



Feature:

1. Integrated Design: Built-in panoramic camera integrates the panoramic camera and tracking camera into one unit, providing a compact and integrated solution.
2. Adjustable Panoramic Lens Angle: The panoramic camera lens angle can be adjusted by $\pm 15^\circ$, greatly facilitating installation and commissioning.
3. 4K Ultra-HD Imaging: Equipped with an 8.42-megapixel high-quality SONY CMOS image sensor, supporting up to 4K (3840×2160) resolution and up to 30 fps at 4K output, delivering clear and lifelike video images.
4. Optical Zoom Lens: 12× optical zoom lens with an 80° horizontal field of view.
5. Advanced Autofocus: Advanced autofocus algorithms enable fast, accurate, and stable focusing.
6. Low Noise and High SNR: Low-noise CMOS sensor combined with advanced 2D and 3D digital noise reduction provides high signal-to-noise ratio and clear images.
7. Multiple Video Interfaces: Supports HDMI, USB 3.0, SDI, and wired LAN interfaces. Supports PoE+ power supply, with USB 3.0 supporting dual-stream output.
8. Multiple Video Compression Formats: Supports YUY2, MJPEG, H.264, H.265, and NV12 formats. MJPEG, H.264, and H.265 support compression up to 3840×2160 at 30 fps.
9. Audio Input: Supports AAC audio encoding with a 48 kHz sampling rate.
10. Built-in Gravity Sensor: Supports automatic PTZ flipping, facilitating flexible installation.
11. Multiple Network Protocols: Supports ONVIF, GB/T28181, RTSP, RTMP, VISCA over IP, IP VISCA, RTMPS, and SRT protocols; supports RTMP streaming and RTP multicast.
12. Multiple Control Protocols: Supports VISCA, PELCO-D, and PELCO-P protocols with automatic protocol recognition.
13. Ultra-Quiet PTZ: Uses high-precision stepper motors and precision motor drivers to ensure smooth and quiet PTZ movement even at low speeds.
14. Multiple Presets: Supports up to 255 preset positions, with up to 10 presets available via remote control.
15. Multiple AI Tracking Modes: Supports Real-Time Tracking, Stage Tracking, Zone Tracking, and Smart Framing. Built-in ReID technology accurately identifies and tracks the target based on body shape, appearance, clothing, and other characteristics.
16. Smart Framing: Built-in high-performance processor and face detection algorithm automatically detect participants and provide optimized framing.
17. Intelligent Voice Localization & Tracking: Built-in 6-element omnidirectional microphone array and intelligent sound-source localization algorithm enable real-time speaker positioning and tracking.
18. Wide Range of Applications: Suitable for distance education, lecture recording, conference systems, remote training, telemedicine, court systems, emergency command systems, and other applications.

► Specification:

1. Camera & Imaging Parameters	
Item	Specification
Image Sensor	1/2.8" High-Quality CMOS Sensor
Effective Pixels	8.42 Megapixels, 16:9
Maximum Resolution	4K (3840 × 2160)
Maximum Frame Rate	30 fps
Digital Noise Reduction	2D & 3D Digital Noise Reduction
Signal-to-Noise Ratio	>50 dB
White Balance	Auto / Manual / One-Push / Specified Color Temperature
Focus Mode	Auto / Manual / One-Push Focus
Exposure Mode	Auto / Manual / Shutter Priority / Aperture Priority / Brightness Priority
Aperture	Auto / Manual
Shutter Speed	1/25–1/10000 s
Backlight Compensation	On / Off
Dynamic Range	Off / Level 1–8
Video Adjustment	Brightness / Hue / Saturation / Contrast / Sharpness / Gamma Curve
2. Video Signal & Resolution	
Interface / Stream	Video Format & Resolution
Network Stream – Tracking Camera	H.264/H.265: 3840×2160 / 2592×1944 / 2304×1296 / 1920×1080 / 1280×720 @ 30/25/20/15/10/5 fps
Network Stream – Panoramic Camera	H.264/H.265: 1920×1080 / 1280×720 @ 30/25/20/15/10/5 fps
USB 3.0 – Tracking Camera	YUY2/NV12: 1920×1080 / 1280×720 / 1024×576 / 800×600 / 800×448 / 640×480 / 640×360 / 480×270 / 320×180 @ 30/25/20/15/10/5 fps
USB 3.0 – Tracking Camera	H.264/H.265/MJPEG: 3840×2160 / 1920×1080 / 1600×896 / 1280×720 / 1024×576 / 960×540 / 800×600 / 800×448 / 720×576 / 720×480 / 640×480 / 640×360 / 480×270 / 352×288 / 320×240 @ 30/25/20/15/10/5 fps

USB 3.0 – Panoramic Camera	YUY2/NV12: 1920×1080 / 1280×720 / 1024×576 / 800×600 / 800×448 / 640×480 / 640×360 / 480×270 / 320×180 @ 30/25/20/15/10/5 fps
USB 3.0 – Panoramic Camera	H.264/H.265/MJPEG: 1920×1080 / 1600×896 / 1280×720 / 1024×576 / 960×540 / 800×600 / 800×448 / 720×576 / 720×480 / 640×480 / 640×360 / 480×270 / 352×288 / 320×240 @ 30/25/20/15/10/5 fps
HDMI Output	Tracking/Panoramic: 3840×2160 / 1920×1080 @ 30/25 fps; 1280×720 @ 60/59.94/50 fps
SDI Output	Tracking/Panoramic: 1920×1080 @ 30/25 fps; 1280×720 @ 60/59.94/50 fps

3. Tracking Camera Lens Parameters

Item	Specification
Optical Zoom	12×
Horizontal Field of View	8° (Tele) – 80° (Wide)
Aperture	F1.8–F2.68
Focal Length	3.5 mm (Wide) – 42 mm (Tele)
Minimum Illumination	0.5 Lux (F1.8, AGC ON)
Digital Noise Reduction	2D & 3D Digital Noise Reduction
Focus	Auto / Manual / One-Push
Exposure	Auto / Manual / Shutter Priority / Aperture Priority / Brightness Priority

4. Panoramic Camera Parameters

Item	Specification
Image Sensor	1/2.8" High-Quality CMOS Sensor
Effective Pixels	8.42 Megapixels, 16:9
Lens Type	Fixed-Focus Lens
Horizontal Field of View	110°
Aperture	F2.2
Focal Length	f = 2.03 mm
Lens Angle Adjustment	±15°

5. Interface & Connectivity

Item	Specification
Interfaces	HDMI, SDI, LAN (PoE+), USB 3.0, LINE-IN, RS485/RS232

Video Output Interfaces	HDMI, SDI, LAN, USB 3.0
LAN Video Compression	H.264, H.265
USB 3.0 Video Formats	YUY2, NV12
Audio Input	Dual-Channel 3.5 mm Line Input
Audio Output	HDMI, SDI, LAN, USB 3.0
Audio Compression	AAC
Network Interface	10/100/1000 Mbps Adaptive Ethernet, PoE+, Audio & Video Output
Network Protocols	RTSP, RTMP, ONVIF, GB/T28181, VISCA over IP, IP VISCA, RTMPS, SRT
Remote Functions	Remote Upgrade / Remote Restart / Remote Reset
Control Interfaces	RS232, RS485, LAN
Control Protocols	VISCA / PELCO-D / PELCO-P
Baud Rate	115200 / 38400 / 9600 / 4800 / 2400 bps
USB Communication Protocols	UVC (Video Communication) / UAC (Audio Communication)
Power Connector	HEC3800 DC Power Socket
Power Adapter Input	AC 110–220V
Power Adapter Output	DC 12V / 2.5A
Input Voltage	DC 12V $\pm$ 10%
Input Current	2A (Max.)
Power Consumption	24W (Max.)
Dimensions	219 × 136.6 × 155.4 mm
Weight	Approx. 1.58 kg

6. PTZ Parameters

Item	Specification
Pan Range	-170° to +170°
Tilt Range	-30° to +90°
Pan Speed	0.1–60°/s
Tilt Speed	0.1–45°/s
Preset Speed	Pan: 60°/s; Tilt: 45°/s
Preset Positions	Up to 255 user-configurable presets; 10 presets via remote control
Gravity Sensor	Built-in, supports automatic PTZ flipping
PTZ Drive	High-precision stepper motor

7. Environmental Parameters

Item	Specification
Storage Temperature	-10°C to +70°C
Storage Humidity	20%–95% RH
Operating Temperature	-10°C to +50°C
Operating Humidity	20%–80% RH
Installation Environment	Indoor
Weight	Approx. 1.58 kg

8. AI Function Parameters

AI Function	Specification
Real-Time Tracking	Supports continuous single-person tracking. Tracking target size can be configured for close-up, half-body, full-body, and other framing modes. The tracking target can be selected through the WEB preview interface.
Stage Tracking	A predefined stage area can be configured. When a person enters the designated area, the camera automatically tracks the person and keeps the target centered in the frame.
Zone Tracking	Allows one or more specific tracking zones to be manually defined within the panoramic view. When a person enters the designated zone, the tracking camera locks onto the corresponding preset position. When the person leaves the zone, the system automatically switches to real-time tracking.
Smart Framing	Built-in high-performance processor and face detection algorithm automatically detect participants and provide optimized framing. Maximum framing distance: 6–7 m.
Intelligent Voice Localization & Tracking	Built-in 6-element omnidirectional microphone array and intelligent sound-source localization algorithm enable real-time speaker positioning. Voice tracking can be enabled/disabled. Maximum pickup distance: 6–7 m.