HJK-MWIR Medium-Wave Coooled Infrared Thermal Camera Technical Specification

HJKIR

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1 Product Overview

The HJK-MWIR medium-wave cooled infrared thermal camera employs high-performance medium-wave cooled infrared sensor, featuring superior sensitivity, rapid response speed, and high frame rate, enabling the acquisition of infrared thermal distributions of rapidly moving targets. Equipped with comprehensive data interfaces and professional data analysis software, it finds extensive applications across various scientific research fields.

Figure 1 Product image of HJK-MWIR medium-wave cooled infrared thermal camera

2 Product Technical Specifications

Sensor	
Sensor type	InSb-cooled medium-wave infrared focal plane sensor
Pixel number	640×512
Pixel spacing	15μm
Wavelength range	3.7±0.2μm~5.0±0.2μm
Focal plane operating temperature	80K±1K
Thermal sensitivity (NETD)	≤25mk@30℃@640×512
Frame frequency	≤200Hz (640x512), Maximum integration time: 5 ms ≤400Hz (window size 480x360), maximum integration time: 2.5 ms ≤600Hz (window size 384x288), maximum integration time: 1.6 ms ≤700Hz (window size 336x252), maximum integration

	time: 1.4 ms ≤1000 Hz (resolution 288x216), Maximum integration time: 1.0 ms
Refrigeration time	≤7min@25℃
Refrigeration method	Rotary stirling refrigerator
F numbers	F4
Image Processing and Display	
Palette	Multiple color palettes, including white heat, black heat, iron red, and rainbow.
Contrast, Brightness	Automatic / Manual
data format	16-bit temperature data (full bit stream)
Thermometric analysis	
Temperature measurement accuracy	±2℃ or ±2%
Temperature measurement range	-10℃～70℃ 50℃～170℃ 150℃～250℃ 230℃～360℃ 350℃～500℃ 500℃～650℃
Electrical character	
Data interface	RJ45
Network standard	Gigabit network
Protocol support	UDP
Input power supply voltage	DC24±1V
Power interface	KF2EDGVM3.81-4P
Steady state power consumption	<12W
Peak Power Consumption	<20W
Environmental parameter	
Working temperature	-20℃～+60℃
Storage Temperature	-45℃～+65℃
Temperature shock resistance	5℃/min（-40℃～+60℃）
Vibration resistance	10–60 Hz, 5 minutes per axis (x, y, z)
Shock resistance	Acceleration: 30g; waveform: half-sinusoidal; pulse width: 6 ms; impact: 3 times in the installation and usage direction
Humidity	≤95% (non-condensing)
Camera lens	

Focal distance	50mm F4
Focusing mode	Manual
FOV	10.97° × 8.78° (horizontal × vertical)
Spatial resolution	0.3mrad
Physical characteristics	
Dimension	Width × Length × Height: 101.42 mm × 256.38 mm × 164.9 mm
Weight	≤5kg
Mounting hole	Four M3 holes at the bottom, each with a depth of 6 mm and 1/4–20 UNC metric threads.
Client	
Real-time temperature display	support
Multiple temperature measurement targets	support
Alarm Function	support
Video/Photo/Playback	support
SDK	
Operating environment	Supports Win32, x64, and Linux (x86/ARM)
Data acquisition	Get 16-bit temperature data (full bitstream) using the callback function

3 Electrical Interface

3.1 Interface Schematic Diagram

The HJK-MWIR medium-wave cooled infrared thermal camera features two external interfaces: the KF2EDGVM3.81-4P interface and the RJ45 interface, as illustrated in the schematic diagram below.

- The KF2EDGVM3.81-4P connector features a 24V power interface;
- The RJ45 connector provides a network digital video output.

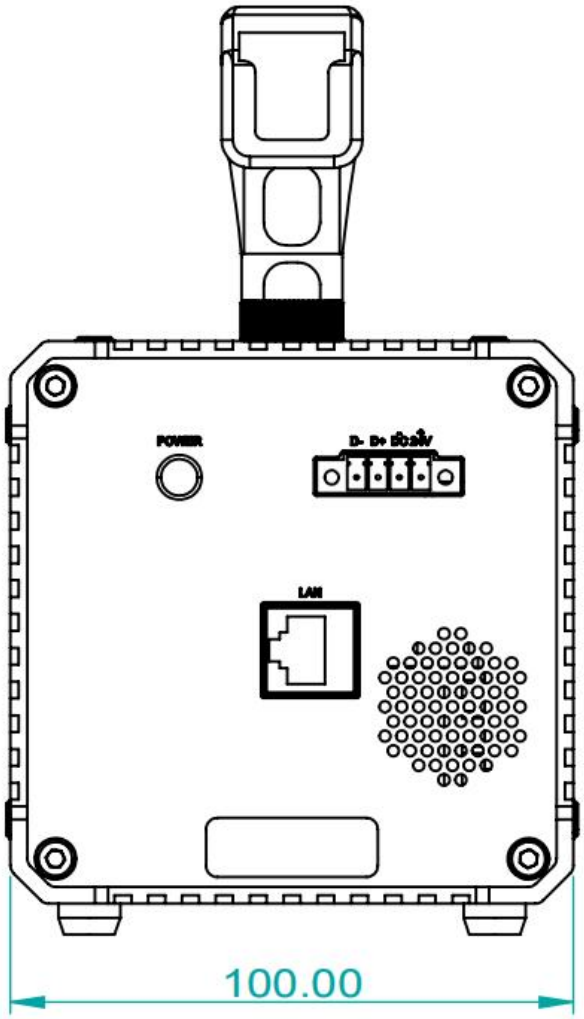

Figure 2 Interface schematic diagram

3.2 Interface Definition

The RJ45 connector is a standard definition, while the signal specifications for the KF2EDGVM3.81-4P connector (power supply) are detailed in Table 1.

Table 1 KF2EDGVM3.81-4P Connector Signal Definitions

Pin	Signal Name	Function	Description
1	DC24V +	Power	24V Input
2	DC24V -	Power	Ground
3	D+	NC	NC
4	D-	NC	NC

4 Structural Dimension

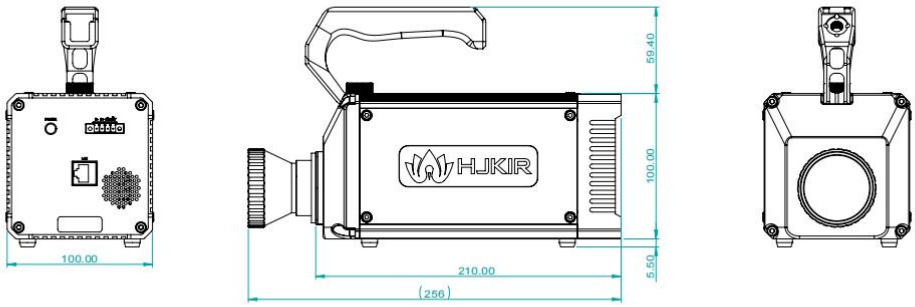

Figure 3 External dimensions of HJK-MWIR medium-wave cooled infrared thermal camera