

# 2 MP PTZ Network Camera

40x Starlight IR PTZ Network Camera





#### **System Overview**

The 2 MP IR PTZ Dome camera features a 1/2.8-in. CMOS imager with a 40x optical zoom lens, and provides an all in one solution for capturing long-distance video surveillance for outdoor applications. The camera uses the Smart H.265+ video compression standard to improve encoding efficiency while preserving high-quality video. The PTZ camera a day/night mechanical IR cut filter and ultra-wide dynamic range to deliver crystal clear images in challenging lighting conditions.

#### **Functions**

#### 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 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.

#### Ultra-Wide Dynamic Range

For applications with both bright and low lighting conditions that change quickly, Ultra WDR (140 dB) optimizes both the bright and dark areas of a scene at the same time to provide usable video.

#### Intelligent Video System (IVS)

IVS is a built-in video analytic algorithm that delivers intelligent functions to monitor a scene for Tripwire violations, intrusion detection, and abandoned or missing objects. A camera with IVS quickly and accurately responds to monitoring events in a specific area. In addition to scene analytics, the camera detects and captures a snapshot of human face in a defined area within a scene, and offers tamper detection by recognizing a dramatic scene change and generating a warning message to inspect the camera.

- 1/2.8-in. 2 MP STARVIS™ CMOS Sensor
- Powerful 40x Optical Zoom
- · Starlight Technology for Ultra-low Light Sensitivity
- Triple-stream Encoding
- H.265 and H.264 Dual Codec
- 1080p at 60 fps Maximum Resolution
- Simultaneous SD Analog Video Output
- Ultra Wide Dynamic Range (140 dB)
- Maximum IR Distance up to 200 m (656 ft)
- ArcticPro Series Camera Operational down to -40° C (-40° F)
- IP67 Ingress Protection and IK10 Vandal Resistance
- Intelligent Video System (IVS) Analytics with Auto-tracking
- Supports Dahua Proprietary Hi-PoE Power Source
- Five-year Warranty\*













#### 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.

#### PFA 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.

#### 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.

#### 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  $-40^{\circ}$  C ( $-40^{\circ}$  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

Subjected and certified to rigorous dust and water immersion tests, the IP67 rating makes it suitable for demanding outdoor applications.



Miner   Mine	Technical Spec	cification		Bit Rate Control	CBR, VBR
Effective Phels   1920(H) x 2080(H) x 2080(H	Camera			Bit Rate	•
Scanning System	Image Sensor			Day/Night	Auto (ICR), Color, B/W
Minimum   Illumination	Effective Pixels		1920(H) x 1080(V), 2 MP	Backlight Compensation	BLC, HLC, Ultra WDR (140 dB)
Minimum   Illumination	Scanning System			White Balance	Auto, ATW, Indoor, Outdoor, Manual
Manual Control   Decar   12 (18 oet   Note Reduction   Wins DRR (20/39)	Electronic Shutter	Speed		Gain Control	Auto, Manual
R Distance	Minimum Illuminat	tion		Noise Reduction	Ultra DNR (2D/3D)
R Distance	S/N Ratio		More than 56 dB		Motion Detection, Region of Interest,
Read   Fine	IR Distance		Distance up to 200 m (656.17 ft)	Advanced Features	
Privacy Masking	IR On/Off Control		Auto, Manual	Digital Zoom	16x
Audio	IR LEDs		Ten (10)	Flip	180°
Max. Aperture	Lens			Privacy Masking	Up to 24 areas
Angle of View	Focal Length		4.5 mm to 180 mm	Audio	
Network	Max. Aperture		F1.2 to F3.5	Compression	G.711a, G.711Mu, PCM, AAC, G.722.1, G.729,
Focus Control Auto, Manual Close Focus Distance DORI Distance DORI Distance DORI Distance DORI Distance Detect (8 ppf) Observe (19 ppf) Recognize (38 ppf) Identify (76 ppf) Detect (8 ppf) Detect (8 ppf) Detect (8 ppf) Observe (19 ppf) Recognize (38 ppf) Identify (76 ppf) Detect (8 ppf) Detect (9 ppf) Detect (10 pp	Angle of View		Horizontal: 67.5°to 1.7°	Compression	MPEG2-L2
Close Focus Distance	Optical Zoom		40x	Network	
DORI Distance   Detect (8 ppf)   Observe (19 ppf)   Recognize (38 ppf)   Identify (76 ppf)   Detect (8 ppf)   Observe (19 ppf)   Recognize (38 ppf)   Identify (76 ppf)   Detect (8 ppf)   Observe (19 ppf)   Recognize (38 ppf)   Identify (76 ppf)   Detect (8 ppf)   Observe (19 ppf)   Recognize (38 ppf)   Identify (76 ppf)   Detect (8 ppf)   Observe (19 ppf)   Recognize (38 ppf)   Identify (76 ppf)   Detect (10 ppf)   Detec	Focus Control			Ethernet	RJ-45 (10 Base-T/100 Base-TX)
Detect (8 ppf)   Observe (19 ppf)   Recognize (38 ppf)   Identify (76 ppf)   246 m (8100 ft)   988 m (3241 ft)   494 m (1621 ft)   247 m (810 ft)   Interoperability   ONVIF, PSIA, CGI		_	100 mm to 1000 mm		IPv4/IPv6, HTTP, HTTPS, SSL, TCP/IP, UDP, UP
Detect (8 ppf)   Observe (19 ppf)   Recognize (38 ppf)   Identify (76 ppf)   249 m (810 ft)   988 m (3241 ft)   494 m (1621 ft)   247 m (810 ft)   Interoperability   ONVIF, PSIA, CGI	DORI Distance	1		Protocol	ICMP, IGMP, SNMP, RTSP, RTP, SMTP, NTP, D DNS, PPPOE, DDNS, FTP, IP Filter, QoS, Boniou
PTZ  Streaming Method Unicast / Multicast  Pan/Tilt Range   Pan: 0" to 360" endless Tilt: -20" to 90", Auto Flip 180"   Maximum User Access   Zo user  Pan: 0.1" to 200" /s Tilt: 0.1" to 120" /s Tilt: 0.1" to 120" /s Pan: 240" /s Tilt: 200" /s Preset Speed   Pan: 240" /s Tilt: 200" /s Presets   300 PTZ Mode   5 Pattern, 8 Tour, Auto Pan, Auto Scan   Management Software   E10, Firefox, Safari   Web Viewer   E10, Firefox, Safari   Web Viewer   Smart PSS, DSS   Web Viewer   Smart PSS,	Detect (8 ppf)	Observe (19 ppf)	Recognize (38 ppf) Identify (76 ppf)		The state of the s
Pan/Tit Range Pan: 0° to 360° endless Tilt: -20° to 90°, Auto Flip 180° Manual Control Speed Pan: 0.1° to 200° /s Tilt: 0.1° to 200° /s Tilt: 200° /s Tilt: 200° /s Preset Speed Pan: 240° /s Tilt: 200° /s Tilt: 200° /s Preset Speed Presets 300 PTZ Mode Speed Setup Adaptation Power up Action Auto restore to previous PTZ and lens status after power failure si no command in the specified period is no command in the specified period Frotocol DH-SD, Pelco-P/D (auto recognition) Video Compression Smart H.265+, H.265, Smart H.264+, H.264 Streaming Method Unicast / Multicast Maximum User Access 20 users NAS (Network Attached Storage) Nas (Netvork Attached Storage) Nas (Network Attac	2469 m (8100 ft)	988 m (3241 ft)	494 m (1621 ft) 247 m (810 ft)	Interoperability	ONVIF, PSIA, CGI
Manual Control Speed Pan. 0.1" to 200" /s uto Flip 180"  Manual Control Speed Pan. 0.1" to 200" /s Pan. 240" /s Tilt: 200" /s Pan. 240" /s Pan. 240	PTZ			Streaming Method	Unicast / Multicast
Tit: 0.1* to 120* /s Pan: 240* /s Tit: 200* /s Presets  300 PTZ Mode  5 Pattern, 8 Tour, Auto Pan, Auto Scan Human-oriented Focal Length, Speed Adaptation Auto restore to previous PTZ and lens status after power failure 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  Streaming Capability  Three (3) Streams  Main Stream  1080p (1920 x 1080), 720p (1280 x 720), D1 (704 x 480), CIF (352 x 240)  Main Stream  1080p x 100 pr. D1 at 30 fps  Sub Stream 2  1080p, 720p, or D1 at 30 fps  Electrical  Edge Storage  Local PC for Instant Recording Micro SD Card, maximum 128 GB  Web Viewer  IE 10, Firefox, Safari  Web Viewer  Smart PSS, DSS  Mobile Operating System IOS, Android  Certifications  Certifications  CE  EN 55032 EN 55032 EN 55034 EN 55034 EN 55030-4 UL UL: UL00950-1+ CAN/CSA C22.2, No.6095C UL Electromagnetic Compatibility FCC Part 15 Subpart B ANSI C63.4-2014  Interface  Video Output One (1) BNC (1.0 Vp-p, 75 Q) Audio Input: One (1) Channel Output: One (1) Channel Output: One (1) Channel Frame Rate  Sub Stream 1 D1 or CIF at 30 fps  Alarm Electrical  Power Supply  24 VAC, 3 A (± 25%) or via Dahua proprietary Hi-PoE power sources	Pan/Tilt Range			Maximum User Access	20 users
Presets 300 PTZ Mode 5 Pattern, 8 Tour, Auto Pan, Auto Scan Human-oriented Focal Length, Speed Adaptation Auto restore to previous PTZ and lens status after power failure Protocol DH-SD, Pelco-P/D (auto recognition) Video Compression Smart H.265+, H.265, Smart H.264+, H.264 Streaming Capability Three (3) Streams  Main Stream 1 1080p (1920 x 1080), 720p (1280 x 720), D1 (704 x 480), CIF (352 x 240) Sub Stream 2 1080p, 720p, or D1 at 30 fps  Web Viewer IE 10, Firefox, Safari  Management Software Smart PSS, DSS  Mobile Operating System IOS, Android Certifications  Certifications  CE	Manual Control Sp	eed	Tilt: 0.1° to 120° /s	Edge Storage	Local PC for Instant Recording
Presets 300 PTZ Mode 5 Pattern, 8 Tour, Auto Pan, Auto Scan Speed Setup Human-oriented Focal Length, Speed Adaptation Auto restore to previous PTZ and lens status after power failure Activate Preset, Scan, Tour, or 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 Streaming Capability Three (3) Streams 1080p (1920 x 1080), 720p (1280 x 720), D1 (704 x 480), CIF (352 x 240) D1 (707 av 480), CIF (352 x 240) Sub Stream 1 D1 or CIF at 30 fps Sub Stream 2 1080p, 720p, or D1 at 30 fps  Electrical Power Supply Management Software Smart PSS, DSS Mobile Operating System 10S, Android Certifications  Certifications  CE  EN 55032 EN 55032 EN 55032 EN 55034 EN 550130-4 EN 50130-4 EN 50130-4 INL: UIL: UIL: 008050-1 + CAN/CSA C22.2, No.6095C INC Protocol UIL: UIC: 008050-1 + CAN/CSA C22.2, No.6095C Interface Video Output One (1) BNC (1.0 Vp-p, 75 Q) Audio Input: One (1) Channel Output: One (1) Channel Output: One (1) Channel Alarm Input: Seven (7) Channels Output: Two (2) Channels Electrical Power Supply Vide Output Via Dahua proprietary Hi-PoE power source Video Output Via Dahua proprietary Hi-PoE power source Video Output Via Dahua proprietary Hi-PoE power source	Preset Speed		·	Web Viewer	
Speed Setup  Human-oriented Focal Length, Speed Adaptation  Auto restore to previous PTZ and lens status after power failure  Activate Preset, Scan, Tour, or 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  Streaming Capability  Three (3) Streams  1080p (1920 x 1080), 720p (1280 x 720), D1 (704 x 480), CIF (352 x 240)  Main Stream  Main Stream  Sub Stream 1  D1 or CIF at 30 fps  Sub Stream 2  1080p, 720p, or D1 at 30 fps  Electrical  Mobile Operating System  Certifications  Certifications  CE  EN 55032 EN 55024 EN 55024 EN 55024 EN 55032 EN 55024 EN 55032 EN 55032 EN 55032 EN 55032 EN 55032 EN 55032 EN 55034 EN 5030-4  UL: UL60950-1 + CAN/CSA C22.2, No.6095C  Interface  Video Output  One (1) BNC (1.0 Vp-p, 75 Ω)  Audio  Input: One (1) Channel Output: One (1) Channel Output: One (1) Channel Output: One (1) Channel Output: Two (2) Channels Output: Two (2) Channels Electrical  Field Trical  Power Supply	Presets				
Adaptation Autor restore to previous PTZ and lens status after power failure  Activate Preset, Scan, Tour, or 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  Streaming Capability  Three (3) Streams  1080p (1920 x 1080), 720p (1280 x 720), D1 (704 x 480), CIF (352 x 240)  D1 (704 x 480), CIF (352 x 240)  Main Stream  Sub Stream 1  D1 or CIF at 30 fps  Sub Stream 2  1080p, 720p, or D1 at 30 fps  Electrical  Power Supply  24 VAC, 3 A (± 25%) or via Dahua proprietary Hi-PoE power source	PTZ Mode			Management Software	Smart PSS, USS
After power failure Active Preset, Scan, Tour, or 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  Streaming Capability  Three (3) Streams  1080p (1920 x 1080), 720p (1280 x 720), D1 (704 x 480), CIF (352 x 240)  Frame Rate  Main Stream  Main Stream  Sub Stream 1  D1 or CIF at 30 fps  Sub Stream 2  1080p, 720p, or D1 at 30 fps  EN 55032 EN 55034 EN 5030-4 EN 5030-4 UL  UL: UL: UL: 006950-1 + CAN/CSA C22.2, No.60950 Electromagnetic Compatibility (EMC) Interface  Video Output One (1) BNC (1.0 Vp-p, 75 \Omega) Audio Electromagnetic Compatibility (EMC) Interface  Video Output Audio Output: One (1) Channel Output: One (1) Channel Output: One (1) Channel Output: One (	Speed Setup			Mobile Operating System	IOS, Android
Activate Feet, Stath, 10th, of Partiest, Stath, 10th, of Partiest is no command in the specified periodProtocolDH-SD, Pelco-P/D (auto recognition)VideOULUL: UL60950-1 + CAN/CSA C22.2, No.60950CompressionSmart H.265+, H.265, Smart H.264+, H.264Electromagnetic Compatibility (EMC)FCC Part 15 Subpart B ANSI C63.4-2014InterfaceVideo OutputOne (1) BNC (1.0 Vp-p, 75 Ω)AudioInput: One (1) Channel Output: One (1) ChannelRS485One (1)AlarmInput: Seven (7) Channels Output: Two (2) ChannelsElectricalPower Supply24 VAC, 3 A (± 25%) or via Dahua proprietary Hi-PoE power source	Power up Action			Certifications	
DH-SD, Pelco-P/D (auto recognition)	Idle Motion			CE	EN 55024
Video         Compression       Smart H.265+, H.265, Smart H.264+, H.264         Streaming Capability       Three (3) Streams         1080p (1920 x 1080), 720p (1280 x 720), D1 (704 x 480), CIF (352 x 240)       Video Output       One (1) BNC (1.0 Vp-p, 75 Ω)         Audio       Input: One (1) Channel Output: One (1) Channel         Sub Stream 1       D1 or CIF at 30 fps         Sub Stream 2       1080p, 720p, or D1 at 30 fps         Alarm       Input: Seven (7) Channels Output: Two (2) Channels         Electrical         Power Supply       24 VAC, 3 A (± 25%) or via Dahua proprietary Hi-PoE power source	Protocol		DH-SD, Pelco-P/D (auto recognition)	UL	
CompressionSmart H.265+, H.265, Smart H.264+, H.264(EMC)ANSI C63.4-2014Streaming CapabilityThree (3) Streams1080p (1920 x 1080), 720p (1280 x 720), D1 (704 x 480), CIF (352 x 240)Video OutputOne (1) BNC (1.0 Vp-p, 75 Ω)AudioInput: One (1) Channel Output: One (1) ChannelSub Stream 1D1 or CIF at 30 fpsSub Stream 21080p, 720p, or D1 at 30 fpsAlarmInput: Seven (7) Channels Output: Two (2) ChannelsElectricalPower Supply24 VAC, 3 A (± 25%) or via Dahua proprietary Hi-PoE power source	Video				
Streaming Capability       Three (3) Streams         Name Rate       1080p (1920 x 1080), 720p (1280 x 720), D1 (704 x 480), CIF (352 x 240)         Main Stream       1080p at 60 fps, or 1.3 MP or 720p at 30 fps         Sub Stream 1       D1 or CIF at 30 fps         Sub Stream 2       D1 or CIF at 30 fps         Sub Stream 2       1080p, 720p, or D1 at 30 fps         Electrical         Power Supply       24 VAC, 3 A (± 25%) or via Dahua proprietary Hi-PoE power source	Compression		Smart H.265+, H.265, Smart H.264+, H.264	(EMC)	•
1080p (1920 x 1080), 720p (1280 x 720), D1 (704 x 480), CIF (352 x 240)	Streaming Capabili	ity	Three (3) Streams	Interface	
Main Stream 1 1080p at 60 fps, or 1.3 MP or 720p at 30 fps RS485 One (1)  Sub Stream 1 D1 or CIF at 30 fps Alarm Input: Seven (7) Channels Output: Two (2) Channels Output: Two (2) Channels Electrical  Power Supply 24 VAC, 3 A (± 25%) or via Dahua proprietary Hi-PoE power source	Resolution			·	
Frame Rate  Sub Stream 1  D1 or CIF at 30 fps  Alarm  Input: Seven (7) Channels Output: Two (2) Channels  Electrical  Power Supply  24 VAC, 3 A (± 25%) or via Dahua proprietary Hi-PoE power source	Frame Rate	Main Stream	1080p at 60 fps, or	Audio	
Alarm Output: Seven (7) Channels Output: Two (2) Channels  Electrical  Power Supply  Alarm 24 VAC, 3 A (± 25%) or via Dahua proprietary Hi-PoE power source				RS485	
Electrical  Power Supply  24 VAC, 3 A (± 25%) or via Dahua proprietary Hi-PoE power source			·	Alarm	
Power Supply via Dahua proprietary Hi-PoE power source	Sub Stredin 2		TUOUP, 72UP, OF DI at 30 TPS	Electrical	
				Power Supply	24 VAC, 3 A (± 25%) or via Dahua proprietary Hi-PoE power source

<sup>1.</sup> 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.

Power Consumption

24 W, 38 W with IR on

# Ultra Series | 6AE240VNI

#### Environmental

Operating Conditions	$-40^{\circ}$ C to 70° C (–40° F to +158° F), Less than 95% RH	
Ingress Protection	IP67	
Vandal Resistance	IK10	
Lightning Protection Rating	8 kV	

#### Construction

Casing	Metal
Dimensions	ø239.80 mm x 382.0 mm (ø9.44 in. x 15.04 in.)
Net Weight	6.75 kg (14.88 lb)
Gross Weight	10.10 kg (22.27 lb)

### Intelligence

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

Standard Features	<ul> <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> </ul>		
Premium Features			
Motion	An object moves through any part of the scene.		

Premium Features	
Motion	An object moves through any part of the scene.
Tripwire	A target crosses a user-defined line.
Intrusion	A target enters or exits a defined perimeter.
Scene Change	A person or object moves the camera to change the scene or covers the camera to obscure 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

defined area within a scene.

Generates a visual representation of data.

Controls the pan/tilt/zoom actions of the camera to automatically track an object in motion and to keep it in the scene.

# **Ordering Information**

Heat Map

Auto-tracking

Туре	Part Number	Description
2 MP PTZ Camera	6AE240VNI	2 MP 40x Starlight PTZ Network Camera, Built-in Heater WDR, IVS
	PFA111	Mount Adapter
Accessories, included	PFB303W	Wall Mount
	AC24V/3A	Power Adapter
	PFA120	Junction Box
	PFA140	Power Box
Accessories, optional	PFA150	Pole Mount
Accessories, optional	PFA151	Corner Mount
	PFB300C	Ceiling Mount
	PFB303S	Parapet Mount
Accessories, Optional Dahua Hi-PoE Power	PFT1200	Hi-PoE Midspan
Source	DH-LR2110-8ET-120	8-port ePoE Layer 2 Switch

### **Accessories**

#### Included:







PFB303W Wall Mount

PFA111 Mount Adapter

AC24V/3A Power Adapter

#### Optional:





PFA140 Power Box

PFB300C Ceiling Mount

PFA120 Junction Box





Pole Mount







PFA151 Corner Mount

PFB303S Parapet Mount

Ceiling Mount	Junction Mount
PFA111 + PFB300C	PFA111 + PFB303W + PFA120
Power Box Mount	Pole Mount
PFA111 + PFB303W + PFA140	PFA111 + PFB303W + PFA150
Corner Mount	Parapet Mount
PFA111 + PFB303W + PFA151	PFA111+ PFB303S



## Dimensions (mm/in.)



