



Hikvision Screening Solution

Avaiden System SDN BHD

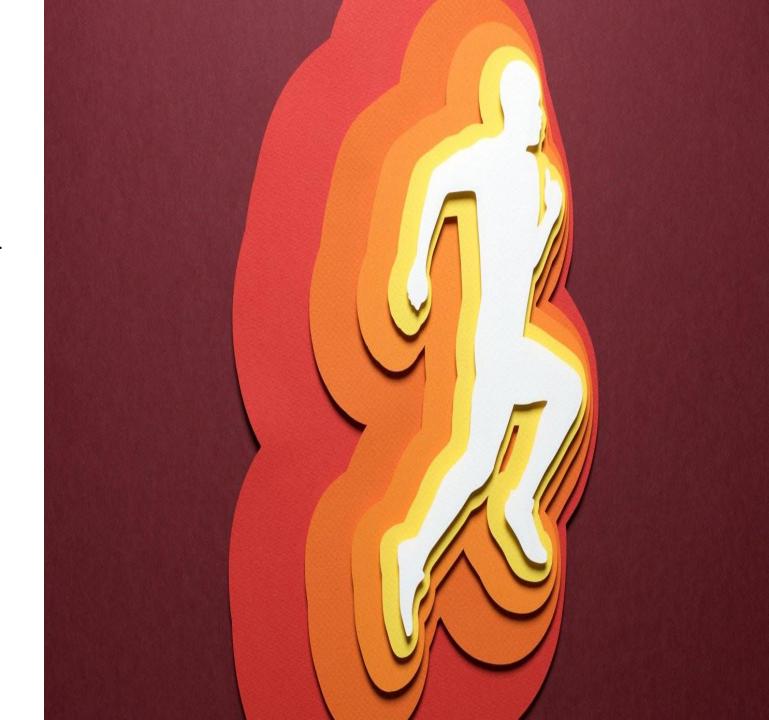
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Foreword

Human Skin-Surface temperature is an important indicator of physical health. In many scenarios, people with abnormal skin-surface temperatures need to be detected quickly and accurately in order to take measures to prevent the situation from further deterioration.



Current Situation

Traditional methods like using the ear thermometer or mercury thermometer perform well in accurately detecting people with abnormal skin-surface temperatures. However, all of these methods have obvious and significant deficiencies:

Close Contact, High Risk

■ Close contact among the users, leading to high risk of infection.

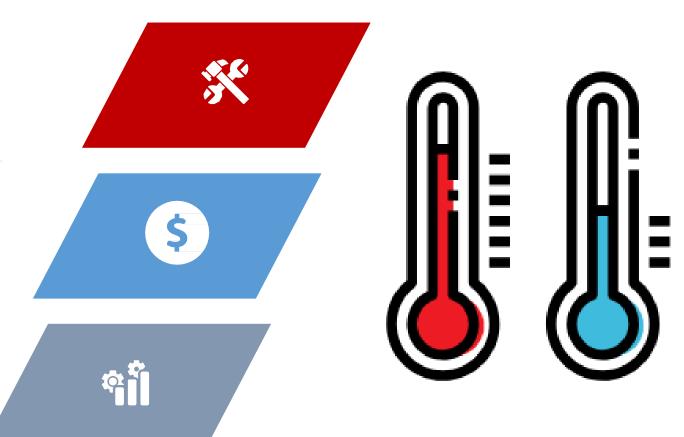
High Cost, Low Efficiency

I Lots of manpower invested.

I Person-by-person inspection is inefficient.

Difficult to collect statistics

I Manual registration is required, which may lead to human error and not so timely feedback.



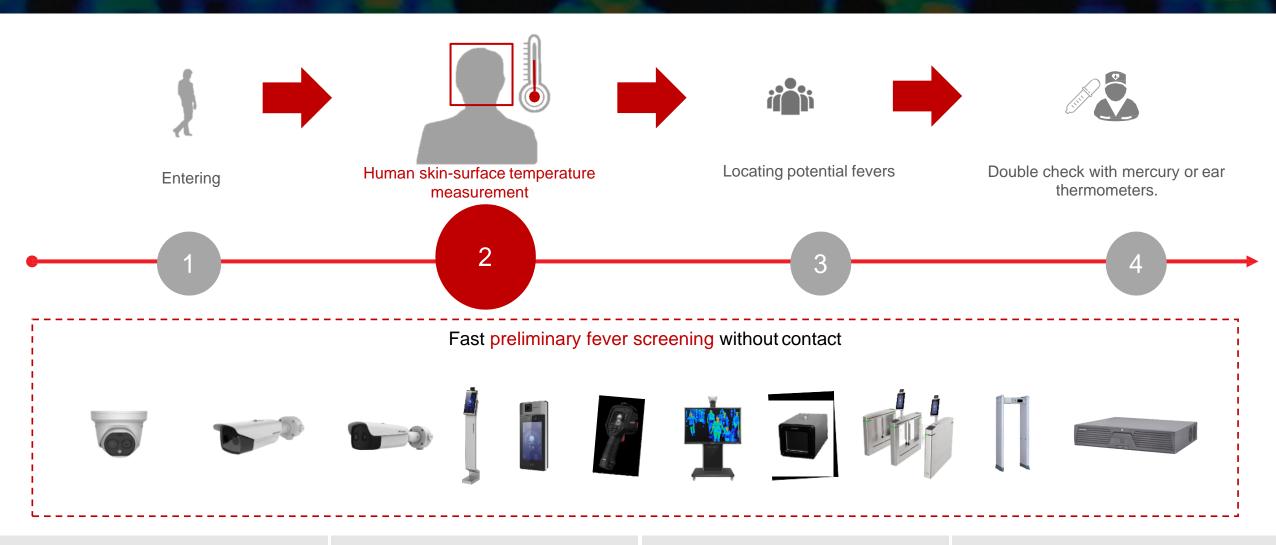
Better Approach

Using machines instead of manpower alone can be a much better choice in many ways.

- n Reducing the contact among people. The detection process can be fast and convenient, as imperceptible as possible, and can minimize the impact on people's daily travel.
- n Effectively reducing manpower, and improving the detection rate of abnormal skin-surface temperature.
- n Producing real-time and accurate temperature measurement data for management and decision-making.



Solution Business Flow



SAFE

no contact, reducing cross-infection possibilities.



EFFICENT

Automatic alarm triggering, reducing manpower invested.



ADAPTABLE

Multiple product types, easy to deploy, and suitable for different scenarios.



TRACEABLE

Combining temperature, image and face identification for easy management and query.

Solution - Fever screening thermographic handheld camera



DS-2TP31B

Solution composition:

Thermographic handheld camera + Tripod (Optional) + Monitor operator

Solution Advantages:

- Flexible and simple to use
- Rapid setting up and adapt to sudden event
- 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 1m
- Recommend to install in a stable environment without wind indoors.
- People pass by the thermographic camera one by one, the operator read the maximum value in the screen.



Solution - Fever screening thermographic handheld camera

Scheme performance:







Solution – Economical thermographic fever screening scheme

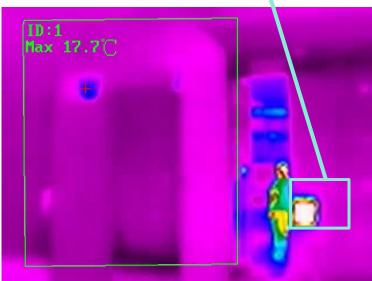
Scheme performance:





Solution – Professional thermographic fever screening scheme





Performance videos of thermal & optical channel

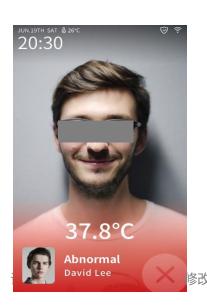


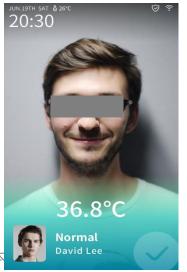
Long-term setting up scheme

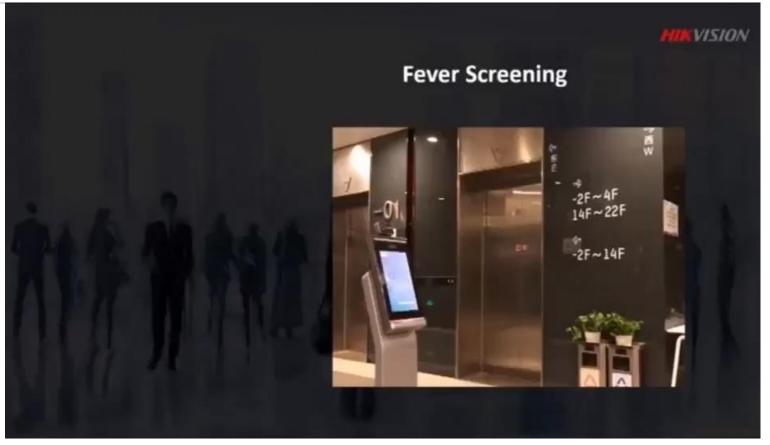


Solution – Access Control + Fever Screening









Thermal bullet camera



Thermal: 160 × 120 ;

DS-2TD2617B-3/6PA(B) Lens: 3 mm / 6 mm ;

- Optical: 2688 × 1520 ;
- Optical lens: 4 mm / 8 mm;
- Video mode: Bi-spectrum image fusion;
- Accuracy: ±0.5°C (± 0.3°C with black body)
- Measurement range: 30-45°C
- Supports audio alarms

Thermal turret camera



- Lens: 3 mm / 6 mm;
- DS-2TD1217B-3/6PA(B) Optical: 2688 × 1520 ;
- Optical lens: 4 mm / 8 mm;
- Video mode: Bi-spectrum image fusion;
- Accuracy: $\pm 0.5^{\circ}$ C ($\pm 0.3^{\circ}$ C with black body)
- Measurement range: 30-45°C
- Supports audio alarms

Black body Calibrator

Temperature resolution: 0.1°C

Accuracy: ±0.1°C

Temperature stability: ±0.1°C/h

• Effective emissivity: 0.97±0.02

• Operating temperature: 0-30°C



DS-2TE127-G4A

Thermal bullet camera

- Thermal: 384×288 , lens: 15 mm/13/10mm;
- Optical: 2688 × 1520, lens: 6mm/6mm/4mm;
- Accuracy: $\pm 0.5^{\circ}$ C ($\pm 0.3^{\circ}$ C with black body)
- Measurement range: 30-45°C
- Working temperature: 10-35°C
- Al human detection, false alarms reduction
- Simultaneous fever screening for multiple people (Up to 30 people)



DS-2TD2636B-15/P DS-2TD2636B-13/P DS-2TD2637B-10/P

Handheld thermographic camera

- Thermal resolution: 160 × 120;
- Measurement range: 30-45°C
- Touch screen
- Accuracy: ±0.5°C
- Bi-spectrum image fusion



DS-2TP31B-6AVF/W

Turnstile

- 650-1100 mm width left/middle/right lane
- Speed of throughput: up to 60 people/min
- 12 pairs of IR light detectors
- Build-in controller & IC card reader
- SUS304 stainless steel pedestal & acrylicswing
- Face recognition terminal & temperature measuring, and device installation hole is reserved.



DS-K3B601series

Metal Detector Door

- 18 independent detection zones, LCD screen
- Thermal camera resolution: 160 x 120
- Temperature range: 30~45°C
- Temperature accuracy: ±0.5°C



ISD-SMG318LT-F

Fever screening face recognition terminal

- Face identification & fever screen & mask detection.
- Voice reminder of not-wearing masks, and no-mask entrance is prohibited.
- Face capacity: 50,000, Card capacity: 50,000
- Temperature accuracy: ±0.5°C, range: 30~45°C
- Face Recognition Duration(1:N) ≤0.2s
- Face Recognition Distance: 0.3m ~ 2m



DS-K1T671TM-3XF (wall mounting)



DS-K5604A-3XF/V (for new or existing barrier gate)



DS-K5604A-3XF/V (stand alone or existing barrier gate)

Interactive Screen

- 65" or 75" or 85", 4K(3840 × 2160), 20 points infrared touch control, industrial screen protection.
- Built-in Wi-Fi realizes wireless screen mirroring without any cable connection. Built-in interactive whiteboard system allows annotating and sharing.



DS-D5A65RB/A DS-D5A75RB/A DS-D5A86RB/A

OPS box (Open Pluggable Specification)



DS-D5AS5/8S1L

- Inserted in interactive display slot (not including Operation System)
- Intel® Skylake_U/Kabylake_U
 Core™ i5, Intel® HD Graphics 4600,
 8 GB memory, 12 8GB SSD

Monitor

• 1080P, HDMI/VGA input, view angle:178°/178°, plastic casing, VESA, base bracket included, 7*24h







DS-D5024FN DS-D5032QE

(23.8")

(31.5")

DS-D5043QE (43")

DeepinMind NVR

- 8 channels of picture or video streaming;
 32-library capacity with up to 100,000 face pictures in total.
- 16 channels of picture or 8 channels video streaming; 32-library capacity with up to 100,000 face pictures in total.



iDS-6708NXI-I/8F(B)



iDS-7716(/32)NXI-I4/(16P)/X(B) iDS-9616(/32/64)NXI-I8/X(B)

POE switch

 L2, Unmanaged, 10/100M RJ45 PoE ports, 1 10/100M RJ45 uplink port, 802.3af/at, PoE power budget. 300m long distance transmission, 6KV surge protection



DS-3E0105P-E(B)



DS-3E0109P-E(C)

Solution - Fever screening thermographic handheld camera

DS-2TP31B-3AUF

Thermal thermographic handheld camera

• Thermal resolution: 160 × 120;

• Measurement range: 30-45°C

Touch screen

Accuracy: ±0.5°C

· Bi-spectrum image fusion

• Distance : 1m

Speed : Real time

Display: Thermal image

• Efficiency: 60 persons / minute

Information preservation: Screenshot



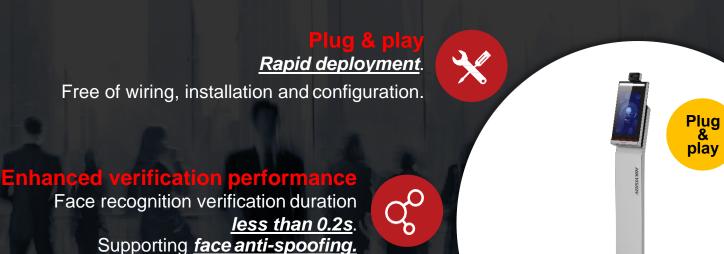
Thermographic Handheld Camera Advantages

- 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



Products Introduction - Highlights

Fever screening face recognition terminal



Various verification methods

Supporting <u>fast temperature measurement</u> and <u>face recognition with fever screening</u>.

Long distance fever screen Authentication distance: 0.3-2 m.

Mask detection

Supporting <u>face mask wearing alert</u> and <u>forced mask wearing alert.</u>



DS-K5604A-3XF/V

Dedicated for fever screening Temperature range: 30°C to 45°C,

Temperature range: 30°C to 45°C, Temperature accuracy: ±0.5°C.



Products Introduction - Highlights

Fever screening face recognition terminal

Supporting wall mounting and floor standing with mounting pole.



Supporting *fast temperature measurement* and face/card recognition with fever screening.



Face recognition verification duration less than 0.2s. Supporting *face anti-spoofing*.







Long distance fever screen

Authentication distance: 0.3-2 m.

Supporting face mask wearing alert and forced mask wearing alert.



DS-K1T671TM-3XF



Temperature range: 30°C to 45°C, Temperature accuracy: ±0.5 °C.





Fever screening face recognition module for barriers

Easy to deployment

Fever screening face recognition module for barriers.



1

Various verification methods

Supporting <u>fast temperature measurement</u> and <u>face recognition with fever screening</u>.

Enhanced verification performance

Face recognition verification duration <u>less than 0.2s</u>.
Supporting <u>face anti-spoofing.</u>





Long distance fever screen

Authentication distance: 0.3-2 m.

Mask detection

Supporting <u>face mask wearing alert</u> and <u>forced mask wearing alert</u>.



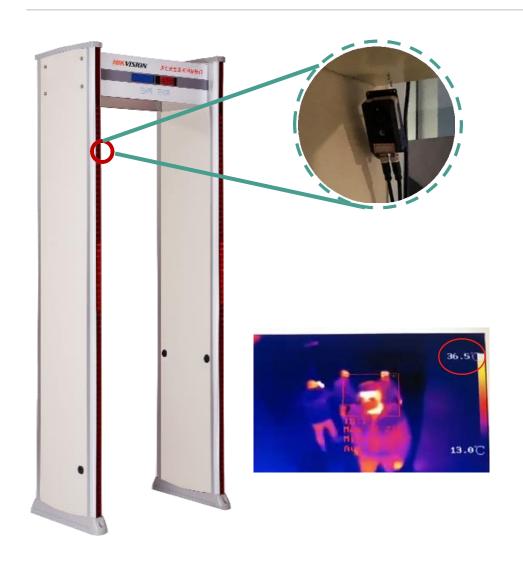
DS-K5671-3XF/ZU



Dedicated for fever screening Temperature range: 30°C to 45°C,

Temperature range: 30°C to 45°C, Temperature accuracy: ±0.5°C.

Solution - Metal Detector Door & body temperature measurement





Non-contact body temperature measurement



Real-time alarm



LCD temperature indicator

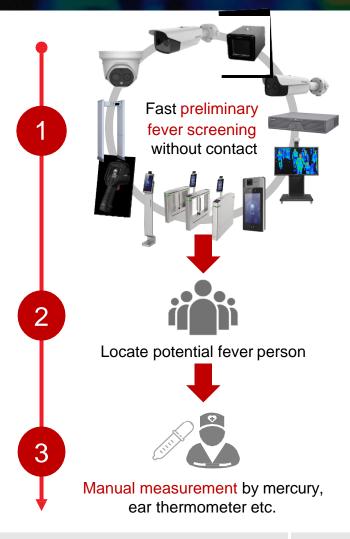


Metal detector

Key Features:

- 12 independent detection zones, LCD screen
- Thermal camera resolution: 160 x 120
- Temperature range: 30~45°C
- Temperature accuracy: ±0.5°C
- Measurement distance: 1 m 1.5 m
- Scenarios: hospitals, schools, police offices, governments, enterprises, customs, airports, train stations, bus stations, subway stations, etc.

Solution Business Flow and Typical Scene Overview





Temperoray fever screening at entrance



Permanent fever screening inside buildings(Group fever screening or with real time personal identification)



Permanent fever screening at Entrance (with access control or Metal Detector)



Patrol fever screening

SAFE

accurate, reduce cross-infection possibility.



EFFICENT

Efficient, auto alarm triggering, reduce man power resources investment.



ADAPTABLE

Multiple product types, easy to deploy, suitable for different scenarios.



TRACEABLE

Combining temperature, image and face identification for easy management and query



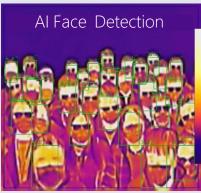
Temporary Fever Screening at Entrance — Thermal bullet/turret camera based

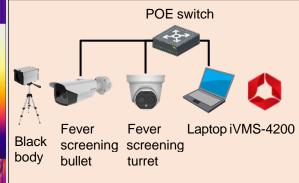
Cost-effective: 1 camera 2 lens empowered by AI for 2 usage (Fever screening + Security surveillance)

Deployment Design

- For building entrance, elevator hall, airport security check, etc.
- Indoor space without wind.
- Recommend to set up personnel guidance route.
- Recommend to fever screening 5 min after the measured person enters the indoorspace
- Use the black body as a basis for screening to improve the accuracy to ±0.3°C









Fever screening bullet



Fever screening turret



Tripod Adaptor

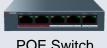




Black Body (optional)



iVMS-4200



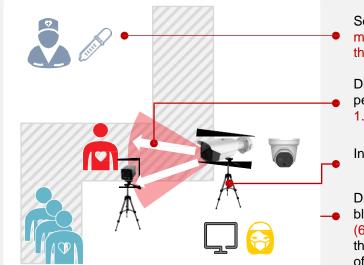
POE Switch



Laptop

Product Design

- Thermal:160 × 120, lens: 3mm / 6mm
- Optical:2688 × 1520, lens: 4mm / 8mm
- Accuracy: ±0.5°C (± 0.3°C with black body)
- Measurement Range:30-45°C
- Working temperature:10~35°C
- Onboard audio alarm for abnormal temperature
- Al face location, avoid interference by other objects with high temperature & increases the precision of fever screening



DS-2TD1217B-3/6 PA

DS-2TD2617B-3/6 PA

Secondary measurement by mercury thermometer, ear thermometer etc.

Distance between camera and person: 0.8-1.5 m (3 mm lens) 1.5-2 m (6 mm lens)

Installation height is 1.5 m

Distance between camera and black body:1 m (3 mm lens) 2 m (6 mm lens). Keep black body in the upper left / upper right corner of the camera view

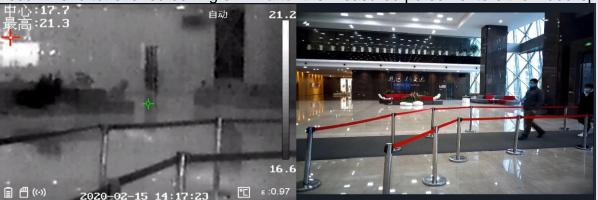
Temporary Fever Screening at Entrance — Stand-along device based

Easy, Flexible, Fast Deployment

Deployment Design

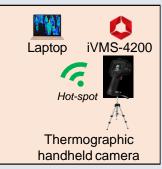
- · For building entrance, elevator hall, airport security check, etc.
- Wireless hot-spot deployment without cable for thermal handheld camera(by APP or 4200 client)
- Stand-along fever screening face identification terminal, plug and use.
- Indoor space without wind.
- Recommend to set up personnel guidance route.

Recommend to fever screening 5 min after the measured person enters the indoorspace









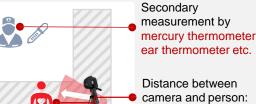


Product Design

Wireless & Flexible, Fast Deployment

- Thermal resolution:160 × 120;
- Optical resolution: 640 × 480;
- Accuracy: ±0.5°C
- Measurement Range: 30-45°C
- 3.5" LCD touch screen
- Support WIFI hotspot, able to live viewin PC / Mobile client, relieves eyefatigue.
- Support real-time audio alarm, and automatic screenshot of abnormal person & upload to PC / Mobile client as evidence.
- Operation time: 4-5 hours

DS-2TP21B-6AVF



1.5-2 m

Installation height is 1.5 m

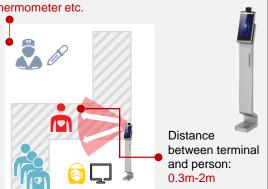
Product Design

Plug & Use, Visualized Measurement

- Non-contact personal identification & fever screening & mask detection
- Voice reminder for not-wearingmask person, could prohibit from entering
- Al face location, avoid interference by other objects with high temperature & increases the precision of fever screening
- Max.50,000 faces capacity, Max.50,000 cards;
- Temperature range: 30-45°C, accuracy: ±0.5°C
- Face Recognition Duration(1:N)≤0.2s
- Face Recognition Distance: 0.3m ~2m
- Terminal & mounting pole all-in-one, plug & use

Secondary measurement by mercury thermometer, ear thermometer etc.

DS-K5604A-3XF/V



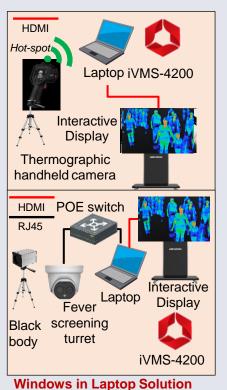


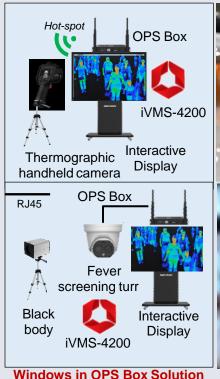
Temporary Fever Screening at Entrance — interactive display based

One display, All information

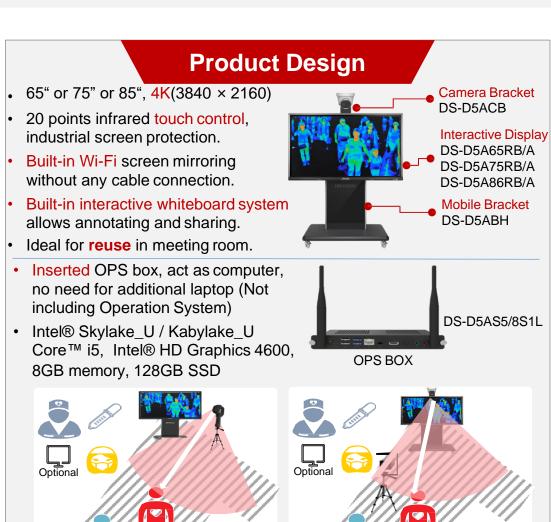
Deployment Design

- For commercial & government office building entrance, elevator hall, etc.
- Inserted computer without laptop (Windows in OPS Box Solution)
- Indoor space without wind.
- Recommend to set up personnel guidance route.
- Recommend to fever screening 5 min after the measured person enters the indoor space











Application Scenarios

Note: Recommend indoor installation. Large fluctuations in outdoor ambient temperature influence the accuracy of temperature measurement.

School



Entrance of college building



Entrance of dormitory

Retail



Entrance of supermarket



Entrance of restaurant

Office Building



Elevator hall of parking lot



Entrance of office building

Airport



Jet bridge for departure & arrival flight

Entrance of terminal

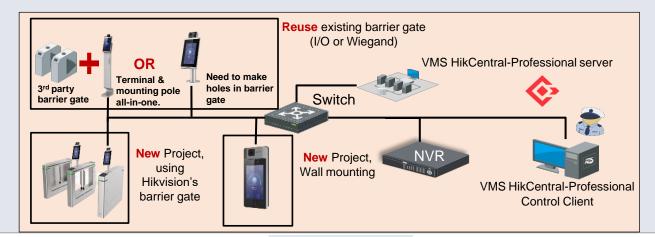


Permanent Fever Screening at Entrance - Access Control Based

Double Protection without Touch

Deployment Design

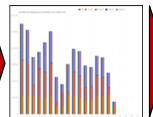
- Long-term fever screening with access control for building related project
- Indoor space
- Recommend to fever screening 5 min after the measured person enters the indoorspace
- Centralized management for access control with temperature record



VMS Centralized management for access control system:

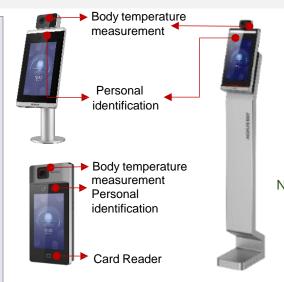
- Access record with temperature statistics and export
- 2 Real time fever alarm handling and trace back
- 3 Open ability of Access record with temperature information (OpenAPI)
- (4) Temperature Abnormal event links Attendance absence correction

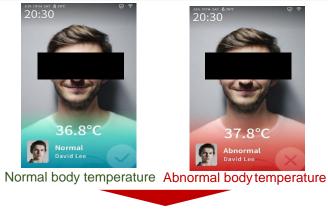






3rd-Party Integration (OA)





Secondary measurement by

mercury thermometer, ear

thermometer etc.

Product Design

- Reuse existing barrier gate(I/O or Wiegand)
- New project with Hikvision's barrier gate or wall mounting.
- Al face location, avoid interference by other objects with high temperature & increases the precision of fever screening.
- Non-contact personal identification & fever screening & mask detection(card reader for DS-K1T671TM-3XF)
- Voice reminder for not-wearing mask person, could prohibit from entering.
- Max.50,000 faces capacity, Max.50,000 cards
- Temperature accuracy ±0.5°C, range: 30~45°C
- Terminal and mounting pole all-in-one(DS-K5604A-3XF/V)



Note: NVR needs customization to store temperature data locally and transmit to HikCentral. HikCentral in this solution is a customized version.



Application Scenarios

Note: Recommend indoor installation. Large fluctuations in outdoor ambient temperature influence the accuracy of temperature measurement.

School



Entrance of library

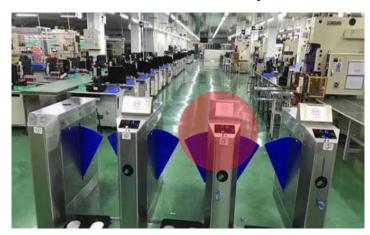


Entrance of dormitory

Factory



Entrance of factory



Entrance of workshop

Commercial Building



Elevator hall of parking lot



Main entrance of office building

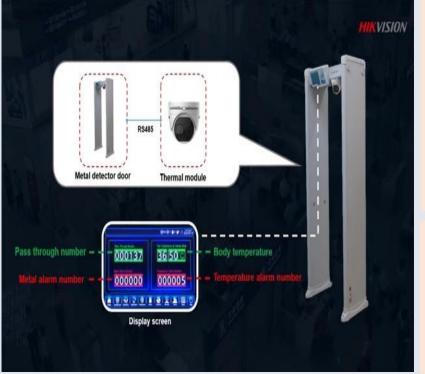


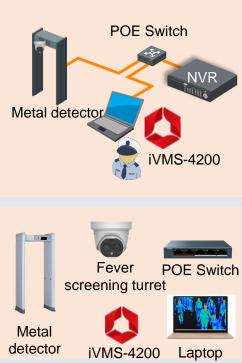
Permanent Fever Screening at Entrance - Metal Detector Based(new project)

Non-Contact, metal detection, real-time alarm

Deployment Design

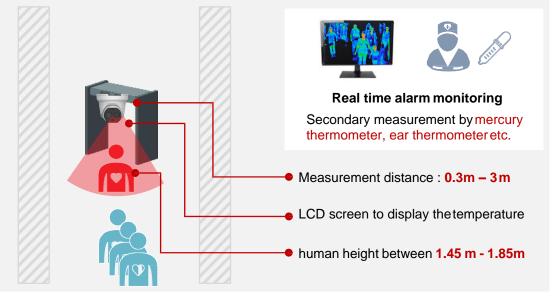
- Long-term fever screening with metal detector for entrance of police station, subway station, airport security check, etc.
- Indoor space without wind.
- Recommend to fever screening 5 min after the measured person enters the indoor space.
- Thermal Turret camera fixed installation with walk through metal detector





Product Design ISD-SMG318LT-F

- 18 independent detection zones,
- 7 inch LCD temperature indicator
- 2200mm*850mm*480mm
- Thermal imaging resolution:160*120
- Temperature measurement accuracy: ±0.5°C
- Temperature measurement range:30-45°C
- Onboard audio alarm for abnormal temperature or metal.





Application Scenarios

Note: Recommend indoor installation. Large fluctuations in outdoor ambient temperature influence the accuracy of temperature measurement.



Entrance of School



Security Check at Airport



Entrance of Office Building



Entrance of Prison



Entrance of Metro Station



Entrance of Stadium



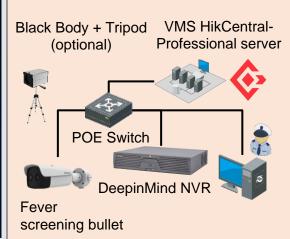
Permanent Fever Screening with Real Time Personal Identification

Personal Identification Even with Mask

Deployment Design

- For long-term preliminary fever screening, personal identification, mask detection (indoor).
- Simultaneous fever screening for multiple person (ca.10-15 persons)
- Centralized management for CCTV with temperature and identity information.
- The black body is used as a basis for screening to improve the accuracy to ±0.3°C



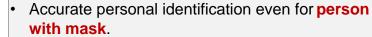




Product Design

- Accuracy: ±0.5°C (± 0.3°C with black body)
- Al body detection increases the precision of fever screening.





 Identify person with abnormal temperature or not-wearing mask, auto alarm in HikCentral professional with video for tracing back.

 Abundant statistics of amount of measured person, abnormal ratio, not-wearing mask ratio etc. for trend analysis and decision making.

Wall Mounted



DS-2TD2636B-15/P

DS-2637B-10P

iDS-9616(/32/64)NXI-I16/X(B)



Real time alarm monitoring

Secondary measurement by mercury thermometer, ear thermometer etc.

Installation height: 1.7 m – 2.6m
Distance between camera andperson:
4.5 to 9 meters (2636B-15/P) or 3 to
7 meters (2637B-10P)
Distance between camera and black body: 5 m. Keep black body in the upper left / upper right corner of the camera view

Note: HikCentral & firmware of DeepinMind NVR in this solution is a customized version.



Application Scenarios

Note: Recommend indoor installation. Large fluctuations in outdoor ambient temperature influence the accuracy of temperature measurement.

Group Fever Screening for Crow in Open Area



Hospital



Airport Transport Station



Bank Branch

Fever Screening with Real Time Personal Identification



Entrance of office building



Entrance of factory



Entrance of school

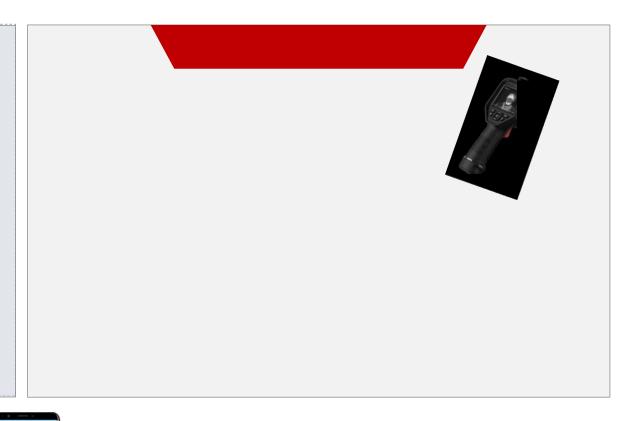
Anytime, Anywhere, One Click



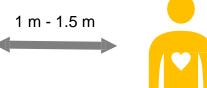












If abnormal





Fast and flexible preliminary measurement

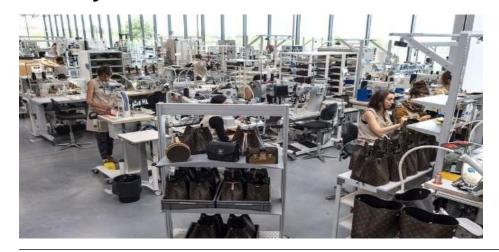
Automatic **screenshot** & upload to Thermal APP as **evidence**

Secondary manual measurement by mercury thermometer, ear thermometer etc.

Application Scenarios

Note: Recommend indoor installation. Large fluctuations in outdoor ambient temperature influence the accuracy of temperature measurement.

Factory Work shop



Office Building Office area





School Entrance of Classroom



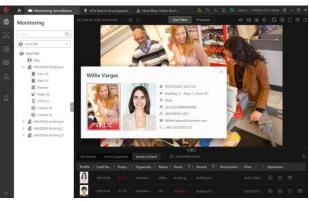
Bank Entrance of branch



HikCentral Professional

- Flexible, scalable, reliable and powerful central surveillance system.
- Supports live view, play back, access control, alarm management, personnel identification, temperature data storage, abnormal temperature trend analysis etc.

Management of Registered Identities



Membering Servaliance Q, VCA Seach Investigation & National Management of National Accordance of National Accordan

Personnel Access Management & Skintemperature Measurement

- HikCentral links personnel skin-temperature and corresponding identity;
- Access status and temperature live display / recording on HikCentral;
- Administrators can grant the access remotely

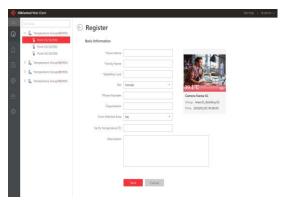
Abnormal Status Management

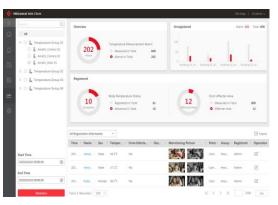
- Detected abnormal temperature from multiple sites will be centralized into HikCentral and displayed on GIS map / E-map;
- Batch attendance handling of people in quarantine

Management of Unregistered Identities

Abnormal Status Registration

- Once abnormal temperature appears, inspectors can type in the identity information and register it to HikCentral;
- All registrations are traceable, and can be easily searched and exported;
- Visualized statistic report helps administrators to assign and adjust manpower;





Successful cases

Hospital in Chongqing



- Protect the entrance of the hospital all daylong.
- 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



Station in Fuzhou

Hikvision
thermographic
fever
screening
cameras



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 °C?

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 0.2, 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 10 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 recognition 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: No. Fever screening thermographic handheld camera is not designed with alarm sending function and interfaces. Basically it only used to show the maximum value of whole screen

