**dahua** TECHNOLOGY

# 2 × 4MP TiOC Dual-lens Panoramic Network Bullet Camera
## ePoE 180-degree Stitched Panoramic Camera with WizMind Analytics+

**NIGHT COLOR**



**WizMind**

**TiOC**

- Dual 1/1.8-in. 4MP Progressive Scan CMOS Sensors
- 180° Field of View
- Maximum Resolution 8MP (4096 × 1800) at 25 fps
- Ultra Wide Dynamic Range (140 dB)
- AI Coding, Smart H.265+, and Smart H.264+ Dual Codec
- Enhanced Night Color Technology for Color Images in Total Darkness
- Built-in Warm Light, Maximum Illumination Distance of 40 m (131 ft)
- Built-in Microphone and Speaker, Supports Two-way Talk
- Analytics+ Features: Perimeter Protection, Heat Map, People Counting, Smart Object Detection, Smart Motion Detection+
- EPTZ: Enlarge and Track the Targets of Intelligent Alarms
- Active Alarm with Red/Blue Lights and Siren or Voice Prompt
- Enhanced Power and Data Transmission Distances (ePoE)
- ArcticPro Series Camera - Operational down to –40° C (–40° F)
- IP67 Ingress Protection
- Five-year Warranty*

WizMind Series devices offer Dahua Analytics+ functions for comprehensive, human-oriented analytic solutions. WizMind Series products are ideal for complex applications with demanding requirements that need advanced analytic capabilities.

## System Overview

The Dahua 2 × 4MP TiOC Dual-lens Panoramic Network Bullet Camera offers complex Analytics+ functions such as Perimeter Protection, Smart Motion Detection+, and People Counting in real time. The Dahua Analytics+ algorithms significantly improve accuracy and reliability as compared to standard intelligent features. The camera is ideal for a host of diverse applications. Enhanced Night Color technology and Ultra Wide Dynamic Range allow the camera to operate in any lighting condition and the IP67 rating makes the camera suitable for the harshest environments.

## Functions

### EPTZ
With advanced target detection and tracking algorithms, Dahua EPTZ technology can simultaneously zoom in and track multiple humans and vehicles that trigger alarms. It provides rich details and a panoramic view at the same time. The ePTZ feature, offers five modes including a wide-angle view that can hold 1, 3, or 5 different sub-images for a more versatile security system.

### 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 fewer pixels to detect an object to deliver improved accuracy and decreased false alarms due to lights, weather, trees, or animals.

### People Counting
The camera uses complex real-time people counting algorithms to deliver accurate flow statistics from two distinct people counting functions, Line Crossing and Regional. The Line Crossing function counts the number of people crossing a defined line, and the Regional function counts the number of people in a distinct, user-defined area. People counting is ideal for measuring the number of customers entering or exiting a location and to monitor groups of people in a distinct location.

### Enhanced Night Color Technology
The Enhanced Night Color camera incorporates white-light LEDs to offer full-color images in total darkness, as well as an effective visual deterrent. This technology provides smart illumination where the camera automatically activates the white-light illuminators when ambient light levels fall and adjusts exposure time and LED intensity to prevent overexposing the image.

### 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.

### ArcticPro
The Dahua ArcticPro Series of extreme-environment cameras combine temperature-tolerant components with a waterproof enclosure to ensure flawless operation in temperatures as low as –40°F (–40°C) without the need for an internal heater. The lack of a heater reduces the camera's power consumption and saves operating costs. 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.

### Enhanced Power over Ethernet (ePoE) Technology
Dahua's innovative ePoE technology offers a plug-and-play solution to transmit power and data over long distances via Ethernet or coaxial cables, reducing installation time, and saving money. ePoE technology is a viable, cost-effective solution for extending transmission distances and for converting existing, coax-based analog systems into IP systems.

### 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.

### 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 is 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.

**Onvif** | **GST**

*Warranty applies to products sold through an authorized Dahua Dealer.

## Technical Specification

### Camera

| | | |
|---|---|---|
| Image Sensor | | Dual 1/1.8-in. 4MP CMOS |
| Effective Pixels | | 4096 (H) × 1800 (V) |
| RAM/ROM | | 1 GB/128 MB |
| Electronic Shutter Speed | | 1/3 s to 1/100,000 s |
| Minimum Illumination | Color (30 IRE) | 0.005 lux at F1.0 |
| | B/W (30 IRE) | 0.0005 lux at F1.0 |
| | IR | 0 lux |
| Illumination Distance | | 40 m (131.23 ft) |
| Illuminators | | Four (4) Warm-light LEDs |
| On/Off Control | | Automatic |
| Pan/Tilt/ Rotation Range | Pan | 0° to 360° |
| | Tilt | 4° to 90° |
| | Rotation | 0° to 360° |
| S/N Ratio | | > 56 dB |

### Lens

| | | |
|---|---|---|
| Type | | Fixed-focal |
| Mount | | M16 |
| Focal Length | | 3.6 mm |
| Maximum Aperture | | F1.0 |
| Angle of View | Horizontal | 180° |
| | Vertical | 48° |
| Iris Type | | Fixed |
| Close Focus Distance | | 3.6 m (11.81 ft) |

| DORI[1] Distance | Detect | Observe | Recognize | Identify |
|---|---|---|---|---|
| | 70.3 m (230.64 ft) | 28.1 m (92.19 ft) | 14.1 m (46.26 ft) | 7.0 m (22.97 ft) |

### Video

| | | |
|---|---|---|
| Compression | | AI Coding, Smart H.265+, H.265, Smart H.264+, H.264, H.264H, H.264B |
| Streaming Capability | | Three (3) Streams |
| Resolution | | 8MP (4096 × 1800), 6.5MP (3840 × 1680), 4MP (3840 × 1080), 4MP (2880 × 1264), 1.6MP (1920 × 832), 0.7MP (1280 × 560), 0.5MP (1024 × 452) |
| Frame Rate[2] | Main Stream | WDR On: 4096 × 1800 at 20 fps WDR Off: 4096 × 1800 at 25 fps |
| | Sub Stream 1 | WDR On: 1024 × 452 at 20 fps WDR Off: 1024 × 452 at 25 fps |
| | Sub Stream 2 | WDR On: 1920 × 832 at 20 fps WDR Off: 1920 × 832 at 25 fps |
| Bit Rate Control | | CBR, VBR |
| Video Bit Rate | | H.264: 9 kbps to 8192 kbps H.265: 9 kbps to 8192 kbps |
| Day/Night | | Color, B/W |
| Backlight Compensation | | BLC, HLC, Ultra WDR (140 dB), SSA |
| White Balance | | Auto, Gain Priority, Shutter Priority, Manual |
| Gain Control | | Auto |
| Noise Reduction | | 3DNR |
| Motion Detection | | Off/On (4 Areas, Rectangular) |
| Region of Interest (RoI) | | 4 Areas |
| Privacy Masking | | 4 Areas |
| Advanced Features | | Defog, Scene Self-adaption (SSA) |

### Audio

| | |
|---|---|
| Compression | G.711a, G.711Mu, PCM, G.726, G.723, AAC |

### Network

| | |
|---|---|
| Ethernet | RJ-45 (10/100 Base-T) |
| Protocol | IPv4, IPv6, HTTP,TCP, UDP, ARP, RTP, RTSP, RTCP, RTMP, SMTP, DHCP, DNS, DDNS, QoS; UPnP, NTP, Multicast, ICMP, IGMP, NFS, SAMBA, PPPoE, SNMP, Bonjour |
| Interoperability | ONVIF (Profile S, G, T), CGI, SDK, API |
| Maximum User Access | 20 Users (Total Bandwidth: 80 Mbps) |
| Edge Storage | MicroSD Card (Max. 512 GB) |
| Web Viewer | Microsoft Edge, Chrome |
| Management Software | SmartPSS Lite, DSS, DMSS |
| Mobile Operating System | Android, iOS |
| 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 |

### Interface

| | | |
|---|---|---|
| Audio | Input | One (1) Channel (RCA Port) |
| | Output | One (1) Channel (RCA Port) |
| Alarm | Input | One (1) Channel (5 mA 3 V to 5 VDC) |
| | Output | One (1) Channel (300 mA 12 VDC) |
| Built-in Microphone | | Yes |

### Electrical

| | | |
|---|---|---|
| Power Supply | | 12 VDC (±30%), PoE+ (802.3at), ePoE |
| Power Consumption | Basic | 4.8 W (12 VDC), 5.5 W (PoE) |
| | Maximum | 10.5W (12 VDC), 11.8 W (PoE) (WDR + Intelligence + Warm Light + SPK) |

### Environmental

| | |
|---|---|
| Operating Temperature | −40 °C to +60 °C (−40 °F to +140 °F) |
| Operating Humidity | ≤ 95% |
| Storage Temperature | −40 °C to +60 °C (−40 °F to +140 °F) |
| Protection | IP67 |

### Construction

| | |
|---|---|
| Casing | Metal, Plastic |
| Product Dimensions (L x W x H) | 301.2 mm × 128.2 mm × 120.1 mm (11.86 in. × 5.05 in. × 4.73 in.) |
| Net Weight | 1.42 kg (3.13 lb) |
| Gross Weight | 1.57 kg (3.46 lb) |

### Analytics+ Functions

| | | |
|---|---|---|
| Perimeter Protection | | • 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 ten (10) detection methods. • Search and retrieve video based on target type. |
| Smart Object Detection | | • Detects when an object (luggage, bag, box, non-motor vehicle) remains or is removed from a designated area • Triggers an alarm after a set amount of time (6 to 300 seconds) |
| People Counting | | • Delivers accurate flow statistics from the following methods: **Line Crossing**: Counts a person as they cross a threshold in a defined direction. **Region**: Counts the number of people in a defined area. • Counts people simultaneously from four (4) threshold lines and four (4) defined regions |
| 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. |
| Recommendeed Detection Distance | Human | Up to 10.0 m (32.81 ft) |
| | Vehicle | Up to 15.0 m (49.21 ft) |

## Intelligent Video System

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 MicroSD card.<br>• Error sending or receiving data over the network.<br>• Unauthorized access to the camera. |
|---|---|
| Premium Features | |
| Fast Moving | Target exceeds a set speed when exiting a defined area. |
| Loitering Detection | Target is in motion inside a defined area longer than a specified amount of time. |
| Crowd Gathering | Specified number of people remain inside a defined area for a set time. |
| Parking Detection | Vehicle remains in a defined area without motion for a set period of time. |
| Heat Map | Generates a visual representation of data. Supports two-dimensional analysis, displays a visual representation of data for number of people or average wait time in a defined area over a given time. |

## ePoE Transmission Distances

### Via CAT5E/CAT6 Ethernet Cable
ePoE supply voltage 48 V
Maximum DC resistance < 10 Ω/100 m

| Cable Length, m (ft) | Bandwidth, Mbps | PoE Load Capacity, W | Hi-PoE Load Capacity, W | Working Mode |
|---|---|---|---|---|
| 100 (328) | 100 | 25.5 | 53 | IEEE/E100 |
| 200 (656) | 100 | 25.5 | 33 | E100 |
| 300 (984) | 100 | 19 | 19 | E100 |
| 400 (1312) | 10 | 17 | 17 | E10 |
| 500 (1640) | 10 | 13 | 13 | E10 |
| 800 (2625) | 10 | 7 | 7 | E10 |

### Via CAT5E/CAT6 Ethernet Cable
ePoE supply voltage 53 V
Maximum DC resistance < 10 Ω/100 m

| Cable Length, m (ft) | Bandwidth, Mbps | PoE Load Capacity, W | Hi-PoE Load Capacity, W | Working Mode |
|---|---|---|---|---|
| 100 (328) | 100 | 25.5 | 53 | IEEE/E100 |
| 200 (656) | 100 | 25.5 | 47 | E100 |
| 300 (984) | 100 | 25.5 | 32 | E100 |
| 400 (1312) | 10 | 23 | 26 | E10 |
| 500 (1640) | 10 | 20 | 20 | E10 |
| 800 (2625) | 10 | 13 | 13 | E10 |

### Via RG-59 Coaxial Cable
ePoE supply voltage 48 V
Maximum DC resistance < 5 Ω/100 m

| Cable Length, m (ft) | Bandwidth, Mbps | PoE Load Capacity, W | Hi-PoE Load Capacity, W | Working Mode |
|---|---|---|---|---|
| 100 (328) | 100 | 25.5 | 50 | IEEE/E100 |
| 200 (656) | 100 | 25.5 | 30 | E100 |
| 300 (984) | 100 | 18 | 18 | E100 |
| 400 (1312) | 100 | 15 | 15 | E100 |
| 500 (1640) | 10 | 12 | 12 | E10 |
| 800 (2625) | 10 | 6 | 6 | E10 |
| 1000 (3281) | 10 | 5 | 5 | E10 |

### Via RG-59 Coaxial Cable
ePoE supply voltage 53 V
Maximum DC resistance < 5 Ω/100 m

| Cable Length, m (ft) | Bandwidth, Mbps | PoE Load Capacity, W | Hi-PoE Load Capacity, W | Working Mode |
|---|---|---|---|---|
| 100 (328) | 100 | 25.5 | 52 | IEEE/E100 |
| 200 (656) | 100 | 25.5 | 48 | E100 |
| 300 (984) | 100 | 25.5 | 30 | E100 |
| 400 (1312) | 100 | 20 | 23 | E100 |
| 500 (1640) | 10 | 16 | 16 | E10 |
| 800 (2625) | 10 | 10 | 10 | E10 |
| 1000 (3281) | 10 | 8 | 8 | E10 |

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.
2. The values above are the max. frame rates of each stream; for multiple streams, the values will be subjected to the total encoding capacity.
3. Compatability mode may be required.

## Ordering Information

| Type | Part Number | Description |
|------|-------------|-------------|
| Network Camera | N83BP83 | 2 × 4MP TiOC Dual-Lens Stitching WizMind Network Camera |
| Accessories (Optional) | DH-PFA5300R | Junction Box |
| | PFA150 | Pole Mount |
| | PFA151 | Corner Mount |
| | DH-PFM321D-US | 12VDC, 1A Power Adapter |

## Accessories

Optional:



**DH-PFA5300R**
Junction Box



**PFA150**
Pole Mount



**PFA151**
Corner Mount



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

For all possible accessory combinations for this camera, please scan or click the QR code below to go to our accessory selector.



## Installation

| Wall Mount | Wall Mount(Junction Mount) | Pole Mount(Vertical) |
|------------|----------------------------|----------------------|
| No Accessory | DH-PFA5300R | DH-PFA5300R + PFA150 |



## Dimensions

mm [in.]



∅120.1[∅4.73]
4−∅4.5[∅0.18]
70.4[2.77]
70.4[2.77]
301.2[11.86]
206.2[8.12]
128.2[5.05]
78.9[3.11]