IPC-HFW5541E-ZE

5MP Pro AI IR Vari-focal Bullet Network Camera

Analytic | **H.265 HEVC** High-Efficiency Video Coding **Codec** | **WDR** | **SD Card** | **3D DNR**

Overview

Pro AI series contains Face Detection, Perimeter Protection and People Counting functions.Powered by deep-learning Artificial Intelligence algo- rithms, significantly improved accuracy. Meanwhile, the series features starlight and smart IR technology. This series fully protected from dust and water, certified to IP67 and vandal resistant to IK10 standard.

Functions

Face Capture

Face capture is a software application that automatically captures faces from within a digital image or a video frame from a video source. The cameras use advanced deep learning algorithms and are trained by a large number of face data sources, enabling the camera to locate faces quickly and accurately from the video source and capture facial images.

Face Attributes

Through the use of deep learning algorithms to analyze facial images, The cameras can extract six facial attributes from each frame, including Age, Gender,Expression (Jolly/Surprise/Normal/Rage/Sad/Disgusted/Confused/Frightened), Glasses, Mouth Mask, Moustache & Beard. Customers can acquire data of interest via face attributes statistics.

People Counting

People Counting function uses advanced image processing technology to capture depth information from within images. The camera pairs this information with deep learning algorithms to analyze and detect human bodies and track target objects in real time. The camera provides statistics for separate individuals' entrance and exit with up to 95% counting accuracy.

Metadata

Metadata is feature attribute information extracted from a target object which can be used for data retrieval. Face detection camera can extract six facial attributes and output the metadata for analysis.

Wide Voltage Protection

Protection(IP67, IK10, wide voltage) The camera allows for ±30% input voltage tolerance, suitable for the most unstable conditions for outdoor applications. Its 6KV lightning rating provides effective protection for both the camera and its structure against lightning.

ONVIF

Technical Specification

Camera

Image Sensor	1/2.7" CMOS
Max. Resolution	2960 (H) × 1668 (V)
ROM	4 GB
RAM	1 GB
Scanning System	Progressive
Electronic Shutter Speed	Auto/Manual 1/3 s–1/100,000 s
Min. Illumination	0.0009 lux@F1.5(Color, 30 IRE) 0.0005 lux@F1.5(B/W, 30 IRE) 0 lux (Illuminator on)
S/N Ratio	>56 dB
Illumination Distance	Up to 60 m (196.85 ft) (IR)
Illuminator On/Off Control	Auto;Zoomprio;Manual
Illuminator Number	4 (IR LED)
Angle Adjustment	Pan: 0°–360° Tilt: 0°–90° Rotation: 0°–360°

Lens

Lens Type	Motorized vari-focal
Lens Mount	φ14
Focal Length	2.7 mm–13.5 mm
Max. Aperture	F1.5
Field of View	H: 114°–32°; V: 58°–17°; D: 138°–36°
Iris Control	Auto
Close Focus Distance	0.8 m (2.62 ft)

	Lens	Detect	Observe	Recognize	Identify
DORI Distance	W	64.0 m (209.97 ft)	25.6 m (83.99 ft)	12.8 m (41.99 ft)	6.4 m (20.99 ft)
	T	210.0 m (688.98 ft)	84.0 m (275.89 ft)	42.0 m (137.80 ft)	21.0 m (68.90 ft)

*DORI (Detect, Observe, Recognize, Identify) is a standard system (EN-62676-4) for defining the ability of a person viewing the video to distinguish persons or objects within a covered area. The numbers in this table do not reflect intelligent function distances. For intelligent function distances, refer to installation and commissioning manual/project design tool.

Intelligence

IVS (Perimeter Protection)	Intrusion, tripwire, fast moving (the three functions support the classification and accurate detection of vehicle and human); loitering detection, people gathering, and parking detection
Smart Object Detection	Smart abandoned object; smart missing object
SMD	SMD 3.0
AcuPick	Uses deep learning algorithms and works with back-end devices to accurately match targets, such as people and motor vehicles, and search through live and recorded videos to quickly locate targets.
AI SSA	Yes

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Face Detection	Face detection; track; snapshot; snapshot optimization; optimal face snapshot upload; face enhancement; face exposure; face attributes extraction including 6 attributes and 8 expressions; face snapshot set as face, one-inch photo or custom; snapshot strategies (real-time snapshot, quality priority and optimization snapshot); face angle filter; optimization time setting.
People Counting	Tripwire people counting, generating and exporting report (day/week/month/year); people counting in area and queue management; generating and exporting report (day/week/month); 4 rules can be set for tripwire, people counting in area and queue management.
Heat Map	Yes
Video Metadata	Motor vehicle, non-motor vehicle, face, human body detection; track; snapshot; snapshot optimization; optimal face snapshot upload. Motor vehicle attributes: vehicle type, vehicle color, vehicle logo and other attributes : seatbelt, smoking, calling. Non-motor vehicle attributes: type, color, number of people, top type and color, hat. Human body attributes: gender, top/bottom type and color, bag, hat and umbrella. Face attributes: gender, age, expressions, glasses, face mask and beard.
Smart Search	Work together with Smart NVR to perform refine intelligent search, event extraction and merging to event videos
Smart Sound Detection	Yes

Video

Video Compression	H.265; H.264; H.264H; H.264B; MJPEG (Only supported by the sub stream)
Smart Codec	Smart H.265+; Smart H.264+
AI Coding	AI H.265; AI H.264
Video Frame Rate	Main stream: 2960 × 1668@(1~25/30 fps) Sub stream: D1@(1~25/30 fps) Third stream: 1080p@(1~25/30 fps) Fourth stream: 720p@(1~25/30 fps) *The values above are the max. frame rates of each stream; for multiple streams, the values will be subjected to the total encoding capacity.
Stream Capability	4 streams
Resolution	5M (2960 × 1668); 5M (2880 × 1620); 4M (2688 × 1520); 3.6M (2560 × 1440); 3M (2048 × 1536); 3M (2304 × 1296); 1080p (1920 × 1080); 1.3M (1280 × 960); 720p (1280 × 720); D1 (704 × 576/704 × 480); VGA (640 × 480); CIF (352 × 288/352 × 240)
Bit Rate Control	CBR/VBR
Video Bit Rate	H.264: 32 kbps–16384 kbps; H.265: 12 kbps–11776 kbps
Day/Night	Auto(ICR)/Color/B/W
BLC	Yes
HLC	Yes
WDR	120 dB
Scene Self-adaptation (SSA)	Yes
White Balance	Auto; natural; street lamp; outdoor; manual; regional custom
Gain Control	Auto
Noise Reduction	3D NR

Motion Detection	OFF/ON (4 areas, rectangular)
Region of Interest (RoI)	Yes (4 areas)
Image Stabilization	Electronic Image Stabilization (EIS)
Defog	Yes
Image Rotation	0°/90°/180°/270° (Support 90°/270° with 4M (2688 × 1520) resolution and lower)
Mirror	Yes
Privacy Masking	8 areas
LDC	Yes

Audio

Built-in MIC	Yes
Audio Compression	G.711a; G.711Mu; PCM; G.726; G.723

Alarm

Alarm Event	No SD card; SD card full; SD card error; network disconnection; IP conflict; illegal access; motion detection; video tampering; tripwire; intrusion; fast moving; abandoned object; missing object; loitering detection; people gathering; parking detection; scene changing; audio detection; voltage detection; external alarm; face detection; video metadata; SMD; people counting in area; stay detection; people counting; people number error detection; queue people number alarm; queue time alarm; security exception; defocus detection

Network

Network Port	RJ-45 (10/100 Enhancement Base-T)
SDK and API	Yes
Network Protocol	IPv4; IPv6; HTTP; TCP; UDP; ARP; RTP; RTSP; RTCP; RTMP; SMTP; FTP; SFTP; DHCP; DNS; DDNS; QoS; UPnP; NTP; Multicast; ICMP; IGMP; NFS; SAMBA; PPPoE; SNMP; P2P
Interoperability	ONVIF (Profile S/Profile G/Profile T); CGI;
User/Host	20 (Total bandwidth: 80 M)
Storage	FTP; SFTP; Micro SD card (support max. 512 GB); NAS
Browser	IE: IE 9 and later Chrome: Chrome 102 and later Firefox: Firefox 88 and later
Management Software	SmartPSS Lite; DSS; DMSS
Mobile Client	iOS; Android
Cyber Security	Configuration encryption; trusted execution; Digest; security logs; WSSE; account lockout; syslog; video encryption; 802.1x; IP/MAC filtering; HTTPS; trusted upgrade; trusted boot; firmware encryption; generation and importing of X.509 certification

Certification

Certifications	CE-LVD: EN62368-1; CE-EMC: Electromagnetic Compatibility Directive 2014/30/EU; FCC: 47 CFR FCC Part 15, Subpart B; UL/CUL: UL62368-1 & CAN/CSA C22.2 No. 62368-1-14

Port

Audio Input	1 channel (RCA port)
Audio Output	1 channel (RCA port)
Alarm Input	2 channels in: wet contact, 5 mA 3V-5V DC

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Alarm Output	1 channel out: wet contact, 300mA 12V DC

Power

Power Supply	12 VDC/PoE (802.3af)/ePoE
Dual Power Backup	When the power adapter and PoE provide power at the same time, disconnect one of them. The device will continue to work, but will not restart.
Power Consumption	Basic: 3.6 W (12 VDC); 4.7 W (PoE) Max. (H.265+ WDR+ Intelligence on+IR on): 10.4 W (12 VDC); 13.0 W (PoE)

Environment

Operating Temperature	−30 °C to +60 °C (−22 °F to +140 °F)
Operating Humidity	≤95%
Storage Temperature	−40 °C to +60 °C (−40 °F to +140 °F)
Storage Humidity	10%–95% (RH), non-condensing
Protection	IP67; IK10

Structure

Casing Material	Metal
Product Dimensions	273.2 mm × 95.0 mm × 95.0 mm (10.76" × 3.74" × 3.74") (L × W × H)
Net Weight	1.12 kg (2.47 lb)
Gross Weight	1.66 kg (3.66 lb)

Diamensions