of high risk
- Entrance security check
- Temporary control

# Successful Cases

## Hospital in Chongqing


- Protect the entrance of the hospital all day long.
- The Hospital adopted the scheme of thermographic fever screening camera with the black body, the accuracy is within ±0.3 degree.
- The scheme is running steadily till today

# Successful cases

## Railway in Jiangxi


## Hikvision thermographic fever screening cameras

## Station in Fuzhou

# Product showcase – Economical Thermal Resolution Products

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## DS-2TD2617B-3/6PA(B)

- Thermal：160 × 120 ;
- Lens: 3mm / 6mm ;
- Optical：2688 × 1520 ;
- Optical lens: 4mm / 8mm ;
- Video mode：Bi-spectrum image fusion ;
- Accuracy：±0.5℃
  ± 0.3℃ (with black body)
- Range：30-45℃
- Audio alarm support

## DS-2TD1217B-3/6PA(B)

- Thermal：160 × 120 ;
- Lens: 3mm / 6mm ;
- Optical：2688 × 1520 ;
- Optical lens: 4mm / 8mm ;
- Video mode：Bi-spectrum image fusion ;
- Accuracy：±0.5℃
  ± 0.3℃ (with black body)
- Range：30-45℃
- Audio alarm support

## Accessory

### Black Body

- Temperature resolution: 0.1℃
- Accuracy: ±0.1℃
- Temperature stability: ±0.1℃/h
- Effective emissivity: 0.97±0.02
- Operating temperature: 0~30℃

### Tripod

- UNC 1/4”-20 tripod connection
- It is recommended that tripod be purchased locally which meet the standards

# Product Showcase – Professional Thermal Resolution Products

## DS-2TD2636B-15/P

- Thermal：384 × 288 ;
- Lens: 15mm ;
- Optical：2688 × 1520 ;
- Optical lens: 6mm ;
- Accuracy：±0.5℃
  ± 0.3℃ (with black body)
- Range：30-45℃

## DS-2TP21B-6AVFW

- Thermal resolution：160 × 120 ;
- Optical resolution : 640 × 480 ;
- Accuracy：±0.5℃
- Range：30-45℃
- Touchable screen
- Bi-spectrum fusion supported
- WIFI support
- Audio alarm support
- Automatic screen capture & upload

# Hikvision Thermographic Fever Screening Solution Advantages

## AI Face Detection

Hikvision thermographic fever screening Bullet/Turret cameras provide AI Face Detection function, locate multi faces intelligently and measure the faces only , to reduce false alarm from other heat sources.

## Onboard Audio Alarm

Hikvision thermographic fever screening 160 resolution Bullet/Turret cameras are able to do onboard audio alarm, notice the operator without the requirement of other sirens , reduce the complexity of whole solution.


## Unique Self-developed Algorithm

Hikvision thermographic fever screening products are embedded with self-developed algorithm, which specially optimized for temperature measurement thermography.

Combined constant temperature/dust-free automated manufacturing process with big data, Hikvision could ensure the accuracy of thermal cameras

## Full Solution

As the world‘s leading security solution provider，Hikvision are able to provide full one-stop solution include thermography , NVR , barriers，detector door，switch. More convenient for customer and user

# FAQ

## Q:Can the thermographic fever screening camera be installed outdoors?

**A:** **Outdoor wind and sun can easily affect the body surface temperature** and the working status of the camera, which results in a deviation between the measured body surface temperature and the actual body temperature.
From the perspective of ensure the accuracy, we strongly recommended the solutions used indoors.

## Q:Can the accuracy of thermographic fever screening camera reach 0.1 ℃?

**A:** No. At present, cameras with accuracy higher than 0.5 require black-body online real-time calibration and intelligent compensation. The accuracy of black body is currently plus or minus 0.1, and it is impossible to achieve 0.1. High-precision accuracy solutions right now are all 0.3

## Q:Does the camera recognize the face for temperature measurement

**A:** The camera recognizes faces when screening. It supports up to 30 faces. But still we recommended to carry out temperature measurement in order.

## Q:Will other heat sources (such as tea cups, kettles, etc.) cause false alarms?

**A:** The cameras are able to use face detection technology, so other heat sources **will not cause false alarms.**

## Q:How long can I use the fever screening function after the camera is turned on?

**A:** **5 minutes** after the handheld camera is turned on, **30 minutes** after the bullet / turret camera is turned on.

## Q:What is black body? What should be noticed before purchase black body?

**A:** The black body is **a standard temperature source**, the thermographic cameras are able to **calibrated** based on the temperature of the black body.
The black body only needs to be powered, no internet required.
Hikvision thermal cameras are available with a black body to **increase accuracy**.
Currently black body only supports Chinese power supply standards.  And **no overseas certification.**

## Q：Is thermographic handheld camera support alarm automatically? Or is it support link with VMS

**A: Only professional** Thermographic handheld camera (TP21B) support, the economical camera (TP31B) not support

# Thanks

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