K12 Series Online infrared thermal imaging thermometer

Technical Specifications

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1 Product Description

K12 online infrared thermal imaging thermometer adopts 12 μm uncooled infrared focal plane detector, high-performance infrared lens and signal processing circuit, and embeds advanced image processing algorithm. It has the characteristics of small size, low power consumption, fast startup, excellent imaging quality and accurate temperature measurement.

K12 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.

K12 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. Integrated debugging, small size, easy to integrate ;

3. Adopt self-developed temperature measurement and correction algorithm to achieve accurate temperature measurement;

4. Output full-stream lossless 16-bit temperature data, provide client software and SDK development kit , facilitate customers to carry out secondary development and system integration, and fully carry out personalized temperature analysis of the measured target .

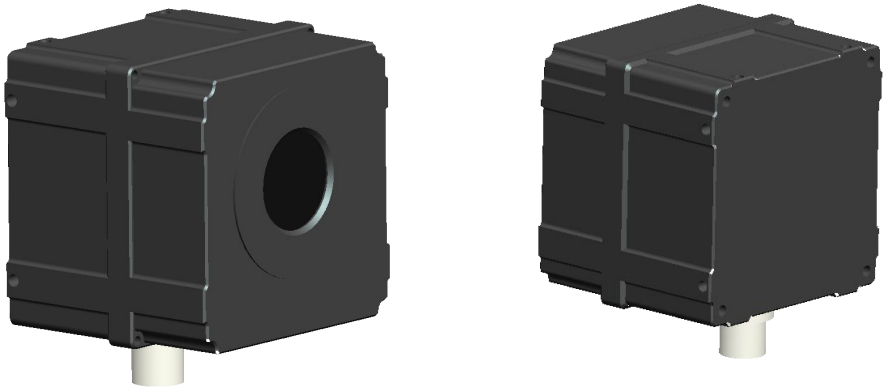

Figure 1 Overall view of online temperature measurement infrared thermal imager

2 Product Specifications

Detector	
Detector Type	Uncooled focal plane microbolometer
Number of pixels	256 × 192
Pixel spacing	1 2 μm
Wavelength range	8～14μm
Thermal sensitivity (NETD)	≤50mk@ 25 ℃
Frame rate	25 Hz
Image processing and display	
Imaging time	≤1 5 S
Color Palette	Multiple color palettes including white hot, black hot, iron red, rainbow, etc.
Contrast, brightness	Automatic/Manual
Data Format	16-bit temperature data (full bit stream)
Temperature measurement analysis	
Temperature measurement accuracy	±2℃ or ±2%
Temperature measurement range	Normal temperature: -15 ℃ ～ 150 ℃ Medium temperature: 50 ℃～550 ℃
Electrical Characteristics	
Web Standards	100M/1000M
Protocol support	UDP
Input power voltage	5V ～12VDC
Communication interface	UART@ RS 485 (reverse control of PTZ and camera)
Data Interface	M12 aviation plug (including power, network and RS 485 interface)
Steady-state power consumption	< 2 W
Reverse polarity protection	have
Over-voltage and under-voltage protection	have
Environmental parameters	
Operating temperature	-40 ℃～60 ℃ (-10 ℃ ～60 ℃ to ensure temperature measurement accuracy)
Storage temperature	- 5 0℃～70℃
Temperature shock resistance	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 the installation direction
humidity	≤95%(non-condensing)
Lenses	
focal length	optional
Focus mode	Manual
Field of view	optional
Spatial resolution	optional
Physical properties	
Dimensions	66 mm × 66 mm × 60.5 mm
Waterproof grade	IP67
weight	< 310 g
Mounting holes	Two M3 × 4 on each side of the bottom
Client	
Real-time temperature display	support

Various temperature measurement objects	support
Alarm Analysis	support
Record/Photograph/Playback	support
SDK development package	
Operating Environment	Support win32, x64 , Linux (x86 /ARM)
Data Acquisition	16-bit temperature data (full stream) through callback function

3 Electrical interface

3.1 Interface Diagram

The external interface of the infrared thermal imager is an M12 aviation plug , which includes an RS485 interface, a power interface and a network interface. The interface diagram is shown in the figure below.

- Pin1-8 is a standard Gigabit network communication interface ;
- Pin9-10 is the 5 V~12 V power input interface ;
- Pin11-12 is the RS485 communication interface .

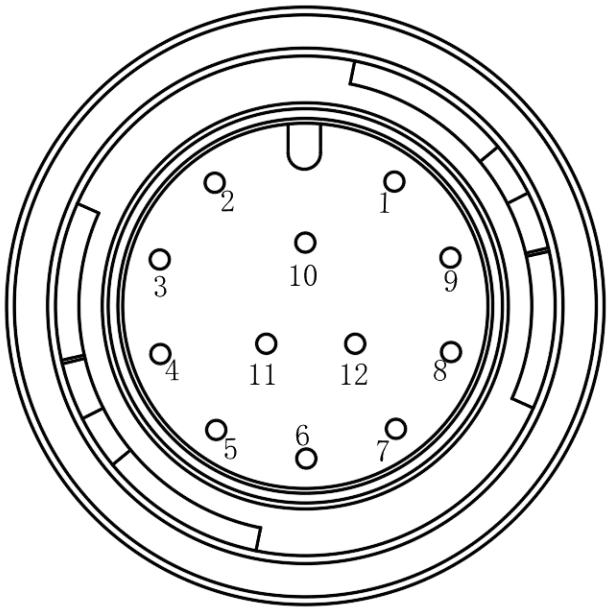

Figure 2 Interface diagram

3.2 Interface Definition

The infrared thermal imager has three external interfaces: network, power supply and RS485 . The specific signal definitions are shown in the following table.

Table 1 Power supply signal definition

Pin	Signal Name	Function	Description
1 ~ 8	Net	video	Standard Gigabit Et

			hernet

Table 2 Power supply signal definition

Pin	Signal Name	Function	Description
9	DC12V -	Power	land
10	DC12V+	Power	5V ~12V Input

Table 3 RS485 signal definition

Pin	Signal Name	Function	Description
11	D-	Conference	RS485 D-
12	D+	Communication	RS485 D+

4 Structural dimensions

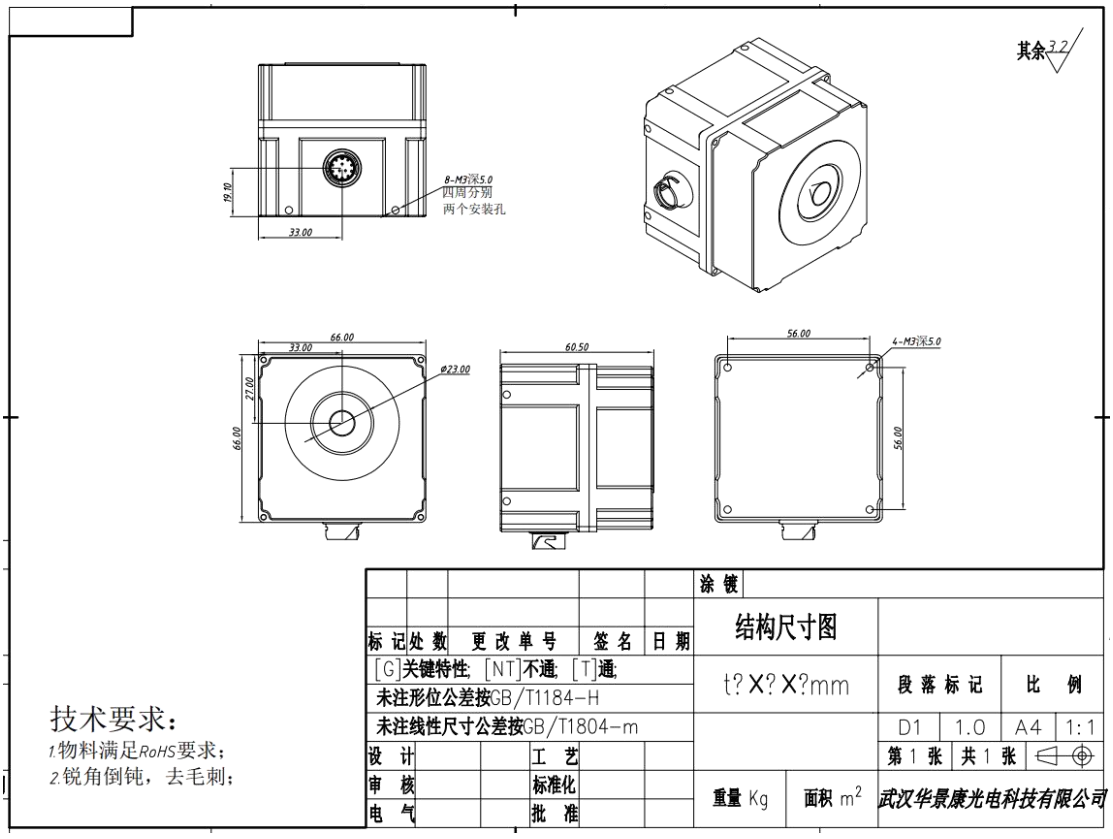

Figure 3 Structural dimensions