G41,43,46 online short wave infrared thermal imaging thermometer

Technical Specification

catalogue

1 Product description

G41,43,46 Online Short-wave Infrared Thermal Imaging Thermometer adopts high-performance short-wave infrared detector, short-wave infrared lens and signal processing circuit, and embedded advanced image processing algorithm, with the characteristics of small size, low power consumption, fast start-up, excellent imaging quality, accurate temperature measurement, wide temperature measurement range, suitable for ultra-high temperature temperature measurement site.

G41,43,46 Online short-wave infrared thermal imaging thermometer selects the device to fully consider the requirements of high and low temperature working performance, and ensure that the whole machine has excellent environmental adaptability.

G41,43,46 online short wave infrared thermal imaging thermometer features:

1. It has the function of passive thermal imaging all day long, has the ability to penetrate glass, and can be used in a wide range of ambient temperature;

2. High frame frequency design is adopted, and the highest frame frequency can reach 125Hz, which can observe fast moving targets;

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

4. Output full code stream lossless 16Bit temperature data, provide client software and SDK development package, facilitate customers to carry out secondary development and system integration, fully analyze the temperature of the target to be tested in a personalized way.

Figure 1 Online short wave infrared thermal imaging thermometer product diagram

2 Product technical indicators

prober		
Type of detector	Non-cooling coke plane micro-radiometric calorimeter		
Pixel count	384×288	640× 480	1280×1024

Pixel spacing	7μm	7μm	4μm
wavelength coverage	0.8～ 2μm		
frame frequency	≤ 125Hz (configurable)		
Image processing and display			
palette	A variety of palettes, including white heat, black heat, iron red, rainbow and so on		
Contrast, brightness	Automatic / Manual		
data format	16Bit temperature data (full stream)		
thermometric analysis			
temperature measurement accuracy	± 1%		
Temperature measurement range	600℃～ 2500℃ (extendable to 3000℃)		
electrical character			
data interface	RJ45		
Network standards	Gigabit network		
Agreement supported	GigE Vision V2.0 protocol and GenICam standard		
Power interface	2EDGKD-3.81mm/2P		
Enter the power supply voltage	12 VDC		
steady state power consumption	< 2.5 W		
Reverse connection protection	have		
Overvoltage protection	have		
enviromental parameter			
working temperature	- 20℃～6 0℃		
Storage temperature	- 40℃～70℃		
Resistant to temperature shock	5℃/min（-40℃～60℃）		
vibration resistance	4.3g, x, y, z axis for 2 hours each		
shock resistance	Acceleration 30g, half sine wave, pulse width 6ms, and three impacts in the installation direction		
humidity	≤ 95% (non-condensable)		
camera lens			
focal distance	Optional		
Focus on methods	hand movement		
physical characteristics			
outline dimension	4 5mm× 4 5mm× 79mm		
weight	< 160 g		
mounting hole	Four M3 x 4		
client			
Real-time temperature display	support		
A variety of temperature measurement objects	support		

Alarm function	support
Video / photo / replay	support
SDK SDK	
Java runtime environment Java	Supports win32, x 64, Linux (x86/ARM)
data procurement	Get 16Bit temperature data (full stream) through the callback function

3   Electrical interface

The external interface of the short-wave infrared thermal imaging camera has two interfaces, namely 2PIN SH interface (power supply) and RJ45 interface, as shown in the figure below.

➢ 2PIN SH connector (power) provides 12V power interface;

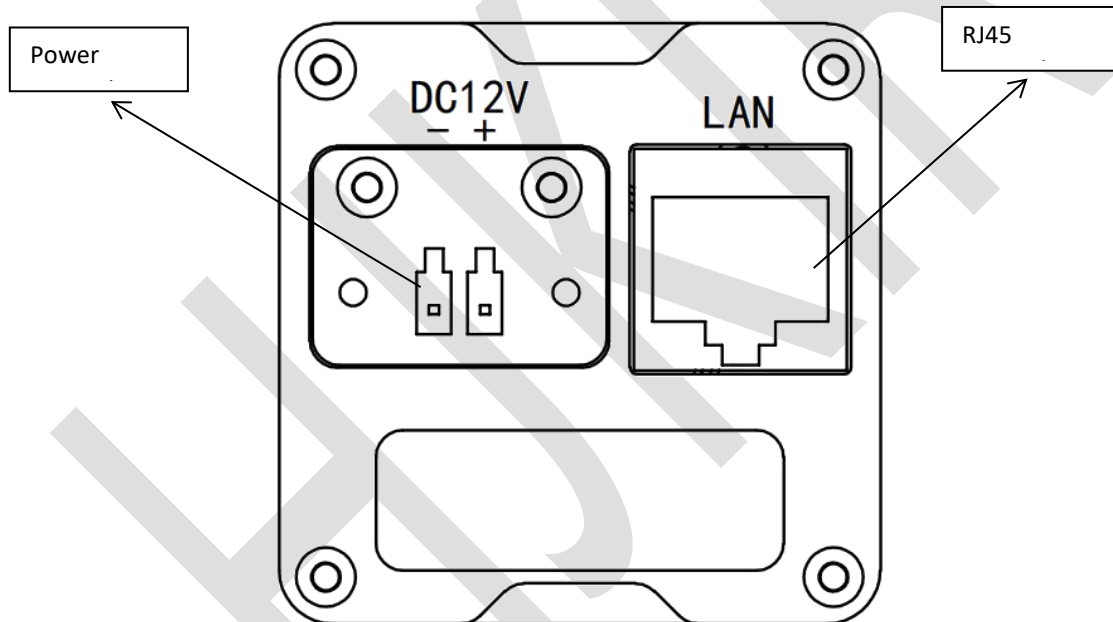➢ The RJ45 connector provides a network digital video output.

Figure 2 Interface diagram
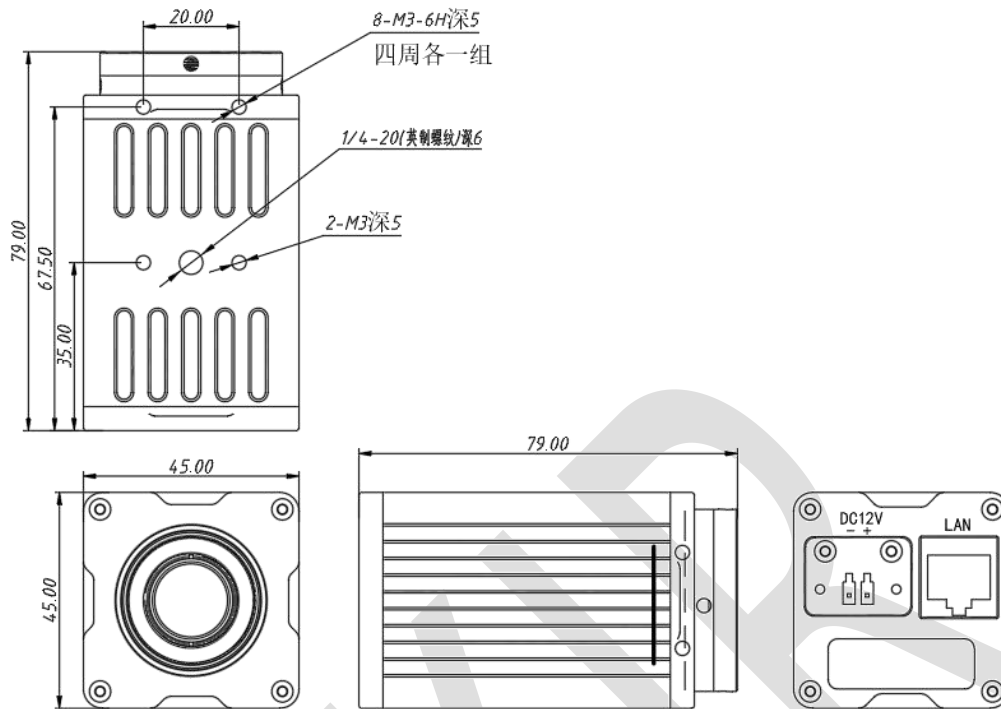
4   structure size

Figure 3 G43/G46 movement structure diagram

5 Introduction to software functions

1. Real-time display: can display full radiation heat image in real time all day long.

2. Temperature curve: It supports drawing real-time temperature curves of global or specific temperature measurement objects, so as to help users determine the temperature trend. In the board interface, the real-time temperature changes in key areas of coal piles can be previewed in real time;

3. Temperature tracking: It supports the function of high and low temperature tracking, automatically analyzes the temperature change trend of the whole picture or specific area of the thermal image, automatically captures the highest/lowest temperature point, and finds potential hazard areas in advance;

4. Temperature marking: It supports the high temperature marking function, which can automatically mark the high temperature position on

the image, so as to help users find the over-temperature point more quickly and make corresponding decisions accurately;

5. Custom Temperature Alarm: Supports 11 different alarm types. Depending on the temperature changes of the object under test, these are mainly divided into over-temperature alarm, temperature rise alarm, temperature drop alarm, high-temperature range alarm, low-temperature alarm, low-temperature range alarm, out-of-range temperature alarm, area temperature difference alarm, and average temperature alarm, totaling 11 types. This helps users quickly grasp the temperature changes of the object under test, enabling early warning and timely handling;

6. Alarm capture: It supports alarm capture, records the image of the moment of alarm, and records the alarm video. When an alarm event occurs, the system will automatically capture the current monitoring picture and record the alarm video;

7. Data storage: alarm data, detection data and file data are stored in 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, which can be classified according to different ways of data generation, so as to carry out more targeted data analysis;

9. Historical data analysis: The system can analyze the images and videos manually stored offline and automatically stored for alarm, so as to facilitate users to trace the temperature changes of the measured target and judge the causes of abnormal conditions based on this;

10. Automatic recovery: supports automatic recovery after power failure, automatic saving of the last device connection properties and other functions;

11. Temperature correction: temperature correction is supported, temperature measurement parameters can be set manually to correct the temperature measurement accuracy;

12. System management: The system operation management can set multi-dimensional data such as system language, file storage, alarm data saving, account management and role permission, and record the system operation log.

6   Optional lens and detailed parameters

focal distance (mm)	size （mm）	F#	detector resolution			angle of field (°)		Spatial resolution (mrad)
			horizontal	perpendicular	Pixel size (um)	horizontal	perpendicular	
8	∅ 33-h43	2.8~16	384	288	7	18	13	0.85
12	∅ 33-h 46	2.8~16	384	288	7	11	9	0.58
25	∅ 30-h 30	1.4~16	384	288	7	6	4	0.28
35	∅ 31-h 35	1.6~16	384	288	7	4	3	0.2
50	∅ 31-h40	2.4~22	384	288	7	3	2	0.14
75	∅ 38-h 69	2.8~32	384	288	7	2	1.5	0.09
8	∅ 33-h43	2.8~16	640	480	7	29	22	0.85
12	∅ 33-h 46	2.8~16	640	480	7	19	14	0.58
25	∅ 30-h 30	1.4~16	640	480	7	10	7	0.28
35	∅ 31-h 35	1.6~16	640	480	7	7	5	0.2
50	∅ 31-h40	2.4~22	640	480	7	5	3	0.14

75	⌀ 38-h 69	2.8~32	640	480	7	3	2	0.09
8	⌀ 33-h43	2.8~16	1280	1024	4	28	23	0.5
12	⌀ 33-h 46	2.8~16	1280	1024	4	19	15	0.33
25	⌀ 30-h 30	1.4~16	1280	1024	4	10	7	0.16
35	⌀ 31-h 35	1.6~16	1280	1024	4	7	5	0.11
50	⌀ 31-h40	2.4~22	1280	1024	4	5	4	0.08
75	⌀ 38-h 69	2.8~32	1280	1024	4	3	2	0.01