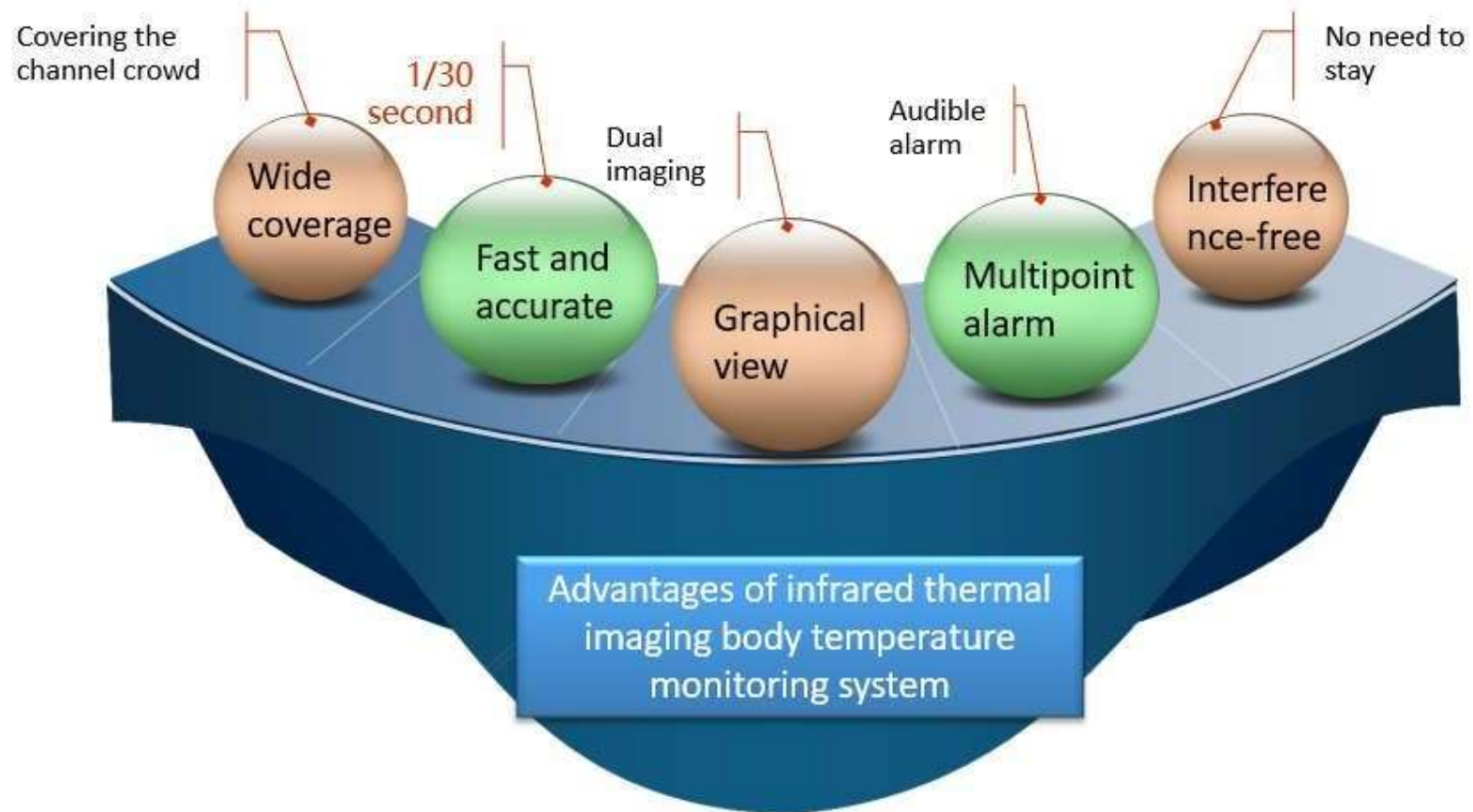




Introduction of Human Body Temperature Measurement System

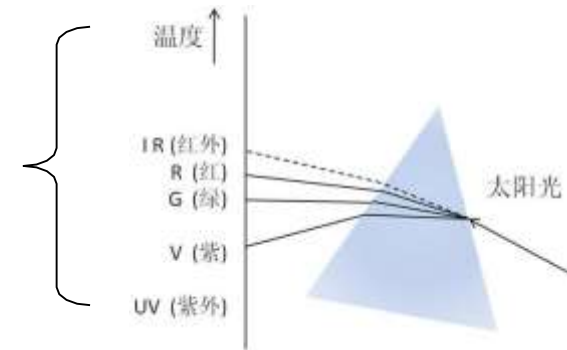
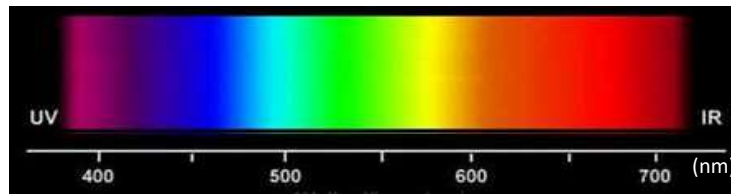


Advantages of infrared thermal imaging body temperature monitoring system



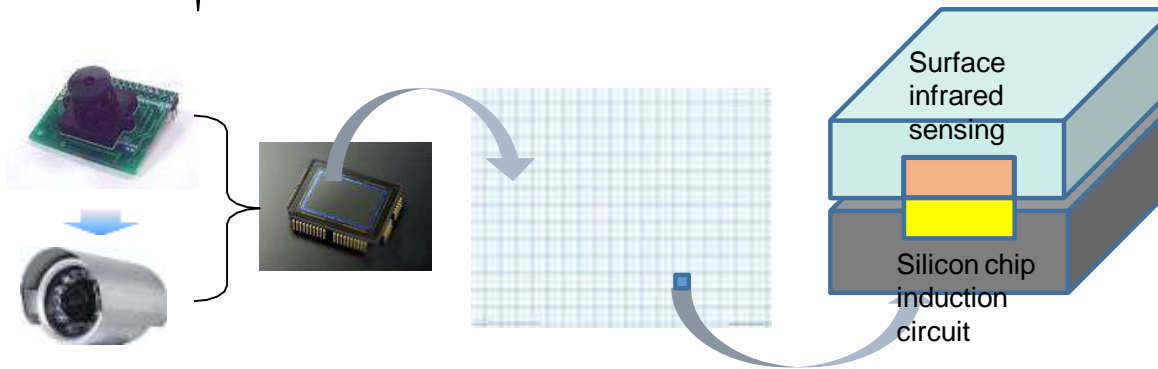
Principle of Infrared Thermal Imaging Technology

Principle of infrared thermography



Near infrared ray 0.75~3
Medium infrared 3~40
Far infrared 40~1000
0.75~3 3~40 40~1000 (μm)

Infrared rays generated by the heating source are received by the detector

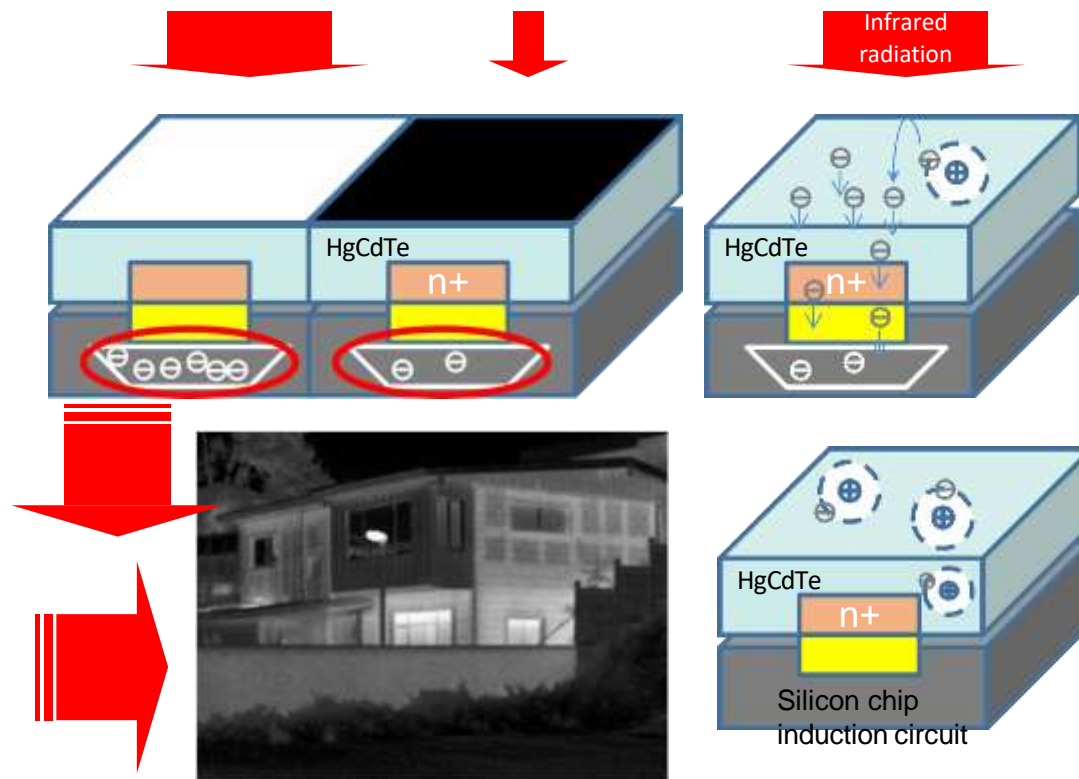


Principle of Infrared Thermal Imaging Technology

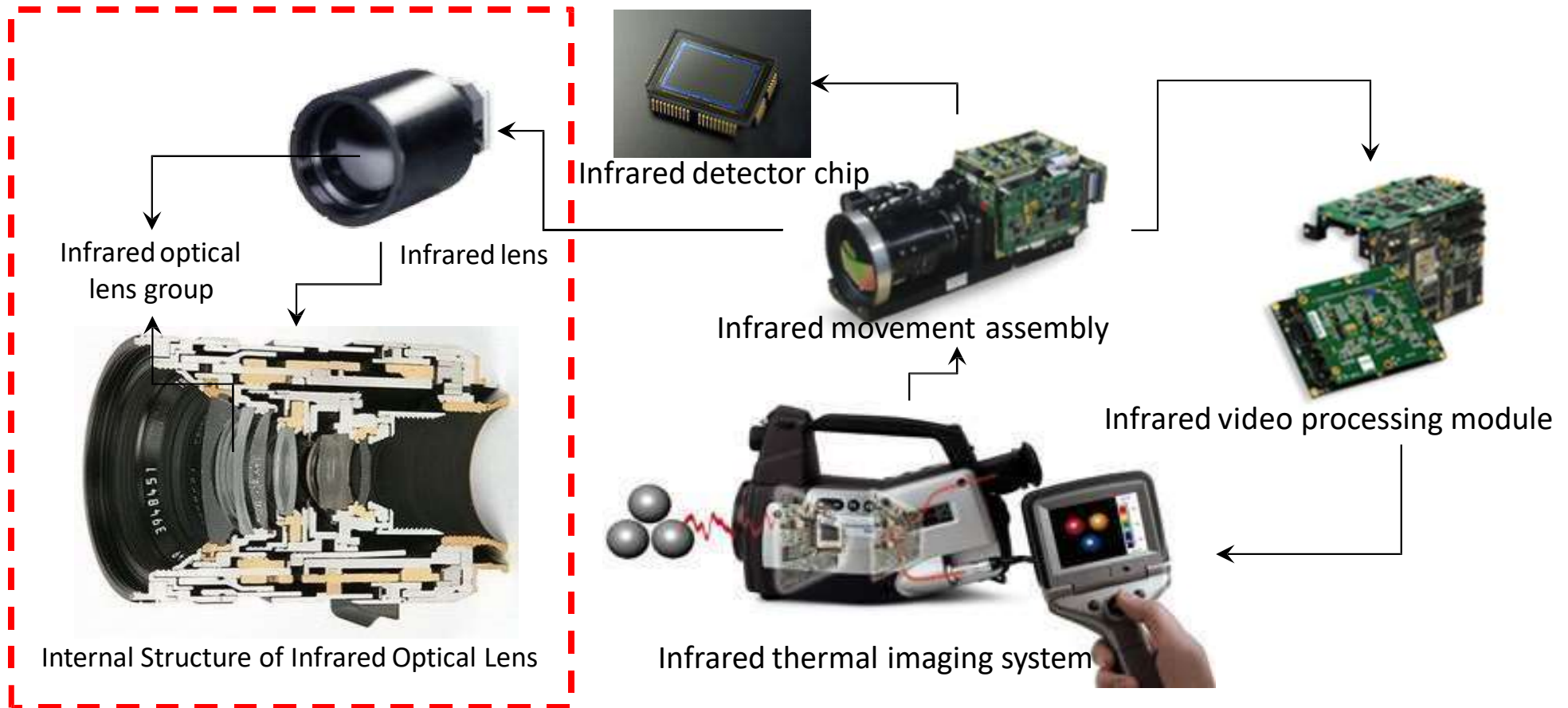
Principle of infrared thermography

When infrared ray is enhanced, the number of electrons increases, thus changing the gray scale of pixels to form an infrared image.

Infrared thermal imaging



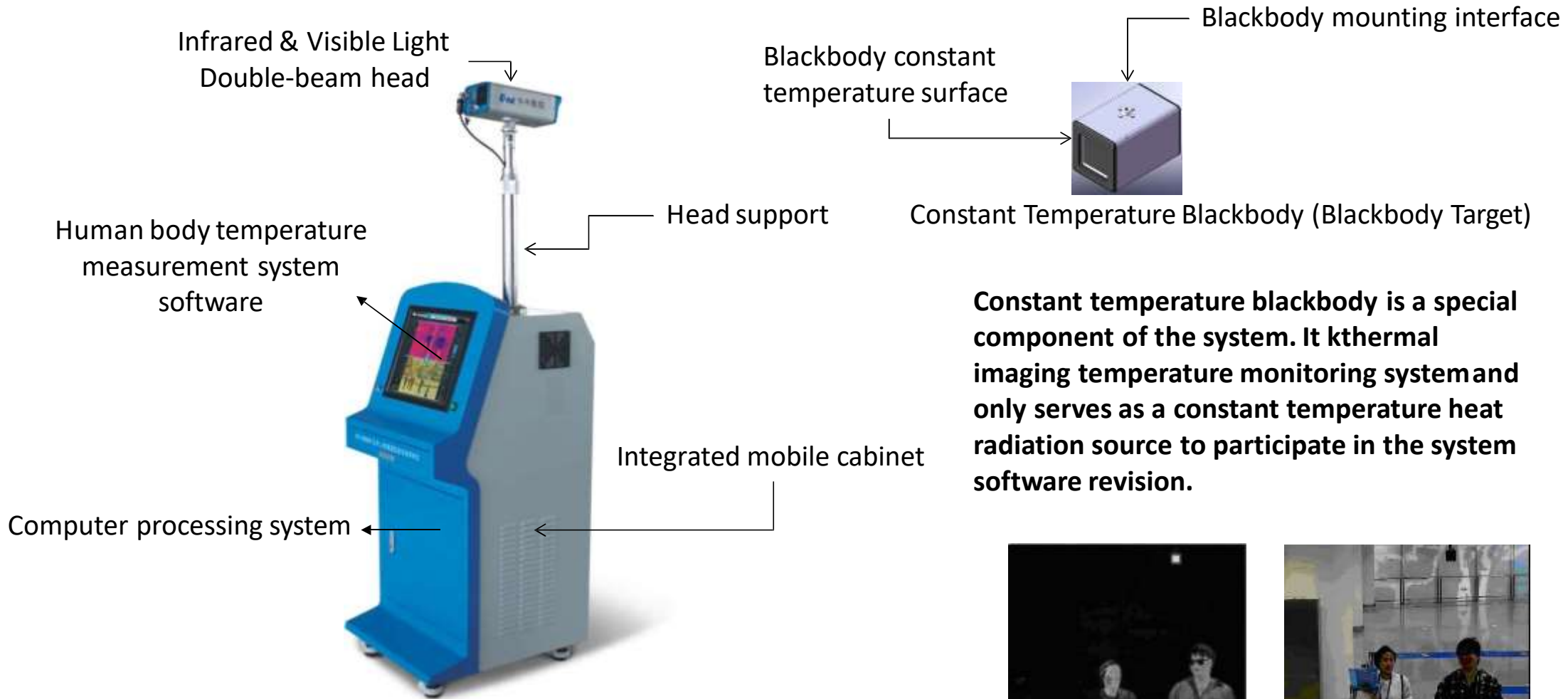
Introduction of Infrared Thermal Imaging System



Composition diagram of infrared thermal imaging system

Image display equipment

Y-2005B Human Body Temperature Measurement System



Constant temperature blackbody is a special component of the system. It kthermal imaging temperature monitoring system and only serves as a constant temperature heat radiation source to participate in the system software revision.

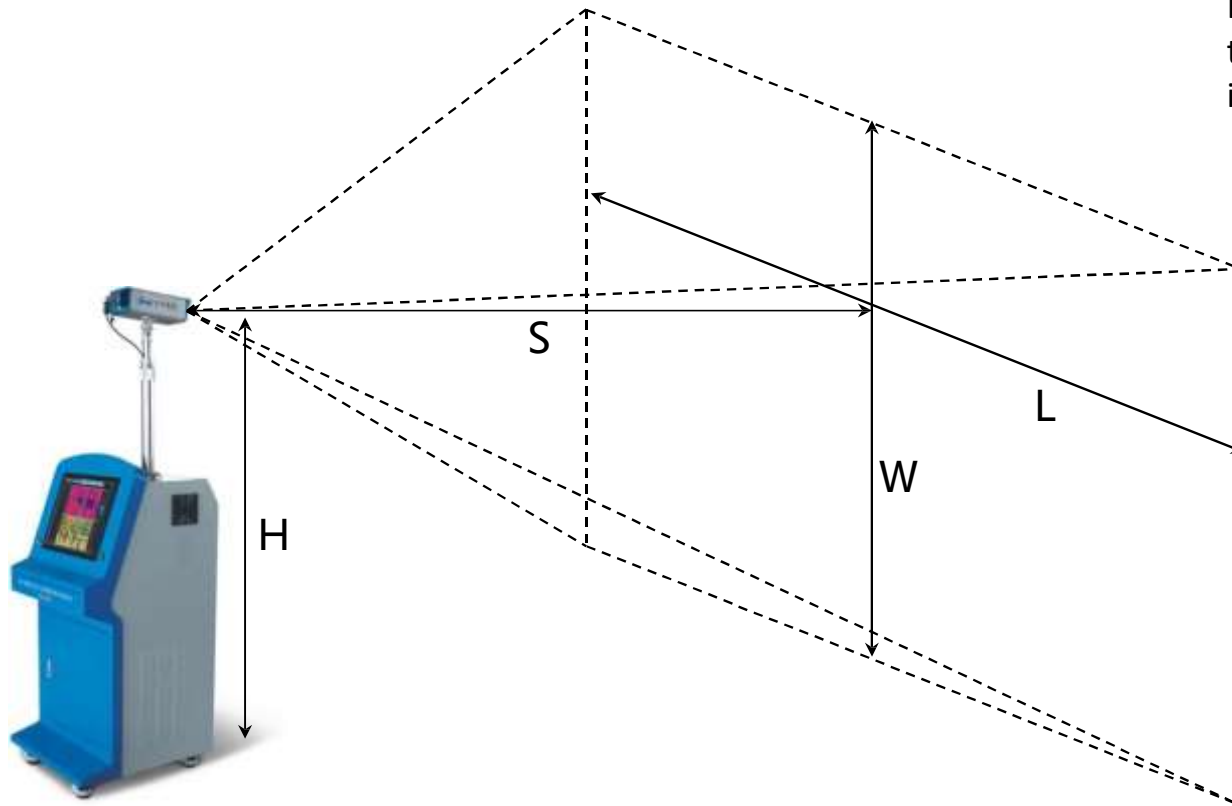


Parameters of HY-2005B Human Body Temperature Measurement System



Name	technical specifications
Sensor	Uncooled focal plane detector
Detector material	Vanadium oxide
Detector pixel	336×256
Detector pixel spacing	17um
Response band	8-14um
Spatial resolution	0.895mrad
focal length	19 mm
Angle of view	24°×19°
Temperature resolution (NETD)	0.05°C
Temperature measuring range	0°C ~ 50°C
Temperature measurement accuracy	±0.2°C
Temperature measuring method	Real-time Calibration and Measurement of Internal and External Blackbody
Interface	RJ45
Communication protocol	TCP/IP , UDP
usage temperature	- 40°C ~ 70°C
Storage temperature	- 40°C ~ 70°C
Power supply	DC12±1V

Observation Range and Temperature Measurement Channel Conditions of HY-2005B



Assuming that the FOV of the 19 mm lens of the thermal infrared imager is: 24° (H) \times 19° (V) ;
 If the lifting height of the thermal imager $h = 2.5\text{m}$; Then the lateral monitoring range at $S = 6\text{m}$ from the thermal imager is about:

$$L = 2 \times \text{tg} \frac{24}{2} \times 6\text{m}$$

$$= 2 \times 0.213 \times 6\text{m}$$

$$\approx 2.55\text{m}$$

Similarly, the vertical monitoring range is about :

$$W = 2 \times \text{tg} \frac{19}{2} \times 6\text{m}$$

$$= 2 \times 0.167 \times 6\text{m}$$

$$\approx 2\text{m}$$

Similarly, the lateral monitoring range $L \approx 3.4\text{m}$ at the distance $S = 8\text{m}$ from the thermal imager;
 Longitudinal monitoring range $w \approx 2.67\text{m}$

The ideal temperature measurement channel conditions are: when the temperature difference is 3°C and the atmospheric attenuation coefficient is $0.95/\text{km}$; Ambient temperature 23 ; The channel width at 6m from the thermal imager is about 2.5m ; The width of the channel at a distance of 8m is about 3.4m .

selection configuration parameters of HY-2005B Lens

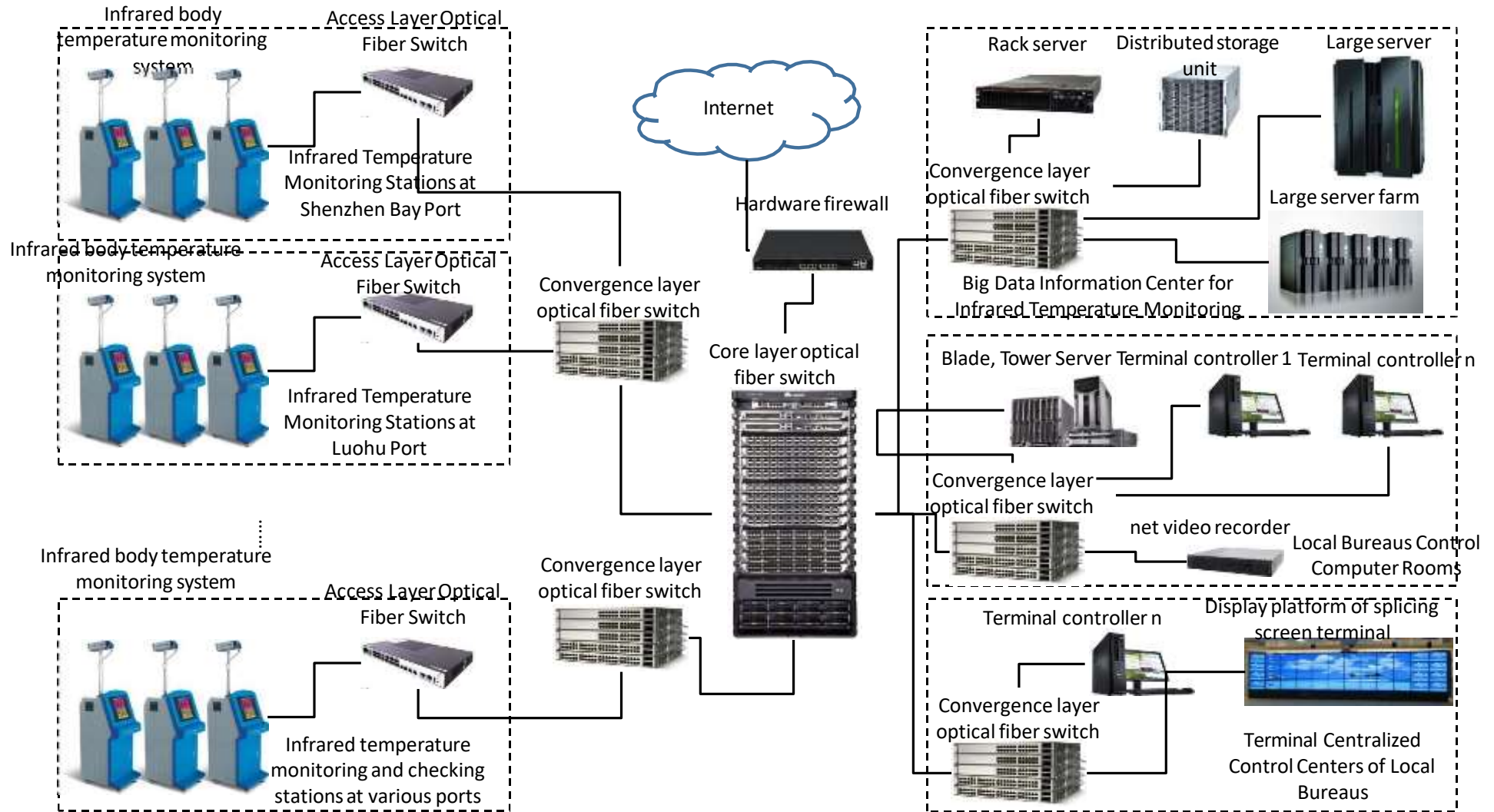
Detector	Optional lens	FOV angle of view	Recognition, Identification and Temperature Measurement of Character Targets
320×240pixel	9mm lens	48° (H) × 39° (V)	The recognition distance is about 57M The identification distance is about 28M The ideal distance for temperature measurement is within 3M
	13mm Lens	34° (H) × 28° (V)	The recognition distance is about 82M The identification distance is about 41M The ideal distance for temperature measurement is within 5 m.
	19mm Lens	24° (H) × 19° (V)	The recognition distance is about 124M m. The identification distance is about 62M The ideal distance for temperature measurement is within 8 m.
	35mm Lens	13° (H) × 10° (V)	The recognition distance is about 225M m. The identification distance is about 112M m. The ideal distance for temperature measurement is within 12M

selection configuration parameters of HY-2005B Lens

Detector	Optional lens	FOV angle of view	Recognition, Identification and Temperature Measurement of Character Targets
640×480pixel	13mmLens	45° (H) × 37° (V)	The recognition distance is about 112M m. The identification distance is about 56M The ideal distance for temperature measurement is within 6 m.
	19mmLens	32° (H) × 26° (V)	The recognition distance is about 160M m. The identification distance is about 80M The ideal distance for temperature measurement is within 10M.
	35mmLens	18° (H) × 14° (V)	The recognition distance is about 320M m. The identification distance is about 160M m. The ideal distance for temperature measurement is within 19M

Note: The actual recognition distance varies according to the setting of thermal imager, environmental conditions, user experience and display type. Assuming that the temperature difference is known to be 3°C and the atmospheric attenuation coefficient is 0.95/km

Schematic diagram of system architecture framework



HY-2005B Human Body Temperature Measurement System Software

software interface

video display

The video display area includes:
infrared real-time video, Visible real-time video, infrared history, Visible light history



Functional navigation

Function navigation includes:
Shutter control,
Alarm switch,
Voice switch,
Video switch,
System locking,
Network configuration,
Video adjustment,
Temperature measurement parameter registration,
General application configuration,
Other



Software startup interface at resolution of 19 inch 1280*1024

HY-2005B Human Body Temperature Measurement System Software

Debugging menu

Press the keyboard shortcut Ctrl+D to call up, Ctrl+← set the temperature display mode to body surface temperature, Ctrl+→ set to underarm temperature; Ctrl+↑ Sets the body surface correction coefficient +0.1°C, Ctrl+↓ Sets the body surface correction coefficient - 0.1°C.



Functional navigation



Debugging menu

HY-2005B Human Body Temperature Measurement System Software

Network configuration

Click the network configuration icon to enter the settings page

网络设置

设备名称：

红外列表： 可见光列表：

红外MAC： 可见光MAC：

红外IP： 可见光IP：

红外Port： 可见光Port：

红外备注： 可见光备注：

指派设备序号： 1 2

应用 返回

Functional navigation



Network configuration

HY-2005B Human Body Temperature Measurement System Software

Network configuration

Click the "Search for Network Equipment" button in the lower right corner and select the infrared and visible cameras from the infrared and visible light lists respectively. The corresponding parameters of the cameras will be automatically filled, as shown in the figure. The name of the equipment needs to be entered manually, for example, hall channel one.

网络设置

设备名称:

红外列表: 可见光列表:

红外Mac: 可见光Mac:

红外IP: 可见光IP:

红外Port: 可见光Port:

红外备注: 可见光备注:

指定设备序号:

After the network configuration search

Functional navigation



When you have finished matching network devices, click the Save to Database button.

HY-2005B Human Body Temperature Measurement System Software

Video adjustment

Video adjustment of infrared and visible light mainly assists users to improve image quality.



Functional navigation

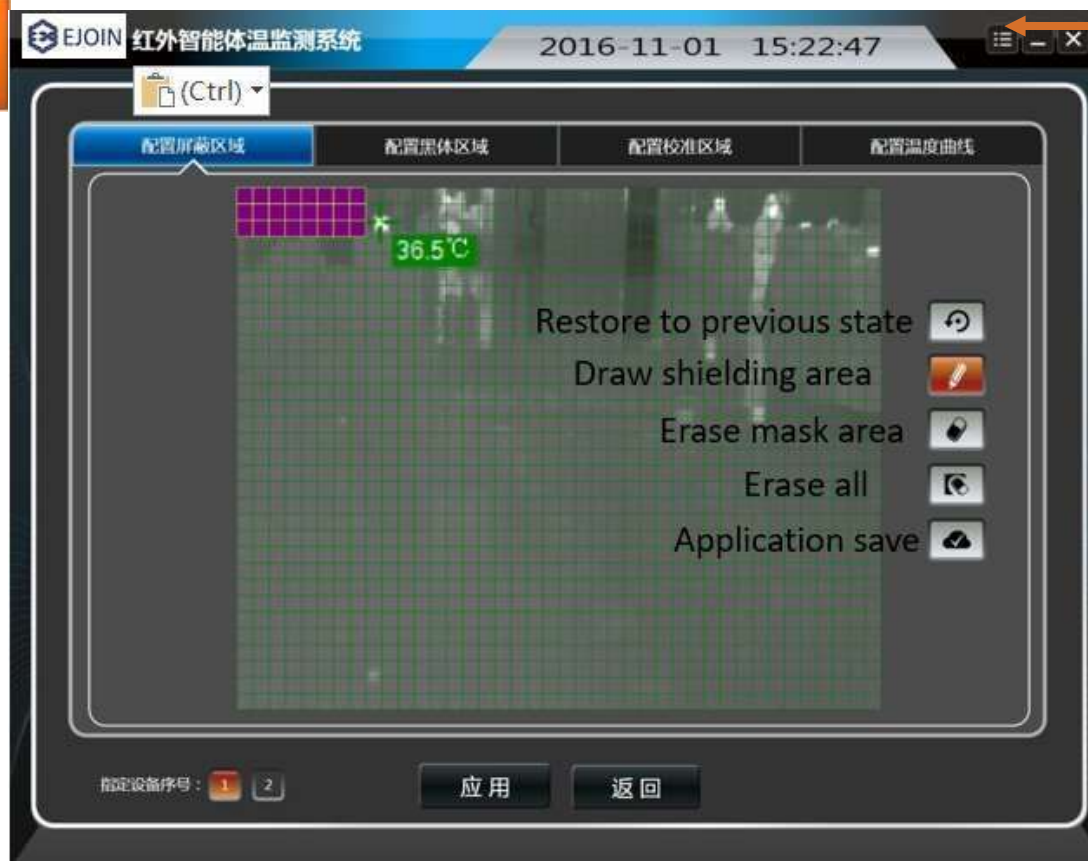


Video adjustment

HY-2005B Human Body Temperature Measurement System Software

Registration of Temperature Measurement Parameters

Configure shielding area



Functional navigation



Registration of Temperature Measurement Parameters-Shielding Area

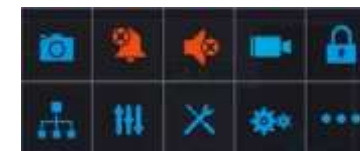
HY-2005B Human Body Temperature Measurement System Software

Configure bold area

Configure bold area



Functional navigation



Temperature Measurement Parameter Registration-Blackbody Region

HY-2005B Human Body Temperature Measurement System Software

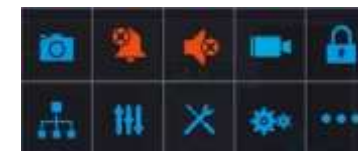
Configure calibration area

In the registration process, the infrared image and the red, yellow and blue circular blocks in the visible region need to be configured correspondingly, and the application configuration will take effect immediately after completion.

。



Functional navigation



Temperature Measurement Parameter Registration-Calibration Area

HY-2005B Human Body Temperature Measurement System Software

Configuration temperature curve

The system has two ways to display human body temperature: body surface temperature and underarm temperature. The conversion between the two can be completed through their temperature difference curves. The whole curve divides the curve into eight temperature sections by nine temperature points, ranging from 32.0 to 41.9°C, and the temperature value in the temperature section is a linear relationship.



Registration of Temperature Measurement Parameters-Temperature Curve

Application case of Human Body Temperature Measurement System

Port of entry and exit



Hong Kong-Zhuhai-Macao Bridge (Zhuhai)



Hong Kong-Zhuhai-Macao Bridge (Macau)

Application case of Human Body Temperature Measurement System

airport



China Guangzhou Baiyun International Airport



China Wuhan Tianhe International Airport

Application case of Human Body Temperature Measurement System

Customs port



Hong Kong West Kowloon Port



Damaiyu Port, Yuhuan, Zhejiang

Application case of Human Body Temperature Measurement System

Epidemic prevention and control

All schools mandatory installation of infrared temperature measurement system

Infrared temperature measurement system installed in hospitals

High-speed railway station, subway station, toll station installed infrared temperature measurement

Shopping malls, hotels, and offices are currently closed and all infrared temperature alarm systems will be installed in the future



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Application case of Human Body Temperature Measurement System

Epidemic prevention and control

Infrared temperature measurement system installed in hospitals



Li Taisheng, director of the Department of Infectious Diseases at Peking Union Medical College Hospital, reviews the ICU ward on a monitor at the Zhongfa Xincheng branch of Wuhan Tongji Hospital on February 14, 2020. Photo: Cui Meng/GT

Application case of Human Body Temperature Measurement System

CONTACT DETAILS