dahua TECHNOLOGY

4MP TiOC Network Eyeball Camera
Active Alarm and Dual Illuminators with Analytics+

WizSense

ArcticPro

WizSense Series devices combine Dahua's powerful Analytics+ with an intuitive and easy to use interface. WizSense devices offer Smart Motion Detection and Perimeter Protection functions that focus on human and vehicular images and ignore irrelevant images to capture important video while reducing false alarms. WizSense Series devices provide powerful general surveillance for small to medium size businesses at a sensible price.

System Overview

The Dahua Three-in-One Camera (TiOC) offers multiple features working in tandem to assist with deterrence and low-light detection while delivering high-resolution video images. The camera also features Perimeter Protection and Smart Motion Detection that offer accurate analytics. The camera is ideal for a host of diverse applications — Enhanced Starlight Technology, True Wide Dynamic Range, and Smart Dual illuminators allow the camera to operate in any lighting condition and the IP67 rating makes the camera suitable for the harshest environments.

Functions

Active Alarm
The camera features an active alarm to respond automatically to a trigger. The configurable automatic responses include activation of red and blue lights and the broadcast of a built-in message or siren to stop an incident before it happens.

Smart Dual Illuminators
The camera offers both IR and white-light illuminators and intelligently employs each depending on the situation. Typically, the camera enters the IR mode as ambient light decreases. When the camera detects a person entering the monitoring area, it activates the white-light illuminator to capture full-color details. Once the person leaves the area, the camera switches back to IR illumination.

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

- 1/2.7-in. 4MP Progressive-scan CMOS Sensor
- Triple-stream Encoding
- AI Coding, Smart H.265+, and Smart H.264+ Video Compression
- 4MP (2688 x 1520) at 30 fps, 3.6 mm Fixed Lens
- Analytics+ Functions — Perimeter Protection, Smart Motion Detection+
- Two (2) Built-in Microphones and a Built-in Speaker
- Voice Catcher Technology Captures Clear Audio at a Distance
- Dual Smart Illumination — IR and White Light
- Active Alarm with Red/Blue Lights and Siren or Voice Prompt
- Enhanced Starlight Technology for Low-light Applications
- ArcticPro Series Camera — Operational down to –40° C (–40° F)
- IP67 Ingress Protection
- Five-year Warranty*

Smart Motion Detection+
Smart Motion Detection+, a component of Dahua's Analytics+ technology, improves alarm accuracy and decreases the number of false alarms. The advanced SMD algorithm analyzes a scene for human or vehicle motion, while filtering out other motion due to trees, leaves, animals, weather, and triggers an alarm when detected. SMD also saves time when searching recorded video by filtering false alarms and allowing quick retrieval of an alarm due to a person or vehicle.

Perimeter Protection
Dahua Analytics+ includes Tripwire and Intrusion functions that offer custom tripwires based on object type for automation in limited access areas. Perimeter Protection requires less pixels to detect an object to deliver improved accuracy and decreased false alarms due to lights, weather, trees, or animals.

ArcticPro
The Dahua ArcticPro Series of extreme-environment cameras combine temperature-tolerant components, a waterproof enclosure, and an integrated heater to ensure flawless operation in temperatures as low as –40° C (–40° F). For applications that demand high-resolution video with advanced features in extremely cold environments, the Dahua ArcticPro Series offers a camera to satisfy the most demanding requirements.

Cybersecurity
Dahua network cameras are equipped with a series of key cybersecurity technologies including: security authentication and authorization, access control, trusted protection, encrypted transmission, and encrypted storage. These technologies improve the camera's ability to prevent malicious access and to protect data.

Environmental
Subjected to rigorous dust and water immersion tests the camera suitable for the most demanding outdoor applications. The camera carries an IP67 rating that ensures protection from total dust ingress and protection from water immersion between 15 centimeters and 1 meter in depth.

Technical Specification

Camera

Image Sensor	1/2.7-in. 4MP CMOS
Effective Pixels	2688(H) x 1520(V)
RAM/ROM	128 MB / 512 MB
Scanning System	Progressive
Electronic Shutter Speed	Auto, Manual, 1/3 s to 1/100,000 s
Minimum Illumination	Color: 0.003 lux at F1.0 (30 IRE) B/W: 0.0003 lux at F1.0 (30 IRE) 0 lux at F1.0 (with illuminators on)
S/N Ratio	Greater than 56 dB
Illumination Distance	IR: 30.0 m (98.43 ft) White Light: 30.0 m (98.43 ft)
IR On/Off Control	Auto, Manual
Illuminators	IR: One (1) LED White Light: One (1) LED

Lens

Lens Type	Fixed-focal
Mount Type	M12
Focal Length	3.6 mm
Maximum Aperture	F1.0
Angle of View	Horizontal: 82° Vertical: 44° Diagonal: 96°
Iris Type	Fixed
Close Focus Distance	2.20 m (7.22 ft)

DORI[1] Distance	Lens	Detect (8 ppf)	Observe (19 ppf)	Recognize (38 ppf)	Identify (76 ppf)
	3.6 mm	78.0 m (255.91 ft)	31.20 m (102.36 ft)	15.60 m (51.18 ft)	7.80 m (25.59 ft)

Installation Angle

Range	Pan: 0° to 360° Tilt: 0° to 78° Rotation: 0° to 360°

Video

Compression		AI Coding, Smart H.265+, H.265, Smart H.264+, H.264, H.264B, H.264H, MJPEG (sub stream only)
Streaming Capability		Three (3) Streams
Resolution		4MP (2688 x 1520), 2560 x 1440, 3MP (2304 x 1296), 1080p (1920 x 1080), 720p (1280 x 720), D1 (704 x 480), CIF (352 x 240)
Frame Rate	Main Stream	4MP (2688 x 1520) at 30 fps
	Sub Stream 1	D1 (704 x 480) at 30 fps
	Sub Stream 2	1920 x 1080 at 30 fps
Bit Rate Control		CBR/VBR
Bit Rate		H.264: 3 kbps to 20480 kbps H.265: 3 kbps to 20480 kbps
Day/Night		Auto (ICR), Color, B/W
BLC Mode		BLC, HLC, True WDR (120 dB), SSA
White Balance		Auto, Natural, Street Lamp, Outdoor, Manual, Regional Custom

Gain Control	Auto, Manual, Gain Priority, Shutter Priority
Noise Reduction	3D DNR
Motion Detection	Off, On (4 Zones, Rectangular)
Advanced Features	Smart IR, Defog
Image Rotation	0°, 90°, 180°, 270°
Mirror	Off, On
Privacy Masking	Off, On (8 Areas)

Audio

Input	Two (2) Built-in Microphones
Output	One (1) Built-in Speaker
Compression	PCM, G.711A, G.711Mu, G.726, G.723

Network

Ethernet	RJ-45 (10/100 Base-T)
Protocol	HTTP, HTTPS, TCP, ARP, RTSP, RTP, UDP, SMTP, FTP, DHCP, DNS, DDNS, PPPOE, IPv4/v6, QoS, UPnP, NTP, ICMP, IGMP, 802.1x
Interoperability	ONVIF Profile S, G, T; CGI, Milestone; P2P
Streaming Method	Unicast / Multicast
Maximum User Access	20 Users (Total Bandwidth: 72 Mbps)
Edge Storage	Network Attached Storage (NAS) SFTP, FTP Micro SD Slot, maximum 256 GB
Web Viewer	IE (Version 8, 9, and 11), Chrome, Firefox
Management Software	DSS, DMSS
Mobile Operating System	iOS, Android
Cybersecurity	Video Encryption, Firmware Encryption, Configuration Encryption, Digest, WSSE, Account Lockout, Security Logs, IP/MAC Filtering, Generating and Importing X.509 Certification, Syslog, HTTPS, 802.1x, Trusted Boot, Trusted Execution, Trusted Upgrade

Certifications

Safety	UL62368-1 CAN/CSA C22.2 No. 62368-1-14 EN62368-1
Electromagnetic Compatibility (EMC)	CFR 47 FCC Part 15 Subpart B Electromagnetic Compatibility Directive 2014/30/EU

Interface

Audio	Input	One (1) Channel (RCA), plus two (2) built-in microphones
	Output	One (1) Channel (RCA) plus one (1) built-in speaker
Alarm	Input	One (1) Channel (5 mA, 3 VDC to 5 VDC)
	Output	One (1) Channel (300 mA, 12 VDC)

Electrical

Power Supply		12 VDC or PoE (IEEE 802.3af, Class 0)
Power Consumption	Basic	12 VDC: 1.75 W PoE: 3.6 W
	Maximum	12 VDC: 6.4 W PoE: 8.6 W

Environmental

Operating Conditions	−40° C to +60° C (−40° F to +140° F), Less than 95% RH
Storage Conditions	−40° C to +60° C (−40° F to +140° F), Less than 95% RH
Ingress Protection	IP67

1. The DORI distance is a measure of the general proximity for a specific classification to help pinpoint the right camera for your needs. The DORI distance is calculated based on sensor specifications and lab test results according to EN 62676-4 , the standard that defines the criteria for the Detect, Observe, Recognize and Identify classifications.

Construction

Casing	Metal
Dimensions	ø110.90 mm x 122.0 mm (4.37 in. x 4.80 in.)
Net Weight	0.745 kg (1.64 lb)
Gross Weight	0.915 kg (2.02 lb)

Analytics+ Functions

Perimeter Protection with Active Alarm	• Detects human or vehicle violations using the following methods: **Tripwire**: a target crosses a defined line. **Intrusion**: a target enters or exits a defined perimeter. • Monitors a combination of detection methods. • Search and retrieve video based on target type. • Configurable automatic response when an alarm is triggered: **Red/Blue Light** illuminator activation. **Siren** activation. Includes 11 built-in siren sounds plus ability to record custom recordings.
Smart Motion Detection+	• Differentiates between and classifies human and vehicle objects. • Filters false alarms due to leaves, lights, animals, and other inconsequential objects. • Extracts human or vehicle objects from recorded video for quick target search and retrieval.
Recommended Detection Distance	Human	Up to 10.0 m (32.81 ft)
	Vehicle	Up to 15.0 m (49.21 ft)

Intelligent Video System Functions

IVS triggers an alarm and takes a defined action for the following events:

Standard Features	• Tampering with the camera. • Error writing to an onboard Micro SD card. • Error sending or receiving data over the network. • Unauthorized access to the camera. • IP Address Conflict
Premium Features	
Motion Detection	An object is moving in a designated area.
Scene Change	A person or object moves the camera to change the scene or covers the camera to obscure the scene.

Ordering Information

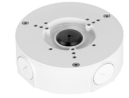| Type	Part Number	Description
TiOC Camera	N43BU83	4MP 3.6 mm Eyeball Camera with Analytics+, Active Alarm, Smart Illumination
Accessories, optional	PFA106	Mount Adapter
	PFA137	Junction Box
	PFA130-E	Waterproof Junction Box
	PFA150	Pole Mount (use with PFB305W wall mount)
	PFA151	Corner Mount (use with PFB305W wall mount)
	PFA152-E	Pole Mount (use with DH-PFB205W-E wall mount)
	DH-PFB205W-E	Wall Mount Bracket
	PFA117	Ceiling Mount Extender for PFB220C
	PFB220C	Ceiling Mount (use with PFA106 mount adapter)
	PFB305W	Wall Mount (use with PFA106 mount adapter)
	DH-PFM321D-US	12 VDC, 1 A Power Adapter

Accessories (Optional)

PFA106
Mount Adapter

PFA137
Junction Box

PFA130-E
Waterproof Junction Box

PFA150
Pole Mount

PFA151
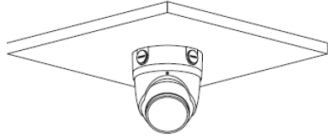Corner Mount

PFA152-E
Pole Mount
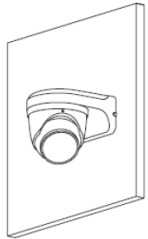

DH-PFB205W-E
Wall Mount Bracket
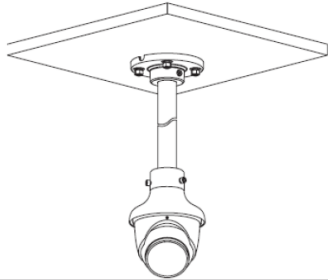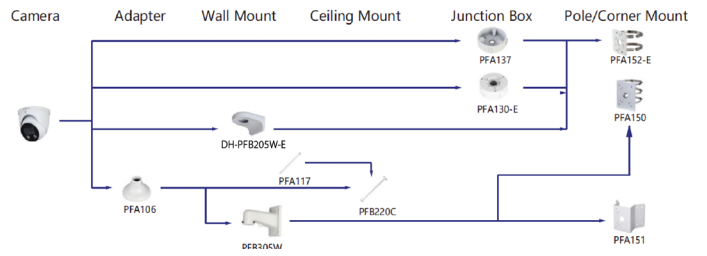

PFB220C
Ceiling Mount

PFA117
Ceiling Mount Extender for PFB220C

PFB305W
Wall Mount

DH-PFM321D-US
12 VDC, 1 A Power Adapter

Junction Mount	Wall Mount
PFA137	DH-PFB205W-E

Ceiling Mount	Pole Mount
PFA106 + PFB220C	DH-PFB205W-E + PFA152-E

Mounting Diagram

Camera · Adapter · Wall Mount · Ceiling Mount · Junction Box · Pole/Corner Mount

PFA137 · PFA152-E · PFA130-E · PFA150 · DH-PFB205W-E · PFA117 · PFA106 · PFB220C · PFA151

Dimensions

mm [in.]

110.9 [4.37]

3–∅4.5 [∅0.18]

∅84.0 [∅3.31]

∅122.0 [∅4.80]