

Obsah ponuky uchádzača k obstarávaniu

**„Modernizácia, rozširovanie a poskytovanie servisných služieb mestského kamerového systému hlavného mesta SR Bratislavy“**

Doklady preukazujúce splnenie podmienky účasti podľa § 32

- Výpis zo zoznamu hospodárskych subjektov

Doklady preukazujúce splnenie podmienky účasti podľa § 34 ods. 1 písm. a) ZOZNAM DODÁVOK TOVAROV

- Zoznam poskytnutých služieb

Návrh na plnenie kritérií na vyhodnotenie ponúk a ocenený výkaz výmer

- Výkaz výmer

Katalógové listy kamier

- Katalógové listy kamier

V Bratislave, dňa 17.6.2021



IČ DPH: SK2020265071

Ing. Oľga Bušo

Obchodné meno uchádzača:	Safe Guard s.r.o.
Sídlo uchádzača:	Mlynské nivy 58, 821 05 Bratislava
Štatutárny zástupca:	Ing. Oľga Bušo
IČO:	35710977
IČ DPH:	SK2020265071
Tel. číslo:	[REDACTED]
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**Návrh na plnenie kritéria**

	Cena celkom za predmet zákazky v EUR bez DPH	Výška DPH	Cena celkom za predmet zákazky v EUR s DPH
návrh uchádzača	166 370,14 €	33 274,03 €	<b>199 644,16 €</b>

Som platiteľom DPH

V Bratislave, dňa 17.6.2021

[REDACTED]  
podpis uchádzača

VÝKAZ KAMERY

Cenová tabuľka č. 1

P.č.	Názov	predpokladané množstvo	merná jednotka	jednotková cena bez DPH	cena bez DPH	DPH	Cena s DPH
1	Demontáž kamery	10	ks	22	220,00 €	44,00 €	264,00 €
2	Montáž a programovanie novej kamery s pripojením na server	50	ks	44	2 200,00 €	440,00 €	2 640,00 €
3	Inštalácia OR (plastová krabica s panelom do outdoor skrine)	50	ks	22	1 100,00 €	220,00 €	1 320,00 €
4	Zváranie v OR outdoor	30	ks	11	330,00 €	66,00 €	396,00 €
5	Inštalácia optického prevodníku	30	ks	5,5	165,00 €	33,00 €	198,00 €
6	Zatiahnutie optického kábla	3000	m	0,22	660,00 €	132,00 €	792,00 €
7	Inštalácia - Kruhový vodič 8 FeZn	1000	m	0,17	170,00 €	34,00 €	204,00 €
8	Inštalácia rozvodnice	30	ks	5,5	165,00 €	33,00 €	198,00 €
9	Inštalácia transformátora pre kameru	30	ks	5,5	165,00 €	33,00 €	198,00 €
10	Inštalácia PoE napájania s výstupom na optiku	30	ks	5,5	165,00 €	33,00 €	198,00 €
11	Zatiahnutie elektrického kábla	1000	m	5,5	5 500,00 €	1 100,00 €	6 600,00 €
12	Krimpovanie konektorov RJ45	30	ks	1,83	55,00 €	11,00 €	66,00 €
13	Zatiahnutie štruktúrovaného kábla	1000	m	5,5	5 500,00 €	1 100,00 €	6 600,00 €
14	Elektrická inštalácia a zapojenie	30	ks	22	660,00 €	132,00 €	792,00 €
15	Pripojovacie svorky jednostranné so svorkou KS	50	ks	1	50,00 €	10,00 €	60,00 €
16	Statický posudok na stĺp (verejného osvetlenia, trolejového vedenia)	50	ks	100	5 000,00 €	1 000,00 €	6 000,00 €
17	Východzia odborná skúška	30	ks	25	750,00 €	150,00 €	900,00 €
18	Projektová dokumentácia + inžinierska činnosť	30	ks	100	3 000,00 €	600,00 €	3 600,00 €
19	Ostatné poskytnuté práce pre inštaláciu kamery (paušál)	30	ks	22	660,00 €	132,00 €	792,00 €
20	Križovanie trolejového vedenia (spolupráca s DPB a.s, Vypnutie TV, práca v noci, prenájom izolovanej plošiny s osádkou)	5	h	50	250,00 €	50,00 €	300,00 €
21	Geodetické zameranie	30	súbor	110	3 300,00 €	660,00 €	3 960,00 €
<b>Tabuľka č. 1 spolu</b>					<b>30 065,00 €</b>	<b>6 013,00 €</b>	<b>36 078,00 €</b>

Cenová tabuľka č. 2

P.č.	Názov	množstvo	merná jednotka	jednotková cena bez DPH	cena bez DPH	DPH	Cena s DPH
1	2.1.1 IP PTZ kamera typ 1	10	ks	816,99 €	8 169,88 €	1 633,98 €	9 803,85 €
2	2.1.2 IP PTZ kamera typ 2	10	ks	720,67 €	7 206,71 €	1 441,34 €	8 648,05 €
3	2.1.3 IP PTZ kamera typ 3	5	ks	385,95 €	1 929,76 €	385,95 €	2 315,71 €
4	2.1.4 IP pevná kamera typ 1	5	ks	218,59 €	1 092,96 €	218,59 €	1 311,55 €
5	2.1.5 IP pevná kamera typ 2	5	ks	218,59 €	1 092,96 €	218,59 €	1 311,55 €
6	2.1.6 IP pevná kamera typ 3	5	ks	218,59 €	1 092,96 €	218,59 €	1 311,55 €
7	2.1.7 IP pevná kamera typ 4	5	ks	267,78 €	1 338,88 €	267,78 €	1 606,65 €
8	2.1.8 IP pevná kamera typ 5	4	ks	131,16 €	524,62 €	104,92 €	629,54 €
9	2.1.9 IP pevná kamera typ 6	1	ks	197,42 €	197,42 €	39,48 €	236,90 €
10	Skriňa (napr. Schneider Sarel Thalassa PLM (530x430x200), IP66)	50	ks	69,14 €	3 456,90 €	691,38 €	4 148,28 €
11	Optická dome spojka pre min 24 vlákien na stĺp	35	ks	21,32 €	746,24 €	149,25 €	895,48 €
12	Optická spojka - kazeta do zeme pre min 24 vlákien	20	ks	21,32 €	426,42 €	85,28 €	511,70 €
13	Optický rozvádzač, Outdoor prevedenie	50	ks	44,55 €	2 227,55 €	445,51 €	2 673,06 €
14	Vonkajší dome box -optická spojka pre 24 vlákien s ochranou spojov	65	ks	40,25 €	2 616,25 €	523,25 €	3 139,50 €
15	Ochrana zvaru, zmršťovacia	30	ks	0,10 €	3,11 €	0,62 €	3,73 €
16	Kazeta pre OR	30	ks	1,45 €	43,47 €	8,69 €	52,16 €
17	Držiak zvarov pre kazetu do OR	30	ks	5,18 €	155,25 €	31,05 €	186,30 €
18	Patchkabel SM SC/PC duplex 1m	30	ks	4,68 €	140,42 €	28,08 €	168,50 €
19	Adaptér SC/PC DUPLEX, pre OR	30	ks	0,32 €	9,66 €	1,93 €	11,59 €

VÝKAZ VDG SENSE

Cenová tabuľka č. 3

PRÁCE							
P.č.	Názov	predpokladané množstvo	merná jednotka	jednotková cena bez DPH	cena bez DPH	DPH	cena spolu
1.	Konfigurácia Sense servera	1	ks	44,00 €	44,00 €	8,80 €	52,80 €
2.	Konfigurácia Sense pracovnej stanice	10	ks	44,00 €	440,00 €	88,00 €	528,00 €
3.	Ostatné práce	100	h	22,00 €	2 200,00 €	440,00 €	2 640,00 €
<b>Tabuľka č. 3 spolu</b>					<b>2 684,00 €</b>	<b>536,80 €</b>	<b>3 220,80 €</b>

Cenová tabuľka č. 4

VDG SENSE Hardware							
P.č.	Názov	predpokladané množstvo	merná jednotka	jednotková cena bez DPH	cena bez DPH	DPH	cena spolu
1.	Server - VDG Video server						
1.1	NVH-2608XR Video server 19", xeon, 2U, SSD, 8-port, HS RAID, RPSU (min. konfigurácii)	1	ks	2 885,63 €	2 885,63 €	577,13 €	3 462,75 €
1.2	NVH-2608XRD Video server 19", dual xeon, 2U, SSD, 8-port, HS RAID, RPSU	1	ks	2 885,63 €	2 885,63 €	577,13 €	3 462,75 €
1.5	Extra 100/1000Mbps LAN interface	4	ks	11,50 €	46,00 €	9,20 €	55,20 €
1.7	Pro video server storage 8TB Pevný disk 3,5" , 256 MB cache, 7200 ot., Interface SATA 6 GB/s/interface transfer rate 600 MB/s, prevádzka 24/7	16	ks	209,86 €	3 357,82 €	671,56 €	4 029,38 €
1.8	Pro video server storage 10TB Pevný disk 3,5" , 256 MB cache, 7200 ot., Interface SATA 6 GB/s/interface transfer rate 600 MB/s, prevádzka 24/7	16	ks	276,72 €	4 427,59 €	885,52 €	5 313,11 €
1.9	Pro video server storage 12TB Pevný disk 3,5" , 256 MB cache, 7200 ot., Interface SATA 6 GB/s/interface transfer rate 600 MB/s, prevádzka 24/7	8	ks	339,86 €	2 718,88 €	543,78 €	3 262,65 €
2.	Pracovná stanica - VDG Video client						
2.1	NVH-1001 Compact, i5, SSD, 1TB HDD (min. v konfigurácii)	2	ks	1 231,20 €	2 462,40 €	492,48 €	2 954,88 €
2.2	NVH-1101 Video client, i7, SSD (desktop/tower)	8	ks	1 231,20 €	9 849,60 €	1 969,92 €	11 819,52 €
2.5	NVH-QUAD Quad mini display port/DVI-D output	8	ks	346,28 €	2 770,20 €	554,04 €	3 324,24 €
3	Monitor 1 27" Full HD LED, 1920x1080, 24/7,VGA,DVI,HDMI,DP + kabel pre pripojenie k PC (min. 2 m)	16	ks	601,36 €	9 621,72 €	1 924,34 €	11 546,06 €
4	Monitor 2 55" Full HD LED, 1920x1080, 24/7,VGA,DVI,HDMI, kabel pre pripojenie k PC (min. 2 m)	6	ks	1 544,81 €	9 268,83 €	1 853,77 €	11 122,60 €
4	Monitor 3 60" Full HD LED, 1920x1080, 24/7,VGA,DVI,HDMI,DP kabel pre pripojenie k PC (min. 2 m)	6	ks	1 757,93 €	10 547,58 €	2 109,52 €	12 657,09 €
<b>Tabuľka č. 4 spolu</b>					<b>60 841,86 €</b>	<b>12 168,37 €</b>	<b>73 010,23 €</b>

## VÝKAZ SERVIS

## Cenová tabuľka č. 5

PRÁCE							
P.č.	Názov	predpokladané množstvo	merná jednotka	jednotková cena bez DPH	cena bez DPH	DPH	Spolu s DPH
1.	Cena za 1 hod. operatívneho servisu od 7:00 do 15:00	200	h	25,00 €	5 000,00 €	1 000,00 €	6 000,00 €
2.	Cena za 1 hod. operatívneho servisu od 15:00 do 7:00 a v sobotu	30	h	10,00 €	300,00 €	60,00 €	360,00 €
3.	Cena za 1 hod. operatívneho servisu vo sviatok a v nedeľu	30	h	10,00 €	300,00 €	60,00 €	360,00 €
4.	Servisná kontrola	100	kamera	22,00 €	2 200,00 €	440,00 €	2 640,00 €
5.	Odborná prehliadka a odborná skúška	50	kamera	22,00 €	1 100,00 €	220,00 €	1 320,00 €
6.	Prenájom montážnej plošiny výška do 12m	130	h	26,00 €	3 380,00 €	676,00 €	4 056,00 €
7.	Prenájom montážnej plošiny výška nad 12m	130	h	29,00 €	3 770,00 €	754,00 €	4 524,00 €
<b>Tabuľka č. 5 spolu</b>					<b>16 050,00 €</b>	<b>3 210,00 €</b>	<b>19 260,00 €</b>

## VÝKAZ LOKÁLNY KAMEROVÝ SYSTÉM

Cenová tabuľka č. 6

PRÁCE							
P.č.	Názov	množstvo	merná jednotka	jednotková cena bez DPH	cena bez DPH	DPH	Spolu s DPH
1.	Pevná IP kamera s konzolou	10	ks	175,50 €	1 755,00 €	351,00 €	2 106,00 €
2.	NVR Systém	8	ks	233,55 €	1 868,40 €	373,68 €	2 242,08 €
3.	POE switch	10	ks	36,45 €	364,50 €	72,90 €	437,40 €
4.	Monitor k NVR	8	ks	601,36 €	4 810,86 €	962,17 €	5 773,03 €
5.	Kábel FTP	500	m	0,29 €	143,75 €	28,75 €	172,50 €
6.	Lišta na povrchové vedenie kabeláže 15x10mm	500	m	0,43 €	213,90 €	42,78 €	256,68 €
7.	Iný inštalačný materiál	8	súbor	17,25 €	138,00 €	27,60 €	165,60 €
8.	Práca (inštalácia, oživenie systému)	64	h	22,00 €	1 408,00 €	281,60 €	1 689,60 €
9.	Dokumentácia, zaškolenie obsluhy	8	prípad	22,00 €	176,00 €	35,20 €	211,20 €
<b>Tabuľka č. 6 spolu</b>					<b>10 878,41 €</b>	<b>2 175,68 €</b>	<b>13 054,09 €</b>

# DH-IPC-HFW5241E-ZE-CNI

## 2MP WDR IR Bullet AI Network Camera



Dahua AI series products adopt the most advanced AI technologies, including deep learning algorithms that primarily target people and vehicles, which provides higher flexibility and accuracy for end-users. This enables the Dahua AI series to offer various advanced applications such as Face Recognition, ANPR, Metadata, People Counting, traffic data statistics, etc. The complete lineup of Dahua AI includes network (PTZ) cameras, network video recorders, servers, and platform management products. Beyond seeing the world, the power of AI allows devices to perceive the environment and understand the world in a better way.

### System Overview

Pro AI series contains Face Capture, Perimeter Protection and People Counting functions. Powered by deep-learning Artificial Intelligence algorithms, 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. Dahua 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, Dahua 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.

#### Perimeter Protection

Dahua's Perimeter Protection functions significantly improved accuracy. Perimeter Protection reduces false alarms and decreases pixel count requirements for object detection. Perimeter Protection features custom tripwires based on object type for automation in limited access areas such as pedestrian or vehicle-only zones. This combination of advanced AI analytics and real-time alerts to a desktop or to a mobile

- 1/2.8" 2Megapixel progressive scan STARVIS™ CMOS
- H.265 & H.264 triple-stream encoding
- 25/30 fps@1080P (1920 × 1080)
- WDR (120 dB), Day/Night (ICR), 3D DNR, AWB, AGC, BLC
- Multiple network monitoring: Web viewer, CMS (DSS/PSS) & DMSS
- 2.7 mm–13.5 mm motorized lens
- 2/1 Alarm in/out, 1/1 audio in/out
- Max. IR LEDs Length 50 m
- Micro SD memory, IP67, IK10



client reduces system requirements and resources resulting in greater surveillance system efficiency.

#### 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. Dahua face detection camera can extract six facial attributes and output the metadata for analysis.

#### ePoE technology

The ePoE technology of Dahua, designed internally, adopts advanced 2D-PAM3 coding modulation from physical layer, and realizes full duplex transmission over 800 meters at the speed of 10Mbps, or 300 meters at the speed of 100Mbps via Cat 5 or coaxial cable media. Besides, it supports PoE and PoC power supply technology which has greatly simplified construction and wiring. Dahua ePoE technology offer a new way to accomplish long distance transmission between IP camera and network switch. It allows more flexible surveillance system design, improves reliability and saves construction and wiring cost.

#### 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. Subjected and certified to rigorous dust and immersion tests (IP67) and impact tests (IK10), the camera is the choice for installation in even the most unforgiving environments.



### Technical Specification

#### Camera

Image Sensor	1/2.8" 2Megapixel progressive scan STARVIS™ CMOS
Effective Pixels	1920 (H) × 1080 (V)
RAM/ROM	512 MB/128 MB
Scanning System	Progressive
Electronic Shutter Speed	Auto/Manual, 1/3 s–1/100000 s
Minimum Illumination	0.002 Lux@F1.5
IR Distance	Distance up to 50 m (164 ft)
IR On/Off Control	Auto/Manual
IR LEDs	4

#### Lens

Lens Type	Motorized				
Mount Type	Board-in				
Focal Length	2.7 mm–13.5 mm				
Max. Aperture	F1.5				
Angle of View	H: 109°–30°, V: 57°–17°				
Optical Zoom	5x				
Aperture Type	Auto				
Close Focus Distance	0.8 m (2.62 ft)				
DORI Distance	Lens	Detect	Observe	Recognize	Identify
	W	50m	20m	10m	5m
	T	146m	58m	29m	15m

#### Pan/Tilt/Rotation

Pan/Tilt/Rotation Range	Pan: 0°–360°, Tilt: 0°–90°, Rotation: 0°–360°
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#### Artificial Intelligence

Face Capture	Support face image capture
Face Attributes	Support 6 kinds of face attributes extraction: Age, Gender, Expression (Jolly, Surprise, Normal, Rage, Sad, Disgusted, Confused, Frightened), Glasses, Mouth Mask, Moustache & Beard
Perimeter Protection	Tripwire, Intrusion (Human & Vehicle classification)
People Counting	Support Line crossing/Region/Queueing people counting; Support 4 accesses independent detection, 4 areas independent detection

#### General Intelligence

Event Trigger	Motion detection, Video tampering, Scene changing, Network disconnection, IP address conflict, Illegal Access, Storage anomaly
General Intelligence	Object Abandoned/Missing

#### Video

Compression	H.265+, H.265, H.264+, H.264, H.264B, H.264H, MJPEG (sub stream)
Streaming Capability	3 Streams

Resolution	1080P (1920 × 1080)/1.3 M (1280 × 960)/720P (1280 × 720)/D1 (704 × 576/704 × 480)/VGA (640 × 480)/CIF (352 × 288/352 × 240)
Frame Rate	Main Stream: 1080P (1 fps–25/30 fps)
	Sub Stream: D1 (1 fps–25/30 fps)
	Third Stream: 1080P (1 fps–6 fps)
Bit Rate Control	CBR/VBR
Bit Rate	H.264: 32 Kbps–8192 Kbps H.265: 19 Kbps–7424 Kbps
Day/Night	Auto(ICR)/Color/B/W
BLC Mode	BLC/HLC/WDR (120 dB)
White Balance	Auto/Natural/Street Lamp/Outdoor/Manual
Gain Control	Auto/Manual
Noise Reduction	3D DNR
Motion Detetion	Off/On (4 Zone, Rectangle)
Region of Interest	Off/On (4 Zone)
Electronic Image Stabilization (EIS)	Support
Smart IR	Support
Defog	Support
Digital Zoom	N/A
Flip	0°/90°/180°/270°
Mirror	Off/On
Privacy Masking	Off/On (4 Area, Rectangle)

#### Audio

Compression	G.711a, G.711Mu, AAC, G.726, G.723
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#### Network

Ethernet	RJ-45 (10/100 Base-T)
Protocol	HTTP, TCP, ARP, RTSP, RTP, UDP, RTCP, SMTP, FTP, DHCP, DNS, DDNS, PPPoE, IPv4/v6, SNMP, QoS, UPnP, NTP, ICMP, HTTPS, IGMP, 802.1x
Interoperability	ONVIF (Profile S/Profile G), CGI, Milestone, Genetec, P2P
Streaming Method	Unicast/Multicast
Max. User Access	20 Users
Edge Storage	NAS FTP Micro SD card 256 GB
Web Viewer	IE (versions newer than IE8), Chrome, Firefox, Safari (versions newer than Safari 12)
Management Software	Smart PSS, DSS, P2P
Smart Phone	iOS, Android

#### Certifications

Certifications	CE-LVD: EN60950-1 CE-EMC: Electromagnetic Compatibility Directive 2014/30/EU FCC: 47 CFR FCC Part 15, Subpart B UL/CUL: UL60950-1 CAN/CSA C22.2 No.60950-1-07
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**Interface**

Video Interface	N/A
Audio Interface	1/1 channel In/Out
RS485	N/A
Alarm	2 channel In: 5mA 5V DC 1 channel Out: 300mA 12V DC

**Electrical**

Power Supply	DC 12V (±30%), PoE (802.3af) (Class 0)
Power Consumption	<10.3W

**Environmental**

Operating Conditions	-40° C to +65° C / 10%RH–95%RH
Storage Conditions	-40° C to +65° C
Ingress Protection	IP67
Vandal Resistance	IK10

**Construction**

Casing	Metal, plastic
Dimensions	273.2 mm × 95.0 mm × 95.0 mm (10.76" × 3.74" × 3.74")
Net Weight	1.11 kg (2.44 lb)
Gross Weight	1.51 kg (3.33 lb)

**Accessories**

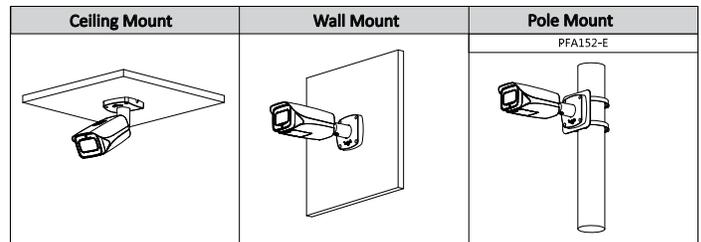
**Optional:**



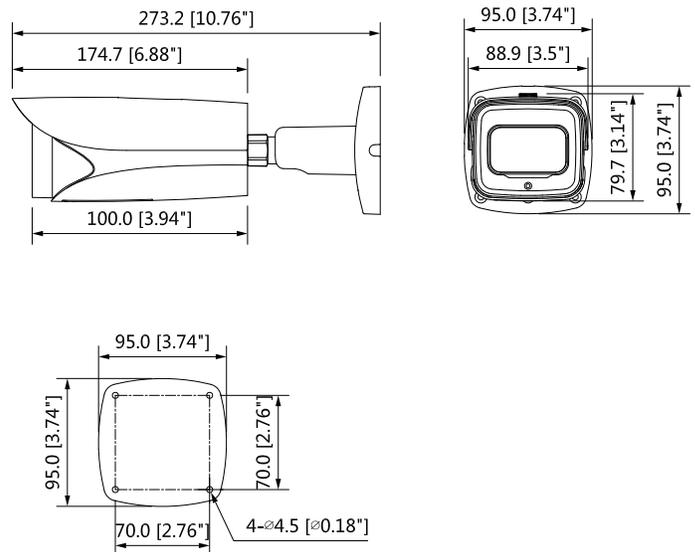
PFA152-E Pole Mount



LR1002 ePoE Over Coax Converter



**Dimensions (mm[inch])**



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- 2.7 mm–13.5 mm motorized lens
- 2/1 Alarm in/out, 1/1 audio in/out
- Max. IR LEDs Length 50 m
- Micro SD memory, IP67, IK10



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

### ePoE technology

The ePoE technology of Dahua, designed internally, adopts advanced 2D-PAM3 coding modulation from physical layer, and realizes full duplex transmission over 800 meters at the speed of 10Mbps, or 300 meters at the speed of 100Mbps via Cat 5 or coaxial cable media. Besides, it supports PoE and PoC power supply technology which has greatly simplified construction and wiring. Dahua ePoE technology offer a new way to accomplish long distance transmission between IP camera and network switch. It allows more flexible surveillance system design, improves reliability and saves construction and wiring cost.

### 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. Subjected and certified to rigorous dust and immersion tests (IP67) and impact tests (IK10), the camera is the choice for installation in even the most unforgiving environments.



### Technical Specification

#### Camera

Image Sensor	1/2.8" 2Megapixel progressive scan STARVIS™ CMOS
Effective Pixels	1920 (H) × 1080 (V)
RAM/ROM	512 MB/128 MB
Scanning System	Progressive
Electronic Shutter Speed	Auto/Manual, 1/3 s–1/100000 s
Minimum Illumination	0.002 Lux@F1.5
IR Distance	Distance up to 50 m (164 ft)
IR On/Off Control	Auto/Manual
IR LEDs	4

#### Lens

Lens Type	Motorized				
Mount Type	Board-in				
Focal Length	2.7 mm–13.5 mm				
Max. Aperture	F1.5				
Angle of View	H: 109°–30°, V: 57°–17°				
Optical Zoom	5x				
Aperture Type	Auto				
Close Focus Distance	0.8 m (2.62 ft)				
DORI Distance	Lens	Detect	Observe	Recognize	Identify
	W	50m	20m	10m	5m
	T	146m	58m	29m	15m

#### Pan/Tilt/Rotation

Pan/Tilt/Rotation Range	Pan: 0°–360°, Tilt: 0°–90°, Rotation: 0°–360°
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#### Artificial Intelligence

Face Capture	Support face image capture
Face Attributes	Support 6 kinds of face attributes extraction: Age, Gender, Expression (Jolly, Surprise, Normal, Rage, Sad, Disgusted, Confused, Frightened), Glasses, Mouth Mask, Moustache & Beard
Perimeter Protection	Tripwire, Intrusion (Human & Vehicle classification)
People Counting	Support Line crossing/Region/Queueing people counting; Support 4 accesses independent detection, 4 areas independent detection

#### General Intelligence

Event Trigger	Motion detection, Video tampering, Scene changing, Network disconnection, IP address conflict, Illegal Access, Storage anomaly
General Intelligence	Object Abandoned/Missing

#### Video

Compression	H.265+, H.265, H.264+, H.264, H.264B, H.264H, MJPEG (sub stream)
Streaming Capability	3 Streams

Resolution	1080P (1920 × 1080)/1.3 M (1280 × 960)/720P (1280 × 720)/D1 (704 × 576/704 × 480)/VGA (640 × 480)/CIF (352 × 288/352 × 240)
Frame Rate	Main Stream: 1080P (1 fps–25/30 fps)
	Sub Stream: D1 (1 fps–25/30 fps)
	Third Stream: 1080P (1 fps–6 fps)
Bit Rate Control	CBR/VBR
Bit Rate	H.264: 32 Kbps–8192 Kbps H.265: 19 Kbps–7424 Kbps
Day/Night	Auto(ICR)/Color/B/W
BLC Mode	BLC/HLC/WDR (120 dB)
White Balance	Auto/Natural/Street Lamp/Outdoor/Manual
Gain Control	Auto/Manual
Noise Reduction	3D DNR
Motion Detetion	Off/On (4 Zone, Rectangle)
Region of Interest	Off/On (4 Zone)
Electronic Image Stabilization (EIS)	Support
Smart IR	Support
Defog	Support
Digital Zoom	N/A
Flip	0°/90°/180°/270°
Mirror	Off/On
Privacy Masking	Off/On (4 Area, Rectangle)

#### Audio

Compression	G.711a, G.711Mu, AAC, G.726, G.723
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#### Network

Ethernet	RJ-45 (10/100 Base-T)
Protocol	HTTP, TCP, ARP, RTSP, RTP, UDP, RTCP, SMTP, FTP, DHCP, DNS, DDNS, PPPoE, IPv4/v6, SNMP, QoS, UPnP, NTP, ICMP, HTTPS, IGMP, 802.1x
Interoperability	ONVIF (Profile S/Profile G), CGI, Milestone, Genetec, P2P
Streaming Method	Unicast/Multicast
Max. User Access	20 Users
Edge Storage	NAS FTP Micro SD card 256 GB
Web Viewer	IE (versions newer than IE8), Chrome, Firefox, Safari (versions newer than Safari 12)
Management Software	Smart PSS, DSS, P2P
Smart Phone	iOS, Android

#### Certifications

Certifications	CE-LVD: EN60950-1 CE-EMC: Electromagnetic Compatibility Directive 2014/30/EU FCC: 47 CFR FCC Part 15, Subpart B UL/CUL: UL60950-1 CAN/CSA C22.2 No.60950-1-07
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**Interface**

Video Interface	N/A
Audio Interface	1/1 channel In/Out
RS485	N/A
Alarm	2 channel In: 5mA 5V DC 1 channel Out: 300mA 12V DC

**Electrical**

Power Supply	DC 12V (±30%), PoE (802.3af) (Class 0)
Power Consumption	<10.3W

**Environmental**

Operating Conditions	-40° C to +65° C / 10%RH–95%RH
Storage Conditions	-40° C to +65° C
Ingress Protection	IP67
Vandal Resistance	IK10

**Construction**

Casing	Metal, plastic
Dimensions	273.2 mm × 95.0 mm × 95.0 mm (10.76" × 3.74" × 3.74")
Net Weight	1.11 kg (2.44 lb)
Gross Weight	1.51 kg (3.33 lb)

**Accessories**

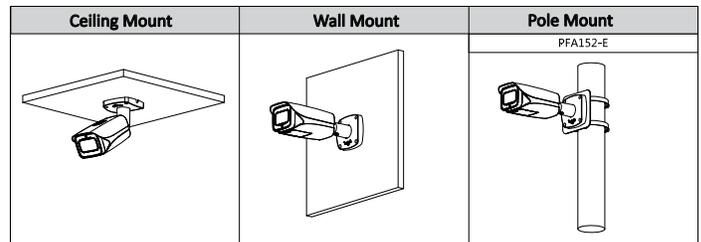
**Optional:**



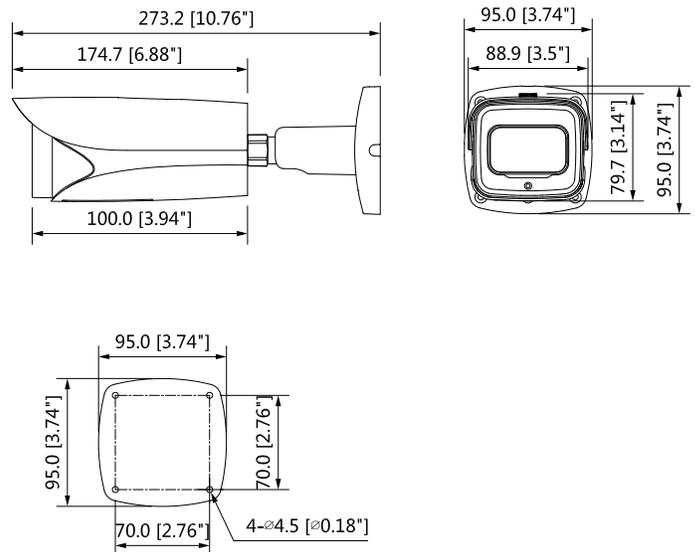
PFA152-E  
Pole Mount



LR1002  
ePoE Over Coax Converter



**Dimensions (mm[inch])**



# DH-IPC-HFW5241E-ZE-CNI

## 2MP WDR IR Bullet AI Network Camera



Dahua AI series products adopt the most advanced AI technologies, including deep learning algorithms that primarily target people and vehicles, which provides higher flexibility and accuracy for end-users. This enables the Dahua AI series to offer various advanced applications such as Face Recognition, ANPR, Metadata, People Counting, traffic data statistics, etc. The complete lineup of Dahua AI includes network (PTZ) cameras, network video recorders, servers, and platform management products. Beyond seeing the world, the power of AI allows devices to perceive the environment and understand the world in a better way.

### System Overview

Pro AI series contains Face Capture, Perimeter Protection and People Counting functions. Powered by deep-learning Artificial Intelligence algorithms, 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. Dahua 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, Dahua 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.

#### Perimeter Protection

Dahua's Perimeter Protection functions significantly improved accuracy. Perimeter Protection reduces false alarms and decreases pixel count requirements for object detection. Perimeter Protection features custom tripwires based on object type for automation in limited access areas such as pedestrian or vehicle-only zones. This combination of advanced AI analytics and real-time alerts to a desktop or to a mobile

- 1/2.8" 2Megapixel progressive scan STARVIS™ CMOS
- H.265 & H.264 triple-stream encoding
- 25/30 fps@1080P (1920 × 1080)
- WDR (120 dB), Day/Night (ICR), 3D DNR, AWB, AGC, BLC
- Multiple network monitoring: Web viewer, CMS (DSS/PSS) & DMSS
- 2.7 mm–13.5 mm motorized lens
- 2/1 Alarm in/out, 1/1 audio in/out
- Max. IR LEDs Length 50 m
- Micro SD memory, IP67, IK10



client reduces system requirements and resources resulting in greater surveillance system efficiency.

#### 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. Dahua face detection camera can extract six facial attributes and output the metadata for analysis.

#### ePoE technology

The ePoE technology of Dahua, designed internally, adopts advanced 2D-PAM3 coding modulation from physical layer, and realizes full duplex transmission over 800 meters at the speed of 10Mbps, or 300 meters at the speed of 100Mbps via Cat 5 or coaxial cable media. Besides, it supports PoE and PoC power supply technology which has greatly simplified construction and wiring. Dahua ePoE technology offer a new way to accomplish long distance transmission between IP camera and network switch. It allows more flexible surveillance system design, improves reliability and saves construction and wiring cost.

#### 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. Subjected and certified to rigorous dust and immersion tests (IP67) and impact tests (IK10), the camera is the choice for installation in even the most unforgiving environments.



### Technical Specification

#### Camera

Image Sensor	1/2.8" 2Megapixel progressive scan STARVIS™ CMOS
Effective Pixels	1920 (H) × 1080 (V)
RAM/ROM	512 MB/128 MB
Scanning System	Progressive
Electronic Shutter Speed	Auto/Manual, 1/3 s–1/100000 s
Minimum Illumination	0.002 Lux@F1.5
IR Distance	Distance up to 50 m (164 ft)
IR On/Off Control	Auto/Manual
IR LEDs	4

#### Lens

Lens Type	Motorized				
Mount Type	Board-in				
Focal Length	2.7 mm–13.5 mm				
Max. Aperture	F1.5				
Angle of View	H: 109°–30°, V: 57°–17°				
Optical Zoom	5x				
Aperture Type	Auto				
Close Focus Distance	0.8 m (2.62 ft)				
DORI Distance	Lens	Detect	Observe	Recognize	Identify
	W	50m	20m	10m	5m
	T	146m	58m	29m	15m

#### Pan/Tilt/Rotation

Pan/Tilt/Rotation Range	Pan: 0°–360°, Tilt: 0°–90°, Rotation: 0°–360°
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#### Artificial Intelligence

Face Capture	Support face image capture
Face Attributes	Support 6 kinds of face attributes extraction: Age, Gender, Expression (Jolly, Surprise, Normal, Rage, Sad, Disgusted, Confused, Frightened), Glasses, Mouth Mask, Moustache & Beard
Perimeter Protection	Tripwire, Intrusion (Human & Vehicle classification)
People Counting	Support Line crossing/Region/Queueing people counting; Support 4 accesses independent detection, 4 areas independent detection

#### General Intelligence

Event Trigger	Motion detection, Video tampering, Scene changing, Network disconnection, IP address conflict, Illegal Access, Storage anomaly
General Intelligence	Object Abandoned/Missing

#### Video

Compression	H.265+, H.265, H.264+, H.264, H.264B, H.264H, MJPEG (sub stream)
Streaming Capability	3 Streams

Resolution	1080P (1920 × 1080)/1.3 M (1280 × 960)/720P (1280 × 720)/D1 (704 × 576/704 × 480)/VGA (640 × 480)/CIF (352 × 288/352 × 240)
Frame Rate	Main Stream: 1080P (1 fps–25/30 fps)
	Sub Stream: D1 (1 fps–25/30 fps)
	Third Stream: 1080P (1 fps–6 fps)
Bit Rate Control	CBR/VBR
Bit Rate	H.264: 32 Kbps–8192 Kbps H.265: 19 Kbps–7424 Kbps
Day/Night	Auto(ICR)/Color/B/W
BLC Mode	BLC/HLC/WDR (120 dB)
White Balance	Auto/Natural/Street Lamp/Outdoor/Manual
Gain Control	Auto/Manual
Noise Reduction	3D DNR
Motion Detetion	Off/On (4 Zone, Rectangle)
Region of Interest	Off/On (4 Zone)
Electronic Image Stabilization (EIS)	Support
Smart IR	Support
Defog	Support
Digital Zoom	N/A
Flip	0°/90°/180°/270°
Mirror	Off/On
Privacy Masking	Off/On (4 Area, Rectangle)

#### Audio

Compression	G.711a, G.711Mu, AAC, G.726, G.723
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#### Network

Ethernet	RJ-45 (10/100 Base-T)
Protocol	HTTP, TCP, ARP, RTSP, RTP, UDP, RTCP, SMTP, FTP, DHCP, DNS, DDNS, PPPoE, IPv4/v6, SNMP, QoS, UPnP, NTP, ICMP, HTTPS, IGMP, 802.1x
Interoperability	ONVIF (Profile S/Profile G), CGI, Milestone, Genetec, P2P
Streaming Method	Unicast/Multicast
Max. User Access	20 Users
Edge Storage	NAS FTP Micro SD card 256 GB
Web Viewer	IE (versions newer than IE8), Chrome, Firefox, Safari (versions newer than Safari 12)
Management Software	Smart PSS, DSS, P2P
Smart Phone	iOS, Android

#### Certifications

Certifications	CE-LVD: EN60950-1 CE-EMC: Electromagnetic Compatibility Directive 2014/30/EU FCC: 47 CFR FCC Part 15, Subpart B UL/CUL: UL60950-1 CAN/CSA C22.2 No.60950-1-07
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**Interface**

Video Interface	N/A
Audio Interface	1/1 channel In/Out
RS485	N/A
Alarm	2 channel In: 5mA 5V DC 1 channel Out: 300mA 12V DC

**Electrical**

Power Supply	DC 12V (±30%), PoE (802.3af) (Class 0)
Power Consumption	<10.3W

**Environmental**

Operating Conditions	-40° C to +65° C / 10%RH–95%RH
Storage Conditions	-40° C to +65° C
Ingress Protection	IP67
Vandal Resistance	IK10

**Construction**

Casing	Metal, plastic
Dimensions	273.2 mm × 95.0 mm × 95.0 mm (10.76" × 3.74" × 3.74")
Net Weight	1.11 kg (2.44 lb)
Gross Weight	1.51 kg (3.33 lb)

**Accessories**

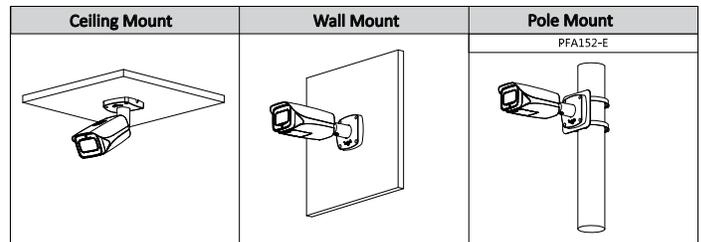
**Optional:**



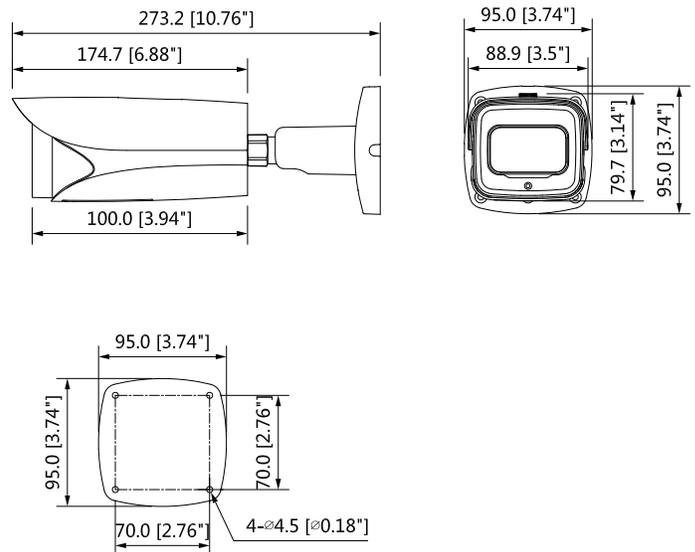
PFA152-E Pole Mount



LR1002 ePoE Over Coax Converter



**Dimensions (mm[inch])**



# DH-IPC-HFW5442E-ZE-CNI

## 4MP WDR IR Bullet AI Network Camera



Dahua AI series products adopt the most advanced AI technologies, including deep learning algorithms that primarily target people and vehicles, which provides higher flexibility and accuracy for end-users. This enables the Dahua AI series to offer various advanced applications such as Face Recognition, ANPR, Metadata, People Counting, traffic data statistics, etc. The complete lineup of Dahua AI includes network (PTZ) cameras, network video recorders, servers, and platform management products. Beyond seeing the world, the power of AI allows devices to perceive the environment and understand the world in a better way.

### System Overview

Pro AI series contains Face Capture, Perimeter Protection and People Counting functions. Powered by deep-learning Artificial Intelligence algorithms, 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. Dahua 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, Dahua 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.

#### Perimeter Protection

Dahua's Perimeter Protection functions significantly improved accuracy. Perimeter Protection reduces false alarms and decreases pixel count requirements for object detection. Perimeter Protection features custom tripwires based on object type for automation in limited access areas such as pedestrian or vehicle-only zones. This combination of advanced AI analytics and real-time alerts to a desktop or to a mobile

- 1/1.8" 4Megapixel progressive scan CMOS
- H.265 & H.264 triple-stream encoding
- 25/30 fps@2688 × 1520, 50/60 fps@1080 (1920 × 1080)
- WDR (140 dB), Day/Night (ICR), 3D DNR, AWB, AGC, BLC
- Multiple network monitoring: Web viewer, CMS (DSS/PSS) & DMSS
- 2.7 mm–12.0 mm motorized lens
- 2/1 Alarm in/out, 1/1 audio in/out
- Max. IR LEDs Length 50 m
- Micro SD memory, IP67, IK10



client reduces system requirements and resources resulting in greater surveillance system efficiency.

#### 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. Dahua face detection camera can extract six facial attributes and output the metadata for analysis.

#### ePoE technology

The ePoE technology of Dahua, designed internally, adopts advanced 2D-PAM3 coding modulation from physical layer, and realizes full duplex transmission over 800 meters at the speed of 10Mbps, or 300 meters at the speed of 100Mbps via Cat 5 or coaxial cable media. Besides, it supports PoE and PoC power supply technology which has greatly simplified construction and wiring. Dahua ePoE technology offer a new way to accomplish long distance transmission between IP camera and network switch. It allows more flexible surveillance system design, improves reliability and saves construction and wiring cost.

#### Protection(IP67, IK10, wide voltage)

The camera allows for  $\pm 30\%$  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. Subjected and certified to rigorous dust and immersion tests (IP67) and impact tests (IK10), the camera is the choice for installation in even the most unforgiving environments.



### Technical Specification

#### Camera

Image Sensor	1/1.8" 4Megapixel progressive scan CMOS
Effective Pixels	2688 (H) × 1520 (V)
RAM/ROM	1 GB/128 MB
Scanning System	Progressive
Electronic Shutter Speed	Auto/Manual, 1/3 s–1/100000 s
Minimum Illumination	0.002 Lux@F1.8
IR Distance	Distance up to 50 m (164 ft)
IR On/Off Control	Auto/Manual
IR LEDs	4

#### Lens

Lens Type	Motorized				
Mount Type	Board-in				
Focal Length	2.7 mm–12.0 mm				
Max. Aperture	F1.8				
Angle of View	H: 114°–47°, V: 62°–26°				
Optical Zoom	4.4x				
Aperture Type	Auto				
Close Focus Distance	1.2 m (3.94 ft)				
DORI Distance	Lens	Detect	Observe	Recognize	Identify
	W	58m(190ft)	23m(75ft)	12m(39ft)	6m(20ft)
	T	131m(430ft)	52m(171ft)	26m(85ft)	13m(43ft)

#### Pan/Tilt/Rotation

Pan/Tilt/Rotation Range	Pan: 0°–360°; Tilt: 0°–90°; Rotation: 0°–360°
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#### Artificial Intelligence

Face Capture	Support face image capture
Face Attributes	Support 6 kinds of face attributes extraction: Age, Gender, Expression (Jolly, Surprise, Normal, Rage, Sad, Disgusted, Confused, Frightened), Glasses, Mouth Mask, Moustache & Beard
Perimeter Protection	Tripwire, Intrusion (Human & Vehicle classification)
People Counting	Support Line crossing/Region/Queueing people counting; Support 4 accesses independent detection, 4 areas independent detection

#### General Intelligence

Event Trigger	Motion detection, Video tampering, Scene changing, Network disconnection, IP address conflict, Illegal Access, Storage anomaly
General Intelligence	Object Abandoned/Missing

#### Video

Compression	H.265+, H.265, H.264+, H.264, H.264B, H.264H, MJPEG (sub stream)
Streaming Capability	3 Streams

Resolution	2688 × 1520/2560 × 1440/2304 × 1296/1080P (1920 × 1080)/1.3M (1280 × 960)/720P (1280 × 720)/D1 (704 × 576/704 × 480)/VGA (640 × 480)/CIF (352 × 288/352 × 240)
Frame Rate	Main Stream: 2688 × 1520 (1 fps–25/30 fps) 2560 × 1440 (1 fps–25/30 fps) 1920 × 1080 (1 fps–50/60 fps)
	Sub Stream: D1 (1 fps–25/30 fps) D1 (1 fps–50/60 fps)
	Third Stream: 1080P (1 fps–16 fps)
Bit Rate Control	CBR/VBR
Bit Rate	H.264: 32 Kbps–8192 Kbps H.265: 19 Kbps–8192 Kbps
Day/Night	Auto(ICR)/Color/B/W
BLC Mode	BLC/HLC/WDR (140 dB)
White Balance	Auto/Natural/Street Lamp/Outdoor/Manual
Gain Control	Auto/Manual
Noise Reduction	3D DNR
Motion Detetion	Off/On (4 Zone, Rectangle)
Region of Interest	Off/On (4 Zone)
Electronic Image Stabilization (EIS)	Support
Smart IR	Support
Defog	Support
Digital Zoom	N/A
Flip	0°/90°/180°/270°
Mirror	Off/On
Privacy Masking	Off/On (4 Area, Rectangle)

#### Audio

Compression	G.711a, G.711Mu, AAC, G.726, G.723
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#### Network

Ethernet	RJ-45 (10/100 Base-T)
Protocol	HTTP, TCP, ARP, RTSP, RTP, UDP, RTCP, SMTP, FTP, DHCP, DNS, DDNS, PPPoE, IPv4/v6, SNMP, QoS, UPnP, NTP, ICMP, HTTPS, IGMP, 802.1x
Interoperability	ONVIF (Profile S/Profile G), CGI, Milestone, Genetec, P2P
Streaming Method	Unicast/Multicast
Max. User Access	20 Users
Edge Storage	NAS FTP Micro SD card 256 GB
Web Viewer	IE (versions newer than IE8), Chrome, Firefox, Safari (versions newer than Safari 12)
Management Software	Smart PSS, DSS, P2P
Smart Phone	iOS, Android

#### Certifications

Certifications	CE-LVD: EN60950-1 CE-EMC: Electromagnetic Compatibility Directive 2014/30/EU FCC: 47 CFR FCC Part 15, Subpart B UL/CUL: UL60950-1 CAN/CSA C22.2 No.60950-1-07
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**Interface**

Video Interface	N/A
Audio Interface	1/1 channel In/Out
RS485	N/A
Alarm	2 channel In: 5mA 5V DC 1 channel Out: 300mA 12V DC

**Electrical**

Power Supply	DC 12V (±30%), PoE (802.3af) (Class 0)
Power Consumption	<10.9W

**Environmental**

Operating Conditions	-40° C to +65° C /10%RH–95%RH
Storage Conditions	-40° C to +65° C
Ingress Protection	IP67
Vandal Resistance	IK10

**Construction**

Casing	Metal, plastic
Dimensions	273.2 mm × 95.0 mm × 95.0 mm (10.76" × 3.74" × 3.74")
Net Weight	1.11 kg (2.44 lb)
Gross Weight	1.51 kg (3.33 lb)

**Accessories**

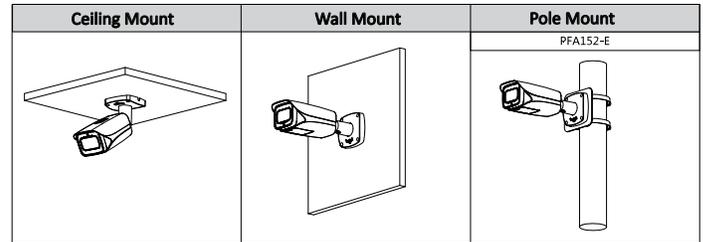
**Optional:**



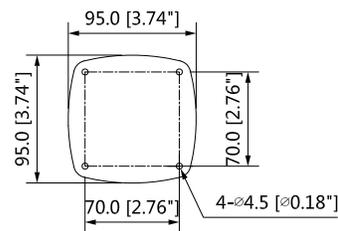
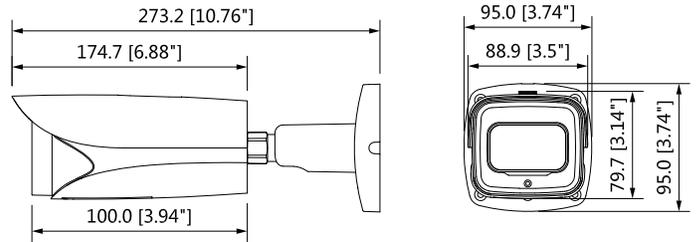
PFA152-E Pole Mount



LR1002 ePoE Over Coax Converter



**Dimensions (mm[inch])**



# DH-IPC-HFW5241T-ASE-CNI

## 2MP WDR IR Bullet AI Network Camera



- 1/2.8" 2Megapixel progressive scan STARVIS™ CMOS
- H.265 & H.264 triple-stream encoding
- 25/30 fps@1080P (1920 × 1080)
- WDR (120 dB), Day/Night (ICR), 3D DNR, AWB, AGC, BLC
- Multiple network monitoring: Web viewer, CMS (DSS/PSS) & DMSS
- 2.8 mm fixed lens (3.6 mm, 6.0 mm, 8.0 mm, 12.0 mm optional)
- 1/1 Alarm in/out, 1/1 audio in/out
- Max. IR LEDs Length 80 m
- Micro SD memory, IP67



Dahua AI series products adopt the most advanced AI technologies, including deep learning algorithms that primarily target people and vehicles, which provides higher flexibility and accuracy for end-users. This enables the Dahua AI series to offer various advanced applications such as Face Recognition, ANPR, Metadata, People Counting, traffic data statistics, etc. The complete lineup of Dahua AI includes network (PTZ) cameras, network video recorders, servers, and platform management products. Beyond seeing the world, the power of AI allows devices to perceive the environment and understand the world in a better way.

### System Overview

Pro AI series contains Face Capture, Perimeter Protection and People Counting functions. Powered by deep-learning Artificial Intelligence algorithms, significantly improved accuracy. Meanwhile, the series features starlight and smart IR technology. This series fully protected from dust and water, certified to IP67 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. Dahua 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.

#### Perimeter Protection

Dahua's Perimeter Protection functions significantly improved accuracy. Perimeter Protection reduces false alarms and decreases pixel count requirements for object detection. Perimeter Protection features custom tripwires based on object type for automation in limited access areas such as pedestrian or vehicle-only zones. This combination of advanced AI analytics and real-time alerts to a desktop or to a mobile client reduces system requirements and resources resulting in greater surveillance system efficiency.

#### 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.

#### ePoE technology

The ePoE technology of Dahua, designed internally, adopts advanced 2D-PAM3 coding modulation from physical layer, and realizes full duplex transmission over 800 meters at the speed of 10Mbps, or 300 meters at the speed of 100Mbps via Cat 5 or coaxial cable media. Besides, it supports PoE and PoC power supply technology which has greatly simplified construction and wiring. Dahua ePoE technology offer a new way to accomplish long distance transmission between IP camera and network switch. It allows more flexible surveillance system design, improves reliability and saves construction and wiring cost.

#### Protection(IP67, wide voltage)

The camera allows for  $\pm 30\%$  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. Subjected and certified to rigorous dust and immersion tests (IP67), the camera is the choice for installation in even the most unforgiving environments.

### Technical Specification

#### Camera

Image Sensor	1/2.8" 2Megapixel progressive scan STARVIS™ CMOS
Effective Pixels	1920 (H) × 1080 (V)
RAM/ROM	512 MB/128 MB
Scanning System	Progressive
Electronic Shutter Speed	Auto/Manual, 1/3 s–1/100000 s
Minimum Illumination	0.002 Lux@F1.6
IR Distance	Distance up to 80 m (262 ft)
IR On/Off Control	Auto/Manual
IR LEDs	4

#### Lens

Lens Type	Fixed
Mount Type	Board-in
Focal Length	2.8 mm, 3.6 mm, 6.0 mm, 8.0 mm, 12.0 mm
Max. Aperture	F1.6 (2.8 mm–8.0 mm), F2.0 (12.0 mm)
Angle of View	H: 106°, V: 57°/H: 87°, V: 46°/H: 53°, V: 30°/ H: 41°, V: 23°/H: 26°, V: 14°
Optical Zoom	N/A
Aperture Type	Fixed
Close Focus Distance	0.6 m (1.97 ft)/1.2 m (3.94 ft)/2.5 m (8.20 ft)/ 4 m (13.12 ft)/8.6 m (28.22 ft)

DORI Distance	Lens	Detect	Observe	Recognize	Identify
	2.8mm	39m(128ft)	15m(49ft)	8m(26ft)	4m(13ft)
	3.6mm	55m(180ft)	22m(72ft)	11m(36ft)	6m(20ft)
	6mm	83m(272ft)	33m(108ft)	17m(56ft)	8m(26ft)
	8mm	110m(361ft)	44m(144ft)	22m(72ft)	11m(36ft)
	12mm	172m(564ft)	69m(226ft)	35m(115ft)	17m(56ft)

#### Pan/Tilt/Rotation

Pan/Tilt/Rotation Range	Pan: 0°–360°; Tilt: 0°–90°; Rotation: 0°–360°
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#### Artificial Intelligence

Face Capture	Support face image capture
Perimeter Protection	Tripwire, Intrusion (Human & Vehicle classification)
People Counting	Support Line crossing/Region/Queueing people counting; Support 4 accesses independent detection, 4 areas independent detection

#### General Intelligence

Event Trigger	Motion detection, Video tampering , Scene changing, Network disconnection , IP address conflict, Illegal Access, Storage anomaly
General Intelligence	Object Abandoned/Missing

#### Video

Compression	H.265+, H.265, H.264+, H.264, H.264B, H.264H, MJPEG (sub stream)
Streaming Capability	3 Streams
Resolution	1080P (1920 × 1080)/1.3M (1280 × 960)/720P (1280 × 720)/D1 (704 × 576/704 × 480)/VGA (640 × 480)/CIF (352 × 288/352 × 240)
Frame Rate	Main Stream: 1080P (1 fps–25/30 fps)
	Sub Stream: D1 (1 fps–25/30 fps)
	Third Stream: 1080P (1 fps–6 fps)
Bit Rate Control	CBR/VBR
Bit Rate	H.264: 32 Kbps–8192 Kbps H.265: 19 Kbps–7424 Kbps
Day/Night	Auto(ICR)/Color/ B/W
BLC Mode	BLC/HLC/WDR (120 dB)
White Balance	Auto/Natural/Street Lamp/Outdoor/Manual
Gain Control	Auto/Manual
Noise Reduction	3D DNR
Motion Detetion	Off/On (4 Zone, Rectangle)
Region of Interest	Off/On (4 Zone)
Electronic Image Stabilization (EIS)	N/A
Smart IR	Support
Defog	Support
Digital Zoom	N/A
Flip	0°/90°/180°/270°
Mirror	Off/On
Privacy Masking	Off/On (4 Area, Rectangle)

#### Audio

Compression	G.711a, G.711Mu, G.726, AAC, G.723
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#### Network

Ethernet	RJ-45 (10/100 Base-T)
Protocol	HTTP, TCP, ARP, RTSP, RTP, UDP, RTCP, SMTP, FTP, DHCP, DNS, DDNS, PPPoE, IPv4/v6, SNMP, QoS, UPnP, NTP, ICMP, HTTPS, IGMP, 802.1x
Interoperability	ONVIF (Profile S/Profile G), CGI, Milestone, Genetec, P2P
Streaming Method	Unicast/Multicast
Max. User Access	20 Users
Edge Storage	NAS FTP Micro SD card 256 GB
Web Viewer	IE (versions newer than IE8), Chrome, Firefox, Safari (versions newer than Safari 12)
Management Software	Smart PSS, DSS, P2P
Smart Phone	iOS, Android

**Certifications**

Certifications	CE-LVD: EN60950-1 CE-EMC: Electromagnetic Compatibility Directive 2014/30/EU FCC: 47 CFR FCC Part 15, Subpart B UL/CUL: UL60950-1 CAN/CSA C22.2 No.60950-1-07
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**Interface**

Video Interface	N/A
Audio Interface	1/1 channel In/Out
RS485	N/A
Alarm	1 channel In: 5mA 5V DC 1 channel Out: 300mA 12V DC

**Electrical**

Power Supply	DC 12V (±30%), PoE (802.3af) (Class 0)
Power Consumption	<8.7W

**Environmental**

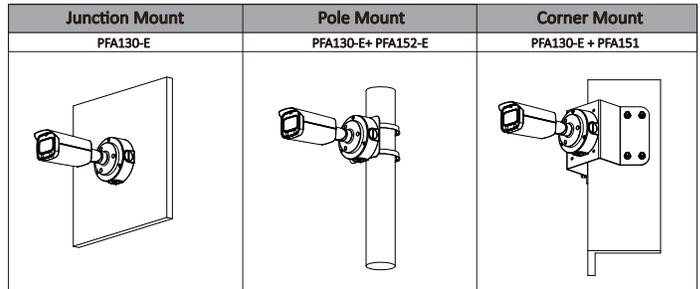
Operating Conditions	-40° C to +65° C /10%RH–95%RH
Storage Conditions	-40° C to +65° C
Ingress Protection	IP67
Vandal Resistance	N/A

**Construction**

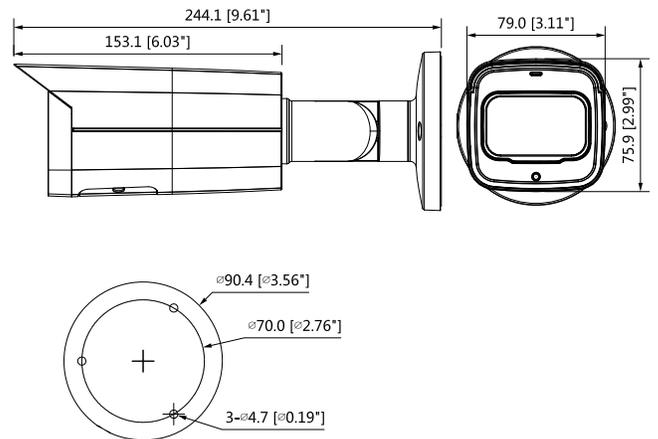
Casing	Metal
Dimensions	244.1 mm × 79.0 mm × 75.9 mm (9.61" × 3.11" × 2.99")
Net Weight	0.815 kg (1.80 lb)
Gross Weight	1.08 kg (2.38 lb)

**Accessories**

**Optional:**



**Dimensions (mm[inch])**



# DH-IPC-HFW5442T-ASE-CNI

4MP Pro AI IR Bullet Network Camera



## System Overview

Pro AI series contains Face Detection, Perimeter Protection and People Counting functions. Powered by deep-learning Artificial Intelligence algorithms, significantly improved accuracy. Active Deterrence and Full Color camera are also in this series. Meanwhile, the series features starlight and smart IR technology. This series fully protected from dust and water, certified to IP67 standard.

## Functions

### Face Detection

Face Detection is a software application that automatically captures faces from within a digital image or a video frame from a video source. Dahua 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.

### Perimeter Protection

Dahua's Perimeter Protection functions significantly improved accuracy. Perimeter Protection reduces false alarms and decreases pixel count requirements for object detection. Perimeter Protection features custom tripwires based on object type for automation in limited access areas such as pedestrian or vehicle-only zones. This combination of advanced AI analytics and real-time alerts to a desktop or to a mobile client reduces system requirements and resources resulting in greater surveillance system efficiency.

### 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.

- 1/1.8" 4Megapixel progressive scan CMOS
- H.265 & H.264 triple-stream encoding
- 25/30 fps@2688 × 1520, 50/60 fps@1080P (1920 × 1080)
- WDR (140 dB), Day/Night (ICR), 3D DNR, AWB, AGC, BLC
- Multiple network monitoring: Web viewer, CMS (DSS/PSS) & DMSS
- 2.8 mm fixed lens (3.6 mm, 6.0 mm optional)
- 1/1 Alarm in/out, 1/1 audio in/out
- Max. IR LEDs Length 50 m
- Micro SD memory, IP67, IK10



## ePoE technology

The ePoE technology of Dahua, designed internally, adopts advanced 2D-PAM3 coding modulation from physical layer, and realizes full duplex transmission over 800 meters at the speed of 10Mbps, or 300 meters at the speed of 100Mbps via Cat 5 or coaxial cable media. Besides, it supports PoE and PoC power supply technology which has greatly simplified construction and wiring. Dahua ePoE technology offer a new way to accomplish long distance transmission between IP camera and network switch. It allows more flexible surveillance system design, improves reliability and saves construction and wiring cost.

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. Subjected and certified to rigorous dust and immersion tests (IP67) and impact tests (IK10), the camera is the choice for installation in even the most unforgiving environments.

Technical Specification						
<b>Camera</b>						
Image Sensor	1/1.8" 4Megapixel progressive scan CMOS					
Effective Pixels	2688 (H) × 1520 (V)					
RAM/ROM	512 MB/128 MB					
Scanning System	Progressive					
Electronic Shutter Speed	Auto/Manual, 1/3 s–1/100000 s					
Minimum Illumination	0.002 Lux@F1.6					
IR Distance	Distance up to 50 m (164 ft)					
IR On/Off Control	Auto/Manual					
IR LEDs	4					
<b>Lens</b>						
Lens Type	Fixed-focal					
Mount Type	Board-in					
Focal Length	2.8 mm, 3.6 mm, 6.0 mm					
Max. Aperture	F1.6					
Angle of View	H: 113°, V: 60°/H: 89°, V: 48°/H: 56°, V: 31°					
Aperture Type	Fixed					
Close Focus Distance	1.3 m (4.27 ft)/1.9 m (6.23 ft)/3.8 m (12.47 ft)					
DORI Distance	Lens	Detect	Observe	Recognize	Identify	
	2.8mm	60m	25m	12m	6m	
<b>Pan/Tilt/Rotation</b>						
Pan/Tilt/Rotation Range	Pan: 0°–360°; Tilt: 0°–90°; Rotation: 0°–360°					
<b>Artificial Intelligence</b>						
Face Detection	Support face image capture					
Perimeter Protection	Tripwire, intrusion (Recognition of vehicle and people), fast moving, loitering detection, parking detection and people gathering					
People Counting	Support Line crossing/Region/Queueing people counting; Support 4 accesses independent detection, 4 areas independent detection					
<b>General Intelligence</b>						
Event Trigger	Motion detection, Video tampering, Scene changing, Network disconnection, IP address conflict, Illegal Access, Storage anomaly					
General Intelligence	Object Abandoned/Missing					
Heat Map	Yes					
<b>Video</b>						
Compression	H.265, H.264, H.264B, H.264H, MJPEG (sub stream)					
Smart Codec	Yes					
Streaming Capability	3 Streams					
Resolution	2688 × 1520/2560 × 1440/2304 × 1296/1080P (1920 × 1080)/1.3M (1280 × 960)/720P (1280 × 720)/D1 (704 × 576/704 × 480)/VGA (640 × 480)/CIF (352 × 288/352 × 240)					
Frame Rate	Main Stream: 2688 × 1520 (1 fps–25/30 fps) 2560 × 1440 (1 fps–25/30 fps) 1920 × 1080 (1 fps–50/60 fps)					
	Sub Stream: D1 (1 fps–25/30 fps) D1 (1 fps–50/60 fps)					
	Third Stream: 1080P (1 fps–16 fps)					
Bit Rate Control	CBR/VBR					
Bit Rate	H.264: 32 Kbps–8192 Kbps H.265: 19 Kbps–8192 Kbps					
Day/Night	Auto(ICR)/Color/B/W					
BLC Mode	BLC/HLC/WDR (140 dB)					
White Balance	Auto/Natural/Street Lamp/Outdoor/Manual					
Gain Control	Auto/Manual					
Noise Reduction	3D DNR					
Motion Detetion	Off/On (4 Zone, Rectangle)					
Region of Interest	Off/On (4 Zone)					
Electronic Image Stabilization (EIS)	N/A					
Smart IR	Yes					
Defog	Yes					
Flip	0°/90°/180°/270°					
Mirror	Off/On					
Privacy Masking	Off/On (4 Area, Rectangle)					
<b>Audio</b>						
Compression	G.711a, G.711Mu, G.726, AAC, G.723					
<b>Network</b>						
Ethernet	RJ-45 (10/100 Base-T)					
Protocol	IPv4;IPv6;HTTP;HTTPS;TCP;UDP;ARP;RTP;RTSP;RTCP;RTMP;SMTP;FTP;SFTP;DHCP;DNS;DDNS;QoS;UPnP;NTP;Multicast;ICMP;IGMP;NFS;PPPoE;802.1x;SNMP					
Interoperability	ONVIF (Profile S/Profile G/Profile T), CGI, Milestone, Genetec, P2P					
Streaming Method	Unicast/Multicast					
Max. User Access	20 Users					
Edge Storage	NAS;FTP;SFTP Micro SD card 256 GB					
Web Viewer	IE (versions newer than IE8), Chrome, Firefox, Safari (versions newer than Safari 12)					
Management Software	Smart PSS, DSS, DMSS					
Smart Phone	iOS, Android					

**Certifications**

Certifications	CE-LVD: EN60950-1 CE-EMC: Electromagnetic Compatibility Directive 2014/30/EU FCC: 47 CFR FCC Part 15, Subpart B UL/CUL: UL60950-1 CAN/CSA C22.2 No.60950-1-07
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**Interface**

Audio Interface	1/1 channel In/Out
RS485	N/A
Alarm	1 channel In: 5mA 5V DC 1 channel Out: 300mA 12V DC

**Electrical**

Power Supply	DC 12V (±30%), PoE (802.3af) (Class 0)
Power Consumption	<9.5W

**Environmental**

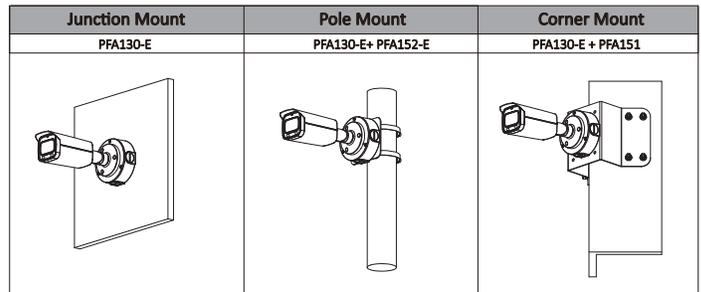
Operating Conditions	-40° C to +65° C /Less than 95% RH
Storage Conditions	-40° C to +65° C
Ingress Protection	IP67
Vandal Resistance	IK10

**Construction**

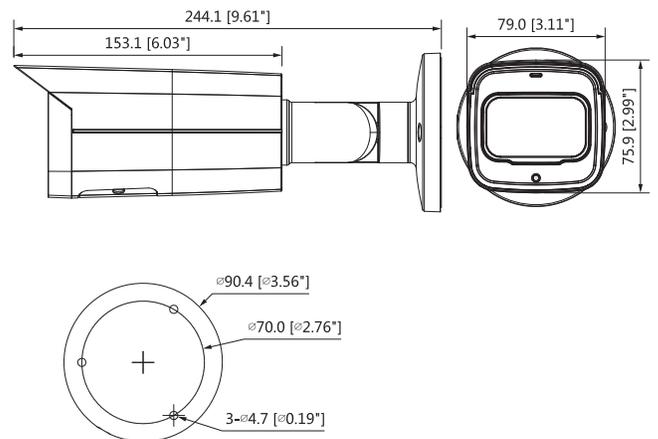
Casing	Metal
Dimensions	244.1 mm × 79.0 mm × 75.9 mm (9.61" × 3.11" × 2.99")
Net Weight	0.815 kg (1.80 lb)
Gross Weight	1.08 kg (2.38 lb)

**Accessories**

**Optional:**



**Dimensions (mm[inch])**



# DH-SD5A432XA-HNR

4MP 32x Starlight IR WizSense Network PTZ Camera



**Wiz Sense**

Launched by Dahua Technology, WizSense is a series of AI products and solutions that adopt independent AI chip and deep learning algorithm. It focuses on human and vehicle with high accuracy, enabling users to fast act on defined targets. Based on Dahua's advanced technologies, WizSense provides intelligent, simple and inclusive products and solutions.

## System Overview

Featuring powerful optical zoom and accurate pan/tilt/zoom performance, this camera provides an all-in-one solution for capturing long distance video surveillance for outdoor applications. Together with infrared illumination and Starlight Technology, the camera is the perfect solution for dark, lowlight applications. The series combines a day/night mechanical IR cut filter for the highest image quality in variable lighting conditions during the day, and True WDR for applications with direct sunlight or glare.

## Functions

### Perimeter Protection

Automatically filters out false alarms caused by animals, rustling leaves, bright lights, etc. Enables system to act secondary recognition for the targets to improve alarm accuracy.

### Starlight+ Technology

For challenging low-light applications, Dahua's Starlight Ultra-low Light Technology offers best-in-class light sensitivity, capturing color details in low light down to 0.005 lux. The camera uses a set of optical features to balance light throughout the scene, resulting in clear images in dark environments.

### PFA Technology

PFA technology has innovatively introduced new methods of judgment to ensure the accuracy and predictability of the direction of subject distance adjustment. The result is a set of advanced focusing algorithms. PFA ensures clarity of the image throughout the process of zooming and shortens focus time. The realization of PFA technology substantially improves user experience and increases product value.

- 1/2.8" 4Megapixel STARVIS™ CMOS
- Powerful 32x optical zoom
- Max. 25/30fps@4M
- IR distance up to 150 m
- Deep-learning-based auto tracking and perimeter protection
- SMD PLUS
- PoE+
- IP67, IK10
- Face Detection



### SMD PLUS

With Deep-Learning Algorithm, Dahua SMD PLUS filters the motion detection alarm triggered by non-concerned target and recognizes human and vehicle effectively, sending alarms when human and vehicles intrude.

### Wide Dynamic Range

The camera achieves vivid images, even in the most intense contrast lighting conditions, using industry-leading wide dynamic range (WDR) technology. For applications with both bright and low lighting conditions that change quickly, True WDR (120 dB) optimizes both the bright and dark areas of a scene at the same time to provide usable video.

### Auto-tracking

This feature controls the pan/tilt/zoom actions of the camera to automatically track an object in motion and to keep it in the scene. The tracking action can be triggered manually or automatically by defined rules. Once a rule is triggered, the camera can zoom in and track the defined target automatically.

### Smart H.265+

Smart H.265+ is the optimized implementation of the H.265 codec that uses a scene-adaptive encoding strategy, dynamic GOP, dynamic ROI, flexible multi-frame reference structure and intelligent noise reduction to deliver high-quality video without straining the network. Smart H.265+ technology reduces bit rate and storage requirements by up to 70% when compared to standard H.265 video compression.

**Technical Specification**
**Camera**

Image Sensor	1/2.8" STARVIS™ CMOS
Pixel	4MP
Max. Resolution	2560 (H) × 1440 (V)
ROM	4 GB
RAM	1 GB
Electronic Shutter Speed	1/1 s–1/30000 s
Scanning System	Progressive
Min. Illumination	Color: 0.005 Lux@F1.35 B/W: 0.0005 Lux@F1.35 0 Lux (IR on)
Illumination Distance	150 m (492.13 ft)
Illuminator On/Off Control	Zoom Prio/Manual/SmartIR
Illuminator Number	4

**Lens**

Focal Length	4.9 mm–156 mm			
Max. Aperture	F1.35–F4.4			
Field of View	H: 61.6°–2.1°; V: 35.1°–1.3°; D: 68.2°–2.5°			
Optical Zoom	32x			
Focus Control	Auto/Semi-Auto/Manual			
Close Focus Distance	1 m–1.5 m (3.28 ft–4.92 ft)			
Iris Control	Auto/Manual/Fixed			
DORI Distance	Detect	Observe	Recognize	Identify
	3120 m (10236.22 ft)	1232 m (4041.99 ft)	624 m (2047.24 ft)	312 m (1023.62 ft)

**PTZ**

Pan/Tilt Range	Pan: 0°–360° endless Tilt: –15° to +90°, auto flip 180
Manual Control Speed	Pan: 0.1°/s–300°/s Tilt: 0.1°/s–200°/s
Preset Speed	Pan: 400°/s Tilt: 300°/s
Presets	300
Tour	8 (up to 32 presets per tour)
Pattern	5
Scan	5
Power-off Memory	Support
Idle Motion	Preset/Tour/Pattern/Scanning
Protocol	DH-SD Pelco-P/D (auto recognition)

**Artificial Intelligence**

Smart Capture	Support human, motor vehicle and non-motor vehicle image capture.
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Perimeter Protection	Tripwire and intrusion. Support alarm triggering by target types (human and vehicle). Support filtering false alarms caused by animals, rustling leaves, bright lights, etc.
Face Detection	Support
Auto Tracking	Support
SMD PLUS	Support

**Video**

Compression	H.265; H.264B; H.264M; H.264H; MJPEG (Sub Stream); H.265+; H.264+
Streaming Capability	3 streams
Resolution	4M (2560 × 1440); 3M (2048 × 1536); 1080P (1920 × 1080); 720P (1280 × 720); D1 (704 × 576/704 × 480); CIF (352 × 288/352 × 240)
Frame Rate	Main stream: 4M/3M/1080P/1.3M/720P (1–25/30 fps) Sub stream 1: D1/CIF (1–25/30 fps) Sub stream 2: 720P (1–25/30 fps)
Bit Rate Control	Variable/Constant
Bit Rate	H.264: 3 Kbps–20480 Kbps H.265: 3 Kbps–20480 Kbps
Day/Night	Auto (ICR)/Color/B/W
BLC	Support
WDR	120 dB
HLC	Support
White Balance	Auto/Indoor/Outdoor/Tracking/Manual/Sodium lamp/ Natural light/Street lamp
Gain Control	Auto/Manual
Noise Reduction	2D/3D
Motion Detection	Support
Region of Interest (RoI)	Support
Image Stabilization	Electronic
Defog	Electronic
Digital Zoom	16x
Flip	180°
Privacy Masking	Up to 24 areas, and up to 8 areas in the same view
S/N Ratio	≥ 55 dB

**Audio**

Compression	G.711a; G.711Mu; G.726; AAC; MPEG2-Layer2; G722.1; G729; G723
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**Network**

Ethernet	RJ-45 (10/100Base-T)
Protocol	IPv4; IPv6; HTTP; HTTPS; 802.1x; Qos; FTP; SMTP; UPnP; SNMPv1/v2c/v3 (MIB-2); DNS; DDNS; NTP; RTSP; RTP; TCP; UDP; IGMP; ICMP; DHCP; PPPoE; ARP; RTCP
Interoperability	ONVIF Profile S&G&T; CGI
Streaming Method	Unicast/Multicast
User/Host	20 (total bandwidth 64M)
Storage	FTP; Micro SD card (256G); NAS

Browser	IE7 and later versions Chrome 42 and earlier versions Firefox 52 and earlier versions Safari
Management Software	Smart PSS; DSS; DMSS; Easy4ip; IVSS
Mobile Phone	IOS, Android

**Certification**

Certifications	CE: EN55032/EN55024/EN50130-4 FCC: Part15 subpartB, ANSI C63.4-2014 UL: UL60950-1+CAN/CSA C22.2.No.60950-1
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**Port**

Audio Input	1
Audio Output	1 (LINE OUT; bare wire)
Two-way Audio	Support
Alarm I/O	2/1

**Power**

Power Supply	AC 24V/3A ± 25% (standard) PoE+ (802.3at)
Power Consumption	Basic: 12W Max: 20W

**Environment**

Operating Temperature	-40°C to +70°C (-40°F to +158°F)
Operating Humidity	≤ 95%
Protection	IP67; IK10; 6000V lightning proof; surge protection; voltage transient protection

**Structure**

Dimensions	Φ190 mm × 332 mm (Φ7.48" × 13.07")
Net Weight	4.7 kg (10.36 lb)
Gross Weight	8 kg (17.64 lb)

**Ordering Information**

Type	Model	Description
4MP WizSense PTZ Camera	DH-SD5A432XA-HNR	4MP 32x Starlight IR WizSense Network PTZ Camera
	DH-SD5A432XAN-HNR	4MP 32x Starlight IR WizSense Network PTZ Camera
	SD5A432XA-HNR	4MP 32x Starlight IR WizSense Network PTZ Camera
	SD5A432XAN-HNR	4MP 32x Starlight IR WizSense Network PTZ Camera
Accessories	PFB305W	Wall Mount Bracket
	AC24V/3A	Power Adapter
	PFA111	Mount Adapter
	PFA140	Power Box
	PFB300C	Ceiling Mount Bracket
	PFA120	Junction Box
	PFA150	Pole Mount Bracket
	PFA151	Corner Mount Bracket
	PFB303S	Parapet Mount Bracket

**Accessories**

**Included:**



PFB305W  
Wall Mount Bracket



AC24V/3A  
Power Adapter

**Optional:**



PFA111  
Mount Adapter



PFA140  
Power Box



PFB300C  
Ceiling Mount Bracket



PFA120  
Junction Box



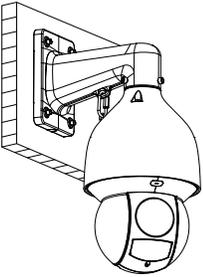
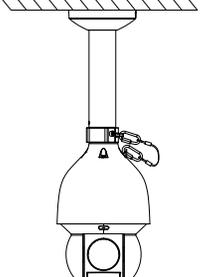
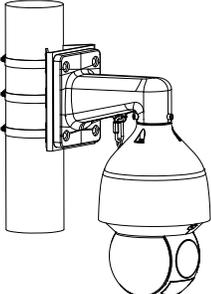
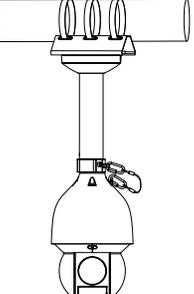
PFA150  
Pole Mount Bracket



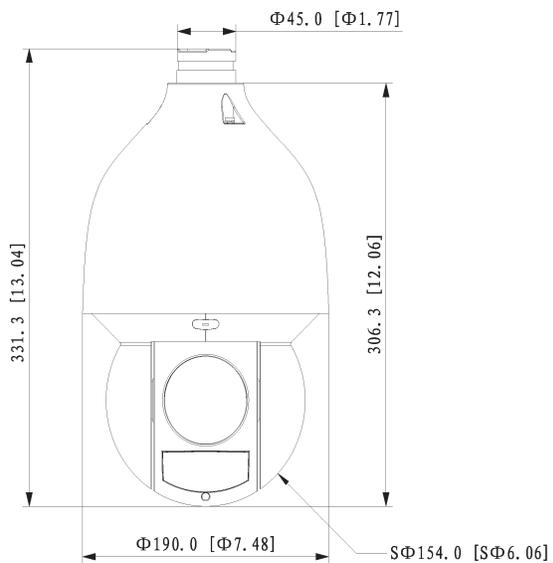
PFA151  
Corner Mount Bracket



PFB303S  
Parapet Mount Bracket

Wall Mount	Ceiling Mount
PFB305W	PFA111+PFB300C
	
Pole Mount(Vertical)	Pole Mount(Horizontal)
PFA150+PFB305W	PFA150+PFA111+PFB300C
	

**Dimensions (mm[inch])**



# DH-SD5A232XA-HNR

2MP 32x Starlight IR WizSense Network PTZ Camera



**Wiz Sense**

- 1/2.8" 2Megapixel STARVIS™ CMOS
- Powerful 32x optical zoom
- Max. 50/60 fps@1080P
- IR distance up to 150 m
- Deep-learning-based auto tracking and perimeter protection
- SMD PLUS
- PoE+
- IP67, IK10
- Face Detection



Launched by Dahua Technology, WizSense is a series of AI products and solutions that adopt independent AI chip and deep learning algorithm. It focuses on human and vehicle with high accuracy, enabling users to fast act on defined targets. Based on Dahua's advanced technologies, WizSense provides intelligent, simple and inclusive products and solutions.

## System Overview

Featuring powerful optical zoom and accurate pan/tilt/zoom performance, this camera provides an all-in-one solution for capturing long distance video surveillance for outdoor applications. Together with infrared illumination and Starlight Technology, the camera is the perfect solution for dark, lowlight applications. The series combines a day/night mechanical IR cut filter for the highest image quality in variable lighting conditions during the day, and True WDR for applications with direct sunlight or glare.

## Functions

### Perimeter Protection

Automatically filters out false alarms caused by animals, rustling leaves, bright lights, etc. Enables system to act secondary recognition for the targets to improve alarm accuracy.

### Starlight+ Technology

For challenging low-light applications, Dahua's Starlight Ultra-low Light Technology offers best-in-class light sensitivity, capturing color details in low light down to 0.005 lux. The camera uses a set of optical features to balance light throughout the scene, resulting in clear images in dark environments.

### PFA Technology

PFA technology has innovatively introduced new methods of judgment to ensure the accuracy and predictability of the direction of subject distance adjustment. The result is a set of advanced focusing algorithms. PFA ensures clarity of the image throughout the process of zooming and shortens focus time. The realization of PFA technology substantially improves user experience and increases product value.

### SMD PLUS

With Deep-Learning Algorithm, Dahua SMD PLUS filters the motion detection alarm triggered by non-concerned target and recognizes human and vehicle effectively, sending alarms when human and vehicles intrude.

### Wide Dynamic Range

The camera achieves vivid images, even in the most intense contrast lighting conditions, using industry-leading wide dynamic range (WDR) technology. For applications with both bright and low lighting conditions that change quickly, True WDR (120 dB) optimizes both the bright and dark areas of a scene at the same time to provide usable video.

### Auto-tracking

This feature controls the pan/tilt/zoom actions of the camera to automatically track an object in motion and to keep it in the scene. The tracking action can be triggered manually or automatically by defined rules. Once a rule is triggered, the camera can zoom in and track the defined target automatically.

### Smart H.265+

Smart H.265+ is the optimized implementation of the H.265 codec that uses a scene-adaptive encoding strategy, dynamic GOP, dynamic ROI, flexible multi-frame reference structure and intelligent noise reduction to deliver high-quality video without straining the network. Smart H.265+ technology reduces bit rate and storage requirements by up to 70% when compared to standard H.265 video compression.

**Technical Specification**
**Camera**

Image Sensor	1/2.8" STARVIS™ CMOS
Pixel	2MP
Max. Resolution	1920 (H) x 1080 (V)
ROM	4 GB
RAM	1 GB
Electronic Shutter Speed	1/1 s–1/30000 s
Scanning System	Progressive
Min. Illumination	Color: 0.005 Lux@F1.35 B/W: 0.0005 Lux@F1.35 0 Lux (IR on)
Illumination Distance	150 m (492.13 ft)
Illuminator On/Off Control	Zoom Prio/Manual/SmartIR
Illuminator Number	4

**Lens**

Focal Length	4.9 mm–156 mm			
Max. Aperture	F1.35–F4.4			
Field of View	H: 62.8°–2.2°; V: 36.7°–1.3°; D: 69.2°–2.6°			
Optical Zoom	32x			
Focus Control	Auto/Semi-Auto/Manual			
Close Focus Distance	1 m–1.5 m (3.28 ft–4.92 ft)			
Iris Control	Auto/Manual/Fixed			
DORI Distance	Detect	Observe	Recognize	Identify
	2152 m (7060.37 ft)	850 m (2788.71 ft)	430 m (1410.76 ft)	215 m (705.38 ft)

**PTZ**

Pan/Tilt Range	Pan: 0°–360° endless Tilt: –15° to +90°, auto flip 180
Manual Control Speed	Pan: 0.1°/s–300°/s Tilt: 0.1°/s–200°/s
Preset Speed	Pan: 400°/s Tilt: 300°/s
Presets	300
Tour	8 (up to 32 presets per tour)
Pattern	5
Scan	5
Power-off Memory	Support
Idle Motion	Preset/Tour/Pattern/Scanning
Protocol	DH-SD Pelco-P/D (auto recognition)

**Artificial Intelligence**

Smart Capture	Support human, motor vehicle and non-motor vehicle image capture.
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Perimeter Protection	Tripwire and intrusion. Support alarm triggering by target types (human and vehicle). Support filtering false alarms caused by animals, rustling leaves, bright lights, etc.
Face Detection	Support
Auto Tracking	Support
SMD PLUS	Support

**Video**

Compression	H.265; H.264B; H.264M; H.264H; MJPEG (Sub Stream); H.265+; H.264+
Streaming Capability	3 streams
Resolution	1080P (1920 × 1080); 1.3M (1280 × 960); 720P (1280 × 720); D1 (704 × 576); CIF (352 × 288)
Frame Rate	Main stream: 1080P/1.3M/720P (1–50/60 fps) Sub stream 1: D1/CIF (1–25/30 fps) Sub stream 2: 720P (1–25/30 fps)
Bit Rate Control	Variable/Constant
Bit Rate	H.264: 3 Kbps–20480 Kbps H.265: 3 Kbps–20480 Kbps
Day/Night	Auto (ICR)/Color/B/W
BLC	Support
WDR	120 dB
HLC	Support
White Balance	Auto/Indoor/Outdoor/Tracking/Manual/Sodium lamp/ Natural light/Street lamp
Gain Control	Auto/Manual
Noise Reduction	2D/3D
Motion Detection	Support
Region of Interest (RoI)	Support
Image Stabilization	Electronic
Defog	Electronic
Digital Zoom	16x
Flip	180°
Privacy Masking	Up to 24 areas, and up to 8 areas in the same view
S/N Ratio	≥ 55 dB

**Audio**

Compression	G.711a; G.711Mu; G.726; AAC; MPEG2-Layer2; G722.1; G729; G723
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**Network**

Ethernet	RJ-45 (10/100Base-T)
Protocol	IPv4; IPv6; HTTP; HTTPS; 802.1x; Qos; FTP; SMTP; UPnP; SNMPv1/v2c/v3 (MIB-2); DNS; DDNS; NTP; RTSP; RTP; TCP; UDP; IGMP; ICMP; DHCP; PPPoE; ARP; RTCP
Interoperability	ONVIF Profile S&G&T; CGI
Streaming Method	Unicast/Multicast
User/Host	20 (total bandwidth 64M)
Storage	FTP; Micro SD card (256G); NAS

Browser	IE7 and later versions Chrome 42 and earlier versions Firefox 52 and earlier versions Safari
Management Software	Smart PSS; DSS; DMSS; Easy4ip; IVSS
Mobile Phone	IOS, Android

**Certification**

Certifications	CE: EN55032/EN55024/EN50130-4 FCC: Part15 subpartB, ANSI C63.4-2014 UL: UL60950-1+CAN/CSA C22.2.No.60950-1
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**Port**

Alarm I/O	2/1
Two-way Audio	Support
Alarm I/O	2/1

**Power**

Power Supply	AC 24V/3A ± 25% (standard) PoE+ (802.3at)
Power Consumption	Basic: 12W Max: 20W

**Environment**

Operating Temperature	-40°C to +70°C (-40°F to +158°F)
Operating Humidity	≤ 95%
Protection	IP67; IK10; 6000V lightning proof; surge protection; voltage transient protection

**Structure**

Dimensions	Φ190 mm × 332 mm (Φ7.48" × 13.07")
Net Weight	4.7 kg (10.36 lb)
Gross Weight	8 kg (17.64 lb)

**Ordering Information**

Type	Model	Description
2MP WizSense PTZ Camera	DH-SD5A232XA-HNR	2MP 32x Starlight IR WizSense Network PTZ Camera
	DH-SD5A232XAN-HNR	2MP 32x Starlight IR WizSense Network PTZ Camera
	SD5A232XA-HNR	2MP 32x Starlight IR WizSense Network PTZ Camera
	SD5A232XAN-HNR	2MP 32x Starlight IR WizSense Network PTZ Camera
Accessories	PFB305W	Wall Mount Bracket
	AC24V/3A	Power Adapter
	PFA111	Mount Adapter
	PFA140	Power Box
	PFB300C	Ceiling Mount Bracket
	PFA120	Junction Box
	PFA150	Pole Mount Bracket
	PFA151	Corner Mount Bracket
	PFB303S	Parapet Mount Bracket

**Accessories**

**Included:**



PFB305W  
Wall Mount Bracket



AC24V/3A  
Power Adapter

**Optional:**



PFA111  
Mount Adapter



PFA140  
Power Box



PFB300C  
Ceiling Mount Bracket



PFA120  
Junction Box



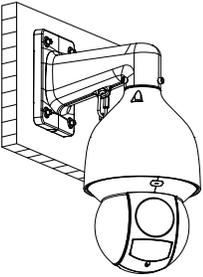
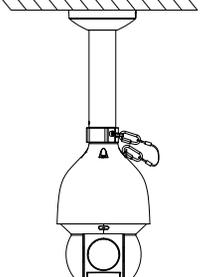
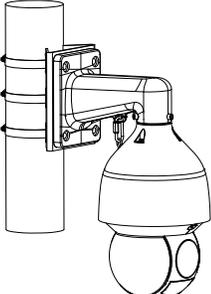
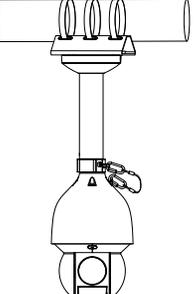
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Pole Mount Bracket



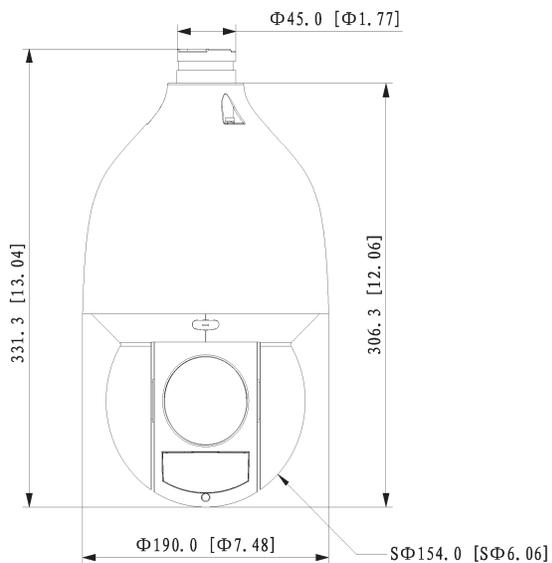
PFA151  
Corner Mount Bracket



PFB303S  
Parapet Mount Bracket

Wall Mount	Ceiling Mount
PFB305W	PFA111+PFB300C
	
Pole Mount(Vertical)	Pole Mount(Horizontal)
PFA150+PFB305W	PFA150+PFA111+PFB300C
	

**Dimensions (mm[inch])**



# DH-SD49225XA-HNR

2MP 25x Starlight IR WizSense Network PTZ Camera



Wiz Sense

- 1/2.8" 2Megapixel CMOS
- Powerful 25x optical zoom
- Starlight technology
- Max. 50/60fps@1080P
- Perimeter protection
- Support PoE+
- IR distance up to 100m
- SMD PLUS
- IP66



Launched by Dahua Technology, WizSense is a series of AI products and solutions that adopt independent AI chip and deep learning algorithm. It focuses on human and vehicle with high accuracy, enabling users to fast act on defined targets. Based on Dahua's advanced technologies, WizSense provides intelligent, simple and inclusive products and solutions.

## System Overview

Dahua PTZ WizSense network camera adopts advanced CNN deep learning algorithms to support Perimeter Protection with high accuracy. This camera possess wide monitor range, PFA algorithm that can always present a clear, focused image while zooming. The camera has very excellent low light performance due to adopting the latest starlight technology. The camera is equipped with smooth control, high quality image and good protection, which make it can meet most of the requirements of video surveillance applications.

## Functions

### Starlight Technology

For challenging low-light applications, Dahua's Starlight Ultra-low Light Technology offers best-in-class light sensitivity, capturing color details in low light down to 0.005 lux. The camera uses a set of optical features to balance light throughout the scene, resulting in clear images in dark environments.

### Wide Dynamic Range

The camera achieves vivid images, even in the most intense contrast lighting conditions, using industry-leading wide dynamic range (WDR) technology. For applications with both bright and low lighting conditions that change quickly, True WDR (120 dB) optimizes both the bright and dark areas of a scene at the same time to provide usable video.

### Perimeter Protection

Automatically filtering out false alarms caused by animals, rustling leaves, bright lights, etc. Enables system to act secondary recognition for the targets. Improving alarm accuracy.

### Environmental

Dahua cameras operate in extreme temperature environments, rated for use in temperatures from -40 °C to +70 °C (-40 °F to +158 °F) with 95% humidity. Subjected to rigorous dust and water immersion tests and certified to the IP66 Ingress Protection rating makes it suitable for demanding outdoor applications.

### Protection

The camera allows for 6KV lightning rating, which provides effective protection for both the camera and its structure against lightning.

### Interoperability

The camera conforms to the ONVIF (Open Network Video Interface Forum) specifications, ensuring interoperability between network video products regardless of manufacturer.

### PFA Technology

PFA technology has innovatively introduced new methods of judgment to ensure the accuracy and predictability of the direction of subject distance adjustment. The result is a set of advanced focusing algorithms. PFA ensures clarity of the image throughout the process of zooming and shortens focus time. The realization of PFA technology substantially improves user experience and increases product value.

### SMD PLUS

With Deep-Learning Algorithm, Dahua SMD PLUS filters the motion detection alarm triggered by non-concerned target and recognizes human and vehicle effectively, sending alarms when human and vehicle intrude.

## Technical Specification

### Camera

Image Sensor	1/2.8" STARVIS™ CMOS
Pixel	2MP
Max. Resolution	1920 (H) × 1080 (V)
ROM	4GB
RAM	1GB
Electronic Shutter Speed	1/1 s–1/30,000 s
Scanning System	Progressive
Min. Illumination	Color: 0.005Lux@F1.6 B/W: 0.0005Lux@F1.6 0Lux@F1.6 (IR light on)
Illumination Distance	100 m (328.08 ft)
Illuminator On/Off Control	Zoom Prio/Manual/SmartIR
Illuminator Number	6

### Lens

Focal Length	4.8 mm–120 mm			
Max. Aperture	F1.6–F4.4			
Field of View	H: 62.8°–2.6°; V: 33.2°–1.7°; D: 67.3°–3.9°			
Optical Zoom	25x			
Focus Control	Auto/Semi-Auto/Manual			
Close Focus Distance	0.1 m–1.5 m (0.33 ft–4.92 ft)			
Iris Control	Auto/Manual			
DORI Distance	Detect	Observe	Recognize	Identify
	1613 m (5291.99 ft)	646 m (2119.42 ft)	323 m (1059.71 ft)	161 m (528.22 ft)

### PTZ

Pan/Tilt Range	Pan: 0°–360° (endless) Tilt: -15°–90° (auto flip 180°)
Manual Control Speed	Pan: 0.1°–200°/s Tilt: 0.1°–120°/s
Preset Speed	Pan: 240°/s Tilt: 200°/s
Presets	300
Tour	8 (up to 32 presets per tour)
Pattern	5
Scan	5
Speed Adjustment	Support
Power-off Memory	Support
Idle Motion	Preset/Tour/Pattern/Scanning
Protocol	DH-SD Pelco-P/D (auto recognition)

## General Intelligence

Event Trigger	Motion detection, Video tampering, Scene changing, Network disconnection, IP address conflict, Illegal Access, Storage anomaly
IVS	Object Abandoned/Missing

## Artificial Intelligence

Perimeter Protection	Tripwire and intrusion. Support alarm triggering by target types (human and vehicle). Support filtering false alarms caused by animals, rustling leaves, bright lights, etc.
SMD PLUS	Support
Face Detection	Support
Smart Capture	Support human, motor vehicle and non-motor vehicle image capture.

## Video

Compression	H.265+/H.265/H.264+/H.264/MJPEG (sub stream)
Streaming Capability	3 streams
Resolution	1080P (1920 × 1080); 1.3 M (1280 × 960); 720P (1280 × 720); D1 (704 × 576/704 × 480); CIF (352 × 288/352 × 240)
Frame Rate	Main stream: 1080P/1.3 M/720P (1–50/60fps) Sub stream 1: D1/CIF (1–25/30fps) Sub stream 2: 1080P/1.3M/720P/D1/CIF (1–25/30fps)
Bit Rate Control	Variable/Constant
Bit Rate	H.265/H.264: 3 kbps–20480 kbps
Day/Night	Auto(ICR)/Color/B/W
BLC	Support
WDR	120 dB
HLC	Support
White Balance	Auto/Indoor/Outdoor/Track/Manual/Sodium lamp/ Natural light/Street lamp
Gain Control	Auto/Manual
Noise Reduction	Ultra DNR (2D/3D)
Motion Detection	Support
Region of Interest (RoI)	Support
Image Stabilization	Electronic
Defog	Electronic
Digital Zoom	16x
Flip	180°
Privacy Masking	Up to 24 areas, and up to 8 areas in the same view

## Audio

Compression	G.711a; G.711Mu; AAC; G.722.1; G.726; MPEG2-Layer2; G.729
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## Network

Ethernet	RJ-45 (10/100Base-T)
Protocol	IPv4; IPv6; HTTP; HTTPS; SSL; TCP/IP; UDP; UPnP; ICMP; IGMP; SNMPv1/v2c/v3(MIB-2); ARP; RTCP; RTSP; RTP; SMTP; NTP; DHCP; DNS; PPPoE; DDNS; FTP; IP Filter; QoS; Bonjour; 802.1x

Interoperability	ONVIF Profile S&G&T; CGI
Streaming Method	Unicast/Multicast
User/Host	19
Storage	NAS; Local PC; Micro SD card (256G)
Browser	IE7 and newer versions Chrome 45 and newer versions Firefox 52 and earlier versions Safari (no version restrictions)
Management Software	Smart PSS; DSS; DMSS
Mobile Phone	IOS/Android

**Certification**

Certifications	CE: EN55032/EN55024/EN50130-4 FCC: Part15 subpartB, ANSI C63.4-2014 UL: UL62368-1+CAN/CSA C22.2.No. 62368-1
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**Port**

Audio Input	1
Audio Output	1
Alarm I/O	2/1

**Power**

Power Supply	DC 12V/3A PoE+ (802.3at)
Power Consumption	13W 22W (IR on)

**Environment**

Operating Temperature	-40°C to +70°C (-40°F to +158°F)
Operating Humidity	≤95%
Protection	IP66; TVS 6000V lightning proof; Surge protection

**Structure**

Dimensions	Φ160 mm × 295 mm (6.30" × 11.61")
Net Weight	3 kg (6.61 lb)
Gross Weight	4.8kg (10.58lb)

**Ordering Information**

Type	Model	Description
2M WizSense PTZ Camera	DH-SD49225XA-HNR	2MP 25x Starlight IR WizSense Network PTZ Camera, WDR, PAL
	DH-SD49225XAN-HNR	2MP 25x Starlight IR WizSense Network PTZ Camera, WDR, NTSC
	SD49225XA-HNR	2MP 25x Starlight IR WizSense Network PTZ Camera, WDR, PAL
	SD49225XAN-HNR	2MP 25x Starlight IR WizSense Network PTZ Camera, WDR, NTSC

Accessories	PFB305W	Wall Mount Bracket
	PFA111	Mount Adapter
	DC12V/3A	Power Adapter
	PFA140	Power Box
	PFB300C	Ceiling Mount Bracket
	PFA120	Water-proof Junction Box
	PFA150	Pole Mount Bracket
	PFA151	Corner Mount Bracket
	PFB303S	Parapet Mount Bracket

**Accessories**

**Included:**



PFB305W  
Wall Mount Bracket

**Optional:**



PFA111  
Mount Adapter



DC12V/3A  
Power Adapter



PFA140  
Power Box



PFB300C  
Ceiling Mount Bracket



PFA120  
Water-proof Junction Box



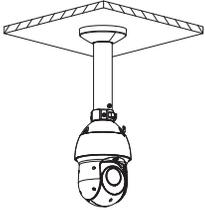
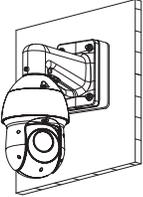
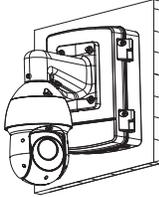
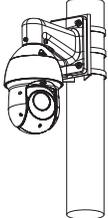
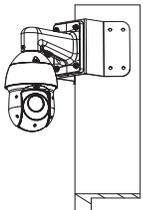
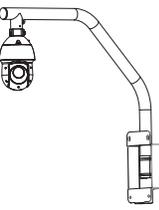
PFA150  
Pole Mount Bracket



PFA151  
Corner Mount Bracket



PFB303S  
Parapet Mount Bracket

Ceiling Mount	Junction Mount	Power Box Mount
PFA111+PFB300C	PFB305W + PFA120	PFB305W + PFA140
		
Pole Mount	Corner Mount	Parapet Mount
PFB305W+PFA150	PFB305W+PFA151	PFA111+PFB303S
		

**Dimensions (mm[inch])**

