

- VOx uncooled thermal focal plane detector
- 1/1.8" 4MP progressive scan CMOS sensor
- Intelligent functions: heat detection & alarm, tripwire, intrusion, target filtering
- Optional junction box support
- Illumination range up to 80 m
- IP67-rated protection
- Power supply: 12 VDC $\pm 20\%$ and PoE
- Smart linkage with white light and audio
- Temperature measurement range: $-20\text{ }^{\circ}\text{C}$ to $+550\text{ }^{\circ}\text{C}$

System Overview

The UTPC5-H Series Camera combines thermal and visible imaging to provide accurate detection in total darkness and challenging environments. It supports heat detection, temperature measurement, and intelligent perimeter protection functions such as intrusion and tripwire. This camera is ideal for perimeter security, industrial facilities, and fire prevention applications.

Technical Specification

Thermal

Detector Type	Vanadium oxide uncooled focal plane detector
Effective Pixels	640 (H) $\times$ 512 (V)
Pixel Pitch	12 μm
Spectral Range	8 μm –14 μm
Sensitivity (NETD)	$\leq 35\text{ mK}$ (@f/1.0)
Focal Length	5 mm; 9 mm; 13 mm; 19 mm; 25 mm; 35 mm
Field of View	5 mm: H: 90.0°; V: 70.7° 9 mm: H: 48.6°; V: 38.6° 13 mm: H: 32.0°; V: 25.7° 19 mm: H: 22.8°; V: 18.4° 25 mm: H: 17.6°; V: 14.1° 35 mm: H: 12.5°; V: 10°
Close Focus Distance	9 mm: 1.7 m 13 mm: 3.6 m 25 mm: 15 m 50 mm: 52.1 m
Digital Zoom	24 levels
Thermal AGC	Auto/Manual
Temperature Measurement Range	Low temperature mode: $-20\text{ }^{\circ}\text{C}$ to $+150\text{ }^{\circ}\text{C}$ High temperature mode: $0\text{ }^{\circ}\text{C}$ to $+550\text{ }^{\circ}\text{C}$ Auto mode
Temperature Measurement Accuracy	Max. ($\pm 2\text{ }^{\circ}\text{C}$, $\pm 2\%$); Operating temperature: $-20\text{ }^{\circ}\text{C}$ to $+60\text{ }^{\circ}\text{C}$

UTPC5-H Series

Thermal Network Hybrid Bullet Camera



Visible

Image Sensor	1/1.8" CMOS
Max. Resolution	2688 (H) $\times$ 1520 (V)
Pixel	4 MP
Min. Illumination	Color: 0.01 lux Black & white: 0.001 lux 0 lux (white light on)
Electronic Shutter Speed	1 s–1/30,000 s (auto/manual)
S/N Ratio	>55 dB
Defog	Electronic defog
BLC/WDR/HLC	Yes
Field of View	4 mm: H: 87.0°; V: 47.3° 6 mm: H: 55.3°; V: 30.0° 12 mm: H: 37.3°; V: 21.4° 10–30 mm: H: 42°–15°; V: 23°–8.4°
Horizontal Definition	$\geq 1100\text{ TVL}$
Close Focus Distance	4 mm: 1.2 m 6 mm: 2.5 m 12 mm: 7.4 m 10–30 mm: 9 m
Aperture	4 mm: F1.6 6 mm: F1.6 12 mm: F1.7 10–30 mm: F1.7

Visible Focus Control	Fixed-focal
IR Illumination Distance	80 m
R Illuminator On/Off Control	Auto; Manual

Audio & Video

Video Compression	H.265; H.264M; H.264H; H.264B		
Audio Encoding	G.711a; G.711 mu		
Image Encoding Format	JPEG		
Video Parameters	Main Stream	Sub Stream	
Resolution	Thermal	1280 × 1024; 1280 × 720; 640 × 512; 1280 × 1024 (default)	640 × 512; 320 × 256; 640 × 512 (default)
	Visible	688 × 1520; 2560 × 1440; 1920 × 1080; 1280 × 720; 704 × 576; 2560 × 1440 (default)	704 × 576; 352 × 288; 704 × 576 (default)
Video Frame Rate	Thermal	(50 Hz): 1 fps–25 fps, 25 fps by default (60 Hz): 1 fps–30 fps, 30 fps by default	(50 Hz): 1 fps–25 fps, 15 fps by default (60 Hz): 1 fps–30 fps, 15 fps by default
	Visible	(50 Hz): 1 fps–25 fps, 25 fps by default (60 Hz): 1 fps–30 fps, 30 fps by default	(50 Hz): 1 fps–25 fps, 15 fps by default (60 Hz): 1 fps–30 fps, 15 fps by default

Function

Two-way Audio	Yes
Sound and Light Alarm	Local audio and white light alarm prompts
Network Protocol	IPv4/IPv6; HTTP; HTTPS; 802.1x; QoS; FTP; SMTP; UPnP; SNMP; DNS; DDNS; NTP; RTSP; RTP; TCP; UDP; IGMP; ICMP; DHCP; PPPoE
Region of Interest (RoI)	Yes (customizable)
Storage	FTP; Micro SD card (512 GB, hot swapping)
Interoperability	ONVIF; CGI
Browser	IE; Firefox; Chrome; Safari
User/Host	Up to 12 (total bandwidth: 64 MB)
Security	Authorized username and password; attached MAC address; HTTPS; IEEE 802.1x; controlled network access

User Management	Up to 20 users; supports multi-level user permissions (2 levels): management group and user group
Malfunction Detection	Network disconnection detection; IP conflict detection; memory card state detection; memory space detection
Fusion Mode	Yes. Off by default
PIP	Yes (Intelligence automatically turns off when PIP is on)

Intelligence

Heat Detection	Yes
Cold/Hot Spot Trace	Yes
Perimeter Protection	Yes. Supports tripwire and intrusion.
Target Distinction	Human/Vehicle Classification
Target Tracking	Yes
Smoke Detection	Yes

Port

Analog Output	1 × CVBS output; BNC port (not supported by the device with a junction box)
Network Port	1 × RJ-45 (10/100 Base-T)
Audio Input	1
Audio Output	1
Alarm Input	2
Alarm Output	2
RS-485	1

Power

Power Supply	12 VDC ± 20%, PoE (802.3af), ePoE
Power Consumption	Basic: 5 W (12 VDC); 8.9 W (PoE) Max: 15 W (12 VDC); 18 W (PoE)
ePoE	Yes

Environment

Operating Temperature	–30 °C to +70 °C
Operating Humidity	≤95%
Storage Temperature	–40 °C to +70 °C

Structure

Protection	IP67
Reliability	Surge protection: 6 kV Air discharge: 15 kV Contact discharge: 8 kV
Product Dimensions	300.9 mm × 181.8 mm × 181.8 mm
Packaging Dimensions	423 mm × 180 mm × 178 mm
Net Weight	≤2.35 kg
Gross Weight	≤2.7 kg

Temperature Measurement Distance

Focal Length	Temperature Measurement Distance (Min.)	Temperature Measurement Distance (Max.)
5 mm	1 m	3 m
9 mm	1 m	5 m
13 mm	2 m	11 m
19 mm	3 m	16 m
25 mm	4 m	21 m
35 mm	6 m	29.4 m

Note: The table displays the measured distances obtained from using the target size 0.1 m × 0.1 m for testing in an environment where the temperature is 23 °C and the relative humidity is below 60%. The table is for reference only. The distances within it are subject to actual conditions including atmospheric conditions, target size, the installation site, and more.

DORI Distance

Focal Length	Detection (objects must cover more than 3.6 pixels of the image).	Recognition (object must cover more than 14 pixels of the image).	Identification (object must cover more than 28 pixels of the image)
5 mm	Vehicle: 641 m Human: 208 m	Vehicle: 157 m Human: 54 m	Vehicle: 79 m Human: 27 m
9 mm	Vehicle: 1,154 m Human: 375 m	Vehicle: 283 m Human: 96 m	Vehicle: 143 m Human: 48 m
13 mm	Vehicle: 1,667 m Human: 542 m	Vehicle: 409 m Human: 139 m	Vehicle: 206 m Human: 70 m
19 mm	Vehicle: 2,436 m Human: 792 m	Vehicle: 597 m Human: 204 m	Vehicle: 302 m Human: 102 m
25 mm	Vehicle: 3,205 m Human: 1,042 m	Vehicle: 786 m Human: 268 m	Vehicle: 397 m Human: 102 m
35 mm	Vehicle: 4,487 m Human: 1,458	Vehicle: 1,101 m Human: 375 m	Vehicle: 556 m Human: 188 m

Dimensions (mm[inch])

