**DAHUA**
TECHNOLOGY

# 8MP TiOC Network Eyeball Camera

## Active Alarm and Dual Illuminators with Analytics+



**Wiz Sense**

ArcticPro

- 1/2.8-in. 8MP Progressive-scan CMOS Sensor
- Triple-stream Encoding
- AI Coding, Smart H.265+, and Smart H.264+ Video Compression
- 8MP (3840 x 2160) at 30 fps, 2.8 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*

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 security 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.

### 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 | 1/2.8-in. 8MP CMOS |
| Effective Pixels | 3840 (H) x 2160 (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: 0.004 lux at F1.0 (30 IRE)<br>B/W: 0.0004 lux at F1.0 (30 IRE)<br>0 lux at F1.0 (with illuminators on) |
| S/N Ratio | Greater than 56 dB |
| Illumination Distance | IR: 30.0 m (98.43 ft)<br>White Light: 30.0 m (98.43 ft) |
| IR On/Off Control | Auto, Manual |
| Illuminators | IR: One (1) LED<br>White Light: One (1) LED |

### Lens

| | |
|---|---|
| Lens Type | Fixed-focal |
| Mount Type | M12 |
| Focal Length | 2.8 mm |
| Maximum Aperture | F1.0 |
| Angle of View | Horizontal: 106°<br>Vertical: 55°<br>Diagonal: 125° |
| Iris Type | Fixed |
| Close Focus Distance | 2.00 m (6.56 ft) |

| DORI[1] Distance | Lens | Detect (8 ppf) | Observe (19 ppf) | Recognize (38 ppf) | Identify (76 ppf) |
|---|---|---|---|---|---|
| | 2.8 mm | 91.0 m (298.56 ft) | 36.40 m (119.42 ft) | 18.20 m (59.71 ft) | 9.10 m (29.86 ft) |

### Installation Angle

| | |
|---|---|
| Range | Pan: 0° to 360°<br>Tilt: 0° to 78°<br>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 | 8MP (3840 x 2160), 6MP (3072 x 2048), 5MP (3072 x 1728), 2592 x 1944, 4MP (2688 x 1520), 3MP(2048 x 1536), 2304 x 1296, 1080p (1920 x 1080), 1.3MP (1280 x 960), 720p (1280 x 720), D1 (704 x 480), CIF (352 x 240) |

| Frame Rate | Main Stream | 8MP (3840 x 2160) 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<br>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, P2P |
| Streaming Method | Unicast / Multicast |
| Maximum User Access | 20 Users (Total Bandwidth: 72 Mbps) |
| Edge Storage | Network Attached Storage (NAS)<br>SFTP, FTP<br>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<br>CAN/CSA C22.2 No. 62368-1-14<br>EN62368-1 |
| Electromagnetic Compatibility (EMC) | CFR 47 FCC Part 15 Subpart B<br>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: 2.9 W<br>PoE: 5.0 W |
| | Maximum | 12 VDC: 7.8 W<br>PoE: 9.6 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:<br>**Tripwire**: a target crosses a defined line.<br>**Intrusion**: a target enters or exits a defined perimeter.<br>• Monitors a combination of detection methods.<br>• Search and retrieve video based on target type.<br>• Configurable automatic response when an alarm is triggered:<br>**Red/Blue Light** illuminator activation.<br>**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.<br>• Filters false alarms due to leaves, lights, animals, and other inconsequential objects.<br>• 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.<br>• Error writing to an onboard Micro SD card.<br>• Error sending or receiving data over the network.<br>• Unauthorized access to the camera.<br>• 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

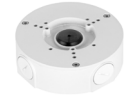| Type | Part Number | Description |
|---|---|---|
| TiOC Camera | N83BU82 | 8MP 2.8 mm Eyeball Camera with Analytics+, Active Alarm, Smart Illumination |
| Accessories, optional | PFA106 | Mount Adapter |
| | PFA137 | Junction Box |
| | PFA130-E | Waterproof Junction Box |
| | PFA150 | Pole Mount (use 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


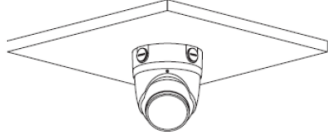
PFA152-E
Pole Mount



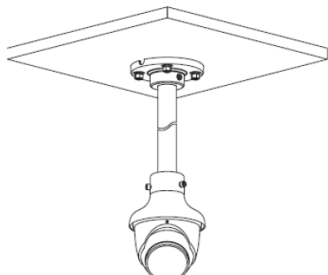DH-PFB205W-E
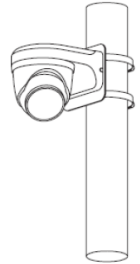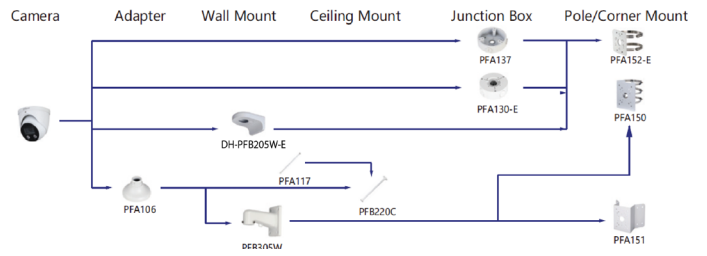Wall Mount Bracket



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



## Dimensions

mm [in.]