

# 4MP IR PTZ Network Camera with Analytics+

## 45x Starlight PTZ Network Camera



- 1/2.8-in. 4 MP Progressive-scan STARVIS™ CMOS Sensor
- Powerful 45x Optical Zoom Lens
- Smart H.265+ and Smart H.264+ Dual Codecs
- 4 MP at 30 fps Maximum Resolution
- Analytics+ Functions — Perimeter Protection, Alarm Track, and Smart Motion Detection
- Starlight Technology for Ultra-low Light Sensitivity
- Maximum IR Distance up to 150 m (492.13 ft)
- Predictive Focus Algorithm+ (PFA+) Technology
- ArcticPro Series Camera - Operational down to  $-40^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$ )
- IP67 Ingress Protection and IK10 Vandal Resistance
- Five-year Warranty\*



### System Overview

The 4MP IR PTZ Dome camera uses a 1/2.8-in STARVIS™ CMOS imager with a 45x optical zoom lens, providing an all in one solution for capturing long-distance video surveillance for outdoor applications. The camera offers Analytics+ functions at the edge – performing complex perimeter protection surveillance with Smart Motion Detection to distinguish human and vehicle motion, significantly improving accuracy and reliability as compared to standard intelligent features.

### Functions

#### 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.

#### Alarm Track

Controls the pan/tilt/zoom actions of the camera to automatically track a human or a vehicle that triggers an alarm based on a Perimeter Protection rule. Once an alarm is triggered, the camera tracks the target automatically until the target leaves the scene or the tracking time is exceeded.

#### 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.

### Starlight Technology

For challenging low-light applications, Dahua's Starlight Ultra-low Light Technology offers light sensitivity that captures 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.

### Predictive Focus Algorithm+ Technology

The camera uses innovative PFA+ Technology to improve zoom accuracy and to decrease focus time. A series of advanced algorithms more accurately judge the direction and the distance to a subject, improving picture clarity throughout the zooming process and decreasing focus time. PFA+ extends lens life by 10%.

### 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  $-40^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$ ). 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.

### Environmental

The camera complies with the IK10 Vandal Resistance impact rating making it capable of withstanding the equivalent of 5 kg (11.02 lbs) of force dropped from a height of 40 cm (15.75 in.). 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.

### Protection

The camera allows for  $\pm 25\%$  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.



### Technical Specification

#### Camera

Image Sensor	1/2.8-in. STARVIS™ CMOS
Effective Pixels	2560(H) x 1440(V), 4 MP
RAM/ROM	1 GB / 4 GB
Scanning System	Progressive
Electronic Shutter Speed	1/1 s to 1/30,000 s
Minimum Illumination	Color: 0.005 lux at F1.6 B/W: 0.0006 lux at F1.6 0 Lux with IR on
IR Distance	Distance up to 150.0 m (492.13 ft)
IR On/Off Control	Zoom Priority, Manual, Smart IR
IR LEDs	Four (4)

#### Lens

Focal Length	3.95 mm to 177.7 mm
Max. Aperture	F1.6 to F4.95
Angle of View	Horizontal: 70.3° to 1.8° Vertical: 37.0° to 1.0° Diagonal: 69.3° to 2.0°
Optical Zoom	45x
Focus Control	Auto, Semi-automatic, Manual
Iris Control	Auto, Manual
Close Focus Distance	0.01 m to 3.0 m (3.93 in. to 39.37 in.)

#### DORI Distance<sup>1</sup>

Detect	Observe	Recognize	Identify
3176 m (10,420 ft)	1270 m (4166 ft)	635 m (2083 ft)	317 m (1040 ft)

#### PTZ

Pan/Tilt Range	Pan: 0° to 360° endless Tilt: -15° to 90°
Manual Control Speed	Pan: 0.1° to 300° /s Tilt: 0.1° to 200° /s
Preset Speed	Pan: 400° /s Tilt: 300° /s
Presets	300
PTZ Mode	5 Pattern, 8 Tour (up to 32 presets per tour), 5 Scan
Speed Setup	Human-oriented focal Length/ speed adaptation
Power up Action	Auto restore to previous PTZ and lens status after power failure
Idle Motion	Activate Preset/ Scan/ Tour/ Pattern if there is no command in the specified period
Protocol	DH-SD, Pelco-P/D (Auto recognition)

#### Video

Compression	Smart H.265+, H.265, Smart H.264+, H.264, MJPEG (sub stream only)
Streaming Capability	Three (3) Streams
Resolution	4 MP (2560 x 1440), 3 MP (2048 x 1536), 1080p (1920 x 1080), 1.3 MP (1280 x 960), 720p (1280 x 720), D1 (704 x 380), CIF (352 x 240)

Frame Rate	Main Stream	4 MP or 3 MP at 30 fps
	Sub Stream 1	D1 or CIF at 30 fps
	Sub Stream 2	1080p, 1.3 MP, 720p, or D1 at 30 fps
Bit Rate Control	CBR, VBR	
Bit Rate	H.265: 32 Kbps to 8192 Kbps H.264: 32 Kbps to 8192 Kbps	
Day/Night	Auto (ICR), Color, B/W	
Backlight Compensation	BLC, HLC, True WDR (120 dB)	
White Balance	Auto, Indoor, Outdoor, ATW, Manual, Sodium Lamp, Natural, Street Lamp	
Gain Control	Aperture Priority, Shutter Priority, Gain Priority, Manual	
Noise Reduction	2D/3D	
Advanced Features	Motion Detection, Region of Interest, Electronic Image Stabilization (EIS), Defog	
Digital Zoom	16x	
Flip	0° / 180°	
Privacy Masking	Up to 24 areas	

#### Audio

Compression	G.711a, G.711Mu, PCM, G.726, AAC, G722.1, G.723, G.729, PCM, MPEG2-Layer2
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#### Network

Ethernet	One (1) RJ-45 Port (10/100 Base-T)
Protocol	IPv4/IPv6, HTTP, HTTPS, SSL, TCP/IP, UDP, UPnP, ICMP, IGMP, SNMP, RTSP, RTP, SMTP, NTP, DHCP, DNS, PPPoE, DDNS, FTP, IP Filter, QoS, Bonjour, 802.1x
Interoperability	ONVIF Profile S and G, CGI
Streaming Method	Unicast / Multicast
Maximum User Access	20 users (48 Mbps bandwidth)
Edge Storage	FTP, P2P, Micro SD Card, maximum 256 GB
Web Viewer	IE Verision 7 and later, Chrome, Firefox
Management Software	Smart PSS, DSS Express S2
Mobile Operating System	IOS, Android

#### Certifications

CE	EN55032, EN55024, EN50130-4
Electromagnetic Compatibility (EMC)	FCC Part 15 Subpart B ANSI C63.4- 2014

#### Interface

Audio	Input: One (1) Channel Output: One (1) Channel
Alarm	Input: Two (2) Channels Output: One (1) Channel

#### Electrical

Power Supply	24 VAC, 3 A (± 25%) or PoE+ (IEEE 802.3at, Class 4)
Power Consumption	11 W, 20 W with IR on

1. The DORI distance is a general proximity of distance helping to pinpoint the correct camera for your needs. The DORI distance is calculated based on sensor specifications and lab test results according to EN 62676-4 which defines the criteria for Detect, Observe, Recognize and Identify.

Environmental

Operating Temperature	-40° C to 70° C (-40° F to +158° F) Less than 95% RH
Ingress Protection	IP67
Vandal Resistance	IK10
Surge Protection	TVSS 6000 V

Construction

Casing	Metal
Dimensions	ø190.0 mm x 332.0 mm (ø7.48 in. x 13.07 in.)
Net Weight	4.70 kg (10.36 lb)
Gross Weight	8.0 kg (17.64 lb)

Analytics+ Functions<sup>2</sup>

Perimeter Protection	<ul style="list-style-type: none"> <li>• Detects human or vehicle violations using the following methods:  <b>Tripwire:</b> a target crosses a defined line.  <b>Intrusion:</b> a target enters or exits a defined perimeter.</li> <li>• Filters actions that may produce a false alarm due to animals, leaves, and bright lights.</li> </ul>
Alarm Track	Controls the pan/tilt/zoom actions of the camera to automatically track a human or a vehicle that triggers an alarm based on a Perimeter Protection rule. Once an alarm is triggered, the camera tracks the target automatically until the target leaves the scene or the tracking time is exceeded.
Smart Motion Detection <sup>3</sup>	<ul style="list-style-type: none"> <li>• Differentiates between and classifies human and vehicle objects.</li> <li>• Filters false alarms due to leaves, lights, animals, and other inconsequential objects.</li> <li>• Extracts human or vehicle objects from recorded video for quick target search and retrieval.</li> </ul>

Intelligent Video System Functions<sup>2</sup>

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

Standard Features	<ul style="list-style-type: none"> <li>• Tampering with the camera.</li> <li>• Error writing to an onboard Micro SD card.</li> <li>• Error sending or receiving data over the network.</li> <li>• Unauthorized access to the camera.</li> <li>• IP Address Conflict</li> </ul>
Premium Features	
Motion	An object moves through any part of the scene.
Abandoned/Missing Object	A target leaves an object in designated area, or a target removes an object from the same designated area.
Advanced Features	
Facial Detection	Detects and captures a snapshot of a human face in a defined area within a scene.

Ordering Information

Type	Part Number	Description
4 MP PTZ Camera	5A445XANR	4 MP 45x IR PTZ Starlight Network Camera with Analytics+
Accessories, Included	PFB305W	Wall Mount
	AC24V/3A	Power Adapter
Accessories, Optional	PFA111	Mount Adapter (use with PFB300C or PFB303S)
	PFA120	Junction Box (use with PFB305W)
	PFA140	Power Box (use with PFB305W)
	DH-PFA142	Outdoor Surveillance Junction Box (use with PFB305W)
	PFA150	Pole Mount (use with PFB305W)
	PFA151	Corner Mount (use with PFB305W)
	DH-PFA153	Heavy-duty Pole Mount Bracket (use with PFB305W)
	PFB300C	Ceiling Mount
	PFB303S	Parapet Mount

Accessories

Included:



PFB305W  
Wall Mount



AC24V/3A  
Power Adapter

Optional:



PFA111  
Mount Adapter



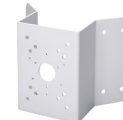
PFA120  
Junction Box



PFA140  
Power Box



DH-PFA142  
Outdoor Surveillance  
Junction Box



PFA151  
Corner Mount



PFA150  
Pole Mount



DH-PFA153  
Pole Mount



PFB300C  
Ceiling Mount



PFB303S  
Parapet Mount

2. The Analytics+ Perimeter Protection and the IVS functions cannot be used at the same time, only one Analytics+ or IVS function can be used at a time.  
 3. Pair a Smart Motion Detection camera with a Dahua recording device that also offers SMD functionality to take advantage of SMD alarm filtering and object classification when searching and playing back recorded video.