Dahua TECHNOLOGY

2MP Starlight Dual-Sensor PTZ Network Camera
IR PTZ Camera with Analytics+

- Two (2) Independent 1/2.8-in. 2 MP Progressive-scan CMOS Sensors
- Panoramic Camera: 6 mm Lens
- PTZ Camera: 4.8 mm to 120 mm, 25x Optical Zoom Lens
- 2 MP at 60 fps Maximum Resolution (each camera)
- Smart H.265+ and Smart H.264+ Dual Codecs
- Starlight Technology for Ultra-low Light Sensitivity
- Predictive Focus Algorithm
- Analytics+ Function – Perimeter Protection
- Maximum IR Distance up to 100 m (328.08 ft) – PTZ Camera
- ArcticPro Series Camera - Operational down to −40° C (−40° F)
- IP67 Ingress Protection
- Intelligent Video System (IVS) with Smart Track
- Five-year Warranty*

Smart H.265+ | WDR | ICR D/N | Starlight | IP67 | Face Capture | Perimeter

System Overview

The Dahua Dual 2 MP Starlight Dual-sensor camera combines two independent sensors that work in tandem to deliver a dual surveillance scene. The 2 MP sensor with a 6 mm lens delivers a panoramic scene that monitors an area for rules violations, while the PTZ camera with Smart Tracking offers a detailed scene that tracks the target of the violation. Both cameras pan and tilt independently of each other, so you can focus on the exact region of interest scene as the PTZ camera tracks and zooms in on the details. The camera offers Perimeter Protection, a component of Dahua Analytics+, that distinguishes between human and vehicular objects to deliver accurate alarms.

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.

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. The camera uses a set of optical features to balance light throughout the scene, resulting in clear images in dark environments.

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.

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.

Automatic Calibration
The camera facilitates the task of calibrating the scenes of the panoramic camera and the PTZ camera. The automatic calibration feature ensures that both cameras are in sync, linking the PTZ camera to the panoramic scene. When the system triggers an alarm in the panoramic scene, the PTZ camera automatically find the alarm target, locks on, takes a snapshot, and tracks the target through the scene.

Smart Tracking
Smart Tracking technology integrates the width of the panoramic scene with the tracking capability of the PTZ camera. 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 is triggered automatically by pre-defined rules set in the region of interest scene. Once a rule is triggered, the camera automatically zooms in and tracks the defined target.

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 high pressure water jets from any direction.

Technical Specification

Panoramic Camera

Image Sensor	1/2.8-in. 2 MP CMOS Sensors
Effective Pixels	1920 (H) x 1080 (V), 2 MP
Scanning System	Progressive
Electronic Shutter Speed	Auto, Manual: 1/3 s to 1/100,000 s
Minimum Illumination	Color: 0.005 lux at F1.6 B/W: 0.0005 lux at F1.6
Illumination Distance	White Light up to 30.0 m (98.43 ft)
Illumination Control	Smart IR, Manual, Off
White Light LEDs	Four (4)

Panoramic Lens

Lens Type	Fixed-focal
Iris Control	Fixed
Focal Length	6 mm
Maximum Aperture	F1.6
Angle of View	Horizontal: 53.70° Vertical: 28.70° Vertical: 61.80°
Close Focus Distance	0.20 m (0.66 ft)

PTZ Camera

Image Sensor	1/2.8-in. 2 MP CMOS Sensor
Effective Pixels	1920 (H) x 1080 (V), 2 MP
Scanning System	Progressive
Electronic Shutter Speed	1/1 s to 1/100,000 s
Minimum Illumination	Color: 0.005 lux at F1.6 B/W: 0.0005 lux at F1.6 0 lux with IR on
IR Distance	Up to 100.0 m (328.08 ft)
IR Control	Zoom Priority, Manual, Smart IR, Off
IR LEDs	Four (4)

PTZ Lens

Lens Type	Motorized Vari-focal
Iris Control	Automatic
Focal Length	4.8 mm to 120.0 mm
Maximum Aperture	F1.6 to F3.5
Angle of View	Horizontal: 59.60° to 4.80° Vertical: 35.40° to 2.70° Diagonal: 66.50° to 5.50°
Optical Zoom	25x
Focus Control	Automatic, Semi-automatic, Manual
Close Focus Distance	0.10 m to 1.50 m (0.33 ft to 4.92 ft)

DORI[1] Distance

	Detect (8 ppf)	Observe (19 ppf)	Recognize (38 ppf)	Identify (76 ppf)
Panoramic Camera	88.30 m (289.70 ft)	35.30 m (115.81 ft)	17.70 m (58.07 ft)	8.80 m (28.87 ft)
PTZ Camera, Telephoto	1613.80 m (5294.62 ft)	645.50 m (2117.78 ft)	322.80 m (1059.06 ft)	161.40 m (529.53 ft)

PTZ

Pan/Tilt Range	Panoramic	Pan: 0˚ to 360˚, endless Tilt: 0˚ to 30˚
	PTZ	Pan: 0˚ to 250˚ Tilt: −10˚ to 90˚
Manual Speed Control	Panoramic	Pan: 7° /s to 117° /s Tilt: 3° /s to 25° /s
	PTZ	Pan: 1.8° /s to 131° /s Tilt: 0.5° /s to 65° /s
Preset Speed	Panoramic	Pan: 242° /s Tilt: 58° /s
	PTZ	Pan: 430° /s Tilt: 243° /s
Presets	300	
PTZ Mode	5 Pattern, 8 Tour (up to 32 presets per tour), 5 Scan	
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)	

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.

Video

Compression		Smart H.265+, H.265, Smart H.264+, H.264 Baseline Profile, H.264 Main Profile, H.264 High Profile, MJPEG
Streaming Capability		Three (3) Streams
Output Channels		Two (2)
Resolution		
	Panoramic	1080p (1920 x 1080), 1.3 MP, 960p (1280 x 960), 720p (1280 x 720), D1 (704 x 480), CIF (52 x 240)
	PTZ	1080p (1920 x 1080), 1.3 MP, 960p (1280 x 960), 720p (1280 x 720), D1 (704 x 480), CIF (52 x 240)
Frame Rate		
	Main Stream	Panoramic: 1080p, 1.3 MP, or 720p at 60 fps PTZ: 1080p, 1.3 MP, or 720p at 60 fps
	Sub Stream 1	Panoramic: D1 or CIF at 30 fps PTZ: D1 or CIF at 30 fps
	Sub Stream 2	Panoramic: 1080p, 1.3 MP, 720p, or CIF at 30 fps PTZ: 1080p, 1.3 MP, 720p, or CIF at 30 fps
Bit Rate Control		CBR, VBR
Bit Rate		H.265: 512 Kbps to 5632 Kbps H.264: 1792 Kbps to 9216 Kbps
Day/Night	Panoramic	Color, B/W, Auto (ICR)
	PTZ	Color, B/W, Auto (ICR)
Backlight		BLC, HLC, WDR
Dynamic Range	Panoramic	True WDR (120 dB)
	PTZ	True WDR (120 dB)
White Balance	Panoramic	Auto, Indoor, Outdoor, ATW, Manual, Sodium Lamp, Natural Light, Street Lamp
	PTZ	Auto, Indoor, Outdoor, ATW, Manual, Sodium Lamp, Natural Light, Street Lamp
Gain Control		Auto, Shutter Priority, Gain Priority, Manual
Noise Reduction		2D/3D
Advanced Features		Electronic Image Stabilization (EIS), Defog (Digital, PTZ camera only)
Digital Zoom		16x (PTZ camera only)
Motion Detection		Off, On (4 zones, rectangular)
Region of Interest		Off, On (4 zones)
Flip		0° to 180°

Audio

Compression	G.711a, G.711Mu, G.726, MPEG-Layer 2, G.722.1, G.729

Network

Ethernet	One (1) RJ-45 Port (10/100 Base-T)
Protocol	IPv4; IPv6; HTTP; HTTPS; 802.1x; Qos; FTP; SMTP; UPnP; SNMP; DNS; DDNS; NTP; RTSP; RTP; TCP; UDP; IGMP; ICMP; DHCP; PPPoE; ARP; SNMPv1/v2c/v3 (MIB-2); RTCP
Interoperability	ONVIF, CGI
Streaming Method	Unicast/Multicast
Maximum User Access	20 Users (total bandwidth 64 Mbps)
Edge Storage	P2P FTP One (1) Micro SD Card slot, maximum 256 GB
Web Viewer	IE Version 7 and later
Management Software	Smart PSS, DSS
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

Electromagnetic Compatibility (EMC)	EN55032, EN55024, EN50130-4 47 CFR FCC Part 15 Subpart B ANSI C63.4-2014

Interface

Audio	Input	One (1) Channel
	Output	One (1) Channel
Alarm	Input	Two (2) Channels (Digital Input 0 VDC to 5 VDC)
	Output	One (1) Channel

Electrical

Power Supply	36 VDC, 2.23 A ±25% or Hi-PoE
Power Consumption	Basic: 21 W Maximum: 40 W (with PTZ, zoom, focus, IR light, white light, and Smart Plan enabled)

Environmental

Operating Conditions	−40° C to +70° C (−40° F to +158° F), ≤ 95% RH
Storage Conditions	−40° C to +70° C (−40° F to +158° F), ≤ 95% RH
Ingress Protection	IP67
Surge Protection	TVS 8000 V

Construction

Casing	Metal and Plastic
Dimensions	ø277.0 mm x 385.0 mm (ø10.91 in. x 15.16 in.)
Net Weight	9.0 kg (19.84 lb)
Gross Weight	13.80 kg (30.42 lb)

Analytics+ Functions[2]

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.

2. The Analytics+ functions are available on the Panoramic Camera only.

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	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.
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
Panoramic + PTZ Camera	T5X225WAN	2 MP Panoramic + 2 MP PTZ Network Camera, True WDR
Accessories, Included	Power Adapter	36 VDC, 2.23 A
	PFB306W-S	Wall Mount Bracket
Accessories, Optional	PFA150	Pole Mount Bracket (use with PFB306W-S)
	PFB300C-S	Ceiling Mount Bracket
Accessories, Optional Dahua Hi-PoE Power Source	PFT1200	Hi-PoE Midspan
	DH-LR2110-8ET-120	8-port ePoE Layer 2 Switch

Accessories

Included:
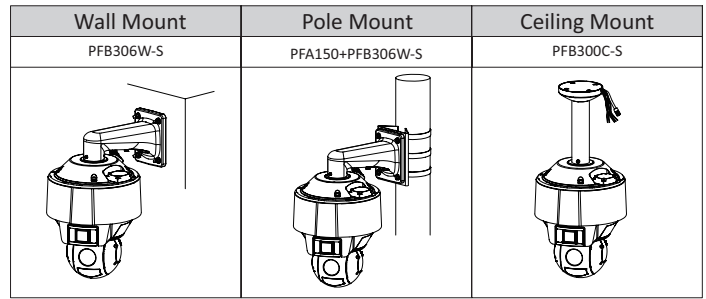
PFB306W-S
Wall Mount

DC36V/2.23A
Power Adapter

Optional:

PFA150
Pole Mount Bracket

PFB300C-S
Ceiling Mount

Wall Mount	Pole Mount	Ceiling Mount
PFB306W-S	PFA150+PFB306W-S	PFB300C-S

Dimensions (mm/in.)

G1 1/2B

385.0 mm (15.16 in.)

357.0 mm (14.06 in.)

ø277.0 mm (ø10.91 in.)

ø160.0 mm (ø6.30 in.)

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