NX26 Series Online Infrared Thermal Imaging Thermometer

Technical Specifications

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1 Product Description

The NX26 series online infrared thermal imaging thermometer uses a 17μm uncooled infrared focal plane detector, a high-performance infrared lens, an excellent imaging processing circuit, and is embedded with advanced image processing algorithms. It has the characteristics of small size, low power consumption, fast startup, excellent imaging quality, and accurate temperature measurement.

NX26 series online infrared thermal imaging thermometer fully considers the requirements of high and low temperature working performance to ensure that the whole machine has excellent environmental adaptability.

The NX26 series online infrared thermal imaging thermometer outputs full-stream lossless temperature data and video stream data in H.265 compression format, and provides SDK to facilitate customer back-end integration development, fully analyzing the temperature of the target being measured.

NX26 series online infrared thermal imaging thermometer features:

1. It has all-weather passive thermal imaging function, has strong smoke penetration performance, and can be used in a wide range of ambient temperature ;

2. Support ONVIF protocol and can be connected to mainstream NVR;

3. Adopt self-developed temperature measurement and correction algorithm to achieve accurate temperature measurement, with the temperature measurement accuracy up to ±2%;

4. Output full-stream lossless temperature data and H.265 compressed video stream data, provide client software and SDK development kit to facilitate customers to carry out secondary development and system integration, and fully carry out personalized temperature analysis of the measured target .

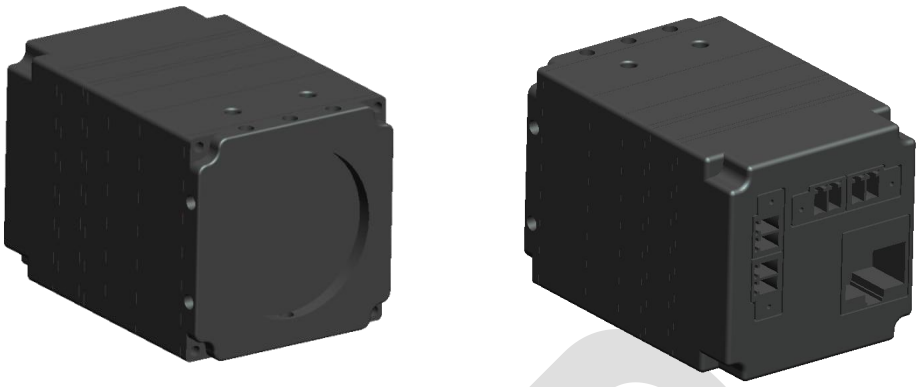

Figure 1 Product image of NX26 series online infrared thermal imaging thermometer

2 Product Specifications

Detector	
Detector Type	Uncooled focal plane microbolometer
Number of pixels	640 × 480
Pixel spacing	17μm
Wavelength range	8～14μm
Thermal sensitivity (NETD)	≤ 50mk @30℃
Frame rate	25Hz
Image processing and display	
Image Optimization	support
Non-uniformity correction	support
Image Noise Reduction	support
Electronic zoom	1.0～4.0 times infinite magnification
Polarity control	support
Color Palette	Multiple color palettes, including white hot, black hot, iron red,
Contrast, brightness	Automatic/Manual
Gamma Correction	support
Enhanced Algorithm	support
Network video compression format	H.265
Grayscale range adjustment	Automatic/Manual
Image Mode	HDR wide dynamic mode
OSD	support
Temperature measurement analysis	
Temperature measurement	±2℃ or ±2%

Temperature measurement range	Normal temperature: -20℃～200℃ Medium temperature range: 150 ℃～800℃ High temperature range: 350 ℃～1600℃ (Can be extended to 2500℃)
Temperature correction	Emissivity, reflected temperature, effective distance
Automatic tracking of hot and cold	support
Center point	support
Average	support
Temperature	Point, line, rectangle, circle, ellipse, polygon
Alarm function	High temperature, low temperature, temperature range, range
Video	Support MP4, GCV
Photograph	Support JPEG
Temperature data	Area csv, temperature curve csv
Electrical Characteristics	
Data Interface	RJ45
Data Types	H264, H265, 16-bit original temperature data
Web Standards	Gigabit Ethernet /Adaptive 10M/100M/1000M
Protocol support	IPv4/IPv6, TCP , UDP, NTP, HTTP, RTSP, RTP, ICMP, WebSocket, ONVIF
Power interface	4 PIN SH
Input power voltage	DC12V
Steady-state power	< 4.0W
Reverse polarity	have
Over-voltage and	have
Communication	UART@RS485 (reverse control of PTZ and camera , Modbus-RTU
IO Input and Output	support
Focus mode	Manual
Environmental parameters	
Operating	-40℃～ + 60℃ (-20℃~+60℃ to ensure temperature measurement
Storage temperature	-50℃～ + 70℃
Temperature shock	5℃/min (-40℃～ + 60℃)
Vibration resistance	4.3g, 2 hours for each of x, y and z axes
Shock resistance	Acceleration 30g, half sine wave, pulse width 6ms, impact 3 times in
humidity	≤95% (non-condensing)
Lenses	
focal length	Various focal length lenses are available
Focus mode	Manual

Physical properties		
size	NX23: 45mm×45mm×60.1mm	NX26: 45mm×45mm×64.1mm
weight	< 90 g	
Mounting holes	Two M3× 5 on the bottom	
Client		
Real-time temperature display	support	
Various temperature measurement	support	
Alarm function	support	
Record/Photograph/ Playback	support	
SDK development package		
Operating Environment	Support Windows (32Bit/64Bit) , Linux (32Bit/64Bit), MacOS, Android and most ARM systems	
Secondary Development	Provide API, SDK and Demo. Support development in multiple languages such as C/C++, C#, Java, Javascript, Typescript, Python, Swift, etc.	

3 Electrical interface

This section introduces the user interface definition of the infrared thermal imager core interface board. The external output interface mainly provides RJ45 connector and 4 PIN SH connector .

3.1Interface Diagram

There are two types of external output connectors , namely two 4- PIN SH connectors and an RJ45 connector . The interface diagram is shown in the figure below.

- 4- pin SH connector provides a DC 12V power interface and an RS485 communication interface .
- 4- pin SH connector provides a switch input and output interface .
- RJ45 connector provides network digital video output .

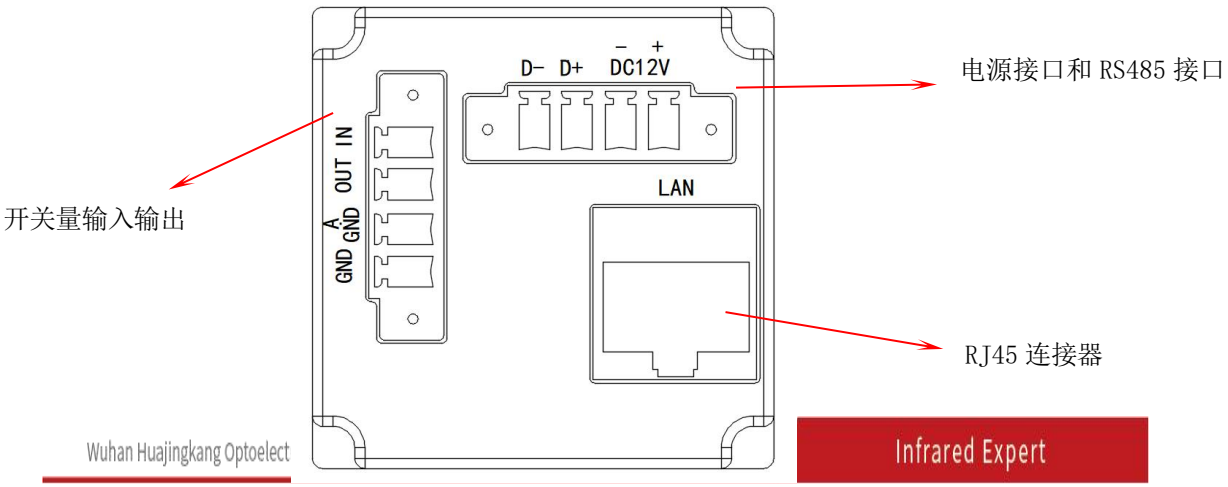

Figure 2 Interface board connector definition

3.2Interface Definition

external user interfaces : RJ45 connector and 4 -pin SH connector. The RJ45 connector is a standard definition, and the signal definition of the 4 -pin SH connector is shown in Table 1 .

Table 1 Signal definition of 4- pin SH connector

Pin	Signal Name	Function	Description
1	VCC_IN	Power	5V ~12V Input
2	DGND	Power	Digital Ground
3	D+	Conference	RS485 D+
4	D-	Conference	RS485 D-

Table 2 Signal definition of 4- pin SH connector

Pin	Signal Name	Function	Description
1	in	IO Input	TTL 3.3V
2	Out	IO Input	TTL 3.3V
3	A GND	IO Input	Digital Ground
4	DGND	IO Input	Digital Ground

4 Structural dimensions

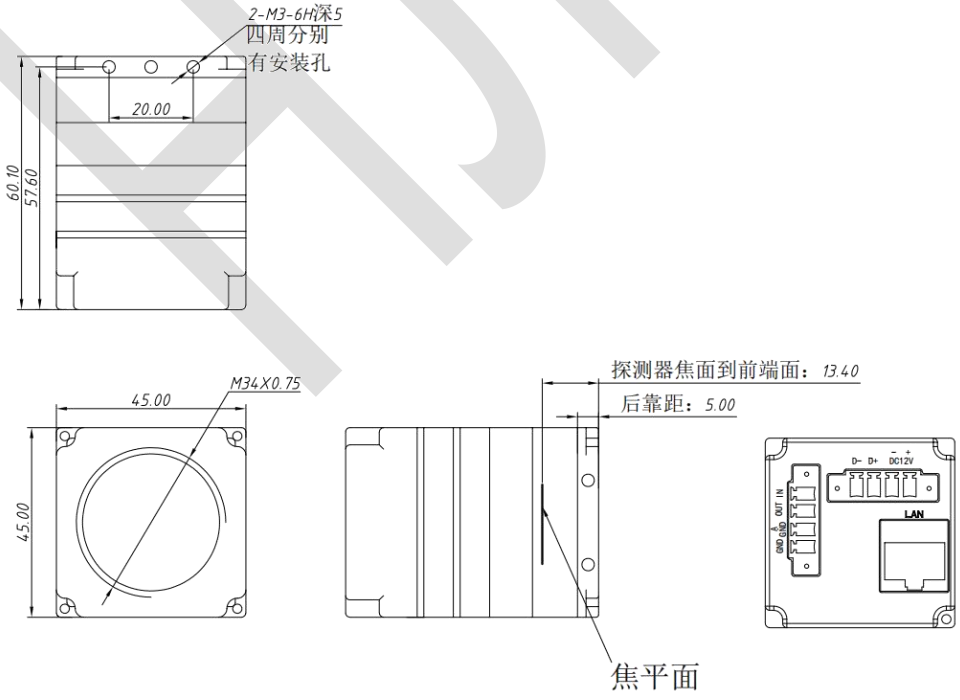

Figure 3 NX23 structural dimensions

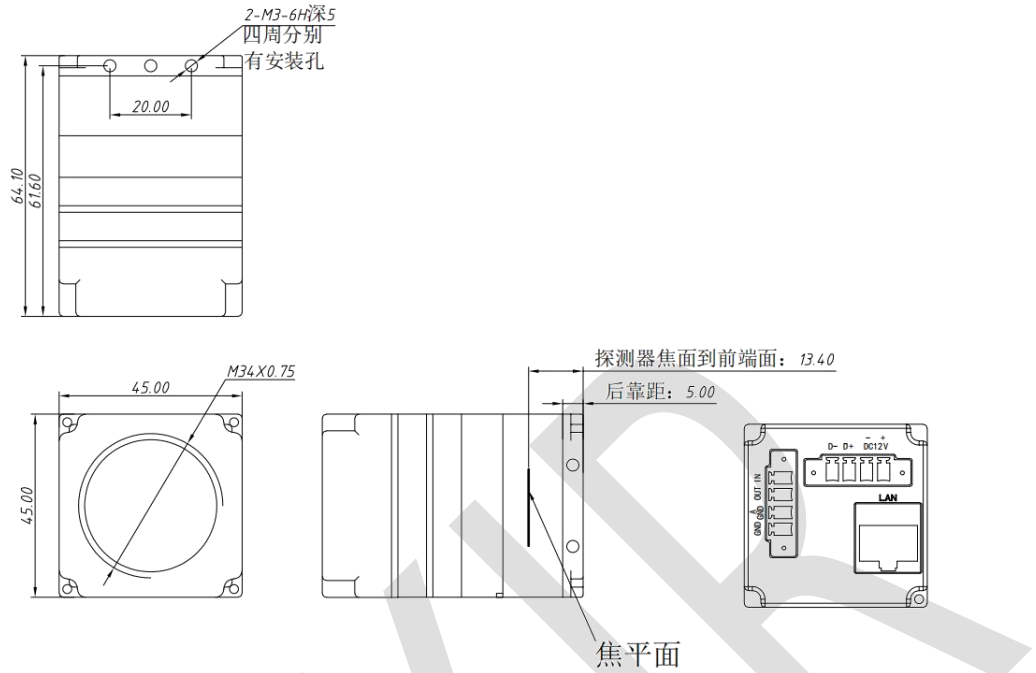

Figure 3 NX26 structural dimensions

5 Software Features

1. Real-time display: The full-radiation thermal image can be displayed in real time around the clock.

2. Temperature curve: Supports drawing real-time temperature curves of global or specific temperature measurement objects, thereby helping users to determine temperature trends. The real-time

temperature changes of key areas of the coal pile can be previewed in real time on the dashboard interface ;

3. Temperature tracking: supports high and low temperature tracking function, automatically analyzes the temperature change trend of the entire thermal image or a specific area , automatically captures the highest/lowest temperature point, and discovers potential danger areas early ;

4. Temperature marking: Supports high temperature marking function, which can automatically mark high temperature locations on the image, helping users to find the location of over-temperature points more quickly so as to make corresponding decisions accurately;

5. Custom temperature alarm: supports 11 different alarm types. According to the temperature changes of the object to be measured, it is mainly divided into 11 types: over-temperature alarm, temperature rise alarm, temperature drop alarm, high temperature interval alarm, low temperature alarm, low temperature interval alarm, temperature range alarm, regional temperature difference quotation, average temperature alarm, etc. Help users quickly grasp the temperature changes of the object to be measured, so as to achieve early warning and early processing ;

6. Alarm capture: Supports alarm capture, records alarm instant images, and records alarm videos. When an alarm event occurs, the system will automatically capture the current monitoring screen and record alarm videos;

7. Data storage: Alarm data , detection data, and file data are stored on the corresponding data pages for users to quickly call and analyze;

8. Multi - dimensional data supervision: The system can be divided into alarm data, detection data, and file data. It can be classified and managed according to the different data generation methods, so that data analysis can be carried out more targetedly;

9. Historical data analysis: The system can analyze offline the pictures and videos stored manually and automatically when the alarm is triggered, so that users can trace back the temperature changes of the measured target and use this as a basis to determine the cause of the abnormal situation.

10. Automatic recovery: supports automatic recovery after power failure and restart , and automatically saves the last device connection properties;

11. Temperature measurement correction: support temperature correction , you can manually set the temperature measurement parameters and correct the temperature measurement accuracy ;

12. System management: System operation management can set system language, file storage, alarm data preservation, account management, role permissions and other multi-dimensional data, and record system operation logs .

6 Optional lenses and detailed parameters

Focal length (mm)	Dimensions (mm)	F#	Detector resolution			Field of view (°)		Spatial resolution (mrad)
			level	vertical	Pixel size (um)	level	vertical	
4	⌀ 41-h23	1.0	384	288	17	81	58	4.25
4.8	⌀ 40 -h37	1.0	384	288	17	71	54	3.54
5.7	⌀ 40-h15	1.0	384	288	17	71	52	2.98

8	⌀ 40-h25.8	1.0	384	288	17	46	35	2.13
9.5	⌀ 40-h15	1.0	384	288	17	38	29	1.79
13	⌀ 31-h24	1	384	288	17	28	21	1.31
19	⌀ 39-h35.8	1.0	384	288	17	19	14	0.89
25	⌀ 37-h24.5	1.0	384	288	17	15	11	0.68
35	⌀ 40 -h28	1.0	384	288	17	11	8	0.49
4.8	⌀ 40 -h37	1.0	640	480	17	114	88	3.54
8	⌀ 40 -h2 5.8	1.0	640	480	17	81	59	2.13
9.5	⌀ 40-h15	1.0	640	480	17	64	48	1.79
13	⌀ 31-h24	1.0	640	480	17	45	35	1.31
19	⌀ 39-h35.8	1.0	640	480	17	31	24	0.89
25	⌀ 37-h24.5	1.0	640	480	17	24	18	0.68
35	⌀ 40-h28	1.0	640	480	17	18	13	0.49